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1.0 INTRODUCTION

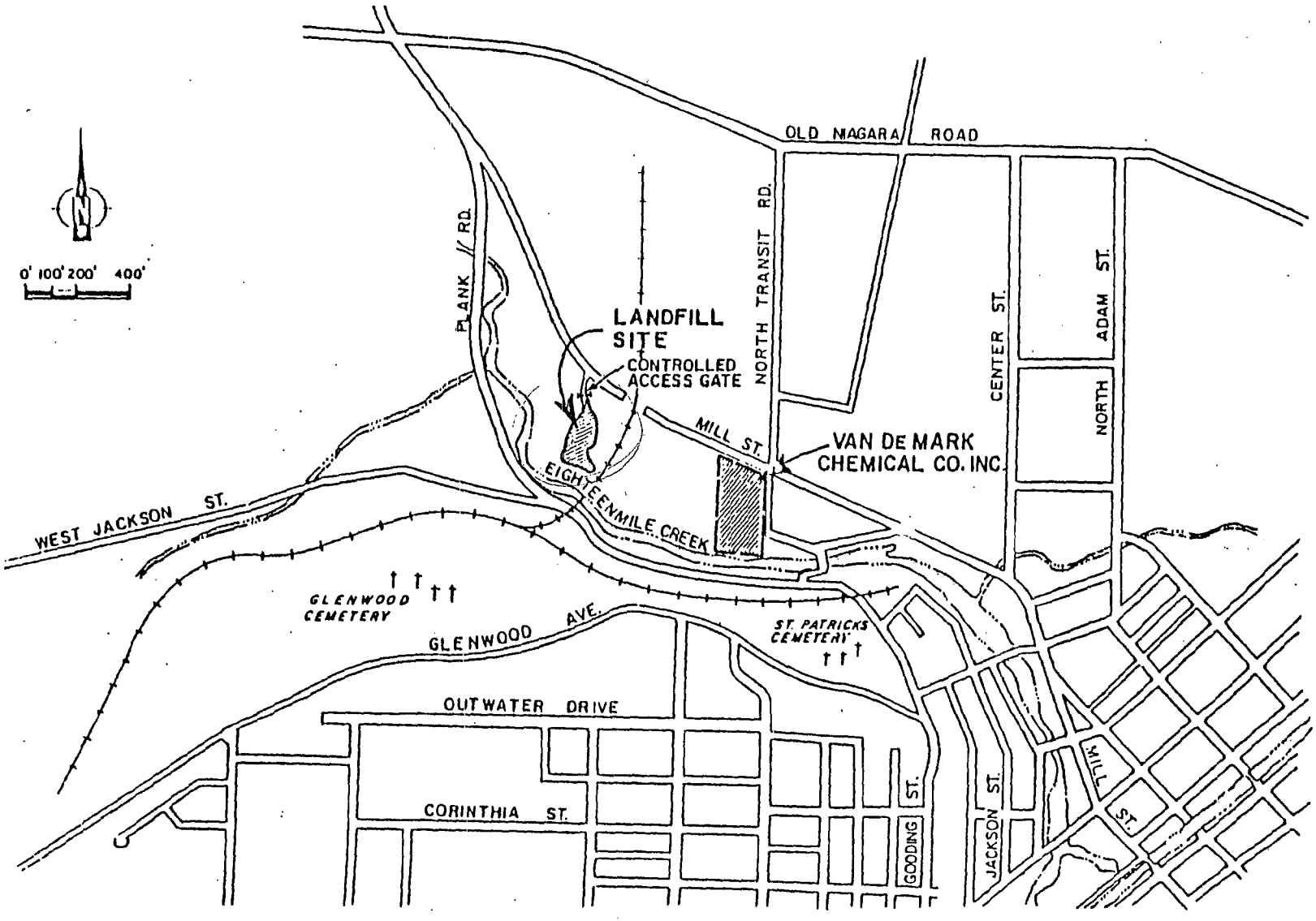
1.1 Background

Van De Mark Chemical Co., Inc. (VDM) owns a landfill which is located between Mill Street and Eighteen Mile Creek, adjacent to their production facilities, in Lockport, New York (Figure 1-1). The landfill occupies approximately 2.5 acres and is situated on a flat plateau, about 80 feet above the creek. During the period from 1957 to 1982, VDM reportedly disposed of chemical waste by-products generated from production of silicon tetrachloride ($SiCl_4$) in the landfill.

Prior to landfilling, the site was utilized as an open-cut quarry for sandstone and limestone. Consequently, the rock of the Grimsby Formation (sandstone) which originally capped the site was removed down to the top of the underlying Power Glen Formation (shale with interbedded dolomite and sandstone). Spoil materials from the mining operation were left in-place over the mined-out areas. This resulted in a layer of soil and rock fragments across the site ranging from about 5 to 13 feet in thickness.

From 1957 to 1979 wastes generated by VDM were disposed in the western half of the site (Figure 1-2). In this portion of the site, landfilling methods consisted of excavating, disposing, and covering of the untreated wastes with the excavated soils. VDM estimates that about 2000 drums of waste were landfilled in this area.

In June 1977, VDM submitted an engineering report (Whitmore, 1977) and applied for a permit to upgrade the condition of the landfill, and proposed the installation of approximately 5-7 feet of soil fill, regrading, and fencing the site for disposal of waste in dug trenches. In this method, trenches approximately 9 feet wide and 7 feet deep are excavated in the overburden. The length of the trenches varies depending on the number of drums. A six inch layer of 2-inch run of crusher limestone is placed in the bottom of the trenches. The semi-liquid wastes in 55-gallon drums are then placed on the prepared limestone bed. The drums are positioned three across, with 6-inches between drums. The spaces around the drums are backfilled with No. 2 (0-1/2-inch size) crushed limestone to the top of the drums, and a 50-lb bag of finished lime



SOURCE: CONESTOGA-ROVERS & ASSOCIATES, INC. 1984

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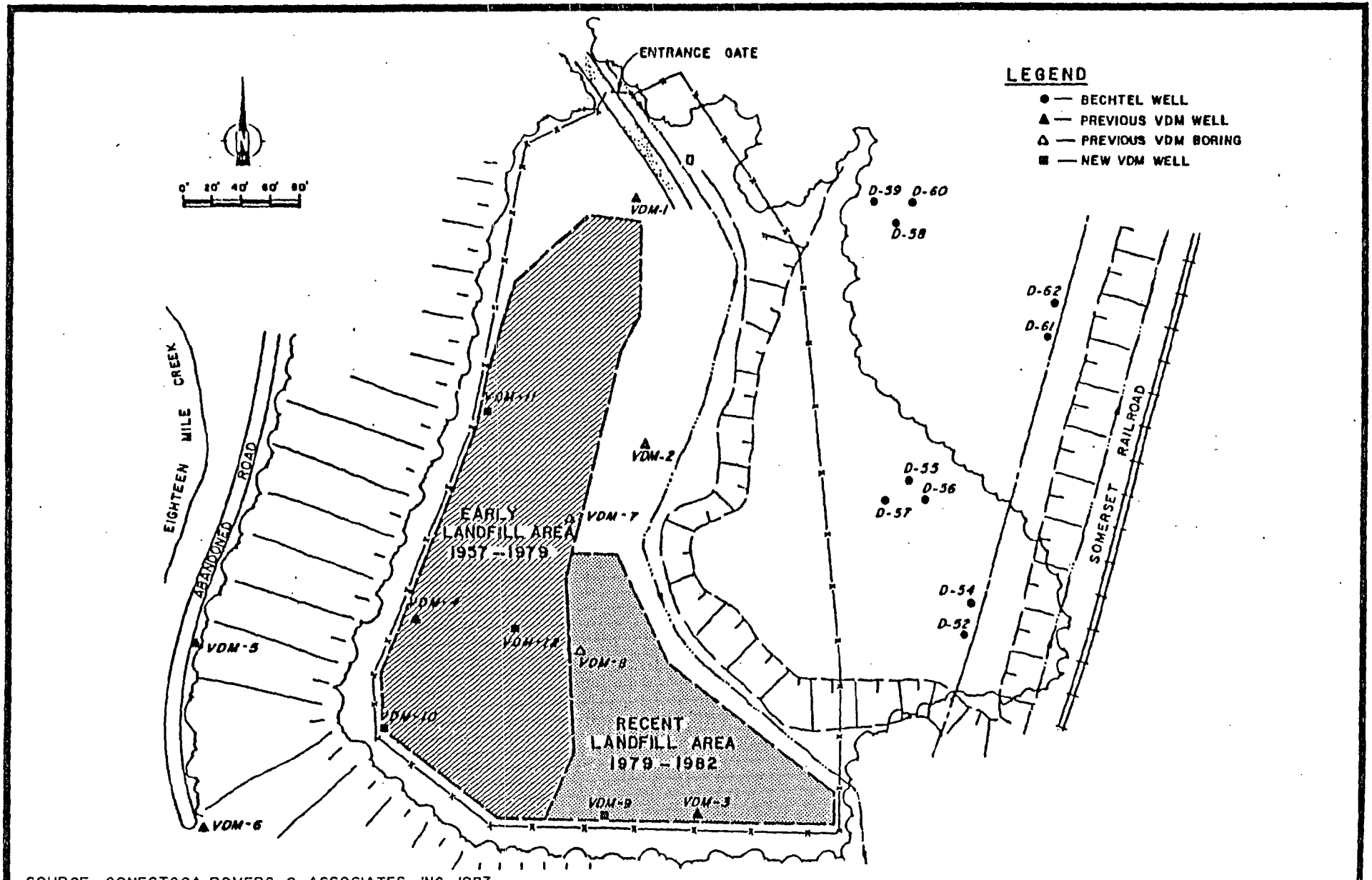
SITE LOCATION PLAN

FIGURE I-I



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EARLY AND RECENT LANDFILL AREAS

FIGURE 1-2

placed on top of each drum. A 6-inch layer of No. 2 crushed limestone is then placed over the lime and drums. This is then covered with 12 inches of excavated material. A hardened steel rod is then pushed vertically into the drums individually through the cover materials. The trench is then backfilled to the original ground surface and the trench location staked and labeled. A typical trench section is presented in Figure 1-3. The overall surface of the site was graded inward such that there was no runoff from the site.

A New York State Department of Environmental Conservation (NYSDEC) permit to operate the eastern portion of the landfill was issued on February 9, 1979 and ran through February 9, 1982. During this period a total of 1307 drums were disposed in the eastern landfill area (Figure 1-2). Following expiration of the permit VDM began disposing pretreated wastes at the Lockport Wastewater Treatment Plant.

As reported by VDM, the wastes consisted of sludges, residues and still bottoms formed as by-products during the commercial production of silicon tetrachloride. The waste materials reportedly consisted of 30 to 70 percent hexachlorodisiloxane, 10 to 50 percent silicon tetrachloride, and 5 to 30 percent carbon and silicon carbide. The hexachlorodisiloxane and silicon tetrachloride decompose into sand (S_iO_2) and hydrochloric acid, Carbon and silicon carbide remain unchanged. The hydrochloric acid reacts with the limestone forming a neutral chloride salt. The owner reported that in 4 to 8 months the only visible remains of the drums are part of the drum rings used to seal the open head drum tops. According to VDM's landfill application, the entire waste mass would eventually become a sand pile with some salt content.

Based on the above discussion, the anticipated leachate produced at the site would be typically acidic and high in chlorides, and would also result in iron leaching from metal present in the landfill and the geologic environment.

The landfill was subsequently closed during the summer of 1987 in accordance with a NYSDEC approved closure plan. As part of this closure, the site was regraded (mounded) to provide positive site drainage and a two-foot thick layer of compacted clay with a maximum permeability of 1 x 10^{-7} cm/sec was installed. The clay was overlain by drainage and topsoil layers. Additionally, a groundwater monitoring program was initiated using five on-site wells

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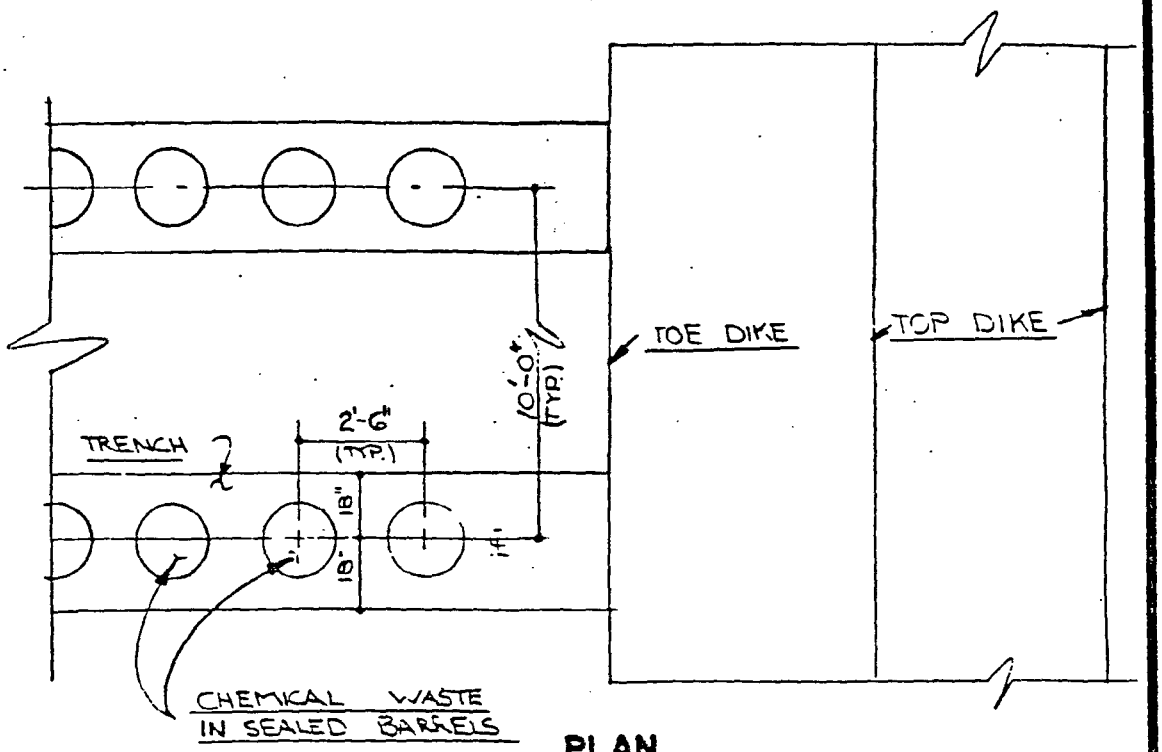
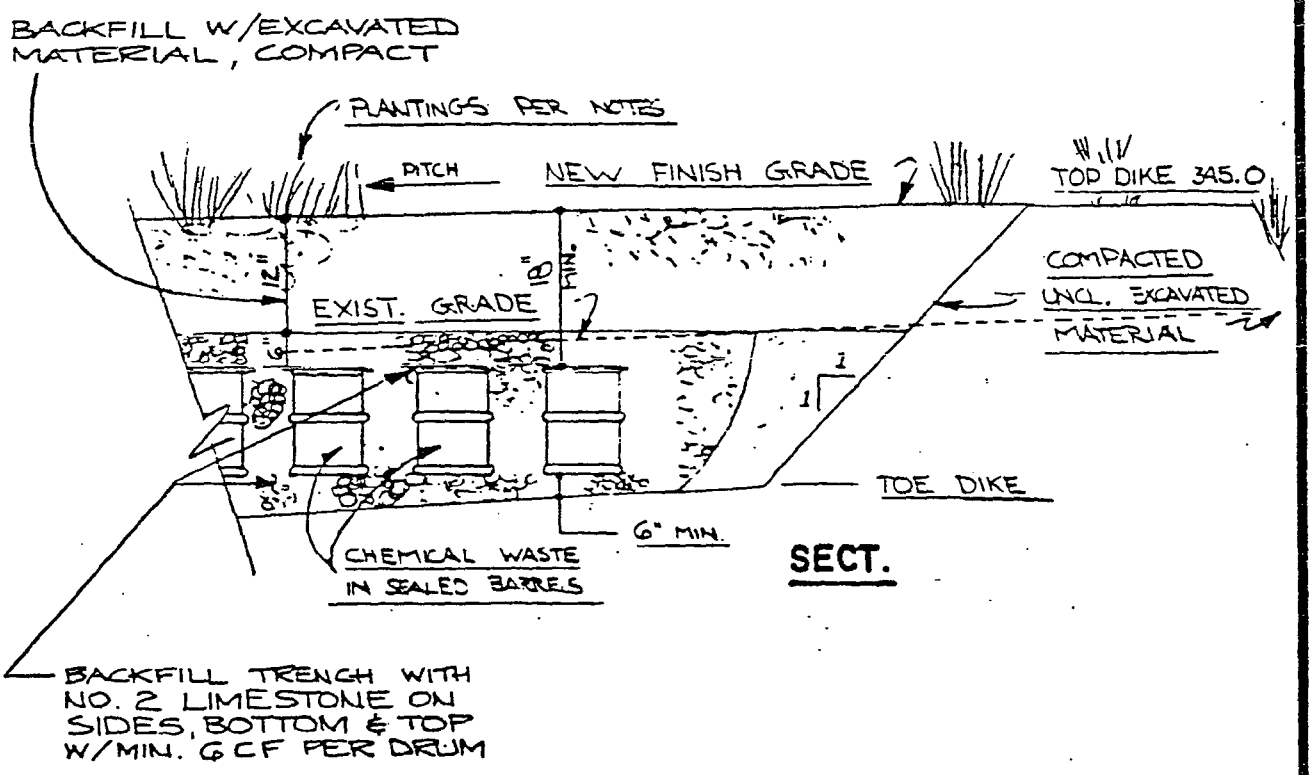


PLAN



TRENCH DET.

1/4" = 1'-0"

SOURCE: WILLIAM W. WHITMORE, P.E. CONSULTING ENGINEERS, 1977

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URS CONSULTANTS, INC.	WASTE DISPOSAL TRENCHES TYPICAL DETAIL	FIGURE 1-3

VDM01127

(VDM-9, -10, -11, -12 and -14), one upgradient well (D-55) and a pan-lysimeter to monitor performance of the cap. VDM-12 has been dry since closure of the landfill was completed.

1.2 Existing Conditions

1.2.1 Geology/Hydrogeology

Several geologic and hydrogeologic studies have been conducted on the site or the immediately adjacent properties to the east (Empire Soils investigation, Inc; Bechtel Civil and Minerals, Inc; and, Woodward Clyde Consultants, Inc.). The relevant data from these reports is summarized in the following sections.

Based on these investigations it was concluded that there are four primary rock units exposed at the site. These include the Grimsby, Power Glen, Whirlpool and Queenston Formations. These sedimentary units are nearly flat lying with bedding striking approximately east-west and dips less then one degree to the south. A generalized stratigraphic column for the site is presented in Table 1-1. A typical geologic cross-section of the site is presented on Figure 1-4.

As indicated in the Bechtel report (Becthel, 1982), the Queenston Formation, is the lowermost formation exposed in the area, and consists of reddish-brown shale with thin interbeds of greenish-gray shale and siltstone. Total thickness of this formation is reported to be 1200 feet. The elevation of the top of the Queenston is about 401 feet msl near 18 Mile Creek and 404 feet msl in the vicinity of Mill Street.

The Whirlpool Formation is a gray to white sandstone. This unit is very hard and fine to medium grained with thin bands of gray shale. In the site area, the Whirlpool Formation outcrops are approximately 11 feet thick. The top of the unit near Eighteen Mile Creek is about elevation 412 feet and about elevation 416 feet near Mill Street.

The Power Glen Formation is a greenish-gray shale and siltstone interbedded with limestone, dolomite, and calcareous sandstone. Thickness of the Power Glen Formation at the

VDM01128

TABLE 1-1

GENERAL STRATIGRAPHIC COLUMN - VDM LANDFILL

System	Series	Group	Formation	Member	Thickness	Description
Silurian	Niagaran	Medina	Grimsby	Zone A	+60'	Sandstone, Siltstone with interbedded Shale: Dark red brown to light green to white sandstone and siltstone with red and green shale interbeds. Sandstone/Siltstone: Thin to medium-bedded, very fine to medium grained, medium hard to very hard, fresh, occasional green mottling, fossiliferous. Shale: Thin bedded to fissile, medium soft, moderately to severaly weathered.
			Power Glen		27.0'	Shale: With interbedded Dolomite and calcareous Sandstone: 60% shale, 40% dolomite and sandstone. Shale: dark gray to green, thin-bedded to fissile, medium soft to soft, microcrystalline, severely weathered. Dolomite and Sandstone: dark gray to green thin-bedded, medium hard, fine-grained, fresh to moderately weathered. Sandstone is cross-bedded.
			Whirlpool		12.0'	Sandstone: White with black speckling (quartz and unknown black mineral), thin-bedded in upper 2', medium-bedded to massive in remainder, fine-grained, hard to very hard, fresh. Cross-bedded, ripple marks.
Ordovician	Cincinnatian	Richmond	Queenston		1200'+	Claystone: Dark reddish-brown with pale green mottling and occasional thin pale green claystone interbeds, medium soft to very soft, clacareous, fresh to completely weathered.

Source: "Closure Plan for Solid Waste Management Facility VAN DE MARK Chemical Company Inc., Lockport, N.Y.", July 1 1982 by William W. Whitmore, Consulting Engineers.

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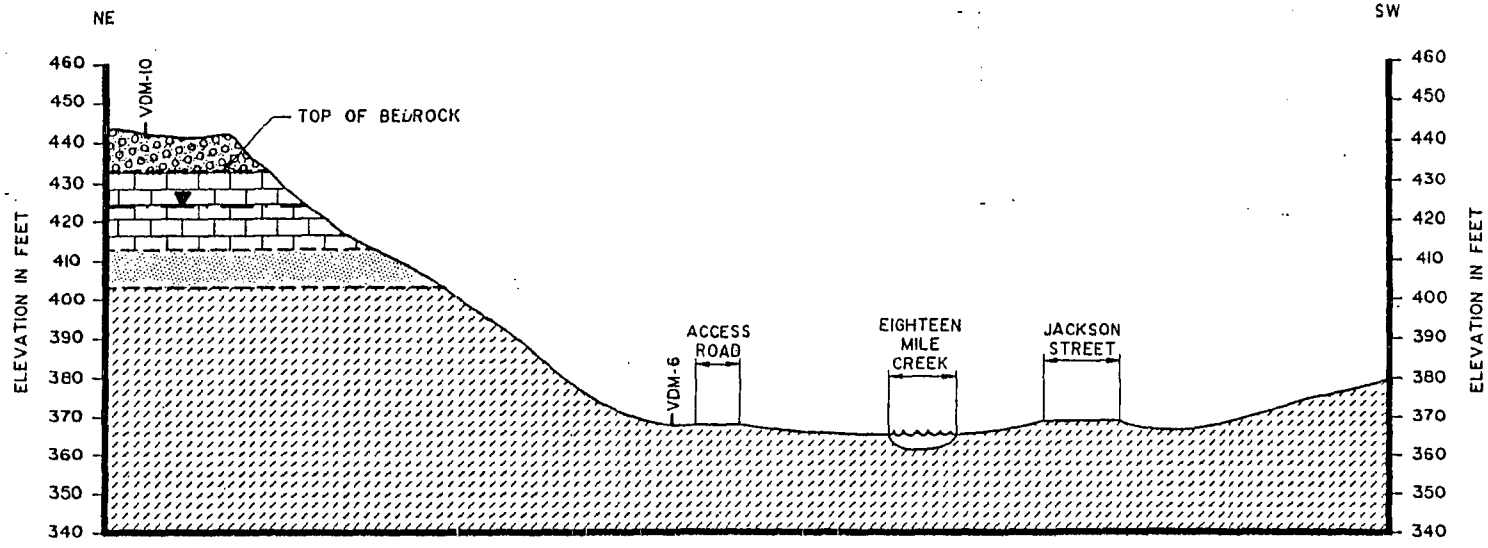

LEGEND

- GROUNDWATER SURFACE
- LANDFILL/FILL
- POWER GLEN FORMATION
- WHIRLPOOL FORMATION
- QUEENSTON FORMATION

30 0 30
HORIZONTAL & VERTICAL SCALE IN FEET

TYPICAL GEOLOGIC CROSS SECTION

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FIGURE 1-4

CC-3399

site ranges from 20 to 25 feet. The top of the Power Glen generally coincides with the top of rock in the site area due to past quarrying activities, with elevations across the site ranging from about 440 to 432 feet.

The Grimsby Formation includes a lower white to pale-green fine-grained sandstone and an upper reddish-brown sandstone with interbedded siltstone and shale. This unit is exposed in the bluff along the eastern boundary of the site, typically above elevation 440 feet .

Jointing in exposures of bedrock is uniform in orientation and character. Observations from rock cores indicate the joints tend to be open near the bluff and become tighter with increasing depth and distance away from the valley wall. Additionally, vertical stress relief features were noted in the rocks near the valley walls. The frequency of jointing ranges from 3- to 6- foot spacing. Three near-vertical joint sets with orientations of N45W to N70W, N55E to N75E, and N10E to N30E were observed. In addition, horizontal bedding joints are present. Joint openings measured at outcrops near the Van De Mark Landfill ranged from closed to as much as 2 inches.

The rocks underlying the study area appear to have little to no primary (porous) permeability. The occurrence and movement of groundwater is predominantly in the fractures and joints of the rocks. The core from the exploratory holes and the permeability testing indicate that more open jointing tends to occur near the contacts between formations. More open and frequent jointing appears to be present within the Whirlpool and Power Glen Formations in the valley walls adjacent to Eighteen Mile Creek. This is most likely in response to stress relief associated with downcutting of the creek.

Water levels measured in observation wells at the site and surrounding area show that at least four zones of groundwater are present between the ground surface east of the site and the Queenston Formation, and that large differences in water levels are present between the zones. The first zone monitored (Zone 1) is groundwater present in the Grimsby Formation east of the Landfill. Considering that the Grimsby has been excavated in the immediate site area, this zone does not occur. Consequently, it is not considered further in this report.

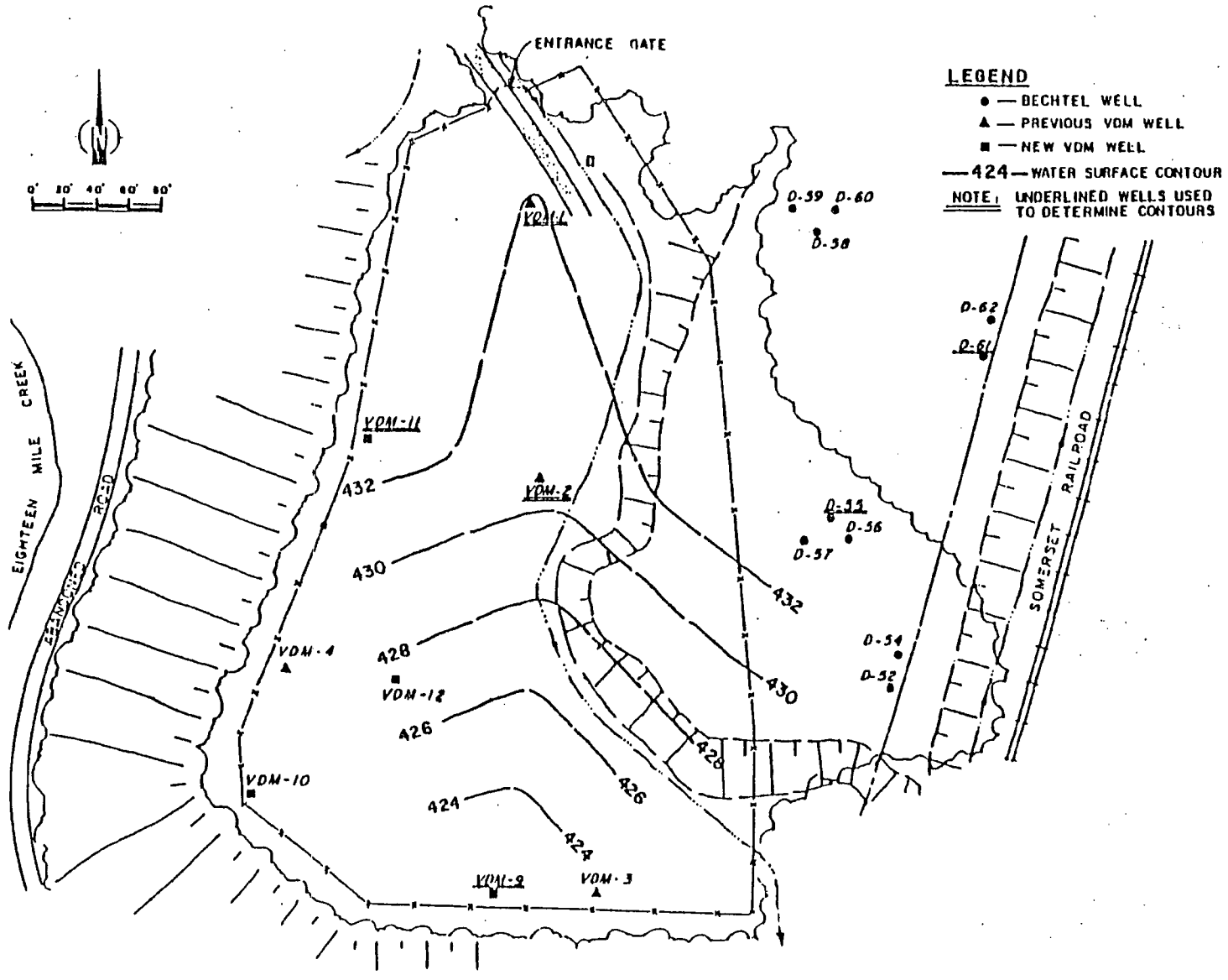
The second zone (Zone 2) is groundwater at the Grimsby (Overburden)/Power Glen contact. The apparent direction of groundwater movement in this zone is to the south (Figure 1-5).

The third and fourth zones are the groundwaters at the Power Glen/Whirlpool and Whirlpool/Queenston contacts, respectively. The apparent direction of groundwater movement in these zones is also to the south.

As indicated in Table 1-2, the permeability measurements made in the Grimsby and Power Glen Formations range from 2.1×10^{-3} to 1.27×10^{-6} cm/sec. These measurements are supported by the permeability measurements made from the well purging data. The higher permeabilities measured were from drill holes close to the valley walls, for example, D-53 and D-55 (Figure 1-6). This probably reflects the condition of the jointing. Near the valley, the rock is more jointed and permeable, whereas away from the valley and with depth, the joints become less frequent and tighter. It is probable that the effective permeability of Zone 2 under the northern part of the landfill is less than 10^{-5} cm/sec. Closer to the bluff, the effective permeability may be as high as 10^{-3} cm/sec. Considering this range of permeability and the available hydraulic gradient indicated by the water level measurements shown on Figure 1-5, the rate of flow beneath the landfill will be very small.

The database provided by the Bechtel study identified the primary zone of groundwater flow in the vicinity of the landfill to be the overburden/Power Glen Formation contact. It was also indicated that bedding planes are the major water bearing intervals and routes of water migration. This is supported by the observation (prior to landfill capping) of a seep in the valley wall south of VDM-10, which coincides with the overburden/Power Glen Formation contact zone. It is recognized that some vertical permeability exists, however, it is considered to be small in comparison to the horizontal permeability (one or two orders of magnitude less). Near the valley walls vertical permeability may be more of a factor as a result of the increase in joining and fracturing due to stress relief.

Furthermore, it was concluded based on the geology of the site and various investigations, that groundwater passing under the landfill is ultimately discharged to Eighteen Mile Creek. This



SOURCE: CONESTOGA-ROVERS & ASSOCIATES, INC. 1984

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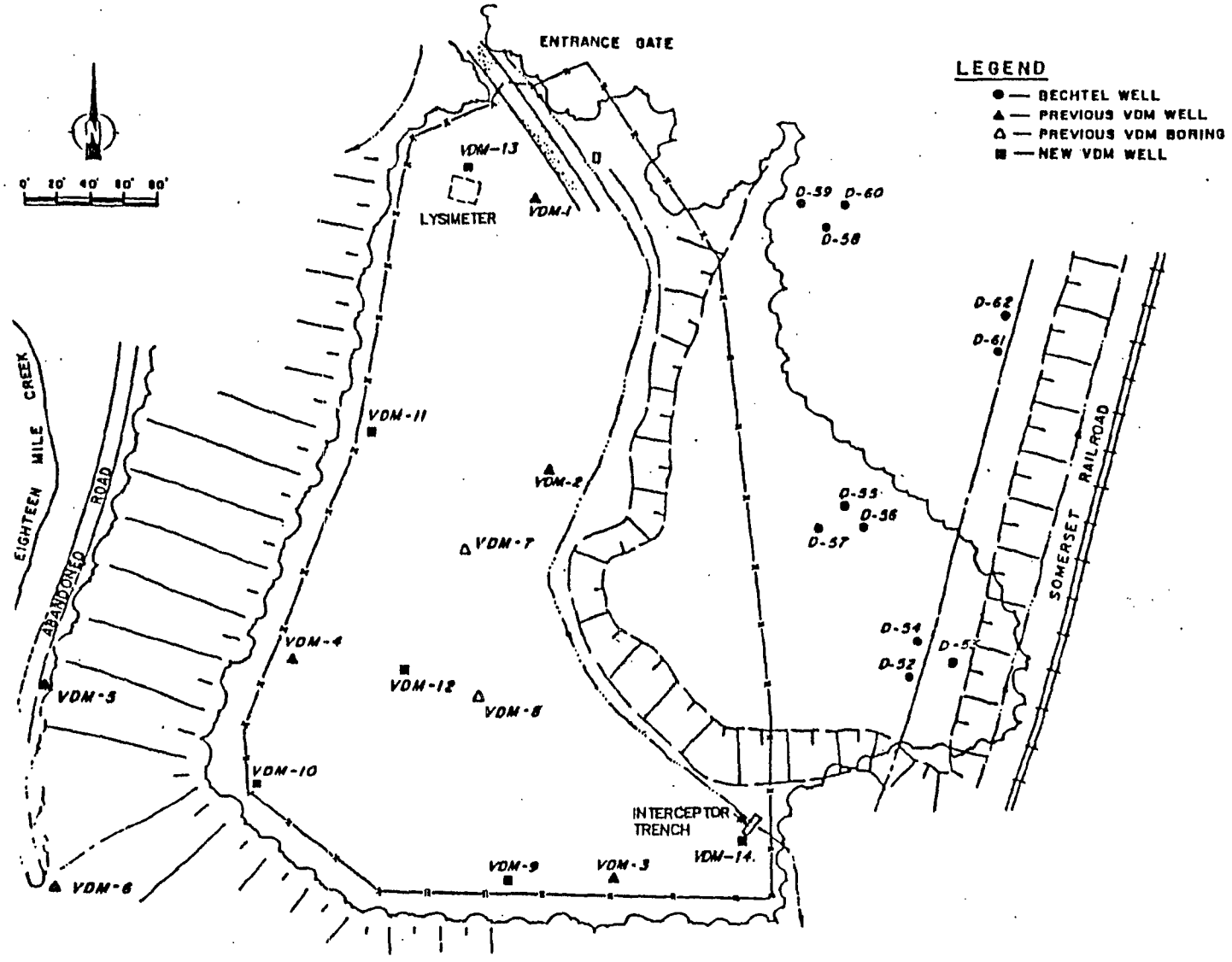
GRIMSBY/POWER GLEN AQUIFER
WATER SURFACE CONTOURS (PRIOR TO CAPPING)

FIGURE 1-5



SOURCE: CONESTOGA-ROVERS & ASSOCIATES, INC. 1993

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MONITORING WELL LOCATION PLAN

FIGURE 1-6

is based primarily on the assumption that the base of the aquifer system would be the Queenston Shale.

This is supported both by the geologic and hydrogeologic data for the site. Permeability test data from borings installed in the upper portions of the Queenston (Table 1-2) indicate that permeability is generally very low, being on the order of 4×10^{-6} cm/sec or less. In several cases, no measurable water take was observed during testing. In a few instances, higher permeabilities, up to 1×10^{-2} cm/sec, were noted. These are presumably associated with discrete fractured or more permeable zones at depth within the Queenston.

Additionally, historical (1981) groundwater measurements taken in monitoring wells VDM-3 and -4 which were installed at the landfill and screened in the Queenston indicated water levels which fluctuated between elevation 362.1 and 373.7 feet, and 405.5 and 406.4 feet, respectively. These levels are both above the water elevation in Eighteen Mile Creek which is about elevation 359 feet. Due to the southerly dip of the bedrock units, it would also be expected that groundwater moving through confined zones within the Queenston would be under artesian pressure which would result in upward hydraulic gradients in the vicinity of the valley/creek. Consequently, water flowing vertically downward from the upper water bearing zones (Zones 2 and 3) will be 1) restricted from further vertical migration when it reaches the Queenston due to the extremely low permeability of this unit, or 2) will merge with the water, flowing along secondary porosity features in the upper portion of the Queenston. In either case, considering that the top of the Queenston is at approximately elevation 401 feet near the creek and groundwater elevations in the upper portion of the Queenston are above the elevation of Eighteen Mile Creek, the groundwater will be directly discharged into Eighteen Mile Creek. Additionally, these geologic/hydrogeologic conditions as described above would prevent groundwater in the site area from migrating beyond Eighteen Mile Creek.

1.2.2 Groundwater Quality

VDM has been monitoring groundwater quality at the landfill site since 1979. Initially samples were collected intermittently from the early monitoring wells at the site (VDM-1 to -8). However, with issuance of the permit for operation of the landfill in 1979, additional wells

(VDM 9-12) were installed, and a routine quarterly monitoring program implemented which continues to date. The wells currently included in the program consist of D-55 (background) and VDM-9, -10, -11, -12, and -14 (Figure 1-6).

The parameters being analyzed include Volatile Organic Compounds (VOCs), Semivolatile Organic Compounds (SVOCs) and Resource Conservation Recovery Act (RCRA) metals. The results of these analysis have been summarized by VDM in a series of tables and graphs and statistically evaluated. Copies of these data are included in Appendix A.

Table 1-3 presents a summary of the average concentrations of the various chemicals detected in the monitoring wells during the two year period following closure of the landfill (1988-1990). A comparison of these values with the groundwater protection concentrations (GPCS) established in VDM's NYSDEC Part 373 post-closure permit (Nov., 1990) indicated that the following chemicals had occasionally exceeded the GPCs: carbon tetrachloride, chloroform, 1,2-dichloroethane, trans-1,2-dichloroethene, methylene chloride, 1,1,2,2-tetrachloroethane, tetrachloroethylene, tetrachloroethene, vinyl chloride, toluene, and phenols. Additionally (total) arsenic, copper, iron, lead and zinc had exceeded the GPCs during this period.

As required by their post-closure permit, VDM conducted a four year investigative monitoring program (Nov., 1990 to Nov., 1994) to monitor performance of the landfill cap. The data from this program is summarized in the tables prepared by VDM (Appendix A) and is represented by the last 16 data points for each well.

Based on a review of the data during this period (Appendix A) it would appear that many VOC and metal concentrations have been reduced relative to the pre-capping levels. However, some VOCs and metals concentrations have increased somewhat during this period. This is most likely due to changes in the quantities of water infiltrating through the cap and paths followed by the infiltrating water following capping. Decreases in the volume of flow through a source of contamination can result in increases in "observed" contaminant concentrations due to the decreases in dilution associated with the lower flows. Similarly, decreases in flow volumes may reduce the flow rates, thereby increasing the contact time between the water and the contaminant source, and consequently, the observed contaminant concentrations. Changes in the flow paths

TABLE 1-3

Average Groundwater Concentrations
VanDeMark Landfill

Constituent	GPC	Monitoring Wells VDM-9	VDM-10	VDM-11	VDM-14	D-55
Carbon Tetrachloride	5	11.6	1.0	14.4	5.2	1.0
Chloroform	8	117.2	148.0	67	43.1	1.0
Chloromethane	5	2.6	3.3	2.3	4.5	1.9
1,2-Dichloroethane	5	10.2	8.6	3.2	4.1	1.0
Trans-1,2-Dichloroethene	5	9.0	1.2	1.4	3.1	1.0
Methylene Chloride	5	33.2	7.6	5.2	6.4	1.5
1,1,2,2-Tetrachloroethane	5	136.2	2.5	84.4	85.1	1.1
Tetrachloroethene	5	22.9	1.0	34.2	17.3	1.0
Trichloroethene	5	20.3	1.4	4.8	63.1	1.0
Vinyl Chloride	2	1.3	1.2	1.4	1.3	1.3
Toluene	5	1.5	41.2	1.0	1.0	1.0
Phenols	1	41	81.2	18.8	12.1	9.6
Arsenic	25	24.1	19.2	27.8	10.8	10.6
Chromium	50	39.3	30.8	45.5	2779	20.8
Copper	200	2561	2820	1757	47.6	108.3
Iron	300	4E+5	51550	43590	2E+5	4972
Lead	25	362.7	141.5	118.8	124.6	98.2
Mercury	2	0.7	0.8	0.6	0.5	0.5
Zinc	300	2086	2715	2698	587	113.7

SOURCE: NYSDEC Post-Closure Permit

associated with reduced infiltration may result in changes with respect to which contaminant sources are contacted by the infiltrating groundwater. These changes would be reflected in corresponding changes in the observed contaminant concentrations in the downgradient monitoring wells. A summary of the chemicals which were detected more than once during this period at concentrations exceeding the GPCs is presented below.

VDM-9 - Exceedances for: Chloroform, 1,2-dichloroethane, Trans-1,2-dichloroethene, methylene chloride, 1,1,2,2-tetrachloroethane, tetrachloroethene, trichloroethene vinyl chloride, phenols, arsenic, chromium, copper, mercury, and zinc.

VDM-10 - Exceedances for: Chloroform, 1,2-dichloroethane, methylene chloride, toluene. 1,1,2,2-tetrachloroethane, vinyl chloride, phenols, chromium, copper, zinc.

VDM-11 - Exceedances for: tetrachlorethane, chloroform, 1,1,2,2-tetrachloroethane, vinyl chloride, phenols, copper, and zinc.

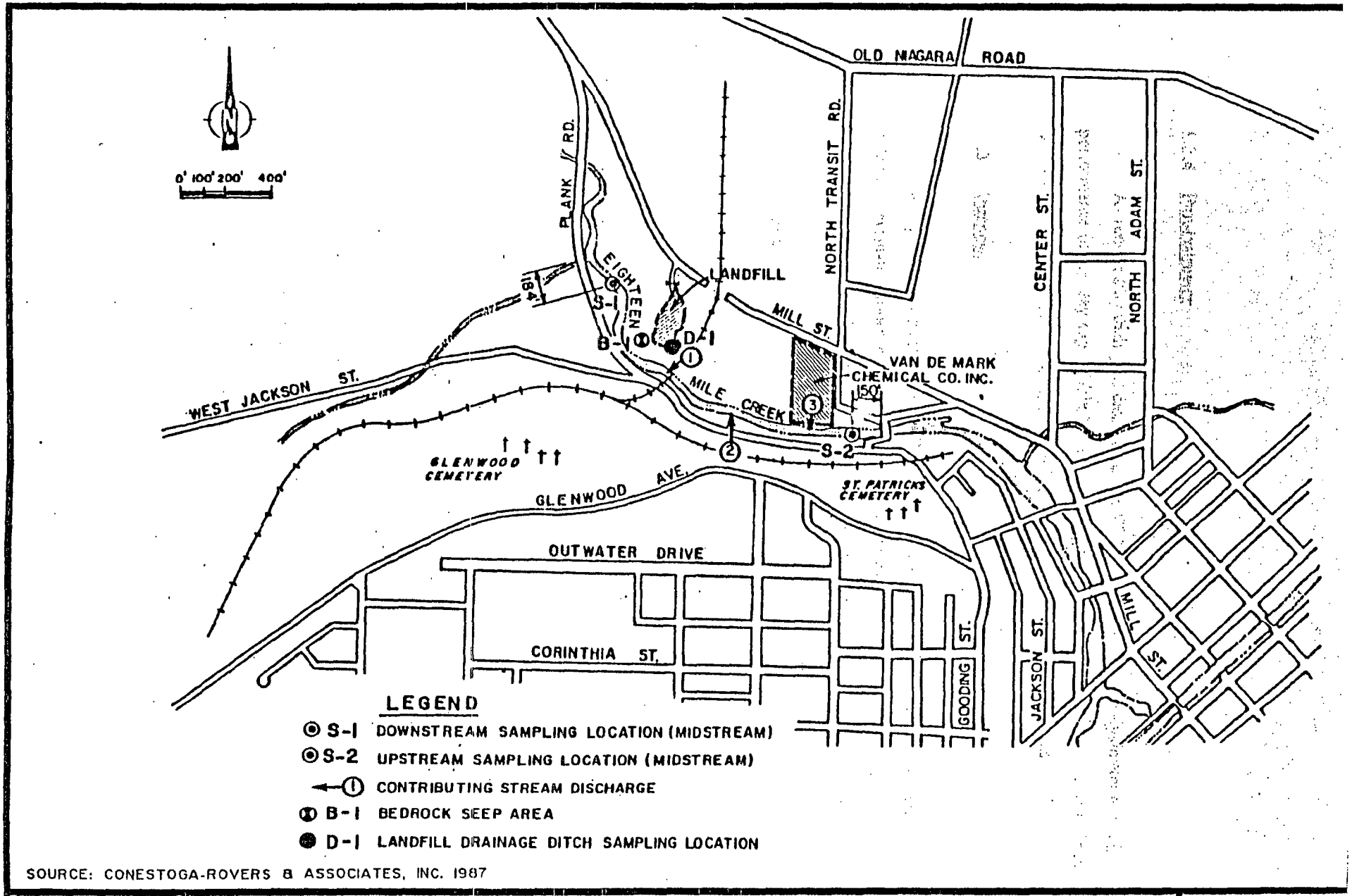
VDM-12 - This well has been dry since capping of the landfill was completed.

VDM-14 - Interceptor trench - Exceedances for: carbon tetrachloride, chloroform, trans-1,2-dichloroethene, 1,1,2.2-Tetrachloroethane, tetrachloroethene, trichloroethene, vinyl chloride, phenols, chromium, and zinc.

D-55 - Exceedances for: No exceedances

1.2.3 Surface Water Quality

Surface water samples were collected from upstream and downstream locations in Eighteen Mile Creek (Figure 1-7) during the period of May 12, 1986 to February 15, 1989. No impacts on the creek were observed during this period, and the NYSDEC agreed to discontinuing any further monitoring. The analytical data for these samples is contained in Appendix B.



SOURCE: CONESTOGA-ROVERS & ASSOCIATES, INC. 1987

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EIGHTEEN MILE CREEK SAMPLE LOCATIONS

FIGURE 1-7

TABLE 2-1

Exceedance Concentrations
VanDeMark Landfill

Constituent	Monitoring Point VDM-9	VDM-10	VDM-11	VDM-14
Carbon Tetrachloride	30	10	30	30
Chloroform	200	200	200	100
Chloromethane	20	20	20	20
1,2-Dichloroethane	30	30	30	30
Trans-1,2-Dichloroethene	40	10	10	10
Methylene Chloride	70	30	30	30
1,1,2,2-Tetrachloroethane	200	20	120	100
Tetrachloroethene	65	20	100	65
Trichloroethene	50	20	30	30
Vinyl Chloride	15	15	15	15
Toluene	20	60	20	20
Phenols	60	100	60	60
Arsenic	60	60	70	60
Chromium	60	80	60	8500
Copper	4000	9500	4000	300
Lead	500	500	500	500
Mercury	5	5	5	5
Zinc	5000	4000	4000	1000

Notes:

1. All Values in ug/l (ppb)
2. Source - VDM'S NYSDEC Part 373 Post Closure Permit (Nov, 1990)

- Direct releases through the cap to air due to volatilization of contaminants or generation of gases from degradation or decomposition;

- Resuspension to air along with surface dust;

- Leaching of chemicals from landfill waste materials and soils to groundwater under the site with migration to off-site groundwater, surface water or deeper water-bearing zones.

2.3 Contaminant Migration Potential

This section assesses the potential for releases of chemicals to the environment along each of the pathways identified above. Factors to be considered include the concentrations of the chemicals, physio-chemical properties of the chemicals (i.e. solubility, mobility, adsorption), media impacted, location at the site (i.e. exposure to air or water), climatic conditions (i.e. precipitation, wind, temperature), and groundwater flow/gradients.

2.3.1 Releases to Air

As indicated in Section 2.1 a number of VOCs have been identified as chemicals of concern at the site. These chemicals all have high vapor pressures and high diffusion coefficients which allow them to volatilize easily and diffuse readily through soil. Therefore, all of these could be of potential concern for direct emission to the air.

No data is available on the concentration of the VOCs in the landfill materials/soils. However, it is likely that prior to capping, VOCs in the near surface soils were emitted to the air, migrated along other pathways, or have degraded. Additionally, since regrading of the site and installation of the low permeability cap over the landfill, the potential for emission of any remaining VOCs has been significantly reduced. The VOCs at depth in the landfill and soils could potentially result in emissions to the air if they were disturbed through excavation or other activities which would bring them to the surface.

The other mode for chemicals to be released to the air is by re-suspension along with dust. This would include metals and organic compounds which exist as both free particles and adsorbed onto soil grains in the surface soils and at depth. Considering that the entire landfill has been regraded and covered with several feet of clean soils and a low permeability cap, the potential for resuspension of chemically contaminated particles is extremely low.

2.3.2 Migration to Groundwater

Historical data indicate that organic compounds (silicon tetrachloride and hexachlorodisiloxane) and metals were disposed in the landfill. As noted these organic compounds react with water, lime/limestone and degrade to sand (SiO_2), salts, hydrochloric acid, and a variety of VOCs depending on the completeness of the reactions. The potential for these constituents to migrate to the groundwater is dependent upon the amount of water infiltrating through the landfill cap to the waste material and the physio-chemical properties of the individual chemicals. These include solubility, mobility, volatility, viscosity, adsorption characteristics, and molecular weight.

In most cases, VOCs are highly mobile, moving through soil by advection and dispersion along with groundwater. Metals are generally less mobile and exhibit low solubilities in water. However, these solubilities are most likely increased at the site due to the low pH (acidity) of the groundwater.

As indicated by the groundwater monitoring well data, there are a limited number of VOCs and metals which were detected, generally at low concentrations. It should be noted that the metals concentration represent "total" metals, and not "soluble" metals. The metals concentrations can be highly influenced by the amount of suspended particles in the samples, and consequently, may not be truly representative of the actual metals concentrations leaching to groundwater.

In regards to the deeper water bearing zones (Zones 3 and 4), these waters are not in direct contact with the contaminated soils/wastes. These deeper zones are generally isolated from the contaminated soils/wastes by intervening, low-permeability rock formations.

In summary, the potential for contaminants (VOCs) to migrate from the contaminated soils and wastes at the site to the groundwater flowing under the landfill is considered to be high. For the most part, the metals have low solubilities, although the low pH of the groundwater may increase the potential for leaching.

2.3.3 Migration to Off-site Groundwater/Surface Water/Deeper Water-Bearing Zones

As discussed in Section 1.2.1 - Site Geology/Hydrogeology, flow within the shallow aquifer (Zone 2) beneath the site is to the south and/or southwest toward Eighteen Mile Creek. Near the cliff face a portion of the groundwater flows downward through vertical fractures in the rock units until it reaches the top of the Queenston shale and is re-directed horizontally to the cliff face or mixes with groundwater in the upper portion of the Queenston and flows towards Eighteen Mile Creek. Ultimately, all the groundwater flowing under the site discharges at the cliff face or directly to Eighteen Mile Creek along with groundwater from the Queenston as discussed previously. Groundwater discharged at the cliff face:

- Evaporates to the atmosphere; or
- Flows overland down the slope and into Eighteen Mile Creek. (It is to be noted that no overland flow of groundwater has been observed in the exposed portions of the cliff face, since capping of the landfill, although some flow may occur in those portions of the cliff which are covered by rock talus and/or loose soil.)

In regards to migration of contaminants from the shallow aquifer to the deeper water - bearing zones, the previous investigations have shown that these zones are hydraulically separated by the intervening low-permeability rock units, and are not in direct contact with each other. It may be postulated that a certain amount of vertical downward flow occurs from the upper to lower units due to the high vertical hydraulic gradients which exist between the zones. However, horizontal flow (toward the cliff face) along bedding planes and horizontal joints/fractures is most likely as much as two orders of magnitude higher than the vertical flow. Evidence of horizontal flow with discharge at the cliff face is provided by the observation of a seep in the cliff face at the approximate overburden/Power Glen contact prior to capping of the landfill. The seep has

not been noted since capping was completed in 1988. This appears to be due to a decrease in infiltration into the landfill due to placement of the low permeability cap.

The low pH (acidic) of the groundwater under the site may also result in solutioning along joints, fractures and bedding planes within the horizontal limestone/dolomite units (Power Glen), thereby increasing the permeability of these units still further. Additionally, should any contaminants migrate vertically to the lower zones, they still will be discharged at the cliff face as discussed below.

Based on existing site conditions there is some potential for mixing of waters from the three zones in the area at, or very near, the cliff face. As indicated previously, the rock units in the immediate vicinity of the cliff face are more fractured and contain vertical stress relief fractures which may cut across formation boundaries. Consequently, as waters moving horizontally in each of the three zones intersect this fractured area, they will flow (unconfined) vertically downward until they reach the upper portion of the low-permeability Queenston shale.

Due to the unconfined nature of the groundwater flow in this zone, there is little if any possibility that hydraulic heads would develop that would result in contaminant migration from the fractured area into the lower zones. However, there is some potential for contaminants to migrate into the lower zones by diffusion, although this is considered very unlikely. It is more probable that mixing of water from the lower units with contaminated water from the upper zone will help reduce the concentrations of the contaminants.

As discussed in Section 1.2.1, the waters reaching the upper portion of the Queenston will 1) be restricted from further vertical migration due to the extremely low permeability of this unit or 2) flow with the water moving through the upper portion of the Queenston. In either case, considering that the top of the Queenston is at approximately elevation 401 feet near the creek and, groundwater elevations in the upper portion of the Queenston are above the water elevation of Eighteen Mile Creek, the groundwater will be discharged to the cliff face and/or directly into Eighteen Mile Creek.

Additionally, due to the southerly dip of the bedrock units, it would also be expected that groundwater moving through confined zones within the Queenston would be under artesian pressure. This would result in upward vertical hydraulic gradients in the vicinity of the valley/creek. Consequently, any groundwater from the upper zones which migrates into the upper portion of the Queenston will be discharged to the cliff face and/or directly into Eighteen Mile Creek. As a result of the hydrogeologic conditions in the vicinity of the creek, it is not possible for any contaminants to migrate beyond the creek.

Based on the existing geologic/hydrogeologic conditions discussed above, the primary potential transport scenario at the site is for contaminants to be discharged to surface water in Eighteen Mile Creek. However, due to the decrease in infiltration to the landfill as a result of regrading and capping the site, the seep which previously existed in the cliff face has ceased flowing. It is possible that some seeps may occur in the lower portions of the cliff, but not be visible due to the rock talus covering the slope in these areas.

As discussed in sections 4.3.2 and 4.3.3 the overall flow beneath the landfill prior to regrading of the site and installation of the clay cap was estimated at approximately 804,500 gal/yr. Following regrading and capping of the site this flow was reduced to about 92,000 gal/yr, a reduction of almost 89 percent.

Additionally, relative to Eighteen Mile Creek, the minimum flow immediately adjacent to the site is 30 cfs during the winter (without canal contributions), with an average flow during summer months of 69.3 cfs. (These figures were reported to the NYSDEC by the City of Lockport WWTP.) This equates to a winter flow of 19.4 mgd and a summer flow of 44.8 mgd. By comparison, the estimated flow from the site (92,000 gal/yr) equates to 0.000252 mgd. Consequently, the ratio of flow in the creek as compared to site flow ranges from 77,000:1 during the winter to 178,000:1 during the summer.

In addition, the mass loading of chemicals which may reach Eighteen Mile Creek due to discharge of contaminated groundwater in the cliff face was estimated. This was done for both pre-grading/capping and post-grading/capping conditions. The mass loadings for each chemical were calculated by multiplying the average concentration of the chemical as measured in VDM-9,

-10, and -11 (Appendix A) by the overall volume of flow. The result of these calculations are summarized in Table 2-2. As indicated, the estimated total organic loading has been reduced from 4.061 lbs/yr to 0.207 lbs/yr and total metals loading has been reduced from 35.057 lbs/yr to 3.691 lbs/yr. These represent reductions of approximately 95 and 89 percent respectively, as a result of regrading/capping the landfill.

Additionally, based on the minimum flow rates in Eighteen Mile Creek and the mass loading numbers, the impact from the total organics is calculated to be less than 0.004 ~~3~~ ug/L per day, whereas from total metals the impact would be less than 0.063 ug/L per day. Based on the above discussion, it is obvious that the assimilative capacity of Eighteen Mile Creek, even during periods of low flow, is such that no discernible impact will result from discharges of contaminated groundwater from the landfill.

This conclusion is supported by the analytical data (Appendix B) which was collected from both upstream and downstream locations in Eighteen Mile Creek during the period of May 1986 to February 1989 (prior to and immediately after capping) which did not show any exceedances of NYSDEC surface water standards for any site-related contaminants. Based on the sampling results the NYSDEC allowed VDM to discontinue any further monitoring of the creek due to the lack of any observable impacts.

This assessment is considered to be conservative in that it assumes that 100 percent of the contaminants detected in the groundwater at each well are being discharged directly to Eighteen Mile Creek. This does not allow for any volatilization of the VOCs or precipitation or attenuation of the metals which may occur during transport from the site to Eighteen Mile Creek. These factors would be expected to significantly reduce the actual mass loading to the creek.

2.3.4 Migration Off-Site in Surface Water

Considering that the entire landfill has been capped, there is no potential for surface waters to be contaminated by direct contact with any of the waste materials. Additionally, there have been no known leachate breakouts anywhere on the above-grade portions of the landfill. As noted previously, a seep did exist in the cliff face below the landfill, however, this seep has

TABLE 2-2
MASS LOADING ANALYSIS
VANDEMARK LANDFILL

PARAMETER	BEFORE						AFTER					
	VDM9 MEAN CONCENTRATION BEFORE CAP ug/L	VDM10 MEAN CONCENTRATION BEFORE CAP ug/L	VDM11 MEAN CONCENTRATION BEFORE CAP ug/L	AVERAGE MEAN CONCENTRATION BEFORE CAP ug/L	FLOW BEFORE CAP gal/year	MASS (1) LOADING BEFORE CAP lbs/year	VDM9 MEAN CONCENTRATION AFTER CAP ug/L	VDM10 MEAN CONCENTRATION AFTER CAP ug/L	VDM11 MEAN CONCENTRATION AFTER CAP ug/L	AVERAGE MEAN CONCENTRATION AFTER CAP ug/L	FLOW AFTER CAP gal/year	MASS LOADING AFTER CAP lbs/year
Carbon Tetrachloride	12.71	3.2	24.76	13.56	804500	0.091	6.02	3.08	6.37	5.16	92000	0.004
Chloroform	195.57	85.94	84.62	122.04	804500	0.819	95.5	95.84	35.15	75.50	92000	0.058
Chloromethane	3.86	5.13	5	4.66	804500	0.031	3.3	2.49	2.83	2.87	92000	0.002
1,2-Dichloroethane	12.8	5.6	4.68	7.69	804500	0.052	12.52	9.06	2.61	8.06	92000	0.006
Trans-1,2-Dichloroethane	14	3.54	4.2	7.25	804500	0.049	48.64	1.9	6.16	18.90	92000	0.015
Methylene Chloride	124.14	29.37	40.62	64.78	804500	0.435	33.06	8.78	5.58	15.80	92000	0.012
1,1,2,2-Tetrachloroethene	229.4	4	32.64	88.68	804500	0.595	92.03	2.68	35.59	43.43	92000	0.033
Tetrachloroethene	77.4	3.2	97.94	59.51	804500	0.399	109.88	2.01	31.81	47.90	92000	0.037
Trichloroethene	70.8	3.78	13.62	29.40	804500	0.197	23.22	1.99	4.3	9.84	92000	0.008
Vinyl Chloride	4.2	3.53	4.2	3.98	804500	0.027	2.71	2.53	2.83	2.69	92000	0.002
Toluene	–	65.47	–	65.47	804500	0.439	2.65	65.47	1.78	23.30	92000	0.018
Phenols	151.67	232.38	30.14	138.06	804500	0.927	11.07	30.03	7.95	16.35	92000	0.013
Arsenic	128	19.2	42.6	63.27	804500	0.425	21.6	27.51	11.48	20.20	92000	0.016
Chromium	271.14	25.27	166.5	154.30	804500	1.036	39.82	41.05	27.21	36.03	92000	0.028
Copper	4264.86	328.33	1291.67	1961.62	804500	13.165	2668.82	3677.94	727.97	2358.24	92000	1.810
Lead	540	119.26	206.33	288.53	804500	1.936	179.22	78.44	40.75	99.47	92000	0.076
Mercury	2.4	2.1	1.4	1.97	804500	0.013	1.25	0.92	0.75	0.97	92000	0.001
Zinc	4626.67	1326.92	2308.33	2753.97	804500	18.483	2714.54	2962.19	1206.55	2294.43	92000	1.761

TOTAL ORGANIC LOADING BEFORE CAP	4.061	lbs/year
TOTAL METAL LOADING BEFORE CAP	35.057	lbs/year
TOTAL ORGANIC LOADING AFTER CAP	0.207	lbs/year
TOTAL METAL LOADING AFTER CAP	3.691	lbs/year
PERCENT ORGANIC REDUCTION	94.901%	
PERCENT METAL REDUCTION	89.471%	

1.) Mass Loading = Concentration x flow x conversion factor

$m = C \times F \times cf$

Where: m = mass loading in lbs/year

F = Flow in gal/year

C = Parameter concentration

cf = Conversion factor of 8.342E-09

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not been observed since regrading and capping of the site. Consequently, no impacts related to surface water contamination would be expected from the flow of surface water from the site to downgradient areas.

2.4 Identification of Potential Exposure Routes

Human Health Risk

Exposure routes describe the modes of contact with and intake of contaminated media and contaminants at exposure points. Typical human exposure routes include inhalation, ingestion and dermal contact. Exposures related to direct contact with the on-site soils and inhalation of contaminants in ambient air are not possible at the site due to the presence of the cap. Groundwater exposure is not assumed to be a viable pathway based on the hydrology of the site and the fact that no current users of groundwater for potable and/or industrial purposes exist. Additionally, due to the physical setting and hydrogeology of the site, it is not possible for future users to install a supply well in any of the three water bearing zones downgradient of the site. It is also to be noted that property up to Eighteen Mile Creek in this area is owned by VDM.

Exposure to surface water could occur during wading or other recreational trespass activities, though this would be an intermittent exposure activity. Additionally, whereas there is some potential of contaminated groundwater from the site reaching Eighteen Mile Creek, no site-related contaminants have been shown to exist in Eighteen Mile Creek at concentrations exceeding NYSDEC surface water standards.

The other identified exposure route at the site is associated with discharge of contaminated groundwater in the cliff face as seeps or overland flow downslope to the creek. In this scenario there is the possibility for trespassers to come into contact with groundwater and/or inhale volatilizing contaminants. It is to be noted that the cliff face has been inspected periodically since closure and capping of the landfill and there have been no observable seeps or overland flow in the exposed portions of the cliff below the landfill during this period. Considering the lack of observable seeps and the inaccessibility of the cliff (steepness and private property), this route of exposure is highly unlikely and extremely rare at best.

Ecological Risk Assessment

There are only a limited number of possible exposure routes for ecological receptors. Terrestrial plants on the cliff face and at the base of the slope may be exposed to contaminants in soil and/or groundwater by root uptake. To date there have been no indications of stressed vegetation in either of these areas. Terrestrial animals may be exposed by dermal uptake of contaminants in seeps or overland flow; ingestion of contaminated water/seeps, plants and animals; and inhalation of VOCs. Based on the site setting and hydrogeology, these would likely be intermittent exposures. In regards to aquatic plants and animals in Eighteen Mile Creek, there have been no contaminants detected at concentrations above the NYSDEC surface water standards. Additionally, based on the calculation of potential mass loadings to Eighteen Mile Creek presented in previous sections, it appears that the loadings are so low that there would be no discernible impact in the surface water of Eighteen Mile Creek. This is supported by the surface water monitoring data that has been collected adjacent to the site.

Conclusion

Based on the above-discussions, it would appear that there are two potentially completed exposure pathways for the site whereby contaminants in the landfill and/or groundwater could be transported to areas where humans or environmental receptors can come in contact with them. Both these pathways would likely only be completed on an intermittent basis, and it has been shown that the risk to human health and the environment in both cases is minimal or non-existent.

3.0 LANDFILL CAP EVALUATION

As indicated previously a pan-lysimeter was installed beneath the clay cap during closure activities at the site in 1987 to monitor the effectiveness of the clay cap in preventing surface water infiltration.

Water levels are measured in VDM-13, the monitoring pipe for the pan-lysimeter, and VDM-1, a piezometer installed in the fill near the pan-lysimeter, during the quarterly monitoring program. The specifications for the pan-lysimeter indicate that an accumulation of 38.73 gallons over a 180-day time period (.215 gal/day) is approximately equal to an infiltration rate of 1×10^{-7} cm/sec. Higher rates of accumulation would indicate infiltration rates exceeding the design specification for the clay cap.

As indicated on Table 3-1, the volumes of water accumulated in the pan-lysimeter exceed the anticipated infiltration rates of 0.215 gal/day. Consequently, as required by the post-closure permit, VDM is to perform an evaluation of the landfill cap to determine its present condition relative to the design specifications. To accomplish this a program was developed which consisted of collection of samples of the clay cap, geotechnical lab testing and a review of the construction data for the pan-lysimeter. The results of the evaluation are presented in the following sections.

3.1 Field Sampling

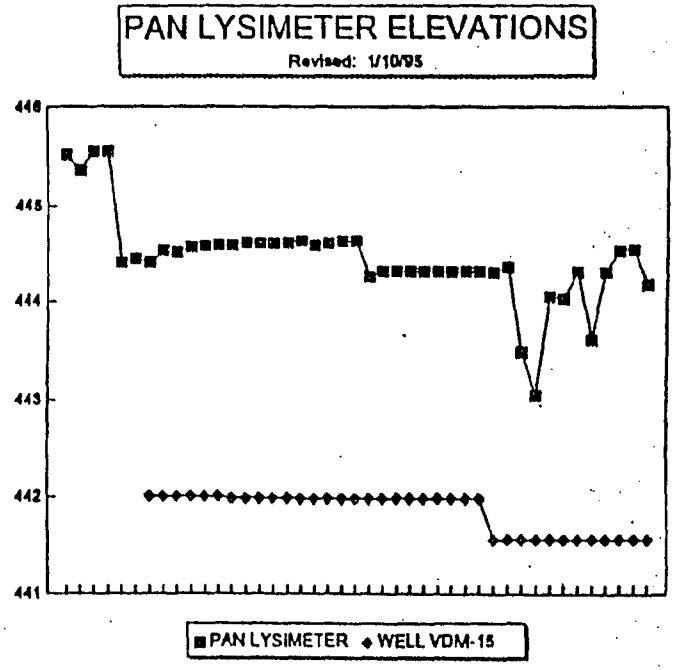
On January 10, 1995, four undisturbed samples of the existing low-permeability clay layer were collected for geotechnical analysis. These samples were collected at the approximate locations shown on Figure 3-1. As indicated, three samples (ST-1, -2 and -3) were obtained from the general cap area, whereas the fourth (ST-4) was obtained directly above the pan-lysimeter. At the time of sampling, the temperature was about 25° F and there was 4 to 6 inches of snow on the ground. However, the cap materials were not frozen.

The sample collection process involved drilling through the topsoil (6 inches), barrier protection layer (15 inches) and sand drainage layer (3 inches) to expose the top of the low

TABLE 3-1

PAN LYSIMETER WATER ELEVATION READINGS
VANDEMARK LANDFILL - LOCKPORT, NY
REVISED: 1/10/95...(file data/123w/pan)

	PAN LYSIMETER		WELL VDM - 15		
DATE	DEPTH	453.27 ELEVATION	DEPTH	450.57 ELEVATION	water pumped out of the Panlysimeter
5/14/93	7.75	445.52			
5/19/93	7.9	445.37			
5/27/93	7.71	445.56			
6/8/93	7.71	445.56			
7/8/93	8.875	444.395			
8/30/93	8.83	444.44			
2/10/94	8.875	444.395	8.56	442.01	
2/18/94	8.75	444.52	8.56	442.01	
3/24/94	8.77	444.5	8.56	442.01	
3/30/94	8.71	444.56	8.56	442.01	
4/15/94	8.7	444.57	8.56	442.01	
4/22/94	8.69	444.58	8.56	442.01	
4/27/94	8.69	444.58	8.58	441.99	
5/4/94	8.67	444.6	8.58	441.99	
5/13/94	8.67	444.6	8.58	441.99	
5/18/94	8.67	444.6	8.58	441.99	
5/25/94	8.67	444.6	8.58	441.99	
6/3/94	8.65	444.62	8.59	441.98	
6/9/94	8.69	444.58	8.59	441.98	
6/16/94	8.67	444.6	8.59	441.98	
6/24/94	8.65	444.62	8.59	441.98	
6/29/94	8.65	444.62	8.59	441.98	
7/1/94	9.02	444.25	8.59	441.98	
7/7/94	8.96	444.31	8.59	441.98	
7/13/94	8.96	444.31	8.59	441.98	
7/20/94	8.96	444.31	8.59	441.98	
7/29/94	8.96	444.31	8.59	441.98	
8/3/93	8.96	444.31	8.59	441.98	
8/12/94	8.96	444.31	8.59	441.98	
8/23/94	8.96	444.31	8.59	441.98	
8/30/94	8.96	444.31	8.59	441.98	
10/17/94	8.97	444.3	9	441.57	10 gal
10/20/94	8.92	444.35	9	441.57	2.5 gal / 3 days
10/25/94	9.79	443.48	9	441.57	2.5 gal / 4 days
11/3/94	10.22	443.05	9	441.57	0 gal / 7 days
11/10/94	9.22	444.05	9	441.57	
11/11/94	9.24	444.03	9	441.57	2 gal / 8 days
11/16/94	8.97	444.3	9	441.57	2.5 gal/5 days
12/2/94	9.66	443.61	9	441.57	3 gal/16 days
12/16/94	8.97	444.3	9	441.57	3.5 gal/15 days
12/27	8.75	444.52	9	441.57	2.5 gal / 8 days
1/3/95	8.73	444.54	9	441.57	1.75 gal / 8 days
1/10/95	9.1	444.17	9	441.57	could not pump - pump broke



SOURCE: VanDeMark Chemical Ltd. (April 1995)

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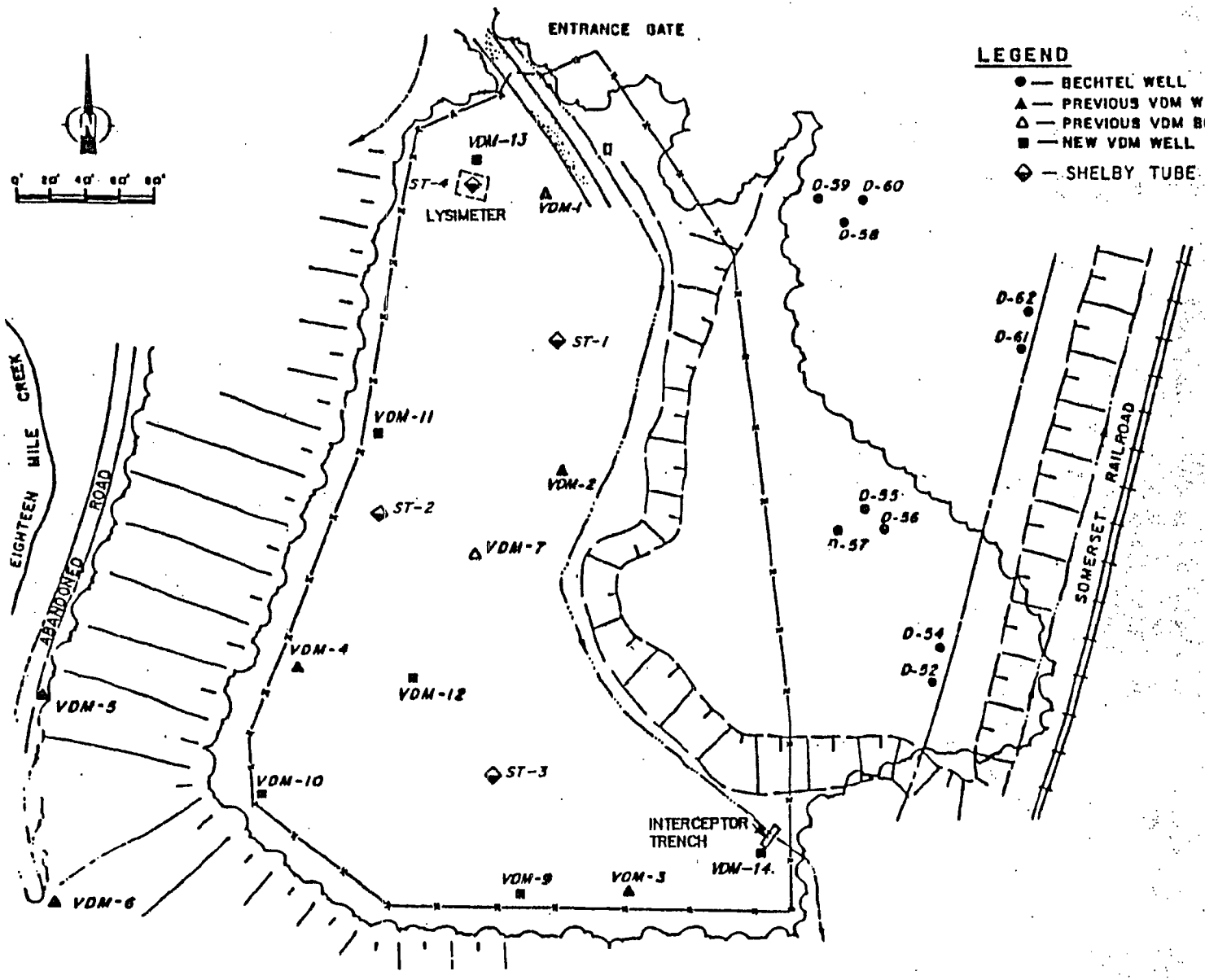


SOURCE: BASEMAP - CONESTOGA-ROVERS & ASSOCIATES, INC. 1993; SHELBY TUBE SAMPLE LOCATIONS - URS CONSULTANTS, INC. 1995

URS CONSULTANTS, INC.

LANDFILL CAP - SHELBY TUBE SAMPLE LOCATIONS

FIGURE 3-1

permeability clay layer. The holes were advanced with an ATV-mounted CME-55 drilling rig utilizing 4¼-inch hollow stem augers. The augers were advanced initially to a depth of two feet below ground surface. The cuttings were removed from around the collar of the hole and the augers withdrawn. The borehole was then cleaned out by hand to remove any loose material and expose the top of clay. The holes were advanced, as necessary, by hand to the top of the clay if deeper than two feet.

Once the hole was clean, a 3-inch diameter by 30-inch long Shelby tube equipped with a drive head was placed by hand into the borehole with the Shelby tube resting firmly on the bottom of the hole. The tube was then pushed with the drill rig a total of 26-inches to ensure a sample of the entire thickness of the low-permeability layer was obtained. The sample over the pan-lysimeter was only pushed 18 inches to ensure the clay layer was not fully penetrated. The tubes were allowed to stand for 10 minutes after they were pushed, and then rotated by hand with a pipe wrench and extracted from the hole. The length of sample recovered was measured and plastic caps were placed over the ends of the tube and securely taped in placed. The tubes were labeled and stored in an upright position until the end of the day when they were transported to the geotechnical lab which is located about 5 miles from the site.

The borehole was subsequently backfilled with bentonite pellets to within about 6 inches of the ground surface. The pellets were hydrated with potable water, and the remainder of the hole backfilled with the drill cuttings to the ground surface.

The locations of the boreholes were determined by taping the distance to the existing wells on-site. The samples were submitted to Glynn Geotechnical Engineering in Lockport, NY for determination of natural moisture content, insitu density and permeability. Additionally, the samples were visually inspected for the presence of desiccation cracks and logged as to the type of material. The laboratory reports are contained in Appendix D.

3.2 Laboratory Results

All four samples were described as medium-brown silty clay. Natural moisture contents were fairly consistent and varied from a low of 18.8 percent in ST-1 to a high of 21.9 percent

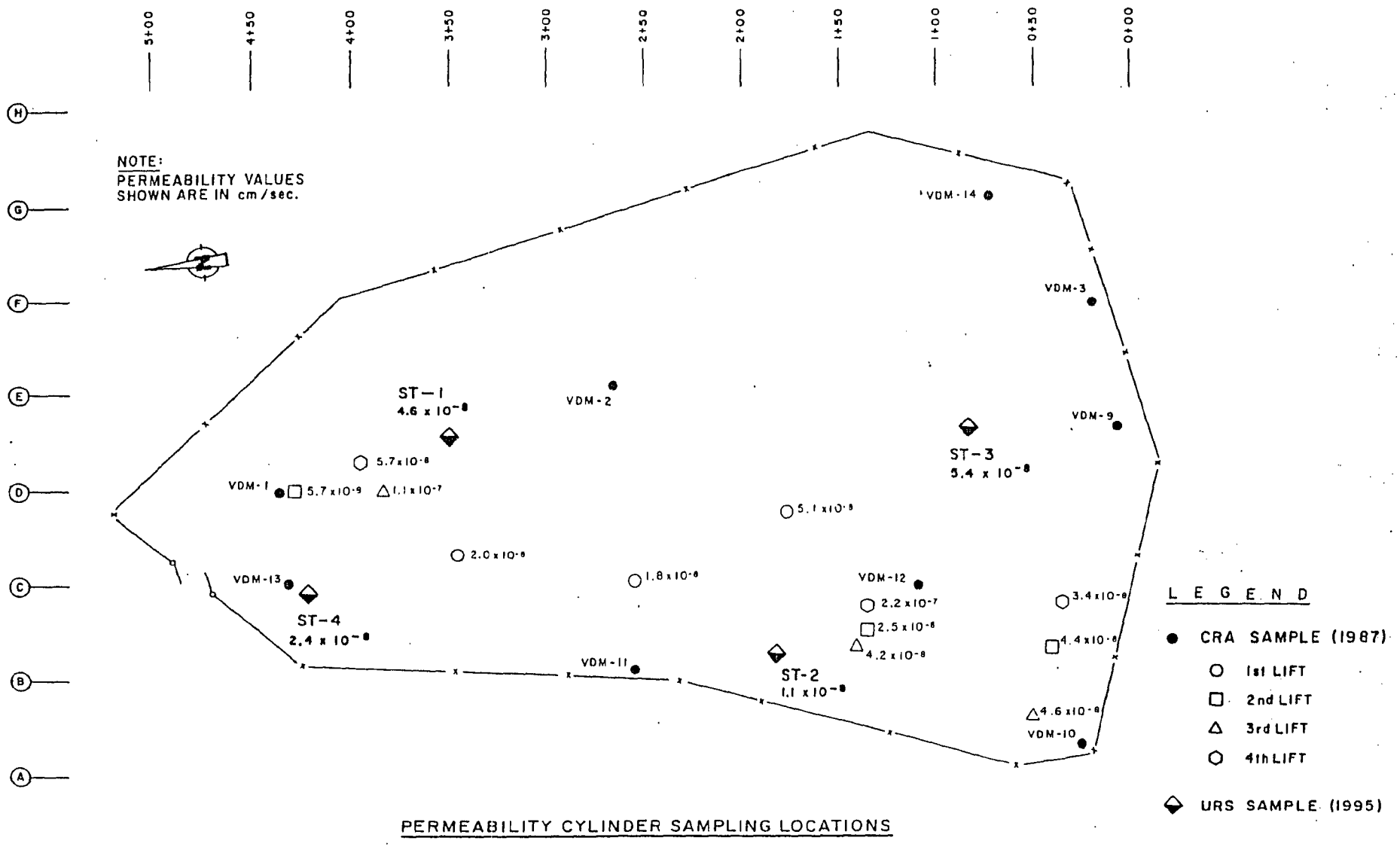
at ST-4. Insitu densities were also fairly consistent, ranging from 108.3 to 114.4 PCF (dry densities). The permeabilities, which ranged from 1.1 to 5.4 x 10^{-8} cm/sec were all well below the acceptable design limit of 1 x 10^{-7} cm/sec.

These results were compared with the QC results obtained during construction for samples of the low-permeability layer. As shown on Figure 3-2, the current sampling locations do not correspond directly to any of the previous permeability test locations. Consequently, the test results were compared with the permeability values for all samples collected during construction of the clay cap (Table 3-2). This comparison indicates that the permeabilities for the four new samples are comparable to the permeabilities obtained during construction. In the same manner, the natural moisture contents and dry densities of the new samples are generally similar to the moisture/density values shown in Table 3-2 for the earlier samples, although samples ST-1, 3 and 4 have slightly higher densities (0.5 to 3 PCF) and sample ST-4 has a slightly higher moisture content (approx. 2%).

3.3 Potential Causes of Increased Infiltration

Based on the geotechnical data for the four Shelby tubes and comparisons with the QC data for the low-permeability layer obtained during construction, it is concluded that there have been no significant changes in the moisture/densities or permeabilities of the low permeability layer which would result in increased rates of infiltration. More specifically, the low permeability layer immediately overlying the pan-lysimeter exhibits a density of 111.5 PCF @ 21.9 percent moisture and a permeability of 2.4 x 10^{-8} cm/sec. These values are considered to be comparable to values at other locations in the cap, and well within the acceptable design limitations.

It was therefore necessary to look at other possible explanations for the higher than expected infiltration to the pan-lysimeter. To do this, initially, the construction records and photographs were reviewed to see if any features or possible explanations could be identified to explain the increased infiltration.



PERMEABILITY CYLINDER SAMPLING LOCATIONS

SOURCE: BASEMAP - CONESTOGA-ROVERS & ASSOCIATES, INC. 1987; SHELBY TUBE SAMPLE LOCATIONS - URS CONSULTANTS, INC. 1995

URS CONSULTANTS, INC.

LANDFILL CAP - PERMEABILITY TEST RESULTS

FIGURE 3-2

TABLE 3-2

SUMMARY OF CLAY TEST RESULTS

Sample No.	Permeability Rate x10^{-7} cm/sec	Cylinder Dry Density	Moisture Content	Percent Compaction	Atterberg Liquid Limit	Atterberg Plastic Limit
Test Pad	0.729	108.6	19.5	94.8	37	23
Test Pad	0.221	108.9	20.1	95.1	39	22
Test Pad	0.471	107.3	19.3	93.7	--	--
1B	0.176	110.2	16.5	96.2	43	22
2B	0.510	105.7	19.5	92.3	37	20
3A	0.200	107.8	15.8	94.1	39	20
4A	0.440	110.7	17.7	96.7	38	20
5B	0.248	108.7	18.5	94.9	34	19
6A	0.569	109.2	19.8	95.4	36	17
7A	0.461	110.5	14.9	96.5	45	24
8B	0.418	109.8	17.0	95.9	36	19
9A	1.09	105.0	18.2	91.7	48	26
10B	0.336	103.2	15.6	90.1	38	19
11B	2.201	101.9	18.2	89.0	38	20
11R2	4.96	102.4	13.3	89.4	32	19
12A	0.574	108.5	17.9	94.8	48	25
Bag #2	4.12	107.1	19.1	93.5	35	18
Avg. 1-12	0.60	107.6	----	----	--	--

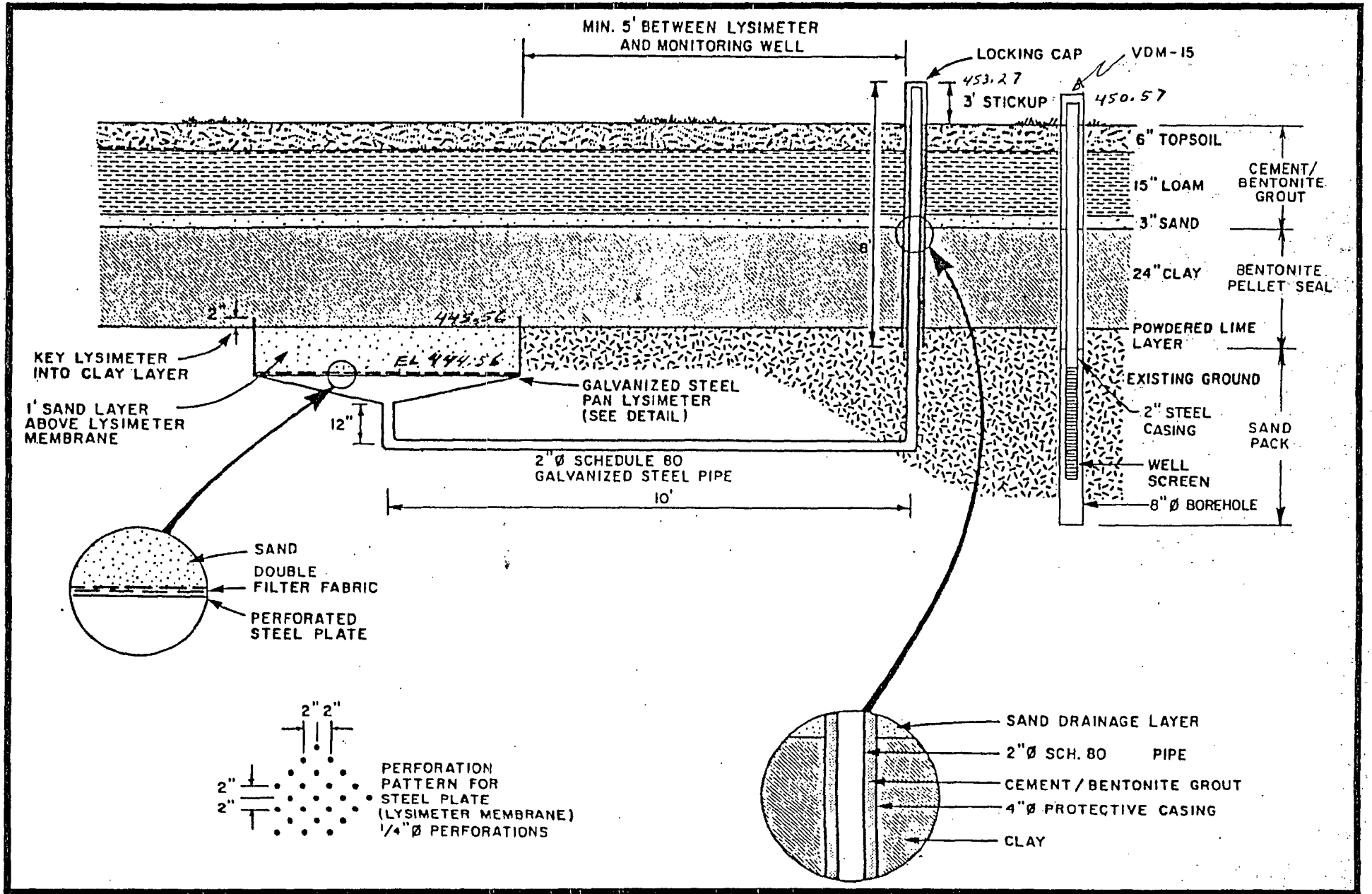
SOURCE: "Record of Closure Activites" - Conestoga-Rovers & Associates (Novemeber 1987)

Based on this review the following possible elements, either singly or in combination, were identified which may be responsible for the increased infiltration to the pan-lysimeter.

- As noted previously, groundwater elevations in the landfill materials (437 feet) and Power Glen Formation (432 feet) are well below the elevation of the pan-lysimeter (444.56 feet) or base of the excavation (approx. 443 feet). Consequently, it is not likely that groundwater either in the landfill materials, or bedrock is capable of affecting the levels measured in the pan- lysimeter This is further supported by the fact that well VDM-15, which was installed adjacent to the pan-lysimeter to specifically monitor groundwater levels in the fill materials, has gone dry (<elevation 441.57 feet) as of January 1995. This would indicate that water levels in the surrounding natural materials are well below the bottom of the pan-lysimeter or even the excavation. Consequently, (assuming VDM-15 is functioning properly) the source of the increased infiltration must be the result of other causes.

- Based on the well installation diagrams for VDM-15 (Figure 3-3), it appears that the sandpack/screen is installed from just below the bottom of clay layer to about 3 feet below the level of the perforated plate in the pan-lysimeter box. The well is also installed outside the limits of the excavation for the pan-lysimeter, in virgin soils. Water level measurements in VDM-15 from February 10, 1994 to January 10, 1995 (Table 3-1) indicate that water levels gradually decreased from elevation 442.01 feet until the well went dry in January 1995. This would tend to indicate that the clay cap is functioning properly, and the water level in the landfill area is gradually being lowered due to decreased infiltration as a result of the capping; or the well is not functioning properly; or, the zone in which the well is screened is extremely tight (low permeability) and/or essentially dry.

- As indicated in the landfill closure report (CRA, 1987), the pan lysimeter was bedded on a one-foot thick layer of #1B stone. The construction photos indicate this stone was hand-placed from a stockpile on the ground surface adjacent to the excavation area. Additionally, the stone blanketed portions of the slopes/side



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PAN-LYSIMETER SYSTEM TYPICAL DETAIL

FIGURE 3-3

walls of the excavation from the bottom (below pan-lysimeter) to the ground surface (top of clay layer). If this stone was not properly cleaned up prior to backfilling of the excavation, it may provide a potential seepage pathway for water in the sand drainage layer to flow into the area immediately around the pan-lysimeter.

- As indicated in the construction photos, the zone between the stone bedding layer and the top of the pan-lysimeter box (12 inches) was backfilled with loose materials consisting of chunks and pieces of clay. The closure report indicates this layer was subsequently compacted by hand with a hydraulic jumping jack. Once backfilled, the entire area over the pan lysimeter was capped by two feet of clay in 6-inch lifts. The first two lifts were hand compacted using a Bomag Compactor and the hydraulic jumping jack. The sheepsfoot roller was used for the third and final lifts.

  Due to the hand compaction methods utilized for the backfill around the pan lysimeter and the "chunky" nature of the backfill material, it is quite probable that this material was not fully compacted, and that the void spaces between chunks were not entirely eliminated. The same may be true, to a lesser degree, of the first two 6-inch lifts of clay. The report also indicates that the initial backfill and first lift were not wetted during compaction. This would tend to increase the probability that the voids between chunks were not eliminated.

  Over the years since the lysimeter was installed, the materials in these two zones will have consolidated and settled further due to natural processes. This could potentially result in the formation of "gaps" or more open zones forming along the contacts between the two zones, which could provide pathways for groundwater to reach the pan-lysimeter.

- The steel riser pipe for the pan-lysimeter which extends through the cap to the surface may provide another potential pathway for groundwater or surface water infiltration. The pan-lysimeter construction detail sheet (Figure 3-3) indicates

that the 2-inch riser pipe is protected by a 4-inch diameter protective casing, and that the annular space between the riser pipe and protective casing is filled with cement/bentonite grout. The protective casing extends from the ground surface to just below the bottom of the low-permeability clay layer. There are no seepage collars or other measures employed on the casing to prevent groundwater or surface water from migrating down along the outside of the casing into the area around the lysimeter. There is a high degree of probability that openings have developed between the casing and surrounding soils as a result of freeze/thaw action and shrinkage of the soils due to drying of the soils during extremely hot and/or dry periods. The fact that the protective casing is steel further increases the temperature related effects, due to the higher thermal conductivity of the steel. This may result in freezing and drying of the soils to greater depths immediately around the protective casing.

If the soils dried out and shrinkage (desiccation) cracks developed along the pipe down into, or through, the low-permeability layer, it is possible that sand from the 3-inch thick drainage layer may have fallen into the area around the casing where it penetrates the low-permeability layer. As the area becomes re-wetted and the clays swell, the sand would prevent the clay from sealing around the pipe, and provide a pathway for surface water, groundwater, or more probably water in the drainage layer to migrate into the area around the lysimeter. Repeated drying cycles would tend to increase the amount of sand infilling around the pipe and consequently the amount of water inflow.

- Likewise, desiccation cracks also may have developed in the barrier protection layer and/or low-permeability layer overlying the pan lysimeter during extremely dry periods (e.g. Summer 1991). These cracks would also fill with sand from the drainage layer which would prevent hem from closing fully when the clays become re-wetted.

These desiccation cracks would provide preferential pathways for surface waters or water in the sand drainage layer to infiltrate directly to the pan-lysimeter.

Although no desiccation cracks were noted during the visual examination of the Shelby tube samples, the possibility still exists that they are present.

- As noted in the Record of Closure Activities Report (CRA, 1987), the edges of the excavation were "regraded" to ensure adequate bonding between the pre-existing clay cover and the newly constructed cover over the lysimeter. It is unclear whether this regrading consisted of sloping, benching, or some other process. It is possible, no matter what mechanism was used, that bonding along this interface may not have been complete, and that this contact zone provides a preferential pathway for migration of groundwater in the sand drainage layer through the clay layer and into the zone around the pan-lysimeter.

- Other potential factors include leakage through the joints in the steel riser pipe which were reportedly welded and visually inspected, but never tested for tightness. Additionally, as indicated by VDM, the waste materials generate hydrochloric acid when exposed to water. This could potentially result in a very corrosive groundwater in areas where it is not neutralized by the powdered lime and/or limestone. This would be particularly true in areas of the early landfill where it is unclear whether any lime/limestone was used in the disposal process. The pan-lysimeter does not appear to be directly located within the limits of the early landfill (Figure 1-2). However, it does appear to be located just outside those limits. Consequently, it is possible that soil and groundwater conditions in the area of the lysimeter could be corrosive and result in deterioration of the pan-lysimeter and riser pipes.

4.0 CORRECTIVE MEASURES EVALUATION

4.1 Introduction

This section of the report presents a discussion of the remedial action objectives for the various media at the site, outlines the potential corrective measures which might be implemented at the site, and evaluates the measures as to their implementability and effectiveness in meeting the remedial action objectives.

4.2 Remedial Action Objectives

Remedial Action Objectives, which are medium-specific, are established to protect human health and the environment. The development of the remedial action objectives is based on the human health risk assessment (HRA), ecological risk assessment, and a comparison of contaminant concentrations detected in onsite media with chemical-specific SCGs, since these are the basis for measuring the potential impact of the landfill on human health and the environment. Medium-specific remedial objectives for the VDM site are presented below:

Soil/Fill

The HRA indicated that there is no risk associated with soils/fill at the site. The landfill has been capped with a low permeability cap, thereby eliminating the potential for dermal contact, inhalation or ingestion. Additionally, the site is fenced on two sides and bounded by extremely steep slopes on the other two sides which restricts the potential for recreational trespassers. The only onsite activities at present consist of periodic monitoring which limits the potential exposure to workers. Therefore, there are no remedial action objectives developed for soil/fill at the site.

Surface Waters

Analytical data from samples collected in Eighteen Mile Creek indicate there are no exceedances of NYSDEC Standards, Criteria or Guidances (SCGs). Consequently, there is no

potential health risk associated with surface waters and no remedial action objectives have been developed.

Sediment

No samples of the sediments from Eighteen Mile Creek have been collected and analyzed. However, there was a groundwater seep observed in the cliff face below the landfill prior to regrading and capping of the landfill. Overland flow down the slope from this seep could potentially have transported contaminants directly into the surface waters of Eighteen Mile Creek. Considering this seep has been not been observed since regrading/capping of the landfill was completed, there are no exceedances of SCGs in the surface waters of the creek, the VOCs detected in groundwater at the site tend to volatize or evaporate very rapidly in moving water or upon exposure to the atmosphere, and the VOCs have very low adsorption potential, it is not anticipated that the sediments are contaminated with VOCs.

In regards to metals, there is some potential that soluble metals transported in groundwater from the site may be discharged into Eighteen Mile Creek where they are transported downstream or precipitated out. No sediment samples have been collected in Eighteen Mile Creek adjacent to the site. However, a limited number of samples were obtained by the NYSDEC Division of Water in 1988, 1989 and 1990 in portions of Eighteen Mile Creek beginning approximately one mile downstream of the site and continuing to the mouth of the creek at Olcott. These samples indicated a wide range of metals concentrations in the sediment. Consequently, based on the extremely low calculated mass loading for metals from the site, it is assumed that no appreciable impact to sediment in the creek has, or will, occur. Therefore, there are no remedial action objectives developed for sediments.

Groundwater

Groundwater is not used as a potable supply source in the vicinity of the site. The geologic/hydrogeologic setting prevents installation of downgradient wells and VDM owns the property up to the creek in the downgradient areas. Prior to cap construction, contaminated groundwater had been observed intermittently seeping from the cliff face below the landfill and

flowing downslope towards Eighteen Mile Creek. No seeps or discharges have been observed since capping, although there could potentially be intermittent seeps which are obscured by the talus accumulations on the slope.

There is a potential current and future risk to recreational trespassers from dermal contact and inhalation of vapors if contaminated groundwater seeps in the cliff face below the landfill occur. Surface flow of contaminated groundwater has been eliminated due to capping of the landfill, although there is some potential for seeps to occur in those portions of the cliff which are obscured by talus accumulations on the slope.

For the protection of human health and the environment, the following remedial action objective has been developed for groundwater:

- Control groundwater discharges in the cliff face and/or discharges directly to Eighteen Mile Creek.

Air

The only reported gaseous emissions from the landfill are associated with the initial placement and subsequent puncturing of the drums. The existing cap will prevent any current or future emissions unless it is disturbed. Consequently, there is no health risk posed by air emissions from the site, and no remedial action objectives have been developed for air.

4.3 Potential Corrective Measures

Based on the existing site conditions and discussions with NYSDEC, a limited number of potential corrective measures have been identified which are to be evaluated during this study. These include:

1) No further action;
2) Installation of an upgradient low-permeability barrier;
3) Installation of a synthetic cap over the existing clay cap; and

4) Installation of a groundwater collection and treatment system.

These corrective measures address the remedial action objective which is to control groundwater discharges by either reducing infiltration, preventing inflow, or collecting downgradient. The corrective measures are described in the following sections, and evaluated as to their technical implementability and effectiveness in achieving the remedial action objective.

4.3.1 No Further Action

In this scenario, the site would be left in its present condition with continuation of the existing post closure groundwater monitoring and maintenance programs as outlined in the closure plan.

This alternative is easily implemented since there is no construction, and has no additional cost associated with it.

This corrective measure meets the remedial action objective of controlling groundwater discharges inasmuch as there are no visible seeps and/or discharges of contaminated groundwater in the cliff face below the landfill now.

4.3.2 Upgradient Low-Permeability Barrier

This corrective measure involves the installation of a low-permeability barrier along the upgradient perimeter of the landfill to reduce the amount of groundwater flow into the landfill. The barrier would be installed to the depth required to ensure that groundwater does not contact the waste placed at the site. This barrier would extend from the northern end of the landfill (near VDM-1) along the eastern boundary to the southeastern corner of the landfill (near VDM-14), a distance of about 560 feet. The barrier itself could be constructed of compacted clay, bentonite slurry, cement grout, sheet piling and/or geosynthetic membranes depending on the required depth and type of materials to be penetrated. Considering that groundwater is first encountered in the bedrock underlying the site, the low permeability barrier would also have to be installed into the bedrock.

Based on the available information, it appears that groundwater flow is generally from the north-northeast to the south-southwest across the site. Groundwater elevations along the upgradient boundaries as measured in monitoring wells VDM-1 and -2 are typically 431 to 432 feet. These measurements are consistent with groundwater elevations measured in well D-55, which is installed east of the site and screened across the Grimsby/Power Glen contact, which vary from 432 to 434 feet. At the southern, or downstream edge of the site, water levels typically are at or below elevation 422 feet. Table 4-1 and Figure 4-1 present a summary of groundwater elevations.

As indicated on Figure 4-2, the top of rock ranges in elevation from about 440 feet at the northern end of the site (near VDM-1) to 430 feet along the southern edge of the site (near VDM-3). In regards to waste disposal at the site, there is very limited information available as to how deep the trenches were excavated into the overburden and/or bedrock. This is particularly true for the early landfill area. In the early landfill area, it has been assumed that the trenches were most likely extended through the overburden materials to the top of bedrock, or possibly a short distance (one or two feet) into the bedrock. Based on typical cross-sections presented in the construction plans prepared by Whitmore (1977) for the new disposal area, it appears that some of the trenches extended into the bedrock. These same drawings also indicate that the base elevation for these disposal trenches does not go below Elev. 438 feet, even in areas where the bedrock is lower.

In summary, the bottom of waste on site is assumed to range from about elevation 430 to 440 feet at the northern end to 428 to 430 feet at the extreme southern edge.

Based on the above discussion, it would appear that the existing water levels measured in the bedrock (Power Glen) immediately underlying the waste, are currently and historically below the base of any wastes disposed on site. Consequently, the groundwater flowing across the site does not come into direct contact with any of the onsite waste materials. Additionally, groundwater levels in the bedrock have remained relatively constant throughout the history of the site, and it is not expected that any significant changes in elevations (increases) will occur in the future.

Groundwater Elevations
(feet AMSL)
VanDeMark Chemical Ltd.
Lockport, New York

Date	VDM-9	VDM-10	VDM-11	VDM-14	D-55
Jan-84	421.62	413.42	431.45	NI	433.70
Mar-84	421.86	413.07	431.42	NI	433.51
May-86	NM	NM	NM	NI	433.51
Jan-87	421.91	414.54	433.19	NI	434.71
Jun-87	422.32	414.17	431.92	NI	432.79
Sep-87	421.26	413.25	431.46	NI	432.36
Nov-87	421.98	413.25	431.64	436.46	433.16
Mar-88	422.06	413.87	434.20	436.98	433.71
Jun-88	421.97	411.60	431.08	435.73	432.61
Aug-88	422.04	412.04	431.00	435.57	432.80
Nov-88	422.84	413.73	432.76	431.56*	432.06
Feb-89	421.74	412.57	432.43	436.28	433.05
May-89	421.95	412.98	431.31	436.21	433.17
Sep-89	421.79	411.93	433.00	436.37	432.61
Jan-90	422.16	413.61	431.85	436.58	433.15
Jun-90	421.49	423.98	430.76*	435.11	432.67
Sep-90	421.49	411.82	430.93	435.19	432.54
Dec-90	421.91	413.82	434.43	437.29	434.26
Mar-91	422.01	413.73	431.97	436.56	433.42
Jun-91	421.54	411.87	430.65	435.21	432.46
Oct-91	422.00	410.90	429.80	434.87	432.46
Dec-91	421.58	412.27	430.14	435.53	432.71
Mar-92	423.00	413.81	433.55	436.60	433.58
Jun-92	421.94	413.87	431.21	436.60	432.81
Sep-92	422.46	412.67	431.74	436.34	432.94
Dec-92	424.17	413.61	433.47	437.48	434.21
Mar-93	424.66	414.59	434.91	437.91	434.84

Notes:

* Potential erroneous or erratic reading.
NI= Not Installed

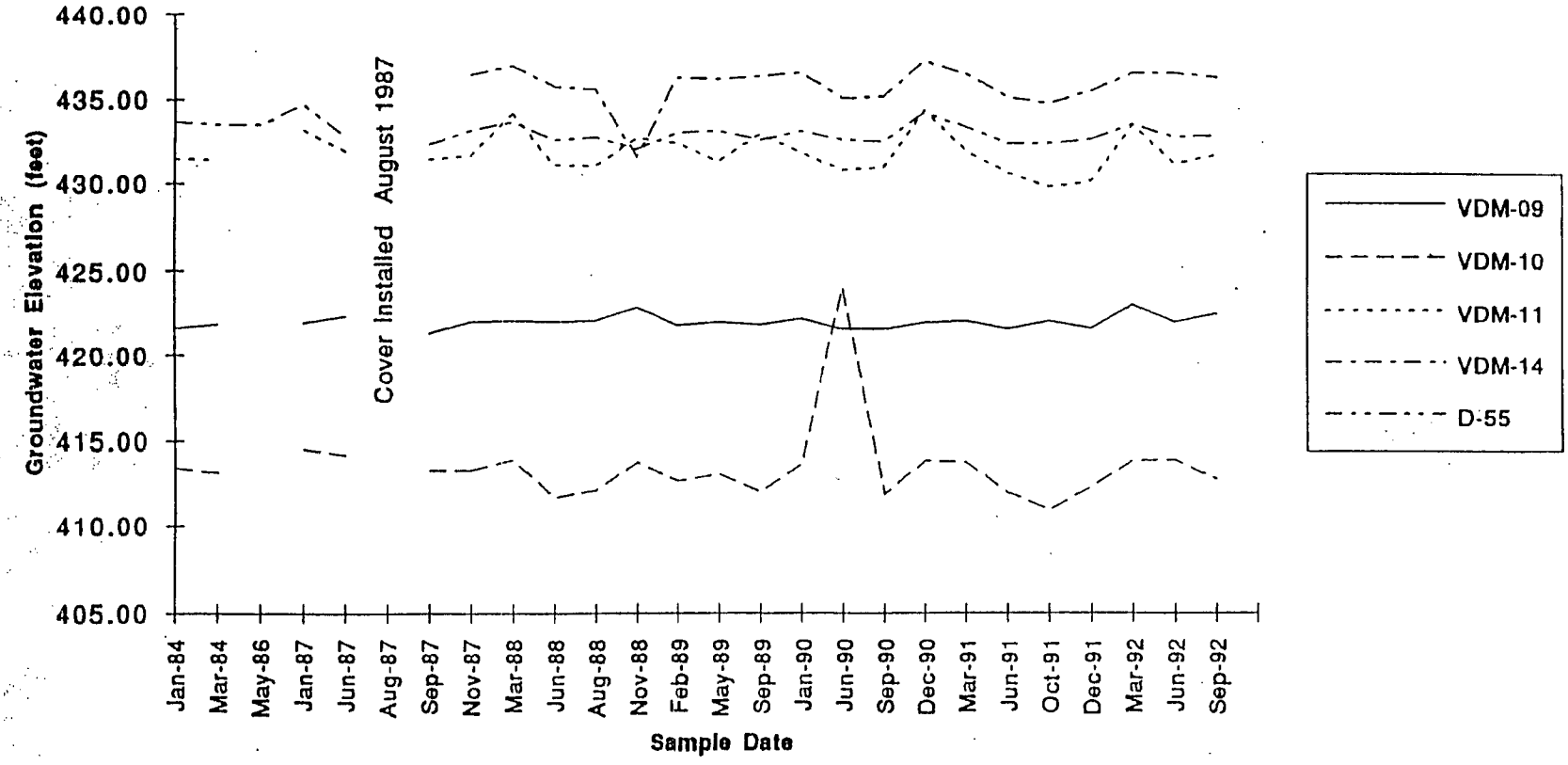
NM= Not Measured

Landfill cover installed in August 1987.

AMSL= Above Mean Sea Level

SOURCE: Conestoga-Rovers & Associates (April 1993)

Figure 4
Groundwater Elevations
VanDeMark Chemical Ltd
Lockport, New York



SOURCE: VANDEMARK 1993

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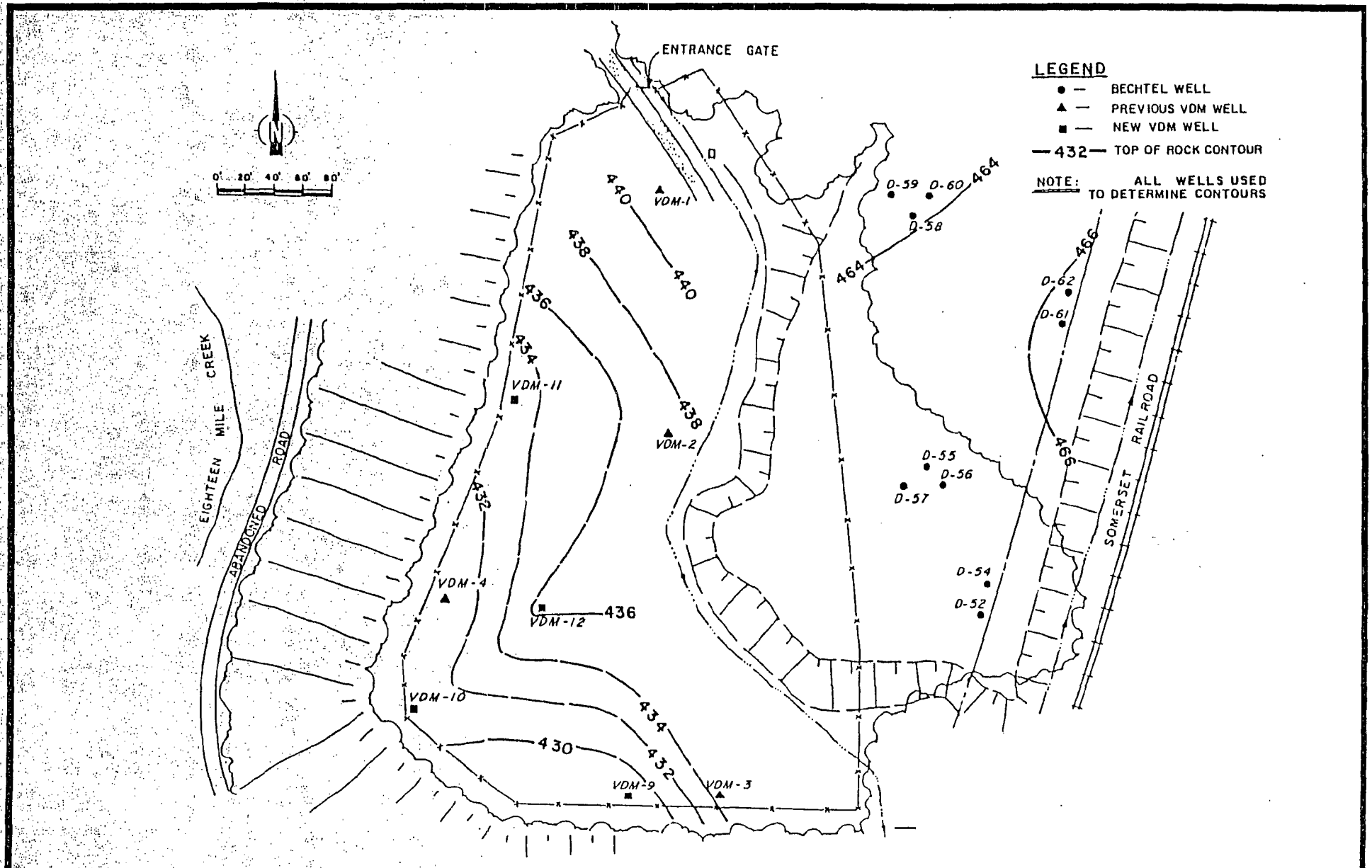
GROUNDWATER ELEVATIONS SUMMARY PLOT

FIGURE 4-1

AH-7652G

J:\35395\CAD\ I=1 4/21/95-1 KAH



SOURCE: CONESTOGA-ROVERS & ASSOCIATES, INC. 1984

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TOP OF BEDROCK CONTOURS

FIGURE 4-2

VDM01169

In light of the above discussions, there is no need, and/or benefit, to installing an upgradient, low-permeability barrier inasmuch as the groundwater flowing onto the site in the bedrock under existing conditions does not come into direct contact with the waste.

Additionally, as indicated by the historical water level measurements (Figure 4-1), there have been some minor variations in the groundwater levels along the upgradient boundary of the site in response to seasonal variations in temperature, precipitation and evapo/transpiration. However, in general terms the groundwater flux (flow onto site) across the upgradient site boundary has remained relatively unchanged.

Based on the groundwater elevation data for wells screened in the Power Glen Formation (i.e. VDM-1, -9, -11, and D-55), a groundwater contour map was prepared (Figure 4-3). This map is based on the average groundwater elevations recorded during the period of November 1988 to present. As indicated previously, these groundwater levels have remained relatively constant throughout this period, and were not significantly impacted by installation of the cap.

The data from this map (i.e. hydraulic gradients) and hydraulic conductivity values for the Power Glen formation were utilized to calculate the groundwater flux across the site. Groundwater flux across the upgradient site boundary was calculated to be on the order of 0.026 gpm (14,500 gal/yr). Likewise the groundwater flux across the downgradient site boundary was calculated to be about 0.18 gpm (92,000 gal/yr). This indicates that approximately 0.15 gpm (79,000 gal/yr) is infiltrating through the landfill cap. The calculations are contained in Appendix C.

Considering that groundwater in the bedrock flowing onto the site does not come into direct contact with the waste materials as it flows under the landfill and ultimately discharges at the cliff face, it is not considered warranted to install an upgradient low-permeability barrier to restrict this flow. However, direct contact of groundwater with the waste is not the only mechanism involved in generating contaminated groundwater.

As surface water (precipitation) infiltrates through the cover system, it may come into contact with the waste materials. This results in the generation of hydrochloric acid and,

VDM01170

4.3.3 Installation of a Synthetic Cap Over the Existing Clay Cap

This corrective measure would involve removal and stockpiling of the existing topsoil at the site followed by installation of a geosynthetic or bentonite-type liner. This liner would be protected by a drainage layer, up to 24 inches of barrier protection soils and 6 inches of stockpiled topsoil. The intent of this additional low permeability liner would be to further reduce the amount of infiltration through the landfill cap.

Based on the geotechnical testing which was performed during this study on samples of the existing low-permeability cap, it was determined that the existing clay cap is functioning as originally designed. The four samples exhibited permeability values ranging from 1.1 to 5.4 x 10^{-8} cm/sec, (Appendix D) which is less than the maximum allowable permeability of 1 x 10^{-7} cm/sec, and consistent with values obtained during construction (Appendix E).

In order to evaluate the comparative value of installing a synthetic or bentonite-type liner over the existing clay cap, the Hydrologic Evaluation of Landfill Performance (HELP) model (Schroeder et al., 1988) was utilized. This computer model calculates the expected volume of infiltration through a landfill cap under varying conditions. Factors such as permeability, slope, precipitation, type of vegetation and evapotranspiration are considered in the model.

Initially, the model was used to calculate the anticipated infiltration through the original landfill cover, prior to regrading and capping. In this case it was assumed that the landfill was graded such that all precipitation falling on the site was directed into the landfill, and there was no run-off. Based on an average permeability of 3.6 x 10^{-5} cm/sec, the expected inflow for the 2.5-acre site is 790,00 gal/yr or 1.5 gpm (Appendix F).

Next, the model was used to calculate the anticipated infiltration through the existing clay cap. Based on an average permeability of 1 x 10^{-7} cm/sec, the expected inflow for the 2.5-acre site is 84,000 gal/yr or 0.16 gpm (Appendix F). This is consistent with the flux calculations which indicated an overall discharge volume from the shallow (Power Glen) aquifer below the landfill on the order of 0.18 gpm. which represents the combined flow of groundwater in the bedrock (0.03 gpm) and infiltration of precipitation to the site (0.15 gpm). Consequently,

VDM01171

regrading the site and installing the clay cap reduced the infiltration to the site by approximately 90 percent, and the overall flow through the site by more than 88 percent.

The model was then utilized to calculate the estimated infiltration to the landfill assuming a synthetic geomembrane or bentonite liner with a permeability of 1×10^{-12} cm/sec was installed over the existing clay cap. All other parameters were kept the same. Results indicated that maximum infiltration would be on the order of 1,000 gallons per year or 1.9×10^{-3} gpm (Appendix F). This represents an additional reduction of about 9 percent in the infiltration rates through the cap, and about an 8 percent additional reduction in the overall groundwater flux across the site. Contact of infiltrating water with the landfilled waste would also be further reduced.

In addition to the HELP model, there are various other factors which need to be considered in evaluation of this alternative. These factors include:

- First and most importantly, under existing conditions the groundwater flux at the site and resultant mass loadings to Eighteen Mile Creek are so low since the site was capped in 1987 that no discernible impacts to the creek have occurred. Consequently, reducing the infiltration rate through the cap, by an additional 9 percent will not appreciably improve this situation.

- Additionally, in regards to groundwater which is discharged at or near the cliff face, evaporation may result in some additional reduction in the volume which ultimately reaches the creek. The slopes also have southern and western exposures which increases the amount of sunlight striking these areas, and winds in this area also tend to be from the west which would further increase evaporation rates.

In summary, the installation of a geosynthetic or bentonite-type liner would only result in a minor additional reduction in the overall groundwater flux across the site. Considering that the present groundwater discharge rate to the cliff face and ultimately to Eighteen Mile Creek is so low that no discernible impacts to the creek have occurred, the installation of a geosynthetic

or bentonite-type liner would not appreciably improve upon this condition. Consequently, further evaluation of this alternative is not warranted.

Based on the above discussion, it appears that installation of a geosynthetic or bentonite-type liner would result in a slight additional reduction in the amount of precipitation infiltrating into the landfill and generation of contaminated groundwater. However, it also appears that installation of the additional cover would have almost no impact on the discharge of contaminants from the site, inasmuch as there are no visible seeps or discharges in the cliff face below the landfill under existing conditions. Consequently, considering there are no discernible impacts to Eighteen Mile Creek at present, installation of a geosynthetic or bentonite-type liner is not warranted.

4.3.4 Groundwater Collection and Pretreatment

This corrective measure involves the installation of a groundwater collection system combined with on-site treatment and discharge to Eighteen Mile Creek or the nearby wastewater treatment plant.

In order to satisfy the remedial action objective, the collection system would be designed to intercept and collect the contaminated groundwater which flows under the landfill in the Power Glen Formation before it discharges in the cliff face below the landfill.

Several types of collection systems were identified which could potentially be installed at the site. These include:

- Individual wells installed in the landfill to the base of the Power Glen formation;
- A series of wells installed around the downstream perimeter of the site to the base of the Power Glen formation;
- Horizontal or inclined drains installed from the cliff face at the base of the Power Glen formation; and,

VDM01173

- A collection trench excavated around the downstream perimeter of the site to the base of the Power Glen formation.

Additionally, several types of extraction systems to remove the contaminated groundwater could be utilized. These include:

- Submersible pumps;
- Vacuum system; and,
- Gravity drains.

Based on the extremely low flow rates across the site and the potentially corrosive groundwater conditions, it was considered that a passive collection system which does not require pumping would be the most applicable. Consequently, the corrective measure proposed for further evaluation consists of excavating a narrow bench in the cliff face in the upper portion of the Whirlpool Formation just below the contact with the Power Glen Formation. Small diameter drain holes would then be drilled from the cliff face into the saturated portion of the Power Glen. The holes would start from just below the contact and be angled upward so that they intersect as many bedding planes and horizontal joints as possible. The drain holes would be extended such that they penetrate the entire thickness of the saturated zone.

The individual drains would be connected to a header pipe positioned to gravity drain to the lowest point along the bench from where the contaminated groundwater would be conveyed downslope to a small treatment facility positioned at the base of the slope. This treatment facility would consist of a small air stripper to remove the VOCs and additional treatment to remove metals and/or adjust the pH prior to discharge to Eighteen Mile Creek. Alternatively, discharge of the pre-treated (air stripped) water directly to the Lockport Wastewater Treatment Plant located on the southwest side of Eighteen Mile Creek may be a possibility.

Whereas this system can be designed and installed to collect some percentage of the contaminated groundwater flowing under the site, no appreciable additional reduction in risk to human health and the environment would be achieved. This is based on the fact that the flow of contaminated groundwater under the site and discharge to the cliff face and ultimately Eighteen

Mile Creek is so low at present that no discernible impacts to the creek have occurred, and the risk presently posed by the site to human health and the environment is minimal. Consequently, collecting the groundwater before it reaches the exposed face will not appreciably improve upon present conditions. Further evaluation of this measure is not warranted.

5.0 SUMMARY AND CONCLUSIONS

5.1 Summary

- From 1957 to 1983, VDM disposed approximately 3,300 55-gal drums containing hexachlorodioxane, silicon tetrachloride, carbon and silicon carbide in their 2.5 acre landfill.

- The landfill was closed during the summer of 1987 in accordance with a NYSDEC approved closure plan. The closure consisted of regrading (mounding) the site and installing a low-permeability cover system. The cover system consisted of 24 inches of compacted clay with a maximum permeability of 1 x 10^{-7} cm/sec, 3-inches of sand drainage material, 15-inches of barrier protection soil and 6-inches of topsoil.

- Analytical data for groundwater samples collected from the five onsite monitoring wells during the four year investigative monitoring period following landfill closure indicated that several VOCs and metals exceeded the GPCs established in VDM's Part 373 post-closure permit. Some contaminants also exceeded the "Exceedance Concentrations" specified in the permit for two or more successive quarterly monitoring periods

- Analytical data for surface water samples collected in Eighteen Mile Creek following landfill closure did not show any exceedances of NYSDEC surface water standards for any site-related contaminants. NYSDEC has allowed VDM to discontinue monitoring of the Creek due to the lack of any observable impacts.

- Infiltration rates measured in the pan-lysimeter during this same four-year period were higher than anticipated based on design calculations.

- As specified in their NYSDEC Part 373 post-closure permit, VDM was required to perform a corrective measures study and assessment of the landfill cap

5.2 Conclusions

5.2.1 Corrective Measures

Based on a review of the existing information, a qualitative health risk assessment and evaluation of four alternative corrective measures, the following conclusions were reached.

- In order to provide a conservative assessment of the health risk posed by the site, all the chemicals specified in VDM's post-closure permit (Table 2-1) were determined to be potential chemicals of concern and retained for further evaluation.

- Based on the health risk assessment, there are two potentially completed exposure pathways for the site. The first exposure route is associated with discharge of contaminated groundwater in the cliff face as seeps or overland flow downslope to Eighteen Mile Creek. Considering that the seep which previously was noted in the cliff face has not been observed since capping of the landfill and the inaccessibility of the cliff (steepness, private property) to recreational trespassers, this is likely to be an occasional exposure activity at best.

- The second potential exposure route is associated with surface waters of Eighteen Mile Creek which might receive contaminated groundwater discharged from the site. Based on extremely low calculated potential mass loadings relative to the assimilative capacity of the creek, it appears that there would be no discernible impact on the surface waters of Eighteen Mile Creek, and the health risk associated with this exposure route would be minimal. This is supported by analytical data for surface waters in Eighteen Mile Creek adjacent to the site which show no exceedances of NYSDEC surface water standards for any site-related contaminants.

- There are no apparent ecological risks posed by the site.

- In developing and evaluating potential corrective measures which might be implemented at the site, the primary remedial action objective was to control groundwater discharges at the cliff face and/or discharges directly to Eighteen Mile Creek.

- Four potential corrective measures were developed based on discussions with the NYSDEC. These included 1) no further action; 2) installation of an upgradient low-permeability barrier; 3) installation of a synthetic cap over the existing clay cap; and, 4) installation of a groundwater collection and treatment system.

- Based on the available groundwater elevation data, the overall groundwater flux across the site was calculated to be about 0.18 gpm. Groundwater flow from upgradient areas onto the site accounts for about 0.03 gpm whereas infiltration through the existing cap accounts for the remaining 0.15 gpm.

- Evaporation rates in the cliff face may result in some additional reduction in the volume which ultimately reaches Eighteen Mile Creek. Southerly exposure of the cliff face, increased downslope areas and westerly winds may further increase evaporation rates for the site.

- The no further action alternative meets the remedial action objective in that based on the present groundwater discharge rate from the site, the mass loadings to Eighteen Mile Creek are so low relative to the assimilative capacity of the creek, that no appreciable adverse impact will occur. This is supported by analytical data for surface waters in Eighteen Mile Creek adjacent to the site which show no exceedances of NYSDEC surface water standards for any site-related contaminants. Consequently, the risk presently posed by the site to human health and the environment is minimal.

- It is estimated that installation of an upgradient low-permeability barrier will reduce the total groundwater flux across the site by about 0.03 gpm which represents about 15 percent of the total flow (0.18 gpm). However, considering

that the groundwater currently flowing onto the site does not contact the wastes directly, and that the present groundwater discharge rate to the cliff face and ultimately to Eighteen Mile Creek is so low (without the barrier) that no discernible impacts to the creek have occurred, the risk presently posed by the site to human health and the environment is minimal. Consequently, implementing this measure will not appreciably improve upon existing conditions.

- It is estimated that installation of a geomembrane or bentonite-type liner over the existing clay cap would result in an additional reduction of infiltration to the site of about 9 percent as compared to the existing infiltration rates associated with the clay cap. However, considering that the present groundwater discharge rate to the cliff face and ultimately to Eighteen Mile Creek is so low that no discernible impacts to the Creek have occurred, the risk presently posed by the site to human health and the environment is minimal. Consequently, implementing this measure will not appreciably improve upon existing conditions.

- It is estimated that installation of a groundwater collection system would result in some portion of the groundwater flowing under the site being collected and treated prior to discharge to Eighteen Mile Creek or the nearby sewage treatment plant. However, as with the other alternatives, the risk presently posed by the site to human health and the environment under existing conditions is minimal. Consequently, implementing this measure will not appreciably improve upon existing conditions.

In summary, some of or all of the various corrective measures outlined herein could be implemented at the site to further reduce the amount of groundwater flowing under the site and/or being discharged in the cliff face and ultimately to Eighteen Mile Creek. However, inasmuch as groundwater discharges from the site under existing conditions and potential mass loadings to Eighteen Mile Creek are so low that no discernible impacts of the creek have resulted, and exposure risks are minimal or non-existent, it is considered unnecessary and unwarranted to undertake any additional corrective measures at this time.

5.2.2 Pan-Lysimeter

Based on the results of the geotechnical testing, a review of the construction details, and groundwater elevation measurements in the various monitoring wells, the following conclusions were reached:

- The low-permeability clay layer exhibits geotechnical properties which are very comparable to those obtained during construction and, consequently, can be expected to be performing as originally designed.

- Water levels in the landfill materials and/or shallow bedrock (Power Glen) are below the elevation of the pan lysimeter and bottom of the excavation, and therefore could not be the cause of the higher than expected infiltration rates observed in the pan-lysimeter.

- The most probable cause of the increased infiltration rates appears to be groundwater in the sand drainage layer and/or surface water seeping into the area of the pan lysimeter through secondary permeability features as opposed to water infiltrating solely through the low permeability layer. These secondary features may include some or all of the following:

  - openings around the steel riser pipe;
  - desiccation cracks;
  - sand stringers which penetrate the low-permeability layer; and,
  - preferential pathways along excavation interfaces

In summary, it appears that the low-permeability layer in particular, and the landfill cap in general, are functioning as designed. Furthermore, the higher than expected infiltration rates observed in the pan-lysimeter are not indicative of a failure of the capping system, but are more likely the result of other factors associated with the design and/or construction of the pan-lysimeter installation.

6.0 RECOMMENDATIONS

6.1 Corrective Measures

Based on evaluation of existing site conditions and the potential corrective measures, it is recommended that the No Further Action alternative be implemented at the site.

6.2 Pan-Lysimeter

In regards to the pan-lysimeter it is recommended that its use as a monitor of landfill cap performance be discontinued due to the probable erroneous nature of the data.

6.3 Monitoring

It is recommended that a Compliance Monitoring Program for the site be developed in consultation with the NYSDEC.

APPENDIX A

ANALYTICAL DATA SUMMARY TABLES WELLS - VDM -9, -10, -11, -14 AND D-55 (PREPARED BY VDM)

KEY TO ANALYTICAL SUMMARY TABLES

Columns

#1 (no label)	Number of quarterly monitoring events
#2 - sample	Parameter concentration in μg/L (ppb)
#3 - Exc. Con.	Exceedance concentration as specified in VDM's post-closure permit (μg/L)
#4 - Pro Std.	Groundwater protection concentration as specified in VDM's post closure permit (μg/L)
#5 - Up Lim.	Statistical Level of Confidence of 95%

Abbreviations

Total	Utilizing all data points
Before	Before capping of landfill
After	After capping of landfill
Mean	Arithmetic mean (average value)
N	Number of data points
STD	Population Standard Deviation
Sx	Standard Error
df	Degrees of Freedom

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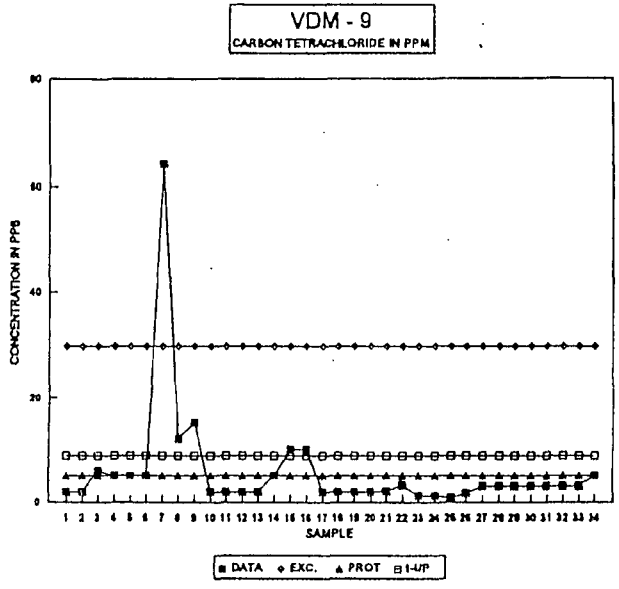
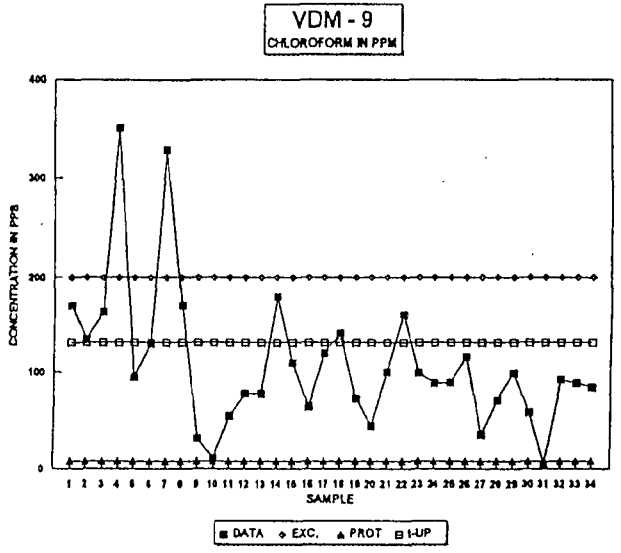
WELL VDM - 9 : CARBON TETRACHLORIDE

SAMPLE	EXC CON	PRO STD UP LIM		STATISTICS		STUDENT t TESTING	
1	2	30	5 9	TOTAL STD	10.63996	UPPER LIMIT	8.868987
2	2	30	5 9	TOTAL Sx	1.852179		
3	6	30	5 9	TOTAL MEAN	5.692353		
4	5	30	5 9	TOTAL N	34		
5	5	30	5 9	TOTAL df	33		
6	5	30	5 9				
7	64	30	5 9	BEFORE MEAN	12.71429	UPPER LIMIT	29.28529
8	12	30	5 9	BEFORE STD	20.98785		
9	15	30	5 9	BEFORE Sx	8.568253		
10	2	30	5 9	BEFORE N	7		
11	2	30	5 9	BEFORE df	6		
12	2	30	5 9				
13	2	30	5 9	AFTER MEAN	6.019286	UPPER LIMIT	9.8865
14	5	30	5 9	AFTER STD	11.67614		
15	10	30	5 9	AFTER Sx	2.247074		
16	10	30	5 9	AFTER N	28		
17	2	30	5 9	AFTER df	27		
18	2	30	5 9				
19	2	30	5 9				
20	2	30	5 9				
21	2.1	30	5 9				
22	3.2	30	5 9				
23	1.25	30	5 9				
24	1.26	30	5 9				
25	1	30	5 9				
26	1.73	30	5 9				
27	3	30	5 9				
28	3	30	5 9				
29	3	30	5 9				
30	3	30	5 9				
31	3	30	5 9				
32	3	30	5 9				
33	3	30	5 9				
34	5	30	5 9				



WELL VDM - 9 : CHLOROFORM

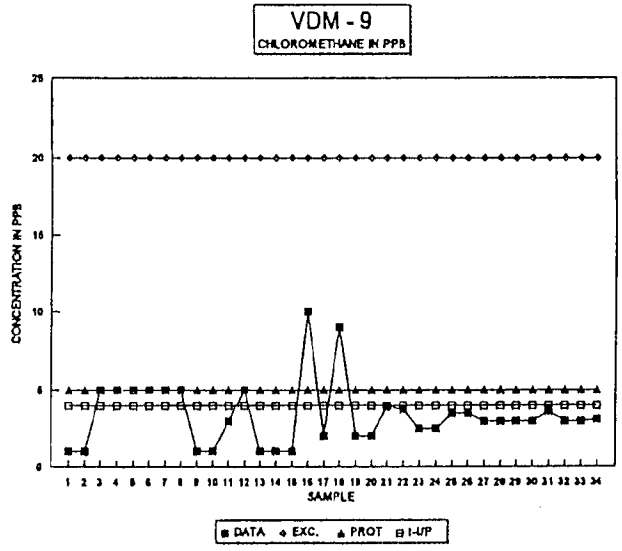
	SAMPLE	EXC CON	PRO STD	UP LIM	STATISTICS		STUDENT t TESTING	
1	169	200	8	131	TOTAL STD	72.09382	UPPER LIMIT	130.7378
2	134	200	8	131	TOTAL Sx	12.54989		
3	163	200	8	131	TOTAL MEAN	109.2647		
4	350	200	8	131	TOTAL N	34		
5	95	200	8	131	TOTAL df	33		
6	130	200	8	131				
7	328	200	8	131	BEFORE MEAN	195.5714	UPPER LIMIT	269.8362
8	170	200	8	131	BEFORE STD	93.62365		
9	32	200	8	131	BEFORE Sx	38.22169		
10	11	200	8	131	BEFORE N	7		
11	55	200	8	131	BEFORE df	6		
12	78	200	8	131				
13	78	200	8	131	AFTER MEAN	95.5	UPPER LIMIT	115.855
14	160	200	8	131	AFTER STD	61.45702		
15	110	200	8	131	AFTER Sx	11.62741		
16	65	200	8	131	AFTER N	28		
17	120	200	8	131	AFTER df	27		
18	140	200	8	131				
19	73	200	8	131				
20	45	200	8	131				
21	100	200	8	131				
22	160	200	8	131				
23	99.7	200	8	131				
24	89.1	200	8	131				
25	89.6	200	8	131				
26	116	200	8	131				
27	36	200	8	131				
28	71	200	8	131				
29	99	200	8	131				
30	59	200	8	131				
31	4	200	8	131				
32	93	200	8	131				
33	89	200	8	131				
34	84	200	8	131				



WELL VDM - 9 : CHLOROMETHANE

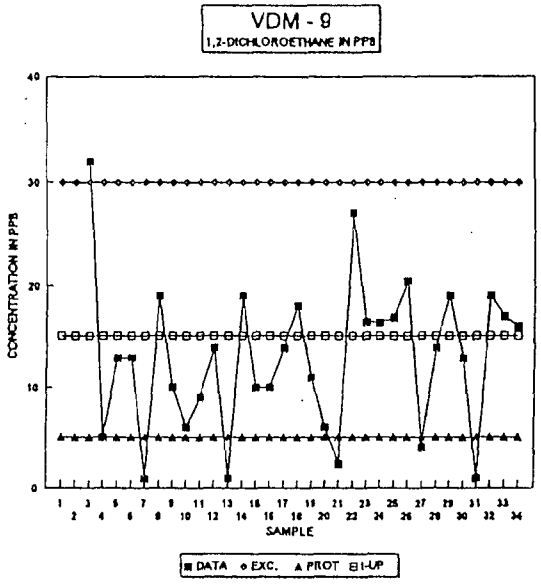
SAMPLE	EXC CON	PRO STD	UP LIM
1	20	5	4
2	20	5	4
3	20	5	4
4	20	5	4
5	20	5	4
6	20	5	4
7	20	5	4
8	20	5	4
9	20	5	4
10	20	5	4
11	20	5	4
12	20	5	4
13	20	5	4
14	20	5	4
15	20	5	4
16	20	5	4
17	20	5	4
18	20	5	4
19	20	5	4
20	20	5	4
21	20	5	4
22	20	5	4
23	20	5	4
24	20	5	4
25	20	5	4
26	20	5	4
27	20	5	4
28	20	5	4
29	20	5	4
30	20	5	4
31	20	5	4
32	20	5	4
33	20	5	4
34	20	5	4

STATISTICS		STUDENT t TESTING	
TOTAL STD	2.045226	UPPER LIMIT	3.970929
TOTAL Sx	0.350028		
TOTAL MEAN	3.361765		
TOTAL N	34		
TOTAL df	33		
BEFORE MEAN	3.057143	UPPER LIMIT	5.290516
BEFORE STD	1.807018		
BEFORE Sx	0.737711		
BEFORE N	7		
BEFORE df	6		
AFTER MEAN	3.296429	UPPER LIMIT	3.98269
AFTER STD	2.072004		
AFTER Sx	0.398757		
AFTER N	28		
AFTER df	27		



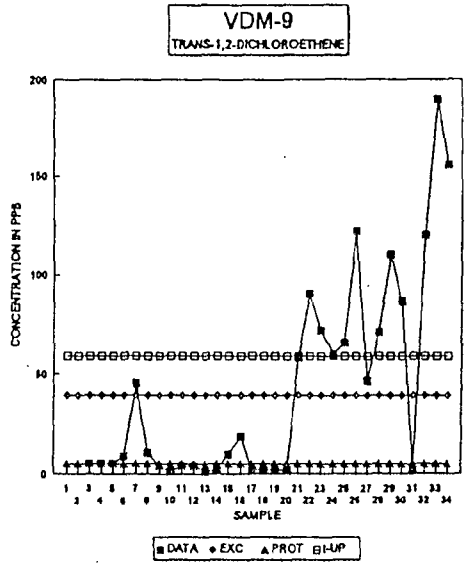
WELL VDM - 9 : 1,2-DICHLOROETHANE

	SAMPLE	EXC CON	PRO STD	UP LIM		STATISTICS		STUDENT t TESTING	
1		30	5	15	TOTAL STD	7.249914	UPPER LIMIT	15.18075	
2		30	5	15	TOTAL Sx	1.302123			
3	32	30	5	15	TOTAL MEAN	12.925			
4	5	30	5	15	TOTAL N	32			
5	13	30	5	15	TOTAL df	31			
6	13	30	5	15					
7	1	30	5	15	BEFORE MEAN	12.8	UPPER LIMIT	24.16878	
8	19	30	5	15	BEFORE STD	10.66583			
9	10	30	5	15	BEFORE Sx	5.332917			
10	6	30	5	15	BEFORE N	5			
11	9	30	5	15	BEFORE df	4			
12	14	30	5	15					
13	1	30	5	15	AFTER MEAN	12.52143	UPPER LIMIT	14.73504	
14	19	30	5	15	AFTER STD	6.883474			
15	10	30	5	15	AFTER Sx	1.286235			
16	10	30	5	15	AFTER N	28			
17	14	30	5	15	AFTER df	27			
18	18	30	5	15					
19	11	30	5	15					
20	8	30	5	15					
21	2.4	30	5	15					
22	27	30	5	15					
23	16.5	30	5	15					
24	16.4	30	5	15					
25	16.9	30	5	15					
26	20.4	30	5	15					
27	4	30	5	15					
28	14	30	5	15					
29	19	30	5	15					
30	13	30	5	15					
31	1	30	5	15					
32	19	30	5	15					
33	17	30	5	15					
34	16	30	5	15					



WELL VDM - 9 : TRANS-1,2-DICHLOROETHANE

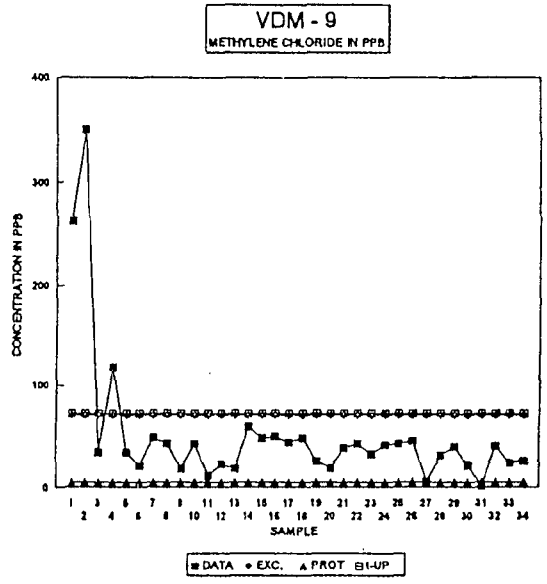
SAMPLE		EXC CON	PRO STD UP LIM		STATISTICS		STUDENT t TESTING	
1		40	5	59	TOTAL STD	51.3104	UPPER LIMIT	59.12947
2		40	5	59	TOTAL Sx	9.215619		
3	5	40	5	59	TOTAL MEAN	43.30625		
4	5	40	5	59	TOTAL N	32		
5	5	40	5	59	TOTAL df	31		
6	9	40	5	59				
7	46	40	5	59	BEFORE MEAN	14	UPPER LIMIT	31.13578
8	11	40	5	59	BEFORE STD	16.07463		
9	4	40	5	59	BEFORE Sx	8.037413		
10	1	40	5	59	BEFORE N	5		
11	4	40	5	59	BEFORE df	4		
12	4	40	5	59				
13	1	40	5	59	AFTER MEAN	48.63571	UPPER LIMIT	66.10262
14	2	40	5	59	AFTER STD	52.73719		
15	10	40	5	59	AFTER Sx	10.14928		
16	19	40	5	59	AFTER N	28		
17	2	40	5	59	AFTER df	27		
18	2	40	5	59				
19	2	40	5	59				
20	2	40	5	59				
21	58	40	5	59				
22	91	40	5	59				
23	71.8	40	5	59				
24	59.8	40	5	59				
25	65.7	40	5	59				
26	122	40	5	59				
27	47	40	5	59				
28	71	40	5	59				
29	110	40	5	59				
30	87	40	5	59				
31	3	40	5	59				
32	120	40	5	59				
33	190	40	5	59				
34	156	40	5	59				



WELL VDM - 9 : METHYLENE CHLORIDE

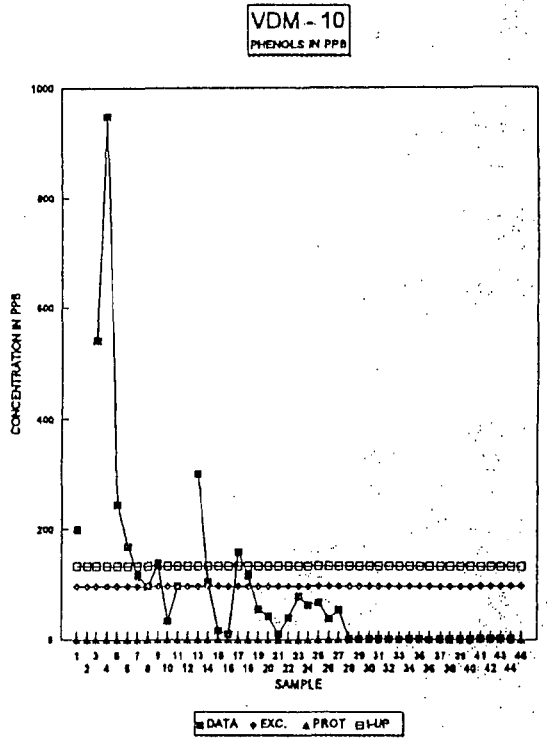
	SAMPLE	EXC CON	PRO STD	UP LIM
1	263	70	5	71
2	350	70	5	71
3	34	70	5	71
4	116	70	5	71
5	34	70	5	71
6	21	70	5	71
7	49	70	5	71
8	43	70	5	71
9	18	70	5	71
10	42	70	5	71
11	11	70	5	71
12	23	70	5	71
13	18	70	5	71
14	59	70	5	71
15	48	70	5	71
16	50	70	5	71
17	44	70	5	71
18	48	70	5	71
19	28	70	5	71
20	18	70	5	71
21	38	70	5	71
22	42	70	5	71
23	32	70	5	71
24	41.2	70	5	71
25	42.1	70	5	71
26	45.2	70	5	71
27	5.7	70	5	71
28	31	70	5	71
29	39	70	5	71
30	21	70	5	71
31	2	70	5	71
32	40	70	5	71
33	24	70	5	71
34	26	70	5	71

STATISTICS		STUDENT t TESTING	
TOTAL STD	67.54219	UPPER LIMIT	71.46135
TOTAL Sx	11.75759		
TOTAL MEAN	51.34412		
TOTAL N	34		
TOTAL df	33		
BEFORE MEAN	124.1429	UPPER LIMIT	220.301
BEFORE STD	121.224		
BEFORE Sx	49.4895		
BEFORE N	7		
BEFORE df	6		
AFTER MEAN	33.06071	UPPER LIMIT	37.82238
AFTER STD	14.37073		
AFTER Sx	2.766802		
AFTER N	28		
AFTER df	27		



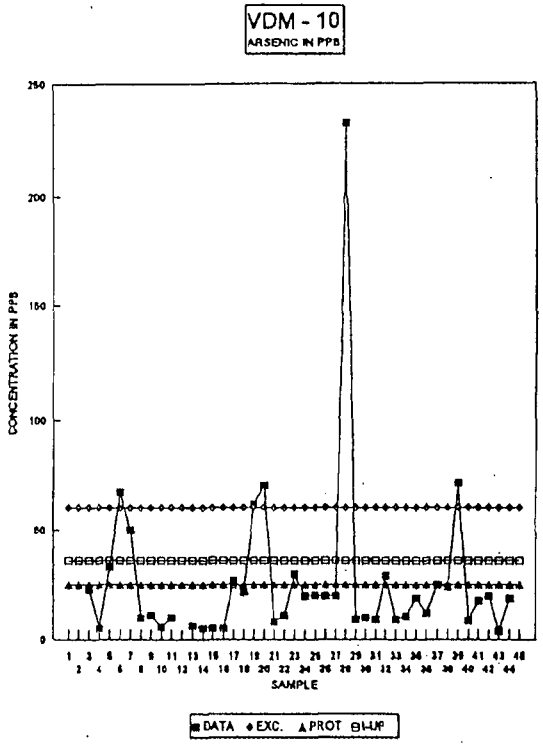
WELL VDM - 10 : PHENOLS

	SAMPLE	EXC CON	PRO STD	UP LIM	STATISTICS		STUDENT t TESTING	
1	200	100	1	136	TOTAL STD	168.4446	UPPER LIMIT	135.7378
2		100	1	136	TOTAL Sx	26.30663		
3	540	100	1	136	TOTAL MEAN	91.09524		
4	946	100	1	136	TOTAL N	42		
5	244	100	1	136	TOTAL df	41		
6	170	100	1	136				
7	120	100	1	136	BEFORE MEAN	232.3846	UPPER LIMIT	357.5484
8	100	100	1	136	BEFORE STD	243.311		
9	140	100	1	136	BEFORE Sx	70.23783		
10	36	100	1	136	BEFORE N	13		
11	100	100	1	136	BEFORE df	12		
12		100	1	136				
13	299	100	1	136	AFTER MEAN	30.03226	UPPER LIMIT	42.9015
14	108	100	1	136	AFTER STD	41.1968		
15	16	100	1	136	AFTER Sx	7.521472		
16	12	100	1	136	AFTER N	31		
17	160	100	1	136	AFTER df	30		
18	120	100	1	136				
19	59	100	1	136				
20	46	100	1	136				
21	11	100	1	136				
22	43	100	1	136				
23	81	100	1	136				
24	66	100	1	136				
25	70	100	1	136				
26	40	100	1	136				
27	56	100	1	136				
28	2	100	1	136				
29	2	100	1	136				
30	2	100	1	136				
31	3	100	1	136				
32	2	100	1	136				
33	2	100	1	136				
34	2.5	100	1	136				
35	2.5	100	1	136				
36	1	100	1	136				
37	2.5	100	1	136				
38	2.5	100	1	136				
39	2.5	100	1	136				
40	2.5	100	1	136				
41	2.5	100	1	136				
42	2.5	100	1	136				
43	2.5	100	1	136				
44	2.5	100	1	136				
45		100	1	136				



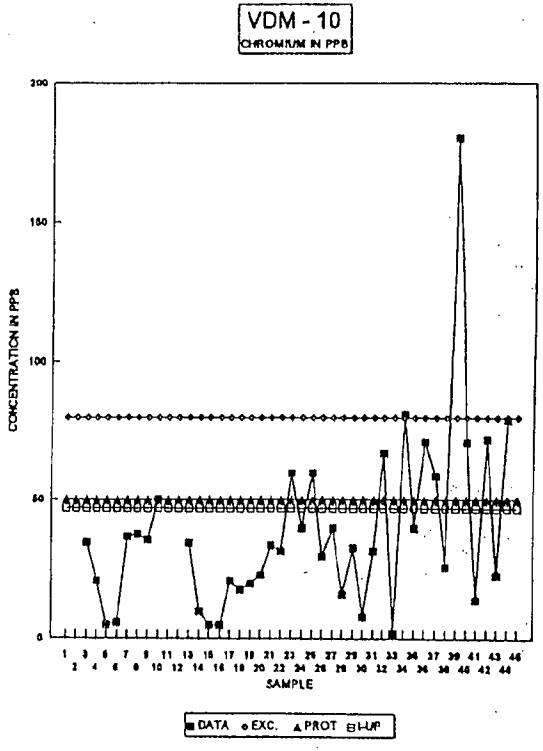
WELL VDM - 10 : ARSENIC

	SAMPLE	EXC CON	PRO STD	UP LIM	STATISTICS		STUDENT t TESTING	
1		60	25	36	TOTAL STD	37.14075	UPPER LIMIT	36.14119
2		60	25	36	TOTAL Sx	5.672488		
3	23	60	25	36	TOTAL MEAN	26.17561		
4	5	60	25	36	TOTAL N	41		
5	33	60	25	36	TOTAL df	40		
6	87	60	25	36				
7	50	60	25	36	BEFORE MEAN	19.20833	UPPER LIMIT	29.85857
8	10	60	25	36	BEFORE STD	19.86751		
9	11	60	25	36	BEFORE Sx	5.929976		
10	5.5	60	25	36	BEFORE N	12		
11	10	60	25	36	BEFORE df	11		
12		60	25	36				
13	6	60	25	36	AFTER MEAN	27.50645	UPPER LIMIT	40.32201
14	5	60	25	36	AFTER STD	41.02497		
15	5	60	25	36	AFTER Sx	7.490101		
16	5	60	25	36	AFTER N	31		
17	27	60	25	36	AFTER df	30		
18	22	60	25	36				
19	81	60	25	36				
20	70	60	25	36				
21	8	60	25	36				
22	11	60	25	36				
23	30	60	25	36				
24	20	60	25	36				
25	20	60	25	36				
26	20	60	25	36				
27	20	60	25	36				
28	232	60	25	36				
29	9	60	25	36				
30	10	60	25	36				
31	9	60	25	36				
32	29	60	25	36				
33	9	60	25	36				
34	10.5	60	25	36				
35	19	60	25	36				
36	12	60	25	36				
37	25	60	25	36				
38	24	60	25	36				
39	71	60	25	36				
40	8.4	60	25	36				
41	18	60	25	36				
42	20	60	25	36				
43	3.8	60	25	36				
44	19	60	25	36				
45		60	25	36				



WELL VDM - 10 : CHROMIUM

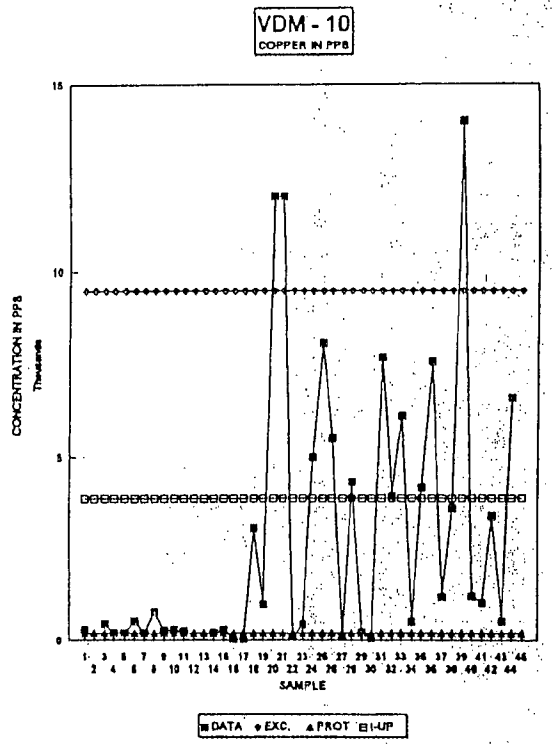
	SAMPLE	EXC CON	PRO STD	UP LIM	STATISTICS		STUDENT t TESTING	
1		80	50	47	TOTAL STD	31.58784	UPPER LIMIT	46.9786
2		80	50	47	TOTAL Sx	5.058102		
3	35	80	50	47	TOTAL MEAN	38.395		
4	21	80	50	47	TOTAL N	40		
5	5	80	50	47	TOTAL df	39		
6	6	80	50	47				
7	37	80	50	47	BEFORE MEAN	25.27273	UPPER LIMIT	34.03601
8	38	80	50	47	BEFORE STD	15.55104		
9	36	80	50	47	BEFORE Sx	4.917869		
10	50	80	50	47	BEFORE N	11		
11		80	50	47	BEFORE df	10		
12		80	50	47				
13	35	80	50	47	AFTER MEAN	41.05806	UPPER LIMIT	51.85685
14	10	80	50	47	AFTER STD	34.5753		
15	5	80	50	47	AFTER Sx	6.312558		
16	5	80	50	47	AFTER N	31		
17	21	80	50	47	AFTER df	30		
18	18	80	50	47				
19	20	80	50	47				
20	23	80	50	47				
21	34	80	50	47				
22	32	80	50	47				
23	60	80	50	47				
24	40	80	50	47				
25	60	80	50	47				
26	30	80	50	47				
27	40	80	50	47				
28	18	80	50	47				
29	33	80	50	47				
30	8	80	50	47				
31	32	80	50	47				
32	67	80	50	47				
33	2	80	50	47				
34	61.5	80	50	47				
35	40.1	80	50	47				
36	71.2	80	50	47				
37	59	80	50	47				
38	28	80	50	47				
39	180	80	50	47				
40	71	80	50	47				
41	14	80	50	47				
42	72	80	50	47				
43	23	80	50	47				
44	79	80	50	47				
45		80	50	47				



VDM01192

WELL VDM - 10 : COPPER

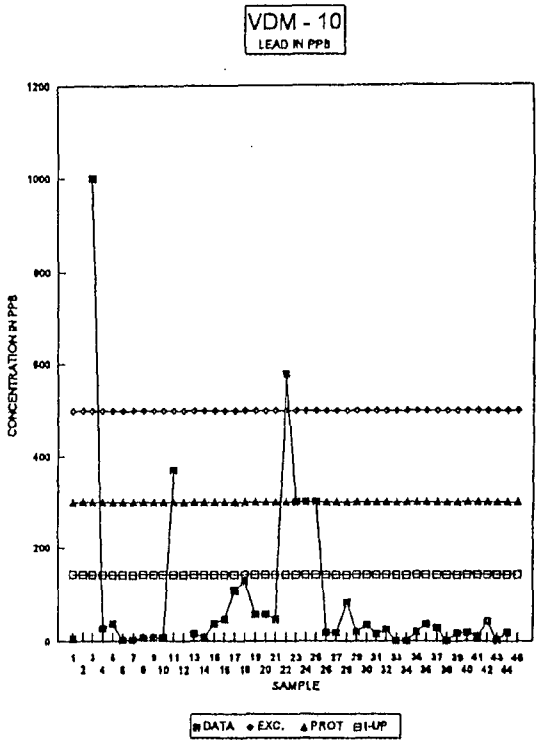
	SAMPLE	EXC CON	PRO STD	UP LIM	STATISTICS		STUDENT t TESTING	
1	290	9500	200	3855	TOTAL STD	3693.116	UPPER LIMIT	3855.471
2		9500	200	3855	TOTAL Sx	583.933		
3	450	9500	200	3855	TOTAL MEAN	2864.537		
4	200	9500	200	3855	TOTAL N	41		
5	200	9500	200	3855	TOTAL df	40		
6	510	9500	200	3855				
7	200	9500	200	3855	BEFORE MEAN	328.3333	UPPER LIMIT	417.685
8	780	9500	200	3855	BEFORE STD	164.9663		
9	270	9500	200	3855	BEFORE Sx	49.73922		
10	280	9500	200	3855	BEFORE N	12		
11	250	9500	200	3855	BEFORE df	11		
12		9500	200	3855				
13		9500	200	3855	AFTER MEAN	3677.935	UPPER LIMIT	4900.477
14	230	9500	200	3855	AFTER STD	3913.58		
15	280	9500	200	3855	AFTER Sx	714.5187		
16	35	9500	200	3855	AFTER N	31		
17	30	9500	200	3855	AFTER df	30		
18	3100	9500	200	3855				
19	990	9500	200	3855				
20	12000	9500	200	3855				
21	12000	9500	200	3855				
22	100	9500	200	3855				
23	430	9500	200	3855				
24	5000	9500	200	3855				
25	8100	9500	200	3855				
26	5500	9500	200	3855				
27	100	9500	200	3855				
28	4300	9500	200	3855				
29	215	9500	200	3855				
30	50	9500	200	3855				
31	7720	9500	200	3855				
32	3920	9500	200	3855				
33	6100	9500	200	3855				
34	498	9500	200	3855				
35	4160	9500	200	3855				
36	7600	9500	200	3855				
37	1200	9500	200	3855				
38	3600	9500	200	3855				
39	14000	9500	200	3855				
40	1220	9500	200	3855				
41	1030	9500	200	3855				
42	3400	9500	200	3855				
43	508	9500	200	3855				
44	6600	9500	200	3855				
45		9500	200	3855				



VDM01193

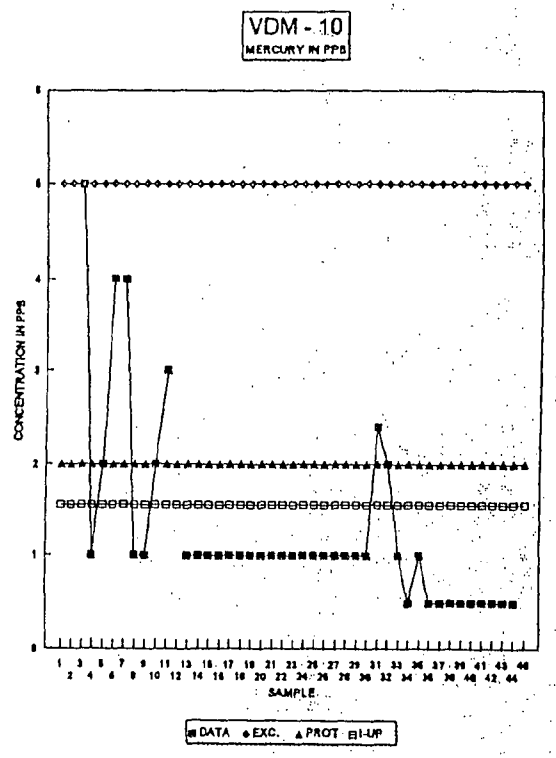
WELL VDM - 10 : LEAD

	SAMPLE	EXC CON	PRO STD	UP LIM	STATISTICS		STUDENT t TESTING	
1	7	500	300	143	TOTAL STD	185.033	UPPER LIMIT	142.6601
2		500	300	143	TOTAL Sx	28.6973		
3	1000	500	300	143	TOTAL MEAN	93.62143		
4	29	500	300	143	TOTAL N	42		
5	39	500	300	143	TOTAL df	41		
6	5	500	300	143				
7	5	500	300	143	BEFORE MEAN	119.2692	UPPER LIMIT	258.8212
8	8	500	300	143	BEFORE STD	271.2808		
9	10	500	300	143	BEFORE Sx	78.31201		
10	9.5	500	300	143	BEFORE N	13		
11	370	500	300	143	BEFORE df	12		
12		500	300	143				
13	18	500	300	143	AFTER MEAN	78.43871	UPPER LIMIT	117.1241
14	10	500	300	143	AFTER STD	123.8392		
15	40	500	300	143	AFTER Sx	22.60984		
16	50	500	300	143	AFTER N	31		
17	110	500	300	143	AFTER df	30		
18	130	500	300	143				
19	60	500	300	143				
20	60	500	300	143				
21	50	500	300	143				
22	580	500	300	143				
23	300	500	300	143				
24	300	500	300	143				
25	300	500	300	143				
26	20	500	300	143				
27	20	500	300	143				
28	84	500	300	143				
29	21	500	300	143				
30	37	500	300	143				
31	17	500	300	143				
32	26	500	300	143				
33	2	500	300	143				
34	2	500	300	143				
35	22	500	300	143				
36	37.4	500	300	143				
37	31	500	300	143				
38	2	500	300	143				
39	19	500	300	143				
40	20	500	300	143				
41	13	500	300	143				
42	45	500	300	143				
43	3.2	500	300	143				
44	20	500	300	143				
45		500	300	143				



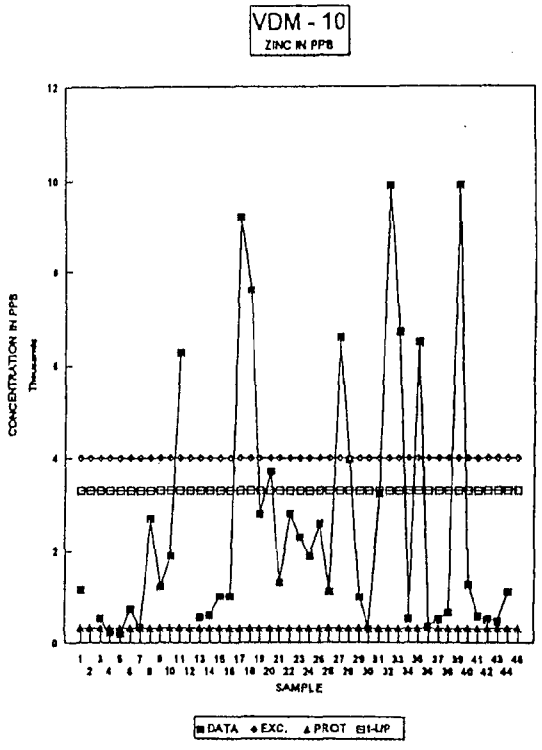
WELL VDM - 10 : MERCURY

	SAMPLE	EXC CON	PRO STD	UP LIM		STATISTICS		STUDENT t TESTING	
1		5	2	2	TOTAL STD	1.015613	UPPER LIMIT	1.550878	
2		5	2	2	TOTAL Sx	0.160582			
3	5	5	2	2	TOTAL MEAN	1.278049			
4	1	5	2	2	TOTAL N	41			
5	2	5	2	2	TOTAL df	40			
6	4	5	2	2					
7	4	5	2	2	BEFORE MEAN	2.166667	UPPER LIMIT	2.927147	
8	1	5	2	2	BEFORE STD	1.404358			
9	1	5	2	2	BEFORE Sx	0.42343			
10	2	5	2	2	BEFORE N	12			
11	3	5	2	2	BEFORE df	11			
12		5	2	2					
13	1	5	2	2	AFTER MEAN	0.916129	UPPER LIMIT	1.044585	
14	1	5	2	2	AFTER STD	0.411211			
15	1	5	2	2	AFTER Sx	0.075077			
16	1	5	2	2	AFTER N	31			
17	1	5	2	2	AFTER df	30			
18	1	5	2	2					
19	1	5	2	2					
20	1	5	2	2					
21	1	5	2	2					
22	1	5	2	2					
23	1	5	2	2					
24	1	5	2	2					
25	1	5	2	2					
26	1	5	2	2					
27	1	5	2	2					
28	1	5	2	2					
29	1	5	2	2					
30	1	5	2	2					
31	2.4	5	2	2					
32	2	5	2	2					
33	1	5	2	2					
34	0.5	5	2	2					
35	1	5	2	2					
36	0.5	5	2	2					
37	0.5	5	2	2					
38	0.5	5	2	2					
39	0.5	5	2	2					
40	0.5	5	2	2					
41	0.5	5	2	2					
42	0.5	5	2	2					
43	0.5	5	2	2					
44	0.5	5	2	2					
45		5	2	2					



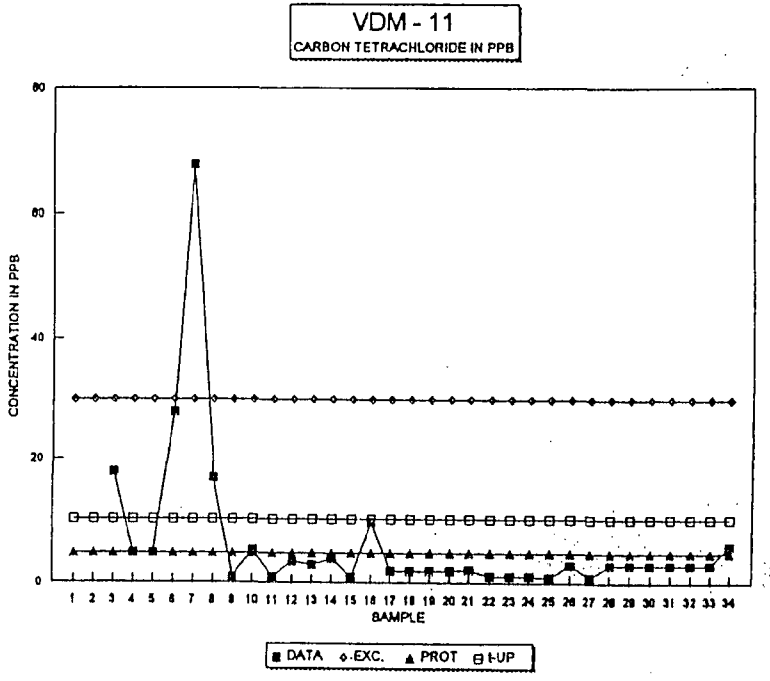
WELL VDM - 10 : ZINC

	SAMPLE	EXC CON	PRO STD	UP LIM	STATISTICS		STUDENT t TESTING	
1	1140	4000	300	3303	TOTAL STD	2804.727	UPPER LIMIT	3302.804
2		4000	300	3303	TOTAL Sx	438.0248		
3	510	4000	300	3303	TOTAL MEAN	2559.476		
4	200	4000	300	3303	TOTAL N	42		
5	180	4000	300	3303	TOTAL df	41		
6	700	4000	300	3303				
7	320	4000	300	3303	BEFORE MEAN	1326.923	UPPER LIMIT	2143.307
8	2700	4000	300	3303	BEFORE STD	1587.002		
9	1200	4000	300	3303	BEFORE Sx	458.128		
10	1900	4000	300	3303	BEFORE N	13		
11	6280	4000	300	3303	BEFORE df	12		
12		4000	300	3303				
13	540	4000	300	3303	AFTER MEAN	2982.194	UPPER LIMIT	3899.724
14	560	4000	300	3303	AFTER STD	3001.207		
15	1000	4000	300	3303	AFTER Sx	547.943		
16	1000	4000	300	3303	AFTER N	31		
17	9200	4000	300	3303	AFTER df	30		
18	7600	4000	300	3303				
19	2800	4000	300	3303				
20	3700	4000	300	3303				
21	1300	4000	300	3303				
22	2600	4000	300	3303				
23	2300	4000	300	3303				
24	1900	4000	300	3303				
25	2600	4000	300	3303				
26	1100	4000	300	3303				
27	6600	4000	300	3303				
28	3960	4000	300	3303				
29	990	4000	300	3303				
30	280	4000	300	3303				
31	3240	4000	300	3303				
32	9900	4000	300	3303				
33	6700	4000	300	3303				
34	517	4000	300	3303				
35	6500	4000	300	3303				
36	340	4000	300	3303				
37	500	4000	300	3303				
38	640	4000	300	3303				
39	9900	4000	300	3303				
40	1260	4000	300	3303				
41	560	4000	300	3303				
42	500	4000	300	3303				
43	451	4000	300	3303				
44	1100	4000	300	3303				
45		4000	300	3303				



WELL VDM - 11 : CARBON TETRACHLORIDE

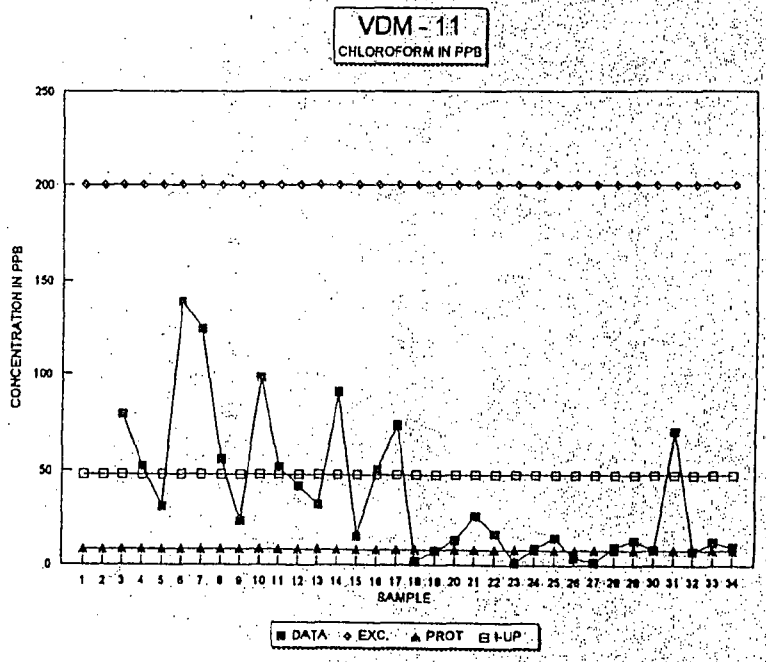
	SAMPLE	EXC CON	PRO STD	UP LIM	STATISTICS		STUDENT t TESTING	
1		30	5	10	TOTAL STD	12.42827	UPPER LIMIT	10.48422
2		30	5	10	TOTAL Sx	2.232184		
3	18	30	5	10	TOTAL MEAN	6.651563		
4	5	30	5	10	TOTAL N	32		
5	5	30	5	10	TOTAL df	31		
6	27.8	30	5	10				
7	68	30	5	10	BEFORE MEAN	24.76	UPPER LIMIT	49.55706
8	17	30	5	10	BEFORE STD	23.26178		
9	1	30	5	10	BEFORE Sx	11.63089		
10	5.5	30	5	10	BEFORE N	5		
11	1	30	5	10	BEFORE df	4		
12	3.5	30	5	10				
13	3	30	5	10	AFTER MEAN	6.374138	UPPER LIMIT	10.55146
14	4	30	5	10	AFTER STD	12.8738		
15	1	30	5	10	AFTER Sx	2.43292		
16	10	30	5	10	AFTER N	29		
17	2	30	5	10	AFTER df	28		
18	2	30	5	10				
19	2	30	5	10				
20	2	30	5	10				
21	2.2	30	5	10				
22	1.2	30	5	10				
23	1.25	30	5	10				
24	1.25	30	5	10				
25	1	30	5	10				
26	3	30	5	10				
27	1	30	5	10				
28	3	30	5	10				
29	3	30	5	10				
30	3	30	5	10				
31	3	30	5	10				
32	3	30	5	10				
33	3	30	5	10				
34	6.15	30	5	10				



WELL VDM - 11 : CHLOROFORM

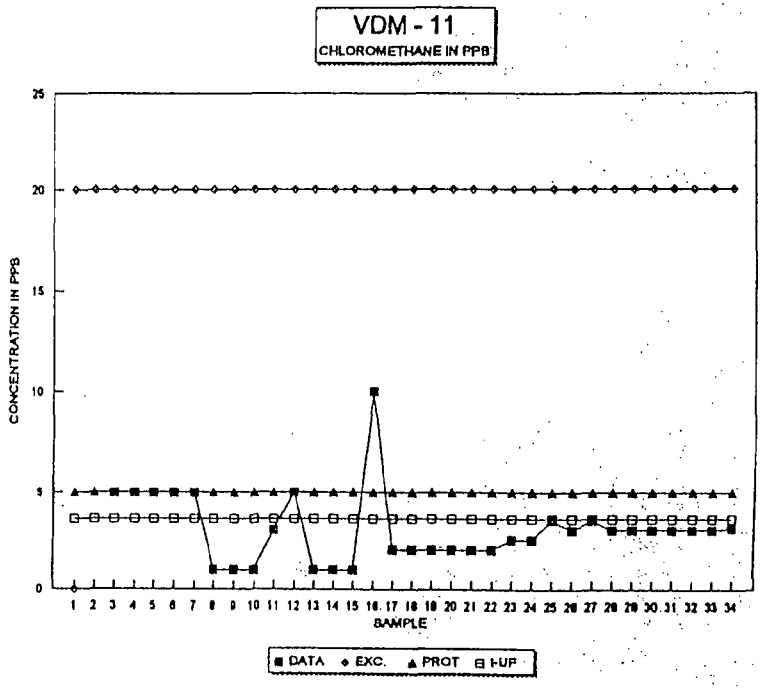
	SAMPLE	EXC CON	PRO STD	UP LIM
1		200	8	48
2		200	8	48
3	79.2	200	8	48
4	52.2	200	8	48
5	30.7	200	8	48
6	138	200	8	48
7	123	200	8	48
8	56	200	8	48
9	23	200	8	48
10	98	200	8	48
11	52	200	8	48
12	42	200	8	48
13	32	200	8	48
14	91	200	8	48
15	15	200	8	48
16	51	200	8	48
17	74	200	8	48
18	2	200	8	48
19	7.4	200	8	48
20	13	200	8	48
21	26	200	8	48
22	16	200	8	48
23	1.25	200	8	48
24	8.55	200	8	48
25	14.3	200	8	48
26	4	200	8	48
27	1.58	200	8	48
28	9.2	200	8	48
29	13	200	8	48
30	8.4	200	8	48
31	71	200	8	48
32	7.1	200	8	48
33	12	200	8	48
34	9.6	200	8	48

STATISTICS		STUDENT t TESTING	
TOTAL STD	36.6335	UPPER LIMIT	46.21837
TOTAL Sx	6.579571		
TOTAL MEAN	36.92125		
TOTAL N	32		
TOTAL df	31		
BEFORE MEAN	84.62	UPPER LIMIT	128.0789
BEFORE STD	40.76824		
BEFORE Sx	20.38412		
BEFORE N	5		
BEFORE df	4		
AFTER MEAN	35.15103	UPPER LIMIT	47.32102
AFTER STD	37.50582		
AFTER Sx	7.087935		
AFTER N	29		
AFTER df	28		



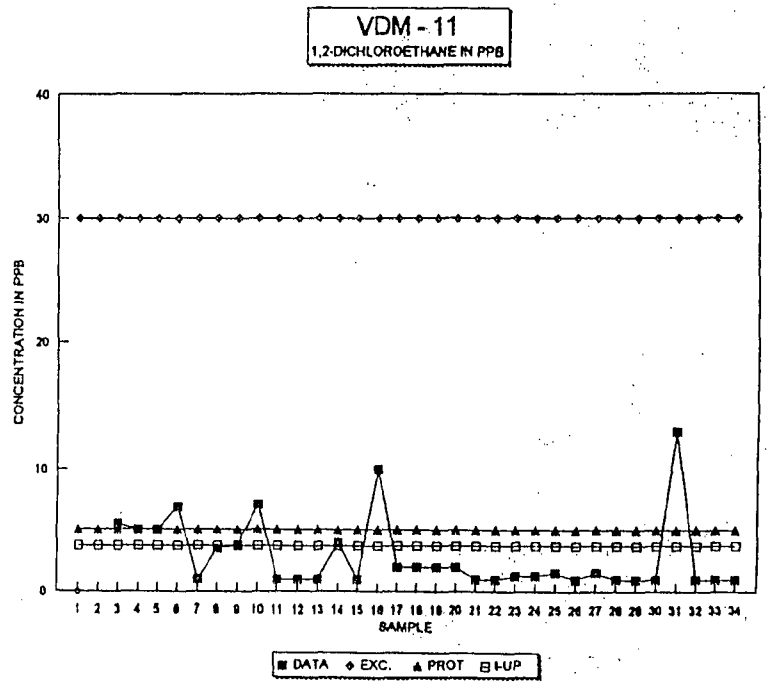
WELL VDM - 11 : CHLOROMETHANE

	SAMPLE	EXC CON	PRO STD	UP LIM	STATISTICS		STUDENT t TESTING	
1		20	5	4	TOTAL STD	1.802535	UPPER LIMIT	3.590245
2		20	5	4	TOTAL Sx	0.323745		
3	5	20	5	4	TOTAL MEAN	3.034375		
4	5	20	5	4	TOTAL N	32		
5	5	20	5	4	TOTAL df	31		
6	5	20	5	4				
7	5	20	5	4	BEFORE MEAN	5	UPPER LIMIT	5
8	1	20	5	4	BEFORE STD	0		
9	1	20	5	4	BEFORE Sx	0		
10	1	20	5	4	BEFORE N	5		
11	3	20	5	4	BEFORE df	4		
12	5	20	5	4				
13	1	20	5	4	AFTER MEAN	2.831034	UPPER LIMIT	3.406404
14	1	20	5	4	AFTER STD	1.773192		
15	1	20	5	4	AFTER Sx	0.335102		
16	10	20	5	4	AFTER N	29		
17	2	20	5	4	AFTER df	28		
18	2	20	5	4				
19	2	20	5	4				
20	2	20	5	4				
21	2	20	5	4				
22	2	20	5	4				
23	2.5	20	5	4				
24	2.5	20	5	4				
25	3.5	20	5	4				
26	3	20	5	4				
27	3.5	20	5	4				
28	3	20	5	4				
29	3	20	5	4				
30	3	20	5	4				
31	3	20	5	4				
32	3	20	5	4				
33	3	20	5	4				
34	3.1	20	5	4				



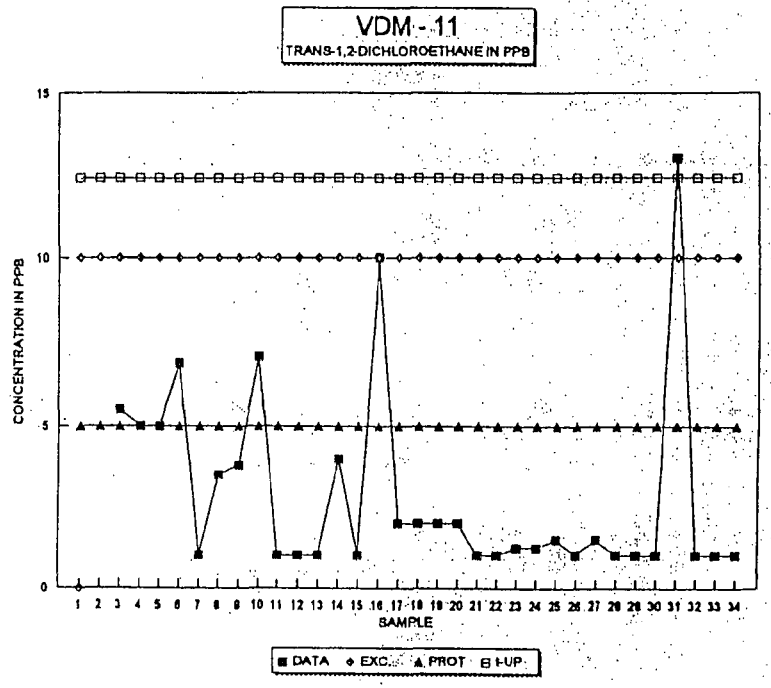
WELL VDM - 11 : 1,2-DICHLOROETHANE

	SAMPLE	EXC CON	PRO STD	UP LIM	STATISTICS		STUDENT t TESTING	
1		30	5	4	TOTAL STD	2.889067	UPPER LIMIT	3.744062
2		30	5	4	TOTAL Sx	0.516892		
3	5.5	30	5	4	TOTAL MEAN	2.853125		
4	5	30	5	4	TOTAL N	32		
5	5	30	5	4	TOTAL df	31		
6	6.9	30	5	4				
7	1	30	5	4	BEFORE MEAN	4.68	UPPER LIMIT	6.77696
8	3.5	30	5	4	BEFORE STD	1.96713		
9	3.8	30	5	4	BEFORE Sx	0.983565		
10	7.1	30	5	4	BEFORE N	5		
11	1	30	5	4	BEFORE df	4		
12	1	30	5	4				
13	1	30	5	4	AFTER MEAN	2.613793	UPPER LIMIT	3.564999
14	4	30	5	4	AFTER STD	2.931455		
15	1	30	5	4	AFTER Sx	0.553993		
16	10	30	5	4	AFTER N	29		
17	2	30	5	4	AFTER df	28		
18	2	30	5	4				
19	2	30	5	4				
20	2	30	5	4				
21	1	30	5	4				
22	1	30	5	4				
23	1.25	30	5	4				
24	1.25	30	5	4				
25	1.5	30	5	4				
26	1	30	5	4				
27	1.5	30	5	4				
28	1	30	5	4				
29	1	30	5	4				
30	1	30	5	4				
31	13	30	5	4				
32	1	30	5	4				
33	1	30	5	4				
34	1	30	5	4				



WELL VDM - 11 : TRANS-1,2-DICHLOROETHANE

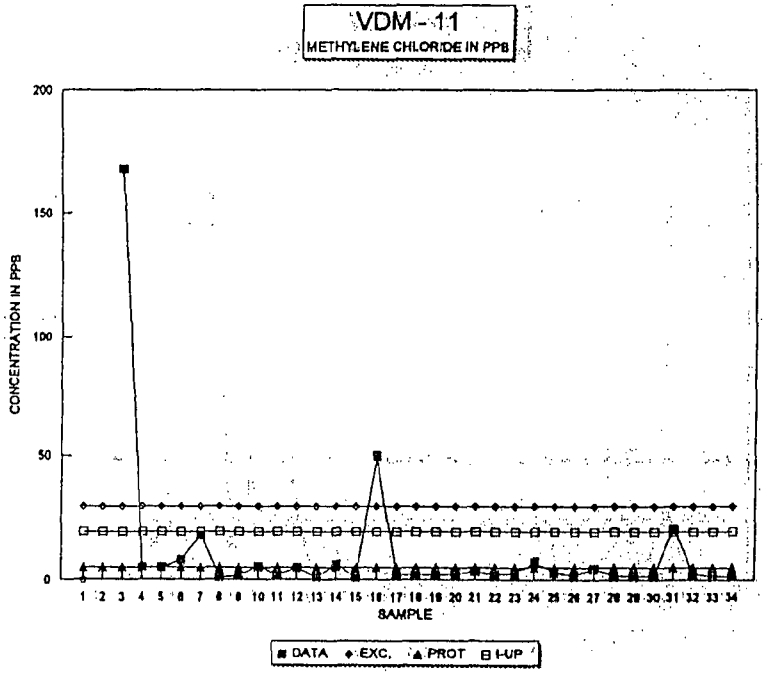
	SAMPLE	EXC CON	PRO STD	UP LIM	STATISTICS		STUDENT t TESTING	
1		10	5	12	TOTAL STD	20.548	UPPER LIMIT	12.38977
2		10	5	12	TOTAL Sx	3.69053		
3	5	10	5	12	TOTAL MEAN	6.053125		
4	5	10	5	12	TOTAL N	32		
5	5	10	5	12	TOTAL df	31		
6	5	10	5	12				
7	1	10	5	12	BEFORE MEAN	4.2	UPPER LIMIT	5.9056
8	2.1	10	5	12	BEFORE STD	1.6		
9	1	10	5	12	BEFORE Sx	0.8		
10	1	10	5	12	BEFORE N	5		
11	1	10	5	12	BEFORE df	4		
12	1.5	10	5	12				
13	1	10	5	12	AFTER MEAN	6.162069	UPPER LIMIT	13.16497
14	1	10	5	12	AFTER STD	21.58175		
15	1	10	5	12	AFTER Sx	4.078567		
16	10	10	5	12	AFTER N	29		
17	2	10	5	12	AFTER df	28		
18	2	10	5	12				
19	2	10	5	12				
20	2	10	5	12				
21	1	10	5	12				
22	1	10	5	12				
23	1.25	10	5	12				
24	1.25	10	5	12				
25	1.5	10	5	12				
26	2.5	10	5	12				
27	1.5	10	5	12				
28	2.5	10	5	12				
29	2.5	10	5	12				
30	2.5	10	5	12				
31	120	10	5	12				
32	2.5	10	5	12				
33	2.6	10	5	12				
34	2.5	10	5	12				



VDM01201

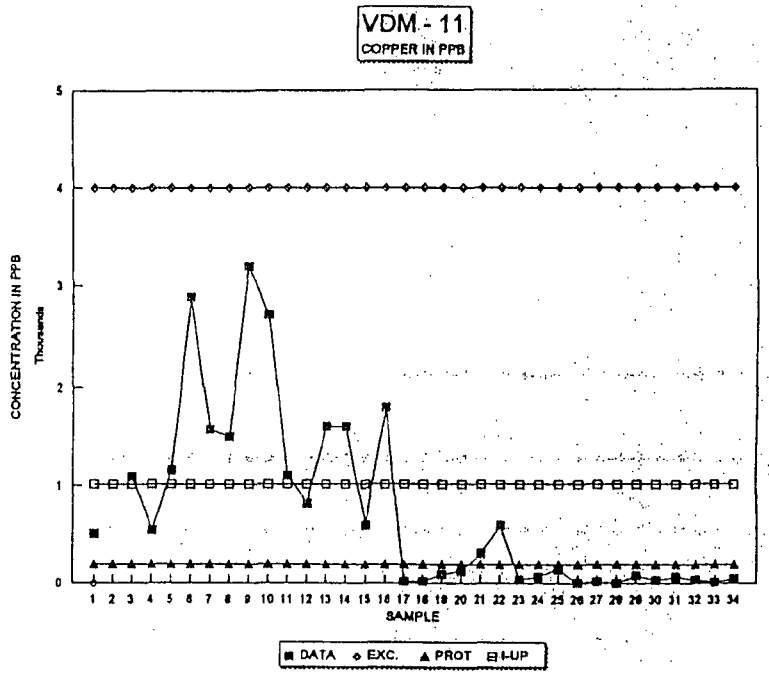
WELL VDM - 11 : METHYLENE CHLORIDE

	SAMPLE	EXC CON	PRO STD	UP LIM	STATISTICS		STUDENT t TESTING	
1		30	5	20	TOTAL STD	29.70364	UPPER LIMIT	19.78164
2		30	5	20	TOTAL Sx	5.334931		
3	168	30	5	20	TOTAL MEAN	10.62156		
4	5	30	5	20	TOTAL N	32		
5	5	30	5	20	TOTAL df	31		
6	7.8	30	5	20				
7	18.3	30	5	20	BEFORE MEAN	40.82	UPPER LIMIT	106.8077
8	1	30	5	20	BEFORE STD	63.77832		
9	1.7	30	5	20	BEFORE Sx	31.88916		
10	5.1	30	5	20	BEFORE N	5		
11	2	30	5	20	BEFORE df	4		
12	4.8	30	5	20				
13	1	30	5	20	AFTER MEAN	5.582414	UPPER LIMIT	8.693704
14	6	30	5	20	AFTER STD	9.588469		
15	1	30	5	20	AFTER Sx	1.81205		
16	50	30	5	20	AFTER N	29		
17	2	30	5	20	AFTER df	28		
18	2	30	5	20				
19	2	30	5	20				
20	2.5	30	5	20				
21	3.4	30	5	20				
22	2	30	5	20				
23	2.5	30	5	20				
24	7.16	30	5	20				
25	3	30	5	20				
26	1.5	30	5	20				
27	4.43	30	5	20				
28	1.5	30	5	20				
29	1.5	30	5	20				
30	1.5	30	5	20				
31	21	30	5	20				
32	2.2	30	5	20				
33	1.5	30	5	20				
34	1.5	30	5	20				



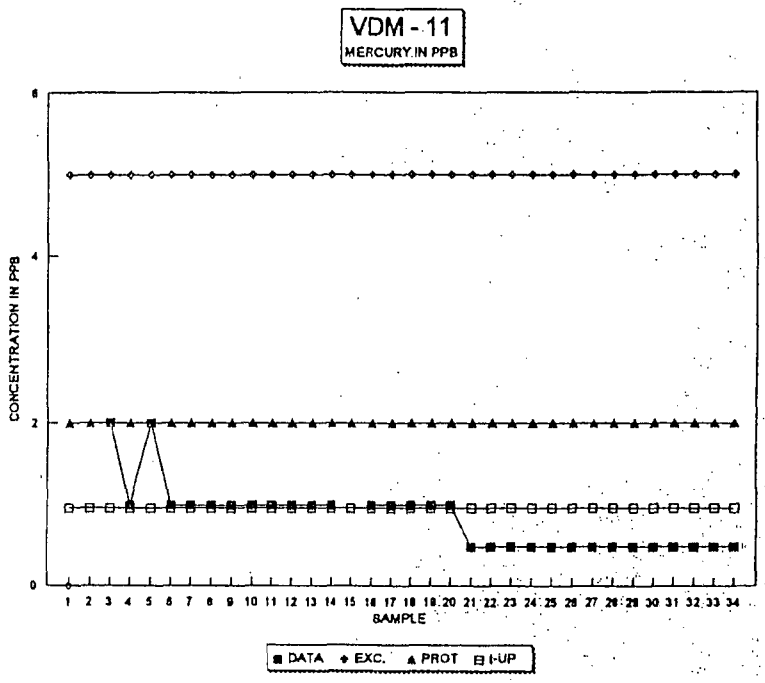
WELL VDM - 11 : COPPER

	SAMPLE	EXC CON	PRO STD	UP LIM	STATISTICS		STUDENT t TESTING	
1	510	4000	200	1013	TOTAL STD	899.2264	UPPER LIMIT	1012.672
2		4000	200	1013	TOTAL Sx	156.9623		
3	1090	4000	200	1013	TOTAL MEAN	739.7333		
4	550	4000	200	1013	TOTAL N	33		
5	1150	4000	200	1013	TOTAL df	32		
6	2880	4000	200	1013				
7	1570	4000	200	1013	BEFORE MEAN	1291.667	UPPER LIMIT	2010.891
8	1500	4000	200	1013	BEFORE STD	798.1315		
9	3200	4000	200	1013	BEFORE Sx	356.9353		
10	2700	4000	200	1013	BEFORE N	6		
11	1100	4000	200	1013	BEFORE df	5		
12	820	4000	200	1013				
13	1600	4000	200	1013	AFTER MEAN	727.9724	UPPER LIMIT	1037.702
14	1600	4000	200	1013	AFTER STD	952.3161		
15	600	4000	200	1013	AFTER Sx	179.9708		
16	1800	4000	200	1013	AFTER N	29		
17	19	4000	200	1013	AFTER df	28		
18	21	4000	200	1013				
19	90	4000	200	1013				
20	130	4000	200	1013				
21	310	4000	200	1013				
22	600	4000	200	1013				
23	35.5	4000	200	1013				
24	66.7	4000	200	1013				
25	150	4000	200	1013				
26	10	4000	200	1013				
27	20	4000	200	1013				
28	5	4000	200	1013				
29	80	4000	200	1013				
30	31	4000	200	1013				
31	68	4000	200	1013				
32	40	4000	200	1013				
33	15	4000	200	1013				
34	50	4000	200	1013				



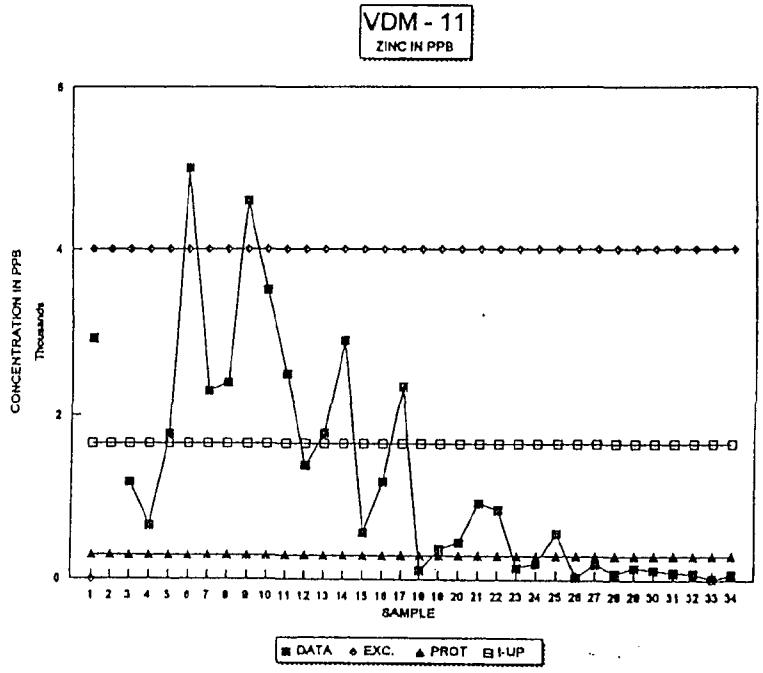
WELL VDM - 11 : MERCURY

	SAMPLE	EXC CON	PRO STD	UP LIM	STATISTICS		STUDENT t TESTING	
1		5	2	1	TOTAL STD	0.389108	UPPER LIMIT	0.961255
2		5	2	1	TOTAL Sx	0.071041		
3	2	5	2	1	TOTAL MEAN	0.83871		
4	1	5	2	1	TOTAL N	31		
5	2	5	2	1	TOTAL df	30		
6	1	5	2	1				
7	1	5	2	1	BEFORE MEAN	1.4	UPPER LIMIT	1.922231
8	1	5	2	1	BEFORE STD	0.489898		
9	1	5	2	1	BEFORE Sx	0.244949		
10	1	5	2	1	BEFORE N	5		
11	1	5	2	1	BEFORE df	4		
12	1	5	2	1				
13	1	5	2	1	AFTER MEAN	0.75	UPPER LIMIT	0.832802
14	1	5	2	1	AFTER STD	0.25		
15		5	2	1	AFTER Sx	0.046113		
16	1	5	2	1	AFTER N	28		
17	1	5	2	1	AFTER df	27		
18	1	5	2	1				
19	1	5	2	1				
20	1	5	2	1				
21	0.5	5	2	1				
22	0.5	5	2	1				
23	0.5	5	2	1				
24	0.5	5	2	1				
25	0.5	5	2	1				
26	0.5	5	2	1				
27	0.5	5	2	1				
28	0.5	5	2	1				
29	0.5	5	2	1				
30	0.5	5	2	1				
31	0.5	5	2	1				
32	0.5	5	2	1				
33	0.5	5	2	1				
34	0.5	5	2	1				



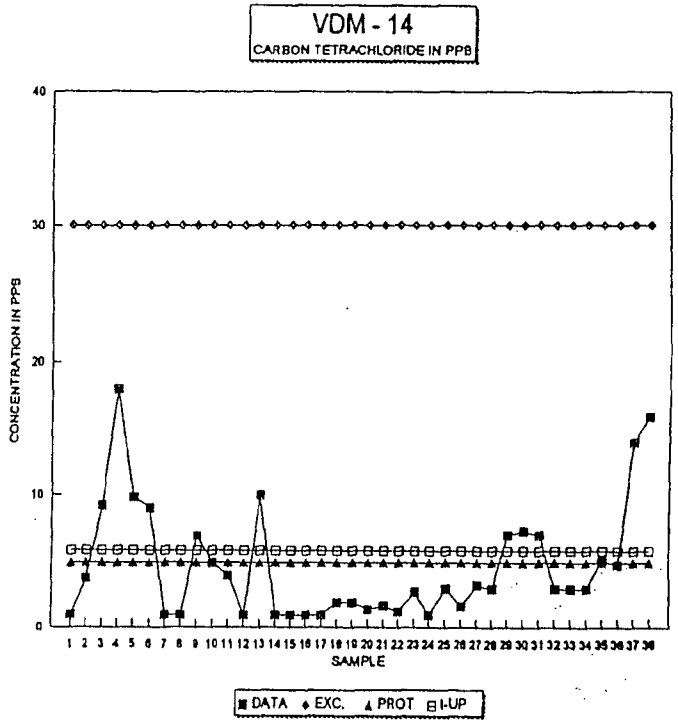
WELL VDM - 11 : ZINC

	SAMPLE	EXC CON	PRO STD	UP LIM	STATISTICS		STUDENT t TESTING	
1	2920	4000	300	1669	TOTAL STD	1352.039	UPPER LIMIT	1669.166
2		4000	300	1669	TOTAL Sx	239.0089		
3	1190	4000	300	1669	TOTAL MEAN	1258.788		
4	660	4000	300	1669	TOTAL N	33		
5	1780	4000	300	1669	TOTAL df	32		
6	5000	4000	300	1669				
7	2300	4000	300	1669	BEFORE MEAN	2308.333	UPPER LIMIT	3575.6
8	2400	4000	300	1669	BEFORE STD	1406.3		
9	4600	4000	300	1669	BEFORE Sx	628.9166		
10	3500	4000	300	1669	BEFORE N	6		
11	2500	4000	300	1669	BEFORE df	5		
12	1400	4000	300	1669				
13	1800	4000	300	1669	AFTER MEAN	1206.552	UPPER LIMIT	1660.87
14	2900	4000	300	1669	AFTER STD	1400.13		
15	580	4000	300	1669	AFTER Sx	264.5998		
16	1200	4000	300	1669	AFTER N	29		
17	2350	4000	300	1669	AFTER df	28		
18	110	4000	300	1669				
19	370	4000	300	1669				
20	460	4000	300	1669				
21	940	4000	300	1669				
22	850	4000	300	1669				
23	145	4000	300	1669				
24	197	4000	300	1669				
25	570	4000	300	1669				
26	30	4000	300	1669				
27	190	4000	300	1669				
28	75	4000	300	1669				
29	145	4000	300	1669				
30	120	4000	300	1669				
31	88	4000	300	1669				
32	80	4000	300	1669				
33	20	4000	300	1669				
34	70	4000	300	1669				



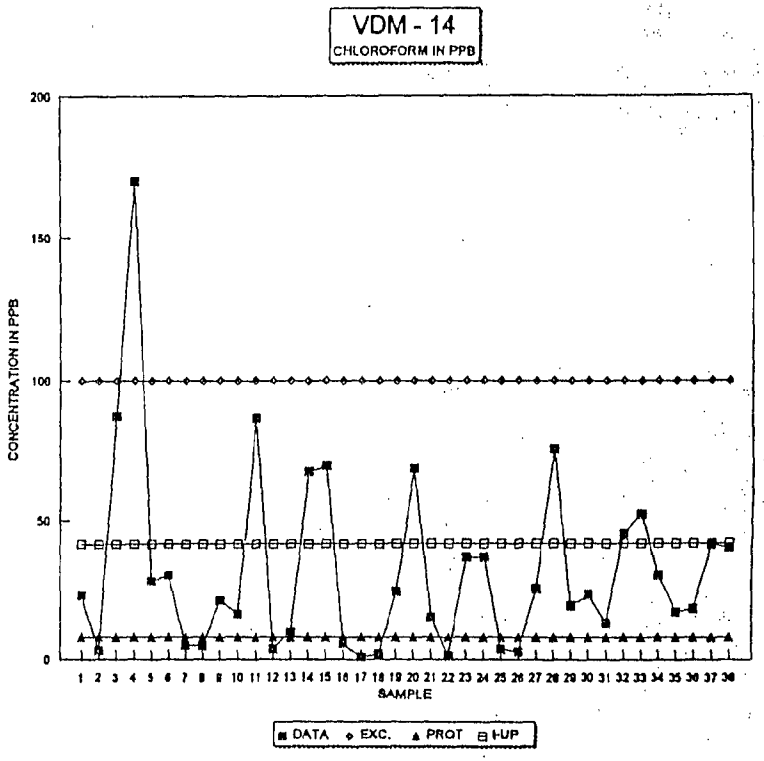
WELL VDM - 14 : CARBON TETRACHLORIDE

	SAMPLE	EXC CON	PRO STD	UP LIM		STATISTICS		STUDENT t TESTING	
1	1	30	5	6	TOTAL STD	4.317283	UPPER LIMIT	5.887863	
2	3.8	30	5	6	TOTAL Sx	0.709757			
3	9.2	30	5	6	TOTAL MEAN	4.669211			
4	18	30	5	6	TOTAL N	38			
5	9.8	30	5	6	TOTAL df	37			
6	9	30	5	6					
7	1	30	5	6	BEFORE MEAN	7.4	UPPER LIMIT	11.83478	
8	1	30	5	6	BEFORE STD	5.590809			
9	7	30	5	6	BEFORE Sx	2.282438			
10	5	30	5	6	BEFORE N	7			
11	4	30	5	6	BEFORE df	6			
12	1	30	5	6					
13	10	30	5	6	AFTER MEAN	3.957188	UPPER LIMIT	5.09885	
14	1	30	5	6	AFTER STD	3.684931			
15	1	30	5	6	AFTER Sx	0.661833			
16	1	30	5	6	AFTER N	32			
17	1	30	5	6	AFTER df	31			
18	2	30	5	6					
19	2	30	5	6					
20	1.4	30	5	6					
21	1.7	30	5	6					
22	1.25	30	5	6					
23	2.81	30	5	6					
24	1	30	5	6					
25	3	30	5	6					
26	1.67	30	5	6					
27	3.3	30	5	6					
28	3	30	5	6					
29	7.1	30	5	6					
30	7.4	30	5	6					
31	7.1	30	5	6					
32	3	30	5	6					
33	3	30	5	6					
34	3	30	5	6					
35	5.1	30	5	6					
36	4.8	30	5	6					
37	14	30	5	6					
38	16	30	5	6					



WELL VDM - 14 : CHLOROFORM

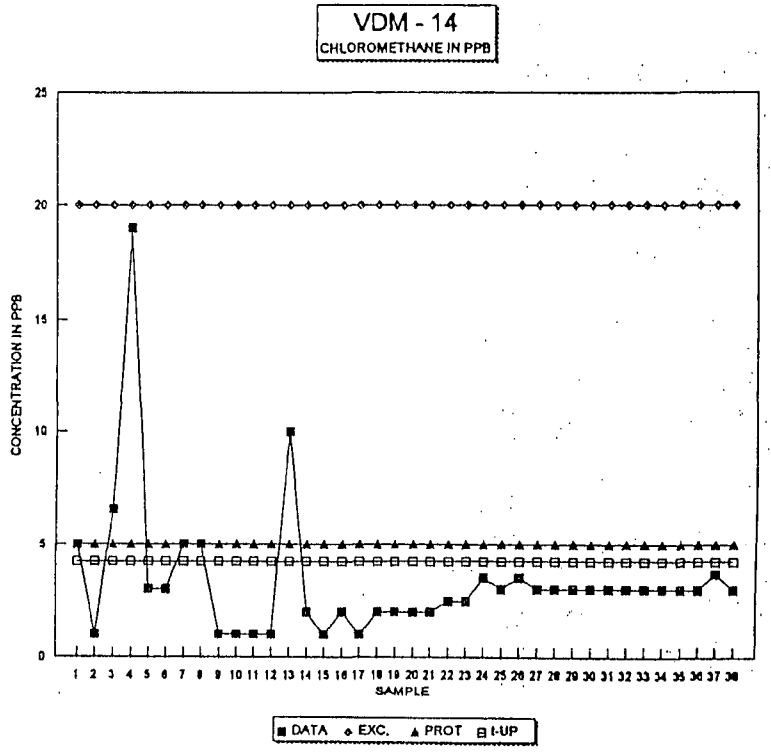
	SAMPLE	EXC CON	PRO STD	UP LIM	STATISTICS		STUDENT t TESTING	
1	22.7	100	8	41	TOTAL STD	33.27276	UPPER LIMIT	41.49069
2	3.2	100	8	41	TOTAL Sx	5.470006		
3	87	100	8	41	TOTAL MEAN	32.09868		
4	170	100	8	41	TOTAL N	38		
5	28	100	8	41	TOTAL df	37		
6	30	100	8	41				
7	5.2	100	8	41	BEFORE MEAN	49.44286	UPPER LIMIT	93.49922
8	5.1	100	8	41	BEFORE STD	55.54071		
9	21	100	8	41	BEFORE Sx	22.6744		
10	16	100	8	41	BEFORE N	7		
11	86	100	8	41	BEFORE df	6		
12	4	100	8	41				
13	10	100	8	41	AFTER MEAN	27.46406	UPPER LIMIT	34.89447
14	67	100	8	41	AFTER STD	23.98304		
15	69	100	8	41	AFTER Sx	4.30748		
16	5.9	100	8	41	AFTER N	32		
17	1	100	8	41	AFTER df	31		
18	2	100	8	41				
19	24	100	8	41				
20	68	100	8	41				
21	15	100	8	41				
22	1.25	100	8	41				
23	36.8	100	8	41				
24	36.8	100	8	41				
25	4	100	8	41				
26	2.8	100	8	41				
27	25	100	8	41				
28	75	100	8	41				
29	19	100	8	41				
30	23	100	8	41				
31	13	100	8	41				
32	45	100	8	41				
33	52	100	8	41				
34	30	100	8	41				
35	17	100	8	41				
36	18	100	8	41				
37	41	100	8	41				
38	40	100	8	41				



VDM01207

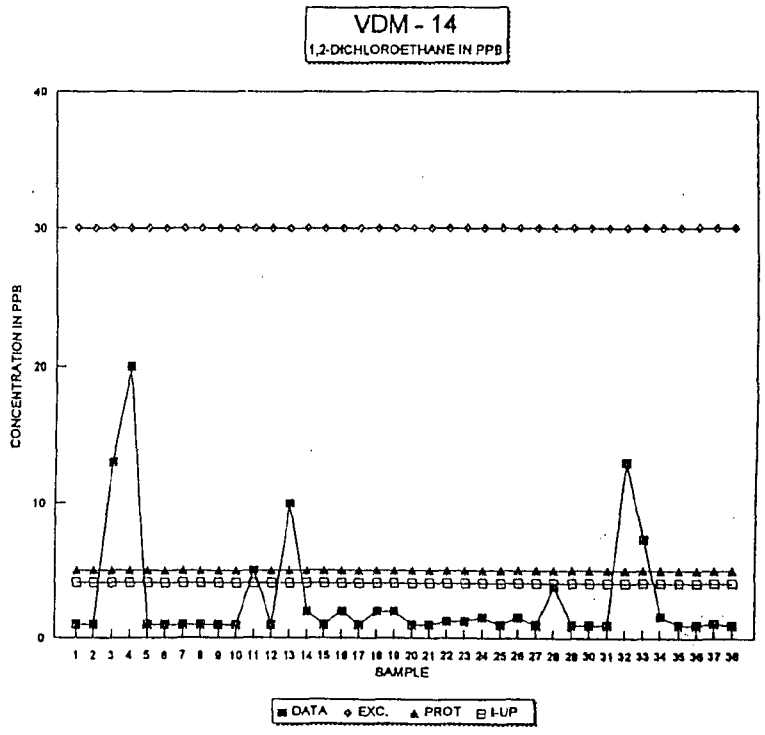
WELL VDM - 14 : CHLOROMETHANE

	SAMPLE	EXC CON	PRO STD	UP LIM	STATISTICS		STUDENT t TESTING	
1	5	20	5	4	TOTAL STD	3.081332	UPPER LIMIT	4.219777
2	1	20	5	4	TOTAL Sx	0.506568		
3	6.6	20	5	4	TOTAL MEAN	3.35		
4	19	20	5	4	TOTAL N	38		
5	3	20	5	4	TOTAL df	37		
6	3	20	5	4				
7	5	20	5	4	BEFORE MEAN	6.085714	UPPER LIMIT	10.47474
8	5	20	5	4	BEFORE STD	5.533128		
9	1	20	5	4	BEFORE Sx	2.25889		
10	1	20	5	4	BEFORE N	7		
11	1	20	5	4	BEFORE df	6		
12	1	20	5	4				
13	10	20	5	4	AFTER MEAN	2.803125	UPPER LIMIT	3.314707
14	2	20	5	4	AFTER STD	1.651228		
15	1	20	5	4	AFTER Sx	0.296569		
16	2	20	5	4	AFTER N	32		
17	1	20	5	4	AFTER df	31		
18	2	20	5	4				
19	2	20	5	4				
20	2	20	5	4				
21	2	20	5	4				
22	2.5	20	5	4				
23	2.5	20	5	4				
24	3.5	20	5	4				
25	3	20	5	4				
26	3.5	20	5	4				
27	3	20	5	4				
28	3	20	5	4				
29	3	20	5	4				
30	3	20	5	4				
31	3	20	5	4				
32	3	20	5	4				
33	3	20	5	4				
34	3	20	5	4				
35	3	20	5	4				
36	3	20	5	4				
37	3.7	20	5	4				
38	3	20	5	4				



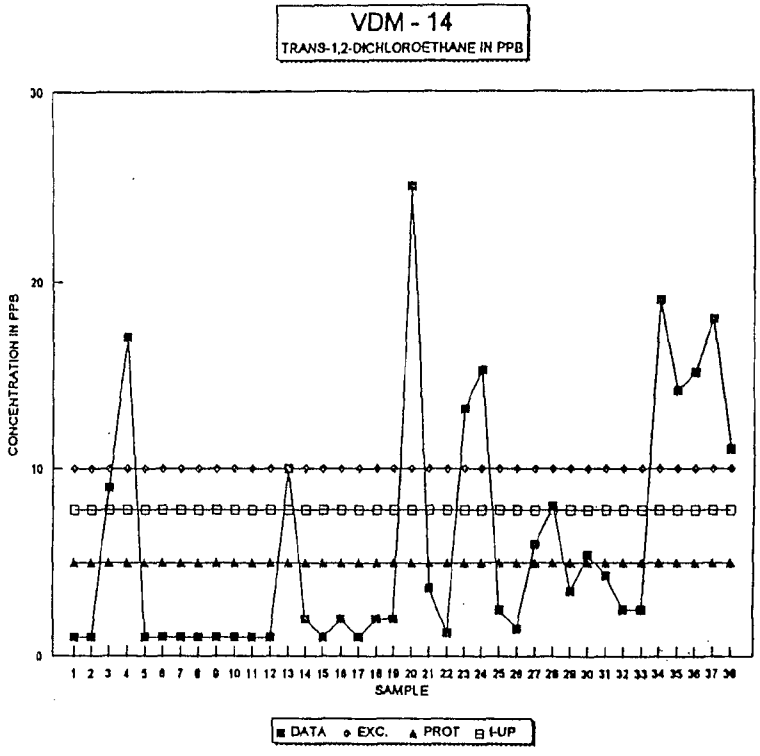
WELL VDM - 14 : 1,2-DICHLOROETHANE

	SAMPLE	EXC CON	PRO STD	UP LIM	STATISTICS		STUDENT t TESTING	
1	1	30	5	4	TOTAL STD	4.182494	UPPER LIMIT	4.056921
2	1	30	5	4	TOTAL Sx	0.687598		
3	13	30	5	4	TOTAL MEAN	2.876316		
4	20	30	5	4	TOTAL N	38		
5	1	30	5	4	TOTAL df	37		
6	1	30	5	4				
7	1	30	5	4	BEFORE MEAN	5.428571	UPPER LIMIT	11.17772
8	1	30	5	4	BEFORE STD	7.247801		
9	1	30	5	4	BEFORE Sx	2.958902		
10	1	30	5	4	BEFORE N	7		
11	5	30	5	4	BEFORE df	6		
12	1	30	5	4				
13	10	30	5	4	AFTER MEAN	2.259375	UPPER LIMIT	3.112736
14	2	30	5	4	AFTER STD	2.754384		
15	1	30	5	4	AFTER Sx	0.494702		
16	2	30	5	4	AFTER N	32		
17	1	30	5	4	AFTER df	31		
18	2	30	5	4				
19	2	30	5	4				
20	1	30	5	4				
21	1	30	5	4				
22	1.25	30	5	4				
23	1.25	30	5	4				
24	1.5	30	5	4				
25	1	30	5	4				
26	1.5	30	5	4				
27	1	30	5	4				
28	3.8	30	5	4				
29	1	30	5	4				
30	1	30	5	4				
31	1	30	5	4				
32	13	30	5	4				
33	7.3	30	5	4				
34	1.6	30	5	4				
35	1	30	5	4				
36	1	30	5	4				
37	1.1	30	5	4				
38	1	30	5	4				



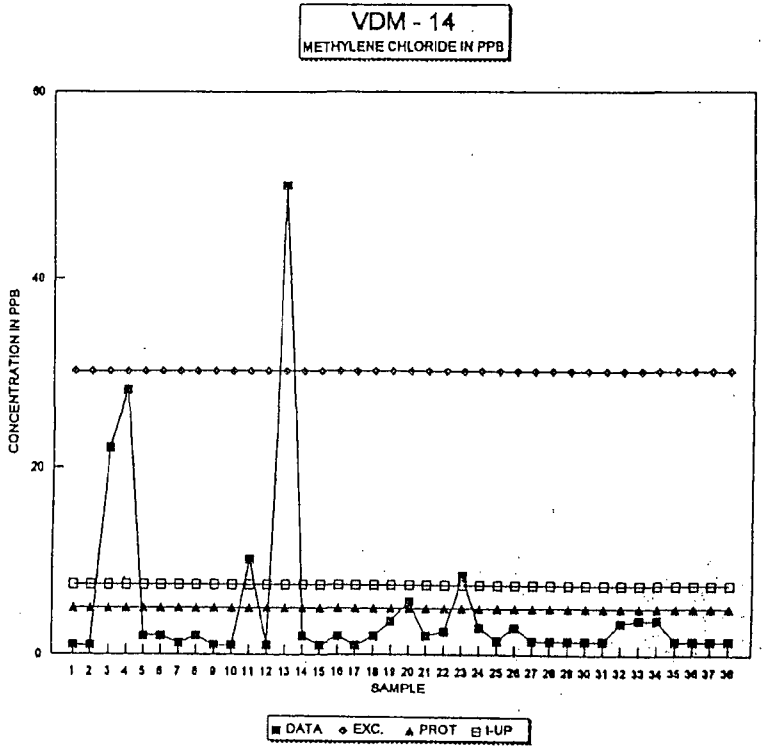
WELL VDM - 14 : TRANS-1,2-DICHLOROETHANE

	SAMPLE	EXC CON	PRO STD	UP LIM	STATISTICS		STUDENT t TESTING	
1	1	10	5	8	TOTAL STD	8.459512	UPPER LIMIT	7.806241
2	1	10	5	8	TOTAL Sx	1.061937		
3	9	10	5	8	TOTAL MEAN	5.982895		
4	17	10	5	8	TOTAL N	38		
5	1	10	5	8	TOTAL df	37		
6	1	10	5	8				
7	1	10	5	8	BEFORE MEAN	4.428571	UPPER LIMIT	9.051059
8	1	10	5	8	BEFORE STD	5.827451		
9	1	10	5	8	BEFORE Sx	2.379047		
10	1	10	5	8	BEFORE N	7		
11	1	10	5	8	BEFORE df	6		
12	1	10	5	8				
13	10	10	5	8	AFTER MEAN	6.167188	UPPER LIMIT	8.183005
14	2	10	5	8	AFTER STD	6.506434		
15	1	10	5	8	AFTER Sx	1.16859		
16	2	10	5	8	AFTER N	32		
17	1	10	5	8	AFTER df	31		
18	2	10	5	8				
19	2	10	5	8				
20	25	10	5	8				
21	3.7	10	5	8				
22	1.25	10	5	8				
23	13.1	10	5	8				
24	15.1	10	5	8				
25	2.5	10	5	8				
26	1.5	10	5	8				
27	6	10	5	8				
28	8	10	5	8				
29	3.5	10	5	8				
30	5.4	10	5	8				
31	4.3	10	5	8				
32	2.5	10	5	8				
33	2.5	10	5	8				
34	19	10	5	8				
35	14	10	5	8				
36	15	10	5	8				
37	18	10	5	8				
38	11	10	5	8				



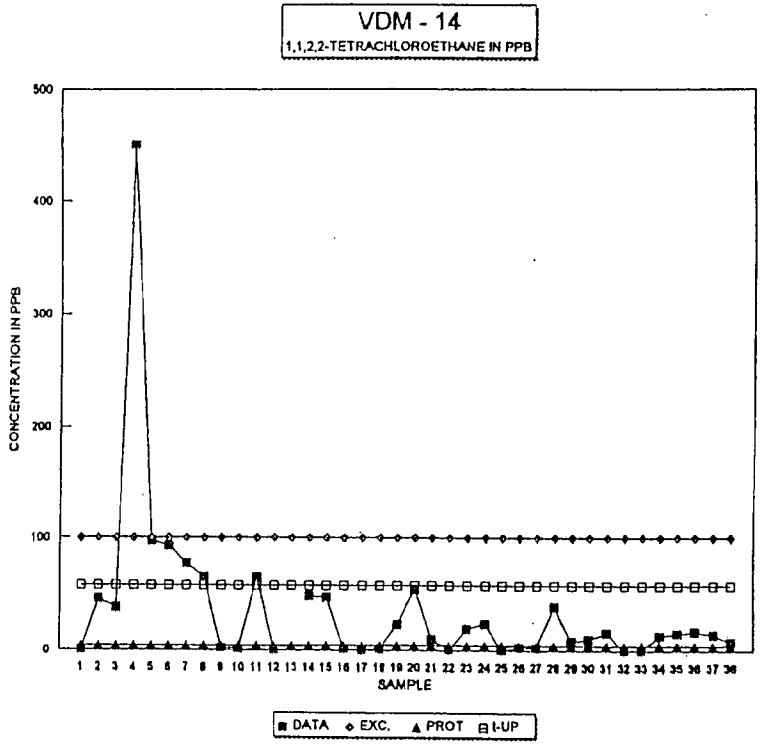
WELL VDM - 14 : METHYLENE CHLORIDE

	SAMPLE	EXC CON	PRO STD	UP LIM	STATISTICS		STUDENT t TESTING	
1	1	30	5	7	TOTAL STD	9.193781	UPPER LIMIT	7.448315
2	1	30	5	7	TOTAL Sx	1.511448		
3	22	30	5	7	TOTAL MEAN	4.853158		
4	28	30	5	7	TOTAL N	38		
5	2	30	5	7	TOTAL df	37		
6	2	30	5	7				
7	1.2	30	5	7	BEFORE MEAN	8.171429	UPPER LIMIT	16.71492
8	2	30	5	7	BEFORE STD	10.77056		
9	1	30	5	7	BEFORE Sx	4.397061		
10	1	30	5	7	BEFORE N	7		
11	10	30	5	7	BEFORE df	6		
12	1	30	5	7				
13	50	30	5	7	AFTER MEAN	4.013125	UPPER LIMIT	6.647514
14	2	30	5	7	AFTER STD	8.50299		
15	1	30	5	7	AFTER Sx	1.527182		
16	2	30	5	7	AFTER N	32		
17	1	30	5	7	AFTER df	31		
18	2	30	5	7				
19	3.6	30	5	7				
20	5.7	30	5	7				
21	2	30	5	7				
22	2.5	30	5	7				
23	8.32	30	5	7				
24	3	30	5	7				
25	1.5	30	5	7				
26	3	30	5	7				
27	1.5	30	5	7				
28	1.5	30	5	7				
29	1.5	30	5	7				
30	1.5	30	5	7				
31	1.5	30	5	7				
32	3.5	30	5	7				
33	3.8	30	5	7				
34	3.8	30	5	7				
35	1.5	30	5	7				
36	1.5	30	5	7				
37	1.5	30	5	7				
38	1.5	30	5	7				



WELL VDM - 14 : 1,1,2,2-TETRACHLOROETHANE

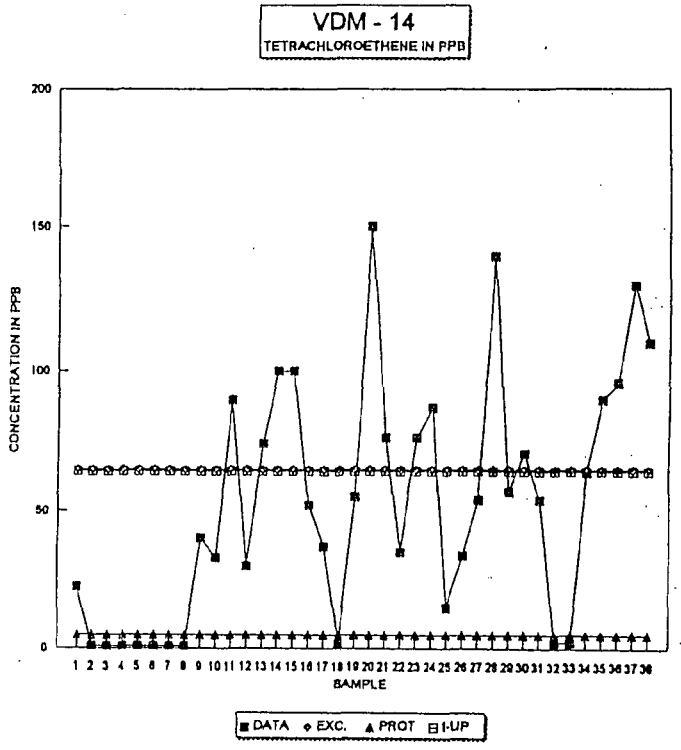
	SAMPLE	EXC CON	PRO STD	UP LIM	STATISTICS		STUDENT t TESTING	
1	1	100	5	57	TOTAL STD	74.06982	UPPER LIMIT	57.11929
2	46	100	5	57	TOTAL Sx	12.34497		
3	38	100	5	57	TOTAL MEAN	35.92297		
4	450	100	5	57	TOTAL N	37		
5	97	100	5	57	TOTAL df	36		
6	93	100	5	57				
7	77	100	5	57	BEFORE MEAN	114.5714	UPPER LIMIT	226.0117
8	65	100	5	57	BEFORE STD	140.4898		
9	3	100	5	57	BEFORE Sx	57.35473		
10	2	100	5	57	BEFORE N	7		
11	65	100	5	57	BEFORE df	6		
12	1	100	5	57				
13		100	5	57	AFTER MEAN	19.48871	UPPER LIMIT	26.41735
14	46	100	5	57	AFTER STD	21.88565		
15	47	100	5	57	AFTER Sx	3.995754		
16	2	100	5	57	AFTER N	31		
17	1	100	5	57	AFTER df	30		
18	2	100	5	57				
19	24	100	5	57				
20	54	100	5	57				
21	11	100	5	57				
22	1.25	100	5	57				
23	19.6	100	5	57				
24	24.4	100	5	57				
25	1	100	5	57				
26	3	100	5	57				
27	3	100	5	57				
28	39	100	5	57				
29	9.3	100	5	57				
30	11	100	5	57				
31	17	100	5	57				
32	1	100	5	57				
33	1	100	5	57				
34	14	100	5	57				
35	16	100	5	57				
36	18	100	5	57				
37	15	100	5	57				
38	8.6	100	5	57				



WELL VDM - 14 : TETRACHLOROETHENE

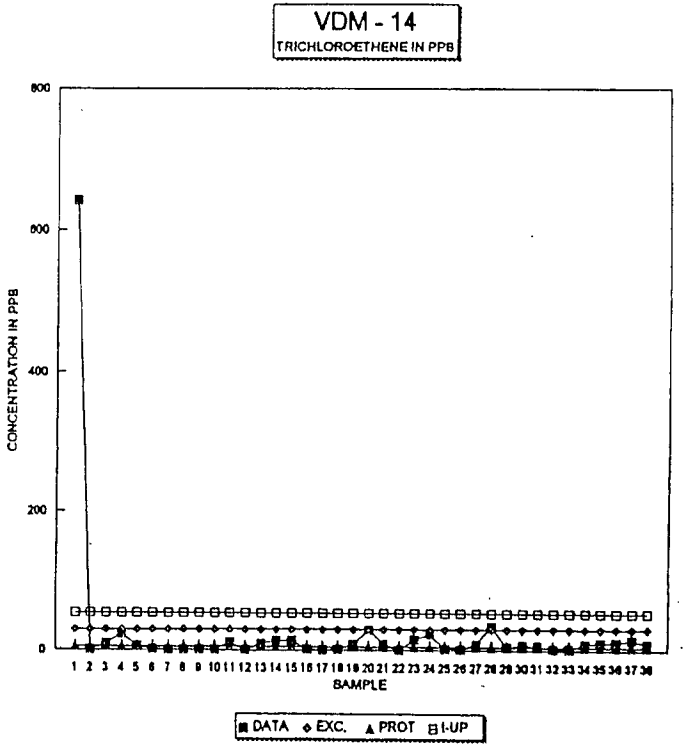
	SAMPLE	EXC CON	PRO STD	UP LIM
1	22.4	65	5	64
2	1	65	5	64
3	1	65	5	64
4	1	65	5	64
5	1	65	5	64
6	1	65	5	64
7	1	65	5	64
8	1	65	5	64
9	40	65	5	64
10	33	65	5	64
11	90	65	5	64
12	30	65	5	64
13	75	65	5	64
14	100	65	5	64
15	100	65	5	64
16	52	65	5	64
17	37	65	5	64
18	2	65	5	64
19	55	65	5	64
20	150	65	5	64
21	77	65	5	64
22	35	65	5	64
23	77.1	65	5	64
24	87.3	65	5	64
25	15	65	5	64
26	33.7	65	5	64
27	54	65	5	64
28	140	65	5	64
29	57	65	5	64
30	71	65	5	64
31	54	65	5	64
32	2.5	65	5	64
33	2.5	65	5	64
34	64	65	5	64
35	90	65	5	64
36	96	65	5	64
37	130	65	5	64
38	110	65	5	64

STATISTICS		STUDENT t TESTING	
TOTAL STD	42.76338	UPPER LIMIT	64.42621
TOTAL Sx	7.030256		
TOTAL MEAN	52.35526		
TOTAL N	38		
TOTAL df	37		
BEFORE MEAN	4.057143	UPPER LIMIT	9.997171
BEFORE STD	7.48844		
BEFORE Sx	3.057143		
BEFORE N	7		
BEFORE df	6		
AFTER MEAN	61.31563	UPPER LIMIT	73.90501
AFTER STD	40.63462		
AFTER Sx	7.298192		
AFTER N	32		
AFTER df	31		



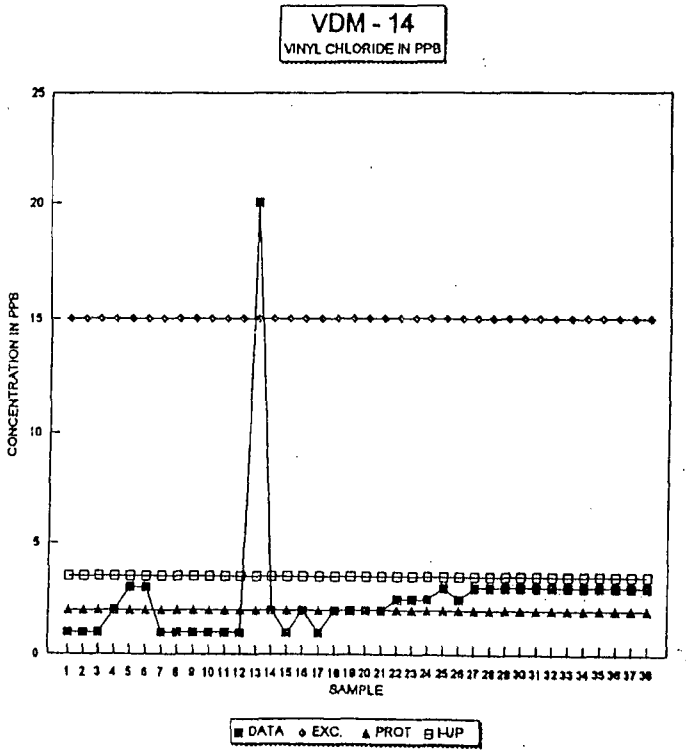
WELL VDM - 14 : TRICHLOROETHENE

	SAMPLE	EXC CON	PRO STD	UP LIM	STATISTICS		STUDENT t TESTING	
1	639	30	5	54	TOTAL STD	101.2274	UPPER LIMIT	53.85113
2	1	30	5	54	TOTAL Sx	16.64168		
3	10	30	5	54	TOTAL MEAN	25.27737		
4	23	30	5	54	TOTAL N	38		
5	5.8	30	5	54	TOTAL *df*	37		
6	1.7	30	5	54				
7	1	30	5	54	BEFORE MEAN	97.35714	UPPER LIMIT	272.853
8	1	30	5	54	BEFORE STD	221.2431		
9	1	30	5	54	BEFORE Sx	90.32213		
10	1	30	5	54	BEFORE N	7		
11	11	30	5	54	BEFORE *df*	6		
12	1	30	5	54				
13	10	30	5	54	AFTER MEAN	8.75125	UPPER LIMIT	11.33588
14	14	30	5	54	AFTER STD	8.34237		
15	14	30	5	54	AFTER Sx	1.498334		
16	2	30	5	54	AFTER N	32		
17	1	30	5	54	AFTER *df*	31		
18	2	30	5	54				
19	8.8	30	5	54				
20	30	30	5	54				
21	9.2	30	5	54				
22	1.25	30	5	54				
23	15.4	30	5	54				
24	23.7	30	5	54				
25	2.5	30	5	54				
26	1.89	30	5	54				
27	8.6	30	5	54				
28	35	30	5	54				
29	5.6	30	5	54				
30	8.1	30	5	54				
31	7	30	5	54				
32	2.5	30	5	54				
33	2.5	30	5	54				
34	10	30	5	54				
35	11	30	5	54				
36	12	30	5	54				
37	16	30	5	54				
38	10	30	5	54				



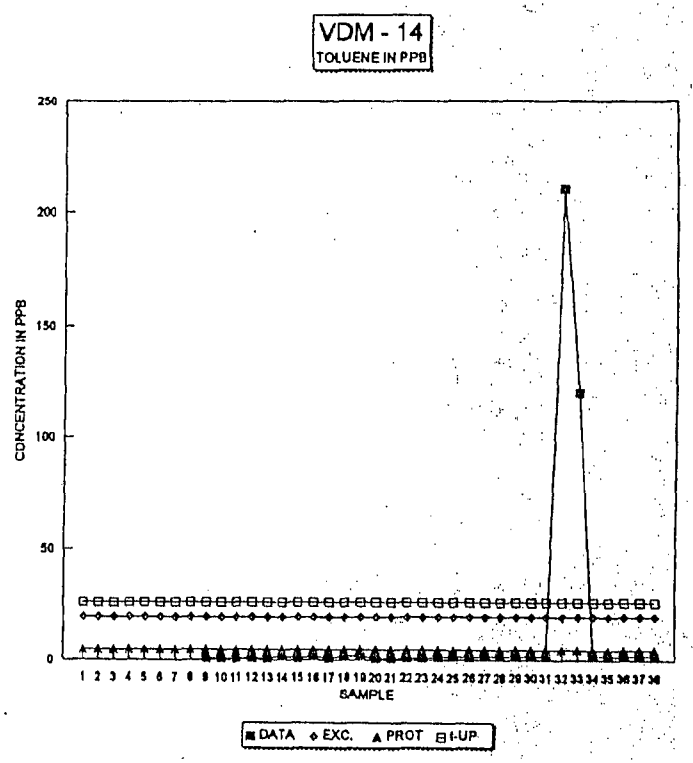
WELL VDM - 14 : VINYL CHLORIDE

	SAMPLE	EXC CON	PRO STD	UP LIM	STATISTICS		STUDENT t TESTING	
1	1	15	2	3	TOTAL STD	2.972869	UPPER LIMIT	3.47074
2	1	15	2	3	TOTAL Sx	0.488737		
3	1	15	2	3	TOTAL MEAN	2.631579		
4	2	15	2	3	TOTAL N	38		
5	3	15	2	3	TOTAL df	37		
6	3	15	2	3				
7	1	15	2	3	BEFORE MEAN	1.714286	UPPER LIMIT	2.412825
8	1	15	2	3	BEFORE STD	0.880631		
9	1	15	2	3	BEFORE Sx	0.359516		
10	1	15	2	3	BEFORE N	7		
11	1	15	2	3	BEFORE df	6		
12	1	15	2	3				
13	20	15	2	3	AFTER MEAN	2.78125	UPPER LIMIT	3.770837
14	2	15	2	3	AFTER STD	3.19408		
15	1	15	2	3	AFTER Sx	0.573674		
16	2	15	2	3	AFTER N	32		
17	1	15	2	3	AFTER df	31		
18	2	15	2	3				
19	2	15	2	3				
20	2	15	2	3				
21	2	15	2	3				
22	2.5	15	2	3				
23	2.5	15	2	3				
24	2.5	15	2	3				
25	3	15	2	3				
26	2.5	15	2	3				
27	3	15	2	3				
28	3	15	2	3				
29	3	15	2	3				
30	3	15	2	3				
31	3	15	2	3				
32	3	15	2	3				
33	3	15	2	3				
34	3	15	2	3				
35	3	15	2	3				
36	3	15	2	3				
37	3	15	2	3				
38	3	15	2	3				



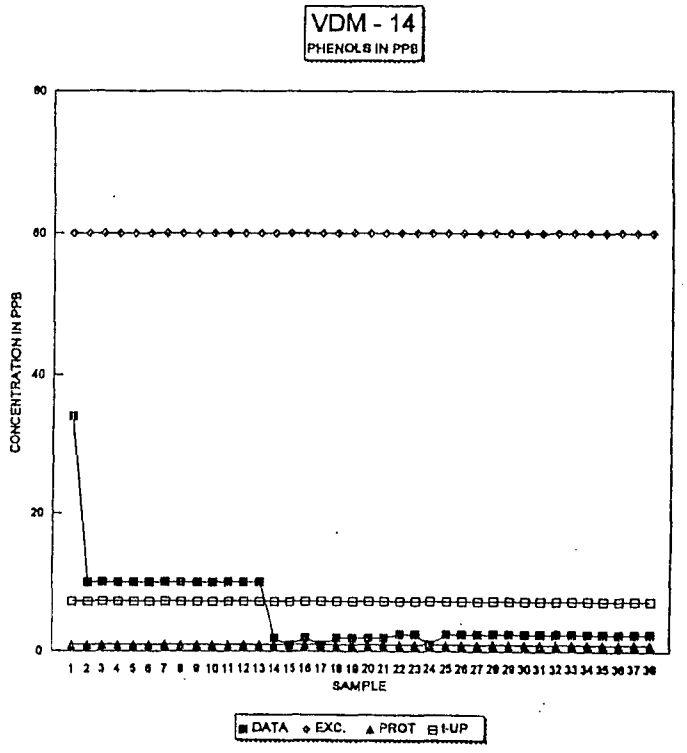
WELL VDM - 14 : TOLUENE

	SAMPLE	EXC CON	PRO STD	UP LIM	STATISTICS		STUDENT t TESTING	
1		20	5	26	TOTAL STD	42.38371	UPPER LIMIT	26.35986
2		20	5	26	TOTAL Sx	7.870458		
3		20	5	26	TOTAL MEAN	12.5		
4		20	5	26	TOTAL N	30		
5		20	5	26	TOTAL df	29		
6		20	5	26				
7		20	5	26	BEFORE MEAN	ERR	UPPER LIMIT	ERR
8		20	5	26	BEFORE STD	ERR		
9	1	20	5	26	BEFORE Sx	ERR		
10	1	20	5	26	BEFORE N	0		
11	1	20	5	26	BEFORE df	-1		
12	1	20	5	26				
13	1	20	5	26	AFTER MEAN	12.5	UPPER LIMIT	26.14737
14	2	20	5	26	AFTER STD	42.38371		
15	1	20	5	26	AFTER Sx	7.870458		
16	2	20	5	26	AFTER N	30		
17	1	20	5	26	AFTER df	29		
18	2	20	5	26				
19	2	20	5	26				
20	1	20	5	26				
21	1	20	5	26				
22	1.25	20	5	26				
23	1.25	20	5	26				
24	1.5	20	5	26				
25	2	20	5	26				
26	1.5	20	5	26				
27	2	20	5	26				
28	2	20	5	26				
29	2	20	5	26				
30	2	20	5	26				
31	2	20	5	26				
32	210	20	5	26				
33	120	20	5	26				
34	2.5	20	5	26				
35	2	20	5	26				
36	2	20	5	26				
37	2	20	5	26				
38	2	20	5	26				



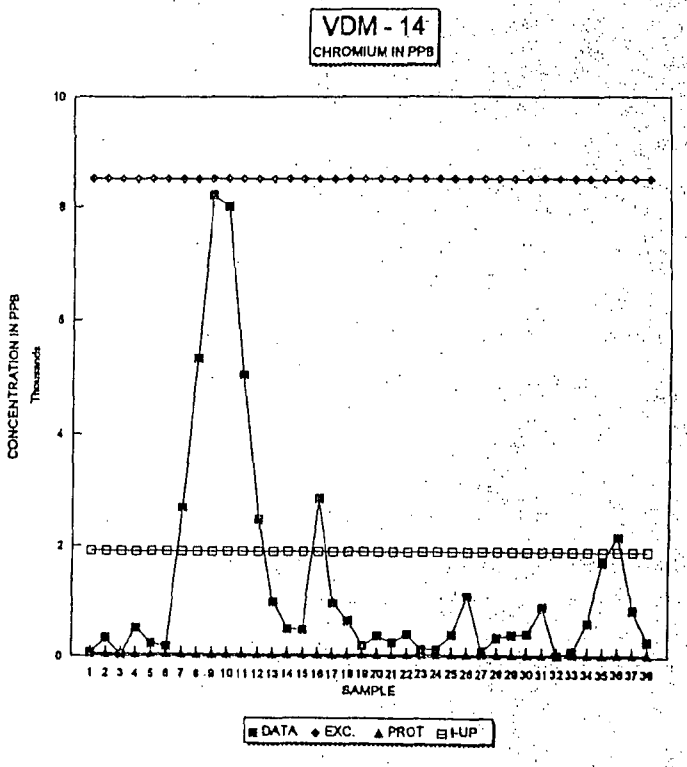
WELL VDM - 14 : PHENOLS

	SAMPLE	EXC CON	PRO STD	UP LIM	STATISTICS		STUDENT t TESTING	
1	34	60	1	7	TOTAL STD	5.923859	UPPER LIMIT	7.172146
2	10	60	1	7	TOTAL Sx	0.973876		
3	10	60	1	7	TOTAL MEAN	5.5		
4	10	60	1	7	TOTAL N	38		
5	10	60	1	7	TOTAL df	37		
6	10	60	1	7				
7	10	60	1	7	BEFORE MEAN	13.42857	UPPER LIMIT	20.09029
8	10	60	1	7	BEFORE STD	8.398251		
9	10	60	1	7	BEFORE Sx	3.428571		
10	10	60	1	7	BEFORE N	7		
11	10	60	1	7	BEFORE df	6		
12	10	60	1	7				
13	10	60	1	7	AFTER MEAN	3.90625	UPPER LIMIT	4.914232
14	2	60	1	7	AFTER STD	3.253454		
15	1	60	1	7	AFTER Sx	0.584338		
16	2	60	1	7	AFTER N	32		
17	1	60	1	7	AFTER df	31		
18	2	60	1	7				
19	2	60	1	7				
20	2	60	1	7				
21	2	60	1	7				
22	2.5	60	1	7				
23	2.5	60	1	7				
24	1	60	1	7				
25	2.5	60	1	7				
26	2.5	60	1	7				
27	2.5	60	1	7				
28	2.5	60	1	7				
29	2.5	60	1	7				
30	2.5	60	1	7				
31	2.5	60	1	7				
32	2.5	60	1	7				
33	2.5	60	1	7				
34	2.5	60	1	7				
35	2.5	60	1	7				
36	2.5	60	1	7				
37	2.5	60	1	7				
38	2.5	60	1	7				



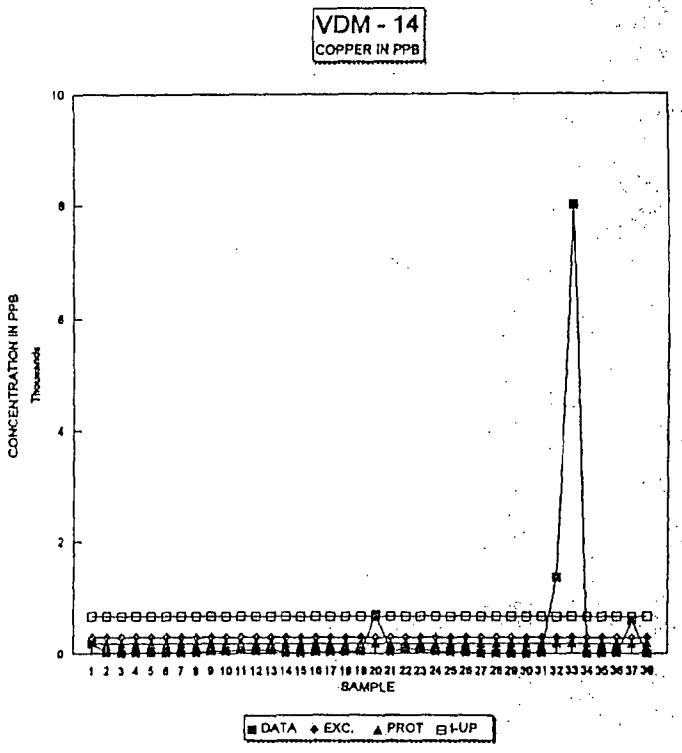
WELL VDM - 14 : CHROMIUM

	SAMPLE	EXC CON	PRO STD	UP LIM	STATISTICS		STUDENT t TESTING	
1	64	8500	50	1899	TOTAL STD	2015.032	UPPER LIMIT	1899.079
2	330	8500	50	1899	TOTAL Sx	331.2692		
3	34	8500	50	1899	TOTAL MEAN	1330.289		
4	520	8500	50	1899	TOTAL N	38		
5	240	8500	50	1899	TOTAL df	37		
6	190	8500	50	1899				
7	2700	8500	50	1899	BEFORE MEAN	582.5714	UPPER LIMIT	1278.788
8	5300	8500	50	1899	BEFORE STD	877.702		
9	8200	8500	50	1899	BEFORE Sx	358.3203		
10	8000	8500	50	1899	BEFORE N	7		
11	5000	8500	50	1899	BEFORE df	6		
12	2500	8500	50	1899				
13	1000	8500	50	1899	AFTER MEAN	1536.656	UPPER LIMIT	2197.298
14	510	8500	50	1899	AFTER STD	2132.345		
15	488	8500	50	1899	AFTER Sx	382.9805		
16	2880	8500	50	1899	AFTER N	32		
17	970	8500	50	1899	AFTER df	31		
18	650	8500	50	1899				
19	208	8500	50	1899				
20	380	8500	50	1899				
21	260	8500	50	1899				
22	406	8500	50	1899				
23	139	8500	50	1899				
24	140	8500	50	1899				
25	395	8500	50	1899				
26	1100	8500	50	1899				
27	100	8500	50	1899				
28	350	8500	50	1899				
29	400	8500	50	1899				
30	420	8500	50	1899				
31	900	8500	50	1899				
32	25	8500	50	1899				
33	100	8500	50	1899				
34	619	8500	50	1899				
35	1730	8500	50	1899				
36	2180	8500	50	1899				
37	847	8500	50	1899				
38	276	8500	50	1899				



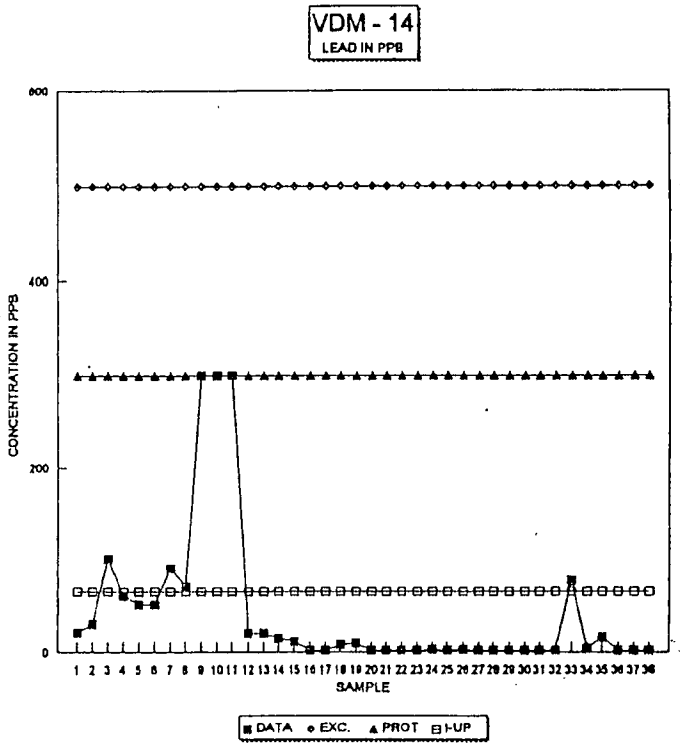
WELL VDM - 14 : COPPER

	SAMPLE	EXC CON	PRO STD	UP LIM	STATISTICS		STUDENT t TESTING	
1	200	300	200	680	TOTAL STD	1288.105	UPPER LIMIT	679.8341
2	21	300	200	680	TOTAL Sx	211.7631		
3	14	300	200	680	TOTAL MEAN	316.2368		
4	15	300	200	680	TOTAL N	38		
5	28	300	200	680	TOTAL df	37		
6	22	300	200	680				
7	18	300	200	680	BEFORE MEAN	45.42857	UPPER LIMIT	95.60353
8	26	300	200	680	BEFORE STD	63.25427		
9	50	300	200	680	BEFORE Sx	25.82345		
10	50	300	200	680	BEFORE N	7		
11	80	300	200	680	BEFORE df	6		
12	60	300	200	680				
13	80	300	200	680	AFTER MEAN	366.1563	UPPER LIMIT	799.2038
14	19	300	200	680	AFTER STD	1397.743		
15	16	300	200	680	AFTER Sx	251.0421		
16	40	300	200	680	AFTER N	32		
17	39	300	200	680	AFTER df	31		
18	50	300	200	680				
19	50	300	200	680				
20	710	300	200	680				
21	50	300	200	680				
22	93.3	300	200	680				
23	79.7	300	200	680				
24	50	300	200	680				
25	40	300	200	680				
26	30	300	200	680				
27	5	300	200	680				
28	10	300	200	680				
29	10	300	200	680				
30	10	300	200	680				
31	18	300	200	680				
32	1370	300	200	680				
33	8000	300	200	680				
34	10	300	200	680				
35	15	300	200	680				
36	18	300	200	680				
37	610	300	200	680				
38	10	300	200	680				



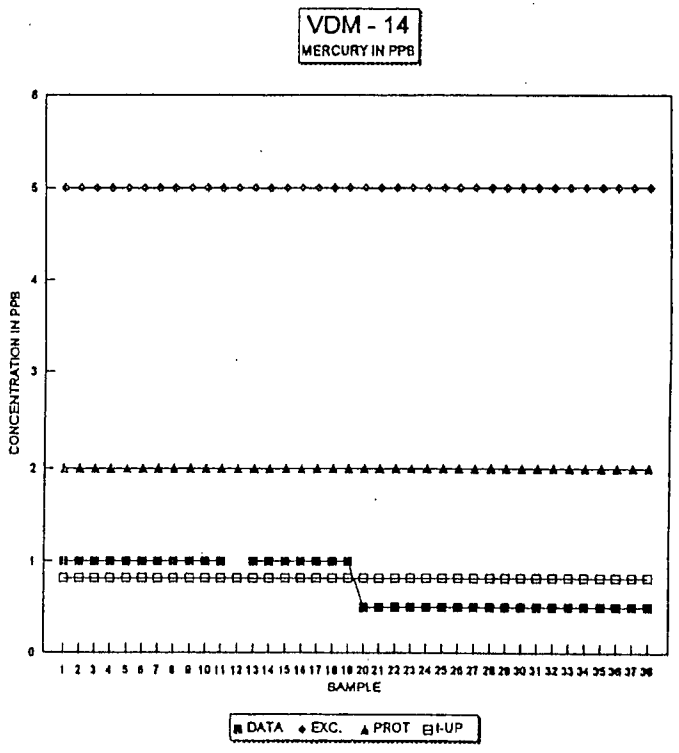
WELL VDM - 14 : LEAD

	SAMPLE	EXC CON	PRO STD	UP LIM	STATISTICS		STUDENT t TESTING	
1	21	500	300	64	TOTAL STD	80.11095	UPPER LIMIT	64.45527
2	30	500	300	64	TOTAL Sx	13.17016		
3	100	500	300	64	TOTAL MEAN	41.84211		
4	60	500	300	64	TOTAL N	38		
5	50	500	300	64	TOTAL df	37		
6	50	500	300	64				
7	90	500	300	64	BEFORE MEAN	57.28571	UPPER LIMIT	78.63226
8	70	500	300	64	BEFORE STD	28.91104		
9	300	500	300	64	BEFORE Sx	10.98639		
10	300	500	300	64	BEFORE N	7		
11	300	500	300	64	BEFORE df	6		
12	20	500	300	64				
13	20	500	300	64	AFTER MEAN	39.96875	UPPER LIMIT	66.76312
14	15	500	300	64	AFTER STD	86.48392		
15	12	500	300	64	AFTER Sx	15.53297		
16	2	500	300	64	AFTER N	32		
17	2	500	300	64	AFTER df	31		
18	8	500	300	64				
19	10	500	300	64				
20	2	500	300	64				
21	2	500	300	64				
22	2	500	300	64				
23	2	500	300	64				
24	3	500	300	64				
25	2	500	300	64				
26	3	500	300	64				
27	2	500	300	64				
28	2	500	300	64				
29	2	500	300	64				
30	2	500	300	64				
31	2	500	300	64				
32	2	500	300	64				
33	76	500	300	64				
34	4	500	300	64				
35	16	500	300	64				
36	2	500	300	64				
37	2	500	300	64				
38	2	500	300	64				



WELL VDM - 14 : MERCURY

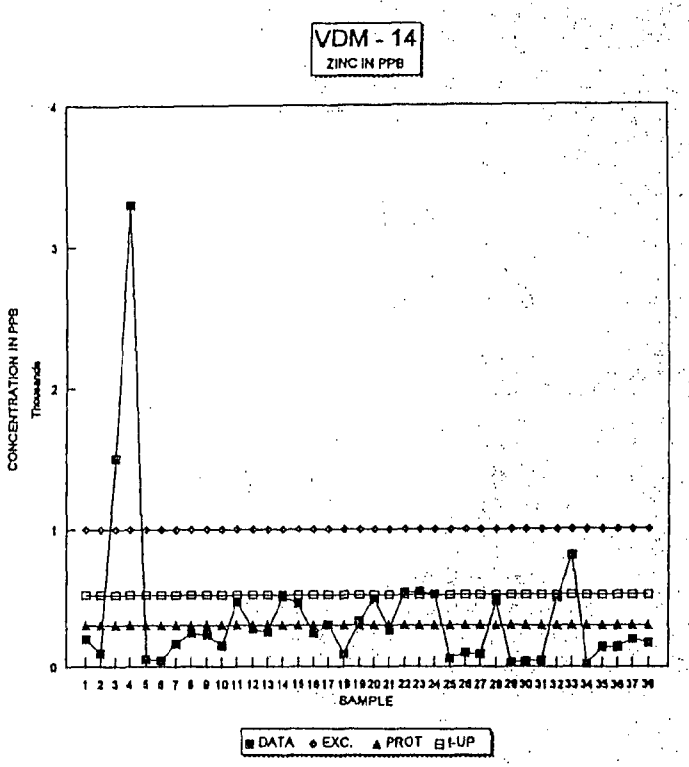
	SAMPLE	EXC CON	PRO STD	UP LIM	STATISTICS		STUDENT t TESTING	
1	1	5	2	1	TOTAL STD	0.249909	UPPER LIMIT	0.814759
2	1	5	2	1	TOTAL Sx	0.041651		
3	1	5	2	1	TOTAL MEAN	0.743243		
4	1	5	2	1	TOTAL N	37		
5	1	5	2	1	TOTAL df	36		
6	1	5	2	1				
7	1	5	2	1	BEFORE MEAN	1	UPPER LIMIT	1
8	1	5	2	1	BEFORE STD	0		
9	1	5	2	1	BEFORE Sx	0		
10	1	5	2	1	BEFORE N	7		
11	1	5	2	1	BEFORE df	6		
12		5	2	1				
13	1	5	2	1	AFTER MEAN	0.693548	UPPER LIMIT	0.77065
14	1	5	2	1	AFTER STD	0.243543		
15	1	5	2	1	AFTER Sx	0.044465		
16	1	5	2	1	AFTER N	31		
17	1	5	2	1	AFTER df	30		
18	1	5	2	1				
19	1	5	2	1				
20	0.5	5	2	1				
21	0.5	5	2	1				
22	0.5	5	2	1				
23	0.5	5	2	1				
24	0.5	5	2	1				
25	0.5	5	2	1				
26	0.5	5	2	1				
27	0.5	5	2	1				
28	0.5	5	2	1				
29	0.5	5	2	1				
30	0.5	5	2	1				
31	0.5	5	2	1				
32	0.5	5	2	1				
33	0.5	5	2	1				
34	0.5	5	2	1				
35	0.5	5	2	1				
36	0.5	5	2	1				
37	0.5	5	2	1				
38	0.5	5	2	1				



WELL VDM - 14 : ZINC

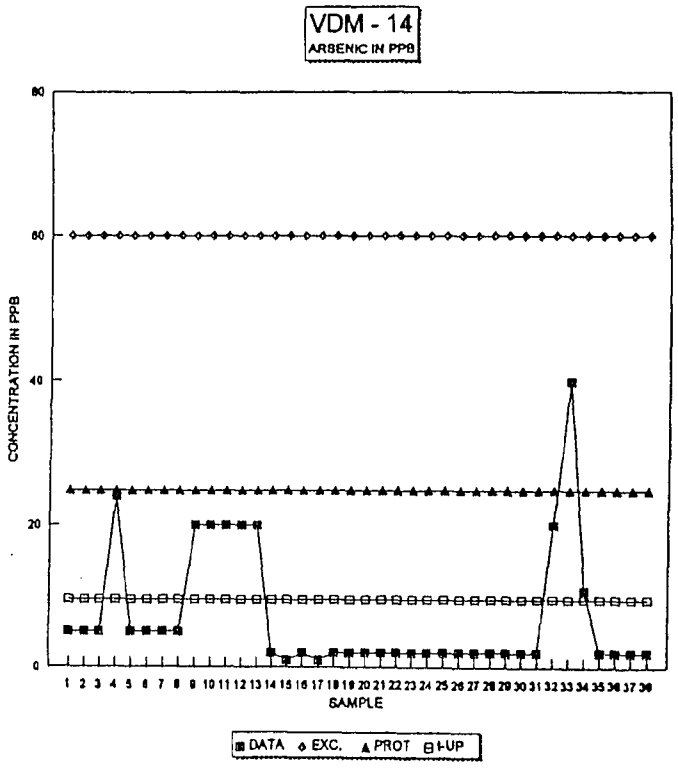
	SAMPLE	EXC CON	PRO STD	UP LIM
1	200	1000	300	528
2	95	1000	300	528
3	1500	1000	300	528
4	3300	1000	300	528
5	57	1000	300	528
6	47	1000	300	528
7	170	1000	300	528
8	240	1000	300	528
9	230	1000	300	528
10	150	1000	300	528
11	470	1000	300	528
12	270	1000	300	528
13	250	1000	300	528
14	510	1000	300	528
15	460	1000	300	528
16	240	1000	300	528
17	300	1000	300	528
18	90	1000	300	528
19	330	1000	300	528
20	490	1000	300	528
21	260	1000	300	528
22	545	1000	300	528
23	550	1000	300	528
24	530	1000	300	528
25	60	1000	300	528
26	100	1000	300	528
27	91	1000	300	528
28	480	1000	300	528
29	31	1000	300	528
30	40	1000	300	528
31	47	1000	300	528
32	506	1000	300	528
33	810	1000	300	528
34	24	1000	300	528
35	141	1000	300	528
36	142	1000	300	528
37	200	1000	300	528
38	170	1000	300	528

STATISTICS		STUDENT t TESTING	
TOTAL STD	554.044	UPPER LIMIT	528.1285
TOTAL Sx	91.08428		
TOTAL MEAN	371.7368		
TOTAL N	38		
TOTAL df	37		
BEFORE MEAN	767	UPPER LIMIT	1671.684
BEFORE STD	1140.511		
BEFORE Sx	465.6117		
BEFORE N	7		
BEFORE df	6		
AFTER MEAN	278.9688	UPPER LIMIT	339.7345
AFTER STD	196.1328		
AFTER Sx	35.2265		
AFTER N	32		
AFTER df	31		



WELL VDM - 14 : ARSENIC

	SAMPLE	EXC CON	PRO STD	UP LIM	STATISTICS		STUDENT t TESTING	
1	5	60	25	10	TOTAL STD	8.895671	UPPER LIMIT	9.668903
2	5	60	25	10	TOTAL Sx	1.462439		
3	5	60	25	10	TOTAL MEAN	7.157895		
4	24	60	25	10	TOTAL N	38		
5	5	60	25	10	TOTAL df	37		
6	5	60	25	10				
7	5	60	25	10	BEFORE MEAN	7.714286	UPPER LIMIT	12.98814
8	5	60	25	10	BEFORE STD	6.648615		
9	20	60	25	10	BEFORE Sx	2.714286		
10	20	60	25	10	BEFORE N	7		
11	20	60	25	10	BEFORE df	6		
12	20	60	25	10				
13	20	60	25	10	AFTER MEAN	6.96875	UPPER LIMIT	9.814077
14	2	60	25	10	AFTER STD	9.183832		
15	1	60	25	10	AFTER Sx	1.649465		
16	2	60	25	10	AFTER N	32		
17	1	60	25	10	AFTER df	31		
18	2	60	25	10				
19	2	60	25	10				
20	2	60	25	10				
21	2	60	25	10				
22	2	60	25	10				
23	2	60	25	10				
24	2	60	25	10				
25	2	60	25	10				
26	2	60	25	10				
27	2	60	25	10				
28	2	60	25	10				
29	2	60	25	10				
30	2	60	25	10				
31	2	60	25	10				
32	20	60	25	10				
33	40	60	25	10				
34	11	60	25	10				
35	2	60	25	10				
36	2	60	25	10				
37	2	60	25	10				
38	2	60	25	10				



VDM01223

UNITS: ppm

VANDERMARK LANDFILL: GROUNDWATER MONITORING PROGRAM RESULTS

WELL D-55

CONSTITUENT	1/6/84	3/21/84	1/28/87	6/3/87	9/2/87	11/5/87	02/31/88	06/29/88	09/31/88	11/16/88	02/15/89	STANDARD DEVIATION	STUDENT T (95%)
WELL ELEVATION			434.65	436.77	432.56	433.19	433.71	432.61	432.8	433.58	433.05		
CHLORIDE	49	636	10.2	15	38	29	13	25	25	27	24	176.1586	-0.1002
pH	7.545	6.571	6.4	6.81	6.92	6.85	6.58	7.36	7.53	7.22	7.63	0.3781	0.4496
TOTAL PHENOLS		0.005	0.028	0.02	0.01	0.002	0.01	0.01	0.01	0.01	0.015	0.0071	0.1417
BROMODICHLOROMETHANE			0.005	0.001	0.005	0.005	0.0002	0.0002	0.0002	0.001	0.0002	0.0022	-0.2911
BROMOFORM			0.005	0.005	0.005	0.005	0.001	0.0002	0.001	0.003	0.0004	0.0021	-0.4185
BROMOMETHANE			0.005	0.001	0.005	0.005	0.0008	0.0008	0.0004	0.005	0.0002	0.0022	-0.3861
CARBON TETRACHLORIDE		0.00022	0.005	0.001	0.005	0.001	0.0002	0.0002	0.0002	0.001	0.0002	0.0018	-0.2187
CHLOROETHANE			0.005	0.001	0.005	0.001	0.0004	0.0002	0.0002	0.002	0.001	0.0018	-0.1475
2-CHLOROETHYLVINYL ETHER			0.005	0.001	0.005	0.01	0.001	0.0032	0.001	0.003	0.0004	0.0018	-0.3075
CHLOROFORM		0.00013	0.005	0.001	0.005	0.001	0.0002	0.0002	0.0002	0.001	0.0002	0.0019	-0.2164
CHLOROMETHANE		0.00026	0.005	0.001	0.005	0.005	0.0004	0.0004	0.0004	0.003	0.001	0.0020	-0.1898
DIBROMOCHLOROETHANE			0.005	0.001	0.005	0.002	0.0002	0.0002	0.0002	0.001	0.0002	0.0022	-0.2911
1,1-DICHLOROETHANE			0.005	0.001	0.005	0.001	0.00038	0.0002	0.0002	0.001	0.0013	0.0018	-0.0738
1,2-DICHLOROETHANE			0.005	0.001	0.005	0.001	0.0002	0.0002	0.0002	0.001	0.0002	0.0019	-0.2599
1,1-DICHLOROETHENE			0.005	0.001	0.005	0.001	0.0004	0.0002	0.0002	0.002	0.0002	0.0019	-0.2781
TRANS-1,2-DICHLOROETHENE			0.005	0.001	0.005	0.001	0.0002	0.0002	0.0002	0.001	0.0002	0.0019	-0.2599
1,2-DICHLOROPROPANE			0.005	0.001	0.005	0.001	0.0002	0.0002	0.0002	0.002	0.0002	0.0019	-0.2854
CIS 1,3 DICHLOROPROPENE			0.005	0.001	0.005	0.001	0.0002	0.0002	0.0002	0.001	0.0002	0.0019	-0.2599
TRANS-1,3-DICHLOROPROPENE			0.005	0.001	0.005	0.001	0.0002	0.0002	0.0002	0.001	0.0002	0.0019	-0.2599
METHYLENE CHLORIDE		0.00276	0.005	0.001	0.005	0.001	0.0002	0.0002	0.0002	0.002	0.00035	0.0018	-0.3317
1,1,2,2-TETRACHLOROETHANE			0.005	0.001	0.005	0.001	0.00053	0.0002	0.0002	0.001	0.0002	0.0019	-0.3601
TETRACHLOROETHENE		0.00014	0.005	0.001	0.005	0.001	0.0002	0.0002	0.0002	0.001	0.0002	0.0018	-0.2167
1,1,1-TRICHLOROETHANE			0.005	0.001	0.005	0.001	0.00033	0.0002	0.0002	0.001	0.0002	0.0019	-0.2510
1,1,2-TRICHLOROETHANE			0.005	0.001	0.005	0.001	0.0002	0.0002	0.0002	0.001	0.0002	0.0019	-0.2599
TRICHLOROETHENE			0.005	0.001	0.005	0.001	0.0002	0.0002	0.0002	0.001	0.0002	0.0019	-0.2599
VINYL CHLORIDE			0.005	0.001	0.005	0.001	0.0004	0.0004	0.0004	0.003	0.0002	0.0019	-0.3052
TRICHLOROFLUOROETHANE			0.005	0.001	0.005	0.001						0.0020	-0.5774
DICHLORODIFLUOROMETHANE			0.005	0.001	0.005	0.001						0.0020	-0.5774
ARSENIC			0.005	0.005	0.005	0.005	0.005	0.026	0.005	0.005	0.005	0.0046	-0.1250
CHROMIUM		0.16	0.009	0.009	0.005	0.009	0.005	0.054	0.008	0.013	0.01	0.0149	-0.1670
COPPER		0.08	0.2	0.2	0.2	0.2	0.009	0.4	0.014	0.039	0.013	0.1203	-0.3374
IRON	0.2	0.0901	5.2	0.4	0.23	0.31	0.34	32	1.4	0.8	0.55	11.0400	-0.1326
LEAD		0.003	0.004	0.003	0.005	0.005	0.03	0.05	0.06	0.05	0.07	0.0234	0.5162
MERCURY			0.001	0.001	0.001	0.001	0.0002	0.0005	0.0002	0.0004	0.0004	0.0003	-0.2927
ZINC		0.00085	0.05	0.07	0.05	0.05	0.041	0.28	0.047	0.036	0.21	0.0833	0.4968

VDM01224

APPENDIX B

EIGHTEEN MILE CREEK ANALYTICAL DATA

VANDENARK LANDFILL: QUARTERLY MONITORING PROGRAM RESULTS

18 MILE CREEK UPSTREAM

CONSTITUENT:	5/12/86	1/22/87	6/3/87	9/2/87	11/5/87	03/31/88	06/28/88	08/31/88	11/16/88	02/15/89	STANDARD DEVIATION	STUDENT T (95%)
CHLORIDE	34.4	35.8	45	44	28	51	27	36	37	86	16.1445	0.9999
pH	7.89	7.67	7.63	7.41	8.25	8.31	8.25	8.14	8.3	8.35	0.3114	0.8017
TOTAL PHENOLS	0.01	0.22	0.01	0.01	0.003	0.01	0.01	0.01	0.01	0.01	0.0633	-0.1079
BROMODICHLOROMETHANE	0.01	0.005	0.001	0.005	0.005	0.0002	0.0002	0.0002	0.001	0.0002	0.0032	-0.2721
BROMOFORM	0.01	0.005	0.005	0.005	0.005	0.001	0.0002	0.001	0.003	0.0004	0.0029	-0.3124
BROMOMETHANE	0.005	0.005	0.001	0.005	0.005	0.0008	0.0008	0.0004	0.005	0.0002	0.0022	-0.3998
CARBON TETRACHLORIDE	0.005	0.005	0.001	0.005	0.001	0.0002	0.0002	0.0002	0.001	0.0002	0.0021	-0.2706
CHLOROETHANE	0.005	0.005	0.001	0.005	0.001	0.0004	0.0002	0.0002	0.002	0.001	0.0020	-0.1833
2-CHLOROETHYLVINYL ETHER	0.005	0.005	0.001	0.005	0.01	0.001	0.0002	0.001	0.003	0.0004	0.0030	-0.3115
CHLOROFORM	0.005	0.005	0.001	0.005	0.001	0.0002	0.0002	0.0002	0.001	0.0002	0.0021	-0.2706
CHLOROMETHANE	0.005	0.005	0.001	0.005	0.005	0.0004	0.0004	0.0004	0.003	0.001	0.0021	-0.2609
DIBROMOCHLOROMETHANE	0.01	0.005	0.001	0.005	0.005	0.0002	0.0002	0.0002	0.001	0.0002	0.0032	-0.2721
1,1-DICHLOROETHANE	0.005	0.005	0.001	0.005	0.001	0.0002	0.0002	0.0002	0.001	0.0002	0.0021	-0.2706
1,2-DICHLOROETHANE	0.005	0.005	0.001	0.005	0.001	0.0002	0.0002	0.0002	0.001	0.0002	0.0021	-0.2706
1,1-DICHLOROETHENE	0.005	0.005	0.001	0.005	0.001	0.0004	0.0002	0.0002	0.002	0.0002	0.0020	-0.2953
TRANS-1,2-DICHLOROETHENE	0.005	0.005	0.001	0.005	0.001	0.00047	0.0002	0.0002	0.0021	0.0002	0.0020	-0.2989
1,2-DICHLOROPROPANE	0.005	0.005	0.001	0.005	0.001	0.0002	0.0002	0.0002	0.003	0.0002	0.0021	-0.3025
CIS-1,3-DICHLOROPROPENE	0.005	0.005	0.001	0.005	0.001	0.0002	0.0002	0.0002	0.001	0.0002	0.0021	-0.2706
TRANS-1,3-DICHLOROPROPENE	0.005	0.005	0.001	0.005	0.001	0.0002	0.0002	0.0002	0.001	0.0002	0.0021	-0.2706
METHYLENE CHLORIDE	0.005	0.005	0.001	0.005	0.001	0.0002	0.0016	0.0002	0.002	0.00079	0.0019	-0.2414
1,1,2,2-TETRACHLOROETHANE	0.005	0.005	0.001	0.005	0.001	0.0002	0.0002	0.0002	0.001	0.0002	0.0021	-0.2706
TETRACHLOROETHENE	0.005	0.005	0.001	0.005	0.001	0.0002	0.0002	0.0002	0.001	0.0002	0.0021	-0.2706
1,1,1-TRICHLOROETHANE	0.005	0.005	0.001	0.005	0.001	0.0002	0.0002	0.0002	0.001	0.0002	0.0021	-0.2706
1,1,2-TRICHLOROETHANE	0.005	0.005	0.001	0.005	0.001	0.0002	0.0002	0.0002	0.001	0.0002	0.0021	-0.2706
TRICHLOROETHENE	0.005	0.005	0.001	0.005	0.001	0.0002	0.0002	0.0002	0.001	0.0002	0.0021	-0.2706
VINYL CHLORIDE	0.005	0.005	0.001	0.005	0.001	0.0004	0.0004	0.0004	0.003	0.0002	0.0020	-0.3004
TRICHLOROFLUOROMETHANE	0.005	0.005	0.001	0.005	0.001						0.0020	-0.8675
DICHLORODIFLUOROMETHANE	0.005	0.005	0.001	0.005	0.001						0.0020	-0.8675
ARSENIC	0.005	0.005	0.005	0.005	0.005	0.01	0.005	0.005	0.005	0.005	0.0015	-0.1111
CHROMIUM	0.5	0.188	0.005	0.005	0.021	0.005	0.006	0.005	0.024	0.011	0.1506	-0.1457
COPPER	0.2	0.2	0.2	0.2	0.2	0.006	0.015	0.011	0.026	0.01	0.0731	-0.3473
IRON	0.3	1.08	0.42	0.37	0.025	0.89	0.74	0.98	0.36	0.23	0.3477	-0.3465
LEAD	1	0.013	0.011	0.013	0.005	0.03	0.05	0.06	0.05	0.07	0.2905	-0.0678
MERCURY	0.001	0.02	0.001	0.001	0.001	0.0002	0.0005	0.0002	0.0004	0.0004	0.0058	-0.1843
ZINC	0.52	0.13	0.05	0.05	0.05	0.014	0.037	0.014	0.026	0.026	0.1460	-0.1477

UNITS = ppm

VANDENMARK LANDFILL: QUARTERLY MONITORING PROGRAM RESULTS

13 MILE CREEK DOWNSTREAM

CONSTITUENT	5/12/86	1/22/87	6/3/87	9/2/87	11/5/87	03/31/88	06/28/88	08/31/88	11/16/88	02/15/89	STANDARD DEVIATION	STUDENT T (95%)
CHLORIDE	40.1	36	50	45	27	54	47	35	37	86	15.4239	0.8707
pH	8.13	7.13	7.67	7.05	8.23	8.3	8.32	8.32	8.52	8.5	0.5148	0.3127
TOTAL PHENOLS	0.01	0.022	0.01	0.01	0.002	0.01	0.01	0.01	0.01	0.01	0.0045	-0.0893
BROMODICHLOROMETHANE	0.01	0.005	0.001	0.005	0.005	0.0002	0.0002	0.0002	0.001	0.0002	0.0032	-0.2721
BROMOFORM	0.01	0.005	0.005	0.005	0.005	0.001	0.0002	0.001	0.003	0.0004	0.0029	-0.3524
BROMOMETHANE	0.005	0.005	0.001	0.005	0.005	0.0008	0.0008	0.0004	0.005	0.0002	0.0022	-0.3988
CARBON TETRACHLORIDE	0.005	0.005	0.001	0.005	0.001	0.0002	0.0002	0.0002	0.001	0.0002	0.0021	-0.2704
CHLOROETHANE	0.005	0.005	0.001	0.005	0.001	0.0004	0.0002	0.0002	0.002	0.001	0.0020	-0.1825
2-CHLOROETHYLVINYL ETHER	0.005	0.005	0.001	0.005	0.01	0.001	0.0002	0.001	0.002	0.0004	0.0030	-0.2779
CHLOROFORM	0.005	0.005	0.001	0.005	0.001	0.0002	0.0002	0.0002	0.003	0.0002	0.0021	-0.3026
CHLOROMETHANE	0.005	0.005	0.001	0.005	0.005	0.0004	0.0004	0.0004	0.001	0.001	0.0021	-0.2233
DIBROMOCHLOROMETHANE	0.01	0.005	0.001	0.005	0.005	0.0002	0.0002	0.0002	0.003	0.0002	0.0031	-0.2985
1,1-DICHLOROETHANE	0.005	0.005	0.001	0.005	0.001	0.0002	0.0002	0.0002	0.001	0.0002	0.0021	-0.2706
1,2-DICHLOROETHANE	0.005	0.005	0.001	0.005	0.001	0.0002	0.0002	0.0002	0.001	0.0002	0.0021	-0.2705
1,1-DICHLOROETHENE	0.005	0.005	0.001	0.005	0.001	0.0004	0.0002	0.0002	0.002	0.0002	0.0020	-0.2953
TRANS-1,2-DICHLOROETHENE	0.005	0.005	0.001	0.005	0.001	0.00066	0.0002	0.0002	0.001	0.0002	0.0020	-0.2826
1,2-DICHLOROPROPANE	0.005	0.005	0.001	0.005	0.001	0.0002	0.0002	0.0002	0.003	0.0002	0.0021	-0.3025
CIS-1,3-DICHLOROPROPENE	0.005	0.005	0.001	0.005	0.001	0.0002	0.0002	0.0002	0.001	0.0002	0.0021	-0.2706
TRANS-1,3-DICHLOROPROPENE	0.005	0.005	0.001	0.005	0.001	0.0002	0.0002	0.0002	0.001	0.0002	0.0021	-0.2706
METHYLENE CHLORIDE	0.005	0.005	0.001	0.005	0.001	0.0002	0.00078	0.0002	0.002	0.00024	0.0020	-0.3002
1,1,2,2-TETRACHLOROETHANE	0.005	0.005	0.001	0.005	0.001	0.00026	0.0002	0.0002	0.001	0.0002	0.0021	-0.2762
TETRACHLOROETHENE	0.005	0.005	0.001	0.005	0.001	0.0002	0.0002	0.0002	0.001	0.0002	0.0021	-0.2706
1,1,1-TRICHLOROETHANE	0.005	0.005	0.001	0.005	0.001	0.0002	0.0002	0.0002	0.001	0.0002	0.0021	-0.2706
1,1,2-TRICHLOROETHANE	0.005	0.005	0.001	0.005	0.001	0.0002	0.0002	0.0002	0.001	0.0002	0.0021	-0.2706
TRICHLOROETHENE	0.005	0.005	0.001	0.005	0.001	0.0002	0.0002	0.0002	0.001	0.0002	0.0021	-0.2706
VINYL CHLORIDE	0.005	0.005	0.001	0.005	0.001	0.0004	0.0004	0.0004	0.003	0.0002	0.0020	-0.3204
TRICHLOROFLUOROMETHANE	0.005	0.005	0.001	0.005	0.001						0.0020	-0.8675
DICHLORODIFLUOROMETHANE	0.005	0.005	0.001	0.005	0.001						0.0020	-0.8675
ARSENIC	0.005	0.005	0.005	0.005	0.005	0.009	0.005	0.005	0.005	0.005	0.0012	-0.1111
CHROMIUM	0.5	0.04	0.05	0.05	0.005	0.005	0.007	0.005	0.018	0.011	0.1468	-0.1135
COPPER	0.3	0.3	0.3	0.3	0.2	0.009	0.012	0.01	0.015	0.01	0.0741	-0.3372
IRON	1.74	0.74	0.46	0.33	0.3	0.86	1.1	0.94	0.34	0.25	0.2582	-0.4204
LEAD	1	0.011	0.011	0.017	0.005	0.03	0.05	0.06	0.05	0.07	0.2907	-0.0693
MERCURY	0.003	0.004	0.002	0.001	0.001	0.0002	0.0005	0.0002	0.0004	0.0004	0.0012	-0.2329
ZINC	0.33	0.05	0.05	0.05	0.05	0.016	0.036	0.016	0.026	0.027	0.0569	-0.1588

APPENDIX C

GROUNDWATER FLUX CALCULATIONS

APPENDIX C

GROUNDWATER FLUX CALCULATIONS

Based on the groundwater elevation data for wells screened in the Power Glen Formation (i.e. VDM-1, -9, -11 and D-55) a groundwater contour map was prepared (Figure 3-3). This map is based on the average groundwater elevations over the period of November 1988 to the present (March 95). As indicated previously, these groundwater levels have remained relatively constant throughout this period, and were not significantly impacted by installation of the cap.

In order to estimate the relative contribution provided by flow of groundwater through the bedrock to the overall flow, the groundwater flux across the site in the Power Glen Formation was calculated using the Darcy equation.

$Q = KiA$

Where

K = Horizontal hydraulic conductivity
i = Hydraulic gradient
A = Length of site boundary X saturated thickness

Based on pressure test results in the Power Glen the average hydraulic conductivities away from the cliff are on the order of $1x10^{-5}$ cm/sec. Nearer the cliff face (downgradient boundary) the effective hydraulic conductivity value may be as high as $1x10^{-3}$ cm/sec.

The horizontal hydraulic gradients were determined from the groundwater contour map (Figure 3-3) which was prepared based on the average groundwater elevations. Gradients calculated for the upgradient or northern half of the site ranged from 0.003 to 0.031 feet/feet. Consequently, a value of 0.02 was selected for the upgradient site boundary. In the downgradient or southern half of the site, gradients ranged from 0.031 to 0.037. However, based on the nature of the site it was assumed that gradients in most areas of the site would be relatively flat, except

VDM01229

near the cliff face where they would be expected to steepen sharply due to the more open nature of the rock in this zone. Consequently, an average hydraulic gradient of 0.02 was also utilized for the downgradient boundary of the site.

The saturated thickness was calculated as the difference between the water table elevation and the elevation of the base of the Power Glen (top of Whirlpool Formation). This equates to a saturated thickness of 16 feet at VDM-1, and 10 feet at VDM-9.

The length of the upgradient site boundary was estimated at 560 feet. Additionally, the length of the downgradient site boundary (VDM-11 to VDM-14) is on the order of 600 feet.

Groundwater flux across the upgradient site boundary was calculated to be on the order of 0.026 gpm (14,500 gal/yr). Likewise, the groundwater flux across the downgradient site boundary was estimated to be on the order of 0.18 gpm (92,00 gal/yr). This indicates that approximately 0.15 gpm (79,000 gal/yr) must be infiltrating through the landfill cap.

URS CONSULTANTS, INC.

PROJECT VDM - CORRECTIVE MEASURES STUDY
SUBJECT GROUNDWATER FLUX CALCULATIONS

PAGE 1 OF
SHEET NO. OF
JOB NO.
MADE BY RRH DATE 3/24/95
CHKD. BY DATE

REF. PAGE

USE DARCY EQUATION:

$$\Phi = K i A$$

WHERE:

K = HORIZONTAL HYDRAULIC CONDUCTIVITY (ft/min)
i = HYDRAULIC GRADIENT (ft/ft)
A = AREA (sf)

UPGRADIENT BOUNDARY

A = PERIMETER LENGTH x SATURATED THICKNESS

- LENGTH FROM VDM-1 TO VDM-14 ≈ 560 ft
- SAT'D THICKNESS
  - VDM-1 W.L @ EL 432 - EL 416 (BASE OF POWER CLAY) = 16'
  - VDM-2 W.L. @ EL 431 - EL 415 (" " " ") = 16'

∴ A = 560 ft x 16 ft
= 8960 sf

i = HYDRAULIC GRADIENT

VDM-1 TO VDM-2	432 - 430.7 / 180'	= 0.006 ft/ft
VDM-1 TO VDM-11	432 - 431.5 / 180'	= 0.003 ft/ft
0-55 TO VDM-14	433.7 - 427.5 / 200	= 0.031 ft/ft

USE 0.02

K = 1 x 10^{-5} cm/sec
= 1.97 x 10^{-4} ft/min

Φ = (1.97 x 10^{-4}) x 0.02 x 8960
= 3.5 x 10^{-3} cf/min
= 0.026 gpm (14,459 gal/yr)

DOWN GRADIENT BOUNDARY

A = PERIMETER LENGTH x SATURATED THICKNESS

- LENGTH FROM VDM-11 TO VDM-14 ≈ 600 ft
- SAT'D THICKNESS

VDM-9 WL @ EL. 422 - EL 412 (BASE OF PGL) = 10'

∴ A = 600 ft x 10 ft
= 6000 sf

i = HYDRAULIC GRADIENT

VDM-2 TO VDM-9	430.7 - 421.9/270'	= 0.033
VDM-11 TO VDM-9	431.5 - 421.9/300'	= 0.032
D-55 TO VDM-9	433.7 - 421.9/320'	= 0.037
	AVG	0.035 *

* CONSIDERING THE NATURE OF THE BEDROCK IT IS LIKELY THAT THE GRADIENT AWAY FROM THE VALLEY WALL IS LESS STEEP, CONSEQUENTLY, A VALUE OF 0.02 IS PROBABLY MORE TYPICAL

K = 1×10^{-4} cm/sec
= 1.97×10^{-4} ft/min

Φ = $(1.97 \times 10^{-4}) \times 0.02 \times 6000$
= 0.023 cf/min
= 0.175 gpm (92,000 gal/yr)

APPENDIX D

GEOTECHNICAL LABORATORY TEST RESULTS

Glynn Geotechnical Engineering
GEOTECHNICAL AND CIVIL ENGINEERING SERVICES

LABORATORY SUMMARY SHEET

PROJECT:	VAN-DE-MARK	DATE REPORTED:	JANUARY 18, 1995
LOCATION:	N. TRANSIT ROAD	PROJECT NO.:	94 - 1120
CLIENT:	URS CONSULTANTS	GGE FOR NO.:	95 - 01
REQUIREMENT:	NA	QUANTITY:	NA

SAMPLE ID	GGE SAMPLE NO.	N.M.C.	UNIT WEIGHT (pcf)	GSA	PROCTOR pcf / %	MAX. / MIN. pcf	PERMEABILITY cm/sec
ST - 1	95 - 01	18.8	114.4				4.6 E- 08
ST - 2	95 - 02	19.2	108.3				1.1 E- 08
ST - 3	95 - 03	20.2	111.5				5.4 E- 08
ST - 4	95 - 04	21.9	111.5				2.4 E- 08

NOTES:

SUBMITTED BY: Sonda DelPalazzo
SONDA DELPALAZZO

REVIEWED BY: ARH/
A.R.H. / MARK W. GLYNN, P.E.

DOCFILE:LABSUMM

6503 CAMPBELL BLVD. • LOCKPORT, N.Y. 14094 • 716 / 625-6933 • FAX: 716 / 625-6983

Glynn Geotechnical Engineering
GEOTECHNICAL AND CIVIL ENGINEERING SERVICES

TRIAXIAL PERMEABILITY
ASTM D - 5084

PROJECT: VAN DE MARK
DATE REPORTED: JANUARY 18, 1995 (Rev. 2/3/95)
LOCATION: N. TRANSIT ROAD
PROJECT NO.: 94 - 1120
CLIENT: URS CONSULTANTS
SAMPLE NO.: 95 - 01
DATE SAMPLED: JANUARY 10, 1995
DEPTH: 2' - 4'
SAMPLE DESCRIPTION: SHELBY TUBE ST - 1, 3' - 3½' TESTED
SAMPLE CLASSIFICATION: ** medium brown, silty CLAY (visual)

INITIAL DATA		
Initial Height	11.73	cm
Initial Diameter	7.11	cm
Moisture Content	18.8	%
Dry Density	114.4	pcf
% Proctor	NA	%

FINAL DATA		
Final Height	11.63	cm
Final Diameter	7.18	cm
Moisture Content	18.5	%
Dry Density	114.1	pcf
Saturation	100	%

TEST DATA		
Confining Pressure	70	psi
Head Water Pressure	65	psi
Tail Water Pressure	60	psi
Gradient, i	32	

NOTES

DEAIRED WATER WAS UTILIZED AS PERMEANT LIQUID.

SAMPLE TAKEN VIA 3" DIAMETER SHELBY TUBE..

RESULTS

AVERAGE PERMEABILITY, K = 4.6 E -08 (cm/sec) at 20° c

REPORTED BY: SONDA DELPALAZZO
REVIEWED BY: A.R.H. / MARK W. GLYNN, P.E.

DOC FILE: TRIAXRPT
REV 6/92

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GEOTECHNICAL AND CIVIL ENGINEERING SERVICES

TRIAXIAL PERMEABILITY
ASTM D - 5084

PROJECT: VAN DE MARK
DATE REPORTED: JANUARY 18, 1995 (Rev. 2/3/95)
LOCATION: N. TRANSIT ROAD
PROJECT NO.: 94 - 1120
CLIENT: URS CONSULTANTS
SAMPLE NO.: 95 - 02
DATE SAMPLED: JANUARY 10, 1995
DEPTH: 2' - 4'
SAMPLE DESCRIPTION: SHELBY TUBE ST-2, 3' - 3½' TESTED
SAMPLE CLASSIFICATION: ** medium brown, silty CLAY (visual)

INITIAL DATA		
Initial Height	8.90	cm
Initial Diameter	7.11	cm
Moisture Content	19.2	%
Dry Density	108.3	pcf
% Proctor	NA	%

FINAL DATA		
Final Height	8.97	cm
Final Diameter	7.15	cm
Moisture Content	23.2	%
Dry Density	103.5	pcf
Saturation	100	%

TEST DATA		
Confining Pressure	89	psi
Head Water Pressure	84	psi
Tail Water Pressure	80	psi
Gradient, i	33	

NOTES

DEAIRED WATER WAS UTILIZED AS PERMEANT LIQUID.

SAMPLE TAKEN VIA 3" DIAMETER SHELBY TUBE..

RESULTS

AVERAGE PERMEABILITY, K = 1.1 E -08 (cm/sec) at 20° c

REPORTED BY: Sonda DelPalazzo
SONDA DELPALAZZO

REVIEWED BY: A.R.H. / MARK W. GLYNN, P.E.

DOC FILE: TRIAXRPT

REV: 6/92

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GEOTECHNICAL AND CIVIL ENGINEERING SERVICES

TRIAXIAL PERMEABILITY
ASTM D - 5084

PROJECT: VAN DE MARK
DATE REPORTED: JANUARY 18, 1995 (Rev. 2/3/95)
LOCATION: N. TRANSIT ROAD
PROJECT NO.: 94 - 1120
CLIENT: URS CONSULTANTS
SAMPLE NO.: 95 - 03
DATE SAMPLED: JANUARY 10, 1995
DEPTH: 2' - 4'
SAMPLE DESCRIPTION: SHELBY TUBE ST - 3, 3' - 3½' TESTED
SAMPLE CLASSIFICATION: **medium brown, silty CLAY (visual)

INITIAL DATA		
Initial Height	12.49	cm
Initial Diameter	7.11	cm
Moisture Content	20.2	%
Dry Density	111.5	pcf
% Proctor	NA	%

FINAL DATA		
Final Height	12.51	cm
Final Diameter	7.58	cm
Moisture Content	19.0	%
Dry Density	99.5	pcf
Saturation	97	%

TEST DATA		
Confining Pressure	90	psi
Head Water Pressure	85	psi
Tail Water Pressure	80	psi
Gradient, i	30	

NOTES

DEAIRED WATER WAS UTILIZED AS PERMEANT LIQUID.

SAMPLE TAKEN VIA 3" DIAMETER SHELBY TUBE..

RESULTS

AVERAGE PERMEABILITY, K = 5.4 E -08 (cm/sec) at 20° c

REPORTED BY: Sonda DelPalazzo
SONDA DELPALAZZO

REVIEWED BY: ARH
A.R.H. / MARK W. GLYNN, P.E.

DOC FILE:TRIAXRPT

REV:6/92

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GEOTECHNICAL AND CIVIL ENGINEERING SERVICES

TRIAXIAL PERMEABILITY
ASTM D - 5084

PROJECT: VAN DE MARK
DATE REPORTED: JANUARY 18, 1995 (Rev. 2/3/95)
LOCATION: N. TRANSIT ROAD
PROJECT NO.: 94 - 1120
CLIENT: URS CONSULTANTS
SAMPLE NO.: 95 - 04
DATE SAMPLED: JANUARY 10, 1995
DEPTH: 2' - 3½'
SAMPLE DESCRIPTION: SHELBY TUBE ST - 4, 2½' - 3' TESTED
SAMPLE CLASSIFICATION: ** medium brown, silty CLAY (visual)

INITIAL DATA		
Initial Height	12.20	cm
Initial Diameter	7.11	cm
Moisture Content	21.9	%
Dry Density	111.5	pcf
% Proctor	NA	%

FINAL DATA		
Final Height	12.34	cm
Final Diameter	7.20	cm
Moisture Content	12.7	%
Dry Density	115.8	pcf
Saturation	100	%

TEST DATA		
Confining Pressure	90	psi
Head Water Pressure	85	psi
Tail Water Pressure	80	psi
Gradient, i	27	

NOTES

DEAIRED WATER WAS UTILIZED AS PERMEANT LIQUID.

SAMPLE TAKEN VIA 3" DIAMETER SHELBY TUBE..

RESULTS

AVERAGE PERMEABILITY, K = 2.4 E -08 ***(cm/sec) at 20° c***

REPORTED BY: SONDA DELPALAZZO

REVIEWED BY: A.R.H. / MARK W. GLYNN, P.E.

DOC FILE:TRIAXRPT

REV:6/92

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APPENDIX E

LANDFILL CAP CONSTRUCTION QA/QC DATA

Glynn Geotechnical Engineering

6437 LOCUST STREET EXTN. • LOCKPORT, NEW YORK 14094 (716) 434-7118

Conestoga Rovers Associates, Inc.
7703 Niagara Falls Blvd.
Niagara Falls, New York 14304
Attention: David E. Black / Mark Becker

August 28, 1987
87 - 0125 - 3

SUBJECT: VAN DE MARK CHEMICAL LANDFILL CAP TESTING

Gentlemen,

This report presents the results of field and laboratory testing of soils used to construct an impermeable clay barrier cap on the former landfill owned by Van de Mark Chemical Co. The landfill site is located in Lockport, New York near the City Sewage Treatment Plant and the Gulf Railroad Bridge of the Somerset Railroad. Design and construction monitoring were performed by Conestoga Rovers Associates. GGE provided testing services as a subcontractor to CRA.

Site work was performed by SLC Consultants/Constructors, Inc. of Lockport, New York. Testing work required by the closure plan was performed in coordination with SLC and CRA to meet the requirements of NYSDEC.

Initial testing by GGE consisted of density testing of proposed borrow soil used to construct clay "test pads". Subsequent to receipt of acceptable permeability test results from the test pads, SLC used clay overburden from Frontier Stone to construct the 24" thick, 2.5 acre cap.

The schedule of all testing was performed at rates required by NYSDEC. As a result 12 permeability cylinders were sampled and tested for hydraulic conductivity as measured by the constant head method. Density testing was typically performed by the Nuclear Method excepting a few tests conducted at the lysimeter location that were performed by the sand cone method. The attached reports document a minimum compaction of 90% modified proctor. In areas were the 90% value was not initially achieved the contractor was notified and then acted to further compact the material until the 90% value was reached. Density retests were subsequently taken and documented. A minimum of 9 passing tests are reported for each 6 inch layer per acre of surface area.

Proctor results were very close and grain size distribution curves followed a narrow band. Atterberg Limit values were less consistent but indicative of good material for clay cap construction. Grain size analysis and atterberg limit testing was performed in concert with each permeability sample.

In accordance with NYSDEC requirements the borrow material was tested at 5000 cubic yard intervals for recompacted permeability. The first 5000 yards of soil was prequalified by the samples taken from the test pads. The second soil sample taken part way through the project was tested for recompacted permeability after laboratory preparation of the sample. Results of this test failed to meet the 1.0 X 10^{-7}cm/sec requirement, however results of field permeability samples justified use of the material from Frontier Stone. The test sample, identified as bag #2, was compacted to 91% of the modified proctor maximum density at a moisture content equal to that normally occurring in the field. The resulting permeability test was 4.7 X 10^{-7}cm/sec. Although the void ratio of the recompacted sample was nearly equal to that of test pad cylinder #3, the permeability rate was an entire order of magnitude greater. Apparently the method of laboratory compaction does not bind clay soil in the same manner as field compaction with heavy vibratory sheepsfoot equipment.

In addition to the above variation, a discrepancy in the required permeability rate also occurred in two areas sampled and tested during construction. Cylinders #9A and #11A yielded results of 1.09 and 2.20 X 10^{-7}cm/sec respectively. Test #9A variation from the required value is insignificant and therefore not retested. Test sample #11A was considered borderline due to some disturbance from driving the cylinder and since sample #11B (all test cylinders were taken in pairs to provide a backup sample in the event of a poor test) fractured when removed from the cylinder the need for resampling was necessary. Cylinder #11R2 was taken in the same location as samples #11A & B and yielded a result of 4.96 X 10^{-7}cm/sec.

Upon review of the entire distribution of results the taking of another sample at location was dismissed. An anomaly occurs in the pattern of data for permeability tests above and below the 1.0 X 10^{-7}cm/sec threshold. Those cylinders having a perm rate below the threshold level exhibited a higher density than the companion field density test. In addition those same cylinders routinely showed a decrease in the moisture content when compared to the companion field moisture associated with the density test. Because of this reciprocal relationship in critical test data the permeability rates from the cylinders #11A and #11R2 should not be considered indicative of field conditions. A graph of void ratio (after test) versus permeability fails to provide a clear relationship of these factors and hence does

not provide any further clue as to why these test cylinders do not meet the required rate.

Not-with-standing the last comments, a stratigraphic view of the various permeability cylinders indicate an acceptable average rate throughout the clay cap.

As requested our testing program also included collecting and analyzing a topsoil sample for pH. Results indicate a value of 6.8.

With the exception of pH testing all laboratory and field test data is included in this report. If there are any questions or comments regarding this report please contact our office.

Sincerely,
GLYNN GEOTECHNICAL ENGINEERING

Mark W. Glynn, P.E.
Geotechnical Consultant

cc: Matthew Barmasse
Safety/Environmental Engineer
Van de Mark Chemical Co.
1 North Transit Road
Lockport, New York 14094

Glynn Geotechnical Engineering

BY W.W. GLYNN DATE 8-19-87 SHEET 1 OF 1

CHKD. BY _____ DATE _____ PROJECT NO. 87-0125

CLIENT CONESTOGA ROVERS

PROJECT VAN DE MARK CHEMICAL

SUBJECT SUMMARY OF TEST DATA

PERMEABILITY TEST TABLE

SAMPLE NO.	PERMEABILITY RATE x 10^{-7} CM/SEC	CYLINDER DRY DENSITY	MOISTURE CONTENT		PERCENT COMPACTION		ATTERBERG'S		VOID RATIO	
			FIELD	CYL.	FIELD	CYL.	LIQUID LIMIT	PLASTIC LIMIT	BEFORE TEST	AFTER TEST
TEST PAD	0.729	108.6	20.4	19.5	89.3	94.8	37	23	.592	.501
TEST PAD	0.221	108.9	21.8	20.1	91.9	95.1	39	22	.494	.478
TEST PAD	0.471	107.3	19.8	19.3	90.8	93.7	—	—	.569	.577
1B	0.176	110.2	17.4	16.5	94.2	96.2	42	22	.489	.505
2B	0.516	105.7	24.1	19.5	88.9	92.3	37	20	.623	.619
3A	0.200	107.8	18.7	15.8	90.8	94.1	39	20	.563	.560
4A	0.440	110.7	18.1	17.7	93.2	96.7	38	20	.505	.454
5B	0.248	108.7	19.4	18.5	92.7	94.9	34	19	.573	.572
6A	0.569	109.2	19.9	19.8	92.8	95.4	36	17	.571	.559
7A	0.460	110.5	18.1	14.9	91.6	96.5	45	24	.468	.479
8B	0.418	109.8	21.9	17.0	90.9	95.9	36	19	.562	.552
9A	1.09	105.0	18.5	18.2	93.0	91.7	48	26	.670	.707
10B	0.336	102.2	16.9	15.6	90.2	90.1	36	19	.608	.579
11B	2.201	101.9	17.7	18.2	90.7	89.0	38	20	.709	.630
11R2	4.96	102.4	N.A.	13.3	90.7	89.4	32	19	.656	.600
12A	0.574	108.5	18.5	17.8	90.1	94.8	48	25	.599	.653
BAG #2	4.12	107.1 (RECOMPACT)	N.A.	19.1 (REMOLD)	N.A.	93.5 (REMOLD)	35	18	.608	.617
AVG. 1-12	0.60	107.6	—	—	—	—				

PERMEABILITY BY STRATA

LIFT	NORTH SECTOR	MIDDLE SECTOR	SOUTH SECTOR
4TH	0.34	2.20	0.57
3RD	0.46	0.42	1.09
2ND	0.44	0.25	0.57
1ST	0.18	0.51	0.20
AVG.	0.36	0.85	0.61

APPENDIX F

HELP MODEL RESULTS

TO: Bob Henschel
FROM: Marek Ostrowski
REF: Van De Mark Landfill infiltration analysis
DATE: 3/23/95

you requested, I tried to estimate the difference in infiltration between the existing clay cap and the possible cap including a liner. I used the HELP model, with the following input:

* Existing cap
  - 6" of topsoil
  - 15" of fill
  - 3" of sand drainage layer
  - 24" of clay barrier
  - Average slope of 7%
  - Average drainage length of 100 ft
* Liner cap
  - 6" of topsoil
  - 18" of fill
  - 6" of sand drainage layer
  - Liner on 24" of clay barrier
  - Average slope of 7%
  - Average drainage length of 100 ft
  - Liner leakage fraction of 0.0003 to 0.01

In both cases I used the same soil parameters and climatic data. Fair grass was used as a surface cover.
The results are:

cap	infiltration [in/yr]	infiltration flow rate over 2.5 acres [gall/yr]	[gall/min]
clay cap	1.2	84,000	0.2
liner cap	5E-4 to 1.5E-2	40 to 1030	approx 0.

I also estimated the infiltration during the period before the installation of the cap. I assumed the same topsoil (6") and fill (12") as in the runs above. Fair grass was used as surface cover. It was assumed that the site was graded inward, eliminating the offsite runoff. The results are:

	infiltration [in/yr]	infiltration flow rate over 2.5 acres [gall/yr]	[gall/min]
pre-cap	11.6	790,000	1.5

****
****

Van de Mark Landfill infiltration analysis, M.O., 3/23/95
Existing conditions: 6" tops(#6,VPL), 15" fill(#6,VPL),
3" drainage (#2,LDL,100 ft,7%), 24" caly(#16,BL)

****
****

FAIR GRASS

LAYER 1

VERTICAL PERCOLATION LAYER

THICKNESS	=	6.00 INCHES
POROSITY	=	0.4530 VOL/VOL
FIELD CAPACITY	=	0.1901 VOL/VOL
WILTING POINT	=	0.0848 VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.4196 VOL/VOL
SATURATED HYDRAULIC CONDUCTIVITY	=	0.002160000149 CM/SEC

LAYER 2

VERTICAL PERCOLATION LAYER

THICKNESS	=	15.00 INCHES
POROSITY	=	0.3609 VOL/VOL
FIELD CAPACITY	=	0.1638 VOL/VOL
WILTING POINT	=	0.0848 VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.3642 VOL/VOL
SATURATED HYDRAULIC CONDUCTIVITY	=	0.000036000001 CM/SEC

LAYER 3

LATERAL DRAINAGE LAYER

THICKNESS	=	3.00 INCHES
POROSITY	=	0.4370 VOL/VOL
FIELD CAPACITY	=	0.0624 VOL/VOL

WILTING POINT	=	0.0245 VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.4370 VOL/VOL
SATURATED HYDRAULIC CONDUCTIVITY	=	0.005799999926 CM/SEC
SLOPE	=	7.00 PERCENT
DRAINAGE LENGTH	=	100.0 FEET

LAYER 4

BARRIER SOIL LINER

THICKNESS	=	24.00 INCHES
POROSITY	=	0.4300 VOL/VOL
FIELD CAPACITY	=	0.3663 VOL/VOL
WILTING POINT	=	0.2802 VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.4300 VOL/VOL
SATURATED HYDRAULIC CONDUCTIVITY	=	0.000000100000 CM/SEC

GENERAL SIMULATION DATA

SCS RUNOFF CURVE NUMBER	=	68.71
TOTAL AREA OF COVER	=	43560. SQ FT
EVAPORATIVE ZONE DEPTH	=	20.00 INCHES
UPPER LIMIT VEG. STORAGE	=	7.7706 INCHES
INITIAL VEG. STORAGE	=	7.6391 INCHES

SOIL WATER CONTENT INITIALIZED BY PROGRAM.

CLIMATOLOGICAL DATA

SYNTHETIC RAINFALL WITH SYNTHETIC DAILY TEMPERATURES AND SOLAR RADIATION FOR BUFFALO NEW YORK

MAXIMUM LEAF AREA INDEX	=	2.00
START OF GROWING SEASON (JULIAN DATE)	=	138
END OF GROWING SEASON (JULIAN DATE)	=	279

NORMAL MEAN MONTHLY TEMPERATURES, DEGREES FAHRENHEIT

JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
23.50	24.50	33.00	45.40	56.10	66.00
70.70	68.90	62.10	51.50	40.30	28.80

****

AVERAGE MONTHLY VALUES IN INCHES FOR YEARS 1 THROUGH 10

	JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
PRECIPITATION						
TOTALS	3.18	2.61	2.78	2.97	2.89	2.21
	2.95	4.39	3.13	3.11	4.24	2.96
STD. DEVIATIONS	0.55	1.01	0.91	0.80	0.78	0.65
	1.06	2.04	1.46	1.37	1.06	0.73
RUNOFF						
TOTALS	0.177	0.250	0.750	0.001	0.000	0.000
	0.000	0.001	0.000	0.013	0.069	0.120
STD. DEVIATIONS	0.236	0.456	1.084	0.002	0.000	0.000
	0.000	0.004	0.000	0.042	0.219	0.256
EVAPOTRANSPIRATION						
TOTALS	0.426	0.645	2.297	2.956	3.199	2.958
	3.541	4.193	2.586	2.008	0.916	0.520
STD. DEVIATIONS	0.114	0.160	0.176	0.598	0.976	0.614
	1.149	1.240	1.130	0.397	0.118	0.127
LATERAL DRAINAGE FROM LAYER 3						
TOTALS	1.3062	1.3672	1.3848	1.0828	0.9997	0.5453
	0.1227	0.0054	0.0214	0.1426	0.5225	1.0621
STD. DEVIATIONS	0.4487	0.2076	0.2837	0.1578	0.2322	0.3163
	0.2299	0.0169	0.0678	0.2929	0.5144	0.6256
PERCOLATION FROM LAYER 4						
TOTALS	0.1678	0.1672	0.1836	0.1505	0.1269	0.1066
	0.0736	0.0163	0.0149	0.0247	0.0676	0.1320
STD. DEVIATIONS	0.0370	0.0293	0.0277	0.0225	0.0167	0.0082
	0.0262	0.0182	0.0292	0.0368	0.0606	0.0642

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AVERAGE ANNUAL TOTALS & (STD. DEVIATIONS) FOR YEARS 1 THROUGH 10

	(INCHES)		(CU. FT.)	PERCENT
PRECIPITATION	37.42	(2.873)	135835.	100.00
RUNOFF	1.382	(0.972)	5015.	3.69
EVAPOTRANSPIRATION	26.241	(2.013)	95256.	70.13

LATERAL DRAINAGE FROM LAYER 3	8.5628 (1.7728)	31083.	22.88
PERCOLATION FROM LAYER 4	1.2318 (0.2271)	4471.	3.29
CHANGE IN WATER STORAGE	0.002 (1.555)	9.	0.01

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PEAK DAILY VALUES FOR YEARS 1 THROUGH 10

	(INCHES)	(CU. FT.)
PRECIPITATION	2.81	10200.3
RUNOFF	1.604	5821.2
LATERAL DRAINAGE FROM LAYER 3	0.0644	233.8
PERCOLATION FROM LAYER 4	0.0068	24.8
HEAD ON LAYER 4	24.3	
SNOW WATER	3.03	10987.1

MAXIMUM VEG. SOIL WATER (VOL/VOL)	0.3885
MINIMUM VEG. SOIL WATER (VOL/VOL)	0.0846

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FINAL WATER STORAGE AT END OF YEAR 10

LAYER	(INCHES)	(VOL/VOL)
1	2.56	0.4264
2	5.46	0.3642
3	1.31	0.4370
4	10.32	0.4300
SNOW WATER	0.03	

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Van de Mark Landfill infiltration analysis, M.O., 3/23/95
Synthetic liner: 6" tops(#6,VPL),18" fill(#6,VPL), 6" drain(#2,LDL,
100 ft,7%), liner on 24" clay(#16,f=0.003,BL)

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FAIR GRASS

LAYER 1

VERTICAL PERCOLATION LAYER

THICKNESS	=	6.00 INCHES
POROSITY	=	0.4530 VOL/VOL
FIELD CAPACITY	=	0.1901 VOL/VOL
WILTING POINT	=	0.0848 VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.3047 VOL/VOL
SATURATED HYDRAULIC CONDUCTIVITY	=	0.002160000149 CM/SEC

LAYER 2

VERTICAL PERCOLATION LAYER

THICKNESS	=	18.00 INCHES
POROSITY	=	0.3609 VOL/VOL
FIELD CAPACITY	=	0.1638 VOL/VOL
WILTING POINT	=	0.0848 VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.3622 VOL/VOL
SATURATED HYDRAULIC CONDUCTIVITY	=	0.000036000001 CM/SEC

LAYER 3

LATERAL DRAINAGE LAYER

THICKNESS	=	6.00 INCHES
POROSITY	=	0.4370 VOL/VOL
FIELD CAPACITY	=	0.0624 VOL/VOL

WILTING POINT	=	0.0245 VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.4370 VOL/VOL
SATURATED HYDRAULIC CONDUCTIVITY	=	0.005799999926 CM/SEC
SLOPE	=	7.00 PERCENT
DRAINAGE LENGTH	=	100.0 FEET

LAYER 4

BARRIER SOIL LINER WITH FLEXIBLE MEMBRANE LINER

THICKNESS	=	24.00 INCHES
POROSITY	=	0.4300 VOL/VOL
FIELD CAPACITY	=	0.3663 VOL/VOL
WILTING POINT	=	0.2802 VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.4300 VOL/VOL
SATURATED HYDRAULIC CONDUCTIVITY	=	0.000000100000 CM/SEC
LINER LEAKAGE FRACTION	=	0.00030000

GENERAL SIMULATION DATA

SCS RUNOFF CURVE NUMBER	=	68.71
TOTAL AREA OF COVER	=	43560. SQ FT
EVAPORATIVE ZONE DEPTH	=	20.00 INCHES
UPPER LIMIT VEG. STORAGE	=	7.7706 INCHES
INITIAL VEG. STORAGE	=	6.9286 INCHES

SOIL WATER CONTENT INITIALIZED BY PROGRAM.

CLIMATOLOGICAL DATA

SYNTHETIC RAINFALL WITH SYNTHETIC DAILY TEMPERATURES AND SOLAR RADIATION FOR BUFFALO NEW YORK

MAXIMUM LEAF AREA INDEX	=	2.00
START OF GROWING SEASON (JULIAN DATE)	=	138
END OF GROWING SEASON (JULIAN DATE)	=	279

NORMAL MEAN MONTHLY TEMPERATURES, DEGREES FAHRENHEIT

JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
23.50	24.50	33.00	45.40	56.10	66.00
70.70	68.90	62.10	51.50	40.30	28.80

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AVERAGE MONTHLY VALUES IN INCHES FOR YEARS 1 THROUGH 10

	JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
PRECIPITATION						
TOTALS	3.18	2.61	2.78	2.97	2.89	2.21
	2.95	4.39	3.13	3.11	4.24	2.96
STD. DEVIATIONS	0.55	1.01	0.91	0.80	0.78	0.65
	1.06	2.04	1.46	1.37	1.06	0.73
RUNOFF						
TOTALS	0.003	0.000	0.034	0.000	0.000	0.000
	0.000	0.001	0.000	0.013	0.000	0.000
STD. DEVIATIONS	0.008	0.000	0.076	0.000	0.000	0.000
	0.000	0.004	0.000	0.042	0.000	0.000
EVAPOTRANSPIRATION						
TOTALS	0.426	0.645	2.305	2.963	3.201	2.958
	3.354	4.177	2.587	2.015	0.917	0.520
STD. DEVIATIONS	0.114	0.160	0.182	0.598	0.974	0.614
	1.156	1.253	1.132	0.402	0.118	0.127
LATERAL DRAINAGE FROM LAYER 3						
TOTALS	1.6672	1.8045	2.1627	1.7059	1.1650	0.5225
	0.1789	0.0561	0.0412	0.1439	0.5800	1.3346
STD. DEVIATIONS	0.7146	0.3436	0.4934	0.3621	0.4530	0.3714
	0.1806	0.0290	0.0457	0.2632	0.6118	0.8462
PERCOLATION FROM LAYER 4						
TOTALS	0.0000	0.0000	0.0001	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
STD. DEVIATIONS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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AVERAGE ANNUAL TOTALS & (STD. DEVIATIONS) FOR YEARS 1 THROUGH 10

	(INCHES)		(CU. FT.)	PERCENT
PRECIPITATION	37.42	(2.873)	135835.	100.00
RUNOFF	0.051	(0.087)	184.	0.14

EVAPOTRANSPIRATION	26.066	(1.965)	94620.	69.66
LATERAL DRAINAGE FROM LAYER 3	11.3624	(2.8367)	41246.	30.36
PERCOLATION FROM LAYER 4	0.0005	(0.0000)	2.	0.00
CHANGE IN WATER STORAGE	-0.060	(1.638)	-217.	-0.16

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PEAK DAILY VALUES FOR YEARS 1 THROUGH 10

	(INCHES)	(CU. FT.)
PRECIPITATION	2.81	10200.3
RUNOFF	0.229	833.1
LATERAL DRAINAGE FROM LAYER 3	0.1056	383.4
PERCOLATION FROM LAYER 4	0.0000	0.0
HEAD ON LAYER 4	29.7	
SNOW WATER	3.03	10987.4

MAXIMUM VEG. SOIL WATER (VOL/VOL) 0.3851

MINIMUM VEG. SOIL WATER (VOL/VOL) 0.0846

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FINAL WATER STORAGE AT END OF YEAR 10

LAYER	(INCHES)	(VOL/VOL)
1	1.35	0.2256
2	6.41	0.3563
3	2.62	0.4370
4	10.32	0.4300
SNOW WATER	0.03	

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Van de Mark Landfill infiltration analysis, M.O., 3/23/95
Synthetic liner: 6" tops(#6,VPL),18" fill(#6,VPL), 6" drain(#2,LDL,
100 ft,7%), liner on 24" clay(#16,f=0.01,BL)

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FAIR GRASS

LAYER 1

VERTICAL PERCOLATION LAYER

THICKNESS	=	6.00 INCHES
POROSITY	=	0.4530 VOL/VOL
FIELD CAPACITY	=	0.1901 VOL/VOL
WILTING POINT	=	0.0848 VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.3043 VOL/VOL
SATURATED HYDRAULIC CONDUCTIVITY	=	0.002160000149 CM/SEC

LAYER 2

VERTICAL PERCOLATION LAYER

THICKNESS	=	18.00 INCHES
POROSITY	=	0.3609 VOL/VOL
FIELD CAPACITY	=	0.1638 VOL/VOL
WILTING POINT	=	0.0848 VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.3622 VOL/VOL
SATURATED HYDRAULIC CONDUCTIVITY	=	0.000036000001 CM/SEC

LAYER 3

LATERAL DRAINAGE LAYER

THICKNESS	=	6.00 INCHES
POROSITY	=	0.4370 VOL/VOL
FIELD CAPACITY	=	0.0624 VOL/VOL

WILTING POINT	=	0.0245 VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.4370 VOL/VOL
SATURATED HYDRAULIC CONDUCTIVITY	=	0.005799999926 CM/SEC
SLOPE	=	7.00 PERCENT
DRAINAGE LENGTH	=	100.0 FEET

LAYER 4

BARRIER SOIL LINER WITH FLEXIBLE MEMBRANE LINER

THICKNESS	=	24.00 INCHES
POROSITY	=	0.4300 VOL/VOL
FIELD CAPACITY	=	0.3663 VOL/VOL
WILTING POINT	=	0.2802 VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.4300 VOL/VOL
SATURATED HYDRAULIC CONDUCTIVITY	=	0.000000100000 CM/SEC
LINER LEAKAGE FRACTION	=	0.01000000

GENERAL SIMULATION DATA

SCS RUNOFF CURVE NUMBER	=	68.71
TOTAL AREA OF COVER	=	43560. SQ FT
EVAPORATIVE ZONE DEPTH	=	20.00 INCHES
UPPER LIMIT VEG. STORAGE	=	7.7706 INCHES
INITIAL VEG. STORAGE	=	6.9262 INCHES

SOIL WATER CONTENT INITIALIZED BY PROGRAM.

CLIMATOLOGICAL DATA

SYNTHETIC RAINFALL WITH SYNTHETIC DAILY TEMPERATURES AND SOLAR RADIATION FOR BUFFALO NEW YORK

MAXIMUM LEAF AREA INDEX	=	2.00
START OF GROWING SEASON (JULIAN DATE)	=	138
END OF GROWING SEASON (JULIAN DATE)	=	279

NORMAL MEAN MONTHLY TEMPERATURES, DEGREES FAHRENHEIT

JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
23.50	24.50	33.00	45.40	56.10	66.00
70.70	68.90	62.10	51.50	40.30	28.80

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AVERAGE MONTHLY VALUES IN INCHES FOR YEARS 1 THROUGH 10

	JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
PRECIPITATION						
TOTALS	3.18	2.61	2.78	2.97	2.89	2.21
	2.95	4.39	3.13	3.11	4.24	2.96
STD. DEVIATIONS	0.55	1.01	0.91	0.80	0.78	0.65
	1.06	2.04	1.46	1.37	1.06	0.73
RUNOFF						
TOTALS	0.003	0.000	0.033	0.000	0.000	0.000
	0.000	0.001	0.000	0.013	0.000	0.000
STD. DEVIATIONS	0.008	0.000	0.075	0.000	0.000	0.000
	0.000	0.004	0.000	0.042	0.000	0.000
EVAPOTRANSPIRATION						
TOTALS	0.426	0.645	2.305	2.963	3.201	2.958
	3.354	4.177	2.587	2.015	0.917	0.520
STD. DEVIATIONS	0.114	0.160	0.182	0.598	0.974	0.614
	1.156	1.253	1.132	0.402	0.118	0.127
LATERAL DRAINAGE FROM LAYER 3						
TOTALS	1.6658	1.8039	2.1619	1.7047	1.1633	0.5214
	0.1767	0.0549	0.0402	0.1428	0.5791	1.3339
STD. DEVIATIONS	0.7141	0.3436	0.4935	0.3626	0.4533	0.3731
	0.1777	0.0285	0.0457	0.2631	0.6120	0.8464
PERCOLATION FROM LAYER 4						
TOTALS	0.0015	0.0015	0.0018	0.0014	0.0012	0.0011
	0.0011	0.0011	0.0010	0.0011	0.0011	0.0014
STD. DEVIATIONS	0.0004	0.0003	0.0004	0.0003	0.0001	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0001	0.0004

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AVERAGE ANNUAL TOTALS & (STD. DEVIATIONS) FOR YEARS 1 THROUGH 10

	(INCHES)		(CU. FT.)	PERCENT
PRECIPITATION	37.42	(2.873)	135835.	100.00
RUNOFF	0.050	(0.086)	182.	0.13

EVAPOTRANSPIRATION	26.066 (1.965)	94620.	69.66
LATERAL DRAINAGE FROM LAYER 3	11.3486 (2.8360)	41195.	30.33
PERCOLATION FROM LAYER 4	0.0151 (0.0013)	55.	0.04
CHANGE IN WATER STORAGE	-0.060 (1.638)	-217.	-0.16

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PEAK DAILY VALUES FOR YEARS 1 THROUGH 10

	(INCHES)	(CU. FT.)
PRECIPITATION	2.81	10200.3
RUNOFF	0.226	819.8
LATERAL DRAINAGE FROM LAYER 3	0.1056	383.4
PERCOLATION FROM LAYER 4	0.0001	0.3
HEAD ON LAYER 4	29.7	
SNOW WATER	3.03	10987.4

MAXIMUM VEG. SOIL WATER (VOL/VOL)	0.3851
MINIMUM VEG. SOIL WATER (VOL/VOL)	0.0846

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FINAL WATER STORAGE AT END OF YEAR 10

LAYER	(INCHES)	(VOL/VOL)
1	1.35	0.2252
2	6.41	0.3563
3	2.62	0.4370
4	10.32	0.4300
SNOW WATER	0.03	

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Van de Mark Landfill infiltration analysis, M.O., 05/01/95
Pre-capp coditions: 6" Tops(#6,VPL), 12" Fill(#6,VPL,COMP)
Site cannot drain

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FAIR GRASS

LAYER 1

VERTICAL PERCOLATION LAYER

THICKNESS	=	6.00 INCHES
POROSITY	=	0.4530 VOL/VOL
FIELD CAPACITY	=	0.1901 VOL/VOL
WILTING POINT	=	0.0848 VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.2280 VOL/VOL
SATURATED HYDRAULIC CONDUCTIVITY	=	0.002160000149 CM/SEC

LAYER 2

VERTICAL PERCOLATION LAYER

THICKNESS	=	12.00 INCHES
POROSITY	=	0.3609 VOL/VOL
FIELD CAPACITY	=	0.1638 VOL/VOL
WILTING POINT	=	0.0848 VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.2880 VOL/VOL
SATURATED HYDRAULIC CONDUCTIVITY	=	0.000036000001 CM/SEC

GENERAL SIMULATION DATA

SCS RUNOFF CURVE NUMBER	=	68.71
TOTAL AREA OF COVER	=	43560. SQ FT
EVAPORATIVE ZONE DEPTH	=	20.00 INCHES

POTENTIAL RUNOFF FRACTION = 0.000000
UPPER LIMIT VEG. STORAGE = 7.0488 INCHES
INITIAL VEG. STORAGE = 4.8562 INCHES
SOIL WATER CONTENT INITIALIZED BY PROGRAM.

CLIMATOLOGICAL DATA

SYNTHETIC RAINFALL WITH SYNTHETIC DAILY TEMPERATURES AND SOLAR RADIATION FOR BUFFALO NEW YORK

MAXIMUM LEAF AREA INDEX = 2.00
START OF GROWING SEASON (JULIAN DATE) = 138
END OF GROWING SEASON (JULIAN DATE) = 279

NORMAL MEAN MONTHLY TEMPERATURES, DEGREES FAHRENHEIT

JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
23.50	24.50	33.00	45.40	56.10	66.00
70.70	68.90	62.10	51.50	40.30	28.80

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AVERAGE MONTHLY VALUES IN INCHES FOR YEARS 1 THROUGH 10

	JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
PRECIPITATION						
TOTALS	3.18	2.61	2.78	2.97	2.89	2.21
	2.95	4.39	3.13	3.11	4.24	2.96
STD. DEVIATIONS	0.55	1.01	0.91	0.80	0.78	0.65
	1.06	2.04	1.46	1.37	1.06	0.73
RUNOFF						
TOTALS	0.000	0.000	0.000	0.000	0.000	0.000
	0.000	0.000	0.000	0.000	0.000	0.000
STD. DEVIATIONS	0.000	0.000	0.000	0.000	0.000	0.000
	0.000	0.000	0.000	0.000	0.000	0.000
EVAPOTRANSPIRATION						
TOTALS	0.426	0.645	2.309	2.969	3.230	2.905
	3.046	4.187	2.579	2.023	0.922	0.522
STD. DEVIATIONS	0.114	0.160	0.184	0.598	0.985	0.674
	1.024	1.266	1.146	0.412	0.119	0.128

PERCOLATION FROM LAYER 2

TOTALS	2.4187	2.0879	2.0357	0.5040	0.1095	0.0353
	0.0013	0.0275	0.0701	0.4586	1.9545	1.9424
STD. DEVIATIONS	0.8588	0.6801	1.5369	0.5555	0.0858	0.0154
	0.0013	0.0712	0.2217	0.6630	1.5164	0.9705

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AVERAGE ANNUAL TOTALS & (STD. DEVIATIONS) FOR YEARS 1 THROUGH 10

	(INCHES)		(CU. FT.)	PERCENT
PRECIPITATION	37.42	(2.873)	135835.	100.00
RUNOFF	0.000	(0.000)	0.	0.00
EVAPOTRANSPIRATION	25.763	(2.056)	93519.	68.85
PERCOLATION FROM LAYER 2	11.6456	(3.0901)	42273.	31.12
CHANGE IN WATER STORAGE	0.012	(0.664)	42.	0.03

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PEAK DAILY VALUES FOR YEARS 1 THROUGH 10

	(INCHES)	(CU. FT.)
PRECIPITATION	2.81	10200.3
RUNOFF	0.000	0.0
PERCOLATION FROM LAYER 2	1.1210	4069.4
SNOW WATER	3.02	10956.2

MAXIMUM VEG. SOIL WATER (VOL/VOL) 0.3585

MINIMUM VEG. SOIL WATER (VOL/VOL) 0.0846

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FINAL WATER STORAGE AT END OF YEAR 10

LAYER	(INCHES)	(VOL/VOL)
1	1.33	0.2225
2	3.62	0.3020
SNOW WATER	0.03	

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New York State Department of Environmental Conservation
Division of Environmental Permits, Region 9
270 Michigan Avenue, Buffalo, New York, 14203-2915
Phone: (716) 851-7165 · **Fax:** (716) 851-7168
Website: www.dec.ny.gov

Alexander B. Grannis
Commissioner

September 23, 2008

Mr. Richard G. Shotell
President
Vanchlor Company, Incorporated
45 Main Street
Lockport, New York 14094

Dear Mr. Shotell:

PART 373 PERMIT RENEWAL
VANCHLOR COMPANY, INCORPORATED
CITY OF LOCKPORT – NIAGARA COUNTY
DEC NO. 9-2909-00049/00003
EPA ID NO. NYD991290529

Enclosed is the referenced 6 NYCRR Part 373 Permit which has been renewed September 23, 2008. The Notice of Complete Application for the permit renewal was published in The Lockport Union Sun and Journal and in the Department's Environmental Notice Bulletin on Wednesday, August 6, 2008. A radio announcement regarding the permit renewal was broadcast on WLVL once between the hours of 7:00 a.m. and 9:00 p.m. and once again between 4:00 p.m. and 6:00 p.m. The public comment period on the permit renewal expired on September 22, 2008, and no comments were received by the Department as of that date.

If you have any questions regarding the administrative processing of the permit renewal, please contact Mr. Jeffrey Dietz or me at (716) 851-7165. Technical questions relating to specific permit conditions may be directed to Mr. Stanley Radon at (716) 851-7220.

Respectfully,

Steven J. Doleski

Steven J. Doleski
Regional Permit Administrator

JED:vm

Enclosure

cc (w/enc.): Mr. James Strickland/Mr. Stanley Radon, Region 9,
Division of Solid and Hazardous Materials
Mr. Lawrence Thomas, Central Office, Division of Solid and Hazardous Materials
Ms. Denise Radtke, Central Office, Division of Solid and Hazardous Materials
Mr. James Reidy, RCRA Program Branch, USEPA Region II
Mr. Matt Forcucci, NYS Department of Health
Mr. James Devald, Niagara County Health Department
Ms. Pamela Cook, VanDeMark Chemical Company, Incorporated
cc (w/o enc.): Mr. Daniel David, NYSDEC Regional Engineer

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Facility DEC ID 9-2909-00049

PERMIT

Under the Environmental Conservation Law (ECL)

Permittee and Facility Information

Permit Issued To:
VANCHLOR CO INC
45 MAIN ST
LOCKPORT, NY 14094
(716) 434-2624

Facility:
VANCHLOR CO
600 MILL ST
LOCKPORT, NY 14094

Facility Permit Contact:
RICHARD G SHOTELL
VANCHLOR CO INC
45 MAIN ST
LOCKPORT, NY 14094
(716) 434-2624

Environmental Contact:
PAMELA J COOK
VANDEMARK CHEMICAL INC
1 N TRANSIT RD
LOCKPORT, NY 14094-2399
(716) 433-6764

Facility Location: in LOCKPORT in NIAGARA COUNTY
Facility Principal Reference Point: NYTM-E: 199.07 NYTM-N: 4788.1
Latitude: 43°11'08.6" Longitude: 79°42'10.9"
Authorized Activity: Post-Closure care of a 2.5 acre closed hazardous waste landfill containing chemical waste by-products generated from VanDeMark Chemical Company's prior production of silicon tetrachloride. Certification of closure accepted by the New York State Department of Environmental Conservation on October 11, 1988.

Permit Authorizations

Resource Conservation and Recovery Act - Under Article 27, TItle 9
Permit ID 9-2909-00049/00003
Renewal Effective Date: 9/23/2008 Expiration Date: 9/22/2013

NYSDEC Approval

By acceptance of this permit, the permittee agrees that the permit is contingent upon strict compliance with the ECL, all applicable regulations, and all conditions included as part of this permit.

Permit Administrator: STEVEN J DOLESKI, Regional Permit Administrator
Address: NYSDEC REGION 9 HEADQUARTERS
270 MICHIGAN AVE
BUFFALO, NY 14203 -2915

Authorized Signature: Steven J. Doleski Date 9/23/2008

Distribution List

PAMELA J COOK
RICHARD G SHOTELL
JAMES STRICKLAND
STANLEY RADON
LAWRENCE M THOMAS
DENISE RADTKE
JAMES M REIDY
MATT FORCUCCI
JAMES J DEVALD

Permit Components

RESOURCE CONSERVATION AND RECOVERY ACT PERMIT CONDITIONS

GENERAL CONDITIONS, APPLY TO ALL AUTHORIZED PERMITS

NOTIFICATION OF OTHER PERMITTEE OBLIGATIONS

RESOURCE CONSERVATION AND RECOVERY ACT PERMIT CONDITIONS

1. **Specified Modules and Attachments** The Permittee must operate the facility in strict accordance with the modules and attachemnts to this permit as specified below:

Modules

Module I	Post-Closure Regulatory Provisions
Module II	Groundwater Monitoring
Module III	Post-Closure Care Conditions

Attachments

Attachment II-A	Groundwater Monitoring Plan
Attachment II-B	Well Purging/Sampling Data
Attachment II-C	Groundwater Monitoring System Inspection Plan and Forum
attachment II-D	Laboratory QA/QC Deliverables

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GENERAL CONDITIONS - Apply to ALL Authorized Permits:

1. **Facility Inspection by The Department** The permitted site or facility, including relevant records, is subject to inspection at reasonable hours and intervals by an authorized representative of the Department of Environmental Conservation (the Department) to determine whether the permittee is complying with this permit and the ECL. Such representative may order the work suspended pursuant to ECL 71- 0301 and SAPA 401(3).

The permittee shall provide a person to accompany the Department's representative during an inspection to the permit area when requested by the Department.

A copy of this permit, including all referenced maps, drawings and special conditions, must be available for inspection by the Department at all times at the project site or facility. Failure to produce a copy of the permit upon request by a Department representative is a violation of this permit.

2. **Relationship of this Permit to Other Department Orders and Determinations** Unless expressly provided for by the Department, issuance of this permit does not modify, supersede or rescind any order or determination previously issued by the Department or any of the terms, conditions or requirements contained in such order or determination.

3. **Applications For Permit Renewals, Modifications or Transfers** The permittee must submit a separate written application to the Department for permit renewal, modification or transfer of this permit. Such application must include any forms or supplemental information the Department requires. Any renewal, modification or transfer granted by the Department must be in writing. Submission of applications for permit renewal, modification or transfer are to be submitted to:

Regional Permit Administrator
NYSDEC REGION 9 HEADQUARTERS
270 MICHIGAN AVE
BUFFALO, NY14203 -2915

4. **Submission of Renewal Application** The permittee must submit a renewal application at least 180 days before permit expiration for the following permit authorizations: Resource Conservation and Recovery Act.

5. **Permit Modifications, Suspensions and Revocations by the Department** The Department reserves the right to modify, suspend or revoke this permit. The grounds for modification, suspension or revocation include:

a. materially false or inaccurate statements in the permit application or supporting papers;

b. failure by the permittee to comply with any terms or conditions of the permit;

c. exceeding the scope of the project as described in the permit application;

d. newly discovered material information or a material change in environmental conditions, relevant technology or applicable law or regulations since the issuance of the existing permit;

e. noncompliance with previously issued permit conditions, orders of the commissioner, any provisions of the Environmental Conservation Law or regulations of the Department related to the permitted activity.

6. **Permit Transfer** Permits are transferrable unless specifically prohibited by statute, regulation or another permit condition. Applications for permit transfer should be submitted prior to actual transfer of ownership.

NOTIFICATION OF OTHER PERMITTEE OBLIGATIONS

Item A: Permittee Accepts Legal Responsibility and Agrees to Indemnification
The permittee, excepting state or federal agencies, expressly agrees to indemnify and hold harmless the Department of Environmental Conservation of the State of New York, its representatives, employees, and agents ("DEC") for all claims, suits, actions, and damages, to the extent attributable to the permittee's acts or omissions in connection with the permittee's undertaking of activities in connection with, or operation and maintenance of, the facility or facilities authorized by the permit whether in compliance or not in compliance with the terms and conditions of the permit. This indemnification does not extend to any claims, suits, actions, or damages to the extent attributable to DEC's own negligent or intentional acts or omissions, or to any claims, suits, or actions naming the DEC and arising under Article 78 of the New York Civil Practice Laws and Rules or any citizen suit or civil rights provision under federal or state laws.

Item B: Permittee's Contractors to Comply with Permit
The permittee is responsible for informing its independent contractors, employees, agents and assigns of their responsibility to comply with this permit, including all special conditions while acting as the permittee's agent with respect to the permitted activities, and such persons shall be subject to the same sanctions for violations of the Environmental Conservation Law as those prescribed for the permittee.

Item C: Permittee Responsible for Obtaining Other Required Permits
The permittee is responsible for obtaining any other permits, approvals, lands, easements and rights-of-way that may be required to carry out the activities that are authorized by this permit.

Item D: No Right to Trespass or Interfere with Riparian Rights
This permit does not convey to the permittee any right to trespass upon the lands or interfere with the riparian rights of others in order to perform the permitted work nor does it authorize the impairment of any rights, title, or interest in real or personal property held or vested in a person not a party to the permit.

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NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF SOLID AND HAZARDOUS MATERIALS

VANCHLOR COMPANY INCORPORATED

MODULE I
Post-Closure Regulatory Provisions

A. EFFECT OF PART 373 PERMIT

The Permittee must comply with all terms and conditions of this Permit. This Permit consists of the conditions contained herein and the applicable regulations cited herein. Pursuant to 6 NYCRR 373-1.6(c)(4), the applicable regulations or requirements are those which are in effect prior to final issuance of this Permit. The exceptions are those requirements which become effective by statute, which become effective due to changes in 6 NYCRR 376, and which become effective due to changes in 6 NYCRR 373-1.6.

The Permittee is required to perform post-closure care in accordance with the conditions of this Permit. Any storage, treatment, or disposal of hazardous waste not authorized in this Permit is prohibited unless exempt from 6 NYCRR Part 373. Issuance of this Permit does not authorize any injury to persons or property, any invasion of other private rights, or any infringement of federal, state or local laws or regulations.

All approved plans, reports, specifications and schedules required by the terms of this Permit and all subsequent amendments to those documents are incorporated by reference into this Permit. Upon incorporation, the provisions of each such document shall be binding upon the Permittee and have the same legal force and effect as the requirements of this Permit.

B. GENERAL PERMITTING REQUIREMENTS FOR THIS PART 373 PERMIT

The Permittee must comply with 6 NYCRR Subpart 373-1 as follows:

1. General (373-1.1)
   a) 6 NYCRR Subpart 373-1.1(b)-Applicability;
   b) 6 NYCRR Subpart 373-1.1(c)-Safeguarding Information;
   c) 6 NYCRR Subpart 373-1.1(f)-Uniform Procedures;
   d) 6 NYCRR Subpart 373-1.1(g)-Enforcement;
   e) 6 NYCRR Subpart 373-1.1(h)-Severability; and
   f) 6 NYCRR Subpart 373-1.1 (l)-Terms Used in This Permit are Defined in Part 370 of This Title.

2. Permit Application Requirements (373-1.4)
   a) 6 NYCRR Subpart 373-1.4(a)(5)(ii)-Reports;
   b) 6 NYCRR Subpart 373-1.4(a)(5)(iii)-Changes to Authorization;
   c) 6 NYCRR Subpart 373-1.4(a)(5)(iv)-Certification; and
   d) 6 NYCRR Subpart 373-1.4(g)-Record keeping.

3. Permit Conditions (373-1.6)
   a) 6 NYCRR Subpart 373-1.6(a)-Conditions Applicable to All Permits;
   b) 6 NYCRR Subpart 373-1.6(a)(1)-Duty to Comply;
   c) 6 NYCRR Subpart 373-1.6(a)(2)-Duty to Reapply;
   d) 6 NYCRR Subpart 373-1.6(a)(3)-Duty to Halt or Reduce Activity Not a Defense;
   e) 6 NYCRR Subpart 373-1.6(a)(4)-Duty to Mitigate;
   f) 6 NYCRR Subpart 373-1.6(a)(5)-Proper Operation and Maintenance;
   g) 6 NYCRR Subpart 373-1.6(a)(6)-Permit Actions;
   h) 6 NYCRR Subpart 373-1.6(a)(7)-Property Rights;
   i) 6 NYCRR Subpart 373-1.6(a)(8)-Duty to Provide Information;
   j) 6 NYCRR Subpart 373-1.6(a)(9)(i) through (iv)-Inspection and Entry;
   k) 6 NYCRR Subpart 373-1.6(a)(10)(i) through (iii)-Monitoring and Records;
   l) 6 NYCRR Subpart 373-1.6(a)(11)-Signatory Requirements;
   m) 6 NYCRR Subpart 373-1.6(a)(12)(i) through (xi)-Reporting Requirements; and
   n) 6 NYCRR Subpart 373-1.6(d)(2)(i) through (iv)-Alternative Schedules of Compliance.

4. Permit Modifications (373-1.7)
   a) 6 NYCRR Subpart 373-1.7(a)-Transfer of Permits;
   b) 6 NYCRR Subpart 373-1.7(b)-Modification of Permits;
   c) 6 NYCRR Subpart 373-1.7(c)-Minor Modifications of RCRA Delegated Permits;
   d) 6 NYCRR Subpart 373-1.7(d)-Major Modifications;
   e) 6 NYCRR Subpart 373-1.7(e)-Announcement of Determinations;
   f) 6 NYCRR Subpart 373-1.7(f)-Temporary Authorizations; and
   g) 6 NYCRR Subpart 373-1.7(g)-Newly Regulated Wastes and Units.

5. Expiration and Continuation of Permits (373-1.8)
   a) 6 NYCRR Subpart 373-1.8(b)-Renewal Applications.

C. FINAL STATUS STANDARDS FOR THIS PART 373 PERMIT

The Permittee must comply with 6 NYCRR Subpart 373-2 as follows:

1. General (373-2.1)
   a) 6 NYCRR Subpart 373-2.1(a)-Purpose, Scope and Applicability; and
   b) 6 NYCRR Subpart 373-2.1(c)-Imminent Hazard Action.

2. General Facility Standards (373-2.2)
   a) 6 NYCRR Subpart 373-2.2(a)-Applicability;
   b) 6 NYCRR Subpart 373-2.2(b)-Facility Ownership Transfer;
   c) 6 NYCRR Subpart 373-2.2(f)-Security;
   d) 6 NYCRR Subpart 373-2.2(g)-General Inspection Requirements;
   e) 6 NYCRR Subpart 373-2.2(h)-Personnel Training;
   f) 6 NYCRR Subpart 373-2.2(i)-General Requirements for Ignitable Reactive or Incompatible Wastes;
   g) 6 NYCRR Subpart 373-2.2(j)-Location Standards; and
   h) 6 NYCRR Subpart 373-2.2(k)-Construction Quality Assurance Program.

3. Preparedness and Prevention (373-2.3)
   a) 6 NYCRR Subpart 373-2.3(a)-Applicability;
   b) 6 NYCRR Subpart 373-2.3(b)-Design and Operation of Facility;
   c) 6 NYCRR Subpart 373-2.3(c)-Required Equipment;
   d) 6 NYCRR Subpart 373-2.3(d)-Testing and Maintenance of Equipment;
   e) 6 NYCRR Subpart 373-2.3(e)-Access to Communications or Alarm System; and
   f) 6 NYCRR Subpart 373-2.3(g)-Arrangements With Local Authorities.

4. Contingency Plan and Emergency Procedures (373-2.4)
   a) 6 NYCRR Subpart 373-2.4(a)-Applicability;
   b) 6 NYCRR Subpart 373-2.4(b)-Purpose and Implementation of Contingency Plan;
   c) 6 NYCRR Subpart 373-2.4(c)-Content of Contingency Plan;
   d) 6 NYCRR Subpart 373-2.4(d)-Copies of Contingency Plan;
   e) 6 NYCRR Subpart 373-2.4(e)-Amendment of Contingency Plan;
   f) 6 NYCRR Subpart 373-2.4(f)-Emergency Coordinator; and
   g) 6 NYCRR Subpart 373-2.4(g)-Emergency Procedures.

5. Manifest System, Record keeping and Reporting (373-2.5)
   a) 6 NYCRR Subpart 373-2.5(a)-Applicability;
   b) 6 NYCRR Subpart 373-2.5(b)-Manifest Requirements;
   c) 6 NYCRR Subpart 373-2.5(c)-Operating Record;
   d) 6 NYCRR Subpart 373-2.5(d)-Availability, Retention, and Disposition of Records;
   e) 6 NYCRR Subpart 373-2.5(e)-Annual Report;
   f) 6 NYCRR Subpart 373-2.5(f)-Unmanifested Waste; and
   g) 6 NYCRR Subpart 373-2.5(g)-Additional Reports.

The Permittee must retain for inspection by the Department: (1) referenced documents of the Completed Permit Application that are made part of this Permit; (2) all subsequent Department approved changes to the contents of that Application, including the most recently Department approved post-closure plan and post-closure cost estimate for the landfill; (3) all Department

approved final design plans and engineering reports.

The Permittee must provide and maintain a log of all Department approved modifications made to documents that are incorporated by reference in this Permit. All proposed modifications shall have a revision date placed on the revised pages by the Permittee. The log shall contain at a minimum the following information regarding an approved modification: (1) the name of the specific document being modified (e.g., contingency plan, security requirements, hazardous waste unit operations, etc.); (2) the approval date which will correspond with the date on the approval letter from the Department; (3) the pertinent page(s), section(s), and/or attachments(s) of the referenced permit documents subject to the approved modification(s); (4) the revision date of the modification(s); and (5) a brief statement regarding the nature of the modification(s). The Permittee shall place the log at the beginning of this Permit along with a copy of the Department's approval letter(s). The Permittee must replace the page(s), section(s), and/or attachment(s) in the permit application with the modified page(s), section(s), and/or attachment(s) approved by the Department.

6. Post-Closure (373-2.7)

The Permittee must comply with 6 NYCRR Subpart 373-2.7 for the post-closure care of the closed hazardous waste management unit (i.e., landfill) as follows:

a) 6 NYCRR Subpart 373-2.7(a)-Applicability;
b) 6 NYCRR Subpart 373-2.7(g)-Post-Closure Care and Use of Property;
c) 6 NYCRR Subpart 373-2.7(h)-Post-Closure Plan; Amendment to Plan;
d) 6 NYCRR Subpart 373-2.7(i)-Post-Closure Notices; and
e) 6 NYCRR Subpart 373-2.7(j)-Certification of Completion of Post-Closure Care.

7. Financial Requirements (373-2.8)

The Permittee must comply with 6 NYCRR Subpart 373-2.8 for meeting the financial requirements associated with the post-closure care of the hazardous waste management unit (i.e., landfill) as follows:

a) 6 NYCRR Subpart 373-2.8(a)-Applicability;
b) 6 NYCRR Subpart 373-2.8(b)-Definition of Terms as Used in This Section;
c) 6 NYCRR Subpart 373-2.8(e)-Cost Estimate for Post-Closure Care;
d) 6 NYCRR Subpart 373-2.8(f)-Financial Assurance for Post-Closure Care;
e) 6 NYCRR Subpart 373-2.8(g)-Use of a Mechanism for Financial Assurance of Both Closure and Post-Closure Care;
f) 6 NYCRR Subpart 373-2.8(i)-Incapacity of Owners or Operators, Guarantors, or Financial Institutions; and
g) 6 NYCRR Subpart 373-2.8(j)-Wording of the Instruments.

8. Landfill Post-Closure Care (373-2.14)

The Permittee must comply with 6 NYCRR Subpart 373-2.14(g) - Post-Closure Care for the closed hazardous waste management unit.

D. LAND DISPOSAL RESTRICTIONS FOR THIS PART 373 PERMIT

The Permittee must comply with all applicable provisions in 6 NYCRR Part 376 for the land disposal of hazardous waste except for hazardous waste generated by remediation or corrective action activities for placement in an on-site corrective action management unit approved by the Commissioner.

E. QUALITY ASSURANCE

The Permittee shall conduct a quality assurance program to ensure that the monitoring data are technically accurate and statistically valid. The quality assurance program shall be in accordance with Chapter One and applicable subsections of "Test Methods for Evaluating Solid Waste: Physical/Chemical Methods," EPA Publication SW-846, Third Edition, First Update, 1990 or later approved revisions, or equivalent methods approved by the Department.

F. ALL PLANS, REPORTS, SPECIFICATIONS, IMPLEMENTATION SCHEDULES AND SUBMITTALS

1. All submittals required by the Permit must be submitted to the Commissioner at the address list below. **One (1) copy to:**

New York State Department of Environmental Conservation
Division of Solid and Hazardous Materials
625 Broadway, 8th Floor
Albany, New York 12233-7252
Attn: Director, Bureau of Radiation and Hazardous Site Management

One (1) copy to:

New York State Department of Environmental Conservation
Region 9
270 Michigan Avenue
Buffalo, New York 14203-2915
Attn: Regional Solid and Hazardous Materials Engineer.

2. Permittee shall submit plans, reports, specifications, schedules and any subsequent amendments required by this Permit to the Department for review and comment. If the Department determines that any plan, report, specification, schedule or respective amendment required by this Permit is deficient either in whole or in part, the Permittee shall either promptly respond to the comments or make revisions to the submission consistent with the Department's comments. Within a reasonable time

frame specified by the Department, a final plan, report, specification schedule or respective amendment shall be submitted to the Department for approval. An extension of the due date for any submittal may be granted by the Department based on the Permittee's documentation that sufficient justification for the extension exists.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF SOLID AND HAZARDOUS MATERIALS

VANCHLOR COMPANY, INCORPORATED

MODULE II
Groundwater Monitoring

A. Applicability

1. The permittee shall comply with all applicable groundwater monitoring requirements set forth in 6 NYCRR 373-2.6.

2. The permittee shall modify the groundwater monitoring program, as necessary, to maintain compliance with any subsequent changes in 6 NYCRR 373-2.6 within ninety (90) days after the effective date of such change.

3. The permittee shall follow its health and safety plan when carrying out the permit's groundwater monitoring activities, unless other requirements govern.

B. Permit Modifications

If the permittee determines that the monitoring programs required under this permit no longer satisfy the requirements of the regulation, the permittee shall, within ninety (90) days of such determination, submit an application for a permit modification which describes the changes that will be necessary to maintain regulatory compliance at the site. The Commissioner may require the permittee to perform additional sampling and install additional monitoring wells, as necessary, to maintain characterization of hydrogeology and groundwater quality at the site. If at any time it is determined that the groundwater monitoring network is not capable of such characterization, the network must be upgraded until such characterization is complete.

C. Groundwater Monitoring Plan

The permittee shall follow a NYSDEC approved groundwater monitoring plan when conducting the sampling and analytical requirements of this permit. The plan shall conform with the "RCRA Quality Assurance Project Plan Guidance," the "RCRA Groundwater Monitoring Technical Enforcement Guidance Document (EPA, September 1986)" and "SW-846." Within sixty (60) days of the effective date of this permit renewal, the permittee shall submit a groundwater monitoring plan for Department review and

approval. Until such time that the new plan is approved and in effect, the permittee shall monitor in accordance with the plan used during the previous permit term.

D. Reporting Requirements

The permittee shall report to the Commissioner the results of all groundwater data obtained through the monitoring in accordance with all required programs specified in this permit. The minimum QA/QC data and information delivered with the samples analysis are stipulated in Attachment **II-D**.

E. Inability to Obtain Representative Samples

1. If the permittee knows that a well may not provide a representative sample, or accurate piezometric values, may be damaged, or is inaccessible, the permittee shall within seven (7) days of such knowledge notify the Commissioner of the problem in writing and propose a remedy. Within fourteen days (14) days of such knowledge, the permittee shall attempt to remedy the problem and, when appropriate, sample or resample the well. Within twenty-one (21) days of such knowledge, the permittee shall, through written notice to the Commissioner, provide information which describes the nature of the problem.

   In addition, the notification shall contain:

   (a) A description of how the problem with the well has been rectified;

   or

   (b) A schedule for the rehabilitation or replacement of the well.

   If a problem with the well prevented the permittee from obtaining a scheduled sample, a sample shall be obtained within fourteen (14) days after rehabilitation or replacement of the well.

2. If the permittee knows that an error in either sampling or analytical methods has occurred, the affected samples shall be retaken within fourteen (14) days of such knowledge.

F. Well Maintenance

The groundwater monitoring system shall be maintained to ensure that all monitoring points yield representative samples of high integrity. During each sampling event, all wells in the monitoring network shall be inspected for integrity in accordance with the groundwater monitoring system inspection plan contained here in. Should a well be

found to be damaged beyond usability, blocked, or broken, or fail to recharge properly, it shall be repaired or abandoned and replaced if necessary. Should any cracking or frost heaving of the grout be observed, repairs will be made and the top of the inner well casing resurveyed to insure accurate definition of groundwater elevations. All repairs or replacements shall be completed prior to the next scheduled sampling event.

G. Collection of Groundwater Samples by NYSDEC

At the request of the Department, the permittee shall allow the Department, or its authorized representative, to collect samples or splits of any samples collected by the permittee pursuant to the requirements of this permit. Similarly, at the request of the permittee, the Department will allow the permittee or the permittee's authorized representatives to take splits or duplicates of any samples collected by the department. The permittee shall provide for adequate disposal of purge water whenever samples are collected by the Department. The permittee shall notify the Regional Office (716-851-7220) at least one week prior to conducting any field-related activities at the landfill site.

H. Well Construction

All groundwater monitoring wells installed after the effective date of this permit, and pursuant to the requirements of this permit, shall be constructed in accordance with the most recent RCRA requirements and guidelines. Work plans which include proposed well installations shall include a description of installation procedures, and materials to be used.

Attachment II-A

GROUNDWATER MONITORING PLAN

To assure consistency in the sampling program, the Permittee shall follow this NYSDEC approved Groundwater Monitoring Plan. This Plan must be kept at the facility, and regularly updated with current monitoring well and groundwater quality data. The Permittee shall ensure that all appropriate site personnel and outside contractors have been properly trained in the application of the Groundwater Monitoring Plan, and that this Plan is followed whenever samples are obtained at the site.

1.0 Pre-sampling Procedures

1.1 Procurement, inspection, and calibration of equipment.

All field instrumentation shall be calibrated before use following manufacturer's recommended procedures for calibration.

1.2 Procurement and preparation of sample bottles.

Sample bottles shall be obtained from the analytical laboratory being used for the sampling program. Bottle procurement shall follow the contract laboratory procedures. All sample bottles shall be prepared in accordance with EPA protocol.

1.3 Storage and handling of sampling equipment between uses.

Each well has a dedicated stainless steel bailer. The bailers are stored in separate closed PVC casings.

1.4 Personal protective equipment.

During sampling, employees shall be required to wear impervious rubber gloves and safety glasses with side shields. The rubber gloves shall be discarded between wells to prevent cross contamination.

1.5 Well purging techniques.

Each monitoring well shall be purged in the morning of the sampling event to remove stagnant water contained in the well casing. Purging will be conducted with dedicated stainless steel bailers. Bailers will be rinsed with deionized water prior to purging the well and prior to sampling. Three well volumes shall be removed from the well or until the well is dry. All information related to the well purging shall be recorded on the well log.

1.6 Water level measuring technique.

Dedicated tape measures with a plopper attachment or the use of an electronic measuring device shall be used to measure water level elevations. In the case of using non-dedicated measuring devices, all components of the device that will enter the well shall be thoroughly rinsed with deionized water before and after measurement of the well. Water level elevations shall be measured prior to purging and prior to sampling. Records of the water level elevations shall be recorded on the well logs. The depth of the well shall also be measured and recorded once a year, during the last sampling event of the calendar year, to determine if the screen is obstructed , or if there is an excessive silt buildup.

1.7 Laboratory notification/verification.

The designated date of sampling is conveyed by phone to the laboratory personnel to coordinate sampling and analysis.

2.0 Sampling Procedures

2.1 Use of sampling equipment.

Collection of samples from monitoring wells will be accomplished with a new polyethylene rope attached to a dedicated stainless steel bailer for each well. This rope will be discarded after each sampling event.

Prior to sampling, the inside and outside of the bailer shall be rinsed thoroughly with deionized water (this step may be omitted if the sampling is taking place immediately following purging of the well). The bailer shall be lowered **slowly** into the well being careful not to hit the bottom of the well casing. The sample shall be poured directly from the bailer into the sample bottles.

After sample collection, each bailer shall be thoroughly rinsed with deionized water and returned to its dedicated case. The rope shall be discarded after each sampling event.

2.2 Field measurements and calibration.

All field instrumentation shall be calibrated before use following manufacturer's recommended procedures for calibration.

2.3 Sampling, handling, and order of collection techniques.

The wells shall be sampled from the least contaminated to the well with the highest contamination levels. The order of sampling shall be as follows: Eighteen Mile Creek, D-55, VDM-9, VDM-10, VDM-11, and VDM-14. VDM-12 shall be sampled if water is

found to be present. VDM-12 shall be checked for the presence of water by using a tape with a plopper attachment, or by using an electronic measuring device. The water level or well depth, if the well is dry, shall be reported for each sampling event.

VOA vials will be filled first, and will be checked to ensure that no air bubbles are present. The sample bottles that remain will be filled according to size, largest to smallest, with at least 75% capacity filled. The pH will be measured on a small separate aliquot.

2.4 Sample containers to be used.

Sample containers shall be of a type as required by EPA protocol and as designated by the analytical laboratory conducting the analysis.

2.5 Sample preservation techniques.

Sample preservation shall be in accordance with EPA protocol. Preservatives shall be added by the laboratory providing the sample containers and conducting the analysis.

2.6 Sample labels.

The sample labels shall contain the date and time of sampling, well location, the person taking the sample, and the preservative added. Other information on the label shall be as required by the laboratory conducting the analysis for QA/QC procedures.

2.7 Sample storage.

The samples shall be placed in an insulated chest with ice (other cooling media) immediately after collection. The samples shall be transported to the laboratory conducting the analysis the same day as the collection occurs.

2.8 Field QA/QC. Cleaning, blanks, and duplicates.

Cleaning of the sampling equipment is covered in sections 2.1

A trip blank form shall accompany the sample containers from the laboratory to the field and back to the laboratory. The trip blank shall be tested for VOAs.

Duplicate samples are taken from the well with the quickest recovery time (VDM-14). Duplicate samples for all parameters shall be collected in the following manner. For each parameter collected at the well, the duplicate and the initial sample from the well shall be collected from the same bailers at the same time with each sample bottle receiving approximately the same volume from each bailer. (For example - at well VDM-14 you are collecting the duplicate sample. VOAs are collected first. Taking one VOA labeled for

VDM-14 and one VOA labeled for the duplicate, partially fill one then partially fill the other. Then go back and finish filling the first, then finish filling the second. Each sample bottle shall receive approximately equal amounts of water from the bailer. This procedure shall be followed with each sample bottle for each parameter until all sample bottles for the initial sample and the duplicate sample are filled.)

2.9 Sample shipping and chain of custody.

Samples shall be shipped in an insulated ice chest with an adequate cooling media. Chain of custody records shall be filled out in the field. When the samples are delivered to the laboratory performing the analysis, the chain of custody shall be completed and returned with the analytical results.

3.0 Laboratory Handling and Analysis

The laboratories used for the groundwater monitoring program analysis shall be limited to laboratories who are certified under the NYSDOH ELAP to conduct the analysis covered under the plan and can carry out the QA/QC requirements as specified in Attachment II-D of this module.

Copies of the laboratory QA/QC programs shall be provided to the Department upon request.

4.0 Background Information and Well Record for Each Monitoring Well

Background information and well record on each monitoring well is provided in **attachment II-B.**

5.0 Statistical and Other Evaluation Methods for Groundwater Quality Data

5.1 Semi-annual evaluation of groundwater data.

The permittee shall prepare concentration versus time plots for each monitoring well.

5.2 Annual evaluation of groundwater data.

Within the annual report, the permittee shall address the following:

(i) Groundwater quality data will be compared on an inter well basis to background water quality data for that parameter if the groundwater protection concentration is exceeded. Additional data analysis will be performed if the groundwater concentration for any parameter at any monitoring well exceeds the background water concentration value for that parameter by 3 standard deviations

and also exceeds the groundwater protection concentration for that parameter.

(ii) For parameters that exceed the background water quality concentration by 3 standard deviations and exceed the groundwater protection concentration for that parameter, a moving average trend test will be performed. Moving average trend tests are used with time dependent groundwater data to reduce the fluctuations in analytic concentrations due to seasonal variations in the groundwater flow regimes. The use of moving average calculations with detected parameters will provide an indication of upward or downward trends over time. The four most recent results for each parameter will be averaged and graphed with time. The use of moving average will provide information on the long term trend of constituent concentration levels while smoothing out seasonal variations which may be present. After the moving average has been plotted for several sampling events, a linear trend line will be fitted to the curve using a least squares analysis. If the trend analysis indicates an increasing concentration trend for two years, and this trend is contrary to the upgradient groundwater quality trends, then the Department will be notified and the additional evaluation below will be performed.

(iii) For parameters that show an increasing concentration trend over a two year period, the trends in Eighteen Mile Creek will be reviewed for increasing concentrations of the parameter in question. If the concentration of the parameter in question in Eighteen Mile Creek shows an increasing trend, the permittee shall prepare and submit a corrective measures plan to the Commissioner.

5.3. Data handling.

Analytical data for all parameters will be entered into a computer spreadsheet (i.e., Excel or Lotus). The spreadsheet will be used to generate graphs showing the changes in concentration over time for each monitoring well and to compare downgradient monitoring well concentrations. Analytical results that are reported as "not detected" will be recorded in the spreadsheet at the detection limit of the analytical method used with a notation indicating that the compound was not detected at the specified detection limit. Concentrations of a compound detected below laboratory quantification limits will be recorded at the quantified value and footnoted as such.

The permittee shall submit an updated electronic file of the groundwater data to the Department as part of the annual report. The file shall be in speadsheet form, such as Excel or Lotus, or some other mutually acceptable file format.

6.0 Components Required for Analytical Data

Analysis shall be performed for the parameters specified **Table III-1 of Module III** of

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the 6 NYCRR Part 373 permit.

7.0 Monitoring Location and Frequency

7.1 Monitoring locations.

The monitoring network shall consist of the following: Wells VDM-9, VDM-10, VDM-11, VDM-12, VDM-14, and D-55. Eighteen Mile Creek shall also be sampled at a location just downstream of the site but upstream of the City of Lockport Wastewater treatment plant SPDES discharge point.

VDM-9, 10, and 11 are groundwater monitoring wells on the down gradient outer boundaries of the landfill site. Monitoring well VDM-12 is located in the center of the landfill.

Monitoring well VDM-14 is located in the interceptor trench, a trench filled with crushed limestone, along the northern edge of the landfill.

Monitoring well D-55 is the upgradient monitoring location.

Eighteen Mile Creek will be sampled during each semi-annual sampling event. Eighteen Mile Creek is the receptor for the groundwater leaving the site.

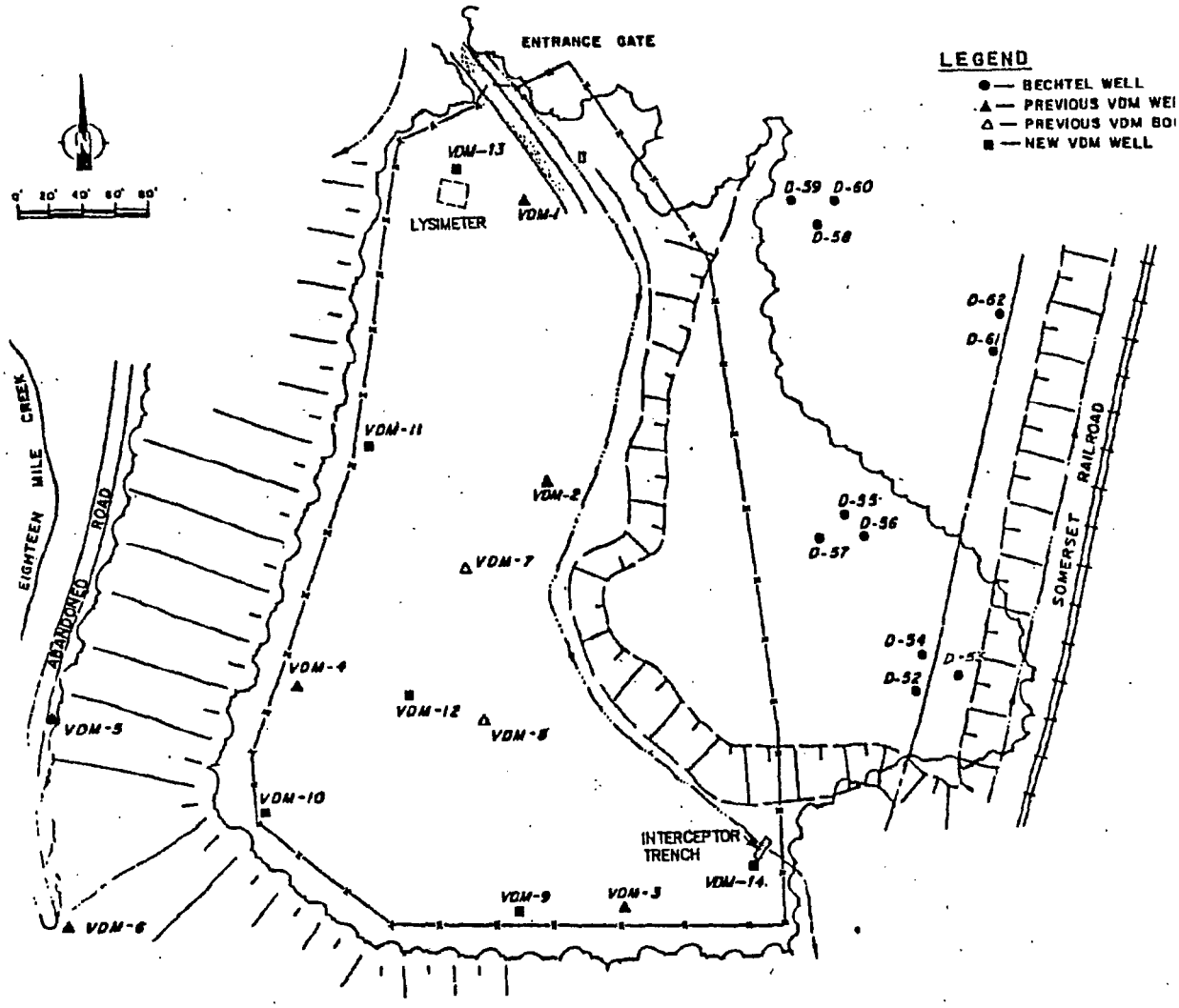
7.2 Monitoring frequency.

Samples shall be collected on a semi-annual basis.

7.3 Sampling Schedule.

The monitoring points shall be sampled during the second and fourth quarters of each calendar year.

WELL LOCATION MAP
Figure 1



OURCE: CONESTOGA-ROVERS & ASSOCIATES, INC. 1993

Attachment II-B
Well Purging / Sampling Data

WELL D-55:

WELL PURGING DATA: DATE:_____

START TIME:_____ FINISH TIME:_____

A: MP ELEVATION 469.45 FEET

B: DEPTH TO WATER: _____ FEET

C: DEPTH OF WELL INSTALLED: 422.40

D: STATIC WATER LEVEL: C - D = _____ FEET

E: WELL VOLUME: E * 0.1636 = _____ GALLONS

F: DEPTH OF WELL AS MEASURED: _____ FEET

WELL SAMPLING DATA:

DATE:_____

START TIME:_____ FINISH TIME:_____

A: MP ELEVATION 469.45 FEET

B: DEPTH TO WATER: _____ FEET

C: DEPTH OF WELL INSTALLED: 422.40

D: STATIC WATER LEVEL: C - D = _____ FEET

E: WELL VOLUME: E * 0.1636 = _____ GALLONS

F: DEPTH OF WELL AS MEASURED: _____ FEET

G: pH OF SAMPLE: _____ pH

H: pH METER CALIBRATED? YES [ ] NO [ ]

I: SAMPLES OBTAINED:

1 - TOTAL METALS, 1 - TOTAL CHLORIDES, 2 - VOAs

J: WEATHER CONDITIONS: _____

K: SAMPLER(S): _____

L: COMMENTS: _____

Well Purging / Sampling Data

WELL VDM-9:

WELL PURGING DATA: DATE:_____

START TIME:_____ FINISH TIME:_____

A: MP ELEVATION 447.37 FEET

B: DEPTH TO WATER: _____ FEET

C: DEPTH OF WELL INSTALLED: 416.40

D: STATIC WATER LEVEL: C - D = _____ FEET

E: WELL VOLUME: E * 0.1636 = _____ GALLONS

F: DEPTH OF WELL AS MEASURED: _____ FEET

WELL SAMPLING DATA: DATE:_____

START TIME:_____ FINISH TIME:_____

A: MP ELEVATION 447.37 FEET

B: DEPTH TO WATER: _____ FEET

C: DEPTH OF WELL INSTALLED: 416.40

D: STATIC WATER LEVEL: C - D = _____ FEET

E: WELL VOLUME: E * 0.1636 = _____ GALLONS

F: DEPTH OF WELL AS MEASURED: _____ FEET

G: pH OF SAMPLE: _____ pH

H: pH METER CALIBRATED? YES [ ] NO [ ]

I: SAMPLES OBTAINED:

1 - TOTAL METALS, 1 - TOTAL CHLORIDES, 2 - VOAs

J: WEATHER CONDITIONS: _____

K: SAMPLER(S): _____

L: COMMENTS: _____

Well Purging / Sampling Data

WELL VDM-10

WELL PURGING DATA: DATE:_____

START TIME:_____ FINISH TIME:_____

A: MP ELEVATION 444.89 FEET

B: DEPTH TO WATER: _____ FEET

C: DEPTH OF WELL INSTALLED: 398.70

D: STATIC WATER LEVEL: C - D = _____ FEET

E: WELL VOLUME: E * 0.1636 = _____ GALLONS

F: DEPTH OF WELL AS MEASURED: _____ FEET

WELL SAMPLING DATA: DATE:_____

START TIME:_____ FINISH TIME:_____

A: MP ELEVATION 444.89 FEET

B: DEPTH TO WATER: _____ FEET

C: DEPTH OF WELL INSTALLED: 398.70

D: STATIC WATER LEVEL: C - D = _____ FEET

E: WELL VOLUME: E * 0.1636 = _____ GALLONS

F: DEPTH OF WELL AS MEASURED: _____ FEET

G: pH OF SAMPLE: _____ pH

H: pH METER CALIBRATED? YES [ ] NO [ ]

I: SAMPLES OBTAINED:

1 - TOTAL METALS, 1 - TOTAL CHLORIDES, 2 - VOAs

J: WEATHER CONDITIONS: _____

K: SAMPLER(S): _____

L: COMMENTS: _____

Well Purging / Sampling Data

WELL VDM-11

WELL PURGING DATA: DATE:_____

START TIME:_____ FINISH TIME:_____

A: MP ELEVATION 450.74 FEET

B: DEPTH TO WATER: _____ FEET

C: DEPTH OF WELL INSTALLED: 427.70

D: STATIC WATER LEVEL: C - D = _____ FEET

E: WELL VOLUME: E * 0.1636 = _____ GALLONS

F: DEPTH OF WELL AS MEASURED: _____ FEET

WELL SAMPLING DATA: DATE:_____

START TIME:_____ FINISH TIME:_____

A: MP ELEVATION 450.74 FEET

B: DEPTH TO WATER: _____ FEET

C: DEPTH OF WELL INSTALLED: 427.70

D: STATIC WATER LEVEL: C - D = _____ FEET

E: WELL VOLUME: E * 0.1636 = _____ GALLONS

F: DEPTH OF WELL AS MEASURED: _____ FEET

G: pH OF SAMPLE: _____ pH

H: pH METER CALIBRATED? YES [ ] NO [ ]

I: SAMPLES OBTAINED:

1 - TOTAL METALS, 1 - TOTAL CHLORIDES, 2 - VOAs

J: WEATHER CONDITIONS: _____

K: SAMPLER(S): _____

L: COMMENTS: _____

Well Purging / Sampling Data

WELL VDM-12

WELL PURGING DATA: DATE:_____

START TIME:_____ FINISH TIME:_____

A: MP ELEVATION 451.52 FEET

B: DEPTH TO WATER: _____ FEET

C: DEPTH OF WELL INSTALLED: 436.10

D: STATIC WATER LEVEL: C - D = _____ FEET

E: WELL VOLUME: E * 0.1636 = _____ GALLONS

F: DEPTH OF WELL AS MEASURED: _____ FEET

WELL SAMPLING DATA: DATE:_____

START TIME:_____ FINISH TIME:_____

A: MP ELEVATION 451.52 FEET

B: DEPTH TO WATER: _____ FEET

C: DEPTH OF WELL INSTALLED: 436.10

D: STATIC WATER LEVEL: C - D = _____ FEET

E: WELL VOLUME: E * 0.1636 = _____ GALLONS

F: DEPTH OF WELL AS MEASURED: _____ FEET

G: pH OF SAMPLE: _____ pH

H: pH METER CALIBRATED? YES [ ] N[ ] [ ]

I: SAMPLES OBTAINED:

1 - TOTAL METALS, 1 - TOTAL CHLORIDES, 2 - VOAs

J: WEATHER CONDITIONS: _____

K: SAMPLER(S): _____

L: COMMENTS: _____

Well Purging / Sampling Data

WELL VDM-14

WELL PURGING DATA: DATE:_____

START TIME:_____ FINISH TIME:_____

A: MP ELEVATION 446.31 FEET

B: DEPTH TO WATER: _____ FEET

C: DEPTH OF WELL INSTALLED: 434.00

D: STATIC WATER LEVEL: C - D = _____ FEET

E: WELL VOLUME: E * 0.1636 = _____ GALLONS

F: DEPTH OF WELL AS MEASURED: _____ FEET

WELL SAMPLING DATA: DATE:_____

START TIME:_____ FINISH TIME:_____

A: MP ELEVATION 446.31 FEET

B: DEPTH TO WATER: _____ FEET

C: DEPTH OF WELL INSTALLED: 434.00

D: STATIC WATER LEVEL: C - D = _____ FEET

E: WELL VOLUME: E * 0.1636 = _____ GALLONS

F: DEPTH OF WELL AS MEASURED: _____ FEET

G: pH OF SAMPLE: _____ pH

H: pH METER CALIBRATED? YES [ ] NO [ ]

I: SAMPLES OBTAINED:

1 - TOTAL METALS, 1 - TOTAL CHLORIDES, 2 - VOAs

J: WEATHER CONDITIONS: _____

K: SAMPLER(S): _____

L: COMMENTS: _____

Attachment II-C

Groundwater Monitoring System Inspection Plan and Form

A. Inspections of the groundwater monitoring system shall be performed on a semi-annual basis to conform with the post-closure monitoring schedule. Personnel trained in groundwater sampling, collection and sample preservation techniques will be used. The inspection form located below or an equivalent form shall be used. The original inspection forms shall be maintained by the permittee in an inspection log book or file for the full term of the post-closure care period. Copies of the inspections shall be submitted with the semi-annual monitoring reports.

B. The well inspection will include visual inspection of the security cap and lock, condition of the surface grout, and the condition of the inner casing and cap. During well purging , the relative rate of recharge should be noted for comparison with the previous data to insure that the well screen is not plugged. Also during purging and sampling, the integrity of the well shall be inspected by measuring the total well depth and noting the presence of any obstructions such as casing bends, foreign objects or siltation. The measured well depth shall be compared to the "as built" well depth.

C. If it becomes apparent that a well is not capable of providing representative samples, the permittee shall respond in accordance with **Condition E.1** of this permit Module.

Landfill/Groundwater Monitoring System Inspection Form

1.	Is the integrity of the cover and ditch lining satisfactory?		YES	NO
	1.1	Any sink holes or depressions	YES	NO
	1.2	Significant erosion of the banks.	YES	NO
	1.3	Any visible problems.	YES	NO
2.	Is the integrity of the vegetative cover satisfactory?		YES	NO
	2.1	Is the grass healthy looking?	YES	NO
	2.2	Are there any bare spots?	YES	NO
	2.3	Is the grass less than 8" tall?	YES	NO
	2.4	Are there trees or bushes growing in the cover?	YES	NO

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3.	Is drainage from the site satisfactory?		YES	NO
	3.1	Is there any ponding or puddling?	YES	NO
4.	Is the fence surrounding the site secure?		YES	NO
	4.1	Any holes or damage?	YES	NO
	4.2	Signs in place every 50'?	YES	NO
	4.3	Accessible entry to the site?	YES	NO
	4.4	Property "Posted Signs" visible and in tact?	YES	NO
5.	Are all of the covers on the monitoring wells locked?		YES	NO
	5.1	Caps on all of the risers?	YES	NO
6.	Is there any iron staining in the drainage ditch?		YES	NO
7.	Are their any visible seeps in the cliff face?		YES	NO
8.	Are the wells in good condition?		YES	NO
	8.1	Any damage to the outer casing?	YES	NO
	8.2	Obstructions in the riser?	YES	NO
	8.3	Excessive sediment buildup in any wells?	YES	NO

Name of inspector: _____

Signature: _____ Date: _____

Attachment II-D

Laboratory QA/QC Deliverables

COMPONENTS REQUIRED FOR RCRA ANALYTICAL DATA SUBMITTED TO NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

A Report Narrative should accompany each submission, summarizing the contents, results and all relevant circumstances of the work.

A. Parameter Requested.

B. Sample Number or Numbers, Matrix, and:

1. date and time collected
2. date extracted and/or digested
3. date and time analyzed
4. chain of custody report and/or form, including confirmation of unbroken chain of custody, intact sample packaging and container seals and adequate temperature and/or other preservation.

C. Results [b,e,f,]

1. sample results
2. duplicate
3. blank[a]
4. spike; spike duplicate
5. surrogate recoveries, if applicable.

D. Supporting QA/QC[b]

1. methodology
2. method detection limits, instrument detection limits[c]
3. linear curves
4. percent solids
5. calculations [d]
6. cleanup procedures
7. data validation procedures and completed data validation checklists
8. documentation which illustrates how blank water is determined to be analyte-free.

In addition to submitting the above, all sample data and its QA/QC data as specified in SW-846, 3rd edition, chapter 1, must be maintained accessible to NYSDEC either in hard copy or disk (computer data files). The data, if requested by NYSDEC, should be formatted as described in SW-846, 3rd edition, chapter 1. This requirement may be changed in the future to mandate computer data files, accessible to NYSDEC on request.

This does not obviate the requirement to do the QA/QC specified in each individual EPA-approved method.

* Components for RCRA submissions for non-contract Lab Protocols. If CLP, then CLP deliverables are required, unless otherwise stated in the approved plan.

[a] The data should include all blanks (trip, equipment rinse, method and instrument blanks) as specified in the sampling and analysis plan, guidance and regulation.

[b] Supporting QA/QC should be specific to the RCRA samples analyzed.

[c] Every effort practicable must be made to achieve optimal detection limits below regulatory limits and comparable to the Practical Quantification Limits specified in the EPA-approved methods.

[d] Alternatively, include QA/QC summaries validating the data, including calibration control charts, correlation coefficients, etc. The Report Narrative should describe the data validation and explain discrepancies. The supporting data should be provided to NYSDEC upon request.

[e] Frequencies of blanks, duplicates, spikes, surrogates, calibrations, standard reference materials, etc., should be as stated in the approved sampling and analysis plan, the approved analytical methods and the SW-846 3rd edition, Chapter 1, requirement. If there are any perceived conflicts, these should be resolved with NYSDEC in advance of sampling.

[f] Spiking for metals, organics or other parameters must be done before sampling preparation (i.e., before digestions, extractions etc.) unless otherwise stated in the approved plan. Furnace analysis for metals will still require post-digestion spikes on all samples analyzed by this technique.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF SOLID AND HAZARDOUS MATERIALS

VANCHLOR COMPANY, INCORPORATED

MODULE III
Post-Closure Care Conditions

A. Description of the Closed regulated unit.

VanDeMark Chemical Co., Inc. (VanDeMark) manufactured and produced silicon tetrachloride for commercial use. Through this process, chemical waste by-products were generated which have been disposed of in a landfill located between Mill Street and Eighteen Mile Creek in Lockport, New York. VanDeMark disposed of these wastes beginning in 1957 and ending in 1982. From 1982 to 1985, the pre-treated wastes were processed through the Lockport Wastewater Treatment Facility. VanDeMark ceased production of silicon tetrachloride in 1985.

The landfill consists of a largely flat 2.5 acre plateau located on a bluff approximately 80 feet above Eighteen Mile Creek. The wastes that were previously landfilled were deposited in 55-gallon drums and placed in trenches with crushed limestone and then backfilled to the original grade. The limestone was to enhance the neutralization process of the waste.

During the Summer of 1988, VanDeMark closed their landfill in accordance with the NYSDEC approved Closure Plan. The Closure Plan included a final cover system consisting of two feet of compacted clay with a permeability of $1x10^{-7}$ cm/sec or less, overlain by a drainage layer of sand and loam, topped with vegetative growth. The system is designed to minimize infiltration of surface water, promote runoff, minimize erosion and enhance the aesthetics of the area.

In October 1999, ownership of the VanDeMark landfill was transferred to Vanchlor Co., Inc. With ownership, responsibility for this Part 373 Permit has been transferred to the Vanchlor Co., Inc.

B. Post Closure Care of the Closed Regulated Unit.

The Post-Closure Permit requires Vanchlor Co., Inc. to monitor the effectiveness of the final cover system, inspect and maintain the integrity of the final cover, and continue to conduct groundwater monitoring. Inspections will include erosion damage, settlement and long-term maintenance of the cover system. Sampling and analysis of the groundwater will be monitored to evaluate the impacts of the landfill during post-closure.

The post-closure monitoring period will be for a minimum of 30 years from the date of closure.

C. Groundwater Monitoring Program for the closed regulated unit.

1. Status of the Unit. Groundwater quality data collected during the interim status monitoring pursuant to 6 NYCRR Subpart 373-3.6 has detected releases of hazardous constituents to the groundwater down-gradient from the landfill site. Subsequent to the identification of the release to the groundwater, the permittee completed physical closure of the landfill in 1988. Closure involved regrading the landfill and placement of an engineered low permeability cover system that promotes surface water runoff and limits infiltration of water in the areas where waste was managed. The closure is designed to minimize the potential for hazardous constituents to be leached from the wastes and released to the groundwater.

Since closure, groundwater has been monitored to evaluate the effectiveness of the closure. Data collected to date has shown no impact of organic or metals loading to Eighteen Mile Creek since closure of the site. The post-closure groundwater monitoring program, specified in this permit, has been designed to monitor the level of contaminants of concern to insure the continued effectiveness of the site closure.

In November 1995, the permittee submitted a revised report titled: "Former Landfill Corrective Measures and Landfill Cap Evaluation." The basic conclusions of this report are summarized below:

(1) The cap is performing to design specifications.

(2) Based upon available monitoring data, the contaminants listed in Table III-1 are considered to be the contaminants of concern for the site.

(3) Additional corrective measures for the site are not necessary at this time.

If significant changes in the contaminant concentrations occur during the post-closure groundwater monitoring program that impact Eighteen Mile Creek, the Commissioner may require the permittee to institute Corrective Action pursuant to 6 NYCRR Subpart 373-2.6(k).

2. Post-closure Groundwater Monitoring Program.

(a) Compliance Period. A compliance period equal to 30 years from the closure of the landfill been established. The permittee shall conduct groundwater monitoring

pursuant to 6 NYCRR 373-2.6 during the compliance period. The compliance period may be shortened or extended by the Commissioner pursuant to a 6 NYCRR 373-2.7(g).

(b) Description of the monitoring network.
The monitoring network shall consist of the following: Wells VDM-9, VDM-10, VDM-11, VDM-12, VDM-14, and D-55. Eighteen Mile Creek shall also be sampled at a location just downstream of the site, but upstream of the City of Lockport Wastewater treatment plant SPDES discharge point.

(c) Monitoring parameters. All of the parameters identified in Table III-1 shall be analyzed by the methods specified during each semi-annual sampling event.

(d) Groundwater Protection Concentrations.
Groundwater protection concentrations for the monitoring parameters are found in Table III-1. The Commissioner shall review these concentrations annually to determine if there is a need to revise, add, or delete a constituent and its associated protection concentration.

(e) Contaminant Data Evaluation and Reporting.

1. Semi-annual evaluation of groundwater data and reporting.

The results of all groundwater sampling shall be submitted to the Commissioner within ten (10) weeks after the completion of all required sampling for each semi-annual event. This submission shall contain the raw analytical data and concentration versus time plots for each monitoring well. No further evaluation is required for the semi-annual report.

2. Annual evaluation of groundwater data and reporting.

Annually, the permittee shall submit a summary report of all sampling results obtained during the previous year. The annual report shall be due and submitted by March 1 of each year. One of the semi-annual reports required above will satisfy this reporting requirement, provided that the report includes the following information:

(a) Groundwater quality data will be compared on an inter well basis to background water quality data for that parameter if the groundwater protection concentration is exceeded at the downgradient monitoring point. Additional data analysis will be performed if the groundwater concentration for any parameter at any monitoring well exceeds the background water concentration value for that parameter by 3 standard deviations and also exceeds the groundwater protection concentration for that parameter.

(b) For parameters that exceed the background water quality concentration by 3 standard deviations and exceed the groundwater protection concentration, a moving average trend test will be performed. The moving average calculations will provide an indication of upward or downward trends over time. The four most recent results for each parameter will be averaged and graphed with time. The use of moving average will provide information on the long term trend of constituent concentration levels while smoothing out seasonal variations which may exist. After the moving average has been plotted for several sampling events, a linear trend line will be fitted to the curve using a least squares analysis. If the trend analysis indicates an increasing concentration trend, and this trend is contrary to the upgradient groundwater quality trend, then the Department will be notified and the additional evaluation below will be performed.

(c) For parameters that show an increasing concentration trend over a two year period, the trends in Eighteen Mile Creek will be reviewed for increasing concentrations of the parameter in question. If there is correlation between the parameter in question and increases at Eighteen Mile Creek, the permittee shall prepare and submit a corrective measures study (CMS) plan to the Commissioner.

The CMS shall evaluate feasible alternative corrective measures and technically justify a recommended selection. The CMS shall address the need for installing additional groundwater wells that may be necessary for implementing the selected corrective measure and for monitoring its performance. The permittee shall submit the CMS to the Commissioner for approval within sixty (60) days following notification by the Commissioner that the data generated under the post-closure groundwater monitoring program indicates the need to implement a Corrective Measures Program.

(d) The permittee shall submit an updated electronic file of the groundwater data to the Department as part of the annual report. The file shall be in speadsheet form, such as Excel or Lotus, or some other mutually acceptable file format.

3. Data handling.

Analytical data for all parameters will be entered into a computer spreadsheet (Excel or Lotus or equivalent). The spreadsheet will be used to generate graphs showing the changes in concentration over time for each monitoring well. Analytical results that are reported as "not detected" will be recorded in the spreadsheet at the detection limit of the analytical method used with a notation

indicating that the compound was not detected at the specified detection limit. Concentrations of a compound detected below laboratory quantification limits will be recorded at the quantified value and footnoted as such.

Table III-1
Constituents of Concern

Constituent	Analytical Method (SW-846)	Groundwater Protection Concentration (ug/l)
Chloroform	8240	8
1,2-Dichloromethane	8240	5
Trans-1,2-Dichloroethene	8240	5
Methylene Chloride	8240	5
1,1,2,2-Tetrachloroethane	8240	5
Tetrachloroethene	8240	5
Trichloroethene	8240	5
Vinyl Chloride	8240	2
Toluene	8240	5
Chromium	6010	50
Copper	6010	200
Iron	6010	300
Zinc	6010	300
Chloride	9251	250,000
pH	9040	6-9 (standard units)

VDM01297

Van De Mark Chemical Co., Inc.

CLOSURE PLAN
Former Landfill Site

PRINTED ON

FEB 25 1997

Van De Mark Chemical Co., Inc.

CLOSURE PLAN
Former Landfill Site

February 1987
Ref. No. 1277

ADVANCED ENVIRONMENTAL SERVICES
CONESTOGA-ROVERS & ASSOCIATES

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1.0 INTRODUCTION

From approximately 1957 to 1982, Van De Mark Chemical Co. Inc. operated a waste disposal area on their property in Lockport, New York. A hydrogeologic investigation of the former landfill facility was undertaken in 1983 and 1984. The results of the investigation were presented in the report entitled "Former Landfill Investigation and Closure Plan" which was submitted to Van De Mark Chemical Co. Inc. in May 1984 by Advanced Environmental Systems (AES) and Conestoga-Rovers & Associates (CRA). The report presents details on the regional and local geology of the landfill area, including soil conditions, groundwater conditions, local topography, surface drainage and local groundwater quality, as well as addressing environmental concerns and presenting a recommended closure plan. A copy of the "Former Landfill Investigation and Closure Plan" is included in Appendix A of this report.

Previous reports detailing some of the area characteristics were used as references for the above mentioned report. These previous reports are presented in Appendices B and C. These reports are:

1) 'Somerset Railroad Project, Hydrogeologic Study, Danielewicz Route, Station 51+810 to 52+330', February,

CONESTOGA-ROVERS & ASSOCIATES

1982 by Bechtel Associates Professional Corporation (Appendix B).

2) 'Closure Plan for Solid Waste Management Facility Van De Mark Chemical Co. Inc., Lockport, N.Y.', July 1, 1982 by William W. Whitemore, Consulting Engineers (Appendix C).

The "Former Landfill Investigation and Closure Plan" was subsequently submitted to the New York State Department of Environmental Conservation (DEC) and the U.S. Environmental Protection Agency (EPA) for review. Comments made by the DEC/EPA, and subsequent Van De Mark responses to the DEC/EPA comments, are included in Appendix D of this document.

Based upon the comments received and analytical data from a recent sampling program, it was deemed necessary to revise the originally proposed closure plan. The purpose of this document is to present the updated Closure Plan. This document provides the details for the following aspects of the Closure Plan:

- Construction of final cover
- Quality assurance of construction
- Provisions for surface water drainage
- Security and site access
- Post-closure monitoring plans

VDM01304

- Post-closure maintenance plan
- Environmental contingency plans
- Estimated costs - closure
  - post closure
- Estimated closure schedule

2.0 EXISTING CONDITIONS

The former Landfill area is located on a relatively flat plateau, located approximately 80 feet above Eighteen Mile Creek and approximately 275 yards west of the Van De Mark Chemical Plant. The Creek flows along the western and southern boundaries of the Site. The northern and eastern limits of the Landfill Site are bordered by a ridge which rises approximately 25-feet above the site to a second plateau. A general site plan indicating surface contours is shown in Figure 1. See also Plan 1.

A small berm, one to two feet in height, extends along the edge of the western and southern disposal limits to prevent on-site surface water discharge over the embankment to Eighteen Mile Creek. A drainage ditch is located along the east and northeast boundaries of the landfilled area. This drainage ditch channels surface water flow toward the railroad track and subsequently into Eighteen Mile Creek.

VDM01306

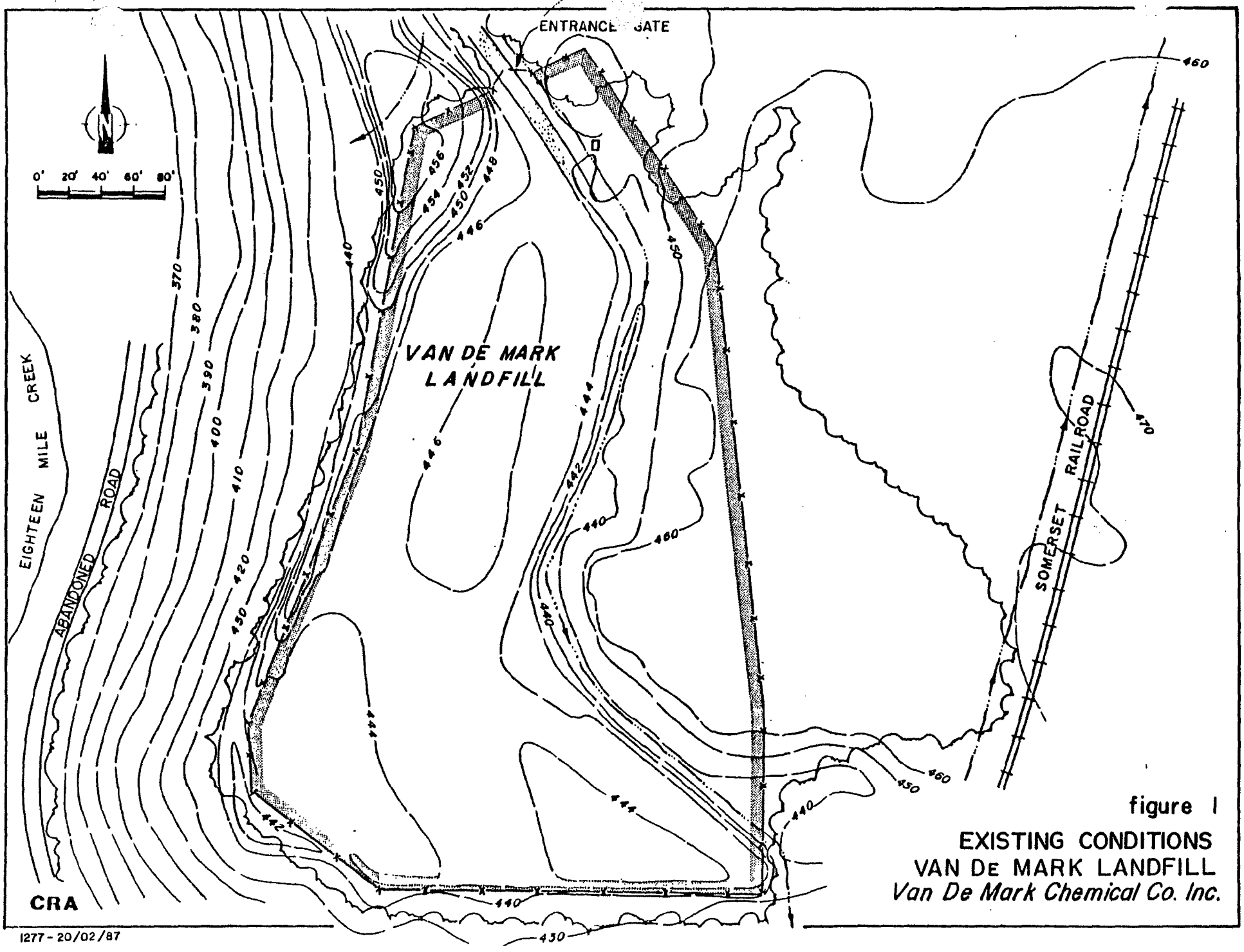

figure 1

EXISTING CONDITIONS
VAN DE MARK LANDFILL
Van De Mark Chemical Co. Inc.

VDM01307

3.0 LANDFILL PRACTICES

The Van De Mark Landfill can be subdivided into two major disposal areas as shown by Figure 2 and Plan 2. The Western region consists of an area which was used for waste disposal between 1957 and 1979 by Van De Mark Chemical. In this area, landfilling methods were generally random, consisting of excavation, disposal and covering. The waste consisted mainly of drums of silicon tetrachloride ($SiCl_4$) and chlorodisiloxane formed as by-products during the commercial production of silicon tetrachloride.

The Eastern region of the landfill was used for the disposal of similar by-products as well as carbon and silicon carbide. Such waste was disposed of according to Permit 2111, issued February 9, 1979 and which expired in February 1982. The drummed waste was deposited in pits on a base of crushed limestone and backfilled with crushed limestone. The drums were then perforated to enhance the neutralizing of the waste. The cover consisted of bags of finish lime and agricultural lime beneath an earthen cap of red silty clayey soils. Upon expiry of Permit 2111 VDM began disposal of pretreated wastes to the Lockport Wastewater Treatment Plant.

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VDM01308

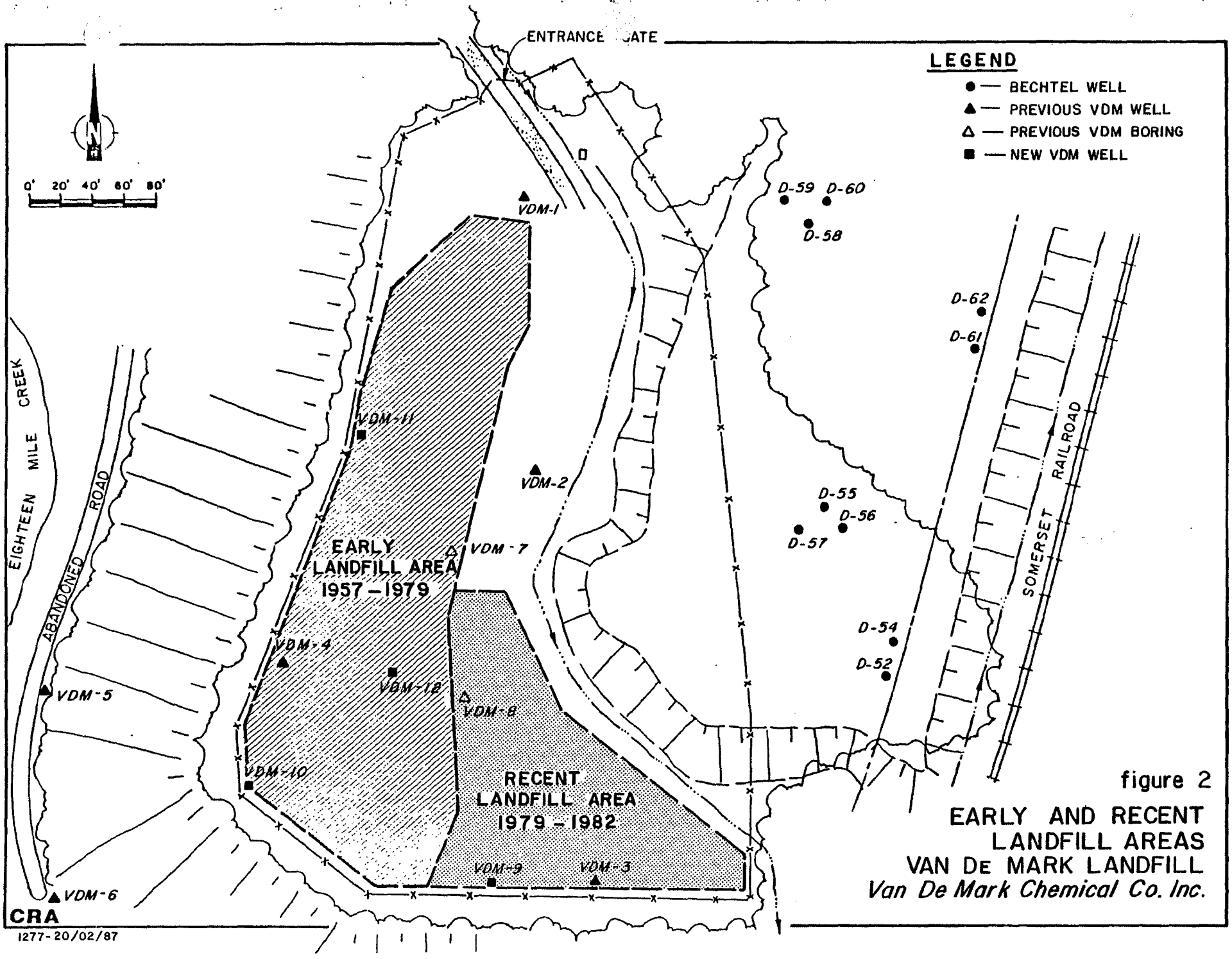

figure 2

EARLY AND RECENT LANDFILL AREAS
VAN DE MARK LANDFILL
Van De Mark Chemical Co. Inc.

VDM01309

4.0 SUPPLEMENTAL SAMPLING

On May 12, 1986, a sample collection program was conducted at the Van De Mark Landfill by AES. The intent of the program was to provide supplemental data and to provide confirmation of the analytical information presented from the April 1984 sampling program. Samples were collected from the following: groundwater monitoring wells VDM 9, 10, 11 and 12; water from the ditch adjacent to the Landfill; and from upstream and downstream locations on Eighteen Mile Creek. The samples were analyzed for chlorides, total recoverable phenols, total organic halides, pH, and priority pollutant volatiles, PCBs and pesticides, base/neutral extractables, acid extractables and metals.

Table 1 presents a summary of the analytical results. Complete analytical results are detailed in Appendix E. Figures 3 and 4 illustrate the locations of all of the wells in the landfill area and the creek sampling stations respectively.

The analytical results indicate that zinc levels have risen over 1984 levels but in general the water quality is very similar to 1984 conditions.

VDM01310

TABLE 1

ANALYTICAL RESULTS OF SAMPLES
COLLECTED MAY 12, 1986

Analytical Parameter(s)	Method No.	Det. Limits	VDM 9 5/12/86	VDM 10 5/12/86	VDM 11 5/12/86	VDM 12 5/12/86	UPSTREAM 18MI CREEK 5/12/86	DOWNSTREAM 18MI CREEK 5/12/86	DITCH 5/12/86	FIELD BLANK 5/12/86
Chlorides mg/L	407B	1	18,000 (15068)	6,470 (7730)	4,803 (1859)	57,200 (53593)	34.4	40.1	2,585	BDL*
Total Recoverable Phenols, mg/L	420.1	0.01	0.01	0.54	0.23	BDL (0.08)	0.01	BDL	BDL	
Total Organic Halides, mg/L	9020	0.001				2.81				
pH			4.30 (4.79)	6.18 (5.32)	2.20 (2.37)	1.83 (4.01)	7.89	8.13	4.66	
PURGEABLE HALOCARBONS										
micrograms/liter, or ppb										
Bromodichloromethane	601	10.0	BDL	BDL	BDL		BDL	BDL	BDL	BDL
Bromoform	601	10.0	BDL	BDL	BDL		BDL	BDL	BDL	BDL
Bromomethane	601	5.0	BDL	BDL	BDL		BDL	BDL	BDL	BDL
Carbon Tetrachloride	601	5.0	6.36 (BDL)	BDL	18.0		BDL	BDL	BDL	BDL
Vinyl Chloride	601	5.0	BDL	BDL	BDL		BDL	BDL	BDL	BDL
Chloroethane	601	5.0	BDL	BDL	BDL		BDL	BDL	BDL	BDL
2-Chloroethylvinyl Ether	601	5.0	BDL	BDL	BDL		BDL	BDL	BDL	BDL
Chloroform	601	5.0	163 (169)	5.97 (98)	72.9 (196)		BDL	BDL	13.7	BDL
Chloromethane	601	5.0	BDL	BDL	BDL		BDL	BDL	BDL	BDL
Dibromochloromethane	601	10.0	BDL	BDL	BDL		BDL	BDL	BDL	BDL
Trichlorofluoromethane	601	5.0	BDL	BDL	BDL		BDL	BDL	BDL	BDL
Trichloroethene	601	5.0	39.9	BDL	6.75		BDL	BDL	BDL	BDL
1,1,2-Trichloroethane	601	5.0	BDL	BDL	BDL		BDL	BDL	BDL	BDL

* BDL - Below Detection Limit

continued....

VDM01311

TABLE 1

ANALYTICAL RESULTS OF SAMPLES
COLLECTED MAY 12, 1986

Analytical Parameter(s)	Method No.	Det. Limits	VDM 9 5/12/86	VDM 10 5/12/86	VDM 11 5/12/86	VDM 12 5/12/86	UPSTREAM 18MI CREEK 5/12/86	DOWNSTREAM 18MI CREEK 5/12/86	DITCH 5/12/86	FIELD BLANK 5/12/86
Dichlorodifluoromethane	601	5.0	BDL	BDL	BDL		BDL	BDL	BDL	BDL
1,1-Dichloroethane	601	5.0	BDL	BDL	BDL		BDL	BDL	BDL	BDL
1,2-Dichloroethene	601	5.0	32.0	9.91	5.45		BDL	BDL	11.2	BDL
1,1-Dichloroethene	601	5.0	BDL	BDL	BDL		BDL	BDL	BDL	BDL
Trans-1,2-Dichloroethene	601	5.0	5.43	BDL	BDL		BDL	BDL	BDL	BDL
1,2-Dichloropropane	601	5.0	BDL	BDL	BDL		BDL	BDL	BDL	BDL
Cis-1,3-Dichloropropene	601	5.0	BDL	BDL	BDL		BDL	BDL	BDL	BDL
Trans-1,3-Dichloroethene	601	5.0	BDL	BDL	BDL		BDL	BDL	BDL	BDL
Methylene Chloride	601	5.0	34.3 (263)	69.5 (42)	168 (232)		BDL	BDL	BDL	BDL
1,1,2,2-Tetrachloroethane	601	5.0	257	BDL	BDL		BDL	BDL	437	BDL
Tetrachloroethene	601	5.0	46.0	BDL	71.6 (230)		BDL	BDL	BDL	BDL
1,1,1-Trichloroethane	601	5.0	BDL	BDL	BDL		BDL	BDL	6.45	BDL
VOLATILE ORGANICS										
micrograms/liter, or ppb										
Chloromethane	624	10				490 (85	BDL	BDL	BDL	BDL
Vinyl Chloride	624	10				BDL				

continued...

VDM01312

TABLE 1

ANALYTICAL RESULTS OF SAMPLES
COLLECTED MAY 12, 1986

Analytical Parameter(s)	Method No.	Det. Limits	VDM 9 5/12/86	VDM 10 5/12/86	VDM 11 5/12/86	VDM 12 5/12/86	UPSTREAM 18MI CREEK 5/12/86	DOWNSTREAM 18MI CREEK 5/12/86	DITCH 5/12/86	FIELD BLANK 5/12/86
Chloroethane	624	10				BDL				
Bromomethane	624	10				BDL				
2-Chloroethyl Vinylether	624	10				BDL				
Ethylbenzene	624	10				BDL				
Methylene Chloride	624	10				180 (B98)				
Chlorobenzene	624	10				BDL				
1,1-Dichloroethylene	624	10				BDL				
1,1-Dichloroethane	624	10				BDL				
trans-1,2-Dichloroethylene	624	10				BDL				
Chloroform	624	10				360 (616)				
1,2-Dichloroethane	624	10				BDL				
1,1,1-Trichloroethane	624	10				BDL				
Carbon Tetrachloride	624	10				38 (28)				
Bromodichloromethane	624	10				BDL				
1,2-Dichloropropane	624	10				BDL				
trans-1,3-Dichloropropene	624	10				BDL				
Trichloroethylene	624	10				15				

continued...

VDM01313

TABLE 1

ANALYTICAL RESULTS OF SAMPLES
COLLECTED MAY 12, 1986

Analytical Parameter(s)	Method No.	Det. Limits	VDM 9 5/12/86	VDM 10 5/12/86	VDM 11 5/12/86	VDM 12 5/12/86	UPSTREAM 18MI CREEK 5/12/86	DOWNSTREAM 18MI CREEK 5/12/86	DITCH 5/12/86	FIELD BLANK 5/12/86
Benzene	624	10				BDL				
cis-1,3-Dichloropropene	624	10				BDL				
1,1,2-Trichloroethane	624	10				BDL				
Dibromochloromethane	624	10				BDL				
Bromoform	624	10				BDL				
1,1,2,2-Tetrachloroethylene	624	10				140 (120)				
1,1,2,2-Tetrachloroethane	624	10				43				
Toluene	624	10				BDL				
PCBs AND PESTICIDES										
Groundwater sample from VDM-12 tested. No PCB's or pesticides found above detection limits.										

continued...

VDM01314

TABLE 1

ANALYTICAL RESULTS OF SAMPLES
COLLECTED MAY 12, 1986

Analytical Parameter(s)	Method No.	Det. Limits	VDM 9 5/12/86	VDM 10 5/12/86	VDM 11 5/12/86	VDM 12 5/12/86	UPSTREAM 18MI CREEK 5/12/86	DOWNSTREAM 18MI CREEK 5/12/86	DITCH 5/12/86	FIELD BLANK 5/12/86
BASE/NEUTRAL EXTRACTABLES										
Groundwater sample from VDM-12 tested. No Base/Neutral Extractables found above detection limits. During analysis of VDM-12 sample of January 24, 1984, Octylphthalate was found at 100 ppb.										
ACIDS										
Groundwater sample from VDM-12 tested. No acids found above detection limits.										

continued...

VDM01315

TABLE 1

ANALYTICAL RESULTS OF SAMPLES
COLLECTED MAY 12, 1986

Analytical Parameter(s)	Method No.	Det. Limits	VDM 9 5/12/86	VDM 10 5/12/86	VDM 11 5/12/86	VDM 12 5/12/86	UPSTREAM IBMI CREEK 5/12/86	DOWNSTREAM IBMI CREEK 5/12/86	DITCH 5/12/86	FIELD BLANK 5/12/86
METALS										
milligrams/liter, or ppm										
Arsenic (As)	206.2	0.005	0.181	0.023	0.105	4.0	BDL	BDL	BDL	
Beryllium (Be)	210.1	0.050	0.084 (0.028)	BDL	BDL (0.016)	0.38 (0.186)	BDL	BDL	BDL	
Cadmium (Cd)	213.1	0.05	BDL (0.096)	BDL (0.04)	BDL (0.017)	BDL (0.294)	BDL	BDL	BDL	
Chromium (Cr)	218.1	0.50	1.4 (0.19)	BDL (0.16)	BDL (0.19)	8.1 (5.26)	BDL	BDL	BDL	
Copper (Cu)	220.1	0.20	6.0 (7.8)	0.45 (0.29)	1.09 (0.51)	29 (57)	BDL	BDL	BDL	
Iron (Fe)	236.1	0.20	1,965	1,820	3,250	14,500	0.80	0.74	500	
Lead (Pb)	239.1	1.00	2.17 (0.75)	BDL (0.07)	BDL (0.1)	27 (22.2)	BDL	BDL	BDL	
Mercury (Hg)	245.1	0.001	0.006	0.005	0.002	BDL	0.001	0.003	0.004	
Nickel (Ni)	249.1	0.50	3.70 (1.73)	BDL (0.31)	0.86 (0.6)	1.94 (26.6)	BDL	BDL	0.68	
Selenium (Se)	270.2	0.005	BDL	BDL	BDL	0.017	BDL	BDL	BDL	
Silver (Ag)	272.1	0.10	BDL (0.21)	BDL (0.06)	BDL (0.06)	BDL (0.87)	BDL	BDL	BDL	
Thallium (Tl)	279.1	1.00	BDL (0.85)	BDL (0.3)	BDL (0.2)	BDL (1.23)	BDL	BDL	BDL	
Zinc (Zn)	289.1	0.050	1,150 (3.05)	0.51 (1.14)	1.19 (2.92)	1,360 (497)	0.52	0.22	0.33	

Notes: Analytical Results given in brackets are the highest results from previous sample rounds by AES.

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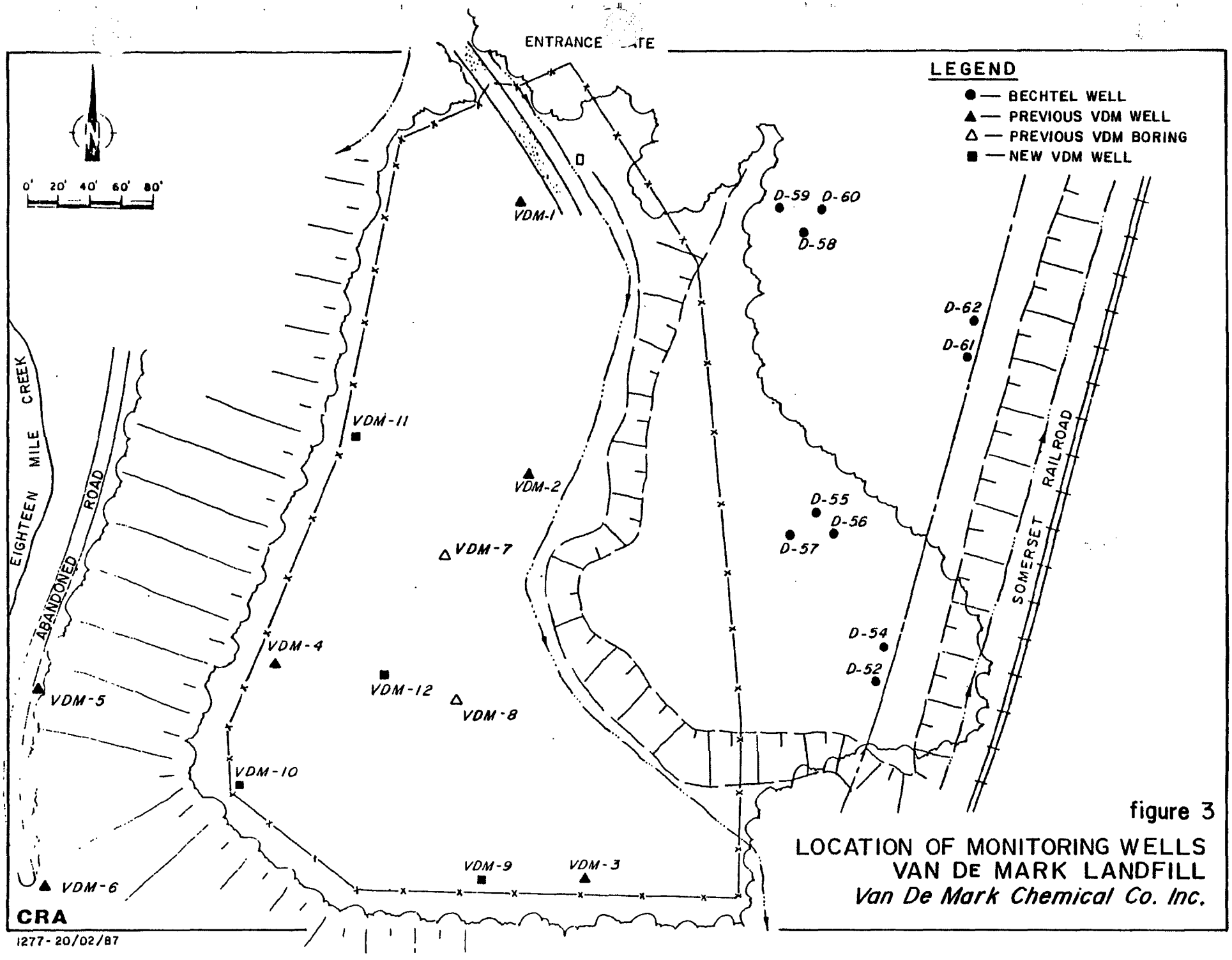

figure 3

LOCATION OF MONITORING WELLS
VAN DE MARK LANDFILL
Van De Mark Chemical Co. Inc.

VDM01317

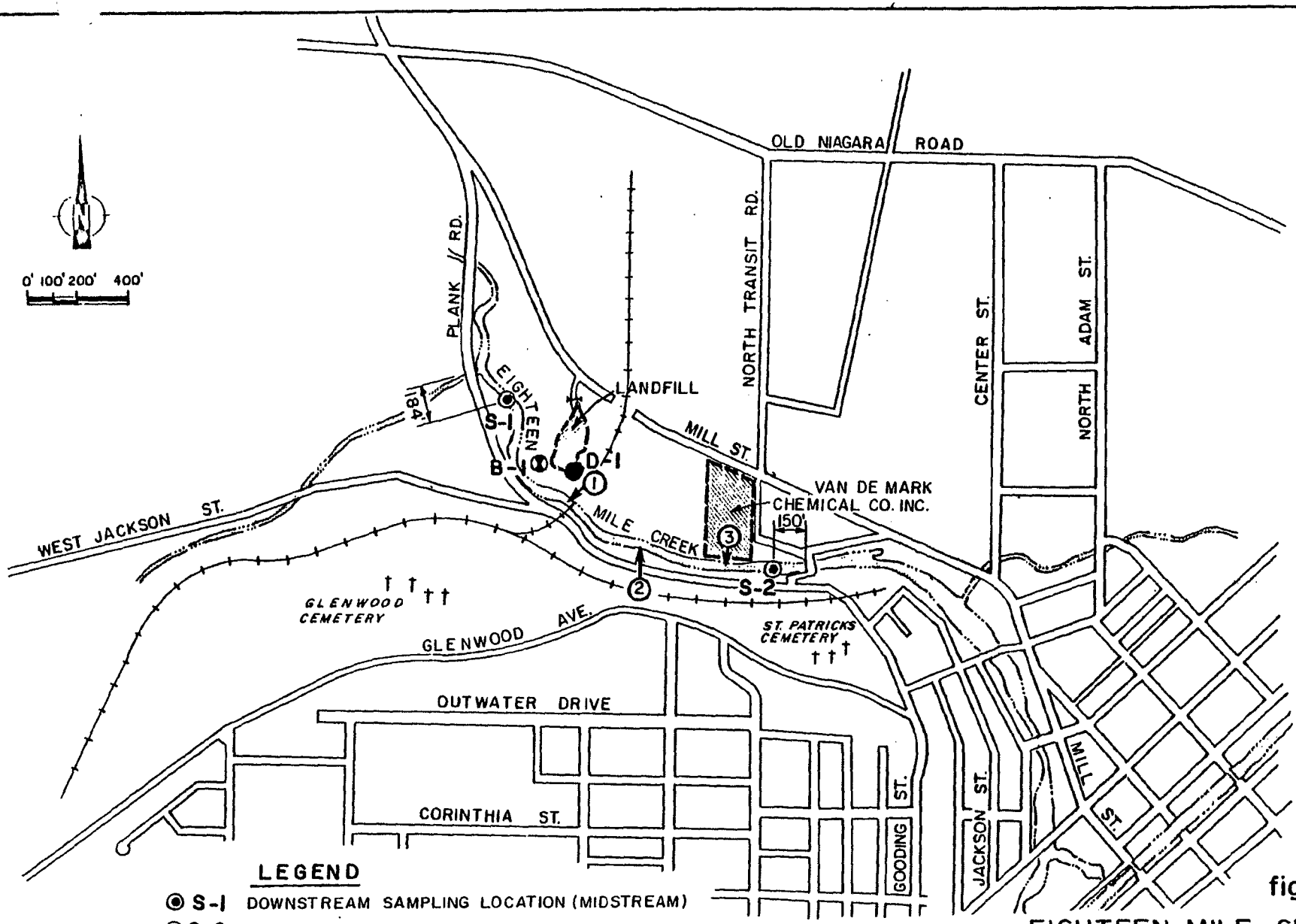

figure 4

EIGHTEEN MILE CREEK
SAMPLING LOCATIONS
VAN DE MARK LANDFILL
Van De Mark Chemical Co. Inc.

VDM01318

5.0 RECOMMENDED CLOSURE PLAN

Based upon the results of investigations by AES and CRA, it is apparent that the groundwater beneath the Van De Mark Landfill has been impacted by the placement of waste materials. Analytical data from groundwater samples collected from VDM12 (located in the middle of the landfill) reveal high concentrations of chlorides (52,000 ppm) and iron (10,000 ppm) and a low pH (4). Elevated concentrations of soluable metals (i.e. chromium - 8.1 ppm, and zinc - 1,360 ppm) and purgeable halocarbons (i.e. chloroform - 616 ppb, and chloromethane - 858 ppb) were also evident. Samples from monitoring wells VDM9, VDM10, and VDM11 as well as from the drainage ditch along the eastern limits of the landfill revealed some migration of various chemical components but at low concentrations. Surface water samples from upstream and downstream locations along Eighteen Mile Creek indicate that there is no measurable impact on Eighteen Mile Creek by the Van De Mark landfill site. See Table 1. Since the north shore of Eighteen Mile Creek is the site property boundary no off-site impact is occuring.

The principle mode of contaminant migration from the site is via groundwater flow. The main driving force behind groundwater flow is infiltrating precipitation which collects on the relatively flat, porous surface of the landfill area. The groundwater descends vertically through

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the fill layer, enters the groundwater flow regime in the bedrock and moves southerly towards the embankment. As indicated by the "Former Landfill Investigation and Closure Plan" the major flow paths through the bedrock are lateral.

In general, the proposed closure plan is based upon the implementation of a low permeable clay cover over the former Landfill area to reduce infiltration and therefore the migration of landfilled contaminants. A layer of lime powder will be placed over the waste material prior to cap construction for the purpose of pH control. Precipitation penetrating through the cap will contact the lime and provide a buffering action to combat the low pH levels in the waste areas. A pan-lysimeter will be installed beneath the cap to measure the amount of any such infiltration through the cap. The surface of the cover will be graded such that a major portion of the surface runoff will flow east into the drainage ditch, while runoff from the remainder of the site will flow over the embankment to the west and south of the Landfill (see Plan 3 and Plan 4).

The existing drainage ditch traversing along the eastern limits of the Landfill area will be lined with clay to restrict the infiltration of ditch flow into the landfilled soils. Conversely, in order to prevent groundwater seepage from the landfilled area continuing to discharge into the ditch and along the underside of the clay

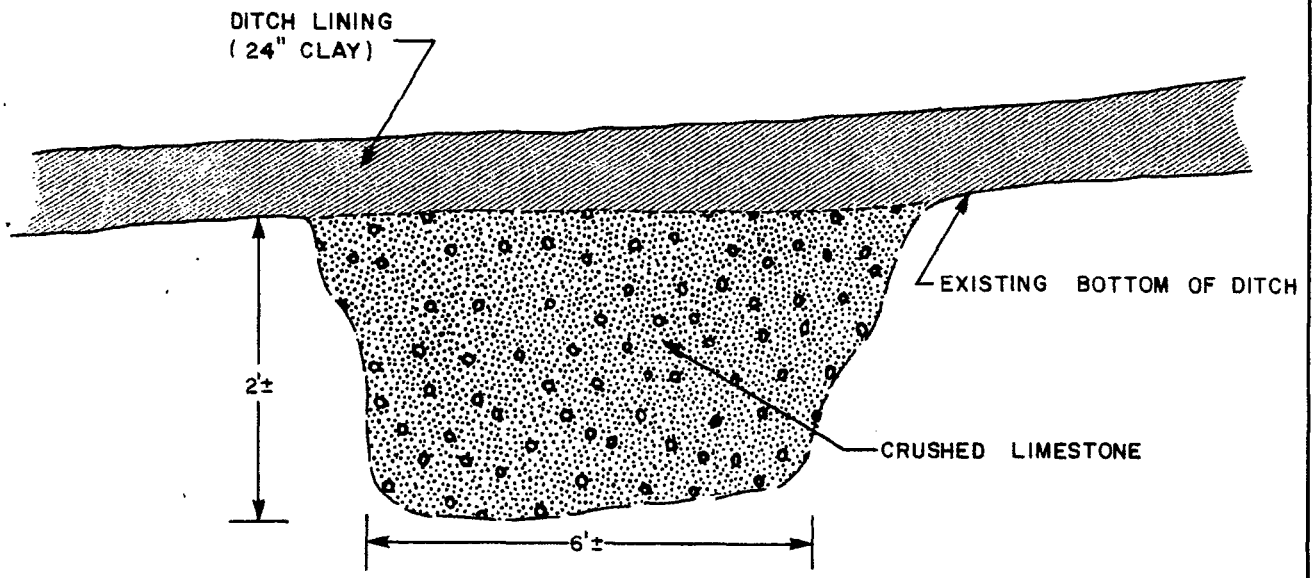
VDM01320

lining to an off-site discharge point, an interceptor drain will be dug near the downstream end of the ditch. The trench will extend from the underside of the clay ditch lining to a depth of two feet and will be backfilled with crushed limestone. Any seepage flowing along the clay lining will be intercepted and buffered then reenter the groundwater flow regime (see Figure 5).

In summary, the recommended closure plan will consist of the following:

a) Site grading and proof-rolling
b) Installation of a pan-lysimeter
c) Lime application
d) Installation of interceptor trench in ditch
e) Construction of a two-foot clay cover including lining of ditch with clay
f) Addition of loam and drainage layers
g) Addition of topsoil layer and application of seeding
h) Implementation of maintenance program
i) Implementation of post-closure monitoring program

VDM01321



PLAN VIEW

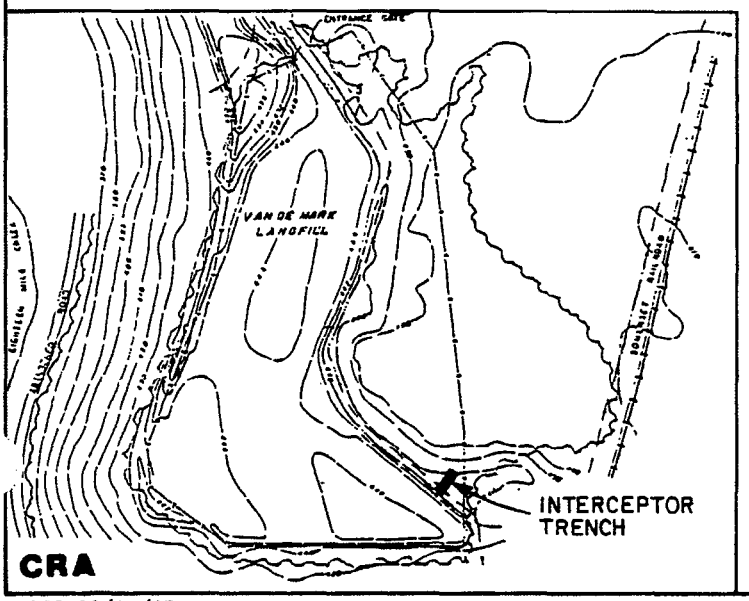


figure 5

INTERCEPTOR TRENCH
VAN DE MARK LANDFILL
Van De Mark Chemical Co. Inc.

1277-20/02/87

VDM01322

6.0 SURFACE PREPARATION

The initial step of the closure plan construction involves the clearing and grubbing of the site. Any vegetation cleared from the site will be disposed of at a sanitary landfill site. Following clearing and grubbing, the site will be pre-graded according to the pre-grading plan (see Figure 6). Disturbance of existing cover soils over the landfilled areas will be minimized to the extent practicable during pre-grading of the site.

Where appropriate, areas of existing topsoil will be stripped and stockpiled for future use. Large surface debris (i.e. concrete, boulders) will be buried beneath the cover in the northeast section of the Landfill.

The entire site will be proof-rolled (20 ton $\pm$ static weight). Any settlement due to proof-rolling will be backfilled, graded and proof-rolled again. Proper proof-rolling of the site will reduce cover settlement following closure.

In conjunction with the pre-grading the pan-lysimeter will be installed. Further consideration is required prior to design of the pan-lysimeter.

Following pre-grading and proof-rolling, powdered lime will be added to the entire surface of the site at a rate of application of 0.1 pounds per square foot.

VDM01323

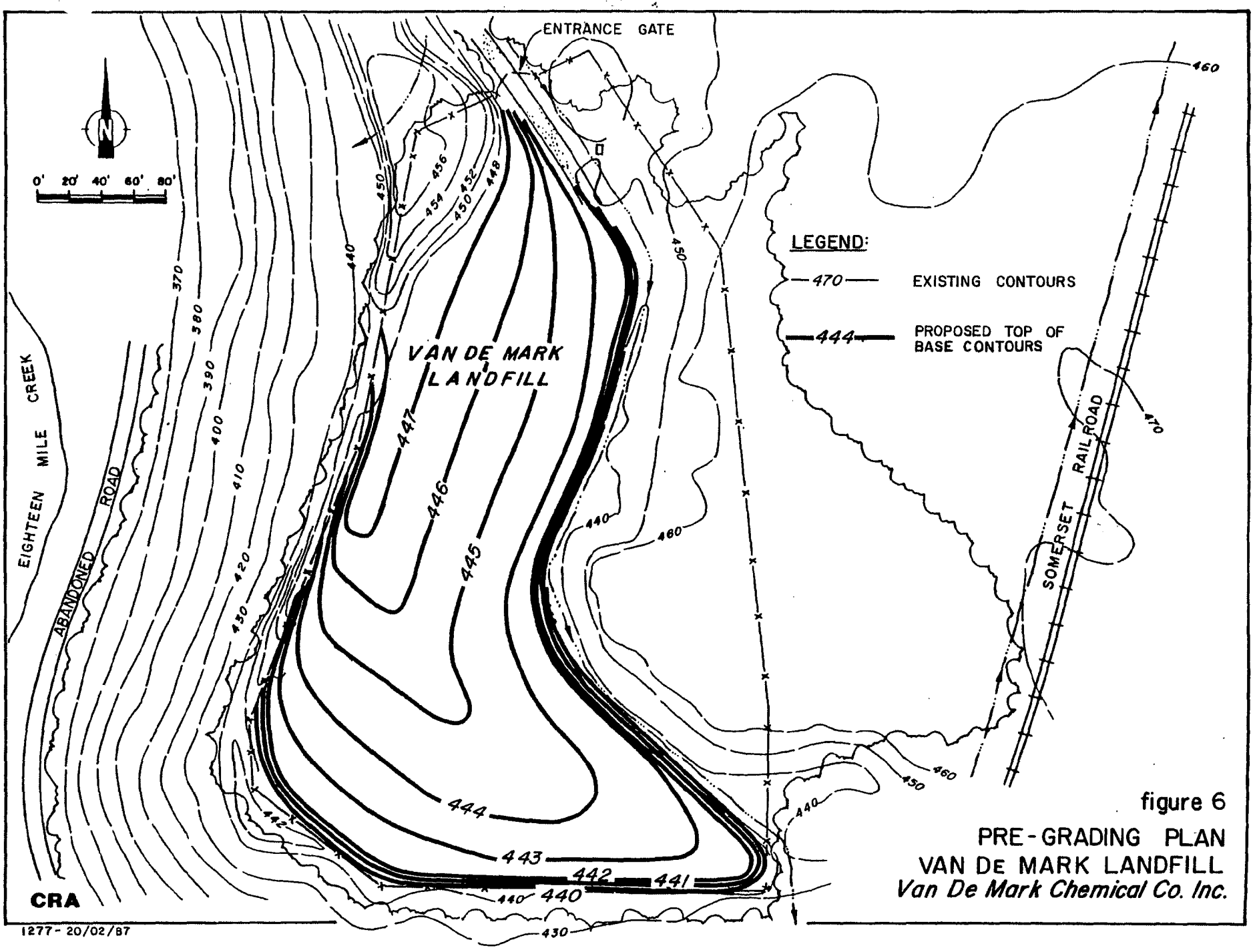


figure 6

PRE-GRADING PLAN
VAN DE MARK LANDFILL
Van De Mark Chemical Co. Inc.

VDM01324

7.0 FINAL COVER

The entire Van de Mark Landfill area will be covered with a low permeability cap to reduce precipitation infiltration. The final cover will consist of:

- vegetative cover (grass)
- 6-inch thick topsoil layer
- 15" thick loam layer
- 3" sand drainage layer
- 24-inch thick clay layer.

A typical cross section of the clay cap is presented on Figure 7. The areal extent and final surface elevations of the cover are presented on Figure 8. The clay will be placed and compacted to a hydraulic conductivity of 1 x 10^{-7} cm/sec or less.

The six-inch thick topsoil layer will be placed on top of the loam layer and will be planted with a persistent vegetative species. The vegetative cover will have a shallow root system. The surface slope of the final cover has been designed at three percent slope, but will never exceed five percent or be less than three percent. Effective vegetation and the proper slope of the cover surface will effectively minimize erosion. Any erosion that does occur will be suitably addressed by the maintenance program.

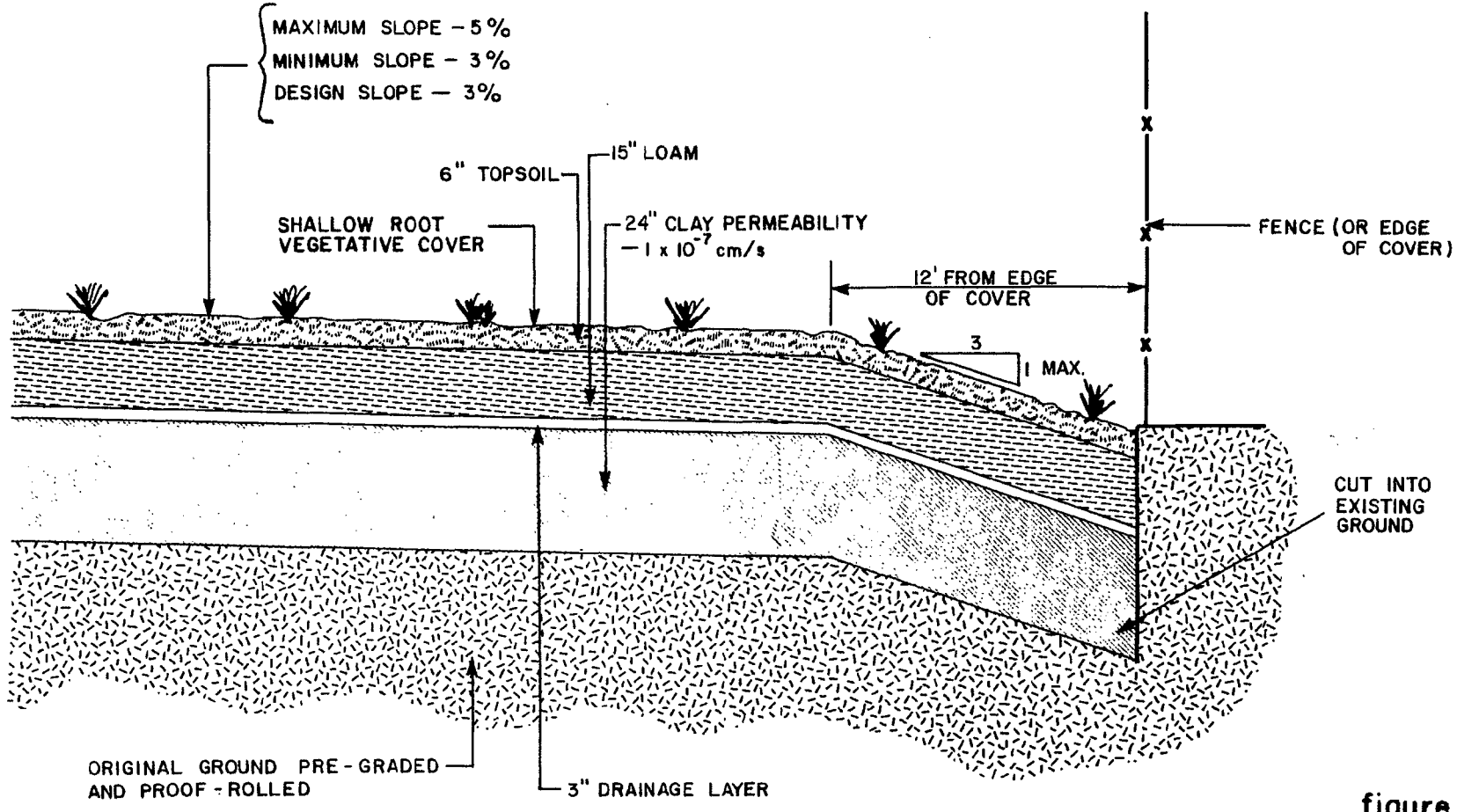


figure 7

CROSS SECTION OF COVER
VAN DE MARK LANDFILL
Van De Mark Chemical Co. Inc.

CRA

1277-20/02/87

VDM01326

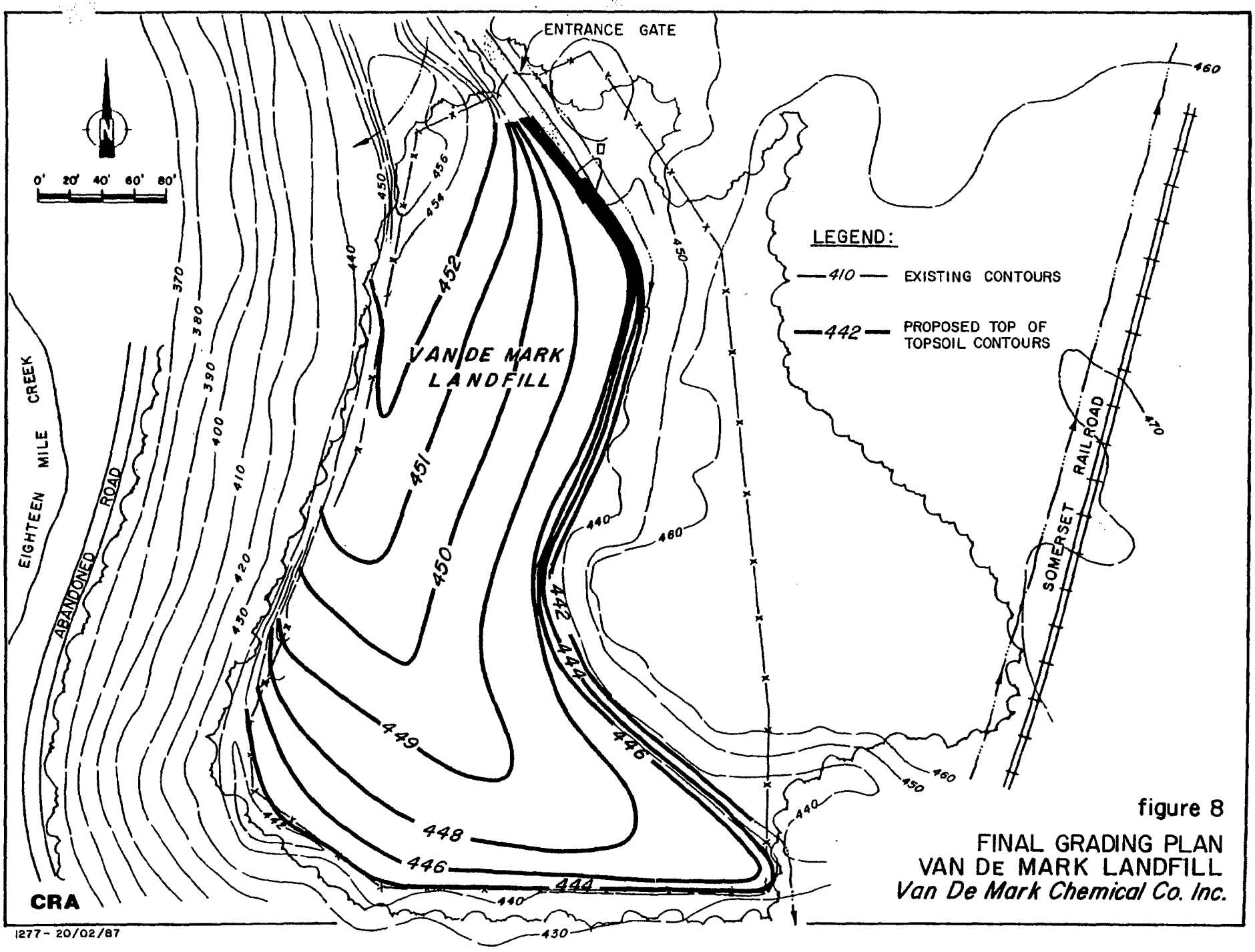


figure 8

FINAL GRADING PLAN
VAN DE MARK LANDFILL
Van De Mark Chemical Co. Inc.

VDM01327

Settlement of the proposed cover will be minimal as existing fill to be covered has had some time to settle and will be proof-rolled during the site grading program. Use of good quality materials and adequate compaction of same during construction of the proposed cover will also minimize settlement following closure. Due to the flexibility of the clay layer it is apparent that minor settlement will have very little effect on the permeability of the cover.

The proposed cover design minimizes the effects of freeze thaw cycles. The depth of frost penetration in the area is on the order of 36 inches, such that 12 inches of the clay layer remains below the depth of frost penetration.

Due to the nature of the fill disposed at the site, biodegradation or volatilization is not a concern. As a result, it will not be necessary to install a venting system to relieve generated gases.

8.0 MATERIAL SPECIFICATIONS AND QUALITY ASSURANCE PLAN

8.1 MATERIAL SPECIFICATIONS

All materials used to construct the final cover will be approved by the Site Supervisor prior to use to ensure they meet the required specifications as described in the following:

a) Clay

Clay for the final cover construction will be clayey soil obtained from sources as directed by the Site Supervisor. Clay material will have a permeability of 1×10^{-7} cm/sec or less, with a minimum of 45 percent fines passing the 200 sieve (clay, classified as CL or ML under the Unified Soils Classification System or defined by ASTM D-421-58 and D-422-63 procedures).

b) Sand

Sand for the drainage layer will be imported clean material from a source approved by the Site Supervisor. The sand shall have a minimum hydraulic conductivity of 1×10^{-3} cm/sec when remolded at 95 percent Standard Proctor Density at Optimum Moisture Content.

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VDM01329

c) Loam

Loam material for the construction of the cover will be an imported clean sand or gravel fill which shall contain a minimum of 30 percent by volume of topsoil from a source approved by the Site Supervisor. Soil stockpiled during grading of the landfill site and soils from other VandeMark property will be used in construction of the cover as is suitable. In addition the topsoil requirements defined below shall apply to the loam.

d) Topsoil

Topsoil will be fertile loamy material free from roots, vegetation, weed, parts of weeds, weed seeds and other debris. The source of topsoil will be an area free from growth of Quackgrass, Japanese Clover, Horsetail, Morning Glory, and other persistent weed plants. Topsoil will be free from stones and clods over two inches in diameter.

Topsoil will not be obtained from swampy areas and will not be infested with the seeds of noxious weeds. The pH of the topsoil will be between 5.5 and 7.0.

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VDM01330

Topsoil will be inspected and approved by the Site Supervisor prior to delivery to the job site. Topsoil of suitable quality from Van De Mark property will be incorporated into the final cover.

8.2 CONSTRUCTION QUALITY ASSURANCE PLAN

a) Clay Placement

Clay for the lower component of the final cover will be placed in 6-inch horizontal lifts compacted to a Modified Proctor Density determined to achieve a maximum permeability of 1.0×10^{-7} cm/sec for that clay as outlined in ASTM 1557, at a moisture content of -1 to +3 percent of its optimum moisture content as determined periodically by the Site Supervisor. During placement of the clay liner, grain size and moisture content determinations will be made for every 1,000 cubic yards of clay; and liquid limit, plasticity index and triaxial permeability will be determined every 5,000 cubic yards of clay. Compaction tests and moisture density determinations will be carried out in place by a soils technician, at a frequency of nine tests per acre per 6-inch lift. Following construction, in situ samples of the clay cap will be collected and tested for hydraulic conductivity at a frequency of one per acre of completed cap.

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VDM01331

The clay component of the final cover will be sloped at a minimum two-percent grade.

All clay placed will meet compaction specifications. Should compaction specifications not be met, the affected area will be reworked and recompacted until subsequent testing confirms compliance with the specifications. Clay will not be placed until underlying lifts have been approved by the Site Supervisor.

b) Drainage Layer and Loam Placement

Following placement of clay layer a 3-inch layer of clean sand will be spread and compacted to 90% Standard Proctor Density over the 24-inch depth clay layer. 15 inches of loam will then be placed over the sand drainage layer. The loam will be placed and compacted in two lifts (each lift no greater than 8 inches thick) to 90% Standard Proctor Density.

c) Topsoil

Six inches of topsoil will be evenly and uniformly spread over the capped area following final grading of the loam.

DOMESTIC SOURCES & RESOURCES

VDM01332

d) Seeding and Mulching

Prior to seeding, fertilizer with a nitrogen/phosphoric acid/pot ash rating of 10/20/20 will be applied to the topsoil for purposes of soil enhancement. The fertilizer application rate will be 300 lb/acre. If a neutral or mildly alkaline silt loam is used for topsoil, the addition of lime will not be necessary.

A combination of Kentucky bluegrass and rye grass (at a ratio of 4:1) will be planted over the cover to reduce infiltration and erosion from wind and rainfall. Rye grass is an especially fast grower, able to survive dry conditions, and is a perennial plant. The Kentucky bluegrass has a shallow and strong root system, requires moderate maintenance, and is also a perennial plant. In combination, this provides an effective vegetative cover. A neutral or mildly alkaline silt loam is favorable to the grass. Suggested seed density for Kentucky bluegrass is 3 lb of seed per 1,000 square feet. This is equivalent to approximately 130 lb of seed per acre. With a 4:1 application of Kentucky bluegrass to rye grass, this amounts to 104 lb/acre and 26 lb/acre, respectively.

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VDM01333

e) Construction Certification

As-built engineering drawings noting final clay cover elevations, topsoil elevations, final drainage features, monitoring device locations and elevations, test locations and any deviations from the approved plans, shall be provided. One east-west and one north-south cross-section through the completed area shall also be generated for cap certification. Once completed, all soil test reports, inspection reports, photographs of all major activities along with the construction certification plans (as-constructed drawings), shall be submitted to the NYSDEC.

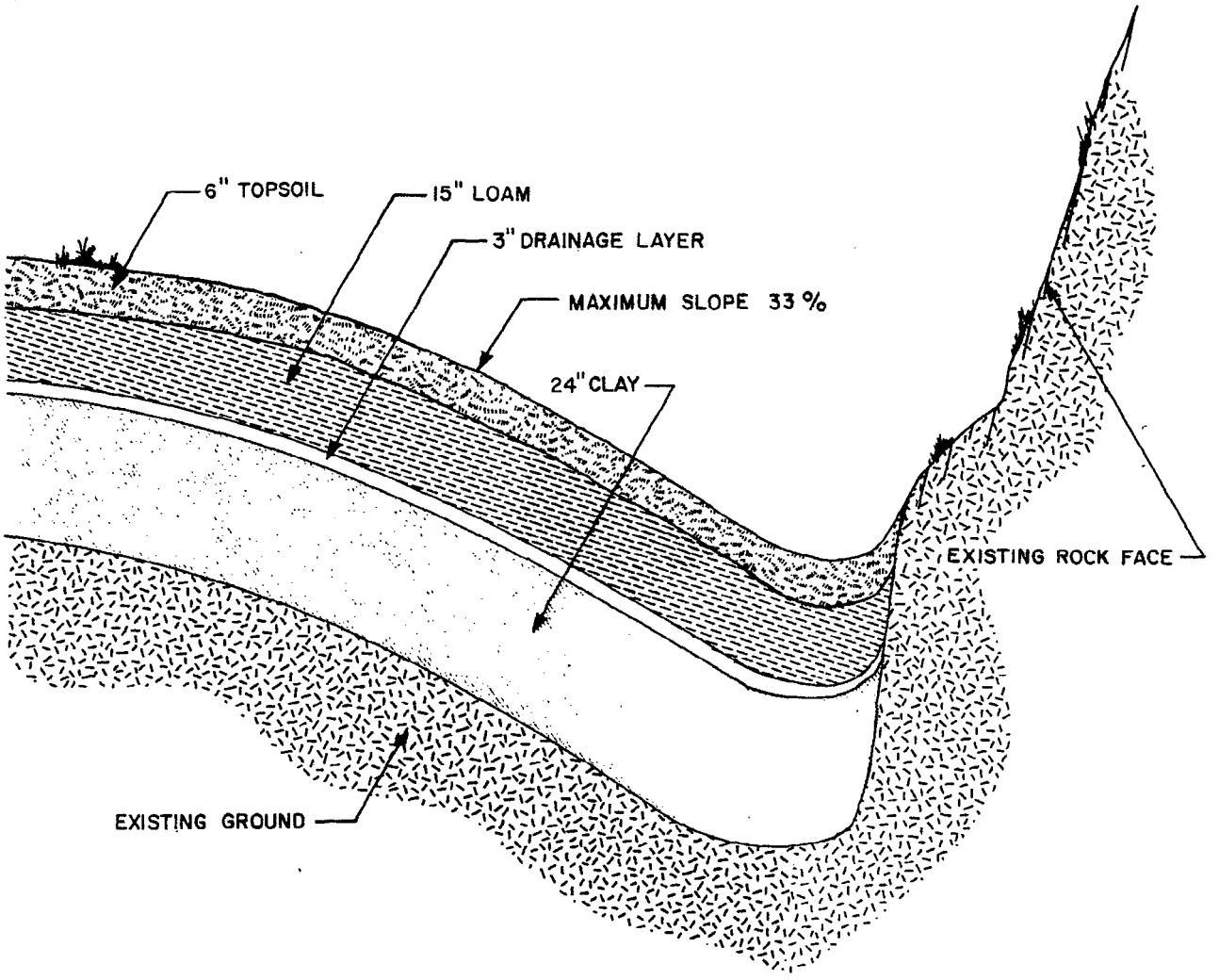
VDM01334

9.0 SURFACE WATER DRAINAGE

It is proposed that the post-closure drainage pattern be similar to the existing pattern in that as little flow as possible be directed over the embankment bordering the Western and Southern limits of the Landfill. By diverting the majority of the flow toward the eastern ditch erosion of the embankment will be minimized. The proposed final grading plan (Figure 7) illustrates the surface drainage configuration.

It is proposed that the existing ditch be lined with clay and in fact will be an extention of the clay cap for the site. The ditch lining will be built to the same specifications as the site cap. The side slope of the ditch will have a maximum slope of 33 percent. A typical detail of the ditch lining is presented in Figure 9.

VDM01335



NOTE: IRON STAINING ALONG DITCH WILL BE REMOVED AND BURIED ON SITE

figure 9

PROPOSED DITCH LINING
VAN DE MARK LANDFILL
Van De Mark Chemical Co. Inc.

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10.0 SITE SECURITY AND ACCESS

Security for the Van De Mark Landfill Site will be maintained by the existing six-foot high chain link fence. The entire fence will be inspected at the conclusion of capping construction and repaired as necessary.

The existing gates will be maintained and kept locked at all times when the site is not being supervised by Van De Mark personnel.

The existing site access road shall be maintained in reasonable condition to provide vehicular access to the site. No on-site access road will be constructed.

11.0 POST-CLOSURE MONITORING PROGRAM

The purpose of the post-closure monitoring program is to monitor the effectiveness of the closure construction for containing the migration of the contaminants within the landfilled area. The program consists of the collection and analysis of a series of groundwater and stream samples at regular intervals. The samples will be analyzed for the site specific parameters which include the following:

- pH (measured in the field)
- purgeable halocarbons (method 601)
- chlorides (method 407B)
- soluable metals: arsenic (method 206.2)
  chromium (method 218.2)
  iron (method 236.1)
  lead (method 239.2)
  mercury (method 245.1)
  zinc (method 289.1)

The sampling locations will include:

- monitoring wells VDM 9, VDM 10, VDM 11, VDM 12, and D-55;
- the effluent from the drainage ditch east of the Landfill;
- the seep in the area of the southwest corner of the Landfill; and,

VDM01338

- upstream and downstream locations of Eighteen Mile Creek.

Sampling Protocols are outlined in Appendix F.

Samples will be collected according to the following schedule:

Initial 18 Months following closure - quarterly
18 Months to end of year 3 following closure - semi-annually
Years 4 and 5 following closure - annually
Years 5 to 30 following closure - every five years

Prior to each sampling round, one complete set of groundwater elevation measurements will be made using all of the wells that have been installed on the landfill site proper.

The results of each sampling event will be submitted to the NYSDEC within one week of receipt of the analytical data.

In order to evaluate the performance of the clay cap, a lysimeter will be installed on the Site. During the regular sampling events outlined for the post-closure program, the water level in the lysimeter will be measured. This measurement will be converted into an estimated infiltration rate of the clay cap, compared to the required cap permeability of 1×10^{-7} cm/sec and reported along with the analytical results to the NYSDEC.

VDM01339

12.0 CONTINGENCY PROGRAM

Following each post-closure monitoring event, the analytical data will be reviewed for accuracy and evaluated to determine whether there have been any significant changes in the landfill conditions. The purpose of the contingency program is to outline the required remedial actions to be taken, where appropriate, based on observations made during post-closure monitoring program activities.

The mechanism which will trigger the implementation of the contingency program will be a significant impact measured in the stream. This will be done by monitoring water quality trends in the stream. Should this monitoring identify a significant increase in chemical parameter, a reassessment of the remedial action will be undertaken.

The initial step of the contingency plan is to notify the NYSDEC representative assigned to the site. The second step is to verify the increase by taking two additional samples at the sample location(s) in question, and analyzing for the particular parameter(s). This must be done within one month of receipt of the analytical data. If the increase is verified, a study will be initiated to determine the cause of the increase and the potential consequences. Within six months of the initial receipt of analytical data

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which triggered the contingency program, a report must be submitted to the NYSDEC, which details these causes and consequences, as well as the recommended remedial action.

VDM01341

13.0 MAINTENANCE PROGRAM

Following site closure, the site will be inspected semi-annually. The site will be inspected with regards to:

a) cover integrity;
b) ditch lining integrity and presence of iron staining;
c) condition of vegetation over the cover;
d) drainage conditions and
e) condition of the fence surrounding the site.

A log will be maintained of the inspections for a minimum of six years from the date of inspection. The log will indicate the name of the inspector, item of inspection, date and time of inspection, observations, and date and nature of remedial action(s).

Any deficiencies noted during inspection will be addressed immediately.

Any settlement of the cover, should it occur, in excess of 12 inches will be remedied by removal of the topsoil, loam and drainage layer and subsequent backfilling with additional clay to top of clay grades and replacement of the drainage layer, loam and topsoil, properly compacted.

CONESTOGA-ROVERS & ASSOCIATES

VDM01342

Any erosion of the cover will be repaired by reconstruction of the cover in the eroded area. If necessary sod will be used to re-establish vegetative cover.

CONESTOGA-ROVERS & ASSOCIATES

VDM01343

14.0 SCHEDULE

The closure plan construction activities will be completed in two phases. Each phase will be completed in one of two consecutive construction seasons (years).

During the initial construction phase (Year 1) the entire site will be cleared and grubbed, proof-rolled and graded. A portion of the site cover, approximately the southern half of the site, will be completed including clay, drainage layer, loam, topsoil and seed and mulch during Year 1.

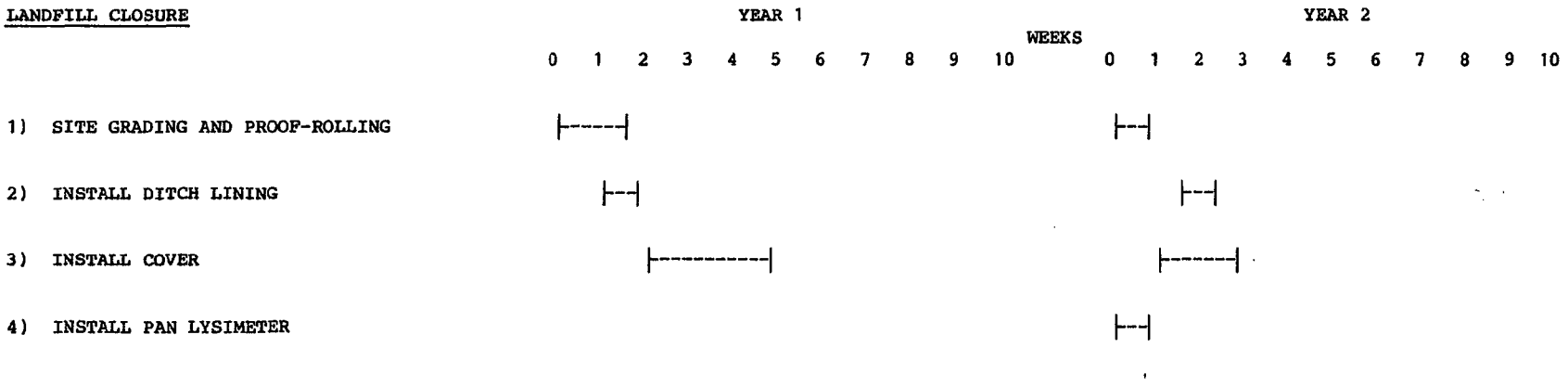
Year 2 construction activities will begin with regrading of the area remaining to be covered, and any repairs or upgrading required of Year 1 installations. Following these activities the lysimeter will be installed and the construction of the cover and ditch lining will be completed.

The estimated schedule is presented in Figure 10.

VDM01344

FIGURE 10

SCHEDULE OF LANDFILL CAPPING AND CLOSURE ACTIVITIES



VDM01345

It is to be noted that site capping is a warm weather construction project and as such could not be undertaken during the winter months. Closure is tentatively scheduled to begin in the spring of 1987, with completion being expected by summer of 1988.

VDM01346

15.0 ESTIMATED COST

The estimated costs for closure of the Van De Mark Landfill in accordance with the specifications contained herein are on the order of $261,000. Table 2 provides a breakdown of the cost components included in this estimate.

The estimated annual monitoring, maintenance and seepage collection/treatment costs for the site are as follows:

Monitoring-Year 1	$14,400
-Year 2	$10,800
-Year 3	$ 7,200
-Years 4 and 5	$ 3,600
-Thereafter	$ 700
Maintenance (Cap and Collection System)	$ 4,000 annually

CONESTOGA-ROVERS & ASSOCIATES

VDM01347

TABLE 2

COST ESTIMATE
SOLID WASTE MANAGEMENT FACILITY CLOSURE

ITEM	
A) Site Preparation	
1. Site Grading and Proof-Rolling 2.5 acres @ $1,200/acre	$ 3,000.
2. Application of Powdered Lime 2.5 acres @ $2,000/acre	$ 5,000.
3. Survey Crew to set and check grades 2.5 acres @ $1,000/acre	$ 2,500.
SECTION A Subtotal	$10,500.
B) Clay Cover Installation and Testing	
1. 24-inch clay layer installation 8,000 c.y. @ $11.00/c.y.	$ 88,000.
2. Placement of 3-inch sand drainage layer 1,000 c.y. @ $17.00/c.y.	$ 17,000.
3. Placement of 15-inch loam cover 5,000 c.y. @ $12.00/c.y.	$ 60,000.
4. Placement of 6-inch topsoil layer 2,000 c.y. @ $12.00/c.y.	$ 24,000.
7. Application of seed and mulch 12,000 sq. yd. @ $0.30/sq. yd.	$ 3,600.
6. Testing	
a) Grain size and moisture content 8 @ $30/test	$ 300.
b) Liquid limit and plasticity 2 @ $50/test	$ 100.
c) Moisture-density measurements 2 @ $80/test	$ 200.
d) Remolded permeability tests 2 @ $270/test	$ 600.
e) In-place moisture-density 90 @ $15/test	$ 1,350.
f) Falling head permeability 10 @ $220/test	$ 2,200.

continued...

TABLE 2 (cont'd)

COST ESTIMATE
SOLID WASTE MANAGEMENT FACILITY CLOSURE

ITEM	
7. Construct trench in drainage ditch and backfill with crushed limestone 1 L.S. @ $1,000	$ 1,000.
8. Supply and install lysimeter 1 L.S. @ $1,500	$ 1,500.
SECTION B Subtotal	$199,850.

C) Closure Certification

1. Certification by land surveyor 2.5 acres @ $300/acre	$ 800.
2. Certification by professional engineer 1 L.S. @ $1,000	$ 1,000.
3. Closure Report - 1 L.S. @ $5,000	$ 5,000.
SECTION C Subtotal	$ 6,800.

Estimated Cost Summary

TOTAL SECTIONS A - C	$217,150.
MOBILIZATION/DEMOBILIZATION	$ 10,000.
CONTINGENCY (15 PERCENT)	$ 34,000.
TOTAL	$261,150.

16.0 SUMMARY

Closure of the Van De Mark Landfill in accordance with the specifications described herein including capping, monitoring and maintenance, will reduce the migration of contaminants discharging with the groundwater beneath the site through a reduction in the driving force created through precipitation infiltration.

All of which is respectfully submitted,

Frank A. Rovers, P. Eng.

David E. Black, P. Eng.

APPENDIX A

FORMER LANDFILL INVESTIGATION

AND CLOSURE PLAN

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1.0 INTRODUCTION

In the fall of 1983, Van De Mark Chemical Company, Inc. (VDM) authorized Advanced Environmental Systems, Inc. and Conestoga-Rovers & Associates Limited to complete a closure investigation of a former landfill site located on VDM property. The former landfill operated under Permit 2111 which was issued February 9, 1979 by the New York State Department of Environmental Conservation and which expired in February 1982. (A copy of the permit application is enclosed in Appendix A). The area had been used by VDM as a disposal area since approximately 1957.

The following report presents details on the regional and local geology including soil conditions, groundwater conditions, local topography, surface drainage and local groundwater quality. This report also addresses environmental concerns and recommends a closure plan.

Background information was provided by historic studies of the area undertaken by Woodward-Clyde Consultants and Bechtel Associates Professional Corporation for adjacent construction operations and from investigations previously undertaken by VDM.

VDM01354

2.0 EXISTING CONDITIONS

2.1 SITE LOCATION

The former Van De Mark Landfill is located within the Northwestern limits of the City of Lockport, New York. A site location plan is presented in Figure 1. The former landfill is located approximately 275 yards west of the Van De Mark Chemical Plant on a plateau bordered to the west and south by an embankment sloping down to Eighteen Mile Creek. The Somerset Railroad passes close by to the East. Mill Street, to the North, allows access to the 2.1 acre site.

2.2 SITE TOPOGRAPHY

The plateau upon which the former landfill site is situated, is relatively flat having an approximate elevation of 444.0 A.M.S.L. The landfill is bordered on the west and south by a steep vertical descent on the order of 85 feet; and is bordered to the north-east by a steep embankment being on the order of 24 feet high. A general site plan indicating surface contours is shown in Figure 2.

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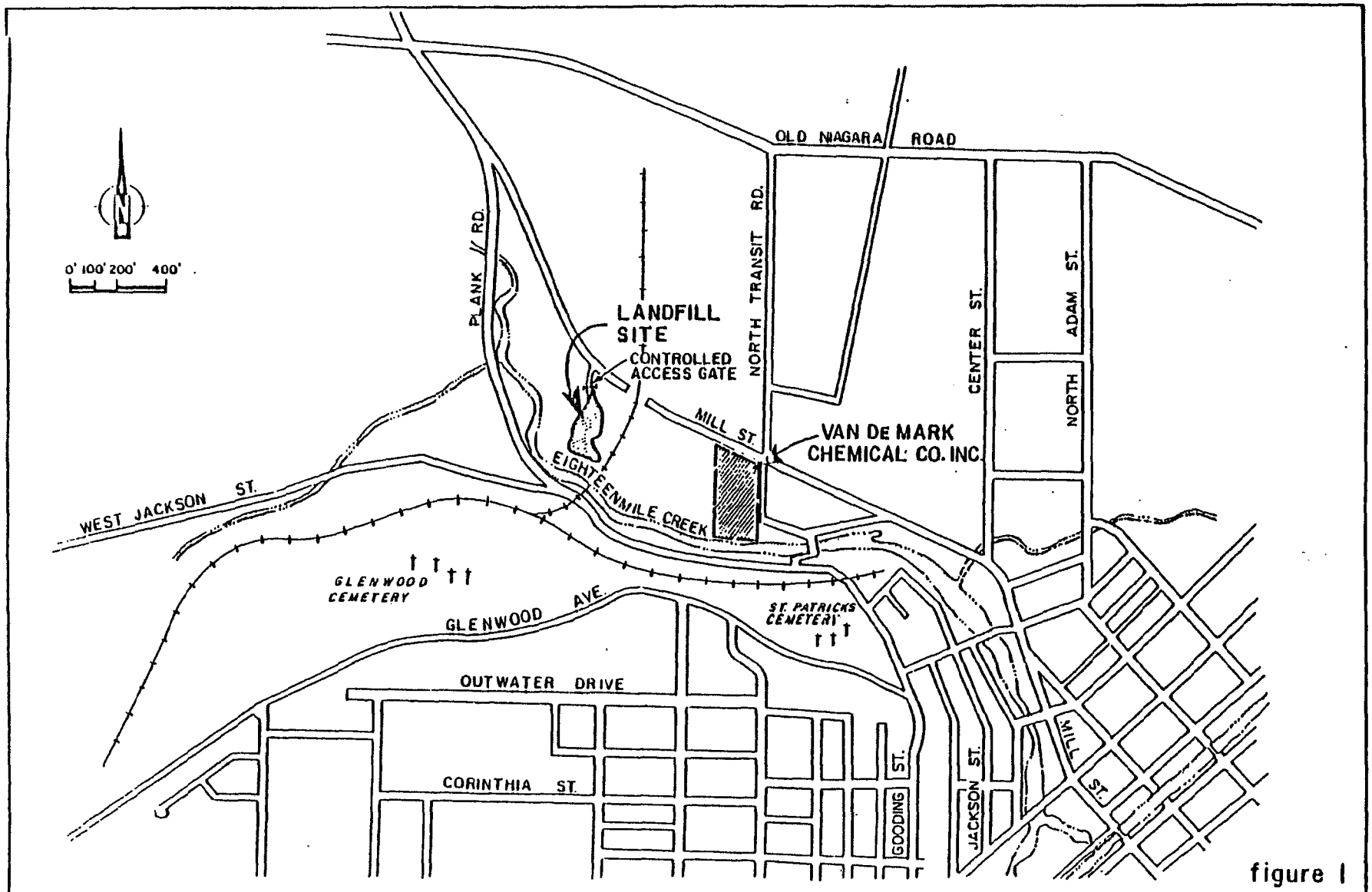

figure 1

SITE LOCATION PLAN
VAN De MARK LANDFILL
Van De Mark Chemical Co. Inc.

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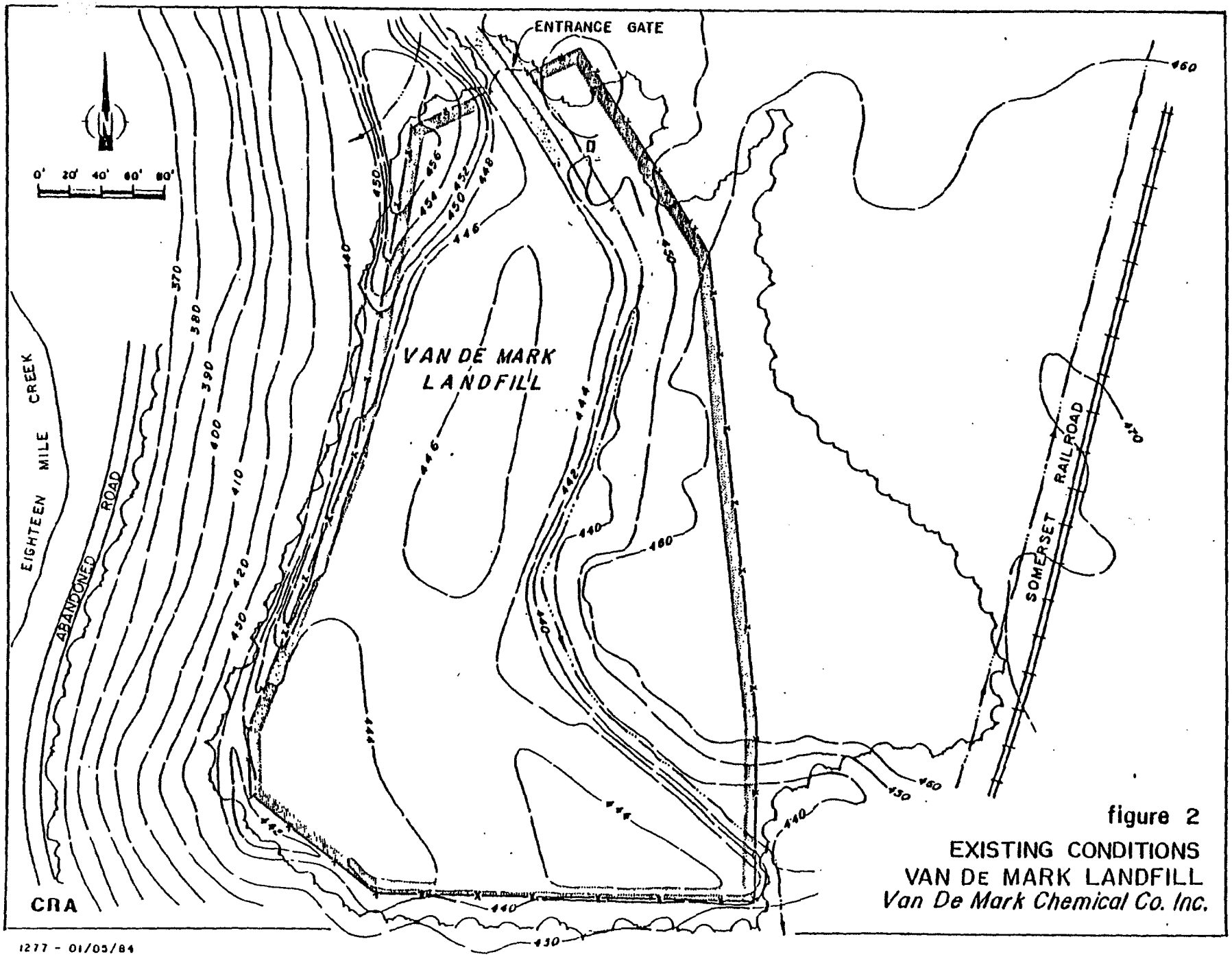

figure 2

EXISTING CONDITIONS
VAN DE MARK LANDFILL
Van De Mark Chemical Co. Inc.

VDM01357

A small berm, one to two feet in height, extends along the edge of the western and southern disposal limits to prevent on-site surface water discharge to Eighteen Mile Creek which runs along the base of the steep slope. A drainage ditch along the base of the incline located east and northeast of the landfilled area provides the site with a surface drainage outlet.

VDM01358

3.0 LANDFILL PRACTICES

The Van De Mark Landfill can be subdivided into two major disposal areas as shown by Figure 3. The Western region consists of an area which was used for waste disposal between 1957 and 1979 by VDM. In this area, landfilling methods were generally random, consisting of excavation, disposal and covering. The waste consisted mainly of drums of silicon tetrachloride ($SiCl_4$) and chlorodisiloxane formed as by-products during the commercial production of phosgene.

The Eastern region of the landfill was used for the disposal of similar by-products as well as carbon and silicon carbide. Such waste was disposed of according to Permit 2111, issued February 9, 1979 and which expired in February 1982. The drummed waste was deposited in pits on a base of crushed limestone and backfilled with crushed limestone. The drums were then perforated to enhance the neutralizing of the waste. The cover consisted of bags of finish lime and agricultural lime beneath an earthen cap of red silty clayey soils. Upon expiry of Permit 2111 VDM began disposal of pretreated wastes to the Lockport Wastewater Treatment Plant.

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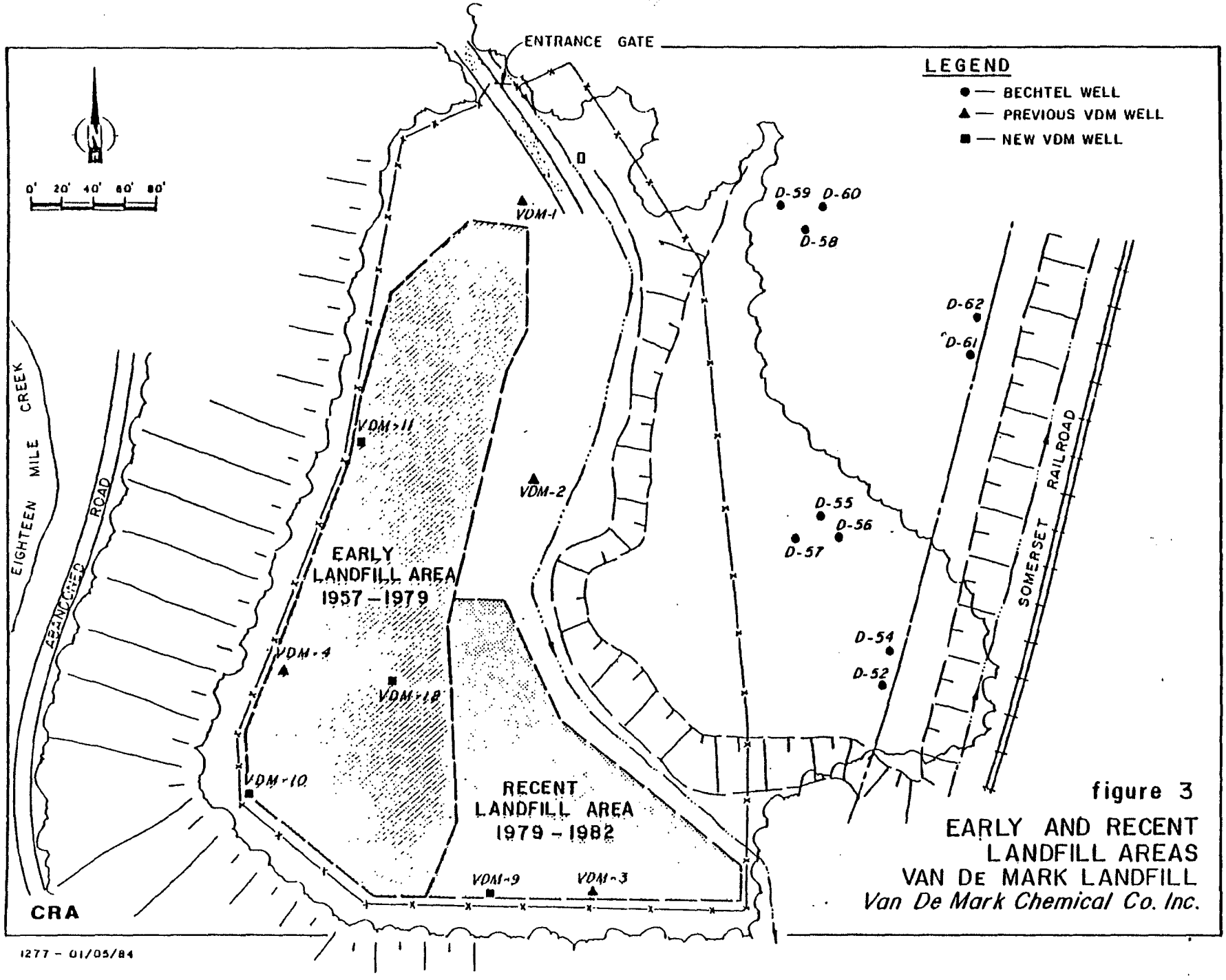

figure 3

EARLY AND RECENT LANDFILL AREAS
VAN DE MARK LANDFILL
Van De Mark Chemical Co. Inc.

VDM01360

4.0 OBSERVATION WELL INSTALLATION

From December 1 to 9, 1983, Earth Dimensions, Inc. installed four (4) groundwater monitoring wells; three (3) monitoring wells (VDM-9, VDM-10, VDM-11) were located downgradient of the landfilled area and one (VDM-12) was installed in the central portion of the earlier landfilled area. The locations of these wells are presented in Figure 4. The direction of groundwater flow was interpreted from previous reports by Whitmore and by Bechtel. Previous wells installed by Bechtel and Whitmore as discussed in Section 4.3, are also included on Figure 4.

4.1 DOWNGRADIENT WELLS

The 1983 groundwater monitoring wells installed by CRA were placed between the landfill and top of bank as follows:

i) midway along the southern limit (VDM-9)
ii) at the southwest corner (VDM-10)
iii) midway along the west limit of the landfill (VDM-11)

The purpose of these wells was to intercept the groundwater flowing beneath the landfill and

VDM01361

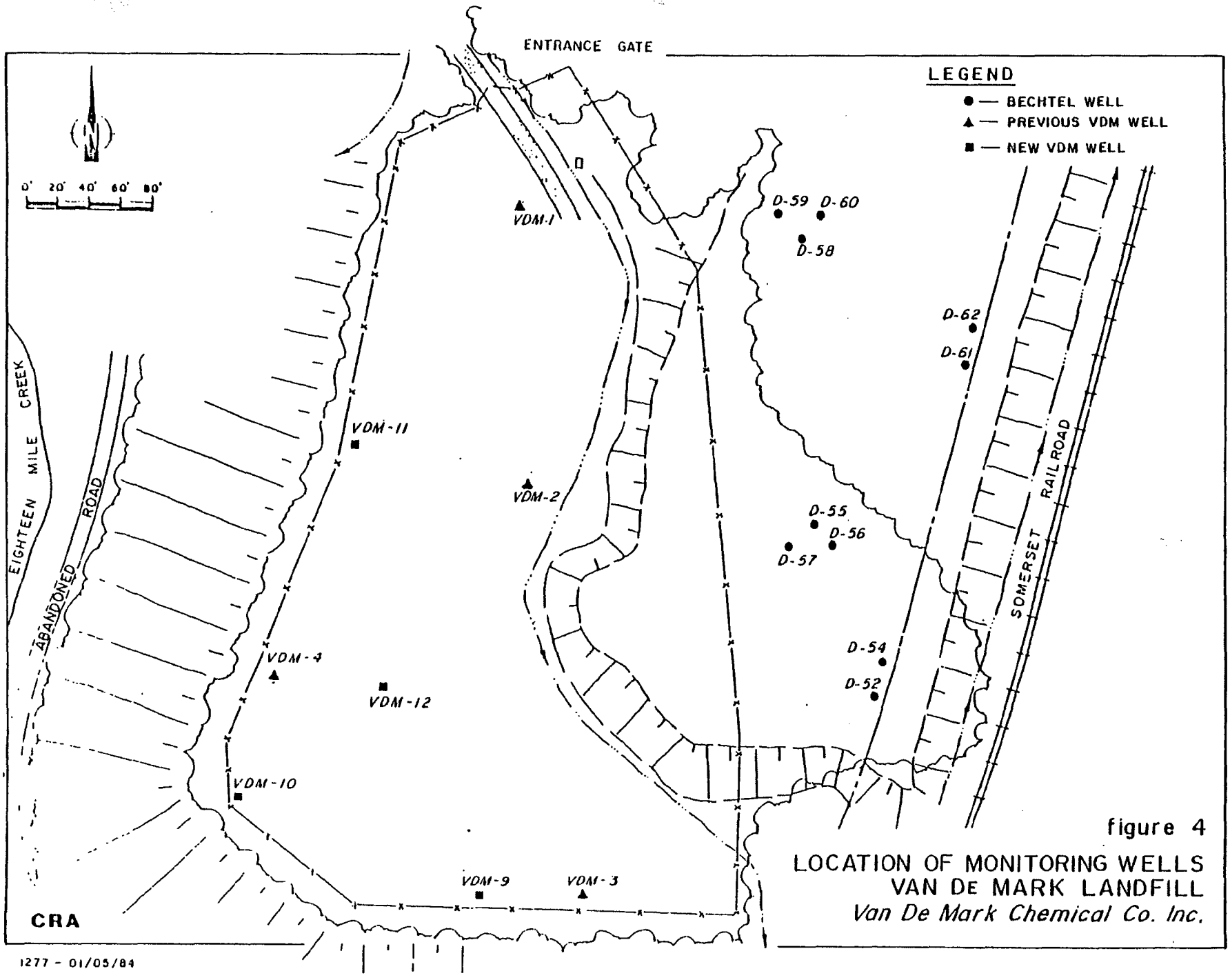

figure 4

LOCATION OF MONITORING WELLS
VAN DE MARK LANDFILL
Van De Mark Chemical Co. Inc.

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discharging to the embankment along Eighteen Mile Creek.

Prior to installation it was proposed that the three downgradient monitoring wells would be installed so as to monitor a 10-foot interval of bedrock which straddled the Grimsby-Power Glen Contact. This was assumed to be the first significant water bearing interval to be encountered. Upon drilling it was found that the Grimsby Formation was not present in the area of the landfill due to former limestone-sandstone open pit quarry operations. Therefore the installations were modified such that VDM-9 and VDM-11 both monitor an interval which straddles the bedrock-overburden interface. The bedrock-overburden interface was observed to be the first encountered water bearing interval and closely approximates the expected top of the Power Glen Formation at VDM-11 and the Power Glen-Whirlpool Contact at VDM-9. Due to the weathered nature of the rock samples, the Power Glen-Whirlpool Contact at VDM-9 was not positively identified. VDM-10 monitors an interval which includes the Power Glen-Whirlpool Contact and the Whirlpool-Queenston Contact. VDM-10 was drilled down to intercept the Queenston Formation so as to provide geologic stratigraphy of the south-west area of the landfill. The monitoring

interval of VDM-10 was chosen to investigate any downward migration of contaminants.

Initially the monitoring well installations in the bedrock were not to include a screen, however, partial monitoring within the overburden required the use of a screen and sand pack. All three (3) wells were constructed of 2-inch PVC riser pipe and a 5 foot PVC well screen. The wells were installed through the augers which were progressively removed in conjunction with the backfilling operation. The annular space between the borehole wall and the well was backfilled with the following material:

1. a measured quartzite sandpack
2. a measured granular bentonite seal above the sandpack
3. a cement-bentonite grout to the surface (3% bentonite was added to prevent grout shrinkage).

Each of the three downgradient monitoring wells is protected by a 4-inch diameter steel casing with lockable cap. A typical monitoring well installation is detailed in Figure 5. Complete well logs are enclosed in Appendix 'B'.

VDM01364

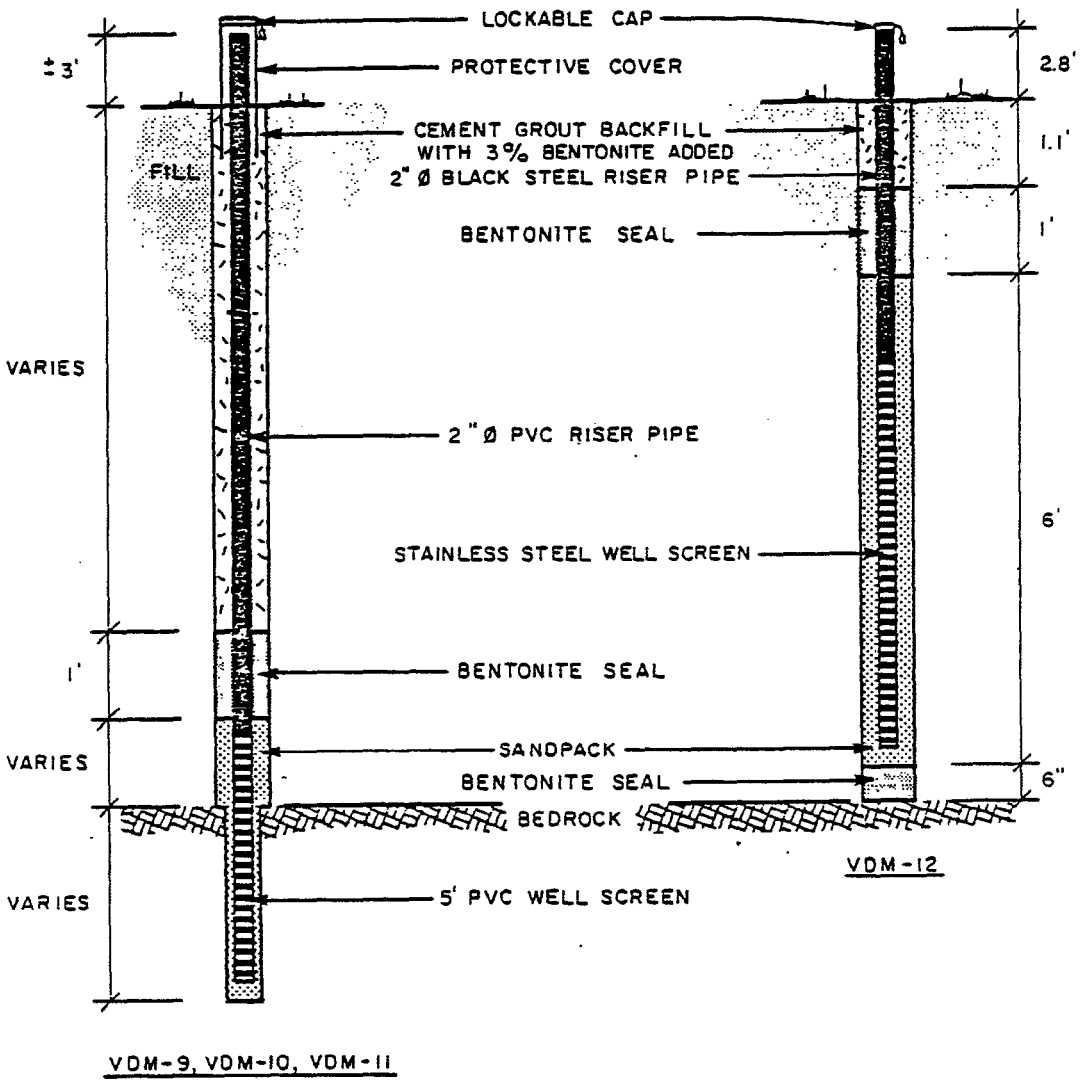

figure 5

MONITORING WELL INSTALLATION

Van De Mark Chemical Co. Inc.

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4.2 LANDFILL OBSERVATION WELL

Groundwater monitoring well VDM-12 is located approximately in the middle of the area landfilled between 1957 and 1979. Due to the random landfilling techniques used to dispose of waste in the early landfill area, leachate generation in this portion of the landfill was deemed to be a worst case condition.

VDM-12 was constructed of 2-inch diameter black steel pipe attached to a 2-inch diameter stainless steel well screen. VDM-12 was installed and backfilled (with a measured quartsite sandpack, measured bentonite plug and cement grout) and is protected by a 4-inch diameter steel casing with locking cap. VDM-12 is screened from 6 inches above bedrock to approximately 2-feet below grade.

Proper safety precautions were taken during all drilling and well installation activities. Respirators and quantities of lime to buffer any acid releases were kept close at hand. All drilling cuttings were temporarily placed in a 55-gallon drum and then disposed of in a pit on the landfill site and covered with a layer of lime and a layer of soil.

VDM01366

4.3 PREVIOUSLY INSTALLED WELLS

Wells previously installed include those constructed by Bechtel and by Whitmore. The Bechtel wells were completed in September and October of 1981 as part of a hydrogeologic investigation performed for the Somerset Railroad Corporation. Sample boring log and groundwater observation well report included in Appendix C pertain to Well D-55 used to gather background or upgradient data for this closure study.

Wells VDM-1 through VDM-4 were installed by Whitmore in relation to previous landfill studies. Associated well logs are also included in Appendix A.

VDM01367

5.0 HYDROGEOLOGIC INVESTIGATION

5.1 ON-SITE STRATIGRAPHY

The geologic stratigraphy of the landfill area was logged during the monitoring well installation program through split spoon sampling of the soil materials and NX coring of the bedrock. Complete well installation and stratigraphic logs are presented in Appendix 'B'.

The principle overburden material consisted of a matrix of red colored rock fragments and red brown clayey silt fill. This fill layer ranged in depth from 5 to 15 feet. Only trace amounts of waste materials were found at VDM-12 and the downgradient wells.

The bedrock in the area of the Van De Mark Landfill has been reported to include the lower 3 formations of the Nedina group; the Grimsby, Power Glen and Whirlpool in descending order. Below them is found the Queenston Formation (Bechtel, 1982). A general cross-section of the area is described on Table 1.

VDM01368

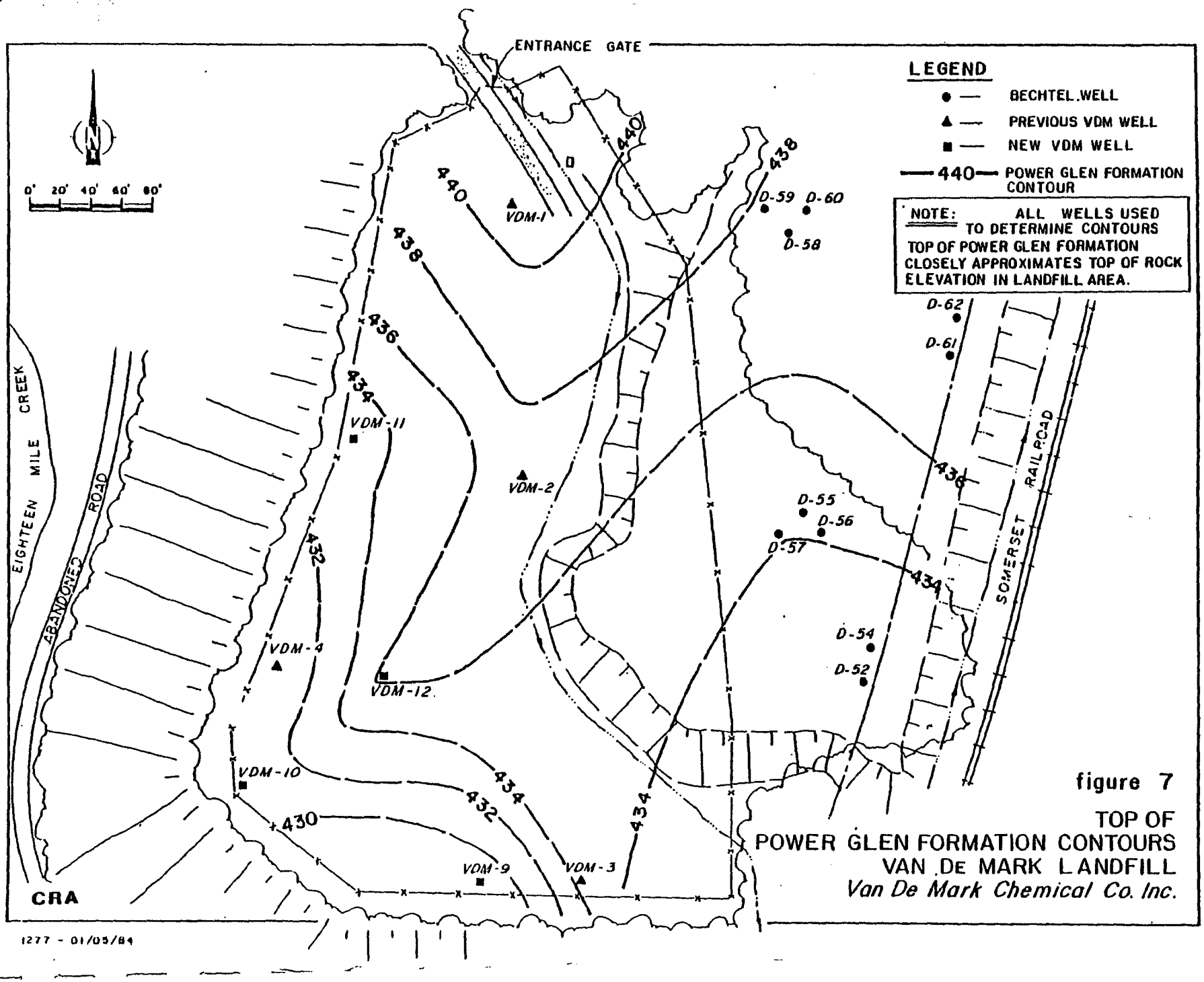


figure 7

TOP OF
POWER GLEN FORMATION CONTOURS
VAN DE MARK LANDFILL
Van De Mark Chemical Co. Inc.

VDM01369

TABLE 1

GENERAL STRATIGRAPHIC COLUMN - VDM LANDFILL

System	Series	Group	Formation	Member	Thickness	Description
Silurian	Niagaran	Medina	Grimsby	Zone A	±60'	Sandstone, Siltstone with interbedded Shale: Dark red brown to light green to white sandstone and siltstone with red and green shale interbeds. Sandstone/Siltstone: Thin to medium-bedded, very fine to medium grained, medium hard to very hard, fresh, occasional green mottling, fossiliferous. Shale: Thin bedded to fissile, medium soft, moderately to severaly weathered.
			Power Glen		27.0'	Shale: With interbedded Dolomite and calcareous Sandstone: 60% shale, 40% dolomite and sandstone. Shale: dark gray to green, thin-bedded to fissile, medium soft to soft, microcrystalline, severely weathered. Dolomite and Sandstone: dark gray to green thin-bedded, medium hard, fine-grained, fresh to moderately weathered. Sandstone is cross-bedded.
			Whirlpool		12.0'	Sandstone: White with black speckling (quartz and unknown black mineral), thin-bedded in upper 2', medium-bedded to massive in remainder, fine-grained, hard to very hard, fresh. Cross-bedded, ripple marks.
Ordovician	Cincinnatian	Richmond	Queenston		1200'+	Claystone: Dark reddish-brown with pale green mottling and occasional thin pale green claystone interbeds, medium soft to very soft, clacareous, fresh to completely weathered.

Source: "Closure Plan for Solid Waste Management Facility VAN DE MARK Chemical Company Inc., Lockport, N.Y.", July 1 1982 by William W. Whitmore, Consulting Engineers.

VDM01370

The overlying bedrock encountered during the installation of well VDM-10 was of the Power Glen Formation. As indicated by borehole logs of VDM-1, VDM-2, VDM-3, VDM-4 and VDM-10 and supported by the Bechtel report, the Grimsby Formation has been removed in the landfill area by previous quarry operations and has been replaced with a layer of fill.

The overlying bedrock encountered during installation of wells VDM-9 and VDM-11 was soft, very weathered shale which could be augered. Due to the weathered nature of the rock a positive identification of the formation was not made. However, the top of rock at VDM-10, VDM-11 and VDM-12 was in close proximity to the Grimsby-Power Glen contact while at VDM-9, the top of rock was very close to the Power Glen-Whirlpool contact as interpolated from the Whitmore Report. Beneath the weathered rock, the Power Glen Formation was encountered at VDM-10 and VDM-11. The Power Glen Formation consists of grey shale interbedded with dolomite and sandstone and is approximately 12 feet thick in this area as indicated by local borings although the general geologic section refers to a regional average thickness of 27 feet. Top of Rock and top of Power Glen Formation contours are presented on Figures 6 and 7.

VDM01371

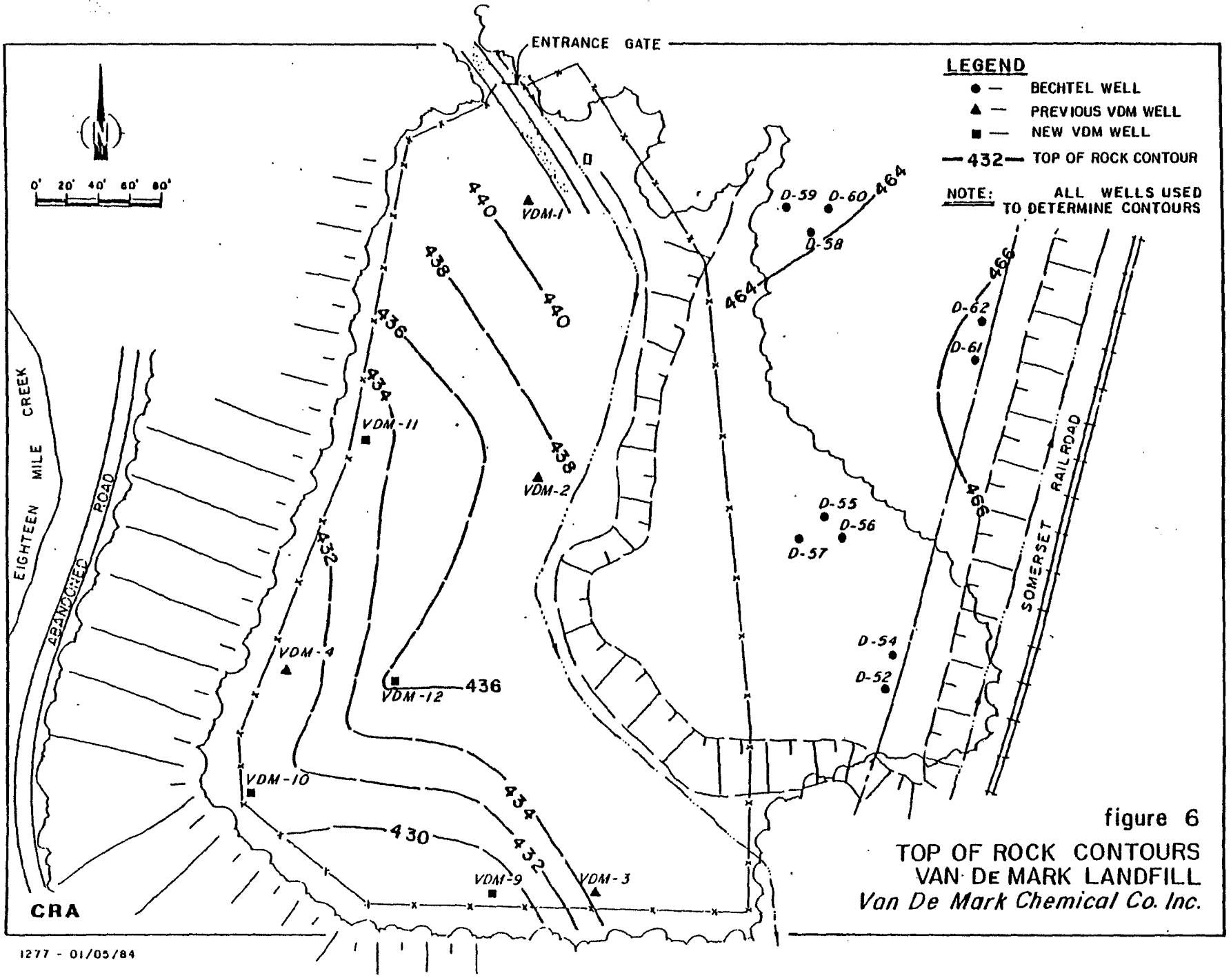


figure 6

TOP OF ROCK CONTOURS
VAN DE MARK LANDFILL
Van De Mark Chemical Co. Inc.

VDM01372

At VDM-10, NX coring extended below the Power Glen Formation, through the Whirlpool Formation to intercept the Queenston Formation. In the area of the VDM Landfill, the Whirlpool Formation is approximately 15 ft. thick consisting of buff colored sandstone. The Queenston Formation is made up of dark red-brown shale (claystone) with interbedded green shale. The top of the Queenston Formation Contours are presented on Figure 8.

Two geologic cross-sections through the landfill area have been prepared. A plan view locating the cross-sections is presented in Figure 9. Figures 10 and 11 present the cross-sectional views.

5.2 GROUNDWATER

Groundwater elevations measured in the overburden/bedrock interface monitoring wells within the VDM Landfill area (VDM-1, VDM-2, VDM-9, VDM-11, and D-55 and D-61) indicate that the general groundwater flow is in a southerly direction towards the embankment leading to Eighteen Mile Creek. Due to the removal of the Grimsby Formation in the area of the landfill the overburden/bedrock interface aquifer is

VDM01373

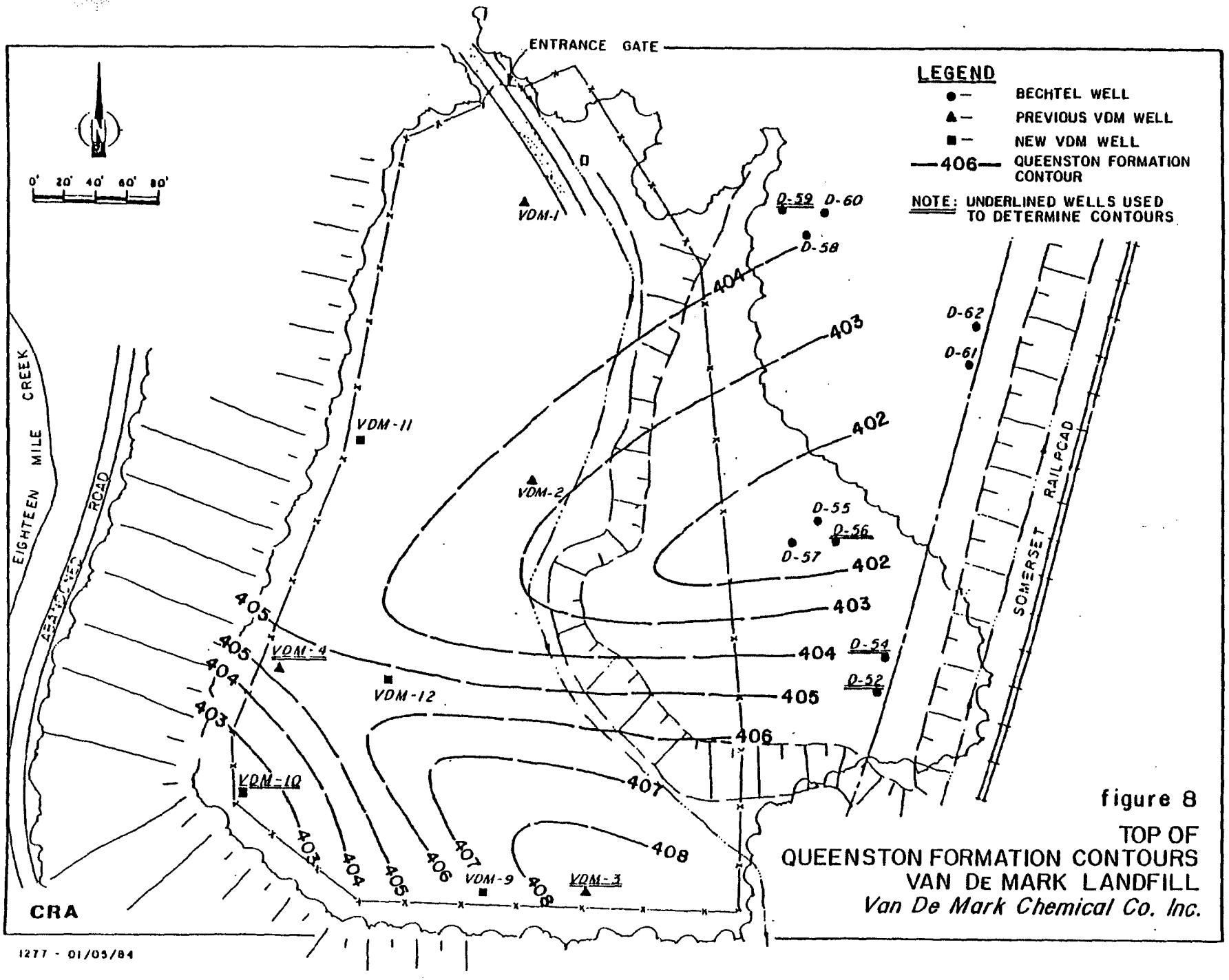


figure 8

TOP OF QUEENSTON FORMATION CONTOURS VAN DE MARK LANDFILL

Van De Mark Chemical Co. Inc.

VDM01374

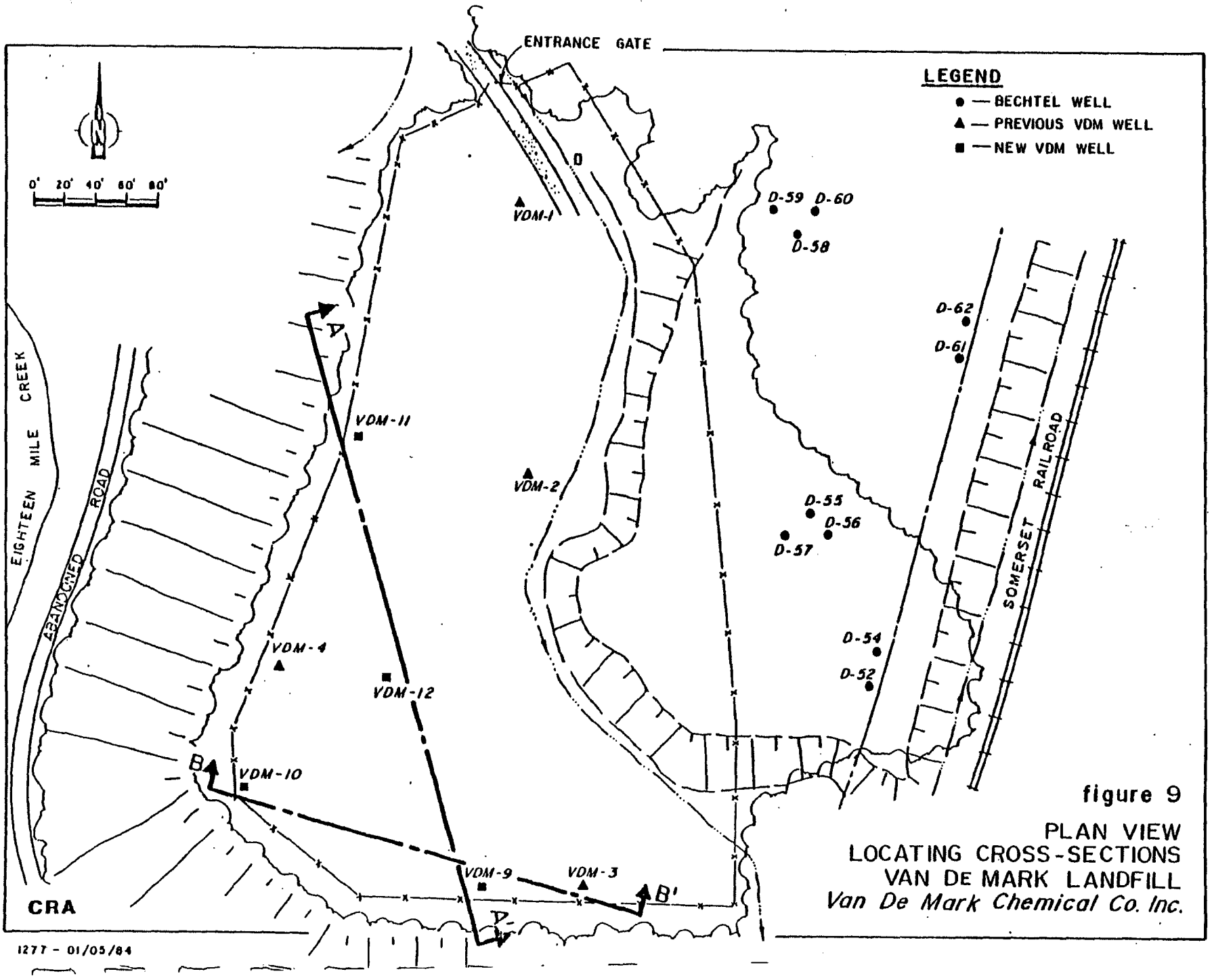
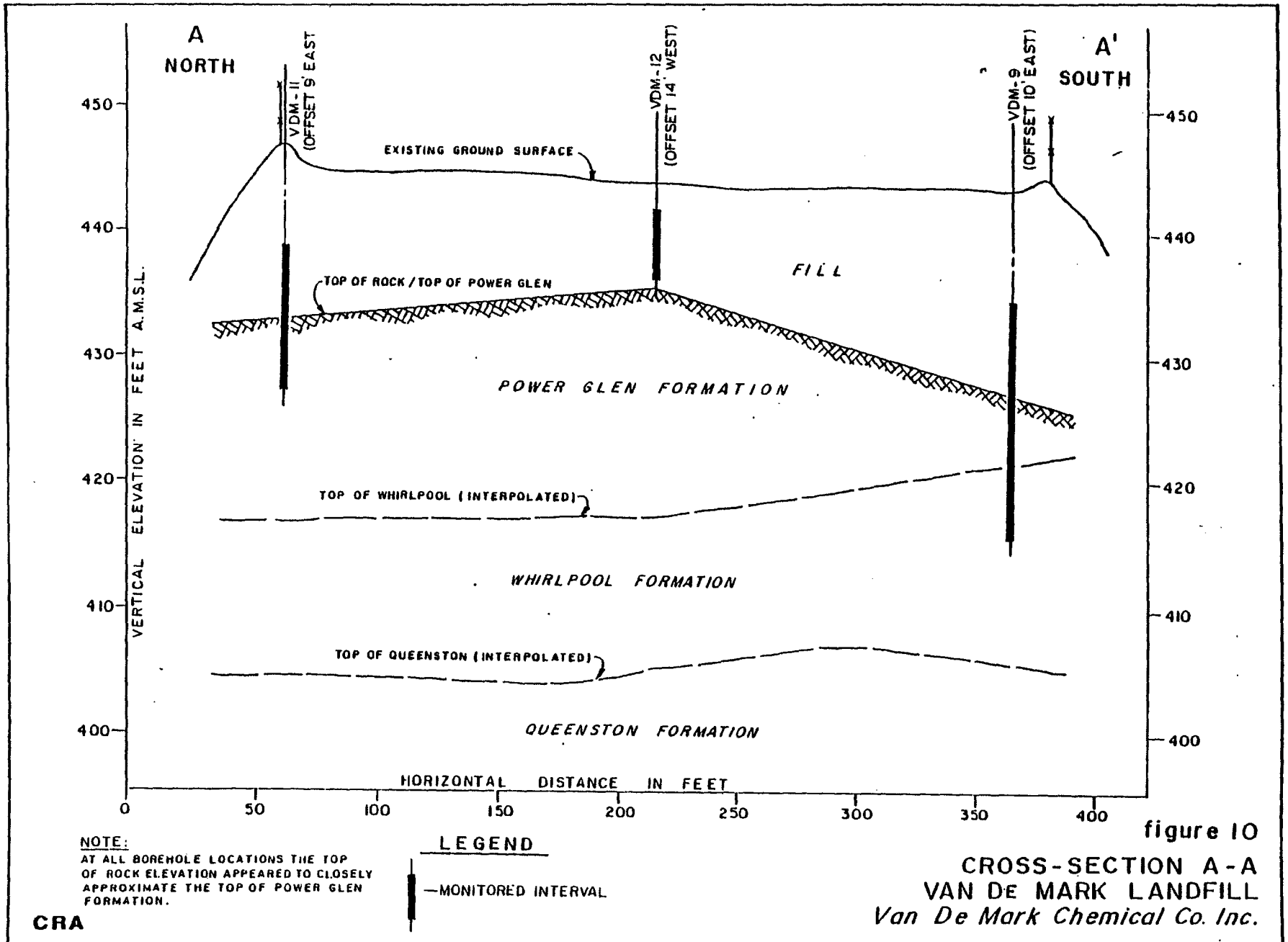


figure 9

PLAN VIEW
LOCATING CROSS-SECTIONS
VAN DE MARK LANDFILL
Van De Mark Chemical Co. Inc.

VDM01375



NOTE:
AT ALL BOREHOLE LOCATIONS THE TOP OF ROCK ELEVATION APPEARED TO CLOSELY APPROXIMATE THE TOP OF POWER GLEN FORMATION.

LEGEND

—MONITORED INTERVAL

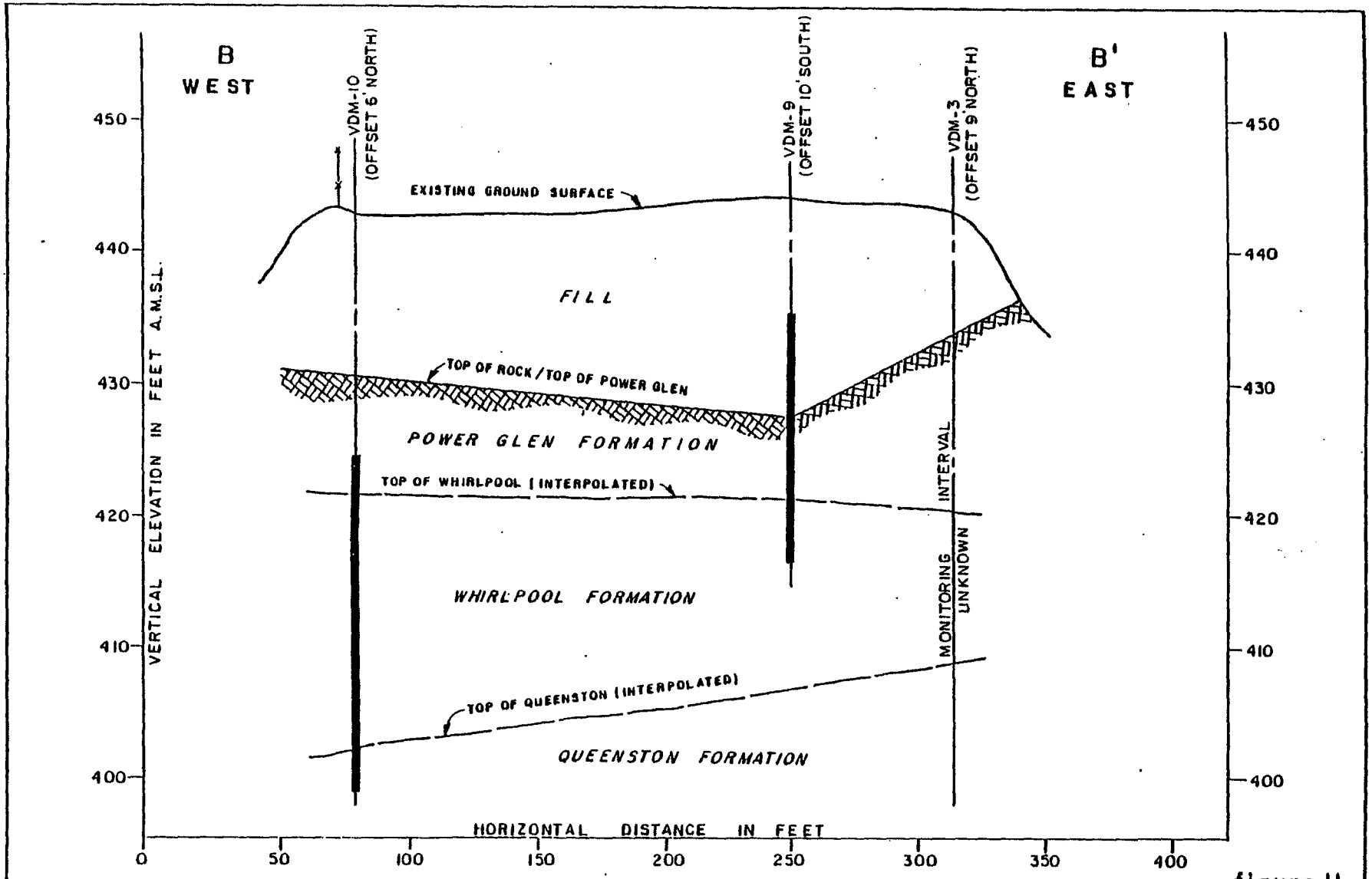
CRA

figure 10

CROSS-SECTION A-A
VAN DE MARK LANDFILL
Van De Mark Chemical Co. Inc.

1277 - 01/05/84

VDM01376



1277 - 01/05/84

VDM01377

believed to be connected with the Grimsby/Power Glen contact groundwater in the area east of the landfill to the railroad cut and are therefore considered to be the same aquifer. Grimsby/Power Glen Aquifer water surface contours are presented by Figure 12.

A completed list of groundwater elevations measured during the investigation are presented in Table 2.

An inspection of the embankment leading down to Eighteen Mile Creek was undertaken during the spring of 1984 to identify possible seepage areas. Only one such seep was identified. It was located west of VDM-10 and was estimated to have a flow rate of less than 0.5 GPM. The seep was located at an elevation similar to the Whirlpool Formation.

Based on the facts that, i) the major water bearing intervals are postulated to be the bedding planes in the bedrock formation, ii) the major flow direction is southerly towards the embankment and iii) only one seepage point was observed along the embankment, it is assumed that the discharge of groundwater to the embankment and thus to Eighteen Mile Creek from the site is minimal. The major flowpaths through the bedrock are expected to be lateral rather

VDM01378

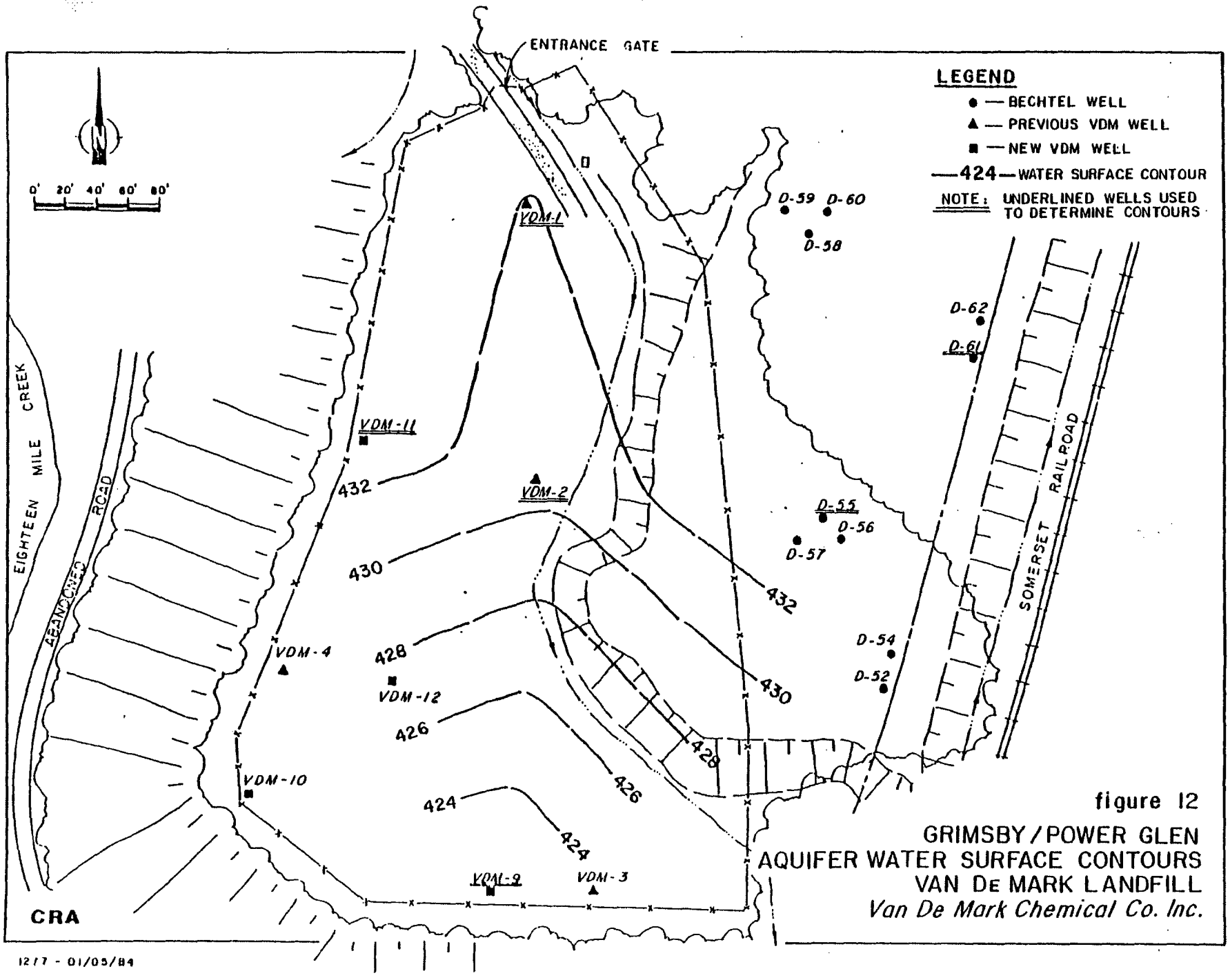


figure 12

GRIMSBY/POWER GLEN
AQUIFER WATER SURFACE CONTOURS
VAN DE MARK LANDFILL
Van De Mark Chemical Co. Inc.

VDM01379

TABLE 2

WATER LEVEL ELEVATIONS

	INTERVAL	12/14/83	12/16/83	01/05/84	01/24/84	01/30/84	03/15/84
VDM-1	GRIMSBY - POWER GLEN	432.16	431.96	-	-	-	-
VDM-2	GRIMSBY - POWER GLEN	430.71	430.73	-	-	-	-
VDM-3	-	414.24	414.12	-	-	-	-
VDM-4	-	395.51	396.18	-	-	-	-
VDM-9	OVERBURDEN - BEDBROCK	421.95	421.64	421.62	421.43	421.54	421.86
VDM-10	WHIRLPOOL - QUEENSTON	427.58	414.41	413.42	412.82	413.37	413.07
VDM-11	OVERBURDEN - BEDROCK	433.14	433.14	431.45	431.25	431.22	431.42
VDM-12	PERCHED	437.91	437.36	-	-	-	-
D-55	GRIMSBY - POWER GLEN	434.23	433.82	433.70	432.71	433.56	433.51
D-61	GRIMSBY - POWER GLEN	432.79	432.73	433.06	432.51	432.61	-

NOTES - GRIMSBY - POWER GLEN CONTACT AQUIFER WHICH INCLUDES THE OVERBURDEN-BEDROCK INTERFACE IN THE AREA OF THE LANDFILL

VDM01380

than vertical. The vertical migration of groundwater beneath the site is further restricted by the presence of the Queenston Shale which is typically considered to be an aquitard.

VDM01381

6.0 GROUNDWATER QUALITY MONITORING

6.1 WELL DEVELOPMENT

The sampling program was preceded by a well development program for the newly installed wells. Well development took place during December 14 to 16, 1983 and was based on the requirement that 3 well volumes be extracted per day for 3 days. Well VDM-10 provided good recovery, wells VDM-9 and VDM-11 required 2 bailings in one day to extract the necessary groundwater volume and VDM-12 had to be bailed intermittantly throughout the program as recovery was slow.

6.2 ANALYTICAL PARAMETERS

Based on the waste materials deposited in the landfill (including drummed silicon tetrachloride and chlorodisiloxane), the anticipated leachate produced would be typically acidic and high in chlorides. This would result in iron leaching both from the geologic environment and metal containers. As a result, groundwater samples were analyzed for the following parameters: chlorides, pH, iron.

VDM01382

To investigate if the above parameters are representative of site conditions a water sample from VDM-12 was also analyzed for the Priority Pollutants.

The protocols for analyses were as follows:

1) Chloride - Method 325.3 Titrametric - Mercuric Nitrate

2) Iron - Method 236.1 Atomic Absorption - Flame Technique

3) pH - Standard Methods, 15th Edition, Method 423

4) Priority Pollutants - U.S. EPA 600/4-79-020, March 1979.

These analytical protocols are as specified in the approved "Revised Monitoring Program Van De Mark Landfill Site", October 15, 1983 with the exception that the approved Iron Analysis method was to be by atomic absorption method 236.2, furnace technique.

VDM01383

6.3 INITIAL SAMPLING

The initial round of groundwater samples were collected on January 6, 1984. Each of the sampling wells had been purged on January 5, 1984 and allowed to recover. The recovery of the wells was slow, especially VDM-12, which required repeated sampling over 19 days to obtain sufficient volume of groundwater to allow for laboratory testing. Groundwater samples were obtained by bailing with a stainless steel bailer. The bailer was subject to a water wash and acetone-hexane-acetone-distilled water rinses between each sampling.

The wells sampled were VDM-9, VDM-10, VDM-11, VDM-12 and D-55. Well D-55, which provided background information is located to the east of the landfill and was installed by Bechtel. The monitoring interval of well D-55 coincides with the Grimsby-Power Glen contact.

The results of chemical analyses of the samples collected during the first round are presented in Tables 3 and 4.

First round analytical results revealed lower pH values of the downgradient and

VDM01384

TABLE 3

INITIAL ROUND SAMPLING RESULTS

Well No.	pH (Std. Units)	Chlorides (mg/L or ppm)	Iron (mg/L or ppm)
VDM-9	5.660	9,197	81.0
VDM-10	5.321	7,730	27.5
VDM-11	3.628	1,859	45.3
VDM-12	4.275	50,682 (51,660)[1]	9,800.0
D-55	7.545	49	<0.2

[1] - Duplicate sample

Notes:

1) Samples collected January 6, 1984
2) Analysis performed by Advanced Environmental Systems, Inc.

TABLE 4

PRIORITY POLLUTANT SURVEY - WELL VDM-12

SUMMARY[1]

(Expressed as micrograms per liter or ppb)

Parameter	Original Sample	Duplicate Sample
Volatiles (31)[2]		
Chloromethane	550	390
Methylene Chloride[3]	330	290
Chloroform	500	500
Carbon Tetrachloride	BDL[4]	28
Tetrachloroethylene	110	120
Base/Neutral Extractables (46)		
Octylphthalate	100	NR[5]
Pesticides/PCB's (25)	BDL	NR
Acid Extractables (11)	BDL	NR
Total Recoverable Phenols (mg/L or ppm)	0.08	NR
Total Cyanide	BDL	NR
Cadmium	294	
Chromium	4250	
Copper	31000	
Lead	485	
Nickel	22900	
Silver	870	
Thallium	1120	
Zinc	497000	
Beryllium	186	

1 - This table lists only those parameters identified from the total of 128; all others are below detection limits. The complete analytical report is provided in Appendix A.
2 - Number of Compounds
3 - The field blank contained 11 ug/L methylene chloride
4 - BDL - Below Detection Limits
5 - Duplicate analysis not requested

- Samples collected January 24, 1984
- Analyses performed by Advanced Environmental Systems Inc.
- Further metals analyses forthcoming

landfill wells, (especially VDM-11), than the neutral pH value of the upgradient well D-55. High chloride and iron concentrations were indicated by the landfill monitoring wells relative to the background well. As previously mentioned, low pH and elevated chlorides and soluble iron concentrations were expected based on the type of waste materials deposited in the landfill.

The priority pollutant survey completed on samples collected from VDM-12 revealed the following parameters as being above the detection limits:

1) Volatiles; Chloromethane, Methylene Chloride, Chloroform, Carbon Tetrachloride, and Tetrachloroethylene,

2) Base/Neutral extractables; Octylphthalate,

3) Total Recoverable Phenols, and

4) Metals; Cadmium, Chromium, Copper, Lead, Nickel Silver, Thallium, Zinc, Beryllium. Further metals analyses are forthcoming.

VDM01387

6.4 SECOND SAMPLING SURVEY

Based on the information gained through the analysis of the initial round of water samples, a set of parameters were chosen for groundwater quality confirmation. These parameters were:

1) Volatiles - Chloromethane, Methylene Chloride, Chloroform, Carbon Tetrachloride, and Tetrachloroethylene;

2) Total Recoverable Phenols;

3) Metals - Cadmium, Chromium, Copper, Lead, Nickel, Silver, Thallium, Zinc and Beryllium, and others yet to be determined.

Low levels of Octylphthalate (100 ppb) were found in the VDM-12 sample. Low level presence of octylphthalate is not considered to be of significant environmental importance and therefore was not included for in the second sampling survey.

The second round sampling survey was carried out on March 21, 1984. Sampling results are presented in Appendix D.

VDM01388

Second round sample analyses for pH, chlorides and iron revealed similar analytical results to the first round with the exception of the soluble iron concentrations which were typically higher for the second set of samples (See Table 5, Appendix D).

Analyses of samples from the downgradient wells indicate reduced concentrations of methylene chloride and chloroform, compared to those observed in the landfill well (VDM-12) with VDM-11 having the highest downgradient concentrations. The presence of carbon tetrachloride and tetrachloroethylene was only observed in VDM-11 and VDM-12. It is to be noted that VDM-11 is located in the older landfill area where disposal methods were not regulated. All observed volatile concentrations were less than 1 ppm in the landfill well and less than 0.35 ppm in the downgradient wells. Upgradient well (D-55) does not contain any of the parameters included in the sampling program.

6.5 EIGHTEEN MILE CREEK SAMPLING

Since on-site monitoring indicated low level water quality impacts due to the landfill, it was deemed appropriate to undertake off-site monitoring to measure off-site impact.

VDM01389

On April 17, 1984, water samples were taken from Eighteen Mile Creek at locations upstream and downstream of that portion of the creek which could be impacted by runoff from beneath the Van De Mark Landfill. As shown on Figure 13, samples were taken at locations situated immediately upstream of the Waste Water Treatment Plant and downstream of the twin culverts at North Transit Road in the vicinity of the Van De Mark Plant. A sample was also taken from the seep on the embankment below the landfill in the area of VDM-10.

At each creek sampling location 3-VOA and 2-metals samples were collected. The samples were taken from approximately mid-stream at a depth of 3 to 6 inches below the surface. The samples were kept cool and transfered to the AES laboratory the same day.

In addition, samples were collected for pH determination at several locations along Eighteen Mile Creek and in the area of the landfill on April 26, 1984 and again on May 2, 1984 as shown on Figure 14. The results indicate that the pH maintains a level of between 6.2 and 8.7 along that portion of the creek in the vicinity of the landfill. (pH sample results are presented in Table 5).

VDM01390

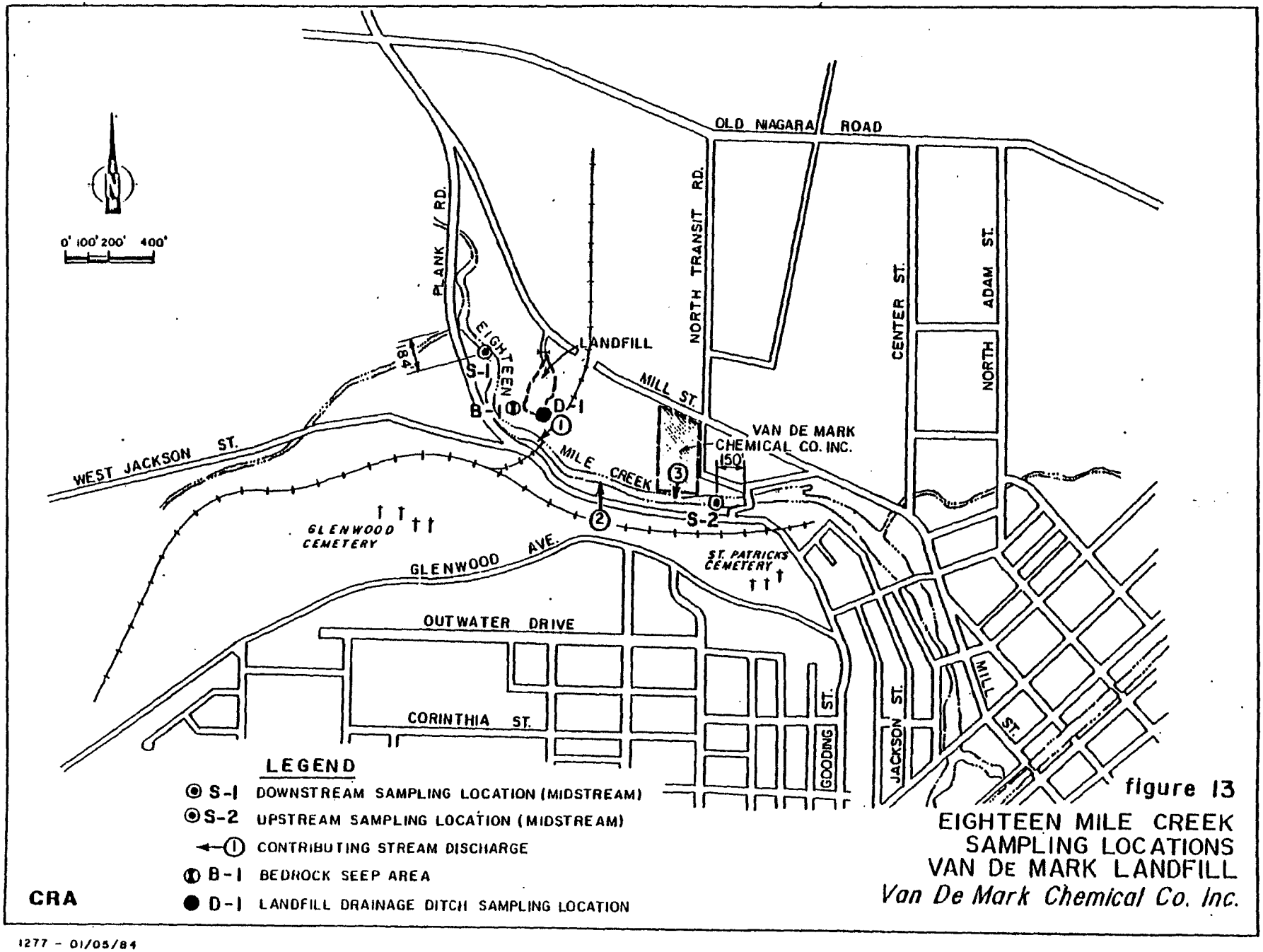


figure 13

EIGHTEEN MILE CREEK
SAMPLING LOCATIONS
VAN DE MARK LANDFILL
Van De Mark Chemical Co. Inc.

1277 - 01/05/84

VDM01391

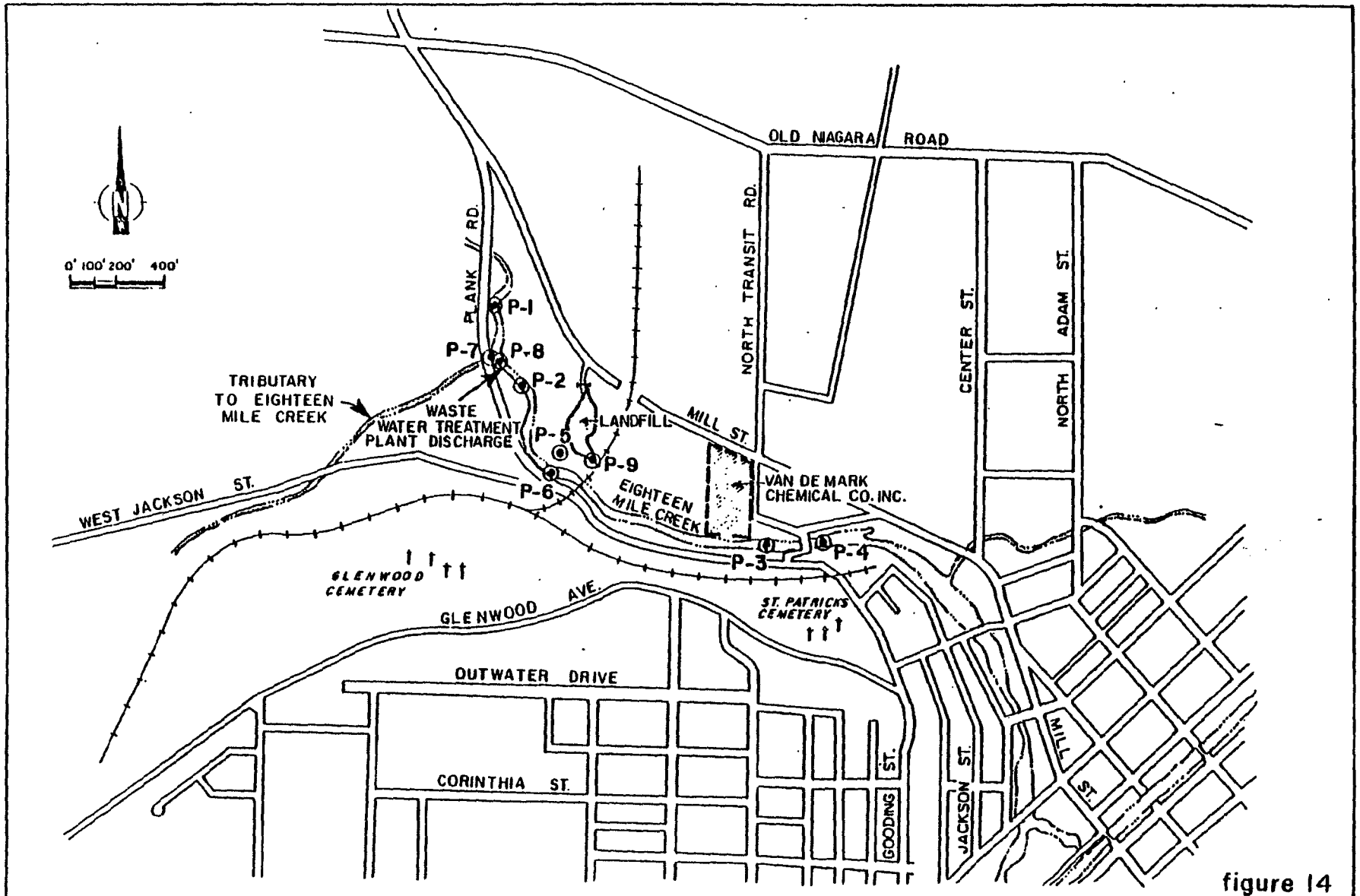


figure 14

PH SAMPLE LOCATIONS
VAN DE MARK LANDFILL
Van De Mark Chemical Co. Inc.

LEGEND

◉ P-1 APPROXIMATE PH SAMPLE LOCATION
(SAMPLES TAKEN AT MIDSTREAM WHERE APPROPRIATE)

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1277-01/05/84

VDM01392

TABLE 5

CREEK pH LEVELS

Sample No.	Location	Sampled April 26 1984	Sampled May 2 1984	Sampled May 3 1984
1	Midstream-Eighteen Mile Creek - 70 yds downstream of closest small bridge north of West Jackson Street	6.8	6.2	7.5
2	Midstream - Eighteen Mile Creek - 115 ft. upstream of most southerly Wastewater Treatment Plant discharge	7.5	--	8.4
3	Midstream - Eighteen Mile Creek - 75 ft. east of abandoned railway bridge at North Transit Road	8.0	8.4	8.5
4	Midstream - Eighteen Mile Creek - 35 ft. east of twin culverts at North Transit Road	7.8	8.4	8.5
5	Seep on embankment face in area of VDM-10 at approximate elevation of Whirlpool Formation	5.3	5.3	--
6	Midstream - Eighteen Mile Creek - opposite embankment seep area in vicinity of VDM-10	8.6	8.7	8.7
7	Midstream - tributary to Eighteen Mile Creek at entrance to Eighteen Mile Creek	--	7.1	7.6
8	Immediate vicinity of downstream discharge to Eighteen Mile Creek from Waste Water Treatment Plant	--	6.9	7.6
9	Midstream - drainage ditch to east of landfill site	--	5.3	4.8

Eighteen Mile Creek is considered to be a Class D stream. Information supplied by VDM suggests that the low flows do not fall below an average minimum of approximately 75 cfs.

Discharges to the stream between the sampling locations include the following:

1) Stormwater drainage system discharge from the Somerset Railroad cut North of Eighteen Mile Creek.

2) Stormwater drainage system discharge from West Jackson Street and from upper mountain area; Glenwood Avenue.

3) Drainage from VDM Pumping Lift Station.

4) Surface drainage from VDM Landfill Site.

The City of Lockport Wastewater Treatment Plant discharges to Eighteen Mile Creek immediately downstream of the VDM property.

VDM01394

Analyses of samples from Eighteen Mile Creek indicated that only tetrachloroethylene was detected in the creek and only at a concentration equal to upstream quality (1 ppb). The analyses completed to date are presented in Tables 6 and 7. The results of the metal analysis of the stream samples indicate no change in stream water quality along the site.

Analyses of the groundwater seep sample revealed the presence of chloroform at an approximate concentration of 0.2 ppm. The completed analytical results are presented in Table 6.

6.6 DRAINAGE DITCH SAMPLING

Samples of the existing surface drainage ditch have been collected and are shown on Tables 5 and 6. The results show very low concentrations of the volatile organics (Maximum 25 ppb chloroform) and an elevated chloride concentration of 3624 ppm. The analyses for iron are not yet completed. The ditch flow has a slightly reduced pH.

VDM01395

TABLE 6

ANALYTICAL RESULTS FROM THE EMBANKMENT SEEP, THE LANDFILLED DRAINAGE DITCH AND EIGHTEEN MILE CREEK

Sample Number Sample Source Sampling Date	F-1 Field Blank 04/17/84	S-1 Downstream 04/17/84	S-2 Upstream 04/17/84	B-1 Bedrock Seep 04/17/84	F-2 Field Blank 05/03/84	D-1 Ditch 05/03/84
Chloromethane (ppb)	<0.37	<0.37	<0.37	<0.37	<0.28	<0.28
Methylene Chloride (ppb)	5.81	1.52	<0.04	1.88	3.61	2.26
Chloroform (ppb)	<0.20	<0.20	<0.20	185.58	<0.08	24.88
Carbon Tetrachloride (ppb)	<0.21	<0.21	<0.21	<0.21	<0.17	4.98
Tetrachloroethylene (ppb)	0.71	1.09	1.08	1.18	1.47	11.81
Chlorides (ppm)	I	I	I	I	--	3624
Total Iron	I	I	I	I	--	I

I - incomplete, to be submitted upon completion.

VDM01396

TABLE 7

METALS ANALYSES -EIGHTEEN MILE CREEK SAMPLES

SAMPLE NUMBER SAMPLE SOURCE SAMPLING DATE	S-1 DOWNSTREAM 4/17/84	DUPLICATE DOWNSTREAM 4/17/84	S-2 UPSTREAM 4/17/84	DUPLICATE UPSTREAM 4/17/84
Atimony (ppb)	3.7	5.0	4.4	4.7
Arsenic (ppb)	I	I	I	I
Berylium (ppb)	<0.5	<0.5	<0.5	<0.5
Cadmium (ppb)	<1.0	1.2	<1.0	<1.0
Chromium (ppb)	<10.0	<10.0	<10.00	<10.0
Copper (ppb)	15.7	12.4	11.3	11.7
Lead (ppb)	<5.0	<5.0	<5.0	<5.0
Mercury (ppb)	I	I	I	I
Nickel (ppb)	<50.0	<50.0	<50.0	<50.0
Selenium (ppb)	I	I	I	I
Silver (ppb)	<1.0	1.8	1.7	1.6
Thallium (ppb)	<1.0	<1.0	<1.0	<1.0
Zinc (ppb)	34	30	34	34
Iron (ppb)	17000	17000	19000	19000

I - Incomplete, to be submitted upon completion.

VDM01397

7.0 CONCLUSIONS AND RECOMMENDATIONS

7.1 ENVIRONMENTAL IMPACT

As indicated by the results of the sample analyses, the groundwater leaching through the VDM Landfill to Eighteen Mile Creek below has no significant detrimental impact to the off-site environment. The reasons for this are:

1) On-site water quality impact is restricted to a low pH and low concentrations of volatile organics.

2) Groundwater flowing toward and discharging as seepage from the embankment, is expected to be treated by air stripping and buffering.

3) Eighteen Mile Creek intercepts any runoff from the site. The assimilative capacity of the Creek for the low discharge from the site is measured to be adequate. (see Section 6.5).

VDM01398

7.2 CLOSURE PLAN RECOMMENDATIONS

The recommended closure activities include site grading, injection of lime, conditioning of surface soils and seeding of the landfill area. The site grading and cleanup will be such that infiltration will be better distributed and will enhance the treatment of the low pH problem. Buffering of low pH levels in the groundwater through the addition of lime will be reduce the observed heavy metals concentration in the groundwater.

The proposed closure plan will consist of the following:

a) Backfill all minor depressions of the landfill surface with lime.

b) Add some lime to the base of the pit located at the northern limits of the recently landfilled area.

c) Since the water is reactive, it is recommended that the final grading plan minimize the area of existing cover soil disturbance. The proposed final grading plan is presented in Figure 15.

VDM01399

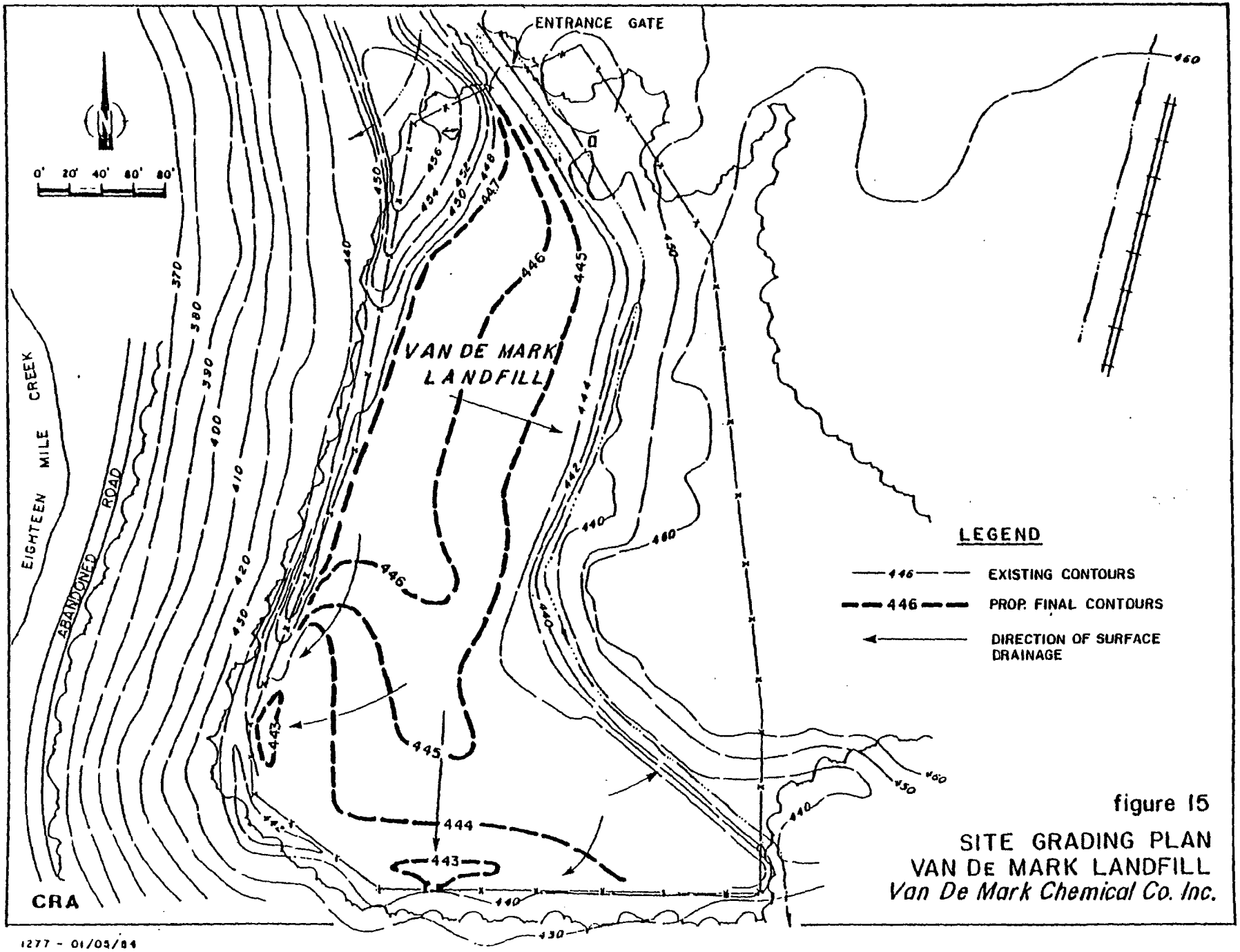


figure 15

SITE GRADING PLAN
VAN DE MARK LANDFILL
Van De Mark Chemical Co. Inc.

1277 - 01/05/84

VDM01400

d) Condition, fertilize and seed the site as recommended by Randall's floristic survey which forms a part of the Whitmore report. Randall suggests

i) to disk or harrow the site to assist seed germination,

ii) apply 500 lb/acre of 15-15-15 (N,P,K) fertilizer,

iii) single application of:

- Crownvetch - var. 'Penngift' - 10 lb/acre;
- Birdsfoot trefoil - var. 'Empire' - 6 lbs/acre (preferred) or var. 'Viking' - 6 lbs/acre; and
- Perennial rye grass - 10 lbs/acre (preferred) or Reed canary grass - 10 lbs/acre (post-seeding conditioning by raking, rolling or meekering is recommended)

e) Implement maintenance program.

f) Implement groundwater monitoring program.

g) The ditch is presently performing as designed. The pH is being buffered, iron is precipitated and volatiles are being air stripped from the groundwater. To

VDM01401

ensure that the above continues the following work is proposed:

(i) review of monitoring data with each analysis.
(ii) add lime as required
(iii) periodically remove iron staining to improve aesthetics (dispose on site under cap).

h) To enhance the buffering capacity of the groundwater, the following work will be attempted: (It is recognized that this effort may be of limited success.)

- add lime solution to upgradient wells VDM-1 and VDM-2. The amount and scheduling of injection of pH adjusting solution will be dependent upon the resultant groundwater quality observed at downgradient wells during the ongoing monitoring programs.

7.3 MAINTENANCE PLAN

The proposed maintenance plan will consist of semi-annual inspections of the site. During each inspection, the cover will be inspected for isolated depressions. Any such area will be filled with lime, recovered and reseeded.

VDM01402

7.4 GROUNDWATER MONITORING PLAN

The groundwater monitoring plan will consist of the collection of groundwater samples for analysis of the following identified parameters:

pH - VDM-9, VDM-10, VDM-11, VDM-12, and East Ditch

Chlorides - VDM-9, VDM-10, VDM-11, VDM-12, and East Ditch

Iron - VDM-9, VDM-10, VDM-11, VDM-12, and East Ditch

Methylene Chloride - VDM-9, VDM-10, VDM-11, VDM-12, and East Ditch

Chloroform - VDM-9, VDM-10, VDM-11, VDM-12, and East Ditch

Chloromethane - VDM-12

Carbon Tetrachloride - VDM-11 and VDM-12

Tetrachloroethylene - VDM-11, VDM-12

The sampling frequency will be as follows:

Year 1 - quarterly

Year 2 and 3 - semi-annually

Thereafter - annually

After each sampling and analysis, the data will be reviewed and submitted to the NYSDEC. The evaluation will include recommendations for site work as deemed appropriate.

VDM01403

All of Which is Respectfully Submitted,

CONESTOGA-ROVERS & ASSOCIATES LIMITED

Frank A. Rovers, P. Eng.

David E. Black, B.A.Sc.

VDM01404

REFERENCES

Advanced Environmental Systems Inc., and Conestoga-Rovers & Associates Limited, "Revised Monitoring Program, Van De Mark Landfill Site", October 15, 1983.

Bechtel Associates Professional Corporation, "Somerset Railroad Project, Hydrogeologic Study, Danielewicz Route, Station 51+810 to 52+330", February, 1982.

William W. Whitmore, Consulting Engineers, "Application for Approval to Construct a Solid Waste Management Facility", June 29, 1977.

William W. Whitmore, Consulting Engineers, "Closure Plan for Solid Waste Management Facility Van De Mark Chemical Co. Inc., Lockport, N.Y.", July 1, 1982.

APPENDIX A

APPLICATION FOR APPROVAL TO CONSTRUCT A SOLID WASTE MANAGEMENT FACILITY

APPLICATION FOR APPROVAL TO CONSTRUCT A SOLID WASTE MANAGEMENT FACILITY

FOR STATE USE ONLY

PROJECT NO.	DATE REC
DEPARTMENT ACTION ☐ Approved ☐ Disapproved	DATE

...TION INSTRUCTIONS ON REVERSE SIDE

...R'S NAME	2. ADDRESS (Street, City, State, Zip Code)	3. Telephone No.
...'s Mark Chemical Co., Inc.	1 N. Transit Rd., Lockport, N. Y. 14094	716-433-676...
...ERATOR'S NAME	5. ADDRESS (Street, City, State, Zip Code)	6. Telephone No.
SAME	SAME	SAME
...NEER'S NAME	8. ADDRESS (Street, City, State, Zip Code)	9. Telephone No.
...liam W. Whitmore III, P.E.P.C.	50 W. Genesee St., Lockport, New York 14094	716-434-024...

...INEER'S N.Y.S. LICENSE NO.
...360 PE

10. TYPE OF PROJECT FACILITIES:
☐ Composting ☐ Transfer ☐ Shredding ☐ Baling ☐ Sanitary Landfill ☐ Incineration
☐ Pyrolysis ☐ Resource Recovery-Energy ☐ Resource Recovery-Materials ☒ Other Chemical Waste La...

...efly describe the project including the basic process and major components:
...r preparing existing site per approved plan, transport metal drums of chemical waste from pla... site, excavate trenches, place drums in trench, cover, regrade & replant surface. Monitoring ...ports monthly

...ibe location of facility. (Attach a USGS Topographic Map showing the exact location of the facility)
...e attached DWG. VDM-1965 Aerial Photograph and USGS Location Map

...y in which facility is located:
...agara

14. Environmental Conservation Region in which facility is located:
Region 9

Municipalities Served by Facility		County	No. of Municipa...
None	N/A	N/a	N/A

...iefly how the proposed facility relates to the Comprehensive Solid Waste Management Plan for the Municipality. Explain any deviation from that Pla...
...unicipal Disposal Plan
...erve Van De Mark Chemical Co., Inc. only. No other conveniently available site approved for ... waste.

...e facility is other than a sanitary landfill, describe the residues in terms of quantities and types. Also indicate the methods and locations of residue disp... ...recyclable, indicate markets:
... to Engineering Report attached and Topographic site location and site development drawing ...966, Sections and Details VDM-1967. Waste is dry mix containing 30-70 % Hexachlorodisiloxane ...0 % Silicon Tetrachloride, and 5-30 % Carbon and Silicon Carbide package in sealed steel drums ...afe handling.

...e facility is a sanitary landfill, provide the following information:
...otal useable area – 2.1 ± Acres
...stance to nearest surface water – 200± Feet
...Depth to nearest ground water – 20'-24'± Feet
...Depth to nearest rock – 5-11'± Feet
e. Distance to nearest airport – 6± miles
f. Expected life of site – 30 -40 years
g. Is site on a flood plain? ☐ Yes _____ Year Flood ☒ No
h. Predominant type of soil on site: Red/Br. silt sand, gravel w... (Use Unified Soil Classification System) R/G. sandstone shale-sc...

...pated construction starting and completion dates
From: July, 1977 To: October, 1977

20. Estimated Population Served
Current: N/A Design: N/A

...ted Cost
...al: 10,000-$20,000 Annual: $5000

22. Estimated Daily Tonnages of Solid Waste
Current: 0.625 Tons/Day Design: 300 Tons/Year

...ing Hours per Day
Deliveries on Weekly Basis

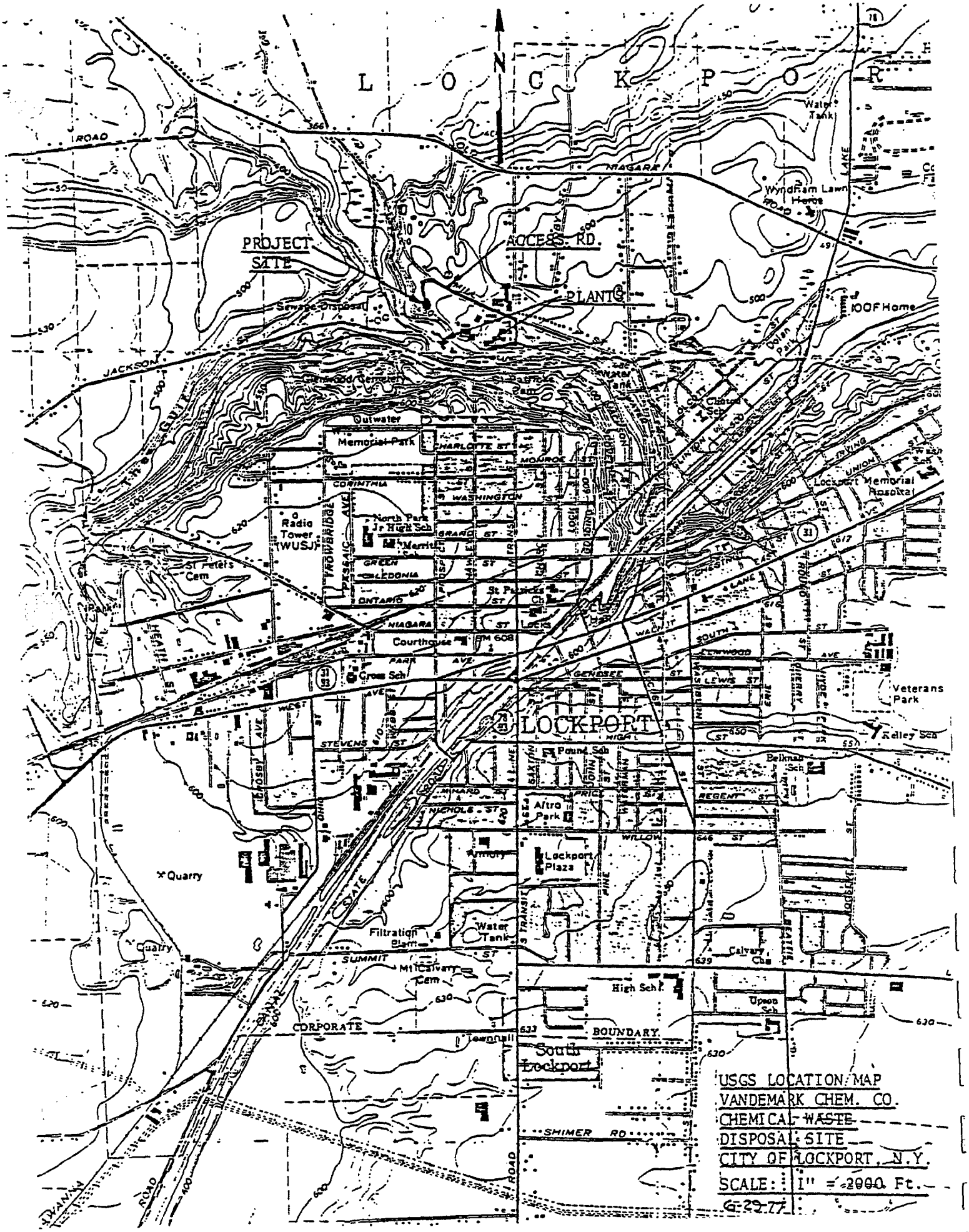
24. Are attached plans and specifications in substantial conformance with "Content Guidelines for Plans and Specifications"? ☒ Yes ☐ No

...FICATION:
...ndersigned does hereby certify that the information in this application and in other attached statements and exhibits is true, correct and complete to the ... of his knowledge and belief.

...ne 29, 1977
Date

VAN DE MARK CHEMICAL CO., INC.
Allan B. Van De Mark — Signature and Title — Secretary

VDM01407


L O C K P O R
N
PROJECT SITE
ACCESS RD.
PLANT
Sewage Disposal
Glenwood Cemetery
St Patricks Pam
Water Tank
Wyndham Lawn Home
IOOF Home
Dolan Park
Clinton Sch
Outwater
Memorial Park
CHARLOTTE ST
MONROE ST
CORINTHIA
WASHINGTON ST
Radio Tower (WUSJ)
North Park Jr High Sch
Merritt Sch
GRAND ST
GREEN
CALEDONIA
ONTARIO
St Peters Cem
St Patricks Ch
Locks
NIAGARA ST
Courthouse
BM 608
PARK AVE
Cross Sch
GENESEE ST
LEWIS ST
Lockport Memorial Hospital
Veterans Park
Kelley Sch
LOCKPORT
STEVENS ST
Pound Sch
Belknap Sch
MINARD ST
NICHOLS ST
Altro Park
PRICE ST
REGENT ST
WILLOW ST
Armory
Lockport Plaza
Quarry
Filtration Plant
Water Tank
SUMMIT ST
Mt Calvary Cem
Calvary Ch
High Sch
Upson Sch
CORPORATE BOUNDARY
Townhall
South Lockport
SHIMER RD
USGS LOCATION MAP
VANDEMARK CHEM. CO.
CHEMICAL WASTE
DISPOSAL SITE
CITY OF LOCKPORT, N.Y.
SCALE: 1" = 2000 Ft.
6-29-77

VDM01408

WILLIAM W. WHITMORE III, P.E. P.C.
WILLIAM W. WHITMORE III, P.E.
HAL G. ROGERS, P. E.

CONSULTING ENGINEERS

MEMBER

CIVIL
STRUCTURAL
MECHANICAL
ELECTRICAL

INDUSTRIAL . COMMERCIAL . MUNICIPAL . INSTITUTIONAL 50 WEST GENESEE STREET P.O. DRAWER 3. . LOCKPORT, N. Y. 14094 . 716 . 434-0242

June 29, 1977

New York State Department of Environmental Conservation
Region 9 Environmental Quality Office
584 Delaware Avenue
Buffalo, New York 14202

ATTENTION: Mr. John McMahan P.E.
Mr. Paul Foersch P.E.

RE: Van De Mark Chemical Company, Inc., File No. 76-37

SUBJECT: Transmittal of Engineering Report for Solid Waste Disposal Site

Gentlemen:

At the request of Van De Mark Chemical Company, Inc., we have prepared the following Engineering report for application and approval for the use of an existing site on their property in Lockport for the disposal of chemical waste from the plant. This application is made on the basis of the requirements of NYCRR Part 360 of Title 6 of Official Compilation of Codes, Rules and Regula- of the State of New York, Environmental Conservation Laws Section 27-0501.

The following information is submitted on the basis of the Tentative Check List for Sanitary Landfill Design Submissions, New York State Department Environmental Conservation, Division of Solid Waste Management, dated 1973 as a guide. This report consists of the following items;

Item 1 - General description of the site and surrounding area, identification of the waste, method of handling to the site, expected life to the site, operating period, record of dumping, site access and final site use.
Item 2 - Transmittal of scale aerial photograph, VDM-1965, showing location of the site in the City of Lockport and relative to adjacent developed properties and the chemical plant.
Item 3 - Transmittal of the topographic maps of the disposal area and surrounding land areas with location of soil borings, existing elevations and proposed elevations, outline of site and surface drainage.
Item 4 - Transmittal VDM-1967, disposal site cross section showing existing ground elevations and proposed changes, details of method of filling proposed.
Item 5 - Transmittal of Empire Soils Investigations, Inc. Site Investigation report No. 77-BD-21 dated June, 1977 with subsurface logs, soils analysis-chemical tests.
Item 6 - Transmittal of reports from the consulting biologist, Dr. Robert Sweeney, Director, Great Lakes Laboratory, Buffalo, New York, as follows:

a. Chemical report describing water quality of the stream and ground water during the several test periods of the investigation.
b. Vegetative-landscaping report of the site with recommendations for site management.
c. Discussion of the adaptability of this site for the proposed solid waste disposal of the chemical waste without major impact on the aquatic or terrestrial environment of the area and/or ground water. This includes a detailed proposal for design of the disposal area, operational program and site for optimum use of the site while maintaining protection to the environment.

Based on the conclusion of the soil, chemical, biological and environmental investigations, we feel that the site is suitable for its intended use and therefore request immediate approval of application and proposed operation/management plan as presented.

Should additional investigations or data be required, including changes in the method of operation, or details of site preparation be required for final approval, we will prepare them immediately and submit for further discussion and approval. Please advise if you will require further conference on this matter.

Respectfully submitted,

William W. Whitmore III, P.E.P.C.
Consulting Engineers, for
Van De Mark Chemical Company, Inc.

Enclosures: Descriptions, reports, photographs, applications, Application Form SW-7
cc: Van De Mark Chemical Company, Inc.
Mr. Ernest Gedeon, Niagara County Health Department

June 29, 1977
PROJECT: Solid Waste Disposal Site
OWNER: Van De Mark Chemical Company, Inc.
1 North Transit Road, Lockport, New York 14094
SUBJECT: General Information and Site Details

A. GENERAL

1. Location: The existing solid waste disposal site which will be reused for this project, is west of the existing Van De Mark Chemical Company, Inc. Plant in an unpopulated area, partially wooded and formerly the sandstone, limestone open pit quarry of approximately 2.10 plus or minus acres. The site is in the northwest section of the City of Lockport in an industrial zoned area in the City Limits. Access is gained from a controlled section of Mill Street and private road to the site. The portion of Mill Street to be used for access is closed to the general public by a locked gate approximately one thousand feet west of the intersection of Mill and North Transit Road. It is located on an escarpment area bounded on the south and west sides by Eighteen Mile Creek. Elevation of the Creek of 359 is considerably lower than the bottom elevation of the proposed dump site of approximately 438 plus or minus USGS. There are no residential dwellings within approximately fifteen hundred feet of this site. The City of Lockport Waste Treatment Plant is approximately five hundred feet west of the site at elevation 362 plus or minus USGS.-- McGonigle & Hilger Roofing, Inc. warehouse and office east of the site at elevation 474 plus or minus & Norton Laboratories Manufacturing Plant is approximately thirteen hundred feet due east of the disposal site at elevation 475 plus or minus. Van De Mark Chemical Corporation Plant on Eighteen Mile Creek is approximately five hundred feet southeast of the site and the chlorine plant is approximately fifteen hundred feet east of the site. New York State Electric and Gas Corporation Sub-station is four hundred feet north of the plant and the remaining property between Mill Street and Old Niagara Road is vacant wooded property owned by C.B. Whitmore Company, Inc. There are no water, sanitary or power facilities immediately available to the disposal site.

2. Waste materials for disposal: Van De Mark Chemical Company intends to dispose of approximately fifty to sixty steel drums of waste (375 cu.ft) plus or minus per month. The material consists of thirty to seventy per cent Hexachlorodisiloxane, ten to fifty per cent Silicon Tetrachloride, and five to thirty per cent Carbon and Silicon Carbide. The Hexachlorodisiloxane and Silicon Tetrachloride decompose into sand (Silicon Dioxide) and Hydrochloric Acid. Carbon and Silicon Carbide remain unchanged. With Limestone soil the resultant product from the interaction of the above chemicals decomposition is instant with water. If residue is buried in drums the owner reports that in four to eight months, the only visible remains are part of the drums rings used to seal the open head drum tops. Their experience indicates that eventually the entire mass will become a sand pile with some salt content. The material is to be hauled in the steel drums from the plant in the bucket of a rubber tired highlift to minimize possibility of accidental dropping of the drums or opening during handling. This method has proven to be the best and safest of several methods previously tried by the owner. No treatment before packaging in the steel drums with sealed tops is contemplated prior to burial.

3. The Plant Superintendant delegates the use of the waste disposal site, the handling of the material and delivery to the site, and the onsite excavation, burial and covering to a plant foreman who will carry out the management and submit the necessary monitoring report.

4. Expected Life of the Site: The expected volume per year of waste to be disposed of is between one hundred sixty-seven and two hundred cubic yards in volume based on a three foot depth of burial over eighty per cent of the land area of the site; it is expected that the capacity is sufficient for between thirty and forty years of burial at the average rate. This is deemed sufficient for present requirements.

5. Lands and Rights-of-way: The Van De Mark Chemical Company owns in excess of fifty acres on this site which is presently unsuitable for development due to the ground conditions of rock, the lack of public utilities and the general topography of the site. The land area adjacent to Mill Street access (the City street right-of-way) is presently unsuitable for residential development and might, in the foreseeable future, be adaptable to use for light industrial development on this fifty-eight plus or minus acres. By mutual consent of the land owners abutting Mill Street in this area, a control gate has been placed at each end of Mill Street and is controlled by those property owners to prevent access by the general public. This is monitored by Van De Mark Chemical on a regular basis.

6. Final Site Use: From the Environmental and Soils Reports, Chemical Analysis of the waste and rate of decomposition to a sandy consistency and mixed with rock cover, it can be assumed that at some future date the site could generally be used for industrial development. Since the area involved is approximately five per cent of the entire land owned by the Chemical Company, it would not create a difficult situation for further industiral development. There appears to be no reason to expect a major environmental problem from the site use in the future.

B. SITE DESCRIPTION

1. Location, size and topography is covered in the general description.

2. Topography varies from a relatively low slope of approximately .25 % to a steep slope along the south and west escarpment of 50% plus or minus slopes. Drainage generally follows existing swales and ditches running from Mill Street south and westerly to the edge of the escarpment and then into Eighteen Mile Creek in irregular pattern.

3. Cover Vegetation: The general area surrounding the site has been recently levelled by bulldozing rock and clay with removal of all vegetation, trees and shrubs. The bank of the escarpment immediately opposite the site is barren of trees but is covered with hardy shrubs and other vegetation with rock outcroppings. The area west and south and northwest of the disposal site is partially wooded area with undergrowth and vegetation, rock outcroppings.

4. Soil Profiles: Reference is made to the attached Empire Soils Investi-

tion Incorporated Site Investigation Report dated June, 1977, describing the soils profile based on four borings from cased monitoring wells and two additional borings to confirm depth to rock and overlying soil consistencies. In general, red-brown silt sand, gravel, rock fragments some vegetation and organic roots, traces of gray clay and sand make up the overburden of the rock cover varying from approximately five to seven feet in the areas not previously used for burial. Depth to ground water at time of drilling varied from five to ninety feet and has been observed to rise in the shaft to approximately the twenty-four foot level.

5. Bedrock type and depth: The top of gray sandstone and/or shale from surface varies from five to thirteen feet plus or minus and continues to the bottom of the ninety foot drill holes with five to ten per cent seams based on recoveries. Chemical tests were made as presented in the soils analysis of the Empire Soils Report for pH, nitrogen-nitrates, phosphorus, chlorides, and phenols. The pH range of 7.85 to 8.45 would indicate a generally neutral soil and rock characteristic.

6. Surface Waters: Surface water running across the easterly and northerly portions of the site from under Mill Street are spring fed and are channelled under the access road through culverts to open ditches for final disposal over the escarpment to Eighteen Mile Creek. There is an existing clay and rock lined drainage ditch around the east and north perimeter of the disposal site carrying surface water from the higher elevations east of the site to a discharge point on the escarpment to Eighteen Mile Creek. Generally the runoff and drainage conditions are excellent for surface water. Eighteen Mile Creek, at an elevation of approximately sixty to eight feet below the top of the escarpment and site area provide the major drainage outlet for the area.

7. Availability of Cover Material: Based on the proposed trenching method of disposal in the site, there is sufficient material available for covering the waste with the excess material to be discarded in adjacent land areas for grading purposes.

8. Quality of the surface and ground water has been established in the biological chemical testing report attached to this report and is being monitored to assess any effects from surface drainage through the waste material to the ground water below the disposal area.

C. DESIGN SPECIFICATIONS

1. Site Preparation: The existing site will be graded to the contours shown in the cross section using existing , preparing the surrounding three sides of the site with the same clay material to contain surface water with general grading to allow drainage to the center of the waste site. The existing drainage ditches on the north and east side of the site will be approved adjacent to the dikes to assure that all surface water will be carried around the site and discharged to the Creek without contamination from the surface waste on the site.

2. Equipment: The owner has contracted for the use of bulldozer equipment, trench excavating equipment and transportation equipment to maintain the site in proper physical condition and to deliver, bury

and cover the waste as proposed in the Operation/Management Plan attached.

3. Landscaping: The report on vegetation- landscaping attached, describes in detail the type of vegetation and planting required to maintain the site in proper conditions and to add to the transpiration of surface water accumulating in the waste area. In addition, the root system will be developed which will be reduce erosion and which can allow for temporary removal of the hardy planning during trenching and burial operations and replanting over the backfilled areas to maintain continuous cover.

4. Roads and Fencing: The security of the site is generally assured by the control gate on Mill Street and access by responsible persons under direction of the property owner. Should a fence be required, a chain link fence with barbed wire and padlock gates would be installed on the high escarpment areas surrounding the northwest, north and east sides of the site to over the edge of the embankment. The fence on the embankment is not deemed necessary because of the excessive slope.

D. OPERATING PROCEDURES

1. The recommendations of the biologist and the consultant for vegetation-landscaping contained in the attached report will be augmented by the owner in the operation of the waste site. Areas previously used for dumping in which complete disintegration of the chemical waste has occurred will be regraded to the inside of the site to allow maximum possible area for future use. Top elevation will be approximately equal to the top of the dike elevation. The new bottom level of the remaining portions of the waste site will be regraded to allow drainage generally toward the center of the site using existing overburden materials. It would be expected that the filling would be started in the south and southeast sections of the dike area trenching in a generally east-west direction, covering and grading approximately equal to the top of the dike, sloped toward the center of the site. Side embankments would be held to a compacted one on one excess cover material would be removed from the site. Access road would then be continuous from Mill Street into the entrance of the prepared area to the south end of the area proceeding northerly as it is filled.

2. Road Maintenance and Placement of Wastes: The roadway, presently existing on solid clay-rock formations is graded with pressed stone, crowned for drainage to the sides and is easily maintained in wet weather. Little difficulty will be experienced in maintaining machines and truck access to the site on the existing road.

3. Compaction and Cover Material Management: Compaction of the backfill will be accomplished with the backhoe-bulldozer grading equipment sufficient to allow moisture runoff as planned. The specified vegetation and planting will be placed on the entire site and dike areas immediately following completion of the grading and prior to use for burying the waste. As waste is buried this cover material will be

temporarily removed, the material placed in trenches, compacted and graded and the vegetation replanted over the newly disturbed areas.

4. Leachate Control and Rodent Control: Monitoring wells surrounding the site are properly protected and will be periodically observed, test samples taken and necessary chemical tests made and reported in accordance with the proposed Management Plan. There is no danger of infestations of rodents due to the nature of the waste and lack of organic materials.

5. Winter Operations: Winter Operations will be carried on at a normal rate during periods of access to the site with snowplowing. However, temporary storage of the waste material in drums can be accomplished at the chemical plant without hazard until access to the site is assured and ground conditions are satisfactory for excavation and backfilling.

6. Fire and Dust Control: Fire control is not a needed item on the site due to lack of burnable materials placed in the waste disposal site. Dust control is not considered to be an item after the proper establishment of the plantings and ground-cover. Road dust on access roads is not to be considered a disturbing influence on the adjacent uninhabited property.

7. Monitoring Program: A monitoring program will be established in accordance with the recommendations of the biologists as contained in the attached report with necessary chemical testing being accomplished by the Van De Mark Chemical Chemist.. Outside chemical tests to verify results will be made as requested.
8. Sign requirements: Required danger, warning and no admittance signs will be placed at the control gates and at the access to the site on all sides in accordance with the State requirements.

9. Emergency and Safety Equipment: Machine operators and disposal site supervisory personnel will be equiped with safety helmets, eye and nose protection and safety breathing apparatus in the event of release of toxic acid fumes during burial operations. Normal care in handling and burial of the waste in the past was found to minimize any hazard from this source.

E. CONCLUSIONS:

Based on the results of soil and subsurface investigations, chemical testing of surface, subsurface and ground water, biological and environmental analysis of the effects of the waste disposal on the surrounding area, it is felt that the proposed method of disposal will result in a safe and a sanitary and acceptable program. Monitoring wells with the required reporting and investigation will assure continuous control of unstable factors and allow for corrective measures to be taken immediately. Cooperation of the owner and his determination to follow the guidelines, modified from time to time as necessary to maintain the proposed condition, should assure a proper acceptable management program. Any change in the characteristics, volume or method of handling would obviously require rein-

vestigations and analysis to assure continual conformance to the approved method.

1. Empire Soils Investigations, Inc.
   Soils Analysis and Report No. 77-BD-21 Pages 1-3
   June 1977

   Soils Analysis
   Boring Logs B-1 - B-6

2. Site Photographs, April 1977 1-15

3. Water Quality Investigations of the Proposed Van De Mark Chemical Company Landfill Site, Lockport, New York June, 1977 - Great Lakes Laboratory, Doctor Robert Sweeney

4. Preliminary Floristic Survey of Lockport Stone Quarry - Van De Mark Chemical Company, Inc. Waste Disposal Site, Lockport, New York, and Recommendations concerning Landscaping, Reseeding and Maintenance - Great Lakes Laboratory, Doctor Eric Randall.

5. Comments Regarding the Design and Management of the Proposed Van De Mark Chemical Company, Inc. Industrial Solid Waste Landfill Site, Lockport, New York, June, 1977 - Doctor Robert B. Sweeney, Director, Great Lakes Laboratory.

6. List of Drawings:
   USGS Location Map - Scale 1" = 2000 Ft., Lockport, N. Y.
   VDM-1965 Aerial Location Map - Aerial Photograph: Scale 1" = 200 Ft.
   VDM-1966 Site Location Map and Disposal Site Layout: Topograph Map Scale 1" = 50 Ft., 2 Ft. contours
   VDM-1967 Disposal Site Cross Sections and Details, Construction Notes.

EMPIRE SOILS INVESTIGATIONS, INC.

MAIN OFFICE ☐
607-498-5861
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Groton, N.Y. 13073

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P.O. Box 229
Orchard Park, N.Y. 14127

ROCHESTER OFFICE ☐
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1164 Ridge Road East
Rochester, N.Y. 14621

SYRACUSE OFFICE ☐
315-475-0717
359 East Brighton Avenue
Syracuse, N.Y. 13210

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518-783-1555
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Latham, N.Y. 12110

WASHINGTON OFFICE ☐
301-868-3131
7508 Old Alexander Ferry Rd.
Clinton, Md. 20735

SITE INVESTIGATION REPORT
LOCKPORT STONE QUARRY
LOCKPORT, NEW YORK

FOR
W. W. WHITMORE III
LOCKPORT, NEW YORK

JOB NO.: 77-BD-21
JUNE 1977

VDM01418

EMPIRE SOILS INVESTIGATIONS, INC.

SITE INVESTIGATION REPORT
LOCKPORT STONE QUARRY
LOCKPORT, NEW YORK

I. INTRODUCTION

This report presents the results of a subsurface investigation performed at the Van DeMark Chemical Co., Inc. Disposal Site at the Lockport Stone Quarry, authorized by Mr. William Whitmore III, who is representing Van DeMark.

The field work was performed between April 27 and May 10, 1977. A total of six (6) test borings were advanced at locations designated by Mr. Whitmore at the site.

All borings were advanced by employing two and one-half inch (2½") diameter hollow stem auger flight casing. Representative samples of the overburden were obtained by driving a two inch (2") O. D. split spoon sampler into the undisturbed soil beneath the casing with a one-hundred forty (140) pound slide weight free falling thirty inches (30") per blow.* Standard sampling techniques were employed obtaining samples at five foot intervals with random extra samples being obtained wherever necessary.

Rock was investigated at four of the six boring locations by means of a "B" size diamond bit rotary drill.

The test borings varied in depth from 6.7 feet at boring 6 to 90 feet at borings 3 and 4.

*This operation is the Standard Penetration Test and is described in greater detail in ASTM D-1586 "Standard Method for Penetration Test and Split Barrel Sampling of Soils". The sampling spoon used permitted a 24 inch long sampling run. Where 24 inch sampling run was used, the Standard Penetration Number (SPN), as defined in the Standard, was obtained by combining the blow counts for the second and third 6 inch increment of each sample run. The values are shown as the "N" value on the attached logs.

I. INTRODUCTION - Continued

The soil and rock samples retrieved were carefully transported to our laboratory where they were visually classified by an engineering geologist. Attached to this report are the subsurface logs which were prepared for each boring completed during the investigation, with reference to the drillers' logs. These logs comprise the basic records of the work performed, as well as the materials encountered.

At the request of Mr. Whitmore, soil samples retrieved from borings 5 and 6 were subjected to various chemical tests, the results of which are appended to this report.

We have also included our "GENERAL INFORMATION AND KEY TO SUBSURFACE LOGS" as a supplement to this report for an explanation of the terms, symbols and definitions which we utilized in our visual clasisfications.

II. SUBSURFACE CONDITIONS

In general, the site is an abandoned stone quarry which is presently being used as a chemical waste disposal by Van DeMark Chemical Co., Inc.

The site is covered with a thin layer or crust of overburden soil consisting of reddish-brown silts and sand, with varying amounts of gravel, rock fragments and organic inclusions located within the actual detailed soil matrix. The soil existed in a dry to moist-firm to very compact condition. The depth of the overburden soils ranged from 5.0 feet at boring B-1 to 13.0 feet at boring B-3. The permeability of these materials is rather low due to the extreme compactness of the soil. In order to determine an accurate groundwater elevation on the site, close monitoring of the well-points should be performed. During drilling operations, freewater was encountered at only two of the borings, which does not indicate enough in-

II. SUBSURFACE CONDITIONS - Continued

formation to estimate groundwater.

Bedrock was investigated at the locations of B-1 and B-2 to a depth 23.0 feet and at B-3 and B-4 to a depth 90.0 feet. The rock retrieved varied distinctly at various depths within each boring. Weathering and seams were prominent in all of the borings, the seams occurring at greater depths at deep core locations. Based on the quality of the rock, primarily considering the extent of the seams and the amount of water loss during drilling, the rock formation could act as an aquifer for groundwater.

A very detailed description of soil and rock conditions is provided on the attached subsurface logs for your review.

If you have any further questions on subsoil conditions, or if we can help you in any way, please feel free to contact our office.

Respectfully submitted,

EMPIRE SOILS INVESTIGATIONS, INC.

Stanley J. Blas, Jr.
Resident Engineer

SJB/ja

Enclosure

SOILS ANALYSIS

CHEMICAL TESTS

	B-5	B-6
pH	8.45	7.85
Nitrogen - Nitrate	.4 Mil./Liter	.27 Mil./Liter
Phosphorous	.1 Mil./Liter	.08 Mil./Liter
Chloride	2.8 Mil./Liter	3.4 Mil./Liter
Phenols	1 part/Billion (Micro/Liter)	1 Part/Billion (Micro/Liter)

VDM01422

DATE
STARTED 5/2/77
FINISHED 5/2/77
SHEET 1 OF 1

EMPIRE SOILS INVESTIGATIONS, INC.

SUBSURFACE LOG

HOLE NO B-1
SURF. ELEV 437.7±
G. W. DEPTH See Note

PROJECT Lockport Stone Quarry
LOCATION Lockport, New York

DEPTH-FT.	SAMPLES	SAMPLE NO	BLOWS ON SAMPLER 0/6	6/12	12/18	N	BLOW ON CASING C	SOIL OR ROCK CLASSIFICATION	NOTES
0		1	17	29	35	64		Red-brown SILT, SAND, GRAVEL, with ROCK fragments, trace embedded roots (Moist - Very Compact)	NOTE #1: No freewater at completion
5		2	100/.2					Top of Rock @ 5.0'	
								Grey SANDSTONE, hard, sound	"B" size core Run #1, 5'-7' 60% Recovery
								Green massive SHALE, soft, weathered with very weathered seams at 9.7', 13.0'-13.5'	Run #2, 7'-12' 90% Recovery
10									Run #3, 12'-17' 90% Recovery
15									Run #4, 17'-22' 90% Recovery
20									
								Bottom of Hole @ 22.0'	NOTE #2: Observation well installed to 22.0' @ this location
25									
30									
35									
40									

N = No. blows to drive 2 "spoon 12 "with 140 lb. pin wt. falling 30 "per blow.
C = No. blows to drive _____ "casing _____ "with _____ lb. weight falling _____ "per blow.

CLASSIFICATION Visual By Soils Engineer

VDM01423

DATE STARTED 5/4/77
FINISHED 5/4/77
SHEET 1 OF 1

EMPIRE SOILS INVESTIGATIONS, INC.

SUBSURFACE LOG

HOLE NO. B-2
SURF. ELEV. 441.7 ±
G. W. DEPTH See Note

PROJECT Lockport Stone Quarry
LOCATION Lockport, New York

DEPTH-FT.	SAMPLES	SAMPLE NO	BLOWS ON SAMPLER 0/6	6/12	12/18	N	BLOW ON CASING C	SOIL OR ROCK CLASSIFICATION	NOTES
0		1	17	25	30	55		Reddish-brown SILT, little sand and gravel (Dry - Very Compact)	NOTE #1: On completion free-water @ 2.0'
5		2	17	35	48	83		-grades SILT and SAND, some embedded Gravel, with embedded grey Rock fragments (Moist - Very Compact)	Top of Rock @ 8.0'
10			-	-				Green massive SHALE, soft, slightly weathered and slightly fractured	"B" size core Run #1, 8'-13' 94% Recovery
									Run #2, 13'-18' 96% Recovery
20									Run #3, 18'-23' 84% Recovery
								Bottom of Hole @ 23.0'	NOTE #2: Wellpoint installed at this location to depth of 23.0'
25									
30									
35									
40									

N = No. blows to drive 2 "spoon 12 "with 140 lb. pin wt. falling 30 "per blow.

CLASSIFICATION Visual By Soils Engineer

VDM01424

DATE
STARTED
FINISHED
SHEET 1 OF 3

EMPIRE SOILS INVESTIGATIONS, INC.

SUBSURFACE LOG

HOLE NO. B-3
SURF. ELEV. 442.2±
G. W. DEPTH See Note

PROJECT Lockport Stone Quarry
LOCATION Lockport, New York

DEPTH-FT.	SAMPLES	SAMPLE NO	BLOWS ON SAMPLER 0/6	6/12	12/18	N	BLOW ON CASING C	SOIL OR ROCK CLASSIFICATION	NOTES
0		1	7	8	9	17		Reddish-grey SILT and weathered ROCK (Dry - Firm)	NOTE: Groundwater observation well installed to bottom of hole at this location
5		2	100/.4					Reddish-brown FILL, SAND, SILT, GRAVEL, with trace gypsum, with trace cemented condition (Moist - Very Compact)	
10		3	100/.2						
		4	100/.2						Top of Rock @ 13.0'
								Grey SANDSTONE, hard, sound.	"B" size core
15								Green massive SHALE, soft, weathered with some fractures	Run #1, 13'-18' 90% Recovery Seam 16.4'-16.8'
20									Run #2, 18'-23' 86% Recovery Seams 18.8'-19.1' 21.0'-21.4'
25								Extremely fractured and weathered seam 24.2'-24.7'	Run #3, 23'-28' 92% Recovery Seams 24.2'-24.4' 27.2'-27.3'
30								Grey SANDSTONE, hard, sound, slightly fractured	Run #4, 28'-33' 92% Recovery Seam 28.2'-28.4'
35									Run #5, 33'-38' 100% Recovery
40									Run #6, 38'-43'

N = No. blows to drive 2 "spoon 12 "with 140 lb. pin wt. falling 30 "per blow.
C = No. blows to drive ____ "casing ____ "with ____ lb. weight falling ____ "per blow.

CLASSIFICATION Visual By Soils Engineer

METHOD OF INVESTIGATION Cased Boring: Casing Drilled In Place

VDM01425

DATE
STARTED
FINISHED
SHEET 2 OF 3

EMPIRE SOILS INVESTIGATIONS, INC.

SUBSURFACE LOG

HOLE NO. B-3
SURF. ELEV.
G. W. DEPTH See Note

PROJECT Lockport Stone Quarry
LOCATION Lockport, New York

DEPTH-FT.	SAMPLES	SAMPLE NO	BLOWS ON SAMPLER 0/6	6/12	12/18	N	BLOW UN CASING C	SOIL OR ROCK CLASSIFICATION	NOTES
40								Red SHALE, soft, weathered with extremely weathered seams at 41.1', 42.2', 43.6'-47', 53', 59.6'-60.4', 65.5'-66.5', 68.7', 72.7'	96% Recovery Seam 42.0'-42.2'
									Run #7, 43'-48' 76% Recovery
45									
									Run #8, 48'-53' 92% Recovery Seam 52.4'-52.7'
50									
									Run #9, 53'-58' 90% Recovery Seam 55.8'-56.1'
55									
									Run #10, 58'-63' 94% Recovery
60									
									Run #11, 63'-68' 94% Recovery
65									
									Run #12, 68'-73' 94% Recovery
70								-becomes slightly weathered @ 72.3'	
									Run #13, 73'-78' 100% Recovery
75									
									Run #14, 78'-83'
80									

N = No. blows to drive 2 "spoon 12 "with 140 lb. pin wt. falling 30 "per blow.
C = No blows to drive "casing "with lb. weight falling "per blow.

CLASSIFICATION Visual By Soils Engineer

VDM01426

DATE
STARTED
FINISHED
SHEET 3 OF 3

EMPIRE SOILS INVESTIGATIONS, INC.

SUBSURFACE LOG

HOLE NO. B-3
SURF. ELEV.
G. W. DEPTH See Note

PROJECT Lockport Stone Quarry
LOCATION Lockport, New York

DEPTH-FT.	SAMPLES	SAMPLE NO	BLOWS ON SAMPLER 0/6	6/12	12/18	N	BLOW ON CASING C	SOIL OR ROCK CLASSIFICATION	NOTES
80									90% Recovery
85									Run #15, 83'-88' 96% Recovery
90									Run #16, 88'-90' 95% Recovery
								Bottom of Hole @ 90.0'	
95									
100									
105									
110									
115									
120									

N = No. blows to drive 2 "spoon 12 "with 140 lb. pin wt. falling 30 "per blow.
C = No. blows to drive ____ "casing ____ "with ____ lb. weight falling ____ "per blow.

CLASSIFICATION Visual By
Soils Engineer

VDM01427

DATE
STARTED 4/27/77
FINISHED 4/27/77
SHEET 1 OF 3

EMPIRE SOILS INVESTIGATIONS, INC.

SUBSURFACE LOG

HOLE NO B-4
SURF. ELEV 442.2D
G. W. DEPTH See Note

PROJECT Lockport Stone Quarry
LOCATION Lockport, New York

DEPTH-FT.	SAMPLES	SAMPLE NO	BLOWS ON SAMPLER 0/6	6/12	12/18	N	BLOW ON CASING C	SOIL OR ROCK CLASSIFICATION	NOTES
0		1	17	18	19	37		Reddish-brown organic SILT, trace sand and embedded gravel, with embedded roots and organic material (Damp - Compact)	NOTE: Casing @ 9', no free-water Boring completed, freewater @ 25' Water observation wel installed to 90'
5		2	21	44	60	104		-grades reddish-brown SILT, little sand, trace fragments, with partings of grey sand (Dry - Very Compact)	
10		3	100/0					Grey SANDSTONE, hard, sound	"B" size core Run #1, 9'-14' 66% Recovery
								Green massive SHALE, soft, fractured and weathered	
15									Run #2, 14'-19' 88% Recovery
20								SANDSTONE seam at 20.8'-21.1'	Run #3, 19'-24' 98% Recovery
								Grey SANDSTONE, hard, sound, slightly fractured	
25								Green SHALE seam 24.7'-25.4'	Run #4, 24'-29' 100% Recovery
30								Weathered seam 29.8'-30.3'	Run #5, 29'-34' 92% Recovery
35								Green SHALE, massive, soft, weathered Becomes red and very weathered at 35.3'	Run #6, 34'-39' 50% Recovery Lost all drill water
40									

N = No. blows to drive 2 "spoon 12 "with 140 lb. pin wt. falling 30 "per blow.
C = No. blows to drive ____ "casing ____ "with ____ lb. weight falling ____ "per blow.

CLASSIFICATION Visual By Soils Engineer

VDM01428

DATE
STARTED 4/27/77
FINISHED 4/27/77
SHEET 2 OF 3

EMPIRE SOILS INVESTIGATIONS, INC.

SUBSURFACE LOG

HOLE NO B-4
SURF. ELEV.
C. W. DEPTH

PROJECT Lockport Stone Quarry
LOCATION Lockport, New York

DEPTH-FT.	SAMPLES	SAMPLE NO.	BLOWS ON SAMPLER 0/6	6/12	12/18	N	BLOW UN CASING C	SOIL OR ROCK CLASSIFICATION	NOTES
40									Run #7, 39'-44' 68% Recovery
45								Green seam 46'-46.2'	Run #8, 44'-49' 78% Recovery
50								Green seams 51'-51.4', 52.5'-52.7', 53.1'-53.8', 60.5'-60.7', 75.1'-75.3'	Run #9, 49'-54' 100% Recovery
55									Run #10, 54'-59' 96% Recovery
60								-becomes slightly weathered @ 62' with weathered and fractured seams @ 71', 74.7', 77.7', 79', 79.5', 82', 86.6'	Run #11, 59'-64' 94% Recovery
65									Run #12, 64'-69' 100% Recovery
70									Run #13, 69'-74' 100% Recovery
75									Run #14, 74'-79' 100% Recovery
80									Run #15, 79'-84' 100% Recovery

N = No. blows to drive 2 "spoon 12 "with 140 lb. pin wt. falling 30 "per blow.
C = No. blows to drive ____ "casing ____ "with ____ lb. weight falling ____ "per blow.

CLASSIFICATION Visual By Soils Engineer

VDM01429

DATE
STARTED 4/27/77
FINISHED 4/27/77
SHEET 3 OF 3

EMPIRE SOILS INVESTIGATIONS, INC.

SUBSURFACE LOG

HOLE NO B-4
SURF. ELEV
G. W. DEPTH

PROJECT Lockport Stone Quarry
LOCATION Lockport, New York

DEPTH-FT.	SAMPLES	SAMPLE NO	BLOWS ON SAMPLER 0/6	6/12	12/18	N	BLOW ON CASING C	SOIL OR ROCK CLASSIFICATION	NOTES
80									Run #16, 84'-89' 100% Recovery
85									Run #17, 89'-90' 100% Recovery
90								Bottom of Hole @ 90.0'	
95									
100									
105									
110									
115									
120									

N = No. blows to drive 2 "spoon 12 "with 140 lb. pin wt. falling 30 "per blow.
C = No blows to drive ____ "casing ____ "with ____ lb. weight falling ____ "per blow.

CLASSIFICATION Visual By Soils Engineer

VDM01430

DATE
STARTED 5/4/77
FINISHED 5/4/77
SHEET 1 OF 1

EMPIRE SOILS INVESTIGATIONS, INC.

SUBSURFACE LOG

HOLE NO B-5
SURF. ELEV 443.0±
G. W. DEPTH See Note

PROJECT Lockport Stone Quarry
LOCATION Lockport, New York

DEPTH-FT.	SAMPLES	SAMPLE NO.	BLOWS ON SAMPLER 0/6	6/12	12/18	N	BLOW ON CASING C	SOIL OR ROCK CLASSIFICATION	NOTES
0		1	17	19		54		Reddish-brown FILL, SAND, SILT, GRAVEL - large fragments blocking spoon sampler (Dry to Moist - Firm to Compact)	NOTE: No freewater encountered
			35	44					
		2	27	100/.4					
5		3	12	17		36			
			19	24					
		4	12	19		48		-grades with weathered ROCK	
			29	40					
		5	39	20					
			100/.3						
10								Bottom of Hole @ 9.3'	
15									
20									
25									
30									
35									
40									

N = No. blows to drive 2 "spoon 12 "with 140 lb. pin wt. falling 30 "per blow.

C = No. blows to drive ____ "casing ____ "with ____ lb. weight falling ____ "per blow.

CLASSIFICATION Visual By
Soils Engineer

VDM01431

DATE
STARTED 5/4/77
FINISHED 5/4/77
SHEET 1 OF 1

EMPIRE SOILS INVESTIGATIONS, INC.

SUBSURFACE LOG

HOLE NO. B-6
SURF. ELEV. 412.0±
G. W. DEPTH See Notes

PROJECT Lockport Stone Quarry
LOCATION Lockport, New York

DEPTH-FT.	SAMPLES	SAMPLE NO.	BLOWS ON SAMPLER 0/6	6/12	12/18	N	BLOW ON CASING C	SOIL OR ROCK CLASSIFICATION	NOTES
0		1	15	22		57		Reddish-brown FILL, SAND, SILT, GRAVEL, with FRAGMENTS (Moist - Firm to Very Compact)	Upon completion, freewater @ 5.2'
			35	39					
		2	10	12		29			
			17	21					
5		3	12	18		39		-grades with some weathered ROCK	
			21	32					
		4	59	100/.4				Bottom of Hole @ 6.7'	
10									
15									
20									
25									
30									
35									
40									

N = No. blows to drive 2 "spoon 12 "with 140 lb. pin wt. falling 30 "per blow.
C = No. blows to drive ____ "casing ____ "with ____ lb. weight falling ____ "per blow.

CLASSIFICATION Visual By Soils Enginee

VDM01432

GENERAL INFORMATION & KEY TO SUBSURFACE LOGS

The Subsurface Logs attached to this report present the observations and mechanical data collected by the driller while at the site, supplemented by classification of the materials removed from the borings as determined through visual identification by technicians in the laboratory. It is cautioned that the materials removed from the borings represent only a fraction of the total volume of the deposits at the site and may not necessarily be representative of the subsurface conditions between adjacent borings or between the sampled intervals. The data presented on the Subsurface Logs together with the recovered samples will provide a basis for evaluating the character of the subsurface conditions relative to the proposed construction. The evaluation must consider all the recorded details and their significance relative to each other. Often analyses of standard boring data indicate the need for additional testing and sampling procedures to more accurately evaluate the subsurface conditions. Any evaluations of the contents of this report and the recovered samples must be performed by Professionals having experience in Soil Mechanics and Foundation Engineering. The information presented in the following defines some of the procedures and terms used on the Subsurface Logs to describe the conditions encountered.

---

① The figures in the Depth column defines the scale of the Subsurface Log.

② The Sample column shows, graphically, the exact depth range from which a sample was recovered. See Table I for a description of the symbols used to signify the various types of samples.

③ The Sample No. is used for identification on sample containers and/or Laboratory Test Reports.

④ Blows on Sampler – shows the results of the "Penetration Test", recording the number of blows required to drive a split spoon sampler into the soil beneath the casing. The number of blows required for each six inches penetration is recorded. The total number of blows required for the last 12 inches of penetration are summarized in the "N" column. The outside diameter of the sampler, the hammer weight and the length of drop are noted at the bottom of the Subsurface Log.

⑤ Blows on Casing – shows the number of blows required to advance the casing a distance of 12 inches. The casing size, the hammer weight and the length of drop are noted at the bottom of the Subsurface Log. If the casing is advanced by means other than driving, the method of advancement will be indicated in the Notes column or under Method of Investigation at the bottom of the Subsurface Log.

⑥ All recovered soil samples are reviewed in the laboratory by technicians. The visual descriptions are made on basis of the sample as recovered and in accordance with the Unified Classification System. Guide Lines for the terms used in descriptions are presented in Tables II and III. The description of the relative soil compactness or consistency is based upon the penetration records as defined in Table IV. The description of the soil moisture is based upon the condition of the sample as recovered. The moisture condition is described as dry, damp, moist or wet. Water used to advance the boring may have affected the in-situ moisture content of the sample. Special terms are used as required to describe materials in greater detail; several such terms are listed in Table V. When sampling gravelly soils with a standard two-inch diameter split spoon, the true percentage of gravel is often not recovered due to the relatively small sampler diameter. The presence of boulders and large gravel is sometimes, but not necessarily, detected by an evaluation of the casing and sampler blows or through the "action" of the drill rig as reported by the driller.

⑦ The description of rock shown is based upon the recovered rock core. Terms frequently used in the description are included in Table VI.

⑧ Miscellaneous observation and procedures noted by the driller are shown in this column, including water level observations. It is important to realize that the reliability of the water level observations depend upon the soil type (water does not readily stabilize in a hole through fine grained soils), and that drill water used to advance the borings may have influenced the observations. The ground water level typically will fluctuate seasonally. One or more perched or trapped water levels may exist in the ground seasonally. All the available readings should be evaluated if definite conclusions cannot be made, it is often prudent to examine the conditions more thoroughly through test pit excavations or water observation installations.

⑨ The length of core run is defined as length of penetration between retrievals of the core barrel from the bore hole, expressed in feet and tenths of feet. The core recovery expresses the length of core recovered from the core barrel per core run, in percent. The size core barrel used is also noted. The more commonly used sizes of core barrels are denoted "AX" and "NX". The "NX" core, being larger in diameter than "AX" core, often produces better recovery, and is frequently utilized where accurate information regarding the geologic conditions and engineering properties is needed. The "NX" core barrel requires the use of four inch diameter casing.

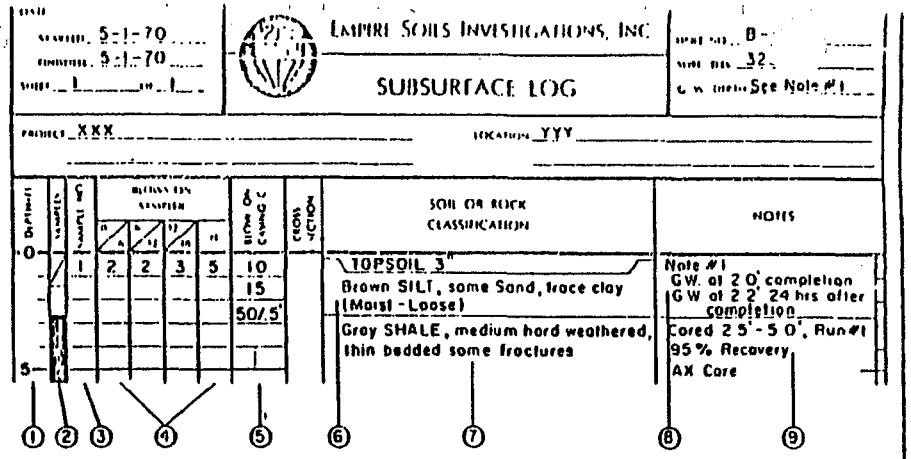


TABLE I

	Split Spoon Sample
	Shelby Tube Sample
	Auger or Pit Sample
	Rock Core

TABLE II

Identification of soil type is made on basis of an estimate of particle sizes, and in the case of fine grained soils also on basis of plasticity.

Soil Type	Soil Particle Size	
Boulder	> 12"	Coarse Grained (Granular)
Cobble	3" – 12"	
Gravel - Coarse	3" – 3/4"	
– Fine	3/4" – # 4	
Sand – Coarse	# 4 – # 10	
– Medium	# 10 – # 40	
– Fine	# 40 – # 200	
Silt - Non Plastic (Granular)	< # 200	Fine Grained
Clay - Plastic (Cohesive)		

TABLE III

The following terms are used in classifying soils consisting of mixtures of two or more soil types. The estimate is based on weight of total sample.

Term	Percent of Total Sample
"and"	35 – 50
"some"	20 – 35
"little"	10 – 20
"trace"	less than 10

(When sampling gravelly soils with a standard split spoon, the true percentage of gravel is often not recovered due to the relatively small sampler diameter.)

TABLE IV

The relative compactness or consistency is described in accord with the following terms.

Granular Soils		Cohesive Soils	
Term	Blows per Foot, N	Term	Blows per Foot, N
Loose	< 10	Very Soft	< 2
Firm	11 – 30	Soft	3 – 5
Compact	31 – 50	Medium	6 – 15
Very Compact	> 51	Stiff	16 – 25
		Hard	> 26

(Large particles in the soils will often significantly influence the blows per foot recorded during the Penetration Test.)

TABLE V

Varved –	Alternating layers, seams, and partings of soils.
Layer –	Soil deposit more than 6" thick.
Seam –	Soil deposit less than 6" thick.
Parting –	Soil deposit less than 1/8" thick.
Uniform –	All grains are of about the same diameter

TABLE VI

Rock Classification Terms

Term		Meaning
Hardness	Soft	Scratched by fingernail
	Medium Hard	Scratched easily by penknife
	Hard	Scratched with difficulty by penknife
	Very Hard	Cannot be scratched by pennnife
Weathering	Very Weathered	Judged from the relative amounts of disintegrating iron staining, core recovery, clay seams, etc
	Weathered	
	Sound	
Bedding	Laminated	Natural breaks in Rock Layers: < 1"
	Thin bedded	1" – 4"
	Bedded	4" – 12"
	Thick bedded	12" – 36"
	Massive	> 36"

(Fracturing refers to natural breaks in the rock oriented at some angle to the rock layers.)

VDM01433

APPENDIX B

BOREHOLE/WELL INSTALLATION LOGS

VDM 9, VDM 10, VDM 11, VDM 12

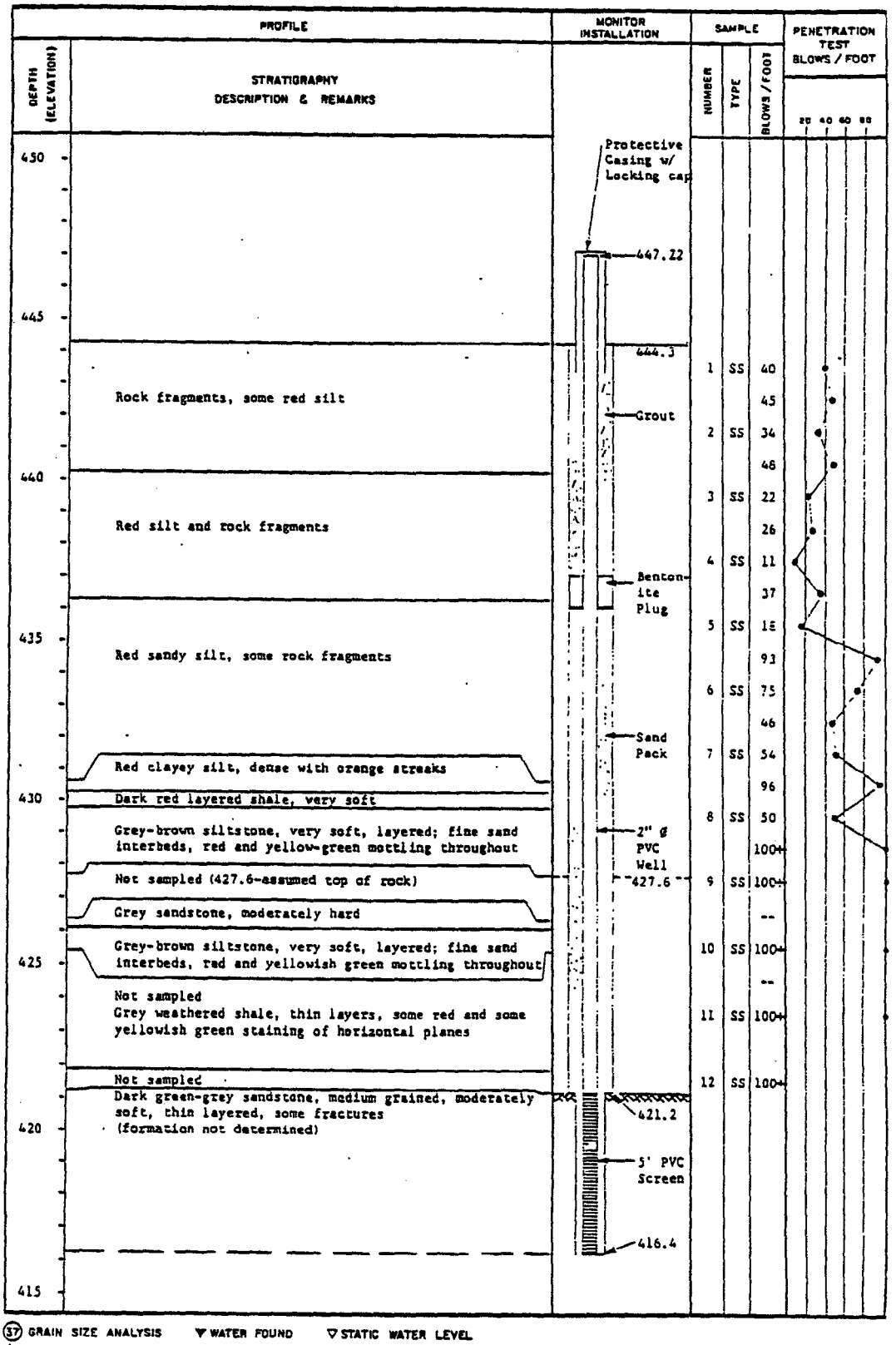
STRATIGRAPHIC AND INSTRUMENTATION LOG

PROJECT NAME: VAN DE MARK LANDFILL SITE JOB NO.: 1277 HOLE NO.: VDM-9

CLIENT: VAN DE MARK CHEMICAL COMPANY DATE COMPLETED: DECEMBER 9, 1983

HOLE TYPE: 8" Ø HOLLOW STEM AUGER LOCATION: MID-SOUTHERN LIMIT OF LANDFILL

GEOLOGIST / ENGINEER: DAVE BLACK GROUND ELEVATION: 444.3 TOP OF PIPE ELEVATION: 447.22



(37) GRAIN SIZE ANALYSIS ▼ WATER FOUND ▽ STATIC WATER LEVEL

VDM01435

STRATIGRAPHIC AND INSTRUMENTATION LOG

PROJECT NAME: VAN DE MARK LANDFILL SITE JOB NO.: 1277 HOLE NO. VDM-10 Pg 1 of 1

CLIENT: VAN DE MARK CHEMICAL COMPANY DATE COMPLETED: DECEMBER 7, 1983

HOLE TYPE: 8" ø HOLLOW STEM AUGER LOCATION: SOUTHWEST CORNER LANDFILL

GEOLOGIST / ENGINEER: DAVE BLACK GROUND ELEVATION: 442.6 TOP OF PIPE ELEVATION: 444.67

PROFILE		MONITOR INSTALLATION	SAMPLE			PENETRATION TEST BLOWS / FOOT
DEPTH (ELEVATION)	STRATIGRAPHY DESCRIPTION & REMARKS		NUMBER	TYPE	BLOWS / FOOT	20 40 60 80
445		Protective Casing w/ Locking cap 444.67				
	Red clayey silt, some rock fragments, fine gravel, and root fibers	442.6	1	SS	25	
	Rock fragments				91	
440	Soft rock fragments, some red clayey silt, pebbles, trace root fibers		2	SS	100+	
					77	
			3	SS	28	
					28	
	No recovery	Grout	4	SS	36	
435					28	
	Rock fragments, some red clayey silty sand		5	SS	44	
					97	
	Dense grey siltstone, layered, greenish		6	SS	28	
	Auger refusal Light grey sandstone, medium grained	430.6			100+	
430	Grey interbedded shale and dolomite/limestone - fissile to thin bedded - highly fractured (vertical and horizontal) - hematitic staining on fractured faces					
	Increasing dolomite beds	Bentonite Plug				
425						
	Grey dolomite/limestone, aphanitic - thin bedded, highly fractured - hematitic and MnO staining on fractures	Sand Pack				
420	Greenish grey to buff interbedded siltstone and sandstone, aphanitic to fine grained - thin to medium beds - frequent fractures along horizontal parting planes and some vertical fractures - some MnO staining - allochthonous sandstone fragments					
415	Grey shale, moderately soft interbedded with moderately hard buff sandstone	2" PVC				
	Buff sandstone moderately hard interbedded with grey moderately soft shale (thin beds)					

(37) GRAIN SIZE ANALYSIS ▼ WATER FOUND ▽ STATIC WATER LEVEL

VDM01436

STRATIGRAPHIC AND INSTRUMENTATION LOG

PROJECT NAME: VAN DE MARK LANDFILL SITE JOB NO.: 1277 HOLE NO.: VDM-10 Pg 2 of 2

CLIENT: VAN DE MARK CHEMICAL COMPANY DATE COMPLETED: DECEMBER 7, 1983

HOLE TYPE: 8" Ø HOLLOW STEM AUGER LOCATION: SOUTHWEST CORNER OF LANDFILL

GEOLOGIST / ENGINEER: DAVE BLACK GROUND ELEVATION: 442.6 TOP OF PIPE ELEVATION: 444.67

PROFILE		MONITOR INSTALLATION	SAMPLE			PENETRATION TEST BLOWS / FOOT
DEPTH (ELEVATION)	STRATIGRAPHY DESCRIPTION & REMARKS		NUMBER	TYPE	BLOWS / FOOT	20 40 60 80
410	Buff sandstone moderately hard interbedded with grey moderately soft shale (thin beds)	2" PVC; Sand Pack				
405		5' PVC Screen				
	Buff sandstone moderately hard, massive					
	WHIRLPOOL-QUEENSTON interface (olive green) Red shale moderately soft - thin bedded - green shale interbed					
400		398.7				
		397.2				
395						

(37) GRAIN SIZE ANALYSIS ▼ WATER FOUND ▽ STATIC WATER LEVEL

VDM01437

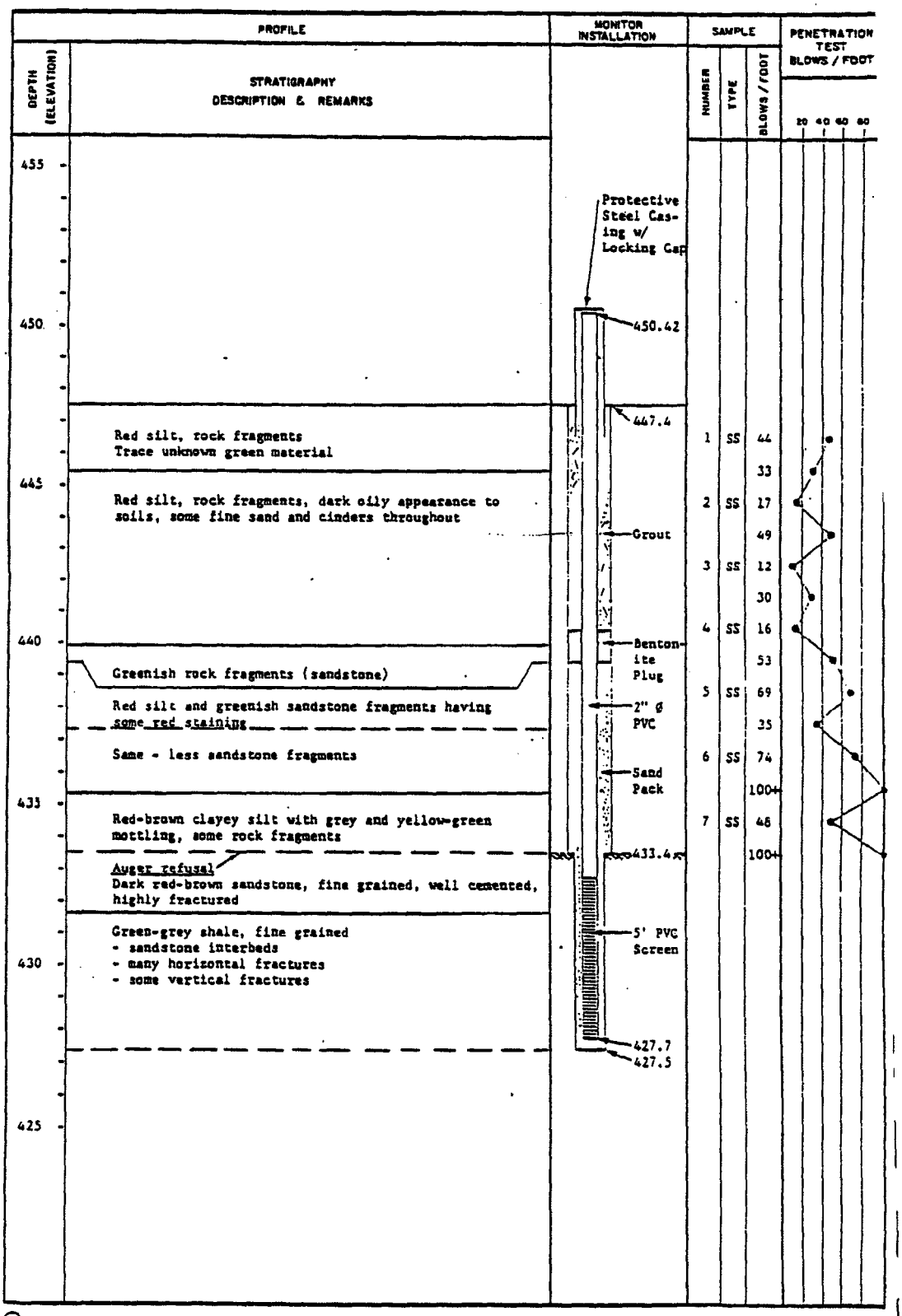
STRATIGRAPHIC AND INSTRUMENTATION LOG

PROJECT NAME: VAN DE MARK LANDFILL SITE JOB NO: 1277 HOLE NO: VDM-11

CLIENT: VAN DE MARK CHEMICAL COMPANY DATE COMPLETED: DECEMBER 9, 1983

HOLE TYPE: 8" Ø HOLLOW STEM AUGER LOCATION: MID-WESTERN LIMIT OF LANDFILL

GEOLOGIST / ENGINEER: DAVE BLACK GROUND ELEVATION: 447.4 TOP OF PIPE ELEVATION: 450.42



(37) GRAIN SIZE ANALYSIS ▼ WATER FOUND ▽ STATIC WATER LEVEL

VDM01438

STRATIGRAPHIC AND INSTRUMENTATION LOG

PROJECT NAME: VAN DE MARK LANDFILL SITE JOB NO: 1277 HOLE NO: VDM-12

CLIENT: VAN DE MARK CHEMICAL COMPANY DATE COMPLETED: DECEMBER 2, 1983

HOLE TYPE: 8" Ø HOLLOW STEM AUGER LOCATION: CENTER OF EARLY LANDFILL AREA

GEOLOGIST / ENGINEER: DAVE BLACK GROUND ELEVATION: 444.7 TOP OF PIPE ELEVATION: 447.52

PROFILE		MONITOR INSTALLATION	SAMPLE			PENETRATION TEST BLOWS / FOOT
DEPTH (ELEVATION)	STRATIGRAPHY DESCRIPTION & REMARKS		NUMBER	TYPE	BLOWS / FOOT	20 40 60 80
450		447.52 2" Ø Black Steel Pipe	C			
445	Red silty clayey sand, medium grained, some angular rock fragments, some green slag, trace black deposits	444.7 Grout	1	SS	100*	
	Red sandy silt, some angular rock fragments, lime green slag at 4.0 feet	Bentonite Plug	2	SS	-- 55 55	
	Brown sandy silt, trace of angular rock fragments and green slag	5' SS Screen	3	SS	75 100	
440	Red sandy silt, some angular rock fragments, dark oily deposits and trace of wood fragments	Sand Pack	4	SS	24 58	
	Rock fragments	Bentonite 436.1	5	SS	100*	
435						

(37) GRAIN SIZE ANALYSIS ▼ WATER FOUND ▽ STATIC WATER LEVEL

VDM01439

APPENDIX C

HISTORICAL BORELOGS

Source: 'Somerset Railroad Project - Hydrogeologic Study Danielewicz Route Station 51 + 810 to 52 + 330',

February 1982, by

Bechtel Associates Professional Corporation

GROUND WATER OBSERVATION WELL REPORT

PROJECT Somerset Railroad - Van De Mark

LOCATION N1,160,756 E468,241

Date Completed 10/19/81 Original Depth 46.7 (cored)

Inspected By J. C. Isham Date 10/19/81

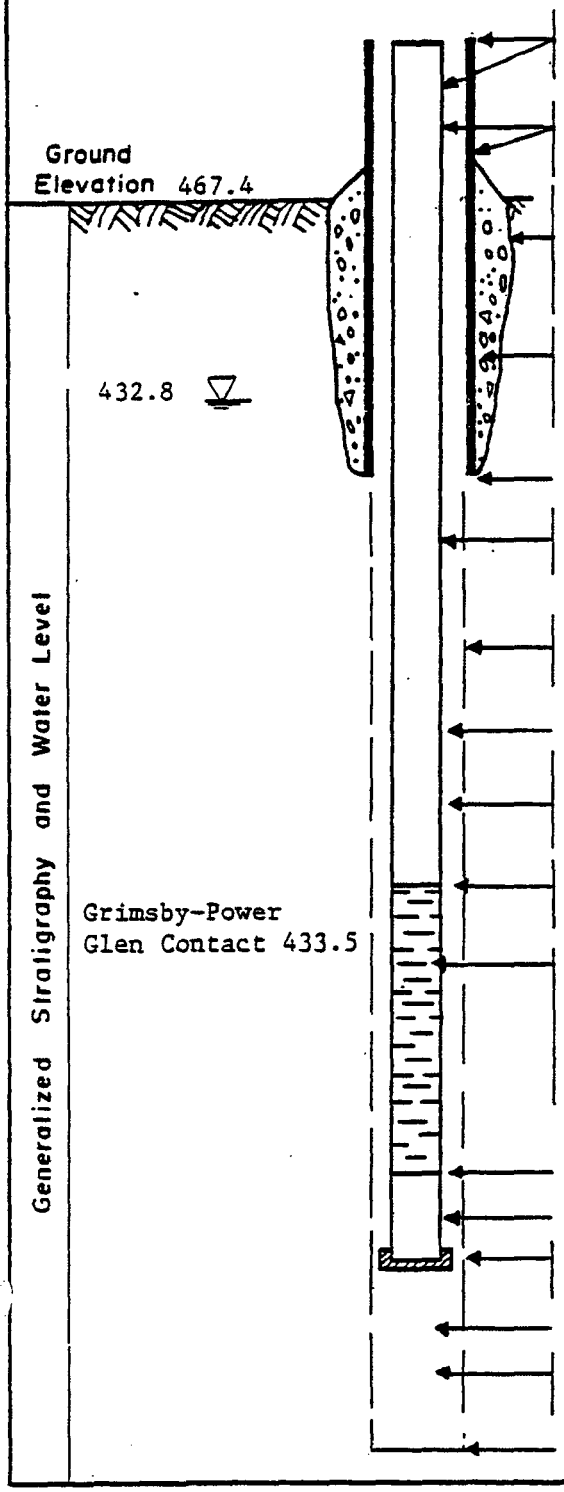
Checked By _____ Date _____

Page 7 of 23

Well No. D-55

Aquifer Grimsby-Power Glen Contact

Elev. Interval 420.7-439.4'



Elevation of top of surface casing / riser pipe.	469.36/469.36'
Heigth of top of surface casing / riser pipe above ground surface	2.0/2.0'
Depth of surface seal below ground surface	3.0'
Type of surface seal: Cement	
I.D. of surface casing.	4"
Type of surface casing: Cast iron with lock cap	
Depth of surface casing below ground	3.0'
I.D. of riser pipe.	2"
Type of riser pipe: Sch 80 PVC	
Diameter of borehole	0.5'
Depth of borehole (reamed)	45.0'
Type of backfill: Cement	
Elev./depth top of seal.	442.3/25.1'
Type of seal: Bentonite	
Elev./depth bottom of seal.	439.4/28.0'
Type of sand pack. 0-02 (fine to med. sand)	
Depth of top of sand pack.	439.4/28.0'
Elev./depth top of screened section.	432.9/34.5'
Type of screened section: Sch 80 PVC	
Describe openings 0.010" machine slot - horizontal slot	
I.D. of screened section.	2.0"
Elev./depth bottom of screened section.	423.3/44.1'
Length of blank section.	0.9'
Elev./depth bottom of plugged blank section.	422.4/45.0'
Elev./depth bottom of sand column.	422.4/45.0'
Type of backfill below observation pipe. Cuttings	
Elev./depth of hole.	420.7/46.7'

VDM01441

BORING LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Somerset Railroad	14818	1 of 2	D-55

SITE	COORDINATES	ANGLE FROM HORIZ.	BEARING
Van De Mark	N 1,160,756 E 468,241	90°	—

BEGUN	COMPLETED	DRILLER	DRILL MAKE AND MODEL	HOLE SIZE (INCHES)	OVERBURDEN (FT.)	ROCK (FT.)	TOTAL DEPTH (FT.)
10/14/81	10/16/81	J. Jensen/Empire	CME 55	NX	2.7	44	46.7

CORE RECOVERY (FT./%)	CORE BOXES	SAMPLES	EL. TOP OF CASING (FT.)	GROUND EL. (FT.)	DEPTH/EL. GROUND WATER (FT.)	DEPTH/EL. TOP OF ROCK (FT.)
42.4/96.4	3	2	469.36	467.4	34.6/432.8	2.7/464.7

SAMPLE HAMMER WEIGHT/FALL	CASING LEFT IN HOLE: DIA./LENGTH	LOGGED BY:
140#/30"	—	D. L. Middleton

SAMPLER TYPE AND DIAMETER	SAMPLER ADVANCE LENGTH CORE RUN	SAMPLE RECOVERY CORE RECOVERY	SAMPLE BLOWS "N" PERCENT CORE RECOVERY	PENETRATION BLOWS 1ST 6"	2ND 6"	3RD 6"	ELEVATION (FT.)	DEPTH-FT	UNIFIED SOIL CLASSIFICATION	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
							467.4					
SS	2	0.7	17	5	7	10				1	0'-2.7' Red-brown, fine to coarse, m. dense SAND, moist, trace organics. some fine gravel, some angular cobbles.	8" PVC surface casing cemented to a depth of 3 ft.
SS	0.7	0.1		100/2	—	—	464.7			2	Red-brown to white, loose, moist, fine SAND, two angular cobbles.	
				RQD %							2.7'-31.9' GRIMSBY FM.	Water used as drilling fluid.
NX	5.0	5.0	100	19				5		RUN 1	Dk. red brown to pale green, med. hard to v. soft, fresh to highly weathered, fine grained to microcrystalline interbedded SANDSTONE, SILTSTONE & SHALE, shale weathered to clay, bedding thin & horizontal with few bedding plane separations. Highly jointed, horizontal to 30° in SS iron oxide stains present in some joints.	Lost 50% of water at 11.2.
NX	2.0	2.0	100	32						2		Lost all water at 28.2. Lost water in highly fractured vuggy zone.
NX	2.0	1.6	80	0				10		RUN 3	Yellow-brown stains in horizontal joints at 13.1, 18.2, 23.1, 23.3, 25.0.	Changed core bits at end of Run 4. Metal from auger tooth at bottom hole. Lost diamond core bit at end of run 4, used old bit to TD. Fished out plenty metal shavings.
NX	5.0	4.7	94	16				15		RUN 4		
END BOX 1												
NX	5.0	4.4	88	57						RUN 5		
							447.1	20			20.3'-31.9' Basal GRIMSBY FM.: Mottled pale green to white, red-brown, v. hard, fresh to slightly weathered, fine grained SANDSTONE, horizontal bedding, some beds angle at 30°, horizontal & vertical joints. Horizontal joint spacing .2'-.9' yellow-brown staining on joints 27.8 vertical fracture to 28.0 yellow-brown stains.	
NX	5.0	4.9	98	88						RUN 6		
								25			28.15-29.0 vertical joint extends from horizontal joint at 28.15, at 29.0 vertical joint fades out. Dk. red brown to black stains present. 29.65-30.3 See page 2 for tabulation of joints.	
NX	5.0	4.9	98	46	Packer Test #2 2.1 x 10^{-3} cm/sec					RUN 7		
								30				
END BOX 2							435.5					
NX	5.0	5	100	18			432.4			RUN 8	31.9'-46.7' POWER GLEN FM.: Dk. reddish brown to pale green to green to white, v. soft to v. hard, slight to severely weathered, v. fine grained to microcrystalline. SHALE calcareous	

SS = SPLIT SPOON; ST = SHELBY TUBE; O = DENNISON; P = PITCHER; O = OTHER

SITE	HOLE NO.
Van De Mark	D-55

VDM01442

BECHTEL

BORING LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Somerset Railroad	14818	2 of 2	D-55

SAMPLER TYPE AND DIAMETER	SAMPLER ADVANCE / LENGTH CORE RUN	SAMPLE RECOVERY / CORE RECOVERY	SAMPLE BLOWS "N" / PERCENT CORE RECOVERY	PENETRATION BLOWS 1ST 6"	2ND 6"	3RD 6"	ELEVATION (FT.)	DEPTH-FT	UNIFIED SOIL CLASSIFICATION	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
							432.4					
				RQD %						8	31.9'-46.7' POWER GLEN Fm. (cont.): SANDSTONE, LIMESTONE, DOLOMITE, SILTSTONE, occasional slump features. Bedding is thin & horizontal. Occasional bedding joints. 31.7-31.9 vertical joints. 31.9-32.1 severely weathered zone, weathered to clay, rock fragments present.	
NX	5.0	4.9	98	78	Packer Test #1 1.7 x 10⁻⁴ cm/sec			40		RUN 9		
NX	5.0	5	100	16						RUN 10		
							420.7	45				
END BOX 3								50			Boring completed at 46.7 ft. Boring completed as observation well. See observation well completion report for construction details. Horizontal bedding joints exist throughout the rock. Vertical joints 27.8-28.0 coating 28.15-30.3 coating 38.9-39.0 coating 39.1-39.2 coating 46.7-47.2 no coating 29.65-30.3 severely weathered zone, v. vuggy, looks eaten away, no visible coatings in vugs. joint spacing 2 cm, 28.1-30.3 connected by vertical joint.	Boring reamed to 6" nom. diam. Reamed to 45'.

SS = SPLIT SPOON; ST = SHELBY TUBE; D = DENNISON; P = PITCHER; O = OTHER

SITE: Van De Mark

HOLE NO.: D-55

VDM01443

APPENDIX D

ANALYTICAL RESULTS

ADVANCED ENVIRONMENTAL SYSTEMS, INC.

RESULTS OF ANALYSIS

TABLE NO. 1

TYPE OF ANALYSIS: First Round of Sampling for Three Parameters - Samples Collected January 6, 1984

PAGE 1 OF 16

UNIT OF MEASURE: See below

CLIENT: Van deMark Chemical

Analysis	Unit of Measure	SAMPLE IDENTIFICATION					
		VDM-9	VDM-10	VDM-11	VDM-12	D-55	
pH	Std.	5.660	5.321	3.628	4.275	7.545	
Chlorides	mg/l	9,197	7,730	1,859	50,682 (51,660)[1]	49	
Soluble Iron	mg/l	81.0	27.5	45.3	9,800.0	<0.2	

[1] Duplicate Analysis

Table 2. Priority Pollutant Survey
Well VDM-12, Samples Collected
January 24, 1984 *

Summary[1]

(Expressed as micrograms per liter or ppb)

Parameter	Original Sample	Duplicate Sample
Volatiles (31)[2]		
Chloromethane	550	390
Methylene Chloride[3]	330	290
Chloroform	500	500
Carbon Tetrachloride	BDL[4]	28
Tetrachloroethylene	110	120
Base/Neutral Extractables (46)		
Octylphthalate	100	NR[5]
Pesticides/PCB's (25)	BDL	NR
Acid Extractables (11)	BDL	NR
Total Recoverable Phenols (mg/l or ppm)	0.08	NR
Total Cyanide	BDL	NR

[1] This table lists only those parameters identified from the total of 128; all others are below detection limits. The complete analytical report is provided in Appendix A.
[2] Number of Compounds
[3] The field blank contained 11 ug/l methylene chloride
[4] BDL - Below Detection Limits
[5] Duplicate analysis not requested.

*Well VDM-12 was purged on January 5, 1984. It took 19 days for this purged well to recharge to a sufficient volume for sampling.

ADVANCED ENVIRONMENTAL SYSTEMS, INC.

RESULTS OF ANALYSIS

TABLE NO. 2 Cont'd

TYPE OF ANALYSIS: Priority Pollutant Metals Concentrations

PAGE 3 OF 16

in VDM-12, Collected January 6, 1984

UNIT OF MEASURE: micrograms/liter, or ppb

CLIENT: Van deMark Chemical

ANALYSIS	SAMPLE IDENTIFICATION					
	VDM-12					
Cadmium	294					
Chromium	4,250					
Copper	31,000					
Lead	4,850					
Nickel	22,900					
Silver	870					
Thallium	1,120					
Zinc	497,000					
Beryllium	186					

COMMENTS: Due to the sample matrix interferences in the sample, the analyses of 13 Priority Pollutant metals has been difficult. Alternate methods are being implemented, and results will be provided upon completion.

ADVANCED ENVIRONMENTAL SYSTEMS, INC.

RESULTS OF ANALYSIS

TABLE NO. 3

Second Round of Sampling of Selected Volatile Organics Compounds found in VDM-12 Priority Pollutant Survey *

PAGE 4 OF 16

UNIT OF MEASURE: micrograms/liter, or ppb

CLIENT: Van DeMark Chemical (AHC)

ANALYSIS	SAMPLE IDENTIFICATION					
	(VDM-9) 3/21/84 Bld.Field Dup.	3/21/84 VDM-9	3/21/84 VDM-10	3/21/84 VDM-11	3/21/84 VDM-12	3/21/84 D-55
Chloromethane	<0.26	<1.31	<0.26	<0.26	858.21	<0.26
Methylene Chloride	350.07	263.13	41.70	231.76	897.64	3.76
Chloroform	134.59	169.21	97.60	196.36	615.83	<0.13
Carbon Tetrachloride	<0.22	<1.11	<0.22	71.57	<5.56	<0.22
Tetrachloroethylene	<0.14	<0.68	<0.14	230.43	33.59	<0.14
Phenols (mg/l)	.020	.010	.200	.013	.043	.005

ANALYSIS	3/21/84 Field Blank
Chloromethane	<0.26
Methylene Chloride	10.20
Chloroform	<0.13
Carbon Tetrachloride	<0.22
Tetrachloroethylene	<0.14

COMMENTS: *All the compounds found in the January 24, 1984 Priority Pollutant Survey were selected except for octyl phthalate.

VDM01448

ADVANCED ENVIRONMENTAL SYSTEMS, INC.

RESULTS OF ANALYSIS

Second Round of Sampling of Selected Metal Compounds Found in First Round of Sampling. Samples Collected 3/21/84.

TABLE NO. 4

UNIT OF MEASURE: micrograms/liter, or ppb

CLIENT: Van deMark Chemical

ANALYSIS		SAMPLE IDENTIFICATION					
		(VDM-9) Fld.Dup. 3/21/84	VDM-9 3/21/84	VDM-10 3/21/84	VDM-11 3/21/84	VDM-12 3/21/84	D-55 3/21/84
Cadmium		91	96	40	17	204	9
Chromium		190	190	160	190	5260	<160
Copper		7700	7800	290	510	57000	80
Lead		900	750	70	100	22200	30
Nickel		1700	1730	310	600	26600	<100
Silver		220	210	60	60	210	50
Thallium		790	850	300	200	1230	<200
Zinc		3150	3050	1140	2920	226000	0.25
Beryllium		28	28	<10	16	182	<10

COMMENTS: Due to the sample matrix interferences in the sample, the analyses of 13 Priority Pollutant metals has been difficult. Alternate methods are being

ADVANCED ENVIRONMENTAL SYSTEMS, INC.

RESULTS OF ANALYSIS

TABLE NO. 5

PAGE 6 OF 16

Second Round of Sampling for Three Parameters

as used in the First Round of Sampling

Samples Collected March 21, 1984

UNIT OF MEASURE: milligrams/liter, or ppm

CLIENT: Van DeMark Chemical (AHG)

ANALYSIS	SAMPLE IDENTIFICATION					
	(VDM-9) Blind Fld.Dup.	VDM-9	VDM-10	VDM-11	VDM-12	D-55
pH	4.904	4.793	6.358	2.365	4.014	6.671
Chlorides	15,968	15,068	5,039	1,859	53,593	636
Soluble Iron	870	880	<.1	228	17,500	<.1

COMMENTS:

VDM01450

ADVANCED ENVIRONMENTAL SYSTEMS, INC.

QUALITY ASSURANCE - Accuracy

TABLE NO. 6

TYPE OF ANALYSIS: Spiked Sample Analysis for Volatile Organics VDM-10

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UNITS OF MEASURE: micrograms/liter, or ppb

CLIENT: Van DeMark Chemical (AHG)

ANALYSIS	TYPE	ORIGINAL CONCEN.	ADDED CONCEN.	EXPECTED CONCEN.	REPORTED CONCEN.	PERCENT RECOVERY	95% CONFID. INTERVAL
Chloromethane	Spike	<0.26	20.0	20.0	22.76	113.8	NA*
Chloroform	Spike	9.76	7.64	17.40	19.94	114.6	"
Carbon Tetrachloride	Spike	<0.22	7.27	7.28	8.10	111.3	"
Tetrachloroethylene	Spike	<0.14	8.36	8.36	9.36	112.0	"

Comments: *NA - not applicable

ADVANCED ENVIRONMENTAL SYSTEMS, INC.

QUALITY ASSURANCE - Precision

TABLE NO. 7

TYPE OF ANALYSIS: Duplicate Analysis

PAGE 8 OF 16

for Volatile Organics Sample VDM-10

UNITS OF MEASURE: micrograms per liter, or ppb

CLIENT: Van deMark Chemical (AHG)

ANALYSIS	SAMPLE	ORIGINAL CONCEN.	DUPLICATE CONCEN.	AVERAGE CONCEN.	RANGE	REL. % DIFFER.
Chloromethane	VDM-10	<0.26	<0.26	NA	NA	NA
Methylene Chloride	VDM-10	41.37	42.03	41.70	0.66	1.6
Chloroform	VDM-10	98.73	96.46	97.60	2.27	2.3
Carbon Tetrachloride	VDM-10	<0.22	<0.22	NA	NA	NA
Tetrachloroethylene	VDM-10	<0.14	<0.14	NA	NA	NA

COMMENTS:

ADVANCED ENVIRONMENTAL SYSTEMS, INC.

QUALITY ASSURANCE - Accuracy

TABLE NO. 8

TYPE OF ANALYSIS: EPA and Spiked Sample
Test Control
Samples Collected 3/21/84

UNITS OF MEASURE: milligrams/liter, or ppm

CLIENT: Van deMerk Chemical

ANALYSIS	TYPE	ORIGINAL CONCEN.	ADDED CONCEN.	EXPECTED CONCEN.	REPORTED CONCEN.	PERCENT RECOVERY	95% CONFID. INTERVAL
Soluble Iron	EPA	.80	---	.80	.79	98.8	.70---.88
Soluble Iron (Field Dup.) *	Spike	.44	1.0	1.44	1.50	104.2	---
Soluble Iron (VDM-9)	Spike	.44	1.0	1.44	1.50	104.2	---
Soluble Iron (VDM-10)	Spike	.05	0.5	.55	.56	101.8	---
Soluble Iron (VDM-11)	Spike	1.14	1.0	2.14	2.22	103.7	---
Soluble Iron (VDM-12)	Spike	0.88	1.0	1.88	1.95	103.7	---
Soluble Iron (D-55)	Spike	.03	0.5	.53	.57	107.5	---

Comments: *Field Duplicate - VDM-9

ADVANCED ENVIRONMENTAL SYSTEMS, INC.

QUALITY ASSURANCE - Accuracy

TABLE NO. 9

TYPE OF ANALYSIS: EPA & Spiked Sample

Test Control

PAGE 10 OF 16

UNITS OF MEASURE: Micrograms/liter, or ppb

CLIENT: Van deMark Chemical

ANALYSIS	TYPE	ORIGINAL CONCEN.	ADDED CONCEN.	EXPECTED CONCEN.	REPORTED CONCEN.	PERCENT RECOVERY	95% CONFID. INTERVAL
Copper	EPA	339	---	339	330	97.3	302---368
Copper (VDM-12, 1/6/84)	Spike	160	500	660	670	101.5	---
Copper (Fld.Dup., 3/21/84)*	Spike	390	500	890	890	100.0	---
Copper (VDM-9, 3/21/84)	Spike	390	500	890	890	100.0	---
Copper (VDM-10, 3/21/84)	Spike	150	500	650	650	100.0	---
Copper (VDM-11, 3/21/84)	Spike	260	500	760	750	98.7	---
Copper (VDM-12, 3/21/84)	Spike	290	500	790	790	100.0	---
Copper (D-55, 3/21/84)	Spike	40	500	540	570	105.6	---
Lead	EPA	43	---	43	43	100.0	3.4---5.4
Lead (VDM-12, 1/6/84)	Spike	24	25	49	48	98.0	---
Lead (Fld.Dup., 3/21/84)	Spike	45	25	70	71	101.4	---
Lead (VDM-9, 3/21/84)	Spike	4	25	29	34	117.2	---
Lead (VDM-10, 3/21/84)	Spike	33	25	58	56	96.6	---
Lead (VDM-11, 3/21/84)	Spike	50	25	75	79	105.3	---
Lead (VDM-12, 3/21/84)	Spike	11	25	36	35	97.2	---

Comments: *Field Duplicate - VDM-9

ADVANCED ENVIRONMENTAL SYSTEMS, INC.

QUALITY ASSURANCE - Accuracy

TABLE NO. 9 Cont'd

TYPE OF ANALYSIS: EPA & Spiked Sample

Test Control

PAGE 11 OF 16

UNITS OF MEASURE: micrograms/liter, or ppb

CLIENT: Van deMark Chemical

ANALYSIS	TYPE	ORIGINAL CONCEN.	ADDED CONCEN.	EXPECTED CONCEN.	REPORTED CONCEN.	PERCENT RECOVERY	95% CONFID. INTERVAL
Lead (D-55, 3/21/84)	Spike	12	25	37	37	100.0	---
Cadmium	EPA	39	---	39	37	94.9	31--- 42.8
Cadmium (VDM-12, 1/6/84)	Spike	147	50	197	217	110.2	---
Cadmium (Fld.Dup. 3/21/84) *	Spike	46	50	96	102	106.3	---
Cadmium (VDM-9, 3/21/84)	Spike	48	50	98	107	109.2	---
Cadmium (VDM-10, 3/21/84)	Spike	20	50	70	73	104.3	---
Cadmium (VDM-10, 3/21/84)	Spike	9	50	59	63	106.8	---
Cadmium (VDM-11, 3/21/84)	Spike	102	50	152	161	105.9	---
Cadmium (VDM-12, 3/21/84)	Spike	5	50	55	58	105.5	---
Chromium	EPA	261	---	261	258	98.9	210--- 306
Chromium (VDM-12, 1/6/84)	Spike	2130	1000	3130	3100	99.0	---
Chromium (Fld.Dup. 3/21/84)	Spike	100	1000	1100	1160	105.5	---
Chromium (VDM-9, 3/21/84)	Spike	100	100	1100	1160	105.5	---
Chromium (VDM-10, 3/21/84)	Spike	80	1000	1080	1130	104.6	---
Chromium (VDM-11, 3/21/84)	Spike	100	1000	1100	1160	105.5	---

Comments: *Field Duplicate - VDM-9

ADVANCED ENVIRONMENTAL SYSTEMS, INC.

QUALITY ASSURANCE - Accuracy

TABLE NO. 9 Cont'd

TYPE OF ANALYSIS: EPA & Spiked Sample Test Controls

PAGE 12 OF 16

UNITS OF MEASURE: micrograms/liter, or ppb

CLIENT: Van deMark Chemical

ANALYSIS	TYPE	ORIGINAL CONCEN.	ADDED CONCEN.	EXPECTED CONCEN.	REPORTED CONCEN.	PERCENT RECOVERY	95% CONFID. INTERVAL
Chromium (VDM-12, 3/21/84)	Spike	2630	1000	3630	3600	99.2	---
Chromium (D-55, 3/21/84	Spike	<100	1000	1000	990	99.0	---
Nickel	EPA	210	---	210	200	95.2	180---240
Nickel (VDM-12, 1/6/84)	Spike	1150	1000	2150	2200	102.3	---
Nickel (Fld.Dup. 3/21/84)*	Spike	850	1000	1850	1940	104.9	---
Nickel (VDM-9, 3/21/84)	Spike	850	1000	1850	1960	105.9	---
Nickel (VDM-10, 3/21/84)	Spike	150	1000	1150	1200	104.3	---
Nickel (VDM-11, 3/21/84)	Spike	300	1000	1300	1310	100.8	---
Nickel (VDM-12, 3/21/84)	Spike	1330	1000	2330	2370	101.7	---
Nickel (D-55, 3/21/84)	Spike	<100	1000	1000	1050	105.0	---
Silver	EPA	1000	---	1000	1000	100.0	---
Silver (VDM-12, 1/6/84)	Spike	440	500	940	930	98.9	---
Silver (Fld.Dup. 3/21/84)	Spike	110	500	610	630	103.3	---
Silver (VDM-9, 3/21/84)	Spike	110	500	610	620	101.6	---
Silver (VDM-10, 3/21/84)	Spike	30	500	530	480	90.6	---

Comments: *Field Duplicate - VDM-9

ADVANCED ENVIRONMENTAL SYSTEMS, INC.

QUALITY ASSURANCE - Accuracy

TABLE NO. 9 Cont'd

TYPE OF ANALYSIS: EPA & Spiked Sample

PAGE 13 OF 16

Test Controls

UNITS OF MEASURE: micrograms/liter, or ppb

CLIENT: Van deMark Chemical

ANALYSIS	TYPE	ORIGINAL CONCEN.	ADDED CONCEN.	EXPECTED CONCEN.	REPORTED CONCEN.	PERCENT RECOVERY	95% CONFID. INTERVAL
Silver (VDM-11, 3/21/84)	Spike	30	500	530	500	94.3	---
Silver (VDM-12, 3/21/84)	Spike	110	500	610	610	100.0	---
Silver (D-55, 3/21/84)	Spike	<50	500	500	440	88.0	---
Thallium	EPA	2520	---	2520	2530	100.4	1440---3680
Thallium (VDM-12, 1/6/84)	Spike	560	2000	2560	2980	116.4	---
Thallium (Fld.Dup. 3/21/84)*	Spike	400	2000	2400	2330	97.1	---
Thallium (VDM-9, 3/21/84)	Spike	420	2000	2420	2380	98.3	---
Thallium (VDM-10, 3/21/84)	Spike	150	2000	2150	2160	100.5	---
Thallium (VDM-10, 3/21/84)	Spike	620	2000	2620	2650	101.1	---
Zinc	EPA	420	---	420	420	100.0	380---450
Zinc (VDM-12, 1/6/84)	Spike	250	500	750	750	100.0	---
Zinc (Fld.Dup., 3/21/84)	Spike	160	500	660	660	100.0	---
Zinc (VDM-9 3/21/84)	Spike	150	500	650	650	100.0	---
Zinc (VDM-10, 3/21/84)	Spike	60	500	560	560	100.0	---
Zinc (VDM-11, 3/21/84	Spike	150	500	650	640	98.5	---

Comments: *Field Duplicate - VDM-9

ADVANCED ENVIRONMENTAL SYSTEMS, INC.

QUALITY ASSURANCE - Accuracy

TABLE NO. 9 Cont'd

TYPE OF ANALYSIS: EPA & Spiked Sample

Test Control

PAGE 14 OF 16

UNITS OF MEASURE: micrograms/liter, or ppb

CLIENT: Van deMark Chemical

ANALYSIS	TYPE	ORIGINAL CONCEN.	ADDED CONCEN.	EXPECTED CONCEN.	REPORTED CONCEN.	PERCENT RECOVERY	95% CONFID. INTERVAL
Zinc (VDM-12, 3/21/84)	Spike	110	500	610	610	100.0	---
Zinc (D-55, 3/21/84)	Spike	120	500	620	630	101.6	---
Beryllium	EPA	235	---	235	234	99.6	207---257
Beryllium (VDM-12, 1/6/84)	Spike	93	100	193	182	94.3	---
Beryllium (Fld.Dup., 3/21/84)*	Spike	14	100	114	117	102.6	---
Beryllium (VDM-9, 3/21/84)	Spike	14	100	114	109	95.6	---
Beryllium (VDM-10, 3/21/84)	Spike	<5	100	100	101	101.0	---
Beryllium (VDM-11, 3/21/84)	Spike	8	100	108	97	89.8	---
Beryllium (VDM-11, 3/21/84)	Spike	91	100	191	182	95.3	---
Beryllium (VDM-12, 3/21/84)	Spike	<5	100	100	97	97.0	---

Comments: *Field Duplicate - VDM-9

ADVANCED ENVIRONMENTAL SYSTEMS, INC.

QUALITY ASSURANCE - Accuracy

TABLE NO. 10

TYPE OF ANALYSIS: Spiked Sample, EPA and Standard Test Control Analysis

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UNITS OF MEASURE: milligrams/liter, or ppm

CLIENT: Van DeMark Chemical (AHG)

ANALYSIS	TYPE	ORIGINAL CONCEN.	ADDED CONCEN.	EXPECTED CONCEN.	REPORTED CONCEN.	PERCENT RECOVERY	95% CONFID. INTERVAL
pH	Std.	7.0	--	7.0	6.978	99.7	NA
Chloride	EPA	17.8	--	17.8	16.6	93.4	NA
Phenol	EPA	.040	--	.040	.045	112.5	NA
Phenol (VDM-9) (Field Dup.)	Spike	.020	.400	.420	.375	89.3	NA
Phenol (VDM-10)	Spike	.200	.400	.600	.567	94.5	NA

Comments:

ADVANCED ENVIRONMENTAL SYSTEMS, INC.

QUALITY ASSURANCE - Precision

TABLE NO. 11

TYPE OF ANALYSIS: Duplicate Analysis for Chlorides & Phenols

UNITS OF MEASURE: milligrams/liter, or ppm

CLIENT: Van DeMark Chemical (AHG)

ANALYSIS	SAMPLE	ORIGINAL CONCEN.	DUPLICATE CONCEN.	AVERAGE CONCEN.	RANGE	REL. % DIFFER.
Chloride	VDM-11	1,859	1,859	1,859	0	0
Chloride	VDM-12	53,471	53,715	53,593	122	.23
Phenol	VDM-11	.010	.016	.013	.003	23.1

COMMENTS:

APPENDIX B

SOMERSET RAILROAD PROJECT

HYDROGEOLOGIC STUDY

DANIELEWICZ ROUTE

STATION 51+810 to 52+330

SOMERSET RAILROAD CORPORATION

HYDROGEOLOGIC STUDY

DANIELEWICZ ROUTE

Station 51+810 to 52+330

BECHTEL CIVIL & MINERALS, INC.

JOB NO. 14818

FEBRUARY 1982

VDM01462

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EXECUTIVE SUMMARY

The hydrogeologic study of the Danielewicz Route from Station 51+810 to 52+330 authorized September 15, 1981, in letter BNE-142, has as its objectives the determination of ground water flow direction relative to the proposed railroad cut through this area, and, based upon chemical indicators, the possibility of movement of known landfill constituents into the ground water intercepted by the proposed railroad cut. The study utilized ground water monitoring wells in concert with the analysis of selected chemical parameters to fulfill these objectives.

Analysis of ground water level data indicate that flows are generally east to west within the rock strata intercepted by the railroad cut. Due to the direction of ground water flow and the relative elevations of the Van De Mark Landfill and the railroad, the proposed cut should not receive any ground water from the Van De Mark Landfill which lies to the west. Chemical analyses of ground water samples from the response tested and bailed wells utilizing parameters indicative of inputs from the Van De Mark Landfill confirm this conclusion.

The study area was explored to a maximum depth of 109 feet, the approximate elevation of Eighteenmile Creek. Four relatively isolated zones of ground water were found, each occurring at different depths. The upper two zones consist of a shallow ground water zone (Zone 1) found in the area of the Norton Landfill to the east of the railroad cut, and a somewhat deeper zone (Zone 2) which occurs along the contact between the Grimsby and Power Glen Formations. The two lower zones found along the contacts between the Power Glen and Whirlpool Formations (Zone 3) and the Whirlpool and Queenston Formations (Zone 4) will not be intercepted by the cut.

The railroad cut will occur within Zone 2 rock strata near the Grimsby-Power Glen Formation contact. However, since this rock has a low to negligible permeability, the quantity of Zone 2 ground water reaching the

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cut should be very small. Zone 1 water may not reach the cut due to the intervening Zone 2 rock. Initial chemical analyses of Zone 1 ground water from the unpurged wells indicated levels of iron, grease, and oil which, for reference purposes only, would exceed United States Environmental Protection Agency (EPA) industrial discharge regulations. Subsequent chemical analyses and samples following purging of the wells indicated that grease and oil levels were within the recommended limits.

Bechtel purged the observation wells in early November in preparation for a more detailed round of chemical analyses conducted after November 15 by Bechtel and others. The resampling and reanalysis conducted for Bechtel by RECRA Research, Inc. showed a substantial reduction in the oil and grease levels from the Zone 1 wells to below the EPA industrial discharge regulations.

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SOMERSET RAILROAD CORPORATION
HYDROGEOLOGIC STUDY IN THE VICINITY
OF THE VAN DE MARK LANDFILL

1.0 INTRODUCTION

This report presents the results of the hydrogeologic investigation performed for the Somerset Railroad Corporation along the proposed Danielewicz Route from (approximately) Station 51+810 to 52+330 in the city of Lockport, New York (Figure 1). In this vicinity, the railroad grade descends to the north at a grade of approximately 1.6 percent. The descent from a bridge section crossing West Jackson Street and the Gulf requires a cut section between two landfills: the Van De Mark Landfill (VDM) on the west, and the Norton/McGonigle & Hilger (N/MH) Landfill on the east. The study was authorized pursuant to letter BNE-142 dated September 15, 1981, from Bechtel to New York State Electric and Gas Corporation.

Preliminary investigations performed during the Somerset Railroad alternative route selection analyses involved geologic field mapping and areal reconnaissance of the landfills and surrounding area. Concurrent with the field work was a search for existing data on the landfills from the files of owners and various public agencies.

The results of the preliminary investigation indicated that ground water levels in the area of the landfills could be at an elevation high enough to be intercepted by the cut between the two landfills (Figure 2). Sufficient data was not available, however, to determine the ground water flow direction nor the quality of the water which may be emanating from the landfills. To provide data necessary to evaluate the ground water levels, flow direction, and chemistry, 22 observation wells were installed. In-hole permeability testing was performed, water levels obtained and samples collected for chemical analysis. On the basis of these studies, an evaluation of the local ground water regime and a prediction of its interaction with the proposed railroad cut are presented.

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2.0 CONCLUSIONS

Based upon data obtained through November 1981 the following observations are made:

a. The permeability of the rock that will be exposed in the proposed cut is low to negligible (Section 7.0).

b. Ground water occurs in relatively isolated zones in the rock and there is little to no vertical movement between zones. Only the upper two zones encountered may be affected by the proposed cut. The first zone is ground water encountered in the Norton Landfill, and the second zone is ground water present along the contact between the Grimsby and Power Glen Formations.

c. Ground water in Zone 2 moves westerly, derived from the east. The proposed cut for the railroad will intercept that flow but the quantity discharging to the cut will be small.

d. The potential for ground water in Zone 2 to move from the vicinity of the Van De Mark Landfill into the railroad cut, a reversal of present flow direction, is determined to be negligible.

e. Ground water encountered in the Norton Landfill is identified as Zone 1 and may or may not reach the cut.

f. Comparison of the chloride concentrations measured in ground water from the Zone 2 wells with similar chemical analyses conducted by the Van De Mark Chemical Corporation at its own landfill monitoring wells provides further indication that ground water from the Van De Mark Landfill is not moving in the direction of the proposed railroad right-of-way (Section 8.2.1).

g. Ground water that may move into the railroad cut from the east is expected to have a chemical quality similar to that found in the Zone 1 and 2 wells (Section 8.2.2).

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h. Initial sampling of one of the Zone 1 wells (D-70) installed in the Norton Landfill had grease and oil levels which exceeded United States Environmental Protection Agency (EPA) regulations for industrial discharges (30 ppm). The initial high reading is believed to be derived from drilling activities. Subsequent sampling and analyses of the Zone 1 and 2 wells in mid-November, following well development and purging, revealed that the oil and grease levels in the Zone 1 wells were substantially below the EPA industrial discharge regulations. Well D-69, which is 75 feet westerly from well D-70, did not show significant levels of these two chemical parameters with regard to the EPA regulations in either round of sampling. Water moving from Zone 1 into the railroad cut may in time demonstrate a quality approaching that of well D-70 (Section 8.2.2).

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3.0 LANDFILL DESCRIPTION

The following descriptions of the two landfills and general methods of the disposal operations are based on information contained in the files of the New York State Department of Environmental Conservation (DEC) and the Niagara County Department of Health, and from results of Bechtel field investigations.

3.1 Van De Mark Landfill

The VDM Landfill (Figure 2) contains chemical waste by-products from the Van De Mark Chemical Company of Lockport, New York. The landfill is in a former open pit quarry excavated in sandstone and limestone; the area is approximately two acres. It is located on a plateau bounded on the west and south sides by slopes descending to Eighteenmile Creek. Relief in the area is about 80 feet from Eighteenmile Creek to the relatively level area of the landfill. Access to the landfill is gained from the east along Mill Street located to the north of the landfill. Site access is controlled by a locked gate at Mill Street and another locked gate at the entrance to the landfill.

At its closest point, the landfill is approximately 125 feet west of the centerline of the proposed cut section. The elevation of the landfill is approximately 440 feet msl.

According to the Van De Mark Chemical Company's landfill application to DEC (1977), the method of disposal of wastes within the landfill consists of the excavation of a 7-foot-deep by 12-foot-wide trench. The trench bottom is then lined with fine crushed limestone for the treatment of waste and 55 gallon drums of waste are placed on top of the limestone. The space between the drums is backfilled with fine crushed limestone, the drums are punctured, sacks of limestone are placed on top of the drums, and the trench is backfilled to the original grade.

According to reports in the files of DEC, the waste material consists of 30 to 70 percent hexachlorodisiloxane, 10 to 50 percent silicon tetrachloride, and 5 to 30 percent carbon and silicon carbide. The hexachlorodisiloxane and silicon tetrachloride decompose into sand (silicon dioxide) and hydrochloric acid. Carbon and silicon carbide remain unchanged. The hydrochloric acid reacts with the limestone forming a neutral chloride salt. The residue is buried in drums; the owner reports that in 4 to 8 months the only visible remains are part of the drum rings used to seal the open head drum tops. According to the Van De Mark Chemical Company's landfill application to DEC, the entire waste mass will eventually become a sand pile with some salt content.

Presently, the active sections of the waste area are located within the southern one-third of the landfill (Figure 2). Prior to 1977, untreated waste was placed on the western portion of the landfill and allowed to decompose without the addition of limestone. DEC has given this landfill a code identification of "E" which indicates a closed controlled landfill in which monitoring is required.

3.2 Norton/McGonigle & Hilger Landfill

The Norton Landfill is situated approximately 400 feet east of the VDM Landfill, as shown on Figure 2. It is overlain in part by the McGonigle & Hilger Landfill. The areal extent of the Norton Landfill is unknown. The composite of these two landfills occupies about 4 to 5 acres. The area of the landfills is bounded on the north by Mill Street and on the south by a cliff leading down to Eighteenmile Creek. The east and southeast boundaries are formed by various manufacturing buildings. The landfill is about 110 feet above Eighteenmile Creek. Access to the landfill is gained from the east along Mill Street. The western boundary of this landfill extends to within approximately 60 feet of the centerline of the proposed railroad cut. The elevation of the landfill is about 473 feet msl. Depending on the final configuration of the cut in this vicinity, the western boundary of the Norton Landfill could extend to within 10 feet of the upper portions of the proposed railroad cut.

The Norton Landfill was used for the storage and recycling of thermoset plastic castings manufactured by Norton Laboratories, Inc., a facility located at the northwest intersection of North Transit Road and Mill Street but which is no longer in operation. Pieces of castings were noted in samples obtained from exploration holes, and during a reconnaissance of the area.

According to the DEC reports, waste lubricating oil in the amount of about 250 gallons/year was also stored there for recycling. Some documented spillage of the waste oil was reported. The period in which this occurred is unknown.

A portion of the site is now used by the McGonigle & Hilger Roofing Company for the disposal of roofing and general construction debris resulting from structural demolition. Asphalt, insulating material, tar paper, and general construction rubble are scattered over the site and a portion of the slope leading down to Eighteenmile Creek. Waste materials from the McGonigle & Hilger operations are deposited on the ground surface and spread periodically, probably by loader or bulldozer. A cover of natural soil material has been placed on top of some of the waste deposits. In the northern part of the area this waste is being spread over the Norton Landfill to a depth of about 6 to 8 feet. The western boundary of the McGonigle & Hilger Landfill is located 200 to 270 feet from the centerline of the proposed railroad cut.

DEC has given the Norton/McGonigle & Hilger Landfill a code identification of "F" which indicates that there is no toxic hazard.

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4.0 EXISTING LANDFILL MONITORING

The only site investigation of the Norton Landfill complex is cited in the brief report from the DEC dated April 16, 1980. The coding assigned by DEC does not require the monitoring of ground water.

The Van De Mark Chemical Company documents the construction of four observation wells within the landfill boundary in their application to the DEC (1977). The wells were constructed in 1977 and are located within the disposal area of the landfill. Two additional wells were constructed in 1980 and are located at the foot of the escarpment adjacent to Eighteenmile Creek. Well locations are shown on Figures 2 and 3 and tabulated data regarding the wells is presented in Table 1.

Construction of each well is similar. On completion of drilling to the prescribed depth, an assembly of 2 to 5 feet of 1-inch-diameter well screen and 1-inch-diameter PVC riser casing was placed in the hole. The wells were sand-packed above the screen and a bentonite seal installed. However, the location of the seal is reported only for wells VDM-5 and 6. A steel protective pipe and a locking cap complete the surface installation.

Wells VDM-5 and 6 were sand-packed to within 1 foot of the top of rock surface, 4.4 feet and 5 feet below ground surface, respectively, and a 6-inch bentonite seal was placed prior to grouting to ground surface. Wells VDM-1 and 2 are shallow (less than 25 feet deep), penetrating about 14 feet into the Power Glen Formation to an elevation of about 422 feet msl. Wells VDM-3 and 4 are within the landfill and are 90 feet deep. They are completed in the Queenston Formation (see geology discussion, Section 6.0) to about elevation 350 feet msl.

Wells VDM-5 and 6 near Eighteenmile Creek were drilled to elevations of about 345 feet msl, and are also within the Queenston Formation.

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5.0 SUBSURFACE INVESTIGATION AND OBSERVATION WELL INSTALLATION PROGRAM

The subsurface investigation began with the arrival of the first drilling rig at the site on October 13, 1981, and was completed on October 31, 1981. Eventually five drilling rigs were moved on site and work was performed 24 hours a day from October 23 through October 30, 1981. All drilling and well installation was performed by Empire Soils Investigations, Inc., Orchard Park, New York, under the technical direction of Bechtel geologists.

The investigation consisted of drilling 22 borings at the locations shown on Figure 3. Boring locations were chosen in order to provide a sufficient number of monitoring points to establish ground water elevation(s) and gradient(s). From this information the component of ground water flow into the proposed railroad cut from the east and west could be established. The holes were drilled to selected depths and completed as ground water observation wells. Borings were advanced by rotary coring with either standard or wire-line split inner-tube core barrels. Coring of the rock was performed in order to adequately determine the rock characteristics of the formations penetrated and to assist in the determination of the placement of the well screen and sand pack intervals. All holes were cored with NX and NQ side discharge diamond impregnated core bits. Water from the City of Lockport water system was used as drilling fluid in all holes to minimize and control the amount of unknown substances introduced into the hydrogeologic system.

At each of six locations between the two landfill areas, nests of three holes were drilled to shallow, intermediate, and deep levels, at which ground water observation wells were installed. A nest of two holes, intermediate and shallow, was drilled at a seventh location. In addition, two shallow holes were drilled within the Norton Landfill. The deepest hole at each location was pressure tested to determine the permeability of the fractures in the vicinity. Data on the well nests are summarized in Table 1 and locations are shown on Figure 3. Boring logs of the drill holes are presented in Appendix A.

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After coring, each hole was reamed with a rock roller bit to a nominal diameter of 6 inches. This was done to facilitate the installation of a sand pack around the screen and riser pipe for the ground water observation wells.

Ground water observation wells are constructed of 2-inch flush coupled PVC pipe. Each well is completed with 10 to 40 feet of screen having machined horizontal slots measuring 0.010 inch in width. Riser pipe made of Schedule 40 or Schedule 80 PVC pipe is attached to the screen and extended about 2 feet above ground surface. A fine to medium sand designated as 2Q by the supplier, Pennsylvania Glass Sand, Inc., is placed around the screen and a minimum of 2 feet above the screen. The grain size analysis of the sand is presented in Figure 4. A minimum of 2 feet of bentonite pellets is placed on top of the sand to ensure that the appropriate zone is sealed. The annular space above the seal is grouted to the surface with portland cement grout and a steel protective casing with locking cap is installed. After installation, each well is response tested to ensure that the screen and sand pack are not clogged and allow the free passage of ground water. A typical well installation is presented in Figure 5. The selection of the monitored intervals has as its basis the geologic reconnaissance of the area which suggested that ground water movement occurs at or near the formation contacts. In general, the intervals screened and sampled are the fractured and more permeable zones in the following intervals: (1) from 15 feet below the base of the proposed cut section to approximately 5 feet above the Grimsby/Power Glen contact, Zone 2; (2) the contact between the Power Glen and Whirlpool Formations, Zone 3; (3) the contact between the Whirlpool and Queenston Formations, Zone 4. The placement of screen within definite zones allows the determination of interconnection between the various ground water zones and the amount of artesian confinement, if any, which may exist within the upper portions of the Queenston Formation.

Two additional observation wells were constructed to monitor a fourth interval (Zone 1) to determine water levels in the Norton Landfill. This

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interval was added to the program because ground water was encountered while placing surface casing for nest 7. Data for these wells are also summarized in Table 2. Ground Water Observation Well Reports for each well are presented in Appendix B.

5.1 Permeability Tests

The deepest hole at each location was pressure tested to determine permeability. Pressure testing was performed in other holes at pre-selected intervals as directed by the geologist. Constant-head, in-situ permeability tests were performed in selected drilled holes in accordance with Designation E-18 of the U.S.B.R. Earth Manual (Ref. 7).

Pneumatic packers were used to seal off intervals of the borehole for testing. The test was begun by adding water through a metering system to maintain a constant pressure head. From recorded pressure, rate of flow, and time data, a permeability was calculated for the interval tested. Prior to testing and lowering of the test equipment, the borehole was surged and washed with clear water to remove cuttings from pores and joints of the rock. Table 5 summarizes the results of the tests.

5.2 Well Purging

Purging of the monitoring wells was conducted from November 9, 1981, through November 17, 1981, to acquire a representative sample of ground water for chemical analysis, and to reduce the amount of water that may have been affected by drilling and well construction. Secondary to purging, recovery rates for the purged wells were recorded and values of permeability were calculated from the data. The two methods used for well purging were nitrogen gas airlifting and hand bailing. Tables 6 and 7 summarize the well purging results.

5.2.1 Nitrogen Purging

The majority of the observation wells were purged using an air lift type apparatus utilizing bottled nitrogen gas rather than compressed air. Dry

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nitrogen gas was used for purging due to its essentially inert properties and lack of volatiles, such as water vapor, which could alter the well water chemistry. The nitrogen gas was contained in 224 cubic feet capacity bottles, purchased from a local Airco distributor.

The apparatus consisted of 1/4- to 3/8-inch-diameter gas line with one end connected to the nitrogen bottle through a two-stage pressure regulator. The gas line extended along the outside of the water discharge hose with the other end inserted approximately 1 foot up inside the bottom of the discharge hose. The discharge hose was 1/2 or 3/4-inch black polyethylene pipe. The discharge and gas lines were taped together and inserted down the 2-inch PVC pipe of the observation well, keeping the lower end of the lines about 1 foot off the bottom of the well. The water was discharged into either calibrated 5-gallon plastic buckets or 20-gallon galvanized garbage containers.

5.2.2 Bailing

Hand bailing of six observation wells was required (D54, 55, 57, 60, 62, 68A). These wells contained less than 10 feet of water, which made the air lifting apparatus ineffective and inefficient due to lack of submergence.

Bailing was performed using a PVC bailer attached to a polypropylene rope. The wells could generally be bailed dry within a few minutes of bailing, therefore, the wells were allowed to recover and then rebailed in order to retrieve a sufficient well volume.

5.2.3 Volumes Purged

A minimum of two well volumes of water was purged from all wells. The majority of the wells were purged to over 4 well volumes. Calculation of well volume was based on adding the water volume within the PVC pipe and the pore volume in the sand pack between the outside of the PVC and the

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wall of the drill hole. In calculating the exterior water volume, a 25-percent porosity of the sand pack was assumed. If the water level was below the bentonite seal capping the sand pack, then the calculated volume was only for the saturated column.

Observation wells D51, 52, 53, 55, 57, 69, and 70 were designated as priority holes requiring a minimum of 2 well volumes from purging. Wells which could be bailed dry were also purged to a minimum of 2 well volumes. Two well volumes for this condition are twice the requirement specified by the Environmental Protection Agency (EPA, 1977). The remainder of the observation wells were purged at a minimum of 4 well volumes as specified by the EPA (EPA, 1977). Observation wells D54, 55, 64, 66, 68A, 69, and 70 had approximately 10 additional gallons of water purged from them by Woodward-Clyde Consultants while in the process of obtaining water samples. These additional volumes have been considered in the calculation of well volumes purged.

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6.0 GEOLOGY

The bluff on which the study area is situated is near the base of the Niagara escarpment, a major geomorphic feature that extends in an east-west direction across northern Niagara County.

The bedrock consists of nearly flat-lying (horizontal) sedimentary beds with a thin cover of unconsolidated glacial deposits, soil, and talus. The glacial deposits consist of unsorted fine to coarse sand with some traces of fine gravel, silt, and clay. The materials are commonly stiff and very compact.

The formations underlying the bluff are well-exposed in the road cut along West Jackson Street directly south of the landfills. These formations include, from oldest to youngest, the Queenston Formation of Ordovician age, and the Whirlpool, Power Glen, and Grimsby Formations of Silurian age. A stratigraphic column outlining the characteristics of all formations of the Niagara escarpment in the vicinity is presented in Table 3.

Bedding generally strikes N65W to east/west and dips less than one degree to the south. Considerable variation in orientation of bedding was observed in the cross-bedded sandstones of the Silurian formations. A geologic map prepared from field investigations and boring logs is presented in Figure 6. Geologic cross sections representing interpretation of drill hole data are presented in Figure 7, sheets 1 through 5.

The Queenston Formation, the lowermost formation exposed in the area, consists of reddish-brown shale with thin interbeds of greenish-gray shale and siltstone. Approximately 23 feet of the Queenston Formation is exposed in the West Jackson Street roadcut and 43.9 feet of the Formation was penetrated in drill hole D-56. Total thickness of the formation is reported to be 1200 feet. The elevation of the top of the Queenston is 397 feet msl at West Jackson Street and 404 feet msl in the vicinity of Mill Street.

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The Whirlpool Formation is a gray to white sandstone. This unit is very hard and fine to medium grained with thin bands of gray shale. In the study area, the Whirlpool Formation outcrops are approximately 11 feet thick and the top of the unit at the West Jackson Street roadcut is at elevation 408 feet. Within the study area total thickness of the Whirlpool Formation as determined from rock cores ranged from 9.4 feet in D-63A to 14.6 feet in D-67.

The Power Glen Formation is a greenish-gray shale and siltstone interbedded with limestone, dolomite, and calcareous sandstone. Total thickness at West Jackson Street is not known due to a talus covering on the slope. Total thickness of the formation penetrated in the core holes ranged from 18.5 feet in D-67 to 28.6 feet in D-63A.

The Grimsby Formation includes a lower white to pale-green fine-grained sandstone and an upper reddish-brown sandstone with interbedded siltstone and shale.

The jointing characteristics of the various formations are shown in Table 4. Jointing in exposures of bedrock is uniform in orientation and character. Observations from rock core indicate the joints tend to be more open to the east near the bluff. The frequency of jointing ranges from 3 to 6 foot spacing. Three near-vertical joint sets present have orientations of N45W to N70W, N55E to N75E, and N10E to N30E. In addition, horizontal bedding joints are present. The near-vertical joints dip predominantly from 85° to vertically. Joint openings measured at outcrops near the Van De Mark Landfill ranged from closed to as much as 2 inches.

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7.0 GROUND WATER OCCURRENCE

The rocks underlying the study area appear to have little to no primary (porous) permeability. The occurrence and movement of ground water is in the fractures and joints of the rocks. The core from the exploratory holes and the permeability testing indicate that more open jointing tends to occur near the contacts between formations. However, none of the zones tested are even of moderate permeability (Table 5). More open and frequent jointing appears to be present within the Whirlpool and Power Glen Formations near the cliff adjacent to West Jackson Street, which indicates that stress relief has occurred adjacent to this feature.

Water levels have been measured in the observation wells constructed during this program and the existing Van De Mark Landfill wells. They show that large differences in levels are present between ground water zones. To illustrate those relationships, water level contour maps shown on Figures 8 through 10, hydrographs shown on Figure 11 (sheets 1 through 8), and sections shown on Figure 7 (sheets 1 through 5) have been prepared. In addition, water levels recorded in the Van De Mark wells are shown on Figure 12. These data show that at least four zones of ground water are present between the ground surface and the Queenston Formation.

The first zone monitored (Zone 1) is ground water present in the area of the Norton Landfill. Only observation wells D-69 and D-70 are monitoring this zone. As illustrated by the section shown on Figure 7, sheet 5, the water level in Zone 1 is more than 20 feet higher than the level in Zone 2, the Grimsby/Power Glen contact. Considering the large difference in head and the low permeability of the formations underlying the landfill, this indicates little to no vertical movement of ground water. It can be seen on the section that ground water in this zone may extend to the cut. The upper portions of the cut will be within 10 feet of the backfill contained in the Norton Landfill.

The second zone monitored (Zone 2) is ground water at the Grimsby/Power Glen contact. Section D-D' (Figure 7, sheet 4) has been constructed along the proposed cut alignment. It can be seen on the section that

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ground water of Zone 2 will be intercepted by the cut and that ground water zones below Zone 2 will not be encountered by the cut. Further evidence is given by Sections A-A', B-B', C-C' (Figure 7, sheets 1 through 3).

The apparent direction of ground water movement in Zone 2 is to the west. Thus, the proposed cut would intercept flow in Zone 2 moving from the east or in the vicinity of the Norton Landfill and prevent it from continuing beneath the Van De Mark Landfill. Because of this interception there will be a small reversal of gradient along the western embankment between the cut and the Van De Mark Landfill. Because of the lack of recharge that would be available west of the cut and the small gradient that would develop, flow in Zone 2 from beneath the Van De Mark Landfill to the cut should not occur.

The third and fourth zones monitored (Zone 3 and Zone 4) are the ground waters at the Power Glen/Whirlpool and Whirlpool/Queenston contacts, respectively. The apparent direction of ground water movement in these zones is to the south. Water in these zones is below the base of the cut, therefore, Zones 3 and 4 will not be encountered by the cut.

The permeability measurements made in the Grimsby and Power Glen Formations range from 2.1×10^{-3} to 1.27×10^{-6} cm/sec., and the four measurements beneath the Norton Landfill taken in D-67 were less than 5.1×10^{-5} cm/sec. These measurements are supported by the permeability measurements made from the well purging data. The higher permeabilities measured were from drill holes close to the bluff, for example, D-53 and D-55. This probably reflects the condition of the jointing. Near the bluff, the rock is more jointed and permeable. Away from the bluff and with depth, joints become less frequent and tight. It is probable that the effective permeability of Zone 2 along the shortest path between the Norton Landfill and the proposed cut is less than 10^{-5} cm/sec. Along other possible paths closer to the bluff, the effective permeability may

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be as high as 10^{-4} cm/sec. Considering this range of permeability and the available hydraulic gradient indicated by the water level contours of Figure 8, the rate of discharge to the proposed cut that can be expected will be very small.

The potential for inflow to the proposed cut from Zone 1 cannot be estimated with the available data. The extent of Zone 1 and the permeability of the materials are not well-defined.

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8.0 GROUND WATER QUALITY

The centerline of the proposed Danielewicz right-of-way passes through a cut approximately 125 feet (at its closest point) east of the Van De Mark Chemical Company Landfill and approximately 60 feet (at its closest point) west of the Norton Landfill. A description of these landfills is presented in Section 3.0.

The base of the cut is below existing water table elevations. For this reason, a ground water quality program was initiated to provide additional indicators of the movement of ground water into the railroad cut from the landfill areas to the east and west.

8.1 Sampling and Analytical Procedures

Based on an investigation of the existing New York State Department of Environmental Conservation records, Niagara County Health Department files, and other investigations of the history of the two landfills, a list of chemical parameters to be determined in the ground water was established. The list consisted of eight chemical parameters (Tables 8 through 10) of which chloride was expected to be the prime indicator of chemical contribution to ground water from the Van De Mark Landfill and oil and grease from the Norton Landfill. Twenty-two wells were installed at the locations and depths shown in Figure 3. The details of well construction are given in Figure 5 and Section 5.0.

Sampling and chemical analyses were performed by RECRA Research Incorporated of Tonawanda, New York. Two rounds of sampling and analyses were undertaken in November, 1981. The first round of sampling occurred on November 2 and 3, following completion of drilling and response testing of the wells. Each of the Zone 1, 2, 3, and 4 wells was sampled at that time, with samples split in the field to facilitate duplicate analyses. Following receipt of the first round analytical results, it was determined that the Zone 1 and 2 wells would be resampled. These wells were then purged according to EPA guidelines in preparation for the second round of sampling and analyses (Section 5.2).

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The second round samples were withdrawn from the purged Zone 1 and 2 wells in mid-November. All sampling was accomplished using a steel pipe bailer, with a new bailer utilized to sample each well. Conductivity, pH, and temperature determinations were made in the field at the time of sampling. All other analyses were performed in RECRA Research, Incorporated's laboratory facilities in Tonawanda, New York. All laboratory analyses were performed in accordance with EPA methodologies. The results of the first round analyses are shown in Tables 8A, B, C, and D. Appendices C-1 and C-2 contain the laboratory data sheets from both the first and second round of analyses. The second round analyses included additional chemical parameters at the direction of Somerset Railroad Corporation.

8.2 Discussion of Results

8.2.1 Van De Mark Landfill

Tables 9 and 10 contain the most recent quarterly analyses of ground water samples taken from Van De Mark Chemical Company monitoring wells installed at that company's landfill as part of their routine landfill monitoring program. Locations of the wells are shown on Figures 2 and 3 and marked VDM 1, 2, 3, and 4. They are presented here for comparison with analyses taken in the area of the proposed railroad right-of-way, to the east of the landfill.

Tables 8A, B, C, and D show results of the first round analyses from the 22 unpurged wells installed at the different elevations necessary to allow sampling of each of the water bearing zones in the area independently.

- Table 8-A shows results from the Grimsby-Power Glen interval (Zone 2).

- Table 8-B shows results from the Power Glen-Whirlpool interval (Zone 3).

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- Table 8-C shows results from the Whirlpool-Queenston interval (Zone 4).

- Table 8-D shows results from shallow wells at the topsoil - Grimsby (Zone 1).

The laboratory data sheets for the first round analyses are found in Appendix C-1, with the second round analyses in Appendix C-2. The base of the railroad cut as it passes near the Van De Mark Landfill varies from approximately elevations 436 feet msl to 442 feet msl. If ground water is intercepted in this area, it is expected to be of a quality similar to that of Zone 2.

A comparison of the Zone 2 chloride concentrations from the first and second rounds of sampling (Table 8A and Appendices C-1 and C-2) with those taken from the Van De Mark monitoring wells shown in Tables 7 and 8 provides further indication that no movement of ground water from the Van De Mark Landfill towards the railroad right-of-way occurs, consequently, no encroachment of ground water into the cut from this landfill is expected.

8.2.2 Norton Landfill

The Norton Landfill is described in Section 3.2 of this report. The edge of the proposed cut passes approximately 10 feet to the west of the landfill at its closest point. The elevation of the centerline at the base of the cut varies from approximately 431 feet msl at Mill Street to 442 feet msl at the bridge transition on the north side of the Gulf. Due to the proximity of the proposed railroad cut to Zones 1 and 2, illustrated in Figure 7, sheet 5, ground water intercepted by the cut in this area is expected to be of a chemical quality similar to that found in Zones 1 and 2. Wells D-69 and D-70 were installed in the landfill with screening at the overburden/Grimsby interface (Zone 1). The first round of chemical analyses (Table 8D) showed recoverable oil and grease concentrations (73

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and 31 mg/1) from well D-70 which, as a means of comparison, exceeded EPA industrial discharge regulations (30 mg/1). Well D-69, 75 feet to the west of D-70, did not show similar levels of oil and grease. The second round of analyses following purging of the wells (Appendix C-2) showed a recoverable oil and grease concentration in the D-70 sample (7 mg/1) which was substantially less than the first round results, and below the EPA industrial discharge regulation. It is suspected that well D-70 may have been contaminated by the drill rig or other activity prior to initial sampling.

Following purging, an expanded program was undertaken by others to further define the quality of the Zone 1 and 2 ground water that may be intercepted by the railroad cut.

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5. Scalf, M. R.; McNabb, J. F.; Dunlop, W. J.; Cosby, R. L.; and Fryberger, J. Manual of Ground Water Sampling Procedures. National Water Well Association, p. 93. 1981.

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TABLE 1

SUMMARY OF DATA ON VAN DE MARK
OBSERVATION WELLS

WELL NO.	SOUNDED DEPTH (FT)	DRILLED DEPTH (FT)	GROUND ELEVETATION AT WELL (FT. MSL)	ELEVATION BOTTOM OF OPEN AREAS (MSL)	FORMATION WELL COMPLETED IN	REMARKS
1	18.8	22	442.2	420.2	Power Glen	Response test calculations show permeability of 2.48 x 10^{-6} cm/sec. Water level elevations range from 434.5 ft. to 430.2 ft. from 4-12-81 to 11-20-81.
2	23.0	23.0	441.7	418.7	Power Glen	No response test performed, blockage in casing. Since 4-13-81 water levels have fluctuated from 427.8 to 430.4.
3	84.0	90.0	442.18	352.18	Queenston	Well responded to test, recovery levels too slow to calculate permeability. Assume permeability is very low. Since 4-13-81 water levels have fluctuated between 373.7 and 362.1 ft. msl.
4	71.4	90.0	437.66	347.66	Queenston	Well responded to test, no calculation of permeability done. Well responded too quickly to take measurements. Water level elevations consistently recorded between 405.5 and 406.4 ft. msl.
5	18.7	20	365.6	345.6	Queenston	Well responded to test, no calculations done. Response of well too slow. Since 9-1-81 water levels have fluctuated from 347 ft. to 352 ft. msl.
6	16.9	20	365.6	345.6	Queenston	No response test performed, not enough water to bail. Since 9-1-81 water levels have fluctuated from 349 ft. to 353 ft. msl.

For location of wells see Figure 3

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TABLE 2

SOMERSET RAILROAD
VAN DE MARK/NORTON McGONIGLE HILGER LANDFILL
OBSERVATION WELL DATA

BORING NO.	WELL NEST NO.	GROUND SURFACE ELEVATION	ELEV. OF BOTTOM WELL	RISER ELEV.	SCREEN INTERVAL (EL.)	FORMATION SCREENED
D-49	1	459.8	408.5	461.90	409.5 - 418.8	Power Glen/Whirlpool
D-50	1	460.8	369.8	462.69	373.2 - 410.3	Whirlpool/Queenston
D-51	1	459.5	418.5	461.77	419.5 - 444.8	Grimsby/Power Glen
D-52	2	466.5	380.5	468.69	381.5 - 405.5	Whirlpool/Queenston
D-53	2	467.4	421.8	469.18	422.8 - 442.3	Grimsby/Power Glen
D-54	2	466.4	408.4	468.46	409.4 - 424.3	Power Glen/Whirlpool
D-55	3	467.4	422.4	469.36	423.3 - 439.4	Grimsby/Power Glen
D-56	3	467.3	360.3	469.44	362.3 - 407.5	Whirlpool/Queenston
D-57	3	467.0	407.5	469.27	408.5 - 426.2	Power Glen/Whirlpool
D-58	4	465.7	414.5	467.68	415.6 - 440.7	Grimsby/Power Glen
D-59	4	465.0	365.0	467.25	366.0 - 409.1	Whirlpool/Queenston
D-60	4	465.7	407.7	467.75	408.9 - 422.7	Power Glen/Whirlpool
D-61	5	467.4	421.5	469.31	422.5 - 441.4	Grimsby/Power Glen
D-62	5	469.0	409.9	471.04	410.9 - 422.7	Power Glen/Whirlpool
D-63A	6	469.6	368.6	471.63	369.4 - 404.6	Whirlpool/Queenston

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TABLE 2 (Continued)

BORING NO.	WELL NEST NO.	GROUND SURFACE ELEVATION	ELEV. OF BOTTOM WELL	RISER ELEV.	SCREEN INTERVAL (EL.)	FORMATION SCREENED
D-64	6	469.1	421.4	471.37	422.4 - 437.1	Grimsby/Power Glen
D-65	6	469.1	406.1	471.33	407.1 - 422.1	Power Glen/Whirlpool
D-66	7	464.4	426.4	466.33	427.4 - 440.4	Grimsby/Power Glen
D-67	7	462.9	362.9	465.91	363.9 - 408.9	Whirlpool/Queenston
D-68A	7	465.2	407.2	467.55	408.2 - 421.2	Power Glen/Whirlpool
D-69		464.4	447.0	466.11	447.2 - 458.4	Grimsby/Soil Landfill
D-70		466.3	446.9	468.10	447.2 - 458.3	Grimsby/Soil Landfill

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TABLE 3

STRATIGRAPHIC COLUMN OF THE NIAGARA ESCARPMENT
ALONG THE DANIELEWICZ ROUTE

SYSTEM	SERIES	GROUP	FORMATION	MEMBER	THICKNESS	DESCRIPTION
Silurian	Niagaran	Lockport	Lockport	Goat Island	8'+	Limestone: Medium to dark gray, thin to medium-bedded, medium hard, coarsely crystalline, fresh to slightly weathered. Abundant fossils. Occasional thin dolomite interbeds. Frequent irregular wavy bedding planes.
				Gasport	5'	Dolomite: Medium brown to medium gray, medium-bedded to massive, hard, fine to very fine crystalline, fresh to slightly weathered.
				Decew	4-5'	Dolomite: Medium brown to dark gray, thin-bedded, medium hard, very fine crystalline, slightly to moderately weathered. Occasional shell lenses, faint lamination and pitted surfaces. Gradational contact with Rochester formation.
		Clinton	Rochester		~70'	Shale: Dolomitic, dark gray, thin-bedded fissile, medium hard, microcrystalline, severely weathered. Occasional thin dolomite and limestone interbeds. Seldom more than 5' exposed before completely weathered to clay. Clay minerals: illite, chlorite, kaolinite, occasional montmorillonite.
			Irondequoit	Unnamed	12'	Limestone: Medium brown to medium gray with pinkish tint, thin to medium-bedded, hard, coarsely crystalline, fresh to slightly weathered, fossiliferous. Pink crystals: Rhodochrosite?

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TABLE 3 (Continued)

SYSTEM	SERIES	GROUP	FORMATION	MEMBER	THICKNESS	DESCRIPTION
Silurian	Niagaran	Clinton	Irondequoit	Rockaway	9.0'+	Limestone: Dark gray, hard, fine to coarsely crystalline, occasional shale partings. Fresh to severely weathered at shale partings.
			Reynales		1.0'	Lime Dolomite: Medium to dark gray, thin to medium-bedded, medium hard to hard, very fine to coarsely crystalline, slightly to severely weathered, contorted beds and occasional clay filled solution cavities.
			Neahga		1.0'-1.5'	Shale: Dark gray, thin-bedded, very soft, fresh.
		Medina	Thorold		2.0'	Mudstone: Light green, medium soft, calcareous, fresh.
			Grimsby	Zone B	15.0'	Sandstone: Red to green, medium-bedded to massive, medium hard, fine grained, fresh to severely weathered. Occasional shale partings and siltstone and claystone interbeds.
				Zone A	~60'	Sandstone, Siltstone with interbedded Shale: Dark red brown to light green to white sandstone and siltstone with red and green shale interbeds. Sandstone/Siltstone: Thin to medium-bedded, very fine to medium grained, medium hard to very hard, fresh, occasional green mottling, fossiliferous. Shale: Thin bedded to fissile, medium soft, moderately to severely weathered.

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TABLE 3 (Continued)

SYSTEM	SERIES	GROUP	FORMATION	MEMBER	THICKNESS	DESCRIPTION
Silurian	Niagaran	Medina	Power Glen		27.0'	Shale: With interbedded Dolomite and calcareous Sandstone: 60% shale, 40% dolomite and sandstone. Shale: dark gray to green, thin-bedded to fissile, medium soft to soft, microcrystalline, severely weathered. Dolomite and Sandstone: dark gray to green thin-bedded, medium hard, fine-grained, fresh to moderately weathered. Sandstone is cross-bedded.
			Whirlpool		12.0'	Sandstone: White with black speckling (quartz and unknown black mineral), thin-bedded in upper 2', medium-bedded to massive in remainder, fine-grained, hard to very hard, fresh. Cross-bedded, ripple marks.
Ordovician	Cincinnatian	Richmond	Queenston		1200'+	Claystone: Dark reddish-brown with pale green mottling and occasional thin pale green claystone interbeds, medium soft to very soft, calcareous, fresh to completely weathered.

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TABLE 4

JOINTING CHARACTERISTICS OF ROCKS
IN VDM LANDFILL AREA

FORMATION/ROCK TYPE	PREDOMINANT JOINT ORIENTATION OPEN SPACE (IN.)/SPACING		
Grimsby/Sandstone, Siltstone, Shale	N60W to E-W Closed* to 2"/3"-30"	N60 to 70E Closed to ¼"/6"-30"	N20 to 30E Closed to 2"/18"-24"
Power Glen/Sandstone, Siltstone, Shale, Limestone, Dolomite	N45 to 70W Tight**/3'-6'	N65 to 70W Tight/2'-6'	
Whirlpool/Sandstone, Ortho-quartzite	N55 to 70W Closed to 2"/2'	N70E Closed to 1"/2'-4'	
Queenston/Siltstone, Shale	N70W Closed /2'-6'	N55 to 75E Closed/2'-6'	N10 to 30E Closed/2'-4'

Note: Dip of joints consistently 85° to vertical measured from the horizontal.

* "Closed" describes open space ≤0.1 mm.
**"Tight" describes open space 0.1 mm to 1 mm.

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TABLE 5

SOMERSET RAILROAD
PRESSURE TEST RESULTS

BORING NO.	ELEVATION INTERVAL TESTED (MSL)	PERMEABILITY CM/SEC	FORMATION
D-50	372.6 - 383.4	No Water Take*	Queenston
	382.9 - 393.4	No Water Take**	Queenston
	392.9 - 403.4	No Water Take**	Queenston
	402.9 - 413.4	No Water Take*	Whirlpool
	412.9 - 423.4	5.2×10^{-4}	Power Glen
	422.9 - 433.4	4.8×10^{-4}	Power Glen
	437.9 - 443.4	7.7×10^{-6}	Grimsby
D-52	379.0 - 389.5	No Water Take*	Queenston
	386.0 - 396.5	No Water Take*	Queenston
	396.0 - 406.5	2.0×10^{-5}	Queenston
	406.0 - 416.5	1.5×10^{-4}	Whirlpool
	416.0 - 426.5	2.1×10^{-6}	Power Glen
D-53	421.5 - 432.27	2.74×10^{-6}	Power Glen
	434.9 - 445.4	1.3×10^{-3}	Grimsby
D-55	423.4 - 433.9	1.7×10^{-4}	Power Glen
	436.2 - 441.2	2.1×10^{-3}	Grimsby
D-56	359.8 - 370.3	No Water Take*	Queenston
	366.8 - 377.3	4.8×10^{-7}	Queenston
	376.8 - 387.3	Test Invalid	Queenston
	386.8 - 397.3	1.0×10^{-2}	Queenston
	396.8 - 407.3	2.1×10^{-6}	Queenston
	406.8 - 417.3	1.5×10^{-4}	Whirlpool
	416.8 - 427.3	Test Invalid	Power Glen
	426.8 - 437.3	Test Invalid	Power Glen
D-59	368.6 - 379.1	1.8×10^{-4}	Queenston
	378.6 - 389.1	7.9×10^{-7}	Queenston
	388.6 - 399.1	No Water Take†	Queenston
	398.6 - 409.1	3.5×10^{-6}	Queenston
	408.6 - 419.1	4.4×10^{-6}	Whirlpool
	418.6 - 429.1	3.4×10^{-6}	Power Glen
	428.6 - 439.1	7.0×10^{-7}	Power Glen

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TABLE 5 (Continued)

BORING NO.	ELEVATION INTERVAL TESTED (MSL)	PERMEABILITY CM/SEC	FORMATION
D-63A	372.25 - 381.75	No Water Take*	Queenston
	379.5 - 390.0	No Water Take*	Queenston
	389.5 - 400.0	No Water Take*	Queenston
	399.5 - 410.0	1.3×10^{-6}	Whirlpool
	409.5 - 420.0	7.3×10^{-5}	Power Glen
	419.5 - 430.0	1.3×10^{-6}	Power Glen
	429.5 - 440.0	1.3×10^{-5}	Power Glen
	439.5 - 450.0	4.3×10^{-4}	Grimsby
	449.5 - 460.0	2.3×10^{-4}	Grimsby
D-67	368.03 - 378.52	3.7×10^{-6}	Queenston
	378.02 - 388.52	3.7×10^{-6}	Queenston
	388.02 - 398.52	3.7×10^{-6}	Queenston
	398.02 - 408.52	3.7×10^{-6}	Whirlpool
	408.02 - 418.52	1.0×10^{-5}	Whirlpool
	418.02 - 428.52	5.1×10^{-5}	Power Glen
	428.02 - 438.52	3.7×10^{-6}	Power Glen
	438.02 - 448.52	1.27×10^{-6}	Grimsby

*Test performed at 10, 15, and 20 psi.
**Test performed at 10 and 15 psi.
†Test performed at 15, 20, and 25 psi.

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TABLE 6

RESPONSE TEST RESULTS FROM WELL PURGING

BORING NO.	TEST INTERVAL	PERMEABILITY CM/SEC	REMARKS
D-49	409.5 - 420.1	2.07×10^{-5}	
D-50	373.2 - 410.3	1.21×10^{-5}	
D-51	419.5 - 440.3	9.1×10^{-6}	
D-52	381.5 - 405.5	5.8×10^{-6}	
D-53	422.8 - 441.6	2.4×10^{-4}	
D-54			insufficient recovery
D-55			insufficient recovery
D-56	362.2 - 407.5	2.9×10^{-7}	
D-57	408.5 - 412.1	1.4×10^{-4}	
D-58			dry
D-59	366.0 - 409.1	1.4×10^{-5}	
D-60			insufficient recovery
D-61	422.5 - 436.4	4.0×10^{-5}	
D-62	410.9 - 419.0	4.2×10^{-5}	
D-63	369.4 - 404.6	1.3×10^{-6}	
D-64	422.4 - 437.1	2.8×10^{-5}	
D-65			insufficient recovery
D-66	427.4 - 439.2	2.2×10^{-5}	
D-67	363.9 - 408.9	2.1×10^{-6}	
D-68	408.2 - 412.6	2.4×10^{-5}	
D-69	447.2 - 458.4	1.5×10^{-4}	
D-70	447.2 - 458.3	1.6×10^{-4}	

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TABLE 7

WELL PURGING SUMMARY SHEET

BORING NO.	AMOUNT CALCULATED TO BE PURGED	AMOUNT ACTUALLY PURGED	WELL VOLUMES PURGED	DATE COMPLETED
D-49	25.4	27.4	4.3	11/16
D-50	74.2	73.0	4.0	11/18
D-51	19.8	35.0	3.6	11/11
D-52	24.8	38.5	3.1	11/11
D-53	18.3	32.5	3.3	11/11
D-54	3.9	4.75 +10	7.5	11/18
D-55	9.7	5 +10	3.1	11/12
D-56	90.1	86.1	3.95	11/17
D-57	4.05	4	2.0	11/14
D-58	--	--	--	--
D-59	83.5	88.3	4.2	11/18
D-60	4.3	10.0	5.0	11/17
D-61	28.1	33.5	4.8	11/13
D-62	14.4	10.25	2.9	11/17
D-63A	70.9	90	5.1	11/13
D-64	32.6	42 +10	6.3	11/13
D-65	22.1	--	--	--
D-66	23.0	23 +10	5.7	11/16
D-67	85.6	89.3	4.2	11/16
D-68	9.9	4.5 +10	2.9	11/18
D-69	21.2	25 +10	3.3	11/12
D-70	22.1	28 +10	3.4	11/12

TABLE 8-A

RESULTS OF CHEMICAL ANALYSES PERFORMED BY RECRA RESEARCH, INC.

Well No.	Temp. (C)	pH	Specific Conductance µmhos/cm	TOC mg/l	TDS mg/l	CL mg/l	Oil & Grease mg/l	T Fe mg/l
	ZONE 2		GRIMSBY/POWER GLEN CONTACT ELEV. 419 - 437.2					
D51	12.5	6.90	295	2.4	260	28	<5	6.1
	12	7.15	295	5.2	260	27	<5	14
D53	12	6.65	353	8.1	280	32	<5	3.8
	12	6.75	360	4.2	340	32	<5	2.5
D55	12	6.55	430	4.8	370	37	<5	7.1
	11.5	6.80	430	4.7	360	37	<5	4.8
D58	DRY HOLE							DRY HOLE
D61	10	6.65	420	6.0	410	36	26	2.0
	10	6.75	510	10	390	36	<5	11
D64	11.5	8.20	244	5.7	180	24	8	1.8
	13.0	8.45	242	6.8	170	23	<5	21
D66	13	7.50	1,040	4.0	860	200	<5	8.0
	12.5	7.45	1,000	4.4	830	190	<5	1.6

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TABLE 8-B

RESULTS OF CHEMICAL ANALYSES PERFORMED BY RECRA RESEARCH, INC.

ZONE 3	POWER GLEN - WHIRLPOOL CONTACT ELEV. 407.1 - 420.2							
Well No.	Temp. (C)	pH	Specific Conductance µmhos/cm	TOC mg/l	TDS mg/l	CL mg/l	Oil & Grease mg/l	T Fe mg/l
D49	11.5	8.85	283	1.1	290	20	<5	16
	12	9.00	305	1.3	290	20	<5	8.8
D54	11	9.50	1,480	2.4	1,400	290	<5	22
	11	9.65	1,480	6.4	1,400	270	<5	49
D57	10	8.10	483	3.8	540	39	<5	9.8
	10	8.15	415	3.7	660	40	<5	11
D62	10	9.95	510	3.3	550	19	6	17
	10	10.25	505	1.5	520	19	<5	18
D65	11.5	7.85	1,290	4.5	1,200	37	<5	4.8
	11.5	8.30	1,290	9.5	1,100	37	<5	3.3
D68-A	12	8.75	255	1.8	230	19	<5	8.4
	12	8.95	258	2.5	240	20	<5	6.7
D60	10.5	7.35	1,680	8.1	1,700	36	<5	16
	10.5	7.55	1,700	7.3	1,800	30	<5	2.9

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TABLE 8-C

RESULTS OF CHEMICAL ANALYSES PERFORMED BY RECRA RESEARCH, INC.

ZONE 4			WHIRLPOOL - QUEENSTON ELEV. 362.3 - 405.9					
Well No.	Temp. (C)	pH	Specific Conductance µmhos/cm	TOC mg/l	TDS mg/l	CL mg/l	Oil & Grease mg/l	T Fe mg/l
D50	12	11.90	1,830	4.5	790	33	<5	0.91
	11.5	11.90	1,830	5.7	750	33	<5	0.90
D52	12.5	6.35	3,000	8.8	2,700	1,100	30	1.4
	12	7.15	2,690	9.6	2,300	910	6	0.70
D56	11	10.45	500	6.4	460	79	<5	5.6
	11	10.70	600	5.0	480	79	<5	7.2
D59	10.5	8.30	249	4.5	220	22	<5	2.6
	10.5	8.25	251	7.9	220	22	<5	2.8
D63-A	12	9.65	255	5.6	270	23	<5	4.7
	11	9.80	275	5.8	270	24	<5	3.0
D67	13	10.65	540	3.2	410	33	<5	3.1
	12.5	10.75	530	2.0	410	33	15	3.5

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TABLE 9

ANALYSIS OF VAN DE MARK SAMPLES
BY
ADVANCED ENVIRONMENTAL SYSTEMS, INC.

Sample Date April 1981						
Sample Site	pH	TDS mg//1	TOC mg/1	DO mg/1	CL mg/1	Specific Conductance µmhos/cm
Eighteenmile Creek Site No. 1	8.27	411	11.5	10.1	53.2	609
Eighteenmile Creek Site No. 2	8.26	429	12.8	10.0	52.1	619
Eighteenmile Creek Site No. 3	8.39	439	15.6	8.90	48.9	612
Landfill Well No. 1 (22' Deep)	8.27	1,820	30.9	7.65	1,010.	2,540
Landfill Well No. 2 (23' Deep)	10.2	1,710	50.0	6.90	417.	2,350
Landfill Well No. 3 (90' Deep)*	7.08	21,200	374.	4.40	4,470.	19,400
Landfill Well No. 4 (90' Deep)*	4.71	19,930	90.2	0.90	12,300.	24,300
Landfill Swale	7.05	784	18.1	9.05	245.	1,250

*Wells 3 & 4 are transposed on Figures 2 and 3.

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TABLE 8-D

RESULTS OF CHEMICAL ANALYSES PERFORMED BY RECRA RESEARCH, INC.

ZONE 1		MISC, SOIL - ELEV. 447.2 - 456.6						
Well No.	Temp. (C)	pH	Specific Conductance µmhos/cm	TOC mg/1	TDS mg/1	CL mg/1	Oil & Grease mg/1	T Fe mg/1
D69	14	6.7	800	6.8	670	29	14	7.4
	14	6.8	780	8.7	730	29	<5	89
D70	14.5	6.85	640	24	570	31	73	120
	13	6.80	540	33	590	32	31	260

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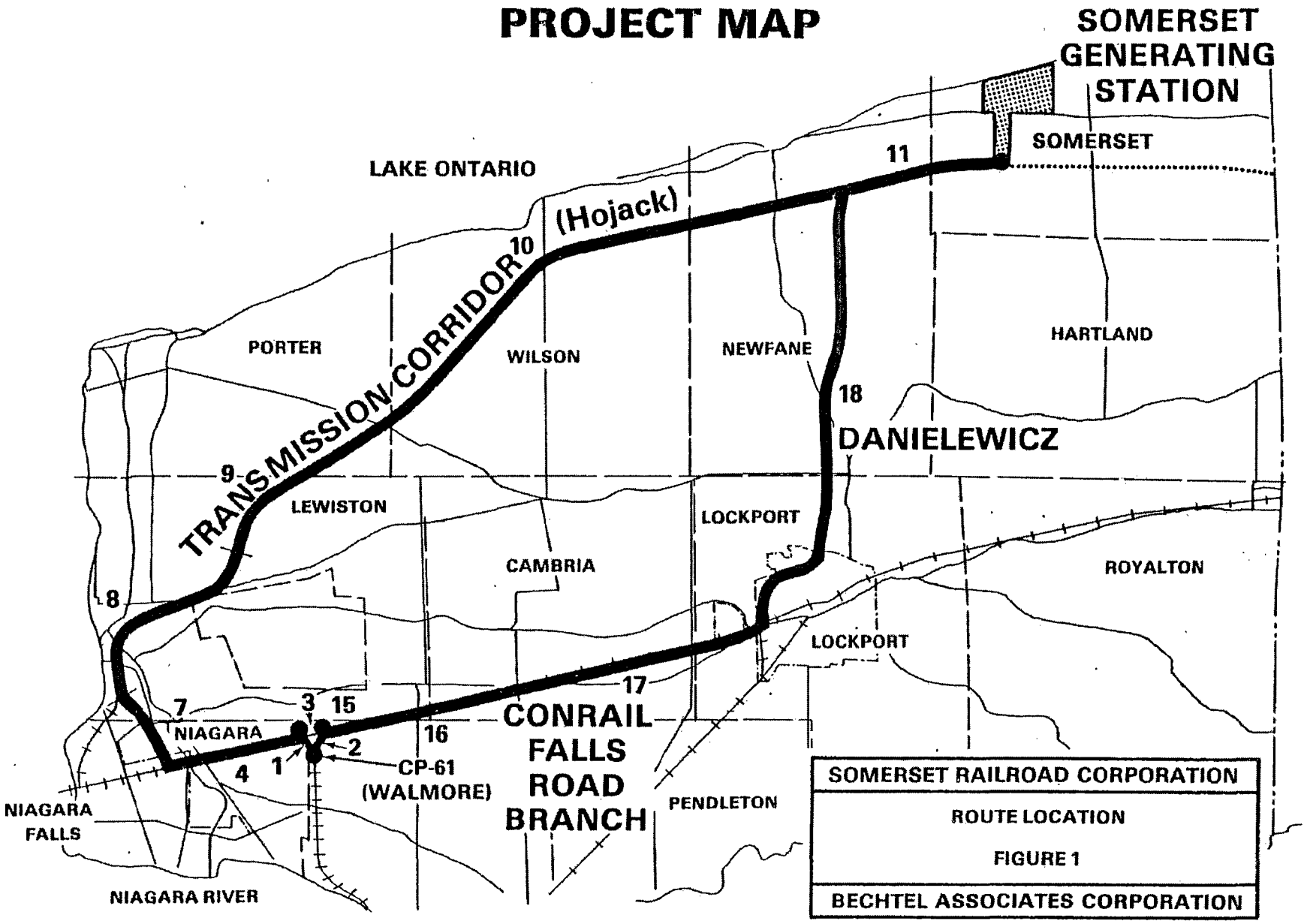
TABLE 10

ANALYSIS OF VAN DE MARK SAMPLES
BY
ADVANCED ENVIRONMENTAL SYSTEMS, INC.

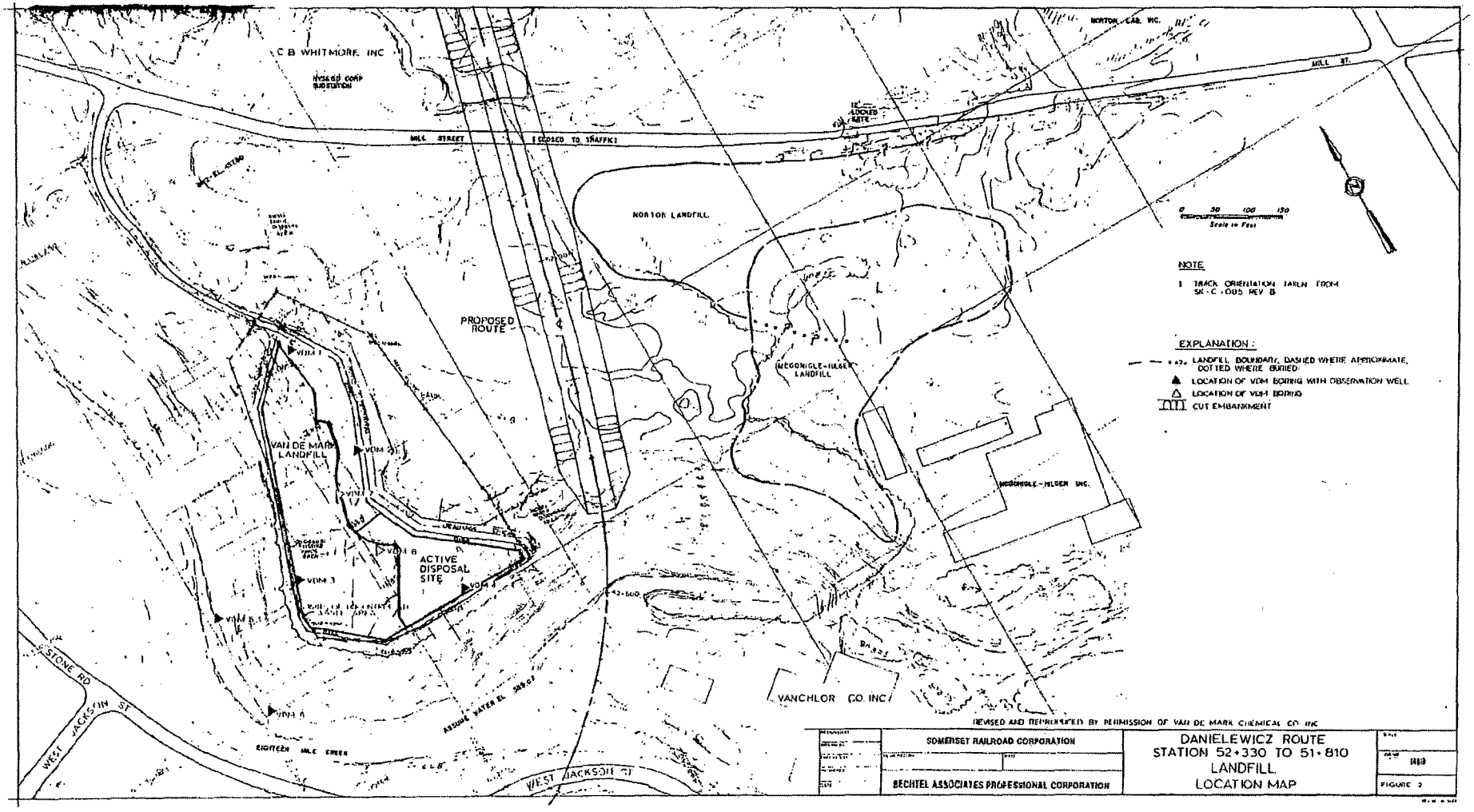
Sample Date October 1981						
Sample Site	pH	TDS mg/1	TOC mg/1	DO mg/1	CL mg/1	Specific Conductance µmhos/cm
Eighteenmile Creek Site No. 1	7.56	38.3	5.1	9.3	39	520
Eighteenmile Creek Site No. 2	6.97	561.2	11.0	7.9	138	830
Eighteenmile Creek Site No. 3	7.08	540.1	7.87	7.1	131	791
Landfill Well No. 1 (22' Deep)	7.63	1,938.2	29.7	1.8	856	3,270
Landfill Well No. 2 (23' Deep)	9.55	776.4	19.5	6.1	236	1,300
Landfill Well No. 3 (90' Deep)*	2.56	36,898.	64.6	15.3	13,895	32,800
Landfill Well No. 4 (90' Deep)*	4.12	30,356.4	97.3	--	11,996	28,800
Landfill Swale	4.72	9,121.	7.2	0.1	3,498	10,360

*Wells 3 and 4 are transposed on Figures 2 and 3.

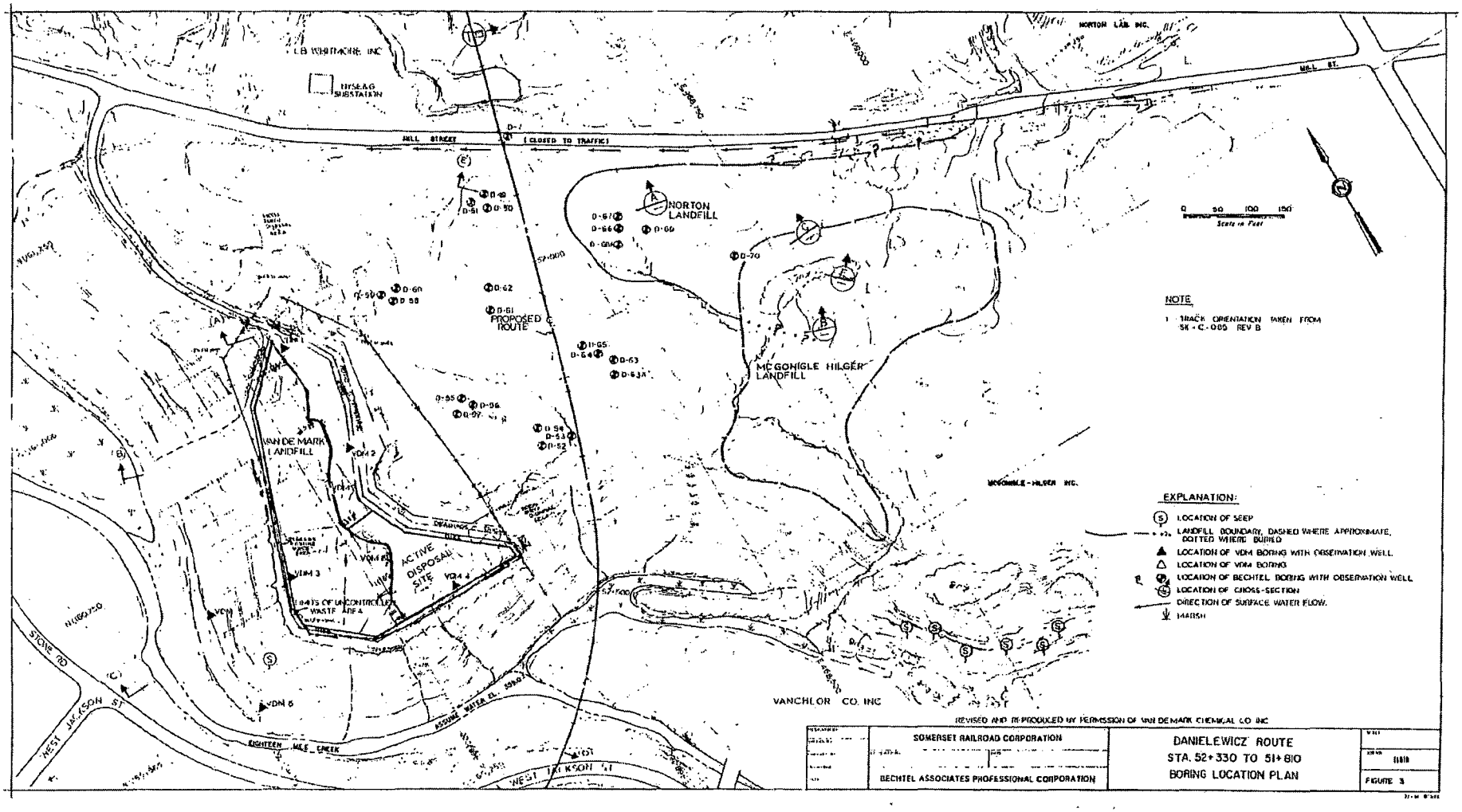
PROJECT MAP



VDM001507

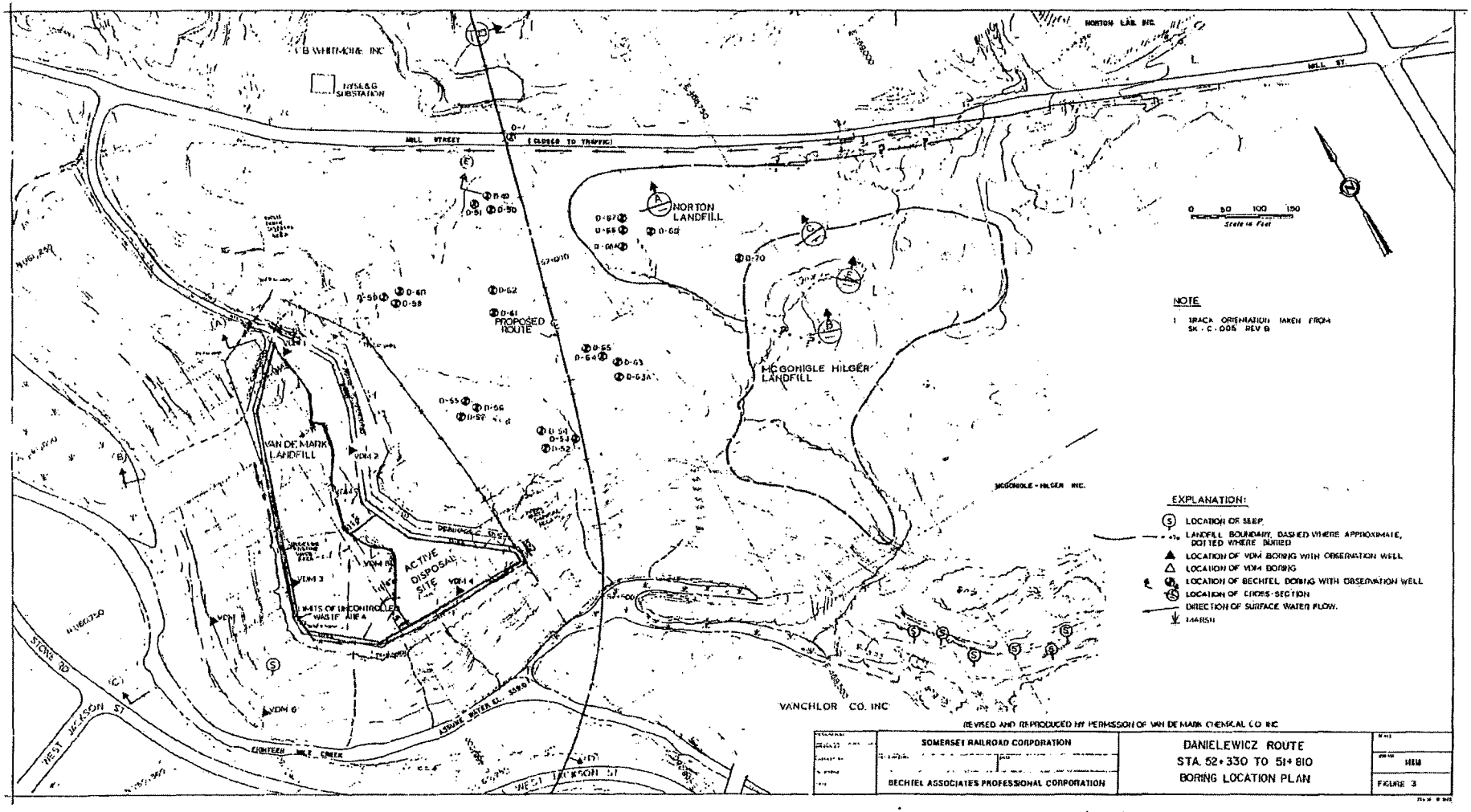

C B WHITMORE INC
NYSEED CORP SUBSTATION
MILL STREET
(CLOSED TO TRAFFIC)
NORTON LANDFILL
PROPOSED ROUTE
MCDONIGLE-HILGER LANDFILL
VAN DE MARK LANDFILL
ACTIVE DISPOSAL SITE
VDM 1
VDM 2
VDM 3
VDM 4
VDM 5
VDM 6
VDM 8
MCDONIGLE-HILGER INC.
VANCHLOR CO INC
NORTON LAB. INC.
MILL ST.
STONE RD
WEST JACKSON ST
EIGHTEEN MILE CREEK
ASSUME WATER EL 389.0
0 50 100 150
Scale in Feet
NOTE
1 TRACK ORIENTATION TAKEN FROM SK-C-085 REV B
EXPLANATION:
LANDFILL BOUNDARY, DASHED WHERE APPROXIMATE, DOTTED WHERE BURIED
LOCATION OF VDM BORING WITH OBSERVATION WELL
LOCATION OF VDM BORING
CUT EMBANKMENT
REVISED AND REPRODUCED BY PERMISSION OF VAN DE MARK CHEMICAL CO INC
SOMERSET RAILROAD CORPORATION
BECHTEL ASSOCIATES PROFESSIONAL CORPORATION
DANIELEWICZ ROUTE
STATION 52+330 TO 51+810
LANDFILL
LOCATION MAP
FIGURE 2

VDM01508



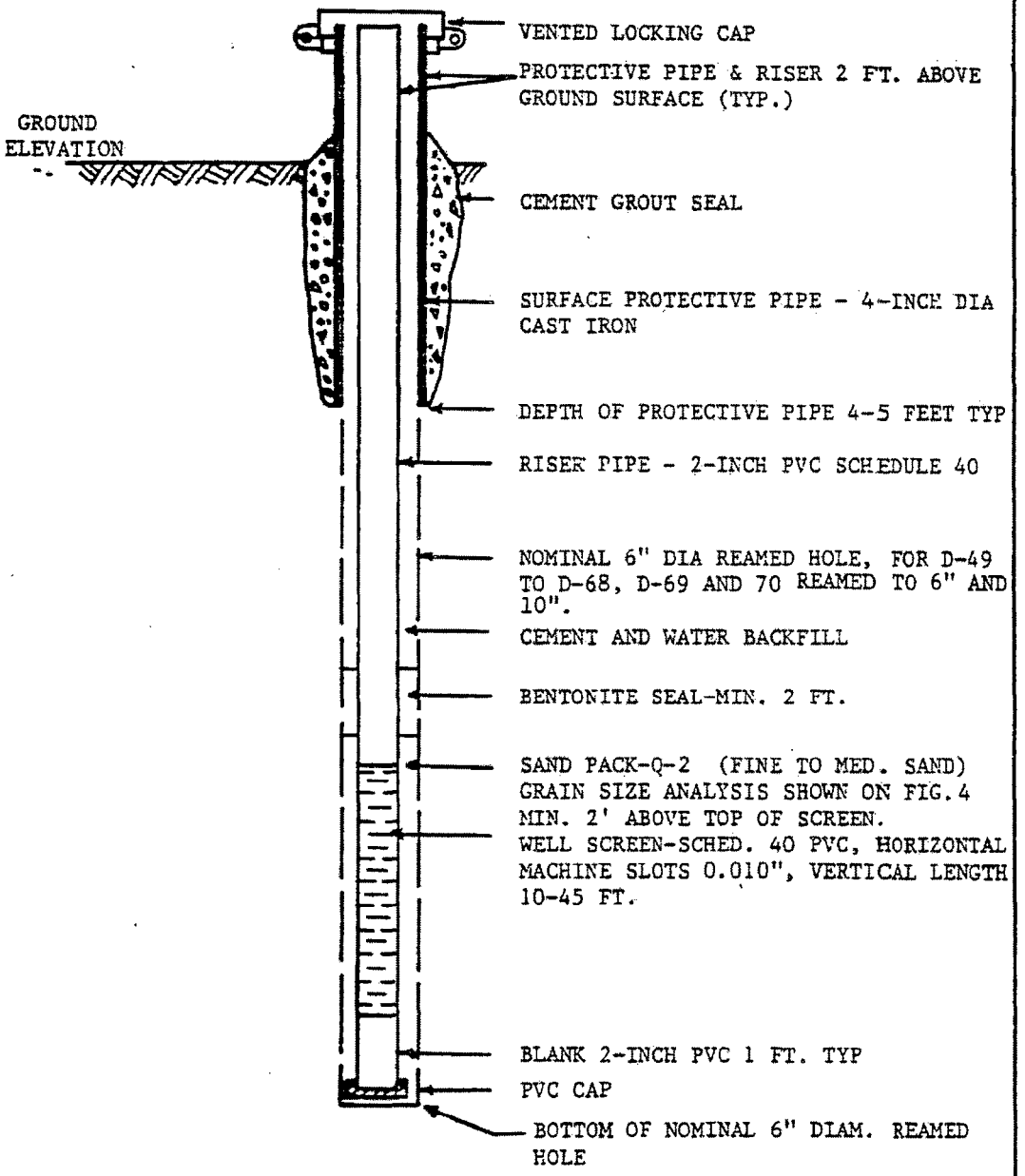
NORTON LAB. INC.
MILL ST.
MILL STREET (CLOSED TO TRAFFIC)
NORTON LANDFILL
PROPOSED ROUTE
MCGONIGLE HILGER LANDFILL
VAN DE MARK LANDFILL
ACTIVE DISPOSAL SITE
VANCHLOR CO. INC
STONE RD
WEST JACKSON ST
EIGHTEEN MILE CREEK
ASSUME WATER EL. 559.0
NOTE
1. TRACK ORIENTATION TAKEN FROM SK-C-085 REV B
EXPLANATION:
LOCATION OF SEEP
LANDFILL BOUNDARY, DASHED WHERE APPROXIMATE, DOTTED WHERE BURIED
LOCATION OF VDM BORING WITH OBSERVATION WELL
LOCATION OF VDM BORING
LOCATION OF BECHTEL BORING WITH OBSERVATION WELL
LOCATION OF CROSS-SECTION
DIRECTION OF SURFACE WATER FLOW
MARSH
REVISED AND REPRODUCED BY PERMISSION OF VAN DE MARK CHEMICAL CO. INC.
SOMERSET RAILROAD CORPORATION
BECHTEL ASSOCIATES PROFESSIONAL CORPORATION
DANIELEWICZ ROUTE
STA. 52+330 TO 51+810
BORING LOCATION PLAN
FIGURE 3

VDM01509



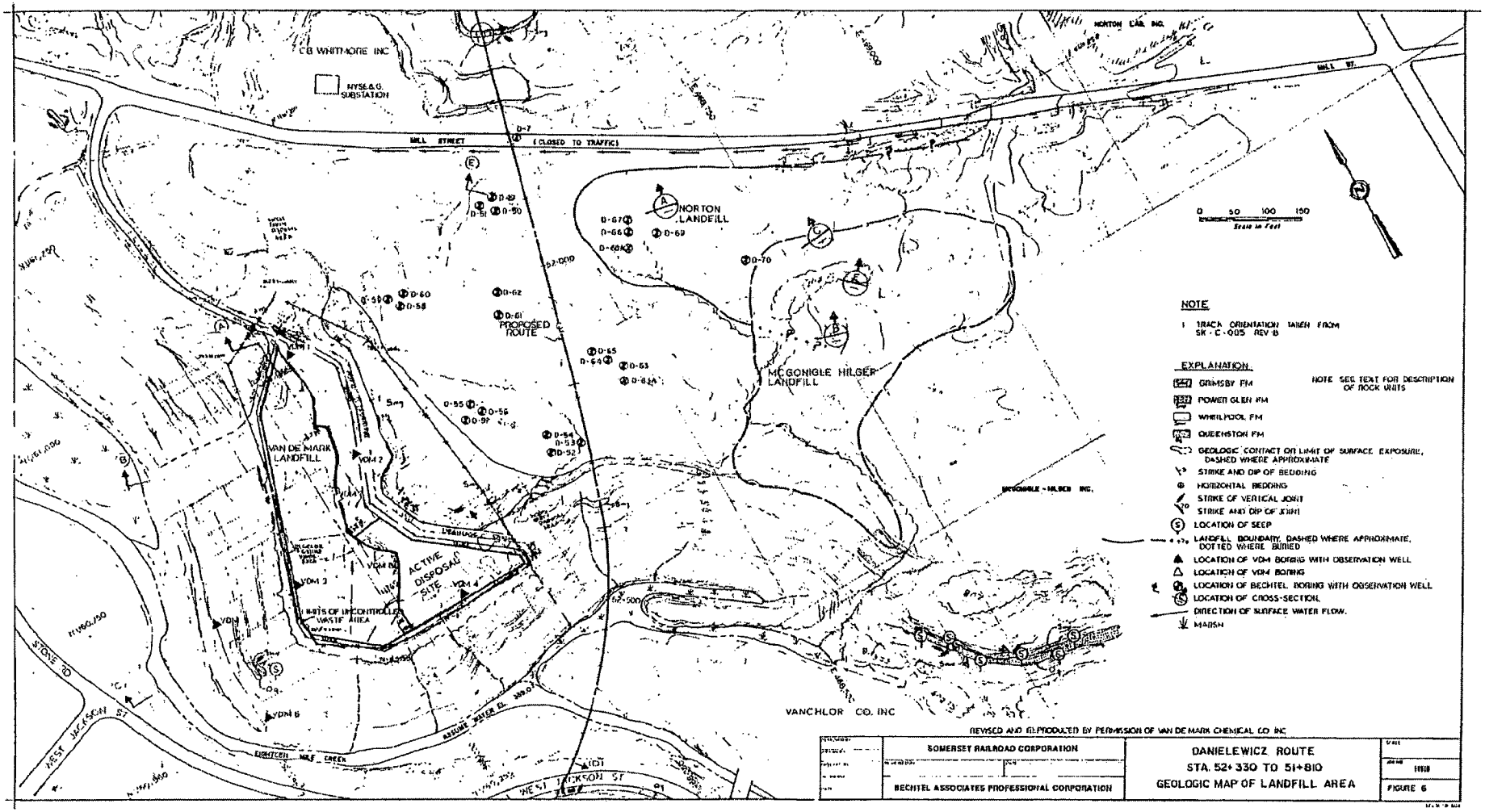
NORTON LAB. INC.
MILL ST.
C B WHITMORE INC
NYSE&G SUBSTATION
MILL STREET (CLOSED TO TRAFFIC)
NORTON LANDFILL
PROPOSED ROUTE
MCGONIGLE HILGER LANDFILL
VAN DE MARK LANDFILL
ACTIVE DISPOSAL SITE
LIMITS OF UNCONTROLLED WASTE AREA
VDM 2
VDM 3
VDM 4
VDM 6
MCGONIGLE - HILGER INC.
VANCHLOR CO. INC
STOWE RD
WEST JACKSON ST
FIGHTEEN MILE CREEK
ASSUME WATER EL. 559.0
0 50 100 150
Scale in Feet
NOTE
1 TRACK ORIENTATION TAKEN FROM SK - C - 005 REV B
EXPLANATION:
LOCATION OF SEEP
LANDFILL BOUNDARY, DASHED WHERE APPROXIMATE, DOTTED WHERE BURIED
LOCATION OF VDM BORING WITH OBSERVATION WELL
LOCATION OF VDM BORING
LOCATION OF BECHTEL BORING WITH OBSERVATION WELL
LOCATION OF CROSS-SECTION
DIRECTION OF SURFACE WATER FLOW.
MARSH
REVISED AND REPRODUCED BY PERMISSION OF VAN DE MARK CHEMICAL CO INC
SOMERSET RAILROAD CORPORATION
BECHTEL ASSOCIATES PROFESSIONAL CORPORATION
DANIELEWICZ ROUTE
STA. 52+330 TO 51+810
BORING LOCATION PLAN
FIGURE 3

VDM01510



BECHTEL	
SOMERSET RAILROAD CORPORATION	
TYPICAL WELL CONSTRUCTION	
14818	FIGURE 5

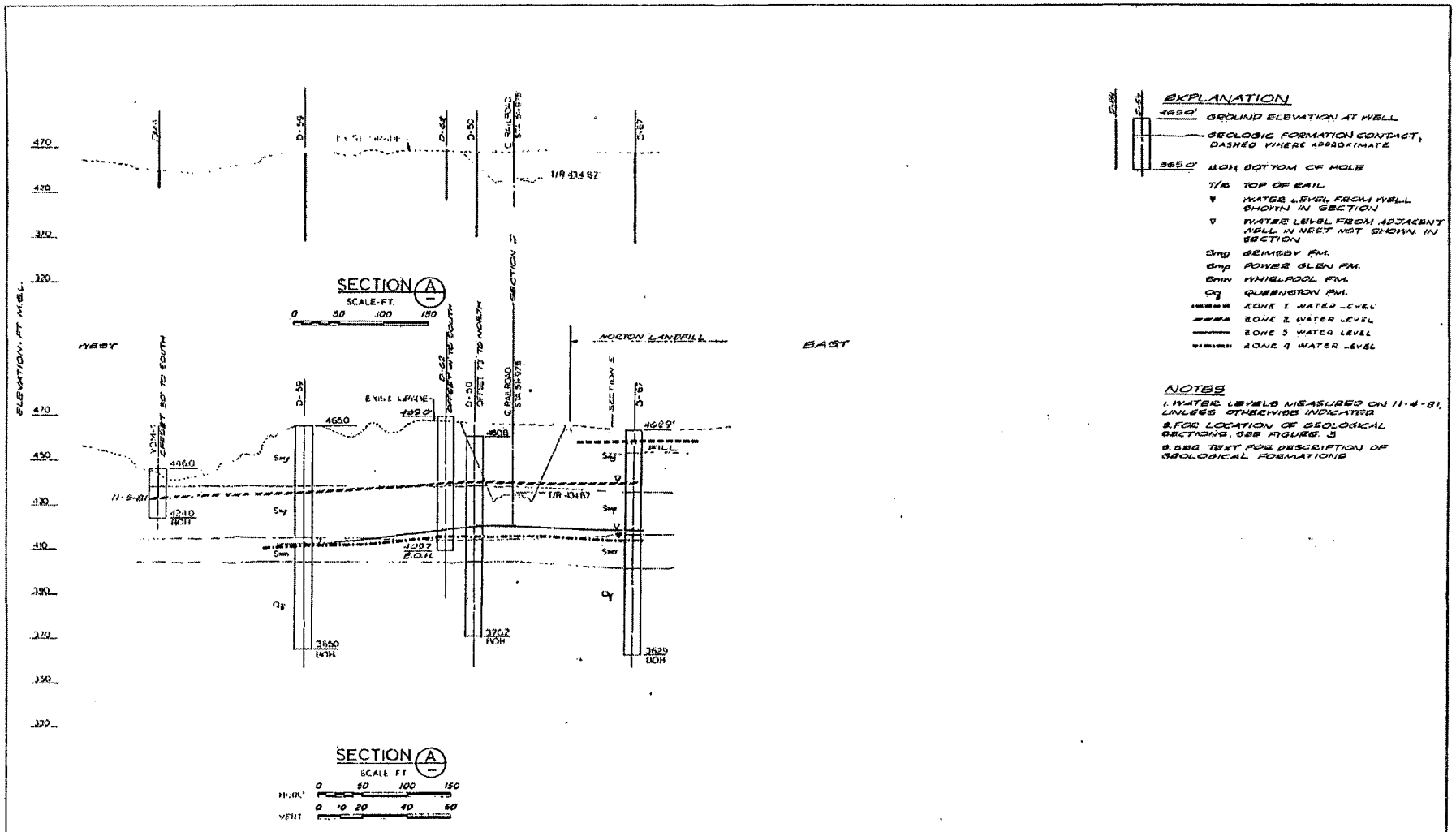
VDM01511



REVISED AND REPRODUCED BY PERMISSION OF VAN DE MARK CHEMICAL CO INC

	SOMERSET RAILROAD CORPORATION	DANIELEWICZ ROUTE STA. 52+330 TO 51+810 GEOLOGIC MAP OF LANDFILL AREA
	BECHTEL ASSOCIATES PROFESSIONAL CORPORATION	FIGURE 6

VDM01512



EXPLANATION

- 4650' — GROUND ELEVATION AT WELL
- GEOLOGIC FORMATION CONTACT, DASHED WHERE APPROXIMATE
- 3650' BOH BOTTOM OF HOLE
- T/R TOP OF RAIL
- ▼ WATER LEVEL FROM WELL SHOWN IN SECTION
- ▽ WATER LEVEL FROM ADJACENT WELL WHERE NOT SHOWN IN SECTION
- Sdy GRIMSBY FM.
- Sgp POWER GLEN FM.
- Smn WHIRLPOOL FM.
- Dg QUENSTON FM.
- ZONE 1 WATER LEVEL
- ZONE 2 WATER LEVEL
- ZONE 3 WATER LEVEL
- ZONE 4 WATER LEVEL

NOTES

1. WATER LEVELS MEASURED ON 11-4-81, UNLESS OTHERWISE INDICATED
2. FOR LOCATION OF GEOLOGICAL SECTIONS, SEE FIGURE 3
3. SEE TEXT FOR DESCRIPTION OF GEOLOGICAL FORMATIONS

NO	DATE	REVISIONS	BY	CHK	APP'D	NO	DATE	REVISIONS	BY	CHK	APP'D

DESIGNED BY
DRAWN BY
TRACED BY
CHECKED BY

SOMERSET RAILROAD CORPORATION

APPROVED BY DATE

BECHTEL ASSOCIATES PROFESSIONAL CORPORATION

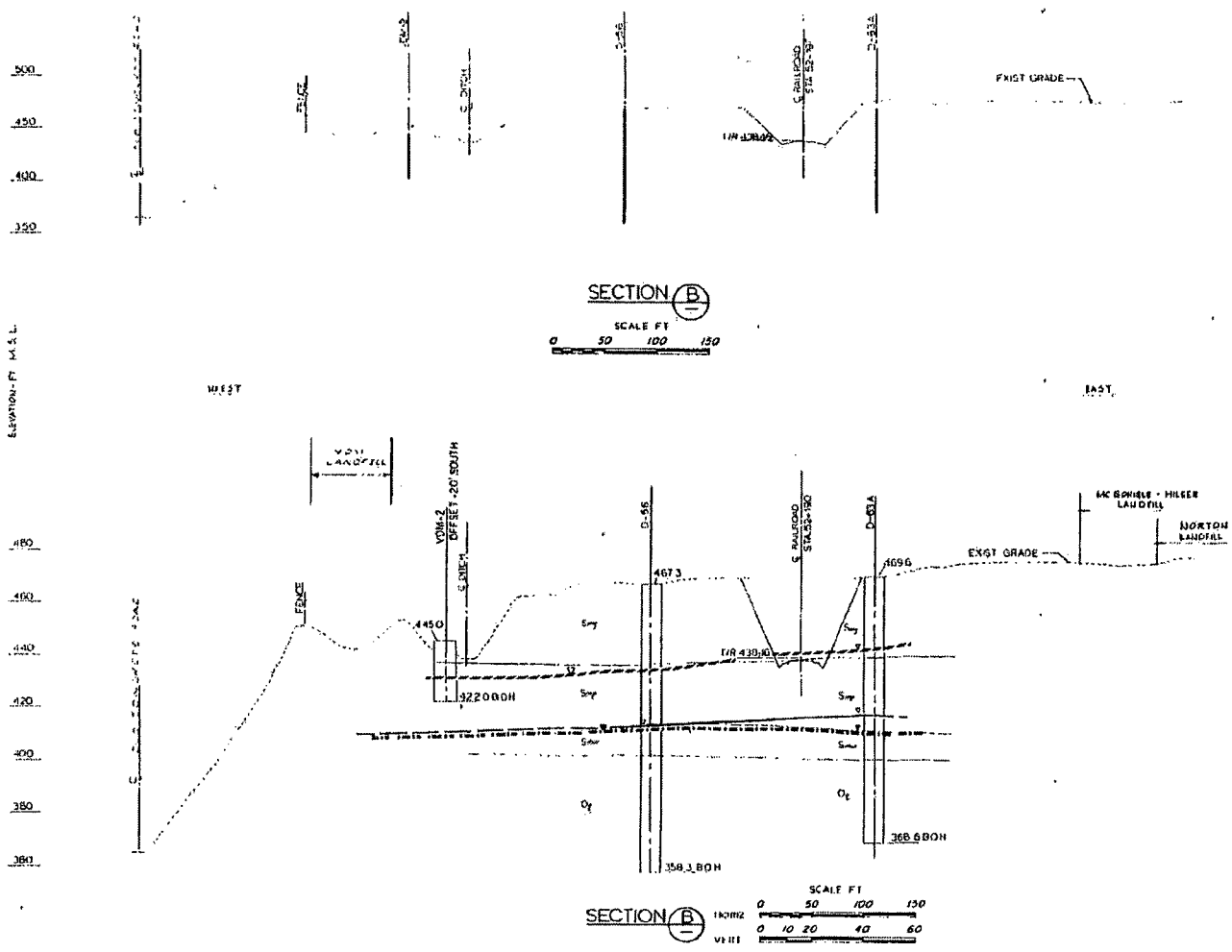
DANIELEWICZ ROUTE
STA. 52+330 TO 51+810
CROSS SECTION A

SCALE

JOB NO 14818

FIGURE 7 SHEET NO 1 OF 5

VDM01513

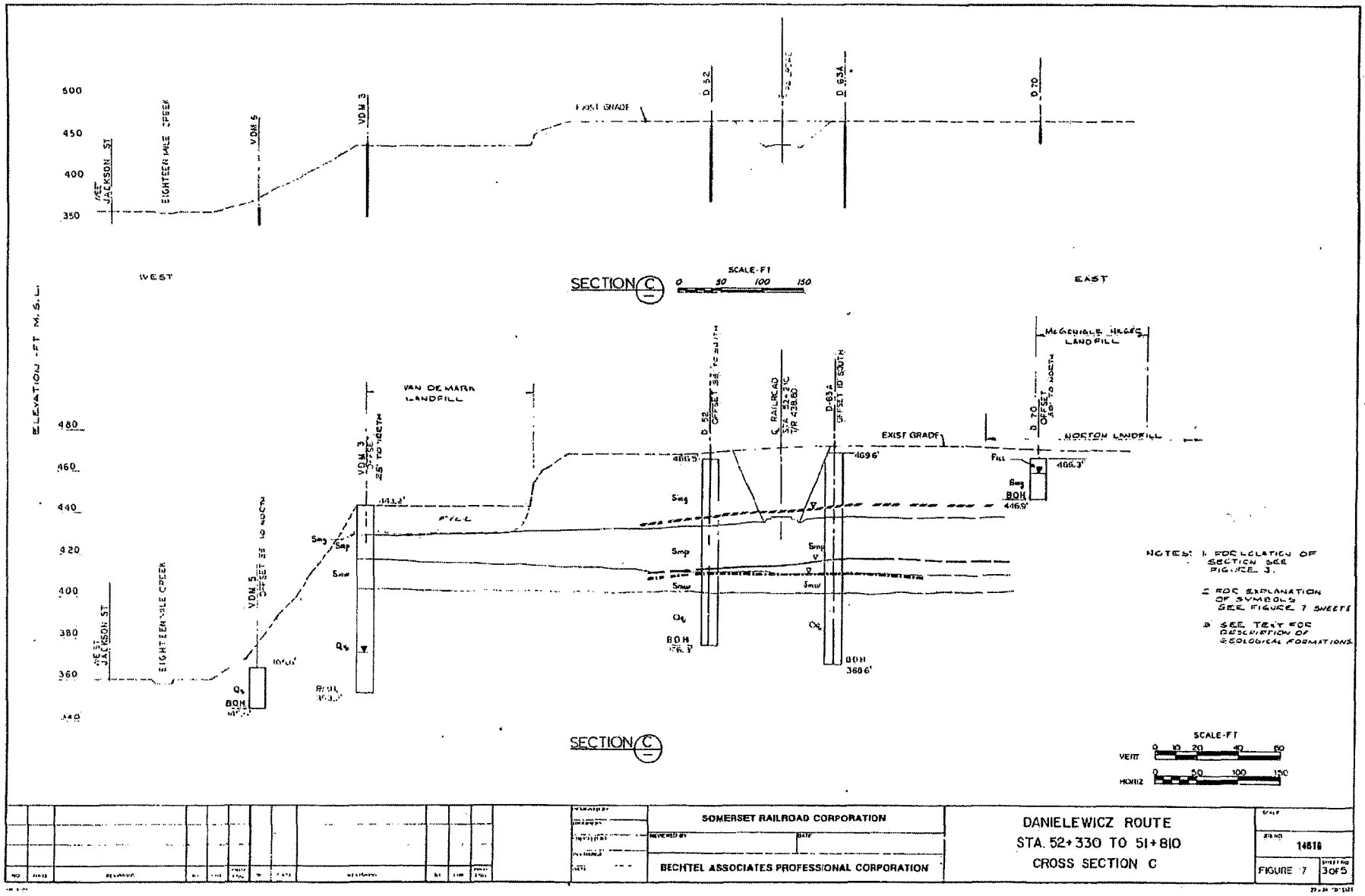


NOTE:

1. FOR EXPLANATION OF SYMBOLS SEE FIGURE 7 SHEET 1
2. FOR LOCATION OF SECTION SEE FIGURE 3
3. SEE TEXT FOR DESCRIPTION OF GEOLOGIC FORMATIONS
4. WATER LEVELS MEASURED ON 11-11-81 UNLESS OTHERWISE INDICATED.

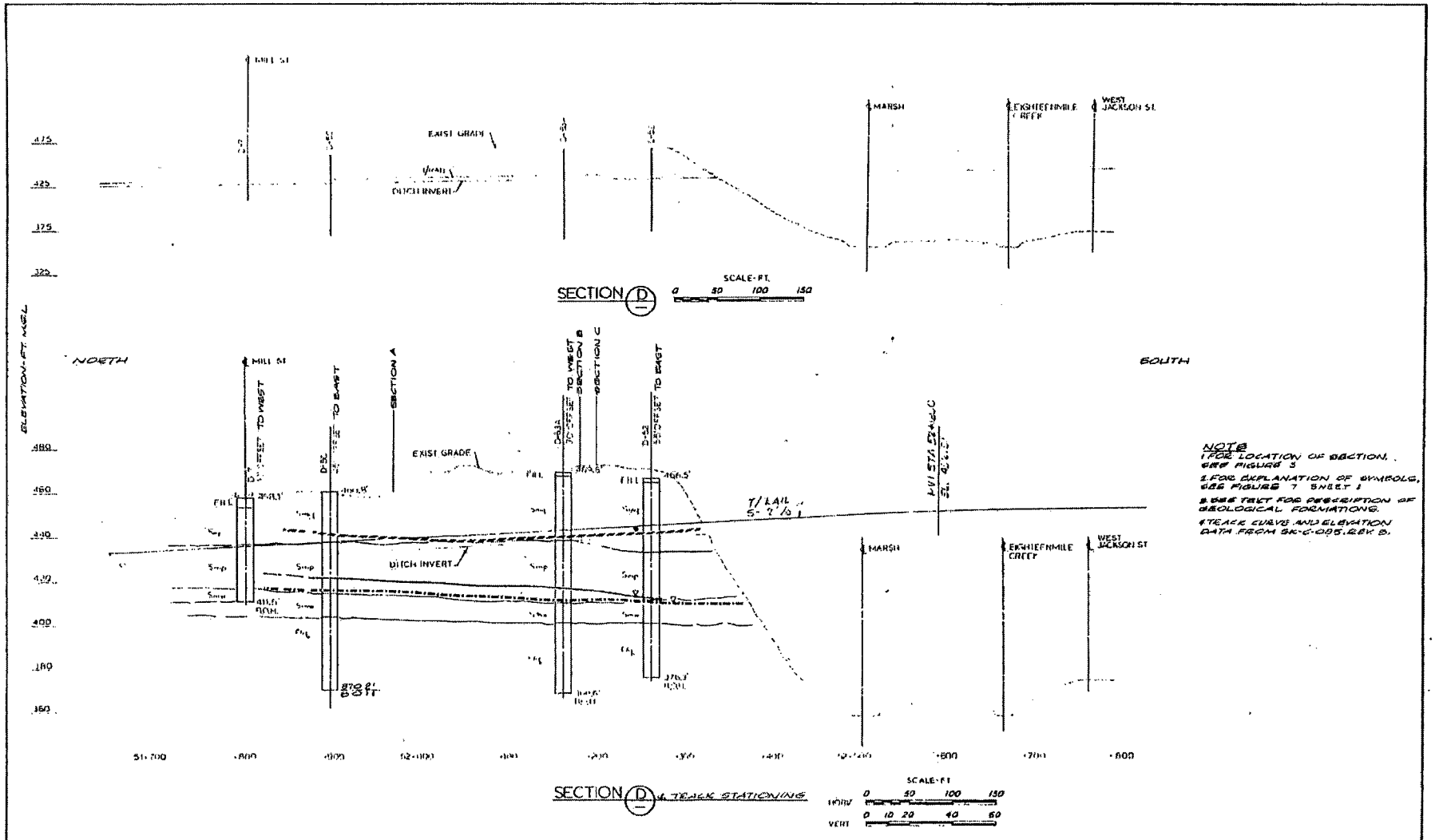
SOMERSET RAILROAD CORPORATION	DANIELEWICZ ROUTE STA. 52+330 TO 51+810 CROSS SECTION B	SCALE	
BECHTEL ASSOCIATES PROFESSIONAL CORPORATION		JOB NO. 14818	
		FIGURE 7	SHEET NO. 2 OF 5

VDM01514



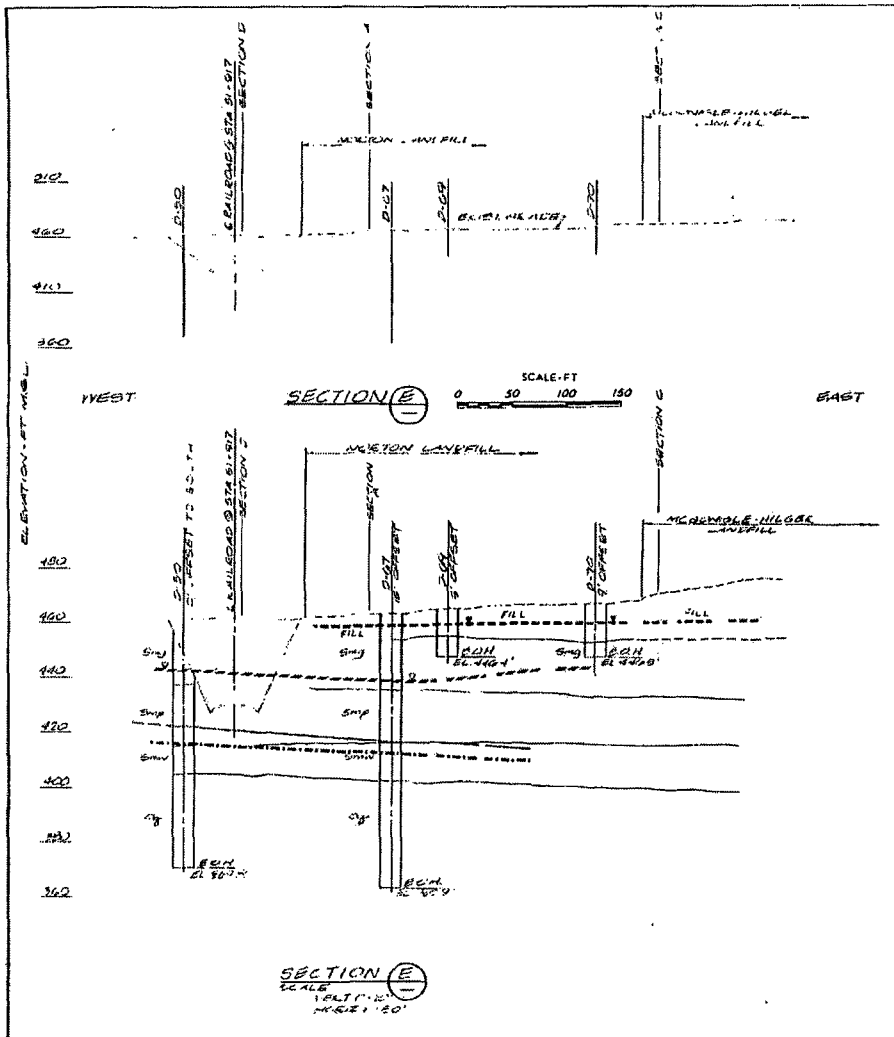
SOMERSET RAILROAD CORPORATION	DANIELEWICZ ROUTE STA. 52+330 TO 51+810 CROSS SECTION C	JOB NO. 14816
BECHTEL ASSOCIATES PROFESSIONAL CORPORATION		FIGURE 7 SHEET NO. 3 OF 5

VDM01515

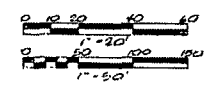


SOMERSET RAILROAD CORPORATION	DANIELEWICZ ROUTE STA. 52+330 TO 51+810 CROSS SECTION D
BECHTEL ASSOCIATES PROFESSIONAL CORPORATION	JOB NO. 14818 FIGURE 7 SHEET NO. 4 of 5

VDM01516

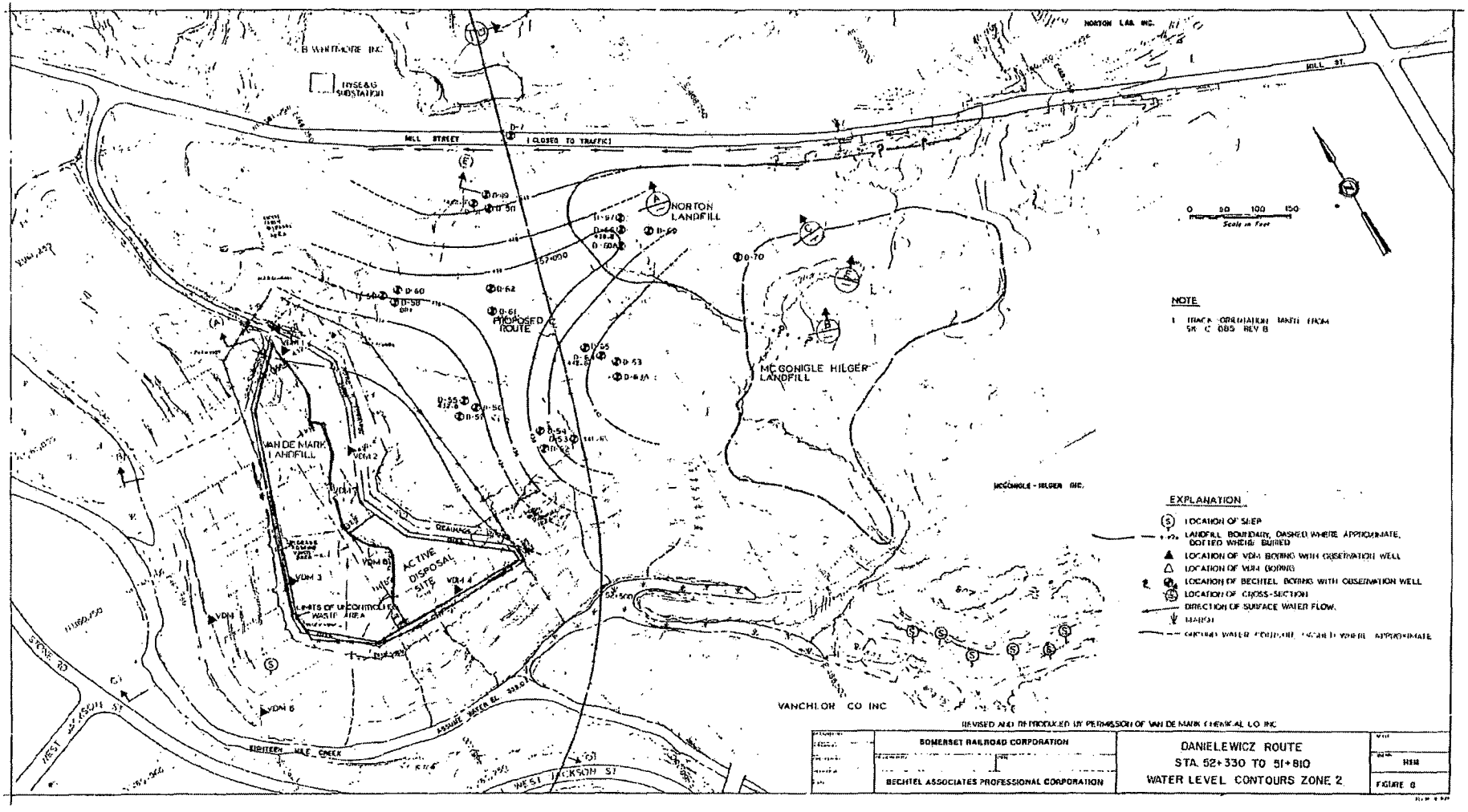


NOTES
1. FOR LOCATION OF SECTIONS, SEE FIGURE 3
2. FOR EXPLANATION OF SYMBOLS SEE FIGURE 7 SHEET 1
3. SEE TEXT FOR DESCRIPTION OF GEOLOGIC FORMATIONS.



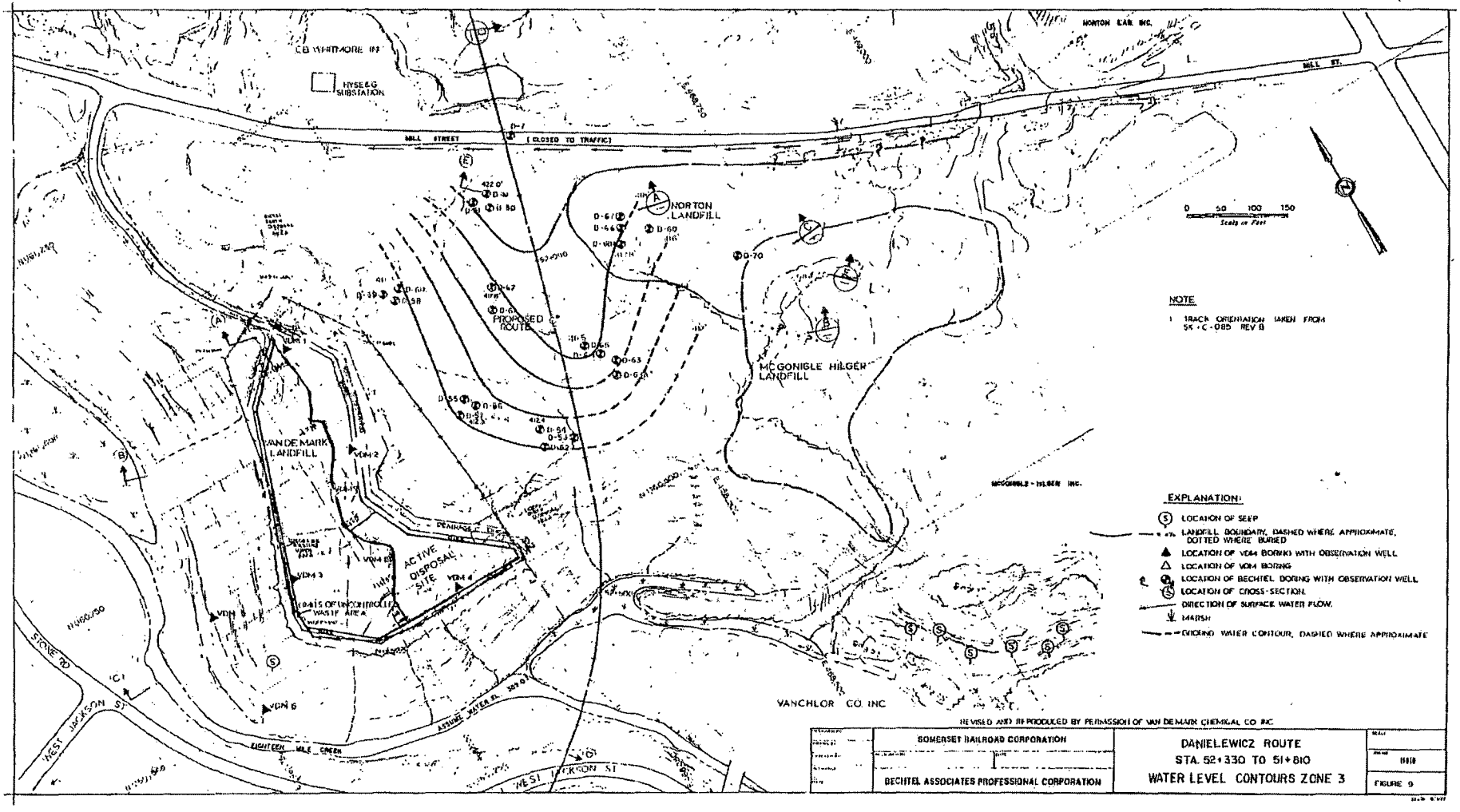
SOMERSET RAILROAD CORPORATION	DANIELEWICZ ROUTE STA. 52+330 TO 51+810 CROSS SECTION E	SCALE	
BECHTEL ASSOCIATES PROFESSIONAL CORPORATION		JOB NO. 14810	
		FIGURE 7	SHEET NO. 5 OF 5

VDM01517

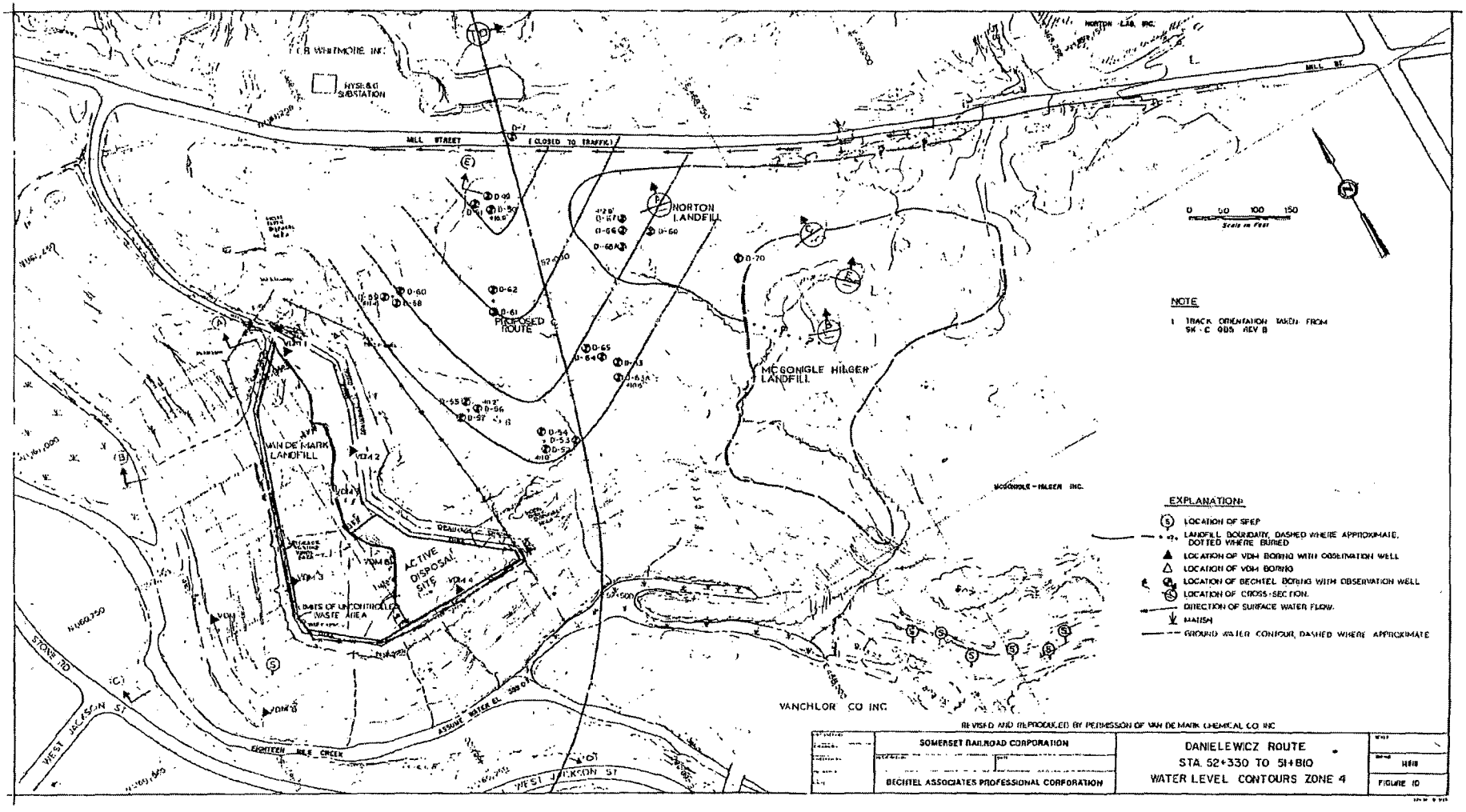


NORTON LAB. INC.
MILL ST.
MILL STREET
(CLOSED TO TRAFFIC)
NORTON LANDFILL
PROPOSED ROUTE
MCGONIGLE HILGER LANDFILL
VAN DE MARK LANDFILL
ACTIVE DISPOSAL SITE
LIMITS OF UNCONTROLLED WASTE AREA
MCGONIGLE - HILGER INC.
VANCHLOR CO INC
WEST JACKSON ST
STONE RD
EIGHTEEN MILE CREEK
ASSUME WATER EL. 333.0
0 50 100 150
Scale in Feet
NOTE
1. TRACK ORIENTATION TAKEN FROM SK C 085 REV B
EXPLANATION
LOCATION OF SEEP
LANDFILL BOUNDARY, DASHED WHERE APPROXIMATE, DOTTED WHERE BURIED
LOCATION OF VDM BORING WITH OBSERVATION WELL
LOCATION OF VDM BORING
LOCATION OF BECHTEL BORING WITH OBSERVATION WELL
LOCATION OF CROSS-SECTION
DIRECTION OF SURFACE WATER FLOW
MARSH
REVISED AND REPRODUCED BY PERMISSION OF VAN DE MARK CHEMICAL CO INC
SOMERSET RAILROAD CORPORATION
BECHTEL ASSOCIATES PROFESSIONAL CORPORATION
DANIELEWICZ ROUTE
STA. 52+330 TO 51+810
WATER LEVEL CONTOURS ZONE 2
FIGURE 8

VDM01518

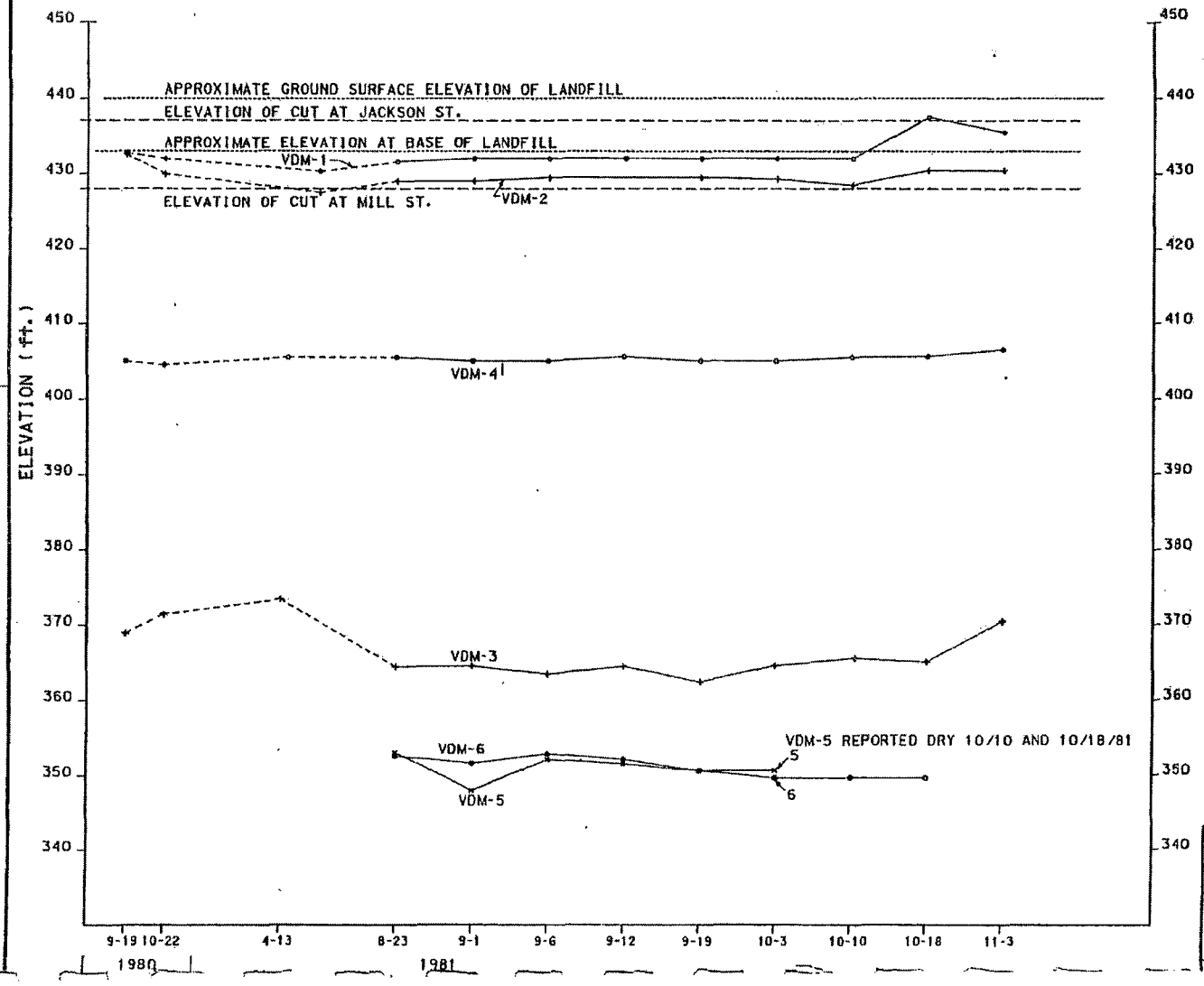

NORTON LANDFILL
MCGONIGLE HILGER LANDFILL
VAN DE MARK LANDFILL
ACTIVE DISPOSAL SITE
PROPOSED ROUTE
VANCHLOR CO INC
HYSEEG SUBSTATION
MILL STREET (CLOSED TO TRAFFIC)
WEST JACKSON ST
STONE RD
EIGHTEEN MILE CREEK
NOTE
1 TRACK ORIENTATION TAKEN FROM SK-C-085 REV B
EXPLANATION:
LOCATION OF SEEP
LANDFILL BOUNDARY, DASHED WHERE APPROXIMATE, DOTTED WHERE BURIED
LOCATION OF VDM BORING WITH OBSERVATION WELL
LOCATION OF VDM BORING
LOCATION OF BECHTEL BORING WITH OBSERVATION WELL
LOCATION OF CROSS-SECTION
DIRECTION OF SURFACE WATER FLOW
MARSH
GROUND WATER CONTOUR, DASHED WHERE APPROXIMATE
REVISED AND REPRODUCED BY PERMISSION OF VAN DEMARK CHEMICAL CO INC
SOMERSET RAILROAD CORPORATION
BECHTEL ASSOCIATES PROFESSIONAL CORPORATION
DANIELEWICZ ROUTE
STA. 52+330 TO 51+810
WATER LEVEL CONTOURS ZONE 3
FIGURE 9

VDM01519



C.B. WHITMORE INC.
HYSE&G SUBSTATION
MILL STREET
(CLOSED TO TRAFFIC)
NORTON LAB. INC.
MILL ST.
NORTON LANDFILL
PROPOSED ROUTE
MCGONIGLE HILGER LANDFILL
VAN DE MARK LANDFILL
ACTIVE DISPOSAL SITE
LIMITS OF UNCONTROLLED WASTE AREA
MCGONIGLE-HILGER INC.
VANCHLOR CO INC
STONE RD
WEST JACKSON ST
EIGHTEEN MILE CREEK
ASSUME WATER EL. 582.0
0 50 100 150
Scale in Feet
NOTE
1. TRACK ORIENTATION TAKEN FROM SK-C QDS REV B
EXPLANATION
LOCATION OF SEEP
LANDFILL BOUNDARY, DASHED WHERE APPROXIMATE, DOTTED WHERE BURIED
LOCATION OF VDM BORING WITH OBSERVATION WELL
LOCATION OF VDM BORING
LOCATION OF BECHTEL BORING WITH OBSERVATION WELL
LOCATION OF CROSS-SECTION.
DIRECTION OF SURFACE WATER FLOW.
MARSH
GROUND WATER CONTOUR, DASHED WHERE APPROXIMATE
REVISED AND REPRODUCED BY PERMISSION OF VAN DE MARK CHEMICAL CO INC
SOMERSET RAILROAD CORPORATION
BECHTEL ASSOCIATES PROFESSIONAL CORPORATION
DANIELEWICZ ROUTE
STA. 52+330 TO 51+810
WATER LEVEL CONTOURS ZONE 4
FIGURE 10

VDM01520



SEE FIGURE 3 FOR WELL LOCATIONS.

BECHTEL
GAITHERSBURG, MARYLAND

SOMERSET RAILROAD CORPORATION

HYDROGRAPH OF VAN DE MARK WELLS
VDM 1 THROUGH VDM 6

VDM01521

TABLE 4

JOINTING CHARACTERISTICS OF ROCKS
IN VDM LANDFILL AREA

FORMATION/ROCK TYPE	PREDOMINANT JOINT ORIENTATION OPEN SPACE (IN.)/SPACING		
Grimsby/Sandstone, Siltstone, Shale	N60W to E-W Closed* to 2"/3"-30"	N60 to 70E Closed to ¼"/6"-30"	N20 to 30E Closed to 2"/18"-24"
Power Glen/Sandstone, Siltstone, Shale, Limestone, Dolomite	N45 to 70W Tight**/3'-6'	N65 to 70W Tight/2'-6'	
Whirlpool/Sandstone, Ortho-quartzite	N55 to 70W Closed to 2"/2'	N70E Closed to 1"/2'-4'	
Queenston/Siltstone, Shale	N70W Closed /2'-6'	N55 to 75E Closed/2'-6'	N10 to 30E Closed/2'-4'

Note: Dip of joints consistently 85° to vertical measured from the horizontal.

* "Closed" describes open space ≤0.1 mm.
**"Tight" describes open space 0.1 mm to 1 mm.

VDM01522

TABLE 5

SOMERSET RAILROAD
PRESSURE TEST RESULTS

BORING NO.	ELEVATION INTERVAL TESTED (MSL)	PERMEABILITY CM/SEC	FORMATION
D-50	372.6 - 383.4	No Water Take*	Queenston
	382.9 - 393.4	No Water Take**	Queenston
	392.9 - 403.4	No Water Take**	Queenston
	402.9 - 413.4	No Water Take*	Whirlpool
	412.9 - 423.4	5.2×10^{-4}	Power Glen
	422.9 - 433.4	4.8×10^{-4}	Power Glen
	437.9 - 443.4	7.7×10^{-6}	Grimsby
D-52	379.0 - 389.5	No Water Take*	Queenston
	386.0 - 396.5	No Water Take*	Queenston
	396.0 - 406.5	2.0×10^{-5}	Queenston
	406.0 - 416.5	1.5×10^{-4}	Whirlpool
	416.0 - 426.5	2.1×10^{-6}	Power Glen
D-53	421.5 - 432.27	2.74×10^{-6}	Power Glen
	434.9 - 445.4	1.3×10^{-3}	Grimsby
D-55	423.4 - 433.9	1.7×10^{-4}	Power Glen
	436.2 - 441.2	2.1×10^{-3}	Grimsby
D-56	359.8 - 370.3	No Water Take*	Queenston
	366.8 - 377.3	4.8×10^{-7}	Queenston
	376.8 - 387.3	Test Invalid	Queenston
	386.8 - 397.3	1.0×10^{-2}	Queenston
	396.8 - 407.3	2.1×10^{-6}	Queenston
	406.8 - 417.3	1.5×10^{-4}	Whirlpool
	416.8 - 427.3	Test Invalid	Power Glen
	426.8 - 437.3	Test Invalid	Power Glen
D-59	368.6 - 379.1	1.8×10^{-4}	Queenston
	378.6 - 389.1	7.9×10^{-7}	Queenston
	388.6 - 399.1	No Water Take†	Queenston
	398.6 - 409.1	3.5×10^{-6}	Queenston
	408.6 - 419.1	4.4×10^{-6}	Whirlpool
	418.6 - 429.1	3.4×10^{-6}	Power Glen
	428.6 - 439.1	7.0×10^{-7}	Power Glen

VDM01523

TABLE 5 (Continued)

BORING NO.	ELEVATION INTERVAL TESTED (MSL)	PERMEABILITY CM/SEC	FORMATION
D-63A	372.25 - 381.75	No Water Take*	Queenston
	379.5 - 390.0	No Water Take*	Queenston
	389.5 - 400.0	No Water Take*	Queenston
	399.5 - 410.0	1.3×10^{-6}	Whirlpool
	409.5 - 420.0	7.3×10^{-5}	Power Glen
	419.5 - 430.0	1.3×10^{-6}	Power Glen
	429.5 - 440.0	1.3×10^{-5}	Power Glen
	439.5 - 450.0	4.3×10^{-4}	Grimsby
	449.5 - 460.0	2.3×10^{-4}	Grimsby
D-67	368.03 - 378.52	3.7×10^{-6}	Queenston
	378.02 - 388.52	3.7×10^{-6}	Queenston
	388.02 - 398.52	3.7×10^{-6}	Queenston
	398.02 - 408.52	3.7×10^{-6}	Whirlpool
	408.02 - 418.52	1.0×10^{-5}	Whirlpool
	418.02 - 428.52	5.1×10^{-5}	Power Glen
	428.02 - 438.52	3.7×10^{-6}	Power Glen
	438.02 - 448.52	1.27×10^{-6}	Grimsby

*Test performed at 10, 15, and 20 psi.
**Test performed at 10 and 15 psi.
†Test performed at 15, 20, and 25 psi.

TABLE 6

RESPONSE TEST RESULTS FROM WELL PURGING

BORING NO.	TEST INTERVAL	PERMEABILITY CM/SEC	REMARKS
D-49	409.5 - 420.1	2.07×10^{-5}	
D-50	373.2 - 410.3	1.21×10^{-5}	
D-51	419.5 - 440.3	9.1×10^{-6}	
D-52	381.5 - 405.5	5.8×10^{-6}	
D-53	422.8 - 441.6	2.4×10^{-4}	
D-54			insufficient recovery
D-55			insufficient recovery
D-56	362.2 - 407.5	2.9×10^{-7}	
D-57	408.5 - 412.1	1.4×10^{-4}	
D-58			dry
D-59	366.0 - 409.1	1.4×10^{-5}	
D-60			insufficient recovery
D-61	422.5 - 436.4	4.0×10^{-5}	
D-62	410.9 - 419.0	4.2×10^{-5}	
D-63	369.4 - 404.6	1.3×10^{-6}	
D-64	422.4 - 437.1	2.8×10^{-5}	
D-65			insufficient recovery
D-66	427.4 - 439.2	2.2×10^{-5}	
D-67	363.9 - 408.9	2.1×10^{-6}	
D-68	408.2 - 412.6	2.4×10^{-5}	
D-69	447.2 - 458.4	1.5×10^{-4}	
D-70	447.2 - 458.3	1.6×10^{-4}	

VDM01525

TABLE 7

WELL PURGING SUMMARY SHEET

BORING NO.	AMOUNT CALCULATED TO BE PURGED	AMOUNT ACTUALLY PURGED	WELL VOLUMES PURGED	DATE COMPLETED
D-49	25.4	27.4	4.3	11/16
D-50	74.2	73.0	4.0	11/18
D-51	19.8	35.0	3.6	11/11
D-52	24.8	38.5	3.1	11/11
D-53	18.3	32.5	3.3	11/11
D-54	3.9	4.75 +10	7.5	11/18
D-55	9.7	5 +10	3.1	11/12
D-56	90.1	86.1	3.95	11/17
D-57	4.05	4	2.0	11/14
D-58	--	--	--	--
D-59	83.5	88.3	4.2	11/18
D-60	4.3	10.0	5.0	11/17
D-61	28.1	33.5	4.8	11/13
D-62	14.4	10.25	2.9	11/17
D-63A	70.9	90	5.1	11/13
D-64	32.6	42 +10	6.3	11/13
D-65	22.1	--	--	--
D-66	23.0	23 +10	5.7	11/16
D-67	85.6	89.3	4.2	11/16
D-68	9.9	4.5 +10	2.9	11/18
D-69	21.2	25 +10	3.3	11/12
D-70	22.1	28 +10	3.4	11/12

TABLE 8-A

RESULTS OF CHEMICAL ANALYSES PERFORMED BY RECRA RESEARCH, INC.

Well No.	Temp. (C)	pH	Specific Conductance µmhos/cm	TOC mg/l	TDS mg/l	CL mg/l	Oil & Grease mg/l	T Fe mg/l
ZONE 2	GRIMSBY/POWER GLEN CONTACT ELEV. 419 - 437.2							
D51	12.5	6.90	295	2.4	260	28	<5	6.1
	12	7.15	295	5.2	260	27	<5	14
D53	12	6.65	353	8.1	280	32	<5	3.8
	12	6.75	360	4.2	340	32	<5	2.5
D55	12	6.55	430	4.8	370	37	<5	7.1
	11.5	6.80	430	4.7	360	37	<5	4.8
D58	DRY HOLE							DRY HOLE
D61	10	6.65	420	6.0	410	36	26	2.0
	10	6.75	510	10	390	36	<5	11
D64	11.5	8.20	244	5.7	180	24	8	1.8
	13.0	8.45	242	6.8	170	23	<5	21
D66	13	7.50	1,040	4.0	860	200	<5	8.0
	12.5	7.45	1,000	4.4	830	190	<5	1.6

VDM01527

TABLE 8-B

RESULTS OF CHEMICAL ANALYSES PERFORMED BY RECRA RESEARCH, INC.

ZONE 3	POWER GLEN - WHIRLPOOL CONTACT ELEV. 407.1 - 420.2							
Well No.	Temp. (C)	pH	Specific Conductance µmhos/cm	TOC mg/1	TDS mg/1	CL mg/1	Oil & Grease mg/1	T Fe mg/1
D49	11.5	8.85	283	1.1	290	20	<5	16
	12	9.00	305	1.3	290	20	<5	8.8
D54	11	9.50	1,480	2.4	1,400	290	<5	22
	11	9.65	1,480	6.4	1,400	270	<5	49
D57	10	8.10	483	3.8	540	39	<5	9.8
	10	8.15	415	3.7	660	40	<5	11
D62	10	9.95	510	3.3	550	19	6	17
	10	10.25	505	1.5	520	19	<5	18
D65	11.5	7.85	1,290	4.5	1,200	37	<5	4.8
	11.5	8.30	1,290	9.5	1,100	37	<5	3.3
D68-A	12	8.75	255	1.8	230	19	<5	8.4
	12	8.95	258	2.5	240	20	<5	6.7
D60	10.5	7.35	1,680	8.1	1,700	36	<5	16
	10.5	7.55	1,700	7.3	1,800	30	<5	2.9

VDM01528

TABLE 8-C

RESULTS OF CHEMICAL ANALYSES PERFORMED BY RECRA RESEARCH, INC.

ZONE 4			WHIRLPOOL - QUEENSTON ELEV. 362.3 - 405.9					
Well No.	Temp. (C)	pH	Specific Conductance µmhos/cm	TOC mg/l	TDS mg/l	CL mg/l	Oil & Grease mg/l	T Fe mg/l
D50	12	11.90	1,830	4.5	790	33	<5	0.91
	11.5	11.90	1,830	5.7	750	33	<5	0.90
D52	12.5	6.35	3,000	8.8	2,700	1,100	30	1.4
	12	7.15	2,690	9.6	2,300	910	6	0.70
D56	11	10.45	500	6.4	460	79	<5	5.6
	11	10.70	600	5.0	480	79	<5	7.2
D59	10.5	8.30	249	4.5	220	22	<5	2.6
	10.5	8.25	251	7.9	220	22	<5	2.8
D63-A	12	9.65	255	5.6	270	23	<5	4.7
	11	9.80	275	5.8	270	24	<5	3.0
D67	13	10.65	540	3.2	410	33	<5	3.1
	12.5	10.75	530	2.0	410	33	15	3.5

VDM01529

TABLE 9

ANALYSIS OF VAN DE MARK SAMPLES
BY
ADVANCED ENVIRONMENTAL SYSTEMS, INC.

Sample Date April 1981

Sample Site	pH	TDS mg//1	TOC mg/1	DO mg/1	CL mg/1	Specific Conductance µmhos/cm
Eighteenmile Creek Site No. 1	8.27	411	11.5	10.1	53.2	609
Eighteenmile Creek Site No. 2	8.26	429	12.8	10.0	52.1	619
Eighteenmile Creek Site No. 3	8.39	439	15.6	8.90	48.9	612
Landfill Well No. 1 (22' Deep)	8.27	1,820	30.9	7.65	1,010.	2,540
Landfill Well No. 2 (23' Deep)	10.2	1,710	50.0	6.90	417.	2,350
Landfill Well No. 3 (90' Deep)*	7.08	21,200	374.	4.40	4,470.	19,400
Landfill Well No. 4 (90' Deep)*	4.71	19,930	90.2	0.90	12,300.	24,300
Landfill Swale	7.05	784	18.1	9.05	245.	1,250

*Wells 3 & 4 are transposed on Figures 2 and 3.

TABLE 8-D

RESULTS OF CHEMICAL ANALYSES PERFORMED BY RECRA RESEARCH, INC.

ZONE 1		MISC. SOIL - ELEV. 447.2 - 456.6						
Well No.	Temp. (C)	pH	Specific Conductance µmhos/cm	TOC mg/1	TDS mg/1	CL mg/1	Oil & Grease mg/1	T Fe mg/1
D69	14	6.7	800	6.8	670	29	14	7.4
	14	6.8	780	8.7	730	29	<5	89
D70	14.5	6.85	640	24	570	31	73	120
	13	6.80	540	33	590	32	31	260

VDM01531

TABLE 10

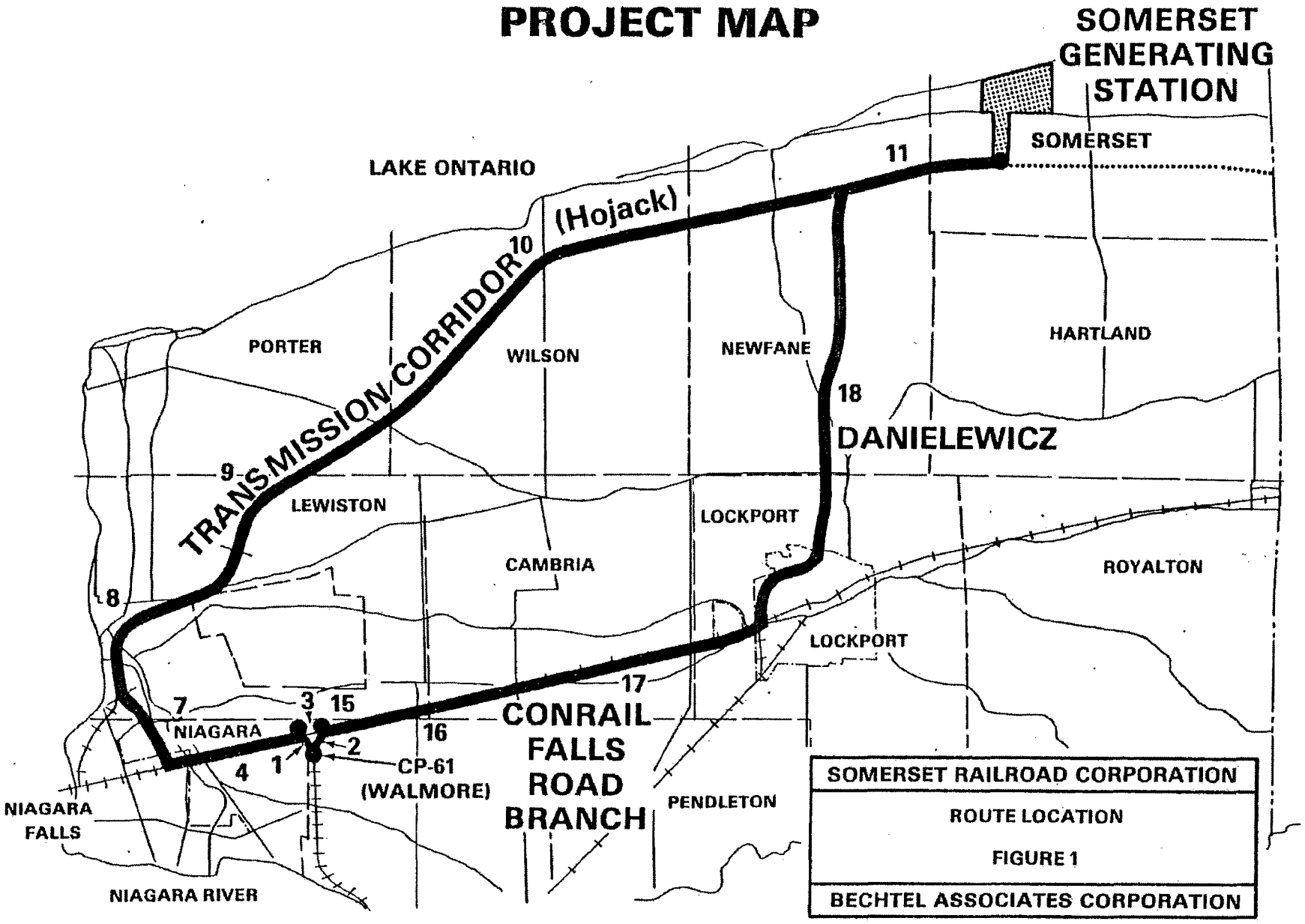
ANALYSIS OF VAN DE MARK SAMPLES
BY
ADVANCED ENVIRONMENTAL SYSTEMS, INC.

Sample Date October 1981						
Sample Site	pH	TDS mg/l	TOC mg/l	DO mg/l	CL mg/l	Specific Conductance µmhos/cm
Eighteenmile Creek Site No. 1	7.56	38.3	5.1	9.3	39	520
Eighteenmile Creek Site No. 2	6.97	561.2	11.0	7.9	138	830
Eighteenmile Creek Site No. 3	7.08	540.1	7.87	7.1	131	791
Landfill Well No. 1 (22' Deep)	7.63	1,938.2	29.7	1.8	856	3,270
Landfill Well No. 2 (23' Deep)	9.55	776.4	19.5	6.1	236	1,300
Landfill Well No. 3 (90' Deep)*	2.56	36,898.	64.6	15.3	13,895	32,800
Landfill Well No. 4 (90' Deep)*	4.12	30,356.4	97.3	--	11,996	28,800
Landfill Swale	4.72	9,121.	7.2	0.1	3,498	10,360

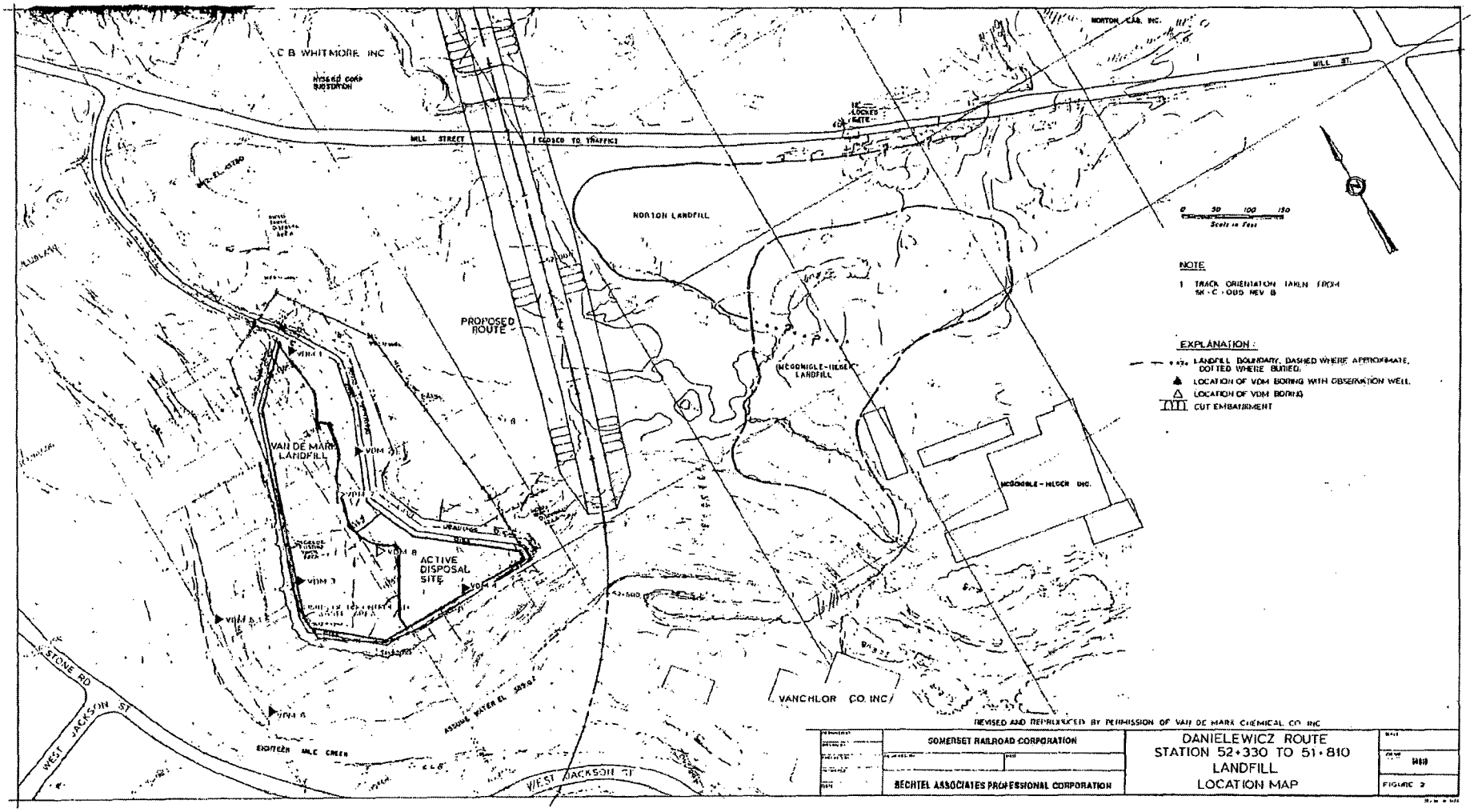
*Wells 3 and 4 are transposed on Figures 2 and 3.

VDM01532

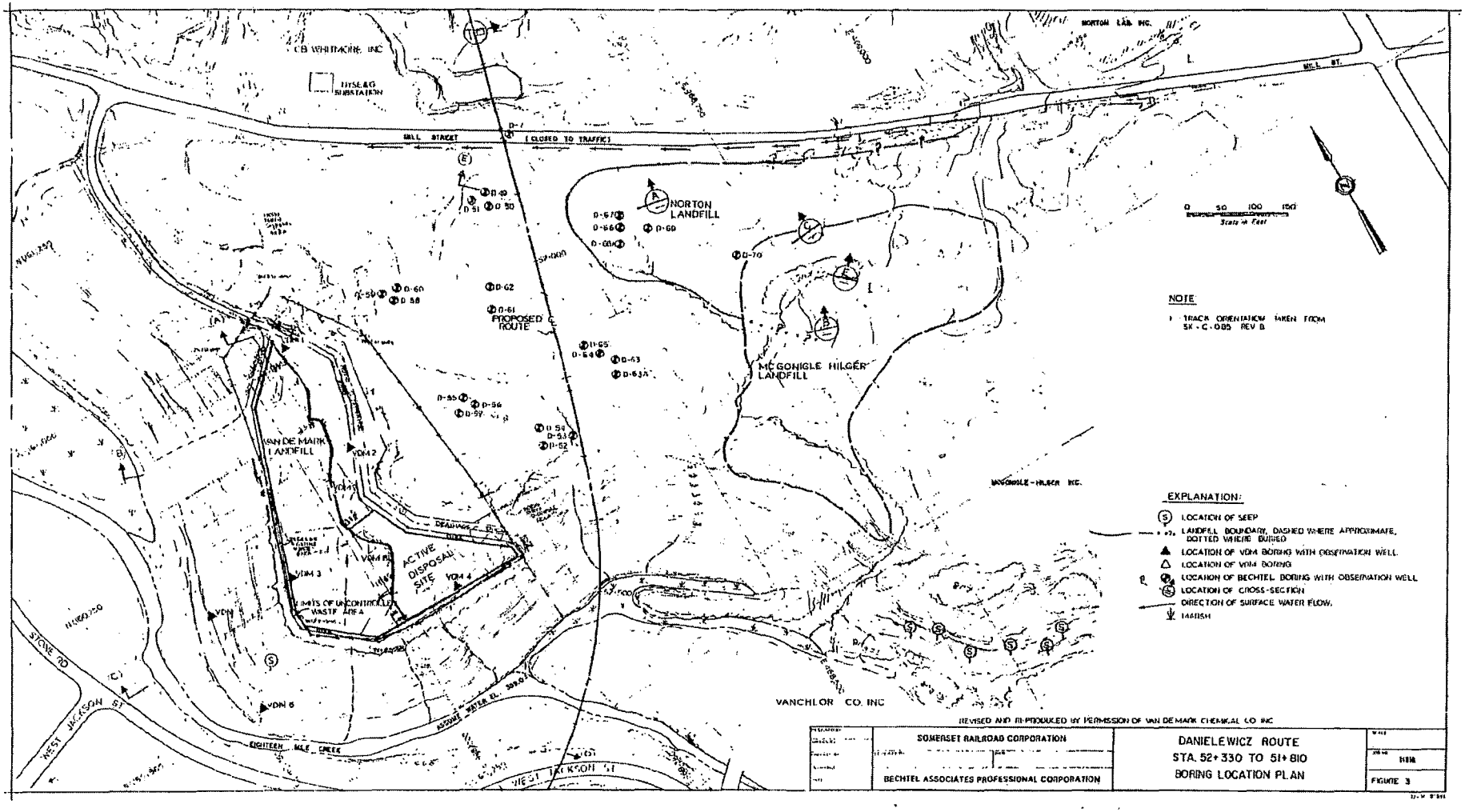
PROJECT MAP



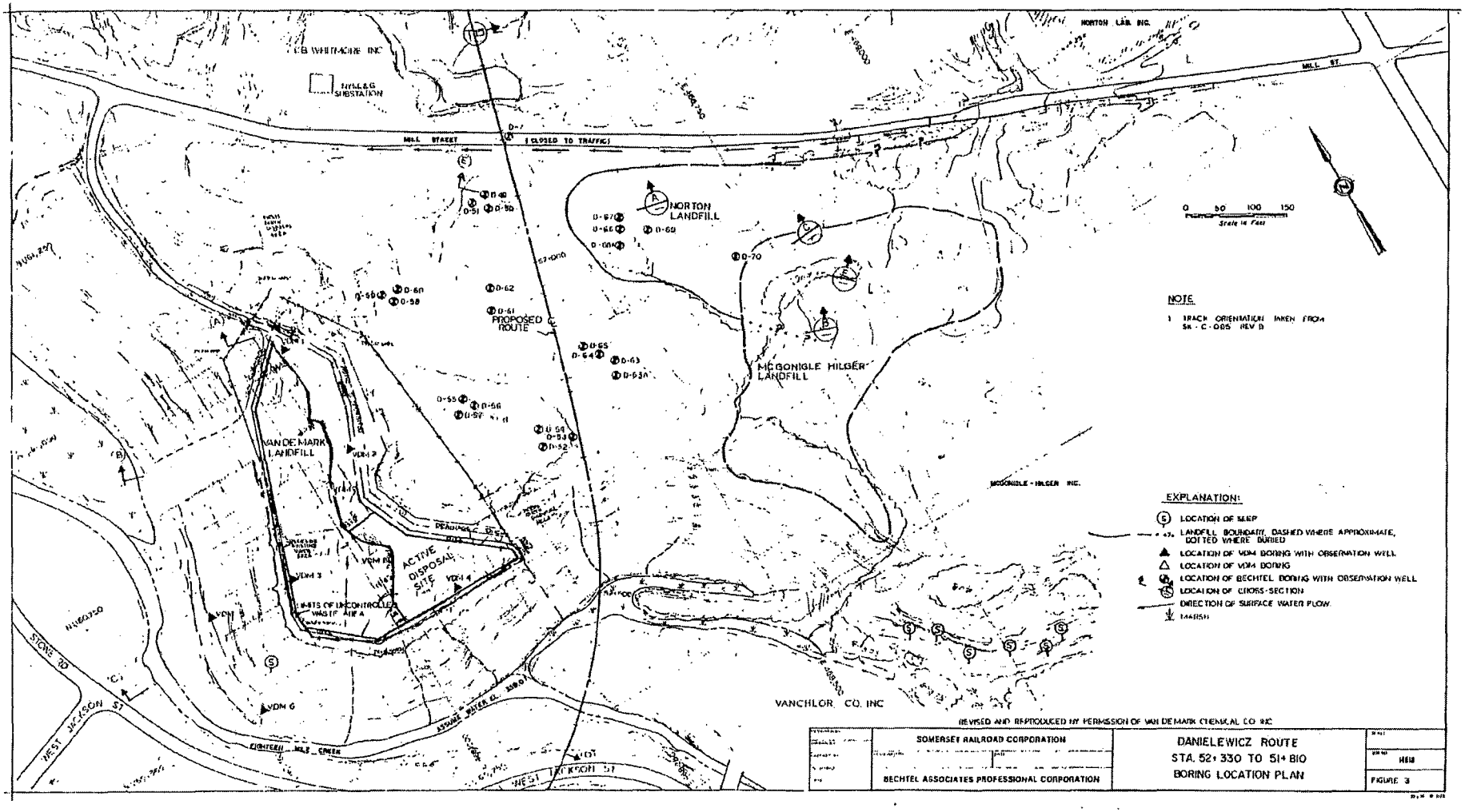
VDM01533


C B WHITMORE INC
MILL STREET
CLOSED TO TRAFFIC
NORTON CAR. INC.
MILL ST.
NORTON LANDFILL
PROPOSED ROUTE
McGONIGLE-HILDER LANDFILL
VAN DE MARK LANDFILL
ACTIVE DISPOSAL SITE
McGONIGLE - HILDER INC.
VANCHLOR CO. INC.
STONE RD
WEST JACKSON ST
EIGHTEEN MILE CREEK
0 50 100 150
Scale in Feet
NOTE
1 TRACK ORIENTATION TAKEN FROM SK-C-0005 REV B
EXPLANATION :
LANDFILL BOUNDARY, DASHED WHERE APPROXIMATE, DOTTED WHERE BURIED.
LOCATION OF VDM BORING WITH OBSERVATION WELL.
LOCATION OF VDM BORING
CUT EMBANKMENT
REVISED AND REPRODUCED BY PERMISSION OF VAN DE MARK CHEMICAL CO. INC
SOMERSET RAILROAD CORPORATION
BECHTEL ASSOCIATES PROFESSIONAL CORPORATION
DANIELEWICZ ROUTE
STATION 52+330 TO 51+810
LANDFILL
LOCATION MAP
FIGURE 2

VDM01534

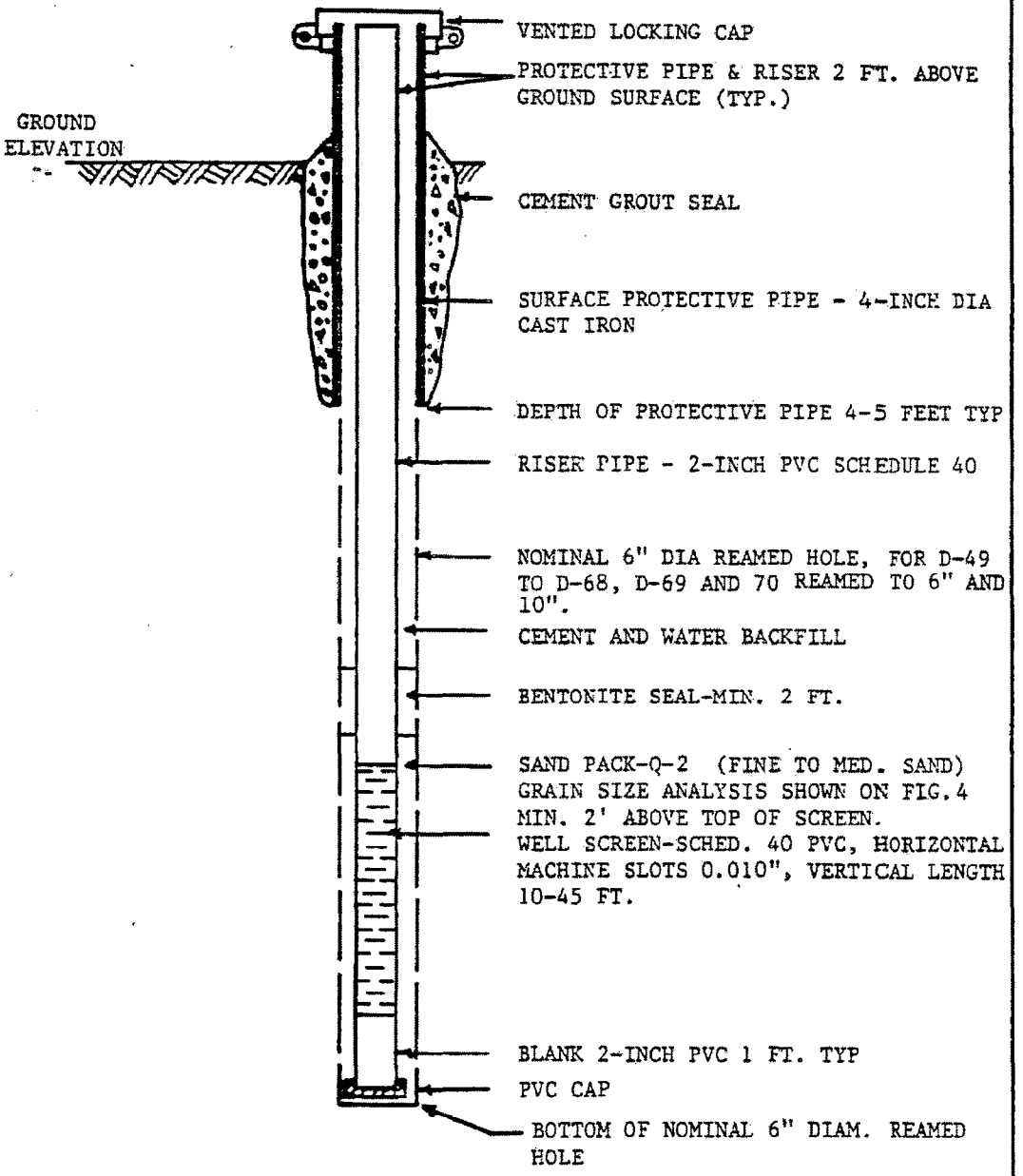

C B WHITTAKER INC
DYSE & G SUBSTATION
MILL STREET (CLOSED TO TRAFFIC)
NORTON LABS INC.
MILL ST.
NORTON LANDFILL
PROPOSED ROUTE
MCGONIGLE HILGER LANDFILL
MCGONIGLE-HILGER INC.
VAN DE MARK LANDFILL
ACTIVE DISPOSAL SITE
LIMITS OF UNCONTROLLED WASTE AREA
VANCHLOR CO. INC
EIGHTEEN MILE CREEK
WEST JACKSON ST
STONE RD
0 50 100 150
Scale in Feet
NOTE
1. TRACK ORIENTATION TAKEN FROM SK-C-085 REV B
EXPLANATION:
LOCATION OF SEEP
LANDFILL BOUNDARY, DASHED WHERE APPROXIMATE, DOTTED WHERE BURIED
LOCATION OF VDM BORING WITH OBSERVATION WELL
LOCATION OF VDM BORING
LOCATION OF BECHTEL BORING WITH OBSERVATION WELL
LOCATION OF CROSS-SECTION
DIRECTION OF SURFACE WATER FLOW
1461ISH
REVISED AND REPRODUCED BY PERMISSION OF VAN DE MARK CHEMICAL CO. INC
SOMERSET RAILROAD CORPORATION
BECHTEL ASSOCIATES PROFESSIONAL CORPORATION
DANIELEWICZ ROUTE
STA. 52+330 TO 51+810
BORING LOCATION PLAN
FIGURE 3

VDM01535



NORTON LAB. INC.
MILL ST.
MILL STREET (CLOSED TO TRAFFIC)
NYSL&G SUBSTATION
NORTON LANDFILL
PROPOSED ROUTE
MCGONIGLE HILGER LANDFILL
VAN DE MARK LANDFILL
ACTIVE DISPOSAL SITE
LIMITS OF UNCONTROLLED WASTE AREA
VANCHLOR CO. INC
MCGONIGLE - HILGER INC.
STOWE RD
WEST JACKSON ST
FIGHTEEN MILE CREEK
ASSUME WATER EL. 359.0
0 50 100 150
Scale in Feet
NOTE
1 TRACK ORIENTATION TAKEN FROM SK - C - 005 REV B
EXPLANATION:
LOCATION OF SEEP
LANDFILL BOUNDARY, DASHED WHERE APPROXIMATE, DOTTED WHERE BURIED
LOCATION OF VDM BORING WITH OBSERVATION WELL
LOCATION OF VDM BORING
LOCATION OF BECHTEL BORING WITH OBSERVATION WELL
LOCATION OF CROSS-SECTION
DIRECTION OF SURFACE WATER FLOW
MARSH
REVISED AND REPRODUCED BY PERMISSION OF VAN DE MARK CHEMICAL CO INC
SOMERSET RAILROAD CORPORATION
BECHTEL ASSOCIATES PROFESSIONAL CORPORATION
DANIELEWICZ ROUTE
STA. 52+330 TO 51+810
BORING LOCATION PLAN
FIGURE 3

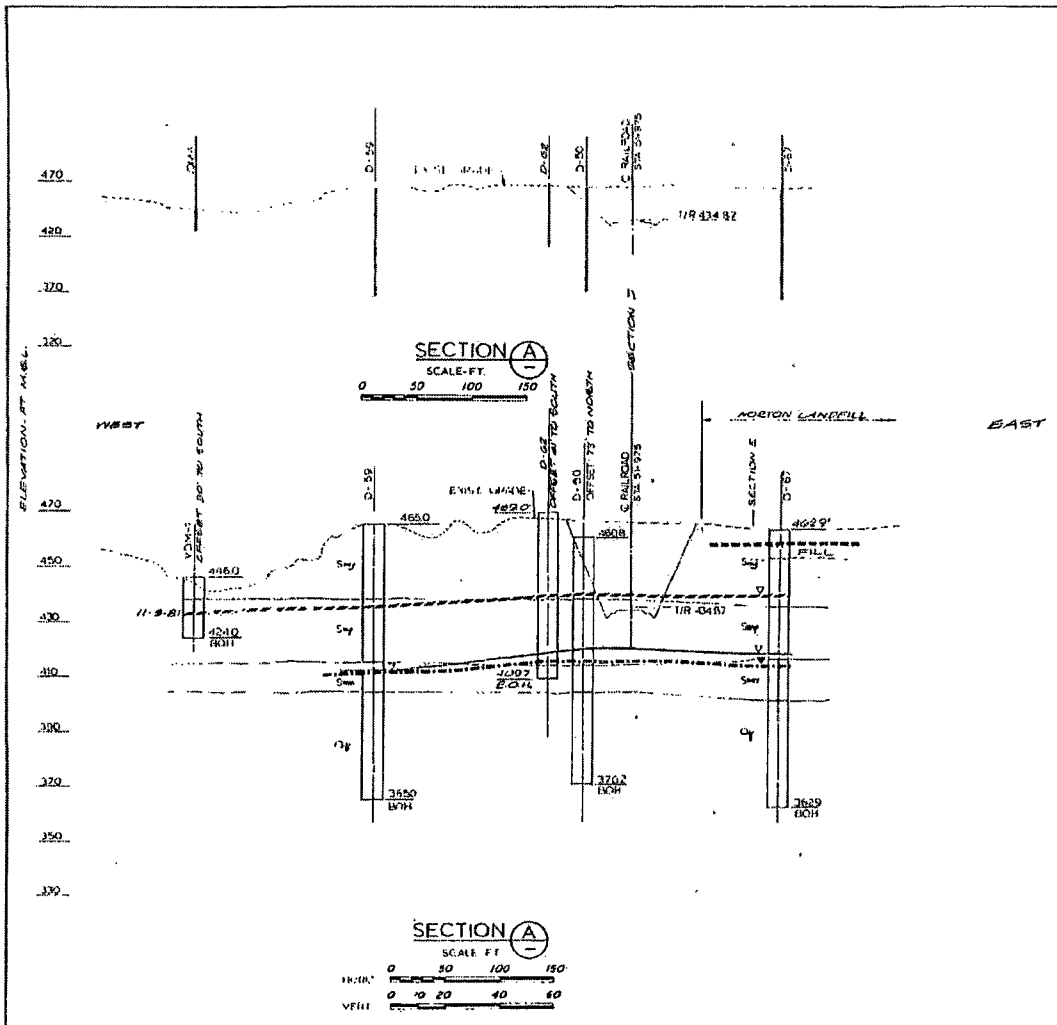
VDM01536



BECHTEL	
SOMERSET RAILROAD CORPORATION	
TYPICAL WELL CONSTRUCTION	
14818	FIGURE 5

VDM01537

CB WHITMORE INC
NYSE&G SUBSTATION
MILL STREET (CLOSED TO TRAFFIC)
MILL ST.
NORTON CAB. INC.
NORTON LANDFILL
MC GONIGLE HILGER LANDFILL
MCGONIGLE - HILGER INC.
PROPOSED ROUTE
VAN DE MARK LANDFILL
ACTIVE DISPOSAL SITE
LIMITS OF UNCONTROLLED WASTE AREA
VANCHLOR CO. INC
STONE RD
WEST JACKSON ST
EIGHTEEN MILE CREEK
0 50 100 150
Scale in Feet
NOTE
1 TRACK ORIENTATION TAKEN FROM SK-C-005 REV B
EXPLANATION
GRIMSBY FM
POWER GLEN FM
WHIRLPOOL FM
QUEENSTON FM
NOTE SEE TEXT FOR DESCRIPTION OF ROCK UNITS
GEOLOGIC CONTACT OR LIMIT OF SURFACE EXPOSURE, DASHED WHERE APPROXIMATE
STRIKE AND DIP OF BEDDING
HORIZONTAL BEDDING
STRIKE OF VERTICAL JOINT
STRIKE AND DIP OF JOINT
LOCATION OF SEEP
LANDFILL BOUNDARY, DASHED WHERE APPROXIMATE, DOTTED WHERE BURIED
LOCATION OF VDM BORING WITH OBSERVATION WELL
LOCATION OF VDM BORING
LOCATION OF BECHTEL BORING WITH OBSERVATION WELL
LOCATION OF CROSS-SECTION
DIRECTION OF SURFACE WATER FLOW.
MARSH
REVISED AND REPRODUCED BY PERMISSION OF VAN DE MARK CHEMICAL CO. INC
SOMERSET RAILROAD CORPORATION
BECHTEL ASSOCIATES PROFESSIONAL CORPORATION
DANIELEWICZ ROUTE
STA. 52+330 TO 51+810
GEOLOGIC MAP OF LANDFILL AREA
FIGURE 6



EXPLANATION

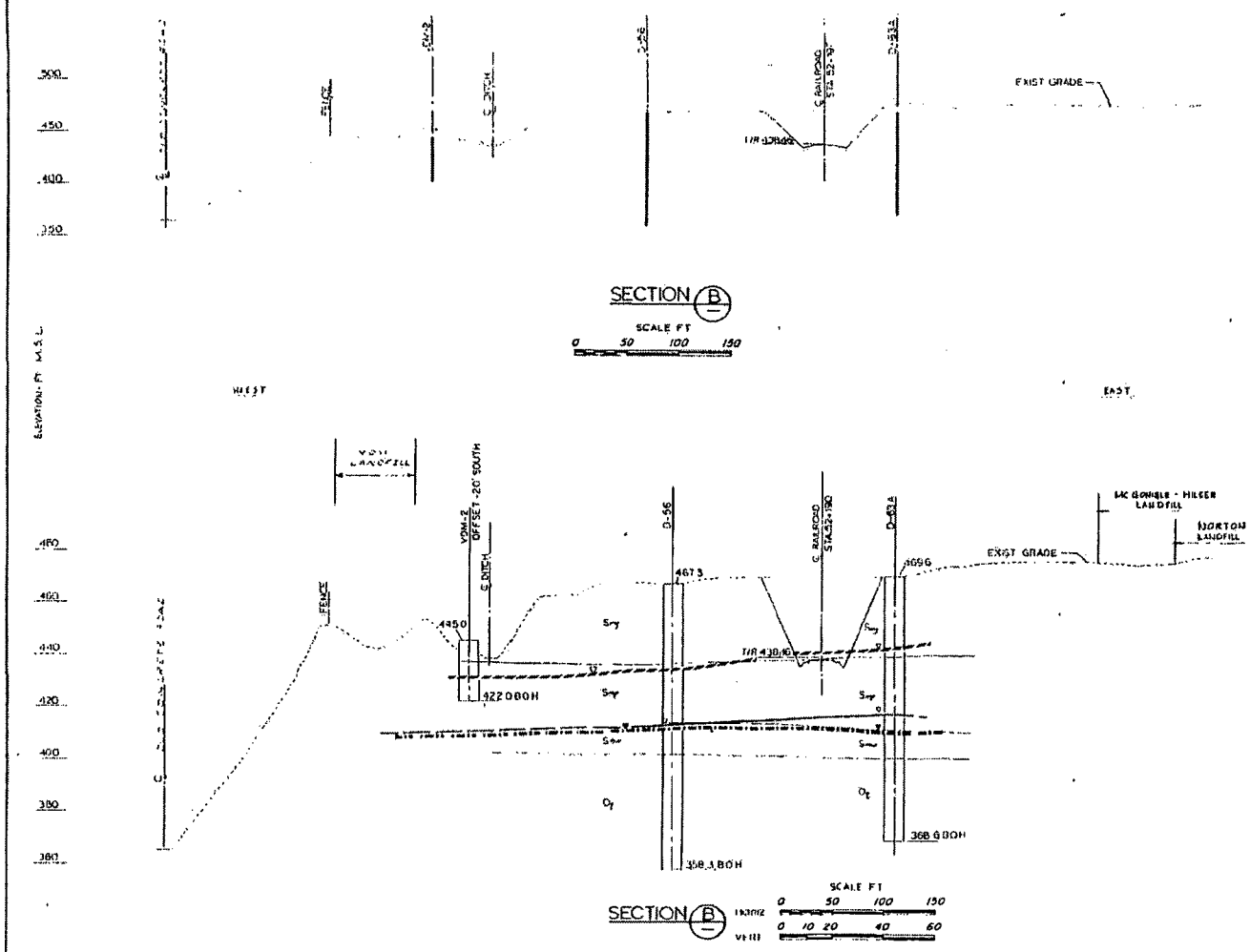
- 4650' — GROUND ELEVATION AT WELL
- GEOLOGIC FORMATION CONTACT, DASHED WHERE APPROXIMATE
- 3650' BOH BOTTOM OF HOLE
- T/R TOP OF RAIL
- ▽ WATER LEVEL FROM WELL SHOWN IN SECTION
- ▽ WATER LEVEL FROM ADJACENT WELL IN NEST NOT SHOWN IN SECTION
- Dmg DELAWARE FM.
- Dmp POWER GLEN FM.
- Dwm WHIRLPOOL FM.
- Cq QUEENSTON FM.
- ZONE 1 WATER LEVEL
- ZONE 2 WATER LEVEL
- ZONE 3 WATER LEVEL
- ZONE 4 WATER LEVEL

NOTES

1. WATER LEVELS MEASURED ON 11-4-81 UNLESS OTHERWISE INDICATED
2. FOR LOCATION OF GEOLOGICAL SECTIONS, SEE FIGURE 3
3. SEE TEXT FOR DESCRIPTION OF GEOLOGICAL FORMATIONS

SOMERSET RAILROAD CORPORATION	DANIELEWICZ ROUTE STA. 52+330 TO 51+810 CROSS SECTION A	SCALE JOB NO. 14818 FIGURE 7 SHEET NO. 1 OF 5
BECHTEL ASSOCIATES PROFESSIONAL CORPORATION		

VDM001539

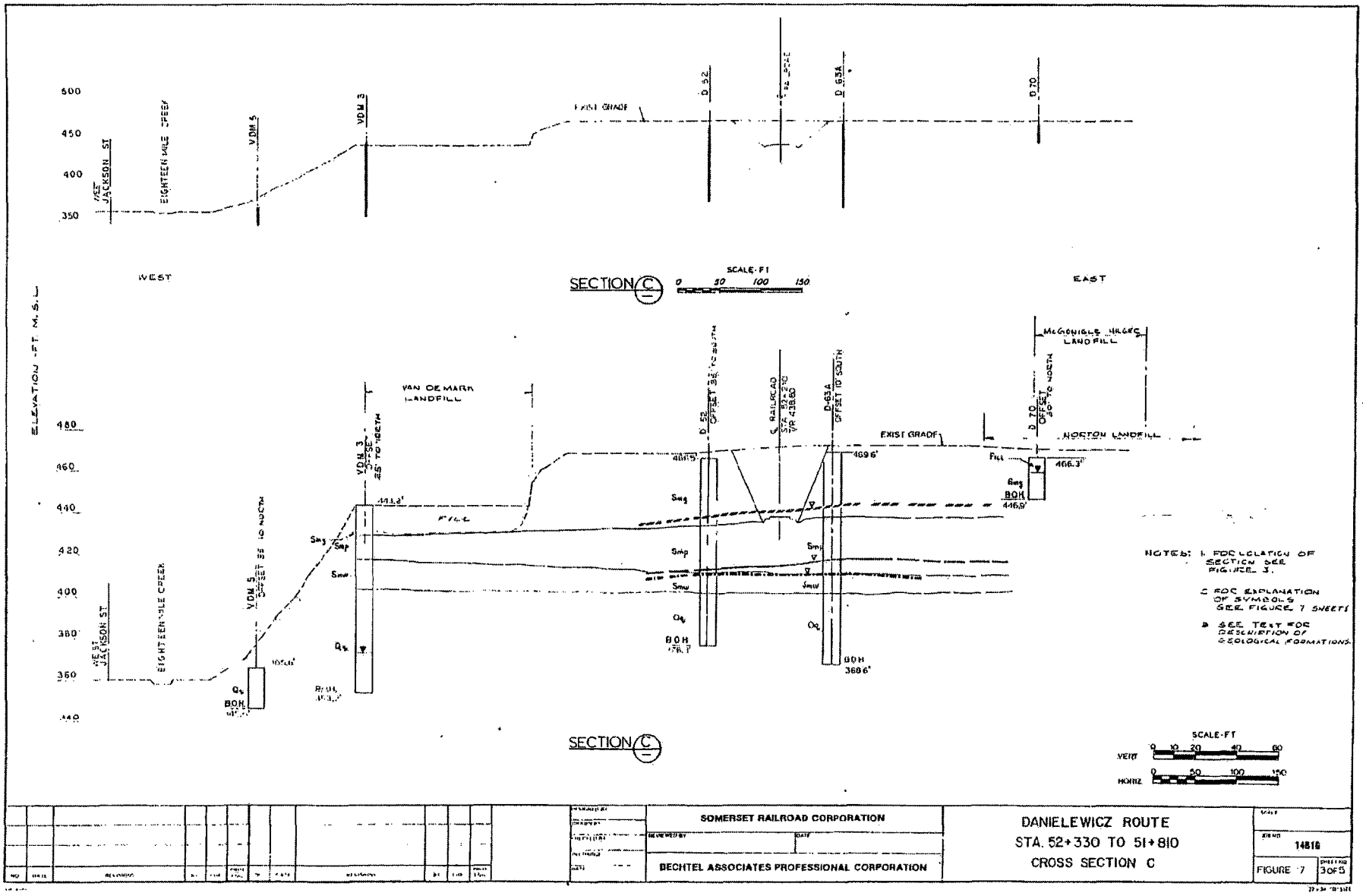


NOTE:

1. FOR EXPLANATION OF SYMBOLS SEE FIGURE 7 SHEET 1
2. FOR LOCATION OF SECTION SEE FIGURE 5
3. SEE TEXT FOR DESCRIPTION OF GEOLOGIC FORMATIONS.
4. WATER LEVELS MEASURED ON 11-4-81 UNLESS OTHERWISE INDICATED.

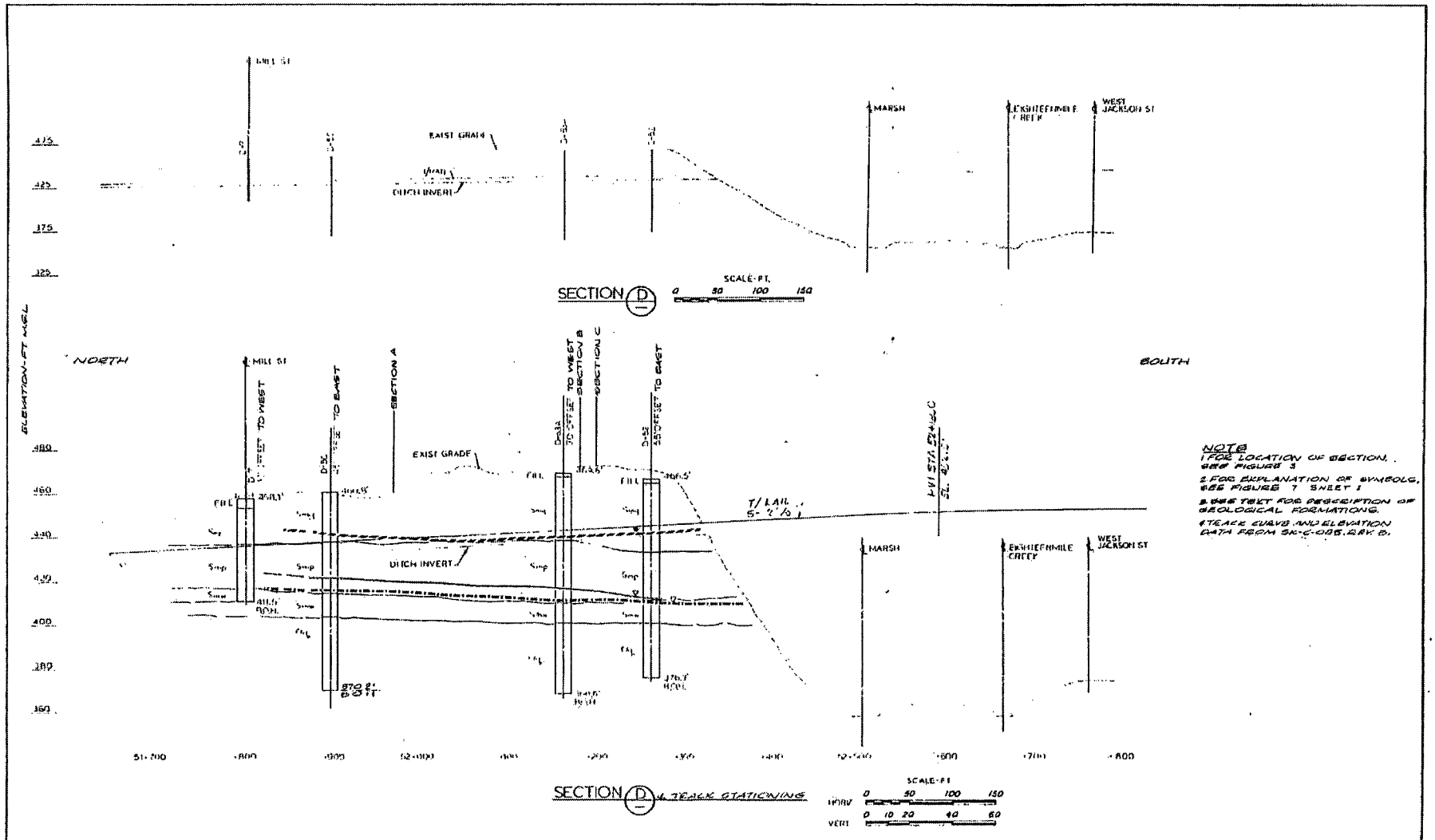
SOMERSET RAILROAD CORPORATION	DANIELEWICZ ROUTE STA. 52+330 TO 51+810 CROSS SECTION B	JOB NO. 14818	
BECHTEL ASSOCIATES PROFESSIONAL CORPORATION		FIGURE 7	SHEET NO. 2 OF 5

VDM01540



SOMERSET RAILROAD CORPORATION	DANIELEWICZ ROUTE STA. 52+330 TO 51+810 CROSS SECTION C	JOB NO. 14816
BECHTEL ASSOCIATES PROFESSIONAL CORPORATION		FIGURE 7 SHEET 3 OF 5

VDM01541



SOMERSET RAILROAD CORPORATION	DANIELEWICZ ROUTE STA. 52+330 TO 51+810 CROSS SECTION D	JOB NO. 14818	
BECHTEL ASSOCIATES PROFESSIONAL CORPORATION		FIGURE 7	SHEET NO. 4 OF 5

VDM01542

NOTES
1. FOR LOCATION OF SECTIONS, SEE FIGURE 3
2. FOR EXPLANATION OF SYMBOLS SEE FIGURE 7 SHEET 1
3. SEE TEXT FOR DESCRIPTION OF GEOLOGIC FORMATIONS.

1" = 20'

1" = 50'

SOMERSET RAILROAD CORPORATION

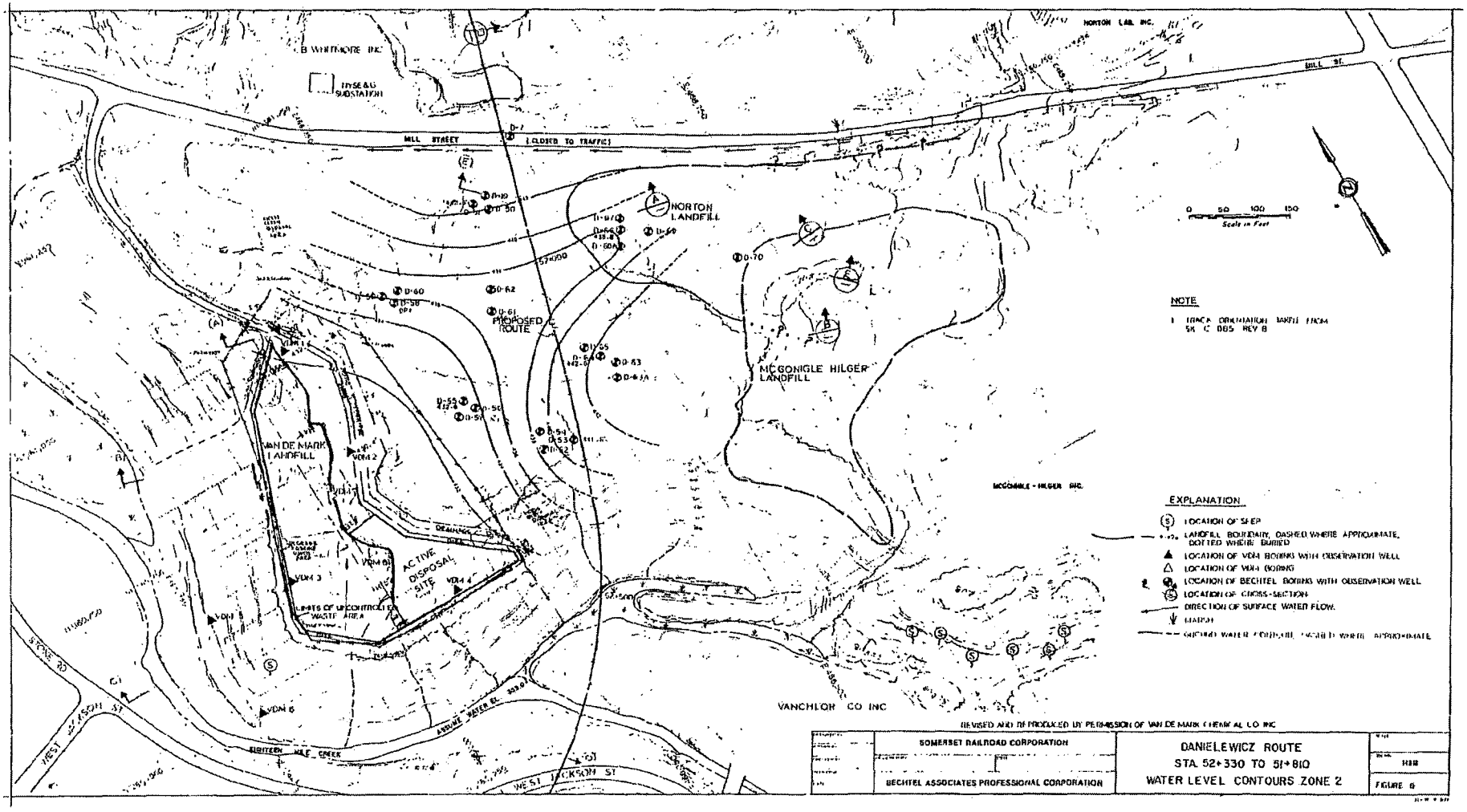
BECHTEL ASSOCIATES PROFESSIONAL CORPORATION

DANIELEWICZ ROUTE
STA. 52+330 TO 51+810
CROSS SECTION E

14818

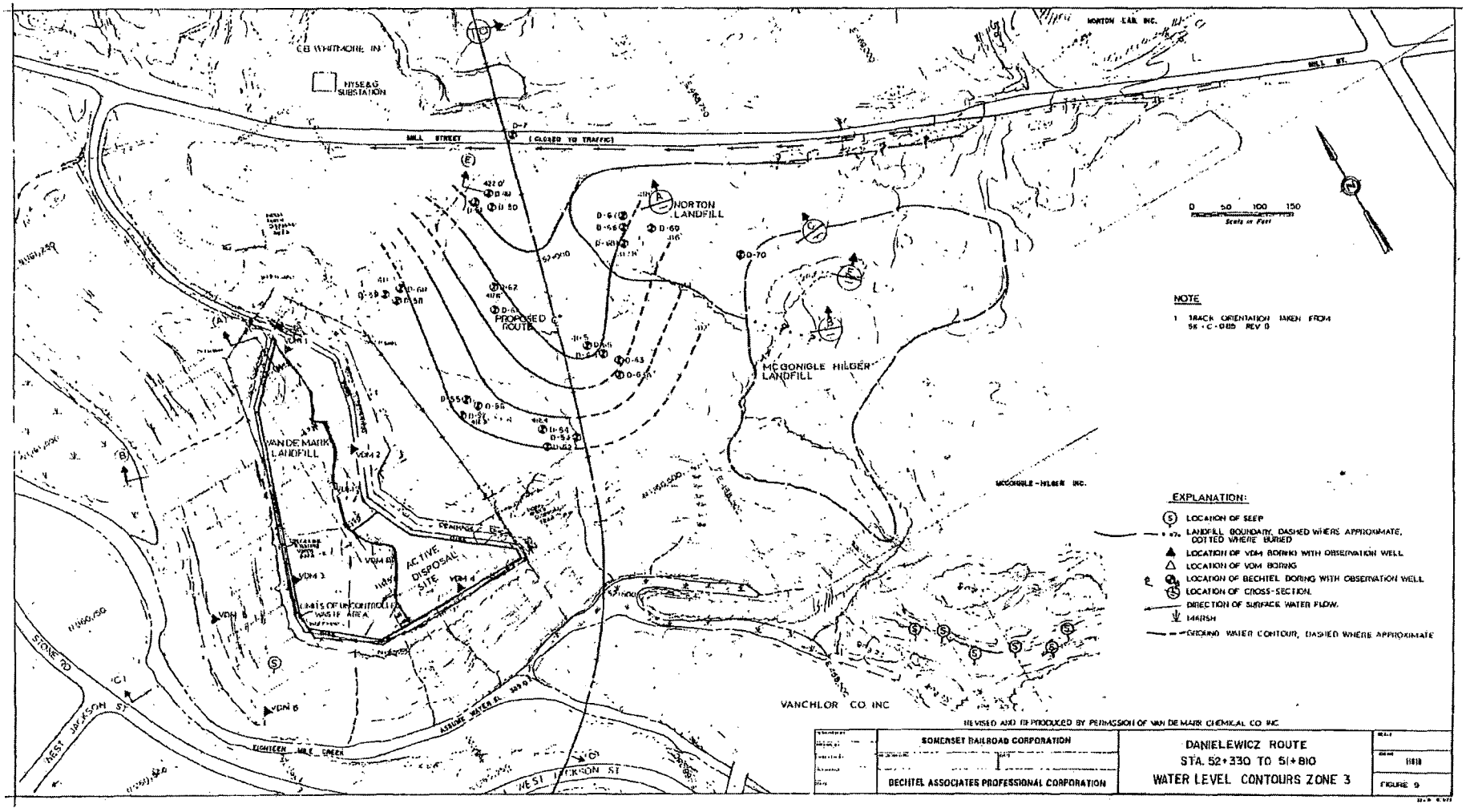
FIGURE 7 5 OF 5

VDM01543

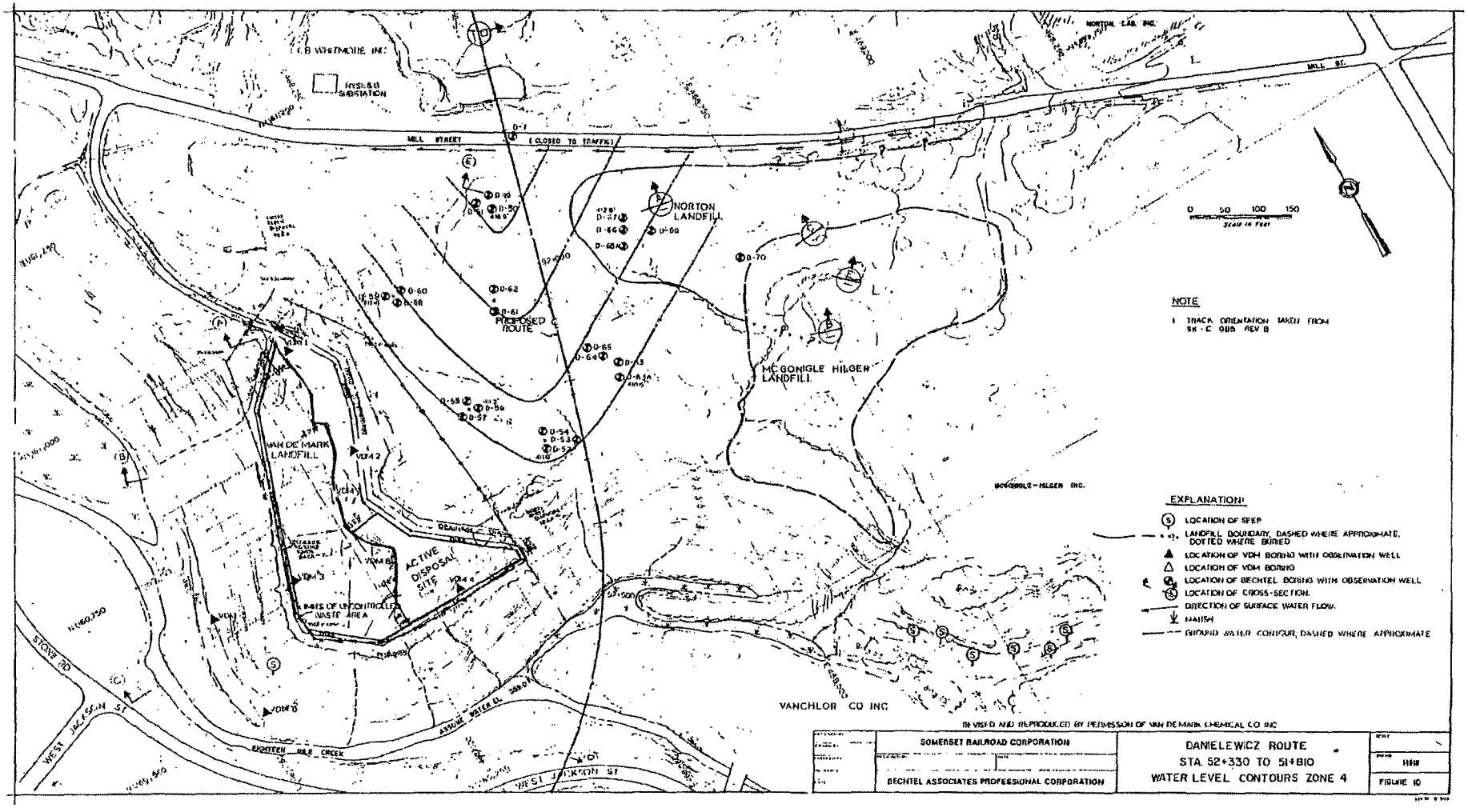


B WHITMORE INC
NYSE&G SUBSTATION
MILL STREET (CLOSED TO TRAFFIC)
NORTON LAB. INC.
MILL ST.
NORTON LANDFILL
PROPOSED ROUTE
MCGONIGLE HILGER LANDFILL
VAN DE MARK LANDFILL
ACTIVE DISPOSAL SITE
LIMITS OF UNCONTROLLED WASTE AREA
MCGONIGLE - HILGER INC.
VANCHLOR CO INC
WEST JACKSON ST
STONE RD
EIGHTEEN MILE CREEK
ASSUME WATER EL. 333.0
0 50 100 150
Scale in Feet
NOTE
1 TRACK ORIENTATION TAKEN FROM SK C 085 REV B
EXPLANATION
LOCATION OF SEEP
LANDFILL BOUNDARY, DASHED WHERE APPROXIMATE, DOTTED WHERE BURIED
LOCATION OF VDM BORING WITH OBSERVATION WELL
LOCATION OF VDM BORING
LOCATION OF BECHTEL BORING WITH OBSERVATION WELL
LOCATION OF CROSS-SECTION
DIRECTION OF SURFACE WATER FLOW
MARSH
GROUND WATER CONTOUR, DASHED WHERE APPROXIMATE
REVISED AND REPRODUCED BY PERMISSION OF VAN DE MARK CHEMICAL CO INC
SOMERSET RAILROAD CORPORATION
BECHTEL ASSOCIATES PROFESSIONAL CORPORATION
DANIELEWICZ ROUTE
STA. 52+330 TO 51+810
WATER LEVEL CONTOURS ZONE 2
FIGURE 6

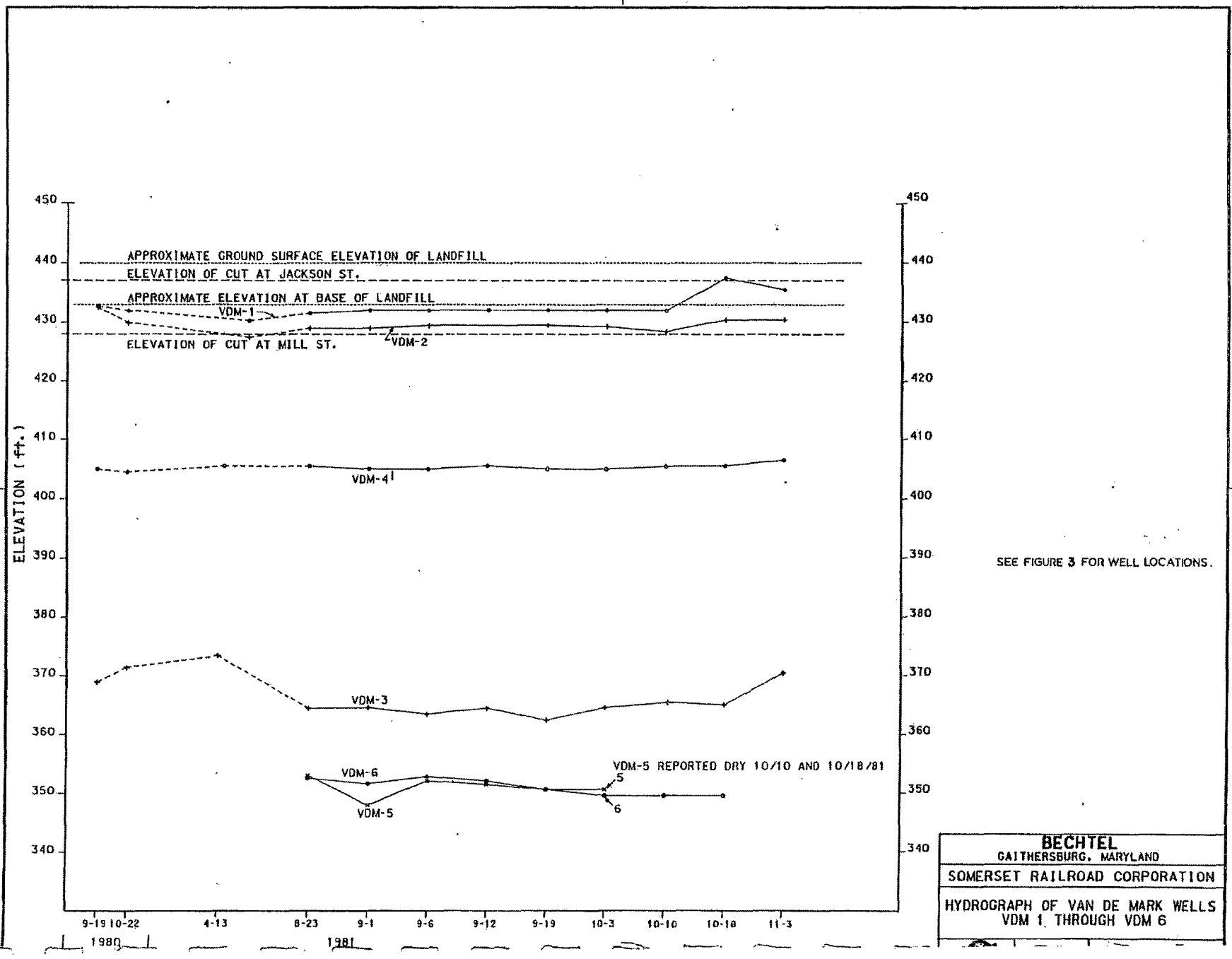
VDM01544


CB WHITMORE INC
NYSE&G SUBSTATION
MILL STREET
(CLOSED TO TRAFFIC)
NORTON CARL INC.
NORTON LANDFILL
PROPOSED ROUTE
MCGONIGLE HILGER LANDFILL
MCGONIGLE - HILGER INC.
VAN DE MARK LANDFILL
ACTIVE DISPOSAL SITE
LIMITS OF UNCONTROLLED WASTE AREA
EIGHTEEN MILE CREEK
WEST JACKSON ST
STONE RD
VANCHLOR CO INC
0 50 100 150
Scale in Feet
NOTE
1 TRACK ORIENTATION TAKEN FROM SK-C-085 REV 0
EXPLANATION:
LOCATION OF SEEP
LANDFILL BOUNDARY, DASHED WHERE APPROXIMATE, DOTTED WHERE BURIED
LOCATION OF VDM BORING WITH OBSERVATION WELL
LOCATION OF VDM BORING
LOCATION OF BECHTEL BORING WITH OBSERVATION WELL
LOCATION OF CROSS-SECTION
DIRECTION OF SURFACE WATER FLOW
MARSH
GROUND WATER CONTOUR, DASHED WHERE APPROXIMATE
REVISED AND REPRODUCED BY PERMISSION OF VAN DE MARK CHEMICAL CO INC
SOMERSET RAILROAD CORPORATION
BECHTEL ASSOCIATES PROFESSIONAL CORPORATION
DANIELEWICZ ROUTE
STA. 52+330 TO 51+810
WATER LEVEL CONTOURS ZONE 3
1818
FIGURE 9

VDM01545


C.B. WHITMORE INC.
NYSEG&G SUBSTATION
MILL STREET
NORTON LANDFILL
PROPOSED ROUTE
MCGONIGLE HILGER LANDFILL
VAN DE MARK LANDFILL
ACTIVE DISPOSAL SITE
AREAS OF UNCONTROLLED WASTE AREA
VANCHLOR CO INC
EIGHTEEN MILE CREEK
WEST JACKSON ST
STONE RD
NOTE
1 TRACK ORIENTATION TAKEN FROM SK-C 005 REV B
EXPLANATION
LOCATION OF SEEP
LANDFILL BOUNDARY, DASHED WHERE APPROXIMATE, DOTTED WHERE BURIED
LOCATION OF VDM BORING WITH OBSERVATION WELL
LOCATION OF VDM BORING
LOCATION OF BECHTEL BORING WITH OBSERVATION WELL
LOCATION OF CROSS-SECTION
DIRECTION OF SURFACE WATER FLOW
MARSH
GROUND WATER CONTOUR, DASHED WHERE APPROXIMATE
REVISED AND REPRODUCED BY PERMISSION OF VAN DE MARK CHEMICAL CO INC
SOMERSET RAILROAD CORPORATION
BECHTEL ASSOCIATES PROFESSIONAL CORPORATION
DANIELEWICZ ROUTE
STA. 52+330 TO 51+810
WATER LEVEL CONTOURS ZONE 4
FIGURE 10

VDM01546



SEE FIGURE 3 FOR WELL LOCATIONS.

BECHTEL
GAITHERSBURG, MARYLAND

SOMERSET RAILROAD CORPORATION

HYDROGRAPH OF VAN DE MARK WELLS
VDM 1 THROUGH VDM 6

VDM01547

APPENDIX C

CLOSURE PLAN FOR SOLID WASTE

MANAGEMENT FACILITY

VAN DE MARK CHEMICAL CO. INC.

LOCKPORT, N.Y.

50 West Genesee Street
P.O. Drawer J
Lockport, New York 14094
(716) 434-0242 - 5549

William W. Whitmore III, P.E. P.C.
Consulting Engineers

William W. Whitmore III, P.E.
Hal G. Rogers, P.E.

INDUSTRIAL • COMMERCIAL • MUNICIPAL • INSTITUTIONAL CIVIL • STRUCTURAL • MECHANICAL • ELECTRICAL

July 1, 1982

Mr. Allan B. VanDeMark
President
VanDeMark Chemical Co. Inc.
1 North Transit Road
Lockport, NY 14094

Subject: Closure Plan for Chemical Waste Landfill

Dear Mr. VanDeMark:

In accordance with your request, we have prepared a Closure Plan based on New York State Dept. of Environmental Conservation Solid Waste Management Facilities, 6NYCRR Part 360, Section 360.8(c)(6).

This plan has been prepared using existing data from the previous permit application, updated preliminary site data, information on ground water quality and movement obtained from the Bechtel Associates and Woodword-Clyde reports and a study and proposal made at our request by Thomsen Associates for a ground water monitoring program that will meet the closure and post-closure plan requirements.

The report data references the various parts of the NYSDEC Part 360 applying to each step and provides the references for data used relative to the proposed monitoring plan for post-closure.

We have estimated the cost for closure based on written quotations from Thomsen Associates, Empire Soils Investigations Inc. and our best estimates of actual work to be done on the site to complete the various plan requirements. It has been necessary to estimate the chemical analysis costs, Owner's management costs and engineering services based on the probable involvement if this closure plan is accepted without major change. A 10% contingency has been provided for miscellaneous costs and/or overruns that may occur in any of the items. It is understood that this preliminary estimate, which is required to be filed for the Closure Plan, will be revised and updated at the completion of the work for filing as required by the DEC regulations.

We have not incurred expense to prepare the plan other than the services of the consulting hydrogeologist and our own engineering services on an hourly basis. We are enclosing a copy of letter directed to me by Thomsen Assoc. outining a proposed costs for closure, for monitoring program and indicating their initial services at a cost of $2,000 which has been included in the preliminary cost estimate.

Three copies of the report are being filed with NYSDEC for their use and distribution to EPA, Region 2. One additional copy is forwarded with this letter and one retained for our file use.

As soon as the DEC and EPA reviews have been completed with comments, we will make any necessary modifications in the plan and resubmit or proceed with the work as they direct.

Very truly yours,
WILLIAM W. WHITMORE III, P.E. P.C.

Consulting Engineers

encl: Thomsen Associates letter 6/25/82
Copy Closure Plan with attachments and exhibits

WWW/rb

THOMSEN ASSOCIATES

June 25, 1982

Mr. William W. Whitmore III, P. E.
William W. Whitmore Consulting Engineers
50 West Genesee Street
Lockport, New York 14094

Dear Mr. Whitmore:

In accordance with your letter of June 17, 1982 we are enclosing a copy of our report entitled "Groundwater Monitoring Plan for VanDeMark Chemical Landfill". Since the reporting and response requirements of the New York Department of Environmental Conservation and United States Environmental Protection agency are very complex for groundwater monitoring, I enclosed a diagram outlining the reporting requirements. This diagram should help clarify parts of the monitoring plan which discuss when VanDeMark Chemicals will report the analyses and how they will respond if any contamination is found.

We estimate the cost of installing the monitoring program outlined in the report will be $6200. Attached is a proposal for this work which explains the cost breakdown. We included in the proposal an estimate for the time needed to regrout VDM1 and VDM2. However, it is possible that we may not be able to regrout the wells deep enough to prevent further leakage from the landfill down to the bottom of the well. We understand from the driller that the well was sandpacked for most of its depth. Therefore, it may be necessary to either pull the well and grout the hole or pull the well clean out the hole and reset a new well to prevent contamination from seeping down to the deeper aquifer. Either of these options would be much more expensive than regrouting the well. However, before deciding on how to ensure that no further contamination seeps down the annular space we will have to examine the wells in the field. Since we also can not estimte the amount of grout that may be needed, we did not include the cost in our estimate. The cost of grout will be an added expense.

Geotechnical & Materials Engineering, Geologic & Environmental Geoscience Services

105 CORONA AVENUE, GROTON, NY 13073, 607-898-5881

THOMSEN ASSOCIATES

Our proposal also does not include any meetings with the New York Department of Environmental Conservation or VanDeMark Chemical Company to discuss the monitoring plan, or revise it if necessary. Any meetings or revisions would be an additional cost and billed according to our standard fee schedule which is attached.

We have spent approximately $2,000.00 preparing the groundwater monitoring plan. We will send you our invoice at the end of the month. If you have any questions about the report or our cost estimate for installing the new wells please contact me in Groton or Stan Blas in Buffalo.

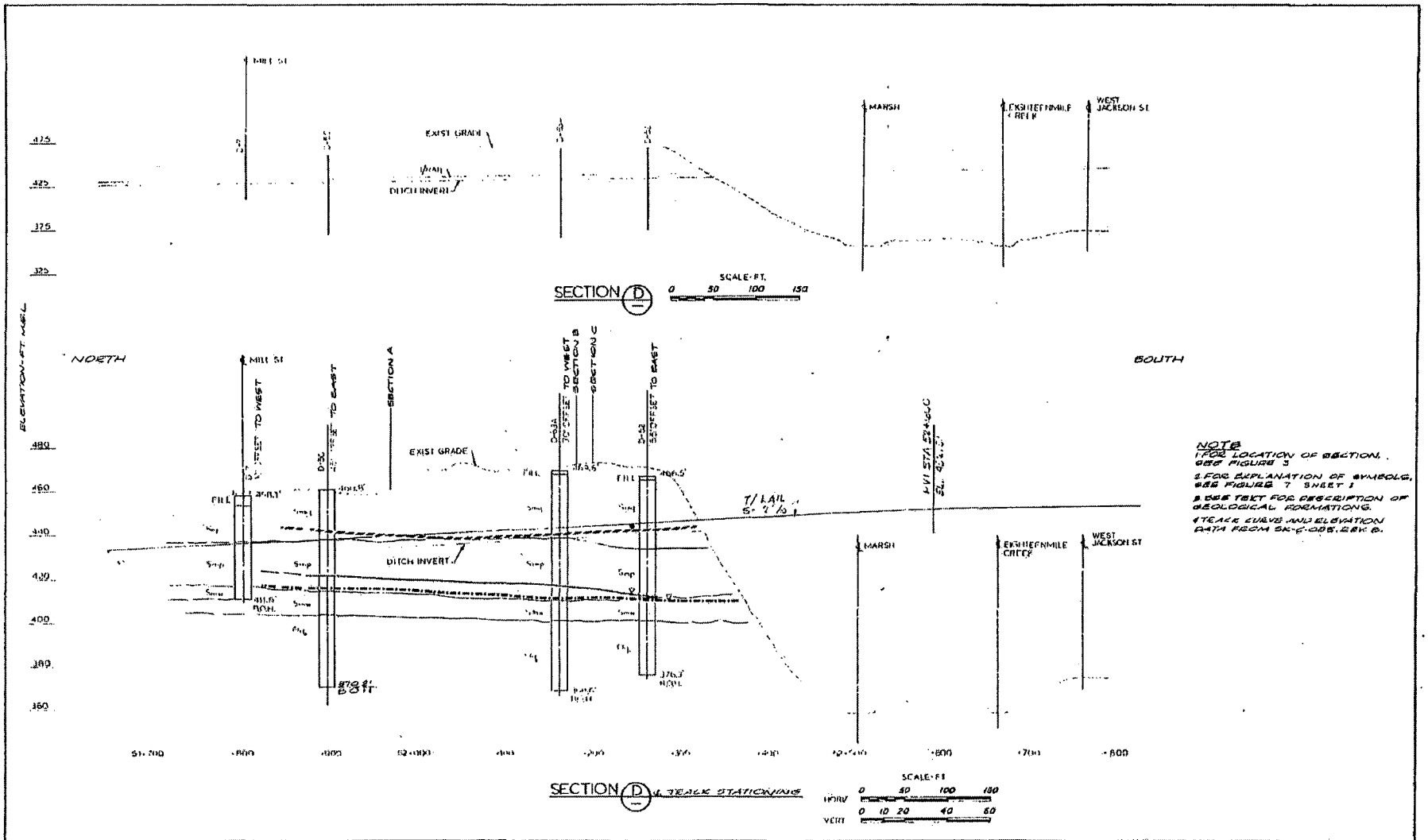
Very truly yours,

THOMSEN ASSOCIATES

Marjory B. Rinaldo-Lee

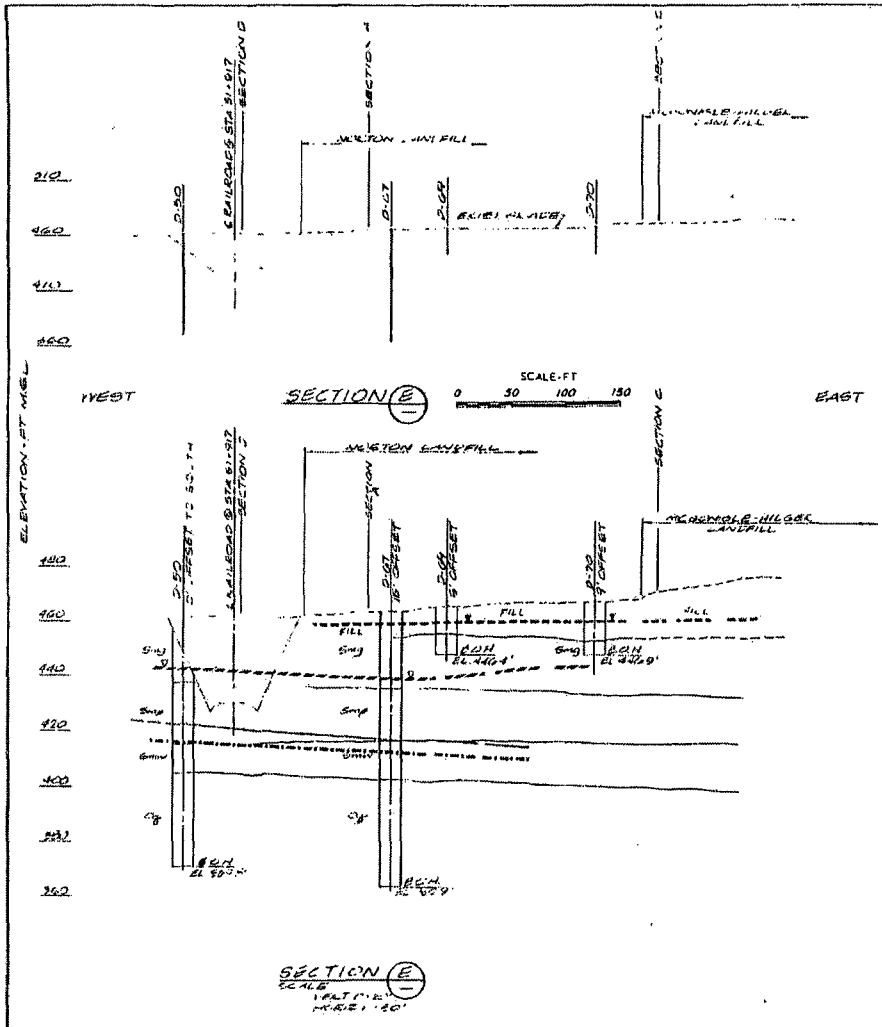
Marjory Rinaldo-Lee
Hydrogeologist

MRL:er



SOMERSET RAILROAD CORPORATION	DANIELEWICZ ROUTE STA. 52+330 TO 51+810 CROSS SECTION D	JOB NO 14818	
BECHTEL ASSOCIATES PROFESSIONAL CORPORATION		FIGURE 7	SHEET NO 4 OF 5

VDM01553

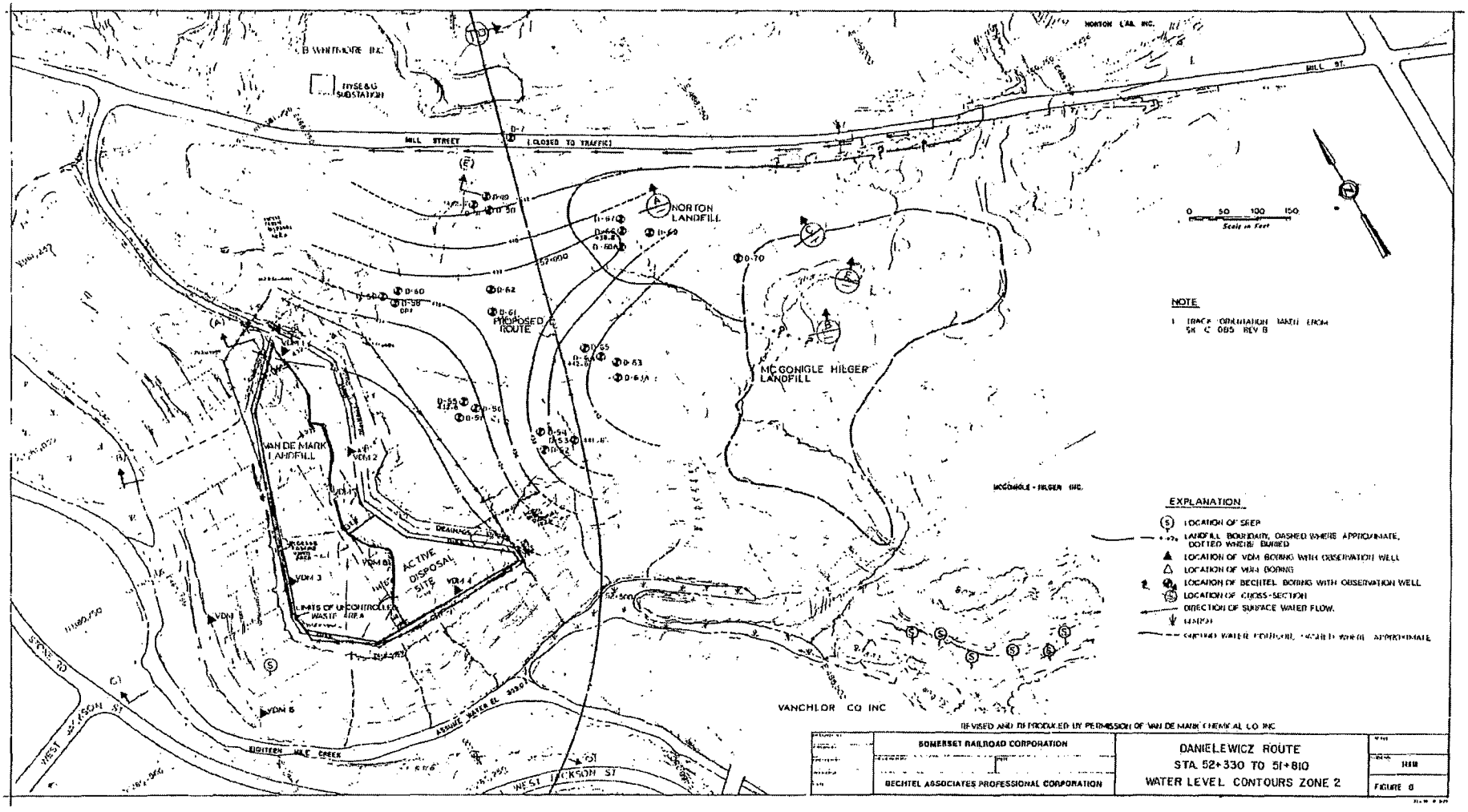


NOTES
1. FOR LOCATION OF SECTIONS, SEE FIGURE 3
2. FOR EXPLANATION OF SYMBOLS SEE FIGURE 7 SHEET 1
3. SEE TEXT FOR DESCRIPTION OF GEOLOGIC FORMATIONS.

0 10 20 40 60
1" = 20'
0 50 100 150
1" = 50'

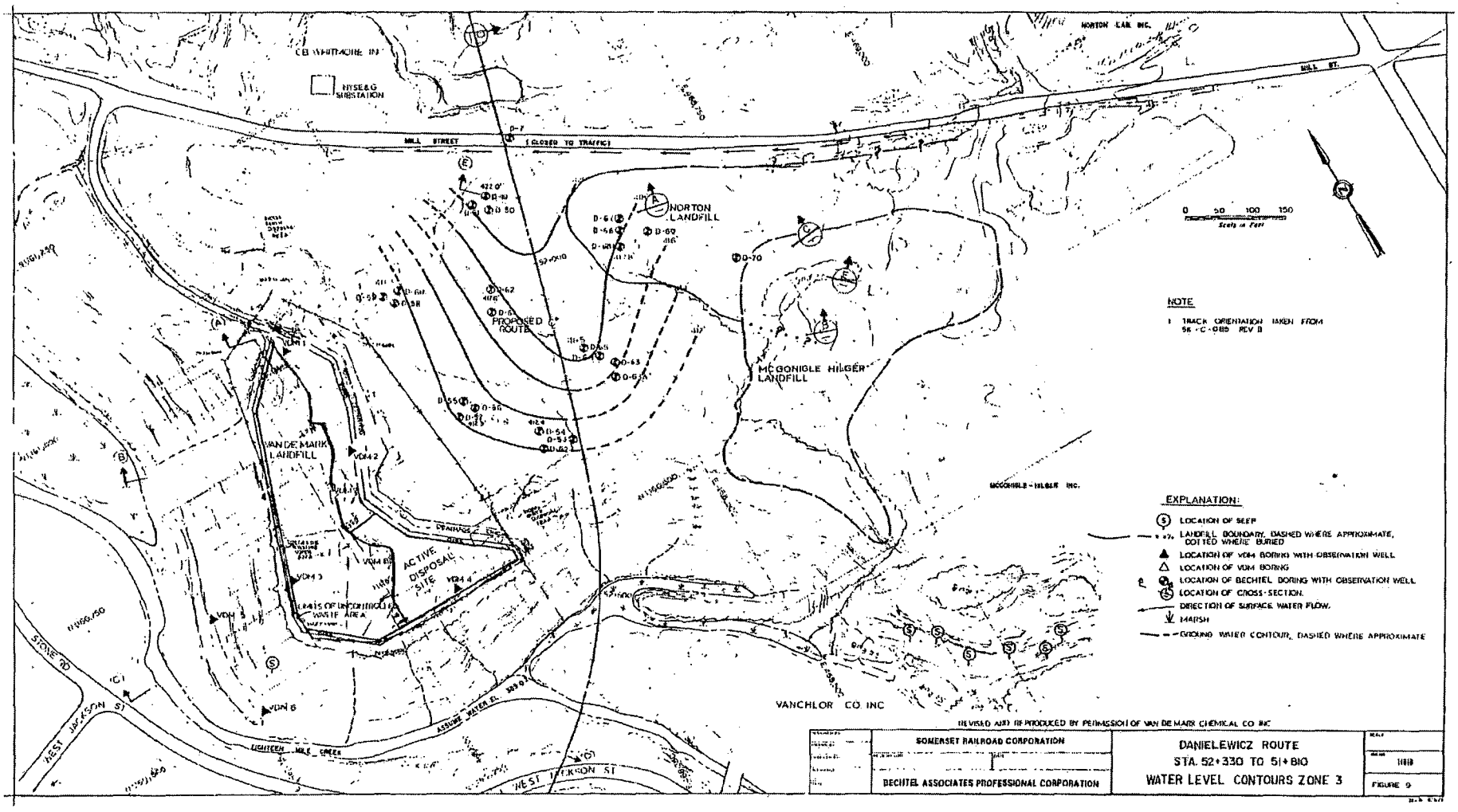
SOMERSET RAILROAD CORPORATION	DANIELEWICZ ROUTE STA. 52+330 TO 51+810 CROSS SECTION E	SCALE	
REVIEWED BY / DATE		JOB NO. 14818	
BECHTEL ASSOCIATES PROFESSIONAL CORPORATION		FIGURE 7	SHEET NO. 5 OF 5

VDM01554

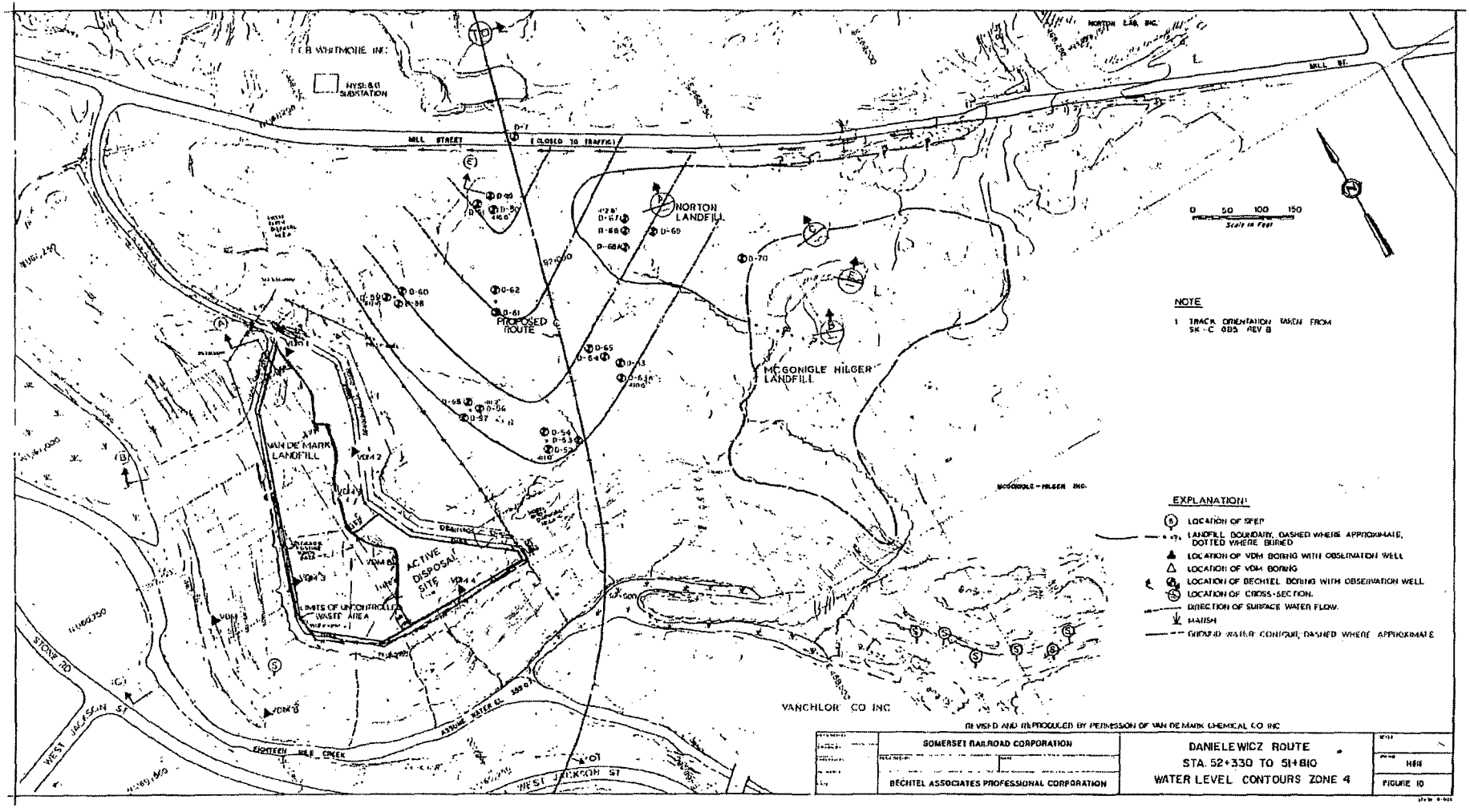


NORTON LAB. INC.
MILL ST.
MILL STREET (CLOSED TO TRAFFIC)
NYSE&G SUBSTATION
NORTON LANDFILL
PROPOSED ROUTE
MCGONIGLE HILGER LANDFILL
VAN DE MARK LANDFILL
ACTIVE DISPOSAL SITE
LIMITS OF UNCONTROLLED WASTE AREA
MCGONIGLE - HILGER INC.
VANCHLOR CO INC
WEST JACKSON ST
EIGHTEEN MILE CREEK
ASSUME WATER EL 353.0
0 50 100 150
Scale in Feet
NOTE
1. TRACK ORIENTATION TAKEN FROM SK C 085 REV B
EXPLANATION
LOCATION OF SEEP
LANDFILL BOUNDARY, DASHED WHERE APPROXIMATE, DOTTED WHERE BURIED
LOCATION OF VDM BORING WITH OBSERVATION WELL
LOCATION OF VDM BORING
LOCATION OF BECHTEL BORING WITH OBSERVATION WELL
LOCATION OF CROSS-SECTION
DIRECTION OF SURFACE WATER FLOW.
REVISED AND REPRODUCED BY PERMISSION OF VAN DE MARK CHEMICAL CO INC
SOMERSET RAILROAD CORPORATION
BECHTEL ASSOCIATES PROFESSIONAL CORPORATION
DANIELEWICZ ROUTE
STA. 52+330 TO 51+810
WATER LEVEL CONTOURS ZONE 2
FIGURE 8

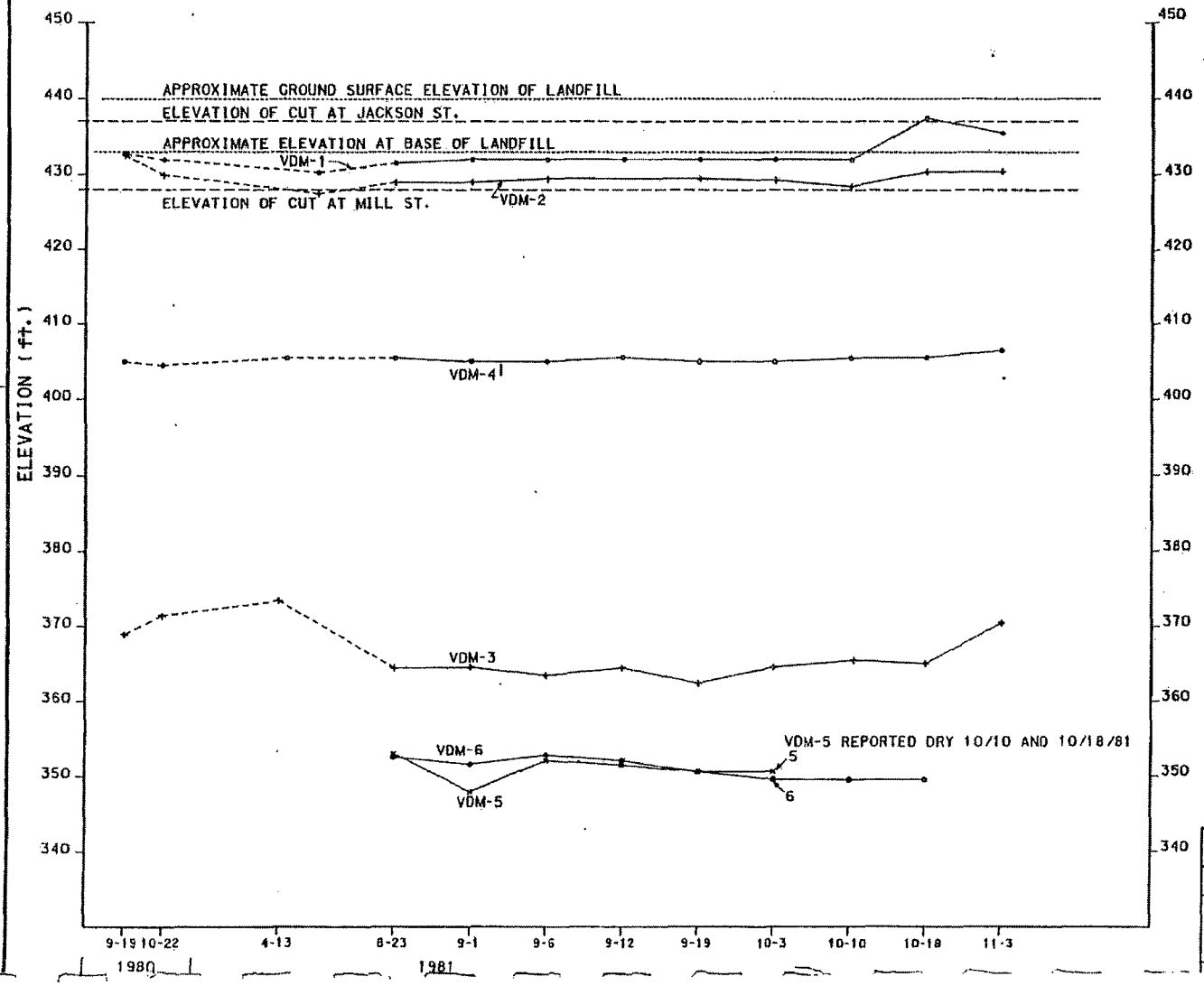
VDM01555


NORTON CHEMICAL INC.
NYSE&G SUBSTATION
MILL STREET
(CLOSED TO TRAFFIC)
NORTON LANDFILL
PROPOSED ROUTE
MCGONIGLE HILGER LANDFILL
VAN DE MARK LANDFILL
ACTIVE DISPOSAL SITE
LIMITS OF UNCONTROLLED WASTE AREA
VANCHLOR CO INC
EIGHTEEN MILE CREEK
WEST JACKSON ST
STONE RD
0 50 100 150
Scale in Feet
NOTE
1 TRACK ORIENTATION TAKEN FROM SK-C-0815 REV B
EXPLANATION:
LOCATION OF SEEP
LANDFILL BOUNDARY, DASHED WHERE APPROXIMATE, DOTTED WHERE BURIED
LOCATION OF VDM4 BORING WITH OBSERVATION WELL
LOCATION OF VDM BORING
LOCATION OF BECHTEL BORING WITH OBSERVATION WELL
LOCATION OF CROSS-SECTION
DIRECTION OF SURFACE WATER FLOW
MARSH
GROUND WATER CONTOUR, DASHED WHERE APPROXIMATE
REVISED AND REPRODUCED BY PERMISSION OF VAN DE MARK CHEMICAL CO INC
SOMERSET RAILROAD CORPORATION
BECHTEL ASSOCIATES PROFESSIONAL CORPORATION
DANIELEWICZ ROUTE
STA. 52+330 TO 51+810
WATER LEVEL CONTOURS ZONE 3
1000
FIGURE 9

VDM01556


C.B. WHITMORE INC.
NYSE&G SUBSTATION
MILL STREET
(CLOSED TO TRAFFIC)
NORTON LANDFILL
PROPOSED ROUTE
MCGONIGLE HILGER LANDFILL
VAN DE MARK LANDFILL
ACTIVE DISPOSAL SITE
LIMITS OF UNCONTROLLED WASTE AREA
VANCHLOR CO INC
STONE RD
WEST JACKSON ST
FIGHTEEN MILE CREEK
ASSUME WATER EL. 359.0
NORTON LAB. INC.
MILL ST.
0 50 100 150
Scale in Feet
NOTE
1 TRACK ORIENTATION TAKEN FROM SK-C 085 REV B
EXPLANATION:
LOCATION OF SFEP
LANDFILL BOUNDARY, DASHED WHERE APPROXIMATE, DOTTED WHERE BURIED
LOCATION OF VDM BORING WITH OBSERVATION WELL
LOCATION OF VDM BORING
LOCATION OF BECHTEL BORING WITH OBSERVATION WELL
LOCATION OF CROSS-SECTION.
DIRECTION OF SURFACE WATER FLOW.
MARSH
GROUND WATER CONTOUR, DASHED WHERE APPROXIMATE
REVISED AND REPRODUCED BY PERMISSION OF VAN DE MARK CHEMICAL CO INC
SOMERSET RAILROAD CORPORATION
BECHTEL ASSOCIATES PROFESSIONAL CORPORATION
DANIELEWICZ ROUTE
STA. 52+330 TO 51+810
WATER LEVEL CONTOURS ZONE 4
FIGURE 10

VDM01557



SEE FIGURE 3 FOR WELL LOCATIONS.

BECHTEL
GAITHERSBURG, MARYLAND

SOMERSET RAILROAD CORPORATION

HYDROGRAPH OF VAN DE MARK WELLS
VDM 1 THROUGH VDM 6

VDM01558

APPENDIX C

CLOSURE PLAN FOR SOLID WASTE MANAGEMENT FACILITY VAN DE MARK CHEMICAL CO. INC. LOCKPORT, N.Y.

50 West Genesee Street
P.O. Drawer J
Lockport, New York 14094
(716) 434-0242 - 5549

William W. Whitmore III, P.E. P.C.
Consulting Engineers

William W. Whitmore III, P.E.
Hal G. Rogers, P.E.

INDUSTRIAL • COMMERCIAL • MUNICIPAL • INSTITUTIONAL CIVIL • STRUCTURAL • MECHANICAL • ELECTRICAL

July 1, 1982

Mr. Allan B. VanDeMark
President
VanDeMark Chemical Co. Inc.
1 North Transit Road
Lockport, NY 14094

Subject: Closure Plan for Chemical Waste Landfill

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Very truly yours,
WILLIAM W. WHITMORE III, P.E. P.C.

William W. Whitmore III

Consulting Engineers

encl: Thomsen Associates letter 6/25/82
Copy Closure Plan with attachments and exhibits

WWW/rb

THOMSEN ASSOCIATES

June 25, 1982

Mr. William W. Whitmore III, P. E.
William W. Whitmore Consulting Engineers
50 West Genesee Street
Lockport, New York 14094

Dear Mr. Whitmore:

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Geotechnical & Materials Engineering, Geologic & Environmental Geoscience Services

105 CORONA AVENUE, GROTON, NY 13073, 607-898-5881

b) Well No's. VDM 1 and VDM 2 on-site together with proposed No's. VDM 10, 11 and 12 reaching to ground water level of Grimsby/Power Glen formations will be drilled and/or reworked for monitoring use.

NOTE: Bechtel Hydrogeologist Study [8] of February 1982 and Woodword-Clyde Hydrogeologist Investigation [9] dated January 15, 1982, provides the required background of site geology and ground water quality, migration and location for purposes of this program.

Details of drilling and completing wells, rehabilitation of existing wells VDM-1, -2, -3, -4 are contained in Exhibit A.

c) Regrading of existing earth cover material to provide a 2%± surface drainage from west (brow of bank) to east surface drainage ditch including regrading upland of site to divert surface run-off to west around north side of site is proposed. Installation of a impervious clay cap is not considered necessary since the penetration of moisture to aid in decomposition is necessary for continuing the chemical reaction. No release of acid mist occurs at present.

d) Following regrading work a replanting procedure as recommended by Dr. E. A. Randall's Floristic Survey dated June 1977 [10] would be instituted with evaluation of degree of plant growth formation and necessary additional procedures instituted to assure proper growth.

e) Monitoring of existing drainage ditch at east side of landfill will continue and necessary additions of limestone made, based on testing, to assure control of pollution of surface run-off.

f) Provide new controlled access to the site from Plank Road as shown on attached drawing VDM-2246 to replace existing Mill St. access being permanently cut-off by Somerset Railroad construction.

g) Engagement of Advanced Environmental Systems Inc., Niagara Falls, NY, to prepare and carryout a sampling and testing program as required by 6NYCRR Part 360.8 (c) (6)(vi)(a)(2). Results of these tests to be reviewed by Thomsen Associates. Hydrogeologist will review, analyze and determine significant increases or decreases of ground water quality for further recommendations to the Owner.

h) Compile testing information and prepare rate of decomposition chart with forecast as to remaining active life of waste in the landfill. This data, with subsequent soil testing on the site, would be used to establish the secure nature of the

THOMSEN ASSOCIATES

Our proposal also does not include any meetings with the New York Department of Environmental Conservation or VanDeMark Chemical Company to discuss the monitoring plan, or revise it if necessary. Any meetings or revisions would be an additional cost and billed according to our standard fee schedule which is attached.

We have spent approximately $2,000.00 preparing the groundwater monitoring plan. We will send you our invoice at the end of the month. If you have any questions about the report or our cost estimate for installing the new wells please contact me in Groton or Stan Blas in Buffalo.

Very truly yours,

THOMSEN ASSOCIATES

Marjory B. Rinaldo-Lee

Marjory Rinaldo-Lee
Hydrogeologist

MRL:er
Enc.
cc: Stan Blas
File

THOMSEN ASSOCIATES

PROPOSAL TO INSTALL THREE MONITORING WELLS AT
VANDEMARK CHEMICAL LANDFILL

A. FIELD EXPLORATION

Mobilization & Demobilization	$ 200.00
Drilling & Sampling in Overburden 4" flush joint casing, standard sampling 40 feet @ $13.00/ft.	$ 520.00
Drilling & Sampling in Rock -NX rock core - 35 feet @ $23.00/ft.	$ 805.00
-Ream rock to 3 3/4" -35 ft @ $24.00/ft.	$ 840.00
Observation Wells (3) -2" flush joint PVC riser and screen w/sand pack, bentonite seal, grout, 3 wells each 25 ft deep and 3 ft stickup - 84 ft @ $9.00/ft.	$ 756.00
-(3) locking steel protector pipes @ $100/ea.	$ 300.00
-Developing wells-6 hrs @ $90.00/hr.	$ 540.00
Regrout (2) 80 ft. wells -labor, approx. 4 hrs @ $90.00/hr.	$ 360.00
-grout	Not Included

B. FIELD SUPERVISION

Layout of Observation Wells & Drilling Supervision -Geologist - 40 hrs @ $40.00/hr.	$1,600.00
-Travel	$ 200.00
ESTIMATED TOTAL COST	$6,121.00

TERMS: Payment is due within 30 days after receipt of invoice. Invoices remaining unpaid beyond 30 days will accrue interest for each month of delinquency computed on basis of 18% annual percentage rate.

THOMSEN ASSOCIATES

SCHEDULE OF STANDARD FEES

GEOTECHNICAL & MATERIALS ENGINEERING,
GEOLOGIC & ENVIRONMENTAL GEOSCIENCE SERVICES

EFFECTIVE MARCH 1, 1982

Principal Engineer, P. E.	$60.00/hour
Senior Geotechnical/Materials Engineer, P.E.	$50.00/hour
Senior Geologist/Hydrogeologist, C.P.G.S.	$50.00/hour
Geotechnical/Materials Engineer, P.E.	$45.00/hour
Geologist/Hydrogeologist, C.P.G.S.	$45.00/hour
Geotechnical/Materials Engineer	$40.00/hour
Geologist/Hydrogeologist	$40.00/hour
Assistant Engineer	$30.00/hour
Assistant Geologist	$30.00/hour
Senior Engineering Technician	$25.00/hour
Engineering Technician	$20.00/hour
Draftsperson	$20.00/hour
Clerk/Typist	$15.00/hour

REMARKS

1. Two (2) copies of our report are included with our fees, distributed in accordance with the client's instructions. Clerical and reproduction costs are applicable where additional copies are requested.

2. All direct non-salary expenses incurred in connection with consulting services, such as outside reproduction services, long distance telephone charges, computer time, Federal Express, or motel and meal costs incurred during overnight trips, will be charged at cost.

3. Travel time is charged portal to portal at the above hourly rates. Automobile travel is charged 25 cents per mile; other modes of transportation are charged at cost.

4. Invoices will be submitted once a month during the period of the contract and/or on the completion of our services. Unless otherwise negotiated, payment is due within 15 days after receipt of invoice. Invoices remaining unpaid beyond 15 days will incur a service charge based on 2%/month from the date of original billing, or the highest interest rate permitted by law; whichever, is less.

50 West Genesee Street
P.O. Drawer J
Lockport, New York 14094
(716) 434-0242 - 5549

William W. Whitmore III, P.E. P.C.
Consulting Engineers

William W. Whitmore III, P.E.
Hal G. Rogers, P.E.

INDUSTRIAL • COMMERCIAL • MUNICIPAL • INSTITUTIONAL CIVIL • STRUCTURAL • MECHANICAL • ELECTRICAL

July 1, 1982

New York State Department of
Environmental Conservation
600 Delaware Ave.
Buffalo, NY 14202

Attention: John S. Tigert, P.E.
Senior Sanitary Engineer

Reference: Closure Plan for Solid Waste Management Facility
VanDeMark Chemical Co. 32S29
Lockport (C), Niagara County, NY

Gentlemen:

Enclosed please find three copies of Closure Plan Proposal for Waste Management Facility at the VanDeMark Chemical Co., Lockport, NY, landfill site.

This has been prepared in accordance with your letter of May 25, 1982 and using 6NYCRR Part 360.8 as a guide.

Following your review, please advise if you will require further for approval to proceed to augment the Closure Plan as outlined.

Very truly yours,
WILLIAM W. WHITMORE III, P.E. P.C.

Consulting Engineers

cc: Allan B. VanDeMark, VanDeMark Chemical Co.
Niagara County Health Dept.

encl: Closure Plan
Dwgs. VDM-2246, -1965, -1967 Rev. 6/30/82

WWW/rb

50 West Genesee Street
P.O. Drawer J
Lockport, New York 14094
(716) 434-0242 - 5549

William W. Whitmore III, P.E. P.C.
Consulting Engineers

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INDUSTRIAL • COMMERCIAL • MUNICIPAL • INSTITUTIONAL CIVIL • STRUCTURAL • MECHANICAL • ELECTRICAL

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New York State Department of
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Gentlemen:

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Following your review, please advise if you will require further for approval to proceed to augment the Closure Plan as outlined.

Very truly yours,
WILLIAM W. WHITMORE III, P.E. P.C.

Consulting Engineers

cc: Allan B. VanDeMark, VanDeMark Chemical Co.
Niagara County Health Dept.

encl: Closure Plan
Dwgs. VDM-2246, -1965, -1967 Rev. 6/30/82

WWW/rb

CLOSURE PLAN FOR VANDEMARK CHEMICAL CO.
CHEMICAL WASTE LANDFILL
LOCKPORT, NEW YORK

1.0 INTRODUCTION

1.1 The existing landfill was started approximately 1957 for the disposal of drums of silicon tetra chloride ($SiCl_4$) and chlorodisiloxane, by-products from the production of commercial phosgene. In June 1977 the company submitted an engineering report and application for permit to upgrade the condition of the landfill and proposed the installatin of approximately 5-7 ft. depth of suitable earth fill regrading and fencing site for disposal of waste material in dug trenches. The method used consisted of placing a bed and backfill of crushed limestone with a cover of bags of finish lime and agricultural lime with final earth cap. Perforation of the drums through the fill cover was accomplished to accelerate lime neutralizing contact with the waste. After a number of tests and variations of procedure, a practical method was determined and permit No. 2111 was issued February 9, 1979 for operation of the landfill. This permit expired in February 1982.

1.2 Bechtel [8] and Woodward-Clyde 1982 [9] Hydrogeologic Investigations determined that ground water affected by this landfill lies at the bottom of the Grimsby formation and over Power Glen formation with migration of ground water east to west on the site and probably to northwest north of the site. (Refer figures 1 and 2 in Thomsen report - Exhibit 1)

1.3 The imminent construction of the Somerset Railroad east and north of the landfill will affect surface drainage patterns and ground water migration as presently determined. (Refer figure 3, Exhibit 1).

2.0 DETERMINED ACTIONS

2.1 VanDeMark Chemical Co., after further discussion with NYSDEC, Region 9, determined that they would close the landfill in accordance with 6NYCRR Part 360.8 (c)(6) - Solid Waste Management Facilities, per letter May 20, 1982 [1].

2.2 This decision was based on successful test development of new process for on-site pre-treatment of the waste and discharge to the City of Lockport Waste Water Treatment Facility. The acceptability of this disposal method is evidenced by the City of Lockport letter May 17, 1982 [2] accepting the final effluent and successful final treatment.

2.3 The Closure Plan is formulated to meet the requirements of NYSDEC Region 9 outlined in May 7, 1982 letter [3] and May 25, 1982 [4]. The U.S. Environmental Protection Agency, by letter dated May 27, 1982 [5] indicates that conformance with NYSDEC requirements will indicate substantial conformance to the Federal Hazardous Waste Program. The Closure Plan will be submitted to both agencies for consideration and approval.

2.4 Subsequent to approval of the proposed Closure Plan, a Post-Closure Plan will be prepared and submitted in accordance with 6 NYCRR Part 360 (c)(6)(vi).

3.0 CLOSURE PLAN

3.1 SCOPE

1) Present the steps to be taken to properly prepare the site to meet objective of minimizing or eliminate future hazards to contamination of ground water, pollution of the atmosphere and to return the site to open land status.

2) Provide controls to site access for a period of time sufficient to accomplish complete decomposition of the waste with no further hazard to the public.

3) Provide necessary facilities for monitoring the decomposition of the waste through sampling of ground water and observe any changes in ground water movement under the site and effect on surface run-off to Eighteenmile Creek.

4) Propose a regrading plan to minimize eroding effect of surface water, maintain existing upland and surface drainage on the site.

5) Initiate a landscaping and planting plan to provide final erosion control on the surface of the landfill.

6) Prepare a management plan to be basis of post-closure activities.

3.2 EXECUTION

1) Institute a ground water monitoring plan as proposed in the attached June 1982 [6] Thomsen Associates Report. This Report was prepared by the consulting hydrogeologist based on NYSDEC/EPA Regulations and presents the following program:

   a) Use of wells No. D-58 and D-61 located upland from the site as previously drilled and tested by Bechtel Associates for Somerset Railroad Corp. proposed construction.

      NOTE: Approval for use of reports and wells was given to VanDeMark Chemical Co. by Somerset Railroad Corp. per letter May 3, 1982 [7].

      These wells are to be monitored for changes in ground water quality due to decomposition of the waste and an indicator of direction of ground water migration.

b) Well No's. VDM 1 and VDM 2 on-site together with proposed No's. VDM 10, 11 and 12 reaching to ground water level of Grimsby/Power Glen formations will be drilled and/or reworked for monitoring use.

NOTE: Bechtel Hydrogeologist Study [8] of February 1982 and Woodword-Clyde Hydrogeologist Investigation [9] dated January 15, 1982, provides the required background of site geology and ground water quality, migration and location for purposes of this program.

Details of drilling and completing wells, rehabilitation of existing wells VDM-1, -2, -3, -4 are contained in Exhibit A.

c) Regrading of existing earth cover material to provide a 2%± surface drainage from west (brow of bank) to east surface drainage ditch including regrading upland of site to divert surface run-off to west around north side of site is proposed. Installation of a impervious clay cap is not considered necessary since the penetration of moisture to aid in decomposition is necessary for continuing the chemical reaction. No release of acid mist occurs at present.

d) Following regrading work a replanting procedure as recommended by Dr. E. A. Randall's Floristic Survey dated June 1977 [10] would be instituted with evaluation of degree of plant growth formation and necessary additional procedures instituted to assure proper growth.

e) Monitoring of existing drainage ditch at east side of landfill will continue and necessary additions of limestone made, based on testing, to assure control of pollution of surface run-off.

f) Provide new controlled access to the site from Plank Road as shown on attached drawing VDM-2246 to replace existing Mill St. access being permanently cut-off by Somerset Railroad construction.

g) Engagement of Advanced Environmental Systems Inc., Niagara Falls, NY, to prepare and carryout a sampling and testing program as required by 6NYCRR Part 360.8 (c) (6)(vi)(a)(2). Results of these tests to be reviewed by Thomsen Associates. Hydrogeologist will review, analyze and determine significant increases or decreases of ground water quality for further recommendations to the Owner.

h) Compile testing information and prepare rate of decomposition chart with forecast as to remaining active life of waste in the landfill. This data, with subsequent soil testing on the site, would be used to establish the secure nature of the

site per 360.8(c)(6)(vi)(d) 2.

i) Comply with monitoring and reporting schedule proposed by NYSDEC letter, May 25, 1982 [4], item 3, as follows:

1st. year - five samples on 15th. of March, May, September, and November.
2nd. year - Minimum Semi-Annually in May and November, subject to results of 1st. year sampling analysis.

j) Institute a reporting and response program as outlined in attached Exhibit A with re-evaluation of the program when necessary to effectively execute the Closure Plan.

k) A final survey map with as-built elevations, bench marks, well locations and elevations, ground water elevations will be prepared and filed upon completion of Closure per 6NYCRR 360.8(c)(6)(vii). Notation of closed landfill will be prepared and filed with map and added to deed as required by 360.8(c)(6)(ix) and state law.

l) A cost estimate showing all closure costs will be prepared and filed by VanDeMark Chemical following approval of Closure Plan. This will be adjusted periodically during Closure and Post-Closure. Such estimate will reflect present costs updated by published inflation factors of U.S. Department of Commerce.

The following Preliminary Estimate presents expected Closure Costs based on July 1982 Construction Costs:

1. Regrading and Site Preparation	$5,000
2. Drilling monitoring wells, completion and rehabilitating existing wells	6,500
3. Improvements to site access, topsoil and seeding	6,000
4. Hydrogeology Consulting services and reports	5,000
5. Chemical Analysis and reports	2,000
6. Survey of site, set bench marks	1,800
7. Engineering services for Closure and Post-Closure Plan	3,500
8. Owner's filing and management costs	2,000
Total	$31,800
10% Contingency	3,200
Total Estimated Closure Cost	$35,000

4.0 DATA

4.1 Physical data on landfill taken from VanDeMark Chemical Co. reports to NYSDEC under Permit No. 2111. Excerpts from Bechtel[8] and Woodward-Clyde[9] reports pertaining to VanDeMark landfill are exhibited to establish hydrogeological data for conformance to 360.8(c)(i)(6).

1) Classification of Waste - D-003, Reactive

2) Total Waste Volume Placed in Landfill:

Sector 1 - Period 4/23/79 thru 2/19/82 per disposal reports of permit #2111	1307	drums
Sector 2 - Owner estimate of waste buried for 20± year period (1959-1979)	2000±	drums
Total Waste Buried	3307±	drums

This represents a total weight of approximately:
3307 @ 618 lb. = 2,043,726 lbs.

3) Existing Monitoring Wells:

Bechtel[8] Table 1
Table 2

4) Stratigraphic Column of VanDeMark Chemical:

Landfill area: Medina - Queenston
Bechtel Tables 3, 4

5) Upland Monitoring Wells

Per Table 5

6) Elevation of Grimsby Power Glen Interface:

(per Bechtel[8] and Woodward-Clyde [9] - Figure 7, 1 of 5 [8])
East of Site - 432 USGS
Under Landfill - 431 East
429 West
Per Bechtel[8] Fig. 7 - 2 of 5.
(Refer Figure 6 for Section locations)

7) Permeability of Subsurface Formations

Refer Tables Bechtel[8], Table 5, 6

8) Analysis of Well Samples:

Advanced Environmental Systems - Table 9, VDM wells
Upland Wells - Recra - Table 8-A, -B, -C
Bechtel[8] - on-site wells, Tables 9, 10

9) Ground Water Analysis - Woodward-Clyde[9]

Executive Summary, pg. 1, 2
Water level contours, page 17, Fig. 6
4.2 Future Conditions, pg. 19
AES - Table 1 - Metals Analysis - D-55, pg. 15 A-4
AES - Table 2 - Volatile Organics - D-55 A-5

5.0 SCHEDULE OF CLOSURE

5.1 Last date of Burial - Feb. 19, 1982 (Refer Exh. C-Waste Monitoring Reports.)

5.2 Proposed date to begin closure - July 31, 1982 [Per 360.8(c)(6)(ii)(c)]

5.3 Proposed date to complete closure - July 1, 1983 [Per 360.8 (c)(6)(iii)(a)].

Note: Modified due to possible effects of Somerset Railroad Construction adjacent to site with disruption of upland drainage patterns.

5.4 Issuance of Certificate of Closure - July 30, 1983.

6.0 SUMMARY

6.1 Based on the determinations made by Bechtel Associates [8] and Woodward-Clyde [9], vertical movement of water through fill to ground water can be expected to be limited to ground water elevation at bottom of Grimsby formation 432 to 439±. Permeability of rock formations has been demonstrated to be very low. Ground water migration under landfill is expected to be east to west with very low external flow from east of site due to Railroad cut construction. Upland from landfill, ground water flow similarly is low with movement toward north and west. The landfill exists entirely within the Grimsby formation.

6.2 Based on these findings, the monitoring plan for post-closure will be confined to five wells on site in landfill to sample ground water at bottom of Grimsby formation. Two existing wells, VDM-1 and 2 will be reworked, properly completed and sealed to assure accurate sampling results. Three new wells, VDM 9, 10, 12 will be installed at west and south edge of landfill, properly completed to sample seepage points to face of escarpment. Existing deep wells VDM 3 and 4 will be reworked to seal sampling tubes for more accurate sampling at ground water levels in Queenston formation. Upland wells D-58 and D-61 will also be sampled for quality and migration analysis of Grimsby/Power Glen ground water. A history of changes in quality and movement of ground water will be maintained to establish rate of waste decomposition. Lower wells VDM 5 and 6 will also be indicators of vertical movement of ground water and/or pollutants.

6.3 Site grading, floristic planting, reconstruction of controlled access roads from Plank Road will be accomplished in the Closure Plan. Monitoring of exposed bank areas on west, south and east side at Railroad cut will be part of Post-Closure Plan.

6.4 All reports of completion of closure actions and water quality analyses of completed wells for post-closure management will be reported to the Commissioner and EPA with certification of closure.

6.5 VanDeMark Chemical Co. will submit a letter of committment to complete closure following approval of this plan and schedule. Contracts with Advanced Environmental Systems Inc. for sampling and analysis with reports as per approved schedule will be confirmed. Report of hydrogeologist will be submitted to confirm test well completion and testing with preliminary ground water analysis report to be used for implementing monitoring program of post-closure.

6.6 A Post-Closure Plan will be prepared and submitted by VanDeMark Chemical Co. in accordance with 6NYCRR 360.8(c)(6)(vi)(b). Notice to Niagara County Clerk will be filed following certification of closure with required survey maps and deed amendment. Closure cost estimate will be updated following completion of closure operations and maintained by Owner.

REFERENCES

1) VanDeMark Chemical Co. Inc. letter May 20, 1982
Closure Determination

2) City of Lockport Wastewater Treatment Plant
Letter May 17, 1982 with U.R.S. Co. Inc. Report May 7, 1982
Agreement to Accept $SiCl_4$ Effluent

3) NYSDEC Letter May 7, 1982, J. J. Tygert P.E.
Report of 4/30/82 Meeting - Closure Proposal

4) NYSDEC Letter May 25, 1982 - J. J. Tygert P.E.
Closure Plan, Wells, Monitoring, EPA Review

5) U.S. Environmental Protection Agency Letter May 27, 1982
EPA Closure and Post-Closure Requirements

6) Thomsen Associates - June 1982, Ground Water Monitoring Program, VanDeMark Landfill

7) Somerset Railroad Corporation letter May 3, 1982
Permission to Utilize Bechtel, Woodward-Clyde Hydrogeological Studies, On-Site Wells

8) Bechtel Associates, Hydrogeological Study, February 1982
Pertinent Data on Wells, Geology, Ground Water Chemical Analysis, Maps

9) Woodward-Clyde Consultants - Results of Hydrogeological Investigation, Jan. 15, 1982
Pertinent Data, Summary of Study, Grimsby Water Level Contours, Test Data Metals and Volatile Organics - Wells D-51 - D-70.

10) Randall, E.A., S.U.C.B., June 1977, Preliminary Floristic Study, VanDeMark Chemical Co.
Waste Disposal Site, Recommendations Concerning Landscape Reseeding and Maintenance

EXHIBITS

A - VanDeMark Chemicals Groundwater Monitoring Program

VDM-2246 Site Plan with revised access and location (Danielewicz)
Somerset Railroad R.O.W.

Van De Mark Chemical Co., Inc.

1 N. Transit Road • Lockport, New York 14094 • 716 • 433-6764

May 20, 1982

Mr. John S. Tygert, P.E.
N.Y.S. Department of Environmental Conservation
600 Delaware Avenue
Buffalo, New York 14202

Dear Mr. Tygert:

This letter serves as written notice that we will be closing our industrial landfill and have received permission to dispose of our still residue to the Lockport Wastewater Treatment Plant, as shown by the enclosures. A formal closure plan will be submitted by July 1, 1982, and will be prepared by William W. Whitmore, P.E.

We have received permission, as indicated on the enclosure, to utilize any or all wells that were bored in the survey work done for Somerset Railroad Corporation and Mr. Whitmore will contact Woodward-Clyde to determine the most suitable wells to use for a groundwater reading.

We have already discharged several thousand pounds of pretreated effluent to the wastewater treatment plant without any detrimental effluent discharges and so are confident that this procedure will serve us permanently.

Please let us know if this timetable and procedure meet with your approval.

Sincerely

Allan B. Van De Mark
President

mad
Enclosures
xc: Paul Counterman - NYSDEC - Albany - Solid Waste
Dennis Wolterding - NYSDEC - Albany - Solid Waste
Jack Kehoe - Niagara County Health Department
Jonathan Joseph, P.E. - EPA - New York

WASTEWATER TREATMENT PLANT
CITY OF LOCKPORT
PLANK ROAD
LOCKPORT, NEW YORK 14094

DAVID R. HALEY, SUPERINTENDENT

439-603
439-603

May 17, 1982

Mr. Allan Van De Mark
Van De Mark Chemical Company
Lockport, NY 14094

Dear Mr. Van De Mark,

Upon the completion of the tank necessary for the silicon tetrachloride effluent process, as designed by Norm Matthews, and the necessary hookups are made, the City of Lockport agrees to accept the final effluent from that process as long as it continues to show no detrimental affects upon the Lockport Wastewater Treatment Plant.

We will require a sample of the final effluent to test and this acceptance is based upon the fact that the City of Lockport will not accept, at any time, slug flows of silicon tetrachloride.

Having viewed this as a pretreatment program with Dick Baker of URS, it is my opinion that we are in concurrence as far as this arrangement between Van De Mark Chemical Company and the City of Lockport is concerned.

Sincerely,

David R. Haley

David R. Haley
Superintendent

DRH:ba

URS

AN INTERNATIONAL PROFESSIONAL SERVICES ORGA

URS COMPANY, INC.
[illegible] DELAWARE AVE.
BUFFALO, NEW YORK 14202
TEL (716) 883-5525

NEW YORK
MONTVALE NJ
BUFFALO
SAN FRANCISCO
WASHINGTON D.C.
DALLAS
SEATTLE
DENVER
KANSAS CITY
HONOLULU
NEW ORLEANS
SAN MATEO
PUERTO RICO

May 7, 1982

Mr. David R. Haley
Superintendent
Lockport Wastewater Treatment Plant
Plank Road
Lockport, New York 14094

RE: VAN DE MARK CHEMICAL COMPANY, INC.
$SiCl_4$ DISCHARGES TO LOCKPORT WASTEWATER TREATMENT PLANT

Dear Mr. Haley:

I have reviewed all the information sent to me by Mr. Norman Matthews of Van De Mark Chemical Company, Inc. relative to the increased chloride discharges to the Lockport Wastewater Treatment Plant due to the production of silicon tetrachloride ($SiCl_4$). The results are summarized below.

Although the final discharge concentration of total chlorides could possibly double, the combined chloride concentration from the present operation and that expected from the $SiCl_4$ operation will be well below the minimum chloride concentration that might inhibit secondary treatment plant operations. At about 8000 mg/l, chlorides cause a temporary (2 - 3 day duration) reduction of biological activity. Available literature reports that nearly 20,000 mg/l of chlorides would be necessary to cause sustained reductions in biological activity. The "worse case" chlorides discharges from Van De Mark Chemical Company, Inc. are anticipated to be about 3000 mg/l.

Slug flows of $SiCl_4$ could cause temporary reduction in biological activity only when the slug loading results in chlorides concentrations greater than 8000 mg/l. This roughly equates to a slug loading of 2200 # $SiCl_4$ in a wastewater discharge of 33,000 GPD.

It is our recommendation that Van De Mark Chemical Company, Inc. be permitted to discharge the pretreated $SiCl_4$ wastewaters to the Locport Wastewater Treatment Plant. Any untreated discharges of $SiCl_4$ should be restricted until an analysis for total chloride and pH is completed.

If you have any questions on this matter, please do not hesitate to call me.

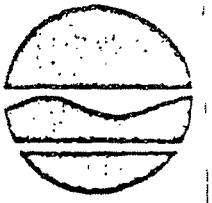
Very truly yours,

URS COMPANY, INC.

Richard J. Baker

Richard J. Baker, P.E.
Project Mgr.

New York State Department of Environmental Conservation
600 Delaware Avenue, Buffalo, New York 14202 - 1073



Robert F. Flacke
Commissioner

May 7, 1982

Van de Mark Chemical Company
1 North Transit Street
Lockport, NY 14094

Attn: Mr. Allen Van de Mark

Re: Disposal of Industrial Wastes
Van de Mark Company
Lockport (C), Niagara County

Dear Mr. Van de Mark:

This will confirm conference in our office on April 30, 1982. Present in addition to yourself were Mr. Norman Mathews of Van de Mark and Mr. John Beecher, Robert Mitrey, Steve Doleski, and the writer from this department.

1. It was indicated by you that the use of the landfill, for which the permit has expired, has ceased and will not be utilized for further disposal of solid or other wastes.

2. You indicated that you intend to react the still bottoms from your silicon tetrachloride production in a fiber glass tank equipped with a mixing device and have a discharge below the liquid surface to prevent hydrochloric acid fumes from escaping to the atmosphere.

3. After mixing the still bottoms with water the effluent will flow through two limestone beds in series where the pH will be raised to a level acceptable for discharge into the sewer system tributary to the Lockport City Waste Water Treatment Plant.

4. It was indicated that you would provide this office with a letter from Mr. Haley, Chief Operator of the Waste Water Treatment Plant, of his willingness to accept, and the limitations upon which he would accept, the effluent from your still bottom treatment facilities.

5. You further indicated that your consultant, Mr. William W. Whitmore, III, would be providing this office with a closure plan for the previously used landfill; both the portions which have been considered most recently to be active as well the inactive area.

6. With respect to groundwater monitoring, the Somerset rail line has placed a number of wells west of their rock cut which will not be disturbed during the construction of their right of way. You indicated that you would contact either Bechtel or their consultants, Woodward Clyde to determine:

a - which series of wells would be most likely to be representative of upstream groundwater flow which would flow through the landfill and

b - if the wells could be grouted and subsequently perforated at the bottom of the Grimsby formation, which is the formation in which the landfill is located.

7. Present requirements for three downstream monitoring wells do exist. However, in view of the steep decline of the topography west of the landfill area, the two wells currently installed in the base of the hill near 18-Mile Creek are in a different rock formation and most probably will not represent downstream water quality in the acquifer which is affected by the landfill.

8. Discussions with staff geologists within the Department have indicated that if the interface between Grimsby and Whirlpool formations can be located on the slope west of the landfill, the insertion of relatively shallow collectors for determining downstream water quality can be accomplished.

It was indicated that you would confirm the above discussion within two weeks.

If you have any questions, please do not hesitate to contact the writer at 847-4585.

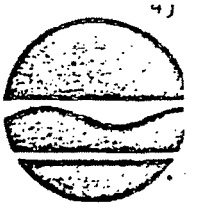
Very truly yours,

John S. Tygert, P.E.
Senior Sanitary Engineer

JST:sk

cc: Mr. Paul Counterman (NYSDEC/Albany/Solid Waste)
Mr. Dennis Wolterding (NYSDEC/Albany/Solid Waste)
Mr. Jack Kehoe (Niagara County Health Department)

New York State Department of Environmental Conservation
600 Delaware Avenue, Buffalo, New York 14202 - 1073



Robert F. Flacke
Commissioner

May 25, 1982

RECEIVED
JUN 1 1982
Wm. W. Whitmore III, P.E.
YPER

Mr. Allan B. Van De Mark, President
Van De Mark Chemical Company, Inc.
1 N. Transit Road
Lockport, NY 14094

Re: Closure Plan for Solid Waste
Management Facility
Van De Mark Chemical Company
32S29
Lockport (C), Niagara County

Dear Mr. Van De Mark:

This will acknowledge your letter of May 20, 1982 accompanied by letters from Somerset Railroad Corporation, URS and the Wastewater Treatment Plant, City of Lockport.

You have indicated that a formal closure plan will be submitted by or before July 1, 1982 and is to be prepared by Mr. William W. Whitmore, III, P.E. This date is satisfactory to this Department.

The following items should be given consideration:

1. Sampling upstream from the Somerset Railroad Corporation wells to obtain background groundwater quality levels.

2. Sampling downstream (at three locations) at the interface between the Grimsby formation in the underlying strata as indicated to you verbally. This may be accomplished by the insertion of a well screen into the obvious seeps at or slightly above the contour or by installation of perforated pipes parallel to the contours at or above the contours between the two strata and installation of a pipe out of the side hill to permit collection of samples.

3. Initially a minimum of four annual samples should be collected. Due to climalogical reasons it may be necessary that samples during the months of December, January and February cannot be collected. In this event bi-monthly samples should be collected during the remainder of the year and the results submitted within 30 days of the sampling. The times of sampling should be March 15, May 15, July 15, and September 15. If possible, a November 15 sample should be collected.

4. Please be advised that although New York State currently is operating under a memorandum of understanding with the Environmental Protection Agency, we do not yet have authorization to act in their behalf. Consequently, your closure plan will be reviewed concurrently by this Department and by the Environmental Protection Agency-Region 2 Office.

5. We have taken the liberty of sending a copy of your cover letter and attached letters to our local Division of Pure Waters to assure that they are kept advised of any discharge of pretreatment industrial wastes into the City of Lockport sewerage system.

If you or your consultants should have any questions concerning the closure plan, pretreatment or other items, please do not hesitate to contact the writer at 847-4585.

Very truly yours,

John S. Tygert, P.E.
Senior Sanitary Engineer

JST:sk

cc: Mr. Vaughn (Niagara County Health Dept.)
Mr. Counterman (NYSDEC/Albany/Solid Waste)
Mr. Wolterding (NYSDEC/Albany/Solid Waste)
Mr. Josephs (Environmental Protection Agency-Region 2)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION II
26 FEDERAL PLAZA
NEW YORK, NEW YORK 10278

MAY 27 1982

Mr. Allan B. Van De Mark
President
Van De Mark Chemical Co., Inc.
1 North Transit Road
Lockport, New York 14094

Dear Mr. Van De Mark:

It is my understanding from your May 20, 1982 letter to Mr. John S. Tygert, P.E., New York State Department of Environmental Conservation (DEC) that a formal closure plan for the Van De Mark Chemical Company industrial landfill (EPA I.D. No. NYT370011249) will be prepared and submitted to DEC by July 1, 1982. The U.S. Environmental Protection Agency (EPA) and DEC have substantially equivalent regulations concerning the closure of hazardous waste management facilities (40 CFR Part 265, Subpart G and 6 NYCRR Part 360.8(c)(6), respectively). Therefore, a closure plan which complies with the DEC regulations for closure is also likely to comply with the EPA regulations for closure. However, until EPA formally delegates the Federal hazardous waste program to DEC, your closure plan must be submitted to both EPA and DEC. Approval of the closure plan by both Agencies may also be necessary.

Although you undoubtedly have an understanding of the requirements for closure from your discussions with DEC, I am enclosing a copy of the applicable EPA regulations concerning closure and post-closure (40 CFR Part 265, Subpart G) for your reference. You should note that, for landfills, the portions of this regulation dealing with post-closure care are applicable. I am also enclosing a copy of the closure and post-closure requirements specific to landfills (40 CFR §265.310) and the EPA requirements for groundwater monitoring (40 CFR Part 265, Subpart F), which extend into the post-closure period. While I understand that a groundwater monitoring program meeting EPA requirements has not yet been fully implemented, your May 20, 1982 letter indicates that your consultant is investigating the selection of the most suitable monitoring wells. Since one of the requirements for an acceptable post-closure plan is a description of the planned groundwater monitoring activities (see 40 CFR §265.118(a)(1)), it will be necessary to finalize the groundwater monitoring program and incorporate its description in your closure/post-closure plan(s).

Please be advised that nothing in this letter should be construed to mean that EPA will not take enforcement action, if appropriate, for any violations of EPA's requirements for hazardous waste management. If there are any questions concerning this matter, I may be contacted at (212) 264-0546. I will appreciate your sending any future correspondence concerning the landfill closure, including a copy of the closure/post-closure plan(s) (when completed), to my attention.

Sincerely yours,

Jonathan Josephs

Jonathan Josephs
Chemical Engineer
Solid Waste Branch

Enclosure

cc: Mr. John S. Tygert, P.E.
New York State Department of
Environmental Conservation (w/encl.)

THOMSEN ASSOCIATES

GROUNDWATER MONITORING PROGRAM
VANDEMARK LANDFILL
LOCKPORT, NEW YORK

FOR

W. W. Whitmore, III

Lockport, New York

Job No. BTA-82-20

June 1982

Geotechnical & Materials Engineering, Geologic & Environmental Geoscience Services

S-3858 SHELDON ROAD, P. O. BOX 229, ORCHARD PARK, NY 14127, 716-649-8110

VDM01586

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VDM01587

THOMSEN ASSOCIATES

GROUNDWATER MONITORING PROGRAM
VANDEMARK LANDFILL
LOCKPORT, NEW YORK

1.0 INTRODUCTION

1.1 Purpose and Scope

Thomsen Associates and Empire Soils Investigations, Inc. were retained by William W. Whitmore, II Consulting Engineers to prepare a written report addressing hydrologic conditions concerning the closure plan to be developed for the VanDeMark Landfill. The purpose of the report is to provide the required Groundwater Monitoring Program for the closure plan. This Groundwater Monitoring Program complies with 360.8 (c) (5) of 6 NYCRR Part 360 except for 360.8 (c) (5) (iii). The procedures and techniques for sample collection, sample preservation and shipment, analytical procedures, and chain of custody control are not included in this plan. These procedures and techniques will be furnished by Advanced Environmental Systems.

The groundwater monitoring program was based on information obtained from:

1) Woodward-Clyde Consultants report of January 15, 1982 "Results of Hydrogeologic Investigation of Danielewicz Route Landfills",
2) Bechtel Associates Professional Corporation report of February 1982 "Hydrogeologic Study Danielewicz Route Station 51+810 to 52+330" and
3) Empire Soils Report of June 1977 "Site Investigation Report, Lockport Stone Quarry, Lockport, New York".

1.2 Summary of Background Hydrogeologic Conditions

The uppermost aquifer beneath the Van De Mark Landfill is at the base of the Grimsby formation. Vertical movement from this aquifer to the lower aquifers at the Power Glen-Whirlpool and Whirlpool Queenston content is practically negligible (Bechtel, 1982). Therefore, the proposed groundwater monitoring program will monitor the upper aquifer at the Grimsby-Power Glen interface.

The direction of groundwater flow beneath the landfill in the upper aquifer (Grimsby-Power Glen interface) is westward, away from the Somerset Railroad project. (Bechtel, 1982, Figure 1) Although the cut for the railroad will intercept groundwater flow in the Grimsby Formation northeast of the landfill, groundwater elevations along the proposed cut east of the southern half of the landfill are below the base of the proposed cut. Thus, even though groundwater elevations may decline due to interception of some of the groundwater flow northeast of the landfill, the general direction of flow beneath the landfill is expected to remain westward toward Eighteen Mile Creek. (Woodward Clyde, 1982)

Part 360.8(c)(5) requires three downgradient monitoring wells at the edge of the landfill in the uppermost aquifer and one upgradient monitoring well in the uppermost aquifer. Since there are no downgradient wells in the upper aquifer three new wells will be placed at the landfill boundary along the northeast edge of the landfill (Figure 2). Well B-55 will be used as the upgradient well.

2.0 GROUNDWATER MONITORING SYSTEM

The groundwater monitoring program for the VanDeMark landfill will monitor the landfill's impact on the quality of groundwater in the uppermost aquifer beneath the landfill (Grimsby-Power Glen interface) after the facility is closed. The groundwater monitoring system will include B-55 from the Bechtel investigation, and 3 new wells (Figure 2). Appendix A contains the well construction details for B-55 and the proposed construction details from the three new wells. All new wells will be placed at the Grimsby-Power Glen interface. Since groundwater elevations decrease from west to east, the bottom of the new wells will be placed at about elevation 415 ft. The new wells will be constructed using 2" i.d. PVC pipe with 10' of well screen. The annular space around the well screen will be sand packed to 1 ft. above the well screen. To prevent surface contamination of the wells the annular space above the sand pack will be grouted with a cement/bentonite slurry.

Previous analyses of groundwater samples from VDM3 and VDM4 (Bechtel, 1982) indicate leachate from the landfill is leaking down the annular space of these wells into the Queenston aquifer and possibly into the upper aquifers as well. To prevent further leakage down the annular space a cement/bentonite slurry will be placed down the annular space of these wells.

In addition to the wells which will be monitored for groundwater quality, in the Grimsby Power Glen interface, water elevations in wells VDM1, VDM2, D-58 and D-61 will be measured at the time water samples are withdrawn for analyses. (Figure 2) These nine wells will be used to measure direction of groundwater flow in the Grimsby-Power

Glen interface. These elevations will be reported to the Commissioner along with results from the Water Quality analyses, according to the reporting requirements of B60.8(c) (5) (U). The water elevations from these wells will be analyzed annually to ensure that D-55 remains upgradient and unaffected by the landfill and monitoring wells VDM9, VDM10 and VDM11 are downgradient of the landfill. If the groundwater table changes substantially after the proposed railroad is installed, new monitoring wells will be installed if necessary to comply with 360.8 (c) (5) (ii) (a).

Records of all water table elevations will be kept by VanDeMark Landfill throughout the post-closure period.

3.0 SAMPLING AND ANALYSIS

Since the waste deposited in the landfill is classified as hazardous based on its reactivity rather than its potential to leach hazardous constituents, and the landfill is being closed, the proposed sampling schedule is different than that specified in 360.8 (c) (5) (iii). (Table I).

The parameters to establish the suitability of groundwater as a drinking water supply have been eliminated based on the waste type. No pesticides, radioactive substances, heavy metals or sewage sludge have been placed in the landfill. The only substance placed in the landfill is silicon tetrachloride which produces an acidic leachate high in chlorides. Since the waste was deposited in barrels and produces an acidic leachate, iron will also be monitored in the wells. Therefore, iron and chlorides are the only parameters which will be monitored for groundwater quality. Specific conductance, total organic carbon and pH will be used as

indicators of groundwater contamination. Total organic halogen will not be used as an indicator parameter because the waste will not leach substances containing organic halogens.

All records of the analyses will be kept by VanDeMark Chemicals. During the final year, results of the analyses will be reported within 15 days of the semiannual sampling. Thereafter, an annual report will be furnished to the Commissioner.

Since the landfill is an existing landfill, the comparison of water quality in the wells specified in 360.8 (c) (5) (iv) (b)-(d) will be modified. After the first year, VanDeMark Chemicals will calculate arithmetic mean and variance for TOC, Specific Conductance and pH for each well based on four replicate samples for each well taken during the first two semi-annual sampling periods. The results from the three downgradient wells will be compared with results from the upgradient well (D-55). The comparison will consider individually each of the downgradient wells and use the Student's t-test at the 0.01 level of significance to determine statistically significant increases (and decreases, in the case of pH) over the background well.

Results from the second year of analysis will be compared as specified in 360.8 (c) (5) (iv) (b) using results from the first year for background concentrations.

If after the second and succeeding years analyses comparisons made for the upgradient wells show a significant increase (or pH decrease), VanDeMark Chemicals will submit this information in accordance with Item 360.8 (c) (5) (v) (a) (2) (ii).

TABLE I

PROPOSED WATER SAMPLE ANALYSIS

Parameter	Frequency of Analysis
Chloride	annual*
Iron	annual*
pH**	semi-annual
Specific Conductance**	semi-annual
Total Organic Carbon**	semi-annual

*semi-annual during first year

**Four replicates will be taken from each well for calculation of arithmetic mean and variance

Since the landfill is 20 years old, monitoring during the first two years should detect whether any leachate is contaminating groundwater. If monitoring during the first two years does not detect any contamination, the monitoring frequency for all parameters will be decreased to annually.

4.0 GROUNDWATER QUALITY ASSESSMENT PROGRAM OUTLINE

4.1 Introduction

The purpose of the groundwater quality assessment program is to provide a program capable of determining:

1) Whether hazardous waste or hazardous waste constituents have entered groundwater
2) The rate and extent of migration of hazardous waste or hazardous waste constituents in groundwater
3) The concentrations of hazardous waste or hazardous waste constituents in the groundwater

This program will be implemented if analyses indicate that the landfill may be affecting groundwater quality.

As explained above in Section 3.0, the comparisons of water quality in the wells specified in 360.8 (c)(5)(iv) (b)-(d) to determine if contamination has occurred will be modified. If the comparisons between downgradient wells and the upgradient wells after the first year of sampling or comparisons for downgradient wells made according to 360.8 (c) (5) (iv) (b) after the second and succeeding years show a significant increase (or pH decrease), VanDeMark Chemicals will then immediately obtain additional groundwater samples from those downgradient wells where a significant difference was detected,

split the samples in two, and obtain analyses of all additional samples to determine whether the significant difference was a result of laboratory error.

If the analyses performed on the additional split groundwater samples confirm the significant increase (or pH decrease), VanDeMark Chemicals will provide written notice to the Commissioner within seven days of the date of such confirmation that the facility may be affecting groundwater quality.

Within 15 days after notification of the Commissioner that the landfill may be affecting groundwater quality, VanDeMark Chemicals will develop and submit to the Commissioner a specific plan, based on the outline described below and certified by a qualified geologist or geotechnical engineer, for a groundwater quality assessment program at the facility.

VanDeMark Chemicals will initiate the groundwater quality assessment program immediately and as soon as technically feasible determine the results of the program. Their results will be submitted to the Commissioner within 15 days of the determination.

Since the landfill is being closed, if any water quality assessment program is required it will be undertaken after final closure of the landfill. Thus, after reporting the results of the water quality assessment program, the indicator evaluation program will be reinstated, in accordance with 360.8 (c) (5).

4.2 Determination of Rate and Extent of Migration of Hazardous Waste Constituents in Groundwater

Following notification of the Commissioner that groundwater quality may be affected by the landfill, additional analyses will be immediately performed to determine the rate and extent of migration of hazarous wastes. The extent of migration of hazardous waste constituents will be determined by sampling wells finished in the two aquifers below the Grimsby-Power Glen interface, the Power Glen-Whirpool interface and the Whirlpool-Queenston interface. The wells to be used for this analysis are shown in Figure 3. Downgradient water quality in the Power Glen-Whirlpool interface, the aquifer immediately below the Grimsby-Power Glen interface, will be sampled in wells D-57 and D-60. Wells D-56 and D-59 will be used to sample downgradient water quality in the Whirlpool-Queenston interface the lowest aquifer. A new upgradient well in the Power Glen-Whirlpool will be placed close to VDM9 for background analyses (VDM12). Well VDM5 will be used for upgradient analysis of the Queenston aquifer. Water samples from wells D56, D57, D59, D60, VDM5 and VDM12 will be analyzed for total organic carbon, pH, Specific Conductance, Iron and Chloride. Results from these analyses will be compared to determine the extent of contamination from the landfill.

The rate of contamination will be estimated using Darcy's Law. Water elevations from the wells used for analyses as well as the additional wells indicated in

Figure 3 will be used to determine the hydraulic gradient. Hydraulic conductivity will be estimated using results from the pressure packer tests on the various geologic units (Bechtel, 1982).

4.3 Determination of Concentration of Hazardous Waste Constituents in Groundwater

To determine the concentrations of hazardous waste constituents in the Grimsby-Power Glen interface, additional analyses will be performed on four downgradient wells, VDM9, VDM10, VDM11, D55, and on one background well, either D-61 or VDM1. Samples from these wells will be analyzed for applicable indicator, groundwater quality and drinking water parameters. (Table II). Results from these analyses, will be compared to determine the concentrations of hazardous waste constituents in the Grimsby-Power Glen interface.

If the results from analyses of water samples taken in the deeper aquifers (see Section 4.2) indicate contamination, additional groundwater samples from these wells will be analyzed for parameters listed in Table II.

Respectfully submitted,

THOMSEN ASSOCIATES

Marjory B. Rinaldo-Lee

Marjory Rinaldo-Lee,
Hydrogeologist

ADVANCED ENVIRONMENTAL SYSTEMS, INC.

FIELD REPORT

CUSTOMER: Vandemark Chemical AES JOB CODE: RQL

DATE: 6/20/86 TIME: 10:30 am WEATHER: 75° Sunny

SAMPLING LOCATION: #9, #10, #11, up Stream, Down Stream

PROCEDURE OF SAMPLING: Grabs

EQUIPMENT USED: Grab Reel, Bailer, Grab Jar

SAMPLE INTERVAL: 1 Sample

SAMPLE VOLUME: 500 mls each sample

FINAL INTEGRATOR READING: N/A DATE: TIME:

INITIAL INTEGRATOR READING: N/A DATE: TIME:

DIFFERENCE: N/A

24 HOUR ADJUSTMENT: N/A

QUALITATIVE PHYSICAL FLOW

PARAMETERS SAMPLED:	COMPOSITE:	GRAB:
chloride — Site #9		✓
chloride — Site #10		✓
chloride — Site #11		✓
chloride — up Stream		✓
chloride — Down Stream		✓
Field Blank + Dup		✓

NUMBER OF SAMPLES: 7

Scott MacFarlane 6/20/86

SCOTT ABEL DATE
FIELD SUPERVISOR

VDM01598

ANALYTICAL METHODOLOGIES

The method numbers for each procedure are listed in the second column of the tabulated results. The source for each method is listed as a reference number in the third column. The source(s) for the Analytical Methodologies are:

1 - EPA 40 CFR Part 136,"Guidelines Establishing Test Procedures for the Analysis of Pollutants Under the Clean Water Act; Final Rule and Interim Final Rule and Proposed Rule", Federal Register 49 (209), October 26, 1984.

2 - EPA 600/4-80-022, "Guidelines Establishing Test Procedures for the Analysis of Pollutants; Proposed Regulations, Correction", Federal Register 44 (244), December 18, 1979.

3 - EPA 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", (1983).

4 - EPA 600/4-79-057, "Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater", (1982).

5 - EPA-SW-846, "Test Methods for Evaluating Solid Waste, Physical/ Chemical Methods", second edition (1982).

6 - Standard Methods for the Examination of Water and Wastewater", 16th edition, (1985).

7 - New York State Institute of Toxicology Analytical Handbook, October 1982,Updated March, 1986.

8 - NIOSH Manual of Analytical Methods, second edition 1977.

9 - "The Analysis of Polychlorinated Biphenyls in Transformer Fluid and Waste Oil", EPA Environmental Monitoring and Support Laboratory draft, June 24, 1980.

10 - "Approved Analytical Procedures for Determining the Content of Constituents Banned from Landburial" (New York State DEC, Division of Solid and Hazardous Waste), January 1985.

11 - EPA 600/4-81-055, "Interim Methods for the Sampling and Analysis of Priority Pollutants in Sediments and Fish Tissue", Revised January 7, 1983.

12 - "Determination of Formaldehyde in the Atmosphere", Environmental Health Center, Division of Laboratories and Research, NYS Department of Health APC-29.

13 - "Chemical Soil Tests", Cornell University Agricultural Experiment Station, NYS College of Agricultural, Ithaca, N.Y. Bulletin 960, Revised October 1965.

14 - "Heat of Combustion of Liquid Hydrocarbon Fuels by Bomb Calorimeter", American Society for Testing and Materials, Philadelphia, Pa., Designation: D 240-64 (Reapproved 1973).

15 - "Analyzing Trace Amounts of Solvents in Water" (Supelco Bulletin 816).

16 - "Determination of Aniline and Substituted Derivatives in Wastewater by Gas and Liquid Chromatography", (Analytical Chemistry, Vol. 55, No. 12, October 1983).

ADVANCED ENVIRONMENTAL SYSTEMS, INC.

FIELD REPORT

CUSTOMER: VAN DE MARK CHEMICAL AES JOB CODE: BQL

DATE: MAY 12, 1986 TIME: 11 AM - 4 PM WEATHER: SUNNY

SAMPLING LOCATION: LOCKPORT, NY

PROCEDURE OF SAMPLING: PURGING AND SAMPLING OF MONITORING WELLS, GRAB SAMPLES OF STREAM AND DITCH.

EQUIPMENT USED: ISCO PUMP, AND HAND-BAILER (STAINLESS STEEL)

SAMPLE INTERVAL: VDM-9, 10, 11; S1 UPSTREAM, S-2 DOWNSTREAM; DITCH, FIELD BLANK

SAMPLE VOLUME:

FINAL INTEGRATOR READING: DATE: TIME:

INITIAL INTEGRATOR READING: DATE: TIME:

DIFFERENCE:

24 HOUR ADJUSTMENT:

QUALITATIVE PHYSICAL FLOW

PARAMETERS SAMPLED:	COMPOSITE:	GRAB:
APPENDIX B, APRIL 29, 1986		

NOTES:

- NO SIGNIFICANT GROUND SEEP
- VDM 12 - ON THE ORIGINAL DAY OF PURGING AND SAMPLING (MAY 12, 1986) THERE WAS SUFFICIENT VOLUME ONLY FOR GC/MS ANALYSES - 624 & 625. THE REMAINING SAMPLE WAS COLLECTED ON MAY 15, 1986.

NUMBER OF SAMPLES:

MR. TIMOTHY DiGIULIO NYS DEC ALBANY AND MARY MCINTOSH NYSDEC REGION 9 WERE PRESENT FOR MOST OF THE SAMPLING

W. Joseph McDonnell MAY 12, 1986
DATE

VDM01600

ADVANCED ENVIRONMENTAL SYSTEMS, INC.

FIELD REPORT

CUSTOMER: VAN DE MARK CHEMICAL AES JOB CODE: BQL

DATE: 6/18/86 TIME: 5 PM WEATHER: SUNNY, ~ 80°

SAMPLING LOCATION: VDM 12, AND DITCH

PROCEDURE OF SAMPLING: GRAB

EQUIPMENT USED: STAINLESS STEEL BAILER

SAMPLE INTERVAL: 1 EACH

SAMPLE VOLUME: ~500 mL EACH

FINAL INTEGRATOR READING: _____ DATE: _____ TIME: _____

INITIAL INTEGRATOR READING: _____ DATE: _____ TIME: _____

DIFFERENCE: _____

24 HOUR ADJUSTMENT: _____

QUALITATIVE PHYSICAL FLOW

PARAMETERS SAMPLED:	COMPOSITE:	GRAB:
CHLORIDES - VDM #12		✓
CHLORIDES - DITCH		✓

NUMBER OF SAMPLES: 2

W. Joseph McDougall 6/18/86
DATE

VDM01601

APPENDIX B

FIELD REPORTS

CHAIN OF CUSTODY RECORD	PROJECT NO. BQL	PROJECT NAME VAN DE MARK CHEMICAL	ADVANCED ENVIRONMENTAL SYSTEMS INC.

SAMPLER'S SIGNATURE [signature]

SAMPLE NO.	SEQ. NO.	DATE	TIME	SAMPLE LOCATION	SAMPLE TYPE	NUMBER OF CONTAINERS	REMARKS
	1	5/12/86		VDM-9	WATER	6	1-LITRE, 2VOAS, 2-250mL, 1-500mL
	2			VDM-10		6	1-LITRE, 2VOAS, 3-250mL
	3			VDM-11		6	1-LITRE, 2VOAS, 3-250
	4			VDM-12		3	1-LITRE, 2VOAS
	5			S-1 UPSTREAM, 18mi. CREEK		6	1-LITRE, 2VOAS, 3-250mL
	6			S-2 DOWNSTREAM "		6	1-LITRE, 2VOAS, 3-250mL
	7			DITCH		6	1-LITRE, 2VOAS, 3-250mL
	8			FIELD BLANK		6	1-LITRE, 2VOAS, 3-250mL
						1	VOA
					TOTAL NO. OF CONTAINERS	40	

RELINQUISHED BY (Sign)	DATE/TIME	RECEIVED BY (Sign)	RELINQUISHED BY (Sign)	DATE/TIME	RECEIVED BY (Sign)
1 [signature]	5/12/86 5:00 PM	2 C. Mocniak	2		3
RELINQUISHED BY (Sign)	DATE/TIME	REC'D BY MOBILE LAB (Sign)	REL'D BY MOBILE LAB (Sign)	DATE/TIME	RECEIVED BY (Sign)
3		4	4		5
METHOD OF SHIPMENT		SHIPPED BY (Sign)	RECEIVED FOR LABORATORY (Sign)		DATE/TIME

VDM01603

CHAIN OF CUSTODY RECORD

PROJECT NO.	PROJECT NAME	ADVANCED ENVIRONMENTAL SYSTEMS INC.
BQL	VAN DE MARK CHEMICAL	

SAMPLER'S SIGNATURE: [signature]

SAMPLE NO.	SEQ. NO.	DATE	TIME	SAMPLE LOCATION	SAMPLE TYPE	NUMBER OF CONTAINERS	REMARKS
	1	5/15/86		VDM-12	WATER	6	2-liter, 3-250mL, 1-500mL
					TOTAL NO. OF CONTAINERS	6	

RELINQUISHED BY (Sign)	DATE/TIME	RECEIVED BY (Sign)	RELINQUISHED BY (Sign)	DATE/TIME	RECEIVED BY (Sign)
1 [signature]	5/15/86 4:00 pm	2 [signature]	2		3
RELINQUISHED BY (Sign)	**DATE/TIME**	**REC'D BY MOBILE LAB (Sign)**	**REL'D BY MOBILE LAB (Sign)**	**DATE/TIME**	**RECEIVED BY (Sign)**
3		4	4		5
METHOD OF SHIPMENT		**SHIPPED BY (Sign)**	**RECEIVED FOR LABORATORY (Sign)**		**DATE/TIME**

VDM01604

CHAIN OF CUSTODY RECORD	PROJECT NO. BQL	PROJECT NAME Van De Mark	ADVANCED ENVIRONMENTAL SYSTEMS INC.

SAMPLER'S SIGNATURE W. Joseph McDougall

SAMPLE NO.	SEQ. NO.	DATE	TIME	SAMPLE LOCATION	SAMPLE TYPE	NUMBER OF CONTAINERS	REMARKS
		6/18/86		DITCH	WATER	1	500ml
		6/18/86		VDM-12	↓	↓	↓
					FOR: CHLORIDES		
					TOTAL NO. OF CONTAINERS	2	

RELINQUISHED BY (Sign)	DATE/TIME	RECEIVED BY (Sign)	RELINQUISHED BY (Sign)	DATE/TIME	RECEIVED BY (Sign)
1 W J McDougall	6/19/86 8:30 AM	2 C Mocniak	2		3
RELINQUISHED BY (Sign)	DATE/TIME	REC'D BY MOBILE LAB (Sign)	REL'D BY MOBILE LAB (Sign)	DATE/TIME	RECEIVED BY (Sign)
3		4	4		5
METHOD OF SHIPMENT		SHIPPED BY (Sign)	RECEIVED FOR LABORATORY (Sign)		DATE/TIME

VDM01605

CHAIN OF CUSTODY RECORD

PROJECT NO.	PROJECT NAME	ADVANCED ENVIRONMENTAL SYSTEMS, INC.
BQL	VANDEMARK Chem.	

SAMPLER'S SIGNATURE: Scott MacFarlane

SAMPLE NO.	SEQ. NO.	DATE	TIME	SAMPLE LOCATION	SAMPLE TYPE	NUMBER OF CONTAINERS	REMARKS
		6/20/86	10:30	#9	WATER	1	500mL
			10:40	#10		1	
			10:50	#11		1	
			11:00	Up Stream		1	
			11:20	Down Stream		1	
				Field Blank		1	
				Dup.		1	
					TOTAL NO. OF CONTAINERS	7	

RELINQUISHED BY (Sign)	DATE/TIME	RECEIVED BY (Sign)	RELINQUISHED BY (Sign)	DATE/TIME	RECEIVED BY (Sign)
1 Scott MacFarlane	6/20/86 3:30	2 C. Mocniak	2		3
RELINQUISHED BY (Sign)	DATE/TIME	REC'D BY MOBILE LAB (Sign)	REL'D BY MOBILE LAB (Sign)	DATE/TIME	RECEIVED BY (Sign)
3		4	4		5

METHOD OF SHIPMENT	SHIPPED BY (Sign)	RECEIVED FOR LABORATORY (Sign)	DATE/TIME

VDM01606

APPENDIX A

CHAIN OF CUSTODY RECORDS

ADVANCED ENVIRONMENTAL SYSTEMS, INC.
LABORATORY REPORT
QUALITY CONTROL - ACCURACY

Type of Analysis: Matrix Spikes and E.P.A. Standards
Client: VAN DE MARK A.E.S. Job Code:BQL

(Units: mg/l or ppm)

Analytical Parameters	Sample No.	Type	Original Conc.	Added Conc.	Expected Conc.	Reported Conc.	Percent Recove
TOTAL RECOVERABLE PHENOLS	6059	SPK	0.01	1.0	1.01	1.00	99.0
TOTAL RECOVERABLE PHENOLS		EPA	0.72	----	0.72	0.73	101.4

VDM01608

ADVANCED ENVIRONMENTAL SYSTEMS, INC.
LABORATORY REPORT
QUALITY CONTROL - PRECISION

Type of Analysis: Duplicate Analysis
Units of Analysis: Milligrams/Liter or ppm
Client: VAN DE MARK CHEMICALA.E.S. Job Code:BQL

Analytical Parameters	Sample No.	Original Conc.	Duplicate Conc.	Average Conc.	Range	Rel. % Difference
TOTAL RECOVERABLE PHENOLS	6062	0.01	0.01	0.01	0	0

Relative Percent Difference =
Range/Average X 100

VDM01609

ADVANCED ENVIRONMENTAL SYSTEM, INC.
LABORATORY REPORT

Type of Analysis: RESULTS - WET CHEMISTRY
Client: VAN DE MARK CHEMICAL A.E.S. Job Code BQL

(All results are in mg/l)

Analytical Parameter(s)	Method No.	Ref No.	Det. Limits	AES Lab No. - 6059 Sample ID - 5/12/86 Grab VDM 9	6060 5/12/86 Grab VDM 10	6061 5/12/86 Grab VDM 11	7027 5/12/86 Grab VDM 12
TOTAL RECOVERABLE PHENOLS	420.1	3	0.01	0.01	0.54	0.23	BDL*
TOTAL ORGANIC HALIDES	9020	5	0.001	NR**	NR	NR	2.81 [1]
pH***				4.30	6.18	2.20	1.83

* Below determinable limits.
** Not required.
*** Analysis performed in field.
[1] Analysis performed by Environmental Laboratories, Gulfport, Miss.

Margaret L. Skowron

MARGARET L. SKOWRON
W. C. DIVISION SUPERVISOR

VDM01610

ADVANCED ENVIRONMENTAL SYSTEM, INC.
LABORATORY REPORT

Type of Analysis: RESULTS - WET CHEMISTRY
Client: VAN DeMARK CHEMICAL A.E.S. Job Code BQL

(All results are in mg/l)

Analytical Parameter(s)	Method No.	Ref No.	Det. Limits	AES Lab No. - 6062 Sample ID - S-1 UPSTREAM 18MI CREEK 5/12/86	6063 S-2 DOWNSTREAM 18MI CREEK 5/12/86	6064 GRAB DITCH 5/12/86
TOTAL RECOVERABLE PHENOLS	420.2	3	0.01	0.01	BDL*	BDL
pH**				7.89	8.13	4.66

* Below determinable limits.
** Analysis performed in field.

Margaret L. Skowron
MARGARET L. SKOWRON
W. C. DIVISION SUPERVISOR

VDM01611

ADVANCED ENVIRONMENTAL SYSTEMS, INC.
LABORATORY REPORT
QUALITY CONTROL - PRECISION

Type of Analysis: Duplicate Analysis
Units of Analysis: Milligrams/Liter or ppm
Client: VAN DeMARK A.E.S. Job Code:BQL

Analytical Parameters	Sample No.	Original Conc.	Duplicate Conc.	Average Conc.	Range	Rel. % Difference
CHLORIDES	8399	2,430	2,340	2,385	90	3.8
CHLORIDES	8400	57,900	56,500	57,200	1,400	2.4
CHLORIDES	8401	19,000	18,600	18,800	400	2.1

elative Percent Difference =
ange/Average X 100

VDM01612

ADVANCED ENVIRONMENTAL SYSTEMS, INC.
LABORATORY REPORT
QUALITY CONTROL - ACCURACY

Type of Analysis: Matrix Spikes and E.P.A. Standards
Client: VAN DeMARK A.E.S. Job Code:BQL

(Units: mg/l or ppm)

Analytical Parameters	Sample No.	Type	Original Conc.	Added Conc.	Expected Conc.	Reported Conc.	Percent Recovery
CHLORIDES		EPA	20.2	---	20.2	18.5	91.6
CHLORIDES		EPA	20.2	---	20.2	19.3	95.6

VDM01613

ADVANCED ENVIRONMENTAL SYSTEM, INC.
LABORATORY REPORT

Type of Analysis: RESULTS - WET CHEMISTRY
Client: VAN DeMARK A.E.S. Job Code BQL

(All results are in mg/l)

Analytical Parameter(s)	Method No.	Ref No.	Det. Limits	AES Lab No. - 8399 Sample ID - DITCH 6/18/86	8400 VDM-12 6/18/86	8401 VDM-9 6/20/86	8402 VDM-10 6/20/86	8403 VDM-11 6/20/86
CHLORIDES	407B	6	1	2,385	57,200	18,800	6,470	4,803

Margaret L. Skowron

MARGARET L. SKOWRON
W. C. DIVISION SUPERVISOR

VDM01614

REVISED SAMPLING PROGRAM RESPONSE TO MEETING AT NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION REGION 9 OF APRIL 29, 1986

Report Prepared For

VAN DeMARK CHEMCIAL COMPANY, INC.

By

ADVANCED ENVIRONMENTAL SYSTEMS, INC.

W. Joseph McDougall

W. Joseph McDougall, Ph.D.
Technical Evaluation

June 24, 1986
AES Report BQL

SCOPE OF WORK

This program was required by New York State Department of Environmental Conservation to provide supplemental data and to update the information presented in the April 1984 sampling results.

COLLECTION OF SAMPLES

On May 12, 1986, in the presence of Mr. Timothy DiGiulio, NYS DEC Albany and Ms. Mary McIntosh, NYS DEC Region 9 most of the samples were collected. There was no significant groundseep to be collected. In Well VDM 12 there was sufficient volume only for GC/MS analyses.

Additional groundwater sample was collected on May 15, 1986 for the remaining parameters.

Due to dilution error in the laboratory, sample aliquots were recollected for chlorides on June 18 and 20, 1986. (Field Reports are attached in Appendix B).

ADVANCED ENVIRONMENTAL SYSTEMS, INC.

FIELD REPORT

CUSTOMER: VAN DEMARK CHEMICAL AES JOB CODE: BQL

DATE: MAY 12, 1986 TIME: 11 AM - 4 PM WEATHER: SUNNY

SAMPLING LOCATION: LOCKPORT, NY

PROCEDURE OF SAMPLING: PURGING AND SAMPLING OF MONITORING WELLS, GRAB SAMPLES OF STREAM AND DITCH

EQUIPMENT USED: ISCO PUMP, AND HAND-BAILER (STAINLESS STEEL)

SAMPLE INTERVAL: VDM-9, 10, 11 · S1 UPSTREAM, S-2 DOWNSTREAM;

SAMPLE VOLUME: DITCH, FIELD BLANK

FINAL INTEGRATOR READING: _____ DATE: _____ TIME: _____

INITIAL INTEGRATOR READING: _____ DATE: _____ TIME: _____

DIFFERENCE: _____

24 HOUR ADJUSTMENT: _____

QUALITATIVE PHYSICAL FLOW

PARAMETERS SAMPLED:	COMPOSITE:	GRAB:
APPENDIX B, APRIL 29, 1986		

NOTES:

- NO SIGNIFICANT GROUND SEEP
- VDM 12 - ON THE ORIGINAL DAY OF PURGING AND SAMPLING (MAY 12, 1986) THERE WAS SUFFICIENT VOLUME ONLY FOR GC/MS ANALYSES - 624 & 625. THE REMAINING SAMPLE WAS COLLECTED ON MAY 15, 1986.

NUMBER OF SAMPLES: _____

MR. TIMOTHY DiGIULIO NYS DEC ALBANY AND MARY MCINTOSH NYSDEC REGION 9 WERE PRESENT FOR MOST OF THE SAMPLING.

W. Arnold McDonald MAY 12, 1986

DATE

VDM01617

ANALYTICAL METHODOLOGIES

The method numbers for each procedure are listed in the second column of the tabulated results. The source for each method is listed as a reference number in the third column. The source(s) for the Analytical Methodologies are:

1 - EPA 40 CFR Part 136, "GuidelinesEstablishing Test Procedures for the Analysis of Pollutants Under the Clean Water Act; Final Rule and Interim Final Rule and Proposed Rule", Federal Register 49 (209), October 26, 1984.

2 - EPA 600/4-80-022, "Guidelines Establishing Test Procedures for the Analysis of Pollutants; Proposed Regulations, Correction", Federal Register 44 (244), December 18, 1979.

3 - EPA 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", (1983).

4 - EPA 600/4-79-057, "Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater", (1982).

5 - EPA-SW-846, "Test Methods for Evaluating Solid Waste, Physical/ Chemical Methods", second edition (1982).

6 - Standard Methods for the Examination of Water and Wastewater", 16th edition, (1985).

7 - New York State Institute of Toxicology Analytical Handbook, October 1982, Updated March, 1986.

8 - NIOSH Manual of Analytical Methods, second edition 1977.

9 - "The Analysis of Polychlorinated Biphenyls in Transformer Fluid and Waste Oil", EPA Environmental Monitoring and Support Laboratory draft, June 24, 1980.

10 - "Approved Analytical Procedures for Determining the Content of Constituents Banned from Landburial" (New York State DEC, Division of Solid and Hazardous Waste), January 1985.

11 - EPA 600/4-81-055, "Interim Methods for the Sampling and Analysis of Priority Pollutants in Sediments and Fish Tissue", Revised January 7, 1983.

12 - "Determination of Formaldehyde in the Atmosphere", Environmental Health Center, Division of Laboratories and Research, NYS Department of Health APC-29.

13 - "Chemical Soil Tests", Cornell University Agricultural Experiment Station, NYS College of Agricultural, Ithaca, N.Y. Bulletin 960, Revised October 1965.

14 - "Heat of Combustion of Liquid Hydrocarbon Fuels by Bomb Calorimeter", American Society for Testing and Materials, Philadelphia, Pa., Designation: D 240-64 (Reapproved 1973).

APPENDIX B

FIELD REPORT

CHAIN OF CUSTODY RECORD	PROJECT NO. Bill	PROJECT NAME Van De Mark Chemical	ADVANCED ENVIRONMENTAL SYSTEMS INC.

SAMPLER'S SIGNATURE [signature]

SAMPLE NO.	SEQ. NO.	DATE	TIME	SAMPLE LOCATION	SAMPLE TYPE	NUMBER OF CONTAINERS	REMARKS
	1	5/12/86		VDM-9	WATER	6	1-Litre, 2VOAs, 2-250mL, 1-500mL
	2			VDM-10		6	1-Litre, 2VOAs, 3-250mL
	3			VDM-11		6	1-Litre, 2VOAs, 3-250mL
	4			VDM-12		3	1-Litre 2VOAs
	5			S-1 Upstream, 18mi. Creek		6	1-Litre 2VOAs, 3-250mL
	6			S-2 Downstream "		6	1-Litre, 2VOAs, 3-250mL
	7			Ditch		6	1-Litre, 2VOAs, 3-250mL
	8			Field Blank		6	1-Litre, 2VOAs, 3-250mL
						1	VOA
					TOTAL NO. OF CONTAINERS	40	

RELINQUISHED BY (Sign)	DATE/TIME	RECEIVED BY (Sign)	RELINQUISHED BY (Sign)	DATE/TIME	RECEIVED BY (Sign)
1 [signature]	5/12/86 5:00 pm	2 [signature]	2		3
RELINQUISHED BY (Sign)	DATE/TIME	REC'D BY MOBILE LAB (Sign)	REL'D BY MOBILE LAB (Sign)	DATE/TIME	RECEIVED BY (Sign)
3		4	4		5

METHOD OF SHIPMENT	SHIPPED BY (Sign)	RECEIVED FOR LABORATORY (Sign)	DATE/TIME

VDM01620

CHAIN OF CUSTODY RECORD

PROJECT NO.	PROJECT NAME	ADVANCED ENVIRONMENTAL SYSTEMS INC.
BGL	VAN DE MARK CHEMICAL	

SAMPLER'S SIGNATURE: [signature]

SAMPLE NO.	SEQ. NO.	DATE	TIME	SAMPLE LOCATION	SAMPLE TYPE	NUMBER OF CONTAINERS	REMARKS
	1	5/15/86		VDM-12	WATER	6	2-liter, 3-35ml, 1-500ml
					TOTAL NO. OF CONTAINERS	6	

RELINQUISHED BY (Sign)	DATE/TIME	RECEIVED BY (Sign)	RELINQUISHED BY (Sign)	DATE/TIME	RECEIVED BY (Sign)
1. [signature]	5/15/86 4:00 PM	2. [signature]	2		3
RELINQUISHED BY (Sign)	DATE/TIME	REC'D BY MOBILE LAB (Sign)	REL'D BY MOBILE LAB (Sign)	DATE/TIME	RECEIVED BY (Sign)
3		4	4		5
METHOD OF SHIPMENT		SHIPPED BY (Sign)	RECEIVED FOR LABORATORY (Sign)		DATE/TIME

VDM01621

APPENDIX A

CHAIN OF CUSTODY RECORDS

ADVANCED ENVIRONMENTAL SYSTEMS, INC.
LABORATORY REPORT

Type of Analysis: Quality Control - Spikes
Client: VAN DEMARK CHEM. A.E.S. Job Code: BQL

(Units: mg/l or ppm)

ANALYSIS	TYPE	SAMPLE NO.	ORIGINAL CONC.	ADDED CONC.	EXPECTED CONC.	REPORTED CONC.	PERCENT RECOVERY
LEAD (Pb)	SPIKE	6063	BDL *	10.0	10.0	9.0	90
EPA (Pb) STD.	EPA	283-1	2.00	----	2.00	2.10	105
MERCURY (Hg)	SPIKE	6062	0.001	0.010	0.011	0.0087	80
EPA (Hg) STD.	EPA	284-2	0.0075	----	0.0075	0.0059	79
NICKEL (Ni)	SPIKE	6063	BDL	5.0	5.0	4.8	96
INDEPENDENT STD.	STD	----	2.50	----	2.50	2.57	103
SELENIUM (Se)	SPIKE	7027	0.017 **	0.100	0.117	0.142	121
EPA (Se) STD.	EPA	284-1	0.0102	----	0.0102	0.0116	114
SILVER (Ag)	SPIKE	6063	BDL	4.00	4.00	4.20	105
EPA (Ag) STD.	EPA	283-1	1.00	----	1.00	1.00	100
THALLIUM (Tl)	SPIKE	6062	BDL	20.0	20.0	17.66	88
INDEPENDENT STD.	STD	----	10.0	----	10.0	7.54	75
ZINC (Zn)	SPIKE	6063	0.22	1.00	1.22	0.92	75
INDEPENDENT STD.	STD	----	0.50	----	0.50	0.54	108

* Below determinable limits.
** Sample spike on dilution.

VDM01623

ADVANCED ENVIRONMENTAL SYSTEMS, INC.
LABORATORY REPORT

Type of Analysis: Quality Control - Spikes
Client: VAN DEMARK CHEM. A.E.S. Job Code: BQL

(Units: mg/l or ppm)

ANALYSIS	TYPE	SAMPLE NO.	ORIGINAL CONC.	ADDED CONC.	EXPECTED CONC.	REPORTED CONC.	PERCENT RECOVERY
ARSENIC (As)	SPIKE	6064	BDL *	0.100	0.100	0.100	100
EPA (As) STD.	EPA	284-1	0.0266	-----	0.0266	0.0266	100
BERYLLIUM (Be)	SPIKE	6060	BDL	2.00	2.00	1.92	96
EPA (Be) STD.	EPA	284-2	0.23	-----	0.23	0.21	91
CADMIUM (Cd)	SPIKE	6064	BDL	1.00	1.00	0.81	81
EPA (Cd) STD.	EPA	283-1	0.70	-----	0.70	0.60	86
CHROMIUM (Cr)	SPIKE	6063	BDL	2.0	2.0	1.8	90
EPA (Cr) STD.	EPA	283-1	1.25	-----	1.25	1.30	104
COPPER (Cu)	SPIKE	6062	BDL	5.00	5.00	4.90	98
EPA (Cu) STD.	EPA	284-2	0.33	-----	0.33	0.32	97
IRON(Fe)	SPIKE	6059	1.96 **	5.00	6.96	6.86	98
EPA (Fe) STD.	EPA	284-2	0.72	-----	0.72	0.78	92

* Below determinable limits.
** Sample spike on dilution.

VDM01624

ADVANCED ENVIRONMENTAL SYSTEMS, INC.
LABORATORY REPORT

Type of Analysis: Quality Control - Spikes
Client: VAN DEMARK CHEM. A.E.S. Job Code: BQL

(Units: mg/l or ppm)

ANALYSIS	TYPE	SAMPLE NO.	ORIGINAL CONC.	ADDED CONC.	EXPECTED CONC.	REPORTED CONC.	PERCENT RECOVERY
LEAD (Pb)	SPIKE	6063	BDL *	10.0	10.0	9.0	90
EPA (Pb) STD.	EPA	283-1	2.00	----	2.00	2.10	105
MERCURY (Hg)	SPIKE	6062	0.001	0.010	0.011	0.0087	80
EPA (Hg) STD.	EPA	284-2	0.0075	----	0.0075	0.0059	79
NICKEL (Ni)	SPIKE	6063	BDL	5.0	5.0	4.8	96
INDEPENDENT STD.	STD	----	2.50	----	2.50	2.57	103
SELENIUM (Se)	SPIKE	7027	0.017 **	0.100	0.117	0.142	121
EPA (Se) STD.	EPA	284-1	0.0102	----	0.0102	0.0116	114
SILVER (Ag)	SPIKE	6063	BDL	4.00	4.00	4.20	105
EPA (Ag) STD.	EPA	283-1	1.00	----	1.00	1.00	100
THALLIUM (Tl)	SPIKE	6062	BDL	20.0	20.0	17.66	88
INDEPENDENT STD.	STD	----	10.0	----	10.0	7.54	75
ZINC (Zn)	SPIKE	6063	0.22	1.00	1.22	0.92	75
INDEPENDENT STD.	STD	----	0.50	----	0.50	0.54	108

* Below determinable limits.
** Sample spike on dilution.

VDM01625

ADVANCED ENVIRONMENTAL SYSTEMS, INC.
LABORATORY REPORT

TYPE OF ANALYSIS: QUALITY CONTROL DUPLICATE
UNITS OF MEASURE: Milligrams/Liter or ppm
CLIENT: VAN DEMARK CHEM. A.E.S. JOB CODE BQL

ANALYSIS	SAMPLE	ORIGINAL CONC.	DUPL. CONC.	AVERAGE CONC.	RANGE	REL. % DIFF.
ARSENIC (As)	6064	BDL *	BDL	BDL	NONE	NONE
BERYLLIUM (Be)	6060	BDL	BDL	BDL	NONE	NONE
CHROMIUM (Cr)	6063	BDL	BDL	BDL	NONE	NONE
CADMIUM (Cd)	6064	BDL	BDL	BDL	NONE	NONE
LEAD (Pb)	6063	BDL	BDL	BDL	NONE	NONE
MERCURY (Hg)	6062	0.001	0.001	0.001	NONE	NONE
COPPER (Cu)	6062	BDL	BDL	BDL	NONE	NONE
NICKEL (Ni)	6063	BDL	BDL	BDL	NONE	NONE
SELENIUM (Se)	7027	0.017	0.017	0.017	NONE	NONE
SILVER (Ag)	6063	BDL	BDL	BDL	NONE	NONE
IRON (Fe)	6059	1,980	1,950	1,965	30	1.5
THALLIUM (Tl)	6062	BDL	BDL	BDL	NONE	NONE
ZINC (Zn)	6063	0.24	0.21	0.22	0.03	13.6

Relative Percent Difference =
Range/Average X 100
* Below determinable limits.

VDM01626

ADVANCED ENVIRONMENTAL SYSTEM, INC.
LABORATORY REPORT

Type of Analysis: RESULTS - METALS
Client: VAN DEMARK CHEM. A.E.S. Job Code BQL

(All results are in mg/l)

Analytical Parameter(s)	Method No.	Ref No.	Det. Limits	AES Lab No. - 6059 Sample ID - VDM 9 GRAB 5/12/86	6060 VDM 10 GRAB 5/12/86	6061 VDM 11 GRAB 5/12/86	7027 VDM 12 GRAB 5/15/86
ARSENIC (As)	206.2	3	0.005	0.181	0.023	0.105	4.0
BERYLLIUM (Be)	210.1	3	0.050	0.084	BDL *	BDL	0.38
CADMIUM (Cd)	213.1	3	0.05	BDL	BDL	BDL	BDL
CHROMIUM (Cr)	218.1	3	0.50	1.4	BDL	BDL	8.1
COPPER (Cu)	220.1	3	0.20	6.0	0.45	1.09	29
IRON (Fe)	236.1	3	0.20	1,965	1,820	3,250	14,500
LEAD (Pb)	239.1	3	1.00	2.17	BDL	BDL	27
MERCURY (Hg)	245.1	3	0.001	0.006	0.005	0.002	BDL
NICKEL (Ni)	249.1	3	0.50	3.70	BDL	0.86	1.94
SELENIUM (Se)	270.2	3	0.005	BDL	BDL	BDL	0.017
SILVER (Ag)	272.1	3	0.10	BDL	BDL	BDL	BDL
THALLIUM (Tl)	279.1	3	1.00	BDL	BDL	BDL	BDL
ZINC (Zn)	289.1	3	0.050	1,150	0.51	1.19	1,360

* Below determinable limits.

JANETTE BINGERT
A.A. DIVISION SUPERVISOR

VDM01627

ADVANCED ENVIRONMENTAL SYSTEM, INC.
LABORATORY REPORT

Type of Analysis: BASE/NEUTRAL EXTRACTABLES[1]
Units Of Measure: MICROGRAMS/LITER, OR PPB
Client: VAN DE MARK CHEMICAL A.E.S. Job Code BQL

Analytical Parameter(s)	Method No.	Ref No.	Det. Limits	AES Lab No. - 7027 Sample ID - VDM12 Grab 5/12/86
N-NITROSODIMETHYLAMINE	625	1	10	BDL*
BIS(2-CHLOROETHYL)ETHER	"	1	10	BDL
1,3-DICHLOROBENZENE	"	1	10	BDL
1,4-DICHLOROBENZENE	"	1	10	BDL
1,2-DICHLOROBENZENE	"	1	10	BDL
BIS(2-CHLOROISOPROPYL)	"	1	10	BDL
ETHER	"	1	10	BDL
HEXACHLOROETHANE	"	1	10	BDL
N-NITROSODI-N-PROPYLAMINE	"	1	10	BDL
NITROBENZENE	"	1	10	BDL
ISOPHORONE	"	1	10	BDL
BIS(2-CHLOROETHOXY)METHANE	"	1	10	BDL
1,2,4-TRICHLOROBENZENE	"	1	10	BDL
NAPHTHALENE	"	1	10	BDL
HEXACHLOROBUTABIENE	"	1	10	BDL
HEXACHLOROCYLOPENTADIENE	"	1	10	BDL
2-CHLORONAPHTHALENE	"	1	10	BDL
DIMETHYLPHTHALATE	"	1	10	BDL
ACENAPHTHYLENE	"	1	10	BDL
2,6-DINITROTOLUENE	"	1	10	BDL
ACENAPHTHENE	"	1	10	BDL
2,4-DINITROTOLUENE	"	1	10	BDL
DIETHYLPHTHALATE	"	1	10	BDL

Michael C. Scrocchi for
SUSAN C. SCROCCHI
GAS CHROMATOGRAPHY SUPERVISOR

[1] Analysis performed by Ecology and Environment, Buffalo NY.
* Below determinable limits.

VDM01628

ADVANCED ENVIRONMENTAL SYSTEM, INC.
LABORATORY REPORT

Type of Analysis: RESULTS - METALS
Client: VAN DEMARK CHEM. A.E.S. Job Code BQL

(All results are in mg/l)

Analytical Parameter(s)	Method No.	Ref No.	Det. Limits	AES Lab No. - 6062 Sample ID - GRAB S-1 UPSTREAM 18MI CREEK 5/12/86	6063 GRAB S-2 DOWNSTREAM 18MI CREEK 5/12/86	6064 GRAB DITCH 5/12/86
ARSENIC (As)	206.2	3	0.005	BDL *	BDL	BDL
BERYLLIUM (Be)	210.1	3	0.050	BDL	BDL	BDL
CADMIUM (Cd)	213.1	3	0.50	BDL	BDL	BDL
CHROMIUM (Cr)	218.1	3	0.50	BDL	BDL	BDL
COPPER (Cu)	220.1	3	0.20	BDL	BDL	BDL
IRON (Fe)	236.1	3	0.20	0.80	0.74	500
LEAD (Pb)	239.1	3	1.00	BDL	BDL	BDL
MERCURY (Hg)	245.1	3	0.001	0.001	0.003	0.004
NICKEL (Ni)	249.1	3	0.50	BDL	BDL	0.68
SELENIUM (Se)	270.2	3	0.005	BDL	BDL	BDL
SILVER (Ag)	272.1	3	0.10	BDL	BDL	BDL
THALLIUM (Tl)	279.1	3	1.00	BDL	BDL	BDL
ZINC (Zn)	289.1	3	0.05	0.52	0.22	0.33

* Below determinable limits.

Janette Bingert
JANETTE BINGERT
A.A. DIVISION SUPERVISOR

VDM01629

ADVANCED ENVIRONMENTAL SYSTEM, INC.
LABORATORY REPORT

Type of Analysis: ACIDS [1]
Units Of Measure: MICROGRAMS/LITER, OR PPB
Client: VAN DE MARK CHEMICAL A.E.S. Job Code BQL

AES Lab No. - 7027
Sample ID - VDM12
Grab
5/12/86

Analytical Parameter(s)	Method No.	Ref No.	Det. Limits	
PHENOL	625	1	10	BDL*
2-CHLOROPHENOL	"	1	10	BDL
2-NITROPHENOL	"	1	10	BDL
2,4-DIMETHYPHENOL	"	1	10	BDL
p-CHLORO-M-CRESOL	"	1	10	BDL
2,4,6-TRICHLOROPHENOL	"	1	10	BDL
2,4-DINITROPHENOL	"	1	30	BDL
4-NITROPHENOL	"	1	10	BDL
4,6-DINITRO-O-CRESOL	"	1	30	BDL
PENTACHLOROPHENOL	"	1	30	BDL
2,4-DICHLOROPHENOL	"	1	10	BDL

Michael Yedinak for
SUSAN C. SCROCCHI
GAS CHROMATOGRAPHY SUPERVISOR

[1] Analysis performed by Ecology and Environment, Buffalo, NY.
* Below determinable limits

ADVANCED ENVIRONMENTAL SYSTEM, INC.
LABORATORY REPORT

Type of Analysis: VOLATILE ORGANICS [1]
Units Of Measure: MICROGRAMS/LITER, OR PPB
Client: VAN DE MARK CHEMICAL A.E.S. Job Code BQL

Analytical Parameter(s)	Method No.	Ref No.	Det. Limits	AES Lab No. - 7027 Sample ID - VDM12 Grab 5/12/86
1,1,2,2-TETRACHLOROETHYLENE	624	1	10	140
1,1,2,2-TETRACHLOROETHANE	"	1	10	43
TOLUENE	"	1	10	BDL*

Michael Yeh Smith for
SUSAN C. SCROCCHI
CHROMATOGRAPHY SUPERVISOR

[1] Analysis performed by Ecology and Environment, Buffalo, NY.
* Below determinable limits.

VDM01631

ADVANCED ENVIRONMENTAL SYSTEM, INC.
LABORATORY REPORT

Type of Analysis: VOLATILE ORGANICS 1
Units Of Measure: MICROGRAMS/LITER, OR PPB
Client: VAN DE MARK CHEMICAL A.E.S. Job Code BQL

Analytical Parameter(s)	Method No.	Ref No.	Det. Limits	AES Lab No. - 7027 Sample ID - VDM12 Grab 5/12/86
CHLOROMETHANE	624	1	10	490
VINYL CHLORIDE	"	1	10	BDL*
CHLOROETHANE	"	1	10	BDL
BROMOMETHANE	"	1	10	BDL
2-CHLOROETHYL VINYLETHER	"	1	10	BDL
ETHYLBENZENE	"	1	10	BDL
METHYLENE CHLORIDE	"	1	10	180
CHLOROBENZENE	"	1	10	BDL
1,1-DICHLOROETHYLENE	"	1	10	BDL
1,1-DICHLOROETHANE	"	1	10	BDL
trans-1,2-DICHLOROETHYLENE	"	1	10	BDL
CHLOROFORM	"	1	10	360
1,2-DICHLOROETHANE	"	1	10	BDL
1,1,1-TRICHLOROETHANE	"	1	10	BDL
CARBON TETRACHLORIDE	"	1	10	38
BROMODICHLOROMETHANE	"	1	10	BDL
1,2-DICHLOROPROPANE	"	1	10	BDL
trans-1,3-DICHLOROPROPENE	"	1	10	BDL
TRICHLOROETHYLENE	"	1	10	13
BENZENE	"	1	10	BDL
cis-1,3-DICHLOROPROPENE	"	1	10	BDL
1,1,2-TRICHLOROETHANE	"	1	10	BDL
DIBROMOCHLOROMETHANE	"	1	10	BDL
BROMOFORM	"	1	10	BDL

Michael Yesnick for
SUSAN C. SCROCCHI
GAS CHROMATOGRAPHY SUPERVISOR

* Below determinable limits.
1 Analysis performed by Ecology and Environ...

VDM01632

ADVANCED ENVIRONMENTAL SYSTEM, INC.
LABORATORY REPORT

Type of Analysis: BASE/NEUTRAL EXTRACTABLES [1]
Units Of Measure: MICROGRAMS/LITER, OR PPB
Client: VAN DE MARK CHEMICAL A.E.S. Job Code BQL

Analytical Parameter(s)	Method No.	Ref No.	Det. Limits	AES Lab No. - 7027 Sample ID - VDM12 Grab 5/12/86
FLUORENE	625	1	10	BDL*
4-CHLOROPHENYLPHENYLETHER	"	1	10	BDL
1,2-DIPHENYLHYDRAZINE	"	1	10	BDL
4-BROMOPHENELPHENYLETHER	"	1	10	BDL
HEXACHLOROBENZENE	"	1	10	BDL
PHENANTHRENE	"	1	10	BDL
ANTHRACENE	"	1	10	BDL
DI-N-BUTYLPHTHALATE	"	1	10	BDL
FLUORANTHENE	"	1	10	BDL
BENZIDINE	"	1	50	BDL
PYRENE	"	1	10	BDL
BUTYLBENZYLPHTHALATE	"	1	10	BDL
BENZO (a)ANTHRACENE	"	1	10	BDL
3,3-DICHLOROBENZIDINE	"	1	30	BDL
CHRYSENE	"	1	10	BDL
BIS(2-ETHYLHEXYL)PHTHALATE	"	1	10	BDL
DI-N-OCTYLPHTHALATE	"	1	10	BDL
BENZO(b)FLUORANTHENE	"	1	10	BDL
BENZO(k)FLUORANTHENE	"	1	10	BDL
BENZO(a)PYRENE	"	1	10	BDL
INDENO(1,2,3-C,D)PYRENE	"	1	10	BDL
DIBENZO(a,h)ANTHRACENE	"	1	10	BDL
BENZO(g,h,i)PERYLENE	"	1	10	BDL

Michael Yedinak for
SUSAN M. CERQUETTI
G. C. DIVISION

[1] Analysis performed by Ecology and Environment, Buffalo NY

VDM01633

ADVANCED ENVIRONMENTAL SYSTEMS, INC.
LABORATORY REPORT

Type of Analysis: Quality Control - Spikes
Client: VAN DEMARK CHEMICAL A.E.S. Job Code: BQL

(Units: µg/l, ppb)

ANALYSIS	TYPE	SAMPLE NO.	ORIGINAL CONC.	ADDED CONC.	EXPECTED CONC.	REPORTED CONC.	PERCENT RECOVERY
trans-1,2-DICHLOROETHYLENE	SPK	6061 *	<1.00	10.8	10.8	10.7	99.1
CHLOROFORM	SPK	6061	7.92	11.0	18.9	20.6	109.0
TRICHLOROETHYLENE	SPK	6061	0.68	11.9	12.6	13.6	107.9
TETRACHLOROETHYLENE	SPK	6061	7.16	12.3	19.5	19.6	100.5

* Sample was diluted prior to spiking.

VDM01634

ADVANCED ENVIRONMENTAL SYSTEM, INC.
LABORATORY REPORT

Type of Analysis: PCBs AND PESTICIDES
Units Of Measure: MICROGRAMS/LITER, OR PPB
Client: VAN DE MARK CHEMICALS A.E.S. Job Code BQL

AES Lab No. - 7027
Sample ID - VDM12
Grab
5/15/86

Analytical Parameter(s)	Method No.	Ref No.	Det. Limits	
ALDRIN	608	1	0.05	BDL*
alpha-BHC	"	1	0.05	BDL
beta-BHC	"	1	0.05	BDL
gamma-BHC	"	1	0.05	BDL
delta-BHC	"	1	0.05	BDL
CHLORDANE	"	1	0.5	BDL
4,4'-DDT	"	1	0.10	BDL
4,4'-DDE	"	1	0.10	BDL
4,4'-DDD	"	1	0.10	BDL
DIELDRIN	"	1	0.10	BDL
alpha-ENDOSULFAN	"	1	0.05	BDL
beta-ENDOSUFAN	"	1	0.10	BDL
ENDOSULFAN SULFATE	"	1	0.10	BDL
ENDRIN	"	1	0.10	BDL
ENDRIN ALDEHYDE	"	1	0.10	BDL
HEPTACHLOR	"	1	0.05	BDL
HEPTACHLOR EPOXIDE	"	1	0.05	BDL
PCB-1242	"	1	0.5	BDL
PCB-1254	"	1	1.0	BDL
PCB-1221	"	1	0.5	BDL
PCB-1232	"	1	0.5	BDL
PCB-1248	"	1	0.5	BDL
PCB-1260	"	1	1.0	BDL
PCB-1016	"	1	0.5	BDL
TOXAPHENE	"	1	1.0	BDL

Michael Yedinak for
SUSAN C. SCROCCHI
GAS CHROMATOGRAPHY SUPERVISOR

* Below determinable limit

VDM01635

ADVANCED ENVIRONM..TAL SYSTEM, INC.
LABORATORY REPORT

Type of Analysis: PURGEABLE HALOCARBONS
Units Of Measure: MICROGRAMS/LITER, OR PPB
Client: VAN DEMARK CHEMICAL A.E.S. Job Code BQL

Analytical Parameter(s)	Method No.	Ref No.	Det. Limits	AES Lab No. - 6063 Sample ID - S-2 DOWNSTREAM 18MI CREEK 5/12/86	6064 DITCH 5/12/86	7028 FIELD BLANK 5/12/86
ROMODICHLOROMETHANE	601	1	10.0	BDL *	BDL	BDL
ROMOFORM	"	"	10.0	BDL	BDL	BDL
ROMOMETHANE	"	"	5.00	BDL	BDL	BDL
RBON TETRACHLORIDE	"	"	5.00	BDL	BDL	BDL
NYL CHLORIDE	"	"	5.00	BDL	BDL	BDL
LOROETHANE	"	"	5.00	BDL	BDL	BDL
-CHLOROETHYLVINYL ETHER	"	"	5.00	BDL	BDL	BDL
LOROFORM	"	"	5.00	BDL	13.7	BDL
LOROMETHANE	"	"	5.00	BDL	BDL	BDL
BROMOCHLOROMETHANE	"	"	10.0	BDL	BDL	BDL
RICHLOROFLUOROMETHANE	"	"	5.00	BDL	BDL	BDL
RICHLOROETHENE	"	"	5.00	BDL	BDL	BDL
,1,2-TRICHLOROETHANE	"	"	5.00	BDL	BDL	BDL
CHLORODIFLUOROMETHANE	"	"	5.00	BDL	BDL	BDL
,1-DICHLOROETHANE	"	"	5.00	BDL	BDL	BDL
,2-DICHLOROETHANE	"	"	5.00	BDL	11.2	BDL
,1-DICHLOROETHENE	"	"	5.00	BDL	BDL	BDL
RANS-1,2-DICHLOROETHENE	"	"	5.00	BDL	BDL	BDL
,2-DICHLOROPROPANE	"	"	5.00	BDL	BDL	BDL
IS-1,3-DICHLOROPROPENE	"	"	5.00	BDL	BDL	BDL
RANS-1,3-DICHLOROETHENE	"	"	5.00	BDL	BDL	BDL
THYLENE CHLORIDE	"	"	5.00	BDL	437	BDL
,1,2,2-TETRACHLOROETHANE	"	"	5.00	BDL	BDL	BDL
TRACHLOROETHENE	"	"	5.00	BDL	6.45	BDL
,1,1-TRICHLOROETHANE	"	"	5.00	BDL	BDL	BDL

* Below determinable limits.

Michael G. Scrocchi for
SUSAN C. SCROCCHI
GAS CHROMATOGRAPHY SUPERVISOR

VDM01636

ADVANCED ENVIRONMENTAL SYSTEMS, INC.
LABORATORY REPORT

TYPE OF ANALYSIS: GC - QUALITY CONTROL DUPLICATE
UNITS OF MEASURE: MICROGRAMS/LITER, OR PPB
CLIENT: VAN DEMARK CHEMICAL A.E.S. JOB CODE BQL

ANALYSIS	SAMPLE	ORIGINAL CONC.	DUPL. CONC.	AVERAGE CONC.	RANGE	REL. % DIFF.
BROMODICHLOROMETHANE	6061	<10.0	<10.0	<10.0	NONE	NONE
BROMOFORM	6061	<10.0	<10.0	<10.0	NONE	NONE
BROMOMETHANE	6061	<5.00	<5.00	<5.00	NONE	NONE
CARBON TETRACHLORIDE	6061	17.3	18.8	18.0	1.5	8.3
VINYL CHLORIDE	6061	<5.00	<5.00	<5.00	NONE	NONE
CHLOROETHANE	6061	<5.00	<5.00	<5.00	NONE	NONE
2-CHLOROETHYLVINYL ETHER	6061	<5.00	<5.00	<5.00	NONE	NONE
CHLOROFORM	6061	76.6	81.7	79.2	5.1	6.4
CHLOROMETHANE	6061	<5.00	<5.00	<5.00	NONE	NONE
DIBROMOCHLOROMETHANE	6061	<5.00	<5.00	<5.00	NONE	NONE
TRICHLOROFLUOROMETHANE	6061	<5.00	<5.00	<5.00	NONE	NONE
TRICHLOROETHENE	6061	6.47	7.03	6.75	0.56	8.3
1,1,2-TRICHLOROETHANE	6061	<5.00	<5.00	<5.00	NONE	NONE
DICHLORODIFLUOROMETHANE	6061	<5.00	<5.00	<5.00	NONE	NONE
1,1-DICHLOROETHANE	6061	<5.00	<5.00	<5.00	NONE	NONE
1,2-DICHLOROETHANE	6061	<5.00	5.45	N/A *	N/A	N/A
1,1-DICHLOROETHENE	6061	<5.00	<5.00	<5.00	NONE	NONE
trans-1,2-DICHLOROETHENE	6061	<5.00	<5.00	<5.00	NONE	NONE
1,2-DICHLOROPROPANE	6061	<5.00	<5.00	<5.00	NONE	NONE
cis-1,3-DICHLOROPROPENE	6061	<5.00	<5.00	<5.00	NONE	NONE
trans-1,3-DICHLOROPROPENE	6061	<5.00	<5.00	<5.00	NONE	NONE
METHYLENE CHLORIDE	6061	167	168	168	1	0.6
1,1,2,2-TETRACHLOROETHANE	6061	<5.00	<5.00	<5.00	NONE	NONE
TETRACHLOROETHENE	6061	75.0	68.3	71.6	6.7	9.4
1,1,1-TRICHLOROETHANE	6061	<5.00	<5.00	<5.00	NONE	NONE

Relative Percent Difference =
Range/Average X 100
* Not applicable.

VDM01637

ADVANCED ENVIRONMENTAL SYSTEMS, INC.
LABORATORY REPORT
QUALITY CONTROL - ACCURACY

Type of Analysis: Matrix Spikes and E.P.A. Standards
Client: VAN DE MARK A.E.S. Job Code:BQL

(Units: mg/l or ppm)

Analytical Parameters	Sample No.	Type	Original Conc.	Added Conc.	Expected Conc.	Reported Conc.	Percent Recovery
CHLORIDE	----	EPA	11.5	----	11.5	11.2	97.4
TOTAL RECOVERABLE PHENOLS	6059	SPK	0.01	1.0	1.01	1.00	99.0
TOTAL RECOVERABLE PHENOLS		EPA	0.72	----	0.72	0.73	101.4

VDM01638

ADVANCED ENVIRONMENTAL SYSTEM, INC.
LABORATORY REPORT

Type of Analysis: PURGEABLE HALOCARBONS
Units Of Measure: MICROGRAMS/LITER, OR PPB
Client: VAN DEMARK CHEMICALS A.E.S. Job Code BQL

Analytical Parameter(s)	Method No.	Ref No.	Det. Limits	AES Lab No. - 6059 Sample ID - VDM 9 GRAB 5/12/86	6060 VDM 10 GRAB 5/12/86	6061 VDM 11 GRAB 5/12/86	6062 S-1 UPSTREAM 18MI CREEK 5/12/86
BROMODICHLOROMETHANE	601	1	10.0	BDL *	BDL	BDL	BDL
BROMOFORM	"	"	10.0	BDL	BDL	BDL	BDL
BROMOMETHANE	"	"	5.00	BDL	BDL	BDL	BDL
CARBON TETRACHLORIDE	"	"	5.00	6.36	BDL	18.0	BDL
VINYL CHLORIDE	"	"	5.00	BDL	BDL	BDL	BDL
CHLOROETHANE	"	"	5.00	BDL	BDL	BDL	BDL
2-CHLOROETHYLVINYL ETHER	"	"	5.00	BDL	BDL	BDL	BDL
CHLOROFORM	"	"	5.00	163	5.97	79.2	BDL
CHLOROMETHANE	"	"	5.00	BDL	BDL	BDL	BDL
DIBROMOCHLOROMETHANE	"	"	10.0	BDL	BDL	BDL	BDL
TRICHLOROFLUOROMETHANE	"	"	5.00	BDL	BDL	BDL	BDL
TRICHLOROETHENE	"	"	5.00	39.9	BDL	6.75	BDL
1,1,2-TRICHLOROETHANE	"	"	5.00	BDL	BDL	BDL	BDL
DICHLORODIFLUOROMETHANE	"	"	5.00	BDL	BDL	BDL	BDL
1,1-DICHLOROETHANE	"	"	5.00	BDL	BDL	BDL	BDL
1,2-DICHLOROETHANE	"	"	5.00	32.0	9.91	5.45	BDL
1,1-DICHLOROETHENE	"	"	5.00	BDL	BDL	BDL	BDL
TRANS-1,2-DICHLOROETHENE	"	"	5.00	5.43	BDL	BDL	BDL
1,2-DICHLOROPROPANE	"	"	5.00	BDL	BDL	BDL	BDL
CIS-1,3-DICHLOROPROPENE	"	"	5.00	BDL	BDL	BDL	BDL
TRANS-1,3-DICHLOROETHENE	"	"	5.00	BDL	BDL	BDL	BDL
METHYLENE CHLORIDE	"	"	5.00	34.3	69.5	168	BDL
1,1,2,2-TETRACHLOROETHANE	"	"	5.00	257	BDL	BDL	BDL
TETRACHLOROETHENE	"	"	5.00	46.0	BDL	71.6	BDL
1,1,1-TRICHLOROETHANE	"	"	5.00	BDL	BDL	BDL	BDL

* Below determinable limits.

Michael Yelinek for
SUSAN C. SCROCCHI
GAS CHROMATOGRAPHY SUPERVISOR

VDM01639

ADVANCED ENVIRONMENTAL SYSTEM, INC.
LABORATORY REPORT

Type of Analysis: RESULTS - WET CHEMISTRY
Client: VAN DeMARK CHEMICAL A.E.S. Job Code BQL

(All results are in mg/l)

Analytical Parameter(s)	Method No.	Ref No.	Det. Limits	AES Lab No. - 6062 Sample ID - S-1 UPSTREAM 18MI CREEK 5/12/86	6063 S-2 DOWNSTREAM 18MI CREEK 5/12/86	6064 GRAB DITCH 5/12/86
CHLORIDES	407B	6	1	16.1	4.4	23.0
TOTAL RECOVERABLE PHENOLS	420.2	3	0.01	0.01	BDL*	BDL
pH**				7.89	8.13	4.66

* Below determinable limits.
** Analysis performed in field.

Margaret L. Skowron
MARGARET L. SKOWRON
W. C. DIVISION SUPERVISOR

VDM01640

ADVANCED ENVIRONMENTAL SYSTEMS, INC.
LABORATORY REPORT
QUALITY CONTROL - PRECISION

Type of Analysis: Duplicate Analysis
Units of Analysis: Milligrams/Liter or ppm
Client: VAN DE MARK CHEMICALA.E.S. Job Code:BQL

Analytical Parameters	Sample No.	Original Conc.	Duplicate Conc.	Average Conc.	Range	Rel. % Difference
CHLORIDES	6064	23.4	22.5	23.0	0.9	3.91
TOTAL RECOVERABLE PHENOLS	6062	0.01	0.01	0.01	0	0

Relative Percent Difference =
Range/Average X 100

VDM01641

SCOPE OF WORK

This program was required by the New York State Department of Environmental Conservation to provide supplemental data and to update the information presented in the April 1984 sampling results.

ADVANCED ENVIRONMENTAL SYSTEM, INC.
LABORATORY REPORT

Type of Analysis: RESULTS - WET CHEMISTRY
Client: VAN DE MARK CHEMICAL A.E.S. Job Code BQL

(All results are in mg/l)

Analytical Parameter(s)	Method No.	Ref No.	Det. Limits	AES Lab No. - 6059 Sample ID - 5/12/86 Grab VDM 9	6060 5/12/86 Grab VDM 10	6061 5/12/86 Grab VDM 11	7027 5/12/86 Grab VDM 12
CHLORIDES	407B	6	1	11.2	13.7	14.2	7.6
TOTAL RECOVERABLE PHENOLS	420.1	3	0.01	0.01	0.54	0.23	BDL*
TOTAL ORGANIC HALIDES	9020	5	0.001	NR**	NR	NR	2.81 [1]
pH***				4.30	6.18	2.20	1.83

* Below determinable limits.
** Not required.
*** Analysis performed in field.
[1] Analysis performed by Environmental Laboratories, Gulf[illegible]

Margaret L. Skowron
MARGARET L. SKOWRON
W. C. DIVISION SUPERVISOR

VDM01643

REVISED SAMPLING PROGRAM RESPONSE TO MEETING AT NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION REGION 9 OF APRIL 29, 1986

Report Prepared For

VAN deMARK CHEMICAL COMPANY, INC.

By

ADVANCED ENVIRONMENTAL SYSTEMS, INC.

W. Joseph McDougall, Ph.D.
Project Coordinator

Leonard Borzynski
Technical Evaluation

June 16, 1986
AES Report BQL

APPENDIX E

ANALYTICAL RESULTS

SUPPLEMENTAL SAMPLING

MAY 12, 1986

INTRODUCTION

This program was required by the NYS DEC to provide supplemental data and to update the information presented in the April 1984 sampling results.

Locations to be Sampled

1. Monitoring Wells

   Wells VDM 9 through VDM 12 will be purged to dryness. When the wells recharge with a sufficient volume of groundwater, samples will be collected for the following parameters:

   VDM -12 - Priority Pollutant Survey, plus Total Organic Halides (TOX). In addition, Chlorides, Iron, and pH will be analyzed.

   VDM - 9, 10, 11 - These perimeter wells will be analyzed for the following:

   Monitoring Parameters:

   Chlorides
   Iron
   pH
   Purgeable Halocarbons
   Metals
   Total Recoverable Phenols

2. Embankment Seeps

   The six Monitoring Parameters will be analyzed.

3. Eighteen Mile Creek

   S-1 Upstream and S-2 Downstream will be analyzed for the six Monitoring Parameters.

Analytical Method References

All the procedures are described in EPA 600/4-80-022, "Guidelines Establishing Test Procedures for the Analysis of Pollutants; Proposed Regulations, Correction", Federal Register 44 (244), December 18, 1979 and EPA 600/4-79-057, "Methods for Chemical Analysis of Water and Wastes", (1983).

Cont'd.

Analytical Method References cont'd.

Priority Pollutant Survey (less asbestos, acrolein, and acrylonitrile)

Parameter	Method
Total Organic Halide (TOX)	450.1
Purgeables	624
PCB's and Pesticides	608
Semivolatile Extractables	625
Arsenic	206.2
Beryllium	210.1
Cadmium	213.1
Chromium	218.1
Copper	220.1
Lead	239.1
Mercury	245.1
Nickel	249.1
Selenium	270.2
Silver	272.1
Thallium	279.1
Zinc	289.1
Chlorides	325.2
Iron	236.1
pH	150.1
Purgeable Halocarbons	601
Total Recoverable Phenols	420.2

VDM01647

APPENDIX B

REVISED SAMPLILNG PROGRAM

RESPONSE TO MEETING AT NYSDEC REGION 9

OF APRIL 29, 1986

RE: VAN DE MARK CHEMICAL COMPANY, INC.

EPA I.D. NO. NYDO02116192

May 1986

1277

1.0 INTRODUCTION

On February 24, 1986 Van De Mark Chemical Company Inc. (VDM) received comments from the United States Environmental Protection Agency (USEPA) and the New York State Department of Environmental Conservation (NYSDEC) regarding the investigation and closure plan for the former VDM landfill presented in the report entitled "Former Landfill Investigation and Closure Plan - April 1984."

Attachment I presents the comments.

On April 29, 1986 VDM met with the USEPA and DEC to discuss the comments.

The following is the response to the comments as discussed with the NYSDEC and USEPA on April 29, 1986.

VDM01649

1.0 INTRODUCTION

On February 24, 1986 Van De Mark Chemical Company Inc. (VDM) received comments from the United States Environmental Protection Agency (USEPA) and the New York State Department of Environmental Conservation (NYSDEC) regarding the investigation and closure plan for the former VDM landfill presented in the report entitled "Former Landfill Investigation and Closure Plan - April 1984."

Attachment I presents the comments.

On April 29, 1986 VDM met with the USEPA and DEC to discuss the comments.

The following is the response to the comments as discussed with the NYSDEC and USEPA on April 29, 1986.

VDM01650

2.0 RESPONSE TO COMMENTS

2.1 GROUNDWATER MIGRATION

The monitoring program for the site was developed in meetings with the NYSDEC and Niagara County Health Department which recognized the existence of the following data base:

1. Field work performed by VDM in 1977 and reported in the "Application For Approval to Construct A Solid Waste Management Facility", June 29, 1977.

2. Bechtel Associate Professional Corporation "Somerset Railroad Project, Hydrogeologic Study, Danielewicz Route, Station 51+810 to 52+330", February, 1982.

3. Results of Hydrogeologic Investigation of Danielewicz Route Landfills" by Woodward-Clyde Consultants, January 15, 1982.

It should be noted that references (2) and (3), above, discuss in considerable detail the hydrogeology of the VDM landfill including permeabilities, vertical and horizontal flow and geology.

VDM01651

The plan of site investigation was developed in the following reports:

1. "Groundwater Monitoring Program - Van De Mark Landfill - Lockport - New York - June 1982" by Thomsen Associates.

2. "Response to Request for Information - Van De Mark Chemical Co., Inc., - Docket No. II RCRA-83-0222." by AES and CRA, October 6, 1983.

3. "Revised Monitoring Program - Van De Mark Landfill Site" by AES and CRA, October 15, 1983.

4. "Addendum 1 - Revised Monitoring Program" by AES and CRA, December 14, 1983.

The plan of site investigation was discussed with NYSDEC and Niagara County Department of Health (DOH) at the following meetings:

1. October 25, 1983

2. April 30, 1984

3. March 25, 1985

VDM01652

The plan of site investigation was approved by the NYSDEC, USEPA and DOH under the following letters:

1. October 31, 1983 John S. Tygert, P.E., DEC
   Senior Sanitary Engineer

2. November 1, 1983 Michael Hopkins, DOH
   Assistant Public Health Engineer

3. November 10, 1983 Johnathan Josephs, Chemical Engineer
   USEPA Region II

During the development of a plan of site investigation, the following conclusions were made from the existing data base:

1. The interpolation of formation contacts across the site based on data collected for the Somerset Railroad project is acceptable. This was deemed to be acceptable due to the close proximity of the project and study work.

2. Bedding planes are the major water bearing intervals and route of water migration. It continues to be recognized that some vertical permeability exists, however this is small in comparison to the horizontal permeability (one to two orders of magnitude less).

VDM01653

3. The data base provided by the Somerset railroad project identified the primary zone of groundwater flow to be the overburden/bedrock contact. As a result, all of the wells were designed to straddle this contact. Furthermore, it was concluded that a very steep downward gradient exists at the site but that this would not need to be monitored since the vertical permeability was relatively very small.

4. The receptor for groundwater flow is Eighteen Mile Creek.

During well installation, difficulty was encountered in maintaining a minimum screened interval across the overburden/bedrock contact. To insure that the most favorable conditions were made for water monitoring, large sand pack intervals were installed. An examination of the water column depth in each of the well installations does show that very acceptable installations were made. Table 2 in the report entitled "Former Landfill Investigation and Closure Plan, April 1984" shows that the water column in each well is as follows:

Well No.	Depth of Water Column
VDM - 9	Approx. 5 feet
VDM - 10	Approx. 16 feet
VDM - 11	Approx. 4 feet
VDM - 12	Approx. 1 foot to Dry

VDM01654

The above data showing a small water column in the wells suggests that very minimal compositing is occurring in the wells.

2.2 UPPERMOST AQUIFER CHARACTERIZATION

As discussed in Section 2.1, the screening over several intervals has been limited to VDM-10 and in this case it is not extensive (water column approximately 16 feet). In the case of wells VDM-9, VDM-11 and VDM-12 the screened interval has been the contact zone.

Also, as discussed in Section 2.1 the primary flow component is horizontal and this occurs at the overburden/bedrock contact. The existing data base plus the observation of a seepage zone restricted to this overburden/bedrock contact zone support this conclusion.

During the preparation of the site investigation plan, an important conclusion was reached regarding the receptor for groundwater flow. This was that the receptor was Eighteen Mile Creek.

This conclusion was primarily based on the observation that the base of the aquifer system would be the

VDM01655

Queenston Shale. The top of the Queenston Shale elevation at approximately 405 AMSL lies well above the elevation of Eighteen Mile Creek which is below 370 AMSL (see Figures 2 and 8 in the Report entitled "Former Landfill Investigation and Closure Plan - April 1984").

The Queenston Shale which would be "impermeable" would not allow groundwater migration under the Creek, but would force any groundwater flow south and west to seep as overland flow to the Creek.

2.3 GROUNDWATER QUALITY

Groundwater compositing is insignificant as discussed in Section 2.1. In fact, the wells were designed and installed to collect water from the initial water bearing interval and would therefore represent "worst" conditions regarding environmental impact.

Although Well D-55 from the Somerset Railroad project monitors the Grimsby/Power Glen contact, it is representative of a background water quality.

VDM01656

The selection of the monitoring parameters from a priority pollutant analysis of VDM-12 was determined to be adequate since the well samples water directly below the disposed waste. To insure that this single analysis was adequate further analyses is proposed as discussed in Appendix B.

The selection of PVC materials was specifically made to prevent contamination of the water by iron, a suspected contaminant. Black iron pipe and stainless steel construction at VDM-12 was selected over PVC since PVC materials could be impacted by the low pH environment within the landfill.

A complete sampling of the site including seeps and the Creek is proposed prior to closure design as discussed in Appendix B. It is to be noted that monitoring of the site has not occurred since the submission of the closure plan report in April 1984 because no response was made to the proposed monitoring plan in that report.

2.4 WASTE STREAM CHARACTERIZATION

Wastes disposed at the site consisted mainly of drums of silicon tetrachloride by-products such as hexachlorodisiloxane and octochlorotrisiloxane.

VDM01657

Those by-products are formed during the commercial production of phosgene. Solvents are not used at the plant in chemical production.

The presence of chloromethane, methylene chloride, chloroform, carbon tetrachloride and tetrachloroethylene at low concentrations in the landfill can only be accounted for as a plant maintenance by-product. It is to be noted that the presence of these solvents were detected in low concentration at the site and these were not detected in the Creek which is the groundwater receptor.

2.5 CLOSURE

Following the collection, analyses and evaluation of water samples as discussed in Appendix B, the closure plan for the site will be re-evaluated.

It is to be noted that the driving force for chemical migration at the site is infiltration. The groundwater elevation is below the disposed waste at the site and, therefore, throughflow is not a mode of chemical migration.

Because of the above, the closure plan presented in April 1984 concentrated on capping of the site.

VDM01658

2.6 ADDITIONAL COMMENTS

1. The leachate has been defined in detail by the priority pollutant analyses provided on a sample taken from VDM-12. Further characterization is planned as discussed in Appendix B.

   The waste is reactive in that when it reacts with moisture, HCl is liberated and, with additional water, forms hydrochloroic acid.

2. As discussed in Section 2.5, the closure plan for the site will be re-evaluated to give consideration to NYSDEC requirements for such a closure.

3. Further work is planned to investigate the impacts of the landfill on the Creek. Both seepage and surface water samples will be collected and analyzed as discussed in Appendix B.

   However, it is to be noted that the existing data base shows that no measurable impact on the surface water quality has resulted from the landfill.

4. As discussed in this report, groundwater flow is south and west toward Eighteen Mile Creek. Prior to

VDM01659

discharging to the Creek, the flow surfaces as seepage above the Creek.

The quantity of flow has not been calculated, but is expected to be small since it is limited primarily to infiltration at the landfill. Further investigation will be done to evaluate the seepage quality and quantity as discussed in Appendix B.

The iron staining in the ditch is the result of groundwater discharge.

5. An excavation was performed to approximately seven feet in depth to accept 40 to 80 drums. Lockport Dolomite was placed in the bottom of the pit. The drums were placed on top of the limestone, and a bag of limestone placed on each drum, and then backfilled with lime sufficient to neutralize three times the maximum amount of acid that could have been produced.

VDM01660

ATTACHMENT I

EPA/DEC COMMENTS

OF FEBRUARY 20, 1986

RE: VAN DE MARK CHEMICAL COMPANY INC.

EPA I.D. NO. NYD002116192

ATTACHMENT I

A. The company has not thoroughly characterized groundwater migration in the vicinity of the site, including horizontal and vertical gradients and flow rates.

1. Figures 10 and 11 of the closure plan indicate that many of the formation contacts beneath the landfill site are interpolated from one data point or from borehole information from the adjacent Somerset railroad project cut (Mill Street cut). The company needs to install sufficient borings on the site to be able to characterize the subsurface geology with confidence.

2. The report "postulates" that bedding planes are the major water bearing intervals, but does not discuss the potential influence of fracture flow and inherent bedrock permeability.

3. Vertical flowpaths are discussed only briefly, and the statement is made on page 13 of the closure plan that "major flowpaths through the bedrock are expected to be lateral rather than vertical (emphasis added). No supporting data are presented.

4. The new downgradient wells on the site (VDM 9, 10, and 11) are not capable of yielding data which can be used to determine horizontal and vertical flow gradients. In Van de Mark's revised monitoring program proposal of October 15, 1983, all downgradient monitoring wells were proposed to straddle the Grimsby-Power Glen bedrock contact as this was stated to be the uppermost water bearing zone underlying the landfill. However, during drilling it was found that the Grimsby was not present due to previous quarrying. Wells VDM 9 and VDM 11 were installed monitoring the overburden/Power Glen contact. Figure 10, however, indicates that VDM-9 may also monitor the Power Glen/ Whirlpool contact. Well VDM 10 monitors the Power Glen/ Whirlpool and Whirlpool/Queenston contacts in the same well. Therefore, the groundwater elevations in each well may represent composites of several water-bearing zones. Because of the differences between wells in the monitoring depths, the data from well to well are not strictly comparable. Therefore, horizontal flow gradients from these wells may be suspect, and any vertical gradients have been masked by the well construction. In addition, although 5 foot screens were used in the landfill wells, the sand pack intervals are large (about 20 feet in some cases). This is generally not acceptable for the Resource Conservation and Recovery Act (RCRA) monitoring wells.

B. The company has not thoroughly characterized the uppermost aquifer.

1. Because the wells have been screened over several intervals, they do not strictly monitor the uppermost zone, but monitor a composite of zones. If there is hydraulic connection between the upper zones and lower zones, it may be necessary to install cluster wells down to an impermeable zone (perhaps as far down as the Queenston shale) in order to adequately monitor the "uppermost aquifer."

2. Flow patterns, both horizontal and vertical, have not been adequately determined for the reasons cited above. It does appear from groundwater quality data that there is a component of flow towards Eighteen Mile Creek, but there could be changes in flow directions between various zones, and this must be investigated.

C. The company has not thoroughly characterized groundwater quality upgradient and downgradient of the landfill.

1. The existing groundwater quality data represent composites of groundwater quality in each of the zones being monitored by an individual well. From this data, one cannot determine whether only the uppermost zone is contaminated or whether pollutants have migrated to lower zones. In fact, the well construction may allow contaminants to migrate to lower zones since the wells may serve as conduits. For this reason alone, the existing wells should be replaced by cluster wells.

2. Upgradient groundwater quality is represented by well D-55 from the Somerset railroad project. This well monitors the Grimsby/Power Glen contact and thus may represent a slightly different quality since on most of the landfill the Grimsby is gone and has been replaced by fill. This may or may not be of great concern.

3. The downgradient wells VDM 9, 10 and 11 were monitored for pH, chlorides, phenols, cadmium, chromium, copper, lead, nickel, silver, thallium, zinc, beryllium, chloromethane, methylene chloride, chloroform, carbon tetrachloride, and tetrachloroethylene. These parameters were chosen in part from a priority pollutant analysis of well VDM 12, which is installed in the landfill itself. It may be necessary to conduct a more extensive sampling program on the landfill well to insure that all parameters of concern have been identified.

4. The landfill wells VDM 9, 10, and 11, and upgradient well D-55 are constructed of PVC. These wells may not be suitable as RCRA monitoring wells because of the construction material, which could lead to erroneous results, especially if the PVC is affected by the low pH recorded in some of the wells.

the closure plan.

D. The company has not thoroughly characterized all waste streams which have been deposited in the landfill.

1. The closure plan indicates that the wastes were mainly drums of silicon tetrachloride ($SiCl_4$), chlorodisiloxane, and carbon and silicon carbide. These were covered with finish lime and agricultural lime to neutralize the acidity generated when water comes into contact with the drums. The company has not accounted for the presence of chloromethane, methylene chloride, chloroform, carbon tetrachloride, and tetrachloroethylene in landfill well VDM 12 and in some of the downgradient wells and seeps.

E. The company has not proposed an acceptable closure methodology.

1. The company has not adequately addressed hydrogeological impacts, and must do so before closure and/or remediation can be finalized.

2. The site has not received waste after July 26, 1982, so the site should fall into a Part 265 closure. As such, the requirements of Subpart G of Part 265 (superseded by Section 373-3.7 of the New York State regulations) apply.

3. The company will need to submit more information on proposed capping procedures, minimization of groundwater quality impacts, prevention of run-on and run-off (e.g., drainage swale to Eighteen Mile Creek) continued monitoring after closure, maintenance, etc. The company must prepare a post-closure plan covering the requirements listed in Section 373-3.4 of the State regulations. A contingency plan may also be needed if the actions listed in the approved closure plan do not result in an improvement in groundwater quality.

F. Additional Comments

1. Describe characteristics of leachate more fully, especially the remark on page 25 that leachate is reactive.

2. Several areas of the closure plan are unclear. In particular, please clarify paragraph 2 of page 11 and its relationship to Figures 6 and 7, and the last paragraph on page 13.

3. Effects of the landfill on surface water have not been adequately addressed. If assimilative capacity of Eighteen Mile Creek is to be used to neutralize leachate from the facility, substantially more extensive investigation of effects will be required. Effects of metal adsorption onto soils in surface waters should also be addressed.

5. The company has not been conducting a regular monitoring program at the wells. The most current data available are from the 1984 closure plan. A monitoring plan was proposed in

4. Groundwater direction and rate of flow should be clarified. How much seepage is actually coming from the embankment? Is groundwater recharging the drainage ditch, or is the obvious contamination caused solely by surface run-off?

5. Please elaborate on the presence of a pit in the landfill (mentioned on page 25).

VDM01665

TABLE II

PROPOSED PARAMETERS FOR GROUNDWATER QUALITY ASSESSMENT

	Parameters
Groundwater Quality Parameters	Chloride Iron Manganese Sodium Sulfate
Indicators of Groundwater Contamination	pH Specific Conductance Total Organic Carbon
Drinking Water Supply Parameters	Arsenic Barium Cadmium Fluoride Lead Mercury Nitrate Selenium Silver

VDM01666

5.0 REFERENCES

1. Bechtel Associates, 1982, Hydrogeologic Study, Danielewicz Route, Station 51+810 to 52+330.

2. Empire Soils Investigations, Inc., 1978, Site Investigation Report, Lockport Stone Quarry, Lockport, New York.

3. New York Department of Environmental Conservation, 1982, 6 NYCRR Part 360 Solid Waste Management Facilities.

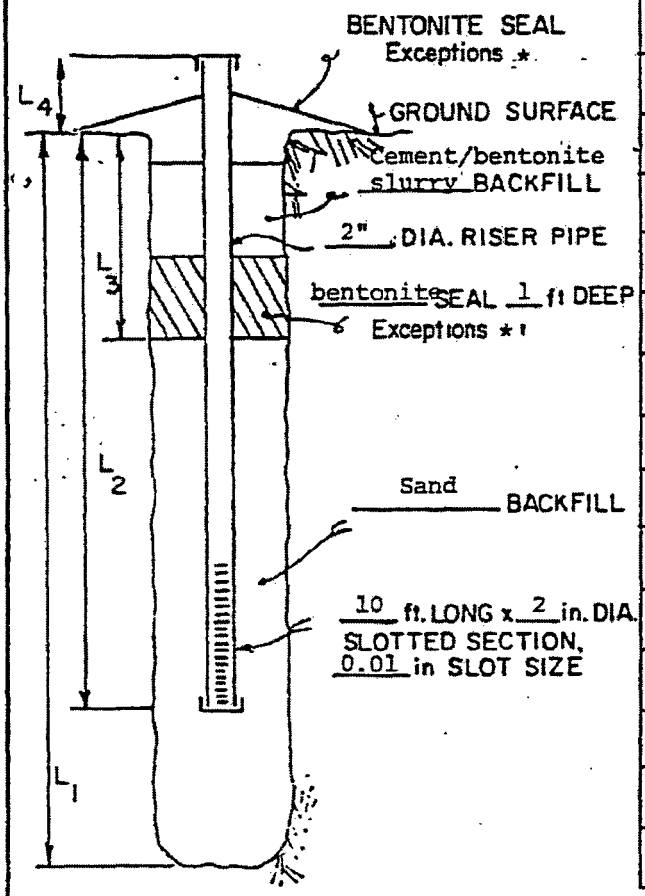
4. Woodward-Clyde Consultants, 1982, Results of Hydrogeologic Investigation of Danielewicz Route Landfills.

VDM01667

APPENDIX A

WELL CONSTRUCTION DETAILS

VDM01668



WELL NO.	L_1	L_2	L_3	L_4	Water Level
VDM9	25'	25'	14'	3'	
VDM10	25'	25'	14'	3'	
VDM11	25'	25'	14'	3'	

EMPIRE SOILS INVESTIGATIONS, INC.

OBSERVATION WELL DETAILS

PROPOSED WELL CONSTRUCTION
VAN DE MARK LANDFILL

DR. BY: | SCALE: | PROJ. NO.

VDM01669

GROUND WATER OBSERVATION WELL REPORT

PROJECT Somerset Railroad - Van De Mark

LOCATION N1,160,756 E468,241

Date Completed 10/19/81 Original Depth 46.7 (cored)

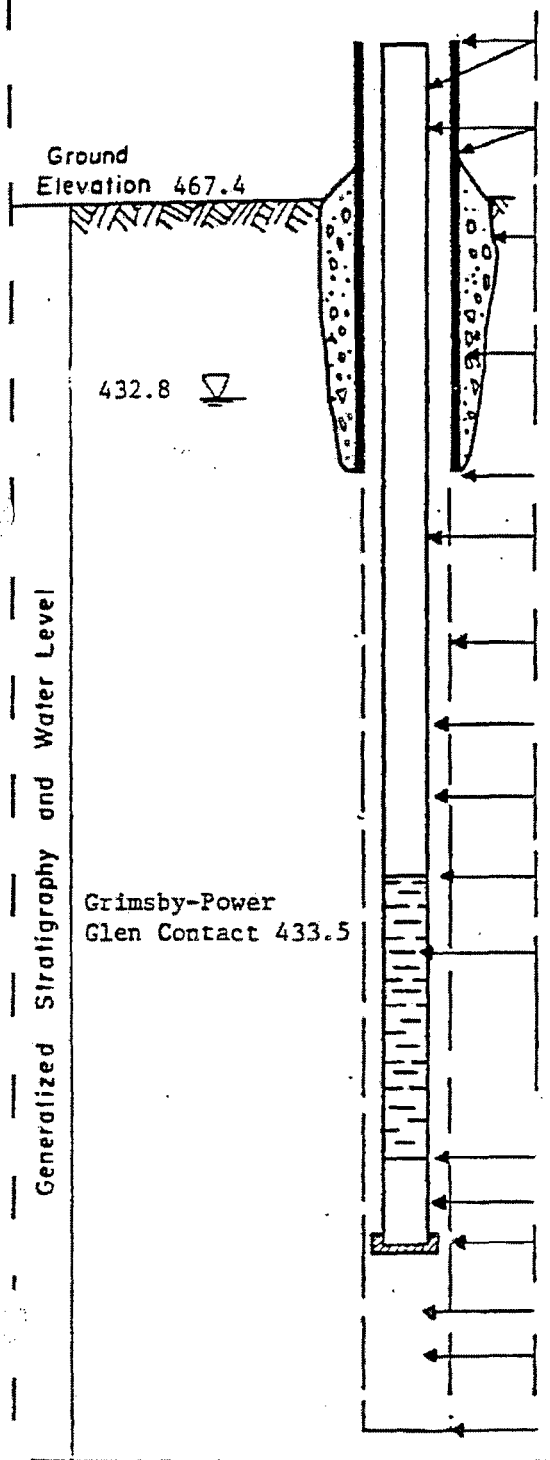
Inspected By J. C. Isham Date 10/19/81

Checked By _____ Date _____

Well No. D-55

Aquifer Grimsby-Power Glen Contact

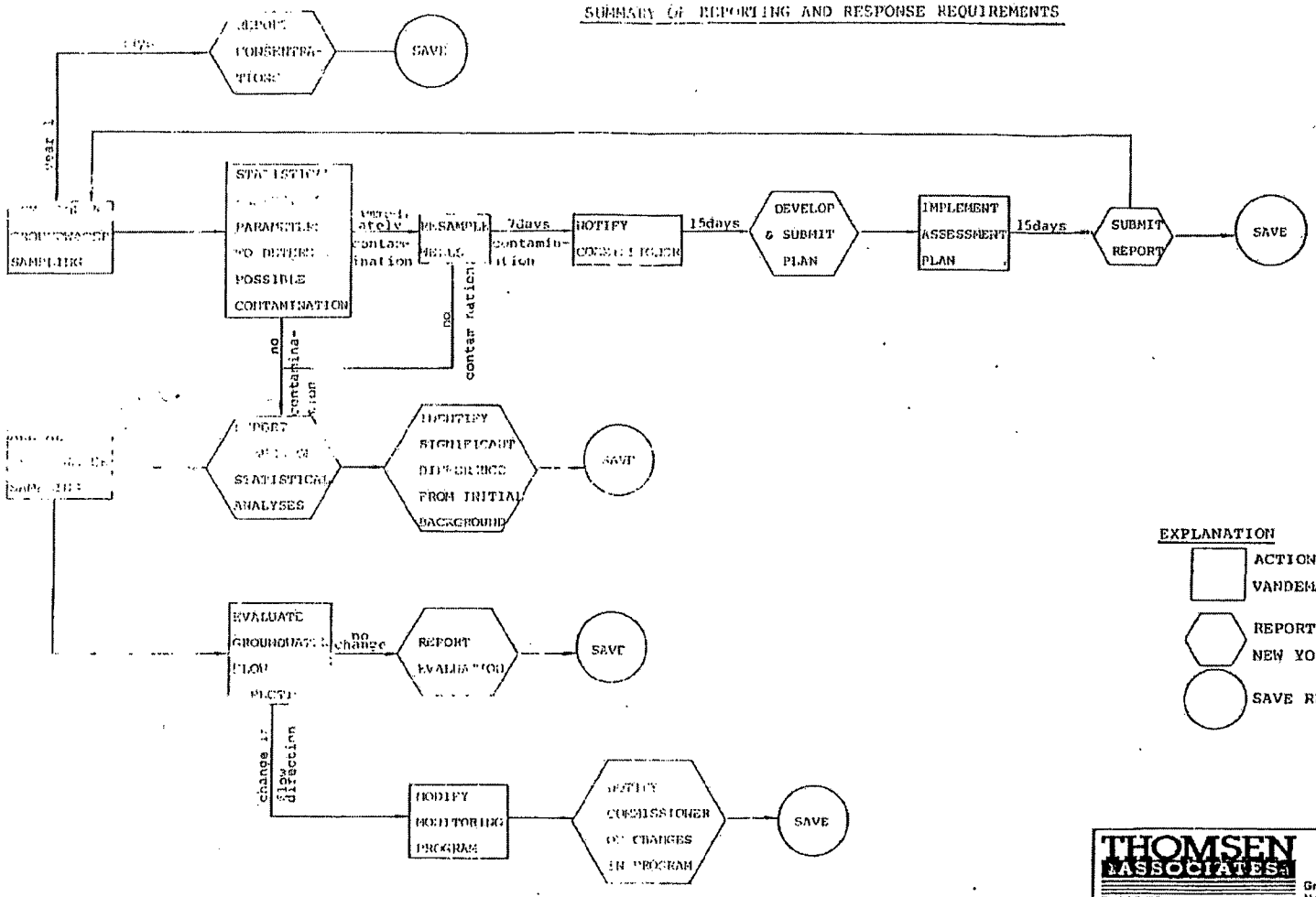
Elev. Interval 420.7-439.4'



Elevation of top of surface casing / riser pipe.	469.36/469.36'
Heigth of top of surface casing/ riser pipe above ground surface.	2.0/2.0'
Depth of surface seal below ground surface	3.0'
Type of surface seal: Cement	
I.D. of surface casing.	4"
Type of surface casing: Cast iron with lock cap	
Depth of surface casing below ground	3.0'
I.D. of riser pipe.	2"
Type of riser pipe: Sch 80 PVC	
Diameter of borehole	0.5'
Depth of borehole (reamed)	45.0'
Type of backfill: Cement	
Elev./depth top of seal.	442.3/25.1'
Type of seal: Bentonite	
Elev./depth bottom of seal.	439.4/28.0'
Type of sand pack. 0-02 (fine to med. sand)	
Depth of top of sand pack.	439.4/28.0'
Elev./depth top of screened section.	432.9/34.5'
Type of screened section: Sch 80 PVC	
Describe openings 0.010" machine slot - horizontal slot	
I.D. of screened section.	2.0"
Elev./depth bottom of screened section.	423.3/44.1'
Length of blank section.	0.9'
Elev./depth bottom of plugged blank section.	422.4/45.0'
Elev./depth bottom of sand column.	422.4/45.0'
Type of backfill below observation pipe. Cuttings	
Elev./depth of hole.	420.7/46.7'

VDM01670

SUMMARY OF REPORTING AND RESPONSE REQUIREMENTS



EXPLANATION

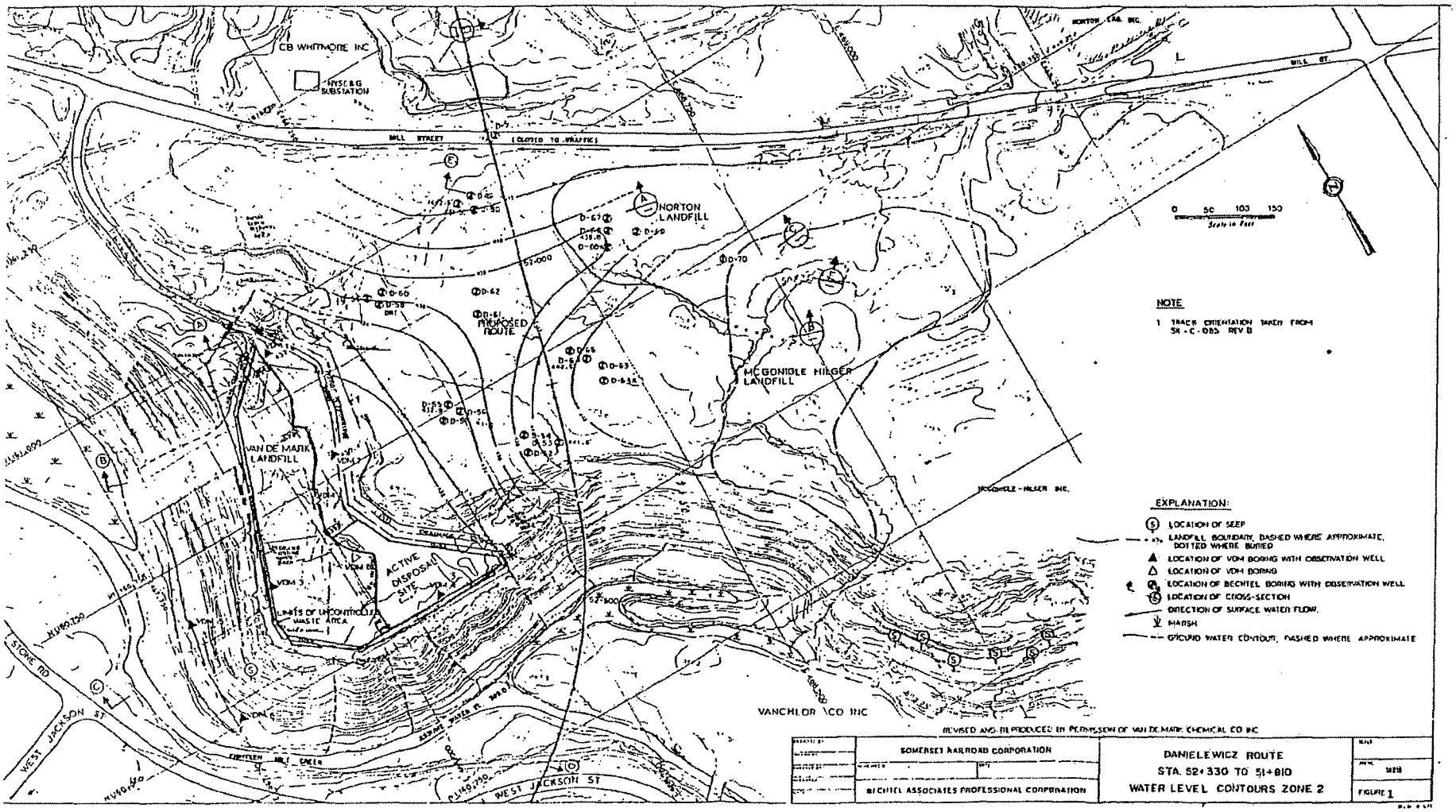
- ACTION REQUIRED OF VANDEMARK CHEMICALS
- REPORT REQUIRED TO NEW YORK DEC/USEPA
- SAVE RESULTS

THOMSEN & ASSOCIATES — CONSULTING GEOTECHNICAL ENGINEERS & GEOLOGISTS
Groton • Buffalo • Rochester • Syracuse • Albany
New York • Woodbridge • Harrisburg • Washington

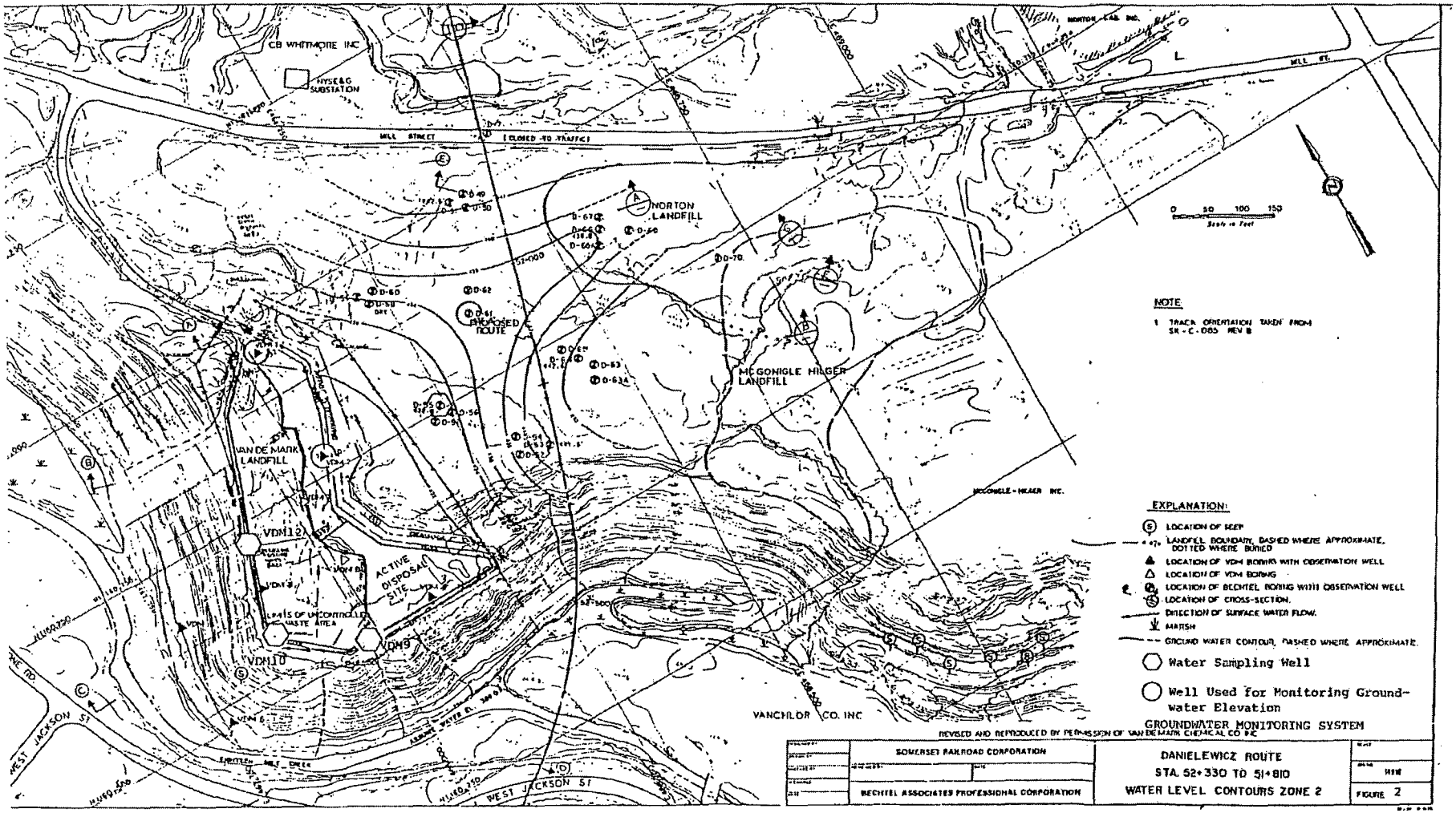
VANDEMARK CHEMICALS GROUNDWATER MONITORING PLAN

DR BY	SC	SCALE	PROJ NO BTA-82-20
CK'D BY	MR-L	DATE 6-23-82	DRWG NO

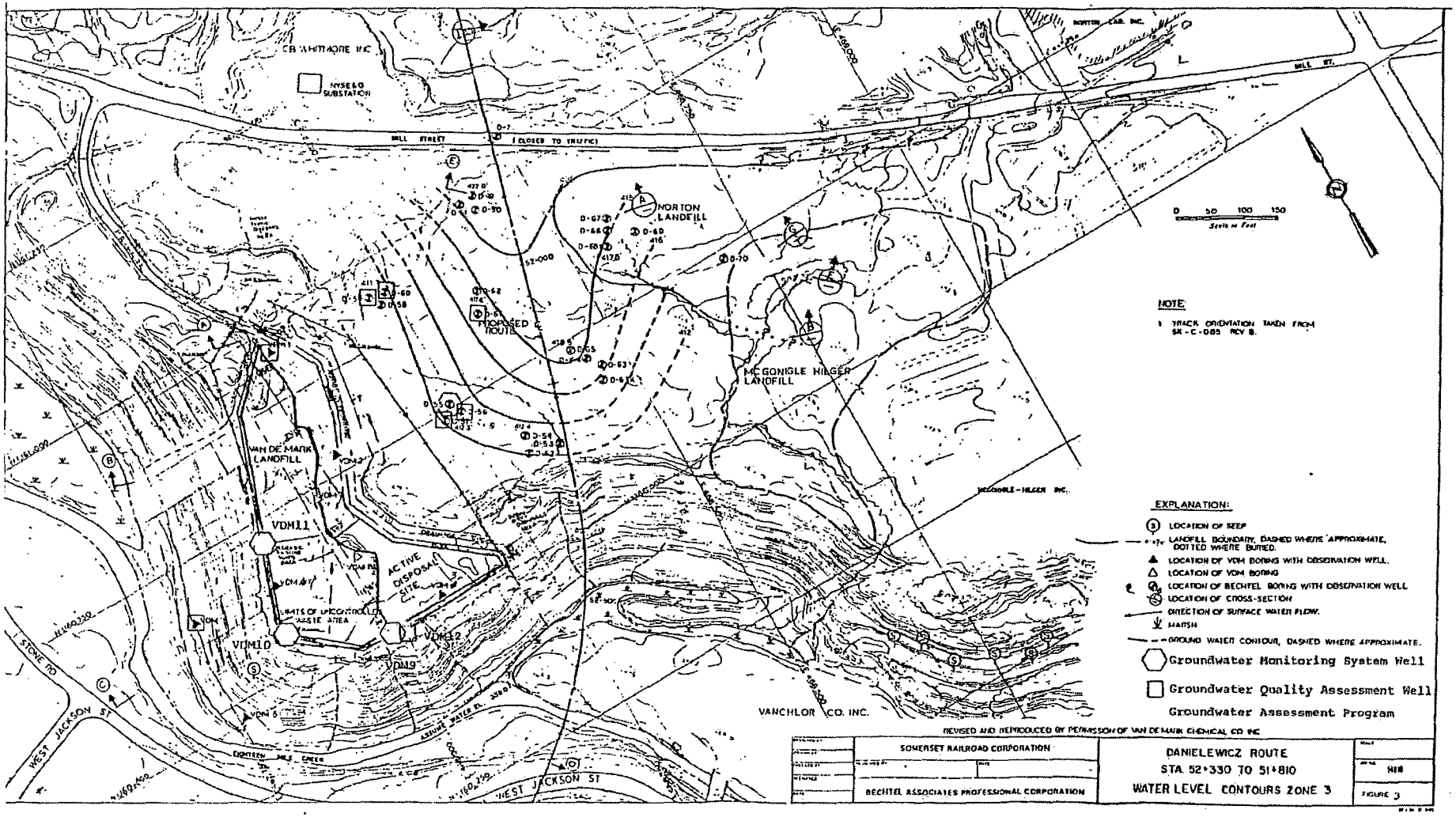
VDM01671


CB WHITMORE INC
NYSEG SUBSTATION
MILL STREET (CLOSED TO TRAFFIC)
NORTON LANDFILL
PROPOSED ROUTE
MCGONIGLE HILGER LANDFILL
VAN DE MARK LANDFILL
ACTIVE DISPOSAL SITE
LIMITS OF UNCONTROLLED WASTE AREA
STONE RD
WEST JACKSON ST
VANCHLOR \CO INC
0 50 100 150
Scale in Feet
NOTE
1 TRACE ORIENTATION TAKEN FROM SK-C-085 REV B
EXPLANATION:
LOCATION OF SEEP
LANDFILL BOUNDARY, DASHED WHERE APPROXIMATE, DOTTED WHERE BURIED
LOCATION OF VDM BORING WITH OBSERVATION WELL
LOCATION OF VDM BORING
LOCATION OF BECHTEL BORING WITH OBSERVATION WELL
LOCATION OF CROSS-SECTION
DIRECTION OF SURFACE WATER FLOW
MARSH
GROUND WATER CONTOUR, DASHED WHERE APPROXIMATE
REVISED AND REPRODUCED BY PERMISSION OF VAN DE MARK CHEMICAL CO INC
SOMERSET RAILROAD CORPORATION
BECHTEL ASSOCIATES PROFESSIONAL CORPORATION
DANIELEWICZ ROUTE
STA. 52+330 TO 51+810
WATER LEVEL CONTOURS ZONE 2
MEB
FIGURE 1

VDM01672


CB WHITMORE INC
HYSE&G SUBSTATION
MILL STREET (CLOSED TO TRAFFIC)
NORTON LANDFILL
PROPOSED ROUTE
MCGONIGLE HILGER LANDFILL
VAN DE MARK LANDFILL
VDM12
VDM11
VDM10
VDM9
ACTIVE DISPOSAL SITE
TRACK OF UNCONTROLLED WASTE AREA
VANCHLOR CO. INC
WEST JACKSON ST
0 50 100 150
Scale in Feet
NOTE
1 TRACK ORIENTATION TAKEN FROM SR-C-085 REV B
EXPLANATION:
LOCATION OF SEEP
LANDFILL BOUNDARY, DASHED WHERE APPROXIMATE, DOTTED WHERE BURIED
LOCATION OF VDM BORING WITH OBSERVATION WELL
LOCATION OF VDM BORING
LOCATION OF BECHTEL BORING WITH OBSERVATION WELL
LOCATION OF CROSS-SECTION.
DIRECTION OF SURFACE WATER FLOW.
MARSH
GROUND WATER CONTOUR, DASHED WHERE APPROXIMATE.
Water Sampling Well
Well Used for Monitoring Ground-water Elevation
GROUNDWATER MONITORING SYSTEM
REVISED AND REPRODUCED BY PERMISSION OF VAN DE MARK CHEMICAL CO INC
SOMERSET RAILROAD CORPORATION
BECHTEL ASSOCIATES PROFESSIONAL CORPORATION
DANIELEWICZ ROUTE
STA. 52+330 TO 51+810
WATER LEVEL CONTOURS ZONE 2
FIGURE 2

VDM01673


CB WHITMORE INC
NYSE&G SUBSTATION
MILL STREET
(CLOSED TO TRAFFIC)
NORTON LANDFILL
PROPOSED ROUTE
MC GONIGLE HILGER LANDFILL
VAN DE MARK LANDFILL
VDM11
VDM10
VDM12
VDM9
ACTIVE DISPOSAL SITE
LIMITS OF UNCONTROLLED WASTE AREA
VANCHLOR CO. INC.
WEST JACKSON ST
STONE RD
EIGHTEEN MILE CREEK
ASSUME WATER EL. 358.0
NORTON LAB. INC.
MILL ST.
MCGONIGLE-HILGER INC.
0 50 100 150
Scale in Feet
NOTE:
1 TRACK ORIENTATION TAKEN FROM SK-C-085 REV B.
EXPLANATION:
LOCATION OF SEEP
LANDFILL BOUNDARY, DASHED WHERE APPROXIMATE, DOTTED WHERE BURIED.
LOCATION OF VDM BORING WITH OBSERVATION WELL.
LOCATION OF VDM BORING
LOCATION OF BECHTEL BORING WITH OBSERVATION WELL
LOCATION OF CROSS-SECTION
DIRECTION OF SURFACE WATER FLOW.
MARSH
GROUND WATER CONTOUR, DASHED WHERE APPROXIMATE.
Groundwater Monitoring System Well
Groundwater Quality Assessment Well
Groundwater Assessment Program
REVISED AND REPRODUCED BY PERMISSION OF VAN DE MARK CHEMICAL CO INC
SOMERSET RAILROAD CORPORATION
BECHTEL ASSOCIATES PROFESSIONAL CORPORATION
DANIELEWICZ ROUTE
STA. 52+330 TO 51+810
WATER LEVEL CONTOURS ZONE 3
FIGURE 3

VDM01674

Somerset Railroad Corporation

Subsidiary of
New York State Electric & Gas Corporation
4500 Vestal Parkway East, Binghamton, New York 13902 (607) 729-2551

May 3, 1982
BBS.001
SRCV-82-29

Mr. Allen VanDeMark
VanDeMark Chemical Company
1 North Transit Street
Lockport, New York 14094

Subject: Somerset Railroad Corporation
Hydrogeologic Study

Dear Mr. VanDeMark:

Recently Mr. William Whitmore III requested that Somerset Railroad Corporation (SRC) authorize you to utilize the data in the Hydrogeologic Study Danielewicz Route Station 51 + 810 to 52 + 330 dated February 1982, prepared by Bechtel Associates Professional Corporation and the results of Hydrogeologic Investigation of Danielewicz Route Landfills dated January 15, 1982 prepared by Woodward-Clyde Consultants in preparation for your DEC Permit.

It was also requested that you be permitted to use the existing wells (D-55, 56, 57, 58, 59, 60) for future sampling in your landfill program, providing that the wells are not disturbed during the construction of the railroad.

Please consider this letter authorization to utilize the above studies and monitoring wells in preparation for your program. Mr. Whitmore also requested copies of the design drawings for the drainage of the railroad in the area of your landfill (Mill Street to the Gulf). These drawings will be forthcoming as soon as they are available.

If you have any questions, please contact either myself or Mr. R. D. Landis.

Very truly yours,

Peter G. Carney
Project Manager
Somerset Railroad Corporation

PGC/db
cc: GP Edwards
HG Erikson
AE Kintigh
W MacCallum
MJ Ray
RE Rude
DR Smith
H Wanaselja
W Whitmore

VDM01675

APPENDIX D

RESPONSE TO USEPA LETTER OF FEBRUARY 20, 1986

TABLE OF CONTENTS

		Page
1.0	INTRODUCTION	1
2.0	RESPONSE TO COMMENTS	2
2.1	GROUNDWATER MIGRATION	2
2.2	UPPERMOST AQUIFER CHARACTERIZATION	6
2.3	GROUNDWATER QUALITY	7
2.4	WASTE STREAM CHARACTERIZATION	8
2.5	CLOSURE	9
2.6	ADDITIONAL COMMENTS	10

APPENDIX F

SAMPLING AND ANALYSIS PROGRAM

FOR MONITORING THE VAN DE MARK LANDFILL SITE

SAMPLING AND ANALYSIS PROGRAM
FOR MONITORING THE
VAN DeMARK LANDFILL SITE

JANUARY 1987

1.0 INTRODUCTION

This program will be the procedures manual for the collection of water samples associated with the monitoring of the Van DeMark Landfill Site. This program incorporates the written comments from Region 9 DEC submitted by Mary E. McIntosh to Van DeMark Chemical dated December 31, 1986.

The items of environmental concern are:

Low pH
High chlorides
Low concentrations of chloroform

The Field Supervisor shall be completely responsible for implementing this Program. Any variation, no matter how small, shall be documented.

2.0 PRE-FIELD ACTIVITIES

To assure that no items have been omitted, a "punch list" of office activities will be used as a basis for organizing pre-field activities (Table 1).

2.1 Review the entire Program. Schedule sample collection and inform the Sample Controller. Prepare the Quarterly Schedule and give copies to the Customer Contact and the Sampler Controller.

2.2 The Sample Controller will use her copy of the Bottle Request Forms (Appendix A) so that she can fill the request.

2.3 The Field Supervisor will assemble all necessary equipment. The Equipment Checklist (Table 2) will be completed and signed by the Field Supervisor in preparation for each scheduled sampling.

3.0 ON-SITE ACTIVITIES

3.1 Field Log Book

Information recorded at each sampling site shall, at a minimum, contain the following details:

3.1.1 Sampling date and time

3.1.2 Sampling location and identification number

3.1.3 Names of Field Crew present at the site

3.1.4 Brief description of weather conditions

3.1.5 pH measurements

3.1.6 Sampling remarks/observations

3.1.7 Collection of Quality Assurance/Quality Control samples

3.2 Sampling Procedure

Sample collection shall proceed in the following order:

3.2.1 18 Mile Creek Samples

The upstream sample should be collected first, and th downstream sample second (Figure 1).

The upstream sampling location is approximately 25 feet upstream from the abandoned wooden railroad tressel.

The downstream sampling location is adjacent to the area where vehicles can park off the east side of the road. There is sufficient room to drive the van quit close to 18 Mile Creek. Note that this location is upstream from the Lockport Wastewater Treatment Plant discharge.

The sediment should not be disturbed during the measurement for pH, and the collection of samples for chlorides.

The VOA vials are to be filled directly under the surface of the creek water; that is, the water is not to be scooped into a container and then poured into VOA vials.

During pH measurements of creek water, be sure to thoroughly rinse the probe with deionized water.

3.2.2 Groundwater Seep

Although we have not yet observed sufficient water tc sample, this seep should be checked during each monitoring quarter. The seep area to be checked is directly down the embankment from well VDM 10.

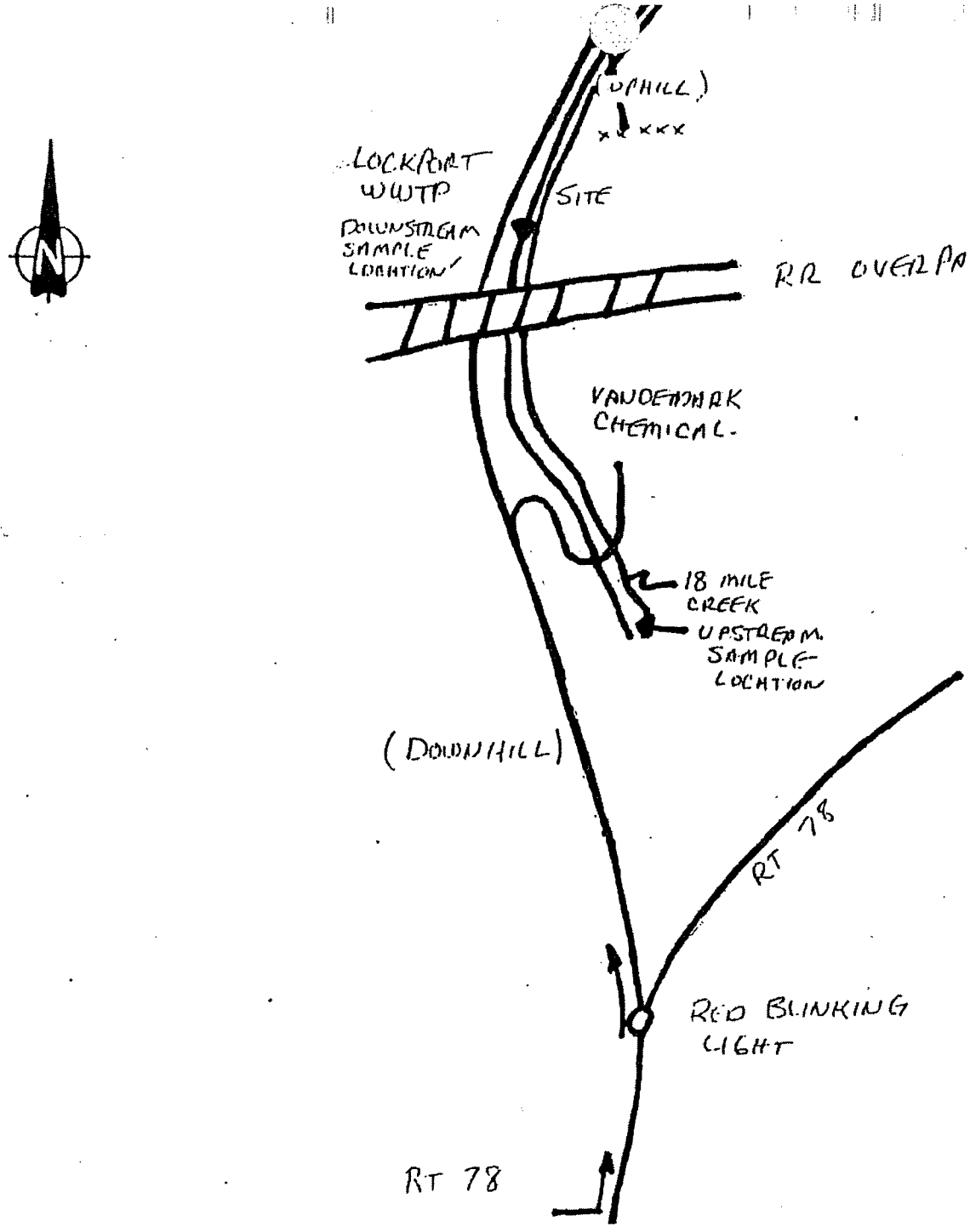


Figure 1

UPSTREAM AND DOWNSTREAM SAMPLE LOCATIONS

VAN DeMARK CHEMICAL CO., I

VDM01681

If water is flowing from the seep area, position the seep collector. The seep collector will be constructed relatively inert material. The modification allows collection over a period of time which is funnelled into a sample collection one gallo glass bottle. The flow collected will be checked periodically, so that the groundwater sample can be preserved and cooled as soon as possible.

The collector shall be left in place while the monitoring wells and ditch are being sampled.

3.2.3 Monitoring Wells - Figure 2

Start in the order of clean wells and work towards more contaminated wells.

The order for purging and sample collection shall be:

D-55, VDM-9, VDM-10, VDM-11, and lastly, VDM-12.

3.2.3.1 Measure the static groundwater level in eact monitoring well accurate to 0.01 feet. The measurement shall be from the permanently marked reference point on the riser pipe. The plopper must be thoroughly rinsed with acetone, hexane, acetone, and deionized water after each measurement. Decontaimination of the water level measuring equipment includes all portions that have entered the well casing.

3.2.3.2 Purge each monitoring well to remove stagnant water contained in the well casing During purging the pH of the water will be checked after every well volumn. It is acceptable to use a peristallic pump with dedicated tubing for purging, but not for sampling. The suction tube must not touch the ground, but be placed in a clean plastic pail. The suction tube must be rinsed with deionized water between use in different wells. Sampling logs will include the time when purging starts and when it is completed.

Remove 4 well volumes or until dryness. The calculation for the volume of water to be purged will be based on the two (2) inch well containing 0.163 gallons/ft. of groundwater contained in the well. The disposal of purge water will be into a 55 gallon drum that will be discarded by Van

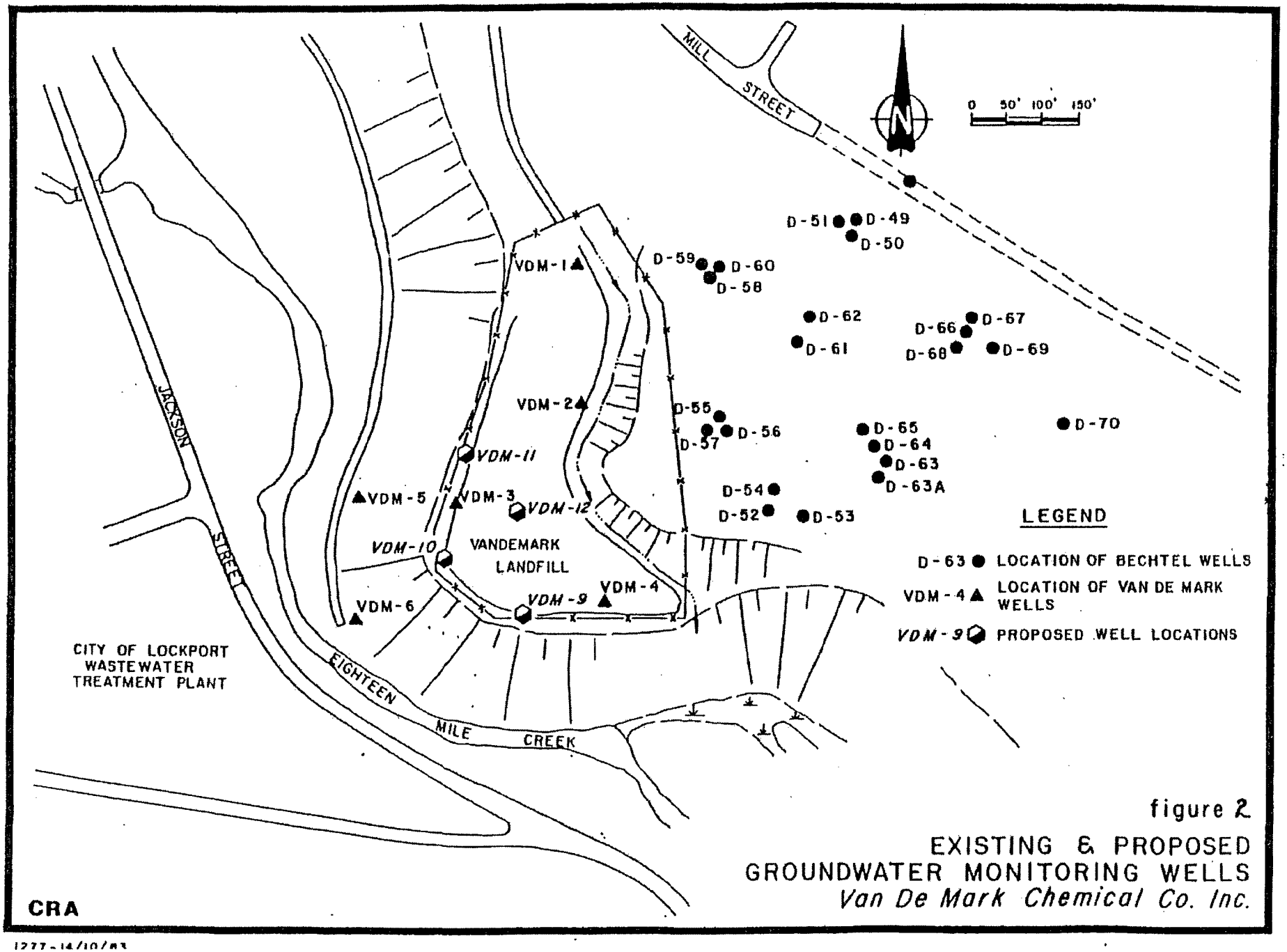


figure 2.

EXISTING & PROPOSED
GROUNDWATER MONITORING WELLS
Van De Mark Chemical Co. Inc.

1277-14/10/83

VDM01683

DeMark Chemical. It can be expected that well VDM 9 -12 will probably be pumped dry. Record the approximate volume purged.

3.2.3.3 The groundwater elevation will be taken immediately prior to sampling to evaluate the recovery of the wells. Collection of samples from monitoring wells will be accomplished with vinyl coated aircraft cable and stainless steel bailer dedicated to each well. After sample collection, each bailer and cable will be rinsed with deionized water, acetone, hexane and returned to their labeled case, and transported to AES for secure storage. Periodically the total depth of the well will be checked to make sure the screen has not silted in. Sample logs will include the time of start and of completion of sampling.

VOA vials will be filled first with particular care that no air bubbles are present in the vial.

pH will be measured on a small separate aliquot. The calibration of the pH meter will be at pH=4, pH=7 and pH=10 each day that samples are collected and prior to each monitoring point. The pH meter will be rinsed and wiped with DI water between each monitoring point. Groundwater will be poured into the appropriate containers for the analysis of chlorides, total recoverable phenols and metals. The filtering procedure for soluble metals will be the unpreserved sample filtered through a 40 whatman filter paper using a vaccum pump apparatus. Sample will be preserved after filtering. The bottles will be placed in an insulated chest with blue ice and transported to the AES laboratory. To avoid possible cross-contamination, samples from VDM-12 will be stored and shipped to the laboratory separately from the other samples.

3.2.4 Drainage Ditch

As with the collection of 19 Mile Creek samples, try to keep the disturbance of sediment to a minimum.

pH measured directly in the standing water; if sufficient volume is available. The water will be poured into appropriate containers for the analysis.

The bottles will be placed in an insulated chest with blue ice and transported to the AES laboratory.

3.2.5 Safety Equipment

Safety googles with side shields, steel toe work boots and acid resistant rubber gloves will be worn by the Field Technicians during purging and sampling. Each Technician will have a respirator attached to their field suits at all times. A fire extinguisher is located in the AES sampling van.

4.0 Receipt of Samples to Laboratory

4.1 Chain of Custody

Upon receipt of samples to the AES Laboratory, a chain of custody document will be completed. Job code, customer name, date and time of sampling, location, number and size of aliquots will be noted. The chain of custody will then be signed by the technician delivering the samples and the AES sample controller receiving them along with the date and time. After the chain of custody is completed, a copy is kept with samples while they are in holding and the original will be included in the report.

5.0 Report

5.1 Analytical Results

All analyticel results will include the date of sampling, date of extraction, date of analysis and the name of the technician doing the analysis.

5.2 Quality Assurance/Quality Control

The Laboratory QA/QC will be included with the analytical results. This will include all supporting documentation generated by the laboratory (performance specifications and data that are required by certain EPA methodologies).

TABLE I

VAN DeMARK LANDFILL SITE
PRE-FIELD ACTIVITY PUNCH LIST

SCHEDULED SAMPLING DATE: _____

	Task	Initials	Date
1.	Notify Sample Controller	_____	_____
2.	Assemble Sampling Equipment and Completed Equipment Checklist	_____	_____
3.	Check the accuracy of the field pH meter against the laboratory pH meter	_____	_____
4.	Check operating condition of the Isco pump	_____	_____
5.	Assemble necessary forms	_____	_____
	a. Field notebook	_____	_____
	b. Field punchlist	_____	_____
	c. Chain of Custody	_____	_____
6.	Receive sample containers from the Sample Controller	_____	_____
7.	Check the accuracy of the labels on the sample containers	_____	_____
8.	Review sampling procedures	_____	_____
9.	Identify Quality Assurance samples and locations	_____	_____

_____ Field
Supervisor Date

TABLE 2

VAN DeMARK LANDFILL SITE

SAMPLING EQUIPMENT CHECKLIST
FOR

_____ SAMPLING

SAMPLING EQUIPMENT AND SUPPLIES

OUT	IN	
___	__	Water Level Plopper with Clean Measuring Tape
___	__	Squeeze Bottles (3 total); Hexane, Acetone, Deionized Water
___	__	Isco Pump, Extra Battery, Extra Fuse, Clean Suction Tubing
___	__	Stainless Steel Bucket, Calibrated
___	__	Deionized Water for Rinsing the Suction Tube between Wells.
___	__	Plastic Garbage Pail
___	__	Dedicated Stainless Steel Bailers and Rope in Labeled Cylindrical Cases
___	__	pH Meter with Spare Batteries and Buffers (1)
___	__	Generator
___	__	Vacuum Pump (1), Vacuum Hose and Fittings
___	__	Filter Apparatus and Whatman 40 Filters (2 boxes)
___	__	Well Keys
___	__	Coveralls
___	__	Rubber Gloves

TABLE 2 (Cont'd.)

OUT	IN	
___	__	Lock-Eze
___	__	Mosquito Repellent
___	__	Calculator
___	__	Rain Gear
___	__	Rubber Boots
___	__	Tools
___	__	Flashlight
___	__	Blue Ice
___	__	Paper Towels
___	__	Sample Bottles, Labelled, and Sealed Ice Chest
___	__	Field Log Book, Basic Information Included (1)
___	__	Field Punch List (1)
___	__	Chain of Custody Forms
___	__	Duct Tape (2 Rolls)
___	__	Project Site Maps
___	__	Plastic Leakproof Bags
___	__	Seep Collector
___	__	One (1) Gallon Glass Container

_____ Field
Supervisor Date

VDM01688

TABLE 3

MAXIMUM HOLDING TIME

Parameters	Holding Time
Purgeable Halocarbons (601)	14 Days
Chloride	28 Days
Mercury (W/HNO3, pH 2)	28 Days
Soluble Metals (W/HNO3, pH 2)	6 Months
Total Recoverable Phenols	28 Days

APPENDIX A

BOTTLE REQUEST FORMS

JOB CODE: BQL DUE DATE: _____

SIZE/TYPE	PRESERVATIVE	LABEL - Parameters	# OF BOTT
40 ml VOA	None	Method 601 Purgeable Halocarbons	
		Field Blank	2
		Upstream	2
		Downstream	2
		Well D-55	2
		Well 9	2
		Well 10	2
		Well 11	2
		Well 12	2
		Blind Field Duplicate	2
		Ditch	2
		Seep	2
		Extra (Blank Label)	2
		TOTAL	24

PACKING

K: _____ CHAIN OF CUSTODY: _____

LER: 2 BLUE ICE: In the Extra Coole Only

ER: _____

IAL INSTRUCTIONS:

acilitate sample collection, please provide two (2) coolers - one with sam les and one (1) empty cooler. As the sample collection progresses, the fi t les will be placed in the extra cooler.

BOTTLE REQUEST FORM

JOB CODE: BQL DUE DATE: _____

SIZE/TYPE	PRESERVATIVE	LABEL - Parameters	# BO
125 ml/glass	None	Chloride	
		Field Blank	1
		Upstream	1
		Downstream	1
		Well D-55	1
		Well 9	1
		Well 10	1
		Well 11	1
		Well 12	1
		Blind Field Duplicate	1
		Ditch	1
		Seep	1
		Extra (Blank Label)	1
		TOTAL	12

PACKING

BOX: _____ CHAIN OF CUSTODY: _____

COOLER: _____ BLUE ICE: _____

OTHER: _____

SPECIAL INSTRUCTIONS:
In the same cooler as the VOA vials

JOB CODE: BQL DUE DATE: _____

SIZE/TYPE	PRESERVATIVE	LABEL - Parameters	# OF BOTT
50 ml/plastic	None	Metals - (Unfiltered)	
		Field Blank	1
		Upstream	1
		Downstream	1
		Well D-55	1
		Well 9	1
		Well 10	1
		Well 11	1
		Well 12	1
		Blind Field Duplicate	1
		Ditch	1
		Seep	1
		Extra (Blank Label)	1
		TOTAL	12

Field Personnel Note: Each sample is to be field-filtered with number 42 Whatman paper. The filtrate is to be poured into the appropriate bottle labeled "soluble metals" and containing nitric acid preservative.

PACKING

X: 1 CHAIN OF CUSTODY: _____

OLER: _____ BLUE ICE: _____

IER: _____

CIAL INSTRUCTIONS:
ease prepare one box of 24 bottles, with dividers, and in order - first s : of 12 "unfiltered" bottles, and then a set of 12 "soluble metals" bottles

BOTTLE REQUEST FORM

JOB CODE: BQL DUE DATE: _____

SIZE/TYPE	PRESERVATIVE	LABEL - Parameters	# O BOT
50 ml/plastic	HNO_3	Soluble Metals - As, Cr, Fe, Pb, Hg, Zn	
		Field Blank	1
		Upstream	1
		Downstream	1
		Well D-55	1
		Well 9	1
		Well 10	1
		Well 11	1
		Well 12	1
		Blind Field Duplicate	1
		Ditch	1
		Seep	1
		Extra (Blank Label)	1
		TOTAL	12

PACKING

OX: 1 CHAIN OF CUSTODY: _____

OOLER: _____ BLUE ICE: _____

OTHER: _____

CIAL INSTRUCTIONS:

7/86

BOTTLE REQUEST FORM

JOB CODE: BQL DUE DATE: _____

SIZE/TYPE	PRESERVATIVE	LABEL - Parameters and Job Code	# O BOT
125 ml/glass	H2SO4	Total Recoverable Phenols	
		Field Blank	1
		Upstream	1
		Downstream	1
		Well D-55	1
		Well 9	1
		Well 10	1
		Well 11	1
		Well 12	1
		Blind Field Duplicate	1
		Ditch	1
		Seep	1
		Extra (Bland Label)	1
		TOTAL	12

PACKING

BOX: 1 CHAIN OF CUSTODY: _____

COOLER: _____ BLUE ICE: _____

OTHER: _____

SPECIAL INSTRUCTIONS:

APPENDIX B

JOB CONTROL SHEETS WITH METHOD NUMBERS AND DETERMINABLE LIMITS

RECEIVED DATE: _____
DUE DATE: _____

JOB CODE: BQL
AES LAB NO. -
CUSTOMER SAMPLE ID -
DATE SAMPLED -
METHOD OF SAMPLING -
-MAIL DATE: _____

ANALYTICAL PARAMETER	METHOD No.	DET. LIMIT	FIELD BLANK	UPSTREAM	DOWN STREAM	WELL D-55
PURGEABLE HALOCARBONS	601	5./ppb	X	X	X	X
CHLORIDE	407B	1./ppm	X	X	X	X
ARSENIC	206.2	0.005/ppm	X	X	X	X
CHROMIUM	218.2	5./ppb	X	X	X	X
IRON	236.1	0.20/ppm	X	X	X	X
LEAD	239.2	5./ppb	X	X	X	X
MERCURY	245.1	0.001/ppm	X	X	X	X
ZINC	289.1	0.05/ppm	X	X	X	X
COPPER	220.1	0.20/ppm	X	X	X	X
TOTAL REC. PHENOLS	420.2	0.01/ppm	X	X	X	X

STORAGE AREA:

A _____ SUE'S FRIDGE 1 _____

B _____ 2 _____

C _____ 3 _____

D _____

RECEIVED DATE: _____
DUE DATE: _____

JOB CODE: BQL
AES LAB NO. -
CUSTOMER SAMPLE ID -
DATE SAMPLED -
METHOD OF SAMPLING -
-MAIL DATE: _____

ANALYTICAL PARAMETER	METHOD No.	DET. LIMIT	WELL 9	WELL 10	WELL 11	WELL 12
URGEABLE HALOCARBONS	601	5./ppb	X	X	X	X
HLORIDE	407B	1./ppm	X	X	X	X
RSENIC	206.2	0.005/ppm	X	X	X	X
CHROMIUM	218.2	5./ppb	X	X	X	X
RON	236.1	0.20/ppm	X	X	X	X
LEAD	239.2	5./ppb	X	X	X	X
ERCURY	245.1	0.001/ppm	X	X	X	X
INC	289.1	0.05/ppm	X	X	X	X
OPPER	220.1	0.20/ppm	X	X	X	X
OTAL REC. PHENOLS	420.2	0.01/ppm	X	X	X	X

STORAGE AREA:

A _____ SUE'S FRIDGE 1 _____

B _____ 2 _____

C _____ 3 _____

D _____

RECEIVED DATE: _____
DUE DATE: _____

JOB CODE: BQL
AES LAB NO. -
CUSTOMER SAMPLE ID -
DATE SAMPLED -
METHOD OF SAMPLING -
-/MAIL DATE: _____

ANALYTICAL PARAMETER	METHOD No.	DET. LIMIT	BLIND FIELD DUPLICATE	DITCH	SEEP	
URGEABLE HALOCARBONS	601	5./ppb	X	X	X	
LORIDE	407B	1./ppm	X	X	X	
RSENIC	206.2	0.005/ppm	X	X	X	
ROMIUM	218.2	5./ppb	X	X	X	
ON	236.1	0.20/ppm	X	X	X	
AD	239.2	5./ppb	X	X	X	
RCURY	245.1	0.001/ppm	X	X	X	
NC	289.1	0.05/ppm	X	X	X	
PPER	220.1	0.20/ppm	X	X	X	
A REC. PHENOLS	420.2	0.01/ppm	X	X	X	

STORAGE AREA:

A _____ SUE'S FRIDGE 1 _____

B _____ 2 _____

C _____ 3 _____

D _____

CHAIN OF CUSTODY RECORD

PROJECT NO.	PROJECT NAME	ADVANCED ENVIRONMENTAL SYSTEMS INC.

SAMPLER'S SIGNATURE _____

SAMPLE NO.	SEQ. NO.	DATE	TIME	SAMPLE LOCATION	SAMPLE TYPE	NUMBER OF CONTAINERS	REMARKS
					TOTAL NO. OF CONTAINERS		

RELINQUISHED BY (Sign)	DATE/TIME	RECEIVED BY (Sign)	RELINQUISHED BY (Sign)	DATE/TIME	RECEIVED BY (Sign)
[1] _____		(2) _____	[2] _____		(3) _____
RELINQUISHED BY (Sign)	**DATE/TIME**	**REC'D BY MOBILE LAB (Sign)**	**REL'D BY MOBILE LAB (Sign)**	**DATE/TIME**	**RECEIVED BY (Sign)**
[3] _____		(4) _____	[4] _____		(5) _____
METHOD OF SHIPMENT		SHIPPED BY (Sign)	RECEIVED FOR LABORATORY (Sign)		DATE/TIME

VDM01700

New York State Department of Environmental Conservation
600 Delaware Avenue, Buffalo, New York 14202-1073

Henry G. Williams
Commissioner

December 31, 1986

JAN 05 1986 Recieved

Mr. Matthew Barmasse
Safety/Environmental Director
Van de Mark Chemical Company
1 North Transit Road
Lockport, New York 14094-2399

Dear Mr. Barmasse:

Region 9 has received additional comments from our Central Office on the Van de Mark Sampling and Analysis Plan. You previously received the Region's comments at the meeting held in New York City on December 19. Since many of the Central Office comments are similar to those of the Region, the writer has combined all of the comments into the following package. In addition, an outline for a groundwater monitoring plan to be kept at the facility is attached (Appendix B), as well as a procedure to be followed when a sample cannot be obtained from a well. Please revise the Sampling and Analysis Plan to incorporate the comments, and initiate the interim status groundwater monitoring program immediately. If you have any questions do not hesitate to contact the writer.

Sincerely,

Mary E. McIntosh
Senior Engineering Geologist

MEM/ad

cc: Mr. Robert Mitrey
Mr. William Wertz
Mr. Larry Thomas

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COMMENTS ON VAN DE MARK SAMPLING AND ANALYSIS PLAN

1. The Appendix B Revised Sampling Program (April 29, 1986) was to be modified to a quarterly groundwater monitoring program according to agreements reached with the company at a June 24, 1986 meeting. This program would encompass quarterly sampling of wells D-55, VDM9, VDM10, VDMs11 and VDM12, the embankment seep. Eighteen Mile Creek upstream and downstream and the drainage ditch. Parameters included in Appendix B include chlorides, iron, pH, purgeable halocarbons, metals and total recoverable phenols. It should be noted that the groundwater sampling program for post-closure has not been formally approved pending review of the closure plan to be submitted at the end of September. Thus, any sampling and analysis plan may need to be modified if additional parameters are added to the post-closure program. The current sampling and analysis plan does not include total recoverable phenols. The metals proposed for testing are arsenic, chromium, iron, lead, mercury and zinc. Other metals previously tested (beryllium, cadmium, copper, nickel, selenium, silver and thallium) are not proposed for quarterly sampling. Of these, total copper was previously found in a concentration of up to 29 mg/l (well VDM12) in the May, 1986 sampling. The other metals were found in relatively low concentrations or below determinable limits. Based on past results, copper should probably be added to the parameter list.

2. Decontamination of the water level measuring equipment must include all portions that have entered the well casing. All water level measurements must be accurate to 0.01 feet. Water level measurements must be made from an easily identified permanent reference point (notch or similar marking on the riser pipe or protective casing). Describe how purge volumes will be calculated.

3. During purging the pH of the water must be checked. The rinsing of the peristaltic tubing between wells is not an adequate decontamination procedure. If more thorough cleaning will not be done (and verified by equipment blanks), tubing must be dedicated to each well where a peristaltic pump is used for purging. If the cost of dedicating tubing is prohibitive, then bailers must be used to purge the wells. At least one of the wells is too deep to be purged using a peristaltic pump and a bailer will need to be used for purging. Sampling logs must include the time when purging starts and when it is completed. The disposal of purge water must also be described.

4. The method for calibrating the pH meter should be included. A minimum two point calibration at pH=4 and pH=7 must be made each day that samples are collected. Prior to use at each monitoring point, the meter must be checked at at least one point. Describe decontamination of the pH meter.

5. The groundwater elevation should also be taken immediately prior to sampling to evaluate the recovery of the wells. Periodically, (at least annually) the total depth of the well should be checked to make sure the screen has not silted in.

6. The use of rope for lowering bailers is not acceptable. A more suitable method is to use heavy gauge monofilament (like that use in weed-whackers), provided that it is cleaned properly prior to use, or teflon coated wire. Sampling logs must note time of start and of completion of sampling.

7. It is unclear from the text whether both total metals and filtered metals will be analyzed. Also it appears that the note on page 3 of the bottle request form should actually be on page 4 of this form. Describe the filtering procedure that will be used on the soluble metals.

8. The laboratory QA/QC procedures are not described (e.g., spikes, replicates, etc.) Analytical results must include the date of sampling, date of extraction, and date of analysis. Lab QA/QC must be included with analytical results. This must include all supporting documentation generated by the laboratory (performance specifications and data that are required by certain EPA methodologies).

9. No chain of custody forms were included, although chain of custody is referenced on the bottle request form. Describe the chain of custody for the samples. Chain of custody should include verification that sample bottles were intact and properly cooled upon receipt at the laboratory.

10. To avoid possible cross-contamination, samples from VDM-12 must be stored and shipped to the laboratory separately from the other samples.

11. Analysis of samples must only be performed at laboratories that are deemed "technically acceptable" by the New York State Division of Solid and Hazardous Waste. A list of technically acceptable laboratories can be obtained from Mr. John Rankin of the Albany Office (518-457-0927).

12. Describe safety equipment that is necessary for sampling activities.

13. Allowing the seep groundwater to flow into the one gallon glass bottle while the rest of the sampling occurs is not acceptable. The samples bottles should be filled directly from the seep if at all possible. If not, the amount of flow collected should be checked at least periodically so that the groundwater samples can be preserved and cooled as soon as possible.

14. The seep collector should be made of a relatively inert material.

INABILITY TO OBTAIN SAMPLES

If the permittee knows that a well or piezometer may not provide representative samples or accurate piezometric values, may be damaged in some way, or is inaccessible, the permittee shall, within fourteen (14) days of such knowledge, attempt to remedy the problem and, when appropriate, sample the well or piezometer. Within twenty (20) days of such knowledge, the permittee shall through written notification to the Department provide information which describes the nature of the problem associated with the device, and in the event of a failure to obtain a sample, the reason why a sample was not obtained.

In addition, the notification shall contain:

1. A description of how the problem with the device was corrected;

Or

2. A schedule for rehabilitation or replacement of the device.

If a problem with the well or piezometer prevented the permittee from obtaining a sample as scheduled, a sample must be obtained within fourteen (14) days after rehabilitation or replacement of the device.

APPENDIX B GROUNDWATER MONITORING PLAN

In order to assure consistency in the groundwater monitoring program, the permittee shall follow a site Groundwater Monitoring Plan. That plan must be kept at the facility, and regularly updated with current groundwater quality data. The permittee shall insure that all appropriate site personnel and outside contractors have been properly trained in the application of the Groundwater Monitoring Plan, and that the Plan is followed whenever groundwater samples are obtained at the site.

The following information must be contained with the plan.

1. Presampling Procedures that describe:
   - Procurement, inspection, and calibration of equipment
   - Procurement and preparation of sample bottles
   - Personal Protective Equipment needed for sampling
   - Well Purging Techniques
   - Water Level Measuring Techniques
   - Laboratory notification/verification

2. Sampling Procedures that Describe:
   - Use of sampling equipment
   - Field measurements and calibration techniques
   - Sampling Parameters/Sample Handling Techniques
     - Sample containers to be used
     - sample preservation techniques
     - sample filtration techniques
     - order of sample collection
     - sample labels
     - sample storage
   - Field QA/QC...cleaning, blanks, duplicate measurements
   - Sample shipping and Chain of custody procedures

3. Laboratory Handling and Analytical Protocol:
   - Documentation of laboratory processing steps
   - Analytical methodologies for each parameter of interest
   - QA/QC protocols
   - Reporting Format

4. Background information for each monitoring well/piezometer:
   - A. Well Log
   - B. Water Level Recovery Rate of Wells
   - C. Measuring Point Elevation
   - D. Normal Purge Volume of the Well
   - E. Background Values - Water Quality
   - F. Development/Redevelopment History of the Well

5. A detailed demonstration of how the statistical evaluation method will be applied to groundwater quality data.

6. A Well Record for each well/piezometer that is updated after each sampling event. The well record must contain the following information:

Well ID # Gradient Depth of Well As Installed Depth of Well As Measured

M.P. Elevation Depth to Water Water Level Elevation

Purge Volume Purge Time (Start/Stop) Recharge Time

Sampling Time Water Level at Sample Time Temperature pH S.C. Before/After Sampling

Physical Condition of Well Important Field Observations regarding purge/sample water or conditions related to sample integrity

Name of Samplers Weather Conditions Purge/Sample Data

Concentration of Indicator Parameters

Concentration of any Other Hazardous Waste Constituents Identified in Sample.

Pertinent Laboratory Information (QA/QC Problems etc.)

STATE OF NEW YORK: DEPARTMENT OF ENVIRONMENTAL CONSERVATION

In the Matter of the Implementation of Corrective Action for a Hazardous Waste Management Facility, Pursuant to Article 27, Titles 9 and 13 of the Environmental Conservation Law of the State of New York by:

ORDER ON CONSENT
File No. 08-10
R9-20080205-5

Van De Mark Chemical, Inc.
One North Transit Road
Lockport, New York 14094-2399

SNPE, Inc.
103 Carnegie Center, Suite 300
Princeton, New Jersey 08540

Respondent(s)

WHEREAS:

1. The New York State Department of Environmental Conservation (the "Department") is responsible for enforcement of the Environmental Conservation Law of the State of New York ("ECL"). This Order is issued pursuant to the Department's authority under that law, including ECL 3-0301, ECL Article 27, Title 9, and ECL Article 71, Title 27.

2. Van De Mark Chemical, Inc. ("Van De Mark"), owns and operates property located at One North Transit Road, Lockport, New York 14094-2399 ("Facility"). Van De Mark was owned by SNPE, Inc. ("SNPE") from 2000 to 2007, and known as Isochem, Inc. from 2004 to 2007. Together, SNPE and Van De Mark will be referred to herein as "Respondents".

3. The Department maintains that Van De Mark conducted operations at the Facility that subject it to ECL Article 27, Title 9, and the regulations promulgated pursuant thereto. The Department further maintains that the Facility is a hazardous waste

management facility, as that term is defined at 6 NYCRR 370.2(b)(89), and is subject to the New York State laws and regulations governing hazardous waste.

4. The Department maintains that the Facility is subject to interim status and corrective action pursuant to the Federal Resource Conservation and Recovery Act ("RCRA") and the regulations promulgated thereunder. The Department received final delegation of RCRA authority from United States Environmental Protection Agency ("EPA") as of May 29, 1986.

5. On March 1, 1981, a Part A hazardous waste application under RCRA was submitted to the EPA by Van De Mark. The Facility has not received a Part B permit and is considered by the Department to be an interim status facility for purposes of 6 NYCRR 373-1.3.

6. A Draft Phase I/II Environmental Audit developed by Dames & Moore for SNPE, in 1999 revealed dense non-aqueous phase liquid (DNAPL) in monitoring well MW-2D.

7. In 2006, Van De Mark agreed to conduct a voluntary Site Assessment of the on-site monitoring wells and further inspection of the base of the escarpment/banks of Eighteen Mile Creek. As a result of the inspection activities, coal tar was discovered along Eighteen Mile Creek at the base of the Niagara Escarpment and below the plant site. The Respondents encountered coal tar in quantities and locations that the parties agreed required further investigatory and remedial efforts.

8. Pursuant to a Department-approved work plan and under Department oversight, Van De Mark began creek bank cleanup activities on August 13, 2007 and completed this phase of the work on August 27, 2007.

9. Respondents submitted a supplemental Eighteen Mile Creek bank cleanup plan on September 12, 2008 to address additional coal tar seeps and a further report on December 22, 2008 that described the second phase of cleanup work along the creek bank.

10. Respondents, in 2009 and 2010, submitted additional work plans and, with the Department's approval, continued to perform additional remediation of the previously unanticipated levels of coal tar at the Facility.

11. The Department and Respondents agree that the goal of this Order is to implement further corrective action to address the coal tar contamination associated with the Facility and Eighteen Mile Creek and to develop and execute a related operation and maintenance plan for the Facility, including the plant site.

12. Pursuant to ECL Section 71-2727(3), the Commissioner of the Department may issue orders requiring corrective action, including corrective action beyond the facility boundary where necessary to protect human health and the environment, for all releases of hazardous waste or constituents from any Area of Concern (AOC) or solid waste management unit (SWMU) at any treatment, storage or disposal facility which is either permitted or seeking a permit under Title 7 of 9 of Article 27 of the Chapter, or which has interim status according to regulations adopted thereunder, regardless of the time at which the waste was placed in the unit.

13. Pursuant to 6 NYCRR 373-1.2(e), an enforceable document, such as an Order on Consent, can be issued in lieu of a post-closure permit, subject to the requirements in 6 NYCRR 373-3.7(k).

14. Respondents consent to the issuance of this Order to fulfill their obligation under ECL Article 27, Title 9 and ECL 71-2727(3)(b) to perform corrective measures

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implementation and operations and maintenance monitoring at the Facility and agree to be bound by its terms. Respondents reserve all rights and defenses they may have regarding liability or responsibility for conditions at the Facility, except that Respondents consent to and agree not to contest the authority or jurisdiction of the Department to enforce this Order, except as provided in Section V.C., and agree not to contest the validity of this Order or its terms. Respondents have consented to the issuance of this Order in good faith without trial or adjudication of any issue of fact or law.

I. Corrective Action

A. Respondents shall implement the Interim Corrective Measures (ICM) work plan, dated February 2011, and approved by the Department on May 5, 2011, within forty-five days of the effective date of this Order. Said ICM requires removal of coal tar located at the plant site portion of the Facility.

B. Respondents shall submit a Corrective Measures Implementation (CMI) work plan that provides sufficient detail of the corrective measures alternative approved by the Department, with modifications, in its letter dated May 5, 2011. This approval was in response to Respondents' Focused Corrective Measures study (CMS) which Respondents submitted in April 2011. This CMI Work Plan will address any identified coal tar impacts to Eighteen Mile Creek adjacent to the Facility. The CMI Work Plan shall be submitted within-sixty days of the effective date of this Order.

C. Respondents shall submit an Operation and Maintenance Plan (OMP) that monitors the effectiveness and maintenance of the remedial system installed at the base of the Niagara Escarpment and groundwater/DNAPL monitoring associated with the selected corrective action at the Facility. Based upon the results of the OMP, the Department may

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require additional corrective action at the Plant Site and/or enhancements to the remedial system installed at the base of the Niagara Escarpment.

II. Financial Assurances

A. Providing Financial Assurance: By sixy (60) days from Effective Date of Order , Respondents shall provide an estimate of financial assurance for (a) corrective measures implementation activities necessary to implement and successfully complete the CMI n to address coal tar contamination at the Facility and (b) activities necessary to implement the OMP at the Facility. Respondents must provide financial assurance in accordance with 6 NYCRR 373-3.8, or comply with requirements of 6 NYCRR 373.3.8. Respondents shall add the words, "and/or corrective action" wherever the words, "closure/post closure" appear in financial assurance instrument wording. Respondents shall thereafter modify the sentence stating that the wording of the financial assurance instrument is identical to the wording provided in the regulations by adding the phrase, "with the exception of including the words, and/or corrective action."

B. Modification of Amount of Financial Assurance:

1. On an annual basis, beginning one year after the effective date of this Order, Respondents must submit to the Department a corrective action cost estimate for (a) the Corrective Measures Implementation Work Plan; and (b) the Operation and Maintenance Plan, all of which are required by Paragraph I of this Order. The Department will review each cost estimate and notify Respondents, in writing, of the Department's approval, rejection, or modification of the cost estimate. If the Department does not approve the cost estimate, the Department will notify the Respondents in writing of the estimate's deficiencies and specify a due date for submittal of a revised cost estimate.

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2. If the cost estimate is greater than the amount of financial assurance then in effect, the Respondents must, within sixty (60) days from the date of the submission of the new cost estimate, provide additional financial assurance in accordance with 6 NYCRR Section 373-3.8, in an amount that is the difference between the new cost estimate and the existing financial assurance then in effect.

3. If the estimated cost is less than the amount of financial assurance then in effect, Respondents may, at the same time that Respondents submit the annual cost estimate, or at any other time agreed to by the Department, submit a written proposal to the Department to reduce the amount of the financial assurance provided under this Section so that the amount of the financial assurance is equal to the estimated cost of the remaining work to be performed. The written proposal shall specify, at a minimum, the cost of the remaining work to be performed and the basis upon which such cost was calculated. In the event that the Department requires additional information concerning the remaining work to be performed, the department shall notify Respondents in writing. Respondents shall have fifteen (15) days after receiving the Department's notification that additional information is needed to submit in writing a revised proposal that addresses all of the additional information requested by the Department. If Respondents provide sufficient information to the Department concerning the cost of the remaining work to be performed, the Department shall issue a written decision within sixty (60) days regarding the amount of financial assurance required under this Order. After receiving the Department's written decision, Respondents may reduce the amount of the financial assurance only in accordance with, and to the extent permitted by, such written decision. If Respondents elect to satisfy the requirement of 6 NYCRR 373-3.8 by establishing a closure/post-closure

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trust fund and the value of the fund is greater than the cost of the remaining work, the Department will instruct the trustee to release such excess funds to the Respondents.

4. In the event of a dispute, Respondents may invoke the dispute resolution mechanism provided in Section VII of this Order. Respondents shall not be required to post additional financial assurance or be entitled to reduce the amount of financial assurance, or seek a release of funds, until a final decision is rendered by the Director or his designee.

C. Liability Requirements:

Respondents must have and maintain liability coverage in accordance with 6 NYCRR 373-3.8(h).

D. Adjustment for Inflation:

While this Order remains in effect, the financial assurance, including financial assurance for corrective action, will be subject to adjustment for inflation as provided for in 6 NYCRR 373-3.8(c)(2) and Section 373-3.8(e)(2).

III. Stipulated Penalties:

1. Respondents' failure to comply with any term of this Order constitutes a violation of this Order and the ECL. If the Department determines that Respondents have failed to comply with this Order, the Department shall notify Respondents in writing. Payment of any penalty shall not in any way alter Respondents' obligation to comply with any term of this Order or to complete performance under the terms of this Order. The payment of stipulated penalties as set forth below shall not limit the Department's right to seek such other relief as may be authorized by law.

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2. Respondents shall be liable for payment to the Department of the sums set forth below as stipulated penalties for each day, or part thereof, that Respondents are in violation of the terms of this Order. All penalties begin to accrue on the first day Respondents are in violation of the terms of this Order and continue to accrue through the final day of correction of any violation, less those days the matter was subject to Dispute Resolution. Such sums shall be due and payable within fifteen (15) days after receipt of notification from the Department assessing the penalties. If such payment is not received within fifteen (15) days after Respondents receive such notification from the Department, interest shall be payable at the annual rate of nine (9) per centum on the overdue amount from the day on which is was due through, and including, date of payment. Penalties shall be paid by certified check or money order, made payable to "New York State Department of Environmental Conservation" and be delivered personally or by certified mail, return receipt requested, to the Regional Attorney, Office of General Counsel, NYSDEC, 270 Michigan Avenue, Buffalo, New York 14203-2915. Payment of the penalties shall not in any way alter Respondents' obligation to complete performance under the terms of this Order. Stipulated penalties shall be due and payable pursuant to the following schedule:

Period of Non-Compliance	Penalty Per-Day
First through 15th day	$ 500
16th through 30th day	$1, 500
31st day and thereafter	$4,500

IV. Submissions

A. All reports and submissions required by this Order shall be made to the Regional Hazardous Materials Engineer at the address provided in Paragraph X.

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Respondents shall be responsible for the content of any submissions made pursuant to this Order.

B. The Department shall review each of the submissions Respondents make pursuant to this Order to determine whether it was prepared, and whether the work done to generate the data and other information in the submission was done, in accordance with this Order and with generally accepted technical/scientific principles. The Department shall notify Respondents in writing of its approval or disapproval of each submission. All Department approved submissions shall be incorporated into and become an enforceable part of this Order. Approval by the Department shall not be unreasonably withheld or delayed by the Department.

C. If the Department disapproves a submission, it shall so notify Respondents in writing and specify the reasons for is disapproval. Within sixty days, unless the notice specifies a different deadline, after receiving written notice that Respondents' submission has been disapproved, Respondents shall make a revised submission to the Department that addresses all the Department's stated reasons for disapproving the first submission. After receipt of the revised submission, the Department shall notify Respondents in writing of its approval or disapproval. If the Department approves the revised submission, it shall be incorporated into and become an enforceable part of this Order. If the Department disapproves the revised submission, the Department and Respondents will conduct good faith negotiations to resolve the issue between them during the course of the next twenty-one days. If the issues are not resolved to the Department's satisfaction, the Department shall so notify Respondents in writing within such twenty-one day period and Respondents shall be in violation of this Order, unless it has invoked the dispute resolution mechanism

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set forth below in Paragraph VI within thirty days of receipt of the Department's written notice that issues have not been resolved.

D. The Department may request that Respondents modify and/or amplify and expand a submission upon the Department's request to do so if the Department reasonably determines, as a result of reviewing data generated by an activity required under this Order or as a result of reviewing any other data or facts, that further work is necessary.

V. Reservation of Rights

A. Nothing contained in this Order shall be construed as barring, diminishing, adjudicating or in any way affecting any of the Department's civil, criminal, or administrative rights or authorities including, but not limited to nor exemplified by, the right to recover natural resource damages against any party, including Respondents and Respondents' defenses thereto.

B. Nothing contained in this Order shall be construed to prohibit the Commissioner or the Commissioner's designee from exercising any summary abatement powers pursuant to ECL 71-0301.

C. Except as specifically set forth herein, nothing in this Order shall be construed as a waiver by Respondents of any rights, claims, defenses, or agreements it now has or may have in the future regarding the Facility.

VI. Dispute Resolution

A. The Parties shall use their reasonable best effort and negotiate in good faith to resolve any disputes regarding this Order.

B. If any dispute shall arise between Respondents and the Department regarding the implementation or interpretation of any provision of this Order or any

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revised submittal, Respondents may invoke the dispute resolution procedures contained in this Section.

C. In order to invoke these procedures, within 30 days of receipt of notice of the Department's action or determination, Respondents must submit a written request to meet with the Director of the Division of Materials Management ("the Director") to discuss the Department's action or determination. The Director or the Director's designated agent must contact Respondents to schedule a meeting within 14 days thereafter. At the meeting, Respondents shall be given an opportunity to present their response to the Department's action or determination, and the Director shall have the authority to modify and/or withdraw such action or determination. The Director shall notify Respondents, in writing, of his or her specific comments as soon as reasonably practicable after the meeting.

D. Upon receipt of such notification, Respondents shall take whatever action is required under this Order as modified by the Director's comments (if any) pursuant to a schedule determined following the meeting with the Director. If Respondents fail to take the required action, Respondents shall be in violation of this Order and the Department may take any action or pursue whatever rights it has pursuant to any provision of statutory or common law.

E. The invocation of dispute resolution procedures under this Paragraph shall not, of itself, extend, postpone, or affect in any way any obligation of Respondents under this Order, except that payment of stipulated penalties with respect to the disputed matter shall be stayed pending resolution of the dispute pursuant to this Paragraph. Notwithstanding the stay of payment set forth above, stipulated penalties shall accrue from

the first day of noncompliance with any applicable provision of this Order. In the event Respondents do not prevail on the disputed issue, stipulated penalties shall be assessed and paid as provided in Paragraph IV above. The Director, in his or her sole discretion, may waive stipulated penalties when Respondents do not prevail on the disputed issue if the Director determines that Respondents had a reasonable basis for believing they would prevail on the disputed issue.

F. The Director's written specific comments shall be the Department's final agency action for purposes of Article 78 of the CPLR. Nothing in this Order shall diminish or otherwise affect Respondents' statutory rights of appeal with respect to the Department's final decision.

VII. Entry Upon Facility

Respondents hereby consent to the entry upon Facility and upon areas in the vicinity of the Facility that are under the control of Respondents upon reasonable notice and at times reasonable under the circumstances by any duly designated employee, consultant, contractor, or agent of the Department or any State Agency having jurisdiction for purposes of inspection, sampling, and testing to ensure Respondents' compliance with this Order. The Department shall abide by the security, health and safety rules in effect at the Facility. The Department may be accompanied by an employee, consultant, contractor, or agent of Respondents.

VIII. Indemnification

Respondents shall indemnify and hold the Department, the State of New York, and its representatives and employees harmless for all claims, suits, actions for damages, and costs of every name and description arising out of or resulting from the fulfillment or

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attempted fulfillment of this Order by Respondents' employees, servants, agents, successors, and assigns.

IX. Modification

A. The terms of this Order constitute the complete and entire Order the Department issued to Respondents covering corrective measures investigation, implementation, and monitoring at the Facility. No term, condition, understanding, or Order purporting to modify or vary any term of this Order shall be binding unless made in writing and subscribed by the party to be bound. No informal advice, guidance, suggestion, or comment by the Department regarding any report, proposal, plan, specification, schedule, or any other submissions shall be construed as relieving Respondents of their obligation to obtain such formal approvals as may be required by this Order.

B. If Respondents desire that any provision of this Order be changed, Respondents shall make timely written application to the Department setting forth reasonable grounds for the relief sought. Copies of such written application shall be delivered or mailed to the Regional Materials Management Engineer, and the Regional Attorney, at the respective addresses provided in paragraph X.

X. Communications

All written communications required by this Order shall be transmitted by United States Postal Service, by private courier service, or by hand delivery.

1. Communication from Respondents shall be sent to:

Regional Materials Management Engineer
New York State Department of Environmental Conservation
270 Michigan Avenue
Buffalo, New York 14203-2915

VDM01718

Regional Attorney
270 Michigan Avenue
Buffalo, New York 14203-2915

2. Communications to Respondents shall be sent to:

Pamela Cook
Van De Mark, Inc.
One North Transit Road
Lockport, New York 14094-2399

Richard A. Martin
Orrick, Herrington & Sutcliffe, LLP
51 West 52nd Street
New York, New York 10019-0142

and to

David Flynn
Phillips Lytle, LLP
3400 HSBC Center
Buffalo, New York 14203

B. The Department and Respondents reserve the right to designate additional or different addresses for communication on written notice to the other given in accordance with this Section.

XI. Termination and Satisfaction

The provisions of this Order shall be deemed satisfied and the obligations of the Respondents under this Order shall terminate upon Respondents' receipt of a written statement from DEC that Respondents have completed, to DEC's satisfaction, all the terms and conditions of this Consent Order. At any time after Respondents complete all of the tasks required by this Order, including the tasks in Paragraph I, Sections A, B, and C, and coal tar is not emanating from the base of the escarpment for a period of three (3) years, Respondents may request in writing that DEC provide Respondents with a statement of completion. Within ninety (90) days after such request by Respondents, DEC will use its best efforts to provide Respondents with a statement of completion, or a written statement as to the basis for a refusal to provide Respondents with such statement of completion. At

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any time after Respondents' receipt of a written statement of refusal to provide Respondents with a statement of completion, Respondents may submit a notice of dispute and trigger the dispute resolution procedures provided in Section VI of this Order. If Respondents disagree with the decision issued under the dispute resolution procedures of this Order, Respondents may then seek judicial review of the DEC determination concerning Termination and Satisfaction. DEC and Respondents agree that the determination of the dispute resolution proceeding concerning Termination and Satisfaction (i.e., whether Respondents have completed all of the tasks required by this Order) shall be deemed final agency action and subject to judicial review. The need for additional post-closure care monitoring, and post-closure financial assurance, while independently enforceable by the Department, shall not be a prerequisite to termination of this Order

XII. Notification of Proposed Transfer

A. Within thirty (30) days after the effective date of this Order, Respondents shall file a copy of this Order with the Niagara County Clerk, Lockport, New York to give notice of this Order to all parties who may acquire an interest in the Site. Respondents shall provide the Department with a certification by the Niagara County Clerk indicating that a copy of the Order has been filed with the Office of the Niagara County Clerk, in Lockport, New York.

B. Within thirty (30) days after the effective date of this Order, Respondents shall file a deed notice with the Niagara County Clerk, Lockport, New York whereby the Facility is restricted to use for commercial or industrial purposes and groundwater at the

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Facility shall not be used for potable water purposes; Said notice shall further state that the site has a possibility of residual coal tar contamination.

C. If Respondents propose to convey the whole or any part of Respondents' ownership interest in the Site during the term of this Order, Respondents shall, not fewer the sixty (60) days before the date of conveyance, notify the Department in writing of the identity of the transferee and of the nature and proposed date of the conveyance, and shall notify the transferee in writing, with a copy to the Department of the applicability to them of this Order and all attachments, and 6 NYCRR Part 373-3.

D. Respondents, through their successors and assigns, shall retain liability for fulfilling the terms of this order throughout the duration of the Order, even if during the duration of the Order, Respondents, or their successors and assigns, convey or transfer the whole or any part of their interest in the Site.

XIII. Miscellaneous

A. Respondents hereby certify that they have fully and accurately disclosed or made available to the Department all relevant information known to Respondents and all relevant information in the possession or control of its officers, directors, employees, contractors, and agents which relates to, identifies or describes contamination at the Facility relative to coal tar and DNAPL, along Eighteen Mile Creek.

B. The Department shall have the right to obtain split samples, duplicate samples, or both, of all substances and materials sampled by Respondents pursuant to this Order, and the Department also shall have the right to take its own samples. Respondents shall make available to the Department the results of all sampling, tests or other data generated by Respondents with respect to implementation of this Order or conducted

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independently by Respondents. Respondents shall have the right to obtain split samples, duplicate samples, or both of all substances and materials sampled by the Department, and the Department shall make available to Respondents the results of all sampling, tests or other data generated by the Department with respect to this Order.

C. Respondents shall obtain all permits, easements, rights-of-way, rights-of-entry, approvals, or authorizations necessary to perform its obligations under this Order.

D. Respondents and Respondents' successors (including successors-in-title) and assigns shall be bound by this Order. Any change in ownership or corporate status of Respondents including, but not limited to, any transfer of assets or real or personal property, shall in no way alter Respondents' responsibilities under this Order. Respondents shall require that its employees, servants, and agents comply with the relevant provision of this Order in the performance of their designated duties on behalf of Respondents.

E. Respondents shall be responsible for ensuring that its contractors and subcontractors perform the work in satisfaction of the requirements of this Order.

F. Respondents shall notify the Department at least 10 working days in advance of the commencement of any field activities to be conducted pursuant to this Order.

G. All references to days in this Order are to calendar days unless otherwise specified. If a deadline falls on a weekend or holiday, such deadline shall automatically be extended until the next business day.

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H. The Paragraph headings set forth in this Order are included for convenience of reference only and shall be disregarded in the construction and interpretation of any of the provisions of this Order.

I. The Effective Date of this Order shall be the date that the Commissioner or his designee signs the Order. The Department will provide Respondents (or Respondents' counsel) with a fully executed copy of this Order as soon as practicable after the Commissioner or his designee signs it.

J. In the event of an inconsistency between the provisions of any attachment or appendix of this Order and any term, condition, or provision contained in Paragraph I through XII of this Order, the term, condition, or provision contained in that Paragraph, and not that in any attachment or appendix of this Order, shall control.

K. Respondents and Respondents' corporate successors and assigns hereby affirmatively waive any right they had, have, or may have to make a claim against New York state pursuant to Article 12 of the Navigation Law with respect to the Site, and further release and hold harmless the New York State Environmental Protection and Spill Compensation Fund from any and all legal or equitable claims, suits, causes of action, or demands whatsoever that any of same has or may have with respect to the Facility.

L. The terms of any Orders on Consent Respondents have entered into with DEC pertaining to the Facility shall continue in full force and effect unless they conflict with or are otherwise addressed by the terms of this Order, in which case terms of this Order shall control.

M. Respondents shall not suffer any penalty under this Order or be subject to any proceeding or action if it cannot comply with any requirement hereof because of war,

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riot, or any other event beyond the reasonable control of Respondents. Respondents shall, within 10 business days of when they obtain knowledge of any such condition, notify the Department in writing. Respondents shall include in such notice the measures taken and to be taken by Respondents to prevent or minimize any delays and shall request an appropriate extension or modification of this Order. Failure to give such notice within such ten-business day period constitutes a waiver of any claim that a delay is not subject to penalties.

Dated: Nov. 30, 2011
Buffalo, New York

Joseph J. Martens
Commissioner
New York State Department of
Environmental Conservation

By: Abby McSnyder
Regional Director

VDM01724

CONSENT BY RESPONDENT

Respondent hereby consents to the issuing and entering of this Order, waives its right to a hearing herein as provided by law, and agrees to be bound by this Order.

By: Michael A. Buchanan

Title: President & CEO

Date: October 20, 2011

STATE OF NEW YORK)
) ss:
COUNTY OF)

On the 20th day of October, in the year 2011, before me, the undersigned, personally appeared Michael A. Buchanan, personally known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me that he/she executed the same in his/her capacity, and that by his/her signature on the instrument, the individual, or the person upon behalf of which the individual acted, executed the instrument.

NOTARY PUBLIC

ANN MARIE WERTH
Notary Public, State of New York
Qualified in Niagara County
My Commission Expires 6/13/2014

VDM01725

CONSENT BY RESPONDENT

Respondent hereby consents to the issuing and entering of this Order, waives its right to a hearing herein as provided by law, and agrees to be bound by this Order.

By: SCHWARTZ FRANCOIS

Title: CHAIRMAN

Date: Nov. 17th 2011

STATE OF NEW YORK)
) ss:
COUNTY OF New York

On the 17 day of NOVEMBER, in the year 2011, before me, the undersigned, personally appeared SCHWARTZ Francois, personally known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me that he/she executed the same in his/her capacity, and that by his/her signature on the instrument, the individual, or the person upon behalf of which the individual acted, executed the instrument.

NOTARY PUBLIC

DEBORAH JOHNSON
Notary Public, State of New York
No. 01JO6022712
Qualified in Kings County
Commission Expires April 5, 2015

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GROUPE SNPE

November 2, 2011

Le Directeur Délégué
Financier et Juridique

Dan Slick
ChayseChem Inc.
301 Oxford Valley Rd, Suite 704 B
Yardley,PA 19067

N° 11 – 81 DFJ

Dear Dan,

You will find enclosed the Consent Decree with the State of New York signed by me as chairman of SNPE Inc.

I hope this signature could be validated.

Waiting to hear from you.

Yours,

F. SCHWARTZ

P.J.

FOCUSED CORRECTIVE MEASURES STUDY

VANDEMARK CHEMICAL LOCKPORT, NEW YORK

Submitted To: SNPE Inc.
103 Carnegie Center, Suite 300
Princeton, NJ 08540

Submitted By: Golder Associates Inc.
2430 North Forest Rd. Suite 100
Getzville, NY 14068 USA

Distribution:

3 copies – New York State Department of Environmental Conservation
1 copy - SNPE, Inc.
1 copy - VanDeMark Chemical Inc.
1 copy – Golder Associates Inc.

April 2010

093-89168

Golder Associates

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1.0 INTRODUCTION

Golder Associates Inc. (Golder) under contract to SNPE Inc. (SNPE) and with the direct cooperation of the owner, VanDeMark Chemical Inc. (VDM), has prepared this Focused Corrective Measures Study (CMS) to address the coal tar residuals comprised of semi-volatile organic compounds in soil and bedrock for the creek bank area located to the south of the VanDeMark Lockport, NY facility. The facility is located in the north central sector of the City of Lockport city limits; as shown on Figure 1-1.

The New York State Department of Environmental Conservation (NYSDEC) is currently negotiating a Corrective Measures Order with VDM (as Site owner) and SNPE under the Resource Conservation and Recovery (RCRA) program to refine the criteria and schedule for the selection and implementation of appropriate corrective measures that are discussed in this report.

1.1 Background

In October 2006, sampling of the on-site groundwater monitoring wells installed in the late 1990's as part of a due diligence effort identified the presence of a significant amount of dense non-aqueous phase liquid (DNAPL) in the deeper bedrock monitoring well (MW 2D) located approximately 25 feet north of the top of the creek bank in a paved area just west of the training and men's locker room building.

Based on this finding, further visual investigation of the adjacent slope and Eighteen-Mile Creek bank area south and presumably downgradient of this well was performed. These inspections revealed visible quantities of an accumulated coal-tar like substance seeping out near the base (toe) of the cliff face and present along an approximately 100 feet length of the creek bank shoreline.

Upon this discovery and in consultation with the NYSDEC, two separate remedial efforts were undertaken in 2007 and 2008 (Benchmark, Sept. 12, 2007, Dec. 22, 2008, and May 20, 2009) to mitigate and remove the accumulated tar material that appeared to have flowed out from the toe of the slope and accumulated along the top of bedrock and intermingled within the bank sediments These removal efforts were predicated on the concept that the flow of accumulated tar had essentially ceased based on the highly weathered appearance of the accumulations. Therefore, the remedial efforts were aimed toward expeditious removal of these source materials that were exposed on the creek bank and follow-up visual monitoring of the creek bank after removal to confirm that new seeps were not occurring.

In the summer of 2009 however, a joint inspection conducted by the NYSDEC and VanDeMark Chemical revealed the presence of newly accumulated tar residuals at both the toe of the slope and on top of the clean backfill that was placed along the creek bank area previously remediated. This finding resulted in a request by the NYSDEC to perform a more detailed evaluation of the potential source, nature and extent of the tar residuals along and within the bedrock along the escarpment (creek bank) area. Specifically the NYSDEC requested the preparation of a Work Plan to characterize and better define the impacts in order to develop a more comprehensive remedial approach going forward.

During an October 14, 2009 review meeting with representatives from NYSDEC, SNPE, VanDeMark and Golder, it was agreed that attempting to further delineate the source and extent of the existing DNAPL within the overburden soils and underlying bedrock through a traditional boring investigation program would be unlikely to better characterize the extent of the impacts based on the complexity (i.e. fractured nature) of the underlying rock geology at the VanDeMark Facility and the fact that the release of the tar residuals most likely occurred more than 40 years ago. This type of investigation would also be logistically difficult to implement due to the layout and constrained access within the facility and the hazards of performing these activities in conjunction with the ongoing chemical production activities. The NYSDEC, SNPE and VanDeMark concurred that a more beneficial strategy would consist of a phased assessment of the situation.

As a result, a DNAPL Assessment and Supplemental Work Plan (December 2009) was prepared and proposed a detailed slope overburden mapping and survey to better define the slope and creek bank bedrock/overburden geology across the slope and understanding of the DNAPL transport mechanism (refer to Appendix A for a copy of this Work Plan). However, in April 2010, personnel from VanDeMark Chemical identified previously unknown solidified coal tar seeps along a steeply pitched segment of the creek bank approximately 70 feet long to the east (upstream) of the "lower" creek bank area that was the primary focus of earlier remedial efforts in 2007 and 2008.

Concurrently, new information was obtained from a VanDeMark employee of tar seep observations that had occurred approximately 15 to 20 years ago in a localized paved area northwest of Building B-4 within the VanDeMark Chemical manufacturing facility. In consultation with the NYSDEC, it was agreed that the supplemental investigation activities would be expanded to encompass additional test pits easterly along the toe of the slope and upgradient of the newly observed creek bank coal tar residuals seeps and the performance of a separate soil boring and sampling program within the VanDeMark Chemical facility centered around the area of historical coal tar seeps in the pavement near Building B-4. In both cases the goal of the expanded investigations would be to define the areal and vertical extent of coal tar residuals in both areas. The supplemental investigation results and findings are summarized in Section 3 – Nature and Extent of Contamination.

1.2 General Approach

The December 2009 DNAPL Assessment and Supplemental Work Plan Report and August 2010 Supplemental DNAPL Investigation Summary Report (refer to Appendix B), initially presented a recommendation for the interception and capture of the DNAPL residuals exiting the toe of the slope directly south of monitoring well MW-2D via a linear cut-off trench system. This approach was conceptual and intended for the lower creek bank area only. The NYSDEC requested that design details, including the location and configuration of the proposed trench, be provided as part of a remedial alternatives analysis or focused Corrective Measures Study (CMS). In addition, the NYSDEC has indicated its ultimate remedial goal is the removal of coal tar in the overburden in all areas of the Eighteen

Mile Creek slope and creek bank area and that the remedial approach proposed for the lower creek bank area also be contemplated for the upper access road area.

As noted in the November 2010 Response to Comments letter to the NYSDEC, due to the complexities and impacts that may be incurred in implementing potential remedial strategies, particularly along the upper access road area, it is the intent of SNPE and VanDeMark to describe and analyze selected alternatives that are most appropriate and pragmatic for this unique area (e.g. source removal, collection trenches, grout curtains, etc.) and evaluate them for: technical implementability; short and long term effectiveness; degree of public and environmental protection afforded; community acceptance; cost and other relevant evaluation criteria. Based on the analysis performed, a preferred remedial approach will be recommended for implementation. The selected remedial alternative will encompass all areas of the creek bank (including the previously remediated or lower creek bank area).

The information collected from previous investigations described as part of site assessments and the supplemental DNAPL assessment activities was utilized for conducting the Focused CMS of the affected Eighteen Mile Creek area. In accordance with USEPA RCRA guidance, the objectives of this Creek Bank Focused CMS are:

- Identification and development of a corrective measure alternative or alternatives, including a description of current conditions, establishment of corrective action objectives, evaluation of corrective measure technologies, and identification of the corrective measure alternative or alternatives;
- Evaluation of the corrective measure alternative or alternatives, including consideration of technical, environmental, human health, institutional issues, and cost; and
- Justification and recommendation of the corrective measure or measures, including consideration of technical, human health, and environmental issues.

1.3 Purpose and Organization

This report presents the findings and recommendations of the Focused CMS for the Eighteen Mile Creek slope and creek bank area to the south of the active manufacturing plant and administrative office building. The purpose of this Focused CMS is to:

- Evaluate the data available from recent investigation programs from the standpoint of potential risk to human health and the environment;
- Determine the need to evaluate corrective measures for impacted media based on the potential risk to human health, the environment and the corrective action criteria;
- Develop potential corrective measure alternatives and perform an evaluation of the alternatives to address clean up objectives; and
- Select a preferred corrective measure alternative based on public health, environmental, technical, institutional and cost criteria.

The first four sections of this report are organized to address the site specific issues such as the history and background of the site and the area covered by the Focused CMS, and the potential risk to the environment. These sections provide a discussion of the issues that affect the ultimate development, evaluation and selection of the proposed corrective measures alternative(s), as discussed in Section 5.

2.0 SITE INFORMATION

2.1 General Site Background

The VDM Facility is located within the Erie-Niagara Region in the western section of New York State. The VDM Facility is situated within the borders of the City of Lockport in Niagara County. The regional location of the VDM Facility is shown on Figure 1-1.

A review of historical Sanborn Fire Insurance maps and aerial photos illustrate an area encompassing the present VanDeMark Chemical operations and surrounding parcels north to Mill Street and south to Eighteen Mile Creek. The maps confirm that the Site and adjacent parcels have over a century of nearly uninterrupted industrial use. The following property ownership chronology was obtained from the review:

- From the late 1800's through the 1920s, the Site was occupied by a company alternately known as "United Industrial Fibre Co., United Indurated Fibre Co., and Fibre Corporation". The maps identified these companies as being manufacturers of fibre pipe, pails, drums, etc.
- The 1928 Sanborn Map indicates that the Fibre Corporation appears to be defunct and most buildings are labeled as vacant. Tenants that may be leasing portions of the former Fibre Corp buildings are listed as Norton Laboratories and National Lead Co.
- The 1948 Sanborn map lists the facility as "Niagara Chlorine Products Corporation".
- The 1969 Sanborn Map contains the first reference to the "VanDeMark Chemical Co." and the buildings and labeling of them remains essentially unchanged from the 1948 map.
- Aerial photographs were obtained for the years 1962, 1972, 1985, 1995 and 2006. Based on the known site history, these photos encompass the more recent ownership of the Site by the VanDeMark/VanChem group of companies.

Since the early 1950's, the principal chemical manufacturing operations at the site have primarily consisted of merchant phosgene gas and phosgene derived specialty chemicals. Ancillary activities historically and currently conducted in support of the phosgene and specialty chemicals manufacturing process include the pre-treatment and discharge of industrial wastewaters under a City of Lockport industrial users permit and the storage and off-site disposal of wastes regulated under Resource Conservation and Recovery Act (RCRA).

2.2 Surrounding Land Use

The VanDeMark Facility is located in the City of Lockport. The surrounding area is mixed urban setting consisting of industrial, commercial and some nearby residential areas. The City's total population per the 2010 United States Census Bureau is 22,279 and the population density is 2,612 per square mile, however the portion of the City that the facility is located in is one of the least populated due to geographical features and the vacant or underutilized status of many of the surrounding industrial and commercial properties. The property is zoned I-3 heavy industrial.

2.3 Focused CMS Area

The area addressed by this Focused CMS lies approximately 110 feet south of the southern fence line of the manufacturing facility and encompasses an area varying in width from approximately 20 feet to 50 feet and extending approximately 350 feet from east to west between the creek edge and the toe of the slope The Eighteen Mile Creek valley is steeply sloped and access to the Focused CMS area is restricted. The area is approximately 60 feet below the top of the escarpment where the manufacturing facility is located.

SNPE and VDM are currently negotiating a Corrective Measures Order with the NYSDEC to formally designate and address this area under the RCRA program, as well as the In-Plant coal tar residuals area that will be addressed under an ICM as previously described in Section 1.

2.4 Hydrology and Site Drainage

The Focused CMS area lies directly adjacent to and north of Eighteen Mile Creek and all surface drainage generated from the VDM manufacturing facility and the slope and bank area is generally due south via sheet flow directly into Eighteen Mile Creek which ultimately drains the entire lower escarpment area into Lake Ontario. Eighteen Mile Creek flow volume and level varies widely seasonally due to the discharge of barge canal water upstream during the spring, summer and fall months.

Eighteen Mile Creek is classified by New York State Class D for its entire length within the City of Lockport. Class D fresh surface waters are defined by the NYSDEC as being suitable for fishing. These waters are also suitable for fish, shellfish, and wildlife survival. Under the Class D classification the water quality shall be suitable for primary and secondary contact recreation, though other factors may limit use for these purposes. Due to such natural conditions as intermittency of flow, water conditions not conducive to propagation of game fishery, or stream bed conditions, the waters will not support fish propagation.

2.5 Geology

Bedrock under the site was described in the 1999 Phase I/II report by Dames & Moore (Dames & Moore, 1999) as soft red-brown shale or red to gray sandstone, dipping gently to the south at 30-40 feet per mile (i.e. sub-horizontal). Bedrock descriptions were refined in the 2006 field investigation summary report by Benchmark Environmental Engineering & Science PLLC (Benchmark, Nov 30, 2006), which was associated with the installation of well MW-7D. In this borehole the uppermost bedrock underlying the site was identified as the Grimsby Sandstone, described in MW-7D as a dark red brown to grey, moderately strong, fine-grained, thinly bedded, slightly to moderately weathered intensely fractured sandstone. Also noted were occasional clay-filled horizontal fractures. Other fractures were extremely to vary narrow and partially healed, some iron-stained.

The unit underlying the Grimsby Sandstone is the Power Glen Shale, described in MW-7D as a dark gray with light to medium gray banded, horizontally bedded, very hard, shale. Also noted were clay filled horizontal fractures. These units are both part of the Lower Silurian age Medina Group. Both units are shown in cross sections of the site, shown in Figure 1-4.

The highly fractured nature of the bedrock is well exhibited in the upper portions of an outcrop along W. Jackson Street approximately ¼ mile west of the site (just SE of the Lockport sewer treatment plant), where both the Grimsby/Power Glen formations as well as the underlying Upper Ordovician aged rock are visible. Common fracture patterns in this area would consist of intersecting near-vertical fractures (often forming a characteristic "diamond" shape when viewed from above) and near horizontal fractures typically corresponding with bedding planes. These "diamond" patterns of intersecting near-vertical fractures are easily visible just beyond the south facility gate leading to the closed section of Gooding Street, and are located just to the north of the road where the bedrock surface is exposed.

Topographically, the facility sits on the north side of Eighteen Mile Creek, which flows generally west at this location. The facility itself sits on gently sloping land, with the north side between approx. 5 and 10 feet higher than the south side (based on monitoring well survey data), thus surface water flow is toward the creek. Immediately south of the facility is the steep valley of Eighteen Mile Creek, which has a relief of approx. 50+ feet (based on the USGS 1:24,000 quadrangle map).

2.6 Hydrogeology

Groundwater elevation measurements collected during the 1999 Dames & Moore Phase I/II investigation indicate groundwater flow in the overburden and bedrock is to the southwest towards Eighteen Mile Creek. Bedrock gradients are steep, as groundwater elevations near the north side of the site (e.g. in MW-4D) are approx. 30 feet higher than those near the valley edge (e.g. in MW-3D and MW-2D), from

which Golder calculated a gradient of approximately 0.2. Groundwater elevations measured in 2006 (Benchmark, Nov. 30, 2006) appear similar.

3.0 NATURE AND EXTENT OF CONTAMINATION

3.1 Areal Extent and Source Evaluation

The characterization and delineation of the coal tar residuals associated with the ongoing migration of the DNAPL through the bedrock and into the Focused CMS creek bank area adjacent to the toe of the escarpment slope, was performed, following issuance of the 2009 DNAPL Assessment and Supplemental Work Plan, in a stepwise approach by SNPE as follows:

- Conduct slope overburden mapping and survey to better define slope and creek bank bedrock/overburden geology, identify DNAPL transport mechanisms and more accurately locate In-Plant investigation (performed June 2010);
- Perform In-Plant Soil Boring Investigation - Northwest corner of Building B-4 to identify source of historically observed coal tar seeps in asphalt (performed June 2010);
- Overburden/Bedrock Test Pit Investigation - Eighteen Mile Creek bank and toe of slope (performed June 2010);
- Slope test pit and In-Plant investigation locations survey (performed June 2010);
- Summarization of findings and preparation of Proposed Remedial Strategies (August 18, 2010 DNAPL Investigation Summary Report);
- Conduct supplemental In-Plant investigations and refine bedrock stratigraphy (performed October 2010, findings summarized in November 4, 2010 Responses to NYSDE Comments);

A brief summary of each activity/task performed and the findings relative to DNAPL characterization are described below.

Slope Overburden Mapping and Survey

In conjunction with the In-Plant soil boring and the Creek Bank/Slope Test Pit investigations, surveyors from Wendel Duchscherer determined the location and surface elevation of the In-Plant soil borings, the test pits conducted along the Eighteen Mile Creek bank and toe of slope, the edge of Eighteen Mile Creek, and other reference points in the test pit area and service road leading to the test pits. In addition, two north-south traverses of the slope were made.

The In-Plant borehole locations as surveyed are presented on Figure 1-2. Figure 1-3 presents the test pit locations, and well as an elevation contour map of the test pit area, service road, and slope area between the two traverses. The westernmost traverse was performed approximately along the line of Cross Section B-B' (Figure 1-4), which shows the slope in profile and passes very near test pit TP2. An East/West cross section of the test pit area is shown on Figure 1-5, which presents the surface and bedrock elevations (where they could be determined) in an area roughly parallel to Eighteen Mile Creek from the original remedial area in the east to the west past the newly discovered seep. Two north-south traverses of the slope were made.

In-Plant Soil Boring Investigation

On June 22, 2010, a total of fifteen (15) direct push borings were advanced to refusal through the pavement to the northwest of Building B-4. The borings were advanced utilizing direct-push drilling techniques and a 2-inch soil sampling tool (Geoprobe® Macrocore® sampler). Golder also screened the first 9 cores for volatile organic compounds (VOCs) using a photoionization detector (PID) and collected 4 samples from the borings for laboratory analysis.

Based on an approximation of where historical observations of coal tar residuals seeps had occurred, the first boring (B9-N5) was positioned 5 feet north of the northwest corner of building B-4. Borings were then spread out North and West in 5 feet increments. After consistent findings of a fairly uniform potential coal tar layer was discovered in the first 7 borings, the spacing was increased to ten (10) feet to the North and West. Again, after similar findings, Golder increased the distances to observe where coal tar layer diminished. A thin layer of coal tar was discovered in borings B9-W30-N36 and B9-N36. Borings could not be drilled further North or West of those borings due to a concrete wall and concrete tank pads. Also, underground utility locations and information for that area were unavailable making further exploration unsafe. However, the observed trends indicated that the coal tar layer was diminishing in those directions.

All fifteen (15) borings were advanced until refusal, which was assumed to be at bedrock. The investigation determined that the average depth of the bedrock was approximately 5 feet, but varied between 4.5 to 8 feet below ground surface (bgs). The majority of the overburden was non-native fill materials which included crushed brick, concrete, wood, and foundry-like sands.

After the borings were advanced, the cores were examined by Golder and the NYSDEC and then logged. Samples were collected from 4 borings (B9-W5, B9-N10, B9-W5-N10, and B9-W10-N5). Due to the consistency of the coal tar found in each subsequent boring, Golder and the NYSDEC agreed that it was not necessary to collect any more samples for laboratory analysis. The first 9 borings were screened for VOCs by Golder using a PID. No VOCs were detected by the PID. Olfactory observations were also made for all the borings. All borings exhibited coal tar odor except borings B9-W5, B9-W30-N10, B9-E20-N20, and B9-W24-S10, however, samples B9-W30-N10 and B9-W24-S10 did have a petroleum-like odor.

The laboratory analysis was performed by Test America Inc. in Amherst, New York. The soil sample results detected high concentrations of polyaromatic hydrocarbons (PAHs) which are typically associated with coal tar residuals. For example, the following PAH compounds were consistently detected in each of the four samples at relatively high concentrations: anthracene, benzo(a)anthracene, chrysene, fluoranthene, naphthalene, phenanthrene and pyrene. A summary of the four sample results from the laboratory analysis are presented in Table 1 of the August 18, 2010 Summary Report on these investigation activities (refer to Appendix A).

Creek Bank Overburden/Bedrock Test Pit Investigation

The purpose of the test pit investigation was to further characterize the geologic aspects of the escarpment slope, define the depth of overburden and to survey the bedrock elevation in the areas down the slope and south of the facility towards Eighteen Mile Creek. The information gathered was used to develop a profile of the slope and the underlying bedrock in order to better quantify and assess the coal tar migration patterns and develop the most appropriate means of remediation for the coal tar contamination.

A total of fourteen (14) test pits (TP1 through TP14) were dug along the North side of Eighteen Mile Creek, starting at the west side of the historic seep area and working east towards the seeps discovered in the Spring of 2010. All test pits were dug with a small rubber-tracked excavator to refusal (assumed to be bedrock) except for TP10 and TP13 where bedrock was deeper than 7 feet below grade surface (bgs) – the maximum reach of the excavator used. The depths of bedrock at test pits where bedrock was found ranged from 2.4 to 7 feet bgs.

Golder recorded the nature of the overburden and logged the descriptions for each test pit and also noted where coal tar was found during the excavations. All test pits except for TP2, TP9, and TP14 had evidence of coal tar present. Though no samples or tests were performed on the soils during excavation, based on visual and olfactory evidence, TP7, TP8, TP10 appeared to have the heaviest deposits of coal tar.

The discovery of coal tar residuals in test pits TP10 through TP13 to the east of the previously remediated area is consistent with the understanding of the bedrock geology of the formation. The vertical fracture planes that would act as a conduit for DNAPL/coal tar residuals to be conveyed from the top of bedrock deeper into the formation are expected to be oriented in both a southwest and southeast directions. This would be consistent with the discovery of the two primary deposition areas along the toe of the slope separated by an area that appears to have little or no coal tar residuals (i.e., between TP9 and TP-10).

Supplemental In-Plant Boring Delineation Program and Response to NYSDEC Comments

In September 2010, NYSDEC prepared written comments on the August 18, 2010 "SNPE-VanDeMark Chemical 2010 Supplemental DNAPL Investigation Summary Report" and requested clarification and additional information on both the proposed In-Plant Remediation area and the Creek Bank remediation approach. These comments were addressed in a response to the NYSDEC dated November 4, 2010 (Appendix C). Part of the response included detailed information on supplemental borings conducted in October 2010 to fill data gaps on the delineation of coal tar residuals within the plant to the north and south of the June 2010 investigation limits. In addition, the response addressed the NYSDEC's concerns relative to proposed remedial action along the Creek Bank and proposed the preparation of this report to identify and weigh remedial alternatives using a focused corrective measures study approach.

Subsequent to submittal of the November 4, 2010 letter responses, it was agreed that SNPE andVanDeMark could proceed with source removal of the In-Plant coal tar residuals upon receipt and approval by the NYSDEC of a Work Plan detailing specific procedures to be implemented during the proposed excavation and removal work. The Interim Corrective Measures (ICM) Work Plan was submitted for approval to the NYSDEC on February 15, 2011 and is awaiting final approval from the NYSDEC. Work on the In-Plant coal tar residuals remediation is proposed to be conducted in early summer of 2011 upon NYSDEC approval. It is the consensus of SNPE, VanDeMark and the NYSDEC representatives that removal of this potential DNAPL source material, which is relatively well defined and accessible, would be desirable prior to addressing the lower Creek Band remediation. It is the intent of SNPE and VDM to conduct the ICM ahead of the remedial activities that are ultimately agreed upon and implemented for the Creek Bank area as a result of this report.

4.0 CORRECTIVE ACTION CRITERIA

4.1 Focused CMS Remedial Goals

The DNAPL investigation and characterization activities have identified source coal tar residuals above, within and discharging from the interface between the less competent bedrock formation (Power Glen Shale) and the more competent Whirlpool Sandstone formation, i.e., into the overburden comprising the Eighteen Mile Creek slope and bank area. The chemical characterization of the residuals is consistent with the chemical signature of a weathered coal tar as evidenced by the lack of residual VOCs and the mixture of PAHs present. The residuals are considered source waste material and may potentially adversely impact humans and the environment if allowed to manifest in the environment through current exposure pathways, i.e, erosion, runoff, and uptake into flora and fauna.

In accordance with NYSDEC's remedial program approach (6NYCRR Part 375-1.8(c)), the most preferable of source removal and control measures is the removal and/or treatment of the source material. The next strategies in order of the preferred remedial hierarchy are: containment; elimination of exposure; and treatment of the source at the point of exposure. These criteria, the nature and extent of contamination and the physical site conditions will all be factored into the alternatives analysis presented in Section 5. Based on these considerations, the following remedial goals are proposed for conducting this Focused CMS:

REMEDIAL GOALS:

- Source removal of DNAPL in creek bank and slope overburden where feasible based on access, slope stability, safety and ecological resource damages assessment;
- Containment and control of remaining DNAPL in the creek bank overburden where removal is not feasible to prevent its exposure or further migration;
- Containment and control of remaining DNAPL in the bedrock fractures where removal is not feasible to prevent its exposure or further migration;
- Containment, control and collection of the DNAPL at the bedrock discharge interface through the development of DNAPL interception and extraction systems; and
- Minimization of surficial water impacts, scouring, runoff, erosion, etc. to the remedial systems installed to prevent transfer of coal tar residuals into the surface waters of Eighteen Mile Creek and deposition in downstream riparian soil/sediment areas.

5.0 EVALUATIONS AND SELECTION OF CORRECTIVE MEASURE ALTERNATIVES

5.1 Identification of Corrective Measure Alternatives for Creek Bank Area

Focused corrective measures identified as potential and appropriate remedial alternatives for the nature and extent of SVOCs identified and associated with the DNAPL impacted Creek Bank areas, include the following:

- **Alternative 1 – Source Removal and Comprehensive DNAPL Interception and Collection:** Comprehensive excavation and removal of accumulated DNAPL residuals and impacted overburden material from all upper and lower creek bank and slope areas combined with installation of DNAPL Collection and Recovery System. Design would incorporate a DNAPL cut-off trench collection and recovery system keyed into the more competent Whirlpool Sandstone formation where DNAPL would be collected from a series of recovery sumps and transferred manually to portable containers for off-site treatment/disposal. A grout curtain would be injected into the bedrock below and along the length of the collector trench to minimize bypass and provide additional containment of DNAPL within the bedrock matrix. Permanent slope stabilization and shoring measures are assumed for this alternative along the entire length (north side) of the interceptor trench systems. Groundwater and surface runoff diversion and pumping systems would be incorporated into the design to minimize the amount of water and sediment draining to the trenches and provide for collection and treatment of water that collects in the trench system. This alternative would include long term maintenance and monitoring provisions for removal of DNAPL and monitoring of long term DNAPL flow patterns and collection volumes.
- **Alternative 2 – Overburden & Bedrock Containment Grout Curtain**: Excavation and removal of accumulated shallow DNAPL residuals and impacted overburden material from the creek bank and slope areas combined with installation of a continuous bedrock and overburden grout curtain or cutoff wall. A shallow DNAPL collection trench filled with permeable media (e.g., crushed stone or similar) would be installed parallel to and upgradient of the grout curtain to passively capture and allow for removal of DNAPL discharging from the bedrock formation and trapped north of the cutoff wall.
- **Alternative 3 – DNAPL Cleanup in Shallow Overburden and Maintenance / Monitoring of Creek Bank Area**: Excavation and removal of shallow accumulated DNAPL residuals and impacted overburden material from the creek bank and slope areas combined with frequent visual monitoring and removal of exposed DNAPL breakouts.

5.2 Description of Analysis Criteria

The detailed analysis of the focused corrective measure alternatives is based on six criteria: technical; reduction of toxicity, mobility or volume; environmental; human health; institutional; and cost.

Each criterion is described below:

Technical Analysis

The technical analysis presents a description of each alternative with a description of the technologies necessary to implement the alternative. It consists of an evaluation of each alternatives expected

performance, reliability, ease of implementation and potential impacts during implementation. Operation and maintenance requirements and the anticipated life of each alternative are also evaluated.

Reduction of Toxicity, Mobility or Volume

This analysis evaluates the degree to which each of the corrective measure alternatives will permanently and significantly reduce the toxicity, mobility or volume of the contaminants and/ or impacted media. The analysis focuses on the treatment process, amount of materials to be treated, the degree of expected reduction, the degree of treatment irreversibly, and the management of treatment residuals that will remain after treatment.

Environmental

The conditions and pathways of contamination actually addressed by each alternative and evaluation of the short and long term beneficial and adverse effects of the response alternative.

Human Health

The extent to which each alternative mitigates short and long term potential exposure to any residual contamination and protects human health both during and after implementation of the corrective measure.

Institutional

Assessment of relevant institutional needs for each alternative regarding Federal, State, and local requirements and permitting for the design, operation and timing of each alternative.

Cost Analysis

This criterion identifies cost associated with implementation of each alternative. The purpose of this analysis is to evaluate the corrective measures alternatives in terms of aggregate costs, including capital, operation, and maintenance costs. The cost estimates also include contingencies for potential unexpected or unforeseeable cost increases during implementation of the alternative and provisions for administration and engineering fees. The present worth cost in 2011 dollars is estimated for each alternative.

5.3 Corrective Measures Alternatives

5.3.1 Detailed Analysis

Alternative 1 – Source Removal and Comprehensive DNAPL Interception and Collection:

Technical Analysis

This alternative involves the excavation and removal of accumulated DNAPL residuals and impacted overburden material from all upper and lower creek bank and slope areas combined with installation of DNAPL Collection and Recovery System. Designed features would incorporate a DNAPL cut-off trench collection and recovery system keyed into the more competent Whirlpool Sandstone formation where DNAPL would be collected from a series of sumps and transferred manually to portable containers for off-site treatment/disposal. A grout curtain would be injected into the bedrock below approximately 15 to 20 feet deep and along the entire length of the collector trench to minimize DNAPL bypass and provide additional containment of DNAPL within the bedrock matrix upgradient of the creek. Permanent slope stabilization and shoring measures are assumed for this alternative along the entire length (north side) of the interceptor trench systems. These slope stabilization measures might include anchored sheeting, concrete retaining walls, gabion baskets or equivalent structural systems to prevent slope erosion and deterioration due to the associated excavation and interceptor trench installation at the toe of the slope.

Groundwater and surface runoff diversion and pumping systems would be incorporated into the design to minimize the amount of water collected in the trenches and provide for collection and treatment of any water that collects in the trench system. This alternative would include long term maintenance and monitoring provisions for removal of DNAPL and monitoring of long term DNAPL flow patterns and collection volumes.

This alternative is highly challenging but implementable from a technical standpoint and would employ proven methods for installation of the various remedial technologies, including the installation of the grout curtains, rock trench and slope stabilization features. However, there are several important considerations for implementation of this design including the high degree of uncertainty associated with the slope integrity and stability adjacent to and above the proposed interceptor trench, this is a particular concern to VDM with respect to the integrity and safety of its highly sensitive phosgene manufacturing facilities at the top of the slope. In addition, there are significant accessibility and safety concerns related to mobilizing and operating the specialized heavy equipment that would be required for the installation of the proposed remedial systems.

The interceptor and collection trench systems are anticipated to be reasonably effective in capturing the gravity flow of the DNAPL as it exits the toe of the slope, however its anticipated that exclusion of both groundwater and runoff from the trenches and associated sediment and debris will be extremely difficult to achieve on a consistent basis due the frequency of high flow conditions in the creek and the substantial amount of runoff that would be generated from the slope directly north and above the trench. These conditions will necessitate extensive and comprehensive operating and maintenance provisions, including water pumping and transfer systems.

Reduction of Toxicity, Mobility, Volume

The implementation of this alternative would decrease the overall mobility and volume of the DNAPL remaining in the bedrock through containment/capture and substantially decrease the amount of accumulated DNAPL in the overburden through excavation and disposal. It will further diminish the potential for soluble contaminants in the DNAPL (already minimal as the predominant SVOCs have low solubilities) to be released to the groundwater and migrate beyond the immediate area. Due to the relatively slow transport and dispersion rates associated with the DNAPL, the containment, capture and removal of DNAPL as proposed under this alternative is anticipated to substantially contribute to the reduction in the toxicity, mobility or volume within the impacted areas.

Environmental

Alternative 1 is protective of the environment as the pathway for direct contact and potential metabolic uptake from creek slope and bank overburden soil, sediment and surface water exposure of the DNAPL residuals would be substantially eliminated for both flora and fauna within the creek's affected riparian area. The coal tar residuals are not generally recognized as an inhalation or dermal exposure route for humans based on short term exposures that might be incurred under current conditions. Excavation and disposal will physically remove exposed DNAPL residuals and interception and collection would eliminate future exposure pathways.

Human Health Analysis

Alternative 1 would be protective of human health, particularly from a long term exposure scenario. Based on the location of the DNAPL impacted area and the restricted access maintained by VDM, the frequency of short term human exposure to the DNAPL constituents is currently low. The associated risk to human health based on the mobility and volatility of the DNAPL constituents contributes to this low risk factor. However, long term impacts to human health, primarily due to exposure and potential migration into the waters of Eighteen Mile Creek and ultimately into drinking water supplies would be substantially mitigated by this alternative.

Groundwater use within the impacted area is not a factor as the impacted area falls within the City of Lockport's municipal water service area and impacts to groundwater would be anticipated to be minimal based on the low solubility of the coal tar constituents.

Institutional Analysis

The implementation of the proposed alternative will need to be conducted in accordance with a Corrective Measures Implementation (CMI) Plan or other approved Work Plan that would identify the procedures and methods to be employed to execute the work and conform with state and federal regulations for remedial

cleanups. This would include any related permitting required, if needed, by the US Army Corps of Engineers.

Compliance with a Site-specific health and safety plan under 29CFR 1910.120, RCRA and Occupational Health and Safety Act (OSHA) regulations are required during implementation of this alternative.

Cost Analysis

The initial capital cost for this alternative is estimated to be $ 2,430,000 (refer to Table 1). The annual operating and maintenance cost for this alternative is estimated to be $ 49,500 (in 2011 dollars). The estimated cost includes off-site disposal of collected DNAPL which is expected to be a low volume based on the relatively low rate of DNAPL discharge observed from the lower creek bank area in recent years. In addition, costs associated with the additional volume of potentially impacted surface runoff or groundwater that would be collected and treated at the on-site wastewater treatment system were included under this alternative.

Alternative 2 – Overburden and Bedrock Containment Grout Curtain:

Technical Analysis

This alternative involves the design and installation of a continuous grout curtain injected into the creek bank overburden soils and into the underlying bedrock in an east-west orientation south of the toe of the slope and extending a total length of approximately 300 feet. The specific grout injection technique (e.g., soil mixing, direct pressure injection, etc.) and formulation would be optimized based on pre-construction field testing. The grout curtain is proposed as a proven containment approach for both overburden and bedrock applications that will significantly reduce or completely eliminate the requirements for large equipment access/operation, eliminate deep excavations into the overburden and bedrock and potential destabilization of the slope. It would be combined with the installation of an upgradient shallow parallel trench located just north of the cutoff curtain and filled with crushed stone or gravel media that would act as a collection sink for DNAPL residuals discharging from the slope and trapped behind the grout curtain. As observed in the lower creek bank area, the density of DNAPL is lower than the overburden soils and over time the DNAPL rises to the surface. This characteristic will allow the more permeable shallow trench media to act as a preferential pathway for DNAPL accumulation directly upgradient of the curtain. The trench design will allow surficial runoff to flow naturally, eliminating the need for dedicated water management and allow for readily accessible removal and replacement of the DNAPL impacted media on a frequency determined by accumulation rates. The top of the collection trench would be covered with a layer of geotextile to reduce sediment intrusion into the gravel media from slope and creek runoff and minimize direct exposure of DNAPL residuals to the environment between cleanout events.

As part of this alternative, shallow (two feet bgs or less) excavation of exposed DANPL residuals across the entire creek bank and slope impacted area would be performed prior to grout curtain installation to remove and dispose of previously accumulated residuals at or near the surface. Figure 5-1 illustrates the proposed plan location and conceptual details for this alternative.

This alternative would be readily implementable and technically feasible and variations of this technology have been employed on numerous hazardous waste site containment applications. The alternative would establish a definitive physical barrier for the purposes of migration control of DNAPL exiting the bedrock formation and migrating towards Eighteen Mile Creek. It also provides a simplified and readily implementable means of collecting and removing source material that may continue to exit the bedrock and accumulate behind the barrier. The design and DNAPL collection approach is inherently simpler and will minimize long term operation and maintenance for this alternative.

Reduction of Toxicity, Mobility, Volume

The implementation of this alternative would decrease the overall mobility and volume of the DNAPL remaining in the bedrock through containment, capture and decrease the amount of accumulated DNAPL in the upper overburden through excavation and disposal. It will further diminish the potential for soluble contaminants in the DNAPL (already minimal as the predominant SVOCs have low solubilities in water) to be released to the groundwater and migrate beyond the immediate area. Due to the relatively slow transport and dispersion rates associated with the DNAPL, the containment, capture and removal of DNAPL as proposed under this alternative is anticipated to substantially contribute to the reduction in the toxicity, mobility or volume within the impacted areas.

Environmental

Alternative 2 is protective of the environment as the exposure pathway for direct contact with and potential metabolic uptake from creek slope and bank overburden soil, sediment and surface water exposure of the DNAPL residuals would be substantially eliminated for both flora and fauna within the creek's affected riparian area. The coal tar residuals are not generally recognized as an inhalation or dermal exposure route for humans based on short term exposures that might be incurred under current conditions. Excavation and disposal will physically remove shallow and exposed DNAPL residuals and interception and routine removal of accumulated DNAPL would substantially reduce future exposure opportunities.

Human Health Analysis

Alternative 2 would be protective of human health, particularly from a long term exposure scenario. Based on the location of the DNAPL impacted area and the restricted access maintained by VDM, the frequency of short term human exposure to the DNAPL constituents is currently low. The associated risk

to human health based on the mobility and volatility of the DNAPL constituents contributes to this low risk factor. However, long term impacts to human health, primarily due to exposure and potential migration into the waters of Eighteen Mile Creek and ultimately into drinking water supplies would be substantially mitigated by this alternative.

Groundwater use within the impacted area is not a factor as the impacted area falls within the City of Lockport's municipal water service area and impacts to groundwater would be anticipated to be minimal based on the low solubility of the coal tar constituents.

Institutional Analysis

The implementation of the proposed alternative will need to be conducted in accordance with a Corrective Measures Implementation (CMI) Plan or other approved Work Plan that would identify the procedures and methods to be employed to execute the work and conform to state and federal regulations for remedial cleanups. This would include any related permitting required, if needed, by the US Army Corps of Engineers.

Compliance with a Site-specific health and safety plan under 29CFR 1910.120, RCRA and Occupational Health and Safety Act (OSHA) regulations are required during implementation of this alternative.

Cost Analysis

The initial capital cost for this alternative is estimated to be $ 1,742,000 (refer to Table 2). The annual operating and maintenance cost for this alternative is estimated to be $ 14,100 (in 2011 dollars). The estimated cost includes off-site disposal of collected DNAPL and trench media on an annual basis assuming a relatively low rate of DNAPL discharge as recently observed from the lower creek bank area.

Alternative 3 - DNAPL Cleanup in Shallow Overburden and Maintenance / Monitoring of Creek Bank Area:

Technical Analysis

Under this alternative, shallow (two feet bgs or less) excavation and removal of accumulated, exposed DANPL residuals across the entire creek bank and slope impacted area would be performed. Soil backfill would be imported to restore excavated areas and native vegetation would be planted.

This alternative is proposed to minimize the disturbance of creek bank overburden and the adjacent slope and utilize the protective soil cover that currently exists for the buried DNAPL within the creek bank overburden. It also takes into account the low mobility of DNAPL discharge and the relatively low rate of degradation of the DNAPL constituents into the environment. This approach is proposed as an

alternative to the removal of substantial portion of the creek bank riparian system along the 300 feet length of the impacted area.

This alternative would place a heavy emphasis on long term, frequent visual inspection, monitoring and maintenance provisions to remove and dispose of exposed DNAPL breakouts.

Reduction of Toxicity, Mobility, Volume

The implementation of this alternative would provide a minimal decrease the overall toxicity and volume of the DNAPL currently present in the creek bank soils as it would not address DNAPL residuals located at depth on the top of the bedrock. It will reduce the potential for soluble contaminants in the DNAPL (already minimal as the predominant SVOCs have low solubilities) to be released to the runoff and migrate beyond the immediate area through this pathway, however shallow groundwater may still be impacted.

Although this alternative is premised on leaving the coal tar deposits identified in the overburden in the upper creek bank area, the average depth and resulting substantial existing soil cover provides for an inherent reduction in the mobility and exposure potential of these deposits.

Environmental

Alternative 3 is partially protective of the environment as the pathway for direct contact and associated metabolic uptake from shallow and exposed DNAPL in creek slope and bank overburden soil, sediment and surface water exposure of the DNAPL residuals would be substantially eliminated for both flora and fauna within the creek's affected riparian area. The coal tar residuals are not generally recognized as an inhalation or dermal exposure route for humans based on short term exposures that might be incurred under current conditions. Excavation and disposal will physically remove shallow and exposed DNAPL residuals that would be more readily degraded than deeper deposits.

Human Health Analysis

Alternative 1 would be protective of human health from a short-term exposure scenario. Based on the removal of exposed or shallow DNAPL accumulations in the impacted area and the restricted access maintained by VDM, the frequency of short term human exposure to the DNAPL constituents would be very low. The associated risk to human health based on the mobility and volatility of the DNAPL constituents contributes to this low risk factor. However, potential long term impacts to human health, primarily due to transport and potential migration into the waters of Eighteen Mile Creek and ultimately into drinking water supplies and fish would not be substantially mitigated by this alternative. Those impacts although anticipated to be minimal cannot be quantified in this analysis.

Groundwater use within the impacted area is not a factor as the impacted area falls within the City of Lockport's municipal water service area and impacts to groundwater would be anticipated to be minimal based on the low solubility of the coal tar constituents.

Institutional Analysis

The implementation of the proposed alternative will need to be conducted in accordance with a Corrective Measures Implementation (CMI) Plan or other approved Work Plan that would identify the procedures and methods to be employed to execute the work and conform with state and federal regulations for remedial cleanups. This would include any related permitting required, if needed, by the US Army Corps of Engineers.

Compliance with a Site-specific health and safety plan under 29CFR 1910.120, RCRA and Occupational Health and Safety Act (OSHA) regulations are required during implementation of this alternative.

Cost Analysis

The initial capital cost for this alternative is estimated to be $ 151,000 (refer to Table 3). The annual operating and maintenance cost for this alternative is estimated to be $ 30,500 (in 2011 dollars). The estimated cost includes an annual maintenance program for removal of DNAPL accumulations and off-site disposal of collected DNAPL and impacted soils.

5.3.2 Conclusions and Recommendations

An assessment of the evaluation criteria for the three alternatives identified for the Focused CMS evaluation is summarized in Table 3. Alternative 1 was not selected due to the installation complexity, potential for significant adverse impacts to the adjacent slope stability and the operational considerations with respect to managing water and sediment collection within the DNAPL collection trenches. The additional DNAPL capture and removal capability that might be achieved by the system was not significant enough to overcome the numerous installation and operational issues associated with this alternative.

Alternative 3 was not selected as the preferred alternative as this approach would not be effective in containing, capturing and ultimately removing the majority of the ongoing DNAPL discharge that continues to flow from the fractured bedrock formation. Therefore, this alternative would not provide an appreciable reduction in the mobility, toxicity or volume of contaminants.

Based on the detailed evaluation, Alternative 2 is recommended for implementation. Alternative 2, Overburden and Bedrock Grout Curtain Containment, would meet the corrective action objectives of DNAPL capture/containment and provide a more passive and reliable method for collection and removal of DNAPL. This alternative would provide a comparable level of containment, capture and removal that

would be expected from Alternative 1, while significantly reducing the concerns noted above relative to the construction and operation in this challenging location.

TABLES

TABLE 1
Focused CMS for Creek Bank Area
SNPE - VanDeMark Chemical Inc.
Lockport, New York

CAPITAL AND OPERATIONS & MAINTENANCE COST ESTIMATE
ATERNATIVE NO. 1: Source Removal & Comprehensive DNAPL Interception & Collection

Direct Capital Cost ($)					
Item	Unit Cost	Unit	Quantity	Total Cost	
Lower Creek Bank Area					
Mobilization/Demobilization and Contractor O.H.	$50,000	LS	1	$50,000	
Permanent Slope Stabilization/Shoring (150 ft x 20 ft high)	$75	SF	3000	$225,000	
Bank Overburden Excavation, Staging and Hauling	$25	CY	250	$6,250	
Coal Tar Impacted Soil/Fill Excavation, Staging & Hauling	$25	CY	400	$10,000	
Coal Tar Imapcted Non-Hazardous Soil/Fill Disposal	$120	TON	600	$72,000	
Bedrock Grout Curtain Installation	$150	SF	3000	$450,000	
Rock Keyway Trench Excavation (150' x 1.5' x 2'D)	$100	CY	20	$2,000	
Overburden Barrier Wall (South Side) (150' x 8' x 1.5')	$150	CY	65	$9,750	
Product/DNAPL Collection Sumps (3' dia x 5' deep)	$25,000	EA	3	$75,000	
Groundwater Dewatering Pumps and Controls	$12,500	EA	3	$37,500	
Upgradient Trench Drainage Diversion Wall (150' x 1' x 1')	$150	CY	10	$1,500	
Grading and Backfill	$25	CY	350	$8,750	
Site Restoration	$20,000	LS	1	$20,000	
Upgradient Bank Rip-Rap	$25	LF	150	$3,750	
	Subtotal, Direct Capital Costs			$971,500	

Item	Unit Cost	Unit	Quantity	Total Cost	
Upper Creek Bank Area					
Mobilization/Demobilization and Contractor O.H.	$50,000	LS	1	$50,000	
Permanent Slope Stabilization/Shoring (125 ft x 20 ft high)	$75	SF	2500	$187,500	
Overburden Soil Excavation, Staging and Hauling	$25	CY	350	$8,750	
Rock Structure Removal and Hauling	$50	CY	250	$12,500	
Coal Tar Impacted Soil/Fill Excavation, Staging & Hauling	$25	CY	150	$3,750	
Coal Tar Impacted Non-Hazardous Soil/Fill Disposal	$120	TON	225	$27,000	
Bedrock Grout Curtain Installation	$150	SF	2500	$375,000	
Rock Keyway Trench Excavation (125' x 1.5' x 2'D)	$100	CY	15	$1,500	
Overburden Barrier Wall (South Side) (125' x 10' x 1.5')	$150	CY	70	$10,500	
Product/DNAPL Collection Sumps (3' dia x 5' deep)	$15,000	EA	3	$45,000	
Groundwater Dewatering Pumps and Controls	$25,000	EA	3	$75,000	
Upgradient Trench Drainage Diversion Wall (100' x 1' x 1')	$150	CY	3	$450	
Grading and Backfill	$25	CY	350	$8,750	
Site Restoration	$20,000	LS	1	$20,000	
Upgradient Bank Rip-Rap (100'x 5'W)	$25	LF	125	$3,125	
	Subtotal, Direct Capital Costs			$828,825	

Indirect Capital Costs ($)		
		Total Cost
Engineering and Contingency (10% + 25%)	35% of Capital Costs	$630,114
	Subtotal, Indirect Capital Costs	$630,114
	Subtotal, Direct Capital Costs	$1,800,325
	Total Capital Cost	**$2,430,439**

Annual Operations Maintenance & Monitoring (OM & M), Direct					
Item	Unit Cost	Unit	Quantity	Annual Cost	Present Value Cost @ 5%
Quarterly DNAPL Sump Cleanout & Monitoring	$8,000	EA	4	$32,000	$484,870
DNAPL Disposal (T and D)	$300	DRUM	10	$3,000	$45,457
Annual Reporting	$4,000	YEAR	1	$4,000	$60,609
			Total Annual Cost	$39,000	
			Subtotal, Direct O&M Costs (30 Years)	**$1,170,000**	**$590,936**

Annual Operation Maintenance & Monitoring (OM & M), Indirect		Annual Cost	Present Value Cost @ 5%
Engineering/Administration	12% of O&M Costs	$4,680	$70,912
Contingencies	15% of O&M Costs	$5,850	$88,640
	Subtotal, Indirect O&M Costs	$10,530	$159,553
	Total Annual O&M Cost (Direct and Indirect)	$49,530	
	Total O&M Costs (Direct and Indirect)	**$1,485,900**	**$750,488**

Total Present Worth (PW): Capital Costs + OM & M PW		
	Total 30 Year Cost	Present Value Cost @ 5%
Total Estimated Cost of Alternative	**$3,916,339**	**$3,180,927**

Notes/Assumptions:
A 5% rate of return was used for calculating present value costs.

TABLE 2
Focused CMS for Creek Bank Area
SNPE -VanDeMark Chemical Inc.
Lockport, New York

CAPITAL AND OPERATIONS & MAINTENANCE COST ESTIMATE
ATERNATIVE NO. 2: Overbuden & Bedrock Containment Grout Curtain

Direct Capital Cost ($)					
Item Description	Unit Cost	Unit	Quantity	Total Cost	
Mobilization/Demobilization and Contractor O.H.	$50,000	LS	1	$50,000	
Coal Tar Impacted Overburden Exc., Staging & Hauling	$25	CY	350	$8,750	
Coal Tar Imapcted Non-Hazardous Soil/Fill Disposal	$120	TON	525	$63,000	
Bank Grading and Prep for Grouting	$10	CY	150	$1,500	
Grout Curtain Installation (300' x 25' D)	$150	SF	7500	$1,125,000	
DNAPL Collection Trench Excavation (300' x 2' x 2.5'D)	$5	CY	60	$300	
DNAPL Collection Trench Stone Backfill	$35	TON	110	$3,850	
Grading and Backfill	$25	CY	400	$10,000	
Site Restoration	$20,000	LS	1	$20,000	
Upgradient Bank Rip-Rap	$25	LF	325	$8,125	
	Subtotal, Direct Capital Costs			$1,290,525	
Indirect Capital Costs ($)					
				Total Cost	
Engineering and Contingency (10% + 25%)	35% of Capital Costs			$451,684	
	Subtotal, Indirect Capital Costs			$451,684	
	Subtotal, Direct Capital Costs			$1,290,525	
	Total Capital Cost			**$1,742,209**	
Annual Operations Maintenance & Monitoring (OM & M), Direct					
Item	Unit Cost	Unit	Quantity	Annual Cost	Present Value Cost @ 5%
Annual DNAPL Collection Trench Cleanout	$25	CY	40	$1,000	$15,152
DNAPL & Media Disposal (T and D)	$120	TON	55	$6,600	$100,005
Annual Reporting	$3,500	YEAR	1	$3,500	$53,033
			Total Annual Cost	$11,100	
	Subtotal, Direct O&M Costs (30 Years)			**$333,000**	**$168,189**
Annual Operation Maintenance & Monitoring (OM & M), Indirect				Annual Cost	Present Value Cost @ 5%
Engineering/Administration	12% of O&M Costs			$1,332	$20,183
Contingencies	15% of O&M Costs			$1,665	$25,228
	Subtotal, Indirect O&M Costs			$2,997	$45,411
	Total Annual O&M Cost (Direct and Indirect)			$14,097	
	Total O&M Costs (Direct and Indirect)[30 Years]			**$422,910**	**$213,601**
Total Present Worth (PW): Capital Costs + OM & M PW					
				Total 30 Year Cost	Present Value Cost @ 5%
	Total Cost of Alternative			**$2,165,119**	**$1,955,809**

Notes/Assumptions:
A 5% rate of return was used for calculating present value costs.

TABLE 3
Focused CMS for Creek Bank Area
SNPE -VanDeMark Chemical Inc.
Lockport, New York

CAPITAL AND OPERATIONS & MAINTENANCE COST ESTIMATE
ATERNATIVE NO. 3: DNAPL Cleanup in Shallow Overburden and Maintenance / Monitoring of Creek Bank Area

Direct Capital Cost ($)

Item Description	Unit Cost	Unit	Quantity	Total Cost	
Mobilization/Demobilization and Contractor O.H.	$15,000	LS	1	$15,000	
Coal Tar Impacted Overburden Exc., Staging & Hauling	$25	CY	350	$8,750	
Coal Tar Imapcted Non-Hazardous Soil/Fill Disposal	$120	TON	525	$63,000	
Grading and Backfill	$25	CY	400	$10,000	
Site Restoration	$15,000	LS	1	$15,000	
	Subtotal, Direct Capital Costs			$111,750	

Indirect Capital Costs ($)

		Total Cost	
Engineering and Contingency (10% + 25%)	35% of Capital Costs	$39,113	
	Subtotal, Indirect Capital Costs	$39,113	
	Subtotal, Direct Capital Costs	$111,750	
	Total Capital Cost	**$150,863**	

Annual Operations Maintenance & Monitoring (OM & M), Direct

Item	Unit Cost	Unit	Quantity	Annual Cost	Present Value Cost @ 5%
Annual DNAPL & Impacted Overburden Removal	$25	CY	100	$2,500	$37,881
Coal Tar Imapcted Non-Hazardous Soil/Fill Disposal	$120	TON	150	$18,000	$272,740
Annual Reporting	$3,500	YEAR	1	$3,500	$53,033
			Total Annual Cost	$24,000	
			Subtotal, Direct O&M Costs (30 Years)	**$720,000**	**$363,653**

Annual Operation Maintenance & Monitoring (OM & M), Indirect		Annual Cost	Present Value Cost @ 5%
Engineering/Administration	12% of O&M Costs	$2,880	$43,638
Contingencies	15% of O&M Costs	$3,600	$54,548
	Subtotal, Indirect O&M Costs	$6,480	$98,186
	Total Annual O&M Cost (Direct and Indirect)	$30,480	
	Total O&M Costs (Direct and Indirect)[30 Years]	**$914,400**	**$461,839**

Total Present Worth (PW): Capital Costs + OM & M PW

	Total 30 Year Cost	Present Value Cost @ 5%
Total Cost of Alternative	**$1,065,263**	**$612,702**

Notes/Assumptions:

A 5% rate of return was used for calculating present value costs.

TABLE 4
SUMMARY OF DETAILED ANALYSIS FOR CREEK BANK ALTERNATIVES
FOCUSED CMS FOR SNPE – VANDEMARK FACILITY

Evaluation Criteria	Focused Corrective Measures Alternatives		
	Alternative 1 **Source Removal and Comprehensive DNAPL Interception and Collection**	Alternative 2 **Overburden & Bedrock Containment Grout Curtain**	Alternative 3 **DNAPL Cleanup in Shallow Overburden and Maintenance / Monitoring of Creek Bank Area**
Technical Analysis	Technically Feasible, Implementable. However significant concerns with construction and associated slope stability. Further concerns with respect to reliability due to operational intensity.	Technically Feasible, Implementable and Reliable.	Technically Feasible, and Implementable. Limited effectiveness relative to source control and removal.
Reduction in Toxicity, Mobility & Volume	Reduction of toxicity, mobility and volume from overburden and bedrock sources through removal and treatment of contaminants.	Reduction of toxicity, mobility and volume from overburden and bedrock sources through removal and treatment of contaminants.	Reduction in toxicity and volume through shallow removals, however no reduction in mobility.
Environmental Analysis	Provides high degree of environmental protection and reduction in potential environmental exposures.	Provides high degree of environmental protection and reduction in potential environmental exposures. Passive collection trench may result in short term pathway for direct contact of DNAPL with flora and fauna	Provides a limited degree of environmental protection through reduction in exposed DNAPL to surface water degradation. DNAPL pathway to creek through overburden may be substantially unchanged.
Human Health Analysis	Provides short and long term reduction in potential human exposures through comprehensive contaminant control, capture and removal.	Provides short and long term reduction in potential human exposures through comprehensive contaminant control, capture and removal.	Provides short term reduction in potential exposures to direct exposures, however long term control of DNAPL pathway to surface waters is marginal.
Institutional Analysis	Needs to comply with final Corrective Measures Order and/or Work Plan for approved remedy.	Needs to comply with final Corrective Measures Order and/or Work Plan for approved remedy.	Needs to comply with final Corrective Measures Order and/or Work Plan for approved remedy.
Total Cost	Capital: $2,352,000 Annual O & M: $39,400	Capital: $1,702,000 Annual O & M: $14,100	Capital: $151,000 Annual O & M: $30,500

FIGURES

REFERENCES

1.) BASE MAP TAKEN FROM U.S.G.S. 7.5 MINUTE QUADRANGLE OF LOCKPORT, NEW YORK DATED 1980.

2000 0 2000
SCALE FEET

NJ Authorization #24GA28029100

Golder Associates
Buffalo, New York

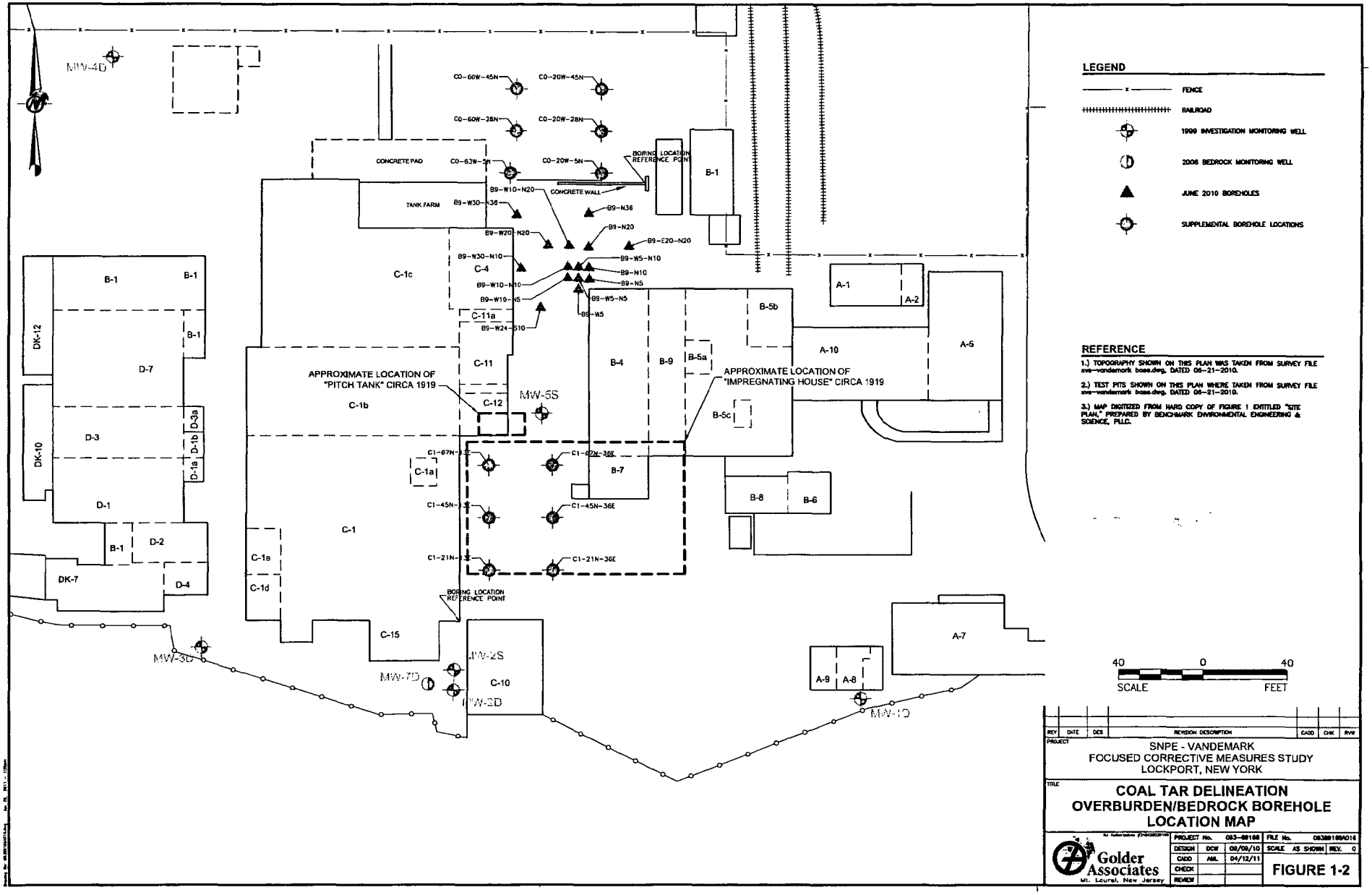
FILE No.	09389168A011
PROJECT No.	093-89168
REV.	0
SCALE	AS SHOWN
DATE	02/04/11
DESIGN	AML
CADD	GLS
CHECK	
REVIEW	

TITLE

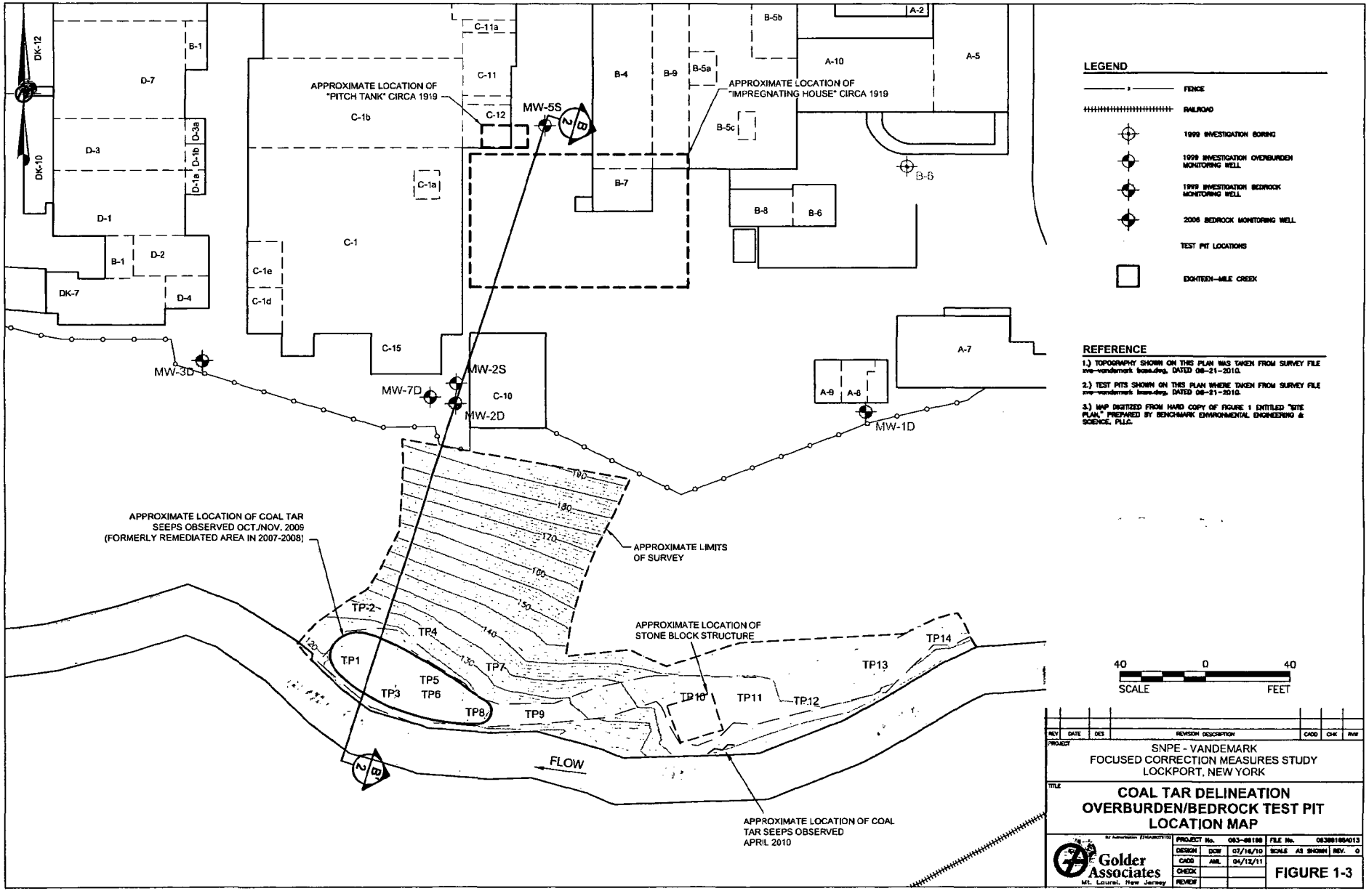
SITE LOCATION MAP

SNPE - VANDEMARK CHEMICAL

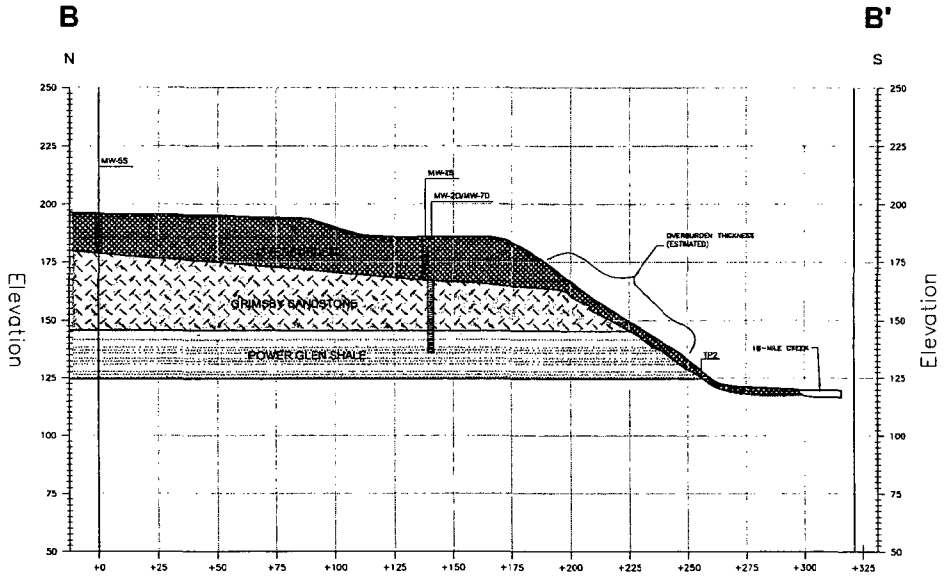
FIGURE 1-1


LEGEND
FENCE
RAILROAD
1999 INVESTIGATION MONITORING WELL
2006 BEDROCK MONITORING WELL
JUNE 2010 BOREHOLES
SUPPLEMENTAL BOREHOLE LOCATIONS
REFERENCE
1.) TOPOGRAPHY SHOWN ON THIS PLAN WAS TAKEN FROM SURVEY FILE xvs-vandemark base.dwg, DATED 06-21-2010.
2.) TEST PITS SHOWN ON THIS PLAN WHERE TAKEN FROM SURVEY FILE xvs-vandemark base.dwg, DATED 06-21-2010.
3.) MAP DIGITIZED FROM HARD COPY OF FIGURE 1 ENTITLED "SITE PLAN," PREPARED BY BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC.
APPROXIMATE LOCATION OF "PITCH TANK" CIRCA 1919
APPROXIMATE LOCATION OF "IMPREGNATING HOUSE" CIRCA 1919
BORING LOCATION REFERENCE POINT
CONCRETE PAD
TANK FARM
CONCRETE WALL
MW-4D
MW-5S
MW-3D
MW-7D
MW-2S
MW-2D
MW-1D
C-1a
C-1b
C-1c
C-1d
C-1
C-4
C-10
C-11
C-11a
C-12
C-15
B-1
B-4
B-5a
B-5b
B-5c
B-6
B-7
B-8
B-9
A-1
A-2
A-5
A-7
A-8
A-9
A-10
D-1
D-2
D-3
D-3a
D-4
D-7
DK-7
DK-10
DK-12
40 0 40
SCALE FEET
SNPE - VANDEMARK
FOCUSED CORRECTIVE MEASURES STUDY
LOCKPORT, NEW YORK
COAL TAR DELINEATION
OVERBURDEN/BEDROCK BOREHOLE
LOCATION MAP
Golder Associates
Mt. Laurel, New Jersey
PROJECT No. 083-88188
FILE No. 083881880A016
DESIGN DCW 08/09/10
SCALE AS SHOWN
REV. 0
CADD AML 04/12/11
CHECK
REVIEW
FIGURE 1-2

VDM01760


LEGEND
FENCE
RAILROAD
1999 INVESTIGATION BORING
1999 INVESTIGATION OVERBURDEN MONITORING WELL
1999 INVESTIGATION BEDROCK MONITORING WELL
2006 BEDROCK MONITORING WELL
TEST PIT LOCATIONS
EIGHTEEN-MILE CREEK
REFERENCE
1.) TOPOGRAPHY SHOWN ON THIS PLAN WAS TAKEN FROM SURVEY FILE xvp-vandemark base.dwg, DATED 08-21-2010.
2.) TEST PITS SHOWN ON THIS PLAN WHERE TAKEN FROM SURVEY FILE xvp-vandemark base.dwg, DATED 08-21-2010.
3.) MAP DIGITIZED FROM HARD COPY OF FIGURE 1 ENTITLED "SITE PLAN," PREPARED BY BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC.
APPROXIMATE LOCATION OF "PITCH TANK" CIRCA 1919
APPROXIMATE LOCATION OF "IMPREGNATING HOUSE" CIRCA 1919
APPROXIMATE LOCATION OF COAL TAR SEEPS OBSERVED OCT./NOV. 2009 (FORMERLY REMEDIATED AREA IN 2007-2008)
APPROXIMATE LIMITS OF SURVEY
APPROXIMATE LOCATION OF STONE BLOCK STRUCTURE
APPROXIMATE LOCATION OF COAL TAR SEEPS OBSERVED APRIL 2010
FLOW
MW-5S
MW-3D
MW-7D
MW-2S
MW-2D
MW-1D
TP1
TP2
TP3
TP4
TP5
TP6
TP7
TP8
TP9
TP10
TP11
TP12
TP13
TP14
B-6
40 0 40
SCALE FEET
SNPE - VANDEMARK
FOCUSED CORRECTION MEASURES STUDY
LOCKPORT, NEW YORK
COAL TAR DELINEATION
OVERBURDEN/BEDROCK TEST PIT
LOCATION MAP
Golder Associates
Mt. Laurel, New Jersey
FIGURE 1-3

VDM01761



LEGEND

- OVERBURDEN
- GRIMSBY SANDSTONE
- POWER GLEN SHALE
- WATER ELEVATION IN WELL

REFERENCES

1.) URS CORP. FIGURE 3 – PHASE I/II ENVIRONMENTAL AUDIT – VANDE/MARIL, INC. A VANCHEM, INC. SEPTEMBER 17, 1999.

2.) BENCHMARK BES, PLLC – SUMMARY OF SUPPLEMENTAL FIELD INVESTIGATION AND SAMPLING ACTIVITIES, ISOCHEM INC., NOVEMBER 30, 2006.

3.) U.S.G.S. LOCKPORT QUADRANGLE (FOR ELEVATION OF EIGHTEEN-MILE CREEK)

25 0 25 50
HORIZONTAL SCALE FEET

25 0 25 50
VERTICAL SCALE FEET

REV	DATE	DES	REVISION DESCRIPTION	CADD	CHK	RW

PROJECT
SNPE - VANDEMARK
FOCUSED CORRECTIVE MEASURES STUDY
LOCKPORT, NEW YORK

TITLE
CROSS SECTION B-B'

Golder Associates
Mt. Laurel, New Jersey

PROJECT No.	093-89158		FILE No.	0938915BA014	
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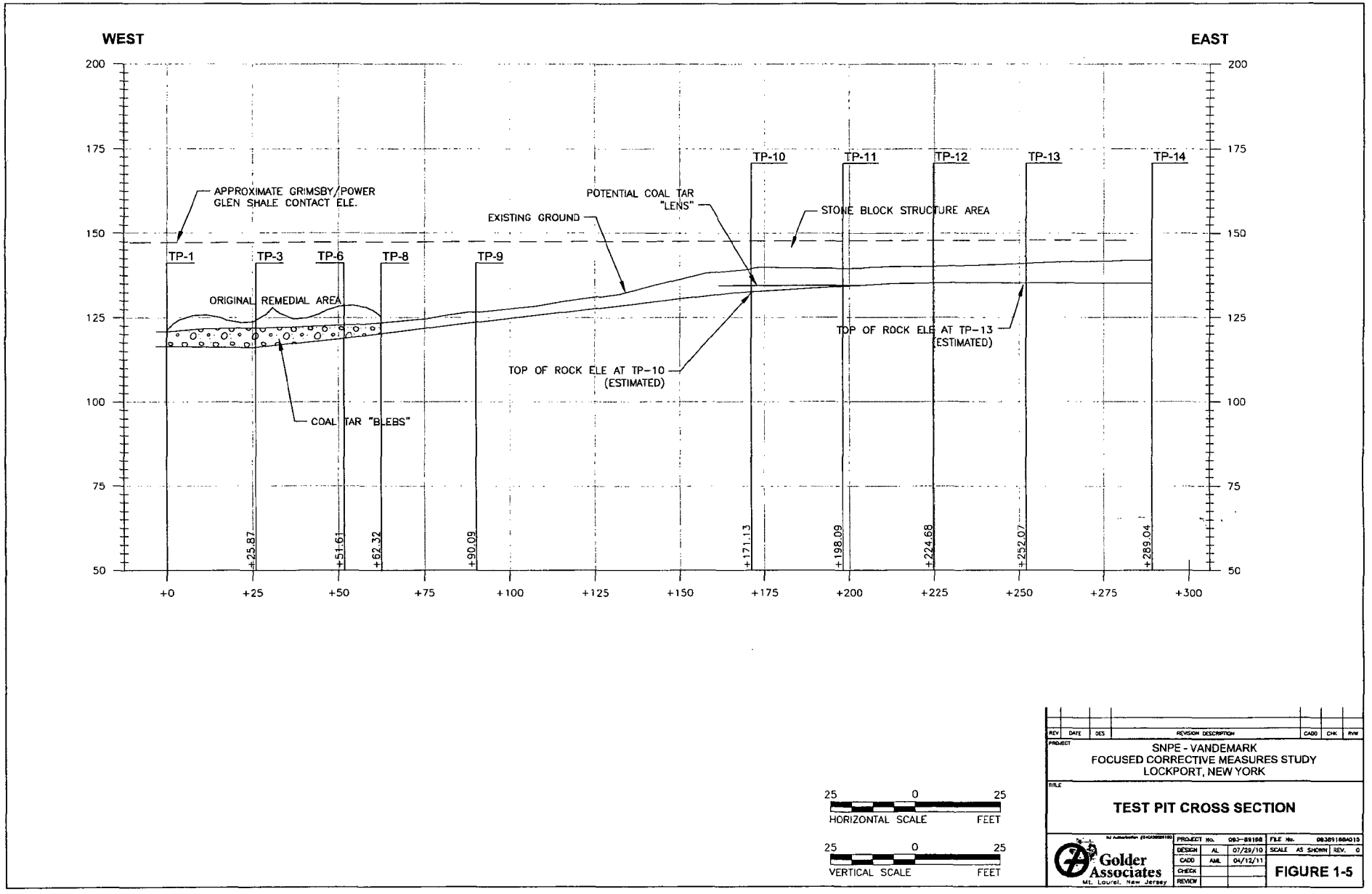
CADD	AML	04/12/11			
CHECK					
REVIEW					

FIGURE 1-4

VDM01762


WEST
EAST
200
175
150
125
100
75
50
TP-1
TP-3
TP-6
TP-8
TP-9
TP-10
TP-11
TP-12
TP-13
TP-14
APPROXIMATE GRIMSBY/POWER GLEN SHALE CONTACT ELE.
EXISTING GROUND
POTENTIAL COAL TAR "LENS"
STONE BLOCK STRUCTURE AREA
ORIGINAL REMEDIAL AREA
TOP OF ROCK ELE AT TP-13 (ESTIMATED)
TOP OF ROCK ELE AT TP-10 (ESTIMATED)
COAL TAR "BLEBS"
+25.87
+51.61
+62.32
+90.09
+171.13
+198.09
+224.68
+252.07
+289.04
+0
+25
+50
+75
+100
+125
+150
+175
+200
+225
+250
+275
+300
25 0 25
HORIZONTAL SCALE FEET
25 0 25
VERTICAL SCALE FEET
REV DATE DES REVISION DESCRIPTION CADD CHK RVW
PROJECT
SNPE - VANDEMARK
FOCUSED CORRECTIVE MEASURES STUDY
LOCKPORT, NEW YORK
TITLE
TEST PIT CROSS SECTION
Golder Associates
Mt. Laurel, New Jersey
PROJECT No. 083-89188
FILE No. 083891884015
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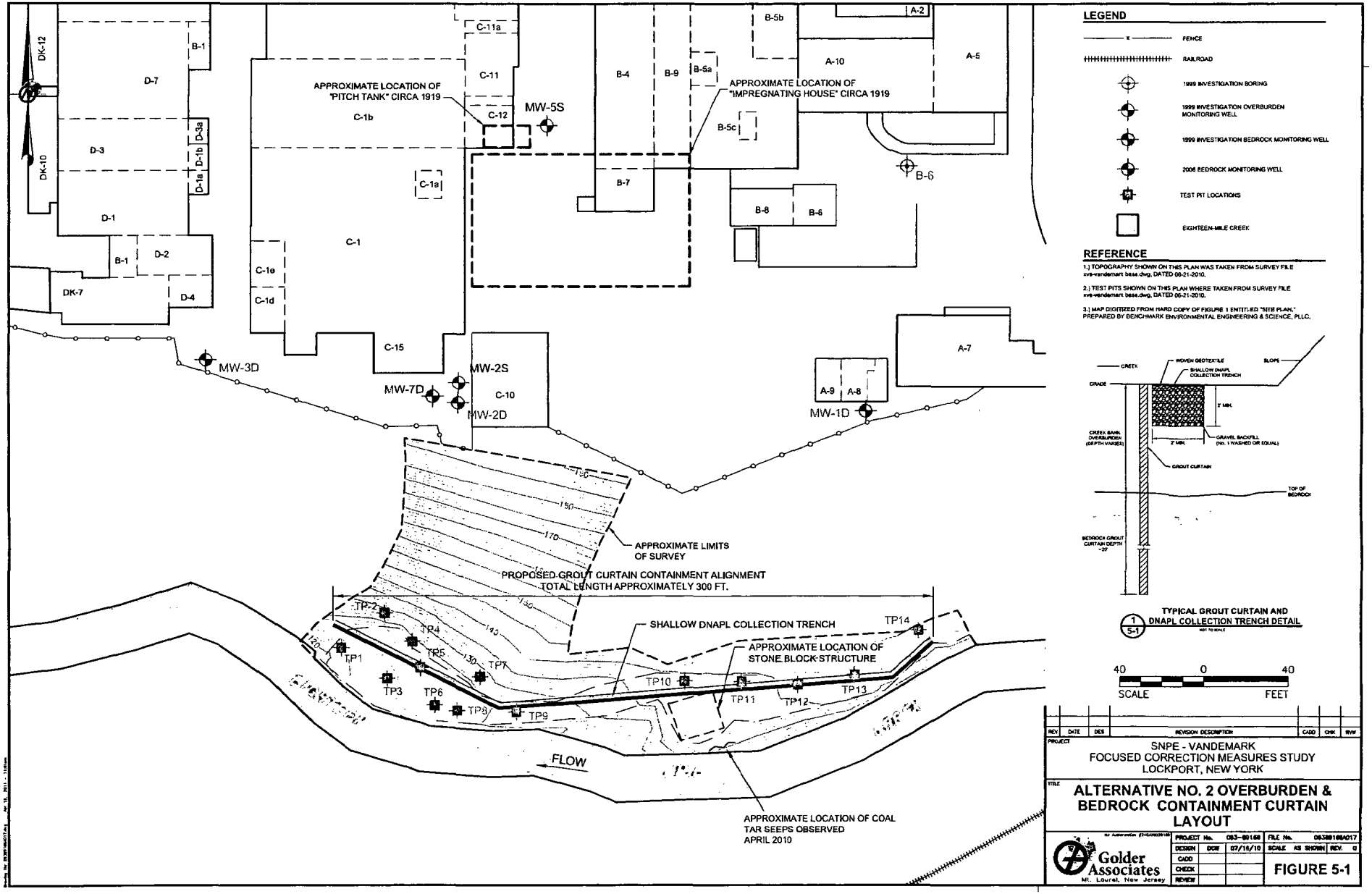
SCALE AS SHOWN REV. 0
CADD AML 04/12/11
CHECK
REVIEW
FIGURE 1-5

VDM01763


LEGEND
FENCE
RAILROAD
1999 INVESTIGATION BORING
1999 INVESTIGATION OVERBURDEN MONITORING WELL
1999 INVESTIGATION BEDROCK MONITORING WELL
2008 BEDROCK MONITORING WELL
TEST PIT LOCATIONS
EIGHTEEN-MILE CREEK
REFERENCE
1.) TOPOGRAPHY SHOWN ON THIS PLAN WAS TAKEN FROM SURVEY FILE xve-vandemark base.dwg, DATED 06-21-2010.
2.) TEST PITS SHOWN ON THIS PLAN WHERE TAKEN FROM SURVEY FILE xve-vandemark base.dwg, DATED 06-21-2010.
3.) MAP DIGITIZED FROM HARD COPY OF FIGURE 1 ENTITLED "SITE PLAN," PREPARED BY BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC.
APPROXIMATE LOCATION OF "PITCH TANK" CIRCA 1919
APPROXIMATE LOCATION OF "IMPREGNATING HOUSE" CIRCA 1919
MW-5S
MW-3D
MW-7D
MW-2S
MW-2D
MW-1D
B-6
APPROXIMATE LIMITS OF SURVEY
PROPOSED GROUT CURTAIN CONTAINMENT ALIGNMENT TOTAL LENGTH APPROXIMATELY 300 FT.
SHALLOW DNAPL COLLECTION TRENCH
APPROXIMATE LOCATION OF STONE BLOCK STRUCTURE
TP1
TP2
TP3
TP4
TP5
TP6
TP7
TP8
TP9
TP10
TP11
TP12
TP13
TP14
FLOW
APPROXIMATE LOCATION OF COAL TAR SEEPS OBSERVED APRIL 2010
CREEK
WOVEN GEOTEXTILE
SLOPE
SHALLOW DNAPL COLLECTION TRENCH
GRADE
2' MIN.
CREEK BANK OVERBURDEN (DEPTH VARIES)
GRAVEL BACKFILL (No. 1 WASHED OR EQUAL)
GROUT CURTAIN
TOP OF BEDROCK
BEDROCK GROUT CURTAIN DEPTH ~27'
1 5-1 TYPICAL GROUT CURTAIN AND DNAPL COLLECTION TRENCH DETAIL
NOT TO SCALE
40 0 40
SCALE FEET
REV DATE DES REVISION DESCRIPTION CADD CHK RVW
PROJECT
SNPE - VANDEMARK
FOCUSED CORRECTION MEASURES STUDY
LOCKPORT, NEW YORK
TITLE
ALTERNATIVE NO. 2 OVERBURDEN & BEDROCK CONTAINMENT CURTAIN LAYOUT
Golder Associates
Mt. Laurel, New Jersey
PROJECT No. 083-89168
FILE No. 083891680017
DESIGN DCW 07/16/10
SCALE AS SHOWN
REV. 0
CADD
CHECK
REVIEW
FIGURE 5-1

VDM01764

APPENDIX A

DNAPL ASSESSMENT AND SUPPLEMENTAL WORK PLAN (DECEMBER 2009)

December 21, 2009 093-89168

New York State Department of Environmental Conservation
Division of Solid and Hazardous Materials, Region 9
270 Michigan Ave.
Buffalo, New York 14203

Attention: Mr. Stanley Radon, Sr. Engineering Geologist

RE: SNPE - VANDEMARK CHEMICAL DNAPL ASSESSMENT & SUPPLEMENTAL WORK PLAN VANDEMARK CHEMICAL FACILITY, LOCKPORT, NY

Dear Mr. Radon:

On behalf of SNPE Inc. (SNPE), Golder Associates Inc. (Golder) has prepared this report to address the issues and concerns raised by the New York State Department of Environmental Conservation concerning further characterization and development of a supplemental Work Plan pertaining to investigation activities of tar impacts along the Eighteen Mile Creek bank and slope adjacent to the VanDeMark Chemical facility in Lockport, New York. SNPE, Inc. as former site owner is taking the lead in conducting the additional evaluation described herein and conducting any recommended supplemental characterization activities with support from the current site owner, VanDeMark Chemical, Inc.

1.0 BACKGROUND

In October 2006, SNPE, as site Owner at that time, conducted sampling of the on-site groundwater monitoring wells network as part of due diligence efforts associated with the pending sale of the facility. The sampling effort identified the presence of a significant amount of dense non-aqueous phase liquid (DNAPL) in the deeper bedrock monitoring well (MW 2D) located approximately 25 feet north of the top of the creek bank in a paved area just west of the training and men's locker room building (Figure 1).

Based on this finding, further visual investigation of the adjacent slope and Eighteen-Mile Creek bank area south and presumably downgradient of this well was performed by SNPE's consultant. These inspections revealed visible quantities of an accumulated coal-tar like substance seeping out near the base (toe) of the cliff face and present along an approximately 100 feet length of the creek bank shoreline itself.

Upon this discovery and in consultation with the New York State Department of Environmental Conservation (NYSDEC), two separate remedial efforts were undertaken through SNPE in 2007 and 2008 (Benchmark, Sept. 12, 2007, Dec. 22, 2008, and May 20, 2009) to mitigate and remove the accumulated tar material that appeared to have flowed out from the toe of the slope and accumulated along the top of bedrock and intermingled within the bank sediments and into the creek itself. These removal efforts were predicated on the concept that the flow of accumulated tar had run its course based on the highly weathered appearance of the accumulations. Therefore, the remedial efforts were aimed toward expeditious removal of these source materials that were exposed on the creek bank and within the creek and follow-up monitoring the creek bank after removal to confirm that new seeps were not occurring.

In the summer of 2009 however, a joint inspection conducted by the NYSDEC and Pam Cook from VanDeMark Chemical revealed the presence of newly accumulated tar residuals at both the toe of the slope and on top of the clean backfill that was placed along the creek bank area previously remediated. This finding has led to a request by the NYSDEC to perform a more detailed evaluation of the potential

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Golder Associates: Operations in Africa, Asia, Australasia, Europe, North America and South America

source, nature and extent of the tar residuals along and within the bedrock along the escarpment (creek bank) area. Specifically the NYSDEC has requested the preparation of a Work Plan to characterize and better define the impacts in order to craft a more comprehensive remedial approach going forward.

During an October 14, 2009 review meeting with representatives from NYSDEC, SNPE, VanDeMark and Golder, the complexity (i.e. fractured nature) of the underlying rock geology at the VanDeMark Facility and the assumption that the release of the tar residuals most likely occurred more than 40 years ago was reiterated. Therefore, it was agreed that attempting to further delineate the source and extent of the existing DNAPL within the overburden soils and underlying bedrock through a traditional boring investigation program would be costly and unlikely to better characterize the location of extent of the impacts. This type of investigation would also be logistically difficult to implement due to the layout and constrained access within the facility and the hazards of performing these activities in conjunction with the ongoing chemical production activities. The NYSDEC, SNPE and VanDeMark concurred that a more beneficial strategy would consist of a phased assessment of the problem.

Following this strategy, Golder conducted the following tasks:

- A historical record review;
- Bedrock and DNAPL analysis and conceptual model formulation; and
- Summarization of findings and preparation of Workplan

2.0 HISTORICAL SITE REVIEW

A review of historical records was conducted from the sources discussed below:

2.1 Sanborn Map Review

A review of the available historical Sanborn fire insurance maps of the site and surrounding parcels for evidence of past manufacturing or related commercial activities that may have resulted in the generation and disposal of tar residuals was conducted by Golder.

Sanborn maps were obtained through Environmental Data Resources (EDR) using the current Site's One North Transit Road address. Maps were available from the years 1898, 1903, 1909, 1914, 1919, 1928, 1948 and 1969. In general the maps illustrate an area encompassing the present VanDeMark Chemical operations and surrounding parcels north to Mill Street and south to Eighteen Mile Creek. The maps confirm that the Site and adjacent parcels have a long history of nearly uninterrupted industrial use. The following detailed observations and inferences were made:

- From the late 1800's through the 1920s, the Site was occupied by a company alternately known as "United Industrial Fibre Co., United Indurated Fibre Co., and Fibre Corporation". The maps identified these companies as being manufacturers of fibre pipe, pails, drums, etc. The most notable features on the map that were associated with all these operations were a "Bake Oven Building", a combined "Resin Storage and Boiling House" building and in the 1914 and 1919 maps a new building located in the southeast portion of the Site. A portion of this building is labeled "Impregnating Room". On the 1919 map, three tanks (presumably outdoors) are evident on the north side of what's now called the "Impregnating House". One of the tanks is labeled as a "Pitch Tank & Heater". These operations and nomenclature would be consistent with the practice of treating/impregnating the fiber-based pipes, containers, etc. with a bituminous mastic or pitch material to waterproof or render them suitable for storing or conveying other liquids.
- The 1928 Sanborn Map indicates that the Fibre Corporation appears to be defunct and most buildings are labeled as vacant. Tenants that may be leasing portions of the former Fibre Corp buildings are listed as Norton Laboratories and National Lead Co. There are no further descriptions of their activities or the nature of their operations.

- The 1948 Sanborn map reveals a significantly diminished set of physical buildings and structures on the Site and it is listed as "Niagara Chlorine Products Corporation". Buildings are labeled as "Factory Building", Aluminum Chloride", "Empty Drum Storage" and "Weld Shop". There are no indications of processes or structures that might be associated with the generation of tar related substances.
- The 1969 Sanborn Map contains the first reference to the "VanDeMark Chemical Co." on the Site and the buildings and labeling of them remains essentially unchanged from the 1948 map. The Milward Alloys buildings appear on this map in the northeast corner of the Site and are labeled generically as "Factory Buildings".

A copy of the Sanborn Maps reviewed and described above are included in Attachment A.

2.2 Aerial Photographs Review

A review of the available historical aerial photographs of the site and surrounding parcels for evidence of past manufacturing or related commercial activities that may have resulted in the generation and disposal of tar residuals was also performed by Golder.

Aerial photographs were obtained through EDR using the current Site's One North Transit Road address. The aerial photos available for review were from the years 1962, 1972, 1985, 1995 and 2006. Based on the known site history, these photos encompass the more recent ownership of the Site by either the VanDeMark/VanChem group of companies (in the 1960s, 1970s, 1980s and majority of the 1990s) or the subsequent ownership of the Site by SNPE NA (SNPE) from the late 1990s through 2006. In general, the photos obtained were taken at an elevation and resulting scale that does not allow for detailed evaluation of specific structures or features and in many cases the photo resolution/quality is relatively poor which further limits the usefulness of the photos.

The photos scale and resolution only allow for confirmation of the presence of the chemical manufacturing plant on the Site during the time frame encompassed by the photos. No other observations or conclusion could be drawn from the photos.

A copy of the aerial photos reviewed and described above are included in Attachment B.

2.3 Facility Records Review

A review of VanDeMark Chemical facility records/files was conducted with the assistance of VandeMark personnel to determine if documentation exists pertaining to the production of CO or any other related process activities (e.g., coal combustion related operations) that may have been associated with the source of the tar residuals observed in the bedrock well and migrating from the toe of the slope.

The records review performed by Golder revealed that oldest available known files are dated to the early 1960s. Specifically, engineering design and documentation information pertaining to the installation of the carbon monoxide (CO) storage tank installation were found and dated circa 1962. This confirmed the assumed time frame for the implementation of CO purchase off-site that was initiated when the on-site generation of CO for use as a raw material in the manufacture of phosgene was discontinued.

Production records related to pre-1962 processes were unavailable and according to current VanDeMark employees there is no record that these records exist.

2.4 Employee Interviews

VanDeMark Chemical provided names of four former employees (all retired) that worked at the facility and were employed in the 1950s and 1960s and may have had direct or anecdotal knowledge of the processes employed by VanDeMark and VanChem (a system company to VanDeMark co-located at the Site) related to the potential use or generation of coal-tar based substances or residuals.

Golder attempted to conduct telephone interviews with all of the former employees and was successful in contacting two of the four contacts provided. Mr. Gerald Schultz indicated that he did not begin working at the VanDeMark facility until the late 1960s and had no knowledge of any processes employed during his tenure that used or resulted in the generation of coal tar or related substances. He also added that he recalled no discussions with longer tenured employees at that time who indicated that any generation or disposal of coal tar related residuals occurred at the facility.

Mr. Robert Dunn, a former long time production worker and supervisor for the VanDeMark Chemical Company was also interviewed. He was employed at the facility during the majority of the 1950s. He had direct knowledge of the on-site CO manufacturing process and was definitive that CO was generated using coke (not coal) as the primary carbon raw material source. To his knowledge, coal was not purchased for use at the facility for any purpose. Mr. Dunn described the residuals from the CO "producers" as a dry ash–like material. He was unaware of any coal-tar based substances either being used as a raw material in any of the production process or generated as a by-product or waste. He described the routine disposal over the south slope of silicon carbide solid waste that was generated from the silicon tetra- carbide process. This fill material was observed in quantity at or near the surface during recent inspections of the creek bank and adjacent slope area.

2.5 Previous Report Review

A review of the results of the Phase II Investigation report performed at the facility in 1998/1999 at the request of SNPE prior to transfer of ownership to SNPE was performed by Golder. As part of this Phase II investigation, seven soil borings were advanced and sampled and six ground water monitoring wells were installed, developed and sampled. The results of these investigation activities were utilized extensively in support of the "DNAPL Transport Analysis" presented in Section 3 of this report.

2.6 Historical Record Review Summary

The results of the historical records review and interviews described above were intended to determine if a more definitive connection may be made as to the type, location, time frame, quantity and disposal practices associated with coal tar residuals from the historical manufacturing activities at the facility. This approach was followed to address the NYSDEC's specific concerns related to conducting a more thorough assessment of the Dense Non Aqueous Phase Liquid (DNAPL) source (potential coal tar) and to better define the extent of the impacts within the complex bedrock geology of the site.

In general, the results of the records review and interviews conducted, while not definitive, found that the Site currently occupied by the VanDeMark Chemical Company and adjacent properties have a long and diverse history of heavy industrialized usage dating back to the late 1800s. A review of the processes and operations conducted at the site over the past 65 to 70 years, i.e., since the Site was under control of the VanDeMark Chemical Company and it successors, did not find evidence that the chemical processes employed resulted in the generation or disposal of coal-tar related residuals during this time period. Prior to conducting the employee interviews there was some anecdotal reports by current VanDeMark employees that coal may have been used/combusted to generate CO prior to the discontinuation of on-site CO generation on the early 1960s. As noted in the interview summary, this does not appear to be consistent with the actual process employed and the use of coke was a standard method of CO generation that would have been typical for a phosgene production facility during the early to mid 1900s.

The most relevant information obtained from the records review pertains to evidence from the Sanborn maps of the use of "pitch" and the identification of a pitch storage tank adjacent to an "Impregnating House" on the 1919 map. The approximate location of these structures was scaled based on the location of North Transit Road and railroad spurs and when overlaid on the current site map is consistent with the area of the Site to the north - northeast of MW-2D that may potentially be the source of the DNAPL as discussed in more fully in Section 3.

3.0 DNAPL TRANSPORT ANALYSIS

To characterize the geologic aspects of the overall tar impacts at the site associated with the ongoing migration of the DNAPL through the bedrock and into the creek bank area adjacent to the toe of the escarpment slope, Golder reviewed existing geologic, hydrogeologic, and groundwater/DNAPL chemistry information and summarized it to create a conceptual site model of DNAPL transport at the facility. These reviews and a summary are presented in the sections following.

3.1 Site Geology Review

Geologic information was primarily derived from the 1999 Phase I/II report by Dames & Moore (Dames & Moore, 1999) and the 2006 field investigation summary report by Benchmark Environmental Engineering & Science PLLC (Benchmark, Nov 30, 2006). In general, the site is underlain by 10-14 feet of brown to black silty sand and gravel fill, subsequently underlain by a silt and clay till (with some coarse sand and medium gravel). Total overburden thickness ranges from approximately 10-20 feet.

Bedrock under the site was described in the Dames & Moore report referenced above as soft red-brown shale or red to gray sandstone, dipping gently to the south at 30-40 feet per mile (i.e. sub-horizontal). Bedrock descriptions were refined in the Benchmark report referenced above, which was associated with the installation of well MW-7D. In this borehole the uppermost bedrock underlying the site was identified as the Grimsby Sandstone, described in MW-7D as a dark red brown to grey, moderately strong, fine-grained, thinly bedded, slightly to moderately weathered intensely fractured sandstone. Also noted were occasional clay-filled horizontal fractures. Other factures were extremely to vary narrow and partially healed, some iron-stained.

The unit underlying the Grimsby Sandstone is the Power Glen Shale, described in MW-7D as a dark gray with light to medium gray banded, horizontally bedded, very hard, shale. Also noted were clay filled horizontal fractures. These units are both part of the Lower Silurian age Medina Group. Both units are shown in cross sections of the site, shown in Figure 2.

The highly fractured nature of the bedrock is well exhibited in the upper portions of an outcrop along W. Jackson Street approximately ¼ mile west of the site (just SE of the Lockport sewer treatment plant), where both the Grimsby/Power Glen formations as well as the underlying Upper Ordovician aged rock are visible. Common fracture patterns in this area would consist of intersecting near-vertical fractures (often forming a characteristic "diamond" shape when viewed from above) and near horizontal fractures typically corresponding with bedding planes. These "diamond" patterns of intersecting near-vertical fractures are easily visible just beyond the south facility gate leading to the closed section of Gooding Street, and are located just to the north of the road where the bedrock surface is exposed.

Topographically, the facility sits on the north side of Eighteen Mile Creek, which flows generally west at this location. The facility itself sits on gently sloping land, with the north side between approx. 5 and 10 feet higher than the south side (based on monitoring well survey data), thus surface water flow is toward the creek. Immediately south of the facility is the steep valley of Eighteen Mile Creek, which has a relief of approx. 50+ feet (based on the USGS 1:24,000 quadrangle map).

3.2 Hydrogeology Review

Groundwater elevation measurements collected during the 1999 Dames & Moore Phase I/II investigation indicate groundwater flow in the overburden and bedrock is to the southwest towards Eighteen Mile Creek. Bedrock gradients are steep, as groundwater elevations near the north side of the site (e.g. in MW-4D) are approx. 30 feet higher than those near the valley edge (e.g. in MW-3D and MW-2D), from which Golder calculated a gradient of approx. 0.2. Groundwater elevations measured in 2006 (Benchmark, Nov. 30, 2006) appear similar.

Note there were some irregularities in Table 2 of the 1999 Dames & Moore Phase I/II report (the values for "Depth to Groundwater From TOC" for wells MW-2S and MW-2D appear to have been inadvertently switched), however the calculated groundwater elevations appear to be correct. As no tests to calculate bedrock hydraulic conductivity are known to have been performed, no estimate of groundwater flow rate has been made.

3.3 Chemistry Review

3.3.1 Previous Sample Results

Soil and groundwater were sampled at the facility in 1999 (Dames & Moore, 1999), and groundwater, surface water, and NAPL were sampled in 2006 and 2007 (Benchmark; Nov. 30, 2006; Dec. 22, 2006; and Feb 26, 2007). As summarized in the Dames & Moore report, exceedances of state standards in soils were noted for Volatile Organic Compounds (VOCs), Base/Neutral/Acid (BNAs – aka Semi-Volatile Organic Compounds [SVOCs]), and metals. Metal exceedances were rather evenly distributed across the site, with VOC exceedances limited to the MW-6 and MW-3 locations, and BNA exceedances found in the MW-5 and MW-6 boreholes. Some metal exceedances (e.g. arsenic, iron, manganese, magnesium) are expected in areas with glacially derived soils such as found at the site, and may not necessarily be related to site activities.

For groundwater samples collected in 1999, all wells indicated exceedances of VOCs except for MW-2S, and all wells had metal exceedances similar to those in the soil samples. BNA exceedances, likely associated with tar DNAPL and present at much higher concentrations (up to 110,000 ppb for naphthalene) than any of the other compounds were limited to MW-2D, with minimal impact elsewhere. A strong moth ball-like odor, and NAPL were observed in MW-2D during sampling.

One suite of chlorinated compounds was limited to the western portion of the site in wells MW-3D and MW-4D, suggesting a possible upgradient off-site source for these compounds. A second suite of chlorinated compounds, with none of the same compounds as the first, was found only in well MW-1D, suggesting a different source. Compounds typically associated with gasoline impacted groundwater (e.g. toluene, ethylbenzene, and xylene) were limited to samples collected from MW-5S and MW-2D in the south/central part of the site.

In 2006, a second round of well sampling was performed (Benchmark, Nov. 30, 2006) including NAPL sampling in MW-2D, two surface water samples collected in Eighteen Mile Creek, and a new well MW-7D installed just west of MW-2D. Monitoring well results were similar to the first round of sampling in that the most significant impacts were present in MW-2D (up to 230,000 ppb for naphthalene), and appear to be related to coal-tar like DNAPL impact (based on the DNAPL analysis). Note wells MW-2S and MW-4D could not be located and were thus not re-sampled, the gasoline-like compounds flagged as exceedances MW-5S in the first round were not detected in the second, and that none of the wells were analyzed for metals in round two.

No VOCs or BNAs were detected in either the upstream or downstream samples collected from Eighteen Mile Creek, suggesting no dissolved-phase measurable impact to the Creek that can be attributed to site activities.

Sample results from MW-7D (Benchmark, Dec. 22, 2006), installed approximately 7 feet west of MW-2D, indicated that groundwater in MW-7D is actually more similar to that collected in cross-gradient wells MW-1D, and MW-3D and only similar to that of MW-2D with regards to VOCs (suggesting a common upgradient VOC source[s]). SVOC (i.e. coal-tar-related) concentrations in MW-7D groundwater were *not* similar to those in MW-2D, and instead were much lower or absent, like those in MW-2D and MW-3D, suggesting that the DNAPL impact area is very localized around MW-2D. No DNAPL was noted in MW-7D.

3.3.2 November 2009 DNAPL Sample Results

A sample of recently exposed (i.e. post-remedial effort) DNAPL was collected from several deposits on November 19, 2009 along the area of the creek bank previously remediated and adjacent toe of the cliff face for chemical property analysis to characterize the DNAPL. The results of the analysis are presented in Attachment C.

The detected constituents, primarily semi-volatile organic compounds (SVOCs) and to a much lesser extent volatile organic compounds (VOCs) are nearly identical to the compounds detected in the DNAPL sample collected from MW-2D in November 2006 and reported in Table 3 of the "Summary of Supplemental Field Investigation and Sampling Activities" dated November 30, 2006 (Benchmark Environmental Engineering). In general, the concentrations reported were an order of magnitude lower than the 2006 DNAPL sample which would be consistent with the weathering and environmental exposure/degradation that would be expected for DNAPL that has slowly migrated through the bedrock fractures and onto the creek bank. The close correlation of the compounds detected within the DNAPL found in the bedrock monitoring well MW2D and the recent sample found along the creek bank confirms that it is highly probable that they emanated from the same source.

3.4 DNAPL Transport and General Site Conceptual Model

The above information was compiled and used to construct a conceptual model of the site's DNAPL transport from the likely original source area location to the toe of the cliff. Based on the Sanborn map notation of "pitch" and the identification of a pitch storage tank adjacent to an "Impregnating House" on the 1919 map (located just south of existing well MW-5S), and the reported use of coke (and not coal) for CO production, Golder has concluded that the most likely origin for the current DNAPL is the pitch impregnation process dating from the late 1910s.

Though the exact mechanism for how the DNAPL was transported from the pitch impregnation process line to the upper bedrock is unknown, the approximate location of the pitch impregnation structures (Figure 1) directly north (upgradient) from MW-2D (the only location where DNAPL is currently present in a well) suggests the tar either leaked directly from the process equipment into the site soils, or it was possibly disposed of in an unlined pit very near the process buildings (a common practice of that era).

Once in the site soils, the tar would move downward through the soil pores under the influence of gravity (it being denser than water) until reaching the upper bedrock, where it would continue its downward migration through the vertical rock fractures known to be present at the site. With the dip of the rock being gently towards the creek (i.e. south), and with groundwater flow also generally towards the south, the downward-migrating DNAPL would also tend to have a southerly component as well (along the bedding planes), until eventually the tar would either exit the rock on north face of the slope of Eighteen Mile Creek (to then flow under the overburden cover of the slope), or it would move downward through the rock until it reaches the (probable) less permeable rock layer currently trapping the tar near the toe of the slope, and *then* move south. At that point it would collect at the toe of the slope as it is currently seen to be doing. The reappearance of the tar subsequent to remedial efforts support the model that tar is continuing to move through the rock (with the rock voids acting as a reservoir) and exiting at the toe of the slope, and was not a one-time "pulse" of DNAPL.

The observation that the DNAPL is currently present in a very limited area at the toe of the slope supports the earlier findings that the original source area was also very localized. The groundwater chemistry findings that show the dissolved phase impact from the DNAPL is similarly localized around well MW-2D also support the above limited-extent source area scenario, and suggests DNAPL was not widely dispersed across the site.

4.0 PROPOSED WORK PLAN / SCHEDULE

In view of the above findings and conceptual model, it would be impractical or impossible remove the source of the DNAPL, which is likely now the rock fractures, or to intercept the DNAPL while it is still

moving through the rock fractures without significantly interrupting site operations. There are also considerable technical/cost challenges to removing very viscous liquids from small pore spaces/fractures, with a certain percentage of tar material likely to remain in place no matter what the extraction technique attempted. Consequently, the most practical strategy to prevent the migration of DNAPL into Eighteen Mile Creek may be to design and construct a DNAPL capture structure at the toe of the slope to intercept the DNAPL before it reaches the creek floodplain (where it is currently noted collecting), but after it exits the rock. This would likely be a linear structure parallel to the creek, substantial enough to withstand occasional creek flooding, with a mechanism for periodic tar removal.

In order to design any such capture structure, the bedrock/overburden interface in the floodplain, at the toe of the slope, and part way up the slope face must be well defined over entire reach of creek where DNAPL is currently collecting.

As a next step in the remedial process, Golder proposes the preparation of a detailed elevation and location survey of the overburden and underlying bedrock surfaces in this area. Based on the previous remedial activities performed in the creek bank floodplain area, the bedrock surface may potentially be reached using hand punchbars, small portable engine-powered augers, or by a small excavator. Once a three-dimensional map has been constructed of the overburden and bedrock surface, the suitability of various designs for the interception and collection of the DNAPL can be assessed.

Due to weather and safety concerns (i.e., difficult access, steep slopes, and proximity to swift-flowing water) associated with implementing the proposed work, Golder recommends scheduling the survey in late spring 2010.

Subsequent to collection and mapping of this data, development of detailed remedial design alternatives based on the DNAPL intercepting structure(s) concept presented above is proposed for Department review within 8 to 10 weeks of survey completion. Assessment of the suitability and effectiveness of each design alternative is anticipated to be a component of the design alternatives submittal with final remedy selection to be determined in conjunction with the NYSDEC.

If you have any questions concerning the findings and recommendations presented in this assessment report or the proposed supplemental Work Plan activities, please contact us at 716-215-0650.

Sincerely,

GOLDER ASSOCIATES INC.

Patrick T. Martin, P.E., BCEE
Senior Consultant

David C. Wehn, CPG
Associate

C: D. Slick, SNPE, Inc.
P. Cook, VanDeMark Chemical

Attachments:
Figures 1 and 2
Attachment A: Sanborn Fire Insurance Maps
Attachment B: Aerial Photographs
Attachment C: DNAPL Analysis Report (TestAmerica, December 2009)

PTM/DCW:dml

VDM01773

5.0 REFERENCES

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Benchmark Environmental Engineering & Science, PLLC, March 23, 2007, *ISOCHEM Inc. – Lockport Facility DNAPL Assessment Report*

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Benchmark Environmental Engineering & Science, PLLC, July 18, 2007, *ISOCHEM Inc. – Lockport Facility REVISED Site Monitoring Program and Creek Bank Clean-up Approach*

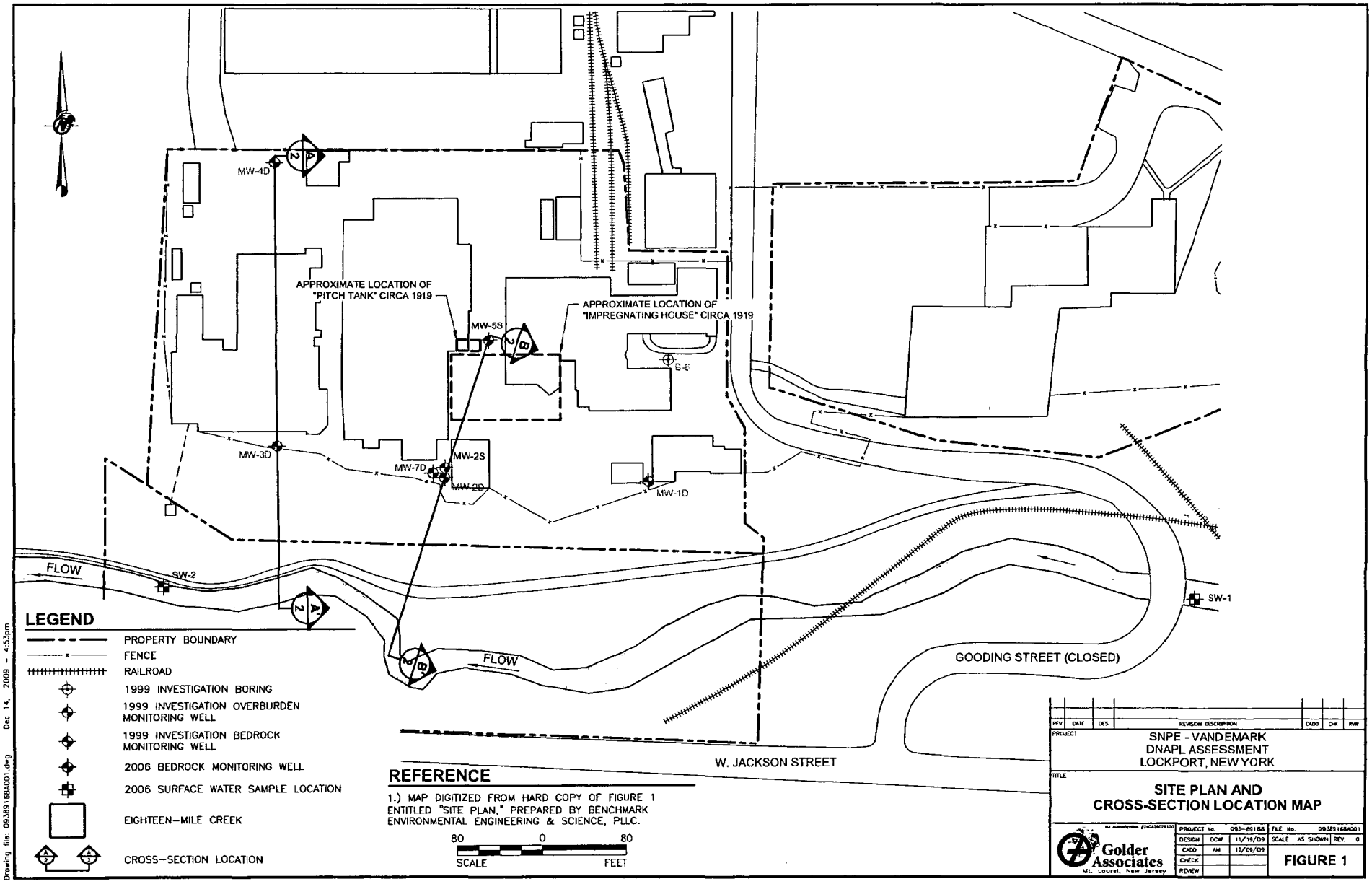
Benchmark Environmental Engineering & Science, PLLC, September 12, 2007, *VanDeMark (ISOCHEM) Inc. – Lockport Facility Creek Bank Clean-up Closeout Report*

Benchmark Environmental Engineering & Science, PLLC, December 22, 2008, *VanDeMark (ISOCHEM) Inc. – Lockport Facility Summary of Work Performed Report*

Benchmark Environmental Engineering & Science, PLLC, May 20, 2009, *VanDeMark (ISOCHEM) Inc. – Lockport Facility Supplement to December 2008 Creek Bank Clean-up Report – Summary of Work Performed*

Dames & Moore, September 17, 1999, *PHASE I/II ENVIRONMENTAL AUDIT, VanDeMark, Inc. & Vanchem, Inc., 1 North Transit Road, Lockport, New York*

FIGURES


MW-4D
APPROXIMATE LOCATION OF "PITCH TANK" CIRCA 1919
MW-5S
APPROXIMATE LOCATION OF "IMPREGNATING HOUSE" CIRCA 1919
B-8
MW-3D
MW-7D
MW-2S
MW-2D
MW-1D
FLOW
SW-2
SW-1
FLOW
GOODING STREET (CLOSED)
W. JACKSON STREET
LEGEND
PROPERTY BOUNDARY
FENCE
RAILROAD
1999 INVESTIGATION BORING
1999 INVESTIGATION OVERBURDEN MONITORING WELL
1999 INVESTIGATION BEDROCK MONITORING WELL
2006 BEDROCK MONITORING WELL
2006 SURFACE WATER SAMPLE LOCATION
EIGHTEEN-MILE CREEK
CROSS-SECTION LOCATION
REFERENCE
1.) MAP DIGITIZED FROM HARD COPY OF FIGURE 1 ENTITLED "SITE PLAN," PREPARED BY BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC.
80 0 80
SCALE FEET
REV DATE DES REVISION DESCRIPTION CADD CHK PM
PROJECT
SNPE - VANDEMARK
DNAPL ASSESSMENT
LOCKPORT, NEW YORK
TITLE
SITE PLAN AND
CROSS-SECTION LOCATION MAP
Golder Associates
Mt. Laurel, New Jersey
PROJECT No. 093-89168
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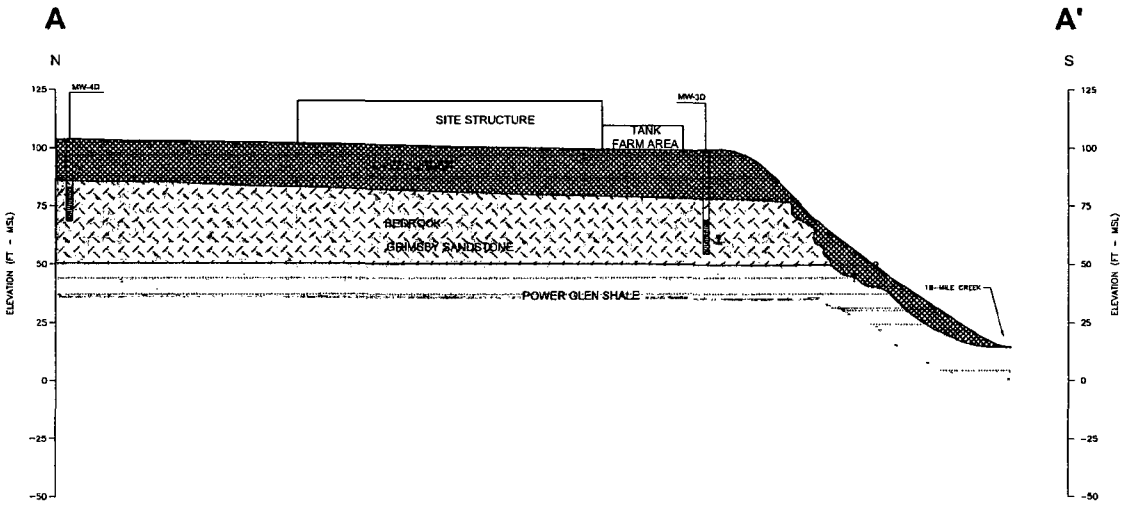

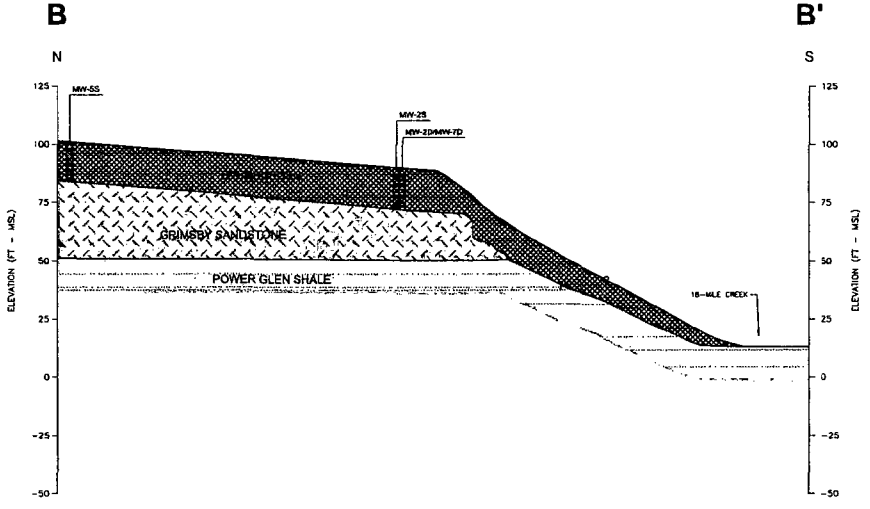

LEGEND

- OVERBURDEN
- BEDROCK GRIMSBY SANDSTONE
- POWER GLEN SHALE

REFERENCES

1.) URS CORP. FIGURE 3 – PHASE I/II ENVIRONMENTAL AUDIT – VANDE/MARIL, INC. A VANCHEM, INC. SEPTEMBER 17, 1998.

2.) BENCHMARK BES, PLLC – SUMMARY OF SUPPLEMENTAL FIELD INVESTIGATION AND SAMPLING ACTIVITIES, ISOCHEM INC., NOVEMBER 30, 2006.

3.) U.S.G.S. LOCKPORT QUADRANGLE (FOR ELEVATION OF EIGHTEEN-MILE CREEK)

25 0 25 50
HORIZONTAL SCALE FEET

25 0 25 50
VERTICAL SCALE FEET

REV	DATE	DES	REVISION DESCRIPTION	CADD	CHK	RVW

PROJECT

SNPE - VANDEMARK
DNAPL ASSESSMENT
LOCKPORT, NEW YORK

TITLE

CROSS SECTIONS A-A' AND B-B'

Golder Associates
Mt. Laurel, New Jersey

PROJECT No.		093-89168	FILE No.	09389168A002
DESIGN	DCW	11/19/09	SCALE AS SHOWN	REV. 0
CADD	AM	12/09/09		
CHECK				
REVIEW				

FIGURE 2

VDM01777

ATTACHMENT A

SANBORN FIRE INSURANCE MAPS

One North Transit Road
One North Transit Road
Lockport, NY 14094

Inquiry Number: 2633108.3
November 06, 2009

Certified Sanborn® Map Report

EDR® Environmental Data Resources Inc

440 Wheelers Farms Road
Milford, CT 06461
800.352.0050
www.edrnet.com

Certified Sanborn® Map Report

11/06/09

Site Name:
One North Transit Road
One North Transit Road
Lockport, NY 14094

EDR Inquiry # 2633108.3

Client Name:
Golder Associates, Inc.
2221 Niagara Falls Blvd. Ste 9
Niagara Falls, NY 14304

Contact: Aaron Lange

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Certified Sanborn Results:

Site Name: One North Transit Road
Address: One North Transit Road
City, State, Zip: Lockport, NY 14094
Cross Street:
P.O. # NA
Project: NA
Certification # 3D28-45F9-A4D1

Sanborn® Library search results
Certification # 3D28-45F9-A4D1

Maps Provided:

1969	1903
1948	1898
1928	
1919	
1914	
1909	

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- ✓ Library of Congress
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· All maps are now displayed at a uniform scale. This makes it easier for you to view changes to the property over time.

· We've increased coverage by adding thousands of new maps from 40 cities for years 1994-2007.

· A new Map Key and Sheet Thumbnails let you reference sheet numbers, year and volume of original Sanborn Map panels used for this report.

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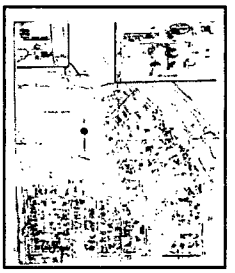
Sanborn Sheet Thumbnails

This Certified Sanborn Map Report is based upon the following Sanborn Fire Insurance map sheets.

1969 Source Sheets

Volume 1, Sheet 24

Volume 1, Sheet 25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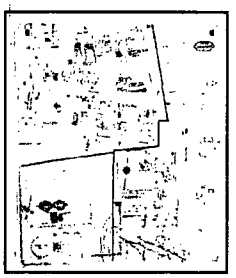
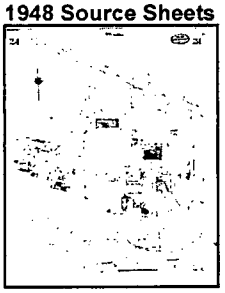

Volume 1, Sheet 6

1948 Source Sheets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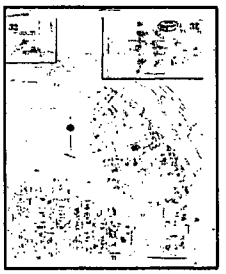
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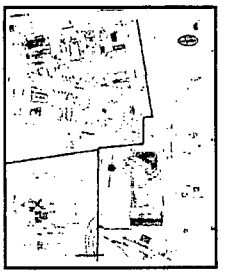
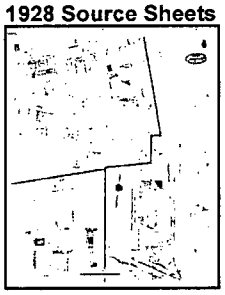
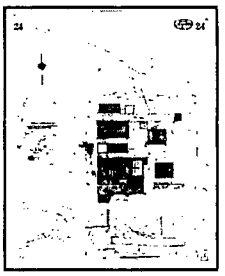

Volume 1, Sheet 6

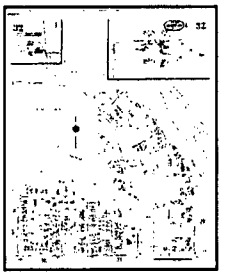
Volume 1, Sheet 25

1928 Source Sheets

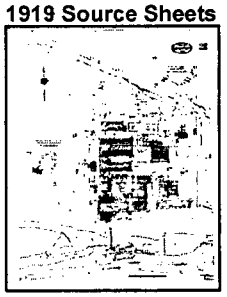

Volume 1, Sheet 6

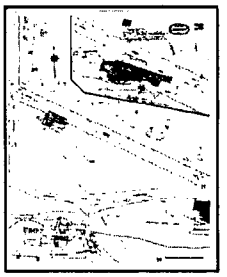

Volume 1, Sheet 24

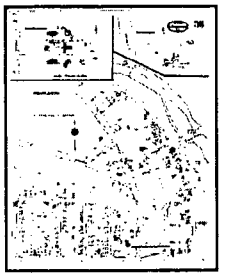
Volume 1, Sheet 25


Volume 1, Sheet 32

1919 Source Sheets

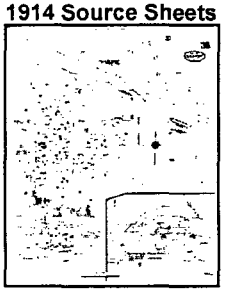

Volume 1, Sheet 25


Volume 1, Sheet 26


Volume 1, Sheet 36

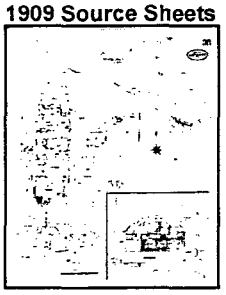
VDM01782

1914 Source Sheets



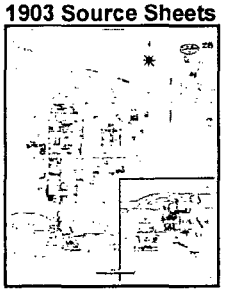
Volume 1, Sheet 38

1909 Source Sheets



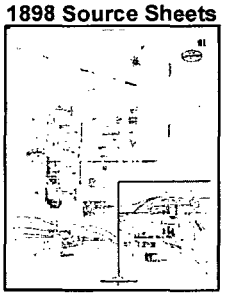
Volume 1, Sheet 38

1903 Source Sheets



Volume 1, Sheet 26

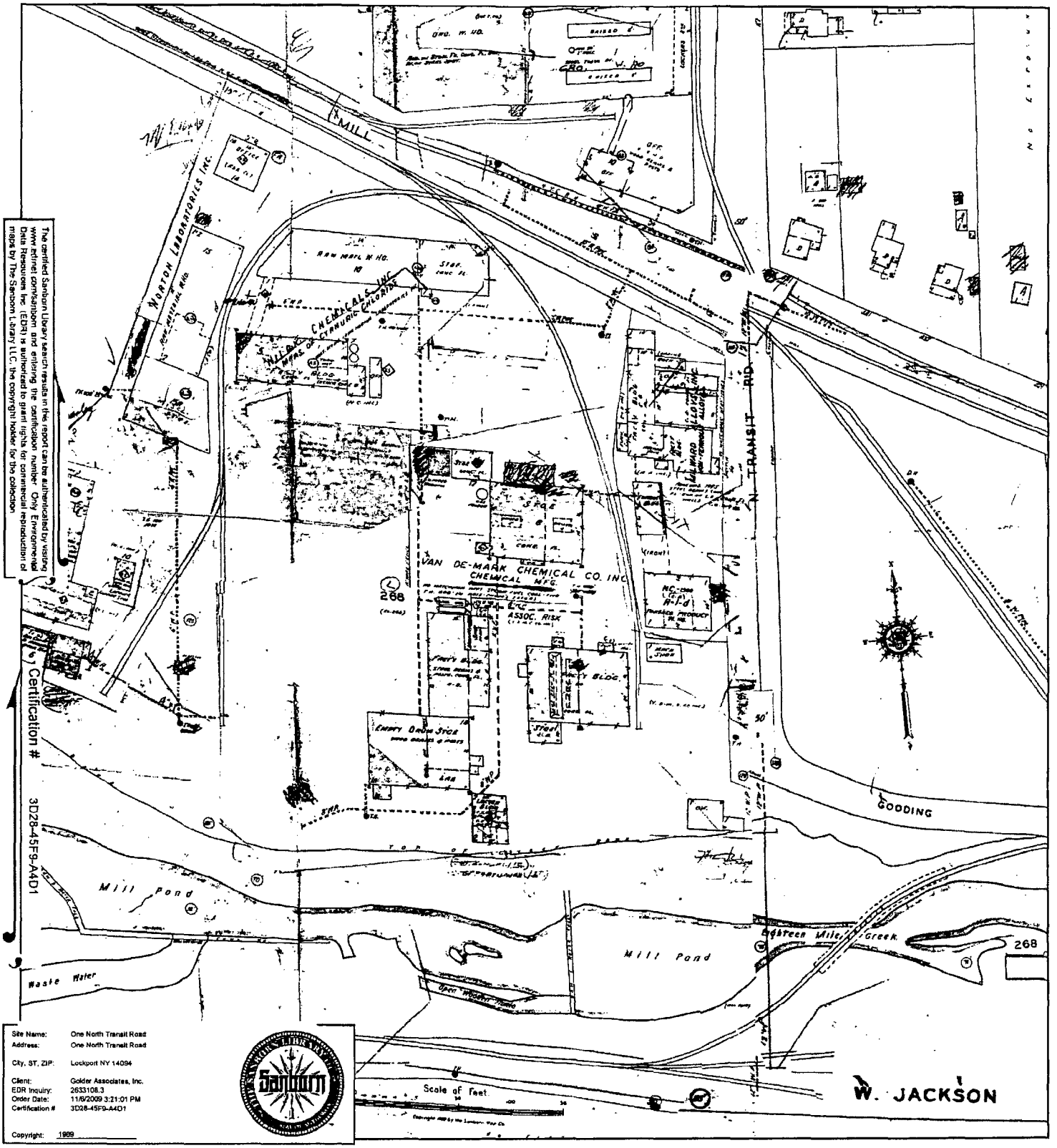
1898 Source Sheets



Volume 1, Sheet 21

VDM01783

1969 Certified Sanborn Map



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Certification # 3D28-45F9-A4D1

Site Name:	One North Transit Road
Address:	One North Transit Road
City, ST, ZIP:	Lockport NY 14094
Client:	Golder Associates, Inc.
EDR Inquiry:	2633108.3
Order Date:	11/5/2009 3:21:01 PM
Certification #	3D28-45F9-A4D1
Copyright:	1969

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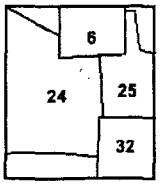


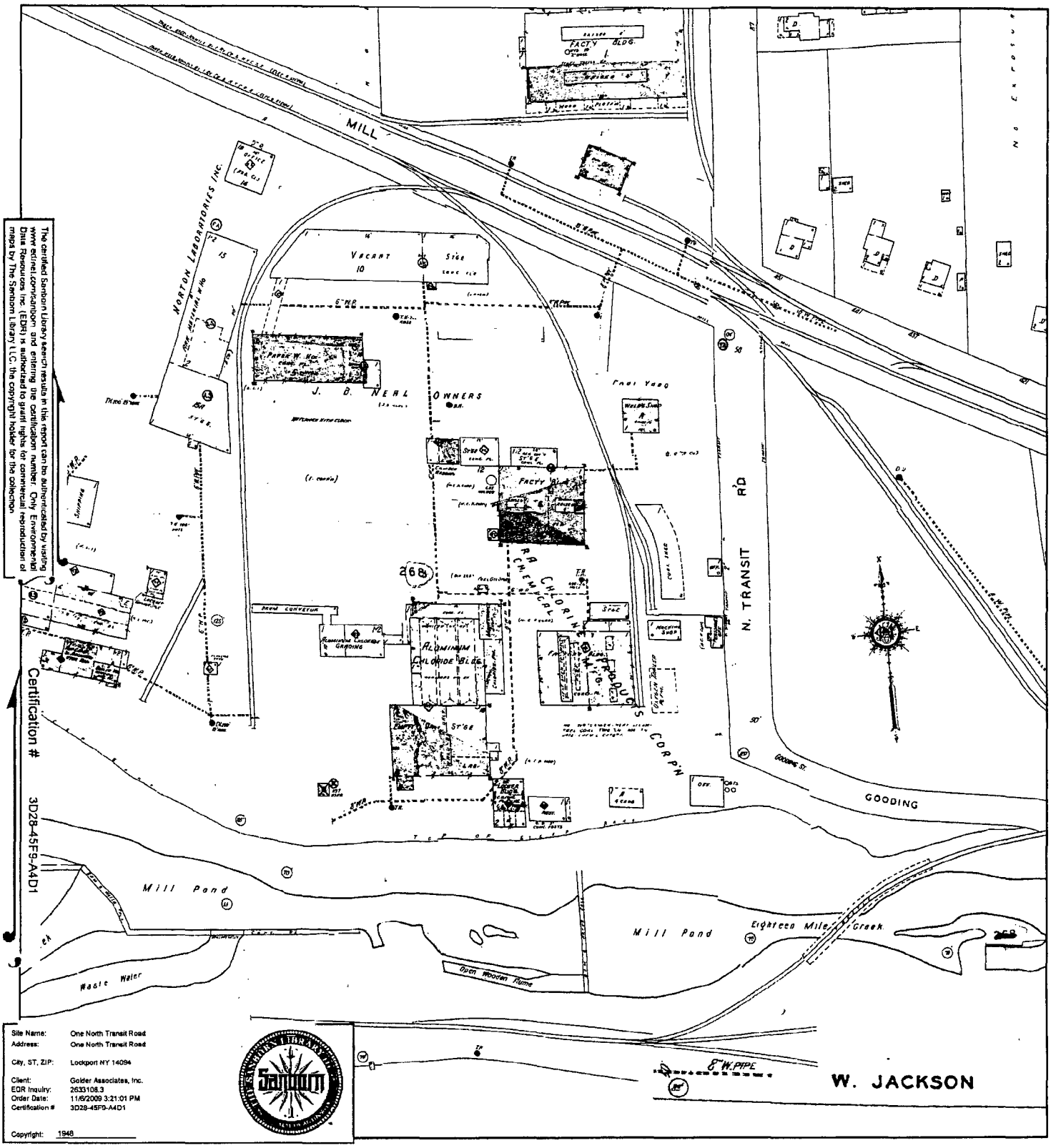
Volume 1, Sheet 24
Volume 1, Sheet 25
Volume 1, Sheet 32
Volume 1, Sheet 6

0 Feet 150 300 600

N

VDM01784

1948 Certified Sanborn Map



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Address:	One North Transit Road
City, ST, ZIP:	Lockport NY 14094
Client:	Golder Associates, Inc.
EDR Inquiry:	2633108.3
Order Date:	11/6/2009 3:21:01 PM
Certification #	3D28-45F9-A4D1
Copyright:	1948

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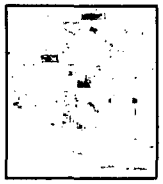
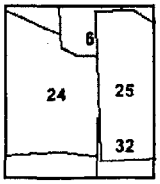




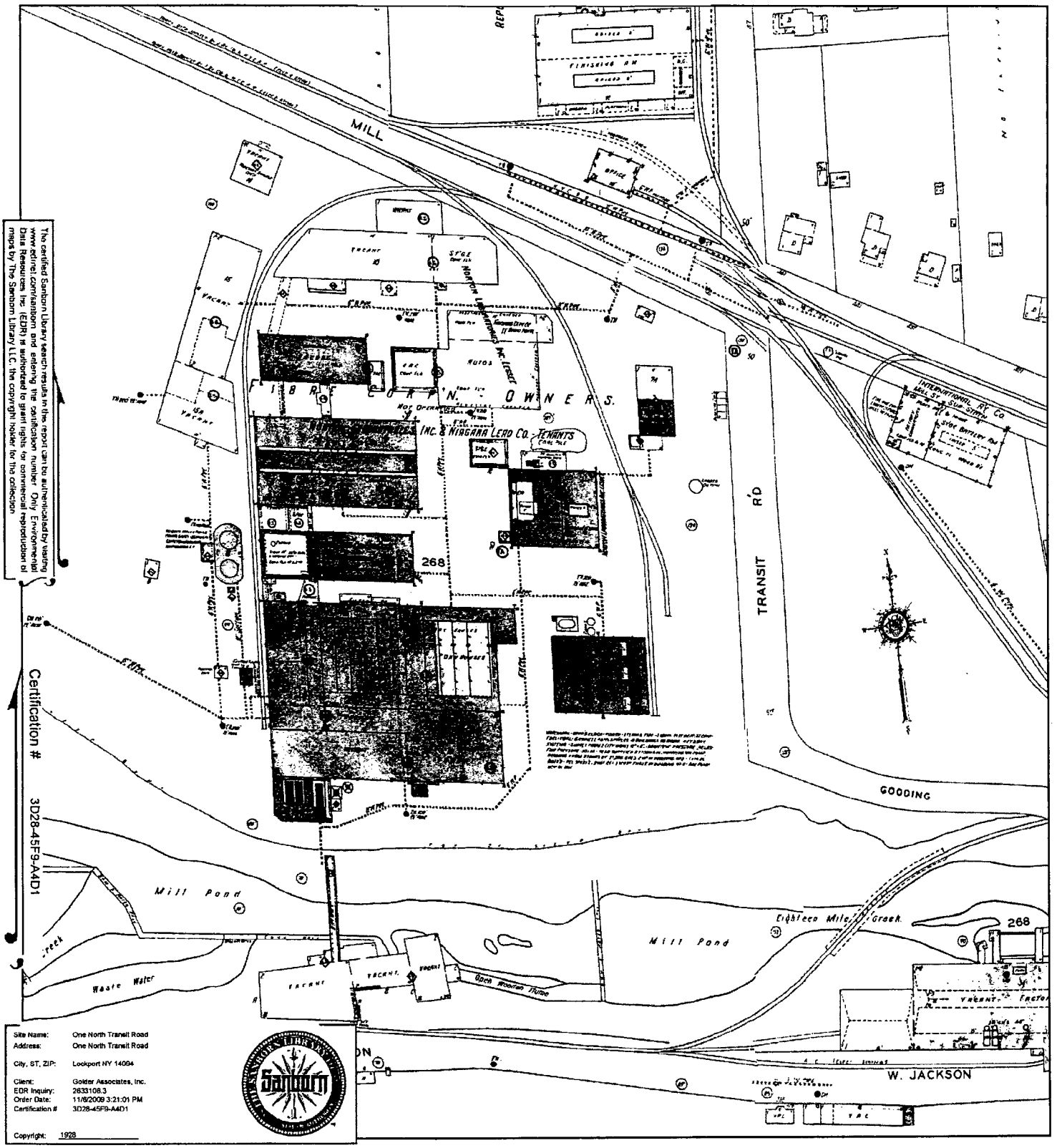
Volume 1, Sheet 24
Volume 1, Sheet 32
Volume 1, Sheet 6
Volume 1, Sheet 25

0 Feet 150 300 600

N

VDM01785

1928 Certified Sanborn Map



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Address:	One North Transit Road
City, ST, ZIP:	Lockport NY 14094
Client:	Golder Associates, Inc.
EDR Inquiry:	2633108.3
Order Date:	11/6/2009 3:21:01 PM
Certification #	3D28-45F9-A4D1
Copyright:	1928

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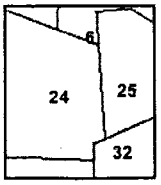


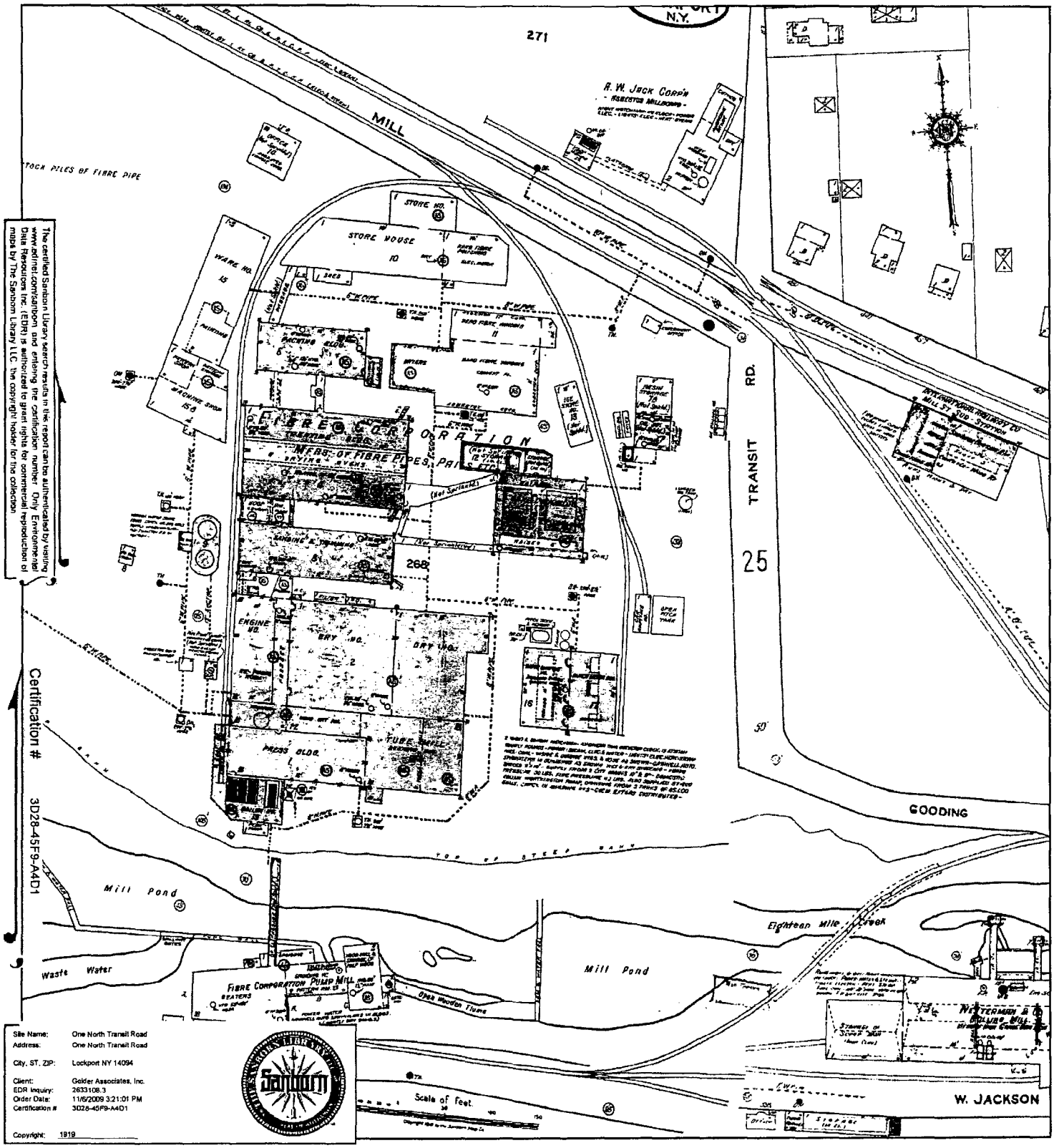
Volume 1, Sheet 6
Volume 1, Sheet 24
Volume 1, Sheet 25
Volume 1, Sheet 32

0 Feet 150 300 600

N

VDM01786

1919 Certified Sanborn Map



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Certification # 3D28-45F9-A4D1

Site Name:	One North Transit Road
Address:	One North Transit Road
City, ST, ZIP:	Lockport NY 14094
Client:	Golder Associates, Inc.
EDR Inquiry:	2633108.3
Order Date:	11/5/2009 3:21:01 PM
Certification #	3D28-45F9-A4D1

Copyright: 1919

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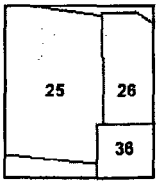


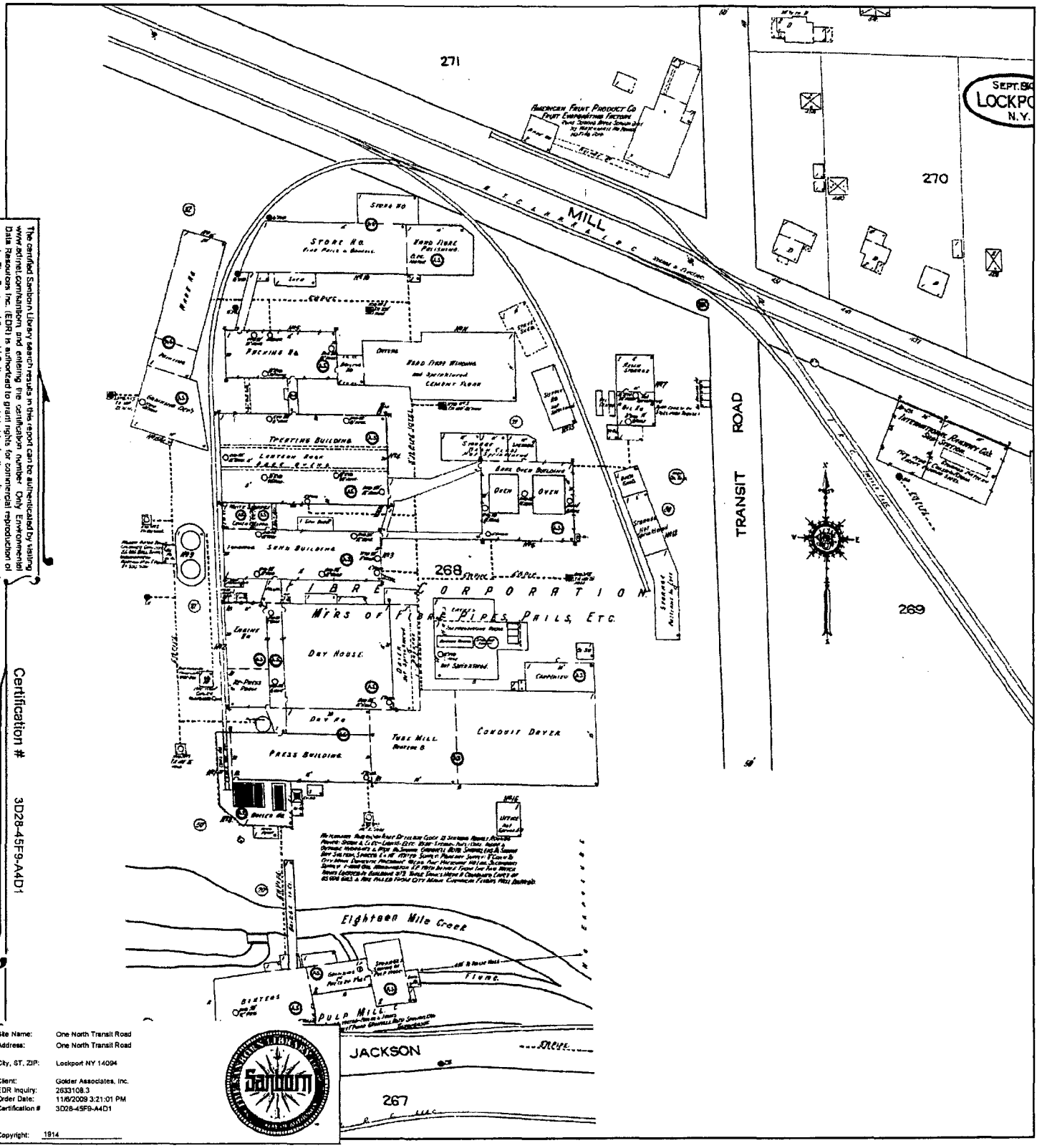
Volume 1, Sheet 25
Volume 1, Sheet 26
Volume 1, Sheet 36

0 Feet 150 300 600

N

VDM01787

1914 Certified Sanborn Map



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Site Name:	One North Transit Road
Address:	One North Transit Road
City, ST, ZIP:	Lockport NY 14094
Client:	Golder Associates, Inc.
EDR Inquiry:	2633108.3
Order Date:	11/6/2009 3:21:01 PM
Certification #	3D28-45F9-A4D1
Copyright:	1914

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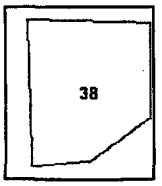
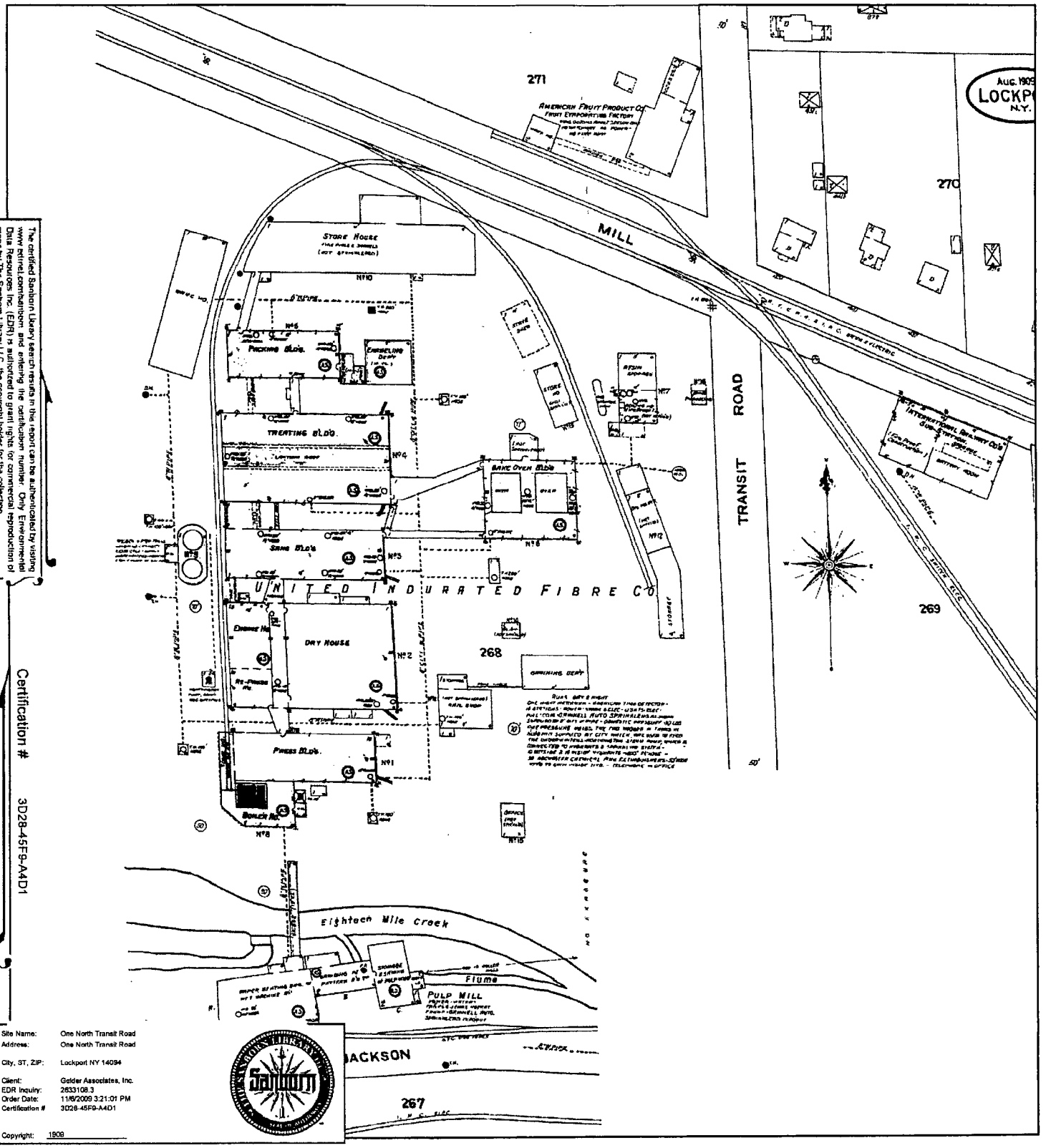


Volume 1, Sheet 38

0 Feet 150 300 600

N

1909 Certified Sanborn Map



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Site Name:	One North Transit Road
Address:	One North Transit Road
City, ST, ZIP:	Lockport NY 14094
Client:	Golder Associates, Inc.
EDR Inquiry:	2633108.3
Order Date:	11/6/2009 3:21:01 PM
Certification #	3D28-45F9-A4D1
Copyright:	1909

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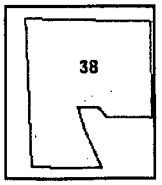
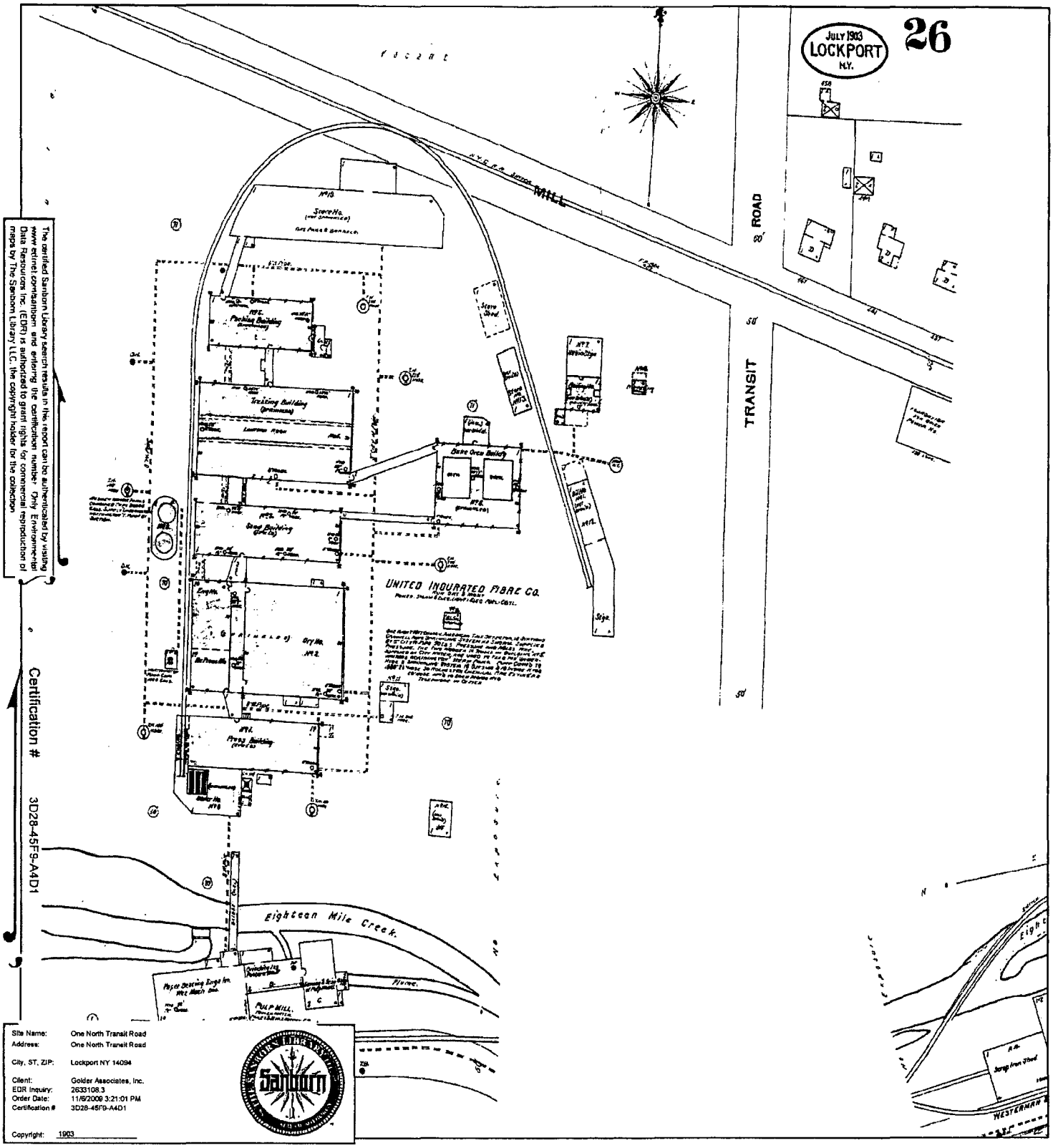


Volume 1, Sheet 38

N

1903 Certified Sanborn Map



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Address:	One North Transit Road
City, ST, ZIP:	Lockport NY 14094
Client:	Golder Associates, Inc.
EDR Inquiry:	2633108.3
Order Date:	11/6/2009 3:21:01 PM
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Copyright:	1903

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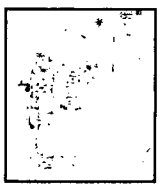
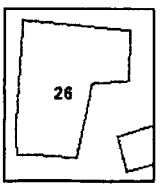


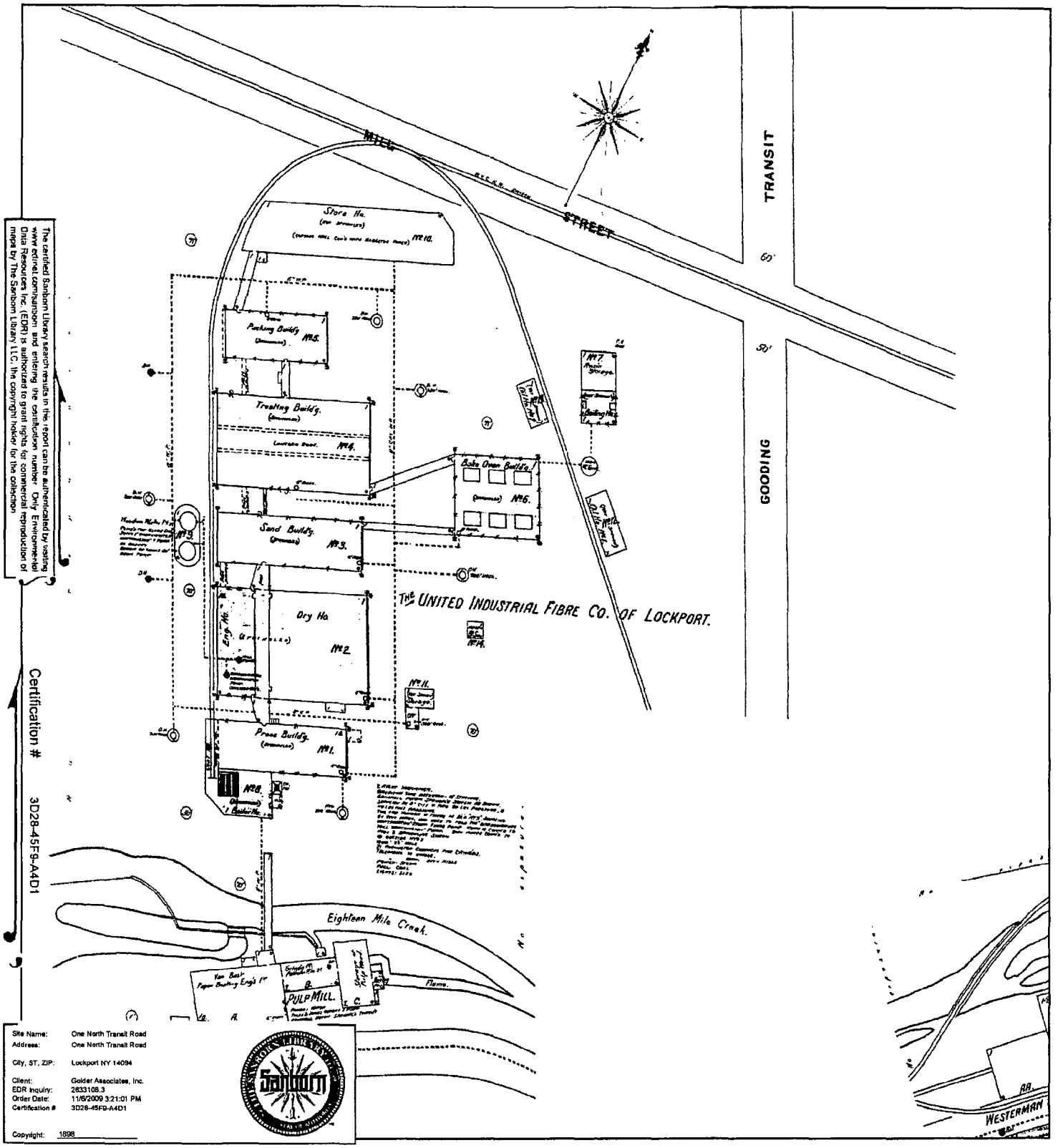


Volume 1, Sheet 26

N

VDM01790

1898 Certified Sanborn Map



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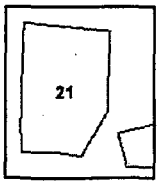
Certification # 3D28-45F9-A4D1

Site Name:	One North Transit Road
Address:	One North Transit Road
City, ST, ZIP:	Lockport NY 14094
Client:	Golder Associates, Inc.
EDR Inquiry:	2633108.3
Order Date:	11/5/2009 3:21:01 PM
Certification #	3D28-45F9-A4D1
Copyright:	1898

This Certified Sanborn Map combines the following sheets (thumbnails on page 3).



Volume 1, Sheet 21

0 Feet 150 300 600

N

ATTACHMENT B
AERIAL PHOTOGRAPHS

One North Transit Road
One North Transit Road
Lockport, NY 14094

Inquiry Number: 2633108.4
November 10, 2009

The EDR Aerial Photo Decade Package

EDR® Environmental Data Resources Inc

440 Wheelers Farms Road
Milford, CT 06461
800.352.0050
www.edrnet.com

EDR Aerial Photo Decade Package

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Date EDR Searched Historical Sources:

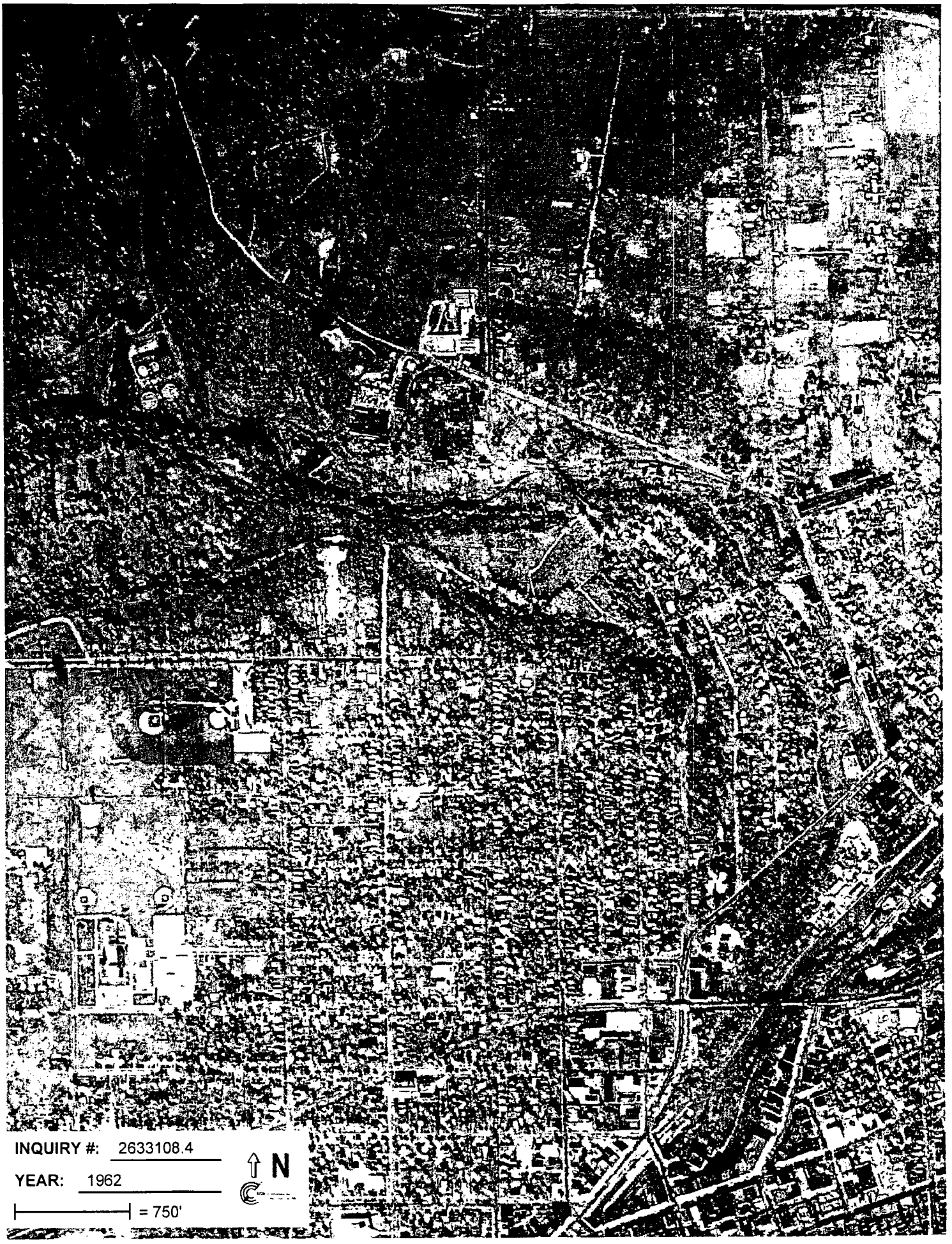
Aerial Photography November 10, 2009

Target Property:

One North Transit Road

Lockport, NY 14094

Year	*Scale*	*Details*	*Source*
1962	Aerial Photograph. Scale: 1"=750'	Panel #: 2443078-B6/Flight Date: October 19, 1962	EDR
1972	Aerial Photograph. Scale: 1"=500'	Panel #: 2443078-B6/Flight Date: May 13, 1972	EDR
1985	Aerial Photograph. Scale: 1"=1000'	Panel #: 2443078-B6/Flight Date: May 03, 1985	EDR
1995	Aerial Photograph. Scale: 1"=750'	Panel #: 2443078-B6/Flight Date: March 28, 1995	EDR
2006	Aerial Photograph. 1" = 604'	Flight Year: 2006	EDR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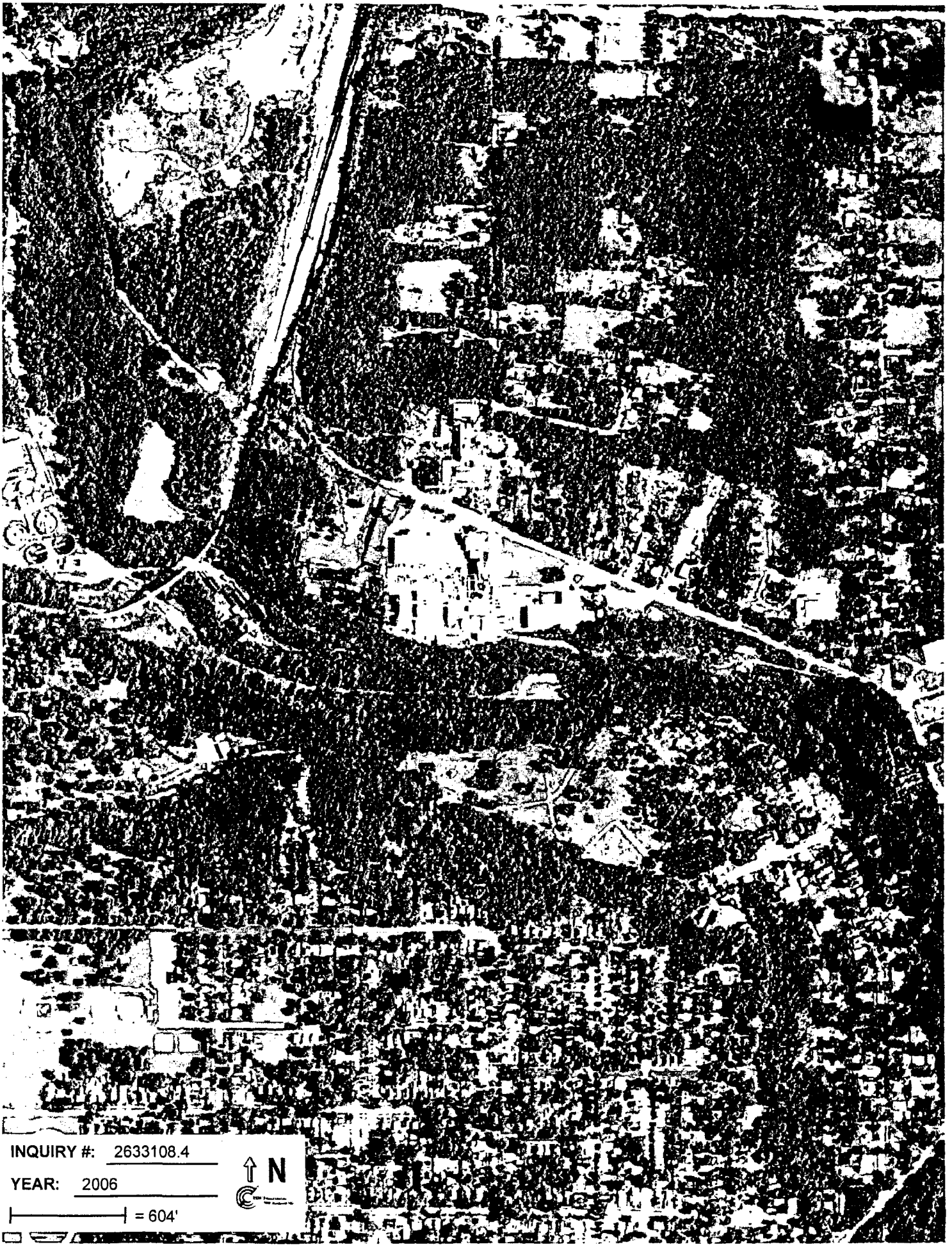
YEAR: 1962
= 750'
N

INQUIRY #: 2633108.4
YEAR: 1972
= 500'
N

VDM01798

INQUIRY #: 2633108.4
YEAR: 1995
= 750'
N



VDM01800

ATTACHMENT C

DNAPL ANALYSIS REPORT (TESTAMERICA, DECEMBER 2009)

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

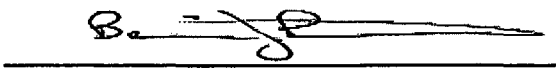
Analytical Report

Work Order: RSK0944

Project Description
Golder - Vandermark/Isochem site

For:

Pat Martin
Golder Associates, Inc. - Niagara Falls, NY
2221 Niagara Falls Blvd., Ste 9
Niagara Falls, NY 14304



Brian Fischer
Project Manager
Brian.Fischer@testamericainc.com
Thursday, December 10, 2009

The test results in this report meet all NELAP requirements for analytes for which accreditation is required or available. Any exception to NELAP requirements are noted in this report. Persuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. All questions regarding this test report should be directed to the TestAmerica Project manager who has signed this report.

Golder Associates, Inc. - Niagara Falls, NY
2221 Niagara Falls Blvd., Ste 9
Niagara Falls, NY 14304

Work Order: RSK0944

Project: Golder - Vandermark/Isochem site
Project Number: [none]

Received: 11/19/09
Reported: 12/10/09 09:29

TestAmerica Buffalo
Current Certifications

As of 1/27/2009

STATE	Program	Cert # / Lab ID
Arkansas	CWA, RCRA, SOIL	88-0686
California*	NELAP CWA, RCRA	01169CA
Connecticut	SDWA, CWA, RCRA, SOIL	PH-0568
Florida*	NELAP CWA, RCRA	E87672
Georgia*	SDWA,NELAP CWA, RCRA	956
Illinois*	NELAP SDWA, CWA, RCRA	200003
Iowa	SW/CS	374
Kansas*	NELAP SDWA, CWA, RCRA	E-10187
Kentucky	SDWA	90029
Kentucky UST	UST	30
Louisiana*	NELAP CWA, RCRA	2031
Maine	SDWA, CWA	NY0044
Maryland	SDWA	294
Massachusetts	SDWA, CWA	M-NY044
Michigan	SDWA	9937
Minnesota	SDWA,CWA, RCRA	036-999-337
New Hampshire*	NELAP SDWA, CWA	233701
New Jersey*	NELAP,SDWA, CWA, RCRA,	NY455
New York*	NELAP, AIR, SDWA, CWA, RCRA,CLP	10026
Oklahoma	CWA, RCRA	9421
Pennsylvania*	NELAP CWA,RCRA	68-00281
Tennessee	SDWA	02970
Texas*	NELAP CWA, RCRA	T104704412-08-TX
USDA	FOREIGN SOIL PERMIT	S-41579
USDOE	Department of Energy	DOECAP-STB
Virginia	SDWA	278
Washington*	NELAP CWA,RCRA	C1677
Wisconsin	CWA, RCRA	998310390
West Virginia	CWA,RCRA	252

*As required under the indicated accreditation, the test results in this report meet all NELAP requirements for parameters for which accre ditation is required or available. Any exceptions to NELAP requirements are noted in this report.

Golder Associates, Inc. - Niagara Falls, NY
2221 Niagara Falls Blvd., Ste 9
Niagara Falls, NY 14304

Work Order: RSK0944

Project: Golder - Vandermark/Isochem site
Project Number: [none]

Received: 11/19/09
Reported: 12/10/09 09:29

CASE NARRATIVE

According to 40CFR Part 136.3, pH, Chlorine Residual, Dissolved Oxygen, Sulfite, and Temperature analyses are to be performed immediately after aqueous sample collection. When these parameters are not indicated as field (e.g. field-pH), they were not analyzed immediately, but as soon as possible after laboratory receipt.

A pertinent document is appended to this report, 1 page, is included and is an integral part of this report.

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TestAmerica Laboratories, Inc. certifies that the analytical results contained herein apply only to the samples tested as received by our Laboratory.

Golder Associates, Inc. - Niagara Falls, NY
2221 Niagara Falls Blvd., Ste 9
Niagara Falls, NY 14304

Work Order: RSK0944

Project: Golder - Vandermark/Isochem site
Project Number: [none]

Received: 11/19/09
Reported: 12/10/09 09:29

DATA QUALIFIERS AND DEFINITIONS

D04	Dilution required due to high levels of non-target compounds
D12	Dilution required due to sample viscosity
H8	The sample was extracted past the holding time.
J	Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL). Concentrations within this range are estimated.
L	Laboratory Control Sample and/or Laboratory Control Sample Duplicate recovery was above the acceptance limits. Analyte not detected, data not impacted.
L1	Laboratory Control Sample and/or Laboratory Control Sample Duplicate recovery was above acceptance limits.
R2	The RPD exceeded the acceptance limit.
W1	Sample was prepared and analyzed utilizing the medium level extraction.
Z3	The sample required a dilution due to the nature of the sample matrix. Because of this dilution, the surrogate spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.
NR	Any inclusion of NR indicates that the project specific requirements do not require reporting estimated values below the laboratory reporting limit.

ADDITIONAL COMMENTS

Results are reported on a wet weight basis unless otherwise noted.

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Project: Golder - Vandermark/Isochem site
Project Number: [none]

Received: 11/19/09
Reported: 12/10/09 09:29

Executive Summary - Detections

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
Sample ID: RSK0944-01 (VANDEMARK DNAPL - Waste)						**Sampled: 11/18/09 14:30**		**Recvd: 11/19/09 17:45**		
Volatile Organic Compounds by EPA 8260B										
Ethylbenzene	**460**	W1, D04,J	560	38	ug/kg dry	5.00	11/30/09 22:40	TWS	9K30023	8260B
Xylenes, total	**370**	W1, D04,J	1100	94	ug/kg dry	5.00	11/30/09 22:40	TWS	9K30023	8260B
Semivolatile Organics by GC/MS										
2-Methylnaphthalene	**1500000**	H8, D12	280000	3300	ug/kg	100	12/04/09 17:33	MKP	9L03042	8270C
Acenaphthene	**1600000**	H8, D12	280000	3300	ug/kg	100	12/04/09 17:33	MKP	9L03042	8270C
Anthracene	**2000000**	H8, D12	280000	7200	ug/kg	100	12/04/09 17:33	MKP	9L03042	8270C
Benzo[a]anthracene	**2200000**	H8, D12	280000	4800	ug/kg	100	12/04/09 17:33	MKP	9L03042	8270C
Benzo[a]pyrene	**1800000**	H8, D12	280000	6800	ug/kg	100	12/04/09 17:33	MKP	9L03042	8270C
Benzo[b]fluoranthene	**1200000**	H8, D12	280000	5500	ug/kg	100	12/04/09 17:33	MKP	9L03042	8270C
Benzo[g,h,i]perylene	**860000**	H8, D12	280000	3300	ug/kg	100	12/04/09 17:33	MKP	9L03042	8270C
Benzo[k]fluoranthene	**500000**	H8, D12	280000	3200	ug/kg	100	12/04/09 17:33	MKP	9L03042	8270C
Chrysene	**2200000**	H8, D12	280000	2800	ug/kg	100	12/04/09 17:33	MKP	9L03042	8270C
Fluoranthene	**3100000**	H8, D12	280000	4000	ug/kg	100	12/04/09 17:33	MKP	9L03042	8270C
Fluorene	**1100000**	H8, D12	280000	6500	ug/kg	100	12/04/09 17:33	MKP	9L03042	8270C
Indeno[1,2,3-cd]pyrene	**530000**	H8, D12	280000	7800	ug/kg	100	12/04/09 17:33	MKP	9L03042	8270C
Naphthalene	**1800000**	H8, D12	280000	4700	ug/kg	100	12/04/09 17:33	MKP	9L03042	8270C
Phenanthrene	**6800000**	H8, D12	280000	5800	ug/kg	100	12/04/09 17:33	MKP	9L03042	8270C
Pyrene	**5000000**	H8, D12	280000	1800	ug/kg	100	12/04/09 17:33	MKP	9L03042	8270C
General Chemistry Parameters										
Percent Solids	**77**		0.010	NR	%	1.00	11/23/09 13:36	JRR	9K23026	Dry Weight

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Work Order: RSK0944

Project: Golder - Vandermark/Isochem site
Project Number: [none]

Received: 11/19/09
Reported: 12/10/09 09:29

Sample Summary

Sample Identification	Lab Number	Client Matrix	Date/Time Sampled	Date/Time Received	Sample Qualifiers
VANDEMARK DNAPL	RSK0944-01	Waste	11/18/09 14:30	11/19/09 17:45	

Golder Associates, Inc. - Niagara Falls, NY
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Work Order: RSK0944

Project: Golder - Vandermark/Isochem site
Project Number: [none]

Received: 11/19/09
Reported: 12/10/09 09:29

Analytical Report

Sample ID: RSK0944-01 (VANDEMARK DNAPL - Waste) Sampled: 11/18/09 14:30 Recvd: 11/19/09 17:45

Volatile Organic Compounds by EPA 8260B

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
1,1,1-Trichloroethane	ND	W1, D04	560	41	ug/kg dry	5.00	11/30/09 22:40	TWS	9K30023	8260B
1,1,2,2-Tetrachloroethane	ND	W1, D04	560	91	ug/kg dry	5.00	11/30/09 22:40	TWS	9K30023	8260B
1,1,2-Trichloroethane	ND	W1, D04	560	28	ug/kg dry	5.00	11/30/09 22:40	TWS	9K30023	8260B
1,1,2-Trichlorotrifluoroethane	ND	W1, D04	560	280	ug/kg dry	5.00	11/30/09 22:40	TWS	9K30023	8260B
1,1-Dichloroethane	ND	W1, D04	560	28	ug/kg dry	5.00	11/30/09 22:40	TWS	9K30023	8260B
1,1-Dichloroethene	ND	W1, D04	560	69	ug/kg dry	5.00	11/30/09 22:40	TWS	9K30023	8260B
1,2,4-Trichlorobenzene	ND	W1, D04	560	34	ug/kg dry	5.00	11/30/09 22:40	TWS	9K30023	8260B
1,2-Dibromo-3-chloropropane	ND	W1, D04	560	280	ug/kg dry	5.00	11/30/09 22:40	TWS	9K30023	8260B
1,2-Dibromoethane (EDB)	ND	W1, D04	560	21	ug/kg dry	5.00	11/30/09 22:40	TWS	9K30023	8260B
1,2-Dichlorobenzene	ND	W1, D04	560	44	ug/kg dry	5.00	11/30/09 22:40	TWS	9K30023	8260B
1,2-Dichloroethane	ND	W1, D04	560	28	ug/kg dry	5.00	11/30/09 22:40	TWS	9K30023	8260B
1,2-Dichloropropane	ND	W1, D04	560	280	ug/kg dry	5.00	11/30/09 22:40	TWS	9K30023	8260B
1,3-Dichlorobenzene	ND	W1, D04	560	29	ug/kg dry	5.00	11/30/09 22:40	TWS	9K30023	8260B
1,4-Dichlorobenzene	ND	W1, D04	560	78	ug/kg dry	5.00	11/30/09 22:40	TWS	9K30023	8260B
2-Butanone (MEK)	ND	W1, D04	2800	200	ug/kg dry	5.00	11/30/09 22:40	TWS	9K30023	8260B
2-Hexanone	ND	W1, D04	2800	190	ug/kg dry	5.00	11/30/09 22:40	TWS	9K30023	8260B
4-Methyl-2-pentanone (MIBK)	ND	W1, D04	2800	180	ug/kg dry	5.00	11/30/09 22:40	TWS	9K30023	8260B
Acetone	ND	W1, D04	2800	120	ug/kg dry	5.00	11/30/09 22:40	TWS	9K30023	8260B
Benzene	ND	W1, D04	560	27	ug/kg dry	5.00	11/30/09 22:40	TWS	9K30023	8260B
Bromodichloromethane	ND	W1, D04	560	29	ug/kg dry	5.00	11/30/09 22:40	TWS	9K30023	8260B
Bromoform	ND	W1, D04	560	280	ug/kg dry	5.00	11/30/09 22:40	TWS	9K30023	8260B
Bromomethane	ND	W1, D04	560	120	ug/kg dry	5.00	11/30/09 22:40	TWS	9K30023	8260B
Carbon disulfide	ND	W1, D04	560	48	ug/kg dry	5.00	11/30/09 22:40	TWS	9K30023	8260B
Carbon Tetrachloride	ND	W1, D04	560	54	ug/kg dry	5.00	11/30/09 22:40	TWS	9K30023	8260B
Chlorobenzene	ND	W1, D04	560	74	ug/kg dry	5.00	11/30/09 22:40	TWS	9K30023	8260B
Chlorodibromomethane	ND	W1, D04	560	31	ug/kg dry	5.00	11/30/09 22:40	TWS	9K30023	8260B
Chloroethane	ND	W1, D04	560	240	ug/kg dry	5.00	11/30/09 22:40	TWS	9K30023	8260B
Chloroform	ND	W1, D04	560	34	ug/kg dry	5.00	11/30/09 22:40	TWS	9K30023	8260B
Chloromethane	ND	W1, D04	560	34	ug/kg dry	5.00	11/30/09 22:40	TWS	9K30023	8260B
cis-1,2-Dichloroethene	ND	W1, D04	560	28	ug/kg dry	5.00	11/30/09 22:40	TWS	9K30023	8260B
cis-1,3-Dichloropropene	ND	W1, D04	560	31	ug/kg dry	5.00	11/30/09 22:40	TWS	9K30023	8260B
Cyclohexane	ND	W1, D04	560	26	ug/kg dry	5.00	11/30/09 22:40	TWS	9K30023	8260B
Dichlorodifluoromethane	ND	W1, D04	560	46	ug/kg dry	5.00	11/30/09 22:40	TWS	9K30023	8260B
Ethylbenzene	460	W1, D04,J	560	38	ug/kg dry	5.00	11/30/09 22:40	TWS	9K30023	8260B
Isopropylbenzene	ND	W1, D04	560	84	ug/kg dry	5.00	11/30/09 22:40	TWS	9K30023	8260B
Methyl Acetate	ND	W1, D04	560	30	ug/kg dry	5.00	11/30/09 22:40	TWS	9K30023	8260B
Methyl tert-Butyl Ether	ND	W1, D04	560	55	ug/kg dry	5.00	11/30/09 22:40	TWS	9K30023	8260B
Methylcyclohexane	ND	W1, D04	560	36	ug/kg dry	5.00	11/30/09 22:40	TWS	9K30023	8260B
Methylene Chloride	ND	W1, D04	560	110	ug/kg dry	5.00	11/30/09 22:40	TWS	9K30023	8260B
Styrene	ND	W1, D04	560	28	ug/kg dry	5.00	11/30/09 22:40	TWS	9K30023	8260B
Tetrachloroethene	ND	W1, D04	560	75	ug/kg dry	5.00	11/30/09 22:40	TWS	9K30023	8260B
Toluene	ND	W1, D04	560	43	ug/kg dry	5.00	11/30/09 22:40	TWS	9K30023	8260B
trans-1,2-Dichloroethene	ND	W1, D04	560	58	ug/kg dry	5.00	11/30/09 22:40	TWS	9K30023	8260B
trans-1,3-Dichloropropene	ND	W1, D04	560	27	ug/kg dry	5.00	11/30/09 22:40	TWS	9K30023	8260B
Trichloroethene	ND	W1, D04	560	38	ug/kg dry	5.00	11/30/09 22:40	TWS	9K30023	8260B
Trichlorofluoromethane	ND	W1, D04	560	53	ug/kg dry	5.00	11/30/09 22:40	TWS	9K30023	8260B

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Received: 11/19/09
Reported: 12/10/09 09:29

Analytical Report

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
Sample ID: RSK0944-01 (VANDEMARK DNAPL - Waste) - cont.						**Sampled: 11/18/09 14:30**		**Recvd: 11/19/09 17:45**		
Volatile Organic Compounds by EPA 8260B - cont.										
Vinyl chloride	ND	W1, D04	1100	68	ug/kg dry	5.00	11/30/09 22:40	TWS	9K30023	8260B
Xylenes, total	**370**	W1, D04,J	1100	94	ug/kg dry	5.00	11/30/09 22:40	TWS	9K30023	8260B
1,2-Dichloroethane-d4	*104 %*	*W1, D04*	*Surr Limits: (10-190%)*				*11/30/09 22:40*	*TWS*	*9K30023*	*8260B*
4-Bromofluorobenzene	*86 %*	*W1, D04*	*Surr Limits: (10-190%)*				*11/30/09 22:40*	*TWS*	*9K30023*	*8260B*
Toluene-d8	*93 %*	*W1, D04*	*Surr Limits: (10-190%)*				*11/30/09 22:40*	*TWS*	*9K30023*	*8260B*
Semivolatile Organics by GC/MS										
2,4,5-Trichlorophenol	ND	H8, D12	280000	62000	ug/kg	100	12/04/09 17:33	MKP	9L03042	8270C
2,4,6-Trichlorophenol	ND	H8, D12,L	280000	18000	ug/kg	100	12/04/09 17:33	MKP	9L03042	8270C
2,4-Dichlorophenol	ND	H8, D12	280000	15000	ug/kg	100	12/04/09 17:33	MKP	9L03042	8270C
2,4-Dimethylphenol	ND	H8, D12	280000	77000	ug/kg	100	12/04/09 17:33	MKP	9L03042	8270C
2,4-Dinitrophenol	ND	H8, D12	550000	98000	ug/kg	100	12/04/09 17:33	MKP	9L03042	8270C
2,4-Dinitrotoluene	ND	H8, D12,L	280000	43000	ug/kg	100	12/04/09 17:33	MKP	9L03042	8270C
2,6-Dinitrotoluene	ND	H8, D12	280000	68000	ug/kg	100	12/04/09 17:33	MKP	9L03042	8270C
2-Chloronaphthalene	ND	H8, D12	280000	18000	ug/kg	100	12/04/09 17:33	MKP	9L03042	8270C
2-Chlorophenol	ND	H8, D12	280000	14000	ug/kg	100	12/04/09 17:33	MKP	9L03042	8270C
2-Methylnaphthalene	**1500000**	H8, D12	280000	3300	ug/kg	100	12/04/09 17:33	MKP	9L03042	8270C
2-Methylphenol	ND	H8, D12	280000	8700	ug/kg	100	12/04/09 17:33	MKP	9L03042	8270C
2-Nitroaniline	ND	H8, D12	550000	90000	ug/kg	100	12/04/09 17:33	MKP	9L03042	8270C
2-Nitrophenol	ND	H8, D12	280000	13000	ug/kg	100	12/04/09 17:33	MKP	9L03042	8270C
3 & 4 Methylphenol	ND	H8, D12	550000	16000	ug/kg	100	12/04/09 17:33	MKP	9L03042	8270C
3,3'-Dichlorobenzidine	ND	H8, D12,L	280000	250000	ug/kg	100	12/04/09 17:33	MKP	9L03042	8270C
3-Nitroaniline	ND	H8, D12	550000	65000	ug/kg	100	12/04/09 17:33	MKP	9L03042	8270C
4,6-Dinitro-2-methylphenol	ND	H8, D12	550000	97000	ug/kg	100	12/04/09 17:33	MKP	9L03042	8270C
4-Bromophenyl phenyl ether	ND	H8, D12	280000	90000	ug/kg	100	12/04/09 17:33	MKP	9L03042	8270C
4-Chloro-3-methylphenol	ND	H8, D12	280000	12000	ug/kg	100	12/04/09 17:33	MKP	9L03042	8270C
4-Chloroaniline	ND	H8, D12	280000	83000	ug/kg	100	12/04/09 17:33	MKP	9L03042	8270C
4-Chlorophenyl phenyl ether	ND	H8, D12	280000	6000	ug/kg	100	12/04/09 17:33	MKP	9L03042	8270C
4-Nitroaniline	ND	H8, D12	550000	32000	ug/kg	100	12/04/09 17:33	MKP	9L03042	8270C
4-Nitrophenol	ND	H8, D12,L	550000	68000	ug/kg	100	12/04/09 17:33	MKP	9L03042	8270C
Acenaphthene	**1600000**	H8, D12	280000	3300	ug/kg	100	12/04/09 17:33	MKP	9L03042	8270C
Acenaphthylene	ND	H8, D12	280000	2300	ug/kg	100	12/04/09 17:33	MKP	9L03042	8270C
Acetophenone	ND	H8, D12,L	280000	14000	ug/kg	100	12/04/09 17:33	MKP	9L03042	8270C
Anthracene	**2000000**	H8, D12	280000	7200	ug/kg	100	12/04/09 17:33	MKP	9L03042	8270C
Atrazine	ND	H8, D12	280000	12000	ug/kg	100	12/04/09 17:33	MKP	9L03042	8270C
Benzaldehyde	ND	H8, D12,L	280000	32000	ug/kg	100	12/04/09 17:33	MKP	9L03042	8270C
Benzo[a]anthracene	**2200000**	H8, D12	280000	4800	ug/kg	100	12/04/09 17:33	MKP	9L03042	8270C
Benzo[a]pyrene	**1800000**	H8, D12	280000	6800	ug/kg	100	12/04/09 17:33	MKP	9L03042	8270C
Benzo[b]fluoranthene	**1200000**	H8, D12	280000	5500	ug/kg	100	12/04/09 17:33	MKP	9L03042	8270C
Benzo[g,h,i]perylene	**860000**	H8, D12	280000	3300	ug/kg	100	12/04/09 17:33	MKP	9L03042	8270C
Benzo[k]fluoranthene	**500000**	H8, D12	280000	3200	ug/kg	100	12/04/09 17:33	MKP	9L03042	8270C
Biphenyl	ND	H8, D12	280000	18000	ug/kg	100	12/04/09 17:33	MKP	9L03042	8270C
Bis(2-chloroethoxy)methane	ND	H8, D12	280000	15000	ug/kg	100	12/04/09 17:33	MKP	9L03042	8270C
Bis(2-chloroethyl)ether	ND	H8, D12	280000	25000	ug/kg	100	12/04/09 17:33	MKP	9L03042	8270C
Bis(2-chloroisopropyl) ether	ND	H8, D12	280000	30000	ug/kg	100	12/04/09 17:33	MKP	9L03042	8270C

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Received: 11/19/09
Reported: 12/10/09 09:29

Analytical Report

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
Sample ID: RSK0944-01 (VANDEMARK DNAPL - Waste) - cont.						**Sampled: 11/18/09 14:30**		**Recvd: 11/19/09 17:45**		
Semivolatile Organics by GC/MS - cont.										
Bis(2-ethylhexyl) phthalate	ND	H8, D12	280000	90000	ug/kg	100	12/04/09 17:33	MKP	9L03042	8270C
Butyl benzyl phthalate	ND	H8, D12	280000	75000	ug/kg	100	12/04/09 17:33	MKP	9L03042	8270C
Caprolactam	ND	H8, D12	280000	120000	ug/kg	100	12/04/09 17:33	MKP	9L03042	8270C
Carbazole	ND	H8, D12	280000	3300	ug/kg	100	12/04/09 17:33	MKP	9L03042	8270C
Chrysene	**2200000**	H8, D12	280000	2800	ug/kg	100	12/04/09 17:33	MKP	9L03042	8270C
Dibenz[a,h]anthracene	ND	H8, D12	280000	3300	ug/kg	100	12/04/09 17:33	MKP	9L03042	8270C
Dibenzofuran	ND	H8, D12	280000	3000	ug/kg	100	12/04/09 17:33	MKP	9L03042	8270C
Diethyl phthalate	ND	H8, D12	280000	8500	ug/kg	100	12/04/09 17:33	MKP	9L03042	8270C
Dimethyl phthalate	ND	H8, D12	280000	7300	ug/kg	100	12/04/09 17:33	MKP	9L03042	8270C
Di-n-butyl phthalate	ND	H8, D12	280000	97000	ug/kg	100	12/04/09 17:33	MKP	9L03042	8270C
Di-n-octyl phthalate	ND	H8, D12	280000	6500	ug/kg	100	12/04/09 17:33	MKP	9L03042	8270C
Fluoranthene	**3100000**	H8, D12	280000	4000	ug/kg	100	12/04/09 17:33	MKP	9L03042	8270C
Fluorene	**1100000**	H8, D12	280000	6500	ug/kg	100	12/04/09 17:33	MKP	9L03042	8270C
Hexachlorobenzene	ND	H8, D12	280000	14000	ug/kg	100	12/04/09 17:33	MKP	9L03042	8270C
Hexachlorobutadiene	ND	H8, D12	280000	14000	ug/kg	100	12/04/09 17:33	MKP	9L03042	8270C
Hexachlorocyclopentadiene	ND	H8, D12	280000	85000	ug/kg	100	12/04/09 17:33	MKP	9L03042	8270C
Hexachloroethane	ND	H8, D12	280000	22000	ug/kg	100	12/04/09 17:33	MKP	9L03042	8270C
Indeno[1,2,3-cd]pyrene	**530000**	H8, D12	280000	7800	ug/kg	100	12/04/09 17:33	MKP	9L03042	8270C
Isophorone	ND	H8, D12	280000	14000	ug/kg	100	12/04/09 17:33	MKP	9L03042	8270C
Naphthalene	**1800000**	H8, D12	280000	4700	ug/kg	100	12/04/09 17:33	MKP	9L03042	8270C
Nitrobenzene	ND	H8, D12	280000	12000	ug/kg	100	12/04/09 17:33	MKP	9L03042	8270C
N-Nitrosodi-n-propylamine	ND	H8, D12	280000	22000	ug/kg	100	12/04/09 17:33	MKP	9L03042	8270C
N-Nitrosodiphenylamine	ND	H8, D12,L	280000	15000	ug/kg	100	12/04/09 17:33	MKP	9L03042	8270C
Pentachlorophenol	ND	H8, D12	550000	97000	ug/kg	100	12/04/09 17:33	MKP	9L03042	8270C
Phenanthrene	**6800000**	H8, D12	280000	5800	ug/kg	100	12/04/09 17:33	MKP	9L03042	8270C
Phenol	ND	H8, D12	280000	30000	ug/kg	100	12/04/09 17:33	MKP	9L03042	8270C
Pyrene	**5000000**	H8, D12	280000	1800	ug/kg	100	12/04/09 17:33	MKP	9L03042	8270C
2,4,6-Tribromophenol	*	*H8, D12,Z3*	*Surr Limits: (39-146%)*				*12/04/09 17:33*	*MKP*	*9L03042*	*8270C*
2-Fluorobiphenyl	*92 %*	*H8, D12*	*Surr Limits: (37-120%)*				*12/04/09 17:33*	*MKP*	*9L03042*	*8270C*
2-Fluorophenol	*63 %*	*H8, D12*	*Surr Limits: (18-120%)*				*12/04/09 17:33*	*MKP*	*9L03042*	*8270C*
Nitrobenzene-d5	*78 %*	*H8, D12*	*Surr Limits: (34-132%)*				*12/04/09 17:33*	*MKP*	*9L03042*	*8270C*
Phenol-d5	*77 %*	*H8, D12*	*Surr Limits: (11-120%)*				*12/04/09 17:33*	*MKP*	*9L03042*	*8270C*
p-Terphenyl-d14	*88 %*	*H8, D12*	*Surr Limits: (58-147%)*				*12/04/09 17:33*	*MKP*	*9L03042*	*8270C*
General Chemistry Parameters										
Percent Solids	**77**		0.010	NR	%	1.00	11/23/09 13:36	JRR	9K23026	Dry Weight

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SAMPLE EXTRACTION DATA

Parameter	Batch	Lab Number	Wt/Vol Extracte	Units	Extract Volume	Units	Date Prepared	Lab Tech	Extraction Method
General Chemistry Parameters									
Dry Weight	9K23026	RSK0944-01	10.00	g	10.00	g	11/23/09 10:35	JRR	Dry Weight
Semivolatile Organics by GC/MS									
8270C	9L03042	RSK0944-01	0.12	g	1.00	mL	12/03/09 21:00	KMB	3580A
Volatile Organic Compounds by EPA 8260B									
8260B	9K30023	RSK0944-01	5.78	g	500.00	mL	11/30/09 13:09	TRB	Methanol Prep

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LABORATORY QC DATA

Analyte	Source Result	Spike Level	RL	MDL	Units	Result	% REC	% REC Limits	% RPD	RPD Limit	Data Qualifiers
Volatile Organic Compounds by EPA 8260B											
Blank Analyzed: 11/30/09 (Lab Number:9K30023-BLK1, Batch: 9K30023)											
1,1,1-Trichloroethane			98	7.1	ug/kg wet	ND					
1,1,2,2-Tetrachloroethane			98	16	ug/kg wet	ND					
1,1,2-Trichloroethane			98	4.9	ug/kg wet	ND					
1,1,2-Trichlorotrifluoroethane			98	49	ug/kg wet	ND					
1,1-Dichloroethane			98	4.9	ug/kg wet	ND					
1,1-Dichloroethene			98	12	ug/kg wet	ND					
1,2,4-Trichlorobenzene			98	6.0	ug/kg wet	ND					
1,2-Dibromo-3-chloropropane			98	49	ug/kg wet	ND					
1,2-Dibromoethane (EDB)			98	3.7	ug/kg wet	ND					
1,2-Dichlorobenzene			98	7.6	ug/kg wet	ND					
1,2-Dichloroethane			98	4.9	ug/kg wet	ND					
1,2-Dichloropropane			98	49	ug/kg wet	ND					
1,3-Dichlorobenzene			98	5.1	ug/kg wet	ND					
1,4-Dichlorobenzene			98	14	ug/kg wet	ND					
2-Butanone (MEK)			490	35	ug/kg wet	270					J
2-Hexanone			490	33	ug/kg wet	ND					
4-Methyl-2-pentanone (MIBK)			490	31	ug/kg wet	ND					
Acetone			490	22	ug/kg wet	ND					
Benzene			98	4.7	ug/kg wet	ND					
Bromodichloromethane			98	5.1	ug/kg wet	ND					
Bromoform			98	49	ug/kg wet	ND					
Bromomethane			98	22	ug/kg wet	ND					
Carbon disulfide			98	8.4	ug/kg wet	ND					
Carbon Tetrachloride			98	9.4	ug/kg wet	ND					
Chlorobenzene			98	13	ug/kg wet	ND					
Chlorodibromomethane			98	5.5	ug/kg wet	ND					
Chloroethane			98	41	ug/kg wet	ND					
Chloroform			98	6.0	ug/kg wet	ND					
Chloromethane			98	5.9	ug/kg wet	ND					
cis-1,2-Dichloroethene			98	4.9	ug/kg wet	ND					
cis-1,3-Dichloropropene			98	5.5	ug/kg wet	ND					
Cyclohexane			98	4.5	ug/kg wet	ND					
Dichlorodifluoromethane			98	8.0	ug/kg wet	ND					
Ethylbenzene			98	6.7	ug/kg wet	ND					
Isopropylbenzene			98	15	ug/kg wet	ND					

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LABORATORY QC DATA

Analyte	Source Result	Spike Level	RL	MDL	Units	Result	% REC	% REC Limits	% RPD	RPD Limit	Data Qualifiers
Volatile Organic Compounds by EPA 8260B											
Blank Analyzed: 11/30/09 (Lab Number:9K30023-BLK1, Batch: 9K30023)											
Methyl Acetate			98	5.3	ug/kg wet	ND					
Methyl tert-Butyl Ether			98	9.6	ug/kg wet	ND					
Methylcyclohexane			98	6.4	ug/kg wet	ND					
Methylene Chloride			98	19	ug/kg wet	42					J
Styrene			98	4.9	ug/kg wet	ND					
Tetrachloroethene			98	13	ug/kg wet	ND					
Toluene			98	7.5	ug/kg wet	ND					
trans-1,2-Dichloroethene			98	10	ug/kg wet	ND					
trans-1,3-Dichloropropene			98	4.7	ug/kg wet	ND					
Trichloroethene			98	6.7	ug/kg wet	ND					
Trichlorofluoromethane			98	9.2	ug/kg wet	ND					
Vinyl chloride			200	12	ug/kg wet	ND					
Xylenes, total			200	16	ug/kg wet	ND					
Surrogate: 1,2-Dichloroethane-d4					*ug/kg wet*		*115*	*10-190*			
Surrogate: 4-Bromofluorobenzene					*ug/kg wet*		*102*	*10-190*			
Surrogate: Toluene-d8					*ug/kg wet*		*115*	*10-190*			
LCS Analyzed: 11/30/09 (Lab Number:9K30023-BS1, Batch: 9K30023)											
1,1-Dichloroethene		2490	100	12	ug/kg wet	2870	115	10-190			
Benzene		2490	100	4.8	ug/kg wet	2800	113	10-190			
Chlorobenzene		2490	100	13	ug/kg wet	2700	108	10-190			
Toluene		2490	100	7.6	ug/kg wet	2720	109	10-190			
Trichloroethene		2490	100	6.8	ug/kg wet	2670	107	10-190			
Surrogate: 1,2-Dichloroethane-d4					*ug/kg wet*		*116*	*10-190*			
Surrogate: 4-Bromofluorobenzene					*ug/kg wet*		*104*	*10-190*			
Surrogate: Toluene-d8					*ug/kg wet*		*116*	*10-190*			

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LABORATORY QC DATA

Analyte	Source Result	Spike Level	RL	MDL	Units	Result	% REC	% REC Limits	% RPD	RPD Limit	Data Qualifiers
Semivolatile Organics by GC/MS											
Blank Analyzed: 12/04/09 (Lab Number:9L03042-BLK1, Batch: 9L03042)											
2,4,5-Trichlorophenol			3400	740	ug/kg	ND					
2,4,6-Trichlorophenol			3400	220	ug/kg	ND					
2,4-Dichlorophenol			3400	180	ug/kg	ND					
2,4-Dimethylphenol			3400	920	ug/kg	ND					
2,4-Dinitrophenol			6600	1200	ug/kg	ND					
2,4-Dinitrotoluene			3400	520	ug/kg	ND					
2,6-Dinitrotoluene			3400	820	ug/kg	ND					
2-Chloronaphthalene			3400	220	ug/kg	ND					
2-Chlorophenol			3400	170	ug/kg	ND					
2-Methylnaphthalene			3400	40	ug/kg	ND					
2-Methylphenol			3400	100	ug/kg	ND					
2-Nitroaniline			6600	1100	ug/kg	ND					
2-Nitrophenol			3400	150	ug/kg	ND					
3 & 4 Methylphenol			6600	190	ug/kg	ND					
3,3'-Dichlorobenzidine			3400	3000	ug/kg	ND					
3-Nitroaniline			6600	780	ug/kg	ND					
4,6-Dinitro-2-methylphenol			6600	1200	ug/kg	ND					
4-Bromophenyl phenyl ether			3400	1100	ug/kg	ND					
4-Chloro-3-methylphenol			3400	140	ug/kg	ND					
4-Chloroaniline			3400	1000	ug/kg	ND					
4-Chlorophenyl phenyl ether			3400	72	ug/kg	ND					
4-Nitroaniline			6600	380	ug/kg	ND					
4-Nitrophenol			6600	820	ug/kg	ND					
Acenaphthene			3400	40	ug/kg	ND					
Acenaphthylene			3400	28	ug/kg	ND					
Acetophenone			3400	170	ug/kg	ND					
Anthracene			3400	86	ug/kg	ND					
Atrazine			3400	150	ug/kg	ND					
Benzaldehyde			3400	380	ug/kg	ND					
Benzo[a]anthracene			3400	58	ug/kg	ND					
Benzo[a]pyrene			3400	82	ug/kg	ND					
Benzo[b]fluoranthene			3400	66	ug/kg	ND					
Benzo[g,h,i]perylene			3400	40	ug/kg	ND					
Benzo[k]fluoranthene			3400	38	ug/kg	ND					
Biphenyl			3400	220	ug/kg	ND					

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LABORATORY QC DATA

Analyte	Source Result	Spike Level	RL	MDL	Units	Result	% REC	% REC Limits	% RPD	RPD Limit	Data Qualifiers
Semivolatile Organics by GC/MS											
Blank Analyzed: 12/04/09 (Lab Number:9L03042-BLK1, Batch: 9L03042)											
Bis(2-chloroethoxy)methane			3400	180	ug/kg	ND					
Bis(2-chloroethyl)ether			3400	300	ug/kg	ND					
Bis(2-chloroisopropyl) ether			3400	360	ug/kg	ND					
Bis(2-ethylhexyl) phthalate			3400	1100	ug/kg	ND					
Butyl benzyl phthalate			3400	900	ug/kg	ND					
Caprolactam			3400	1500	ug/kg	ND					
Carbazole			3400	40	ug/kg	ND					
Chrysene			3400	34	ug/kg	ND					
Dibenz[a,h]anthracene			3400	40	ug/kg	ND					
Dibenzofuran			3400	36	ug/kg	ND					
Diethyl phthalate			3400	100	ug/kg	ND					
Dimethyl phthalate			3400	88	ug/kg	ND					
Di-n-butyl phthalate			3400	1200	ug/kg	ND					
Di-n-octyl phthalate			3400	78	ug/kg	ND					
Fluoranthene			3400	48	ug/kg	ND					
Fluorene			3400	78	ug/kg	ND					
Hexachlorobenzene			3400	170	ug/kg	ND					
Hexachlorobutadiene			3400	170	ug/kg	ND					
Hexachlorocyclopentadiene			3400	1000	ug/kg	ND					
Hexachloroethane			3400	260	ug/kg	ND					
Indeno[1,2,3-cd]pyrene			3400	94	ug/kg	ND					
Isophorone			3400	170	ug/kg	ND					
Naphthalene			3400	56	ug/kg	ND					
Nitrobenzene			3400	150	ug/kg	ND					
N-Nitrosodi-n-propylamine			3400	260	ug/kg	ND					
N-Nitrosodiphenylamine			3400	180	ug/kg	ND					
Pentachlorophenol			6600	1200	ug/kg	ND					
Phenanthrene			3400	70	ug/kg	ND					
Phenol			3400	360	ug/kg	ND					
Pyrene			3400	22	ug/kg	ND					
Surrogate: 2,4,6-Tribromophenol					*ug/kg*		*86*	*39-146*			
Surrogate: 2-Fluorobiphenyl					*ug/kg*		*116*	*37-120*			
Surrogate: 2-Fluorophenol					*ug/kg*		*100*	*18-120*			

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LABORATORY QC DATA

Analyte	Source Result	Spike Level	RL	MDL	Units	Result	% REC	% REC Limits	% RPD	RPD Limit	Data Qualifiers
Semivolatile Organics by GC/MS											
Blank Analyzed: 12/04/09 (Lab Number:9L03042-BLK1, Batch: 9L03042)											
Surrogate: Nitrobenzene-d5					*ug/kg*		*121*	*34-132*			
Surrogate: Phenol-d5					*ug/kg*		*105*	*11-120*			
Surrogate: p-Terphenyl-d14					*ug/kg*		*107*	*58-147*			
LCS Analyzed: 12/04/09 (Lab Number:9L03042-BS1, Batch: 9L03042)											
2,4,5-Trichlorophenol		1000000	3400	740	ug/kg	1180000	118	59-126			
2,4,6-Trichlorophenol		1000000	3400	220	ug/kg	1240000	124	59-123			L
2,4-Dichlorophenol		1000000	3400	180	ug/kg	1160000	116				
2,4-Dimethylphenol		1000000	3400	920	ug/kg	1150000	115				
2,4-Dinitrophenol		1000000	6600	1200	ug/kg	1150000	115	35-146			
2,4-Dinitrotoluene		1000000	3400	520	ug/kg	1270000	127	55-125			L
2,6-Dinitrotoluene		1000000	3400	820	ug/kg	1220000	122	66-128			
2-Chloronaphthalene		1000000	3400	220	ug/kg	1120000	112				
2-Chlorophenol		1000000	3400	170	ug/kg	1040000	104	38-120			
2-Methylnaphthalene		1000000	3400	40	ug/kg	1190000	119				
2-Methylphenol		1000000	3400	100	ug/kg	1080000	108				
2-Nitroaniline		1000000	6600	1100	ug/kg	1280000	128	61-130			
2-Nitrophenol		1000000	3400	150	ug/kg	1130000	113	50-120			
3 & 4 Methylphenol		1000000	6600	190	ug/kg	1090000	109	50-119			
3,3'-Dichlorobenzidine		1000000	3400	3000	ug/kg	1390000	139	48-126			L
3-Nitroaniline		1000000	6600	780	ug/kg	1090000	109	61-127			
4,6-Dinitro-2-methylphenol		1000000	6600	1200	ug/kg	1420000	142	49-155			
4-Bromophenyl phenyl ether		1000000	3400	1100	ug/kg	1200000	120	58-131			
4-Chloro-3-methylphenol		1000000	3400	140	ug/kg	1220000	122	49-125			
4-Chloroaniline		1000000	3400	1000	ug/kg	1120000	112	49-120			
4-Chlorophenyl phenyl ether		1000000	3400	72	ug/kg	1150000	115	63-124			
4-Nitroaniline		1000000	6600	380	ug/kg	1120000	112	63-128			
4-Nitrophenol		1000000	6600	820	ug/kg	1390000	139	43-137			L
Acenaphthene		1000000	3400	40	ug/kg	1160000	116	60-120			
Acenaphthylene		1000000	3400	28	ug/kg	1190000	119				
Acetophenone		1000000	3400	170	ug/kg	1200000	120	66-120			L
Anthracene		1000000	3400	86	ug/kg	1170000	117				
Atrazine		1000000	3400	150	ug/kg	1170000	117				
Benzaldehyde		1000000	3400	380	ug/kg	1400000	140	21-120			L
Benzo[a]anthracene		1000000	3400	58	ug/kg	1140000	114				
Benzo[a]pyrene		1000000	3400	82	ug/kg	1260000	126				

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LABORATORY QC DATA

Analyte	Source Result	Spike Level	RL	MDL	Units	Result	% REC	% REC Limits	% RPD	RPD Limit	Data Qualifiers
Semivolatile Organics by GC/MS											
LCS Analyzed: 12/04/09 (Lab Number:9L03042-BS1, Batch: 9L03042)											
Benzo[b]fluoranthene		1000000	3400	66	ug/kg	1100000	110				
Benzo[g,h,i]perylene		1000000	3400	40	ug/kg	1250000	125				
Benzo[k]fluoranthene		1000000	3400	38	ug/kg	1190000	119				
Biphenyl		1000000	3400	220	ug/kg	1120000	112	71-120			
Bis(2-chloroethoxy)methane		1000000	3400	180	ug/kg	1010000	101	61-133			
Bis(2-chloroethyl)ether		1000000	3400	300	ug/kg	955000	95	45-120			
Bis(2-chloroisopropyl) ether		1000000	3400	360	ug/kg	975000	97				
Bis(2-ethylhexyl) phthalate		1000000	3400	1100	ug/kg	1130000	113				
Butyl benzyl phthalate		1000000	3400	900	ug/kg	1160000	116				
Caprolactam		1000000	3400	1500	ug/kg	1170000	117	54-133			
Carbazole		1000000	3400	40	ug/kg	1160000	116	59-129			
Chrysene		1000000	3400	34	ug/kg	1140000	114				
Dibenz[a,h]anthracene		1000000	3400	40	ug/kg	1240000	124				
Dibenzofuran		1000000	3400	36	ug/kg	1140000	114	56-120			
Diethyl phthalate		1000000	3400	100	ug/kg	1210000	121				
Dimethyl phthalate		1000000	3400	88	ug/kg	1170000	117				
Di-n-butyl phthalate		1000000	3400	1200	ug/kg	1200000	120				
Di-n-octyl phthalate		1000000	3400	78	ug/kg	1110000	111				
Fluoranthene		1000000	3400	48	ug/kg	1190000	119				
Fluorene		1000000	3400	78	ug/kg	1180000	118				
Hexachlorobenzene		1000000	3400	170	ug/kg	1170000	117				
Hexachlorobutadiene		1000000	3400	170	ug/kg	1150000	115				
Hexachlorocyclopentadiene		1000000	3400	1000	ug/kg	1180000	118				
Hexachloroethane		1000000	3400	260	ug/kg	1120000	112	41-120			
Indeno[1,2,3-cd]pyrene		1000000	3400	94	ug/kg	1260000	126				
Isophorone		1000000	3400	170	ug/kg	1100000	110				
Naphthalene		1000000	3400	56	ug/kg	1130000	113				
Nitrobenzene		1000000	3400	150	ug/kg	1220000	122	42-131			
N-Nitrosodi-n-propylamine		1000000	3400	260	ug/kg	1040000	104	46-120			
N-Nitrosodiphenylamine		1000000	3400	180	ug/kg	1450000	145	20-119			L
Pentachlorophenol		1000000	6600	1200	ug/kg	1170000	117	39-136			
Phenanthrene		1000000	3400	70	ug/kg	1180000	118				
Phenol		1000000	3400	360	ug/kg	1060000	106	17-120			
Pyrene		1000000	3400	22	ug/kg	1160000	116	58-136			

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LABORATORY QC DATA

Analyte	Source Result	Spike Level	RL	MDL	Units	Result	% REC	% REC Limits	% RPD	RPD Limit	Data Qualifiers
Semivolatile Organics by GC/MS											
LCS Analyzed: 12/04/09 (Lab Number:9L03042-BS1, Batch: 9L03042)											
Surrogate: 2,4,6-Tribromophenol					*ug/kg*		*113*	*39-146*			
Surrogate: 2-Fluorobiphenyl					*ug/kg*		*110*	*37-120*			
Surrogate: 2-Fluorophenol					*ug/kg*		*101*	*18-120*			
Surrogate: Nitrobenzene-d5					*ug/kg*		*116*	*34-132*			
Surrogate: Phenol-d5					*ug/kg*		*103*	*11-120*			
Surrogate: p-Terphenyl-d14					*ug/kg*		*97*	*58-147*			
LCS Dup Analyzed: 12/04/09 (Lab Number:9L03042-BSD1, Batch: 9L03042)											
2,4,5-Trichlorophenol		1000000	3400	740	ug/kg	1080000	108	59-126	9	18	
2,4,6-Trichlorophenol		1000000	3400	220	ug/kg	1070000	107	59-123	15	19	
2,4-Dichlorophenol		1000000	3400	180	ug/kg	1030000	103		13		
2,4-Dimethylphenol		1000000	3400	920	ug/kg	973000	97		17		
2,4-Dinitrophenol		1000000	6600	1200	ug/kg	1030000	103	35-146	11	22	
2,4-Dinitrotoluene		1000000	3400	520	ug/kg	1140000	114	55-125	11	20	
2,6-Dinitrotoluene		1000000	3400	820	ug/kg	1090000	109	66-128	11	15	
2-Chloronaphthalene		1000000	3400	220	ug/kg	961000	96		15		
2-Chlorophenol		1000000	3400	170	ug/kg	970000	97	38-120	7	25	
2-Methylnaphthalene		1000000	3400	40	ug/kg	1020000	102		15		
2-Methylphenol		1000000	3400	100	ug/kg	1010000	101		7		
2-Nitroaniline		1000000	6600	1100	ug/kg	1140000	114	61-130	12	15	
2-Nitrophenol		1000000	3400	150	ug/kg	942000	94	50-120	19	18	R2
3 & 4 Methylphenol		1000000	6600	190	ug/kg	1000000	100	50-119	8	24	
3,3'-Dichlorobenzidine		1000000	3400	3000	ug/kg	1320000	132	48-126	5	25	L1
3-Nitroaniline		1000000	6600	780	ug/kg	1010000	101	61-127	8	19	
4,6-Dinitro-2-methylphenol		1000000	6600	1200	ug/kg	1360000	136	49-155	4	15	
4-Bromophenyl phenyl ether		1000000	3400	1100	ug/kg	1070000	107	58-131	11	15	
4-Chloro-3-methylphenol		1000000	3400	140	ug/kg	1080000	108	49-125	12	27	
4-Chloroaniline		1000000	3400	1000	ug/kg	1000000	100	49-120	11	22	
4-Chlorophenyl phenyl ether		1000000	3400	72	ug/kg	1020000	102	63-124	12	16	
4-Nitroaniline		1000000	6600	380	ug/kg	998000	100	63-128	11	24	
4-Nitrophenol		1000000	6600	820	ug/kg	1280000	128	43-137	9	25	
Acenaphthene		1000000	3400	40	ug/kg	1000000	100	60-120	14	35	
Acenaphthylene		1000000	3400	28	ug/kg	1020000	102		15		
Acetophenone		1000000	3400	170	ug/kg	1110000	111	66-120	8	20	

Golder Associates, Inc. - Niagara Falls, NY
2221 Niagara Falls Blvd., Ste 9
Niagara Falls, NY 14304

Work Order: RSK0944

Project: Golder - Vandermark/Isochem site
Project Number: [none]

Received: 11/19/09
Reported: 12/10/09 09:29

LABORATORY QC DATA

Analyte	Source Result	Spike Level	RL	MDL	Units	Result	% REC	% REC Limits	% RPD	RPD Limit	Data Qualifiers
Semivolatile Organics by GC/MS											
LCS Dup Analyzed: 12/04/09 (Lab Number:9L03042-BSD1, Batch: 9L03042)											
Anthracene		1000000	3400	86	ug/kg	1060000	106		10		
Atrazine		1000000	3400	150	ug/kg	1060000	106		10		
Benzaldehyde		1000000	3400	380	ug/kg	1250000	125	21-120	12	20	L1
Benzo[a]anthracene		1000000	3400	58	ug/kg	1050000	105		7		
Benzo[a]pyrene		1000000	3400	82	ug/kg	1180000	118		6		
Benzo[b]fluoranthene		1000000	3400	66	ug/kg	1040000	104		5		
Benzo[g,h,i]perylene		1000000	3400	40	ug/kg	1180000	118		6		
Benzo[k]fluoranthene		1000000	3400	38	ug/kg	1130000	113		5		
Biphenyl		1000000	3400	220	ug/kg	957000	96	71-120	15	20	
Bis(2-chloroethoxy)methane		1000000	3400	180	ug/kg	885000	88	61-133	14	17	
Bis(2-chloroethyl)ether		1000000	3400	300	ug/kg	867000	87	45-120	10	21	
Bis(2-chloroisopropyl) ether		1000000	3400	360	ug/kg	873000	87		11		
Bis(2-ethylhexyl) phthalate		1000000	3400	1100	ug/kg	1020000	102		10		
Butyl benzyl phthalate		1000000	3400	900	ug/kg	1070000	107		8		
Caprolactam		1000000	3400	1500	ug/kg	1040000	104	54-133	12	20	
Carbazole		1000000	3400	40	ug/kg	1030000	103	59-129	12	20	
Chrysene		1000000	3400	34	ug/kg	1060000	106		7		
Dibenz[a,h]anthracene		1000000	3400	40	ug/kg	1170000	117		5		
Dibenzofuran		1000000	3400	36	ug/kg	1020000	102	56-120	11	15	
Diethyl phthalate		1000000	3400	100	ug/kg	1070000	107		12		
Dimethyl phthalate		1000000	3400	88	ug/kg	1040000	104		11		
Di-n-butyl phthalate		1000000	3400	1200	ug/kg	1070000	107		12		
Di-n-octyl phthalate		1000000	3400	78	ug/kg	1020000	102		9		
Fluoranthene		1000000	3400	48	ug/kg	1070000	107		10		
Fluorene		1000000	3400	78	ug/kg	1010000	101		15		
Hexachlorobenzene		1000000	3400	170	ug/kg	1040000	104		12		
Hexachlorobutadiene		1000000	3400	170	ug/kg	993000	99		15		
Hexachlorocyclopentadiene		1000000	3400	1000	ug/kg	958000	96		20		
Hexachloroethane		1000000	3400	260	ug/kg	1000000	100	41-120	11	46	
Indeno[1,2,3-cd]pyrene		1000000	3400	94	ug/kg	1200000	120		5		
Isophorone		1000000	3400	170	ug/kg	961000	96		13		
Naphthalene		1000000	3400	56	ug/kg	964000	96		16		
Nitrobenzene		1000000	3400	150	ug/kg	1030000	103	42-131	17	24	
N-Nitrosodi-n-propylamine		1000000	3400	260	ug/kg	967000	97	46-120	7	31	
N-Nitrosodiphenylamine		1000000	3400	180	ug/kg	1300000	130	20-119	11	15	L1

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Received: 11/19/09
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LABORATORY QC DATA

Analyte	Source Result	Spike Level	RL	MDL	Units	Result	% REC	% REC Limits	% RPD	RPD Limit	Data Qualifiers
Semivolatile Organics by GC/MS											
LCS Dup Analyzed: 12/04/09 (Lab Number:9L03042-BSD1, Batch: 9L03042)											
Pentachlorophenol		1000000	6600	1200	ug/kg	1100000	110	39-136	6	35	
Phenanthrene		1000000	3400	70	ug/kg	1070000	107		10		
Phenol		1000000	3400	360	ug/kg	959000	96	17-120	10	35	
Pyrene		1000000	3400	22	ug/kg	1070000	107	58-136	8	35	
Surrogate: 2,4,6-Tribromophenol					*ug/kg*		*102*	*39-146*			
Surrogate: 2-Fluorobiphenyl					*ug/kg*		*96*	*37-120*			
Surrogate: 2-Fluorophenol					*ug/kg*		*91*	*18-120*			
Surrogate: Nitrobenzene-d5					*ug/kg*		*95*	*34-132*			
Surrogate: Phenol-d5					*ug/kg*		*97*	*11-120*			
Surrogate: p-Terphenyl-d14					*ug/kg*		*91*	*58-147*			

Chain of Custody Record

Temperature on Receipt _____

Drinking Water? Yes ☐ No ☒

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TAL-4124 (1007)

Client: GOLDER ASSOCIATES	Project Manager: PATRICK MARTIN	Date: 11/19/09	Chain of Custody Number: 100079
Address: 2221 NIA FALLS BLVD, STE. 9	Telephone Number (Area Code)/Fax Number: 716 - 215 - 0650	Lab Number:	Page 1 of 1
City: NIA. FALLS; State: NY; Zip Code: 14304	Site Contact: —	Lab Contact: BRIAN FISCHER	
Project Name and Location (State): SNPE - VANDEMARK, LOCKPORT NY	Carrier/Waybill Number:		
Contract/Purchase Order/Quote No.: 093 - 89168			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Zn/Ag	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Analysis (Attach list if more space is needed): 8260	8270	Special Instructions/ Conditions of Receipt
VANDEMARK DNAPL (2 x 4oz)	11/18/09	14:30					X							X	X	2x4 oz JARS
	~~11/18/09~~	~~14:30~~					~~X~~									

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☒ 14 Days ☐ 21 Days ☐ Other _____

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By: Patrick T. Martin	11/19/09	1745	1. Received By: [signature]	11/19/09	1745
2. Relinquished By:			2. Received By:		
3. Relinquished By:			3. Received By:		

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

NO ICE

VDM01821

APPENDIX B

2010 SUPPLEMENTAL DNAPL INVESTIGATION SUMMARY REPORT (AUGUST 2010)

Golder Associates

August 18, 2010 093-89168

New York State Department of Environmental Conservation
Division of Solid and Hazardous Materials, Region 9
270 Michigan Ave.
Buffalo, New York 14203

Attention: Mr. Stanley Radon, Sr. Engineering Geologist

RE: SNPE - VANDEMARK CHEMICAL
2010 SUPPLEMENTAL DNAPL INVESTIGATION SUMMARY REPORT
VANDEMARK CHEMICAL FACILITY, LOCKPORT, NY

Dear Mr. Radon:

On behalf of SNPE Inc. (SNPE), Golder Associates Inc. (Golder) has prepared this report to summarize the results of recent investigation/characterization activities conducted in June 2010 and implemented as part of the Supplemental Work Plan activities proposed in the December 21, 2009 Dense Non-Aqueous Phase Liquid (DNAPL) Assessment and Supplemental Work Plan Report. SNPE, Inc. as the former site owner, has been conducting the agreed upon supplemental characterization activities with support from the current site owner, VanDeMark Chemical, Inc.

The investigation activities described herein were conducted to further assess and identify the potential source(s), distribution, and quantity of coal tar residual impacts that were first identified and partially remediated along the banks and adjacent slope of Eighteen Mile Creek directly south of the VanDeMark Chemical facility. In addition, this report will present recommendations for the remediation of coal tar residuals and additional monitoring provisions where appropriate.

1.0 BACKGROUND

Based on the information available at that time, the December 2009 DNAPL Assessment and Supplemental Work Plan proposed a detailed slope overburden mapping and survey to better define the slope and creek bank bedrock/overburden geology across the slope and understanding of the DNAPL transport mechanism. However, in April 2010, subsequent to the report issuance and review by the New York State Department of Environmental Conservation (NYSDEC), personnel from VanDeMark Chemical identified previously unknown solidified coal tar seeps along a steeply pitched segment of the creek bank approximately 70 feet long to the east of the creek bank area that was the primary focus of earlier remedial efforts in 2007 and 2008.

At about the same time, new information was obtained from a VanDeMark employee of tar seep observations that had occurred approximately 15 to 20 years ago in a localized paved area northwest of Building B-4 within the VanDeMark Chemical manufacturing facility. In consultation with the NYSDEC, it was agreed that the supplemental investigation activities would be expanded to encompass additional test pits easterly along the toe of the slope and upgradient of the newly observed creek bank coal tar residuals seeps and the performance of a separate soil boring and sampling program within the VanDeMark Chemical facility centered around the area of historical coal tar seeps in the pavement near Building B-4. In both cases the goal of the expanded investigations would be to define the areal and vertical extent of coal tar residuals in both areas

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Golder Associates: Operations in Africa, Asia, Australasia, Europe, North America and South America

Therefore, to implement this expanded investigation strategy, Golder conducted the following tasks:

- In-Plant Soil Boring Investigation - Northwest corner of Building B-4;
- Overburden/Bedrock Test Pit Investigation - Eighteen Mile Creek bank and toe of slope
- Slope and Investigation locations survey; and
- Summarization of findings and preparation of Proposed Remedial Strategies

2.0 IN-PLANT SOIL BORING INVESTIGATION

On Tuesday, June 22, 2010, Mr. David Wehn and Mr. Aaron Lange of Golder, along with two Zebra Environmental (Zebra) employees, the subcontracted drilling firm, arrived at the Site to begin the boring program. Mr. Stanley Radon of the NYSDEC was also onsite to observe the delineation program. A total of fifteen (15) direct push borings were advanced to refusal through the pavement to the northwest of building B-4. The borings were advanced utilizing direct-push drilling techniques and a 2-inch soil sampling tool (Geoprobe® Macrocore® sampler). Golder also screened the first 9 cores for volatile organic compounds (VOCs) using a photoionization detector (PID) and collected 4 samples from the borings for laboratory analysis.

2.1 Boring Layout

Based on an approximation of where historical observations of coal tar residuals seeps had occurred, Golder's first boring (B9-N5) was positioned 5 feet north of the northwest corner of building B-4. Borings were then spread out North and West in 5 feet increments. After consistent findings of a fairly uniform potential coal tar layer was discovered in the first 7 borings, the spacing was increased to ten (10) feet to the North and West. Again, after similar findings, Golder increased the distances to observe where coal tar layer diminished. A thin layer of coal tar was discovered in borings B9-W30-N36 and B9-N36. Borings could not be drilled further North or West of those borings due to a concrete wall and concrete tank pads. Also, underground utility locations and information for that area were unavailable making further exploration unsafe. However, the observed trends indicated that the coal tar layer was diminishing in those directions. Plant structures adjacent to or in the vicinity of the investigation area and boring locations are illustrated on Figure 1.

2.2 Boring Installation

The drill rig used by Zebra was a Geoprobe® 6620D with a Macrocore® sampler. All fifteen (15) borings were advanced until refusal, which was assumed to be at bedrock. The investigation determined that the average depth of the bedrock was approximately 5 feet, but varied between 4.5 to 8 feet below ground surface (bgs). The majority of the overburden was non-native fill materials which included crushed brick, concrete, wood, and foundry sands.

After the borings were advanced, the cores were examined by Mr. Radon and Mr. Wehn and then logged. The boring logs are provided as Attachment A. The drill cuttings were returned to the boring hole and the pavement was patched with asphalt.

2.3 Sample Collection and Results

Samples were collected from 4 borings (B9-W5, B9-N10, B9-W5-N10, and B9-W10-N5). Due to the consistency of the coal tar found in each subsequent boring, Mr. Wehn and Mr. Radon decided it was not necessary to collect any more samples for laboratory analysis. The first 9 borings were screened for VOCs by Golder using a PID. No VOCs were detected by the PID. During the 10th boring the PID malfunctioned indicating a "fan error". Olfactory observations were also made for all the borings. All borings exhibited coal tar odor except borings B9-W5, B9-W30-N10, B9-E20-N20, and B9-W24-S10, however, samples B9-W30-N10 and B9-W24-S10 did have a petroleum like odor.

The laboratory analysis was performed by Test America Inc. in Amherst, New York. The soil sample results detected high concentrations of polyaromatic hydrocarbons (PAHs) which are typically associated with coal tar residuals. For example, the following PAH compounds were consistently detected in each of the four samples at relatively high concentrations: anthracene, benzo(a)anthracene, chrysene, flouranthene, naphthalene, phenanthrene and pyrene. Table 1 presents a summary of the four sample results from the laboratory analysis. The full laboratory Analytical Report is provided as Attachment B.

3.0 OVERBURDEN/BEDROCK TEST PIT INVESTIGATION

The purpose of the test pit investigation was to further characterize the geologic aspects of the escarpment slope, define the depth of overburden and to survey the bedrock elevation in the areas down the slope and south of the facility towards Eighteen Mile Creek. The information gathered was used to develop a profile of the slope and the underlying bedrock in order to better quantify and assess the coal tar migration patterns and develop the most appropriate means of remediation for the coal tar contamination.

Mr. David Wehn and Mr. Patrick Martin of Golder deployed to the Site on June 6, 2010. Mr. Wehn observed the nature of the overburden and logged the descriptions for each test pit. A total of fourteen (14) test pits (TP1 through TP14) were dug along the North side of Eighteen Mile Creek as shown on Figure 2, starting at the west side of the historic seep area and working east towards the seeps discovered in the Spring of 2010. All test pits were dug by O'Regan's Landscaping with a small rubber-tracked excavator to refusal (assumed to be bedrock) except for TP10 and TP13 where bedrock was deeper than 7 feet below grade surface (bgs) – the maximum reach of the excavator used. The depths of bedrock at test pits where bedrock was found ranged from 2.4 to 7 feet bgs.

Mr. Wehn also noted where coal tar was found during the excavations. All test pits except for TP2, TP9, and TP14 had evidence of coal tar present. Though no samples or tests were performed on the soils during excavation, based on visual and olfactory evidence, TP7, TP8, TP10 appeared to have the heaviest deposits of coal tar.

The discovery of coal tar residuals in test pits TP10 through TP13 to the east of the previously remediated area is consistent with the understanding of the bedrock geology of the formation. The vertical fracture planes that would act as a conduit for DNAPL/coal tar residuals to be conveyed from the top of bedrock deeper into the formation are expected to be oriented in both a southwest and southeast directions. This would be consistent with the discovery of the two primary deposition areas along the toe of the slope separated by an area that appears to have little or no coal tar residuals (i.e., between TP9 and TP-10). Table C-1 summarizing the field observations noted during the test pit excavations is presented in Attachment C.

4.0 SLOPE AND SUPPLEMENTAL INVESTIGATION LOCATION SURVEY

Concurrent with the In-Plant soil boring and the Test Pit investigations, surveyors from Wendel Duchscherer determined the location and surface elevation of the In-Plant soil borings, the test pits conducted along the Eighteen Mile Creek bank and toe of slope, the edge of Eighteen Mile Creek, and other reference points in the test pit area and service road leading to the test pits. In addition, two north-south traverses of the slope were made.

The In-Plant borehole locations as surveyed are presented on Figure 1. Figure 2 presents the test pit locations, and well as an elevation contour map of the test pit area, service road, and slope area between the two traverses. Note the westernmost traverse was performed approximately along the line of Cross Section B-B' (Figure 3), which shows the slope in profile and passes very near test pit TP2. An East/West cross section of the test pit area is shown on Figure 4, which presents the surface and bedrock elevations

(where they could be determined) in an area roughly parallel to Eighteen Mile Creek from the original remedial area in the east to the west past the newly discovered seep.

5.0 PROPOSED REMEDIAL ALTERNATIVES

5.1 In-Plant Coal Tar Overburden Remediation

The In-Plant soil boring investigation identified a distinct layer of coal tar residuals encompassing an area of approximately 50 feet by 50 feet to the north and northwest of Building B-4 within the VanDeMark Plant. The layer varied in thickness from approximately 12 inches to 2 inches and is estimated to comprise approximately 75 to 100 cubic yards of coal tar based on an average thickness of 9 inches. As described in Section 2, the top of the layer is generally located about 1.0 to 2.5 feet below the paved surface. In several borings (e.g., B9-N10, B9-W10-N10) evidence of small quantities of coal tar residuals was observed at the overburden/bedrock interface.

Based on the accessibility and relative proximity of this layer to the surface, excavation and off-site disposal of these residuals is proposed as the remedial approach. It is estimated based on the delineation volume calculated [and density of 1.5 tons per cubic yard] that approximately 100 to 125 tons of tar residuals mixed with overburden fill would be removed and disposed of utilizing this approach. At the boring locations where coal tar was detected on the top of bedrock, the excavation of this material would proceed until removal of residuals identified at this depth is achieved. It is assumed the existing pavement and overburden fill located above the coal tar residual layer would be removed and disposed of off-site due to the unsuitability for reuse as backfill within the completed excavation (I.e., due to potential compaction and settlement concerns).

If the coal tar residuals layer is found to extend to the north of the concrete barrier wall that defines the gaseous carbon monoxide storage and offloading area, further investigation within this area may be required to better evaluate the extent of removal feasible and these activities will have to be closely coordinated with VanDeMark to address operational and safety considerations.

As stated in the December 2009 Report, it would be impractical and nearly impossible to extract and remove DNAPL which has migrated into the rock fractures below this area of coal tar residuals, without significantly interrupting site operations. There are also considerable technical/cost limitations to removing very viscous liquids from small pore spaces/fractures, with a certain percentage of tar residuals likely to remain in place regardless of the extraction technique attempted.

5.2 Eighteen Mile Creek Slope and Bank Remediation

The creek bank test pit investigation indicates that the area of the creek bank that has been impacted by coal tar residuals extends a significant distance east along the creek bank from the originally delineated and remediated area. Coal tar residuals were found approximately 100 feet east of test pit TP8 (located at the eastern end of the remediated area) beginning with TP10 located near the top of the access road ramp and extending to TP13 about 80 feet further east along the toe of the slope. In general the coal tar was identified beginning five feet below grade surface in this area.

Although solidified coal tar seeps have been identified along an approximately 50 foot portion of the steeply pitched creek bank located south of this newly identified area, the amount/extent of coal tar deposits appears to be significantly less than that encountered to the west (previously remediated), where coal tar residuals were 2.5 to 3.5 feet thick in places. Therefore, based on observed thickness and areal distribution of the residuals in TP-10 through TP13, significant slope stability and slope undermining concerns and highly constrained physical access associated with conducting a major excavation (i.e., removal of over five feet of overburden and former rock structures at the base of the slope), Golder is not recommending the removal of the buried coal tar residuals in this area at this time as a prudent or practical remedial measure. The resulting environmental disruption of the creek bank and associated

riparian area to access and remove a relatively small mass of accumulated coal residuals does not in our opinion warrant the excessive measures and damage that would be incurred to perform the removal.

Alternatively, it is recommended that the implementation of a linear DNAPL cutoff trench (as previously proposed) be performed at the toe of the slope south of monitoring well MW-2D where the majority of the coal tar residuals were found and continue to be exiting the fractured rock (i.e., approximately between TP1 and TP8). This structure would allow for the capture and periodic removal of DNAPL / coal tar residuals from what is confirmed to be an active transmission pathway and represents the most likely exposure pathway of these residuals into the environment. The cutoff mechanism will also allow for accurate tracking of the quantities and rate of DNAPL seepage to assess the potential mass that remains within the fractured bedrock formation.

In conjunction with the installation of this cutoff trench, it is proposed that visible coal tar residuals that have accumulated on the creek bank directly south of the test pits TP-10 through TP-13 (upper access road area) be removed at the surface. Quarterly visual monitoring is proposed along the creek bank slope in this area to determine if further seepage is occurring. If significant seepage is observed, additional alternatives for remediation of the coal tar residuals in this area will be reevaluated with the NYSDEC.

Development of detailed remedial design alternatives based on the DNAPL intercepting structure(s) concept presented above is proposed for NYSDEC review within 8 to 10 weeks of concept approval. Assessment of the suitability and effectiveness of each design alternative is anticipated to be a component of the design alternatives submittal with final remedy selection to be determined in conjunction with the NYSDEC.

If you have any questions concerning the investigation findings presented in this report or the proposed remedial strategies, please contact us at 716-215-0650.

Sincerely,

GOLDER ASSOCIATES INC.

Patrick T. Martin, P.E., BCEE
Senior Consultant

David C. Wehn, CPG
Associate

cc: D. Slick, SNPE, Inc.
P. Cook, VanDeMark Chemical

Attachments: Table 1
Figures 1, 2 and 3
Appendices A, B and C

PTM/DCW:dml

TABLES

TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS
SNPE VANDEMARK
DNAPL ASSESSMENT
LOCKPORT, NY

Lab ID	RTF1262-01	RTF1262-02	RTF1262-03	RTF1262-04
Sample Date	6/22/2010	6/22/2010	6/22/2010	6/22/2010
Sample ID	B-9-W5-N5	B-9-N-10	B-9-W5-N10	B-9-W10-N5
Units	UG/KG	UG/KG	UG/KG	UG/KG
Semivolatile Organics by GC/MS (US EPA Method 8270C)				
2,4,5-Trichlorophenol	ND [1,2]	ND [1,2]	ND [1,2]	ND [1,2]
2,4,6-Trichlorophenol	ND [1,2]	ND [1,2]	ND [1,2]	ND [1,2]
2,4-Dichlorophenol	ND [1,2]	ND [1,2]	ND [1,2]	ND [1,2]
2,4-Dimethylphenol	ND [1,2]	ND [1,2]	ND [1,2]	ND [1,2]
2,4-Dinitrophenol	ND [1,2]	ND [1,2]	ND [1,2]	ND [1,2]
2,4-Dinitrotoluene	ND [1,2]	ND [1,2]	ND [1,2]	ND [1,2]
2,6-Dinitrotoluene	ND [1,2]	ND [1,2]	ND [1,2]	ND [1,2]
2-Chloronaphthalene	ND [1,2]	ND [1,2]	ND [1,2]	ND [1,2]
2-Chlorophenol	ND [1,2]	ND [1,2]	ND [1,2]	ND [1,2]
2-Methylnaphthalene	2200000 [1,2]	1500000 [1,2]	1200000 [1,2]	530000 [1,2]
2-Methylphenol	ND [1,2]	ND [1,2]	ND [1,2]	ND [1,2]
2-Nitroaniline	ND [1,2]	ND [1,2]	ND [1,2]	ND [1,2]
2-Nitrophenol	ND [1,2]	ND [1,2]	ND [1,2]	ND [1,2]
3 & 4 Methylphenol	ND [1,2]	ND [1,2]	ND [1,2]	ND [1,2]
3,3'-Dichlorobenzidine	ND [1,2]	ND [1,2]	ND [1,2]	ND [1,2]
3-Nitroaniline	ND [1,2]	ND [1,2]	ND [1,2]	ND [1,2]
4,6-Dinitro-2-methylphenol	ND [1,2]	ND [1,2]	ND [1,2]	ND [1,2]
4-Bromophenyl phenyl ether	ND [1,2]	ND [1,2]	ND [1,2]	ND [1,2]
4-Chloro-3-methylphenol	ND [1,2]	ND [1,2]	ND [1,2]	ND [1,2]
4-Chloroaniline	ND [1,2]	ND [1,2]	ND [1,2]	ND [1,2]
4-Chlorophenyl phenyl ether	ND [1,2]	ND [1,2]	ND [1,2]	ND [1,2]
4-Nitroaniline	ND [1,2]	ND [1,2]	ND [1,2]	ND [1,2]
4-Nitrophenol	ND [1,2]	ND [1,2]	ND [1,2]	ND [1,2]
Acenaphthene	2100000 [1,2]	1500000 [1,2]	1300000 [1,2]	830000 [1,2]
Acenaphthylene	30000 [1,2,3]	ND [1,2]	ND [1,2]	19000 [1,2,3]
Acetophenone	ND [1,2]	ND [1,2]	ND [1,2]	ND [1,2]
Anthracene	3000000 [1,2]	2700000 [1,2]	1800000 [1,2]	1300000 [1,2]
Atrazine	ND [1,2]	ND [1,2]	ND [1,2]	ND [1,2]
Benzaldehyde	ND [1,2]	ND [1,2]	ND [1,2]	ND [1,2]
Benzo[a]anthracene	2900000 [1,2]	3400000 [1,2]	2000000 [1,2]	1600000 [1,2]
Benzo[a]pyrene	2000000 [1,2]	2300000 [1,2]	1300000 [1,2]	1000000 [1,2]
Benzo[b]fluoranthene	1400000 [1,2]	1600000 [1,2]	1000000 [1,2]	1000000 [1,2]
Benzo[g,h,i]perylene	1000000 [1,2]	1100000 [1,2]	720000 [1,2,3]	570000 [1,2]
Benzo[k]fluoranthene	560000 [1,2,3]	610000 [1,2,3]	360000 [1,2,3]	ND [1,2]
Biphenyl	260000 [1,2,3]	160000 [1,2,3]	150000 [1,2,3]	77000 [1,2,3]
Bis(2-chloroethoxy)methane	ND [1,2]	ND [1,2]	ND [1,2]	ND [1,2]
Bis(2-chloroethyl)ether	ND [1,2]	ND [1,2]	ND [1,2]	ND [1,2]

TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS
SNPE VANDEMARK
DNAPL ASSESSMENT
LOCKPORT, NY

Lab ID	RTF1262-01	RTF1262-02	RTF1262-03	RTF1262-04
Sample Date	6/22/2010	6/22/2010	6/22/2010	6/22/2010
Sample ID	B-9-W5-N5	B-9-N-10	B-9-W5-N10	B-9-W10-N5
Units	UG/KG	UG/KG	UG/KG	UG/KG
Bis(2-chloroisopropyl) ether	ND [1, 2]	ND [1, 2]	ND [1, 2]	ND [1, 2]
Bis(2-ethylhexyl) phthalate	ND [1, 2]	ND [1, 2]	ND [1, 2]	ND [1, 2]
Butyl benzyl phthalate	ND [1, 2]	ND [1, 2]	ND [1, 2]	ND [1, 2]
Caprolactam	ND [1, 2]	ND [1, 2]	ND [1, 2]	ND [1, 2]
Carbazole	320000 [1, 2, 3]	280000 [1, 2, 3]	200000 [1, 2, 3]	97000 [1, 2, 3]
Chrysene	2800000 [1, 2]	3400000 [1, 2]	2000000 [1, 2]	1500000 [1, 2]
Dibenz[a,h]anthracene	300000 [1, 2, 3]	300000 [1, 2, 3]	200000 [1, 2, 3]	160000 [1, 2, 3]
Dibenzofuran	320000 [1, 2, 3]	260000 [1, 2, 3]	200000 [1, 2, 3]	110000 [1, 2, 3]
Diethyl phthalate	ND [1, 2]	ND [1, 2]	ND [1, 2]	ND [1, 2]
Dimethyl phthalate	ND [1, 2]	ND [1, 2]	ND [1, 2]	ND [1, 2]
Di-n-butyl phthalate	ND [1, 2]	ND [1, 2]	ND [1, 2]	ND [1, 2]
Di-n-octyl phthalate	ND [1, 2]	ND [1, 2]	ND [1, 2]	ND [1, 2]
Fluoranthene	3900000 [1, 2]	4000000 [1, 2]	2500000 [1, 2]	2000000 [1, 2]
Fluorene	1600000 [1, 2]	1300000 [1, 2]	940000 [1, 2]	640000 [1, 2]
Hexachlorobenzene	ND [1, 2]	ND [1, 2]	ND [1, 2]	ND [1, 2]
Hexachlorobutadiene	ND [1, 2]	ND [1, 2]	ND [1, 2]	ND [1, 2]
Hexachlorocyclopentadiene	ND [1, 2]	ND [1, 2]	ND [1, 2]	ND [1, 2]
Hexachloroethane	ND [1, 2]	ND [1, 2]	ND [1, 2]	ND [1, 2]
Indeno[1,2,3-cd]pyrene	680000 [1, 2, 3, 4]	790000 [1, 2, 3, 4]	470000 [1, 2, 3, 4]	400000 [1, 2, 3, 4]
Isophorone	ND [1, 2]	ND [1, 2]	ND [1, 2]	ND [1, 2]
Naphthalene	3000000 [1, 2]	2000000 [1, 2]	1500000 [1, 2]	590000 [1, 2]
Nitrobenzene	ND [1, 2]	ND [1, 2]	ND [1, 2]	ND [1, 2]
N-Nitrosodi-n-propylamine	ND [1, 2]	ND [1, 2]	ND [1, 2]	ND [1, 2]
N-Nitrosodiphenylamine	ND [1, 2]	ND [1, 2]	ND [1, 2]	ND [1, 2]
Pentachlorophenol	ND [1, 2]	ND [1, 2]	ND [1, 2]	ND [1, 2]
Phenanthrene	9400000 [1, 2]	9400000 [1, 2]	5900000 [1, 2]	4200000 [1, 2]
Phenol	ND [1, 2]	ND [1, 2]	ND [1, 2]	ND [1, 2]
Pyrene	6200000 [1, 2]	7600000 [1, 2]	4300000 [1, 2]	3300000 [1, 2]

Footnotes:

Analyses performed by Test America Inc.

Qualifications:

[1] = Sample had an adjusted volume during extraction due to extract matrix and/or viscosity.

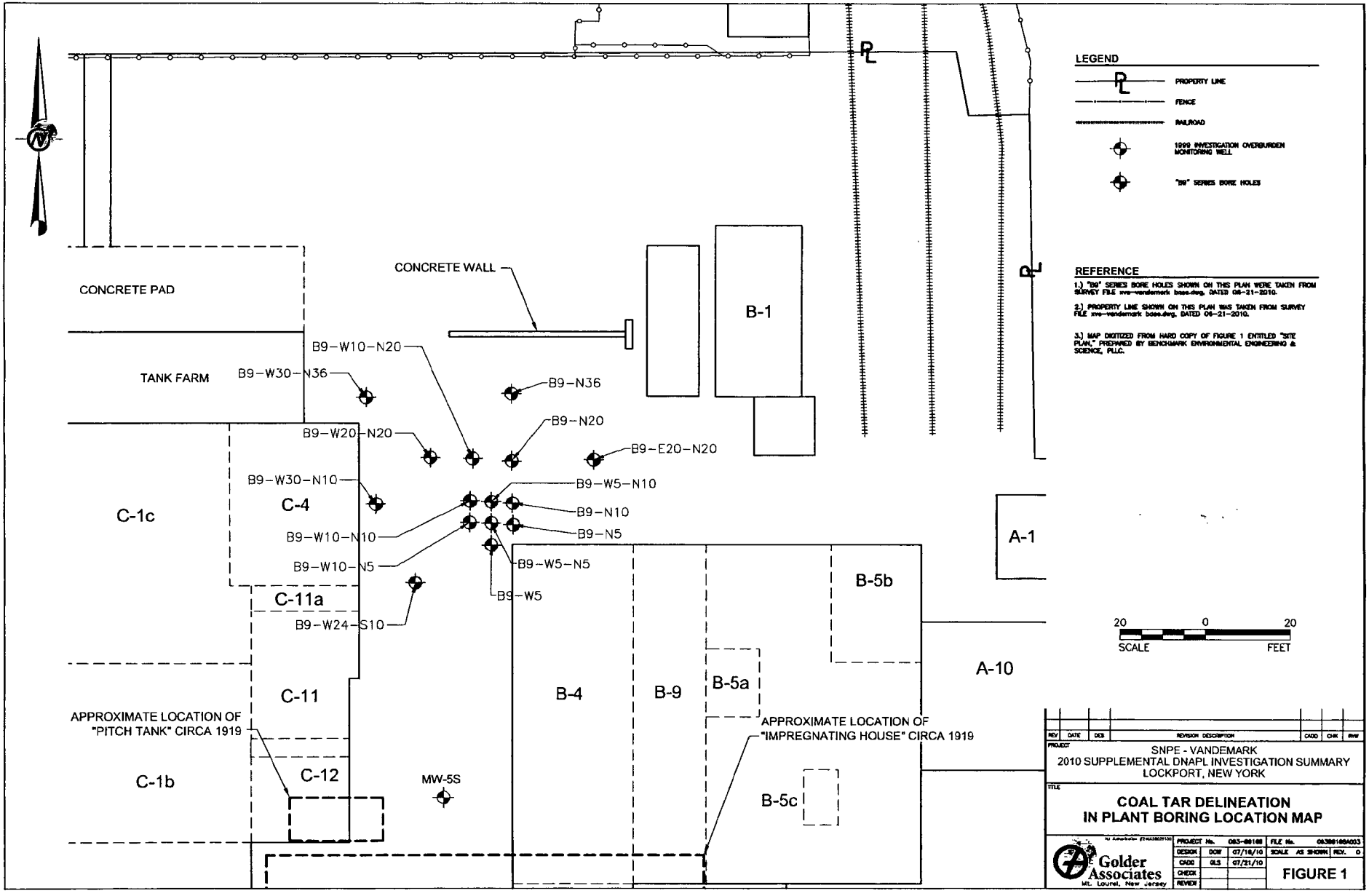
[2] = Dilution required due to high concentration of target analyte.

[3] = Analyte detected at a level less that Reporting Limit and greater than or equal to the Method Detection Limit. Concentrations in

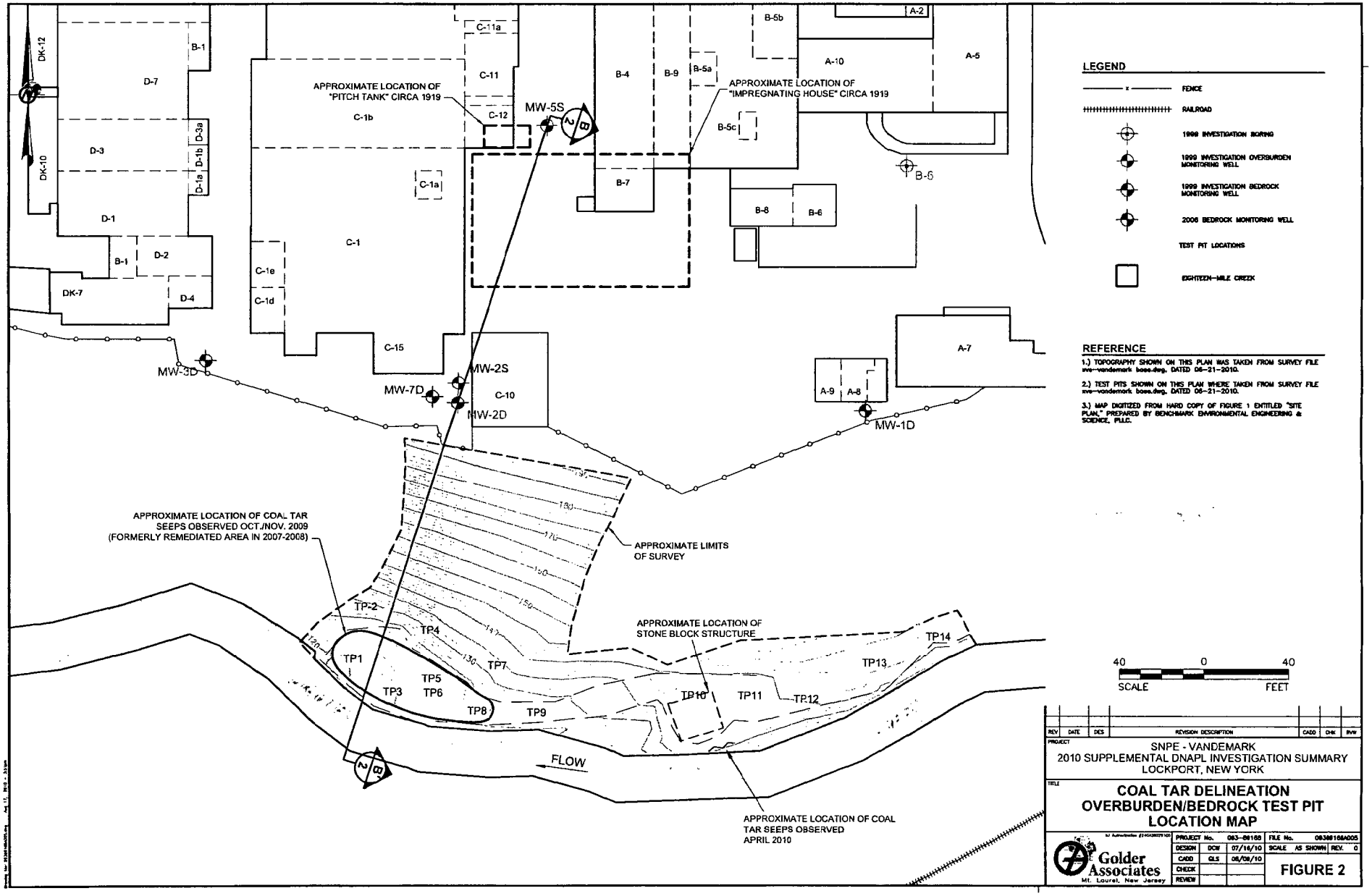
[4] = Laboratory Control Sample and/or laboratory control sample duplicate recovery was below acceptance limits.

Table by: AML
Checked by: JRS
Reviewed by: PTM

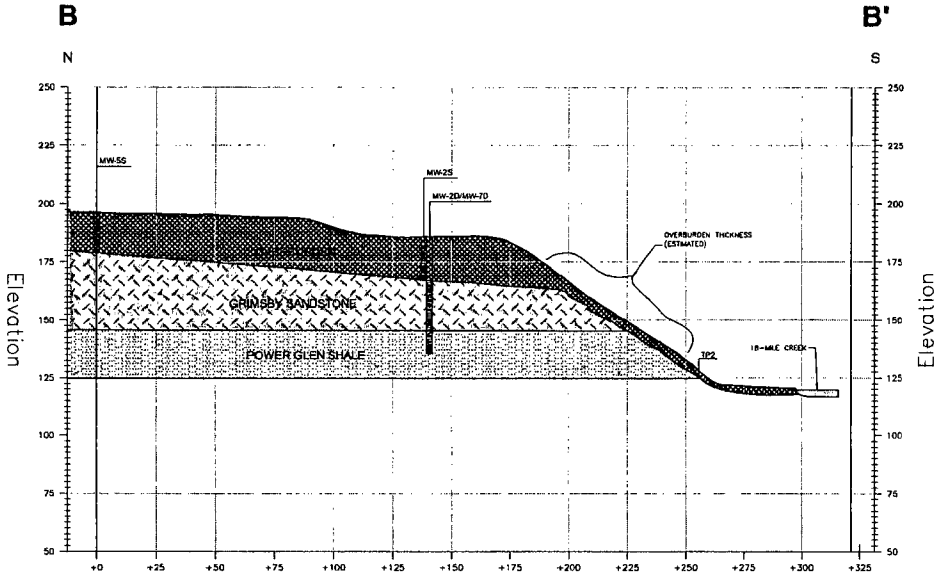
FIGURES


LEGEND
PROPERTY LINE
FENCE
RAILROAD
1999 INVESTIGATION OVERBURDEN MONITORING WELL
"B9" SERIES BORE HOLES
REFERENCE
1.) "B9" SERIES BORE HOLES SHOWN ON THIS PLAN WERE TAKEN FROM SURVEY FILE xvs-vandemark base.dwg, DATED 06-21-2010.
2.) PROPERTY LINE SHOWN ON THIS PLAN WAS TAKEN FROM SURVEY FILE xvs-vandemark base.dwg, DATED 06-21-2010.
3.) MAP DIGITIZED FROM HARD COPY OF FIGURE 1 ENTITLED "SITE PLAN," PREPARED BY BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC.
CONCRETE PAD
TANK FARM
CONCRETE WALL
B-1
B9-W10-N20
B9-W30-N36
B9-N36
B9-N20
B9-W20-N20
B9-E20-N20
B9-W30-N10
B9-W5-N10
B9-N10
B9-N5
B9-W10-N10
B9-W10-N5
B9-W5-N5
B9-W5
B9-W24-S10
C-1c
C-4
C-11a
C-11
C-12
C-1b
A-1
A-10
B-4
B-9
B-5a
B-5b
B-5c
APPROXIMATE LOCATION OF "PITCH TANK" CIRCA 1919
APPROXIMATE LOCATION OF "IMPREGNATING HOUSE" CIRCA 1919
MW-5S
20 0 20
SCALE FEET
REV DATE DES REVISION DESCRIPTION CADD CHK RVW
PROJECT
SNPE - VANDEMARK
2010 SUPPLEMENTAL DNAPL INVESTIGATION SUMMARY
LOCKPORT, NEW YORK
TITLE
COAL TAR DELINEATION
IN PLANT BORING LOCATION MAP
Golder Associates
Mt. Laurel, New Jersey
PROJECT No. 083-88168
FILE No. 08388168A003
DESIGN DCW 07/16/10
SCALE AS SHOWN
REV. 0
CADD GLS 07/21/10
CHECK
REVIEW
FIGURE 1

VDM01832


LEGEND
FENCE
RAILROAD
1999 INVESTIGATION BORING
1999 INVESTIGATION OVERBURDEN MONITORING WELL
1999 INVESTIGATION BEDROCK MONITORING WELL
2006 BEDROCK MONITORING WELL
TEST PIT LOCATIONS
EIGHTEEN-MILE CREEK
REFERENCE
1.) TOPOGRAPHY SHOWN ON THIS PLAN WAS TAKEN FROM SURVEY FILE nve-vandemark base.dwg, DATED 06-21-2010.
2.) TEST PITS SHOWN ON THIS PLAN WHERE TAKEN FROM SURVEY FILE nve-vandemark base.dwg, DATED 06-21-2010.
3.) MAP DIGITIZED FROM HARD COPY OF FIGURE 1 ENTITLED "SITE PLAN," PREPARED BY BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC.
APPROXIMATE LOCATION OF "PITCH TANK" CIRCA 1919
APPROXIMATE LOCATION OF "IMPREGNATING HOUSE" CIRCA 1919
APPROXIMATE LOCATION OF COAL TAR SEEPS OBSERVED OCT./NOV. 2009 (FORMERLY REMEDIATED AREA IN 2007-2008)
APPROXIMATE LIMITS OF SURVEY
APPROXIMATE LOCATION OF STONE BLOCK STRUCTURE
APPROXIMATE LOCATION OF COAL TAR SEEPS OBSERVED APRIL 2010
FLOW
MW-5S
MW-2S
MW-7D
MW-2D
MW-3D
MW-1D
TP1
TP2
TP3
TP4
TP5
TP6
TP7
TP8
TP9
TP10
TP11
TP12
TP13
TP14
B-6
40 0 40
SCALE FEET
SNPE - VANDEMARK
2010 SUPPLEMENTAL DNAPL INVESTIGATION SUMMARY
LOCKPORT, NEW YORK
COAL TAR DELINEATION
OVERBURDEN/BEDROCK TEST PIT
LOCATION MAP
Golder Associates
Mt. Laurel, New Jersey
PROJECT No. 083-08158
FILE No. 08308158A005
DESIGN DCW 07/16/10
SCALE AS SHOWN
REV. 0
CADD GLS 08/08/10
CHECK
REVIEW
FIGURE 2

VDM01833



LEGEND

- OVERBURDEN
- GRIMSBY SANDSTONE
- POWER GLEN SHALE
- WATER ELEVATION IN WELL

REFERENCES

1.) URS CORP. FIGURE 3 – PHASE I/II ENVIRONMENTAL AUDIT – VANDE/MARIL, INC. A VANCHEM, INC. SEPTEMBER 17, 1999.

2.) BENCHMARK BES, PLLC – SUMMARY OF SUPPLEMENTAL FIELD INVESTIGATION AND SAMPLING ACTIVITIES, ISOCHEM INC., NOVEMBER 30, 2006.

3.) U.S.G.S. LOCKPORT QUADRANGLE (FOR ELEVATION OF EIGHTEEN-MILE CREEK)

25 0 25 50
HORIZONTAL SCALE FEET

25 0 25 50
VERTICAL SCALE FEET

REV	DATE	DES	REVISION DESCRIPTION	CADD	CHK	RVW

PROJECT

SNPE - VANDEMARK
2010 SUPPLEMENTAL DNAPL INVESTIGATION SUMMARY
LOCKPORT, NEW YORK

TITLE

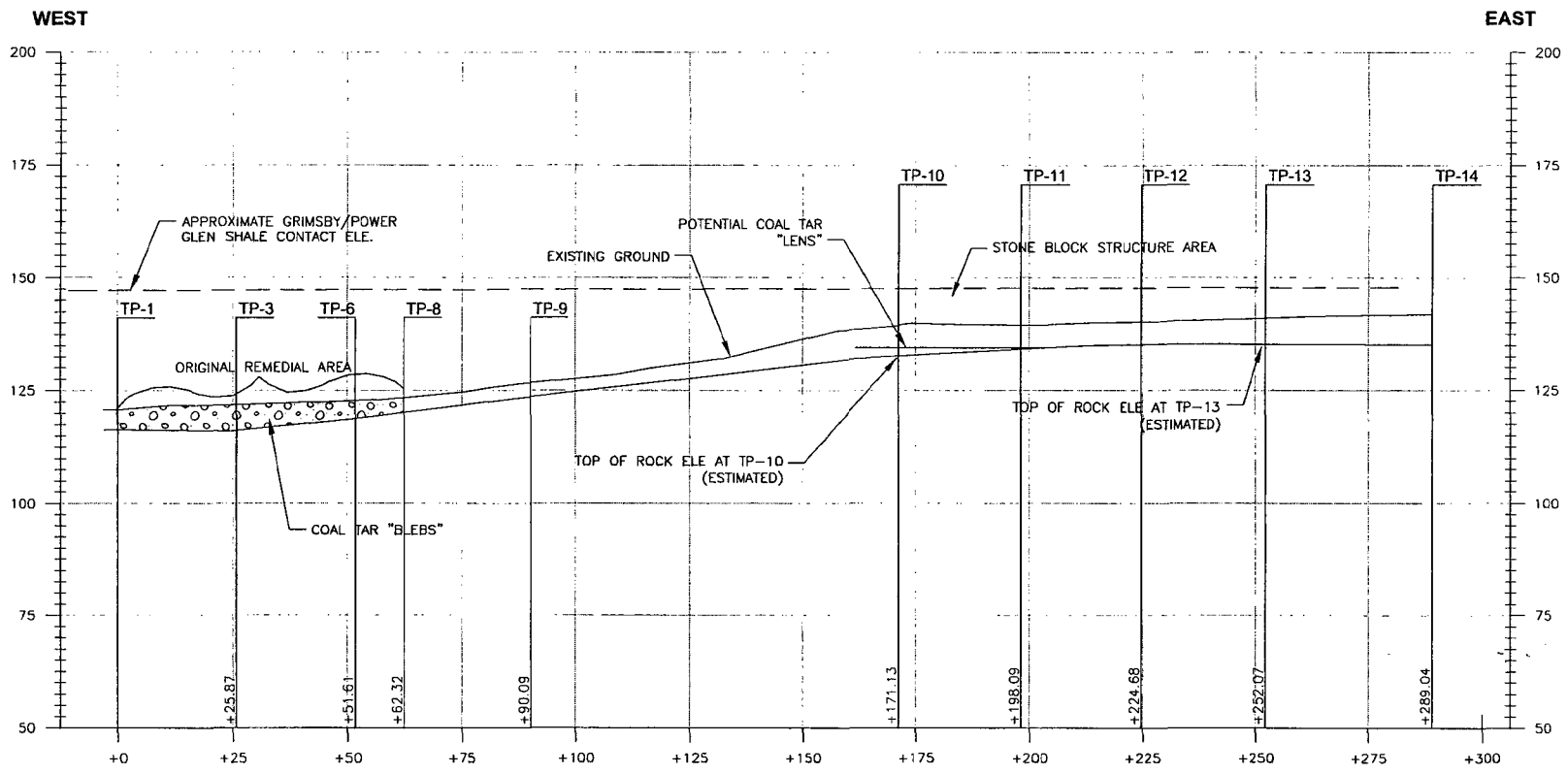
CROSS SECTION B-B'

Golder Associates
Mt. Laurel, New Jersey

PROJECT No.	093-89168		FILE No.	093891684002	
DESIGN	DCW	08/09/10	SCALE AS SHOWN	REV.	0
CADD	AM	08/09/10			
CHECK					
REVIEW					

FIGURE 3

VDM01834



25 0 25
HORIZONTAL SCALE FEET

25 0 25
VERTICAL SCALE FEET

REV	DATE	DES	REVISION DESCRIPTION	CADD	CHK	PM

PROJECT
SNPE - VANDEMARK
2010 SUPPLEMENTAL DNAPL INVESTIGATION SUMMARY
LOCKPORT, NEW YOR

TITLE
TEST PIT CROSS SECTION

Golder Associates
Mt. Laurel, New Jersey

PROJECT No.	093-89158		FILE No.	093891588A006
DESIGN	AL	07/29/10	SCALE AS SHOWN	REV. 0
CADD	GLS	08/09/10		
CHECK				
REVIEW				

FIGURE 4

VDM001835

ATTACHMENT A
BORING LOGS

Field Boring Log

DEPTH HOLE 7.5 FT | JOB NO 093-89168 | PROJECT Van De Mark | BORING NO. BG-N5
DEPTH SOIL DRILL 7.5FT | GA INSP D. WEHN | DRILLING METHOD Geoprobe Macrocore | SHEET 1 OF 1
DEPTH ROCK CORE N/A | WEATHER L. RAIN | DRILLING COMPANY Zebra Env. | SURFACE ELEV
NO. DIST SA. 0 UD. SA 2 | TEMP 75°F | DRILL RIG 6620D | DRILLER D. Pino | DATUM
DEPTH WL N/A | HRS. PROD. N/A | WT. SAMPLER HAMMER N/A | DROP N/A | STARTED 9:30, 6/22/10
TIME WL. N/A | HRS. DELAYED 0 | WT CASING HAMMER N/A | DROP N/A | COMPLETED 9:45, 6/22/10

SAMPLE TYPES
AS AUGER SAMPLE
CS CHUNK SAMPLE
OO DRIVE OPEN
DS DENISON SAMPLE
PS PITCHER SAMPLE
RC ROCK CORE
ST SLOTTED TUBE
TO THIN-WALLED, OPEN
TP THIN-WALLED, PISTON
WS WASH SAMPLE

ABBREVIATIONS
BL BLACK
BR BROWN
C COARSE
CA CASING
CL CLAY
CLY CLAYEY
F FINE
FRAG FRAGMENTS
GL GRAVEL
LTD LATERED
L LITTLE
M MEDIUM
MIC MICACEOUS
MOT MOTTLED
NP NON-PLASTIC
OG ORANGE
ORG ORGANIC
PH PRESSURE HYDRAULIC
PM PRESSURE MANUAL
R RED
RES RESIDUAL
RX ROCK
SA SAMPLE
SAT SATURATED
SD SAND
SI SILT
SLY SILTY
SM SOME
TR TRACE
WL WATER LEVEL
WH WEIGHT OF HAMMER
Y YELLOW

SOIL DESCRIPTION - RANGE OF PROPORTION
TRACE 0 - 10%
LITTLE 10 - 20%
AND 30 - 50%

RELATIVE DENSITY	BLOWS	CONSISTENCY	UNIAXIAL PRESSURE
VERY LOOSE	VLS 0-4	VERY SOFT	VS
LOOSE	LS 4-10	SOFT	S
COMPACT	CP 10-30	FIRM	FM
DENSE	DN 30-50	STIFF	ST
VERY DENSE	VDN >50	VERY STIFF	VST
		HARD	H

ELEV. DEPTH	DESCRIPTION	BLOWS/FT	SAMPLES NO.	TYPE	HAMM. BLOWS PER 6 IN (FORCE)	REC/ATT	DEPTH	SAMPLE DESCRIPTION AND BORING NOTES
								Boring 5 FT N of NW corner of J 139.
1								0.0 - 0.3 FT roadbase GRAVEL.
2			1		PID = 0.0 ppm	4.2/5.0		0.3 - 4.2 FT Dark brown to reddish crushed brick, wood, silt, sand, gravel FILL.
3								Slight coal tar odor.
4								
5								
6			2		PID = 0.0 ppm	2.5/2.5		5.0 - 7.5 FT Dark brown sand, gravel, silt FILL with some crushed brick.
7								Slight coal tar odor.
8								Refusal @ 7.5 FT
								Cuttings returned to borehole, tamped, and covered with asphalt patch.

VDM01837

Field Boring Log

DEPTH HOLE 5.0	JOB NO 093-89169	PROJECT Van DeMark			BORING NO. B9-W5
DEPTH SOIL DRILL 5.0	GA INSP D. WEHN	DRILLING METHOD Geoprobe Macrocore			SHEET 1 OF 1
DEPTH ROCK CORE N/A	WEATHER L. RAIN	DRILLING COMPANY Zebra Env.			SURFACE ELEV
NO. DIST SA. 0 UD. SA. 1	TEMP 75°F	DRILL RIG 6620D		DRILLER D. Pino	DATUM
DEPTH WL N/A	HRS. PROD. N/A	WT SAMPLER HAMMER N/A	DROP N/A		STARTED 9:45 AM / 6/22/10
TIME WL. N/A	HRS. DELAYED 0	WT CASING HAMMER N/A	DROP N/A		COMPLETED 9:55 AM / 6/22/10

SAMPLE TYPES

AS	AUGER SAMPLE	BL	BLACK
CS	CHUNK SAMPLE	BR	BROWN
DO	DRIVE OPEN	C	COARSE
DS	DENISON SAMPLE	CA	CASING
PS	PITCHER SAMPLE	CL	CLAY
RC	ROCK CORE	CLY	CLAYEY
ST	SLOTTED TUBE	F	FINE
TO	THIN-WALLED, OPEN	FRAG	FRAGMENTS
TP	THIN-WALLED, PISTON	GL	GRAVEL
WS	WASH SAMPLE	LYD	LAYERED
		LI	LITTLE

ABBREVIATIONS

M	MEDIUM	SA	SAMPLE
MIC	MICACEOUS	SAT	SATURATED
MOT	MOTTLED	SD	SAND
NP	NON-PLASTIC	SI	SILT
OG	ORANGE	SLY	SILTY
ORG	ORGANIC	SM	SOME
PH	PRESSURE HYDRAULIC	TR	TRACE
PM	PRESSURE MANUAL	WL	WATER LEVEL
R	RED	WH	WEIGHT OF HAMMER
RES	RESIDUAL	Y	YELLOW
RX	ROCK		

SOIL DESCRIPTION - RANGE OF PROPORTION

TRACE 0 - 5% SOME 12 - 30%
LITTLE 5 - 12% AND 30 - 50%

RELATIVE DENSITY	BLOWS	CONSISTENCY	SINGLE PRESSURE
VERY LOOSE	VLS		VERY SOFT	VS	
LOOSE	LS		SOFT	S	
COMPACT	CP		FIRM	FM	
DENSE	DN		STIFF	ST	
VERY DENSE	VDN		VERY STIFF	VST	
			HARD	H	

ELEV / DEPTH	DESCRIPTION	BLOWS / FT	SAMPLES NO.	SAMPLES TYPE	SAMPLES HAMM. BLOWS PER 6 IN (FORCE)	SAMPLES REC / ATT	DEPTH	SAMPLE DESCRIPTION AND BORING NOTES
1								Boring 5 FT W of NW corner of B9.
2			1		PID= 0.0 ppm	3.5 / 5.0		0.0-5.0 FT Dark brown to reddish SILT SAND GRAVEL - FILL.
3								No coal tar odor.
4								Refusal @ 5.0 FT
5								
6								Cuttings returned to borehole, tamped and covered with asphalt patch.

Field Boring Log

DEPTH HOLE 5.5	JOB NO 093-89168	PROJECT Van DeMark		BORING NO. B9-W5-N5	
DEPTH SOIL DRILL 5.5	GA INSP D. WEHN	DRILLING METHOD Geoprobe Macrocore		SHEET 1 OF 1	
DEPTH ROCK CORE N/A	WEATHER L. RAIN	DRILLING COMPANY Zebra Env.		SURFACE ELEV	
NO. DIST SA 0 NO. SA 1	TEMP 75°F	DRILL RIG 6620D	DRILLER D. Pino	DATUM	
DEPTH WL N/A	HRS PROD N/A	WT SAMPLER HAMMER N/A	DROP N/A	STARTED 9:55, 6/22/10	
TIME WL N/A	HRS. DELAYED 0	WT CASING HAMMER N/A	DROP N/A	COMPLETED 10:10, 6/22/10	

SAMPLE TYPES

AS	AUGER SAMPLE	BL	BLACK
CS	CHUNK SAMPLE	BR	BROWN
DO	DRIVE OPEN	C	COARSE
DS	DENISON SAMPLE	CA	CASING
PS	PITCHER SAMPLE	CL	CLAY
RC	ROCK CORE	CLY	CLAYEY
ST	SLOTTED TUBE	F	FINE
TO	THINWALLED, OPEN	FRAG	FRAGMENTS
TP	THINWALLED, PISTON	GL	GRAVEL
WS	WASH SAMPLE	LYD	LAYERED
		LI	LITTLE

ABBREVIATIONS

M	MEDIUM	SA	SAMPLE
MIC	MICACEOUS	SAT	SATURATED
MOT	MOTTLED	SD	SAND
NP	NONPLASTIC	SI	SILT
OG	ORANGE	SLY	SILTY
ORG	ORGANIC	SM	SOME
PH	PRESSURE HYDRAULIC	TR	TRACE
PM	PRESSURE MANUAL	WL	WATER LEVEL
R	RED	WH	WEIGHT OF HAMMER
RES	RESIDUAL	Y	YELLOW
RX	ROCK		

SOIL DESCRIPTION - RANGE OF PROPORTION

TRACE 0 - 10% WITH 12 - 30%
LITTLE 10 - 20% AND 35 - 50%

RELATIVE DENSITY	BLOWS	CONSISTENCY	FINGER PRESSURE
VERY LOOSE VLS	0 - 4	VERY SOFT VS	EASILY INTO
LOOSE LS	4 TO 10	SOFT S	MODERATE EFFORT
COMPACT CP	10 TO 30	FIRM F	HARD
DENSE DN	30 TO 50	STIFF ST	EXTREME EFFORT
VERY DENSE VDN	>50	VERY STIFF VST	THUMBNAIL INDENT
		HARD H	RESISTS THUMBNAIL

ELEV / DEPTH	DESCRIPTION	BLOWS / FT	SAMPLES NO.	TYPE	HAMM. BLOWS PER 6 IN (FORCE)	REC / ATT	DEPTH	SAMPLE DESCRIPTION AND BORING NOTES
								Boring 5 FT N and 5 FT W of NW corner of B9.
1								
2			1		PID = 0.0 ppm	4.0 / 5.0		0.0-5.0 FT Dark brown to black to reddish SILT, SAND + GRAVEL. FILL. Some brick. Coal tar from 1.6-2.1 FT. Strong coal tar odor.
3								
4								Sample collected of coal tar.
5			2		PID=0.0 ppm	0.9 / 0.5		5.0-5.5 FT Brown SILT, SAND & GRAVEL. Saturated. No coal tar odor.
6								Refusal @ 5.5 FT.
								Cuttings returned to borehole, tamped and covered with asphalt patch.

Field Boring Log

DEPTH HOLE 5.0	JOB NO 093-89168	PROJECT Van DeMark		BORING NO. B9-N10	
DEPTH SOIL DRILL 5.0	GA INSP D. WEHN	DRILLING METHOD Geoprobe Macrocore		SHEET 1 OF 1	
DEPTH ROCK CORE N/A	WEATHER OVERCAST	DRILLING COMPANY Zebra Env.		SURFACE ELEV	
NO DIST SA 0 UD. SA 1	TEMP 75°F	DRILL RIG 6620D	DRILLER D. Pino	DATUM	
DEPTH WL. N/A	HRS. PROD. N/A	WT SAMPLER HAMMER N/A	DROP N/A	STARTED 10:15, 6/22/10	
TIME WL. N/A	HRS. DELAYED 0	WT CASING HAMMER N/A	DROP N/A	COMPLETED 10:25, 6/22/10	

SAMPLE TYPES

AS	AUGER SAMPLE
CS	CHUNK SAMPLE
DO	DRIVE OPEN
DS	DENISON SAMPLE
PS	PITCHER SAMPLE
RC	ROCK CORE
ST	SLOTTED TUBE
TO	THIN-WALLED, OPEN
TP	THIN-WALLED, PISTON
WS	WASH SAMPLE

ABBREVIATIONS

BL	BLACK	M	MEDIUM	SA	SAMPLE
BR	BROWN	MIC	MICACEOUS	SAT	SATURATED
C	COARSE	MOT	MOTTLED	SD	SAND
CA	CASING	NP	NON-PLASTIC	SI	SILT
CL	CLAY	OG	ORANGE	SIY	SILTY
CLY	CLAYEY	ORG	ORGANIC	SM	SOME
F	FINE	PH	PRESSURE HYDRAULIC	TR	TRACE
FRAG	FRAGMENTS	PM	PRESSURE MANUAL	WL	WATER LEVEL
GL	GRAVEL	R	RED	WH	WEIGHT OF HAMMER
LYD	LAYERED	RES	RESIDUAL	Y	YELLOW
LI	LITTLE	RX	ROCK		

SOIL DESCRIPTION - RANGE OF PROPORTION

TRACE 0-1% SOME 12-30%
LITTLE 5-12% AND 30-50%

RELATIVE DENSITY		BLOWS	CONSISTENCY		FINGER PRESSURE
VERY LOOSE	VLS	0-4	VERY SOFT	VS	EXTRUDES
LOOSE	LS	4-10	SOFT	S	MOLDS EASILY
COMPACT	CP	10-30	FIRM	FM	MOLDS
DENSE	DN	30-50	STIFF	ST	THUMB POINTS
VERY DENSE	VDN	50	VERY STIFF	VST	THUMBNAIL INDENT
			HARD	H	RESISTS THUMBNAIL

ELEV DEPTH	DESCRIPTION	BLOWS/FT		SAMPLES NO.	TYPE	HAMM. BLOWS PER 6 IN (FORCE)	REC/ATT	DEPTH	SAMPLE DESCRIPTION AND BORING NOTES
									Boring 10 FT N of NW corner of B9.
1									0.0 - 5.0 FT Dark brown to reddish to light tan SILT, SAND + GRAVEL with some wood + brick. Light tan granular ~~substance~~ sandy substance near bottom of sample (several inches thick).
2				1		PID = 0.0 ppm	4.3/5.0		
3									
4									Coal tar from 2.3 - 2.8 FT and at tip of sample shoe on top of rock.
5									
6									Coal tar odor.
									Refusal @ 5.0 FT
									Collected sample of coal tar.
									Cuttings returned to borehole, tamped, and covered with asphalt patch.

Field Boring Log

DEPTH HOLE 5.0	JOB NO 053-89169	PROJECT Van DeMark		BORING NO. B9-WS-N10	
DEPTH SOIL DRILL 5.0	GA INSP D. WEHN	DRILLING METHOD Geoprobe Macrocore		SHEET 1 OF 1	
DEPTH ROCK CORE N/A	WEATHER OVERCAST	DRILLING COMPANY Zebra Env.		SURFACE ELEV	
NO. DIST SA 0 UD. SA 1	TEMP 75°F	DRILL RIG 6620D	DRILLER D. Pino	DATUM	
DEPTH WL N/A	HRS. PROD. N/A	WT SAMPLER HAMMER N/A	DROP N/A	STARTED 10:30, 6/22/10	
TIME WL. N/A	HRS. DELAYED 0	WT CASING HAMMER N/A	DROP N/A	COMPLETED 20:40, 6/22/10	

SAMPLE TYPES

AS	AUGER SAMPLE
CS	CHUNK SAMPLE
OD	DRIVE OPEN
DS	DENISON SAMPLE
PS	PITCHER SAMPLE
RC	ROCK CORE
ST	SLOTTED TUBE
TO	THIN-WALLED, OPEN
TP	THIN-WALLED, PISTON
WS	WASH SAMPLE

ABBREVIATIONS

BL	BLACK	M	MEDIUM	SA	SAMPLE
BR	BROWN	MIC	MICACEOUS	SAT	SATURATED
C	COARSE	MOT	MOTTLED	SD	SAND
CA	CASING	NP	NON-PLASTIC	SI	SILT
CL	CLAY	OG	ORANGE	SIY	SILTY
CLY	CLAYEY	ORG	ORGANIC	SM	SOME
F	FINE	PH	PRESSURE HYDRAULIC	TR	TRACE
FRAG	FRAGMENTS	PM	PRESSURE MANUAL	WL	WATER LEVEL
GL	GRAVEL	R	RED	WH	WEIGHT OF HAMMER
LTD	LAYERED	RES	RESIDUAL	Y	YELLOW
U	LITTLE	RX	ROCK		

SOIL DESCRIPTION - RANGE OF PROPORTION

TRACE	0 - 10%		
LITTLE	10 - 20%	AND	30 - 50%

RELATIVE DENSITY	BLOWS	CONSISTENCY	FIELD PRESSURE
VERY LOOSE	VLS	0 - 2	VERY SOFT
LOOSE	LS	4 TO 10	SOFT
COMPACT	CP	TO 30	
DENSE			
VERY DENSE	VDN	10	VERY STIFF
			HARD

VS	EASILY INDENTED
S	MOLDED EASILY
MS	MOLDED
ST	[illegible]
VST	[illegible]
H	[illegible]

ELEV / DEPTH	DESCRIPTION	BLOWS / FT	SAMPLES NO.	SAMPLES TYPE	SAMPLES HAMM. BLOWS PER 6 IN (FORCE)	SAMPLES REC / ATT	DEPTH	SAMPLE DESCRIPTION AND BORING NOTES
								Boring 5 FT W and 10 FT N of NE corner of B9.
1								
2					PID =	4.3		0.0-5.0 FT Dark brown SILT SAND, GRAVEL + BRICK. FILL.
3			1		0.0 ppm	5.0		Dark gray sandy material from 3.7 - 4.3 FT
4								Coal tar from 1.7 - 2.1 FT
5								Coal tar odor.
								Sample collected of coal tar.
								Refusal @ 5 FT
								Cuttings returned to borehole, tamped and covered with asphalt patch.

VDM01841

Field Boring Log

DEPTH HOLE 5.0	JOB NO 093-89168	PROJECT Van DeMark		BORING NO. B9-W10-N5	
DEPTH SOIL DRILL 5.0	QA INSP D. WEHN	DRILLING METHOD Geoprobe Macrocore		SHEET 1 OF 1	
DEPTH ROCK CORE N/A	WEATHER L. RAIN	DRILLING COMPANY Zebra Env.		SURFACE ELEV	
NO. DIST SA 0 UD. SA. 1	TEMP 75°F	DRILL RIG 6620D	DRILLER D. Pino	DATUM	
DEPTH WL N/A	HRS. PROD. N/A	WT SAMPLER HAMMER N/A	DROP N/A	STARTED 10:40, 6/22/10	
TIME WL. N/A	HRS. DELAYED 0	WT CASING HAMMER N/A	DROP N/A	COMPLETED 10:56, 6/22/10	

SAMPLE TYPES

AS	AUGER SAMPLE	BL	BLACK
CS	CHUNK SAMPLE	BR	BROWN
DO	DRIVE OPEN	C	COARSE
DS	DENISON SAMPLE	CA	CASING
PS	PITCHER SAMPLE	CL	CLAY
RC	ROCK CORE	CLY	CLAYEY
ST	SLOTTED TUBE	F	FINE
TO	THIN-WALLED, OPEN	FRAG	FRAGMENTS
TP	THIN-WALLED, PISTON	GL	GRAVEL
WS	WASH SAMPLE	LYD	LAYERED
		LI	LITTLE

ABBREVIATIONS

M	MEDIUM	SA	SAMPLE
MIC	MICACEOUS	SAT	SATURATED
MOT	MOTTLED	SD	SAND
NP	NON-PLASTIC	SI	SILT
OG	ORANGE	SIY	SILTY
ORG	ORGANIC	SM	SOME
PH	PRESSURE HYDRAULIC	TR	TRACE
PM	PRESSURE MANUAL	WL	WATER LEVEL
R	RED	WH	WEIGHT OF HAMMER
RES	RESIDUAL	Y	YELLOW
RX	ROCK		

SOIL DESCRIPTION - RANGE OF PROPORTION

TRACE 0 - 10% SOME 11 - 30%
LITTLE 11 - 20% AND 30 - 50%

RELATIVE DENSITY	BLOWS	CONSISTENCY	SINGLE PRESSURE
VERY LOOSE	WS	VERY SOFT	VS
LOOSE	LS	SOFT	S
COMPACT	CP	FIRM	F
DENSE	DN	STIFF	ST
VERY DENSE	VDN	VERY STIFF	VST
		HARD	H

ELEV / DEPTH	DESCRIPTION	BLOWS / FT	SAMPLES NO.	SAMPLES TYPE	SAMPLES HAMM. BLOWS PER 6 IN (FORCE)	SAMPLES REC / ATT	DEPTH	SAMPLE DESCRIPTION AND BORING NOTES
								Boring 10 FT W and 5 FT N of NW corner of B9.
1								
2			1		PID = 0.0 ppm	4.0 / 5.0		0.0-6.0 FT Dark brown SILT SAND GRAVEL with some brick and wood. FILL. Tan sandy material just above refusal.
3								
4								Coal tar 1.3-1.6 FT Coal tar odor Sample collected of coal tar.
5								Refusal @ 5.0 FT
								Cuttings returned to borehole, tamped, and covered with asphalt patch.

VDM01842

Field Boring Log

DEPTH HOLE 6.0	JOB NO 053-89169	PROJECT Van DeMark		BORING NO. B9-W10-N10	
DEPTH SOIL DRILL 6.0	QA INSP D. WEHN	DRILLING METHOD Geoprobe Macrocore		SHEET 1 OF 1	
DEPTH ROCK CORE N/A	WEATHER L. RAIN	DRILLING COMPANY Zebra Env.		SURFACE ELEV	
NO. DIST SA. 0 UD. SA. 2	TEMP 75°F	DRILL RIG 6620D	DRILLER D. Pino	DATUM	
DEPTH WL N/A	HRS. PROD. N/A	WT. SAMPLER HAMMER N/A	DROP N/A	STARTED 10:55, 6/22/10	
TIME WL. N/A	HRS. DELAYED 0	WT CASING HAMMER N/A	DROP N/A	COMPLETED 11:05, 6/22/10	

SAMPLE TYPES

AS	AUGER SAMPLE	BL	BLACK
CS	CHUNK SAMPLE	BR	BROWN
DO	DRIVE OPEN	C	COARSE
DS	DENISON SAMPLE	CA	CASING
PS	PITCHER SAMPLE	CL	CLAY
RC	ROCK CORE	CLY	CLAYEY
ST	SLOTTED TUBE	F	FINE
TO	THIN-WALLED, OPEN	FRAG	FRAGMENTS
TP	THIN-WALLED, PISTON	GL	GRAVEL
WS	WASH SAMPLE	LYD	LAYERED
		U	LITTLE

ABBREVIATIONS

M	MEDIUM	SA	SAMPLE
MIC	MICACEOUS	SAT	SATURATED
MOT	MOTTLED	SD	SAND
NP	NON-PLASTIC	SI	SILT
OG	ORANGE	SIY	SILTY
ORG	ORGANIC	SM	SOME
PH	PRESSURE HYDRAULIC	TR	TRACE
PM	PRESSURE MANUAL	WL	WATER LEVEL
R	RED	WH	WEIGHT OF HAMMER
RES	RESIDUAL	Y	YELLOW
RX	ROCK		

SOIL DESCRIPTION - RANGE OF PROPORTION

TRACE	0	VERY	1		
LITTLE	5	AND	30		
RELATIVE DENSITY	BLOWS	CONSISTENCY	FINGER PRESSURE		
VERY LOOSE	VLS	0	VERY SOFT	VS	EASILY
LOOSE	LS	4	10 SOFT	S	MODERATELY
COMPACT	CP	10	30 FIRM	FM	MOISTS
DENSE	DN	30	50 STIFF	ST	DIFFICULTY
VERY DENSE	VDN	50	VERY STIFF	VST	EXTREMELY DIFFICULT
			HARD	H	MOISTS THUMBNAIL

ELEV / DEPTH	DESCRIPTION	BLOWS / FT	SAMPLES NO.	SAMPLES TYPE	SAMPLES HAMM. BLOWS PER 6 IN (FORCE)	SAMPLES REC / ATT	DEPTH	SAMPLE DESCRIPTION AND BORING NOTES
								Boring 10 FT W and 10 FT N of NW corner of B9.
1								0.0 - 5.0 FT
2			1		PID = 0.0 ppm	4.1 / 5.0		Coal tar from 1.0 - 2.1 FT, 3.0 - 3.9 FT, and at bottom of shoe. Coal tar odor.
3								Crushed GRAVEL 1.1 - 1.4 FT then crushed brick, SAND + GRAVEL - FILL.
4								
5			2		PID = 0.0 ppm	0.8 / T.0		5.0 - 6.0 FT Dark brown SAND. Coal tar odor.
6								
								Cuttings returned to borehole, tamped, and covered with asphalt patch.

Field Boring Log

DEPTH HOLE 5.0 | JOB NO 093-89168 | PROJECT Van DeMark | BORING NO. B9-N20
DEPTH SOIL DRILL 5.0 | QA INSP D. WEHN | DRILLING METHOD Geoprobe Macrocore | SHEET 1 OF 1
DEPTH ROCK CORE N/A | WEATHER L. RAIN | DRILLING COMPANY Zebra Env. | SURFACE ELEV
NO. DIST SA. 0 UD. SA. 1 | TEMP 75°F | DRILL RIG 6620D | DRILLER D. Pino | DATUM
DEPTH WL. N/A | HRS. PROD. N/A | WT SAMPLER HAMMER N/A | DROP N/A | STARTED 11:05, 6/22/10
TIME WL. N/A | HRS. DELAYED 0 | WT CASING HAMMER N/A | DROP N/A | COMPLETED 11:20, 6/22/10

SAMPLE TYPES

AS	AUGER SAMPLE	BL	BLACK
CS	CHUNK SAMPLE	BR	BROWN
DO	DRIVE OPEN	C	COARSE
DS	DENISON SAMPLE	CA	CASING
PS	PITCHER SAMPLE	CL	CLAY
RC	ROCK CORE	CLY	CLAYEY
ST	SLOTTED TUBE	F	FINE
TO	THIN-WALLED, OPEN	FRAG	FRAGMENTS
TP	THIN-WALLED, PISTON	GL	GRAVEL
WS	WASH SAMPLE	LYD	LAYERED
		LI	LITTLE

ABBREVIATIONS

M	MEDIUM	SA	SAMPLE
MIC	MICACEOUS	SAT	SATURATED
MOT	MOTTLED	SD	SAND
NP	NON-PLASTIC	SI	SILT
OG	ORANGE	SLY	SILTY
ORG	ORGANIC	SM	SOME
PH	PRESSURE HYDRAULIC	TR	TRACE
PM	PRESSURE MANUAL	WL	WATER LEVEL
R	RED	WH	WEIGHT OF HAMMER
RES	RESIDUAL	Y	YELLOW
RX	ROCK		

SOIL DESCRIPTION - RANGE OF PROPORTION

TRACE 0 - 10% | SOME 10 - 30% | AND 30 - 50%
LITTLE 10 - 20% | AND 30 - 50%

RELATIVE DENSITY		BLOWS	CONSISTENCY		FIELD PRESSURE
VERY LOOSE	VLS	0-4	VERY SOFT	VS	EXTRUDES
LOOSE	LS	4-10	SOFT	S	MOLDS EASILY
COMPACT	CP	10-30	FIRM	FM	MOLDS
DENSE	DN	30-50	STIFF	ST	INDENTS
VERY DENSE	VDN	>50	VERY STIFF	VST	INDENTS WITH DIFFICULTY
			HARD	H	RESISTS INDENTATION

ELEV / DEPTH	DESCRIPTION	BLOWS / FT	SAMPLES NO.	TYPE	HAMM. BLOWS PER 6 IN (FORCE)	REC / ATT	DEPTH	SAMPLE DESCRIPTION AND BORING NOTES
								Boring 20 FT N of NW corner of B9.
1								
2			1		PID=	3.1		00-5.0 Dark brown to tan SILT SAND + GRAVEL with some wood. FILL.
3					0.0 ppm	5.0		Coal tar from 1.5-1.9 FT. Coal tar odor
4								
5								Refusd @ 5.0 FT
								Cuttings returned to borehole, tamped and covered with asphalt patch.

VDM01844

Field Boring Log

DEPTH HOLE 4.5	JOB NO 093-89168	PROJECT Van DeMark		BORING NO. B9-W10-N20	
DEPTH SOIL DRILL 4.5	GA INSP D. WEHN	DRILLING METHOD Geoprobe Macrocore		SHEET 1 OF 1	
DEPTH ROCK CORE N/A	WEATHER L. RAIN	DRILLING COMPANY Zebra Env.		SURFACE ELEV	
NO. DIST SA 0 UD. SA 1	TEMP 75°F	DRILL RIG 6620D	DRILLER D. Pino	DATUM	
DEPTH WL. N/A	HRS. PROD. N/A	WT SAMPLER HAMMER N/A	DROP N/A	STARTED 11:20, 6/22/10	
TIME WL. N/A	HRS. DELAYED 0	WT CASING HAMMER N/A	DROP N/A	COMPLETED 11:30, 6/22/10	

SAMPLE TYPES

AS	AUGER SAMPLE	BL	BLACK
CS	CHUNK SAMPLE	BR	BROWN
DO	DRIVE OPEN	C	COARSE
DS	DENISON SAMPLE	CA	CASING
PS	PITCHER SAMPLE	CL	CLAY
RC	ROCK CORE	CLY	CLAYEY
ST	SLOTTED TUBE	F	FINE
TO	THIN-WALLED, OPEN	FRAG	FRAGMENTS
TP	THIN-WALLED, PISTON	GL	GRAVEL
WS	WASH SAMPLE	LYD	LAYERED
		LI	LITTLE

ABBREVIATIONS

M	MEDIUM	SA	SAMPLE
MIC	MICACEOUS	SAT	SATURATED
MOT	MOTTLED	SD	SAND
NP	NON-PLASTIC	SI	SILT
OG	ORANGE	SLY	SILTY
ORG	ORGANIC	SM	SOME
PH	PRESSURE HYDRAULIC	TR	TRACE
PM	PRESSURE MANUAL	WL	WATER LEVEL
R	RED	WH	WEIGHT OF HAMMER
RES	RESIDUAL	Y	YELLOW
RK	ROCK		

SOIL DESCRIPTION - RANGE OF PROPORTION

TRACE 0 - 10% | LITTLE 10 - 20% | SOME 20 - 35% | AND 35 - 50%

RELATIVE DENSITY	BLOWS	CONSISTENCY	FINGER PRESSURE
VERY LOOSE VLS	0-4	VERY SOFT VS	EASY INCHES
LOOSE LS	4-10	SOFT S	MOLDS EASILY
COMPACT CP	10-30	FIRM FM	MOLDS
DENSE DN	30-50	STIFF ST	FINGER MARKS
VERY DENSE VDN	>50	VERY STIFF VST	FINGERNAIL INDENT
		HARD H	FINGER'S THUMBNAIL

ELEV / DEPTH	DESCRIPTION	BLOWS / FT	SAMPLES NO.	SAMPLES TYPE	SAMPLES HAMM. BLOWS PER 6 IN (FORCE)	SAMPLES REC / ATT	DEPTH	SAMPLE DESCRIPTION AND BORING NOTES
								Boring 10 FT W and 20 FT N of NW corner of B9.
1								
2					PID =	4.2 /		0.0 - 4.5 FT Dark brown SILT SAND + GRAVEL with some brick. FILL.
3					0.0 ppm	4.5		Coal tar 2.5 - 2.9 and 3.7 - 3.5 FT. Coal tar odor.
4								
5								Refusal @ 4.5 FT
								Cuttings returned to borehole, tamped and covered with asphalt patch.

Field Boring Log

DEPTH HOLE 4.0	JOB NO 093-89168	PROJECT Van DeMark		BORING NO. B9-W20-N20	
DEPTH SOIL DRILL 4.0	GA INSP D. WEHN	DRILLING METHOD Geoprobe Macrocore		SHEET 1 OF 1	
DEPTH ROCK CORE N/A	WEATHER	DRILLING COMPANY Zebra Env.		SURFACE ELEV	
NO. DIST SA 0 UD. SA 1	TEMP 75°F	DRILL RIG 6620D	DRILLER D. Pino	DATUM	
DEPTH WL N/A	HRS. PROD. N/A	WT SAMPLER HAMMER N/A	DROP N/A	STARTED 11:30, 6/22/10	
TIME WL. N/A	HRS. DELAYED 0	WT CASING HAMMER N/A	DROP N/A	COMPLETED 11:40, 6/22/10	

SAMPLE TYPES

AS	AUGER SAMPLE
CS	CHUNK SAMPLE
DO	DRIVE OPEN
DS	DENISON SAMPLE
PS	PITCHER SAMPLE
RC	ROCK CORE
ST	SLOTTED TUBE
TO	THIN-WALLED, OPEN
TP	THIN-WALLED, PISTON
WS	WASH SAMPLE

ABBREVIATIONS

BL	BLACK	M	MEDIUM	SA	SAMPLE
BR	BROWN	MIC	MICACEOUS	SAT	SATURATED
C	COARSE	MOT	MOTTLED	SD	SAND
CA	CASING	NP	NON-PLASTIC	SI	SILT
CL	CLAY	OG	ORANGE	SIY	SILTY
CLY	CLAYEY	ORG	ORGANIC	SN	SOME
F	FINE	PH	PRESSURE HYDRAULIC	TR	TRACE
FRAG	FRAGMENTS	PM	PRESSURE MANUAL	WL	WATER LEVEL
GL	GRAVEL	R	RED	WH	WEIGHT OF HAMMER
LYD	LAYERED	RES	RESIDUAL	Y	YELLOW
LI	LITTLE	RK	ROCK		

SOIL DESCRIPTION - RANGE OF PROPORTION

TRACE 0 - 5% SOME 12 - 30%
LITTLE 5 - 12% AND 30 - 50%

RELATIVE DENSITY		BLOWS	CONSISTENCY		FINGER PRESSURE
VERY LOOSE	VLS	0-4	VERY SOFT	VS	EXTRUDES
LOOSE	LS	4-10	SOFT	S	MOLDS EASILY
COMPACT	CP	10-30	FIRM	FM	MOLDS
DENSE	DN	30-50	STIFF	ST	THUMB INDENTS
VERY DENSE	VDN	>50	VERY STIFF	VST	THUMBNAIL INDENT
			HARD	H	RESISTS THUMBNAIL

ELEV / DEPTH	DESCRIPTION	BLOWS / FT		SAMPLES NO.	TYPE	HAMM. BLOWS PER 6 IN (FORCE)	REC / ATT	DEPTH	SAMPLE DESCRIPTION AND BORING NOTES
									Boring 20 FT W and 20 FT N of NW corner of building B9.
1									
2							3.0 / 4.0		0.0-4.0 Tan SAND and GRAVEL. FILL. Coal tar from 2.0-2.9 FT. Coal tar odor.
3									
4									Refusal @ 4.0 FT
5									PID displayed "fan error" - no readings possible for remainder of day.
									Cuttings returned to borehole, tamped, and covered with asphalt patch.

VDM01846

Field Boring Log

DEPTH HOLE 7.0	JOB NO 093-89168	PROJECT Van DeMark		BORING NO. B9-W30-N10	
DEPTH SOIL DRILL 7.0	GA INSP D. WEHN	DRILLING METHOD Geoprobe Macrocore		SHEET 1 OF 1	
DEPTH ROCK CORE N/A	WEATHER OVERCAST	DRILLING COMPANY Zebra Env.		SURFACE ELEV	
NO. DIST SA. 0 UD SA. 2	TEMP 75°F	DRILL RIG 6620D	DRILLER D. Pino	DATUM	
DEPTH WL. N/A	HRS. PROD. N/A	WT SAMPLER HAMMER N/A	DROP N/A	STARTED 11:45, 6/22/10	
TIME WL. N/A	HRS. DELAYED 0	WT CASING HAMMER N/A	DROP N/A	COMPLETED 12:00, 6/22/10	

SAMPLE TYPES: AS AUGER SAMPLE; CS CHUNK SAMPLE; DO DRIVE OPEN; DS DENISON SAMPLE; PS PITCHER SAMPLE; RC ROCK CORE; ST SLOTTED TUBE; TO THIN-WALLED, OPEN; TP THIN-WALLED, PISTON; WS WASH SAMPLE

ABBREVIATIONS: BK BLACK; BR BROWN; C COARSE; CA CASING; CL CLAY; CLY CLAYEY; F FINE; FRAG FRAGMENTS; GL GRAVEL; LYD LAYERED; L LITTLE; M MEDIUM; MIC MICACEOUS; MOT MOTTLED; NP NON-PLASTIC; OG ORANGE; ORG ORGANIC; PH PRESSURE HYDRAULIC; PM PRESSURE MANUAL; R RED; RES RESIDUAL; RK ROCK; SA SAMPLE; SAT SATURATED; SD SAND; SI SILT; SLY SILTY; SM SOME; TR TRACE; WL WATER LEVEL; WH WEIGHT OF HAMMER; Y YELLOW

SOIL DESCRIPTION - RANGE OF PROPORTION

RELATIVE DENSITY	BLOWS	CONSISTENCY	FIELD PRESSURE
VERY LOOSE	VLS 0-4	VERY SOFT	VS LESS THAN 0.5
LOOSE	LS 4-10	SOFT	S 0.5-1.0
COMPACT	CP 10-30	FIRM	FM 1.0-2.0
DENSE	DN 30-50	STIFF	ST 2.0-4.0
VERY DENSE	VDN >50	VERY STIFF	VST 4.0-8.0
		HARD	H MORE THAN 8.0

ELEV / DEPTH	DESCRIPTION	BLOWS / FT	SAMPLES NO.	SAMPLES TYPE	SAMPLES HAMM. BLOWS PER 6 IN (FORCE)	SAMPLES REC / ATT	DEPTH	SAMPLE DESCRIPTION AND BORING NOTES
								Boring 30 FT W and 10 FT N of NW corner of B9
1								
2						3.2		0.0-5.0 FT Grey to black SAND & GRAVEL. FILL. Some brick.
3			1			/ 5.0		No coal tar or petroliferous odor.
4								Petroliferous odor.
5								
								5.0-7.0 FT Reddish brown GRAVEL. Slight petroliferous odor.
6			2			1.8 / 2.0		
7								Refusal @ 7.0 FT.
								Cuttings returned to borehole, tamped, and covered with asphalt patch.

VDM01847

Field Boring Log

DEPTH HOLE 8.0	JOB NO 093-89168	PROJECT Van DeMark		BORING NO. B9-W30-N36	
DEPTH SOIL DRILL 8.0	QA INSP D. WEHN	DRILLING METHOD Geoprobe Macrocore		SHEET 1 OF 1	
DEPTH ROCK CORE N/A	WEATHER OVERCAST	DRILLING COMPANY Zebra Env.		SURFACE ELEV	
NO. DIST SA. 0 UD. SA. 2	TEMP 75°F	DRILL RIG 6620D	DRILLER D. Pino	DATUM	
DEPTH WL N/A	HRS. PROD. N/A	WT SAMPLER HAMMER N/A	DROP N/A	STARTED 12:45, 6/22/10	
TIME WL N/A	HRS. DELAYED 0	WT CASING HAMMER N/A	DROP N/A	COMPLETED 13:00, 6/22/10	

SAMPLE TYPES

AS	AUGER SAMPLE
CS	CHUNK SAMPLE
DO	DRIVE OPEN
DS	DENISON SAMPLE
PS	PITCHER SAMPLE
RC	ROCK CORE
ST	SLOTTED TUBE
TO	THIN-WALLED, OPEN
TP	THIN-WALLED, PISTON
WS	WASH SAMPLE

ABBREVIATIONS

BL	BLACK	M	MEDIUM	SA	SAMPLE
BR	BROWN	MIC	MICACEOUS	SAT	SATURATED
C	COARSE	MOT	MOTTLED	SD	SAND
CA	CASING	NP	NON-PLASTIC	SI	SILT
CL	CLAY	OG	ORANGE	SIY	SILTY
CLY	CLAYEY	ORG	ORGANIC	SM	SOME
F	FINE	PH	PRESSURE HYDRAULIC	TR	TRACE
FRAG	FRAGMENTS	PM	PRESSURE MANUAL	WL	WATER LEVEL
GL	GRAVEL	R	RED	WH	WEIGHT OF HAMMER
LYD	LAYERED	RES	RESIDUAL	Y	YELLOW
LI	LITTLE	RX	ROCK		

SOIL DESCRIPTION - RANGE OF PROPORTION

TRACE 0-5% SOME 15-30%
LITTLE 5-12% AND 30-50%

RELATIVE DENSITY		BLOWS	CONSISTENCY		FINGER PRESSURE
VERY LOOSE	VLS	0-4	VERY SOFT	VS	EXTRUDES
LOOSE	LS	4-10	SOFT	S	MOLDS EASILY
COMPACT	CP	10-30	FIRM	FM	MOLDS
DENSE	DN	30-50	STIFF	ST	THUMB DENTS
VERY DENSE	VDN	>50	VERY STIFF	VST	THUMBNAIL INDENT
			HARD	H	RESISTS THUMBNAIL

ELEV / DEPTH	DESCRIPTION	BLOWS / FT		SAMPLES NO.	TYPE	HAMM. BLOWS PER 6 IN (FORCE)	REC / ATT	DEPTH	SAMPLE DESCRIPTION AND BORING NOTES
1									Boring 30 FT W and 36 FT N of NW corner of B9
2									0.0-5.0 FT Dark brown to black gravelly SAND. FILL.
3				1			4.2 / 5.0		Crushed brick ~~1.8-2.0 FT~~ 2.9-3.7 FT
4									Coal tar 1.8-2.0 FT. Coal tar odor.
5									5.0-8.0 FT Dark brown coarse SAND + GRAVEL.
6				2			1.8 / 3.0		Petroliferous odor.
7									
8									Refusal @ 8.0 FT
									Cuttings returned to borehole, tamped, and covered with asphalt patch.

Field Boring Log

DEPTH HOLE	4.5	JOB NO	093-89168	PROJECT	Van DeMark	BORING NO.	B9-N36
DEPTH SOIL DRILL	4.5	GA INSP	D. WEHN	DRILLING METHOD	Geoprobe Macrocore	SHEET	1 OF 1
DEPTH ROCK CORE	N/A	WEATHER	OVERCAST	DRILLING COMPANY	Zebra Env.	SURFACE ELEV	
NO. DIST SA	0 UD. SA. 1	TEMP	75°F	DRILL RIG	6620D	DRILLER D. Pino	DATUM
DEPTH WL	N/A	HRS. PROD.	N/A	WT SAMPLER HAMMER	N/A	DROP N/A	STARTED 13:05, 6/22/10
TIME WL	N/A	HRS. DELAYED	0	WT CASING HAMMER	N/A	DROP N/A	COMPLETED 13:15, 6/22/10

SAMPLE TYPES

AS	AUGER SAMPLE
CS	CHUNK SAMPLE
DO	DRIVE OPEN
DS	DENISON SAMPLE
PS	PITCHER SAMPLE
RC	ROCK CORE
ST	SLOTTED TUBE
TO	THIN-WALLED, OPEN
TP	THIN-WALLED, PISTON
WS	WASH SAMPLE

ABBREVIATIONS

BL	BLACK	M	MEDIUM	SA	SAMPLE
BR	BROWN	MIC	MICACEOUS	SAT	SATURATED
C	COARSE	MOT	MOTTLED	SD	SAND
CA	CASING	NP	NON-PLASTIC	SI	SILT
CL	CLAY	OG	ORANGE	SIY	SILTY
CLY	CLAYEY	ORG	ORGANIC	SM	SOME
F	FINE	PH	PRESSURE HYDRAULIC	TR	TRACE
FRAG	FRAGMENTS	PM	PRESSURE MANUAL	WL	WATER LEVEL
GL	GRAVEL	R	RED	WH	WEIGHT OF HAMMER
LYD	LAYERED	RES	RESIDUAL	Y	YELLOW
LI	LITTLE	RX	ROCK		

SOIL DESCRIPTION - RANGE OF PROPORTION

TRACE 0 - 5% SOME 12 - 30%
LITTLE 5 - 12% AND 30 - 50%

RELATIVE DENSITY		BLOWS	CONSISTENCY		FINGER PRESSURE
VERY LOOSE	VLS	0-4	VERY SOFT	VS	EXTRUDES
LOOSE	LS	4-10	SOFT	S	MOLDS EASILY
COMPACT	CP	10-30	FIRM	FM	MOLDS
DENSE	DN	30-50	STIFF	ST	THUMB INDENTS
VERY DENSE	VDN	>50	VERY STIFF	VST	THUMBNAIL INDENT
			HARD	H	RESISTS THUMBNAIL

ELEV / DEPTH	DESCRIPTION	BLOWS / FT		SAMPLES NO.	TYPE	HAMM. BLOWS PER 6 IN (FORCE)	REC / ATT	DEPTH	SAMPLE DESCRIPTION AND BORING NOTES
									Boring 36 FT N of NW corner of B9.
1									0.0 - 4.5 FT
2				1			3.5 / 4.5		Black to dark gray SAND + GRAVEL to 1.9 FT, then reddish SILT + CLAY.
3									Coal tar 1.3 - 1.7 FT. Coal tar odor.
4									Refusal @ 4.5 FT
5									
									Cuttings returned to borehole, tamped, and covered with asphalt patch.

VDM01849

Field Boring Log

DEPTH HOLE 5.0	JOB NO 093-89168	PROJECT Van DeMark		BORING NO. B9-E20-N20	
DEPTH SOIL DRILL 5.0	QA INSP D. WEHN	DRILLING METHOD Geoprobe Macrocore		SHEET 1 OF 1	
DEPTH ROCK CORE N/A	WEATHER OVERCAST	DRILLING COMPANY Zebra Env.		SURFACE ELEV	
NO DIST SA 0 UD. SA 1	TEMP 75°F	DRILL RIG 6620D	DRILLER D. Pino	DATUM	
DEPTH WL N/A	HRS. PROD. N/A	WT SAMPLER HAMMER N/A	DROP N/A	STARTED 13:16, 6/22/10	
TIME WL N/A	HRS. DELAYED 0	WT CASING HAMMER N/A	DROP N/A	COMPLETED 13:25, 6/22/10	

SAMPLE TYPES

AS	AUGER SAMPLE
CS	CHUNK SAMPLE
DO	DRIVE OPEN
DS	DENISON SAMPLE
PS	PITCHER SAMPLE
RC	ROCK CORE
ST	SLOTTED TUBE
TO	THIN-WALLED, OPEN
TP	THIN-WALLED, PISTON
WS	WASH SAMPLE

ABBREVIATIONS

BL	BLACK	M	MEDIUM	SA	SAMPLE
BR	BROWN	MIC	MICACEOUS	SAT	SATURATED
C	COARSE	MOT	MOTTLED	SD	SAND
CA	CASING	NP	NON-PLASTIC	SI	SILT
CL	CLAY	OG	ORANGE	SIY	SILTY
CLY	CLAYEY	ORG	ORGANIC	SM	SOME
F	FINE	PH	PRESSURE HYDRAULIC	TR	TRACE
FRAG	FRAGMENTS	PM	PRESSURE MANUAL	WL	WATER LEVEL
GL	GRAVEL	R	RED	WH	WEIGHT OF HAMMER
LYD	LAYERED	RES	RESIDUAL	Y	YELLOW
LI	LITTLE	RX	ROCK		

SOIL DESCRIPTION - RANGE OF PROPORTION

TRACE 0-1% SOME 12-30%
LITTLE 5-12% AND 30-50%

RELATIVE DENSITY		BLOWS	CONSISTENCY		FINGER PRESSURE
VERY LOOSE	VLS	0-4	VERY SOFT	VS	EXTRUDES
LOOSE	LS	4-10	SOFT	S	MOLDS EASILY
COMPACT	CP	10-30	FIRM	FM	MOLDS
DENSE	DN	30-50	STIFF	ST	THUMB INDENTS
VERY DENSE	VDN	50	VERY STIFF	VST	THUMBNAIL INDENT
			HARD	H	RESISTS THUMBNAIL

ELEV DEPTH	DESCRIPTION	BLOWS/FT		SAMPLES NO.	TYPE	HAMM. BLOWS PER 6 IN (FORCE)	REC/ATT	DEPTH	SAMPLE DESCRIPTION AND BORING NOTES
									Boring 20 FT E and 20 FT N of NW corner of B9
1									
2							3.9/5.0		0-1.4 FT crushed concrete.
3				1					1.4-3.9 FT reddish brown SILT with some sand.
4									
5									
									Cuttings returned to borehole, tamped, and covered with asphalt patch.

VDM01850

Field Boring Log

DEPTH HOLE 5.3	JOB NO 093-89168	PROJECT Van DeMark			BORING NO. B9-W34-S10
DEPTH SOIL DRILL 5.3	GA INSP D. WEHN	DRILLING METHOD Geoprobe Macrocore			SHEET 1 OF 1
DEPTH ROCK CORE N/A	WEATHER	DRILLING COMPANY Zebra Env.			SURFACE ELEV
NO. DIST SA 0 UD SA 2	TEMP 75°F	DRILL RIG 6620D		DRILLER D. Pino	DATUM
DEPTH WL N/A	HRS. PROD. N/A	WT SAMPLER HAMMER N/A	DROP N/A		STARTED 13:28, 6/22/10
TIME WL N/A	HRS. DELAYED 0	WT CASING HAMMER N/A	DROP N/A		COMPLETED 13:40, 6/22/10

SAMPLE TYPES: AS AUGER SAMPLE; CS CHUNK SAMPLE; DO DRIVE OPEN; DS DENISON SAMPLE; PS PITCHER SAMPLE; RC ROCK CORE; ST SLOTTED TUBE; TO THIN-WALLED, OPEN; TP THIN-WALLED, PISTON; WS WASH SAMPLE

ABBREVIATIONS: BL BLACK; BR BROWN; C COARSE; CA CASING; CL CLAY; CLY CLAYEY; F FINE; FRAG FRAGMENTS; GL GRAVEL; LYD LAYERED; LI LITTLE; M MEDIUM; MIC MICACEOUS; MOT MOTTLED; NP NON-PLASTIC; OG ORANGE; ORG ORGANIC; PH PRESSURE HYDRAULIC; PM PRESSURE MANUAL; R RED; RES RESIDUAL; RX ROCK; SA SAMPLE; SAT SATURATED; SD SAND; SI SILT; SLY SILTY; SM SOME; TR TRACE; WL WATER LEVEL; WH WEIGHT OF HAMMER; Y YELLOW

SOIL DESCRIPTION - RANGE OF PROPORTION: TRACE 0 - 5%; LITTLE 5 - 12%; SOME 12 - 30%; AND 30-50%

RELATIVE DENSITY	BLOWS	CONSISTENCY	FINGER PRESSURE
VERY LOOSE VLS	0-4	VERY SOFT VS	EXTRUDES
LOOSE LS	4-10	SOFT S	MOLDS EASILY
COMPACT CP	10-30	FIRM F	MOLDS
DENSE DN	30-50	STIFF ST	INDENTS READILY
VERY DENSE VDN	>50	VERY STIFF VST	INDENTS SLIGHTLY
		HARD H	MARKS WITH FINGERNAIL

ELEV / DEPTH	DESCRIPTION	BLOWS / FT	SAMPLES NO.	SAMPLES TYPE	SAMPLES HAMM. BLOWS PER 6 IN (FORCE)	SAMPLES REC / ATT	DEPTH	SAMPLE DESCRIPTION AND BORING NOTES
								Boring 24 FT W and 10 FT S of NW corner of B9
1								
2								0.0-5.0 FT Gray GRAVEL and SAND TO 1.6 FT then black GRAVEL and SAND.
			1			3.8 / 5.0		
3								Petroliferous odor
4								
5								
			2			0.3 / 0.3		5.0-5.3 FT Black SAND + GRAVEL
6								
								Cuttings returned to borehole, tamped, and covered with asphalt patch.

VDM01851

ATTACHMENT B

LABORATORY ANALYSIS REPORT (TESTAMERICA, JUNE 2010)

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

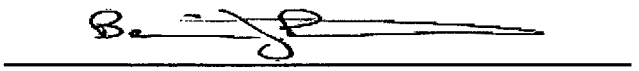
Analytical Report

Work Order: RTF1262

Project Description
Golder - Vandermark/Isochem site

For:

Pat Martin
Golder Associates, Inc. - Niagara Falls, NY
2221 Niagara Falls Blvd., Ste 9
Niagara Falls, NY 14304



Brian Fischer
Project Manager
Brian.Fischer@testamericainc.com
Friday, July 2, 2010

The test results in this report meet all NELAP requirements for analytes for which accreditation is required or available. Any exception to NELAP requirements are noted in this report. Persuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. All questions regarding this test report should be directed to the TestAmerica Project manager who has signed this report.

Golder Associates, Inc. - Niagara Falls, NY
2221 Niagara Falls Blvd., Ste 9
Niagara Falls, NY 14304

Work Order: RTF1262

Project: Golder - Vandermark/Isochem site
Project Number: [none]

Received: 06/22/10
Reported: 07/02/10 11:35

TestAmerica Buffalo
Current Certifications

As of 06/17/2010

STATE	Program	Cert # / Lab ID
Arkansas	CWA, RCRA, SOIL	88-0686
California*	NELAP CWA, RCRA	01169CA
Connecticut	SDWA, CWA, RCRA, SOIL	PH-0568
Florida*	NELAP CWA, RCRA	E87672
Georgia*	SDWA,NELAP CWA, RCRA	956
Illinois*	NELAP SDWA, CWA, RCRA	200003
Iowa	SW/CS	374
Kansas*	NELAP SDWA, CWA, RCRA	E-10187
Kentucky	SDWA	90029
Kentucky UST	UST	30
Louisiana*	NELAP CWA, RCRA	2031
Maine	SDWA, CWA	NY0044
Maryland	SDWA	294
Massachusetts	SDWA, CWA	M-NY044
Michigan	SDWA	9937
Minnesota	SDWA,CWA, RCRA	036-999-337
New Hampshire *	NELAP SDWA, CWA	233701
New Jersey*	NELAP,SDWA, CWA, RCRA,	NY455
New York*	NELAP, AIR, SDWA, CWA, RCRA,CLP	10026
North Dakota	CWA, RCRA	R-176
Oklahoma	CWA, RCRA	9421
Oregon*	CWA,RCRA	NY200003
Pennsylvania*	NELAP CWA,RCRA	68-00281
Tennessee	SDWA	02970
Texas*	NELAP CWA, RCRA	T104704412-08-TX
USDA	FOREIGN SOIL PERMIT	S-41579
Virginia	SDWA	278
Washington*	NELAP CWA,RCRA	C1677
Wisconsin	CWA, RCRA	998310390
West Virginia	CWA,RCRA	252

*As required under the indicated accreditation, the test results in this report meet all NELAP requirements for p arameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report.

Golder Associates, Inc. - Niagara Falls, NY
2221 Niagara Falls Blvd., Ste 9
Niagara Falls, NY 14304

Work Order: RTF1262

Project: Golder - Vandermark/Isochem site
Project Number: [none]

Received: 06/22/10
Reported: 07/02/10 11:35

CASE NARRATIVE

According to 40CFR Part 136.3, pH, Chlorine Residual, Dissolved Oxygen, Sulfite, and Temperature analyses are to be performed immediately after aqueous sample collection. When these parameters are not indicated as field (e.g. field-pH), they were not analyzed immediately, but as soon as possible after laboratory receipt.

A pertinent document is appended to this report, 1 page, is included and is an integral part of this report.

Reproduction of this analytical report is permitted only in its entirety. This report shall not be reproduced except in full without the written approval of the laboratory.

TestAmerica Laboratories, Inc. certifies that the analytical results contained herein apply only to the samples tested as received by our Laboratory.

Golder Associates, Inc. - Niagara Falls, NY
2221 Niagara Falls Blvd., Ste 9
Niagara Falls, NY 14304

Work Order: RTF1262

Project: Golder - Vandermark/Isochem site
Project Number: [none]

Received: 06/22/10
Reported: 07/02/10 11:35

DATA QUALIFIERS AND DEFINITIONS

D08	Dilution required due to high concentration of target analyte(s)
J	Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL). Concentrations within this range are estimated.
L2	Laboratory Control Sample and/or Laboratory Control Sample Duplicate recovery was below acceptance limits.
T10	Sample had an adjusted final volume during extraction due to extract matrix and / or viscosity.
Z3	The sample required a dilution, the surrogate spike concentration in the sample are reduced to a level where the recovery calculation does not provide useful information.
NR	Any inclusion of NR indicates that the project specific requirements do not require reporting estimated values below the laboratory reporting limit.

ADDITIONAL COMMENTS

Results are reported on a wet weight basis unless otherwise noted.

Golder Associates, Inc. - Niagara Falls, NY
2221 Niagara Falls Blvd., Ste 9
Niagara Falls, NY 14304

Work Order: RTF1262

Project: Golder - Vandermark/Isochem site
Project Number: [none]

Received: 06/22/10
Reported: 07/02/10 11:35

Executive Summary - Detections

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
Sample ID: RTF1262-01 (B-9-W5-N5 - Solid)					**Sampled: 06/22/10 10:05**			**Recvd: 06/22/10 14:20**		
Semivolatile Organics by GC/MS										
2-Methylnaphthalene	**2200000**	T10, D08	740000	8900	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Acenaphthene	**2100000**	T10, D08	740000	8600	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Acenaphthylene	**30000**	T10, D08,J	740000	6000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Anthracene	**3000000**	T10, D08	740000	19000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Benzo[a]anthracene	**2900000**	T10, D08	740000	13000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Benzo[a]pyrene	**2000000**	T10, D08	740000	18000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Benzo[b]fluoranthene	**1400000**	T10, D08	740000	14000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Benzo[g,h,i]perylene	**1000000**	T10, D08	740000	8800	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Benzo[k]fluoranthene	**560000**	T10, D08,J	740000	8100	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Biphenyl	**260000**	T10, D08,J	740000	46000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Carbazole	**320000**	T10, D08,J	740000	8500	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Chrysene	**2800000**	T10, D08	740000	7300	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Dibenz[a,h]anthracene	**300000**	T10, D08,J	740000	8600	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Dibenzofuran	**320000**	T10, D08,J	740000	7600	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Fluoranthene	**3900000**	T10, D08	740000	11000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Fluorene	**1600000**	T10, D08	740000	17000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Indeno[1,2,3-cd]pyrene	**680000**	T10, D08,L2, J	740000	20000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Naphthalene	**3000000**	T10, D08	740000	12000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Phenanthrene	**9400000**	T10, D08	740000	15000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Pyrene	**6200000**	T10, D08	740000	4800	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
General Chemistry Parameters										
Percent Solids	**91**		0.010	NR	%	1.00	06/24/10 13:46	JRR	10F2079	Dry Weight
Sample ID: RTF1262-02 (B-9-N-10 - Solid)					**Sampled: 06/22/10 10:25**			**Recvd: 06/22/10 14:20**		
Semivolatile Organics by GC/MS										
2-Methylnaphthalene	**1500000**	T10, D08	840000	10000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Acenaphthene	**1500000**	T10, D08	840000	9800	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Anthracene	**2700000**	T10, D08	840000	21000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Benzo[a]anthracene	**3400000**	T10, D08	840000	14000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Benzo[a]pyrene	**2300000**	T10, D08	840000	20000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Benzo[b]fluoranthene	**1600000**	T10, D08	840000	16000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Benzo[g,h,i]perylene	**1100000**	T10, D08	840000	10000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Benzo[k]fluoranthene	**610000**	T10, D08,J	840000	9200	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Biphenyl	**160000**	T10, D08,J	840000	52000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Carbazole	**280000**	T10, D08,J	840000	9700	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Chrysene	**3400000**	T10, D08	840000	8400	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Dibenz[a,h]anthracene	**300000**	T10, D08,J	840000	9800	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Dibenzofuran	**260000**	T10, D08,J	840000	8700	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Fluoranthene	**4000000**	T10, D08	840000	12000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Fluorene	**1300000**	T10, D08	840000	19000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Indeno[1,2,3-cd]pyrene	**790000**	T10, D08,L2, J	840000	23000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Naphthalene	**2000000**	T10, D08	840000	14000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Phenanthrene	**9400000**	T10, D08	840000	18000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Pyrene	**7600000**	T10, D08	840000	5400	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C

Golder Associates, Inc. - Niagara Falls, NY
2221 Niagara Falls Blvd., Ste 9
Niagara Falls, NY 14304

Work Order: RTF1262

Project: Golder - Vandermark/Isochem site
Project Number: [none]

Received: 06/22/10
Reported: 07/02/10 11:35

Executive Summary - Detections

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
Sample ID: RTF1262-02 (B-9-N-10 - Solid) - cont.						**Sampled: 06/22/10 10:25**		**Recvd: 06/22/10 14:20**		
General Chemistry Parameters										
Percent Solids	**79**		0.010	NR	%	1.00	06/24/10 13:48	JRR	10F2079	Dry Weight
Sample ID: RTF1262-03 (B-9-W5-N10 - Solid)						**Sampled: 06/22/10 10:35**		**Recvd: 06/22/10 14:20**		
Semivolatile Organics by GC/MS										
2-Methylnaphthalene	**1200000**	T10, D08	740000	8900	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Acenaphthene	**1300000**	T10, D08	740000	8600	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Anthracene	**1800000**	T10, D08	740000	19000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Benzo[a]anthracene	**2000000**	T10, D08	740000	13000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Benzo[a]pyrene	**1300000**	T10, D08	740000	18000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Benzo[b]fluoranthene	**1000000**	T10, D08	740000	14000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Benzo[g,h,i]perylene	**720000**	T10, D08,J	740000	8800	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Benzo[k]fluoranthene	**360000**	T10, D08,J	740000	8100	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Biphenyl	**150000**	T10, D08,J	740000	46000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Carbazole	**200000**	T10, D08,J	740000	8500	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Chrysene	**2000000**	T10, D08	740000	7300	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Dibenz[a,h]anthracene	**200000**	T10, D08,J	740000	8600	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Dibenzofuran	**200000**	T10, D08,J	740000	7600	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Fluoranthene	**2500000**	T10, D08	740000	11000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Fluorene	**940000**	T10, D08	740000	17000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Indeno[1,2,3-cd]pyrene	**470000**	T10, D08,L2, J	740000	20000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Naphthalene	**1500000**	T10, D08	740000	12000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Phenanthrene	**5900000**	T10, D08	740000	15000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Pyrene	**4300000**	T10, D08	740000	4800	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
General Chemistry Parameters										
Percent Solids	**92**		0.010	NR	%	1.00	06/24/10 13:50	JRR	10F2079	Dry Weight
Sample ID: RTF1262-04 (B-9-W10-N5 - Solid)						**Sampled: 06/22/10 10:45**		**Recvd: 06/22/10 14:20**		
Semivolatile Organics by GC/MS										
2-Methylnaphthalene	**530000**	T10, D08	410000	4900	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Acenaphthene	**830000**	T10, D08	410000	4700	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Acenaphthylene	**19000**	T10, D08,J	410000	3300	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Anthracene	**1300000**	T10, D08	410000	10000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Benzo[a]anthracene	**1600000**	T10, D08	410000	7000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Benzo[a]pyrene	**1000000**	T10, D08	410000	9700	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Benzo[b]fluoranthene	**1000000**	T10, D08	410000	7800	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Benzo[g,h,i]perylene	**570000**	T10, D08	410000	4800	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Biphenyl	**77000**	T10, D08,J	410000	25000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Carbazole	**97000**	T10, D08,J	410000	4700	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Chrysene	**1500000**	T10, D08	410000	4000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Dibenz[a,h]anthracene	**160000**	T10, D08,J	410000	4700	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Dibenzofuran	**110000**	T10, D08,J	410000	4200	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Fluoranthene	**2000000**	T10, D08	410000	5800	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Fluorene	**640000**	T10, D08	410000	9300	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Indeno[1,2,3-cd]pyrene	**400000**	T10, D08,L2, J	410000	11000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Naphthalene	**590000**	T10, D08	410000	6700	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C

Golder Associates, Inc. - Niagara Falls, NY
2221 Niagara Falls Blvd., Ste 9
Niagara Falls, NY 14304

Work Order: RTF1262

Project: Golder - Vandermark/Isochem site
Project Number: [none]

Received: 06/22/10
Reported: 07/02/10 11:35

Executive Summary - Detections

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
Sample ID: RTF1262-04 (B-9-W10-N5 - Solid) - cont.						**Sampled: 06/22/10 10:45**		**Recvd: 06/22/10 14:20**		
Semivolatile Organics by GC/MS - cont.										
Phenanthrene	**4200000**	T10, D08	410000	8500	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Pyrene	**3300000**	T10, D08	410000	2600	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
General Chemistry Parameters										
Percent Solids	**82**		0.010	NR	%	1.00	06/24/10 13:52	JRR	10F2079	Dry Weight

Golder Associates, Inc. - Niagara Falls, NY
2221 Niagara Falls Blvd., Ste 9
Niagara Falls, NY 14304

Work Order: RTF1262

Project: Golder - Vandermark/Isochem site
Project Number: [none]

Received: 06/22/10
Reported: 07/02/10 11:35

Sample Summary

Sample Identification	Lab Number	Client Matrix	Date/Time Sampled	Date/Time Received	Sample Qualifiers
B-9-W5-N5	RTF1262-01	Solid	06/22/10 10:05	06/22/10 14:20	
B-9-N-10	RTF1262-02	Solid	06/22/10 10:25	06/22/10 14:20	
B-9-W5-N10	RTF1262-03	Solid	06/22/10 10:35	06/22/10 14:20	
B-9-W10-N5	RTF1262-04	Solid	06/22/10 10:45	06/22/10 14:20	

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Work Order: RTF1262

Project: Golder - Vandermark/Isochem site
Project Number: [none]

Received: 06/22/10
Reported: 07/02/10 11:35

Analytical Report

Sample ID: RTF1262-01 (B-9-W5-N5 - Solid) — **Sampled: 06/22/10 10:05** — **Recvd: 06/22/10 14:20**

Semivolatile Organics by GC/MS

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
2,4,5-Trichlorophenol	ND	T10, D08	740000	160000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
2,4,6-Trichlorophenol	ND	T10, D08	740000	48000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
2,4-Dichlorophenol	ND	T10, D08	740000	39000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
2,4-Dimethylphenol	ND	T10, D08	740000	200000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
2,4-Dinitrophenol	ND	T10, D08	1400000	260000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
2,4-Dinitrotoluene	ND	T10, D08	740000	110000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
2,6-Dinitrotoluene	ND	T10, D08	740000	180000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
2-Chloronaphthalene	ND	T10, D08	740000	49000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
2-Chlorophenol	ND	T10, D08	740000	37000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
2-Methylnaphthalene	**2200000**	T10, D08	740000	8900	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
2-Methylphenol	ND	T10, D08	740000	23000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
2-Nitroaniline	ND	T10, D08	1400000	240000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
2-Nitrophenol	ND	T10, D08	740000	34000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
3 & 4 Methylphenol	ND	T10, D08	1400000	41000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
3,3'-Dichlorobenzidine	ND	T10, D08	740000	640000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
3-Nitroaniline	ND	T10, D08	1400000	170000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
4,6-Dinitro-2-methylphenol	ND	T10, D08	1400000	250000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
4-Bromophenyl phenyl ether	ND	T10, D08	740000	230000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
4-Chloro-3-methylphenol	ND	T10, D08	740000	30000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
4-Chloroaniline	ND	T10, D08	740000	220000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
4-Chlorophenyl phenyl ether	ND	T10, D08	740000	16000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
4-Nitroaniline	ND	T10, D08	1400000	82000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
4-Nitrophenol	ND	T10, D08	1400000	180000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Acenaphthene	**2100000**	T10, D08	740000	8600	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Acenaphthylene	**30000**	T10, D08,J	740000	6000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Acetophenone	ND	T10, D08	740000	38000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Anthracene	**3000000**	T10, D08	740000	19000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Atrazine	ND	T10, D08	740000	33000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Benzaldehyde	ND	T10, D08	740000	81000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Benzo[a]anthracene	**2900000**	T10, D08	740000	13000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Benzo[a]pyrene	**2000000**	T10, D08	740000	18000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Benzo[b]fluoranthene	**1400000**	T10, D08	740000	14000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Benzo[g,h,i]perylene	**1000000**	T10, D08	740000	8800	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Benzo[k]fluoranthene	**560000**	T10, D08,J	740000	8100	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Biphenyl	**260000**	T10, D08,J	740000	46000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Bis(2-chloroethoxy)methane	ND	T10, D08	740000	40000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Bis(2-chloroethyl)ether	ND	T10, D08	740000	63000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Bis(2-chloroisopropyl) ether	ND	T10, D08	740000	77000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Bis(2-ethylhexyl) phthalate	ND	T10, D08	740000	240000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Butyl benzyl phthalate	ND	T10, D08	740000	200000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Caprolactam	ND	T10, D08	740000	320000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Carbazole	**320000**	T10, D08,J	740000	8500	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Chrysene	**2800000**	T10, D08	740000	7300	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Dibenz[a,h]anthracene	**300000**	T10, D08,J	740000	8600	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Dibenzofuran	**320000**	T10, D08,J	740000	7600	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C

Golder Associates, Inc. - Niagara Falls, NY
2221 Niagara Falls Blvd., Ste 9
Niagara Falls, NY 14304

Work Order: RTF1262

Project: Golder - Vandermark/Isochem site
Project Number: [none]

Received: 06/22/10
Reported: 07/02/10 11:35

Analytical Report

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
Sample ID: RTF1262-01 (B-9-W5-N5 - Solid) - cont.						**Sampled: 06/22/10 10:05**		**Recvd: 06/22/10 14:20**		
Semivolatile Organics by GC/MS - cont.										
Diethyl phthalate	ND	T10, D08	740000	22000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Dimethyl phthalate	ND	T10, D08	740000	19000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Di-n-butyl phthalate	ND	T10, D08	740000	250000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Di-n-octyl phthalate	ND	T10, D08	740000	17000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Fluoranthene	**3900000**	T10, D08	740000	11000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Fluorene	**1600000**	T10, D08	740000	17000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Hexachlorobenzene	ND	T10, D08	740000	36000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Hexachlorobutadiene	ND	T10, D08	740000	38000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Hexachlorocyclopentadiene	ND	T10, D08	740000	220000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Hexachloroethane	ND	T10, D08	740000	57000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Indeno[1,2,3-cd]pyrene	**680000**	T10, D08,L2, J	740000	20000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Isophorone	ND	T10, D08	740000	37000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Naphthalene	**3000000**	T10, D08	740000	12000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Nitrobenzene	ND	T10, D08	740000	33000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
N-Nitrosodi-n-propylamine	ND	T10, D08	740000	58000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
N-Nitrosodiphenylamine	ND	T10, D08	740000	40000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Pentachlorophenol	ND	T10, D08	1400000	250000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Phenanthrene	**9400000**	T10, D08	740000	15000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Phenol	ND	T10, D08	740000	77000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Pyrene	**6200000**	T10, D08	740000	4800	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
2,4,6-Tribromophenol	*	*T10, D08,Z3*	*Surr Limits: (39-146%)*				*06/30/10 19:16*	*MAF*	*10F2051*	*8270C*
2-Fluorobiphenyl	*360 %*	*T10, D08,Z3*	*Surr Limits: (37-120%)*				*06/30/10 19:16*	*MAF*	*10F2051*	*8270C*
2-Fluorophenol	*	*T10, D08,Z3*	*Surr Limits: (18-120%)*				*06/30/10 19:16*	*MAF*	*10F2051*	*8270C*
Nitrobenzene-d5	*	*T10, D08,Z3*	*Surr Limits: (34-132%)*				*06/30/10 19:16*	*MAF*	*10F2051*	*8270C*
Phenol-d5	*	*T10, D08,Z3*	*Surr Limits: (11-120%)*				*06/30/10 19:16*	*MAF*	*10F2051*	*8270C*
p-Terphenyl-d14	*360 %*	*T10, D08,Z3*	*Surr Limits: (58-147%)*				*06/30/10 19:16*	*MAF*	*10F2051*	*8270C*
General Chemistry Parameters										
Percent Solids	**91**		0.010	NR	%	1.00	06/24/10 13:46	JRR	10F2079	Dry Weight

Golder Associates, Inc. - Niagara Falls, NY
2221 Niagara Falls Blvd., Ste 9
Niagara Falls, NY 14304

Work Order: RTF1262

Project: Golder - Vandermark/Isochem site
Project Number: [none]

Received: 06/22/10
Reported: 07/02/10 11:35

Analytical Report

Sample ID: RTF1262-02 (B-9-N-10 - Solid) — **Sampled: 06/22/10 10:25** — **Recvd: 06/22/10 14:20**

Semivolatile Organics by GC/MS

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
2,4,5-Trichlorophenol	ND	T10, D08	840000	180000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
2,4,6-Trichlorophenol	ND	T10, D08	840000	55000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
2,4-Dichlorophenol	ND	T10, D08	840000	44000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
2,4-Dimethylphenol	ND	T10, D08	840000	230000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
2,4-Dinitrophenol	ND	T10, D08	1600000	290000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
2,4-Dinitrotoluene	ND	T10, D08	840000	130000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
2,6-Dinitrotoluene	ND	T10, D08	840000	200000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
2-Chloronaphthalene	ND	T10, D08	840000	56000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
2-Chlorophenol	ND	T10, D08	840000	43000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
2-Methylnaphthalene	**1500000**	T10, D08	840000	10000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
2-Methylphenol	ND	T10, D08	840000	26000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
2-Nitroaniline	ND	T10, D08	1600000	270000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
2-Nitrophenol	ND	T10, D08	840000	38000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
3 & 4 Methylphenol	ND	T10, D08	1600000	47000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
3,3'-Dichlorobenzidine	ND	T10, D08	840000	730000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
3-Nitroaniline	ND	T10, D08	1600000	190000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
4,6-Dinitro-2-methylphenol	ND	T10, D08	1600000	290000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
4-Bromophenyl phenyl ether	ND	T10, D08	840000	270000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
4-Chloro-3-methylphenol	ND	T10, D08	840000	34000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
4-Chloroaniline	ND	T10, D08	840000	250000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
4-Chlorophenyl phenyl ether	ND	T10, D08	840000	18000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
4-Nitroaniline	ND	T10, D08	1600000	93000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
4-Nitrophenol	ND	T10, D08	1600000	200000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Acenaphthene	**1500000**	T10, D08	840000	9800	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Acenaphthylene	ND	T10, D08	840000	6800	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Acetophenone	ND	T10, D08	840000	43000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Anthracene	**2700000**	T10, D08	840000	21000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Atrazine	ND	T10, D08	840000	37000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Benzaldehyde	ND	T10, D08	840000	92000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Benzo[a]anthracene	**3400000**	T10, D08	840000	14000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Benzo[a]pyrene	**2300000**	T10, D08	840000	20000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Benzo[b]fluoranthene	**1600000**	T10, D08	840000	16000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Benzo[g,h,i]perylene	**1100000**	T10, D08	840000	10000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Benzo[k]fluoranthene	**610000**	T10, D08,J	840000	9200	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Biphenyl	**160000**	T10, D08,J	840000	52000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Bis(2-chloroethoxy)methane	ND	T10, D08	840000	46000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Bis(2-chloroethyl)ether	ND	T10, D08	840000	72000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Bis(2-chloroisopropyl) ether	ND	T10, D08	840000	87000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Bis(2-ethylhexyl) phthalate	ND	T10, D08	840000	270000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Butyl benzyl phthalate	ND	T10, D08	840000	220000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Caprolactam	ND	T10, D08	840000	360000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Carbazole	**280000**	T10, D08,J	840000	9700	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Chrysene	**3400000**	T10, D08	840000	8400	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Dibenz[a,h]anthracene	**300000**	T10, D08,J	840000	9800	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Dibenzofuran	**260000**	T10, D08,J	840000	8700	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C

Golder Associates, Inc. - Niagara Falls, NY
2221 Niagara Falls Blvd., Ste 9
Niagara Falls, NY 14304

Work Order: RTF1262

Project: Golder - Vandermark/Isochem site
Project Number: [none]

Received: 06/22/10
Reported: 07/02/10 11:35

Analytical Report

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
Sample ID: RTF1262-02 (B-9-N-10 - Solid) - cont.						**Sampled: 06/22/10 10:25**		**Recvd: 06/22/10 14:20**		
Semivolatile Organics by GC/MS - cont.										
Diethyl phthalate	ND	T10, D08	840000	25000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Dimethyl phthalate	ND	T10, D08	840000	22000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Di-n-butyl phthalate	ND	T10, D08	840000	290000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Di-n-octyl phthalate	ND	T10, D08	840000	20000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Fluoranthene	**4000000**	T10, D08	840000	12000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Fluorene	**1300000**	T10, D08	840000	19000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Hexachlorobenzene	ND	T10, D08	840000	42000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Hexachlorobutadiene	ND	T10, D08	840000	43000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Hexachlorocyclopentadiene	ND	T10, D08	840000	250000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Hexachloroethane	ND	T10, D08	840000	65000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Indeno[1,2,3-cd]pyrene	**790000**	T10, D08,L2, J	840000	23000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Isophorone	ND	T10, D08	840000	42000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Naphthalene	**2000000**	T10, D08	840000	14000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Nitrobenzene	ND	T10, D08	840000	37000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
N-Nitrosodi-n-propylamine	ND	T10, D08	840000	66000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
N-Nitrosodiphenylamine	ND	T10, D08	840000	46000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Pentachlorophenol	ND	T10, D08	1600000	290000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Phenanthrene	**9400000**	T10, D08	840000	18000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Phenol	ND	T10, D08	840000	88000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Pyrene	**7600000**	T10, D08	840000	5400	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
2,4,6-Tribromophenol	*	*T10, D08,Z3*	*Surr Limits: (39-146%)*				*06/30/10 19:40*	*MAF*	*10F2051*	*8270C*
2-Fluorobiphenyl	*440 %*	*T10, D08,Z3*	*Surr Limits: (37-120%)*				*06/30/10 19:40*	*MAF*	*10F2051*	*8270C*
2-Fluorophenol	*	*T10, D08,Z3*	*Surr Limits: (18-120%)*				*06/30/10 19:40*	*MAF*	*10F2051*	*8270C*
Nitrobenzene-d5	*	*T10, D08,Z3*	*Surr Limits: (34-132%)*				*06/30/10 19:40*	*MAF*	*10F2051*	*8270C*
Phenol-d5	*	*T10, D08,Z3*	*Surr Limits: (11-120%)*				*06/30/10 19:40*	*MAF*	*10F2051*	*8270C*
p-Terphenyl-d14	*120 %*	*T10, D08*	*Surr Limits: (58-147%)*				*06/30/10 19:40*	*MAF*	*10F2051*	*8270C*
General Chemistry Parameters										
Percent Solids	**79**		0.010	NR	%	1.00	06/24/10 13:48	JRR	10F2079	Dry Weight

Golder Associates, Inc. - Niagara Falls, NY
2221 Niagara Falls Blvd., Ste 9
Niagara Falls, NY 14304

Work Order: RTF1262

Project: Golder - Vandermark/Isochem site
Project Number: [none]

Received: 06/22/10
Reported: 07/02/10 11:35

Analytical Report

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
Sample ID: RTF1262-03 (B-9-W5-N10 - Solid)						**Sampled: 06/22/10 10:35**		**Recvd: 06/22/10 14:20**		
Semivolatile Organics by GC/MS										
2,4,5-Trichlorophenol	ND	T10, D08	740000	160000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
2,4,6-Trichlorophenol	ND	T10, D08	740000	48000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
2,4-Dichlorophenol	ND	T10, D08	740000	39000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
2,4-Dimethylphenol	ND	T10, D08	740000	200000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
2,4-Dinitrophenol	ND	T10, D08	1400000	260000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
2,4-Dinitrotoluene	ND	T10, D08	740000	110000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
2,6-Dinitrotoluene	ND	T10, D08	740000	180000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
2-Chloronaphthalene	ND	T10, D08	740000	49000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
2-Chlorophenol	ND	T10, D08	740000	37000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
2-Methylnaphthalene	**1200000**	T10, D08	740000	8900	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
2-Methylphenol	ND	T10, D08	740000	23000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
2-Nitroaniline	ND	T10, D08	1400000	240000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
2-Nitrophenol	ND	T10, D08	740000	34000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
3 & 4 Methylphenol	ND	T10, D08	1400000	41000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
3,3'-Dichlorobenzidine	ND	T10, D08	740000	640000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
3-Nitroaniline	ND	T10, D08	1400000	170000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
4,6-Dinitro-2-methylphenol	ND	T10, D08	1400000	250000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
4-Bromophenyl phenyl ether	ND	T10, D08	740000	230000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
4-Chloro-3-methylphenol	ND	T10, D08	740000	30000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
4-Chloroaniline	ND	T10, D08	740000	220000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
4-Chlorophenyl phenyl ether	ND	T10, D08	740000	16000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
4-Nitroaniline	ND	T10, D08	1400000	82000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
4-Nitrophenol	ND	T10, D08	1400000	180000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Acenaphthene	**1300000**	T10, D08	740000	8600	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Acenaphthylene	ND	T10, D08	740000	6000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Acetophenone	ND	T10, D08	740000	38000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Anthracene	**1800000**	T10, D08	740000	19000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Atrazine	ND	T10, D08	740000	33000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Benzaldehyde	ND	T10, D08	740000	81000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Benzo[a]anthracene	**2000000**	T10, D08	740000	13000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Benzo[a]pyrene	**1300000**	T10, D08	740000	18000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Benzo[b]fluoranthene	**1000000**	T10, D08	740000	14000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Benzo[g,h,i]perylene	**720000**	T10, D08,J	740000	8800	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Benzo[k]fluoranthene	**360000**	T10, D08,J	740000	8100	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Biphenyl	**150000**	T10, D08,J	740000	46000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Bis(2-chloroethoxy)methane	ND	T10, D08	740000	40000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Bis(2-chloroethyl)ether	ND	T10, D08	740000	63000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Bis(2-chloroisopropyl) ether	ND	T10, D08	740000	77000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Bis(2-ethylhexyl) phthalate	ND	T10, D08	740000	240000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Butyl benzyl phthalate	ND	T10, D08	740000	200000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Caprolactam	ND	T10, D08	740000	320000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Carbazole	**200000**	T10, D08,J	740000	8500	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Chrysene	**2000000**	T10, D08	740000	7300	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Dibenz[a,h]anthracene	**200000**	T10, D08,J	740000	8600	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Dibenzofuran	**200000**	T10, D08,J	740000	7600	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C

Golder Associates, Inc. - Niagara Falls, NY
2221 Niagara Falls Blvd., Ste 9
Niagara Falls, NY 14304

Work Order: RTF1262

Project: Golder - Vandermark/Isochem site
Project Number: [none]

Received: 06/22/10
Reported: 07/02/10 11:35

Analytical Report

Sample ID: RTF1262-03 (B-9-W5-N10 - Solid) - cont. **Sampled: 06/22/10 10:35** **Recvd: 06/22/10 14:20**

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
Semivolatile Organics by GC/MS - cont.										
Diethyl phthalate	ND	T10, D08	740000	22000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Dimethyl phthalate	ND	T10, D08	740000	19000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Di-n-butyl phthalate	ND	T10, D08	740000	250000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Di-n-octyl phthalate	ND	T10, D08	740000	17000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Fluoranthene	**2500000**	T10, D08	740000	11000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Fluorene	**940000**	T10, D08	740000	17000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Hexachlorobenzene	ND	T10, D08	740000	36000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Hexachlorobutadiene	ND	T10, D08	740000	38000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Hexachlorocyclopentadiene	ND	T10, D08	740000	220000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Hexachloroethane	ND	T10, D08	740000	57000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Indeno[1,2,3-cd]pyrene	**470000**	T10, D08,L2, J	740000	20000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Isophorone	ND	T10, D08	740000	37000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Naphthalene	**1500000**	T10, D08	740000	12000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Nitrobenzene	ND	T10, D08	740000	33000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
N-Nitrosodi-n-propylamine	ND	T10, D08	740000	58000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
N-Nitrosodiphenylamine	ND	T10, D08	740000	40000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Pentachlorophenol	ND	T10, D08	1400000	250000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Phenanthrene	**5900000**	T10, D08	740000	15000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Phenol	ND	T10, D08	740000	77000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Pyrene	**4300000**	T10, D08	740000	4800	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
2,4,6-Tribromophenol	*	*T10, D08,Z3*	*Surr Limits: (39-146%)*				*06/30/10 20:04*	*MAF*	*10F2051*	*8270C*
2-Fluorobiphenyl	*440 %*	*T10, D08,Z3*	*Surr Limits: (37-120%)*				*06/30/10 20:04*	*MAF*	*10F2051*	*8270C*
2-Fluorophenol	*	*T10, D08,Z3*	*Surr Limits: (18-120%)*				*06/30/10 20:04*	*MAF*	*10F2051*	*8270C*
Nitrobenzene-d5	*	*T10, D08,Z3*	*Surr Limits: (34-132%)*				*06/30/10 20:04*	*MAF*	*10F2051*	*8270C*
Phenol-d5	*	*T10, D08,Z3*	*Surr Limits: (11-120%)*				*06/30/10 20:04*	*MAF*	*10F2051*	*8270C*
p-Terphenyl-d14	*200 %*	*T10, D08,Z3*	*Surr Limits: (58-147%)*				*06/30/10 20:04*	*MAF*	*10F2051*	*8270C*
General Chemistry Parameters										
Percent Solids	**92**		0.010	NR	%	1.00	06/24/10 13:50	JRR	10F2079	Dry Weight

Golder Associates, Inc. - Niagara Falls, NY
2221 Niagara Falls Blvd., Ste 9
Niagara Falls, NY 14304

Work Order: RTF1262

Project: Golder - Vandermark/Isochem site
Project Number: [none]

Received: 06/22/10
Reported: 07/02/10 11:35

Analytical Report

Sample ID: RTF1262-04 (B-9-W10-N5 - Solid) — Sampled: 06/22/10 10:45 — Recvd: 06/22/10 14:20

Semivolatile Organics by GC/MS

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
2,4,5-Trichlorophenol	ND	T10, D08	410000	88000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
2,4,6-Trichlorophenol	ND	T10, D08	410000	27000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
2,4-Dichlorophenol	ND	T10, D08	410000	21000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
2,4-Dimethylphenol	ND	T10, D08	410000	110000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
2,4-Dinitrophenol	ND	T10, D08	790000	140000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
2,4-Dinitrotoluene	ND	T10, D08	410000	62000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
2,6-Dinitrotoluene	ND	T10, D08	410000	99000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
2-Chloronaphthalene	ND	T10, D08	410000	27000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
2-Chlorophenol	ND	T10, D08	410000	21000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
2-Methylnaphthalene	**530000**	T10, D08	410000	4900	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
2-Methylphenol	ND	T10, D08	410000	12000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
2-Nitroaniline	ND	T10, D08	790000	130000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
2-Nitrophenol	ND	T10, D08	410000	18000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
3 & 4 Methylphenol	ND	T10, D08	790000	22000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
3,3'-Dichlorobenzidine	ND	T10, D08	410000	350000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
3-Nitroaniline	ND	T10, D08	790000	93000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
4,6-Dinitro-2-methylphenol	ND	T10, D08	790000	140000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
4-Bromophenyl phenyl ether	ND	T10, D08	410000	130000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
4-Chloro-3-methylphenol	ND	T10, D08	410000	17000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
4-Chloroaniline	ND	T10, D08	410000	120000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
4-Chlorophenyl phenyl ether	ND	T10, D08	410000	8600	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
4-Nitroaniline	ND	T10, D08	790000	45000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
4-Nitrophenol	ND	T10, D08	790000	98000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Acenaphthene	**830000**	T10, D08	410000	4700	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Acenaphthylene	**19000**	T10, D08,J	410000	3300	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Acetophenone	ND	T10, D08	410000	21000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Anthracene	**1300000**	T10, D08	410000	10000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Atrazine	ND	T10, D08	410000	18000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Benzaldehyde	ND	T10, D08	410000	44000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Benzo[a]anthracene	**1600000**	T10, D08	410000	7000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Benzo[a]pyrene	**1000000**	T10, D08	410000	9700	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Benzo[b]fluoranthene	**1000000**	T10, D08	410000	7800	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Benzo[g,h,i]perylene	**570000**	T10, D08	410000	4800	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Benzo[k]fluoranthene	ND	T10, D08	410000	4400	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Biphenyl	**77000**	T10, D08,J	410000	25000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Bis(2-chloroethoxy)methane	ND	T10, D08	410000	22000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Bis(2-chloroethyl)ether	ND	T10, D08	410000	35000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Bis(2-chloroisopropyl) ether	ND	T10, D08	410000	42000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Bis(2-ethylhexyl) phthalate	ND	T10, D08	410000	130000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Butyl benzyl phthalate	ND	T10, D08	410000	110000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Caprolactam	ND	T10, D08	410000	170000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Carbazole	**97000**	T10, D08,J	410000	4700	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Chrysene	**1500000**	T10, D08	410000	4000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Dibenz[a,h]anthracene	**160000**	T10, D08,J	410000	4700	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Dibenzofuran	**110000**	T10, D08,J	410000	4200	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C

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2221 Niagara Falls Blvd., Ste 9
Niagara Falls, NY 14304

Work Order: RTF1262

Project: Golder - Vandermark/Isochem site
Project Number: [none]

Received: 06/22/10
Reported: 07/02/10 11:35

Analytical Report

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
Sample ID: RTF1262-04 (B-9-W10-N5 - Solid) - cont.						**Sampled: 06/22/10 10:45**		**Recvd: 06/22/10 14:20**		
Semivolatile Organics by GC/MS - cont.										
Diethyl phthalate	ND	T10, D08	410000	12000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Dimethyl phthalate	ND	T10, D08	410000	11000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Di-n-butyl phthalate	ND	T10, D08	410000	140000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Di-n-octyl phthalate	ND	T10, D08	410000	9400	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Fluoranthene	**2000000**	T10, D08	410000	5800	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Fluorene	**640000**	T10, D08	410000	9300	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Hexachlorobenzene	ND	T10, D08	410000	20000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Hexachlorobutadiene	ND	T10, D08	410000	21000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Hexachlorocyclopentadiene	ND	T10, D08	410000	120000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Hexachloroethane	ND	T10, D08	410000	31000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Indeno[1,2,3-cd]pyrene	**400000**	T10, D08,L2, J	410000	11000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Isophorone	ND	T10, D08	410000	20000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Naphthalene	**590000**	T10, D08	410000	6700	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Nitrobenzene	ND	T10, D08	410000	18000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
N-Nitrosodi-n-propylamine	ND	T10, D08	410000	32000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
N-Nitrosodiphenylamine	ND	T10, D08	410000	22000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Pentachlorophenol	ND	T10, D08	790000	140000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Phenanthrene	**4200000**	T10, D08	410000	8500	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Phenol	ND	T10, D08	410000	42000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Pyrene	**3300000**	T10, D08	410000	2600	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
2,4,6-Tribromophenol	*	*T10, D08,Z3*	*Surr Limits: (39-146%)*				*06/30/10 20:27*	*MAF*	*10F2051*	*8270C*
2-Fluorobiphenyl	*240 %*	*T10, D08,Z3*	*Surr Limits: (37-120%)*				*06/30/10 20:27*	*MAF*	*10F2051*	*8270C*
2-Fluorophenol	*	*T10, D08,Z3*	*Surr Limits: (18-120%)*				*06/30/10 20:27*	*MAF*	*10F2051*	*8270C*
Nitrobenzene-d5	*	*T10, D08,Z3*	*Surr Limits: (34-132%)*				*06/30/10 20:27*	*MAF*	*10F2051*	*8270C*
Phenol-d5	*	*T10, D08,Z3*	*Surr Limits: (11-120%)*				*06/30/10 20:27*	*MAF*	*10F2051*	*8270C*
p-Terphenyl-d14	*60 %*	*T10, D08,Z3*	*Surr Limits: (58-147%)*				*06/30/10 20:27*	*MAF*	*10F2051*	*8270C*
General Chemistry Parameters										
Percent Solids	**82**		0.010	NR	%	1.00	06/24/10 13:52	JRR	10F2079	Dry Weight

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Work Order: RTF1262

Project: Golder - Vandermark/Isochem site
Project Number: [none]

Received: 06/22/10
Reported: 07/02/10 11:35

SAMPLE EXTRACTION DATA

Parameter	Batch	Lab Number	Wt/Vol Extracte	Units	Extract Volume	Units	Date Prepared	Lab Tech	Extraction Method
General Chemistry Parameters									
Dry Weight	10F2079	RTF1262-01	10.00	g	10.00	g	06/24/10 09:56	JRR	Dry Weight
Dry Weight	10F2079	RTF1262-02	10.00	g	10.00	g	06/24/10 09:56	JRR	Dry Weight
Dry Weight	10F2079	RTF1262-03	10.00	g	10.00	g	06/24/10 09:56	JRR	Dry Weight
Dry Weight	10F2079	RTF1262-04	10.00	g	10.00	g	06/24/10 09:56	JRR	Dry Weight
Semivolatile Organics by GC/MS									
8270C	10F2051	RTF1262-03	30.04	g	20.00	mL	06/24/10 08:00	CJM	3550B MB
8270C	10F2051	RTF1262-01	30.25	g	20.00	mL	06/24/10 08:00	CJM	3550B MB
8270C	10F2051	RTF1262-02	30.63	g	20.00	mL	06/24/10 08:00	CJM	3550B MB
8270C	10F2051	RTF1262-04	30.65	g	20.00	mL	06/24/10 08:00	CJM	3550B MB

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Work Order: RTF1262

Project: Golder - Vandermark/Isochem site
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Received: 06/22/10
Reported: 07/02/10 11:35

LABORATORY QC DATA

Analyte	Source Result	Spike Level	RL	MDL	Units	Result	% REC	% REC Limits	% RPD	RPD Limit	Data Qualifiers
Semivolatile Organics by GC/MS											
Blank Analyzed: 06/30/10 (Lab Number:10F2051-BLK1, Batch: 10F2051)											
2,4,5-Trichlorophenol			170	36	ug/kg wet	ND					
2,4,6-Trichlorophenol			170	11	ug/kg wet	ND					
2,4-Dichlorophenol			170	8.7	ug/kg wet	ND					
2,4-Dimethylphenol			170	45	ug/kg wet	ND					
2,4-Dinitrophenol			330	58	ug/kg wet	ND					
2,4-Dinitrotoluene			170	26	ug/kg wet	ND					
2,6-Dinitrotoluene			170	41	ug/kg wet	ND					
2-Chloronaphthalene			170	11	ug/kg wet	ND					
2-Chlorophenol			170	8.5	ug/kg wet	ND					
2-Methylnaphthalene			170	2.0	ug/kg wet	ND					
2-Methylphenol			170	5.1	ug/kg wet	ND					
2-Nitroaniline			330	54	ug/kg wet	ND					
2-Nitrophenol			170	7.6	ug/kg wet	ND					
3 & 4 Methylphenol			330	9.3	ug/kg wet	ND					
3,3'-Dichlorobenzidine			170	150	ug/kg wet	ND					
3-Nitroaniline			330	38	ug/kg wet	ND					
4,6-Dinitro-2-methylphenol			330	58	ug/kg wet	ND					
4-Bromophenyl phenyl ether			170	53	ug/kg wet	ND					
4-Chloro-3-methylphenol			170	6.9	ug/kg wet	ND					
4-Chloroaniline			170	49	ug/kg wet	ND					
4-Chlorophenyl phenyl ether			170	3.6	ug/kg wet	ND					
4-Nitroaniline			330	19	ug/kg wet	ND					
4-Nitrophenol			330	40	ug/kg wet	ND					
Acenaphthene			170	2.0	ug/kg wet	ND					
Acenaphthylene			170	1.4	ug/kg wet	ND					
Acetophenone			170	8.6	ug/kg wet	ND					
Anthracene			170	4.3	ug/kg wet	ND					
Atrazine			170	7.4	ug/kg wet	ND					
Benzaldehyde			170	18	ug/kg wet	ND					
Benzo[a]anthracene			170	2.9	ug/kg wet	ND					
Benzo[a]pyrene			170	4.0	ug/kg wet	ND					
Benzo[b]fluoranthene			170	3.2	ug/kg wet	ND					
Benzo[g,h,i]perylene			170	2.0	ug/kg wet	ND					
Benzo[k]fluoranthene			170	1.8	ug/kg wet	ND					
Biphenyl			170	10	ug/kg wet	ND					

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Work Order: RTF1262

Project: Golder - Vandermark/Isochem site
Project Number: [none]

Received: 06/22/10
Reported: 07/02/10 11:35

LABORATORY QC DATA

Analyte	Source Result	Spike Level	RL	MDL	Units	Result	% REC	% REC Limits	% RPD	RPD Limit	Data Qualifiers
Semivolatile Organics by GC/MS											
Blank Analyzed: 06/30/10 (Lab Number:10F2051-BLK1, Batch: 10F2051)											
Bis(2-chloroethoxy)methane			170	9.1	ug/kg wet	ND					
Bis(2-chloroethyl)ether			170	14	ug/kg wet	ND					
Bis(2-chloroisopropyl) ether			170	17	ug/kg wet	ND					
Bis(2-ethylhexyl) phthalate			170	54	ug/kg wet	ND					
Butyl benzyl phthalate			170	45	ug/kg wet	ND					
Caprolactam			170	72	ug/kg wet	ND					
Carbazole			170	1.9	ug/kg wet	ND					
Chrysene			170	1.7	ug/kg wet	ND					
Dibenz[a,h]anthracene			170	2.0	ug/kg wet	ND					
Dibenzofuran			170	1.7	ug/kg wet	ND					
Diethyl phthalate			170	5.0	ug/kg wet	ND					
Dimethyl phthalate			170	4.4	ug/kg wet	ND					
Di-n-butyl phthalate			170	58	ug/kg wet	ND					
Di-n-octyl phthalate			170	3.9	ug/kg wet	ND					
Fluoranthene			170	2.4	ug/kg wet	ND					
Fluorene			170	3.8	ug/kg wet	ND					
Hexachlorobenzene			170	8.3	ug/kg wet	ND					
Hexachlorobutadiene			170	8.5	ug/kg wet	ND					
Hexachlorocyclopentadiene			170	50	ug/kg wet	ND					
Hexachloroethane			170	13	ug/kg wet	ND					
Indeno[1,2,3-cd]pyrene			170	4.6	ug/kg wet	ND					
Isophorone			170	8.3	ug/kg wet	ND					
Naphthalene			170	2.8	ug/kg wet	ND					
Nitrobenzene			170	7.4	ug/kg wet	ND					
N-Nitrosodi-n-propylamine			170	13	ug/kg wet	ND					
N-Nitrosodiphenylamine			170	9.1	ug/kg wet	ND					
Pentachlorophenol			330	57	ug/kg wet	ND					
Phenanthrene			170	3.5	ug/kg wet	ND					
Phenol			170	18	ug/kg wet	ND					
Pyrene			170	1.1	ug/kg wet	ND					
Surrogate: 2,4,6-Tribromophenol					*ug/kg wet*		*106*	*39-146*			
Surrogate: 2-Fluorobiphenyl					*ug/kg wet*		*99*	*37-120*			
Surrogate: 2-Fluorophenol					*ug/kg wet*		*79*	*18-120*			

Golder Associates, Inc. - Niagara Falls, NY
2221 Niagara Falls Blvd., Ste 9
Niagara Falls, NY 14304

Work Order: RTF1262

Project: Golder - Vandermark/Isochem site
Project Number: [none]

Received: 06/22/10
Reported: 07/02/10 11:35

LABORATORY QC DATA

Analyte	Source Result	Spike Level	RL	MDL	Units	Result	% REC	% REC Limits	% RPD	RPD Limit	Data Qualifiers
Semivolatile Organics by GC/MS											
Blank Analyzed: 06/30/10 (Lab Number:10F2051-BLK1, Batch: 10F2051)											
Surrogate: Nitrobenzene-d5					*ug/kg wet*		*87*	*34-132*			
Surrogate: Phenol-d5					*ug/kg wet*		*85*	*11-120*			
Surrogate: p-Terphenyl-d14					*ug/kg wet*		*101*	*58-147*			
LCS Analyzed: 06/30/10 (Lab Number:10F2051-BS1, Batch: 10F2051)											
2,4,5-Trichlorophenol			170	36	ug/kg wet	ND		59-126			
2,4,6-Trichlorophenol			170	11	ug/kg wet	ND		59-123			
2,4-Dichlorophenol			170	8.7	ug/kg wet	ND		52-120			
2,4-Dimethylphenol			170	45	ug/kg wet	ND		36-120			
2,4-Dinitrophenol			330	58	ug/kg wet	ND		35-146			
2,4-Dinitrotoluene		3290	170	26	ug/kg wet	3140	95	55-125			
2,6-Dinitrotoluene			170	41	ug/kg wet	ND		66-128			
2-Chloronaphthalene			170	11	ug/kg wet	ND		57-120			
2-Chlorophenol		3290	170	8.5	ug/kg wet	2490	76	38-120			
2-Methylnaphthalene			170	2.0	ug/kg wet	ND		47-120			
2-Methylphenol			170	5.1	ug/kg wet	ND		48-120			
2-Nitroaniline			330	53	ug/kg wet	ND		61-130			
2-Nitrophenol			170	7.6	ug/kg wet	ND		50-120			
3 & 4 Methylphenol			330	9.3	ug/kg wet	ND		50-119			
3,3'-Dichlorobenzidine			170	150	ug/kg wet	ND		48-126			
3-Nitroaniline			330	38	ug/kg wet	ND		61-127			
4,6-Dinitro-2-methylphenol			330	58	ug/kg wet	ND		49-155			
4-Bromophenyl phenyl ether			170	53	ug/kg wet	ND		58-131			
4-Chloro-3-methylphenol		3290	170	6.9	ug/kg wet	2790	85	49-125			
4-Chloroaniline			170	49	ug/kg wet	ND		49-120			
4-Chlorophenyl phenyl ether			170	3.6	ug/kg wet	ND		63-124			
4-Nitroaniline			330	19	ug/kg wet	ND		63-128			
4-Nitrophenol		3290	330	40	ug/kg wet	2850	87	43-137			
Acenaphthene		3290	170	2.0	ug/kg wet	3020	92	53-120			
Acenaphthylene			170	1.4	ug/kg wet	ND		58-121			
Acetophenone			170	8.6	ug/kg wet	ND		66-120			
Anthracene			170	4.3	ug/kg wet	ND		62-129			
Atrazine			170	7.4	ug/kg wet	ND		73-133			
Benzaldehyde			170	18	ug/kg wet	ND		21-120			
Benzo[a]anthracene			170	2.9	ug/kg wet	ND		65-133			
Benzo[a]pyrene			170	4.0	ug/kg wet	ND		64-127			

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Work Order: RTF1262

Project: Golder - Vandermark/Isochem site
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Received: 06/22/10
Reported: 07/02/10 11:35

LABORATORY QC DATA

Analyte	Source Result	Spike Level	RL	MDL	Units	Result	% REC	% REC Limits	% RPD	RPD Limit	Data Qualifiers
Semivolatile Organics by GC/MS											
LCS Analyzed: 06/30/10 (Lab Number:10F2051-BS1, Batch: 10F2051)											
Benzo[b]fluoranthene			170	3.2	ug/kg wet	ND		64-135			
Benzo[g,h,i]perylene			170	2.0	ug/kg wet	ND		50-152			
Benzo[k]fluoranthene			170	1.8	ug/kg wet	ND		58-138			
Biphenyl			170	10	ug/kg wet	ND		71-120			
Bis(2-chloroethoxy)methane			170	9.1	ug/kg wet	ND		61-133			
Bis(2-chloroethyl)ether			170	14	ug/kg wet	ND		45-120			
Bis(2-chloroisopropyl) ether			170	17	ug/kg wet	ND		44-120			
Bis(2-ethylhexyl) phthalate		3290	170	54	ug/kg wet	3710	113	61-133			
Butyl benzyl phthalate			170	45	ug/kg wet	ND		61-129			
Caprolactam			170	72	ug/kg wet	ND		54-133			
Carbazole			170	1.9	ug/kg wet	ND		59-129			
Chrysene			170	1.7	ug/kg wet	ND		64-131			
Dibenz[a,h]anthracene			170	2.0	ug/kg wet	ND		54-148			
Dibenzofuran			170	1.7	ug/kg wet	ND		56-120			
Diethyl phthalate			170	5.0	ug/kg wet	ND		66-126			
Dimethyl phthalate			170	4.3	ug/kg wet	ND		65-124			
Di-n-butyl phthalate			170	58	ug/kg wet	ND		58-130			
Di-n-octyl phthalate			170	3.9	ug/kg wet	ND		62-133			
Fluoranthene			170	2.4	ug/kg wet	ND		62-131			
Fluorene			170	3.8	ug/kg wet	ND		63-126			
Hexachlorobenzene			170	8.3	ug/kg wet	ND		60-132			
Hexachlorobutadiene			170	8.5	ug/kg wet	ND		45-120			
Hexachlorocyclopentadiene			170	50	ug/kg wet	ND		31-120			
Hexachloroethane		3290	170	13	ug/kg wet	2300	70	41-120			
Indeno[1,2,3-cd]pyrene		3290	170	4.6	ug/kg wet	2310	70	56-149			L2
Isophorone			170	8.3	ug/kg wet	ND		56-120			
Naphthalene			170	2.8	ug/kg wet	ND		46-120			
Nitrobenzene			170	7.4	ug/kg wet	ND		49-120			
N-Nitrosodi-n-propylamine		3290	170	13	ug/kg wet	2760	84	46-120			
N-Nitrosodiphenylamine			170	9.1	ug/kg wet	ND		20-119			
Pentachlorophenol		3290	330	57	ug/kg wet	2500	76	33-136			
Phenanthrene			170	3.5	ug/kg wet	ND		60-130			
Phenol		3290	170	18	ug/kg wet	2440	74	36-120			
Pyrene		3290	170	1.1	ug/kg wet	3930	119	51-133			

Golder Associates, Inc. - Niagara Falls, NY
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Work Order: RTF1262

Project: Golder - Vandermark/Isochem site
Project Number: [none]

Received: 06/22/10
Reported: 07/02/10 11:35

LABORATORY QC DATA

Analyte	Source Result	Spike Level	RL	MDL	Units	Result	% REC	% REC Limits	% RPD	RPD Limit	Data Qualifiers
Semivolatile Organics by GC/MS											
LCS Analyzed: 06/30/10 (Lab Number:10F2051-BS1, Batch: 10F2051)											
Surrogate: 2,4,6-Tribromophenol					*ug/kg wet*		*102*	*39-146*			
Surrogate: 2-Fluorobiphenyl					*ug/kg wet*		*91*	*37-120*			
Surrogate: 2-Fluorophenol					*ug/kg wet*		*67*	*18-120*			
Surrogate: Nitrobenzene-d5					*ug/kg wet*		*77*	*34-132*			
Surrogate: Phenol-d5					*ug/kg wet*		*76*	*11-120*			
Surrogate: p-Terphenyl-d14					*ug/kg wet*		*108*	*58-147*			

Chain of Custody Record

Temperature on Receipt _____

Drinking Water? Yes ☐ No ☐

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TAL-4124 (1007)

Client: Gobler Associates	Project Manager: Pat Martin	Date: 6-22-10	Chain of Custody Number: 148801
Address: 2221 Niagara Falls Blvd. suite 9	Telephone Number (Area Code)/Fax Number: 716-215-0650	Lab Number:	Page 1 of 1
City: Niagara Falls / State: NY / Zip Code: 14304	Site Contact: Pam Cook	Lab Contact:	
Project Name and Location (State): SNPE Van	Carrier/Waybill Number:		
Contract/Purchase Order/Quote No:			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Analysis (Attach list if more space is needed): SVOCs
B-9-W5-N5	6-22-10	1005				X							X
B-9-N10	6-22-10	1025				X							X
B-9-W5-N10	6-22-10	1035				X							X
B-9-W10-N15	6-22-10	1045				X							X

Special Instructions/ Conditions of Receipt

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☒ 14 Days ☐ 21 Days ☐ Other

QC Requirements (Specify)

1. Relinquished By	Date: 6-22-10	Time: 1420	1. Received By	Date: 6/22/10	Time: 1420
2. Relinquished By	Date	Time	2. Received By	Date	Time
3. Relinquished By	Date	Time	3. Received By	Date	Time

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

VDM01875

ATTACHMENT C

TEST PIT SUMMARY TABLE

TABLE C-1

SNPE - VANDEMARK
2010 SUPPLEMENTAL DNAPL INVESTIGATION
SUMMARY OF TEST PIT OBSERVATIONS – JUNE 9, 2010

Test Pit No.	Observations/Notes	Total Depth (ft)
TP-1	Test pit located in West end of the remedial area. Several 6-inch coal tar chunks were observed. Test pit was excavated to refusal at 4 feet below ground surface (bgs).	4
TP-2	Test pit located in West end of the remedial area just North (i.e. upslope) of the toe of the slope. No tar was observed. Test pit was excavated to refusal at 3 feet bgs.	3
TP-3	Test pit located in West-central area of the remedial area. Several 6-inch diameter coal tar chunks were observed. Test pit was excavated to refusal at 5.5 feet bgs.	5.5
TP-4	Test pit located in North-central area of the remedial area just upslope from the toe of the slope. A small number of tar blebs, a few inches in diameter, were observed. Test pit was excavated to refusal at 4.5 feet bgs.	4.5
TP-5	Test pit located in North-central area of the remedial area. Several fist-sized tar blebs were present. Test pit was excavated to refusal at 4 feet bgs.	4
TP-6	Test pit located in South-central area of remedial area. Several fist-sized tar blebs were present. Test pit was excavated to refusal at 4.7 feet bgs.	4.7
TP-7	Test pit located in Eastern end of remedial area North of the top of the slope. A large amount of tar was observed and estimated to be 5-10% of the total material excavated. Test pit was excavated to refusal at 2.4 feet bgs.	2.4
TP-8	Test pit located in the flat portion of the Eastern end of the remedial area. A large amount of tar was observed and estimated to be 10% of the total material excavated. Test pit was excavated to refusal at 3.6 feet bgs.	3.6
TP-9	Test pit located near the roadway at the Eastern end of the remedial area. No tar was observed. Test pit was excavated to refusal at 3.2 feet bgs.	3.2
TP-10	Test pit located near the upper seep area near the stone block structure. Tar was observed and estimated to be 2% of the total material excavated. The tar was observed approximately 5-6 feet bgs. Due to the limits of the excavation equipment, the test pit was dug to 7 feet bgs without reaching the bedrock (max reach of excavator). The final pit size was approximately 2 feet wide and 10 feet long. Bedrock was not encountered at 7 feet bgs.	7
TP-11	Test pit located near the upper seep area. A tar vein was observed approximately 5-6 feet bgs. There was also greenish sand present. The final pit size was approximately 2 feet wide and 8 feet long. Bedrock was not encountered at 7 feet bgs.	7
TP-12	Test pit located near the upper seep area. Several tar blebs were observed on the top of the bedrock at 5.6 feet bgs. There was also some greenish granular material present.	5.6
TP-13	Test pit located East of the stone block structure on the road. A few tar blebs were observed but appear to have been placed there as fill and not having flowed to that location. The pit was excavated to a depth of 7 feet bgs without encountering bedrock.	7
TP-14	Test pit located East of the stone block structure on the road. No tar was observed. Some pieces of green pipe were present. The final depth to refusal was 6.5 feet bgs.	6.5

APPENDIX C

RESPONSES TO NYSDEC COMMENTS ON THE 2010 SUPPLEMENTAL DNAPL INVESTIGATION SUMMARY REPORT (NOVEMBER 2010)

Golder Associates

August 18, 2010 093-89168

New York State Department of Environmental Conservation
Division of Solid and Hazardous Materials, Region 9
270 Michigan Ave.
Buffalo, New York 14203

Attention: Mr. Stanley Radon, Sr. Engineering Geologist

RE: SNPE - VANDEMARK CHEMICAL
2010 SUPPLEMENTAL DNAPL INVESTIGATION SUMMARY REPORT
VANDEMARK CHEMICAL FACILITY, LOCKPORT, NY

Dear Mr. Radon:

On behalf of SNPE Inc. (SNPE), Golder Associates Inc. (Golder) has prepared this report to summarize the results of recent investigation/characterization activities conducted in June 2010 and implemented as part of the Supplemental Work Plan activities proposed in the December 21, 2009 Dense Non-Aqueous Phase Liquid (DNAPL) Assessment and Supplemental Work Plan Report. SNPE, Inc. as the former site owner, has been conducting the agreed upon supplemental characterization activities with support from the current site owner, VanDeMark Chemical, Inc.

The investigation activities described herein were conducted to further assess and identify the potential source(s), distribution, and quantity of coal tar residual impacts that were first identified and partially remediated along the banks and adjacent slope of Eighteen Mile Creek directly south of the VanDeMark Chemical facility. In addition, this report will present recommendations for the remediation of coal tar residuals and additional monitoring provisions where appropriate.

1.0 BACKGROUND

Based on the information available at that time, the December 2009 DNAPL Assessment and Supplemental Work Plan proposed a detailed slope overburden mapping and survey to better define the slope and creek bank bedrock/overburden geology across the slope and understanding of the DNAPL transport mechanism. However, in April 2010, subsequent to the report issuance and review by the New York State Department of Environmental Conservation (NYSDEC), personnel from VanDeMark Chemical identified previously unknown solidified coal tar seeps along a steeply pitched segment of the creek bank approximately 70 feet long to the east of the creek bank area that was the primary focus of earlier remedial efforts in 2007 and 2008.

At about the same time, new information was obtained from a VanDeMark employee of tar seep observations that had occurred approximately 15 to 20 years ago in a localized paved area northwest of Building B-4 within the VanDeMark Chemical manufacturing facility. In consultation with the NYSDEC, it was agreed that the supplemental investigation activities would be expanded to encompass additional test pits easterly along the toe of the slope and upgradient of the newly observed creek bank coal tar residuals seeps and the performance of a separate soil boring and sampling program within the VanDeMark Chemical facility centered around the area of historical coal tar seeps in the pavement near Building B-4. In both cases the goal of the expanded investigations would be to define the areal and vertical extent of coal tar residuals in both areas

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Therefore, to implement this expanded investigation strategy, Golder conducted the following tasks:

- In-Plant Soil Boring Investigation - Northwest corner of Building B-4;
- Overburden/Bedrock Test Pit Investigation - Eighteen Mile Creek bank and toe of slope
- Slope and Investigation locations survey; and
- Summarization of findings and preparation of Proposed Remedial Strategies

2.0 IN-PLANT SOIL BORING INVESTIGATION

On Tuesday, June 22, 2010, Mr. David Wehn and Mr. Aaron Lange of Golder, along with two Zebra Environmental (Zebra) employees, the subcontracted drilling firm, arrived at the Site to begin the boring program. Mr. Stanley Radon of the NYSDEC was also onsite to observe the delineation program. A total of fifteen (15) direct push borings were advanced to refusal through the pavement to the northwest of building B-4. The borings were advanced utilizing direct-push drilling techniques and a 2-inch soil sampling tool (Geoprobe® Macrocore® sampler). Golder also screened the first 9 cores for volatile organic compounds (VOCs) using a photoionization detector (PID) and collected 4 samples from the borings for laboratory analysis.

2.1 Boring Layout

Based on an approximation of where historical observations of coal tar residuals seeps had occurred, Golder's first boring (B9-N5) was positioned 5 feet north of the northwest corner of building B-4. Borings were then spread out North and West in 5 feet increments. After consistent findings of a fairly uniform potential coal tar layer was discovered in the first 7 borings, the spacing was increased to ten (10) feet to the North and West. Again, after similar findings, Golder increased the distances to observe where coal tar layer diminished. A thin layer of coal tar was discovered in borings B9-W30-N36 and B9-N36. Borings could not be drilled further North or West of those borings due to a concrete wall and concrete tank pads. Also, underground utility locations and information for that area were unavailable making further exploration unsafe. However, the observed trends indicated that the coal tar layer was diminishing in those directions. Plant structures adjacent to or in the vicinity of the investigation area and boring locations are illustrated on Figure 1.

2.2 Boring Installation

The drill rig used by Zebra was a Geoprobe® 6620D with a Macrocore® sampler. All fifteen (15) borings were advanced until refusal, which was assumed to be at bedrock. The investigation determined that the average depth of the bedrock was approximately 5 feet, but varied between 4.5 to 8 feet below ground surface (bgs). The majority of the overburden was non-native fill materials which included crushed brick, concrete, wood, and foundry sands.

After the borings were advanced, the cores were examined by Mr. Radon and Mr. Wehn and then logged. The boring logs are provided as Attachment A. The drill cuttings were returned to the boring hole and the pavement was patched with asphalt.

2.3 Sample Collection and Results

Samples were collected from 4 borings (B9-W5, B9-N10, B9-W5-N10, and B9-W10-N5). Due to the consistency of the coal tar found in each subsequent boring, Mr. Wehn and Mr. Radon decided it was not necessary to collect any more samples for laboratory analysis. The first 9 borings were screened for VOCs by Golder using a PID. No VOCs were detected by the PID. During the 10th boring the PID malfunctioned indicating a "fan error". Olfactory observations were also made for all the borings. All borings exhibited coal tar odor except borings B9-W5, B9-W30-N10, B9-E20-N20, and B9-W24-S10, however, samples B9-W30-N10 and B9-W24-S10 did have a petroleum like odor.

The laboratory analysis was performed by Test America Inc. in Amherst, New York. The soil sample results detected high concentrations of polyaromatic hydrocarbons (PAHs) which are typically associated with coal tar residuals. For example, the following PAH compounds were consistently detected in each of the four samples at relatively high concentrations: anthracene, benzo(a)anthracene, chrysene, flouranthene, naphthalene, phenanthrene and pyrene. Table 1 presents a summary of the four sample results from the laboratory analysis. The full laboratory Analytical Report is provided as Attachment B.

3.0 OVERBURDEN/BEDROCK TEST PIT INVESTIGATION

The purpose of the test pit investigation was to further characterize the geologic aspects of the escarpment slope, define the depth of overburden and to survey the bedrock elevation in the areas down the slope and south of the facility towards Eighteen Mile Creek. The information gathered was used to develop a profile of the slope and the underlying bedrock in order to better quantify and assess the coal tar migration patterns and develop the most appropriate means of remediation for the coal tar contamination.

Mr. David Wehn and Mr. Patrick Martin of Golder deployed to the Site on June 6, 2010. Mr. Wehn observed the nature of the overburden and logged the descriptions for each test pit. A total of fourteen (14) test pits (TP1 through TP14) were dug along the North side of Eighteen Mile Creek as shown on Figure 2, starting at the west side of the historic seep area and working east towards the seeps discovered in the Spring of 2010. All test pits were dug by O'Regan's Landscaping with a small rubber-tracked excavator to refusal (assumed to be bedrock) except for TP10 and TP13 where bedrock was deeper than 7 feet below grade surface (bgs) – the maximum reach of the excavator used. The depths of bedrock at test pits where bedrock was found ranged from 2.4 to 7 feet bgs.

Mr. Wehn also noted where coal tar was found during the excavations. All test pits except for TP2, TP9, and TP14 had evidence of coal tar present. Though no samples or tests were performed on the soils during excavation, based on visual and olfactory evidence, TP7, TP8, TP10 appeared to have the heaviest deposits of coal tar.

The discovery of coal tar residuals in test pits TP10 through TP13 to the east of the previously remediated area is consistent with the understanding of the bedrock geology of the formation. The vertical fracture planes that would act as a conduit for DNAPL/coal tar residuals to be conveyed from the top of bedrock deeper into the formation are expected to be oriented in both a southwest and southeast directions. This would be consistent with the discovery of the two primary deposition areas along the toe of the slope separated by an area that appears to have little or no coal tar residuals (i.e., between TP9 and TP-10). Table C-1 summarizing the field observations noted during the test pit excavations is presented in Attachment C.

4.0 SLOPE AND SUPPLEMENTAL INVESTIGATION LOCATION SURVEY

Concurrent with the In-Plant soil boring and the Test Pit investigations, surveyors from Wendel Duchscherer determined the location and surface elevation of the In-Plant soil borings, the test pits conducted along the Eighteen Mile Creek bank and toe of slope, the edge of Eighteen Mile Creek, and other reference points in the test pit area and service road leading to the test pits. In addition, two north-south traverses of the slope were made.

The In-Plant borehole locations as surveyed are presented on Figure 1. Figure 2 presents the test pit locations, and well as an elevation contour map of the test pit area, service road, and slope area between the two traverses. Note the westernmost traverse was performed approximately along the line of Cross Section B-B' (Figure 3), which shows the slope in profile and passes very near test pit TP2. An East/West cross section of the test pit area is shown on Figure 4, which presents the surface and bedrock elevations

(where they could be determined) in an area roughly parallel to Eighteen Mile Creek from the original remedial area in the east to the west past the newly discovered seep.

5.0 PROPOSED REMEDIAL ALTERNATIVES

5.1 In-Plant Coal Tar Overburden Remediation

The In-Plant soil boring investigation identified a distinct layer of coal tar residuals encompassing an area of approximately 50 feet by 50 feet to the north and northwest of Building B-4 within the VanDeMark Plant. The layer varied in thickness from approximately 12 inches to 2 inches and is estimated to comprise approximately 75 to 100 cubic yards of coal tar based on an average thickness of 9 inches. As described in Section 2, the top of the layer is generally located about 1.0 to 2.5 feet below the paved surface. In several borings (e.g., B9-N10, B9-W10-N10) evidence of small quantities of coal tar residuals was observed at the overburden/bedrock interface.

Based on the accessibility and relative proximity of this layer to the surface, excavation and off-site disposal of these residuals is proposed as the remedial approach. It is estimated based on the delineation volume calculated [and density of 1.5 tons per cubic yard] that approximately 100 to 125 tons of tar residuals mixed with overburden fill would be removed and disposed of utilizing this approach. At the boring locations where coal tar was detected on the top of bedrock, the excavation of this material would proceed until removal of residuals identified at this depth is achieved. It is assumed the existing pavement and overburden fill located above the coal tar residual layer would be removed and disposed of off-site due to the unsuitability for reuse as backfill within the completed excavation (I.e., due to potential compaction and settlement concerns).

If the coal tar residuals layer is found to extend to the north of the concrete barrier wall that defines the gaseous carbon monoxide storage and offloading area, further investigation within this area may be required to better evaluate the extent of removal feasible and these activities will have to be closely coordinated with VanDeMark to address operational and safety considerations.

As stated in the December 2009 Report, it would be impractical and nearly impossible to extract and remove DNAPL which has migrated into the rock fractures below this area of coal tar residuals, without significantly interrupting site operations. There are also considerable technical/cost limitations to removing very viscous liquids from small pore spaces/fractures, with a certain percentage of tar residuals likely to remain in place regardless of the extraction technique attempted.

5.2 Eighteen Mile Creek Slope and Bank Remediation

The creek bank test pit investigation indicates that the area of the creek bank that has been impacted by coal tar residuals extends a significant distance east along the creek bank from the originally delineated and remediated area. Coal tar residuals were found approximately 100 feet east of test pit TP8 (located at the eastern end of the remediated area) beginning with TP10 located near the top of the access road ramp and extending to TP13 about 80 feet further east along the toe of the slope. In general the coal tar was identified beginning five feet below grade surface in this area.

Although solidified coal tar seeps have been identified along an approximately 50 foot portion of the steeply pitched creek bank located south of this newly identified area, the amount/extent of coal tar deposits appears to be significantly less than that encountered to the west (previously remediated), where coal tar residuals were 2.5 to 3.5 feet thick in places. Therefore, based on observed thickness and areal distribution of the residuals in TP-10 through TP13, significant slope stability and slope undermining concerns and highly constrained physical access associated with conducting a major excavation (i.e., removal of over five feet of overburden and former rock structures at the base of the slope), Golder is not recommending the removal of the buried coal tar residuals in this area at this time as a prudent or practical remedial measure. The resulting environmental disruption of the creek bank and associated

riparian area to access and remove a relatively small mass of accumulated coal residuals does not in our opinion warrant the excessive measures and damage that would be incurred to perform the removal.

Alternatively, it is recommended that the implementation of a linear DNAPL cutoff trench (as previously proposed) be performed at the toe of the slope south of monitoring well MW-2D where the majority of the coal tar residuals were found and continue to be exiting the fractured rock (i.e., approximately between TP1 and TP8). This structure would allow for the capture and periodic removal of DNAPL / coal tar residuals from what is confirmed to be an active transmission pathway and represents the most likely exposure pathway of these residuals into the environment. The cutoff mechanism will also allow for accurate tracking of the quantities and rate of DNAPL seepage to assess the potential mass that remains within the fractured bedrock formation.

In conjunction with the installation of this cutoff trench, it is proposed that visible coal tar residuals that have accumulated on the creek bank directly south of the test pits TP-10 through TP-13 (upper access road area) be removed at the surface. Quarterly visual monitoring is proposed along the creek bank slope in this area to determine if further seepage is occurring. If significant seepage is observed, additional alternatives for remediation of the coal tar residuals in this area will be reevaluated with the NYSDEC.

Development of detailed remedial design alternatives based on the DNAPL intercepting structure(s) concept presented above is proposed for NYSDEC review within 8 to 10 weeks of concept approval. Assessment of the suitability and effectiveness of each design alternative is anticipated to be a component of the design alternatives submittal with final remedy selection to be determined in conjunction with the NYSDEC.

If you have any questions concerning the investigation findings presented in this report or the proposed remedial strategies, please contact us at 716-215-0650.

Sincerely,

GOLDER ASSOCIATES INC.

Patrick T. Martin, P.E., BCEE
Senior Consultant

David C. Wehn, CPG
Associate

cc: D. Slick, SNPE, Inc.
P. Cook, VanDeMark Chemical

Attachments: Table 1
Figures 1, 2 and 3
Appendices A, B and C

PTM/DCW:dml

TABLES

TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS
SNPE VANDEMARK
DNAPL ASSESSMENT
LOCKPORT, NY

Lab ID	RTF1262-01	RTF1262-02	RTF1262-03	RTF1262-04
Sample Date	6/22/2010	6/22/2010	6/22/2010	6/22/2010
Sample ID	B-9-W5-N5	B-9-N-10	B-9-W5-N10	B-9-W10-N5
Units	UG/KG	UG/KG	UG/KG	UG/KG
Semivolatile Organics by GC/MS (US EPA Method 8270C)				
2,4,5-Trichlorophenol	ND [1, 2]	ND [1, 2]	ND [1, 2]	ND [1, 2]
2,4,6-Trichlorophenol	ND [1, 2]	ND [1, 2]	ND [1, 2]	ND [1, 2]
2,4-Dichlorophenol	ND [1, 2]	ND [1, 2]	ND [1, 2]	ND [1, 2]
2,4-Dimethylphenol	ND [1, 2]	ND [1, 2]	ND [1, 2]	ND [1, 2]
2,4-Dinitrophenol	ND [1, 2]	ND [1, 2]	ND [1, 2]	ND [1, 2]
2,4-Dinitrotoluene	ND [1, 2]	ND [1, 2]	ND [1, 2]	ND [1, 2]
2,6-Dinitrotoluene	ND [1, 2]	ND [1, 2]	ND [1, 2]	ND [1, 2]
2-Chloronaphthalene	ND [1, 2]	ND [1, 2]	ND [1, 2]	ND [1, 2]
2-Chlorophenol	ND [1, 2]	ND [1, 2]	ND [1, 2]	ND [1, 2]
2-Methylnaphthalene	2200000 [1, 2]	1500000 [1, 2]	1200000 [1, 2]	530000 [1, 2]
2-Methylphenol	ND [1, 2]	ND [1, 2]	ND [1, 2]	ND [1, 2]
2-Nitroaniline	ND [1, 2]	ND [1, 2]	ND [1, 2]	ND [1, 2]
2-Nitrophenol	ND [1, 2]	ND [1, 2]	ND [1, 2]	ND [1, 2]
3 & 4 Methylphenol	ND [1, 2]	ND [1, 2]	ND [1, 2]	ND [1, 2]
3,3'-Dichlorobenzidine	ND [1, 2]	ND [1, 2]	ND [1, 2]	ND [1, 2]
3-Nitroaniline	ND [1, 2]	ND [1, 2]	ND [1, 2]	ND [1, 2]
4,6-Dinitro-2-methylphenol	ND [1, 2]	ND [1, 2]	ND [1, 2]	ND [1, 2]
4-Bromophenyl phenyl ether	ND [1, 2]	ND [1, 2]	ND [1, 2]	ND [1, 2]
4-Chloro-3-methylphenol	ND [1, 2]	ND [1, 2]	ND [1, 2]	ND [1, 2]
4-Chloroaniline	ND [1, 2]	ND [1, 2]	ND [1, 2]	ND [1, 2]
4-Chlorophenyl phenyl ether	ND [1, 2]	ND [1, 2]	ND [1, 2]	ND [1, 2]
4-Nitroaniline	ND [1, 2]	ND [1, 2]	ND [1, 2]	ND [1, 2]
4-Nitrophenol	ND [1, 2]	ND [1, 2]	ND [1, 2]	ND [1, 2]
Acenaphthene	2100000 [1, 2]	1500000 [1, 2]	1300000 [1, 2]	830000 [1, 2]
Acenaphthylene	30000 [1, 2, 3]	ND [1, 2]	ND [1, 2]	19000 [1, 2, 3]
Acetophenone	ND [1, 2]	ND [1, 2]	ND [1, 2]	ND [1, 2]
Anthracene	3000000 [1, 2]	2700000 [1, 2]	1800000 [1, 2]	1300000 [1, 2]
Atrazine	ND [1, 2]	ND [1, 2]	ND [1, 2]	ND [1, 2]
Benzaldehyde	ND [1, 2]	ND [1, 2]	ND [1, 2]	ND [1, 2]
Benzo[a]anthracene	2900000 [1, 2]	3400000 [1, 2]	2000000 [1, 2]	1600000 [1, 2]
Benzo[a]pyrene	2000000 [1, 2]	2300000 [1, 2]	1300000 [1, 2]	1000000 [1, 2]
Benzo[b]fluoranthene	1400000 [1, 2]	1600000 [1, 2]	1000000 [1, 2]	1000000 [1, 2]
Benzo[g,h,i]perylene	1000000 [1, 2]	1100000 [1, 2]	720000 [1, 2, 3]	570000 [1, 2]
Benzo[k]fluoranthene	560000 [1, 2, 3]	610000 [1, 2, 3]	360000 [1, 2, 3]	ND [1, 2]
Biphenyl	260000 [1, 2, 3]	160000 [1, 2, 3]	150000 [1, 2, 3]	77000 [1, 2, 3]
Bis(2-chloroethoxy)methane	ND [1, 2]	ND [1, 2]	ND [1, 2]	ND [1, 2]
Bis(2-chloroethyl)ether	ND [1, 2]	ND [1, 2]	ND [1, 2]	ND [1, 2]

TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS
SNPE VANDEMARK
DNAPL ASSESSMENT
LOCKPORT, NY

Lab ID	RTF1262-01	RTF1262-02	RTF1262-03	RTF1262-04
Sample Date	6/22/2010	6/22/2010	6/22/2010	6/22/2010
Sample ID	B-9-W5-N5	B-9-N-10	B-9-W5-N10	B-9-W10-N5
Units	UG/KG	UG/KG	UG/KG	UG/KG
Bis(2-chloroisopropyl) ether	ND [1, 2]	ND [1, 2]	ND [1, 2]	ND [1, 2]
Bis(2-ethylhexyl) phthalate	ND [1, 2]	ND [1, 2]	ND [1, 2]	ND [1, 2]
Butyl benzyl phthalate	ND [1, 2]	ND [1, 2]	ND [1, 2]	ND [1, 2]
Caprolactam	ND [1, 2]	ND [1, 2]	ND [1, 2]	ND [1, 2]
Carbazole	320000 [1, 2, 3]	280000 [1, 2, 3]	200000 [1, 2, 3]	97000 [1, 2, 3]
Chrysene	2800000 [1, 2]	3400000 [1, 2]	2000000 [1, 2]	1500000 [1, 2]
Dibenz[a,h]anthracene	300000 [1, 2, 3]	300000 [1, 2, 3]	200000 [1, 2, 3]	160000 [1, 2, 3]
Dibenzofuran	320000 [1, 2, 3]	260000 [1, 2, 3]	200000 [1, 2, 3]	110000 [1, 2, 3]
Diethyl phthalate	ND [1, 2]	ND [1, 2]	ND [1, 2]	ND [1, 2]
Dimethyl phthalate	ND [1, 2]	ND [1, 2]	ND [1, 2]	ND [1, 2]
Di-n-butyl phthalate	ND [1, 2]	ND [1, 2]	ND [1, 2]	ND [1, 2]
Di-n-octyl phthalate	ND [1, 2]	ND [1, 2]	ND [1, 2]	ND [1, 2]
Fluoranthene	3900000 [1, 2]	4000000 [1, 2]	2500000 [1, 2]	2000000 [1, 2]
Fluorene	1600000 [1, 2]	1300000 [1, 2]	940000 [1, 2]	640000 [1, 2]
Hexachlorobenzene	ND [1, 2]	ND [1, 2]	ND [1, 2]	ND [1, 2]
Hexachlorobutadiene	ND [1, 2]	ND [1, 2]	ND [1, 2]	ND [1, 2]
Hexachlorocyclopentadiene	ND [1, 2]	ND [1, 2]	ND [1, 2]	ND [1, 2]
Hexachloroethane	ND [1, 2]	ND [1, 2]	ND [1, 2]	ND [1, 2]
Indeno[1,2,3-cd]pyrene	680000 [1, 2, 3, 4]	790000 [1, 2, 3, 4]	470000 [1, 2, 3, 4]	400000 [1, 2, 3, 4]
Isophorone	ND [1, 2]	ND [1, 2]	ND [1, 2]	ND [1, 2]
Naphthalene	3000000 [1, 2]	2000000 [1, 2]	1500000 [1, 2]	590000 [1, 2]
Nitrobenzene	ND [1, 2]	ND [1, 2]	ND [1, 2]	ND [1, 2]
N-Nitrosodi-n-propylamine	ND [1, 2]	ND [1, 2]	ND [1, 2]	ND [1, 2]
N-Nitrosodiphenylamine	ND [1, 2]	ND [1, 2]	ND [1, 2]	ND [1, 2]
Pentachlorophenol	ND [1, 2]	ND [1, 2]	ND [1, 2]	ND [1, 2]
Phenanthrene	9400000 [1, 2]	9400000 [1, 2]	5900000 [1, 2]	4200000 [1, 2]
Phenol	ND [1, 2]	ND [1, 2]	ND [1, 2]	ND [1, 2]
Pyrene	6200000 [1, 2]	7600000 [1, 2]	4300000 [1, 2]	3300000 [1, 2]

Footnotes:

Analyses performed by Test America Inc.

Qualifications:

[1] = Sample had an adjusted volume during extraction due to extract matrix and/or viscosity.

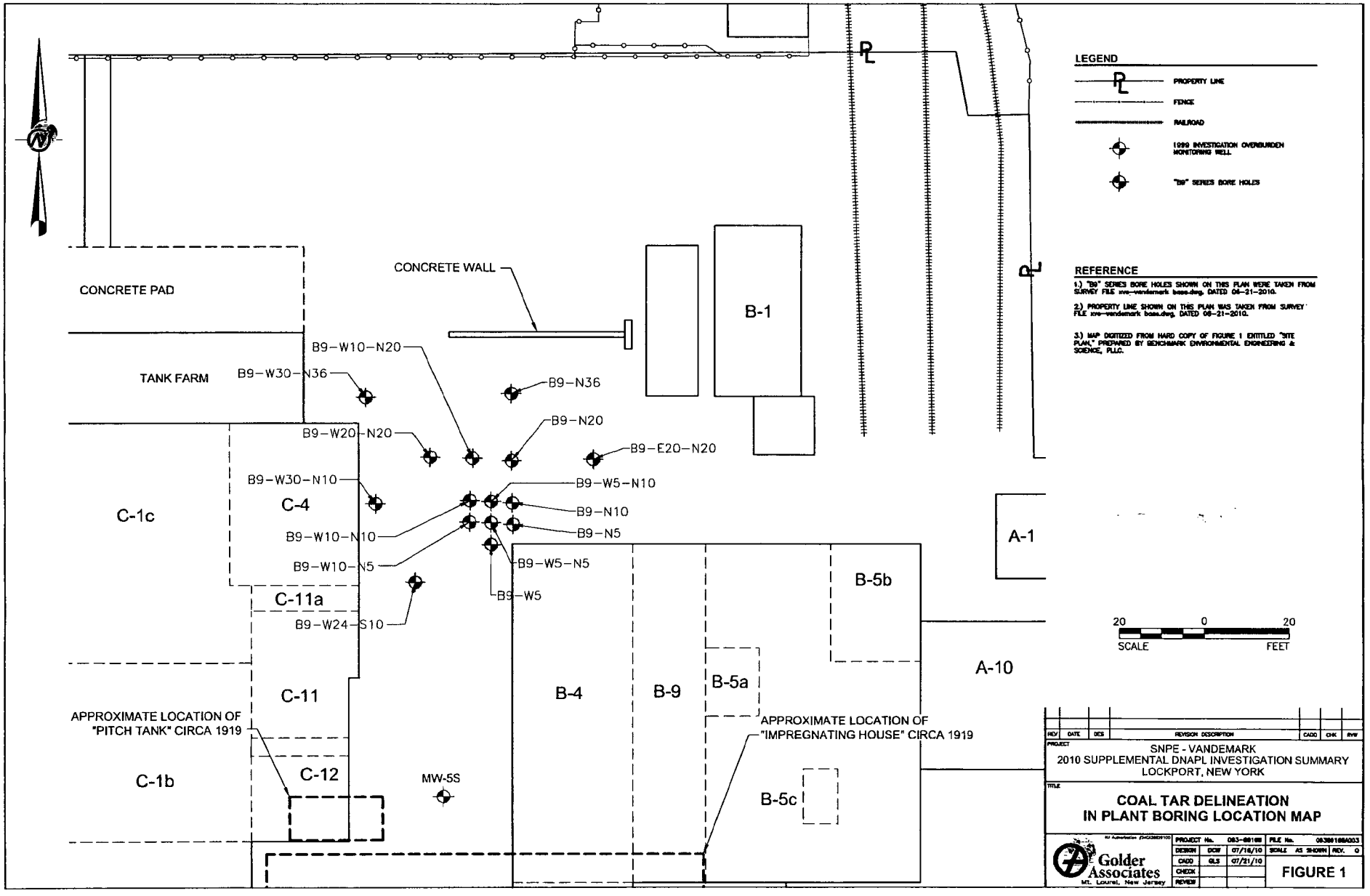
[2] = Dilution required due to high concentration of target analyte.

[3] = Analyte detected at a level less that Reporting Limit and greater than or equal to the Method Detection Limit. Concentrations in

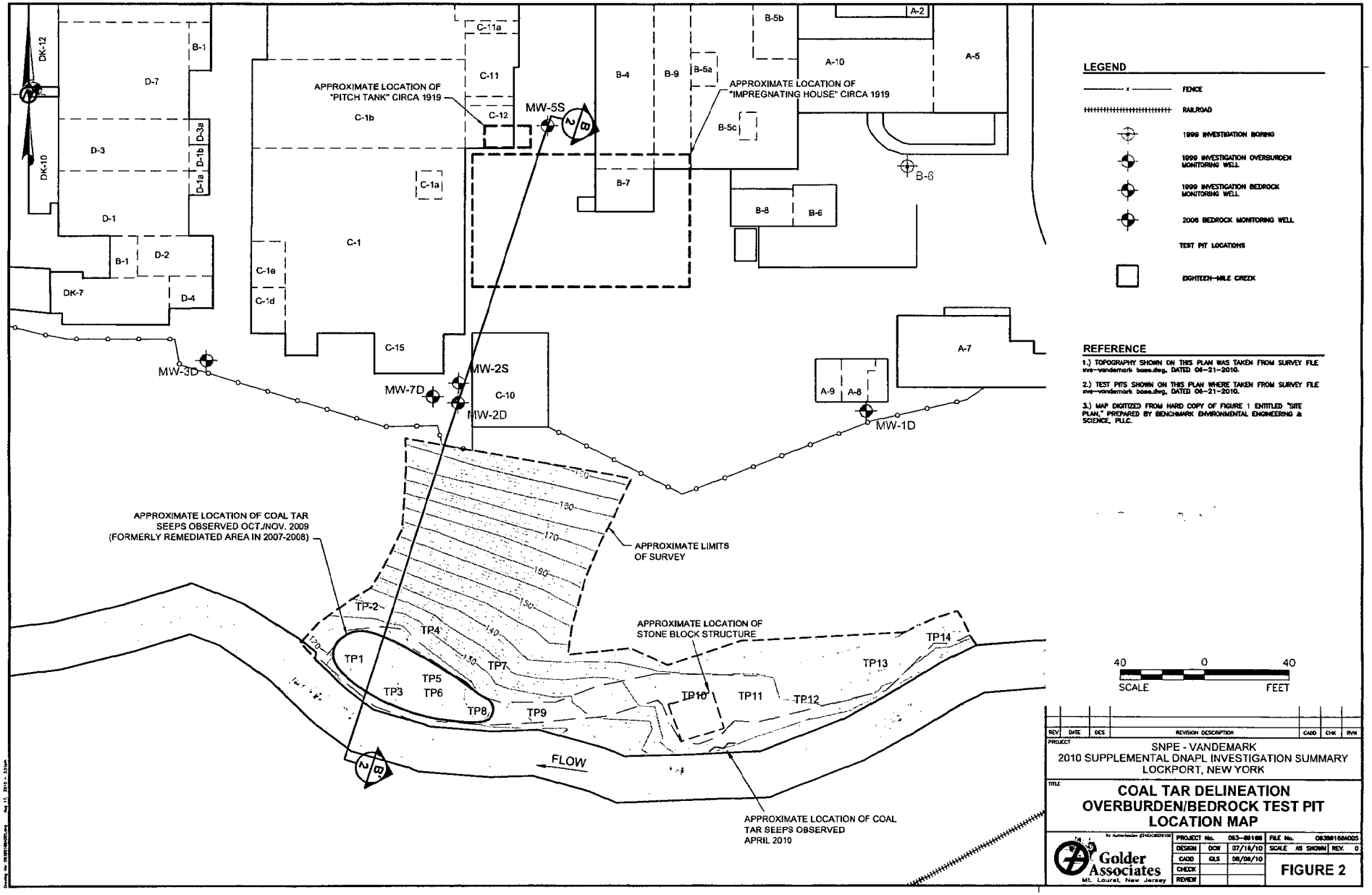
[4] = Laboratory Control Sample and/or laboratory control sample duplicate recovery was below acceptance limits.

Table by: AML
Checked by: JRS
Reviewed by: PTM

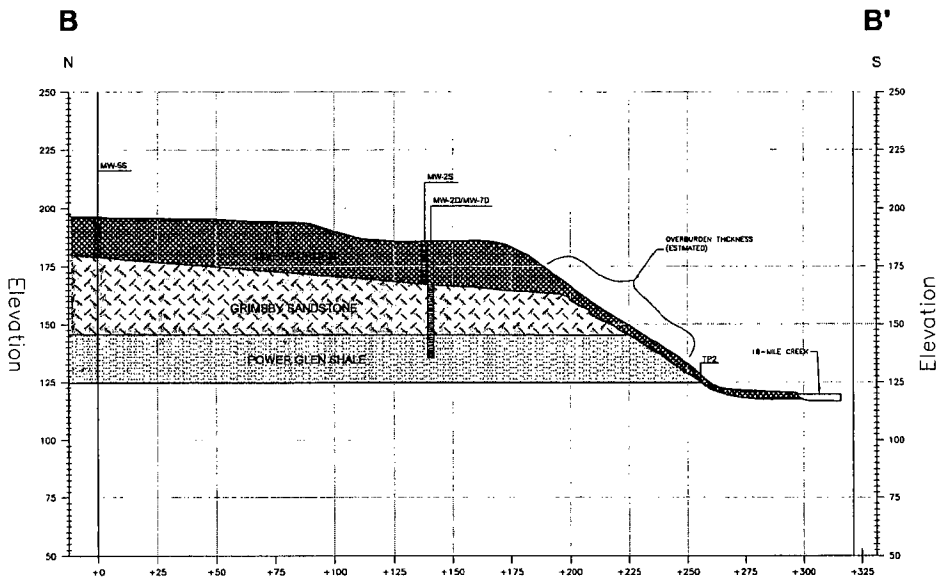
FIGURES


LEGEND
PROPERTY LINE
FENCE
RAILROAD
1999 INVESTIGATION OVERBURDEN MONITORING WELL
"B9" SERIES BORE HOLES
REFERENCE
1.) "B9" SERIES BORE HOLES SHOWN ON THIS PLAN WERE TAKEN FROM SURVEY FILE xre-vandemark base.dwg, DATED 06-21-2010.
2.) PROPERTY LINE SHOWN ON THIS PLAN WAS TAKEN FROM SURVEY FILE xre-vandemark base.dwg, DATED 06-21-2010.
3.) MAP DIGITIZED FROM HARD COPY OF FIGURE 1 ENTITLED "SITE PLAN," PREPARED BY BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC.
CONCRETE PAD
CONCRETE WALL
TANK FARM
B-1
B9-W10-N20
B9-W30-N36
B9-N36
B9-N20
B9-W20-N20
B9-E20-N20
B9-W30-N10
B9-W5-N10
C-1c
C-4
B9-N10
B9-W10-N10
B9-N5
B9-W10-N5
B9-W5-N5
B9-W5
C-11a
B9-W24-S10
A-1
B-5b
A-10
C-11
B-4
B-9
B-5a
APPROXIMATE LOCATION OF "PITCH TANK" CIRCA 1919
APPROXIMATE LOCATION OF "IMPREGNATING HOUSE" CIRCA 1919
C-1b
C-12
MW-5S
B-5c
20 0 20
SCALE FEET
SNPE - VANDEMARK
2010 SUPPLEMENTAL DNAPL INVESTIGATION SUMMARY
LOCKPORT, NEW YORK
COAL TAR DELINEATION
IN PLANT BORING LOCATION MAP
Golder Associates
Mt. Laurel, New Jersey
FIGURE 1

VDM01888


LEGEND
FENCE
RAILROAD
1999 INVESTIGATION BORING
1999 INVESTIGATION OVERBURDEN MONITORING WELL
1999 INVESTIGATION BEDROCK MONITORING WELL
2006 BEDROCK MONITORING WELL
TEST PIT LOCATIONS
EIGHTEEN-MILE CREEK
REFERENCE
1.) TOPOGRAPHY SHOWN ON THIS PLAN WAS TAKEN FROM SURVEY FILE svs-vandemark base.dwg, DATED 06-21-2010.
2.) TEST PITS SHOWN ON THIS PLAN WHERE TAKEN FROM SURVEY FILE svs-vandemark base.dwg, DATED 06-21-2010.
3.) MAP DIGITIZED FROM HARD COPY OF FIGURE 1 ENTITLED "SITE PLAN," PREPARED BY BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC.
APPROXIMATE LOCATION OF "PITCH TANK" CIRCA 1919
APPROXIMATE LOCATION OF "IMPREGNATING HOUSE" CIRCA 1919
APPROXIMATE LOCATION OF COAL TAR SEEPS OBSERVED OCT./NOV. 2009 (FORMERLY REMEDIATED AREA IN 2007-2008)
APPROXIMATE LIMITS OF SURVEY
APPROXIMATE LOCATION OF STONE BLOCK STRUCTURE
APPROXIMATE LOCATION OF COAL TAR SEEPS OBSERVED APRIL 2010
FLOW
MW-5S
MW-3D
MW-7D
MW-2S
MW-2D
MW-1D
B-6
TP1
TP2
TP3
TP4
TP5
TP6
TP7
TP8
TP9
TP10
TP11
TP12
TP13
TP14
40 0 40
SCALE FEET
SNPE - VANDEMARK
2010 SUPPLEMENTAL DNAPL INVESTIGATION SUMMARY
LOCKPORT, NEW YORK
COAL TAR DELINEATION
OVERBURDEN/BEDROCK TEST PIT
LOCATION MAP
Golder Associates
Mt. Laurel, New Jersey
FIGURE 2

VDM01889



LEGEND

- OVERBURDEN
- GRIMSBY SANDSTONE
- POWER GLEN SHALE
- WATER ELEVATION IN WELL

REFERENCES

1.) URS CORP. FIGURE 3 – PHASE I/II ENVIRONMENTAL AUDIT – VANDE/MARK, INC. A VANCHEM, INC. SEPTEMBER 17, 1999.

2.) BENCHMARK BES, PLLC – SUMMARY OF SUPPLEMENTAL FIELD INVESTIGATION AND SAMPLING ACTIVITIES, ISOCHEM INC., NOVEMBER 30, 2006.

3.) U.S.G.S. LOCKPORT QUADRANGLE (FOR ELEVATION OF EIGHTEEN-MILE CREEK)

25 0 25 50
HORIZONTAL SCALE FEET

25 0 25 50
VERTICAL SCALE FEET

REV	DATE	DES	REVISION DESCRIPTION	CADD	CHK	RVW

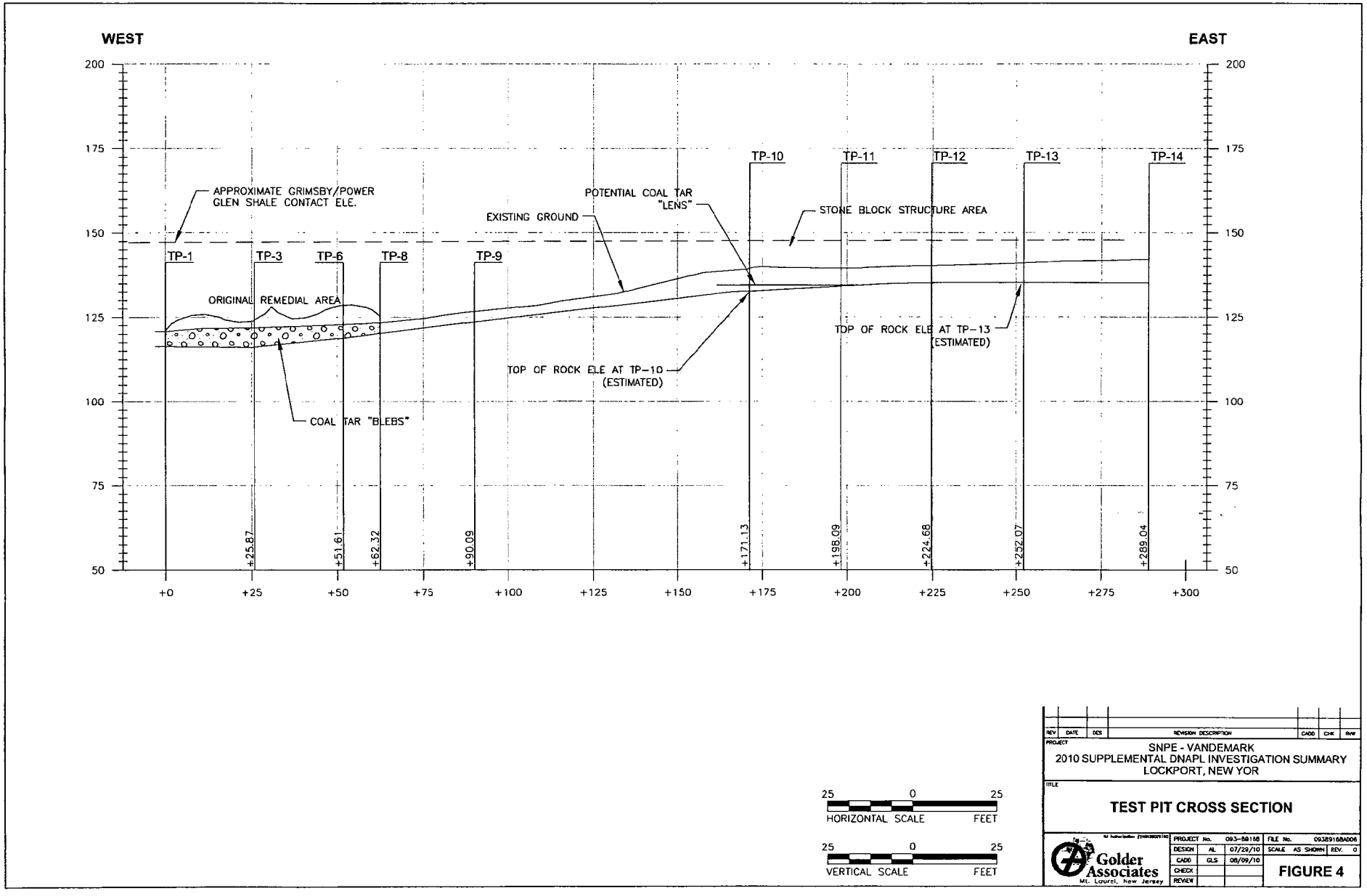
PROJECT
SNPE - VANDEMARK
2010 SUPPLEMENTAL DNAPL INVESTIGATION SUMMARY
LOCKPORT, NEW YORK

TITLE
CROSS SECTION B-B'

Golder Associates
Mt. Laurel, New Jersey

PROJECT No.	093-89168		FILE No.	093891680002	
DESIGN	DCW	08/09/10	SCALE	AS SHOWN	REV. 0
CADD	AM	08/09/10	**FIGURE 3**		
CHECK					
REVIEW					

VDM01890



REV	DATE	DES	REVISION DESCRIPTION	CADD	CHK	RVW

PROJECT

SNPE - VANDEMARK
2010 SUPPLEMENTAL DNAPL INVESTIGATION SUMMARY
LOCKPORT, NEW YOR

TITLE

TEST PIT CROSS SECTION

Golder Associates
Mt. Laurel, New Jersey

PROJECT No.	093-88188		FILE No.	09389188A006	
DESIGN	AL	07/29/10	SCALE	AS SHOWN	REV. 0
CADD	GLS	08/09/10			
CHECK					
REVIEW					

FIGURE 4

VDM01891

ATTACHMENT A

BORING LOGS

Field Boring Log

DEPTH HOLE 7.5 FT	JOB NO 093-89168	PROJECT Van De Mark		BORING NO. B9-NS	
DEPTH SOIL DRILL 7.5FT	GA INSP D. WEHN	DRILLING METHOD Geoprobe Macrocore		SHEET 1 OF 1	
DEPTH ROCK CORE N/A	WEATHER L. RAIN	DRILLING COMPANY Zebra Env.		SURFACE ELEV	
NO. DIST SA. 0 UD. SA. 2	TEMP 75°F	DRILL RIG bb70D	DRILLER D. Pino	DATUM	
DEPTH WL N/A	HRS. PROD. N/A	WT. SAMPLER HAMMER N/A	DROP N/A	STARTED 9:30, 6/22/10	
TIME WL. N/A	HRS. DELAYED 0	WT CASING HAMMER N/A	DROP N/A	COMPLETED 9:45, 6/22/10	

SAMPLE TYPES

AS	AUGER SAMPLE
CS	CHUNK SAMPLE
OO	DRIVE OPEN
OS	DENISON SAMPLE
PS	PITCHER SAMPLE
RC	ROCK CORE
ST	SLOTTED TUBE
TO	THIN-WALLED, OPEN
TP	THIN-WALLED, PISTON
WS	WASH SAMPLE

ABBREVIATIONS

BL	BLACK	M	MEDIUM	SA	SAMPLE
BR	BROWN	MIC	MICACEOUS	SAT	SATURATED
C	COARSE	MOT	MOTTLED	SD	SAND
CA	CASING	NP	NON-PLASTIC	SI	SILT
CL	CLAY	OG	ORANGE	SY	SILTY
CLY	CLAYEY	ORG	ORGANIC	SM	SOME
F	FINE	PH	PRESSURE HYDRAULIC	TR	TRACE
FRAG	FRAGMENTS	PM	PRESSURE MANUAL	WL	WATER LEVEL
GL	GRAVEL	R	RED	WH	WEIGHT OF HAMMER
LYD	LAYERED	RES	RESIDUAL	Y	YELLOW
LI	LITTLE	RX	ROCK		

SOIL DESCRIPTION - RANGE OF PROPORTION

TRACE 0 - 10% MOM 12 - 30%
LITTLE 5 - 20% AND 30 - 50%

RELATIVE DENSITY	BLOWS	CONSISTENCY	FIELD PRESSURE
VERY LOOSE VLS	0-4	VERY SOFT VS	EXTRUDES
LOOSE LS	4-10	SOFT S	MOLDS EASILY
COMPACT CP	10-30	FIRM FM	MOISTS
DENSE DN	30-50	STIFF ST	CRUMBLES
VERY DENSE VDN	50	VERY STIFF VST	CRUMBLES WITH DIFFICULTY
		HARD H	RESISTS CRUMBLING

ELEV. DEPTH	DESCRIPTION	BLOWS/FT	SAMPLES NO.	SAMPLES TYPE	SAMPLES HAMM. BLOWS PER 6 IN (FORCE)	SAMPLES REC./ATT	DEPTH	SAMPLE DESCRIPTION AND BORING NOTES
								Boring 5 FT N of NW corner of B9
1								0.0 - 0.3 FT roadbase GRAVEL.
2			1		PID = 0.0 ppm	4.2/5.0		0.3 - 4.2 FT Dark brown to reddish crushed brick, wood, silt, sand, gravel FILL.
3								
4								Slight coal tar odor.
5								
6			2		PID = 0.0 ppm	2.5/2.5		5.0 - 7.5 FT Dark brown sand, gravel, silt, FILL with some crushed brick.
7								Slight coal tar odor.
8								Refusal @ 7.5 FT
								Cuttings returned to borehole, tamped and covered with asphalt patch.

Field Boring Log

DEPTH HOLE 5.0	JOB NO 093-89168	PROJECT Van DeMark		BORING NO. B9-WS	
DEPTH SOIL DRILL 5.0	GA INSP D. WEHN	DRILLING METHOD Geoprobe Macrocore		SHEET 1 OF 1	
DEPTH ROCK CORE N/A	WEATHER L. RAIN	DRILLING COMPANY Zebra Env.		SURFACE ELEV	
NO. DIST SA 0 UD. SA 1	TEMP 75°F	DRILL RIG 6620D	DRILLER D. Pino	DATUM	
DEPTH WL N/A	HRS. PROD. N/A	WT SAMPLER HAMMER N/A	DROP N/A	STARTED 9:45 , 6/22/10	
TIME WL. N/A	HRS. DELAYED 0	WT CASING HAMMER N/A	DROP N/A	COMPLETED 9:55 , 6/22/10	

SAMPLE TYPES

AS	AUGER SAMPLE
CS	CHUNK SAMPLE
OO	DRIVE OPEN
DS	DENISON SAMPLE
PS	PITCHER SAMPLE
RC	ROCK CORE
ST	SLOTTED TUBE
TO	THIN-WALLED, OPEN
TP	THIN-WALLED, PISTON
WS	WASH SAMPLE

BL	BLACK
BR	BROWN
C	COARSE
CA	CASING
CL	CLAY
CLY	CLAYEY
F	FINE
FRAG	FRAGMENTS
GL	GRAVEL
LYD	LAYERED
LI	LITTLE

ABBREVIATIONS

M	MEDIUM
MIC	MICACEOUS
MOT	MOTTLED
NP	NONPLASTIC
OG	ORANGE
ORG	ORGANIC
PH	PRESSURE HYDRAULIC
PM	PRESSURE MANUAL
R	RED
RES	RESIDUAL
RK	ROCK

SA	SAMPLE
SAT	SATURATED
SD	SAND
SI	SILT
SLY	SILTY
SM	SOME
TR	TRACE
WL	WATER LEVEL
WH	WEIGHT OF HAMMER
Y	YELLOW

SOIL DESCRIPTION - RANGE OF PROPORTION

TRACE	0 - 10%	SOME	12 - 30%
LITTLE	5 - 12%	AND	30 - 50%

RELATIVE DENSITY	BLOWS	CONSISTENCY	FINGER PRESSURE
VERY LOOSE	VLS	VERY SOFT	VS
LOOSE	LS	SOFT	S
COMPACT	CP	FIRM	FM
DENSE	DN	STIFF	ST
VERY DENSE	VDN	VERY STIFF	VST
		HARD	H

ELEV / DEPTH	DESCRIPTION	BLOWS / FT	SAMPLES NO.	SAMPLES TYPE	SAMPLES (HAMM. BLOWS) PEN & IN (FORCE)	SAMPLES REC / ATT	DEPTH	SAMPLE DESCRIPTION AND BORING NOTES
1								Boring 5 FT W of NW corner of J B9.
2					PID=			0.0-5.0 FT Dark brown to reddish SILT SAND GRAVEL - FILL.
3			1		0.0 ppm	3.5 / 5.0		No coal tar odor.
4								Refusal @ 5.0 FT
5								
6								Cuttings returned to borehole, tamped and covered with asphalt patch.

Field Boring Log

DEPTH HOLE 5.5	JOB NO 093-89168	PROJECT Van DeMark		BORING NO. B9-W5-N5	
DEPTH SOIL DRILL 5.5	GA INSP D. WEHN	DRILLING METHOD Geoprobe Macrocore		SHEET 1 OF 1	
DEPTH ROCK CORE N/A	WEATHER L. RAIN	DRILLING COMPANY Zebra Env.		SURFACE ELEV	
NO. DIST SA. 0 UD. SA. 2	TEMP 75°F	DRILL RIG 6620D	DRILLER D. Pino	DATUM	
DEPTH WL N/A	HRS PROD. N/A	WT SAMPLER HAMMER N/A	DROP N/A	STARTED 9:55, 6/22/10	
TIME WL. N/A	HRS. DELAYED 0	WT CASING HAMMER N/A	DROP N/A	COMPLETED 10:10, 6/22/10	

SAMPLE TYPES

AS	AUGER SAMPLE	BL	BLACK
CS	CHUNK SAMPLE	BR	BROWN
DO	DRIVE OPEN	C	COARSE
DS	DENISON SAMPLE	CA	CASING
PS	PITCHER SAMPLE	CL	CLAY
RC	ROCK CORE	CLY	CLAYEY
ST	SLOTTED TUBE	F	FINE
TO	THIN-WALLED, OPEN	FRAG	FRAGMENTS
TP	THIN-WALLED, PISTON	GL	GRAVEL
WS	WASH SAMPLE	LYD	LAYERED
		LI	LITTLE

ABBREVIATIONS

M	MEDIUM	SA	SAMPLE
MIC	MICACEOUS	SAT	SATURATED
MOT	MOTTLED	SD	SAND
NP	NON-PLASTIC	SI	SILT
OG	ORANGE	SLY	SILTY
ORG	ORGANIC	SM	SOME
PH	PRESSURE HYDRAULIC	TR	TRACE
PM	PRESSURE MANUAL	WL	WATER LEVEL
R	RED	WH	WEIGHT OF HAMMER
RES	RESIDUAL	Y	YELLOW
RX	ROCK		

SOIL DESCRIPTION - RANGE OF PROPORTION

TRACE 0 - 10% SOME 21 - 35%
LITTLE 11 - 20% AND 36 - 50%

RELATIVE DENSITY	BLOWS	CONSISTENCY	FINGER PRESSURE
VERY LOOSE VLS	0 - 4	VERY SOFT VS	EASY INCHES
LOOSE LS	4 - 10	SOFT S	MODERATE EFFORT
COMPACT CP	10 - 30	FIRM F	HARD
DENSE D	30 - 50	STIFF ST	EXTREME EFFORTS
VERY DENSE VDN	>50	VERY STIFF VST	EMBEDDING INDENT
		HARD H	RESISTS PENETRATION

ELEV / DEPTH	DESCRIPTION	BLOWS / FT	SAMPLES NO.	TYPE	HAMM. BLOWS PER 6 IN (FORCE)	REC / ATT	DEPTH	SAMPLE DESCRIPTION AND BORING NOTES
								Boring 5 FT N and 5 FT W of NW corner of B9.
1								
2			1		PID = 0.0 ppm	4.0 / 5.0		0.0-5.0 FT Dark brown to black to reddish SILT, SAND & GRAVEL. Fill. Some brick. Coal tar from 1.6-2.1 FT. Strong coal tar odor.
3								
4								Sample collected of coal tar.
5			2		PID=0.0 ppm	0.9 / 0.5		5.0-5.5 FT Brown SILT, SAND & GRAVEL. Saturated. No coal tar odor.
6								Refusal @ 5.5 FT
								Cuttings returned to borehole, tamped and covered with asphalt patch.

VDM01895

Field Boring Log

DEPTH HOLE 5.0	JOB NO 093-89168	PROJECT Van DeMark		BORING NO. B9-N10	
DEPTH SOIL DRILL 5.0	QA INSP D. WEHN	DRILLING METHOD Geoprobe Macrocore		SHEET 1 OF 1	
DEPTH ROCK CORE N/A	WEATHER OVERCAST	DRILLING COMPANY Zebra Env.		SURFACE ELEV	
NO. DIST SA 0 UD. SA 1	TEMP 75°F	DRILL RIG 6620D	DRILLER D. Pino	DATUM	
DEPTH WL N/A	HRS. PROD. N/A	WT SAMPLER HAMMER N/A	DROP N/A	STARTED 10:15, 6/22/10	
TIME WL N/A	HRS. DELAYED 0	WT CASING HAMMER N/A	DROP N/A	COMPLETED 10:25, 6/22/10	

SAMPLE TYPES

AS	AUGER SAMPLE
CS	CHUNK SAMPLE
DD	DRIVE OPEN
DS	DENISON SAMPLE
PS	PITCHER SAMPLE
RC	ROCK CORE
ST	SLOTTED TUBE
TO	THIN-WALLED, OPEN
TP	THIN-WALLED, PISTON
WS	WASH SAMPLE

ABBREVIATIONS

BL	BLACK	M	MEDIUM	SA	SAMPLE
BR	BROWN	MIC	MICACEOUS	SAT	SATURATED
C	COARSE	MOT	MOTTLED	SD	SAND
CA	CASING	NP	NON-PLASTIC	SI	SILT
CL	CLAY	OG	ORANGE	SIY	SILTY
CLY	CLAYEY	ORG	ORGANIC	SM	SOME
F	FINE	PH	PRESSURE HYDRAULIC	TR	TRACE
FRAG	FRAGMENTS	PM	PRESSURE MANUAL	WL	WATER LEVEL
GL	GRAVEL	R	RED	WH	WEIGHT OF HAMMER
LTD	LAYERED	RES	RESIDUAL	Y	YELLOW
LI	LITTLE	RX	ROCK		

SOIL DESCRIPTION - RANGE OF PROPORTION

TRACE 0 - 1% SOME 12 - 30%
LITTLE 5 - 12% AND 30 - 50%

RELATIVE DENSITY		BLOWS	CONSISTENCY		FINGER PRESSURE
VERY LOOSE	VLS	0-4	VERY SOFT	VS	EXTRUDES
LOOSE	LS	4-10	SOFT	S	MOLDS EASILY
COMPACT	CP	10-30	FIRM	FM	MOLDS
DENSE	DN	30-50	STIFF	ST	THUMB INDENTS
VERY DENSE	VDN	50	VERY STIFF	VST	THUMBNAIL INDENT
			HARD	H	RESISTS THUMBNAIL

ELEV / DEPTH	DESCRIPTION	BLOWS / FT		SAMPLES NO.	TYPE	HAMM. BLOWS PER 6 IN (FORCE)	REC / ATT	DEPTH	SAMPLE DESCRIPTION AND BORING NOTES
									Boring 10 FT N of NW corner of B9.
1									0.0 - 5.0 FT Dark brown to reddish to light tan SILT, SAND + GRAVEL with some wood + brick. Light tan granular ~~substance~~ sandy substance near bottom of sample (several inches thick).
2				1		PID = 0.0 ppm	4.3 / 5.0		
3									
4									Coal tar from 2.3 - 2.8 FT and at tip of sample shoe on top of rock.
5									
6									Coal tar odor.
									Refusal @ 5.0 FT
									Collected sample of coal tar.
									Cuttings returned to borehole, tamped, and covered with asphalt patch.

Field Boring Log

DEPTH HOLE 5.0	JOB NO 093-89169	PROJECT Van DeMark			BORING NO. B9-WS-N10
DEPTH SOIL DRILL 5.0	GA INSP D. WEHN	DRILLING METHOD Geoprobe Macrocore			SHEET 1 OF 1
DEPTH ROCK CORE N/A	WEATHER OVERCAST	DRILLING COMPANY Zebra Env.			SURFACE ELEV
NO. DIST SA 0 UD. SA 1	TEMP 75°F	DRILL RIG 6620D		DRILLER D. Pino	DATUM
DEPTH WL N/A	HRS. PROD. N/A	WT SAMPLER HAMMER N/A	DROP N/A		STARTED 10:30, 6/22/10
TIME WL N/A	HRS. DELAYED 0	WT CASING HAMMER N/A	DROP N/A		COMPLETED 20:40, 6/22/10

SAMPLE TYPES: AS AUGER SAMPLE; CS CHUNK SAMPLE; DO DRIVE OPEN; DS DENISON SAMPLE; PS PITCHER SAMPLE; RC ROCK CORE; ST SLOTTED TUBE; TO THIN-WALLED, OPEN; TP THIN-WALLED, PISTON; WS WASH SAMPLE

ABBREVIATIONS: BL BLACK; BR BROWN; C COARSE; CA CASING; CL CLAY; CLY CLAYEY; F FINE; FRAG FRAGMENTS; GL GRAVEL; LTD LAYERED; U LITTLE; M MEDIUM; MIC MICACEOUS; MOT MOTTLED; NP NON-PLASTIC; OG ORANGE; ORG ORGANIC; PH PRESSURE HYDRAULIC; PM PRESSURE MANUAL; R RED; RES RESIDUAL; RB ROCK; SA SAMPLE; SAT SATURATED; SD SAND; SI SILT; SIY SILTY; SM SOME; TR TRACE; WL WATER LEVEL; WH WEIGHT OF HAMMER; Y YELLOW

SOIL DESCRIPTION - RANGE OF PROPORTION: TRACE 0 - 10%; LITTLE 10 - 20%; AND 30 - 50%

RELATIVE DENSITY	BLOWS	CONSISTENCY	FINGER PRESSURE
VERY LOOSE	VLS	VERY SOFT	VS
LOOSE	LS	SOFT	S
COMPACT	CP	FIRM	FM
DENSE	DN	STIFF	ST
VERY DENSE	VDN	VERY STIFF	VST
		HARD	H

ELEV / DEPTH	DESCRIPTION	BLOWS / FT	SAMPLES NO.	TYPE	HAMM. BLOWS PER 6 IN (FORCE)	REC / ATT	DEPTH	SAMPLE DESCRIPTION AND BORING NOTES
								Boring 5 FT W and 10 FT N of NW corner of B9.
1								
2					PID =	4.3		0.0-5.0 FT Dark brown SILT SAND, GRAVEL + BRICK. FILL.
3			1		0.0 ppm	5.0		Dark gray sandy material From 3.7-4.3 FT
4								Coal tar from 1.7-2.1 FT
5								Coal tar odor.
								Sample collected of coal tar.
								Refusal @ 5 FT
								Cuttings returned to borehole, tamped and covered with asphalt patch.

VDM01897

Field Boring Log

DEPTH HOLE 5.0	JOB NO 093-89168	PROJECT Van DeMark			BORING NO. B9-W10-N5
DEPTH SOIL DRILL 5.0	QA INSP D. WEHN	DRILLING METHOD Geoprobe Macrocore			SHEET 1 OF 1
DEPTH ROCK CORE N/A	WEATHER L. RAIN	DRILLING COMPANY Zebra Env.			SURFACE ELEV
NO. DIST SA 0 UD. SA. 1	TEMP 75°F	DRILL RIG 6620D		DRILLER D. Pino	DATUM
DEPTH WL N/A	HRS. PROD. N/A	WT SAMPLER HAMMER N/A	DROP N/A		STARTED 10:40, 6/22/10
TIME WL. N/A	HRS. DELAYED 0	WT CASING HAMMER N/A	DROP N/A		COMPLETED 10:50, 6/22/10

SAMPLE TYPES

AS	AUGER SAMPLE
CS	CHUNK SAMPLE
DO	DRIVE OPEN
DS	DENISON SAMPLE
PS	PITCHER SAMPLE
RC	ROCK CORE
ST	SLOTTED TUBE
TO	THIN-WALLED, OPEN
TP	THIN-WALLED, PISTON
WS	WASH SAMPLE

BL	BLACK
BR	BROWN
C	COARSE
CA	CASING
CL	CLAY
CLY	CLAYEY
F	FINE
FRAG	FRAGMENTS
GL	GRAVEL
LYD	LAYERED
LI	LITTLE

ABBREVIATIONS

M	MEDIUM
MIC	MICACEOUS
MOT	MOTTLED
NP	NON-PLASTIC
OG	ORANGE
ORG	ORGANIC
PH	PRESSURE HYDRAULIC
PM	PRESSURE MANUAL
R	RED
RES	RESIDUAL
RX	ROCK

SA	SAMPLE
SAT	SATURATED
SD	SAND
SI	SILT
SLY	SILTY
SM	SOME
TR	TRACE
WL	WATER LEVEL
WH	WEIGHT OF HAMMER
Y	YELLOW

SOIL DESCRIPTION - RANGE OF PROPORTION

TRACE 0 - 5% SOME 12 - 30%
LITTLE 5 - 12% AND 30-50%

RELATIVE DENSITY	BLOWS	CONSISTENCY	POCKET PENETROMETER
VERY LOOSE VLS	0-4	VERY SOFT VS	LESS THAN 0.5
LOOSE LS	4-10	SOFT S	0.5 TO 1.0
COMPACT CP	10-30	FIRM F	1.0 TO 2.0
DENSE D	30-50	STIFF ST	2.0 TO 4.0
VERY DENSE VDN	>50	VERY STIFF VST	4.0 TO 8.0
		HARD H	MORE THAN 8.0

ELEV / DEPTH	DESCRIPTION	BLOWS / FT	SAMPLES NO.	SAMPLES TYPE	SAMPLES HAMM. BLOWS PER 6 IN (FORCE)	SAMPLES REC. / ATT	DEPTH	SAMPLE DESCRIPTION AND BORING NOTES
								Boring 10 FT W and 5 FT N of NW corner of B9.
1								
2			1		PID = 0.0 ppm	4.0 / 5.0		0.0-5.0 FT Dark brown SILT SAND GRAVEL with some brick and wood. FILL. Tan sandy material just above refusal.
3								
4								Coal tar 1.3-1.6 FT Coal tar odor Sample collected of coal tar.
5								Refusal @ 5.0 FT
								Cuttings returned to borehole, tamped, and covered with asphalt patch.

Field Boring Log

DEPTH HOLE 6.0	JOB NO 073-89169	PROJECT Van DeMark			BORING NO. B9-W10-N10
DEPTH SOIL DRILL 6.0	QA INSP D. WEHN	DRILLING METHOD Geoprobe Macrocore			SHEET 1 OF 1
DEPTH ROCK CORE N/A	WEATHER L. RAIN	DRILLING COMPANY Zebra Env.			SURFACE ELEV
NO. DIST SA 0 UD. SA 2	TEMP 75°F	DRILL RIG 6620D		DRILLER D. Pino	DATUM
DEPTH WL N/A	HRS. PROD. N/A	WT SAMPLER HAMMER N/A		DROP N/A	STARTED 10:55, 6/22/10
TIME WL. N/A	HRS. DELAYED 0	WT CASING HAMMER N/A		DROP N/A	COMPLETED 11:05, 6/22/10

SAMPLE TYPES

AS	AUGER SAMPLE	BL	BLACK
CS	CHUNK SAMPLE	BR	BROWN
DO	DRIVE OPEN	C	COARSE
DS	DENISON SAMPLE	CA	CASING
PS	PITCHER SAMPLE	CL	CLAY
RC	ROCK CORE	CLY	CLAYEY
ST	SLOTTED TUBE	F	FINE
TO	THIN-WALLED, OPEN	FRAG	FRAGMENTS
TP	THIN-WALLED, PISTON	GL	GRAVEL
WS	WASH SAMPLE	LTD	LAYERED
		U	LITTLE

ABBREVIATIONS

M	MEDIUM	SA	SAMPLE
MIC	MICACEOUS	SAT	SATURATED
MOT	MOTTLED	SD	SAND
NP	NON-PLASTIC	SI	SILT
OG	ORANGE	SLY	SILTY
ORG	ORGANIC	SM	SOME
PH	PRESSURE HYDRAULIC	TR	TRACE
PM	PRESSURE MANUAL	WL	WATER LEVEL
R	RED	WH	WEIGHT OF HAMMER
RES	RESIDUAL	Y	YELLOW
RX	ROCK		

SOIL DESCRIPTION - RANGE OF PROPORTION

TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND 35 - 50%

RELATIVE DENSITY	BLOWS	CONSISTENCY	FINGER PRESSURE
VERY LOOSE	WLS 0-4	VERY SOFT	VS EASY INCHES
LOOSE	LS 4-10	SOFT	S MODER EASILY
COMPACT	CP 10-30	FIRM	FM MODER
DENSE	DN 30-50	STIFF	ST DIFFICULT INCHES
VERY DENSE	VDN 50	VERY STIFF	VST EXTREMELY INCHES
		HARD	H RESISTS THUMBNAIL

ELEV / DEPTH	DESCRIPTION	BLOWS / FT	SAMPLES NO.	SAMPLES TYPE	SAMPLES HAMM. BLOWS PER 6 IN (FORCE)	SAMPLES REC / ATT	DEPTH	SAMPLE DESCRIPTION AND BORING NOTES
								Boring 10 FT W and 10 FT N of MW cocon of B9.
1								
								0.0 - 5.0 FT
2					PID =			
			1		0.0 ppm	4.1 / 5.0		Coal tar from 1.0 - 2.1 FT, 3.0 - 3.9 FT, and at bottom of shoe. Coal tar odor.
3								
								Crushed GRAVEL 1.1 - 1.4 FT then crushed brick, SAND + GRAVEL - FILL.
4								
5								
			2		PID = 0.0 ppm	0.8 / T.0		5.0 - 6.0 FT Dark brown SAND. Coal tar odor.
6								
								Cuttings returned to borehole, tamped, and covered with asphalt patch.

VDM01899

Field Boring Log

DEPTH HOLE 5.0	JOB NO 093-89168	PROJECT Van DeMark		BORING NO. B9-N20	
DEPTH SOIL DRILL 5.0	QA INSP D. WEHN	DRILLING METHOD Geoprobe Macrocore		SHEET 1 OF 1	
DEPTH ROCK CORE N/A	WEATHER L. RAIN	DRILLING COMPANY Zebra Env.		SURFACE ELEV	
NO. DIST SA. 0 UD. SA. 1	TEMP 75°F	DRILL RIG 6620D	DRILLER D. Pino	DATUM	
DEPTH WL N/A	HRS. PROD. N/A	WT SAMPLER HAMMER N/A	DROP N/A	STARTED 11:05, 6/22/10	
TIME WL. N/A	HRS. DELAYED 0	WT CASING HAMMER N/A	DROP N/A	COMPLETED 11:20, 6/22/10	

SAMPLE TYPES

AS	AUGER SAMPLE
CS	CHUNK SAMPLE
DO	DRIVE OPEN
DS	DENISON SAMPLE
PS	PITCHER SAMPLE
RC	ROCK CORE
ST	SLOTTED TUBE
TO	THIN-WALLED, OPEN
TP	THIN-WALLED, PISTON
WS	WASH SAMPLE

ABBREVIATIONS

BL	BLACK	M	MEDIUM	SA	SAMPLE
BR	BROWN	MIC	MICACEOUS	SAT	SATURATED
C	COARSE	MOT	MOTTLED	SD	SAND
CA	CASING	NP	NON-PLASTIC	SI	SILT
CL	CLAY	OG	ORANGE	SIY	SILTY
CLY	CLAYEY	ORG	ORGANIC	SM	SOME
F	FINE	PH	PRESSURE HYDRAULIC	TR	TRACE
FRAC	FRAGMENTS	PM	PRESSURE MANUAL	WL	WATER LEVEL
GL	GRAVEL	R	RED	WH	WEIGHT OF HAMMER
LYD	LAYERED	RES	RESIDUAL	Y	YELLOW
LI	LITTLE	RX	ROCK		

SOIL DESCRIPTION - RANGE OF PROPORTION

TRACE 0 - 5% SOME 12 - 30%
LITTLE 5 - 12% AND 30 - 50%

RELATIVE DENSITY		BLOWS	CONSISTENCY		FINGER PRESSURE
VERY LOOSE	VLS	0-4	VERY SOFT	VS	EXTRUDES
LOOSE	LS	4-10	SOFT	S	MOLDS EASILY
COMPACT	CP	10-30	FIRM	FM	MOLDS
DENSE	DN	30-50	STIFF	ST	THUMB INDENTS
VERY DENSE	VDN	>50	VERY STIFF	VST	THUMBNAIL INDENT
			HARD	H	RESISTS THUMBNAIL

ELEV / DEPTH	DESCRIPTION	BLOWS / FT		SAMPLES NO.	TYPE	HAMM. BLOWS PER 6 IN (FORCE)	REC / ATT	DEPTH	SAMPLE DESCRIPTION AND BORING NOTES
									Boring 20 FT N of NW corner of B9.
1									0.0-5.0 Dark brown to tan SILT SAND + GRAVEL with some wood. FILL.
2				1		PID=	3.1		
3						0.0 ppm	5.0		Coal tar from 1.5-1.9 FT. Coal tar odor
4									
5									Refusal @ 5.0 FT
									Cuttings returned to borehole, tamped, and covered with asphalt patch.

Field Boring Log

DEPTH HOLE 4.5 | JOB NO 093-89169 | PROJECT Van DeMark | BORING NO. B9-W10-N20
DEPTH SOIL DRILL 4.5 | QA INSP D. WEHN | DRILLING METHOD Geoprobe Macrocore | SHEET 1 OF 1
DEPTH ROCK CORE N/A | WEATHER L. RAIN | DRILLING COMPANY Zebra Env. | SURFACE ELEV
NO. DIST SA 0 UD. SA 1 | TEMP 75°F | DRILL RIG 6620D | DRILLER D. Pine | DATUM
DEPTH WL. N/A | HRS. PROD. N/A | WT SAMPLER HAMMER N/A | DROP N/A | STARTED 11:20, 6/22/10
TIME WL. N/A | HRS. DELAYED 0 | WT CASING HAMMER N/A | DROP N/A | COMPLETED 11:30, 6/22/10

SAMPLE TYPES: AS AUGER SAMPLE; CS CHUNK SAMPLE; DO DRIVE OPEN; DS DENISON SAMPLE; PS PITCHER SAMPLE; RC ROCK CORE; ST SLOTTED TUBE; TO THIN-WALLED, OPEN; TP THIN-WALLED, PISTON; WS WASH SAMPLE

ABBREVIATIONS: BL BLACK; BR BROWN; C COARSE; CA CASING; CL CLAY; CLY CLAYEY; F FINE; FRAG FRAGMENTS; GL GRAVEL; LYD LAYERED; LI LITTLE; M MEDIUM; MIC MICACEOUS; MOT MOTTLED; NP NONPLASTIC; OG ORANGE; ORG ORGANIC; PH PRESSURE HYDRAULIC; PM PRESSURE MANUAL; R RED; RES RESIDUAL; RX ROCK; SA SAMPLE; SAT SATURATED; SD SAND; SI SILT; SLY SILTY; SM SOME; TR TRACE; WL WATER LEVEL; WH WEIGHT OF HAMMER; Y YELLOW

SOIL DESCRIPTION - RANGE OF PROPORTION
TRACE 0 - 10%; LITTLE 10 - 20%; SOME 20 - 35%; AND 35 - 50%

RELATIVE DENSITY	BLOWS	CONSISTENCY	FIELD PRESSURE
VERY LOOSE VLS	0-4	VERY SOFT VS	EASY INCHES
LOOSE LS	5-10	SOFT S	MEDIUM EASY
COMPACT CP	10-30	FIRM FM	MOLDS
DENSE DN	30-50	STIFF ST	DRIVEN WITH DIFFICULTY
VERY DENSE VDN	>50	VERY STIFF VST	DRIVEN WITH EXTREME DIFFICULTY
		HARD H	RESISTS THUMBNAIL

ELEV / DEPTH	DESCRIPTION	BLOWS / FT	SAMPLES NO.	SAMPLES TYPE	SAMPLES HAMM. BLOWS PER 6 IN (FORCE)	SAMPLES REC / ATT	DEPTH	SAMPLE DESCRIPTION AND BORING NOTES
								Boring 10 FT W and 20 FT N of NW corner of B9.
1								
2					PID = 0.0 ppm	4.2 / 4.5		0.0 - 4.5 FT Dark brown SILT SAND + GRAVEL with some brick. FILL.
3								Coal tar 2.5 - 2.9 and 3.7 - 3.5 FT. Coal tar odor.
4								
								Refusal @ 4.5 FT
5								
								Cuttings returned to borehole, tamped, and covered with asphalt patch.

VDM01901

Field Boring Log

DEPTH HOLE 4.0	JOB NO 093-89169	PROJECT Van DeMark			BORING NO. B9-W20-N20
DEPTH SOIL DRILL 4.0	GA INSP D. WEHN	DRILLING METHOD Geoprobe Macrocore			SHEET 1 OF 1
DEPTH ROCK CORE N/A	WEATHER	DRILLING COMPANY Zebra Env.			SURFACE ELEV
NO. DIST SA 0 UD. SA 1	TEMP 75°F	DRILL RIG 6620D		DRILLER D. Pino	DATUM
DEPTH WL N/A	HRS. PROD. N/A	WT SAMPLER HAMMER N/A	DROP N/A		STARTED 11:30, 6/22/10
TIME WL N/A	HRS. DELAYED 0	WT CASING HAMMER N/A	DROP N/A		COMPLETED 11:40, 6/22/10

SAMPLE TYPES

AS	AUGER SAMPLE	BL	BLACK
CS	CHUNK SAMPLE	BR	BROWN
DO	DRIVE OPEN	C	COARSE
DS	DENISON SAMPLE	CA	CASING
PS	PITCHER SAMPLE	CL	CLAY
RC	ROCK CORE	CLY	CLAYEY
ST	SLOTTED TUBE	F	FINE
TO	THIN-WALLED, OPEN	FRAG	FRAGMENTS
TP	THIN-WALLED, PISTON	GL	GRAVEL
WS	WASH SAMPLE	LYD	LAYERED
		LI	LITTLE

ABBREVIATIONS

M	MEDIUM	SA	SAMPLE
MIC	MICACEOUS	SAT	SATURATED
MOT	MOTTLED	SD	SAND
NP	NON-PLASTIC	SI	SILT
OG	ORANGE	SIY	SILTY
ORG	ORGANIC	SM	SOME
PH	PRESSURE HYDRAULIC	TR	TRACE
PM	PRESSURE MANUAL	WL	WATER LEVEL
R	RED	WH	WEIGHT OF HAMMER
RES	RESIDUAL	Y	YELLOW
RK	ROCK		

SOIL DESCRIPTION - RANGE OF PROPORTION

TRACE 0 - 10% | LITTLE 10 - 20% | SOME 20 - 35% | AND 35 - 50%

RELATIVE DENSITY	BLOWS	CONSISTENCY	FINGER PRESSURE
VERY LOOSE	VLS	0 - 4	VERY SOFT	VS	EASY INCHES
LOOSE	LS	4 - 10	SOFT	S	MOLDS WITH MOISTURE
COMPACT	CP	10 - 30	FIRM	FM	MOLDS
DENSE	DN	30 - 50	STIFF	ST	ENGRAM WITH NAIL
VERY DENSE	VDN	>50	VERY STIFF	VST	ENGRAM WITH THUMBNAIL
			HARD	H	RESISTS THUMBNAIL

ELEV / DEPTH	DESCRIPTION	BLOWS / FT	SAMPLES NO.	SAMPLES TYPE	SAMPLES HAMM. BLOWS PER 6 IN (FORCE)	SAMPLES REC / ATT	DEPTH	SAMPLE DESCRIPTION AND BORING NOTES
								Boring 20 FT W and 20 FT N of NW corner of building B9.
1								
2						3.0		0.0 - 4.0 Tan SAND and GRAVEL FILL. Coal tar from 2.0-2.9 FT. Coal tar odor.
3						4.0		
4								Refusal @ 4.0 FT
5								PID displayed "fan error" - no readings possible for remainder of day.
								Cuttings returned to borehole, tamped, and covered with asphalt patch.

VDM01902

Field Boring Log

DEPTH HOLE 7.0	JOB NO 093-89168	PROJECT Van DeMark			BORING NO. B9-W30-N10
DEPTH SOIL DRILL 7.0	GA INSP D. WEHN	DRILLING METHOD Geoprobe Macrocore			SHEET 1 OF 1
DEPTH ROCK CORE N/A	WEATHER OVERCAST	DRILLING COMPANY Zebra Env.			SURFACE ELEV
NO. DIST SA. 0 UD SA. 2	TEMP 75°F	DRILL RIG 6620D		DRILLER D. Pino	DATUM
DEPTH WL. N/A	HRS. PROD. N/A	WT SAMPLER HAMMER N/A	DROP N/A		STARTED 11:45, 6/22/10
TIME WL. N/A	HRS. DELAYED 0	WT CASING HAMMER N/A	DROP N/A		COMPLETED 12:00, 6/22/10

SAMPLE TYPES

AS	AUGER SAMPLE	BL	BLACK
CS	CHUNK SAMPLE	BR	BROWN
DO	DRIVE OPEN	C	COARSE
DS	DENISON SAMPLE	CA	CASING
PS	PITCHER SAMPLE	CL	CLAY
RC	ROCK CORE	CLY	CLAYEY
ST	SLOTTED TUBE	F	FINE
TO	THIN-WALLED, OPEN	FRAG	FRAGMENTS
TP	THIN-WALLED, PISTON	GL	GRAVEL
WS	WASH SAMPLE	LYD	LAYERED
		U	LITTLE

ABBREVIATIONS

M	MEDIUM	SA	SAMPLE
MIC	MICACEOUS	SAT	SATURATED
MOT	MOTTLED	SD	SAND
NP	NON-PLASTIC	SI	SILT
OG	ORANGE	SIY	SILTY
ORG	ORGANIC	SM	SOME
PH	PRESSURE HYDRAULIC	TR	TRACE
PM	PRESSURE MANUAL	WL	WATER LEVEL
R	RED	WH	WEIGHT OF HAMMER
RES	RESIDUAL	Y	YELLOW
RR	ROCK		

SOIL DESCRIPTION - RANGE OF PROPORTION

TRACE 0 - 5% SOME 12 - 30%
LITTLE 5 - 12% AND 30-50%

RELATIVE DENSITY		BLOWS	CONSISTENCY		UNCONFINED PRESSURE
VERY LOOSE	VLS	0-4	VERY SOFT	VS	0.5 TSF OR LESS
LOOSE	LS	4-10	SOFT	S	0.5 TO 1.0 TSF
COMPACT	CP	10-30	FIRM	F	1.0 TO 2.0 TSF
DENSE	DN	30-50	STIFF	ST	2.0 TO 4.0 TSF
VERY DENSE	VDN	>50	VERY STIFF	VST	4.0 TSF OR MORE
			HARD	H	MEASURED THUMBNAIL

ELEV / DEPTH	DESCRIPTION	BLOWS / FT	SAMPLES NO.	SAMPLES TYPE	SAMPLES HAMM. BLOWS PER 6 IN (FORCE)	SAMPLES REC / ATT	DEPTH	SAMPLE DESCRIPTION AND BORING NOTES
								Boring 30 FT W and 10 FT N of NW corner of B9
1								
2						3.2		0.0 - 5.0 FT Gray to black SAND & GRAVEL. FILL. Some brick.
3			1			5.0		No coal tar or tar odor.
4								Petroliferous odor.
5								
						1.8		5.0 - 7.0 FT Reddish brown GRAVEL. Slight petroliferous odor.
6			2			2.0		
7								Refusal @ 7.0 FT.
								Cuttings returned to borehole, tamped, and covered with asphalt patch.

VDM01903

Field Boring Log

DEPTH HOLE 8.0 | JOB NO 093-89169 | PROJECT Van DeMark | BORING NO. B9-W30-N36
DEPTH SOIL DRILL 8.0 | QA INSP D. WEHN | DRILLING METHOD Geoprobe Macrocore | SHEET 1 OF 1
DEPTH ROCK CORE N/A | WEATHER OVERCAST | DRILLING COMPANY Zebra Env. | SURFACE ELEV
NO. DIST SA 0 UD SA 2 | TEMP 75°F | DRILL RIG 6620D | DRILLER D. Pino | DATUM
DEPTH WL N/A | HRS. PROD. N/A | WT SAMPLER HAMMER N/A | DROP N/A | STARTED 1245, 6/22/10
TIME WL N/A | HRS. DELAYED 0 | WT CASING HAMMER N/A | DROP N/A | COMPLETED 1300, 6/22/10

SAMPLE TYPES: AS AUGER SAMPLE; CS CHUNK SAMPLE; DO DRIVE OPEN; DS DENISON SAMPLE; PS PITCHER SAMPLE; RC ROCK CORE; ST SLOTTED TUBE; TO THIN-WALLED, OPEN; TP THIN-WALLED, PISTON; WS WASH SAMPLE

ABBREVIATIONS: BL BLACK; BR BROWN; C COARSE; CA CASING; CL CLAY; CLY CLAYEY; F FINE; FRAG FRAGMENTS; GL GRAVEL; LYD LAYERED; LI LITTLE; M MEDIUM; MIC MICACEOUS; MOT MOTTLED; NP NONPLASTIC; OG ORANGE; ORG ORGANIC; PH PRESSURE HYDRAULIC; PM PRESSURE MANUAL; R RED; RES RESIDUAL; RX ROCK; SA SAMPLE; SAT SATURATED; SD SAND; SI SILT; SIY SILTY; SM SOME; TR TRACE; WL WATER LEVEL; WH WEIGHT OF HAMMER; Y YELLOW

SOIL DESCRIPTION - RANGE OF PROPORTION
TRACE 0 - 5% | WITH 12 - 30%
LITTLE 5 - 12% | AND 30 - 50%

RELATIVE DENSITY	BLOWS	CONSISTENCY	SINGLE PRESSURE
VERY LOOSE VLS	0-4	VERY SOFT VS	(ESTIMATED)
LOOSE LS	4-10	SOFT S	MOISTURE
COMPACT CP	10-30	FIRM FM	MOISTURE
DENSE DN	30-50	STIFF ST	FREEZING MOISTURE
VERY DENSE VDN	>50	VERY STIFF VST	FREEZING MOIST
		HARD H	MOISTURE THAWING

ELEV / DEPTH	DESCRIPTION	BLOWS / FT	SAMPLES NO.	TYPE	HAMM. BLOWS PER 6 IN (FORCE)	REC / ATT	DEPTH	SAMPLE DESCRIPTION AND BORING NOTES
								Boring 30 FT W and 36 FT N of NW corner of B9
1								0.0-5.0 FT Dark brown to black gravelly SAND. FILL.
2			1			4.2 / 5.0		Crushed brick ~~2.5-2.9 FT~~ 2.9-3.7 FT
3								Coal tar 1.8 - 2.0 FT. Coal tar odor.
4								
5								5.0-8.0 FT Dark brown coarse SAND + GRAVEL.
6			2			1.8 / 3.0		Petroliferas odor.
7								Refusal @ 8.0 FT
8								
								Cuttings returned to borehole, tamped and covered with asphalt patch.

VDM01904

Field Boring Log

DEPTH HOLE 4.5 | JOB NO 093-89169 | PROJECT Van DeMark | BORING NO. B9-N36
DEPTH SOIL DRILL 4.5 | QA INSP D. WEHN | DRILLING METHOD Geoprobe Macrocore | SHEET 1 OF 1
DEPTH ROCK CORE N/A | WEATHER OVERCAST | DRILLING COMPANY Zebra Env. | SURFACE ELEV
NO. DIST SA 0 UD. SA. 1 | TEMP 75°F | DRILL RIG 6620D | DRILLER D. Pino | DATUM
DEPTH WL N/A | HRS. PROD. N/A | WT SAMPLER HAMMER N/A | DROP N/A | STARTED 13:05, 6/22/10
TIME WL N/A | HRS. DELAYED 0 | WT CASING HAMMER N/A | DROP N/A | COMPLETED 13:15, 6/22/10

SAMPLE TYPES: AS AUGER SAMPLE; CS CHUNK SAMPLE; DO DRIVE OPEN; DS DENISON SAMPLE; PS PITCHER SAMPLE; RC ROCK CORE; ST SLOTTED TUBE; TO THINWALLED, OPEN; TP THINWALLED, PISTON; WS WASH SAMPLE

ABBREVIATIONS: BL BLACK; BR BROWN; C COARSE; CA CASING; CL CLAY; CLY CLAYEY; F FINE; FRAG FRAGMENTS; GL GRAVEL; LYD LAYERED; LI LITTLE; M MEDIUM; MIC MICACEOUS; MOT MOTTLED; NP NON-PLASTIC; OG ORANGE; ORG ORGANIC; PH PRESSURE HYDRAULIC; PM PRESSURE MANUAL; R RED; RES RESIDUAL; RX ROCK; SA SAMPLE; SAT SATURATED; SD SAND; SI SILT; SLTY SILTY; SM SOME; TR TRACE; WL WATER LEVEL; WH WEIGHT OF HAMMER; Y YELLOW

SOIL DESCRIPTION - RANGE OF PROPORTION: TRACE 0 - 10%; LITTLE 10 - 20%; SOME 20 - 35%; AND 35 - 50%

RELATIVE DENSITY	BLOWS	CONSISTENCY	FIELD PRESSURE
VERY LOOSE	VLS 0-4	VERY SOFT	VS (THUMB)
LOOSE	LS 4-10	SOFT	S (THUMB)
COMPACT	CP 10-30	FIRM	F (NAIL)
DENSE	DN 30-50	STIFF	ST (THUMB)
VERY DENSE	VDN >50	VERY STIFF	VST (THUMBNAIL)
		HARD	H (PENETRATES THUMBNAIL)

ELEV / DEPTH	DESCRIPTION	BLOWS / FT	SAMPLES NO.	TYPE	HAMM. BLOWS PER 6 IN (FORCE)	REC / ATT	DEPTH	SAMPLE DESCRIPTION AND BORING NOTES
								Boring 36 FT N of NW corner of J 139.
1								
2			1			3.5		0.0 - 4.5 FT Black to dark gray SAND + GRAVEL to 1.9 FT, then reddish SILT + CLAY.
3						4.5		
4								Coal tar 1.3 - 1.7 FT; Coal tar odor.
5								Refusal @ 4.5 FT
								Cuttings returned to borehole, tamped, and covered with asphalt patch.

VDM01905

Field Boring Log

DEPTH HOLE 5.0	JOB NO 093-89168	PROJECT Van DeMark			BORING NO. B9-E20-N20
DEPTH SOIL DRILL 5.0	QA INSP D. WEHN	DRILLING METHOD Geoprobe Macrocore			SHEET 1 OF 1
DEPTH ROCK CORE N/A	WEATHER OVERCAST	DRILLING COMPANY Zebra Env.			SURFACE ELEV
NO DIST SA 0 UD. SA 1	TEMP 75°F	DRILL RIG 6620D	DRILLER D. Pino		DATUM
DEPTH WL N/A	HRS. PROD. N/A	WT SAMPLER HAMMER N/A	DROP N/A		STARTED 13:16 6/22/10
TIME WL. N/A	HRS. DELAYED 0	WT CASING HAMMER N/A	DROP N/A		COMPLETED 13:25 6/22/10

SAMPLE TYPES

AS	AUGER SAMPLE	BL	BLACK
CS	CHUNK SAMPLE	BR	BROWN
DO	DRIVE OPEN	C	COARSE
DS	DENISON SAMPLE	CA	CASING
PS	PITCHER SAMPLE	CL	CLAY
RC	ROCK CORE	CLY	CLAYEY
ST	SLOTTED TUBE	F	FINE
TO	THIN-WALLED, OPEN	FRAG	FRAGMENTS
TP	THIN-WALLED, PISTON	GL	GRAVEL
WS	WASH SAMPLE	LYD	LAYERED
		U	LITTLE

ABBREVIATIONS

M	MEDIUM	SA	SAMPLE
MIC	MICACEOUS	SAT	SATURATED
MOT	MOTTLED	SD	SAND
NP	NONPLASTIC	SI	SILT
OG	ORANGE	SLY	SILTY
ORG	ORGANIC	SM	SOME
PH	PRESSURE HYDRAULIC	TR	TRACE
PM	PRESSURE MANUAL	WL	WATER LEVEL
R	RED	WH	WEIGHT OF HAMMER
RES	RESIDUAL	Y	YELLOW
RK	ROCK		

SOIL DESCRIPTION - RANGE OF PROPORTION

TRACE 0 - 10% WITH 12 - 30%
LITTLE 10 - 20% AND 30-50%

RELATIVE DENSITY		BLOWS	CONSISTENCY		FINGER PRESSURE
VERY LOOSE	VLS	0-4	VERY SOFT	VS	EASY INCHES
LOOSE	LS	4-10	SOFT	S	MODERATE EFFORT
COMPACT	CP	10-30	FIRM	FM	MODERATE
DENSE	DN	30-50	STIFF	ST	THUMBNAIL MARKS
VERY DENSE	VDN	>50	VERY STIFF	VST	THUMBNAIL MOVES
			HARD	H	NEEDS THUMBNAIL

ELEV / DEPTH	DESCRIPTION	BLOWS / FT	SAMPLES NO.	SAMPLES TYPE	SAMPLES HAMMER BLOWS PER 6 IN (FORCE)	SAMPLES REC / ATT	DEPTH	SAMPLE DESCRIPTION AND BORING NOTES
								Boring 20 FT E and 20 FT N of NW corner of B9
1								
2			1			3.9 / 5.0		0-1.4 FT crushed concrete.
3								1.4-3.9 FT reddish brown SILT with some sand.
4								
5								
								Cuttings returned to borehole, tamped and covered with asphalt patch.

VDM01906

Field Boring Log

DEPTH HOLE 5.3 | JOB NO 093-89169 | PROJECT Van DeMark | BORING NO. B9-W34-S10
DEPTH SOIL DRILL 5.3 | GA INSP D. WEHN | DRILLING METHOD Geoprobe Macrocore | SHEET 1 OF 1
DEPTH ROCK CORE N/A | WEATHER | DRILLING COMPANY Zebra Env. | SURFACE ELEV
NO. DIST SA. 0 UD. SA. 2 | TEMP 75°F | DRILL RIG 6620D | DRILLER D. Pino | DATUM
DEPTH WL N/A | HRS. PROD. N/A | WT SAMPLER HAMMER N/A | DROP N/A | STARTED 13:28, 6/22/10
TIME WL N/A | HRS. DELAYED 0 | WT CASING HAMMER N/A | DROP N/A | COMPLETED 13:40, 6/22/10

SAMPLE TYPES: AS AUGER SAMPLE; CS CHUNK SAMPLE; DO DRIVE OPEN; DS DENISON SAMPLE; PS PITCHER SAMPLE; RC ROCK CORE; ST SLOTTED TUBE; TO THIN-WALLED, OPEN; TP THIN-WALLED, PISTON; WS WASH SAMPLE

ABBREVIATIONS: BL BLACK; BR BROWN; C COARSE; CA CASING; CL CLAY; CLY CLAYEY; F FINE; FRAG FRAGMENTS; GL GRAVEL; LYD LAYERED; LI LITTLE; M MEDIUM; MIC MICACEOUS; MOT MOTTLED; NP NON-PLASTIC; OG ORANGE; ORG ORGANIC; PH PRESSURE HYDRAULIC; PM PRESSURE MANUAL; R RED; RES RESIDUAL; RX ROCK; SA SAMPLE; SAT SATURATED; SD SAND; SI SILT; SLY SILTY; SM SOME; TR TRACE; WL WATER LEVEL; WH WEIGHT OF HAMMER; Y YELLOW

SOIL DESCRIPTION - RANGE OF PROPORTION: TRACE 0 - 5%; LITTLE 5 - 12%; SOME 12 - 30%; AND 30 - 50%

RELATIVE DENSITY	BLOWS	CONSISTENCY	FINGER PRESSURE
VERY LOOSE	WLS	VERY SOFT	VS
LOOSE	LO	SOFT	S
COMPACT	CP	FIRM	FM
DENSE	DN	STIFF	ST
VERY DENSE	VDN	VERY STIFF	VST
		HARD	H

ELEV / DEPTH	DESCRIPTION	BLOWS / FT	SAMPLES NO.	SAMPLES TYPE	SAMPLES HAMM. BLOWS PER 6 IN (FORCE)	SAMPLES REC / ATT	DEPTH	SAMPLE DESCRIPTION AND BORING NOTES
								Boring 24 FT W and 10 FT S of NW corner of B9
1								
2								0.0-5.0 FT Gray GRAVEL and SAND to 1.6 FT then black GRAVEL and SAND.
			1			3.8 / 5.0		
3								Petroliferous odor
4								
5								
			2			0.3 / 0.3		5.0-5.3 FT Black SAND + GRAVEL
6								
								Cuttings returned to borehole, tamped, and covered with asphalt patch.

VDM01907

ATTACHMENT B

LABORATORY ANALYSIS REPORT (TESTAMERICA, JUNE 2010)

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

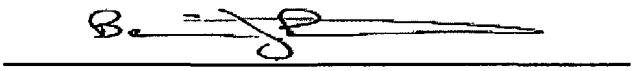
Analytical Report

Work Order: RTF1262

Project Description
Golder - Vandermark/Isochem site

For:

Pat Martin
Golder Associates, Inc. - Niagara Falls, NY
2221 Niagara Falls Blvd., Ste 9
Niagara Falls, NY 14304



Brian Fischer
Project Manager
Brian.Fischer@testamericainc.com
Friday, July 2, 2010

The test results in this report meet all NELAP requirements for analytes for which accreditation is required or available. Any exception to NELAP requirements are noted in this report. Persuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. All questions regarding this test report should be directed to the TestAmerica Project manager who has signed this report.

Golder Associates, Inc. - Niagara Falls, NY
2221 Niagara Falls Blvd., Ste 9
Niagara Falls, NY 14304

Work Order: RTF1262

Project: Golder - Vandermark/Isochem site
Project Number: [none]

Received: 06/22/10
Reported: 07/02/10 11:35

TestAmerica Buffalo
Current Certifications

As of 06/17/2010

STATE	Program	Cert # / Lab ID
Arkansas	CWA, RCRA, SOIL	88-0686
California*	NELAP CWA, RCRA	01169CA
Connecticut	SDWA, CWA, RCRA, SOIL	PH-0568
Florida*	NELAP CWA, RCRA	E87672
Georgia*	SDWA,NELAP CWA, RCRA	956
Illinois*	NELAP SDWA, CWA, RCRA	200003
Iowa	SW/CS	374
Kansas*	NELAP SDWA, CWA, RCRA	E-10187
Kentucky	SDWA	90029
Kentucky UST	UST	30
Louisiana*	NELAP CWA, RCRA	2031
Maine	SDWA, CWA	NY0044
Maryland	SDWA	294
Massachusetts	SDWA, CWA	M-NY044
Michigan	SDWA	9937
Minnesota	SDWA,CWA, RCRA	036-999-337
New Hampshire *	NELAP SDWA, CWA	233701
New Jersey*	NELAP,SDWA, CWA, RCRA,	NY455
New York*	NELAP, AIR, SDWA, CWA, RCRA,CLP	10026
North Dakota	CWA, RCRA	R-176
Oklahoma	CWA, RCRA	9421
Oregon*	CWA,RCRA	NY200003
Pennsylvania*	NELAP CWA,RCRA	68-00281
Tennessee	SDWA	02970
Texas*	NELAP CWA, RCRA	T104704412 -08-TX
USDA	FOREIGN SOIL PERMIT	S-41579
Virginia	SDWA	278
Washington*	NELAP CWA,RCRA	C1677
Wisconsin	CWA, RCRA	998310390
West Virginia	CWA,RCRA	252

*As required under the indicated accreditation, the test results in this report meet all NELAP requirements for p arameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report.

Golder Associates, Inc. - Niagara Falls, NY
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CASE NARRATIVE

According to 40CFR Part 136.3, pH, Chlorine Residual, Dissolved Oxygen, Sulfite, and Temperature analyses are to be performed immediately after aqueous sample collection. When these parameters are not indicated as field (e.g. field-pH), they were not analyzed immediately, but as soon as possible after laboratory receipt.

A pertinent document is appended to this report, 1 page, is included and is an integral part of this report.

Reproduction of this analytical report is permitted only in its entirety. This report shall not be reproduced except in full without the written approval of the laboratory.

TestAmerica Laboratories, Inc. certifies that the analytical results contained herein apply only to the samples tested as received by our Laboratory.

Golder Associates, Inc. - Niagara Falls, NY
2221 Niagara Falls Blvd., Ste 9
Niagara Falls, NY 14304

Work Order: RTF1262

Project: Golder - Vandermark/Isochem site
Project Number: [none]

Received: 06/22/10
Reported: 07/02/10 11:35

DATA QUALIFIERS AND DEFINITIONS

D08	Dilution required due to high concentration of target analyte(s)
J	Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL). Concentrations within this range are estimated.
L2	Laboratory Control Sample and/or Laboratory Control Sample Duplicate recovery was below acceptance limits.
T10	Sample had an adjusted final volume during extraction due to extract matrix and / or viscosity.
Z3	The sample required a dilution, the surrogate spike concentration in the sample are reduced to a level where the recovery calculation does not provide useful information.
NR	Any inclusion of NR indicates that the project specific requirements do not require reporting estimated values below the laboratory reporting limit.

ADDITIONAL COMMENTS

Results are reported on a wet weight basis unless otherwise noted.

Golder Associates, Inc. - Niagara Falls, NY
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Work Order: RTF1262

Project: Golder - Vandermark/Isochem site
Project Number: [none]

Received: 06/22/10
Reported: 07/02/10 11:35

Executive Summary - Detections

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
Sample ID: RTF1262-01 (B-9-W5-N5 - Solid)					**Sampled: 06/22/10 10:05**		**Recvd: 06/22/10 14:20**			
Semivolatile Organics by GC/MS										
2-Methylnaphthalene	**2200000**	T10, D08	740000	8900	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Acenaphthene	**2100000**	T10, D08	740000	8600	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Acenaphthylene	**30000**	T10, D08,J	740000	6000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Anthracene	**3000000**	T10, D08	740000	19000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Benzo[a]anthracene	**2900000**	T10, D08	740000	13000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Benzo[a]pyrene	**2000000**	T10, D08	740000	18000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Benzo[b]fluoranthene	**1400000**	T10, D08	740000	14000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Benzo[g,h,i]perylene	**1000000**	T10, D08	740000	8800	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Benzo[k]fluoranthene	**560000**	T10, D08,J	740000	8100	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Biphenyl	**260000**	T10, D08,J	740000	46000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Carbazole	**320000**	T10, D08,J	740000	8500	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Chrysene	**2800000**	T10, D08	740000	7300	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Dibenz[a,h]anthracene	**300000**	T10, D08,J	740000	8600	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Dibenzofuran	**320000**	T10, D08,J	740000	7600	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Fluoranthene	**3900000**	T10, D08	740000	11000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Fluorene	**1600000**	T10, D08	740000	17000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Indeno[1,2,3-cd]pyrene	**680000**	T10, D08,L2, J	740000	20000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Naphthalene	**3000000**	T10, D08	740000	12000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Phenanthrene	**9400000**	T10, D08	740000	15000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Pyrene	**6200000**	T10, D08	740000	4800	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
General Chemistry Parameters										
Percent Solids	**91**		0.010	NR	%	1.00	06/24/10 13:46	JRR	10F2079	Dry Weight
Sample ID: RTF1262-02 (B-9-N-10 - Solid)					**Sampled: 06/22/10 10:25**		**Recvd: 06/22/10 14:20**			
Semivolatile Organics by GC/MS										
2-Methylnaphthalene	**1500000**	T10, D08	840000	10000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Acenaphthene	**1500000**	T10, D08	840000	9800	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Anthracene	**2700000**	T10, D08	840000	21000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Benzo[a]anthracene	**3400000**	T10, D08	840000	14000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Benzo[a]pyrene	**2300000**	T10, D08	840000	20000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Benzo[b]fluoranthene	**1600000**	T10, D08	840000	16000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Benzo[g,h,i]perylene	**1100000**	T10, D08	840000	10000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Benzo[k]fluoranthene	**610000**	T10, D08,J	840000	9200	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Biphenyl	**160000**	T10, D08,J	840000	52000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Carbazole	**280000**	T10, D08,J	840000	9700	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Chrysene	**3400000**	T10, D08	840000	8400	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Dibenz[a,h]anthracene	**300000**	T10, D08,J	840000	9800	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Dibenzofuran	**260000**	T10, D08,J	840000	8700	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Fluoranthene	**4000000**	T10, D08	840000	12000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Fluorene	**1300000**	T10, D08	840000	19000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Indeno[1,2,3-cd]pyrene	**790000**	T10, D08,L2, J	840000	23000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Naphthalene	**2000000**	T10, D08	840000	14000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Phenanthrene	**9400000**	T10, D08	840000	18000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Pyrene	**7600000**	T10, D08	840000	5400	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C

Golder Associates, Inc. - Niagara Falls, NY
2221 Niagara Falls Blvd., Ste 9
Niagara Falls, NY 14304

Work Order: RTF1262

Project: Golder - Vandermark/Isochem site
Project Number: [none]

Received: 06/22/10
Reported: 07/02/10 11:35

Executive Summary - Detections

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
Sample ID: RTF1262-02 (B-9-N-10 - Solid) - cont.					**Sampled: 06/22/10 10:25**			**Recvd: 06/22/10 14:20**		
General Chemistry Parameters										
Percent Solids	**79**		0.010	NR	%	1.00	06/24/10 13:48	JRR	10F2079	Dry Weight
Sample ID: RTF1262-03 (B-9-W5-N10 - Solid)					**Sampled: 06/22/10 10:35**			**Recvd: 06/22/10 14:20**		
Semivolatile Organics by GC/MS										
2-Methylnaphthalene	**1200000**	T10, D08	740000	8900	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Acenaphthene	**1300000**	T10, D08	740000	8600	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Anthracene	**1800000**	T10, D08	740000	19000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Benzo[a]anthracene	**2000000**	T10, D08	740000	13000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Benzo[a]pyrene	**1300000**	T10, D08	740000	18000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Benzo[b]fluoranthene	**1000000**	T10, D08	740000	14000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Benzo[g,h,i]perylene	**720000**	T10, D08,J	740000	8800	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Benzo[k]fluoranthene	**360000**	T10, D08,J	740000	8100	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Biphenyl	**150000**	T10, D08,J	740000	46000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Carbazole	**200000**	T10, D08,J	740000	8500	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Chrysene	**2000000**	T10, D08	740000	7300	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Dibenz[a,h]anthracene	**200000**	T10, D08,J	740000	8600	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Dibenzofuran	**200000**	T10, D08,J	740000	7600	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Fluoranthene	**2500000**	T10, D08	740000	11000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Fluorene	**940000**	T10, D08	740000	17000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Indeno[1,2,3-cd]pyrene	**470000**	T10, D08,L2, J	740000	20000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Naphthalene	**1500000**	T10, D08	740000	12000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Phenanthrene	**5900000**	T10, D08	740000	15000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Pyrene	**4300000**	T10, D08	740000	4800	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
General Chemistry Parameters										
Percent Solids	**92**		0.010	NR	%	1.00	06/24/10 13:50	JRR	10F2079	Dry Weight
Sample ID: RTF1262-04 (B-9-W10-N5 - Solid)					**Sampled: 06/22/10 10:45**			**Recvd: 06/22/10 14:20**		
Semivolatile Organics by GC/MS										
2-Methylnaphthalene	**530000**	T10, D08	410000	4900	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Acenaphthene	**830000**	T10, D08	410000	4700	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Acenaphthylene	**19000**	T10, D08,J	410000	3300	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Anthracene	**1300000**	T10, D08	410000	10000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Benzo[a]anthracene	**1600000**	T10, D08	410000	7000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Benzo[a]pyrene	**1000000**	T10, D08	410000	9700	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Benzo[b]fluoranthene	**1000000**	T10, D08	410000	7800	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Benzo[g,h,i]perylene	**570000**	T10, D08	410000	4800	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Biphenyl	**77000**	T10, D08,J	410000	25000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Carbazole	**97000**	T10, D08,J	410000	4700	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Chrysene	**1500000**	T10, D08	410000	4000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Dibenz[a,h]anthracene	**160000**	T10, D08,J	410000	4700	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Dibenzofuran	**110000**	T10, D08,J	410000	4200	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Fluoranthene	**2000000**	T10, D08	410000	5800	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Fluorene	**640000**	T10, D08	410000	9300	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Indeno[1,2,3-cd]pyrene	**400000**	T10, D08,L2, J	410000	11000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Naphthalene	**590000**	T10, D08	410000	6700	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C

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Niagara Falls, NY 14304

Work Order: RTF1262

Project: Golder - Vandermark/Isochem site
Project Number: [none]

Received: 06/22/10
Reported: 07/02/10 11:35

Executive Summary - Detections

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
Sample ID: RTF1262-04 (B-9-W10-N5 - Solid) - cont.						**Sampled: 06/22/10 10:45**		**Recvd: 06/22/10 14:20**		
Semivolatile Organics by GC/MS - cont.										
Phenanthrene	**4200000**	T10, D08	410000	8500	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Pyrene	**3300000**	T10, D08	410000	2600	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
General Chemistry Parameters										
Percent Solids	**82**		0.010	NR	%	1.00	06/24/10 13:52	JRR	10F2079	Dry Weight

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Reported: 07/02/10 11:35

Sample Summary

Sample Identification	Lab Number	Client Matrix	Date/Time Sampled	Date/Time Received	Sample Qualifiers
B-9-W5-N5	RTF1262-01	Solid	06/22/10 10:05	06/22/10 14:20	
B-9-N-10	RTF1262-02	Solid	06/22/10 10:25	06/22/10 14:20	
B-9-W5-N10	RTF1262-03	Solid	06/22/10 10:35	06/22/10 14:20	
B-9-W10-N5	RTF1262-04	Solid	06/22/10 10:45	06/22/10 14:20	

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Reported: 07/02/10 11:35

Analytical Report

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
Sample ID: RTF1262-01 (B-9-W5-N5 - Solid)						**Sampled: 06/22/10 10:05**		**Recvd: 06/22/10 14:20**		
Semivolatile Organics by GC/MS										
2,4,5-Trichlorophenol	ND	T10, D08	740000	160000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
2,4,6-Trichlorophenol	ND	T10, D08	740000	48000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
2,4-Dichlorophenol	ND	T10, D08	740000	39000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
2,4-Dimethylphenol	ND	T10, D08	740000	200000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
2,4-Dinitrophenol	ND	T10, D08	1400000	260000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
2,4-Dinitrotoluene	ND	T10, D08	740000	110000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
2,6-Dinitrotoluene	ND	T10, D08	740000	180000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
2-Chloronaphthalene	ND	T10, D08	740000	49000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
2-Chlorophenol	ND	T10, D08	740000	37000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
2-Methylnaphthalene	**2200000**	T10, D08	740000	8900	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
2-Methylphenol	ND	T10, D08	740000	23000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
2-Nitroaniline	ND	T10, D08	1400000	240000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
2-Nitrophenol	ND	T10, D08	740000	34000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
3 & 4 Methylphenol	ND	T10, D08	1400000	41000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
3,3'-Dichlorobenzidine	ND	T10, D08	740000	640000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
3-Nitroaniline	ND	T10, D08	1400000	170000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
4,6-Dinitro-2-methylphenol	ND	T10, D08	1400000	250000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
4-Bromophenyl phenyl ether	ND	T10, D08	740000	230000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
4-Chloro-3-methylphenol	ND	T10, D08	740000	30000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
4-Chloroaniline	ND	T10, D08	740000	220000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
4-Chlorophenyl phenyl ether	ND	T10, D08	740000	16000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
4-Nitroaniline	ND	T10, D08	1400000	82000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
4-Nitrophenol	ND	T10, D08	1400000	180000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Acenaphthene	**2100000**	T10, D08	740000	8600	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Acenaphthylene	**30000**	T10, D08,J	740000	6000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Acetophenone	ND	T10, D08	740000	38000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Anthracene	**3000000**	T10, D08	740000	19000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Atrazine	ND	T10, D08	740000	33000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Benzaldehyde	ND	T10, D08	740000	81000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Benzo[a]anthracene	**2900000**	T10, D08	740000	13000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Benzo[a]pyrene	**2000000**	T10, D08	740000	18000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Benzo[b]fluoranthene	**1400000**	T10, D08	740000	14000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Benzo[g,h,i]perylene	**1000000**	T10, D08	740000	8800	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Benzo[k]fluoranthene	**560000**	T10, D08,J	740000	8100	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Biphenyl	**260000**	T10, D08,J	740000	46000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Bis(2-chloroethoxy)methane	ND	T10, D08	740000	40000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Bis(2-chloroethyl)ether	ND	T10, D08	740000	63000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Bis(2-chloroisopropyl) ether	ND	T10, D08	740000	77000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Bis(2-ethylhexyl) phthalate	ND	T10, D08	740000	240000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Butyl benzyl phthalate	ND	T10, D08	740000	200000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Caprolactam	ND	T10, D08	740000	320000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Carbazole	**320000**	T10, D08,J	740000	8500	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Chrysene	**2800000**	T10, D08	740000	7300	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Dibenz[a,h]anthracene	**300000**	T10, D08,J	740000	8600	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Dibenzofuran	**320000**	T10, D08,J	740000	7600	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C

Golder Associates, Inc. - Niagara Falls, NY
2221 Niagara Falls Blvd., Ste 9
Niagara Falls, NY 14304

Work Order: RTF1262

Project: Golder - Vandermark/Isochem site
Project Number: [none]

Received: 06/22/10
Reported: 07/02/10 11:35

Analytical Report

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
Sample ID: RTF1262-01 (B-9-W5-N5 - Solid) - cont.						**Sampled: 06/22/10 10:05**		**Recvd: 06/22/10 14:20**		
Semivolatile Organics by GC/MS - cont.										
Diethyl phthalate	ND	T10, D08	740000	22000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Dimethyl phthalate	ND	T10, D08	740000	19000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Di-n-butyl phthalate	ND	T10, D08	740000	250000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Di-n-octyl phthalate	ND	T10, D08	740000	17000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Fluoranthene	**3900000**	T10, D08	740000	11000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Fluorene	**1600000**	T10, D08	740000	17000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Hexachlorobenzene	ND	T10, D08	740000	36000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Hexachlorobutadiene	ND	T10, D08	740000	38000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Hexachlorocyclopentadiene	ND	T10, D08	740000	220000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Hexachloroethane	ND	T10, D08	740000	57000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Indeno[1,2,3-cd]pyrene	**680000**	T10, D08,L2, J	740000	20000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Isophorone	ND	T10, D08	740000	37000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Naphthalene	**3000000**	T10, D08	740000	12000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Nitrobenzene	ND	T10, D08	740000	33000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
N-Nitrosodi-n-propylamine	ND	T10, D08	740000	58000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
N-Nitrosodiphenylamine	ND	T10, D08	740000	40000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Pentachlorophenol	ND	T10, D08	1400000	250000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Phenanthrene	**9400000**	T10, D08	740000	15000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Phenol	ND	T10, D08	740000	77000	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
Pyrene	**6200000**	T10, D08	740000	4800	ug/kg dry	200	06/30/10 19:16	MAF	10F2051	8270C
2,4,6-Tribromophenol	*	*T10, D08,Z3*	*Surr Limits: (39-146%)*				*06/30/10 19:16*	*MAF*	*10F2051*	*8270C*
2-Fluorobiphenyl	*360 %*	*T10, D08,Z3*	*Surr Limits: (37-120%)*				*06/30/10 19:16*	*MAF*	*10F2051*	*8270C*
2-Fluorophenol	*	*T10, D08,Z3*	*Surr Limits: (18-120%)*				*06/30/10 19:16*	*MAF*	*10F2051*	*8270C*
Nitrobenzene-d5	*	*T10, D08,Z3*	*Surr Limits: (34-132%)*				*06/30/10 19:16*	*MAF*	*10F2051*	*8270C*
Phenol-d5	*	*T10, D08,Z3*	*Surr Limits: (11-120%)*				*06/30/10 19:16*	*MAF*	*10F2051*	*8270C*
p-Terphenyl-d14	*360 %*	*T10, D08,Z3*	*Surr Limits: (58-147%)*				*06/30/10 19:16*	*MAF*	*10F2051*	*8270C*
General Chemistry Parameters										
Percent Solids	**91**		0.010	NR	%	1.00	06/24/10 13:46	JRR	10F2079	Dry Weight

Golder Associates, Inc. - Niagara Falls, NY
2221 Niagara Falls Blvd., Ste 9
Niagara Falls, NY 14304

Work Order: RTF1262

Project: Golder - Vandermark/Isochem site
Project Number: [none]

Received: 06/22/10
Reported: 07/02/10 11:35

Analytical Report

Sample ID: RTF1262-02 (B-9-N-10 - Solid) — **Sampled: 06/22/10 10:25** — **Recvd: 06/22/10 14:20**

Semivolatile Organics by GC/MS

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
2,4,5-Trichlorophenol	ND	T10, D08	840000	180000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
2,4,6-Trichlorophenol	ND	T10, D08	840000	55000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
2,4-Dichlorophenol	ND	T10, D08	840000	44000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
2,4-Dimethylphenol	ND	T10, D08	840000	230000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
2,4-Dinitrophenol	ND	T10, D08	1600000	290000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
2,4-Dinitrotoluene	ND	T10, D08	840000	130000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
2,6-Dinitrotoluene	ND	T10, D08	840000	200000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
2-Chloronaphthalene	ND	T10, D08	840000	56000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
2-Chlorophenol	ND	T10, D08	840000	43000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
2-Methylnaphthalene	**1500000**	T10, D08	840000	10000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
2-Methylphenol	ND	T10, D08	840000	26000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
2-Nitroaniline	ND	T10, D08	1600000	270000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
2-Nitrophenol	ND	T10, D08	840000	38000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
3 & 4 Methylphenol	ND	T10, D08	1600000	47000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
3,3'-Dichlorobenzidine	ND	T10, D08	840000	730000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
3-Nitroaniline	ND	T10, D08	1600000	190000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
4,6-Dinitro-2-methylphenol	ND	T10, D08	1600000	290000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
4-Bromophenyl phenyl ether	ND	T10, D08	840000	270000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
4-Chloro-3-methylphenol	ND	T10, D08	840000	34000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
4-Chloroaniline	ND	T10, D08	840000	250000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
4-Chlorophenyl phenyl ether	ND	T10, D08	840000	18000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
4-Nitroaniline	ND	T10, D08	1600000	93000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
4-Nitrophenol	ND	T10, D08	1600000	200000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Acenaphthene	**1500000**	T10, D08	840000	9800	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Acenaphthylene	ND	T10, D08	840000	6800	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Acetophenone	ND	T10, D08	840000	43000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Anthracene	**2700000**	T10, D08	840000	21000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Atrazine	ND	T10, D08	840000	37000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Benzaldehyde	ND	T10, D08	840000	92000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Benzo[a]anthracene	**3400000**	T10, D08	840000	14000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Benzo[a]pyrene	**2300000**	T10, D08	840000	20000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Benzo[b]fluoranthene	**1600000**	T10, D08	840000	16000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Benzo[g,h,i]perylene	**1100000**	T10, D08	840000	10000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Benzo[k]fluoranthene	**610000**	T10, D08,J	840000	9200	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Biphenyl	**160000**	T10, D08,J	840000	52000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Bis(2-chloroethoxy)methane	ND	T10, D08	840000	46000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Bis(2-chloroethyl)ether	ND	T10, D08	840000	72000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Bis(2-chloroisopropyl) ether	ND	T10, D08	840000	87000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Bis(2-ethylhexyl) phthalate	ND	T10, D08	840000	270000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Butyl benzyl phthalate	ND	T10, D08	840000	220000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Caprolactam	ND	T10, D08	840000	360000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Carbazole	**280000**	T10, D08,J	840000	9700	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Chrysene	**3400000**	T10, D08	840000	8400	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Dibenz[a,h]anthracene	**300000**	T10, D08,J	840000	9800	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Dibenzofuran	**260000**	T10, D08,J	840000	8700	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C

Golder Associates, Inc. - Niagara Falls, NY
2221 Niagara Falls Blvd., Ste 9
Niagara Falls, NY 14304

Work Order: RTF1262

Project: Golder - Vandermark/Isochem site
Project Number: [none]

Received: 06/22/10
Reported: 07/02/10 11:35

Analytical Report

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
Sample ID: RTF1262-02 (B-9-N-10 - Solid) - cont.						**Sampled: 06/22/10 10:25**		**Recvd: 06/22/10 14:20**		
Semivolatile Organics by GC/MS - cont.										
Diethyl phthalate	ND	T10, D08	840000	25000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Dimethyl phthalate	ND	T10, D08	840000	22000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Di-n-butyl phthalate	ND	T10, D08	840000	290000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Di-n-octyl phthalate	ND	T10, D08	840000	20000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Fluoranthene	**4000000**	T10, D08	840000	12000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Fluorene	**1300000**	T10, D08	840000	19000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Hexachlorobenzene	ND	T10, D08	840000	42000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Hexachlorobutadiene	ND	T10, D08	840000	43000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Hexachlorocyclopentadiene	ND	T10, D08	840000	250000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Hexachloroethane	ND	T10, D08	840000	65000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Indeno[1,2,3-cd]pyrene	**790000**	T10, D08,L2, J	840000	23000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Isophorone	ND	T10, D08	840000	42000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Naphthalene	**2000000**	T10, D08	840000	14000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Nitrobenzene	ND	T10, D08	840000	37000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
N-Nitrosodi-n-propylamine	ND	T10, D08	840000	66000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
N-Nitrosodiphenylamine	ND	T10, D08	840000	46000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Pentachlorophenol	ND	T10, D08	1600000	290000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Phenanthrene	**9400000**	T10, D08	840000	18000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Phenol	ND	T10, D08	840000	88000	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
Pyrene	**7600000**	T10, D08	840000	5400	ug/kg dry	200	06/30/10 19:40	MAF	10F2051	8270C
2,4,6-Tribromophenol	*	*T10, D08,Z3*	*Surr Limits: (39-146%)*				*06/30/10 19:40*	*MAF*	*10F2051*	*8270C*
2-Fluorobiphenyl	*440 %*	*T10, D08,Z3*	*Surr Limits: (37-120%)*				*06/30/10 19:40*	*MAF*	*10F2051*	*8270C*
2-Fluorophenol	*	*T10, D08,Z3*	*Surr Limits: (18-120%)*				*06/30/10 19:40*	*MAF*	*10F2051*	*8270C*
Nitrobenzene-d5	*	*T10, D08,Z3*	*Surr Limits: (34-132%)*				*06/30/10 19:40*	*MAF*	*10F2051*	*8270C*
Phenol-d5	*	*T10, D08,Z3*	*Surr Limits: (11-120%)*				*06/30/10 19:40*	*MAF*	*10F2051*	*8270C*
p-Terphenyl-d14	*120 %*	*T10, D08*	*Surr Limits: (58-147%)*				*06/30/10 19:40*	*MAF*	*10F2051*	*8270C*
General Chemistry Parameters										
Percent Solids	**79**		0.010	NR	%	1.00	06/24/10 13:48	JRR	10F2079	Dry Weight

Golder Associates, Inc. - Niagara Falls, NY
2221 Niagara Falls Blvd., Ste 9
Niagara Falls, NY 14304

Work Order: RTF1262

Project: Golder - Vandermark/Isochem site
Project Number: [none]

Received: 06/22/10
Reported: 07/02/10 11:35

Analytical Report

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
Sample ID: RTF1262-03 (B-9-W5-N10 - Solid)						**Sampled: 06/22/10 10:35**		**Recvd: 06/22/10 14:20**		
Semivolatile Organics by GC/MS										
2,4,5-Trichlorophenol	ND	T10, D08	740000	160000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
2,4,6-Trichlorophenol	ND	T10, D08	740000	48000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
2,4-Dichlorophenol	ND	T10, D08	740000	39000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
2,4-Dimethylphenol	ND	T10, D08	740000	200000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
2,4-Dinitrophenol	ND	T10, D08	1400000	260000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
2,4-Dinitrotoluene	ND	T10, D08	740000	110000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
2,6-Dinitrotoluene	ND	T10, D08	740000	180000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
2-Chloronaphthalene	ND	T10, D08	740000	49000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
2-Chlorophenol	ND	T10, D08	740000	37000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
2-Methylnaphthalene	**1200000**	T10, D08	740000	8900	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
2-Methylphenol	ND	T10, D08	740000	23000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
2-Nitroaniline	ND	T10, D08	1400000	240000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
2-Nitrophenol	ND	T10, D08	740000	34000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
3 & 4 Methylphenol	ND	T10, D08	1400000	41000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
3,3'-Dichlorobenzidine	ND	T10, D08	740000	640000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
3-Nitroaniline	ND	T10, D08	1400000	170000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
4,6-Dinitro-2-methylphenol	ND	T10, D08	1400000	250000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
4-Bromophenyl phenyl ether	ND	T10, D08	740000	230000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
4-Chloro-3-methylphenol	ND	T10, D08	740000	30000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
4-Chloroaniline	ND	T10, D08	740000	220000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
4-Chlorophenyl phenyl ether	ND	T10, D08	740000	16000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
4-Nitroaniline	ND	T10, D08	1400000	82000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
4-Nitrophenol	ND	T10, D08	1400000	180000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Acenaphthene	**1300000**	T10, D08	740000	8600	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Acenaphthylene	ND	T10, D08	740000	6000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Acetophenone	ND	T10, D08	740000	38000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Anthracene	**1800000**	T10, D08	740000	19000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Atrazine	ND	T10, D08	740000	33000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Benzaldehyde	ND	T10, D08	740000	81000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Benzo[a]anthracene	**2000000**	T10, D08	740000	13000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Benzo[a]pyrene	**1300000**	T10, D08	740000	18000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Benzo[b]fluoranthene	**1000000**	T10, D08	740000	14000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Benzo[g,h,i]perylene	**720000**	T10, D08,J	740000	8800	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Benzo[k]fluoranthene	**360000**	T10, D08,J	740000	8100	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Biphenyl	**150000**	T10, D08,J	740000	46000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Bis(2-chloroethoxy)methane	ND	T10, D08	740000	40000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Bis(2-chloroethyl)ether	ND	T10, D08	740000	63000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Bis(2-chloroisopropyl) ether	ND	T10, D08	740000	77000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Bis(2-ethylhexyl) phthalate	ND	T10, D08	740000	240000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Butyl benzyl phthalate	ND	T10, D08	740000	200000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Caprolactam	ND	T10, D08	740000	320000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Carbazole	**200000**	T10, D08,J	740000	8500	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Chrysene	**2000000**	T10, D08	740000	7300	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Dibenz[a,h]anthracene	**200000**	T10, D08,J	740000	8600	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Dibenzofuran	**200000**	T10, D08,J	740000	7600	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C

Golder Associates, Inc. - Niagara Falls, NY
2221 Niagara Falls Blvd., Ste 9
Niagara Falls, NY 14304

Work Order: RTF1262

Project: Golder - Vandermark/Isochem site
Project Number: [none]

Received: 06/22/10
Reported: 07/02/10 11:35

Analytical Report

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
Sample ID: RTF1262-03 (B-9-W5-N10 - Solid) - cont.						**Sampled: 06/22/10 10:35**		**Recvd: 06/22/10 14:20**		
Semivolatile Organics by GC/MS - cont.										
Diethyl phthalate	ND	T10, D08	740000	22000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Dimethyl phthalate	ND	T10, D08	740000	19000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Di-n-butyl phthalate	ND	T10, D08	740000	250000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Di-n-octyl phthalate	ND	T10, D08	740000	17000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Fluoranthene	**2500000**	T10, D08	740000	11000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Fluorene	**940000**	T10, D08	740000	17000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Hexachlorobenzene	ND	T10, D08	740000	36000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Hexachlorobutadiene	ND	T10, D08	740000	38000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Hexachlorocyclopentadiene	ND	T10, D08	740000	220000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Hexachloroethane	ND	T10, D08	740000	57000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Indeno[1,2,3-cd]pyrene	**470000**	T10, D08,L2, J	740000	20000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Isophorone	ND	T10, D08	740000	37000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Naphthalene	**1500000**	T10, D08	740000	12000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Nitrobenzene	ND	T10, D08	740000	33000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
N-Nitrosodi-n-propylamine	ND	T10, D08	740000	58000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
N-Nitrosodiphenylamine	ND	T10, D08	740000	40000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Pentachlorophenol	ND	T10, D08	1400000	250000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Phenanthrene	**5900000**	T10, D08	740000	15000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Phenol	ND	T10, D08	740000	77000	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
Pyrene	**4300000**	T10, D08	740000	4800	ug/kg dry	200	06/30/10 20:04	MAF	10F2051	8270C
2,4,6-Tribromophenol	*	*T10, D08,Z3*	*Surr Limits: (39-146%)*				*06/30/10 20:04*	*MAF*	*10F2051*	*8270C*
2-Fluorobiphenyl	*440 %*	*T10, D08,Z3*	*Surr Limits: (37-120%)*				*06/30/10 20:04*	*MAF*	*10F2051*	*8270C*
2-Fluorophenol	*	*T10, D08,Z3*	*Surr Limits: (18-120%)*				*06/30/10 20:04*	*MAF*	*10F2051*	*8270C*
Nitrobenzene-d5	*	*T10, D08,Z3*	*Surr Limits: (34-132%)*				*06/30/10 20:04*	*MAF*	*10F2051*	*8270C*
Phenol-d5	*	*T10, D08,Z3*	*Surr Limits: (11-120%)*				*06/30/10 20:04*	*MAF*	*10F2051*	*8270C*
p-Terphenyl-d14	*200 %*	*T10, D08,Z3*	*Surr Limits: (58-147%)*				*06/30/10 20:04*	*MAF*	*10F2051*	*8270C*
General Chemistry Parameters										
Percent Solids	**92**		0.010	NR	%	1.00	06/24/10 13:50	JRR	10F2079	Dry Weight

Golder Associates, Inc. - Niagara Falls, NY
2221 Niagara Falls Blvd., Ste 9
Niagara Falls, NY 14304

Work Order: RTF1262

Project: Golder - Vandermark/Isochem site
Project Number: [none]

Received: 06/22/10
Reported: 07/02/10 11:35

Analytical Report

Sample ID: RTF1262-04 (B-9-W10-N5 - Solid) — **Sampled: 06/22/10 10:45** — **Recvd: 06/22/10 14:20**

Semivolatile Organics by GC/MS

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
2,4,5-Trichlorophenol	ND	T10, D08	410000	88000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
2,4,6-Trichlorophenol	ND	T10, D08	410000	27000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
2,4-Dichlorophenol	ND	T10, D08	410000	21000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
2,4-Dimethylphenol	ND	T10, D08	410000	110000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
2,4-Dinitrophenol	ND	T10, D08	790000	140000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
2,4-Dinitrotoluene	ND	T10, D08	410000	62000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
2,6-Dinitrotoluene	ND	T10, D08	410000	99000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
2-Chloronaphthalene	ND	T10, D08	410000	27000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
2-Chlorophenol	ND	T10, D08	410000	21000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
2-Methylnaphthalene	**530000**	T10, D08	410000	4900	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
2-Methylphenol	ND	T10, D08	410000	12000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
2-Nitroaniline	ND	T10, D08	790000	130000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
2-Nitrophenol	ND	T10, D08	410000	18000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
3 & 4 Methylphenol	ND	T10, D08	790000	22000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
3,3'-Dichlorobenzidine	ND	T10, D08	410000	350000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
3-Nitroaniline	ND	T10, D08	790000	93000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
4,6-Dinitro-2-methylphenol	ND	T10, D08	790000	140000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
4-Bromophenyl phenyl ether	ND	T10, D08	410000	130000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
4-Chloro-3-methylphenol	ND	T10, D08	410000	17000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
4-Chloroaniline	ND	T10, D08	410000	120000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
4-Chlorophenyl phenyl ether	ND	T10, D08	410000	8600	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
4-Nitroaniline	ND	T10, D08	790000	45000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
4-Nitrophenol	ND	T10, D08	790000	98000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Acenaphthene	**830000**	T10, D08	410000	4700	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Acenaphthylene	**19000**	T10, D08,J	410000	3300	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Acetophenone	ND	T10, D08	410000	21000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Anthracene	**1300000**	T10, D08	410000	10000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Atrazine	ND	T10, D08	410000	18000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Benzaldehyde	ND	T10, D08	410000	44000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Benzo[a]anthracene	**1600000**	T10, D08	410000	7000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Benzo[a]pyrene	**1000000**	T10, D08	410000	9700	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Benzo[b]fluoranthene	**1000000**	T10, D08	410000	7800	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Benzo[g,h,i]perylene	**570000**	T10, D08	410000	4800	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Benzo[k]fluoranthene	ND	T10, D08	410000	4400	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Biphenyl	**77000**	T10, D08,J	410000	25000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Bis(2-chloroethoxy)methane	ND	T10, D08	410000	22000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Bis(2-chloroethyl)ether	ND	T10, D08	410000	35000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Bis(2-chloroisopropyl) ether	ND	T10, D08	410000	42000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Bis(2-ethylhexyl) phthalate	ND	T10, D08	410000	130000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Butyl benzyl phthalate	ND	T10, D08	410000	110000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Caprolactam	ND	T10, D08	410000	170000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Carbazole	**97000**	T10, D08,J	410000	4700	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Chrysene	**1500000**	T10, D08	410000	4000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Dibenz[a,h]anthracene	**160000**	T10, D08,J	410000	4700	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Dibenzofuran	**110000**	T10, D08,J	410000	4200	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C

Golder Associates, Inc. - Niagara Falls, NY
2221 Niagara Falls Blvd., Ste 9
Niagara Falls, NY 14304

Work Order: RTF1262

Project: Golder - Vandermark/Isochem site
Project Number: [none]

Received: 06/22/10
Reported: 07/02/10 11:35

Analytical Report

Analyte	Sample Result	Data Qualifiers	RL	MDL	Units	Dil Fac	Date Analyzed	Lab Tech	Batch	Method
Sample ID: RTF1262-04 (B-9-W10-N5 - Solid) - cont.						**Sampled: 06/22/10 10:45**		**Recvd: 06/22/10 14:20**		
Semivolatile Organics by GC/MS - cont.										
Diethyl phthalate	ND	T10, D08	410000	12000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Dimethyl phthalate	ND	T10, D08	410000	11000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Di-n-butyl phthalate	ND	T10, D08	410000	140000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Di-n-octyl phthalate	ND	T10, D08	410000	9400	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Fluoranthene	**2000000**	T10, D08	410000	5800	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Fluorene	**640000**	T10, D08	410000	9300	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Hexachlorobenzene	ND	T10, D08	410000	20000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Hexachlorobutadiene	ND	T10, D08	410000	21000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Hexachlorocyclopentadiene	ND	T10, D08	410000	120000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Hexachloroethane	ND	T10, D08	410000	31000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Indeno[1,2,3-cd]pyrene	**400000**	T10, D08,L2, J	410000	11000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Isophorone	ND	T10, D08	410000	20000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Naphthalene	**590000**	T10, D08	410000	6700	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Nitrobenzene	ND	T10, D08	410000	18000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
N-Nitrosodi-n-propylamine	ND	T10, D08	410000	32000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
N-Nitrosodiphenylamine	ND	T10, D08	410000	22000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Pentachlorophenol	ND	T10, D08	790000	140000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Phenanthrene	**4200000**	T10, D08	410000	8500	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Phenol	ND	T10, D08	410000	42000	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
Pyrene	**3300000**	T10, D08	410000	2600	ug/kg dry	100	06/30/10 20:27	MAF	10F2051	8270C
2,4,6-Tribromophenol	*	*T10, D08,Z3*	*Surr Limits: (39-146%)*				*06/30/10 20:27*	*MAF*	*10F2051*	*8270C*
2-Fluorobiphenyl	*240 %*	*T10, D08,Z3*	*Surr Limits: (37-120%)*				*06/30/10 20:27*	*MAF*	*10F2051*	*8270C*
2-Fluorophenol	*	*T10, D08,Z3*	*Surr Limits: (18-120%)*				*06/30/10 20:27*	*MAF*	*10F2051*	*8270C*
Nitrobenzene-d5	*	*T10, D08,Z3*	*Surr Limits: (34-132%)*				*06/30/10 20:27*	*MAF*	*10F2051*	*8270C*
Phenol-d5	*	*T10, D08,Z3*	*Surr Limits: (11-120%)*				*06/30/10 20:27*	*MAF*	*10F2051*	*8270C*
p-Terphenyl-d14	*60 %*	*T10, D08,Z3*	*Surr Limits: (58-147%)*				*06/30/10 20:27*	*MAF*	*10F2051*	*8270C*
General Chemistry Parameters										
Percent Solids	**82**		0.010	NR	%	1.00	06/24/10 13:52	JRR	10F2079	Dry Weight

Golder Associates, Inc. - Niagara Falls, NY
2221 Niagara Falls Blvd., Ste 9
Niagara Falls, NY 14304

Work Order: RTF1262

Project: Golder - Vandermark/Isochem site
Project Number: [none]

Received: 06/22/10
Reported: 07/02/10 11:35

SAMPLE EXTRACTION DATA

Parameter	Batch	Lab Number	Wt/Vol Extracte	Units	Extract Volume	Units	Date Prepared	Lab Tech	Extraction Method
General Chemistry Parameters									
Dry Weight	10F2079	RTF1262-01	10.00	g	10.00	g	06/24/10 09:56	JRR	Dry Weight
Dry Weight	10F2079	RTF1262-02	10.00	g	10.00	g	06/24/10 09:56	JRR	Dry Weight
Dry Weight	10F2079	RTF1262-03	10.00	g	10.00	g	06/24/10 09:56	JRR	Dry Weight
Dry Weight	10F2079	RTF1262-04	10.00	g	10.00	g	06/24/10 09:56	JRR	Dry Weight
Semivolatile Organics by GC/MS									
8270C	10F2051	RTF1262-03	30.04	g	20.00	mL	06/24/10 08:00	CJM	3550B MB
8270C	10F2051	RTF1262-01	30.25	g	20.00	mL	06/24/10 08:00	CJM	3550B MB
8270C	10F2051	RTF1262-02	30.63	g	20.00	mL	06/24/10 08:00	CJM	3550B MB
8270C	10F2051	RTF1262-04	30.65	g	20.00	mL	06/24/10 08:00	CJM	3550B MB

Golder Associates, Inc. - Niagara Falls, NY
2221 Niagara Falls Blvd., Ste 9
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Work Order: RTF1262

Project: Golder - Vandermark/Isochem site
Project Number: [none]

Received: 06/22/10
Reported: 07/02/10 11:35

LABORATORY QC DATA

Analyte	Source Result	Spike Level	RL	MDL	Units	Result	% REC	% REC Limits	% RPD	RPD Limit	Data Qualifiers
Semivolatile Organics by GC/MS											
Blank Analyzed: 06/30/10 (Lab Number:10F2051-BLK1, Batch: 10F2051)											
2,4,5-Trichlorophenol			170	36	ug/kg wet	ND					
2,4,6-Trichlorophenol			170	11	ug/kg wet	ND					
2,4-Dichlorophenol			170	8.7	ug/kg wet	ND					
2,4-Dimethylphenol			170	45	ug/kg wet	ND					
2,4-Dinitrophenol			330	58	ug/kg wet	ND					
2,4-Dinitrotoluene			170	26	ug/kg wet	ND					
2,6-Dinitrotoluene			170	41	ug/kg wet	ND					
2-Chloronaphthalene			170	11	ug/kg wet	ND					
2-Chlorophenol			170	8.5	ug/kg wet	ND					
2-Methylnaphthalene			170	2.0	ug/kg wet	ND					
2-Methylphenol			170	5.1	ug/kg wet	ND					
2-Nitroaniline			330	54	ug/kg wet	ND					
2-Nitrophenol			170	7.6	ug/kg wet	ND					
3 & 4 Methylphenol			330	9.3	ug/kg wet	ND					
3,3'-Dichlorobenzidine			170	150	ug/kg wet	ND					
3-Nitroaniline			330	38	ug/kg wet	ND					
4,6-Dinitro-2-methylphenol			330	58	ug/kg wet	ND					
4-Bromophenyl phenyl ether			170	53	ug/kg wet	ND					
4-Chloro-3-methylphenol			170	6.9	ug/kg wet	ND					
4-Chloroaniline			170	49	ug/kg wet	ND					
4-Chlorophenyl phenyl ether			170	3.6	ug/kg wet	ND					
4-Nitroaniline			330	19	ug/kg wet	ND					
4-Nitrophenol			330	40	ug/kg wet	ND					
Acenaphthene			170	2.0	ug/kg wet	ND					
Acenaphthylene			170	1.4	ug/kg wet	ND					
Acetophenone			170	8.6	ug/kg wet	ND					
Anthracene			170	4.3	ug/kg wet	ND					
Atrazine			170	7.4	ug/kg wet	ND					
Benzaldehyde			170	18	ug/kg wet	ND					
Benzo[a]anthracene			170	2.9	ug/kg wet	ND					
Benzo[a]pyrene			170	4.0	ug/kg wet	ND					
Benzo[b]fluoranthene			170	3.2	ug/kg wet	ND					
Benzo[g,h,i]perylene			170	2.0	ug/kg wet	ND					
Benzo[k]fluoranthene			170	1.8	ug/kg wet	ND					
Biphenyl			170	10	ug/kg wet	ND					

Golder Associates, Inc. - Niagara Falls, NY
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Received: 06/22/10
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LABORATORY QC DATA

Analyte	Source Result	Spike Level	RL	MDL	Units	Result	% REC	% REC Limits	% RPD	RPD Limit	Data Qualifiers
Semivolatile Organics by GC/MS											
Blank Analyzed: 06/30/10 (Lab Number:10F2051-BLK1, Batch: 10F2051)											
Bis(2-chloroethoxy)methane			170	9.1	ug/kg wet	ND					
Bis(2-chloroethyl)ether			170	14	ug/kg wet	ND					
Bis(2-chloroisopropyl) ether			170	17	ug/kg wet	ND					
Bis(2-ethylhexyl) phthalate			170	54	ug/kg wet	ND					
Butyl benzyl phthalate			170	45	ug/kg wet	ND					
Caprolactam			170	72	ug/kg wet	ND					
Carbazole			170	1.9	ug/kg wet	ND					
Chrysene			170	1.7	ug/kg wet	ND					
Dibenz[a,h]anthracene			170	2.0	ug/kg wet	ND					
Dibenzofuran			170	1.7	ug/kg wet	ND					
Diethyl phthalate			170	5.0	ug/kg wet	ND					
Dimethyl phthalate			170	4.4	ug/kg wet	ND					
Di-n-butyl phthalate			170	58	ug/kg wet	ND					
Di-n-octyl phthalate			170	3.9	ug/kg wet	ND					
Fluoranthene			170	2.4	ug/kg wet	ND					
Fluorene			170	3.8	ug/kg wet	ND					
Hexachlorobenzene			170	8.3	ug/kg wet	ND					
Hexachlorobutadiene			170	8.5	ug/kg wet	ND					
Hexachlorocyclopentadiene			170	50	ug/kg wet	ND					
Hexachloroethane			170	13	ug/kg wet	ND					
Indeno[1,2,3-cd]pyrene			170	4.6	ug/kg wet	ND					
Isophorone			170	8.3	ug/kg wet	ND					
Naphthalene			170	2.8	ug/kg wet	ND					
Nitrobenzene			170	7.4	ug/kg wet	ND					
N-Nitrosodi-n-propylamine			170	13	ug/kg wet	ND					
N-Nitrosodiphenylamine			170	9.1	ug/kg wet	ND					
Pentachlorophenol			330	57	ug/kg wet	ND					
Phenanthrene			170	3.5	ug/kg wet	ND					
Phenol			170	18	ug/kg wet	ND					
Pyrene			170	1.1	ug/kg wet	ND					
Surrogate: 2,4,6-Tribromophenol					*ug/kg wet*		*106*	*39-146*			
Surrogate: 2-Fluorobiphenyl					*ug/kg wet*		*99*	*37-120*			
Surrogate: 2-Fluorophenol					*ug/kg wet*		*79*	*18-120*			

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Semivolatile Organics by GC/MS											
Blank Analyzed: 06/30/10 (Lab Number:10F2051-BLK1, Batch: 10F2051)											
Surrogate: Nitrobenzene-d5					*ug/kg wet*		*87*	*34-132*			
Surrogate: Phenol-d5					*ug/kg wet*		*85*	*11-120*			
Surrogate: p-Terphenyl-d14					*ug/kg wet*		*101*	*58-147*			
LCS Analyzed: 06/30/10 (Lab Number:10F2051-BS1, Batch: 10F2051)											
2,4,5-Trichlorophenol			170	36	ug/kg wet	ND		59-126			
2,4,6-Trichlorophenol			170	11	ug/kg wet	ND		59-123			
2,4-Dichlorophenol			170	8.7	ug/kg wet	ND		52-120			
2,4-Dimethylphenol			170	45	ug/kg wet	ND		36-120			
2,4-Dinitrophenol			330	58	ug/kg wet	ND		35-146			
2,4-Dinitrotoluene		3290	170	26	ug/kg wet	3140	95	55-125			
2,6-Dinitrotoluene			170	41	ug/kg wet	ND		66-128			
2-Chloronaphthalene			170	11	ug/kg wet	ND		57-120			
2-Chlorophenol		3290	170	8.5	ug/kg wet	2490	76	38-120			
2-Methylnaphthalene			170	2.0	ug/kg wet	ND		47-120			
2-Methylphenol			170	5.1	ug/kg wet	ND		48-120			
2-Nitroaniline			330	53	ug/kg wet	ND		61-130			
2-Nitrophenol			170	7.6	ug/kg wet	ND		50-120			
3 & 4 Methylphenol			330	9.3	ug/kg wet	ND		50-119			
3,3'-Dichlorobenzidine			170	150	ug/kg wet	ND		48-126			
3-Nitroaniline			330	38	ug/kg wet	ND		61-127			
4,6-Dinitro-2-methylphenol			330	58	ug/kg wet	ND		49-155			
4-Bromophenyl phenyl ether			170	53	ug/kg wet	ND		58-131			
4-Chloro-3-methylphenol		3290	170	6.9	ug/kg wet	2790	85	49-125			
4-Chloroaniline			170	49	ug/kg wet	ND		49-120			
4-Chlorophenyl phenyl ether			170	3.6	ug/kg wet	ND		63-124			
4-Nitroaniline			330	19	ug/kg wet	ND		63-128			
4-Nitrophenol		3290	330	40	ug/kg wet	2850	87	43-137			
Acenaphthene		3290	170	2.0	ug/kg wet	3020	92	53-120			
Acenaphthylene			170	1.4	ug/kg wet	ND		58-121			
Acetophenone			170	8.6	ug/kg wet	ND		66-120			
Anthracene			170	4.3	ug/kg wet	ND		62-129			
Atrazine			170	7.4	ug/kg wet	ND		73-133			
Benzaldehyde			170	18	ug/kg wet	ND		21-120			
Benzo[a]anthracene			170	2.9	ug/kg wet	ND		65-133			
Benzo[a]pyrene			170	4.0	ug/kg wet	ND		64-127			

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Analyte	Source Result	Spike Level	RL	MDL	Units	Result	% REC	% REC Limits	% RPD	RPD Limit	Data Qualifiers
Semivolatile Organics by GC/MS											
LCS Analyzed: 06/30/10 (Lab Number:10F2051-BS1, Batch: 10F2051)											
Benzo[b]fluoranthene			170	3.2	ug/kg wet	ND		64-135			
Benzo[g,h,i]perylene			170	2.0	ug/kg wet	ND		50-152			
Benzo[k]fluoranthene			170	1.8	ug/kg wet	ND		58-138			
Biphenyl			170	10	ug/kg wet	ND		71-120			
Bis(2-chloroethoxy)methane			170	9.1	ug/kg wet	ND		61-133			
Bis(2-chloroethyl)ether			170	14	ug/kg wet	ND		45-120			
Bis(2-chloroisopropyl) ether			170	17	ug/kg wet	ND		44-120			
Bis(2-ethylhexyl) phthalate		3290	170	54	ug/kg wet	3710	113	61-133			
Butyl benzyl phthalate			170	45	ug/kg wet	ND		61-129			
Caprolactam			170	72	ug/kg wet	ND		54-133			
Carbazole			170	1.9	ug/kg wet	ND		59-129			
Chrysene			170	1.7	ug/kg wet	ND		64-131			
Dibenz[a,h]anthracene			170	2.0	ug/kg wet	ND		54-148			
Dibenzofuran			170	1.7	ug/kg wet	ND		56-120			
Diethyl phthalate			170	5.0	ug/kg wet	ND		66-126			
Dimethyl phthalate			170	4.3	ug/kg wet	ND		65-124			
Di-n-butyl phthalate			170	58	ug/kg wet	ND		58-130			
Di-n-octyl phthalate			170	3.9	ug/kg wet	ND		62-133			
Fluoranthene			170	2.4	ug/kg wet	ND		62-131			
Fluorene			170	3.8	ug/kg wet	ND		63-126			
Hexachlorobenzene			170	8.3	ug/kg wet	ND		60-132			
Hexachlorobutadiene			170	8.5	ug/kg wet	ND		45-120			
Hexachlorocyclopentadiene			170	50	ug/kg wet	ND		31-120			
Hexachloroethane		3290	170	13	ug/kg wet	2300	70	41-120			
Indeno[1,2,3-cd]pyrene		3290	170	4.6	ug/kg wet	2310	70	56-149			L2
Isophorone			170	8.3	ug/kg wet	ND		56-120			
Naphthalene			170	2.8	ug/kg wet	ND		46-120			
Nitrobenzene			170	7.4	ug/kg wet	ND		49-120			
N-Nitrosodi-n-propylamine		3290	170	13	ug/kg wet	2760	84	46-120			
N-Nitrosodiphenylamine			170	9.1	ug/kg wet	ND		20-119			
Pentachlorophenol		3290	330	57	ug/kg wet	2500	76	33-136			
Phenanthrene			170	3.5	ug/kg wet	ND		60-130			
Phenol		3290	170	18	ug/kg wet	2440	74	36-120			
Pyrene		3290	170	1.1	ug/kg wet	3930	119	51-133			

Golder Associates, Inc. - Niagara Falls, NY
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Analyte	Source Result	Spike Level	RL	MDL	Units	Result	% REC	% REC Limits	% RPD	RPD Limit	Data Qualifiers
Semivolatile Organics by GC/MS											
LCS Analyzed: 06/30/10 (Lab Number:10F2051-BS1, Batch: 10F2051)											
Surrogate: 2,4,6-Tribromophenol					*ug/kg wet*		*102*	*39-146*			
Surrogate: 2-Fluorobiphenyl					*ug/kg wet*		*91*	*37-120*			
Surrogate: 2-Fluorophenol					*ug/kg wet*		*67*	*18-120*			
Surrogate: Nitrobenzene-d5					*ug/kg wet*		*77*	*34-132*			
Surrogate: Phenol-d5					*ug/kg wet*		*76*	*11-120*			
Surrogate: p-Terphenyl-d14					*ug/kg wet*		*108*	*58-147*			

Chain of Custody Record

Temperature on Receipt _____

Drinking Water? Yes ☐ No ☐

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TAL-4124 (1007)

Client: Goller Associates	Project Manager: Pat Martin	Date: 6-22-10	Chain of Custody Number: 148801
Address: 2221 Niagara Falls Blvd. suite 9	Telephone Number (Area Code)/Fax Number: 716-215-0650	Lab Number:	Page 1 of 1
City: Niagara Falls / State: NY / Zip Code: 14304	Site Contact: Pam Cook / Lab Contact:		
Project Name and Location (State): SNPE Van	Carrier/Waybill Number:		
Contract/Purchase Order/Quote No:			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc / NaOH	Analysis (Attach list if more space is needed): SVOCs	Special Instructions/ Conditions of Receipt
B-9-W5-N5	6-22-10	1005				X							X	
B-9-N10	6-22-10	1025				X							X	
B-9-W5-N10	6-22-10	1035				X							X	
B-9-W10-N5	6-22-10	1045				X							X	

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required
☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☒ 14 Days ☐ 21 Days ☐ Other

QC Requirements (Specify)

1. Relinquished By	Date: 6-22-10	Time: 1420	1. Received By	Date: 6/22/10	Time: 1420
2. Relinquished By	Date	Time	2. Received By	Date	Time
3. Relinquished By	Date	Time	3. Received By	Date	Time

Comments: 35°C

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

VDM01931

ATTACHMENT C

TEST PIT SUMMARY TABLE

TABLE C-1

SNPE - VANDEMARK
2010 SUPPLEMENTAL DNAPL INVESTIGATION
SUMMARY OF TEST PIT OBSERVATIONS – JUNE 9, 2010

Test Pit No.	Observations/Notes	Total Depth (ft)
TP-1	Test pit located in West end of the remedial area. Several 6-inch coal tar chunks were observed. Test pit was excavated to refusal at 4 feet below ground surface (bgs).	4
TP-2	Test pit located in West end of the remedial area just North (i.e. upslope) of the toe of the slope. No tar was observed. Test pit was excavated to refusal at 3 feet bgs.	3
TP-3	Test pit located in West-central area of the remedial area. Several 6-inch diameter coal tar chunks were observed. Test pit was excavated to refusal at 5.5 feet bgs.	5.5
TP-4	Test pit located in North-central area of the remedial area just upslope from the toe of the slope. A small number of tar blebs, a few inches in diameter, were observed. Test pit was excavated to refusal at 4.5 feet bgs.	4.5
TP-5	Test pit located in North-central area of the remedial area. Several fist-sized tar blebs were present. Test pit was excavated to refusal at 4 feet bgs.	4
TP-6	Test pit located in South-central area of remedial area. Several fist-sized tar blebs were present. Test pit was excavated to refusal at 4.7 feet bgs.	4.7
TP-7	Test pit located in Eastern end of remedial area North of the top of the slope. A large amount of tar was observed and estimated to be 5-10% of the total material excavated. Test pit was excavated to refusal at 2.4 feet bgs.	2.4
TP-8	Test pit located in the flat portion of the Eastern end of the remedial area. A large amount of tar was observed and estimated to be 10% of the total material excavated. Test pit was excavated to refusal at 3.6 feet bgs.	3.6
TP-9	Test pit located near the roadway at the Eastern end of the remedial area. No tar was observed. Test pit was excavated to refusal at 3.2 feet bgs.	3.2
TP-10	Test pit located near the upper seep area near the stone block structure. Tar was observed and estimated to be 2% of the total material excavated. The tar was observed approximately 5-6 feet bgs. Due to the limits of the excavation equipment, the test pit was dug to 7 feet bgs without reaching the bedrock (max reach of excavator). The final pit size was approximately 2 feet wide and 10 feet long. Bedrock was not encountered at 7 feet bgs.	7
TP-11	Test pit located near the upper seep area. A tar vein was observed approximately 5-6 feet bgs. There was also greenish sand present. The final pit size was approximately 2 feet wide and 8 feet long. Bedrock was not encountered at 7 feet bgs.	7
TP-12	Test pit located near the upper seep area. Several tar blebs were observed on the top of the bedrock at 5.6 feet bgs. There was also some greenish granular material present.	5.6
TP-13	Test pit located East of the stone block structure on the road. A few tar blebs were observed but appear to have been placed there as fill and not having flowed to that location. The pit was excavated to a depth of 7 feet bgs without encountering bedrock.	7
TP-14	Test pit located East of the stone block structure on the road. No tar was observed. Some pieces of green pipe were present. The final depth to refusal was 6.5 feet bgs.	6.5

Interim Corrective Measures Work Plan
VanDeMark Chemical Inc.

Lockport, New York

May 25, 2012

GNARUS
ADVISORS LLC
WWW.GNARUSLLC.COM

PALMERTON GROUP

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3.2 Pre-design Investigation and Waste Characterization 4
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Figure 1 – Site Layout
Figure 2 – Pre-design Study Locations
Figure 3 – Excavation Extent
Figure 4 – Verification Sample Locations

Table 1 – Soil Analytical Results
Table 2 – Groundwater Analytical Results

Appendix A – Quality Assurance Project Plan
Appendix B – Health and Safety Plan
Appendix C – Community Air Monitoring Plan

1.0 Introduction

The VanDeMark Chemical Inc. site is located at One North Transit Road in Lockport, New York. The site occupies approximately 11.5 acres and is located in a primarily industrial area. The site has been used for a variety of manufacturing purposes since the late 1800s, including the manufacturing of: fiber tubes, lead products, aluminum chloride, and most recently phosgene and related chemicals.

Several environmental assessments and investigations have been conducted at the site by various consultants. The investigations identified that soil located under a paved area between two buildings used as maintenance shops in the central portion of the plant contains lead and polycyclic aromatic hydrocarbons (PAHs). The lead and PAHs are present at concentrations above the New York State Department of Environmental Conservation (NYSDEC) soil cleanup objectives (SCOs), specifically the restricted use SCOs pertaining to industrial use. This area will be referred to as the "Maintenance Shop Alley" (Figure 1).

Soil remediation will be conducted in the Maintenance Shop Alley as an Interim Corrective Measure (ICM).

On behalf of VanDeMark Chemical Inc., Gnarus Advisors LLC has prepared this ICM Work Plan. The affected soil targeted for removal is located under pavement in an area with somewhat restricted access. This work plan specifies a basic process whereby the following steps will take place:

- Confirm utility locations
- Conduct pre-excavation sampling to confirm excavation limits and collect waste characterization samples for landfill/treatment facility approval
- Abandon monitoring well MW-5S
- Cut, remove, and dispose of the pavement overlying the area; dispose of the removed pavement as a construction and debris waste
- Excavate accessible soil containing lead and PAHs above the industrial SCOs
- Direct load soil for transportation to approved landfill/treatment facility
- Collect verification samples for expedited analysis
- If necessary, conduct additional excavation and verification sampling
- Backfill excavated area with clean soil and compact
- Replace pavement with in-kind material
- Replace monitoring well MW-5S with MW-5SR
- Following well development, collect a sample from MW-5SR for lead analysis
- Prepare summary report for NYSDEC submittal

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Several environmental assessments and investigations have been conducted at the site by various consultants. The investigations identified that soil located under a paved area between two buildings used as maintenance shops in the central portion of the plant contains lead and polycyclic aromatic hydrocarbons (PAHs). The lead and PAHs are present at concentrations above the New York State Department of Environmental Conservation (NYSDEC) soil cleanup objectives (SCOs), specifically the restricted use SCOs pertaining to industrial use. This area will be referred to as the "Maintenance Shop Alley" (Figure 1).

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- Direct load soil for transportation to approved landfill/treatment facility
- Collect verification samples for expedited analysis
- If necessary, conduct additional excavation and verification sampling
- Backfill excavated area with clean soil and compact
- Replace pavement with in-kind material
- Replace monitoring well MW-5S with MW-5SR
- Following well development, collect a sample from MW-5SR for lead analysis
- Prepare summary report for NYSDEC submittal

The activities listed above are outlined below and will be conducted in accordance with NYSDEC guidance and regulations.

2.0 Investigation Summary

2.1 Soil Investigations

In August 1999, Dames & Moore conducted a site-wide investigation that included installing soil boring B-5 in the Maintenance Shop Alley that was completed as a shallow monitoring well (MW-5S; Dames & Moore, 1999; Figure 2). A soil sample collected from this boring at a depth of 4 to 8 feet below ground surface (bgs) contained lead at 19,200 milligram per kilogram (mg/kg). This sample also contained several PAHs above the industrial SCOs. Table 1 lists the chemicals of concern detected above the industrial SCOs in samples from B-5.

Environ International Corporation conducted another environmental investigation in August and September 2011 that included installing six soil borings in the Maintenance Shop Area (SB01 through SB06; Environ, 2011; Figure 2). The soil borings were advanced using a Geoprobe hydraulic push rig until bedrock refusal was encountered at 6 to 8 feet bgs. Environ collected soil samples for lead analysis from three intervals within each boring.

The soil sample results, also summarized in Table 1, indicate that only one sample, SB02 (2 to 3 feet bgs), which is from the boring located closest to MW-5S, contained lead above the industrial SCO of 3,900 mg/kg. This sample contained lead at 3,970 mg/kg. None of the other samples, including the two other samples from SB02 (collected at 1 to 1.5 feet bgs and 7 to 7.5 feet bgs), contained lead concentrations above the industrial SCO.

Based on the data collected to date, it appears that the extent of soil containing lead above the industrial SCOs is limited to the immediate vicinity of SB02 and MW-5S and does not likely extend deeper than 6 or 7 feet bgs (because the lead concentration in the 7- to 7.5-foot bgs sample from SB02 was lower than the industrial SCO). The extent of soil containing PAHs above the industrial SCOs has not been defined, but will be defined as part of this work plan.

2.2 Groundwater Investigations

One groundwater monitoring well, MW-5S, is located in the vicinity of the Maintenance Shop Alley. This is a shallow monitoring well installed in the borehole for B-5 by Dames & Moore in 1999. Three rounds of groundwater samples have been collected from this well: 1999 (Dames & Moore), 2006 (Benchmark), and 2011 (Environ). Data that indicate exceedances in the groundwater standards or guidance are summarized in Table 2.

A groundwater sample collected from this well in 1999 contained 768 micrograms per liter (µg/l) of lead, which is above the groundwater quality standard of 25 µg/l. This sample also exceeded the groundwater quality standards for iron, manganese, and sodium. The sample analyzed for VOCs also contained ethylbenzene and xylenes above the groundwater quality standards. No PAHs were detected in the groundwater sample.

In its 2006 investigation, Benchmark Environmental Engineering & Science, PLLC redeveloped several wells on-site, including MW-5S; however, the samples collected were not analyzed for metals (Benchmark, 2006). A sample from this well was analyzed for PAHs and VOCs. The PAHs detected above the groundwater quality standards or guidance were flagged as "J" values by the laboratory, indicating that the concentrations could not be reliably quantified and, thus, the values reported were only estimated. No VOCs were detected above the applicable groundwater quality standards.

Environ also collected a groundwater sample from MW-5S in 2011. In this event, the sample was analyzed for lead, SVOCs (including PAHs), and VOCs (Environ, 2011; Figure 2). The groundwater sample collected by Environ contained a lead concentration of 67 µg/l. As in the Benchmark investigation, the PAHs detected above the groundwater quality standards or guidance were also flagged as estimated concentrations. Again, no VOCs were detected above applicable standards in this sampling event.

It is common for groundwater samples analyzed for metals to have a contribution of metals from suspended sediment. This is because the sediment naturally contains metals that are released into the sample during the acid digestion process. This issue is generally managed by taking precautions during the groundwater sample collection process to minimize the presence of sediment, such as using low flow sampling techniques, and/or to filter the samples to remove sediment. Neither the Dames & Moore nor Environ reports mention either low flow sampling or filtering to minimize suspended sediment in the samples. The metals analyses conducted in 1999 and 2011 may have resulted in a higher lead concentration than represented by the surrounding aquifer due to the presence of lead-containing sediment. Therefore, the presence of the lead detected in these samples may be biased high.

3.0 Interim Corrective Measures Scope of Work

The objective of the ICM is to safely remove soil containing lead and PAHs above the restricted use industrial SCOs, set forth in the protection of public health-industrial use column of 6 NYCRR 375, Table 375-6.8(b), to the extent the affected soil is accessible. The excavation work will be conducted in accordance with 6 NYCRR 375, Environmental Remediation Programs, and associated guidance, including the policies for: Technical Guidance for Site Investigation and Remediation (DER-10; NYSDEC, 2010), Soil Cleanup Guidance (CP-51; NYSDEC, 2010), and Green Remediation (DER-31; NYSDEC, 2011).

The scope of work consists of the sequential activities listed in the Introduction and described in this section of the ICM Work Plan.

3.1 Confirm Utility Location

Based on information provided by VanDeMark facility personnel, there are no underground utilities in the vicinity of the excavation. To verify this information, the Contractor will retain an independent underground utility locator to assess whether any underground utilities are present in the paved area between the maintenance shop buildings.

If there are any utilities identified, research, potentially including exploratory excavation, will be conducted to confirm the utility location and purpose. Precautions, which may include isolating or otherwise deactivating the utility, will be taken to protect any active utilities identified in the Maintenance Shop Alley.

There is an overhead pipe bridge that conveys phosgene off-gas, electricity, brine, steam, condensate, cabling, water, nitrogen, and sump water between two of the maintenance shop buildings. The lowest piping associated with the pipe bridge is approximately 18 feet above ground. Precautions will be taken to maintain a safe working distance from the overhead pipe bridge during the excavation project.

3.2 Pre-design Investigation and Waste Characterization

Based on the characterization performed by Environ, the outer extent of the excavation is no more than 40 feet from north to south and 30 feet from east to west; however, because only the two borings in the center of the area (B-5 and SB02 points) contain lead or PAHs (B-5 only, as SB02 was not analyzed for PAHs) over the industrial SCOs, the actual area is likely to be considerably less in aerial extent. To verify the extent, minimize the potential for excavation creep, and gather a sample for waste characterization purposes, a limited pre-design investigation will be conducted.

The pre-design investigation will consist of drilling 5 Geoprobe borings and collecting samples from 3 intervals from each boring (1 to 1.5, 2 to 3, and 7 to 7.5 feet bgs). If bedrock refusal is encountered above the deepest interval, then a sample from the 0.5-foot interval above the point of refusal will be collected. The samples will be submitted for lead and PAH analyses. Drilling equipment will be decontaminated prior to drilling, between borings, and following drilling activities to minimize the risk of cross contamination.

One of the borings is located next to MW-5S because the depth of the sample with the highest lead and PAH concentrations was collected from an extended depth interval of 4 to 8 feet bgs and more definition on the vertical extent of the chemicals of concern is warranted.

The discrete samples collected from each boring will be used to prepare a composite sample for waste characterization purposes. The composite sample, consisting of a 2-inch portion of the core from each sample interval, will be prepared by placing the 15 aliquots into a new stainless steel mixing bowl and thoroughly mixing the soil with a new stainless steel spoon. The mixed sample will be analyzed for RCRA waste characterization parameters, as set forth in 6 NYCRR 371, and analytical results will be submitted to the landfill being considered for disposal. In addition, a sample from the 2 to 3-foot interval from the boring next to MW-5S will be submitted for VOC analysis for waste characterization purposes (it is not appropriate to composite samples for VOC analysis).

The investigation and analytical activities will be conducted in accordance with the Quality Assurance Project Plan provided in Appendix A and Health and Safety Plan provided in Appendix B.

The above work will be conducted at the same time as the MW-5S abandonment, described below.

3.3 Abandon Monitoring Well MW-5S

Monitoring well MW-5S is located in the approximate center of the excavation and must be abandoned before the excavation commences. The well will be grouted in-place following the procedures specified in CP-43 (Groundwater Monitoring Well Decommissioning Policy) and its attachment, Final Groundwater Monitoring Well Decommissioning Procedures (NYSDEC, 2009). This involves mixing grout, as required by the above referenced procedure, and using a tremie to place the grout from the bottom of the well to 5 feet bgs. The casing from 5 feet bgs to the ground surface will be filled with soil. The curb box and steel inspection plate will also be removed. Since the area will be excavated, a temporary surface, such as crushed stone, will be placed in

the former well location following the well abandonment until the excavation project commences. The area will be paved following the excavation.

3.4 Perform Excavation

The Engineer or Field Team Leader will mark the outside of the excavation with chalk or spray paint. Then, the Contractor will cut, remove, and dispose of the pavement overlying the area at the direction of the Field Team Leader. The Contractor will be responsible for transporting the removed pavement for disposal as a construction and debris waste. The Field Team Leader will coordinate the implementation of a Community Air Monitoring Plan (Appendix C) during the excavation activities. The CAMP monitoring will be conducted immediately downwind of the excavation area.

After the pavement is removed, soil will be removed using an excavator and placed directly into a truck for transport to the landfill or treatment facility. If temporary stockpiling is required, the soil will be placed on polyethylene sheeting. Any stockpiled soil left onsite overnight will be covered with polyethylene sheeting and barricaded at the end of the day or during rainfall events of significant magnitude to potentially cause runoff to occur.

The excavation plan is shown in Figure 3. Based on the current data and assuming the excavation size does not need to be increased, the excavation bottom will be a 15-foot by 15-foot rectangle roughly centered around SB02 and MW-5S. The center of the excavation will extend to a depth of 7 feet bgs, or until competent bedrock is encountered. The excavation size and depth may be adjusted based on the pre-design investigation results. The excavation side walls will then be excavated at a 1:1 slope until they are one foot bgs at which point there will be a vertical surface from 1 foot bgs to the ground surface. Using this design enables the excavation to be conducted without using sheeting or shoring.

Note: if the predesign investigation data show that the excavation must be expanded in size, sheeting or shoring may be required. If so, a structural or geotechnical engineer registered as a professional engineer in New York State will be retained for the design.

3.5 Verification Sampling

Verification samples will be collected from the base and sidewalls of the excavation. Four samples will be collected from the floor of the excavation and 2 samples will be collected from each sidewall. The floor samples will be spaced evenly around the bottom of the excavation and the sidewall samples will be in the center of each sidewall evenly spaced along the side slope. The verification sample locations are shown in Figure 4.

The excavation will not be entered for any reason until it is backfilled to a depth of 4 feet bgs. The verification samples will be collected using the excavator to remove soil to the ground surface and then the Field Team Leader or his/her designee (who will be a scientist or engineer) will retrieve samples from the excavator bucket.

The samples will be collected as specified in the Quality Assurance Project Plan and analyzed for lead and PAHs on a 24-hour or 48-hour turnaround time. If the verification samples contain lead or PAHs above the industrial SCOs, additional soil will be removed, if deemed safe and will not potentially compromise the structural integrity of the building. No additional soil will be removed from the east side of the excavation as the planned excavation is already as close to the building as safely allowable without supporting the building foundation.

If the excavation is extended, additional verification samples will be collected and again analyzed on a 24-hour or 48-hour turnaround time basis (unless it is deemed that no further excavation can be performed even if the verification samples exceed the industrial SCOs, in which case the excavation will be immediately backfilled).

The excavation dimensions will be measured in the field and recorded in the field notebook in accordance with the Quality Assurance Project Plan. These measurements will later be used to prepare an as-built drawing documenting the excavation activities.

After completing the excavation, the excavator and other equipment that contacted potentially contaminated equipment will be decontaminated with a potable water rinse.

3.6 Backfill Excavated Area and Replace Pavement

The area will be backfilled with clean soil from an offsite non-industrial source. The clean soil will either originate from a quarry with NYSDEC approved fill or an off-site source that will be tested prior to use. If testing is warranted, in accordance with 6 NYCRR 375-6.7(d) and Table 5.4(e)10 of DER-10, three samples from the backfill source will be collected and analyzed for VOCs. These samples will be composited following the process specified in Section 3.2 above (but with only 3 aliquots) and analyzed for the remainder of parameters (inorganics, semi-volatile organic compounds [SVOCs], polychlorinated biphenyls [PCBs], and pesticides). The sampling and analysis will be conducted in accordance with the Quality Assurance Project Plan.

The backfill will be placed in one-foot lifts and compacted using the excavator bucket. The final three lifts will be compacted with a vibratory roller. The final lift will be crushed stone, as specified by VanDeMark.

Following the compaction completion, the pavement will be replaced with in-kind

material, as specified by VanDeMark. The pavement replacement may be delayed by weather, depending on the season.

3.7 Replace Monitoring Well MW-5S with MW-5SR

Following placement of the final cover, former monitoring well MW-5S will be replaced with MW-5SR. The well will be replaced by advancing a 4.25-inch hollow stem auger to a depth of approximately 16 feet bgs or until refusal at bedrock. The well will be constructed with a 2-inch diameter, schedule 40 polyvinyl chloride (PVC) casing using 10 feet of 0.01-inch slot size PVC screen set 3 feet above the groundwater table surface. A sand filter pack will be installed around the well from the bottom to 2 feet above the screened interval. A minimum of 2 feet of bentonite will be used to create a seal above the sand pack. A bentonite-portland cement grout mixture will be used to fill the remainder of the borehole annulus. The well will be completed at the ground surface with a flush-mounted traffic grade protective casing set in cement grout. The grout will be allowed to cure for 24 hours before well development.

The well will be developed to remove fine suspended material and ensure effective communication. The development activities will be conducted with clean equipment to prevent potential cross-contamination. The well will be developed by pumping and using a surge block, as warranted, while periodically monitoring turbidity, pH, temperature, and specific conductance to ensure that water representative of the formation is entering the borehole. Development will continue until the discharge is relatively free of suspended sediment.

The drilling and sampling activities will be conducted with clean equipment. The drilling equipment (augers, rods) will be cleaned using a portable steam cleaner. The wastewater generated during the drilling activities will be contained in U.S. Department of Transportation (DOT) authorized 55-gallon steel drums. Labels indicating the drum contents (either hazardous or nonhazardous depending on the waste characterization results) and labeled in accordance with DOT and RCRA regulations. Drill cuttings and water generated during drilling and well development will also be contained in drums, which will initially be labeled with hazardous waste labels designated with the words "hazardous waste characterization results pending". The labeled drummed materials will be moved to an on-site staging area designated by the facility personnel. These investigation-derived wastes will be disposed of in accordance with applicable regulations.

Boring logs and well construction diagrams will be prepared to document the well installation and development procedure.

The well will be sampled for PAHs and total and dissolved lead and as part of future groundwater investigation activities at the facility.

4.0 Prepare Summary Report

A summary report will be prepared that documents the ICM field activities. At a minimum, the summary report will include the following:

- A description of the ICM activities, including excavation extent, excavation procedures, and any deviations from the ICM Work Plan
- A scaled as-built drawing depicting the vertical and horizontal extent of the excavation
- A tabulated summary of the laboratory data with a comparison to the industrial SCOs; inaccessible areas that contain lead or PAH concentrations above the industrial SCOs will be discussed and noted on the as-built drawing
- A narrative discussion of the laboratory data focusing on compliance with the industrial SCOs
- The complete laboratory deliverable, including a quality assurance narrative discussing the data validity
- Daily field activity logs and notes
- Well decommissioning form, with the information contained in Figure 3 of CP-43
- Boring log and well completion diagram for MW-5SR
- Disposal bills of lading or hazardous waste manifests, as applicable
- Certification by a New York State Professional Engineer

5.0 Health and Safety

The consultant overseeing the work and the contractor conducting the excavation will be required to prepare a health and safety plan (HASP) in accordance with 29 CFR 1910.120. At a minimum, the HASP will include the following information required by the OSHA Hazardous Waste Operations and Emergency Response Standard (40 CFR 1910.120(b)(4):

- A safety and health risk or hazard analysis for each site task and operation required as part of the ICM activities
- Personal protective equipment to be used by employees for each of the site tasks being conducted
- Frequency and types of air monitoring, personnel monitoring, and environmental sampling techniques and instrumentation to be used, including methods of maintenance and calibration of monitoring and sampling equipment to be used
- Site control measures
- Decontamination procedures
- An emergency response plan for safe and effective responses to emergencies, including the necessary PPE and other equipment
- Pre-entry briefing to be held prior to initiating any site activity, and at such other times as necessary to ensure that workers are apprised of the HASP and that the HASP is being followed
- Provisions for inspections by the site safety and health supervisor and, to the extent required, mechanisms in place to correct deficiencies in the effectiveness of the HASP

The HASP will be reviewed by all on-site personnel and will be maintained on-site at all times when the ICM or related activities are conducted. Both the contractor and the engineer overseeing the work will have HASPs.

Other safety measures that will be implemented will include:

- Placing barriers or fencing, as well as signage, at the limits of the ICM area to restrict access to the area
- Establishing an exclusion zone, contaminant reduction zone, and support zone for the work
- Placing orange safety fencing around the excavation if left open overnight, during the weekend, or periods of verification sample analysis (fencing is required whenever an open excavation is left unattended).

In addition, during the excavation activities the Community Air Monitoring Program

provided in Appendix C will be followed during the excavation portion of the ICM Work Plan implementation.

6.0 Green Remediation

As required by the NYSDEC's Green Remediation Policy (DER-31; NYSDEC, 2011), green remediation management practices will be integrated into the ICM activities. The green remediation management practices that will be implemented include:

- Retain a contractor located in the Buffalo area (local staffing)
- Recycle paper products, cans, and bottles, when possible
- Utilize local source of backfill material
- Implement an idle reduction plan in accordance with 6 NYCRR Part 217 Motor Vehicle Emissions, Subpart 217-3 Idling Prohibition For Heavy Duty Vehicles
- Misting the work areas a minimum of twice per day to minimize dust generation

In addition, if the selected contractor has the ability, it will utilize low sulfur diesel fuel in its equipment. Also, if the pavement can be recycled this will be considered as well. However, given the small volume of pavement to be removed, this may not be a reasonable expectation.

7.0 Project Schedule

The project schedule is predicated on the NYSDEC's review of the work plan and accessibility of the Maintenance Shop Alley during periods of production. The following schedule is envisioned for the work.

- Week 0 - Work plan approval from NYSDEC
- Week 2 - Pre-design investigation field work, unless VanDeMark opts to perform this activity prior to DEC review
- Week 4 - Investigation data review and confirm excavation area
- Week 6 - Retain contractor for excavation
- Week 6 - Coordinate with VanDeMark personnel to set excavation date
- Week 10 – Implement excavation activities (2 weeks in the field)
- Week 14 – Receive final verification data
- Week 18 – Submit ICM Summary Report to NYSDEC

It is envisioned that the groundwater sampling of MW-5SR will be coordinated with other groundwater investigation work at the facility and, thus, the post-ICM groundwater sampling is not included in the above schedule.

8.0 References

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Environ International Corporation. (2011). Phase II Investigations and Findings, VanDeMark Chemical, Inc. October 7.

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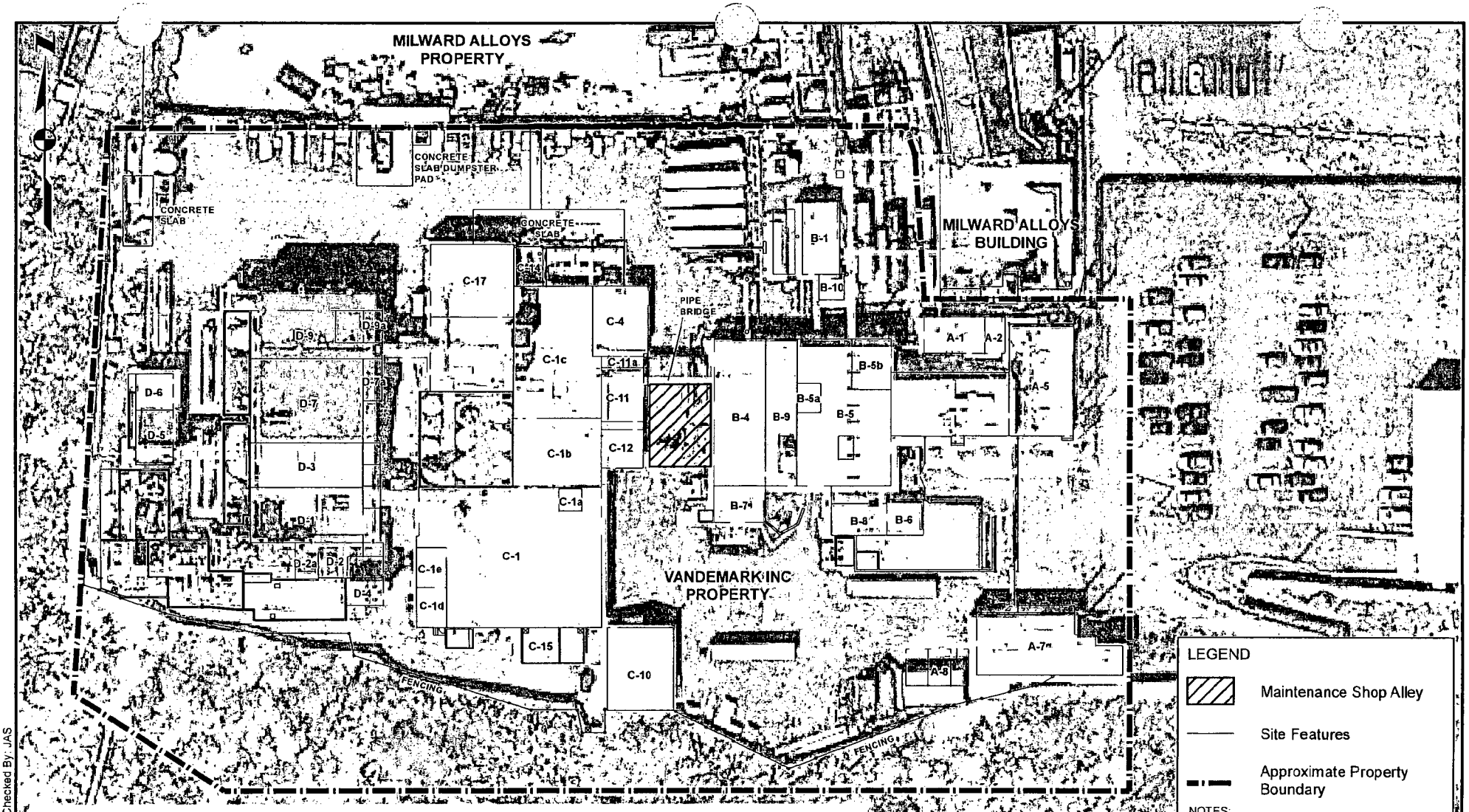
New York State Department of Environmental Conservation. (2009). CP-43 / Groundwater Monitoring Well Decommissioning Policy. November 3.

New York State Department of Environmental Conservation. (2010). DER-10 / Technical Guidance for Site Investigation and Remediation. May 3.

New York State Department of Environmental Conservation. (2011). DER-31 / Green Remediation. January 20.



LEGEND

- Maintenance Shop Alley
- Site Features
- Approximate Property Boundary

NOTES:
1) 2008 Aerial Photo.
2) All site features and locations are approximate.

MAP REFERENCES:
1) NYS Cyber Security, 2009.
2) Environ, 2011. Figure 2A.
3) VDM, 1996. Drawing VDM-5-9, Rev. 21.

0 25 50 75 Feet

Building Key

ID	Building
A-1	Back-Up Boiler Building
A-2	Centralite Ribbon Mill Room
A-5	VanDeMark Group Laboratory
A-7	VanDeMark Group Office Building
A-8	Car Garage
B-1	Main Boiler Building
B-4	Maintenance Shop
B-5	Phosgene Packout & Scales Building
B-5a	VanDeMark Control Room
B-5b	VanDeMark Condenser/Receiver Building
B-6	General Storage Room
B-7	One Ton Cylinder Painting Building
B-8	8% Caustic Scrubber Tank Room (2-1,200 gal. tanks)
B-9	Phosgene Production Room
B-10	Phosgene Dept. Emergency Generator
C-1	Drum Storage Warehouse
C-1a	Shipping & Receiving
C-1b	Chemical Storage Warehouse - Warm Room
C-1c	Chemical Storage Warehouse - Chloroformates
C-1d	Production Locker Room
C-1e	Safety Supply Room
C-4	One Ton Cylinder Maintenance Shop
C-10	Locker Room Building
C-11	Maintenance Storeroom
C-11a	Maintenance Inst./Elec. Storeroom
C-12	Office - Maintenance Supervisor
C-14	Transformer Power Station (Outdoors)
C-15	Waste Drum Storage (Outdoors) Concrete Pad
C-17	Refrigeration Building Expansion
D-1	VanChem Production Building
D-2	VanChem Control Room
D-2a	VanChem Electrical Distribution Center
D-3	P.T.S.I. Production Area
D-4	Ethylene Glycol Recirculation Cooling System
D-5	P.T.S.I. Heat Transfer Vacuum Pump Building
D-6	Dryer Room
D-7	TIC-C Production Area
D-7a	Phosgene Addition Scale Bldg.
D-9	FC-102 Production Area
D-9a	FC-102 Pack-Out Room

GNARUS ADVISORS LLC

Site Layout

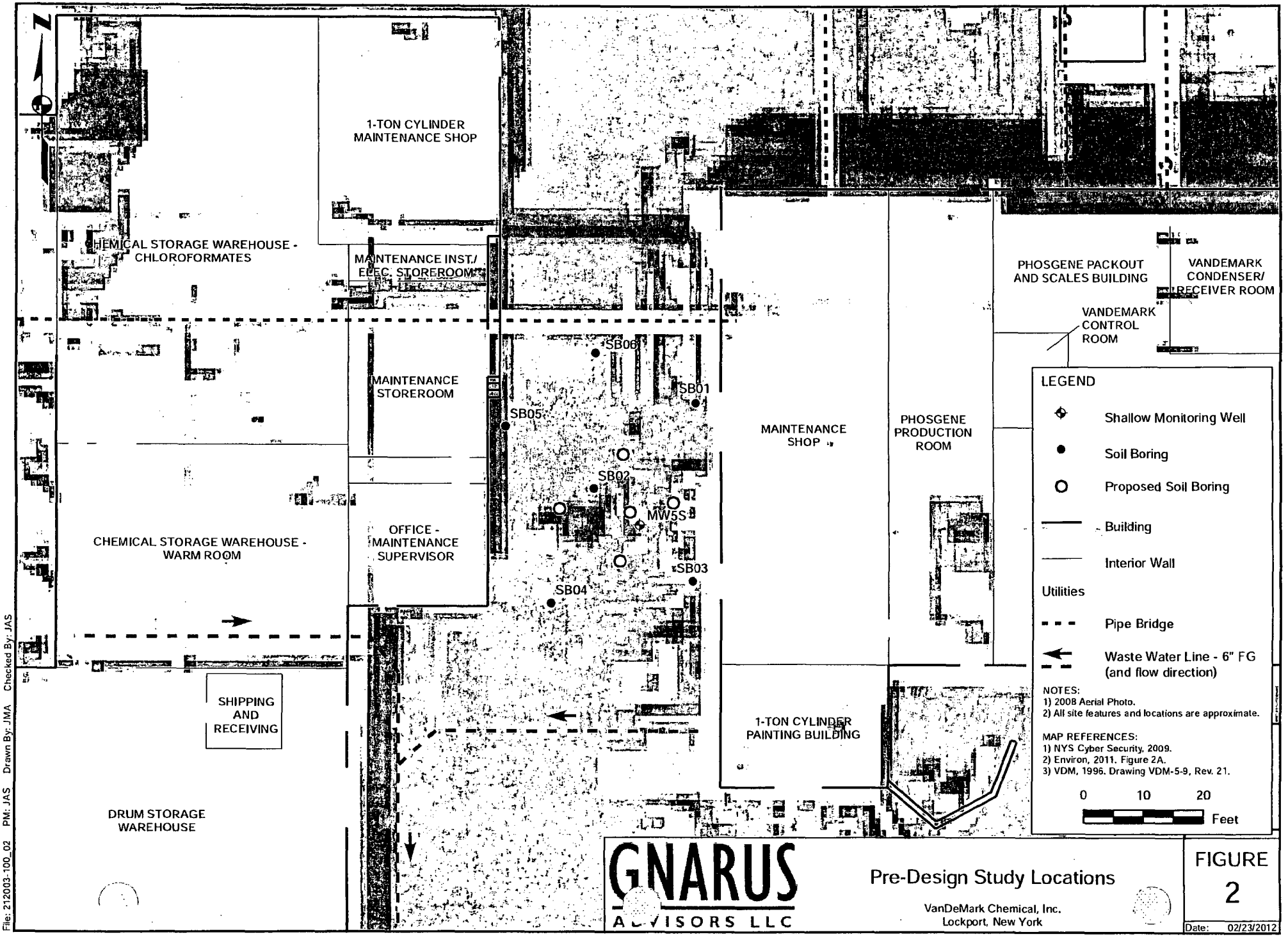
VanDeMark Chemical, Inc.
Lockport, New York

FIGURE 1

Date: 02/23/2012

File: 212003-100_01 PM: JAS Drawn By: JMA Checked By: JAS

VDM01952



File: 212003-100_02 PM: JAS Drawn By: JMA Checked By: JAS

GNARUS ADVISORS LLC

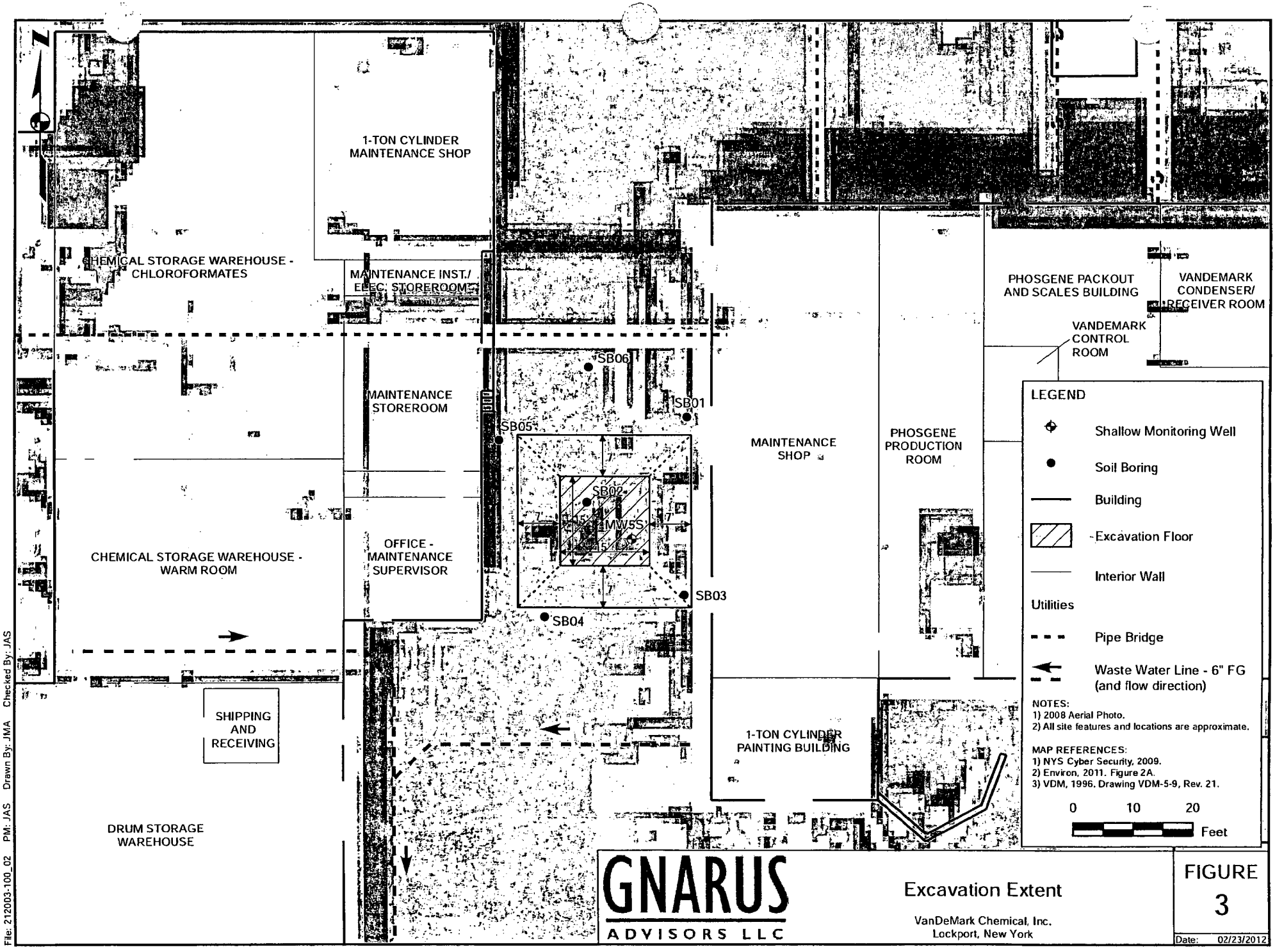
Pre-Design Study Locations

VanDeMark Chemical, Inc.
Lockport, New York

FIGURE 2

Date: 02/23/2012

VDM01953



File: 212003-100_02 PM: JAS Drawn By: JMA Checked By: JAS

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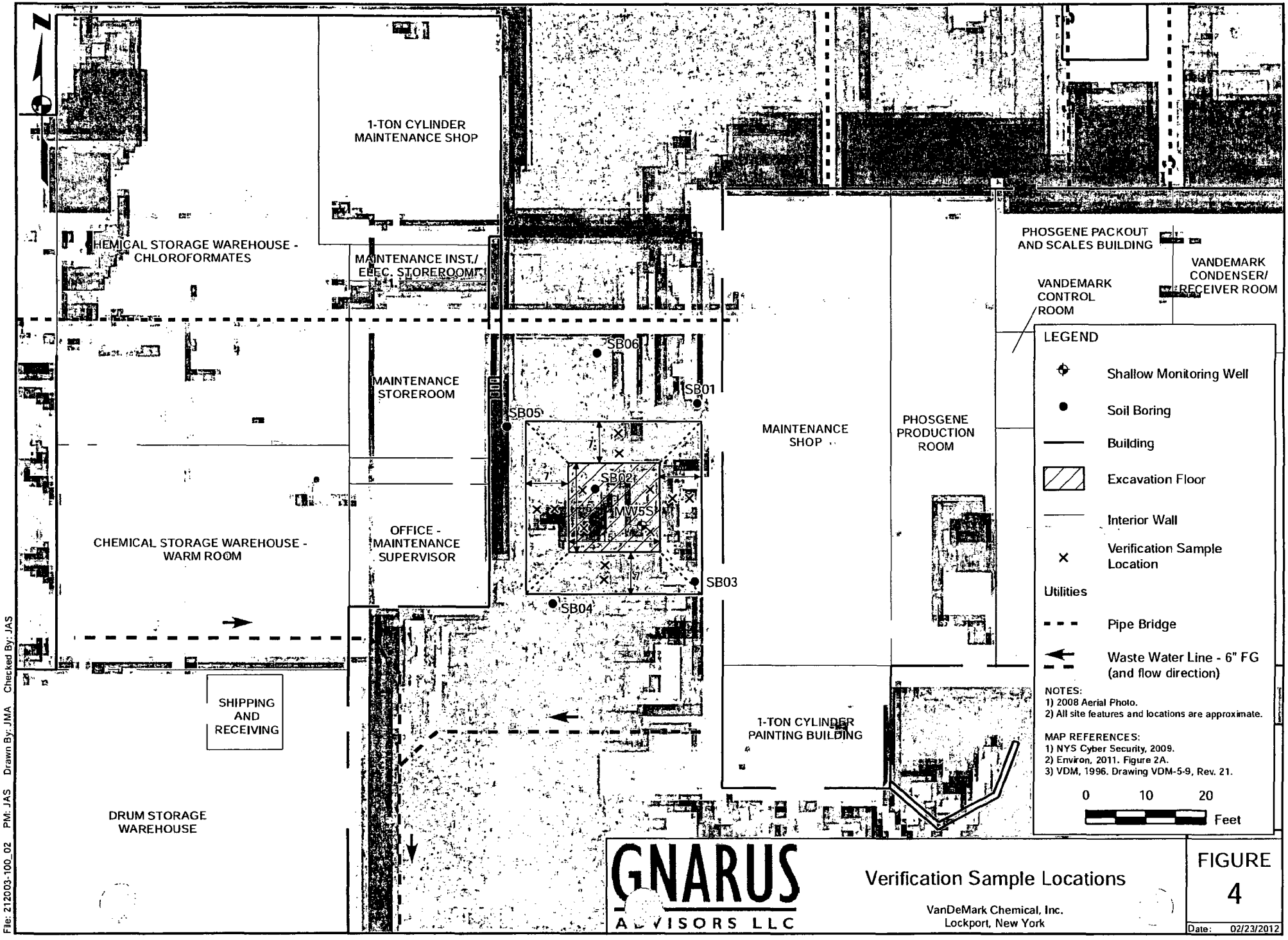
Excavation Extent

VanDeMark Chemical, Inc.
Lockport, New York

FIGURE 3

Date: 02/23/2012

VDM01954



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Verification Sample Locations

VanDeMark Chemical, Inc.
Lockport, New York

FIGURE 4

Date: 02/23/2012

VDM01955

Table 1

Soil Analtyical Results
VanDeMark Chemical
Lockport, New York

Parameter	NYSDEC Standards (a)	Consultant: Sample No.: Depth (ft):	Dame & Moore B-5 (4-8) 4 - 8	Environ SB02-SS02 1 - 1.5
Metals (mg/kg)				
Lead	3,900		19,200	3,970
Volatile Organic Compounds			NE	NA
Polycyclic Aromatic Hydrocarbons (mg/kg)				NA
Benzo(a)anthracene	11		140	
Benzo(a)pyrene	1.1		120	
Ideno(1,2,3-cd)pyrene	11		39	
Dibenzo(a,h)anthracene	1.1		26	
Chrysene	110		150	

a/ Soil cleanup objectives are provided in 6 NYCRR 375-6.4 for industrial sites
Notes:
NE - no exceedances of applicable standards
NA - not analyzed

Table 2

Groundwater Analtyical Results
VanDeMark Chemical
Lockport, New York

Parameter	NYSDEC Standards (a)	Consultant: Dames & Moore Sample No.: MW-5S	Benchmark MW-5S	Environ MW-5S
Metals (mg/l)				
Iron	300	11,600		
Lead	25	768		67
Manganese	300	472		
Sodium	20,000	891,000		
Volatile Organic Compounds (ug/l)			NE	All ND
Ethylbenzene	5	53		
o-Xylene	5	15		
m+p-Xylene	5	50		
Polycyclic Aromatic Hydrocarbons (mg/kg)		All ND		
Benzo(a)anthracene	0.002*		3 J	0.61 J
Benzo(a)pyrene	ND		3 J	0.54 J
Benzo(b)fluoranthene	0.002*		3 J	0.54 J
Ideno(1,2,3-cd)pyrene	0.002*		2 J	NE
Chrysene	0.002*		4 J	0.68 J

a/ Groundwater quality standards are provided in 6 NYCRR 703.5, Class GA Groundater Standards
Values with asterisks are guidance values from Division of Water Technical and Operational Guidance Series (1.1.1), June 1998

Notes:
NE - no exceedances of applicable standards
ND - not detected
J - estimated value

Appendix A

Quality Assurance Project Plan for Interim Corrective Measures Work Plan

VanDeMark Chemicals
Lockport, New York

May 7, 2012

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PALMERTON GROUP

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Figure 1 - Project Organization

Appendix A – Test America Chain-of-Custody

VDM01960

1. Introduction and Project Definition

VanDeMark Chemical plans to implement an Interim Corrective Measures (ICM) Work Plan at its facility located at One Transit Road in Lockport, New York. The purpose of the ICM is to remove soil in the Maintenance Shop Alley area of the VanDeMark Chemical facility that contains lead and polycylic aromatic hydrocarbons (PAHs) at concentrations above the New York State Department of Environmental Conservation (NYSDEC) DER-10 Industrial Soil Cleanup Objectives (SCOs). Gnarus and the Palmerton Group have prepared this Quality Assurance Project Plan (QAPP) for the implementation of the Interim Corrective Measures (ICM) Work Plan.

In general, the project will involve the following steps:

- Confirm utility locations
- Conduct pre-excavation sampling to confirm excavation limits and collect waste characterization samples for landfill/treatment facility approval
- Abandon monitoring well MW-5S
- Cut, remove, and dispose of the pavement overlying the area; dispose of the removed pavement as a construction and debris waste
- Excavate accessible soil containing lead and PAHs above the industrial SCOs
- Direct load soil for transportation to approved landfill/treatment facility
- Collect verification samples for expedited analysis
- If necessary, conduct additional excavation and verification sampling
- Backfill excavated area with analytically confirmed clean soil and compact
- Replace pavement with in-kind material
- Replace monitoring well MW-5S with MW-5SR
- Following well development, collect a water sample from MW-5SR for lead analysis
- Prepare summary report for NYSDEC submittal

The activities listed above are described in the ICM Work Plan and will be conducted in accordance with applicable NYSDEC guidance and regulations.

This QAPP sets forth the quality assurance/quality control (QA/QC) procedures to be followed during the execution of the ICM Work Plan, including procedures for sampling, chain of custody, laboratory analysis, data reduction and reporting, internal quality control, preventive maintenance, and corrective action. The purpose of the QAPP is to ensure the generation of valid data or, if the data are not valid, to identify the validity issues and determine appropriate corrective actions (which could include resampling).

2. Project Organization

A flowchart depicting the project organization, including the flow of information from the client, project management team, field team, and laboratory, is provided in Figure 1.

Project Participants

The personnel responsible for the quality assurance of the field sampling and analysis portion of the project are as follows:

- VanDeMark Chemical Project Representative – Chris Banach
- Project Director – John Simon, Gnarus Advisors LLC
- Project Manager – Josh Sandberg, The Palmerton Group, LLC
- Project Engineer – Jeff Holt, Holt Consulting
- Field Leader and Site-Specific Health and Safety Officer – Josh Sandberg
- Project Health and Safety Director – Brian Gourdie, The Palmerton Group, LLC
- Project Hydrogeologist – Josh Sandberg
- Sampling Personnel
- Quality Assurance Chemist – Bruce Wallin, Environmental Chemistry Consulting, Inc.
- Laboratory Project Manager – Melissa Deyo, Test America
- Laboratory Custodian – Ken Kinecki, Test America

The following subsections describe the relationship among the project participants.

VanDeMark Chemical Project Representative

Chris Banach is the VanDeMark project manager for the ICM activities. Mr. Banach will review documents and provide comments to the project team. He also is responsible for coordinating the field activities with the project manager and ensuring that the work area is available for the necessary field activities.

Project Director

John Simon will serve as the project director and, as such, will work with the project team to develop the overall ICM project strategy. Mr. Simon will also serve as the primary point of contact with the client. Mr. Simon will be responsible for the quality of documents submitted to the NYSDEC.

Project Health and Safety Director

Brian Gourdie will serve as the project health and safety director and will be responsible for developing the site-specific health and safety plan (HASP), reviewing and approving the subcontractors' health and safety programs, and directing Palmerton Group's health and safety program.

Project Hydrogeologist

Josh Sandberg will also serve as the project hydrogeologist and, as such, will be responsible for directing and overseeing the pre-design study, well abandonment, and well replacement. Mr. Sandberg or his designee will be responsible for the following activities:

- All pre-design field work, including the soil boring installation
- Coordinating and supervising the drilling contractor for the soil boring installation, monitoring well abandonment, and monitoring well replacement
- Working with the other team members to ensure any investigation derived wastes are managed in accordance with applicable laws and regulations
- Coordinating with the laboratory project manager prior to shipping sample coolers to the laboratory
- Either directly collecting or overseeing the collection of environmental media samples
- Supervising or serving as the field sample custodian
- Ensuring field measurements and sample collection follow the ICM Work Plan
- Identifying and resolving problems occurring during the field work

Sampling Personnel

Experienced engineers, geologists, hydrogeologists, environmental scientists, and/or environmental technicians employed by Palmerton Group of Buffalo and Syracuse, New York will conduct the contractor oversight and sampling tasks set forth in the ICM Work Plan and QAPP. Their responsibilities will include following sample collection, documentation, shipment, chain of custody, and health and safety procedures during all aspects of the field activities. The sampling personnel will report to the Field Leader.

Quality Assurance Chemist

Bruce Wallin, of Environmental Chemistry Consultants Inc. will serve as an independent third party consultant, specializing in evaluating the quality of laboratory data, will be retained to review the data packages produced by the laboratory and validate the data. Mr. Wallin will prepare a validation report discussing the usability of the data, identify any concerns or issues, and, if warranted, corrective measures.

team to develop the overall ICM project strategy. Mr. Simon will also serve as the primary point of contact with the client representative and the NYSDEC project manager. Mr. Simon will be responsible for the quality of documents submitted to the NYSDEC.

Project Engineer

Jeff Holt, P.E., is designated as the project engineer. Mr. Holt will be responsible for designing the engineering plans for the project and providing additional engineering services as needed.

Project Manager

Josh Sandberg is designated as the project manager and will be responsible for overseeing the overall implementation of the ICM Work Plan. He will be responsible for ensuring the field activities are conducted in accordance with the ICM Work Plan and that the appropriate personnel are assigned to complete the project tasks.

Field Leader and Site-Specific Health and Safety Officer

Josh Sandberg will have the responsibility of managing the contractor to ensure that the field work is performed in accordance with the ICM Work Plan and QAPP. He will review project plans and inquire with Mr. Holt about any potential issues or inconsistencies. Most importantly, he will ensure that he understands the overall project goals as well as the specific procedures outlined in both the ICM Work Plan and the QAPP. Mr. Sandberg or his designee will be responsible for the following activities:

- Verification sampling tasks
- Coordinating and supervising the excavation activities, including the contractor retained to excavate, load, and transport the lead and PAH-containing soil
- Working with the other team members to ensure the waste classification is assigned in accordance with applicable laws and regulations
- Coordinating with the laboratory project manager prior to shipping sample coolers to the laboratory
- Either directly collecting or overseeing the collection of the verification samples
- Supervising or serving as the field sample custodian
- Ensuring that field measurements and sample collection follow the ICM Work Plan
- Identifying and resolving problems occurring during the field work

As the Site-Specific Health and Safety Officer, Mr. Sandberg is responsible for ensuring that the HASP is adhered to by all field personnel under his direction (the contractor will have its own HASP and designated health and safety officer). He will serve as the

Bruce Wallin, of Environmental Chemistry Consultants Inc. will serve as an independent third party consultant, specializing in evaluating the quality of laboratory data, will be retained to review the data packages produced by the laboratory and validate the data. Mr. Wallin will prepare a validation report discussing the usability of the data, identify any concerns or issues, and, if warranted, corrective measures.

Laboratory Project Manager

Melissa Deyo, of Test America, will serve as the laboratory project manager. Ms. Deyo will be responsible for the laboratory's adherence to this QAPP (which will be provided to the laboratory). He/she will coordinate with Mr. Sandberg to coordinate the shipment, acceptance, and laboratory analyses. The laboratory project manager or his/her designee will be responsible for ensuring the laboratory conducts an assessment of the data and prepares the required analytical data package.

Laboratory Custodian

Ken Kinecki will be responsible for properly logging and handling the samples delivered to the laboratory. Mr. Kinecki will report to the laboratory project manager.

3. Data Quality Objectives

The data quality objectives and data assessment techniques will follow relevant US Environmental Protection Agency (US EPA) guidance: *Guidance on Systematic Planning Using the Data Quality Objectives Process* (EPA QA/G-4) (US EPA, 2005). This guidance outlines seven steps for developing DQOs. Each step is provided below with a description of how the step will be applied to the ICM Work Plan implementation.

1. State the Problem – soil in the Maintenance Shop Alley of the VanDeMark Chemicals facility contains lead and PAHs at concentrations above the NYSDEC industrial SCOs.

2. Identify the Goal of the Study (Project) – remove accessible soil containing lead and PAHs above the NYSDEC Industrial SCOs.

3. Identify Information Inputs –information will be gathered from historical reports to guide the general scope of the project. This information will be complemented by a pre-design study to delineate the extent of the lead and PAHs in soil in the Maintenance Shop Alley area. The pre-design investigation scope of work, specified in the ICM Work Plan, specifies an appropriate number of samples to provide this delineation.

   Based on the delineation, the excavation extent will be revised, as warranted. Additional information will be collected during the excavation process to verify that soil containing lead and PAHs above the industrial SCOs is removed or, if soil containing lead and PAHs above the industrial SCOs is inaccessible, the locations of such soil will be documented.

4. Define the Boundaries of the Study (Project) – the project boundaries are the Maintenance Shop Alley outlined in Figure 1 of the ICM Work Plan.

5. Developing the Analytical Approach – samples will be collected in accordance with industry guidance, as described in this QAPP, and will be analyzed by an ELAP-certified laboratory for the chemicals of concern, lead and PAHs.

6. Specify Performance or Acceptance Criteria – acceptance criteria will be satisfied by the development of valid data that can be used to compare to the industrial SCOs to evaluate the pre and post-excavation site conditions.

7. Develop Plan for Obtaining Data – The procedures for field sampling, sample management, laboratory analysis, and reporting, consistent with NYSDEC guidance, are specified in this QAPP.

4. Sampling Procedures

Soil Samples

Two types of soil samples will be collected during the project: pre-design soil samples using direct push sampling equipment and verification samples collected from the bucket of the auger. The collection of each of these types of samples is discussed below.

Pre-design Soil Samples

A Geoprobe direct-push rig will be used to install soil borings at the locations and depths specified in the ICM Work Plan. Soil samples will be collected continuously from the soil borings using 4-foot-long, 2-inch-diameter samplers fitted with a new plastic liner for each sample interval. Upon recovery, the liner will be removed from the sampler and split open using a utility knife. The drilling equipment will be decontaminated prior to drilling, between boring locations, and following drilling activities to minimize the risk of cross contamination. Decontamination shall involve the use of water and an industrial grade detergent. The water placed into Department of Transportation-approved drums for proper disposal. The samples will be described for lithology and the description will be recorded in a field book. The horizontal location of each soil boring will be measured using a tape measure from two fixed points and recorded in the field notebook.

The soil borings will be designated by the letters "SB" and then a two digit number beginning with soil boring number 14 (SB14 will be the first boring). This sequence builds on that established by the 2011 Environ investigation in which borings SB01 through SB13 were installed.

The soil samples will be numbered by boring location and the sample depth interval in feet within parenthesis. Thus, a sample collected from boring SB15 from a depth of 1 to 1.5 feet will be designated as sample number "SB15 (1-1.5)".

In addition, the ICM Work Plan specifies collecting waste characterization samples. Two types of waste characterization samples will be collected: a composite sample and a discrete sample (for volatile organic compound [VOC] analysis only). These samples will be comprised of a 2-inch portion from the plastic liner of each sample interval from the soil boring sleeves (15 aliquots total) placed into a new stainless steel mixing bowl and thoroughly mixed with a new stainless steel spoon. The composite sample will be designated as "WC01". In addition, a sample from the 2 to 3-foot interval from the boring next to MW-5S will be submitted for VOC analysis for waste characterization purposes (it is not appropriate to composite samples for VOC analysis). This sample will be designated as "WC02 (VOCs)".

Excavation Verification Samples

During the excavation activities, all personnel will position themselves upwind of the work area to the extent possible. Air monitoring and will be conducted in accordance with the generic Community Air Monitoring Plan (CAMP) and Health and Safety Plan (HASP). The excavated materials will be photographed and logged for future reference. The horizontal and vertical dimensions of the excavation will be measured using a tape measure from two fixed points and recorded in the field notebook.

Verification samples will be collected from the base and sidewalls of the excavation as described in the ICM Work Plan. The samples will be collected directly from the excavator bucket using a new stainless steel spoon. The excavating equipment will be decontaminated prior to and following excavation activities to minimize the risk of cross contamination. Decontamination shall involve the use of steam cleaner to remove any gross contamination from the excavator bucket. The water and material will be captured on plastic sheeting and placed into Department of Transportation-approved drums for proper disposal.

The verification soil samples will be designated as verification samples ("VS"), whether floor or wall samples ("FLOOR" or "WALL") and numbered by sample wall position (either "N", "E", "W", or "S") and its vertical depth as measured from the ground surface in feet. Thus, a verification sample collected from a depth of 2.5 feet from the north wall will be designated as the VS- WALL-N location and the sample depth interval in feet within parenthesis "VS-WALL-N (2.5)". If the sample is a replicate because additional soil had to be removed to meet the industrial SCOs, then the sample should be designated with "REP1", "REP2", "REP3". Therefore, the second sample collected from the north excavation wall at a depth of 2.5 feet would be labelled "VS-WALL-N (2.5)(REP1)" (note: the first/initial verification sample would be "VS-WALL-N (2.5)").

5. Sample Custody and Management

Sample Containers, Preservation, and Holding Times

The sample containers, preservation methods, and laboratory holdings times for soil samples to be analyzed for lead, PAHs, and VOCs are provided below.

Analytical Parameter	Sample Matrix	Sample Container	Preservation Method	Laboratory Holding Time
Lead (and Inorganics for Backfill)	Soil	4-oz glass jar with Teflon®-lined lid	Cool to 4 degrees C	6 months
PAHs (and SVOCs, PCBs, and Pesticides for Backfill)	Soil	4-oz glass jar with Teflon®-lined lid	Cool to 4 degrees C	14 days
VOCs	Soil	4-oz glass jar with Teflon®-lined lid	Cool to 4 degrees C	14 days

The holding times begin when the sample is received at the laboratory.

The laboratory will provide pre-cleaned samples sent in the same coolers used for the samples. The coolers will be chilled by placing a minimum of two 1-gallon bags of ice (each double-bagged to prevent moisture) into the coolers.

Each sample container will be labeled with the following information:

- Project name
- Sample number (described above)
- Analysis
- Date
- Time
- Sampler's name
- Preservative

Chain of Custody

A person will be deemed to have custody of samples when the samples are in their possession or control. The sampling crew will retain the chain of custody forms until the samples are shipped or hand delivered to the laboratory. If the person leaves the samples from their sight, the samples must be stored in a closed cooler, and placed in a secured area, such as a locked vehicle, to prevent tampering by third parties.

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A chain of custody form will be completed for each sample shipment. At a minimum, the chain of custody form will include the following information in the title block:

- Project name
- Project number
- Contact person and telephone number

In addition, the chain of custody form will include the following information:

- Environmental media sampled
- Sample identification number
- Sample time
- Sample date
- Analytical procedure
- Sample preservative

Entries on the chain of custody form must be made in indelible ink and not pencil or other erasable marking. If an incorrect entry is made, the information will be crossed out with a single strike mark with initials and the date next to the marked out text.

A signature block with the sample custodian's signature, printed name, and date must be included on the form. In addition, the chain of custody form will include signature blocks for subsequent custodians.

Before shipping from the project site, a copy of the chain of custody form will be made and placed in the project files. Then the original form will be placed into a zip-lock bag and taped to the top of the inside of the cooler. The cooler will then be sealed with a chain-of-custody seal, which will be signed and dated. Finally, the cooler will be taped shut.

An example Test America chain of custody form is provided in Appendix

The sample coolers will be delivered to the analytical laboratory by either ground courier or overnight shipping service. The receiving party must sign the chain of custody form and provide a copy of the signed form with the laboratory report.

Particulate Air Monitoring

As part of the generic CAMP, real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size will be used. As required by New York State guidance, the equipment must be equipped with an audible alarm to indicate exceedance of the action level set forth in the generic CAMP provided in Appendix C.

the CAMP sampling will be conducted immediately downgradient of the excavation area. In addition, fugitive dust migration should be visually assessed during all work activities.

6. Field Documentation

The purpose of field documentation is to record the activities and site conditions to enable a third party who is not present to understand both the site conditions, such as weather and other nearby activities, and the ICM activities that took place on-site. The overall objective of field documentation is to not rely on a person's memory to be able to retrospectively understand the field activities.

Each field supervisor or technician will make notes on a daily basis in their own field notebook dedicated to the project. Entries must be made in indelible ink and not pencil or other erasable marking. If an incorrect entry is made, the information will be crossed out with a single strike mark with initials and the date next to the marked out text.

The field notebook must be stored in a secured, locked location when not in use and should be placed in the project files at the end of that stage of the field activities.

The cover or the first page of the field notebook should contain the following information:

- Professional's name
- Professional's employer
- Project name
- Project number
- Contact information (in case the field notebook is lost and recovered)

The notes made for each day must begin on a fresh page and include the following information:

- Date
- Weather conditions (temperature, cloud cover, and precipitation)
- Personnel present on-site, including name and affiliation
- Nearby activities (such as construction)
- Time log of ICM activities
- Sample information, including: location, sample identification, time, type, analysis, field measurements, and physical characteristics
- Field duplicate designations
- Equipment used to make field measurements, along with the date and time of calibration, if required
- Information related to sample documentation, including:
  - Dates and method of sample shipments
  - Chain-of-custody record numbers
  - Courier air bill number
- Other pertinent information and activities

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7. Laboratory Analytical Methods

The laboratory methods and reporting units are listed below.

Parameter	Analytical Method	Quantitation Limits	Reporting Units
Lead	EPA SW 6010B/6020/7471A Series	1 mg/kg	milligrams per kilogram
PAHs (and SVOCs for backfill only)	US EPA Method 8270	170 – 330 ug/kg	micrograms per kilogram
VOCs	US EPA Method 8260	5 – 25 ug/kg	micrograms per kilogram
Pesticides (backfill only)	US EPA Method 8081	1.67 ug/kg	micrograms per kilogram
PCBs (backfill only)	US EPA Method 8080	16.7 ug/kg	micrograms per kilogram
Inorganics (backfill only)	As specified in US EPA SW-846 (US EPA, 1996)	Varies	milligrams per kilogram
RCRA Waste Characteristics	As specified in US EPA SW-846 (US EPA, 1996)	In accordance with SW-846	In accordance with SW-846

The laboratory will follow the July 2005 NSYDEC Analytical Services Protocol document, including the required method detection limits (NYSDEC, 2005). If difficulties arise in achieving the specified method detection limits due to a particular sample matrix, the laboratory manager must notify the project manager. In order to achieve those detection limits, the laboratory must utilize all appropriate cleanup procedures in an attempt to retain the project required detection limits. If a sample requires dilution due to high levels of target analytes or interferences, the laboratory must document all initial analyses (if possible) and secondary dilution results. Dilution will be permitted only to bring target analytes within the linear range of calibration; however, in the case of metals analysis, dilution may be required for non-target analytes that interfere with target analytes.

8. Quality Control Requirements

Quality Assurance Indicators

The acceptance/performance criteria for laboratory analyses are assessed by evaluating the precision, accuracy, representativeness, completeness, and comparability of the laboratory data. The definition of each of these terms is provided below.

Precision

Precision is the measure of reproducibility of sample results. The goal is to maintain a level of analytical precision consistent with the project objectives. To maximize precision, sampling and analytical procedures will be followed. All work for this project will adhere to protocols presented in the ICM Work Plan. Checks for analytical precision will include the analysis of matrix spikes (MSs), MS duplicates (MSDs), laboratory duplicates, and field duplicates. Checks for field measurement precision will include obtaining duplicate field measurements.

Accuracy

Accuracy is the deviation of a measurement from the true value of a known standard. Both field and analytical accuracy will be monitored through initial and continuing calibration of instruments. In addition, internal standards, MSs, MSDs, blank spikes, and surrogates (system monitoring compounds) will be used to assess the accuracy of the laboratory analytical data.

Representativeness

Representativeness is the degree to which sampling data accurately and precisely represent site conditions, and is dependent on sampling and analytical variability and the variability of environmental media at the Site. The ICM Work Plan presents the sample locations and frequency and, this information combined with this QAPP, will ensure that representative samples are collected.

Completeness

Completeness is defined as a measure of the amount of valid data obtained from an event and/or investigation compared to the total amount that was obtained. This will be determined upon final assessment of the analytical results.

Comparability

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Comparability is the degree of confidence with which one data set can be compared to another. Comparability between the ICM activities, and to the extent possible, with existing data will be maintained through consistent field and laboratory methods as described in this QAPP and referenced documents.

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9. Field and Laboratory Quality Control Checks

Field Quality Control Samples

Due to the nature of the ICM activities, there will be limited use of field measurements. The generic CAMP requires the use of a real-time particulate monitoring instrument capable of measuring 10-micron particulate matter. This equipment is factory-calibrate and, thus, does not require calibration in the field.

Field Duplicates

A field duplicate will be collected at a minimum frequency of one for every 20 samples (5%). There likely will be one field duplicate collected during the pre-design investigation and one field duplicate as part of the verification sampling.

Equipment Rinse Blanks

Only new, dedicated sampling equipment will be used during the ICM activities. Therefore, equipment rinse blanks are not necessary.

Trip Blanks

VOCs are not a chemical class that poses a concern in the Maintenance Shop Alley. The only VOC sample to be collected is a single sample for waste characterization purposes. Therefore, no trip blank samples are warranted.

Analytical Laboratory Quality Control Checks

Internal laboratory quality control checks will be used to monitor data integrity. These checks will include method blanks, MS/MSDs, spike blanks, internal standards, surrogate samples, calibration standards, and reference standards. Laboratory control charts will be used to determine long-term instrument trends.

Method Blanks

Method blanks will be used to assess potential sources of contamination in the analytical process. The method blank is prepared at the start of the analytical process and includes all phases of the laboratory analysis. One method blank will be analyzed with each analytical series associated with no more than 20 samples.

MS/MSDs

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MS/MSDs will be used to measure the accuracy of analyte recovery from the sample matrices and will be site-specific. MS/MSD pairs will be analyzed by the laboratory at a minimum frequency of one MS/MSD for every 20 samples or once per week, whichever is more frequent.

If the laboratory results indicate that the MS recoveries are outside of the quality control limits, the control sample and surrogate spike recoveries will be evaluated to identify the reason for the deviation and assess the effect on the reported sample results.

Surrogate Spikes

In the analytical chemistry field, a surrogate is considered a chemical that is not naturally occurring (or rarely occurs in nature), but also has properties similar to the analytes of interest. Surrogates are principally used as an internal check for samples analyzed by gas chromatography/mass spectrometry (GC/MS) and GC methods. The surrogate spike is added to the samples prior to purging or extraction. The surrogate spike provides information related to the accuracy of an analytical method on a sample-specific basis.

If the laboratory results indicate that the surrogate spike recoveries are outside of specified quality control limits, the recoveries will be evaluated to identify the potential sources of the deviation, possibly considering other control information. Surrogate spike compounds will be determined based on information provided by the US EPA analytical methods for the chemicals specified for analysis.

Laboratory Duplicates

Laboratory duplicates will be run for the soil samples to assess laboratory precision. The duplicates will be prepared as a separate aliquot of a sample that will then be analyzed as a separate sample.

Calibration Standards

The laboratory will use calibration standards to assess the instruments' stability and to provide information regarding the instrumentations' capability to provide valid quantification results. The laboratory will analyze calibration standards at the beginning and end of each analytical series, as well as throughout a series containing a large number of samples.

In general, the need for calibration standards analysis is specified by the analytical method. In analyses where internal standards are used, a calibration check standard will only be analyzed at the beginning of an analytical series. If results of the calibration check standard exceed specified tolerances, then all samples analyzed since the last

acceptable calibration check standard will be reanalyzed.

Laboratory instrument calibration standards will be determined utilizing the guidance provided in the analytical methods.

Internal Standards

The laboratory will monitor internal standard areas and retention times for organic analyses performed by GC/MS and GC methods. Method-specified internal standard compounds will be spiked into all field samples, calibration standards, and quality control samples after preparation and prior to analysis.

If internal standard areas in one or more samples exceed the tolerances specified in the analytical method, the cause will be investigated and, if warranted, the instrument will be recalibrated. In this case, all affected samples will be reanalyzed.

Reference Standards

Reference standards are standards of known concentration and independent in origin from the calibration standards. The intent of reference standard analysis is to provide insight into the analytical proficiency within an analytical series. This includes preparation of calibration standards, validity of calibration, sample preparation, instrument set-up, and the premises inherent in quantitation. Reference standards will be analyzed at the frequencies specified within the analytical methods.

10. Data Precision Assessment Procedures

Field Precision

Field precision is difficult to measure because of temporal variations in field parameters. However, precision will be controlled through the use of experienced field personnel, properly calibrated meters, and duplicate field measurements. Field duplicates will be used to assess precision for the measurement system.

Laboratory Precision

Laboratory data precision for organic analyses will be monitored through the use of MS/MSD and laboratory duplicates. The precision of data will be measured by calculating the relative percent difference (RPD) by the following equation:

RPD = 100*(A-B) /((A+B)/2)

Where:

A = Analytical result from one of two duplicate measurements
B = Analytical result from the second measurement

Precision objectives for MSD and laboratory duplicate analyses are identified in the NYSDEC ASP Revision 2005.

Data Accuracy Assessment Procedures

The accuracy of field measurements will be controlled by experienced field personnel, properly calibrated field meters, and adherence to established protocols. The accuracy of field meters will be assessed by review of calibration and maintenance logs.

Laboratory accuracy will be assessed via the use of MSs, surrogate spikes, internal standards, and reference standards. Where available and appropriate, quality assurance performance standards will be analyzed periodically to assess laboratory accuracy.

Accuracy will be calculated in terms of percent recovery as follows:
% Recovery = 100*(A-X)/B

Where:

A = Value measured in spiked sample or standard
X = Value measured in original sample

B = True value of amount added to sample or true value of standard

This formula is derived under the assumption of constant accuracy over the original and spiked measurements. If any accuracy calculated by this formula is outside of the acceptable levels, data will be evaluated to determine whether the deviation represents unacceptable accuracy, or variable, but acceptable accuracy. Accuracy objectives for MS recoveries and surrogate recovery objectives are identified in the NYSDEC ASP 2005 Revision.

Data Completeness Assessment Procedures

The laboratory will calculate the completeness of laboratory data sets by comparing the number of valid sample results generated to the total number of results generated.

Completeness = 100*(Number valid results/Total number of results generated)

As a general guideline, overall project completeness is expected to be at least 90%.

Corrective action

The corrective actions typically taken by the laboratory are described below. If the calibration, instrument performance, or blank criteria are not met, the cause of the problem will be investigated and corrected. The analytical system then will be recalibrated. As part of the laboratory's operating protocol, sample analysis does not begin until calibration, instrument performance, and blank criteria are met. If matrix spike, reference standard, or duplicate analyses are found to be out of acceptable limits, the cause of the issue must be researched. Then, depending on the results of the overall QC program for the sample set, the data may be accepted, accepted with qualification, or determined to be unusable. If deemed unusable, the samples either must be reanalyzed or a new set of samples collected and analyzed.

Preventive Maintenance

Preventative maintenance procedures must be performed by the laboratory on all equipment used for the ICM analyses. The maintenance activities must be documented in the laboratory's records.

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11. Data Reduction, Assessment, and Reporting

Data Reduction

The laboratory will reduce the data produced in accordance with SW-846 protocols. The criteria used to reduce the data are specified in the analytical methods.

Data Quality Assessment

The laboratory deliverables will be NYSDEC ASP Category B. Data for this investigation will be evaluated and qualified in accordance with the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, USEPA-540-R-07-003, July 2007 and USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, EPA-540-R-04-004, October 2004, as appropriate for the analytical methods employed.

The validated analytical results reported by the laboratory and validated by the third party validator will be assigned one of the following USEPA-defined data usability qualifiers:

- U – Not detected at given value
- UJ – Estimated not detected at given value (applied by third party validator)
- J – Estimated value
- N – Presumptive evidence at the value given (applied by third party validator)
- R – Result not useable (applied by third party validator)
- No Flag – Result accepted without qualification

Data Usability Summary Report

The analytical data review will be summarized by a third party validator in a Data Usability Summary Report, which will include a review and evaluation of all the analytical results. The following parameters will be reviewed to ensure compliance with the analytical method protocols:

- Initial and continuing calibrations
- Blanks
- Laboratory control standards and matrix spikes
- Surrogate recoveries
- Matrix interference checks
- Field and laboratory duplicates
- Sample data
- Chain-of-custody forms

- Holding times

The report will describe the samples and parameters reviewed. Any deficiencies identified during the review will be noted and the effect on the generated data will be discussed. If warranted, the report will include recommendations for re-sampling or reanalysis. The validated data deliverable and the data usability summary report will be included as an appendix to the engineering report summarizing the ICM activities.

Data Validation

An independent third party quality assurance chemist will review the laboratory data package and prepare a data validation report. The validation will conform with the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, USEPA-540-R-07-003, July 2007 and USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, EPA-540-R-04-004, October 2004, as appropriate for the analytical methods employed.

The data validation report will present the results of data validation, including a summary assessment of laboratory data packages, sample preservation, and a summary assessment of precision, accuracy, representativeness, comparability, and completeness for each analytical method. A detailed assessment of each sample delivery group will be presented in the data validation report.

Data Reporting

The data package provided by the laboratory will contain all of the items discussed above. Data quality issues will be discussed in a case narrative included with the data report. A photocopy of the completed chain of custody forms accompanying each sample shipment will be included with the data package. The analytical data package will be accompanied by an electronic data deliverable (EDD).

The EDD format required is current format Earthsoft EQuIS® Environmental Data Management Software. Each EDD must be formatted and copied using an MS-DOS operating system. To avoid transcription errors, data will be loaded directly into the ASCII format from the laboratory information management system (LIMS). The laboratory will perform a QC check on the EDD before delivery. The original data, tabulations, and electronic media must be stored in a secure and retrievable fashion.

12. References

NSYDEC. (2005). Analytical Services Protocol. July.

US EPA. (2002). Guidance for Quality Assurance Project Plans, EPA-QA/G-5. December.

US EPA. (2002). Generic Brownfields Quality Assurance Project Plan (QAPP), Brownfields Assessment Demonstration Pilot, South Troy Brownfields, New York. May.

US EPA. (2005). Guidance on Systematic Planning Using the Data Quality Objectives Process (EPA QA/G-4).

US EPA. (1996). Test Methods for Evaluating Solid Waste. SW-846 3rd Edition, Update 3. Office of Solid Waste. December.

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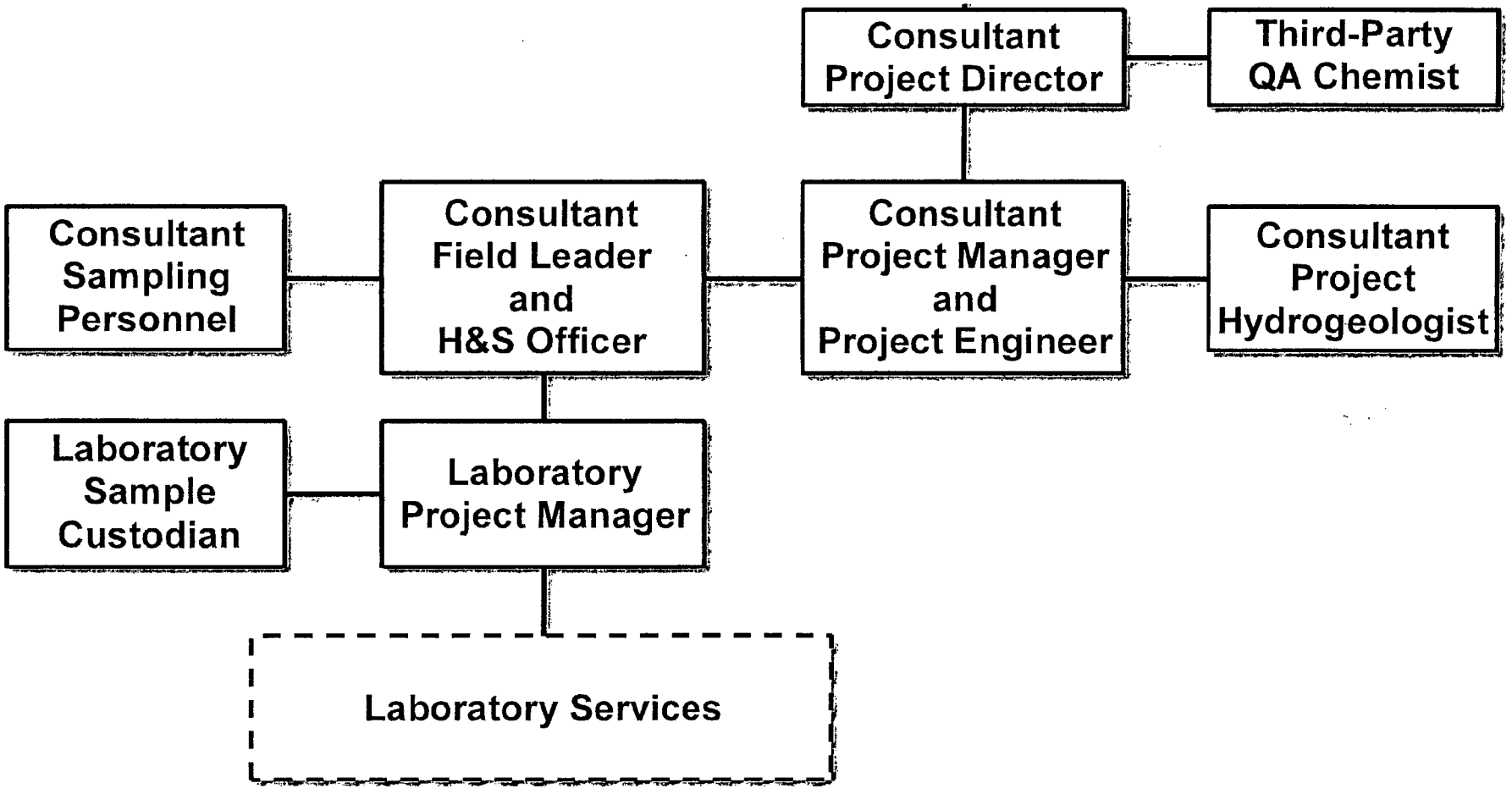

GNARUS ADVISORS LLC

Quality Assurance Project Plan
Project Organization

VanDeMark Chemical, Inc.
Lockport, New York

FIGURE 1

Date: 02/08/2012

File: 212004-100_02 PM: JAS Drawn By: JMA Checked By: JAS

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>>> Select a Laboratory <<<
#N/A
#N/A
#N/A
#N/A

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	**Project Manager:**	**Site Contact:**	**Date:**	COC No:
Your Company Name here	**Tel/Fax:**	**Lab Contact:**	**Carrier:**	_____ of _____ COCs
Address	**Analysis Turnaround Time**			Job No.
City/State/Zip	Calendar (C) or Work Days (W) _____			
(xxx) xxx-xxxx Phone	TAT if different from Below _____			
(xxx) xxx-xxxx FAX	☐ 2 weeks			SDG No.
Project Name:	☐ 1 week			
Site:	☐ 2 days			
P O #	☐ 1 day			Sampler:

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Filtered Sample	Sample Specific Notes:

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification

☐ *Non-Hazard* ☐ *Flammable* ☐ *Skin Irritant* *Poison B* ☐ *Unknown* ☐

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Special Instructions/QC Requirements & Comments:

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

VDM01985

The Palmerton Group, LLC

SITE-SPECIFIC
HEALTH AND SAFETY PLAN

Project: VanDeMark Chemicals Inc. Interim Corrective Measures
Maintenance Shop Alley

Location: 1 North Transit Road, Lockport, New York

Proposed Date of Field Activities: TBD

Project Directors: David Palmerton, Jr., CPG, CHMM
John Simon, Gnarus Advisors, LLC

Project Manager: Joshua Sandberg

Prepared by: Joshua Sandberg

Date Prepared: February 20, 2012
Date Revised:

Approvals

	Signature	Date
Palmerton Project Manager	***Joshua Sandberg***	
Palmerton Construction Field Supervisor	***Joshua Sandberg***	
Palmerton Director of Safety	***Brian Gourdie***	

1. INTRODUCTION

1.1 Policy

It is The Palmerton Group's policy to ensure the health and safety of its employees, the public, and the environment during performance of work it conducts. This site-specific health and safety plan establishes the procedures and requirements to ensure the health and safety of the employees of The Palmerton Group, LLC (Palmerton Group) for the above-named project.

This site-specific health and safety plan has been developed for the sole use of The Palmerton Group employees and is not intended for use by firms not participating in The Palmerton Group's training and health and safety programs. Contractors and subcontractors are responsible for developing and providing their own health and safety plans. In addition, the health & safety policies and procedures of the VanDeMark, Chemical Inc. facility at which this work is being performed, shall apply, and is included as an attachment (Attachment 4).

This site-specific health and safety plan has been prepared to meet the following applicable requirements and guidance:

Applicable Regulations/Guidance
29 CFR 1926 OSHA Construction Standards
29 CFR 1910.120 Hazardous Waste Operations and Emergency Response (HAZWOPER)
29 CFR 1926.651 Excavations
29 CFR 1926.62 Lead in Construction

1.2 Scope of Work

Description of Work: The work will consist of oversight of a private utility locator, a direct-push limited investigation, and an excavation of an area containing lead, polycyclic aromatic hydrocarbons (PAHs), and potentially volatile organic compound (VOC) contaminated soil. Soil samples will be collected during the investigation and excavation phases of work. All efforts will be coordinated with the facility of which the work area is located. The work area will be identified as the "Maintenance Shop Alley".

Task Breakdown: The following table provides descriptions of tasks to be employed to complete this project.

Task Number	Task Description
1	Utility Clearance
2	Soil Boring Installation
3	Soil Sampling
4	Excavation
5	Site Restoration

1.3 Site Description

Site History/Description: The VanDeMark Chemical Inc. site is located at One North Transit Road in Lockport, New York. The site occupies approximately 11.5 acres and is located in a primarily industrial area. The site has been used for a variety of manufacturing purposes since the late 1800s, including the manufacturing of: fiber tubes, lead products, aluminum chloride, and most recently phosgene and related chemicals.

Several environmental assessments and investigations have been conducted at the site by various consultants. The investigations identified that soil located under a paved area between two buildings used as maintenance shops in the central portion of the plant (Maintenance Shop Alley) contains lead and polycyclic aromatic hydrocarbons (PAHs). The lead and PAHs are present at concentrations above the New York State Department of Environmental Conservation (NYSDEC) soil cleanup objectives (SCOs), specifically the restricted use SCOs pertaining to industrial use.

Site Map: Site maps provided by Gnarus ares included with this plan as Attachment 1.

Is the site currently in operation? ☒ Yes ☐ No

Locations of Contamination/Wastes: Maintenance Shop Alley

Types and Characteristics of Contaminants/Wastes:

☒ Liquid	☒ Solid	☒ Sludge	☒ Gas/Vapor (*potentially*)
☒ Flammable/Ignitable (*potentially*)	☒ Volatile	☐ Corrosive	☐ Acutely Toxic
☐ Explosive	☐ Reactive	☒ Carcinogenic	☐ Radioactive

Responsibilities of on-site representative (Joshua Sandberg)

- The Person-in-Charge (PIC) will be responsible for on-site activities. He will ensure that this plan is implemented safely. He will also be responsible for approving daily safe work permits, and ensuring employees clearly understand tasks to be performed, hazards associated with tasks, and ways to mitigate these hazards. He will direct the project through the Contractor(s) on site supervisor(s) in coordination with the Safe Work Plan.

Responsibilities of the Contractor(s) on Site Supervisor(s)

- On site supervisors and all contract employees will have the authority to shut down any job that has the potential to cause injury to personnel or damage to equipment.

Responsibilities of the Field Supervisor:

- Assure that elements of this plan are complied with
- Communicate Palmerton Group HSE Policies and Procedures
- Conduct routine inspections and surveys
- Promptly fix or safeguard conditions and behaviors deemed to be at risk to HSE.
- Lead HSE incident investigations
- Perform if needed any on-site orientations

Communications: Telephone and two-way radios will be used in safe designated areas to contact outside resources. Safe cell phone usage is defined as "150 ft" away from any possible source of gas emissions. Intrinsically safe radios will be used inside hazardous locations. Truck radios may be used as well.

Site Role/Responsibility	Name	Contact Number
Palmerton Group Construction OSR	Joshua Sandberg	(607) 761-7975
Palmerton Group HSE	Brian Gourdie	(412) 350-8582

2. ORGANIZATION AND RESPONSIBILITIES

The project team, including qualified alternates, is identified below.

Site Role/Responsibility	Name	Contact Number
Palmerton Group Project Director	David Palmerton	(315) 243-2702 - Cell
Gnarus Project Director	John Simon	(315) 243-2702 - Cell
VanDeMark EHSQ Manager	Chris Banach	(716) 870-0613 - Cell
Palmerton Group Project Manager	Joshua Sandberg	(607) 761-7975 - Cell
Palmerton Group Safety Director	Brian Gourdie	(412) 350-8582 - Cell
Holt Consulting Project Engineer	Jeffrey Holt	(518) 784-9021 - Cell
On Site Person in Charge (PIC)/Site Specific Safety Officer	Joshua Sandberg	(607) 761-7975 - Cell

3. TRAINING

Prior to field work, all of The Palmerton Group field personnel shall have received training as indicated below. As applicable, personnel shall have read the project work plan.

Training
Site Specific Safety Orientation
First Aid
Annual CPR
Ground Disturbance
OSHA 40 Hour HAZWOPER Training
Operator Training (for excavator operator)
Lead Awareness Training

4. MEDICAL SURVEILLANCE

4.1 Medical Surveillance Program

The Palmerton Group field personnel shall actively participate in The Palmerton Group's medical surveillance program and shall have received an appropriate physical examination. Field personnel should inform the site safety officer (SSO) of any allergies, medical conditions, or similar situations that are relevant to the safe conduct of the work to which this site-specific health and safety plan applies. All Palmerton employees will remain out of the work zone, will not be exposed to any lead materials and will not be subject to any lead monitoring program.

Subcontractors will certify that all their employees have successfully completed a physical examination by a qualified physician. The physical examinations must meet the requirements of 29 CFR 1910.120 (f) and 29 CFR 1910.134. Any subcontractor that will be working with lead materials will be subject to the medical surveillance requirements of 29 CFR 1926.62(j).

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5. SITE CONTROL

5.1 Site Layout and Work Zones

Site Map: A Gnarus-provided site map is included with this plan as Attachment 1.

Site Access Requirements and Special Considerations: Follow standard access protocol. Contact Chris Banach of VanDeMark Chemical Inc. to coordinate site activities and attend facility safety orientation. Any non-Palmerton or Palmerton subcontractor will not be permitted into the work area while work is being conducted. If any inspection needs to be conducted by outside personnel, they shall be subject to the same work rules, PPE and training as designated by this Plan.

Illumination Requirements: Comply with requirements specified in 29 CFR 1910.120 (m).

Sanitary Facilities: Comply with requirements specified in 29 CFR 1910.120 (n) and 29 CFR 1926.62(i)(5).

On-Site Communications: As determined by SSO.

Other Site Control Requirements:
Barricades shall be placed around any boring or excavation left open for more than one shift.

An exclusion zone (EZ) shall be established during excavation of lead containing materials to prevent unauthorized workers from entering.

A contamination reduction zone (CRZ) shall be established and maintained for exit from the exclusion zone.

Signs in compliance with 29 CFR 1926.62(m).

5.2 Safe Work Practices

ALL ON-SITE ACTIVITIES WILL BE CONDUCTED UNDER THE SUPERVISION OF A COMPETENT PERSON (The PIC will identify)

Required before Work Commences on a Daily Basis:

1. **Job Hazard Analysis (JHA):** A hazard analysis checklist will be completed in consideration of the worksite.
2. **Job Safety Analysis (JSA):** Utilizing the JHA, generate a JSA for the work. Have all employees review the JSA and sign it.
3. **Equipment Inspection Form:** The contractors will complete a rig/equipment inspection form each day, prior to commencing work.
4. **Facility specific Work Permit as required**

Daily Safety Meeting: An on-site daily safety meeting will be conducted for all of The Palmerton Group field personnel and sub-contractors and documented in the field logbook. The information and data obtained from applicable site work and analysis will be addressed in the safety meetings and also used to update this site-specific health and safety plan, as necessary. JSAs will be reviewed daily and modified whenever work conditions fall outside those specified on the JSA. Work will cease whenever new site conditions arise so the daily work plan can address the new situation and all workers are informed.

Work Limitations:

1. No employee shall be permitted to enter an excavation.
2. Only properly trained employees with proper PPE shall enter the EZ.
3. Work will be conducted in daylight hours only.
4. Work will not be performed until atmosphere surrounding excavation is assessed/continuously monitored.
5. Work cannot proceed to a subsequent open excavation or boring until the one being completed is demarcated and barricaded.

Weather Limitations: Work shall not be conducted during electrical storms. Work conducted in other inclement weather will be at the discretion of the SSO.

Other Work Limitations: NOT APPLICABLE

Buddy System: Field work shall be conducted in pairs of team members.

Line of Sight: Each field team member shall remain in the line of sight and within verbal communication of at least one other team member.

Eating, Drinking, and Smoking: Eating, drinking, smoking, and the use of tobacco products shall not be prohibited in the EZ or CRZ and shall only be permitted in designated areas. Workers must wash their face and hands after leaving EZ; before eating or drinking.

Additional Restrictions: No other restrictions are anticipated.

Contamination Avoidance:

1. Excavated/drilled spoil piles shall be placed directly into DOT approved containers upon completion of sampling in preparation for proper disposal.

2. Some form of dust suppression will be utilized during excavation activities to prevent the spread of any lead contamination.

Sample Handling: If any type of sampling is required, nitrile gloves shall be utilized to avoid skin contact. Other PPE will be required if the samples are taken in the EZ (see Section 7). Splash hazards may require additional protection such as a face shield, goggles, bib or other dermal protection.

6. HAZARD EVALUATION AND CONTROL

6.1 Physical Hazard Evaluation and Control

Potential physical hazards and their applicable control measures are described in Table 6.1 for each task.

6.2 Chemical Hazard Evaluation and Control

6.2.1 Chemical Hazard Evaluation

Potential chemical hazard descriptions and material data safety sheets will be provided by the contractor

6.2.2 Chemical Hazard Control

An appropriate combination of engineering/administrative controls, work practices, and PPE shall be used to reduce and maintain employee exposures to a level below Occupational Safety and Health Administration (OSHA) permissible exposure levels (PEL's) as listed on Table 6.2.

The contractor shall conduct a hazard assessment of the work to determine the level of PPE including respiratory protection. This hazard assessment shall be part of the safe work plan and shall be available for review by the Palmerton Group.

Applicable Engineering/Administrative Control Measures: Dust suppression techniques will be utilized. Employees will stand upwind of all ground penetrating activities to minimize potential exposure to dusts/VOC emissions.

Personal Protective Equipment: See Section 7.

6.3 Radiological Hazard Evaluation and Control

All available documentation for this site relating to historical investigation activities was reviewed. Based on this review, past and current activities at this site, no radiological hazards are anticipated during this work.

7. LEVEL OF PROTECTION AND PERSONAL PROTECTIVE EQUIPMENT

The levels of protection have been selected for each work task based on an evaluation of the potential or known hazards, the routes of entry, and the characteristics of the Personal Protective Equipment (PPE). On-site monitoring results and other information obtained through on-site activities will be used to modify these levels of protection and the PPE, as necessary, to ensure sufficient personnel protection. The level of protection will increase to protect staff from potential contamination if site conditions change.
Level D PPE consists of:

- Work clothing
- Nitrile gloves as required
- Work gloves (type: leather)
- Steel toe/shank work boots
- Safety glasses
- Hearing protection (available)
- Hard hat
- Face shield (where necessary)

Work clothing in the EZ shall be:

- Disposable coveralls
- Nitrile gloves as required
- Work gloves (type: leather)
- Steel toe/shank work boots
- Disposable boot covers
- Safety glasses

- Hearing protection (available)
- Hard hat
- Respiratory Protection as designated by contractor hazard assessement.
- Face shield (where necessary)

Depending on the subcontractor's previous exposure monitoring records, respiratory protection may be required. If exposure monitoring for the task is not available, the contractor may use objective data where applicable. If no objective data is available, the assumption that the employee will be exposed over the OSHA Permissible Exposure Limit (PEL) to lead shall be made. This will increase the level of protection to Level C at a minimum. The contractors safe work plan shall address this situation and set-forth guidelines of PPE during the activities.

Any increase in Level of Protection shall be communicated with the Palmerton Group, the President, Project Manager and Safety Director shall be included in any such decisions.

8. HEALTH AND SAFETY MONITORING

Health and safety monitoring will take place will be for any fugitive emissions from the excavation. Any detection of gas/VOCs by continuous monitoring meter will result in stop work. If stop work is necessary then monitoring will be conducted every 15 minutes for the first hour then every half hour until work is completed. This may be adjusted by the SSO as needed. Any deviations from background readings shall be recorded on the daily work log.

Area air monitoring for dust contamination migration will be utilized.

The contractor may utilize personal exposure monitoring to document employee exposures. This shall be included in the contractor's safe work plan and hazard assessment.

9. DECONTAMINATION PROCEDURES

Potential contamination is discussed in Section 5.2. Any contaminated equipment or tools will be washed prior to moving to another location. Wash all tools over the spoil pile of the excavation.

Provisions for removing gross contamination (mud, snow, ice, etc) shall be in place before any vehicle enters a public roadway. This will reduce liability that the excess mud and flying debris may cause. Specific procedures are described below.

Equipment/Material Decontamination Procedures: As discussed in the ICM Work Plan.

PPE Requirements for Personnel Performing Decontamination: As described in Section 7.

Personnel Decontamination Procedures: Remove gross contamination, remove PPE, and wash hands with waterless hand cleaner in CRZ. Clean boots of excess mud before entering trailers or vehicles. Rubber over-boots may be worn to keep work boots clean.

Personnel Decontamination in General: Following appropriate decontamination procedures, all field personnel will wash hands and face with soap and potable water.

Disposition of Disposable PPE: Disposable PPE will be rendered unusable and disposed as site waste.

Disposition of Decontamination Wastes (e.g., dry wastes, decontamination fluids, etc.): Dispose as contaminated waste according to local, state and federal regulations.

10. EMERGENCY RESPONSE

This section contains additional information pertaining to on-site emergency response and does not duplicate pertinent emergency response information contained in previous sections of this plan. Emergency response procedures shall be rehearsed regularly, as applicable, during project activities.

10.1 Emergency Responsibilities

All personnel shall be alert to the possibility of an on-site emergency; report potential or actual emergency situations to the team leader and SSO; and notify appropriate emergency resources, as necessary. VanDeMark, Chemical, Inc. emergency response policies and procedures shall apply (Attachment 4).

The team leader shall determine the emergency actions to be performed by Palmerton Group personnel and shall direct these actions. The team leader also shall ensure that applicable incidents are reported to appropriate Palmerton Group and client personnel and government agencies.

The SSO shall recommend health/safety and protective measures appropriate to the emergency.

10.2 Local and Site Resources (including phone numbers)

Ambulance: 911

Hospital: Eastern Niagara Health System
521 East Avenue
Lockport, NY 14094
(716) 514-5800 Ext. 3601

Directions to hospital are included in Attachment 2.

Poison Control: 1-800-222-1222

Police Department: 911

Fire Department: 911

Palmerton Group Site Contact: Joshua Sandberg (607) 761-7975

10.3 The Palmerton Group Emergency Contacts

Corporate Office: 315-463-5300

David Palmerton: 315-243-2702 (cell)

Chris Banach, VanDeMark EHSQ Manager: (716) 870-0613 (cell)

10.4 Other Emergency Response Procedures

On-Site Evacuation Signal/Alarm: Sound vehicle horn in three activation bursts.

On-Site Assembly Area: Designated at Daily Tailgate Meeting

Emergency Egress Route to Get Off-Site: Determine best route daily depending on where field activity is occurring. Discuss with field crew at daily morning safety meeting.

Off-Site Assembly Area: To be determined at daily morning safety meeting.

Preferred Means of Reporting Emergencies: Cellular phone.

Site Security and Control: In an emergency situation, personnel will attempt to secure the affected area and control site access. In some areas, there is a road that will pass the site. Both ways must be secured in case of an emergency to prevent accident incursion into emergency area. If borings/excavations are to remain open for longer than one shift, they will be demarcated and barricaded to prevent persons from falling into excavation.

Emergency Decontamination Procedures: Perform gross decontamination of victim in CRZ. Never move severely injured person unless in life-threatening situation.

PPE: Personnel will don appropriate PPE when responding to an emergency situation. The SSO and information provided in Section 7 will provide guidance regarding appropriate PPE.

Emergency Equipment: Appropriate emergency equipment will be available on-site.

TABLE 6.1 PHYSICAL HAZARD EVALUATION AND CONTROL

Hazard	Task Number	Hazard Control Measures
Biological (flora, fauna, etc.)	1, 2, 3, 4	• Potential hazards: Rodents, insects, poisonous plants. • Establish site-specific procedures for working around identified hazards.
Lead compounds	2,3,4	• Hazard assessment • PPE • Dust Suppression • Personnel and equipment decontamination. • Signs and designated restricted areas.
Metal debris	1, 2, 3, 4	• Be aware of potential trip hazards. • Avoid contact with exposed metal edges. • Wear appropriate gloves if hand removal of metal debris is required.
Cold Stress	1, 2, 3, 4	• Provide warm break area and adequate breaks. • Provide warm non-caffeinated beverages. • Promote cold stress awareness.
Electrical	1, 2, 3, 4	• Ensure compliance with 29 CFR 1910 Subparts J and S. • Call Dig Safely NY to locate and mark underground, aboveground, and overhead energized lines. • Deenergize lines, as necessary. • Utilize lockout and tagout procedures as appropriate. • All electric circuits used on site shall be ground fault circuit interrupter (GFCI) protected. • Ground all electrical circuits, including electric generator outputs. • Guard or isolate temporary wiring to prevent accidental contact. • Inspect all temporary wiring (i.e., extension cords) prior to usage and frequently throughout the work shift to ensure safe condition. • Evaluate potential areas of high moisture or standing water and define special electrical needs.
Fire and Explosion	1, 2, 3, 4	• Inform personnel of the location(s) of potential fire/explosion hazards. • Establish site-specific procedures for working around flammables. • Ensure that appropriate fire suppression equipment is available and in good working condition. • Comply with special monitoring needs, as described in Table 8.1. • Remove ignition sources from flammable atmospheres. • Coordinate with local fire department regarding potential fire/explosion situations as needed. • Establish contingency plans and review daily with team members.
Noise	1, 2, 3, 4	• Establish noise level standards for on-site equipment/operations. • Inform personnel of hearing protection requirements, as specified Section 7. • Define site-specific requirements for noise monitoring, as described in Table 8.1.
Overhead Obstructions	1, 2, 3, 4	• Wear hard hat.
Utility Lines	1, 2, 3, 4	• Identify/locate existing utilities prior to initiating field work.

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Hazard	Task Number	Hazard Control Measures
		• Ensure that overhead, underground, and nearby utilities are at least 25 feet away from work areas. • Contact utility providers and consult facility "as built" drawings to confirm locations, as necessary.
Weather Extremes	1, 2, 3, 4	• Potential hazards: heavy rain, snowstorm, high winds. • Establish site-specific contingencies for severe weather situations. • Monitor weather reports. • Weatherize safety equipment, as necessary (e.g., ensure eyewash units cannot freeze). • Identify special personnel protective equipment needs. See Section 7. • Discontinue work during severe weather.
Stress and strain	1, 2, 3, 4	• Get help while using auger or direct push samplers when weight and effort is too great for one person. • Utilize a stretch and flex routine prior to starting work
Power Tools	1, 2, 3, 4	• Ensure compliance with 29 CFR 1910 Subpart P.
Excavation	2	• Inspect excavation equipment to ensure safe condition (e.g., no leaking pressure fittings) and appropriate operation (e.g., proper "kill switch" operation). • Restrict entry to excavation work area by establishing appropriate "exclusion zone." • Wear appropriate PPE, as described in Section 7.

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TABLE 8.1 HEALTH AND SAFETY MONITORING

Monitoring of excavation activities shall be the following:

1. Checking for fugitive gas emissions from the excavation with calibrated O2/LEL Meter.
2. Checking the excavated materials if evidence of severe contamination (i.e. large amount of discoloration, very strong hydro-carbon odor, excessive liquid discolored liquid).

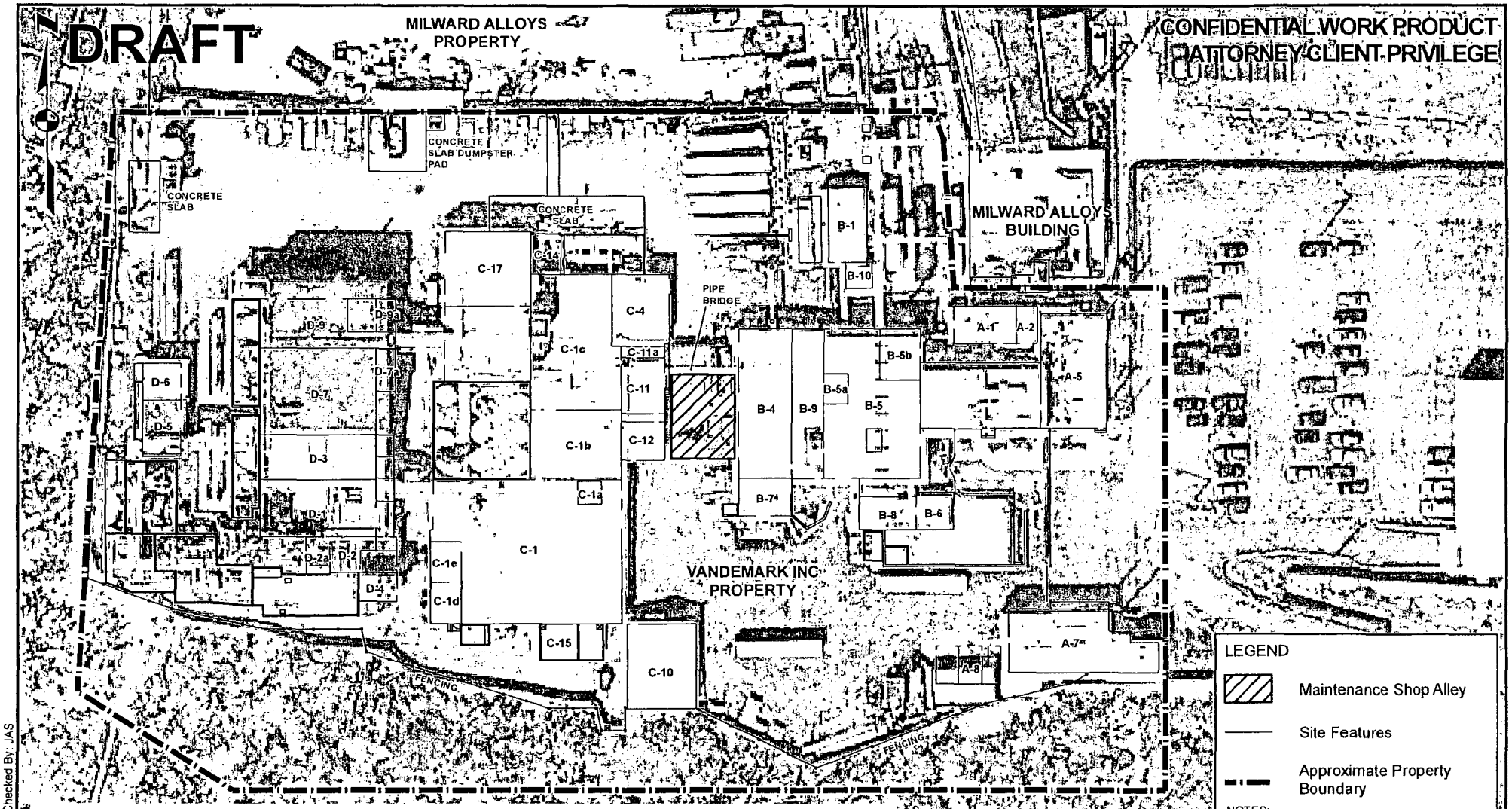
The following table should be used as guidance when health and safety monitoring is to be performed.

Instrument	Task Number	Contaminant(s)	Monitoring Location	Monitoring Frequency	Action Levels[a]	
Oxygen Meter/ Explosimeter	2,3,4	Hydro-carbons	Bore hole excavation	Before access to pit area.	**Oxygen** <19.5% or >25.0%. Evacuate area; eliminate ignition sources; reassess conditions. 19.5 to 25.0%. Continue work in accordance with action levels for each instrument	**Explosivity** ≤10% LEL. Continue work in accordance with action levels for other instruments; monitor continuously for combustible atmospheres. >10% LEL. Evacuate area; eliminate ignition sources; reassess conditions.
Dust Meter	2,3,4,5	Dusts	Downwind of activities	Continuous	15 mg/m3	

[a] Unless stated otherwise, airborne contaminant concentrations are measured as a time-weighted average in the worker's breathing zone. Acceptable concentrations for known airborne contaminants will be determined based on OSHA/ACGIH. Exposure limits.

VDM01999

ATTACHMENT 1
SITE MAP



Building Key

ID	Building
A-1	Back-Up Boiler Building
A-2	Centralite Ribbon Mill Room
A-5	VanDeMark Group Laboratory
A-7	VanDeMark Group Office Building
A-8	Car Garage
B-1	Main Boiler Building
B-4	Maintenance Shop
B-5	Phosgene Packout & Scales Building
B-5a	VanDeMark Control Room
B-5b	VanDeMark Condenser/Receiver Building
B-6	General Storage Room
B-7	One Ton Cylinder Painting Building
B-8	8% Caustic Scrubber Tank Room (2-1,200 gal. tanks)
B-9	Phosgene Production Room
B-10	Phosgene Dept. Emergency Generator
C-1	Drum S[illegible] Warehouse
C-1a	Shippi[illegible]eiving
C-1b	Chemica[illegible]age Warehouse - Warm Room
C-1c	Chemical Storage Warehouse - Chloroformates
C-1d	Production Locker Room
C-1e	Safety Supply Room
C-4	One Ton Cylinder Maintenance Shop
C-10	Locker Room Building
C-11	Maintenance Storeroom
C-11a	Maintenance Inst./Elec. Storeroom
C-12	Office - Maintenance Supervisor
C-14	Transformer Power Station (Outdoors)
C-15	Waste Drum Storage (Outdoors) Concrete Pad
C-17	Refrigeration Building Expansion
D-1	VanChem Production Building
D-2	VanChem Control Room
D-2a	VanChem Electrical Distribution Center
D-3	P.T.S.I. Production Area
D-4	Ethylene Glycol Recirculation Cooling System
D-5	P.T.S.I. Heat Transfer Vacuum Pump Building
D-6	Dryer Room
D-7	TIC-C Production Area
D-7a	Phosgene Addition Scale Bldg.
D-9	FC-102 Production Area
D-9a	FC-102 Pack-Out Room

GNARUS ADVISORS LLC

Site Layout

VanDeMark Chemical, Inc.
Lockport, New York

FIGURE 1

Date: 01/27/2012

File: 212003-100_01 PM: JAS Drawn By: JMA Checked By: JAS

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ATTACHMENT 2
SITE MAP & DIRECTIONS TO HOSPITAL

Driving directions to:
Eastern Niagara Health System
521 East Avenue
Lockport, NY 14094
(716) 514-5800 Ext. 3601

This route has restricted usage or private roads.

Origin:
1 N Transit Rd
Lockport, NY 14094

1. Head **north** on **Transit Rd** toward **Mill St**
Restricted usage road

262 ft

2. Take the 1st right onto **Mill St**

0.9 mi

3. Continue onto **Exchange St**

0.1 mi

4. Continue onto **Spring St**

0.2 mi

5. Turn left onto **East Ave/New York State Bicycle Route 5**
Destination will be on the left

0.5 mi

Eastern Niagara Health System
521 East Avenue
Lockport, NY 14094
(716) 514-5800 Ext. 3601

Map to Hospital

ATTACHMENT 3
AUTHORITY TO STOP WORK
Palmerton Group Policy 100-46

1.0 Policy:

A. It is the policy of the Palmerton Group to ensure that all employees, contractors and subcontract personnel are given the responsibility and authority to stop work when they believe that a situation exists that places them, their coworker(s), contracted personnel, or the public at risk or in danger.

2.0 Scope:

A. This policy is applicable to all employees, contractors, and subcontract personnel working at The Palmerton Group's sites and facilities.

3.0 Purpose:

A. Maintaining a diligent questioning attitude is vital to safe execution of work-scope and is a cornerstone to effective operations and integrated safety management.

B. The purpose of this procedure is to ensure that all employees are given the responsibility and authority to stop work when employees believe that a situation exists that places them, their coworker(s), contracted personnel, or the public at risk or in danger; could adversely affect the safe operation or cause damage property; or result in a release of chemical effluents to the environment above regulatory requirements/approvals and provides a method to resolve the issue.

Stop Work authority is granted and supported by David L. Palmerton, Jr., President and CEO

D L Palmerton, Jr.

Signed November 10, 2011

4.0 Responsibilities:

A. Employee Responsibilities

(1) In supporting safe execution of work and without fear of reprisal, all personnel, have the following responsibilities to:

a. Stop work or decline to perform an assigned task which they believe is unsafe.
b. Discuss and resolve work and safety concerns.
c. Conduct discussions with co-workers, supervision, or safety representative to resolve work related issues, address potential unsafe conditions, clarify work instructions, propose additional controls, etc.

d. Initiate a Stop Work IMMEDIATELY, when the employee believes a situation exists which places himself/herself, a coworker(s), or the environment in danger or at risk.
e. Report any activity or condition the employee believes is unsafe or for which they have initiated a Stop Work.
f. Notify the affected worker(s) and the supervisor or their supervisor's designee at the location where the activity or condition exists.
g. Notify their supervisor if a raised Stop Work issue has not been resolved to their satisfaction through established channels prior to the resumption of work.

B. Management/Supervisor/ Field Work Supervisor Responsibilities

(1) Management and supervision are committed to promptly resolve issues resulting from an employee-raised Stop Work issue.

(2) Management (e.g., Directors, Managers, Supervisors) responsibilities are to:

a. Resolve any issues that have resulted in an individual stopping a specific task(s) or activity.
b. Provide feedback to individual/s and the affected work group who have exercised their Stop Work responsibility on the resolution of their concern prior to resuming work.
c. If the employee that issued a stop work is not available due to reasons such as vacation, shift change, or training then the supervisor provides the feedback to the safety representative, prior to resuming work.
d. Notify the employer's Safety Representative, if a raised stop work issue has not been resolved.
e. Ensure no actions are taken as reprisal or retribution against individuals who raise safety concerns or stop an activity they believe is unsafe.

C. Safety Director or Contractor Safety Representatives(s) Responsibilities

(1) Safety Director or Contractor Safety Representatives(s) are responsible to:
a. Assist employees, supervision and management in the resolution of safety issues and concerns.
b. Immediately contact management and work to resolve issues when an employee has called a situation to their attention that has not been resolved.
c. Discuss resolution with employees involved in a work stoppage where resolution was completed after their shift or when they were unavailable, or where he/she acted as their representative in reaching resolution.
d. Work as the agent of an employee that prefers to remain anonymous to work directly in the resolution of the stop work.

4.0 Process:

A. Employee Stops work if an activity or condition is believed to be unsafe, such as:

(1) A situation exists that places them, their coworker(s), contracted personnel, or the public at risk or in danger;
(2) A situation could adversely affect the safe operation or cause damage to the facility; or
(3) A situation could result in a release of chemical effluents to the environment above regulatory requirements or approvals.
(4) To clarify work instructions or to propose additional controls.

B. Employees ensure the work/activity is in, or placed in a safe condition and immediately notify supervision/management/Safety Director and affected personnel/workers.

C. Management/Safety Director/Safety Representatives will resolve any issues that have resulted in an employee stopping work or an activity.

D. Management/Safety Director/Safety Representatives will notify the client/client representatives as required by client's procedures.

E. Management/Safety Director/Safety Representatives will involve individuals who initiated the Stop Work or their appropriate safety representatives if the individual is not available, in reaching mutual agreement on the resolution or proposed actions necessary to return to work.

F. Management/Safety Director/Safety Representatives will verify any necessary corrective actions are taken before resuming an activity and are documented in accordance with procedures (logbook or other established method of reporting/tracking/communicating safety issues and corrective action management).

G. If a Stop Work has not been resolved to the mutual agreement of management, safety director/Safety representative and employee(s), then the stop work remains in place and The Palmerton Group will notify the appropriate client/company management and safety representatives.

H. Work may be resumed when employee, safety representatives and management agree that the issue has been resolved. The objective is to reach a safe resolution at the lowest levels of engagement.

ATTACHMENT 4
VanDeMark, Chemical Inc. Policies and Procedures for Contractors

VANDEMARK CHEMICAL INC.
CONTROLLED DOCUMENT

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APPENDIX

A. Safety and Health Policy Statement

1.0 Management Commitment & Employee Involvement

At **VanDeMark Chemical Inc.**, management commitment provides the overall focus for the Safety and Health Program (SHP). By taking a positive and proactive approach, management promotes proper employee attitude towards safety and health. Employees are empowered to participate in the Safety and Health Program (SHP) as partners, to express their ideas, and implement improvements in the pursuit of safety and health excellence. A well balanced mix of management commitment and employee participation results in establishment of reasonable goals, expectations, and achievement of stated objectives towards a safe and healthful workplace.

Safety and health is considered as an integral part of every job at our facility. An important component of each employee's job is an appropriate awareness of safety and health issues and the knowledge to perform assigned tasks in a manner that achieves a safe workplace. Responsibility for performance is assigned, resources are provided, and individuals are accountable for performing according to VanDeMark Chemical Inc. Safety and Health Program (SHP) expectations.

The following sections outline the necessary elements of a program that balances management commitment with employee participation.

1.1 Safety And Health Policy Statement

VanDeMark Chemical Inc's. safety and health policy statement is the foundation of our safety and health program. The policy statement is intended to:

- Drive the development of goals and policies for the Safety and Health Program (SHP)
- Communicate the importance of safety and health to every employee
- Communicate management's commitment to the safety and health of the workforce
- Communicate the importance of employee participation in the Safety and Health Program (SHP)

VanDeMark Chemical Inc's. safety and health policy statement is included as **Appendix A**.

1.2 Goals and Objectives of the Safety and Health Program

Goals and objectives of **VanDeMark Chemical Inc.** are communicated to each employee. Each employee's role is defined relative to performance of the assigned activities and tasks. Monitoring of goals shall be conducted and published to ensure that progress is being made. Measurement of this goal shall be in the form of OSHA (Occupational Safety & Health Administration) recordable and lost time accident and injury rates and incidents with an impact off site. Other metrics may be included. These are reviewed during the management review of this program.

1.3 Management Involvement

VanDeMark Chemical Inc. management is actively involved in promoting safety and health awareness and setting an example for the organization through leadership and the pursuit of safety and health excellence. Management commitment to the pursuit of safety and health excellence shall be demonstrated by:

- Establishing annual Safety and Health Program goals and objectives.
- Participation in a committee to oversee the Safety and Health Program and ensure that the Stated Goals and Objectives are being met.
- Maintain a department to administer and implement the Safety and Health Program (SHP).

The "**VanDeMark Chemical Inc. Safety Committee "(Safety Committee)** shall act as the steering committee for Safety & Health Program. The core members of the committee shall be comprised of Management Staff, the EHSQ department and employee representatives from the Plant. The Safety Committee's purpose shall be to provide direction and goals for VanDeMark Chemical Inc's. Safety and Health Program (SHP) and insure that resources are available to meet the stated objectives.

The **"VanDeMark Group Safety Department"** shall be responsible for administration of the Safety and Health Program (SHP). This shall include:

- Development of programs
- Communication & training
- Documentation of requirements
- Monitoring objectives

1.4 Employee Involvement

The purpose of employee involvement is to communicate employee concerns and to utilize employee experience and skills to make the safety and health program more effective.

Employees participate in **VanDeMark Chemical Inc.** Safety and Health Program (SHP) by:

Employee involvement activities:

{ Attending safety training (QA-0005-PR)
{ Attending safety meetings (SE-0128-00)
{ Participating in hazard reviews (SE-0003-00)
{ Participating in accident / incident investigations (SE-0026-00)
{ Reviewing and commenting on operating procedures & Safe Operating Procedures (SOP's) (QA-0100-00)
{ Participating in Job Safety Analysis (JSA's) (SE-0024-00)
{ Conducting routine safety inspections
{ Participating in safety audits (SE-0035-00)
{ Safety Achievements (Safety Recognition : SE-0058)

1.5 Responsibility, Authority, Resources

VanDeMark Chemical Inc.'s employees' roles and responsibilities identified in the Safety & Health Program shall be communicated to them upon commencement of employment.

Employee responsibilities include: (Employee - All people employed by VanDeMark Chemical Inc..)

{ Work safely
{ Following safety rules
{ Reporting all injuries immediately
{ Reporting workplace hazards
{ Participating in the employee-involvement activities identified above
{ Every employee is empowered to take whatever action is necessary to prevent accidents and environmental incidents

Supervisor responsibilities include: (Any employee who supervises other employees)

{ Work safely
{ Conducting initial accident and incident investigation
{ Participating in conducting training
{ Monitoring safety performance
{ Conducting training programs

Management responsibilities include: (Any employee who holds a management level position [Manages supervisors].)

{ Work safely
{ Auditing safety program
{ Conducting baseline worksite surveys
{ Correcting workplace hazards
{ Providing for preventive maintenance
{ Providing emergency response plans
{ Providing medical and first aid programs

{ Conducting training programs

Once responsibility is assigned, adequate authority and resources to carry out the tasks and activities are also authorized.

1.6 Monitoring and Auditing Performance

Periodic monitoring shall be conducted by **VanDeMark Chemical Inc.** in order to assess achievement of stated goals and objectives. Each employee is held accountable for meeting expectations for successful performance. Safety performance shall be part of each employee's job function. Monitoring of the program shall be performed in the following manner:

{ Employee performance evaluations shall review safety performance (Responsibility - All managers)
{ Lost Time and OSHA (Occupational Safety & Health Administration) Recordable injury and illness records shall be updated monthly with reports distributed throughout the group. (Safety Department, See Section 2.6)
{ An accident performance sign shall be maintained in front of VanDeMark Chemical Inc. Plant (Safety Department)
{ Progress reports on annual objectives shall be prepared and distributed periodically (Safety Department)

Periodic auditing shall be the method to evaluate the effectiveness of the Safety and Health Program (SHP) implementation. Auditing shall verify implementation of the program is consistent with the requirements specified in the Safety and Health Program (SHP).

The audits may be third party, customer, or internal, (conducted by the Safety Department with support from staff and/or employees).

2.0 Worksite Analysis

The purpose of a worksite analysis is to identify any hazards or potential hazards at a worksite so that corrective actions can be taken to prevent injury, illness and loss of property. The worksite analysis shall be applied to new and substantially modified facilities and work activities as well as to existing areas not previously reviewed.

Worksite analysis at **VanDeMark Chemical Inc.** is composed of five major elements:

2.1 Process Hazard Analysis
2.2 Periodic safety inspections

2.3 Reporting of safety concerns
2.4 Accident and incident investigation
2.5 Injury and illness trend analysis

2.1 Process Hazard Analysis

A Process Hazard Analysis, in accordance with OSHA standard 29 CFR 1910.119 on any process with a hazardous substance, (SE-0003). The Safety and Engineering Departments have the ultimate responsibility to implement the PHA procedure and facilitate conducting all PROCESS HAZARD ANALYSIS (PHA'S).

A team will be gathered representing Engineering, Safety, process supervision and employee(s) with knowledge from the area.

2.2 Periodic Safety Inspections

Periodic safety inspections shall fall into two categories, routine & monthly. Requirements for both of these inspections is outlined below:

A routine safety inspection is an inspection performed by employee's in a specific area of VanDeMark Chemical Inc. that is designed to meet the needs of that specific area. The results of these inspections are reported through the supervisor to the department manager. The supervisor or manager is responsible for responding to the issues raised in these inspection reports.

A monthly safety inspection of each plant area shall be conducted to insure that all safety-related equipment, supplies and documents are available and in working condition. The inspection shall be performed by an individual or team capable of insuring that safety-related equipment is in working condition. The inspections are conducted using a checklist format. The checklist will be developed based on the Baseline Safety Survey.

Deficiencies noted in the inspection will be assigned a responsible party to correct the deficiency. A log of the deficiencies shall be maintained by the Safety Department until corrected. Correction shall be verified during the following months safety inspection.

2.3 Reporting of Safety Concerns

Employees are expected to report unsafe conditions or any concerns they have about safety practices, the operation of machinery, or the hazardous properties of chemicals to their supervisor or by recording the concern on the shift report or log. The department supervisor/manager shall be responsible for responding to the concern. If at any time the employee is unsatisfied with a solution or recommendation, he or she should address the concern directly with the Safety Department. No employee will be discriminated against in any fashion for reporting unsafe conditions or concerns.

2.4 Accident / Incident / Hazard Abatement Reporting and Investigation

All accidents, incidents and hazards shall be reported and investigated. Procedures for reporting and investigation of accidents and incidents is found in SOP SE-0026. The Safety Department shall be responsible for administration of the accident / incident reporting system. Employees from the department involved in the accident / incident shall be involved in the investigation.

2.5 Accident Performance Reporting.

All injuries and illnesses shall be reported in accordance with OHSA 29 CFR 1904. These reports will be managed by the Safety Department and Human Resources. This data shall also be summarized and posted within the plant in visible location(s) so all employees can view our performance for managing and reducing workplace injuries and illness.

3.0 Hazard Prevention & Control

3.1 Abatement of Identified Hazards

Once identified, the selection of hazard abatement measures follows a suggested hierarchy of preventative measures. This hierarchy is as follows:

- Elimination of the hazard
- Implementation of engineering controls
- Implementation of safe work practices
- Utilization of personal protective equipment
- Implementation of administrative controls

The most effective means of abatement of hazards shall be selected. The accident / incident investigation form and reporting system shall be used to identify and track hazard corrections. It shall be the responsibility of the Safety Department to administer the accident / incident investigation system.

3.2 Preventive Maintenance Program

It is the responsibility of the Maintenance Department to develop a Preventative Maintenance (PM) Program. The program shall meet the requirements of the OSHA (Occupational Safety & Health Administration) PSM (Process safety management) standard as necessary and prevent breakdown of equipment that may adversely affect the safety of people in the workplace, our neighbors or the environment.

3.3 Emergency Response Program

The nature and location of operations at **VanDeMark Chemical Inc.** involve the potential for circumstances requiring emergency response. An effective emergency response program has been developed which provides for immediate and precise response to these types of emergencies. The emergency response program is comprised of:

- **Emergency Response Plan** - The emergency response plan details the plan of action that is to be taken in the event of an emergency (SE-0030-00)
- **Emergency Response Team** - An emergency response team (ERT) shall be maintained to respond to emergency situation both on-site and off site. The Emergency Response Team (ERT) shall consist of employees from production, maintenance, and the safety / Environmental Department. The team shall be organized and maintained under the direction of the Safety Department.
- **Emergency Response Training** - Training for emergency response team members, and other facility personnel, shall meet OSHA (Occupational Safety & Health Administration) requirements (1910.120) and the needs for this facility. Training requirements are outlined in the employee training section of the SAFETY AND HEALTH PROGRAM (SHP). (Section 4.0)

3.4 Occupational Health Program

An Occupational Health Program will be established based on the types of operations conducted and specific requirements as outlined in OSHA (Occupational Safety & Health Administration) standards. This program shall consist of the following:

- **Preventing Hazards**
  - Employee Fitness for Work Program
  - Drug Testing Program (Employee handbook)
  - Evaluation of Workplace Hazards
- **Early Recognition & Treatment**
  - Bi-annual physical program
  - Industrial Hygiene Monitoring Program (SE-0123-00)
  - 1st Aid / CPR Program
  - Blood borne Pathogen Program (SE-5221)
  - Employee Training Program (QA-0100)
- **Limiting Severity of injuries & illnesses:**
  - Work Related Injury / Illness program
  - Return to work program
- **Record Keeping**
  - Medical Records
  - Injury/Illness Logs

{ Industrial Hygiene Monitoring Results (SE-0126)

VanDeMark Chemical Inc. does not have an Occupational Health Professional on staff. As such, Occupational Health Professional services will be contracted with an off-site medical facility designated by the company. The designated facility shall provide all medical services outlined in the OCCUPATIONAL HEALTH PROGRAM (OHP). This does not preclude an employee from seeing a doctor of their own choice under the employee benefit program.

3.5 Safe Operating Procedures.

The Safe Operating Procedures (SOP's) program has been developed to implement effective programs to address both safety concerns and regulatory requirements. The SAFE OPERATING PROCEDURE (SOP) program is the basis for employee training and one of the key elements in preventing accidents and injuries in the workplace. The SAFE OPERATING PROCEDURE (SOP)'s address the following topics:

- **SE-0007 - Personal Protective Equipment**
- **SE-0002 – Electrical Safety**
- **SE-0125- Hot Work Permits**
- **SE-0128 - Respiratory Protective Equipment**
- **SE-0027 – Piping system Color Coding**
- **SE-0037 - Lockout / Tagout**
- **SE-0124 - Line and Equipment Break**
- **SE-5207 - Confined Space**
- **SE-0076 - Towmotor Safety**
- **SE-0026 - Accident / Incident Reporting**
- **EN-0005 - Process Modifications**
- **SE-0018 - Visitor / Contractor Procedures**
- **SE-0003 - Process Hazard Analysis**
- **SOP #16 - Hazard Communication**
- **SE-5221 - Blood borne Pathogen**
- **SE-0130 – Fall Protection**
- **LB-0001 - 0009 - Chemical Hygiene Plan**

4.0 Safety and Health Training

Influencing the actions of employees and management by training is a key element in creating a safe work environment at VanDeMark Chemical Inc. The types and amounts of training received will be dependent upon the employee's job placement, and the competence level of the employee. The components of the safety and health training program are as follows:

4.1 New Employee Safety and Health Orientation

Proper safety and health orientation of new employees is important in imparting good safety attitudes and awareness from the onset of their employment. Therefore, a new employee safety and health orientation will be performed with each new employee prior to assignment of regular duties. This orientation will be performed by the EHSQ department. Emphasis is focused on the close relationship between safety and health, loss prevention and general performance excellence. The content of the training includes all the information the employee needs to start his/her job safely and to know when to ask for more information or help.

4.2 Initial Training

When a new employee is assigned to a department, the supervisor explains the department rules, protective devices and alarms prior to task assignment. New employee task training includes a review of the written procedures, including safety measures and proper protective equipment for that task and job instruction training conducted by the employee's supervisor or appropriate training group. A copy of the written procedures will be available to the employee for quick reference. Periodic follow-up is conducted to assure adherence to the procedures and to promote a thorough understanding of the tasks.

4.3 Refresher Training

Employees receive refresher training in the safety and health procedures of all tasks they perform. Refresher training generally is accomplished by reviewing safety and health procedures in a safety meeting. Supervisor observations relating to particular jobs and tasks to assure understanding of and compliance with the procedures. When appropriate, written testing or job observation is used to determine the adequacy of the employee's understanding of the material.

4.4 Supervisor/Management Training

Supervisors play one of the most important roles in a successful safety and health program because of their continuous interaction with the facility and the workforce. Suggested additional safety and health training is available to supervisors to assist them in recognition of potential safety and health hazards include the National Safety Council Supervisor Development Training Program and the OSHA (Occupational Safety & Health Administration)Training Institute Construction Safety Training Program. Participation in these programs shall be based upon need at the managers discretion and arranged by the Safety Department.

Manager Training is provided as needed by the requirements of the position. Elements of manager training is outlined in the safety training matrix.

4.5 Hazardous Materials Emergency Response Training

VanDeMark Chemical Inc. maintains a hazardous materials emergency response team for responding to on-site and off-site incidents. The team is headed by the Safety Department and is comprised of volunteers from the plant. The training shall meet the training requirements of the OSHA (Occupational Safety & Health Administration) Hazardous Waste Operations and Emergency Response standard 1910.120 and the specific needs for the facility for emergency response.

4.6 Safety Meetings

Safety meetings open lines of communication, foster sharing of ideas and heighten safety and health awareness. The meetings communicate management commitment to safety and loss prevention and provide a forum for employee's to discuss safety concerns.

Meetings where safety is discussed as all or part of the meeting shall be implemented by each manager. The manager for each area determines the topics for each meeting based upon the needs for that department.

Topics are scheduled in advance and may include: accident / injury performance, accident/incident investigations, regulatory requirements, company requirements in the SAFETY AND HEALTH PROGRAM (SHP), or items of interest to the employees.

Managers shall be responsible for documentation of the safety issues discussed and addressing issues presented by employees at the meeting. The Safety Department can be used as a resource to suggest topics or make presentations at such meetings.

4.7 Documentation

All training is documented. Attendance is required and recorded. Sources and other back-up information used during the training sessions are kept on file for future reference. The safety department shall be responsible for maintaining all recordkeeping required under the SAFETY AND HEALTH PROGRAM (SHP).

Appendix A

Safety and Health Policy Statement

Safely producing quality and competitive products in an environmentally compliant facility is VanDeMark Chemical Inc's. number one goal.

It is the policy of VanDeMark Chemical Inc. to provide a safe working environment for all of our employees. The following philosophies and principals are fundamental to the operation of VanDeMark Chemical Inc.:

- All occupational accidents, illnesses and injuries are preventable.
- Buildings and equipment shall be designed and maintained to provide for a safe working environment and to insure that we do not pose an unreasonable risk to our neighbors.
- All employees share equal responsibility for safety.
- To meet or surpass industry and government safety and health standards and guidelines.

All employees of the company share the responsibility of preventing personal accidents, injuries and illnesses. In carrying out their assigned tasks, employees are required to have regard for their personal health and safety, the safety of their fellow employees, the community, and the safe and proper use of equipment. All employees will make health and safety a consideration in everything they do and are empowered to take whatever action is necessary to prevent accidents and environmental incidents.

Employees will be trained to work safely, helped to understand that it is to their advantage, as well as the company's, to work safely, and to understand that they have a personal responsibility to work safely.

VanDeMark Chemical Inc. is committed to support a continuing effort to improve the industry responsible management of chemicals through the American Chemistry Council (ACC) Responsible Care Program.

VANDEMARK, INC.
CONTROLLED DOCUMENT

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Document Number : SE-0127-F1 Revision: C*

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7/26/00	0	Incorrectly assigned SE-5202-00 Rev. 0; updated to SE-5203-00 Rev.0. Updated SOP to reflect new format and name change; removed Vanchlor from distribution list; Vanchem changed to D-Area
3/08/2010	A	Changed document number from SE-5203 to SE-0127F1. New information for Nitrogen purged equipment & requirements for continuous monitoring. Added language for elevated work. Removed permit to separate document (now SE-0127F1).
10/08/10	B	Updated form to include additional locations to document LEL monitoring if area condition will lend to potential changes in explosive gases.
5/6/11	C	Added additional intervals for fire watch re-inspection after work is complete.

HOT WORK PERMIT

Rev. C
SE-0127- F1
Page 1 of 1

JOB INFORMATION

Issued to: Date:
Reason for Permit:
Location:

PRE-JOB CHECKLIST

		YES	NO
1.	Can the job be done in an area which is more safe?	____	____
2.	Is the adjacent area and equipment safe for Hot Work?	____	____
3.	Can flames ignite materials in the vicinity or areas below? If yes, a fire watch is required.	____	____
4.	Has the explosion meter been calibrated within the last month? Date of Calibration : _____	____	____
5.	Reading from the explosion meter: _____%LEL** _____%O_2 (must be 0% & 20.8%) Signature of the tester: _____		
6.	Is a line breaking checklist necessary?	____	____
7.	Have all process materials (liquids, solids, gasses), been removed from the equipment or lines?	____	____
8.	Have all lines been disconnected or blanked off?	____	____
9.	Is a fire watch needed? If yes, has the fire watch been advised of his duties and understands them? Signature of fire watch: _____	____	____
10.	Is the proper fire extinguisher or water hose available?	____	____
11.	Have the workmen been given special instructions? If yes what: _____	____	____
12.	Is a confined space entry permit necessary?	____	____
13.	Any additional monitoring equipment necessary? Type: _____	____	____
14.	Is the Lock out/Tag out SOP required?	____	____
15.	Will the job be completed in one shift?	____	____
16.	Have all areas affected by the work been notified?	____	____

****Contact Safety if >0% LEL.** **See section 5.5 of procedure if O_2 is <20.8%.**

If area conditions can change within 35 ft of Hot Work, (line breaks, vessel openings, or solvent odors develop), work must be suspended and additional LEL monitoring is required.

Additional LEL Monitoring (specify why & interval below)				

_____

_____

POST JOB CHECKLIST

		YES	NO
1.	Has the work for this permit been completed?	____	____
2.	Has the area been checked for smoldering fires?	____	____
3.	Fire watch inspections needed beyond 30 minutes? (specify ____)	____	____
4.	Have all the materials and equipment from the job been cleaned up	____	____
5.	Is the area ready to resume to normal operations?	____	____
6.	If monitoring equipment was used, was it returned?	____	____

PERMIT APPROVALS

Person issuing permit: _____ (start work) _____(work complete)
Person performing work_____ (start work) _____(work complete)

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3/08/2010	A	Changed document number from SE-5203 to SE-0125. New information for Nitrogen purged equipment & requirements for continuous monitoring. Added language for elevated work. Removed permit to separate document (now SE-0127F1).

HOT WORK PERMITS

1 Applicants: Applies to all employees of VanDeMark, Inc. and all other persons entering the plants.

2 Introduction:

This SOP will address the steps that must be taken prior to the start of any "Hot Work" being conducted. A permit will be issued by the Production Supervisor or designee and a LEL/O2 meter tests will be conducted to ensure the area is safe for work.

3 Definitions

3.1. Hot Work

a. Any welding, cutting, torching, or use of open flames.

b. Any grinding, chipping, chiseling, sandblasting, drilling or use of power hand or gas engine operated tools in areas or on equipment in which flammable gas, vapors, or liquids may be present.

c. Any other activity that may cause sparks, flames or provide ignition source (including the use of power tools not rated for Class 1 Divison 2 hazardous locations).

4 *Responsibility*

4.1. It is the responsibility of the Production Supervisor or designee to approve any hot work done in the area. The person approving the hot work permit is responsible, for the following:

a. Specify any precautions to be taken.

b. Ensure the precautions are taken.

c. Notify the person to whom the permit was issued if there are any changes while the work is in process.

d. Notify any other areas who may be affected by the work.

4.2. It is the responsibility of the person doing the work to:

a. Obtain a Hot Work permit form the production area.

b. Follow all procedures for SE-0125 and all other applicable SOP's.

4.3. Contractors will be required to follow all procedures for SOP's. It is the responsibility of the person bringing the contractor in to the plant to ensure that they are following all aspects of SE-0125.

5.1. Requirements: Hot Work Permits are required for the following:

a. Welding and cutting

b. Torches and open flames.

c. Work done in areas or on equipment where flammable gases, vapors or liquids may be present.

This type of work includes:

a) Chiseling
b) Grinding
c) Sandblasting
d) Drilling
e) Gas Engine equipment
f) Operations of power tools (including welders and sump pumps)
g) Any activity that may initiate sparks or flames

5.2. Applications: Hot Work permits are required in all areas of the plant except in welding and maintenance shop's where Hot Work is performed on a daily basis. If the work done in this area is on equipment containing flammable materials then the SOP applies.

5.3. Procedures

a. The person assigned to do the work should determine the tools & equipment needed to complete the job prior to starting and determine if the work will necessitate a Hot Work Permit. If so, he will then contact the production supervisor or designee and initiate the need for a Hot Work Permit.

b. Explosive/LEL meter tests will be conducted in the Hot Work area. No detectable levels of explosive gases shall be present. Oxygen (O_2) levels must be 20.8% or additional testing/PPE may needed. See section **5.5** for more details.

c. After the tests have been completed and it has been determined the job can proceed safely, a Hot Work Permit will be completed and issued by the production department.

d. The Hot Work Permit will be completed and signed by the production supervisor or designee and the person doing the work.

e. The permit will be posted on the permit board in the area while it is open.

f. When the work is completed the permit will be signed by the person doing the work and signed out by the production supervisor or designee, this will close the permit. The permit will be placed in the area supervisors box and then forwarded to the Safety Department's box.

g. Each work permit is good for the work period only. Each shift a new permit must be issued.

5.4. Other Precautions

a. Be certain that the explosion/LEL/O2 meter is working and calibrated within the last month prior to checking the area.

b. Working in elevated locations requires a review of where sparks, slag and hot debris may fall. These materials must be contained with fire blankets or other means.

c. Remove all combustible or flammable materials in the area prior to starting work. (Rags, wood, paper, cartons, open drums, etc.).

d. A fire watch is required if any of the of the following conditions are met:

i. If combustible/flammable materials, liquids or vapors are adjacent to the opposite side of metal partitions, walls, ceilings or roofs, and may be ignited by conduction or radiation.

ii. Any work performed above ground were sparks can not be contained from potential combustibles on lower levels.

iii. Note wind direction for outdoor work. Flying sparks could cause ignition down wind.

iv. If there is an appreciable amount of combustible/flammable materials, liquids or vapors in the building or closer than 35 feet from the work area.

v. Any detectable reading of LEL gases are found during the survey. Every effort should be made to eliminate the condition. Continuous monitoring will be required by the fire watch.

d. Responsibilities of the Fire Watch

i. Be in the area of the work so that if a fire breaks out he can respond.

ii. Be aware of the hazards associated with the job. If necessary be responsible for taking periodic explosion level tests of the area.

iii. Have the proper fire extinguisher available for use.

iv. Be familiar with the procedure to sound the alarm if it becomes necessary.

v. If Hot Work is conducted on upper levels, the area below should be secured or the fire watch shall be present to prevent any personnel from entering the area.

vi. A fire watch will be maintained for ½ hour after completion of cutting or welding operations to detect or extinguish smoldering fires.

vii. If the LEL meter alarms during continuous monitoring, the work must stop, and the permit immediately expires. The work will need to be reviewed, and a new permit issued.

e. Equipment and Tools

i. All equipment and tools used by the workmen must meet the electrical standards of the area.

ii. Oxygen and acetylene bottles and their associate hoses must be placed in a safe location and not exposed to hot metals and sparks.

iii. Wet down or cover all wood railings, floors, insulation, window sill, etc., that are in the line of falling sparks. This will prevent accidental ignition.

5.5 Special Precautions for Equipment Containing or being Purged with Nitrogen

a) Asphyxiates such as nitrogen present a real hazard of creating an oxygen deficient atmosphere. A nitrogen purge is commonly used to assure an oxygen deficient atmosphere exists in lines or equipment that contained flammable materials or to control moisture content. It is important that the Permit Issuer protect personnel against an oxygen deficient atmosphere under such circumstances.

b) The Permit Issuer must assure that personnel will not be exposed to an oxygen deficient atmosphere (less than 19.5% oxygen) during purging of lines or equipment with an asphyxiate in preparation for, or during Hot Work activities. Deflections on the %O2 meter should be considered a potential for the development of an oxygen deficient atmosphere.

c) The flow rate of nitrogen should be as low as feasible to achieve its intended purpose.

d) The nitrogen purge must be limited to as brief a time a possible. When the work and/or conditions allow, the purge should be immediately shut off.

e) Openings in the system which allow nitrogen to escape during purging should be minimized. Each such opening must be evaluated to determine if an oxygen deficient envelope could develop capable of impacting personnel.

f) Oxygen deficient envelopes that can impact personnel must be identified and appropriate precautions taken to keep people out of those areas or require appropriate respiratory protection be worn by those authorized to enter.

i) An open drain valve at floor level that creates an oxygen deficient envelope extending out a few inches is not considered one that would impact employees.

ii) Special consideration must be given to any enclosed areas in which nitrogen might accumulate to determine the extent to which an oxygen deficient atmosphere may exist.

g) Respiratory requirements for anyone entering an oxygen deficient atmosphere are as follows:

i) If the oxygen content is less than 20.8%, but not IDLH (below 19.5%), a full face pressure demand supplied air respirator or full face pressure demand SCBA must be worn.

ii) If the oxygen content is in the IDLH range (<19.5%) a full face pressure demand supplied air respirator with an auxiliary self contained air supply or full face pressure demand SCBA must be worn. Additionally, any entry into an IDLH (<19.5% O2) atmosphere requires the use of the "buddy system". A second employee must be stationed outside of the IDLH atmosphere with appropriate respiratory equipment for entry and rescue.

6 *Hot Work Permit Forms*

6.1. The Hot Work Permit Form is divided into 3 sections; job information, pre job checklist and post job checklist. The contents of these sections are as follows:

a. Job Information:
This contains a detailed description of the job along with the date, time and location of the job.

b. Pre Job Checklist:
This contains a checklist of procedures to follow to ensure safety of the job. These include:

i. Can the job be done in an area which is more safe?

ii. Is the adjacent area and equipment safe for hot work?

iii. Can flames or sparks ignite materials in the vicinity or area below?

iv. Has the LEL meter been calibrated within a month? If no, have maintenance calibrate the unit and log.

v. What is the flammability reading with the LEL meter (must be non-detect or "0". Oxygen must be present at above 19.5%)?

vi. Is a line breaking checklist necessary?

vii. Have all the process materials (solids, liquids, gasses) been removed from the equipment of lines?

viii. Have all the lines been disconnected or blanked off?

ix. Is a fire watch required? If yes, has the fire watch been advised of the duties and understands them?

x. Is a fire extinguisher or water hose available?

xi. Have the workmen been given any special instructions? If yes, what?

xii. Is a confined Space Entry Permit necessary?

xiii. Do the workmen need any monitoring devices? If yes, what?

xiv. Is the Lockout & Tagout Procedure necessary?

xv. Will the job be completed in one shift?

xvi. Have other areas affected by the work been notified?

c. Post Job Checklist:

This portion is to be filled out by the worker and signed and dated by both the worker and the production department. This will insure that all people involved are aware that the work has been completed and normal operations may resume.

VanDeMark Chemical Inc.
CONTROLLED DOCUMENT

Document Name : Lockout and Line Break Permit

Document Number : SE-0037-FM Rev. A*

Controlled Document Stamp
(For reference purpose only if above stamp does not appear in red)

Author : Brian Law

Date: April 29, 2011

Total # of Pages: 4

Approvals:

EHSQ Manager: _____ Signature _____ Date

COO: _____ Signature _____ Date

Safety Specialist: _____ Signature _____ Date

CONTROLLED COPIES:

Location	Series ID.	Location	Series ID
Quality Assurance Department	001	Quality Assurance Binder - D- Area Prod.	002
Quality Assurance Binder - B- Area Prod	003		

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Revision History

Date	Revision ID	Revision Description
03/02/10	0	Initial issue under own cover, separated from SE-0037.
04/29/11	A	Added addition questions on equipment isolation and process changes during line break. Clarified HHC = Highly Hazardous Chemical

ELECTRICAL OR HAZARDOUS ENERGY WORK PERMIT ☐
LINE OR EQUIPMENT BREAKING PERMIT ☐

Date: _____ Time: _____ Location: _____ Equipment Involved: _____

Description of work: _____

Equip./Line status: Empty ☐ Full ☐ : In Service: YES ☐ NO ☐ : Temp: _____ Pres: _____ Voltage: _____

Chemical(s) Involved: _____

Is it HHC (Highly Hazardous Chemical)? Yes ☐ No ☐ (Must contact Safety if HHC / Ventilation must be employed)

COMPLETE THIS SECTION BEFORE CHECKLIST IS SIGNED

1. Has material involved condition use and location of fire extinguisher & safety shower been reviewed with worker? Yes ☐ No ☐ NA ☐
2. Is lockout and Tag procedure required? Yes ☐ No ☐ NA ☐
3. Is group lockout being used? Yes ☐ No ☐ NA ☐
4. List all isolation points if more space is needed, use attached form: Electrical: _____
   Pumps: _____ Motors: _____ Hydraulic: _____
   Vent: _____ Steam: _____ CBC: _____
   N2: _____ Valves: _____ Other: _____
5. Are locks and tags placed on isolation points? Yes ☐ No ☐ NA ☐
6. Is area roped off and others notified of hazards and a clear escape route available? Yes ☐ No ☐ NA ☐
7. Has a Hot work permit been issued if needed? Yes ☐ No ☐ NA ☐
8. Has the line or equipment been bled, drained and purged into a suitable container? Yes ☐ No ☐ NA ☐
9. Has the equipment been isolated from other plant processes or chemicals? Yes ☐ No ☐ NA ☐
10. Can the conditions surrounding the line break be changed by other processes while open? Yes ☐ No ☐ NA ☐
11. Are the lines properly supported and measures taken in the event of a plugged line? Yes ☐ No ☐ NA ☐
12. Has Pressure been bleed off the system, line or piece of equipment? Yes ☐ No ☐ NA ☐
13. Can all lines to work be double blocked, blinded, or open to atm.? Yes ☐ No ☐ NA ☐
    - If not additional PPE is required. If chemical is HHC, must contact Safety
14. Has a visual inspection of the electrical system been performed? Yes ☐ No ☐ NA ☐
15. Specific Personal Equipment. PPE Guide Number **SE-**_____

☐Full Face Shield ☐Respirator _____ ☐Gloves _____ ☐Level B or A suit ☐Electrical Shielding
☐Electrical Rating Gloves ☐Nomex Clothing ☐Other (Specify): _____

*Contact Safety if answering **NO** to any of the above. **Remember** : Two Layers of Protection shall be maintained at all times.*

COMMENTS/ WRITTEN WORK PLAN: _____

Will the work involve more than 1 shift? **(if yes, new workers/area must initial permit and place their locks as needed)** Yes ☐ No ☐ NA ☐

	APPROVAL TO START WORK		APPROVAL OF WORK COMPLETED	
	SIGNED	DATE	SIGNED	DATE
MAINTENANCE				
MAINTENANCE				
OPER/ LEAD / SUPV				
OPER/ LEAD / SUPV				
MAINT SUP / ENG SUP / MGR				
SAFETY				

APPROVALS REQUIRED

Electrically Hazardous <125V - maintenance, area/operator/lead, area supervisor or manager
>125V - maintenance, area/operator/lead, area supervisor or manager, engineer or electrician

Hazardous Energy - maintenance, area/operator/lead, area supervisor or manager

Line/ Equipment Breaking - maintenance, area/operator/lead, area supervisor or manager

IF Highly Hazard Chemical - maintenance, area/operator/lead, worker supervisor, area supervisor or manager, safety

ADDITIONAL LOCKOUT / TAGOUT LOCATIONS

TYPE	LOCK #	DESCRIPTION	LOCATION
ELECTRICAL			
ELECTRICAL			
ELECTRICAL			
ELECTRICAL			
PUMPS			
PUMPS			
PUMPS			
PUMPS			
MOTORS			
MOTORS			
MOTORS			
MOTORS			
HYDRAULIC			
HYDRAULIC			
HYDRAULIC			
HYDRAULIC			
VENT			
VENT			
VENT			
VENT			
STEAM			
STEAM			
STEAM			
STEAM			
CBC			
CBC			
CBC			
CBC			
N2			
N2			
N2			
N2			
VALVES			
VALVES			
VALVES			
VALVES			
OTHER			
OTHER			
OTHER			
OTHER			

NOTES : VanDeMark Highly Hazardous Chemicals (HHC's) are : Phosgene, Chlorine, Hydrochloric Acid, Thionyl Chloride Hydrazine, Hydroxylamine, & Hot Isocyanates.

VanDeMark Chemical Inc.
CONTROLLED DOCUMENT

Document Name : Lockout and Tag Procedures

Document Number : SE-0037-00 Rev. B*

Controlled Document Stamp
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Author : Brian Law

Date: March 9, 2010

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EHSQ Manager: _____ Signature _____ Date

COO: _____ Signature _____ Date

Safety Specialist: _____ Signature _____ Date

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Location	Series ID.	Location	Series ID
Quality Assurance Department	001	Quality Assurance Binder - D- Area Prod.	002
Quality Assurance Binder - B- Area Prod	003		

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Revision History

Date	Revision ID	Revision Description
5/26/00	0	Original in controlled document system -replace SOP5
11/25/08	A	Update to new number system and new format; changes to audit form
03/09/10	B	Removal of permit to separate document, remove line break chart

1 *Purpose:*

1.1. To establish a uniform lockout and tag procedure and to prevent injury from a sudden release of an energy source.

2 *Application:*

2.1. All personnel working in the plant shall comply with this controlled document which specifies procedures to adequately isolate hazardous energy sources that could cause injury.

3 *Responsibility:*

3.1. It shall be the responsibility of the safety department to develop, maintain, and audit this procedure.

4 *Scope:*

4.1. This standard excludes:

4.1.1 Work on cord and plug equipment if the plug is disconnected and under the exclusive control of the person doing the work (i.e. must be in view of the employee)

4.1.2 Minor equipment adjustments, tool changes, and other minor service that are routine and integral to the use of the equipment.

4.2. The following hazardous energy sources must be identified and isolated prior to issuing a Hazardous Energy Work Permit and the commencement of work:

4.2.1 Electrical

4.2.2 Mechanical

4.2.3 Thermal

4.2.4 Chemical

4.2.5 Pressure

4.2.6 Stored energy

4.3. Operators and mechanics shall work together to isolate all energy sources.

5 *Definitions:*

5.1. *Affected Employees:* are the people whose job requires that they work in an area when servicing and/or maintenance is being performed. Affected employees may be operators and/or contractors.

5.2. *Authorized Employees:* are the people who actually use the lockout/tagout system to perform maintenance and/or servicing on equipment. Authorized employees may be maintenance personnel, contractors, lead operators, or supervisors.

5.3. *Energy Isolation Device:* a mechanical device that physically prevent the transmission or release of energy. Some examples are: manually operated electrical circuit breakers, disconnect switches, valves, etc.

5.4. *Hazardous energy work permit* - Form SE-0037-F1 will be used when a written lockout/tagout procedure is required. (See section 7.3.1)

5.5. *Hazardous Energy Source* - Any source of electrical, mechanical, hydraulic, pneumatic, chemical, thermal, or other energy source which could cause injury or release of chemical to the environment.

5.6. *Locks:* Locks will be color coded and assigned to specific areas such as D-1, D-2, D-7 and D-9. Each set of locks will have only one key.

5.7. *Lockbox:* A box that is used to store a set of operation keys from locks being utilized in the field, this box will be locked out by personnel performing the work.

5.8. *Lockout* - The placement of a lockout device on an energy isolation device ensuring that the energy isolating device and equipment being controlled cannot be separated until the lockout device is removed.

5.9. *Lockout Device* - A device the utilizes a positive means such as a lock to hold an energy isolating device in the safe position and prevent the energizing of a machine or equipment.

5.10. *Multiple Lockout Device* - A hasp with a latching loop on one end and overlapping holes at the other end. This can help to use many locks to lock one energy isolation device in a safe position.

5.11. *Tagout Device* - A device which identifies the reason for the isolation. Tags shall be used with all locks. A tag may be used without a lock if it is impossible to connect a lock to the energy isolation device.

5.12. *Zero Energy State:* Status of equipment for which all energy sources are neutralized.

6 ***Summary***

6.1. This procedure shall direct work as follows:

6.1.1 Preparing equipment for shutdown,

6.1.2 Shutting down the equipment

6.1.3 Identifying and isolating all hazardous energy sources,

6.1.4 Applying lockout/tagout devices to energy isolation points,

6.1.5 Safety releasing all stored energy,

6.1.6 Verification of energy isolation.

6.2. When work is completed, before any energy is restored this procedure shall direct work as follows:

6.2.1 Assurance that equipment is operationally intact,

6.2.2 Assurance that lockout/tagout devices are removed,

6.2.3 Notification of affected employees that lockout/tagout devices have been removed.

6.2.4 All employees are safely positioned for restart.

6.3. The locks and tags specified in this procedure shall be used only for the purpose of lockout/tagout . No other use of these locks and tags is permitted.

Procedure:

7.1. A summary flow chart of the Lockout/Tagout Procedure can be viewed in Attachment A.

7.2. Operations will prepare to remove equipment from service. The operator will make certain that stored energy is dissipated or restrained by methods such as repositioning, blocking, bleeding down, blinding, etc. The operator will then close valves, and de-energize electrical equipment (an electrician must assist with high voltage de-energizing).

7.3. ***A written lockout/tagout procedure (Hazardous energy work permit)*** may be required

7.3.1 Written lockout shall be developed, documented and utilized for the control of potentially hazardous energy except when all of the following elements exist:

- The machine or equipment has no potential for stored or residual energy or re-accumulation of stored energy after shut down which could endanger employees;
- The machine or equipment has a single hazardous energy source which can be readily identified and isolated;
- The isolation and locking out of that hazardous energy source will completely de-energize and deactivate the machine or equipment;
- The machine or equipment is isolated from that hazardous energy source and locked out during servicing or maintenance;
- A signal lockout device will achieve a locked-out condition;
- The lockout device is under the exclusive control of the authorized employee performing the servicing or maintenance;
- The servicing or maintenance does not create hazards for other employees; and
- The employer, in utilizing this exception, has had no accidents involving the unexpected activation or re-energization of machine or equipment during servicing or maintenance

7.3.2 The following is required on a written LO/TO procedure.

- A specific statement of what is being done.
- Identifying and listing all isolation points if more than five locks are utilized, use attached sheet.
- Specific procedural steps for shutting down, isolating, blocking and securing machines or equipment to control hazardous energy;
- Specific procedural steps for the placement, removal and transfer of lockout devices or tagout device and the responsibility for them; and
- Specific requirements for testing a machine or equipment to determine and verify the effectiveness of lockout devices, tagout devices and other energy control measures.

7.3.3 A hazardous energy work permit (SE-0037-F1) shall be used to meet these requirements.

- Use the comment section to write out specific procedures being used along with lock placement locations.
- Use #3 in the checklist to identify the total number of locks and types of energy sources being locked out i.e. valves, switches etc.
- Any additional documentation to the permit such as piping and instrumentation drawings must remain attached and not be removed for any reason.
- After the procedure has been written initially, this form can be maintained for future uses. The form will be filed in the safety department files. The form may be requested from the safety department. Prior to using a written procedure review the equipment to insure that no modifications have been made to the equipment.

7.4. The operator will then review the isolation points with a representative employee from the crew conducting the work (usually mechanics or contractors). The key from the set of operator locks used to secure equipment shall be placed in its lockbox and the lockbox will then be locked out with mechanic or contractor locks using a multi lockout device. So at a minimum for each group working on a job there must be at least one lock on each isolation point or lockbox.

NOTE: ANYONE WORKING ON THE EQUIPMENT MAY INSTALL THEIR PERSONAL LOCK ON THE LOCKBOX WHILE THEY ARE WORKING ON THE JOB IF THEY CHOSE TO DO SO.

7.5. Ensure that the equipment is disconnected from the energy source(s). First check that no personnel are exposed, then verify the isolation of the equipment by operating the push button or other normal operating control(s) at least three times.

7.6. **A lock may be removed only by the person responsible for the lock.** If there is a shift change the old crew's representative will review his/her lock placement and the new crew will have their representative take ownership and sign the permit.

NOTE: EMPLOYEES LEAVING WORK DO NOT REMOVE LOCKS. THE NEXT SHIFT WORKERS WILL REVIEW AND READY TO REPLACE THOSE LOCKS WITH THEIR OWN.

7.7. Group lockout systems can be used for job involving many isolation points. A set of mast locks will be used at each isolation point and the key(s) will be placed a the lock out box. A multi-locking device will be placed on the box and each individual will place his/her lock on the box. All other procedures must be followed as listed above.

8 ***Temporary Removal of Locks for Testing*** When lockout devices must be removed to test or position equipment then the following sequence should be used:

8.1. Clear the equipment or system of tools, material, and personnel,

8.2. Remove nonessential personnel from the equipment area,

8.3. Remove the lockout/tagout devices,

8.4. Energize the equipment or system and proceed with the testing or positioning

8.5. When testing or positioning is completed, de-energize the system again and reapply the lockout/tagout devices in the same order as originally installed.

Return to normal Operations

9.1. Make sure the machine or equipment and immediate area around the machine or equipment have been cleared of all nonessential items and that the machine or equipment components are operationally intact.

9.2. Check the work area to be sure that all employees have been safely positioned or removed from the area.

9.3. Verify that the controls are in neutral.

9.4. Replace all guards.

9.5. Remove all blinds.

9.6. Notify affected employees that the servicing or maintenance is completed and the machine or equipment is ready for use.

9.7. Remove the lockout devices and energize the machine or equipment.

Note: *The removal of some forms of blocking may require re-energizing of the machine before safe removal.*

10 ***Contractors*** - Outside contractors and the on-site employer must exchange lockout/tagout information. CONTRACTORS WILL FOLLOW VANDEMARK'S LOCKOUT/TAGOUT PROCEDURES. Contractors will be responsible for supply their own locks to apply to the isolation devices. When this is done a VanDeMark employee's lock must also be applied. Any removal of locks must follow our lock removal procedure listed in this document.

11 ***Auditing*** This program at a minimum will be audited annually by the safety department. See Attachment B for LO/TO audit form.

12 ***Training*** Training requirements differ for each classification of employee. All employees listed in the two categories listed below will receive initial training when hired and a refresher every three years. Training and refresher training will be documented according to OSHA regulations. Refresher training will be proved to all authorized and affected employees wherever there is a change in their job assignments, when there is a change in the energy control (LO/TO) procedure, or whenever an employer has a reason to believe that there are deviations from or inadequacies in the employee's knowledge or use of the LO/TO procedure

12.1. ***Authorized Employees:*** will receive training in the recognition of applicable hazardous energy source, the type and magnitude of the energy available in the work place and the methods and means necessary for energy isolation and control. A summary of the training course is Attachment C.

12.2. ***Affected Employees:*** Each affected employee will be instructed in the purpose and use of the energy control procedure. Affected Employees will receive a summary of the Authorized employee training.

13 ***Emergency Removal procedures:*** There may be situations when an authorized employee's locks must be removed and that employee is not available to remove it, as required in the general lockout/tagout policy.

Procedures for emergency removal will be strict and strictly adhered to in order to fully protect employees authorized to perform lockout/tagout. If the employee who has locked out a machine cannot be located and his lock must be removed, the following procedures must be followed:

13.1. Attempts must be made to locate the employee who has locked out the equipment. If he/she cannot be located in the plant, an attempt must be made to reach him at home and to explain the circumstances requirement the removal of his lock. If the employee cannot be reached, they will be notified of their lock being removed by placing a notice on their locker notifying them that their lock(s) have been removed due to an emergency situation and they must report to their supervisor prior to starting work..

13.2. Locks can only be removed after authorized by the employee's supervisor, production supervisor, plant manager, or the safety department.

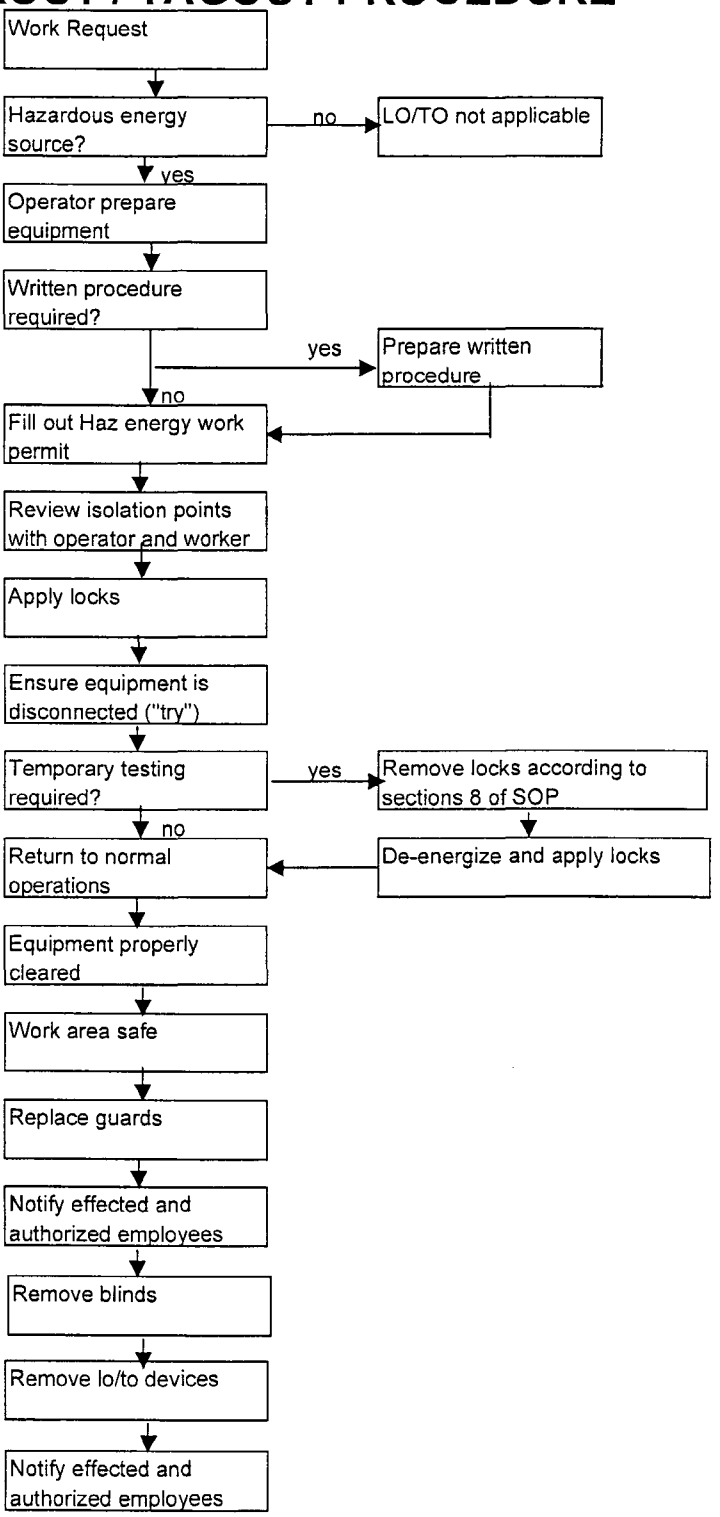
13.3. Locks will be removed by using the spare key located in the production supervisor office.

13.4. Before a lock is physically removed from a machine or equipment, the machinery and surrounding equipment must be thoroughly searched to verify that all employees have been safely positioned or removed from the area.

13.5. After removal, the removed lock and spare key must be returned to the production supervisor's office.

tachment A

LOCKOUT / TAGOUT PROCEDURE



Attachment B

Lockout / Tagout Audit

Inspector Name: Date of Audit:

Lockout/Tagout Procedure Responsibilities Reviewed:
Location of Lockout/Tagout:

Authorized Employees(s) Performing the Lockout/Tagout under review:

_____, _____, _____
_____, _____, _____
_____, _____, _____

List machines, equipment, and or processes in which Energy Control Procedures are being utilized:

_____
_____
_____

	INSPECT THE FOLLOWING	*YES*	*NO*	*NA*
1.	Have affected employees been notified of the lockout/tagout?	____	____	____
2.	Have all hazardous sources of energy been identified? List energy sources: _____ _____	____	____	____
3.	Has machine, equipment and/or process been shut down as normal?	____	____	____
4.	Have all hazardous sources of energy been isolated:	____	____	____
	a. switches moved to the off position?	____	____	____
	b. breakers moved to the off position?	____	____	____
	c. main disconnect switches moved to the off position?	____	____	____
	d. valves closed?	____	____	____
	e. blinds/blind flanges installed and tightened?	____	____	____
	f. pressure relief valves opened?	____	____	____
	h. chemical tanks, lines (pipes), reactors are drained purged cleaned?	____	____	____
5.	Have all authorized employees attached their personal padlock and (completed signed) tag to each energy isolation point?	____	____	____
6.	Have all sources of stored energy been released, bled, blocked or disconnected?	____	____	____
7.	has zero energy state been tested and verified (e.g. tried to start equipment, machine, process)?	____	____	____
8.	Have all the switches, valves etc., used to verify zero energy been to the neutral or off position?	____	____	____
9.	When work is complete steps reversed to return to normal operations?	____	____	____
10.	Were affected employees notified when locks and tags were removed?	____	____	____
11.	Do supervisors, authorized and affected employees know emergency lock and tag removal procedures?	____	____	____
12.	Has the machine, equipment, process etc., been started and tested to verify a return to normal operation?	____	____	____

COMMENTS:

DEFICIENCIES:

retraining necessary?

Is lockout/tagout program review necessary?

List employees names that should be retrained:

I CERTIFY THAT ALL OF THE INFORMATION CONTAINED IN THIS LOCKOUT/TAGOUT AUDIT ARE TRUE.

Inspectors name (print):

Inspectors signature: Date:

Attachment C

Employee Training Record

Course Title: Lockout Tagout & Line/Equipment Breaking **Course number**: 15 and 3

Target Audience: Affected employees

Course Description: Cover Lockout/Tagout requirements according to 29CFR 1910.147 and requirements of our line breaking procedures.

Training Objectives :(list outline)	**Time:**
Lockout/Tagout	10 min.
- Overheads	
- Definitions	
- Potential Energy Sources	
- Locks	
- Tags	
- Energy Isolation procedure	
- Energy Release procedure	
Line or Equipment Breaking	20 min.
- Overheads	
- What is a line break?	
- Hazards	
- VanDeMark procedure	
- Flow chart	
- Permit	
Exercise	30 min.
- Break into groups and each group will come up with a plan to remove pump and review with group	

Training methods and materials: Overheads, Overhead projector, diagram for exercise, overheads of diagram.

Course Time: 1 hour **Course Frequency**: Every 3 years

Means used to verify the employee understood training: Exercise

Employee name:	Employee Signature:
Date:	
Company:	Department:
Trainer Name(s):	

ADDITIONAL LOCKOUT / TAGOUT LOCATIONS

TYPE	LOCK #	DESCRIPTION	LOCATION
ELECTRICAL			
ELECTRICAL			
ELECTRICAL			
ELECTRICAL			
PUMPS			
PUMPS			
PUMPS			
PUMPS			
MOTORS			
MOTORS			
MOTORS			
MOTORS			
HYDRAULIC			
HYDRAULIC			
HYDRAULIC			
HYDRAULIC			
VENT			
VENT			
VENT			
VENT			
STEAM			
STEAM			
STEAM			
STEAM			
CBC			
CBC			
CBC			
CBC			
N2			
N2			
N2			
N2			
VALVES			
VALVES			
VALVES			
VALVES			
OTHER			
OTHER			
OTHER			
OTHER			

VanDeMark Chemical Inc.
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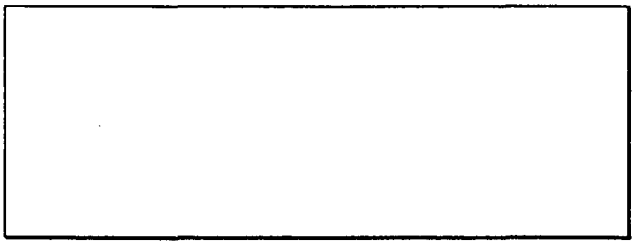
Document Name : VanDeMark Chemical Inc. Emergency Response Guide
Document Number : SE-0030-00 Rev: N



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COO: _____ Signature _____ Date

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Location	Series ID.	Location	Series ID
Quality Assurance Department	001		

**** Please Destroy All Previous Revisions of this Document***

Revision History

Date	Rev ID	Revision Description
10/01/93	0	Initial Issue
	A	Revision A misplaced
07/20/94	B	Changed persons on the emergency call in lists due to management changes at Milward and Vanchlor
05/06/02	C	Update reflects new phone numbers and company name; update to reflect EHSQ numbering system; old revision number SE-5401-94
08/13/02	D	Update to new phone number and new employees
12/20/02	E	Added section R.1.2 , truck panic alert procedure; updated employees phone numbers and emergency contacts
05/22/03	F	Update to ERG pages; added Community Alert Siren Protocol; updated employee phone number and emergency call in list; added additional contacts; update company name change from VanDeMark to ISOCHEM Inc.
06/23/04	G	Update to include Bomb Threat and Suspicious package pages; update to employee listings and call in lists.
09/28/04	H	Update to Qualcom Truck ID numbers; update of employees phone numbers
03/29/06	I	Updates: Added Security guard to notification checklist, updated hazmat team list, updated ER flow sheet (Removed Vanchlor, added security Guard), updated security response plan, updated media contacts, and added a pandemic response plan.
10/24/07	J	Updates: Qualcom Call-in List, employee phone numbers and positions.
09/26/08	K	Updates: Qualcom truck numbers.
09/14/09	L	Updates: Employee phone list.
05/25/10	M	Update Employee titles, phone list and charts with employee names
03/18/11	N	Updated Titles, members of Hazmat team, headcount information. Also broke out the phone sheets into a separate reference document.

1. POLICY

1.1. The VanDeMark Chemical Inc. Emergency Response Guide has been established as a summary of the integrated emergency response plan.

1.2. All employees affected by this program will be informed of the included information and will be expected to follow these procedures accordingly. Affected employees are those involved with the operations in all aspects of the plants and offices.

1.3. This policy has attachments referenced that contain the most current employee, contractor and vendor phone numbers. These reference documents are the list that all phone numbers will be updated through.

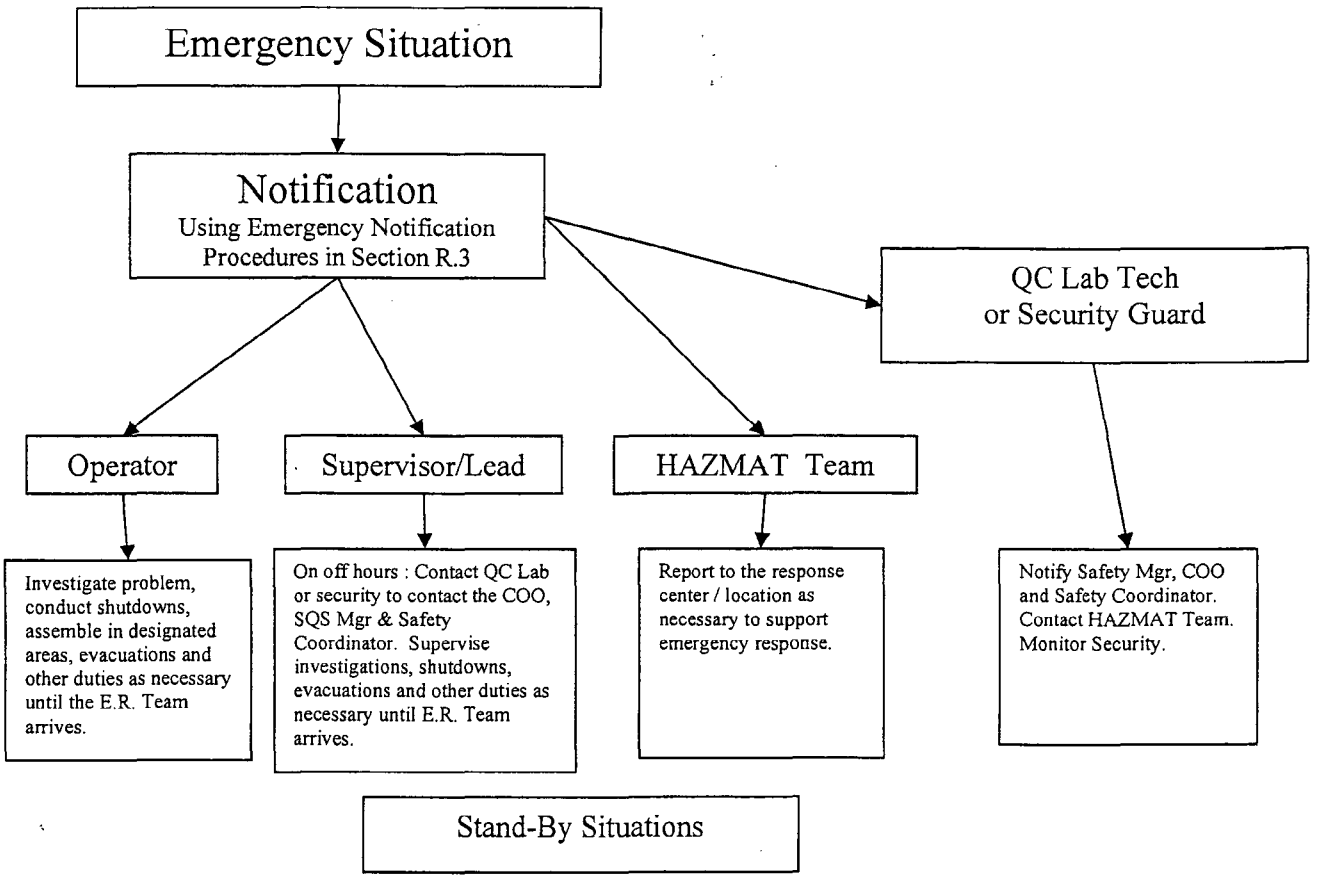
1.4. This plan complies with all federal and state regulatory requirements applicable to this facility including 40 CFR, 29 CFR, and 6 NYCRR.

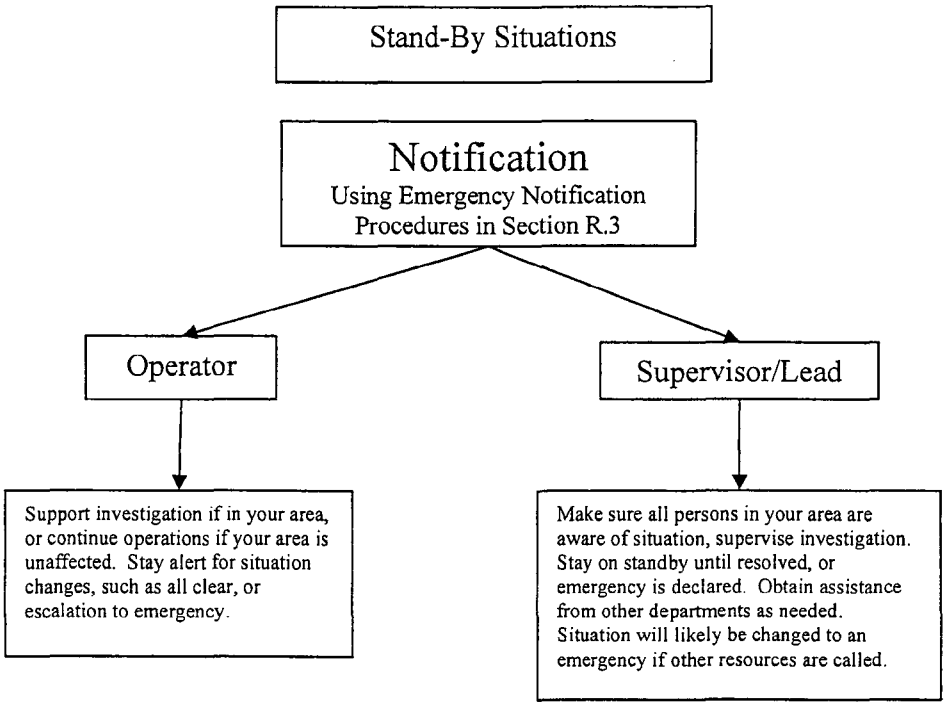
REFERENCE DOCUMENT

R.1 EMERGENCY PHONE NUMBERS TABLE OF CONTENTS

R.1.1	Emergency Response Guide	Page 5 - 8
R.1.2	Assembly / Shelter in place procedures	Page 9
R.1.3	Community Alert Siren	Page 12 - 14
R.1.4	VANDEMARK Emergency Information Hotline Info	Page 15
R.1.5	Phosgene Truck Panic Alert Procedure	Page 16

R.1 EMERGENCY RESPONSE GUIDE





Definitions of Situation:

STAND BY - A situation that is not an emergency, is not immediately threatening to life or property, but could escalate to an emergency. This would include a phosgene alarm below the emergency level. During a standby situation, plants will operate as usual but be prepared to go to an emergency level. Supervisors or Lead operators will notify their departments and make sure that all personnel in their area(s) (including contractors and visitors) are aware of the standby situation, and prepared to assemble.

EMERGENCY - An emergency situation is a situation that occurs that cannot be controlled by the operator, endangers life or property in the immediate or surrounding areas, may adversely affect the quality of air, water, or the environment. Examples include (1) fire, (2) explosion or explosive condition, (3) a large uncontrolled release of a hazardous substance, (4) ruptured process tank or vessel, (5) major utility failure, (6) a release that may affect life, property or the environment inside or outside of the plant, (7) a release of a hazardous substance above a reportable quantity, (8) an employee being sent to the hospital from an event that may have affected health or safety off site.
During an emergency situation, effected plants will perform an emergency shutdown. Supervisors or Lead Operators will notify their departments, make sure that all personnel in their area(s) (including contractors and visitors) assemble in a designated area.

Emergency Notification Procedures - VanDeMark Chemical Inc.:

For any emergency, or standby situation, all plants and departments must be notified by radio first, then by intercom. If all areas do not respond, then use a telephone or verbal notification.
Contact Milward Alloys using the emergency radio on channel three. If they do not respond, call Milward on the telephone.
The plant siren must be sounded for all emergencies. Once radio notification is made, activate the plant siren using a plant telephone (to turn on, or turn off siren, dial 62,wait two seconds, then dial 07). The siren should be activated for 30 seconds then shut off. Immediately after turning off siren use the intercom to announce the emergency to all personnel not monitoring a radio. To activate the plant intercom use a plant telephone (to turn on the intercom, dial 61, listen for tone, the dial 01).
When making notification by radio or intercom be sure to clearly describe the situation. Include the type of problem (fire, spill, chemical release, etc.) area(s) affected, material involved, estimated quantity, wind direction, etc.
The person responsible for each of the areas shall make sure that all persons (including contractors and visitors) in their area are accounted for, and aware of the situation.

Emergency Notification - Off site / Off hours:

For any confirmed emergency on off hours, the Environmental Health and Safety Department and production supervisor must be immediately notified. **If there is off site impact**, contact 911 first, then the Environmental Health and Safety Department and production supervisor.

PHOSGENE RELEASE RESPONSE GUIDELINES

NON-EMERGENCY RELEASES OF PHOSGENE

1. LESS THAN 0.2 PPM FOR LESS THAN 1 HOUR

2. 0.2 PPM TO 1.0 PPM FOR LESS THAN 10 MINUTES

EMERGENCY PHOSGENE RELEASES

1. LESS THAN 0.2 PPM FOR GREATER THAN 1 HOUR

2. GREATER THAN 0.2 PPM AND LESS THAN 1.0 PPM FOR GREATER THAN 10 MINUTES

EVACUATION GUIDELINES

1. GREATER THAN 2.0 PPM FOR ANY PERIOD

2. 0.1 - 0.2 FOR ANY PERIOD TO EXCEED OR EXPECTED TO EXCEED ONE HOUR

3. 0.2 - 1.0 FOR ANY PERIOD EXPECTED TO EXCEED 10 MINUTES

4. 1.0 - 1.99 FOR ANY PERIOD EXPECTED TO EXCEED 5 MINUTES

5. ANY TIME THERE IS A DEFINITELY NOTICEABLE OR IRRITATING ODOR OF PHOSGENE

ANY RELEASE OF PHOSGENE IN AN ENCLOSURE IS NOT SUBJECT TO THESE RESPONSE LEVELS. IF A RELEASE IN AN ENCLOSURE IS UNCONTROLLABLE AND POSES A POTENTIAL FOR RELEASE OUTSIDE OF THE ENCLOSURE, AN EMERGENCY OR STANDBY LEVEL WILL BE DECLARED.

EMERGENCY OR STANDBY NOTIFICATION CHECKLIST (CHECK EACH BOX BELOW ONCE NOTIFIED)

1. ( ) **Use an emergency radio on channel 1 to notify all VanDeMark departments.**

PHOSGENE & D - AREA

( )	PHOSGENE PRODUCTION DEPT.	( )	D - AREA PRODUCTION DEPT.
( )	OFFICE	( )	MAINTENANCE DEPT.
( )	QC/RD LAB	( )	SHIPPING/RECEIVING
( )	SECURITY GUARD		

2. ( ) **Notify Milward Alloys, Vanchlor Inc., and Twin Lakes if they would possibly be effected. Milward must be contacted using the emergency radio on channel 3.**

MILWARD ALLOYS [ ] VANCHLOR [ ] TWIN LAKES [ ]

3. ( ) **Use the plant siren and intercom to notify all personnel, contractors, and visitors working in the plant that are not monitoring the radio.**

( ) **Activate the siren for 30 seconds.**

To turn on, and to turn off the siren dial 62, wait two seconds, then dial 07.

( ) **Use the intercom to make announcement.**

To turn on the intercom dial 61, listen for tone, then dial 01.

When making notification by radio or intercom be sure to clearly describe the situation. Include the type of problem (fire, spill, chemical release, etc.) area(s) affected, material involved, estimated quantity, wind direction, etc.

R.1.2 Assembly / Shelter in place guide

Assembly Areas - Assembly areas have been designated to accumulate personnel on site in the event of an emergency situation. Personnel will assemble in these areas until the decision to return to work or evacuate is made. If for some reason the nearest assembly area is not accessible, proceed to the next closest area.

Sheltering - Sheltering shall be used when an assembly area needs to be secured to prevent airborne releases of harmful vapors from entering the area.

Evacuation center - Off-site area to assemble in the event that evacuation of the plant site is necessary.

Sheltering - Personnel in an assembly area shall "Shelter in place" and wait for further instructions if there is an atmospheric release of a harmful chemical that may impact the assembly area. Sheltering shall be performed when:

- Time is needed to don escape respirators **or when**
- The release is expected to be of a short duration and evacuation would not be a safer alternative.

The basic procedure for sheltering is listed below. For each assembly area, follow the area specific procedure for that assembly area. (Note – the procedure will be posted in the assemble area).

- Secure all doors & place sign on the door "Do not enter, area under shelter"
- Turn off all hoods, fans blowers, HVAC systems that may bring in outside air.
- Close windows
- Seal the doors / vents with plastic sheeting / duct tape. (Note - in the lab secure all lab hood vents.
- Call in headcount to Security (ext 450)
- Maintain radio contact with the emergency response center to obtain further instructions.

HEADCOUNT PROCEDURE

During an emergency situation, it is essential that we have an accurate headcount of personnel. All personnel will report to the nearest assembly and shelter / headcount location. Headcount will be taken lead personnel in the area, and will include contractors and employees from other departments. This information will be communicated to Security at ext 450. Security will also be monitoring radio channel 1. Radio channel 1 airways need to be kept as clear as possible for emergency purposes.

Each department will call in to security. The message should be quick, and to the point. Example, "all accounted for", or "missing Tom Smith, contractor", or "all accounted for, and Chris Jones is here too".

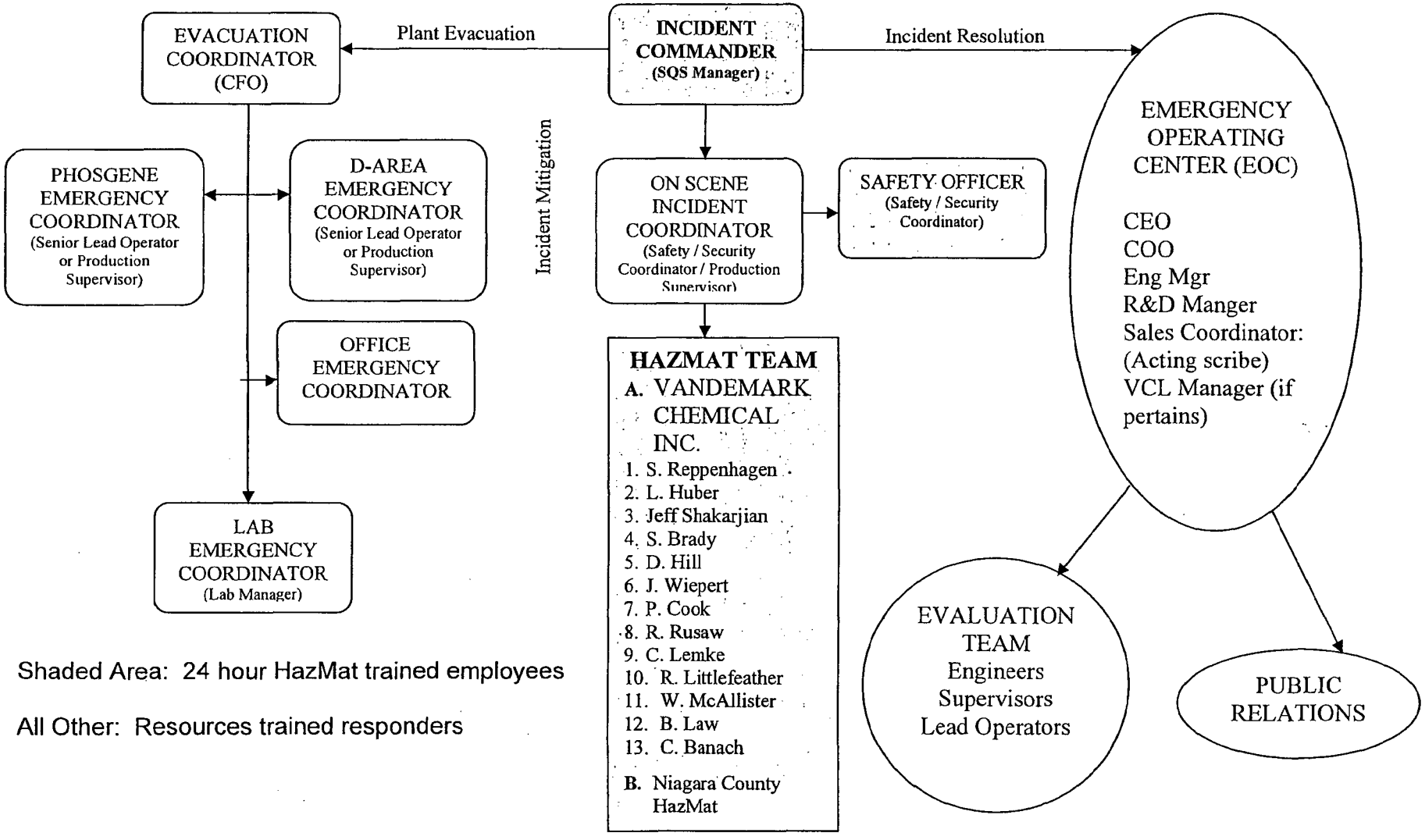
The Guard will populate the table below. Once complete, he will then call the EOC to provide the outcome of the headcount.

LOCATION/CHECK	ADDITIONAL IN AREA	MISSING FROM AREA	Check if in another area
OFFICE CONF. ROOM ☐			
LAB (R&D / QC) ☐			
C-10/LOCKER ROOM ☐			
MAINTENANCE ☐			
PHOSGENE DEPT. ☐			
D-AREA CONTROL ROOM ☐			
WAREHOUSE ☐			

Evacuation areas -
Primary - VanDeMark east parking lot at access gate.
Secondary - Milward alloys north parking lot,
Tertiary - Lockport City Hall.

LOCATION/CHECK	ADDITIONAL IN AREA	MISSING FROM AREA	Check if in another area
VANDEMARK PARKING LOT ASSEMBLY AREA ☐			
MILWARD PARKING LOT ASSEMBLY AREA ☐			

EMERGENCY RESPONSE ORGANIZATIONAL CHART



Shaded Area: 24 hour HazMat trained employees

All Other: Resources trained responders

INCIDENT COMMANDER (IC) - The IC is the person who is responsible for all decisions relating to the management of the incident. The IC is in charge of the incident site. The IC develops the overall response objectives.

EMERGENCY OPERATING CENTER (EOC) TEAM - The emergency operating center team is responsible for assisting the IC with the overall emergency response coordination. Responsibilities include: Notification of VANDEMARK Plant and outside agencies, communication with outside emergency response agencies, keeping records of all events, coordinate rescue work and obtaining additional resources, make determinations on the necessity of community evacuations. Public relation statements will be handled through this team. The EOC will be located in the upstairs copy room in the main office building.-

ON SCENE INCIDENT COORDINATOR (OSIC) - The OSIC is responsible for evaluating and coordinating the response to the incident. The OSIC provides detailed information to the IC, and the evaluation team. The OSIC is in communication with the IC, and takes direction from the IC on how to best respond to the incident. The OSIC is responsible for establishing safe zones, supervising testing of areas inside and outside of the plant for emissions, and is in direct command of the Haz-Mat Response Team.

SAFETY OFFICER - The safety officer shall be part of the response team. The safety officer is solely responsible for the safety of persons involved in the incident. Responsibilities shall include: coordination of hazardous materials response efforts, monitoring of releases, insuring perimeters are established, establishment of decon units if necessary, all other activities relating to the safe operations of the emergency response efforts. The safety officer will work very closely with the OSIC, and when necessary can act as both the safety officer and the OSIC.

HAZ-MAT RESPONSE TEAM - The HAZMAT response team includes both 24 hour trained hazardous materials response technicians and other individuals who can assist in non-hazardous materials response efforts. The hazardous materials response team will be responsible for all hazardous materials response efforts including: assisting in evacuations, incipient fire control, spill containment and cleanup, monitoring, rescue work, and other response efforts. The other members of the response team shall be responsible for non-hazardous materials response assistance including: evacuations, crowd control, traffic control, obtaining response resources, and other actions required by the Emergency response team.

EVACUATION COORDINATOR - The evacuation center coordinator shall be responsible for selection of the evacuation assembly area, accounting for all employees, visitors, and contractors assembled, or evacuated from the site, and report this information to the EOC. The evacuation coordinator communicates with each emergency coordinator, the shipping/receiving supervisor, and the lead man mechanic. The evacuation coordinator maintains a master head count of all people in the facilit notifies the IC of any unaccounted people and relays information from the IC back to each assembly area.

OFFICE EMERGENCY COORDINATOR - The office emergency coordinator shall be responsible for insuring that all persons in the office are accounted for and when required assemble the personnel for cocooning or evacuation. The office emergency coordinator shall also insure that the front gates are closed and secured, that access is controlled, and the phones are manned. The office emergency coordinator provides the evacuation coordinator with the office head count and information from the visitor log on all non-company people signed in.

PHOSGENE EMERGENCY COORDINATOR - The Production emergency coordinator shall be responsible for insuring that all persons inside and around the VANDEMARK Production area are accounted for, and when required, assemble the personnel for cocooning or evacuation. The Production emergency coordinator is responsible for the following areas; The Phosgene department production room, pack out room, condenser room, cylinder paint room, caustic tub room, lab annex, boiler rooms, rail car area, CO trailer area, cylinder test shop, and maintenance shop. The VANDEMARK emergency coordinator provides the evacuation coordinator with a head count.

D - AREA EMERGENCY COORDINATOR - The D - area emergency coordinator shall be responsible for insuring that all persons in the D - area production area are accounted for and when required assemble the personnel for cocooning or evacuation. The D - area emergency coordinator is responsible for the following areas; All of the D - area production areas, C-1 warehouse, refrigeration rooms, and flammable storage tank farm. The D - area emergency coordinator provides the evacuation coordinator with the head count.

LAB EMERGENCY COORDINATOR - The Lab emergency coordinator shall be responsible for insuring that all persons in the Lab are accounted for, and when required, assemble the personnel for cocooning or evacuation. The Lab emergency coordinator provides the evacuation coordinator with the head count

SECURITY GUARD - The security guard and supervisor are responsible for site security and making emergency phone contacts in the event of an emergency.

R.1.3 Community Alert Siren Protocol

Siren activation - The Community Alert Siren will be activated if there is an emergency situation at VanDeMark Chemical Inc. that in the opinion of VanDeMark or the City of Lockport Incident Commander threatens public health or safety. This could include a chemical release, fire explosion, or the serious threat of any of the previously mentioned events. The siren will remain activated as long as the Incident Commander feels it is necessary to adequately notify the public.

Protocol for activation of the siren - When it has been determined that the community needs to be alerted in the event of an emergency situation the Community Alert Siren will be activated according to the activation flow sheet.

City of Lockport Activation of the Siren - The City of Lockport can activate the Community Alert Siren anytime there is an emergency situation at the VanDeMark plant if VanDeMark has not already activated the Community Alert Siren. A lock box for that purpose is located in the area of the E-2 Warehouse on the east side of North Transit Road.

Facility activation of the siren - VanDeMark Chemical Inc. will typically notify the City prior to activation of the Community Alert Siren. In the event of a verified emergency where activation is known to be necessary, VanDeMark will activate the Community Alert Siren immediately and at the same time or immediately thereafter notify the City.

Responsibility - Activation of the siren shall be the responsibility of the VanDeMark incident commander. If however, the situation warrants activation prior to the incident commander being on site, the senior management representative on site can request activation of the siren.

Activation of messages - VanDeMark Chemical Inc. in conjunction with the City shall utilize pre-recorded messages to supplement use of the siren. Messages that are available are listed below and shall be used to supplement the HYPER Link notifications. These messages can be repeated continuously as long as deemed necessary by the Incident Commander.

- **Shelter in place**
- **Evacuate the area**
- **Emergency is over.**

Protocol for all clear - Once the incident commander has determined that the incident no longer poses a threat to the community an audio message may be played indicating that the emergency situation has been terminated. This may be done in addition to the normal means of notification that are described in the City of Lockport Emergency Response plan.

COMMUNITY ALERT SIREN ACTIVATION PROTOCOL

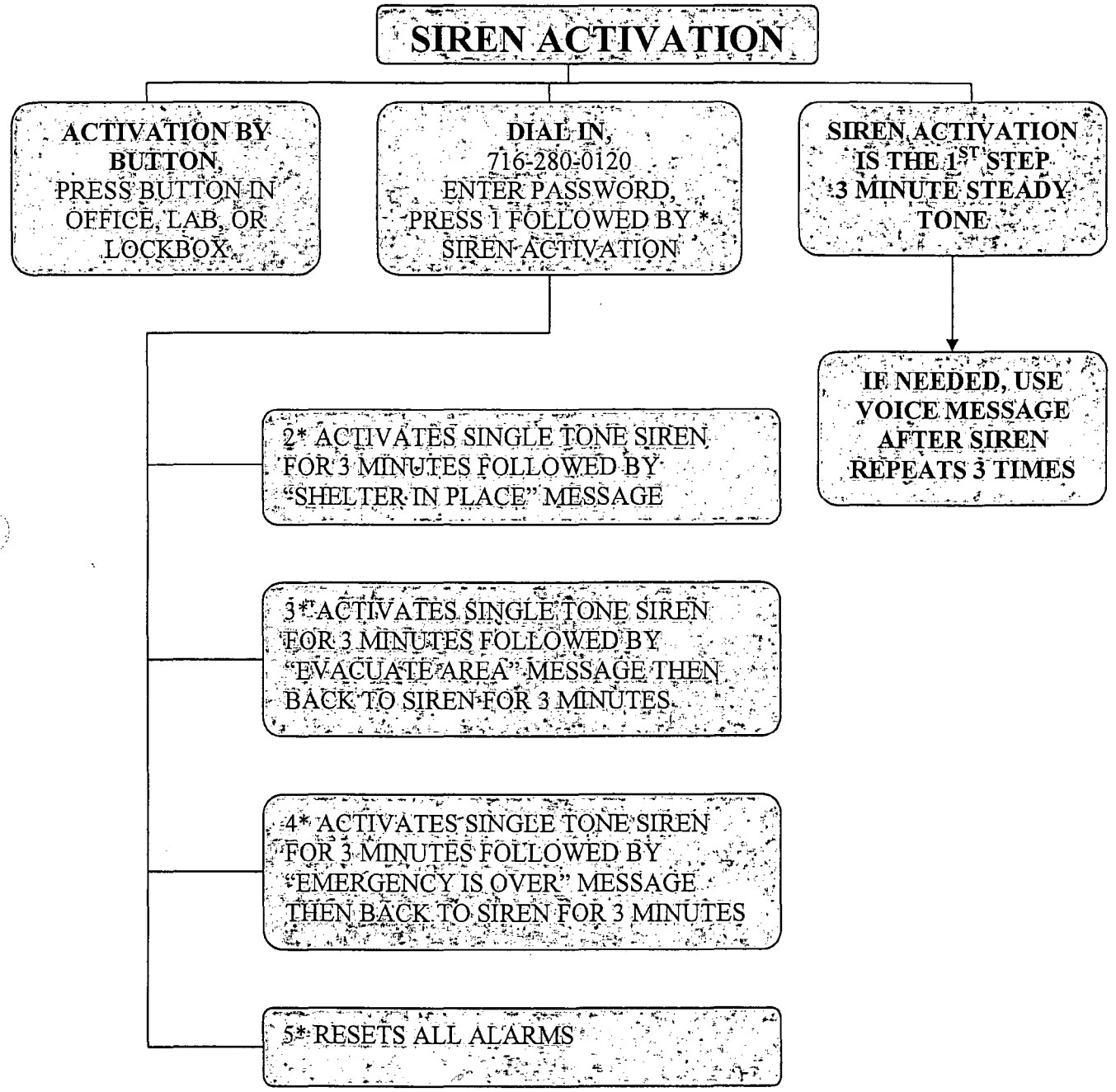
INCIDENT COMMANDER OR DESIGNATE

The incident commander has the responsibility to sound the community alert siren. The siren shall be sounded when there is a release, or a serious threat of a release that will affect public safety.

Every effort should be made to contact Lockport Emergency Services (911) prior to sounding the siren. However, if the threat to public safety is immediate, the siren shall be sounded and Lockport Emergency Services will be contacted immediately afterwards to inform them of the nature of the emergency.

COMMUNITY ALERT SIREN ACTIVATION PROTOCOL

ON SITE PERSONNEL



R.1.5 VANDEMARK Emergency Information Hotline (559-3071 / 559-3072)

The VanDeMark Emergency Information Hotline is to be used in the event of an emergency to provide updates to the public and VanDeMark employees regarding the emergency status.

The Emergency Information Hotline is a phone message and answering system. The EHSQ department shall determine the status of the situation and update the messages as needed. There shall be the following recorded messages that can be used:

#1 Normal Operation - You have reached the VanDeMark Emergency Information Hotline. The plant currently operating under normal conditions. If you wish to speak to someone please leave a message at the tone. The voice mailbox is checked periodically and someone will return your call. Thank you and have a safe day.

#2 Emergency Shelter in Place - You have reached the VanDeMark Emergency Information Hotline. There is currently an ongoing emergency that requires the public to shelter in place. Please tune into the Emergency Alert System for details on the affected areas by this emergency. Radio WLVL 1340; WGR 550, and WKBW TV channel 7. This message will be updated as soon as the emergency status changes. If you have any questions, please leave a message.

#3 Emergency Evacuation Procedure - You have reached the VanDeMark Emergency Information Hotline. There is currently an ongoing emergency that requires the public to evacuate the area. Please tune into the Emergency Alert System for details on the affected areas by this emergency. Radio WLVL 1340; WGR 550, and WKBW TV channel 7. This message will be updated as soon as the emergency status changes. If you have any questions, please leave a message.

#4 Emergency is Over; Return to normal Operations - You have reached the VanDeMark Emergency Information Hotline. There emergency situation is over. The plant has returned to normal operations. This message will be updated if the emergency status changes. If you have any questions, please leave a message.

#5 Open for new message -

The Emergency Information Hotline Protocol Security:
The Emergency Information Hotline has security access codes that will be managed by the EHSQ department and access is limited.

The Emergency Information Hotline Protocol in an Emergency is as follows:

1. Emergency that potentially affects public requires immediate changing of message;
2. EHSQ determining required message;
3. EHSQ Department updates message;
4. Sales Coordinator or Designee checks messages and responds to them according to priority;
5. Sales Coordinator or Designee updates message throughout the emergency until return to normal operations.

The Emergency Information Hotline Protocol for No Emergency is as follows:

1. Message #1 is in place;
2. Sales Coordinator checks messages 1 times per week and passes on to EHSQ Department.

R 1.5 Phosgene Truck Panic Alert Procedure

Service Provider - Qualcomm: 1-800-541-7490

VANDEMARK Truck ID #:

Qualcomm # = MCT # 105066505-VANDEMARK Truck #471013 Cell #609-1478

Qualcomm # = MCT # 105066982-VANDEMARK Truck #471014 Cell #609-1488

This procedures covers the steps taken by VANDEMARK Personnel when a call is received from "QUALCOMM". Qualcomm is our provider of the global positioning devices on the Ryder trucks delivering phosgene.

1 QUALCOMM: When QUALCOMM receives a panic alarm from one of the VanDeMark phosgene trucks from either the push button located on the dashboard or the remote which is carried with the driver, they shall immediately notify the VanDeMark Chemical Inc. facility at 716-433-6764 then dialing "0" for the operator on normal business hours and off hours they will dial ext 447.

QUALCOMM will identify themselves, and indicate that they have received a phosgene panic alarm for MCT#------. The person receiving the call will then transfer the call to the appropriate response personnel, or call a member of the response team at the office or via cell phone/home.

QUALCOMM will then relay the information on the date, time & location of the alarm to a member of the response team and continue to monitor the location of the unit.

2 **VANDEMARK person receiving call from QUALCOMM:** When a call is received from Qualcomm indicating a panic button has been activated, whoever takes the call must immediately notify one of the following people compromising the emergency response team for the type of incident:

a) Debbie Taylor
b) Janet Scott
c) Brian Law
d) Chris Banach
e) Paul Ameis

3 **The response team will then proceed as follows;**

3.1. Attempt to call the driver and determine why the panic button was activated.

3.2. If drivers reply with the designated password that represents they are in **TROUBLE,** a call should be made to the Lockport barracks of the NYS Police (434-5588). The NYS police will put us in contact with the appropriate local law enforcement agencies. **Local law enforcement agencies must be dispatched any time a unit is on the road with phosgene. Even if you have talked to the driver.**

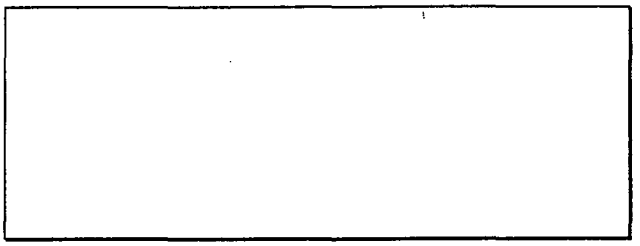
3.3. Activate the VanDeMark Emergency Response Plan, notify Executives and Safety Department as needed.

3.4. Log onto the GPS system to track the location of the truck in question. (Response team identified above only has access to this database.)

Log onto the traffic department file on the pdc to determine the trucks destination if not known. (pdc/data/traffic/current quarter).

VanDeMark Chemical Inc.
CONTROLLED DOCUMENT

Document Name : Visitor / Contractor Safety Procedure
Document Number: SE-0018-00 Revision: I



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Author: Janet Scott

Date: October 15, 2010

Total # of Pages: 23

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Signature Date

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Revision History

Date	Rev ID	Revision Description
5/23/00	A	First in controlled document format
01/28/02	B	Updated to new format. Added increased security measures
06/19/02	C	Update to PQF to make year 2000
03/01/06	D	Updates to include new Security Center Procedures and company name change; change PQF form to CQF form. Name of department change from EHS to EHSQ.
01/18/08	E	Update to include company name change and department name change from QESS to EHSQ.
12/03/08	F	Update to implement the correct verbiage into the document.
10/30/09	G	Updated remove requirement of signing in at main office, added contractors are to sign in with maintenance if working in phosgene area when phosgene not running.
05/24/10	H	Updated insurance statement on F3 – under the insurance title.
10/15/10	I	Updated per Janet Scott – additional insurance information added.

1 Purpose

1.1. This Standard establishes minimum health, environmental, safety and security requirements for visitors, contractors, subcontractors, truck drivers, and any other non-company persons entering the VanDeMark plant site. The purpose of this standard is to protect the health and safety of persons entering company property and to comply with the OSHA process safety standards for contractors. Any non-company person entering the plant must follow the procedures set forth in this standard. This includes signing in and out, reviewing hazard communication information, following plant rules, reviewing emergency procedures.

1.2. When "Contractor" or Subcontractor" is used in this Procedure, it also includes each and every employee of the contractor or subcontractor at the VanDeMark plant site.

2 Application

2.1. Each contractors or subcontractor, and each of their employees on the VanDeMark plant site, shall comply with all requirements of this procedure and comply with all applicable federal, state and local regulations. This procedure also applies to all plant personnel who have responsibility for contractors. The requirements of eligibility, selection and site safety programs may be waived in certain situation. All exceptions must be reviewed and approved by VanDeMark Safety and Health department. Eligibility and selection criteria may not be required for contractors whose tasks are typically performed in a low-exposure area such as an office building ,warehouse or who are engaged in a low exposure task. Examples include, but are not limited to, the following:

- Vendors
- Delivery people
- Computer and copy machine repair personnel
- Non-company visitors
- Salespersons
- Technical support
- Field service engineers
- Lawn mowing/landscaping personnel ***(Insurance required)***
- Fencing/blacktopping Contractors ***(Insurance required)***

3 Responsibilities

3.1. Safety Department

3.1.1 Conducting contractor/visitor orientation

3.1.2 Maintaining orientation records

3.1.3 Evaluating contractor company EHSS program- (New and every 3 years)

3.2. VanDeMark Employee requesting contractor or visitor

3.2.1 Scheduling contractor/visitor orientation with the safety department

3.2.2 Supplying EHSQ all evaluation information listed in section 5.0 for all PSM contractors.

3.2.3 Notifying EHSQ of any injuries or incidents involving contractors

3.2.4 Notifying EHSQ of any waste that can be generated by the contractor

3.2.5 Covering any Hazard Communication information relevant to the job or task. Phosgene information will be covered in the safety orientation.

3.2.6 Obtaining a MSDS of any chemicals the contractor will be bringing on site and forward the MSDS to the EHSQ department

3.2.7 Approving Excavation work and notifying the EHSQ department.

3.2.8 Insuring contractors and sub contractors meet the requirements of this program and are escorted if they do not meet requirements.

3.3. Contractor

3.3.1 Reporting all injuries and incidents immediately to a company representative

3.3.2 Submitting Qualification information at a minimum every three years to VANDEMARK safety department.

3.3.3 Complying with all applicable federal, state, local and company regulations and procedures.

3.3.4 Complying with all VanDeMark safety rules and policies as outlined in this procedure.

3.3.5 Insuring all subcontractors used are VanDeMark approved contractors.

4 VanDeMark Site visitors/contractor rules

4.1. **Training** - All VanDeMark employees requesting contract work, or bringing visitors on site, in conjunction with the safety department must ensure all contractor employees and visitors are given a safety orientation concerning the safety, security and PSM requirements for working on the VanDeMark plant site.

4.1.1 All contractors/visitors that go through orientation and meet other safety requirements will be given a dated access card. Two types of cards will be issued:

- Visitor
- PSM Contractor (Must have valid OSHA 10 hour training See 4.1.6)

4.1.2 Attachment SE-0018-F2, visitor/contractor training and review requirements will be completed for each contractor which is trained and the form will be in the front office contractor training file.

4.1.3 Safety orientation shall be valid for 1 year. Contractors and visitors that have expired training will be required to be given the orientation before they enter the site.

4.1.4 VanDeMark will maintain a data base with contractor names, company, and training dates.

4.1.5 The orientation will cover all aspects of this standard. See section 7 for orientation training plan.

4.1.6 Any contractor that performs work on a covered process that may effect process safety will be required to complete the OSHA 10 hour training.

4.2. **Sign in and out** - It is mandatory to sign in and out of the plant.

4.2.1 Procedures during normal working hours (7:30 am - 4:00 pm)

- The contractor must sign in at the security office.
- The security guard will be required to ensure the following prior to allowing anyone to enter the plant:
- The person is signed in the log book
- The person has gone through the site orientation training within the last 1 year (checking cards or looking up on the data base) and has viewed the safety video.
- Issue a vehicle pass if needed. All vehicles entering the plant are subject to inspection of both inside and outside the vehicle. Vehicle passes will be valid for a one day period. Vehicle passes will only be issued for vehicles that are necessary for performing work on site. Vehicles will be allowed on-site to drop off required supplies/tools but then must be parked in designated parking lots.
- The personnel have the proper PPE to enter the site with contractor or visitor badge.
- The contractor must sign in at the area of the plant they are working.
    - ❖ Phosgene control room (if not running sign in with maintenance)
    - ❖ D-area control room
    - ❖ Lab
- When leaving an area for the day or when the contractor will be required to leave the site for "ANY" period of time, must sign out from the area, and from the security office.
- Leaving permanently for the day requires returning all PPE and identification badges. Identification badges & PPE may be returned after 04:00 pm in the drop box in front of the Lab (A-5)

4.2.2 Procedures during off work hours (4:00 pm - 7:30 am)

- It is requested that all contractors that enter during the morning hours MUST enter after 7:30 am. Any other time for entry into the facility must be approved by a VanDeMark representative and reviewed with the security guard/production supervisor. No vehicles without passes will be admitted until 7:30 am.
- Contractors must sign in at the laboratory log book. The security guard/production supervisor will contact the plant personnel (if needed).
- The contractor must get a vehicle pass from the security guard during normal work hours to bring a vehicle on site. Vehicle passes will be valid for a one day period.
- The contractor must sign in at the area of the plant they are working
- When leaving an area for the day or when the contractor will be required to leave the site for "ANY" period of time, they must sign out from the area, and from the office.

4.3. **Traffic** Assume a maximum 5 mph speed limit anywhere on the plant site. Special permission is required to bring a vehicle on site. A vehicle pass will be issued by the security guard when a vehicle will be one site. All vehicles entering the plant are subject to

inspection of both inside and outside the vehicle. The vehicle will be logged in at the front desk. Contractors must park vehicles in assigned areas. The pass then must be displayed in the windshield of the vehicle at all times. Vehicles required for material delivery must be removed from the plant site immediately following delivery. No personal vehicles are allowed on site without permission from VANDEMARK Management.

4.4. **Personnel Protective Equipment** All visitors are required to wear:

- ANSI approved safety glasses with side shield
- hard hats
- non-vented goggles
- phosgene badges (supplied by VANDEMARK)
- acid gas escape respirator (supplied by VANDEMARK).

Any protective equipment supplied by VanDeMark must be returned at the end of the day. Contractors and visitors are also required to wear long pants and shirts with sleeves, and steel toe safety shoes. Sleeveless shirts and shorts will not be permitted in site. Contractors are required to provide all necessary personal protective equipment and necessary safety equipment. Phosgene badges and Escape respirators, and non-vented goggles will be supplied by VanDeMark.

4.5. **Smoking** Smoking is permitted in designated areas.

4.6. **Cameras monitoring equipment** No camera, visual, or audio recording devices or material, atmospheric or some other media measuring and or sampling equipment, may be brought onto the site without direct written approval of a company representative at the manager level or above.

4.7. **Hazard Communication**

4.7.1 The VanDeMark employee bringing the contractor on site is required to review any hazard communication information. MSDS for on site chemicals can be secured through the VanDeMark company representative. Phosgene safety will be covered in the orientation.

4.7.2 No chemicals may be brought on site unless the Material Safety Data Sheet for that chemical is provided to the VanDeMark Safety Department prior to the contractor bring the chemical on site.

4.8. **Emergency Procedures** In the event of an emergency, proceed to the closest assembly area upwind of the emergency. If evacuation is required proceed to the closest evacuation center upwind. If any chemical odors are noticed in the plant sites, notify company personnel immediately. **In the event of an injury or an exposure to a chemical the contractor must report the incident immediately to company personnel.**

4.9. **Food** No food or beverages are allowed in the plant outside of the lunchroom. The lunch rooms are not for contractor use unless specifically authorized by VanDeMark management. Building C-10 (training center) is open for contractors to have meals.

4.10. **Regulated areas** Contractors may not enter any building unless authorized by company personnel. The contractor shall not proceed to their destination unless they are sure of its location. The contractor shall ask for assistance if they are not sure.

4.11. **Alcohol/drugs** Introduction, possession or use of intoxicating liquors or illegal drugs or being under the influence of such, is prohibited on company property. Any contractor/ employee using a prescription medication which could affect the safe performance of the work must notify their supervisor so a job reassignment can be made. VanDeMark may perform random drug testing on contractors. Failure to submit to testing will result in removal from the work site.

4.12. **Secrecy** All information and data concerning the VanDeMark Chemical Inc. facility and operations must be at all time treated as confidential.

4.13. **Housekeeping/cleanliness** All contractors must recognize that their job is not complete until all housekeeping activities are completed and the work area is left clean neat and safe **at the end of each work day.**

4.14. **Shipping/Receiving** Drivers must follow all of the rules for visitors to the VanDeMark site any additional site specific rules or procedures.

4.15. **Excavation** Any digging or excavation must be approved by the engineering department prior to breaking ground. There may be hazardous underground electrical or chemical lines. All excavation must conform to all applicable O.S.H.A. Standards.

4.16. **Waste Generation** Any generating of waste (hazardous or non hazardous) from work on site must be made known to the environmental department prior to generation or immediately there after. No chemicals or solid waste generated, may be discharged to the sewer system on site without prior approval from the environmental department.

4.17. **Hot work** A hot work permit (issued by VanDeMark personnel) is necessary whenever any welding, cutting , or activity that may cause sparks or flames or the use of open flames. A permit is also required in areas where flammable vapors , gases, dusts or liquids may be present when any drilling, grinding, sandblasting, chiseling, or the operation of power tools is being performed.

4.18. **Lockout/Tag out** Lockout tag out procedures must be followed whenever it is necessary to protect employees from energized machinery, process materials, electricity, or any other substance that can harm the employee or the environment.

4.19. **Line Breaking** A completed line breaking permit (issued by VanDeMark personnel) is required before any work is performed on lines and equipment.

4.20. **Confined space entry** A completed confined space entry permit (issued by VanDeMark personnel) must be completed before any work may begin in a confined space.

4.21. **Electrical safe work practices** GFICs shall be used on all extension cords and portable tools. All electrical cord shall be in good working condition with no rips, tares, or areas with exposed wiring. No work shall be done within 50 feet of high voltage lines (>120 volts) unless the work is approved by site management. All Lockout/Tag out procedures must be followed.

4.22. **Fall protection** Any employee exposed to a fall potential 6 feet or greater must be protected by adequate fall protection equipment.

4.23. **Miscellaneous** All visitors must maintain good order and conduct at all times when on site. Normal conduct must be maintained. This includes a general prohibition of theft,

unauthorized borrowing or use of company property, mischief, sleeping, horseplay, negligence, carelessness, property damage or defamation, property loss, gambling, carrying weapons, soliciting funds, sale of raffle tickets, or other materials, unauthorized use of company phones, idling, falsification of any information, insubordination to any company representative, abusive language or swearing, immoral activities, posting of circulars, bulletins, or posters.

4.24. **Security** Contractors must abide by the site security procedures or be subject to immediate expulsion from the site. Any action that would breach security procedures or policies shall not be permitted. Contractors must follow site entry procedures, do not proceed to areas in which they are not authorized to work, do not allow access to others to the site in any way, (through gates, doors, or fence openings). Contractors must always have their access badges visible and dated for the day they are on site. Entry and egress from the site shall be through the main gate and the guard office. (See the supervisor on off hours.).

4.25. **Failure to comply with any of the provisions above will result in the removal of the individual, offending contractor, employee and or the entire contractor crew from the VanDeMark property, and or termination of the contractor with no liability to the company.**

5 Eligibility

5.1. The VanDeMark person responsible for bringing a contractor on site is responsible for ensuring that the contractor supply the information required by this section.

5.2. This information shall be forwarded to the safety department for review and filing.

5.3. This information MUST be supplied before the contractor can work on site.

5.4. Information needed

5.4.1 A completed Contractor Qualification Form (CQF) SE-0018-F3

5.4.2 OSHA Form 300 log information, and Worker's compensation Experience Modification Rate (EMR) - *These rates are submitted using the CQF.*

5.4.3 Safety and Health Programs as required by OSHA - Required programs are dependent on the type of work the contractor will be performing

1. Hazard Communication
2. Lockout/Tag out
3. Fire Prevention,
4. Fire Extinguisher
5. Hot work
6. Confined space entry
7. Line breaking
8. Fall protection
9. Personal Protective Equipment (PPE)
10. Electrical safety

5.4.4 Records of training as specified by OSHA. Records of SHECN training on all employees involved in process safety equipment.

5.4.5 Company Drug testing policy that meets the standards of VanDeMark's Drug testing policy or willingness to participate in VanDeMark's random drug testing.

5.4.6 Contractor security policy that includes background checks on permanent and contracted employees and sub contractors.

5.4.7 Certification of Liability insurance. All suppliers must have liability coverage of one million dollars per occurrence with a five million dollar total coverage. The insurance certificate will also be required to state the following in the remarks/special provisions section:

- "VanDeMark is named as an additional insured on a primary non-contributing basis with a waiver of subrogation."

6 Selection/Evaluation

6.1. The contractors past safety performance shall be considered during the selection process along with the contractor's technical expertise, experience, and commercial standing.

6.2. Contractors selected should have a target EMR of 1.0 or less for at least two of the three previous years. Should a contractor's EMR exceed 1.0 for more than one of the previous 3 years the contractor may be asked to provide an explanatory report accounting for the high EMR and the corrective steps being taken to reduce the EMR. The contractor must also have a OSHA Injury and Illness incident rate acceptable to VanDeMark's safety and health department.

6.3. The company must have a drug testing policy that meets the standards of the VanDeMark Drug testing policy.

6.4. Prior experience with the contractor at VanDeMark shall be considered , including status, if previously dismissed for safety violations.

6.5. Contractors shall designate one employee at the work site to be responsible for the health and safety oversight.

6.6. The safety department will conduct the contractor evaluation every three years using the Evaluation form (SE-0018-F4). Any new contractors used on site shall also be evaluated before work will begin on site.

6.7. The company shall have a security procedure in place that includes employee background checks. This requirement has been implemented to meet the requirements of Federal and State Security requirements. (*Note: This is a new requirement as of March 2006, contractors requiring additional time to meet this new requirement shall petition VANDEMARK for a temporary variance allowing time to implement an acceptable procedure.)*

7 **Orientation Training plan** - 7.1 to 7.5 shall at a minimum be covered with visitors by viewing the video and passing the orientation exam. All areas listed below will be covered with contractors that work on or near equipment deemed covered under the process safety OSHA standard.

7.1. Site Access Procedures - (see section 4.2)

7.2. Rules for Visitors/Contractors - (see section 4)

7.3. Escape Routes and Escape Respirators

7.4. Emergency plan

7.4.1 Emergency vs. Standby

7.4.2 Assembly areas

7.4.3 Siren procedure

7.4.4 Shelter in place procedure

7.4.5 Evacuation Procedure

7.5. Hazard communication information

7.5.1 Phosgene - Badge information

7.5.2 Chlorine

7.5.3 Others

7.5.4 MSDS location

7.6. Requirements/Eligibility for contractors

7.7. Applicable SOP's

7.7.1 Hot work

7.7.2 Line break

7.7.3 Confined space

7.7.4 PPE

7.7.5 Lockout/Tag out

7.8. Explosion, fire and release information

7.9. Site Specific Information

7.9.1 Phosgene Department

7.9.2 D-Area Department

7.9.3 Laboratory

7.10. Shipping and Receiving policies

7.10.1 All shipping and receiving at VanDeMark will take place between the hours of 8:00 am through 3:00 p.m. Monday through Friday.

7.10.2 There will be no routine exceptions to the above unless cleared with company management or the shipping/receiving coordinator.

7.10.3 All vehicles either delivering or picking up materials for VanDeMark, must first stop at the Security Trailer (located at the Mill Street entrance) where they will sign in and obtain visitor badge and be announced to the Shipping / Receiving Department.

VANDEMARK CHEMICAL INC.
VISITOR/CONTRACTOR TRAINING AND REVIEW REQUIREMENTS

COMPANY OR ORGANIZATION NAME: _____

NAME OF VISITOR OR CONTRACTOR:(print) _____

Truck Driver	[ ]	Government Employee	[ ]
Customer	[ ]	Vendor	[ ]
Contractor	[ ]	Other	[ ]

VISITORS & OTHER NON-COMPANY PERSONNEL

- Site Access Procedure [ ]
- Rules for Visitors/Contractors [ ]
- Escape Routes and Escape Respirators [ ]
- PPE Requirements [ ]
- Security Requirements [ ]
- Emergency plan [ ]
  - Assembly areas [ ]
  - Siren procedure [ ]
  - Shelter in place procedure [ ]
  - Evacuation Procedure [ ]
- Hazard communication information [ ]
  - Phosgene-Badge information [ ]
  - Chlorine [ ]
  - Others [ ]
  - MSDS location [ ]

ADDITIONAL REQUIREMENT FOR: CONTRACTORS

- Requirements/Eligibility for contractors [ ]
- Applicable SOP's [ ]
- Explosion, fire and release information [ ]
- Site Specific Information [ ]
  - Phosgene Department [ ]
  - D-area Department [ ]
  - Laboratory [ ]

TRUCK DRIVERS ONLY

- Shipping / Receiving Policy [ ]

Certification:
I understand that this plant site procedures and used hazardous chemicals. I have reviewed the information that is checked off above and agree to abide by the company rules and policies.

Signature: _____ Date: _____

Trainer/Reviewed by:

_____

VISITOR/CONTRACTOR QUIZ

1. What color does the "Phosgene Badge" turn when exposed to Phosgene?
   a. Blue
   b. Orange
   c. Red
2. Which of the following is the correct action to take when the Plant Emergency Siren is activated?
   a. Report to the nearest Shelter/Assembly area up wind.
   b. Stay where you are.
   c. Go to the Main Gate.
3. Which of the following Personal Protective Equipment is required while in the Plant.
   a. Hard Hat
   b. Safety Glasses
   c. Escape Respirator
   d. Non-vented Goggles
   e. All the above
4. Smoking, eating and drinking is allowed anywhere in the Plant.
   a. True
   b. False
5. What does Phosgene smell like?
   a. Fresh cut grass
   b. Rotten Fruit
   c. Pine Trees
6. All injuries must be reported to VANDEMARK personnel immediately.
   a. True
   b. False
7. Which of the following is the correct action to take when you notice color change on your Phosgene Badge?
   a. Ignore it until it gets darker.
   b. Get a new one.
   c. Leave the area you are in and report it **immediately** to a company representative.
8. It is acceptable to open the back gate for a contractor / visitor that needs to get back into the facility after properly signing in with the guard.
   a. True
   b. False

VanDeMark Chemical Inc.

Contractor Qualification Form (CQF)

Date form completed: _____

GENERAL INFO

1. **Company Name:** _____

   Street Address: _____

   City: _____ **State:** _____ **Zip:** _____

   Mailing Address: _____

   City: _____ **State:** _____ **Zip:** _____

   Telephone: _____

2. **Officers - President:** _____ **Yrs w/Co:** _____

   V. President: _____ **Yrs w/Co:** _____

   Treasurer: _____ **Yrs w/Co:** _____

3. **Contact for Requesting Bids:** _____

   Title: _____ **Telephone:** _____

LEGAL ISSUES

4. **Are there any judgments, claims or suits pending or outstanding against your company?** _____ **Yes** _____ **No**

5. **Are you now or have you ever been involved in any bankruptcy or reorganization proceedings? If yes to either of the above questions, please attach details.**
   _____ **Yes** _____ **No**

INSURANCE

6. Can you provide a certification of Liability insurance with liability coverage of one million dollars per occurrence with a five million dollar total coverage. The insurance certificate will also be required to state the following in the remarks/special provisions section:

> **"VanDeMark Chemical Inc. and its affiliates, directors, officers, employees and agents shall be named as Additional Insureds on the General Liability, Automobile Liability and Excess Liability policies. The insurance provided by the Named Insured on this certificate shall be primary, without right of contribution, with respect to any insurance maintained by the Additional Insured. Waiver of subrogation is granted by the Named Insured to the Additional Insured."**

The certificate of insurance must be submitted prior to acceptance and renewals submitted prior to expiration.

_____ Yes _____ No

The form below MUST be completed prior to starting being considered as an approved supplier:

This Addendum to Contract/Purchase Order by and between _____ [Supplier] and Owner and subsidiaries **VanDeMark Chemical, Inc.** [Owner] for the period covering _____

INDEMNIFICATION:

Vendor shall defend, indemnify and hold harmless Owner and/or its assigns, employees and agents from and against any and all liability claims, suits and judgments and against any costs, fees, expenses (including but not limited to investigation and litigation expenses), disbursements and attorneys' fees, directly or indirectly, resulting from, arising from, and/or in connection with this contract, with respect to any injury to person (including death) and/or injury to property, from any accident, incident and/or occurrence occasioned in whole or part by the negligence of Vendor, it's employees, agents, assigns, and/or sub-vendors. Vendor further agrees, upon the request of the Owner, to assume at Vendor's own cost the defense of ay claim, demand or suit against the Owner that, if the allegations or claims were proved, would be covered by this indemnification obligation.

If any court or law renders any of these indemnity obligations void or otherwise impaired, the parties agree that the obligations of the defense and indemnity shall be construed in favor of the Owner as broadly as permitted by law.

INSURANCE:

In addition to all obligations set forth within this agreement, the Vendor shall carry and maintain as its sole expense the types of insurance in at least the coverage and amounts specified below. Vendor shall provide Owner with acceptable certificates of insurance and shall insure that Owner is named as an "additional insured" upon all such policies to the extent permitted by law. Failure by the Vendor and/or any of its sub-vendors agent, or assigns to maintain such insurance coverage shall be a material and continuing breach of contract for which Vendor shall remain fully liable, to include costs, expenses, fees (including attorneys' fees) and indemnity, regardless of whether Owner is aware of such a breach and regardless of whether Owner fails or refuses to enforce the requirement from time to time.

All policies shall contain a waiver of subrogation in favor of the Owner. No policy obtained pursuant to the requirements of this contract shall contain a deductible greater than $5,000 or self-insured retention.

Each policy shall contain an endorsement providing that such insurance is primary insurance as respect the interest of the Owner and that any insurance maintained by the Owner in excess and not contributing insurance to any and all other coverages that may exist.

The insurance obtained in accordance with this contract shall contain a "cross liability" endorsement stating that in the event that a claim is brought by one insured against another insured under the policy or by an employee of one insured against another insured under the policy, each insured shall be considered a separate insured for purposes of the insurance so long as such endorsement is reasonably available through Vendor's insurance carrier and is offered for no or nominal cost.

All policies and certificates on insurance must contain a provision that the company writing the policy will give to the Owner ten (10) days notice in writing in advance of any modification, cancellation, lapse or change in the effective date, provisions, or limits of the policy.

Vendor shall require that all of its sub-vendors shall carry and maintain the same types of coverage in at least the same amounts as required of the Vendor, with the same requirements as set forth above.

All of the policies/endorsements listed below will have limits as per the sample Certificate of Insurance attached. Please note the proper wording under the "Description of Operations" and "Certificate Holder" sections.

_____ _____

Dated Supplier

SUBSTANCE ABUSE

7. Do you currently have a substance abuse program _____ Yes _____ No
If yes, does it include the following:
_____ Pre-employment Testing _____Random Testing _____ Testing for

NOTE: Contractors working on site will be randomly drug tested along with VanDeMark Chemical Inc. employees

PERFORMANCE

8. From last three year's OSHA Form 300:

	20__	20__	20__
- No. of fatalities (from Column 1)	_____	_____	_____
- No. of lost work day cases? (from Column 2)	_____	_____	_____
- No. of injuries with days away from work? (from Column 3)	_____	_____	_____
- No. of Recordable injuries? (from Column 1, 2 & 6)	_____	_____	_____
- No. of total recordable illnesses? (from columns 8, 9 & 13)	_____	_____	_____

9. Employee hours worked last three years:

Hours/Year	20__	20__	20__
Field	____	____	____
Total	____	____	____

10. Please list your overall Workers compensation Experience Modification Rate (EMR) for the past three years:

EMR: _____ 20__ EMR: _____ 20__ EMR: _____ 20__

11. Please list your past three years' OSHA Recordable Injury Rate (RIR):

RIR: _____ 20__ RIR: _____ 20__ RIR: _____ 20__

*RIR Formula Using OSHA Form 300: $\frac{\text{(Total Column 1 + 2 + 6) x 200,000}}{\text{Total Employer Hours}}$

12. Have you been inspected by OSHA in the last three years? _____ Yes _____ No

If yes, have citations been issued (Attach copies)

PROCESS SAFETY MANAGEMENT

13. Do you have a program in place to support the contractor requirements of OSHA 1910.119 (Process Safety Management of Highly Hazardous Chemicals)? Yes [ ] No [ ]
Are your employees trained on the OSHA Construction standard? Yes [ ] No [ ]

SAFETY & HEALTH

14. Do you have a documented safety program? _____ Yes _____ No

15. Do you have a documented hazard communication program? _____ Yes _____ No

16. Do you have documented safety procedures? _____ Yes _____ No

17. Does your company establish annual safety goals? _____ Yes _____ No
If yes, please list current goals:

18. Do you have a program that recognizes employees for safety performance excellence?
_____ Yes _____ No

19. Do you hold site safety meetings for:

Field Supervisors	_____ Yes _____ No	Frequency	_____
Employees	_____ Yes _____ No	Frequency	_____
New Hires	_____ Yes _____ No	Frequency	_____
Subcontractors	_____ Yes _____ No	Frequency	_____

SAFETY & HEALTH ORIENTATION PROGRAM

	New Hires		Supervisors	
20. Do you have a Safety Orientation Program for new hires and newly hired or promoted supervisors? If yes, does it include instruction on the following?	___Yes	___ No	___ Yes	____ No
- Safe Work Practices	____ Yes	____ No	____ Yes	____ No
- Safety Supervision	____ Yes	____ No	____ Yes	____ No
- Toolbox Meetings	____ Yes	____ No	____ Yes	____ No
- Emergency Procedures	____ Yes	____ No	____ Yes	____ No
- First Aid Procedures	____ Yes	____ No	____ Yes	____ No
- Incident Investigation	____ Yes	____ No	____ Yes	____ No
- Fire Protection and Prevention	____ Yes	____ No	____ Yes	____ No
- New Worker Orientation	____ Yes	____ No	____ Yes	____ No
- Safety Intervention	____ Yes	____ No	____ Yes	____ No
- Hazard Communication	____ Yes	____ No	____ Yes	____ No
- Drug testing	____ Yes	____ No	____ Yes	____ No
- SHECN Training	____ Yes	____ No	____ Yes	____ No
- OSHA Construction Safety Standard	____ Yes	____ No	____ Yes	____ No
- Security Training	____ Yes	____ No	____ Yes	____ No

INSPECTIONS

21. Do you conduct safety inspections? _____ Yes _____ No

22. Do you conduct equipment inspections that meet applicable governmental requirements? _____ Yes _____ No

23. Do you conduct incident investigation? If yes, who receives reports? How are recommendations tracked? _____ Yes _____ No

24. Do you have a full-time safety director? _____ Yes _____ No

25. Do you have a full-time site safety supervisor? _____ Yes _____ No

26. List the highest ranking safety professional in your organization:
Name:_____ Title: _____

Address: _____ Phone: _____

MEDICAL

27. Do you conduct physicals for:
    Pre- employment ___ Pulmonary ___ Respiratory ___

28. Describe how you will provide first aid and other services for your employees while on-site. Also specify who will provide this service:

SECURITY

29. Do you have a written security plan in place? _____ Yes _____ No

30. Do you perform background checks on employees? _____ Yes _____ No

INFORMATION

30. Complete the attached list of employees requested to be on site and status with respect to required contractor training and background checks. (Note: The bottom of the form must be signed & dated by the person responsible for safety in the organization.) (Required)
31. Safety health and security plan submitted. (Upon request)
32. Drug testing policy . (Upon request)
33. Training records. (Upon request).
34. Background check verification. (Upon request.)

Individual to contact for clarification or additional information:

Name: _____ Phone # _____ Fax# _____

Company official name (Print): _____

Company official signature: _____

The above signature is required to be a company official attesting that the information submitted is true to the best of their knowledge.

Listing of employees requested to be on the VanDeMark Chemical Inc. Site.

Contractor Name	OSHA training (Date)	Security Background check & clearance. (Date)	Comments

Safety supervisor / coordinator: _____ **Date:**_____

Signature

DO NOT FILL IN BEYOND THIS POINT

VanDeMark Chemical Inc. USE ONLY

Contractor is _____ Acceptable _____ Conditionally acceptable to be added to approved contractor list.

Reviewer: _____ Date: _____

Comments:

Approved Contractor Checklist

All of the requirements listed below must be fulfilled prior to approval for work on site.

The VanDeMark employee bring the contractor on site is responsible for ensuring that all of these requirements are met and the information is supplied to the Environmental, Health and Safety Department.

Contractor Name: _____

Date Filed : _____

VANDEMARK employee contact: _____

	Yes	No
Contractor Qualification Form (CQF) submitted		
OSHA log submitted (last 3 years)		
Worker's compensation Experience Modification Rate (EMR) Submitted (last 3 years)		
EMR rates are less than 1 of at least two of the past three years.		
- If not explanatory report is required.		
Records of training submitted - (OSHA)		
Required Safety Programs Submitted		
Hazard Communication		
Lockout/tag out		
Fire Prevention/Extinguisher		
Hot Work		
Confined Space entry		
Line breaking		
Fall Protection		
Personal Protective Equipment (PPE)		
Electrical safety		
Drug Testing policy Submitted		
Drug testing Policy meets VanDeMark requirements		
Security policy with employee background checks in place		
Certification of Liability insurance submitted		
All suppliers must have liability coverage of one million dollars per occurrence with a five million dollar total coverage. The insurance certificate will also be required to state the following in the remarks/special provisions section: "VANDEMARK is named as an additional insured on a primary non-contributing basis with a waiver of subrogation."		

Signatures and Approvals:

Submitted by: _____

Safety Department: _____

Appendix C

Appendix 1A
New York State Department of Health
Generic Community Air Monitoring Plan

Overview

A Community Air Monitoring Plan (CAMP) requires real-time monitoring for volatile organic compounds (VOCs) and particulates (i.e., dust) at the downwind perimeter of each designated work area when certain activities are in progress at contaminated sites. The CAMP is not intended for use in establishing action levels for worker respiratory protection. Rather, its intent is to provide a measure of protection for the downwind community (i.e., off-site receptors including residences and businesses and on-site workers not directly involved with the subject work activities) from potential airborne contaminant releases as a direct result of investigative and remedial work activities. The action levels specified herein require increased monitoring, corrective actions to abate emissions, and/or work shutdown. Additionally, the CAMP helps to confirm that work activities did not spread contamination off-site through the air.

The generic CAMP presented below will be sufficient to cover many, if not most, sites. Specific requirements should be reviewed for each situation in consultation with NYSDOH to ensure proper applicability. In some cases, a separate site-specific CAMP or supplement may be required. Depending upon the nature of contamination, chemical- specific monitoring with appropriately-sensitive methods may be required. Depending upon the proximity of potentially exposed individuals, more stringent monitoring or response levels than those presented below may be required. Special requirements will be necessary for work within 20 feet of potentially exposed individuals or structures and for indoor work with co-located residences or facilities. These requirements should be determined in consultation with NYSDOH.

Reliance on the CAMP should not preclude simple, common-sense measures to keep VOCs, dust, and odors at a minimum around the work areas.

Community Air Monitoring Plan

Depending upon the nature of known or potential contaminants at each site, real-time air monitoring for VOCs and/or particulate levels at the perimeter of the exclusion zone or work area will be necessary. Most sites will involve VOC and particulate monitoring; sites known to be contaminated with heavy metals alone may only require particulate monitoring. If radiological contamination is a concern, additional monitoring requirements may be necessary per consultation with appropriate DEC/NYSDOH staff.

Continuous monitoring will be required for all ground intrusive activities and during the demolition of contaminated or potentially contaminated structures. Ground intrusive activities include, but are not limited to, soil/waste excavation and handling, test pitting or trenching, and the installation of soil borings or monitoring wells.

Periodic monitoring for VOCs will be required during non-intrusive activities such as the collection of soil and sediment samples or the collection of groundwater samples from existing monitoring wells. "Periodic" monitoring during sample collection might reasonably consist of taking a reading upon arrival at a sample location, monitoring while opening a well cap or

VDM02093

overturning soil, monitoring during well baling/purging, and taking a reading prior to leaving a sample location. In some instances, depending upon the proximity of potentially exposed individuals, continuous monitoring may be required during sampling activities. Examples of such situations include groundwater sampling at wells on the curb of a busy urban street, in the midst of a public park, or adjacent to a school or residence.

VOC Monitoring, Response Levels, and Actions

Volatile organic compounds (VOCs) must be monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a continuous basis or as otherwise specified. Upwind concentrations should be measured at the start of each workday and periodically thereafter to establish background conditions, particularly if wind direction changes. The monitoring work should be performed using equipment appropriate to measure the types of contaminants known or suspected to be present. The equipment should be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate. The equipment should be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

1. If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.

2. If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities must be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities can resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less - but in no case less than 20 feet, is below 5 ppm over background for the 15-minute average.

3. If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shutdown.

4. All 15-minute readings must be recorded and be available for State (DEC and NYSDOH) personnel to review. Instantaneous readings, if any, used for decision purposes should also be recorded.

Particulate Monitoring, Response Levels, and Actions

Particulate concentrations should be monitored continuously at the upwind and downwind perimeters of the exclusion zone at temporary particulate monitoring stations. The particulate monitoring should be performed using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action level. The equipment must be equipped with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration should be visually assessed during all work activities.

1. If the downwind PM-10 particulate level is 100 micrograms per cubic meter (mcg/m^3) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques must be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 150 mcg/m^3 above the upwind level and provided that no visible dust is migrating from the work area.

2. If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 mcg/m^3 above the upwind level, work must be stopped and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 mcg/m^3 of the upwind level and in preventing visible dust migration.

3. All readings must be recorded and be available for State (DEC and NYSDOH) and County Health personnel to review.

December 2009

OMB Control No. 2070-0078
Expires 5/31/2012

United States
ENVIRONMENTAL PROTECTION AGENCY
Washington, DC 20460

Pesticide Report for Pesticide-Producing and Device-Producing Establishments
Office of Enforcement and Compliance Assurance
Section 7, Federal Insecticide, Fungicide, and Rodenticide Act (7 U.S.C. sec. 136e)
http://www.epa.gov/compliance/monitoring/programs/fifra/establishments.html

1. Establishment Name: VanDeMark Chemical Inc.		2. EPA Est. No. 84910 -- NY -- 001	
3. Establishment Site Address: 1 North Transit Road			
4. City: Lockport	5. State or Country: NY	6. Zip Code: 14094	
7. Establishment Mailing Address: 1 North Transit Road			
8. City: Lockport	9. State or Country: NY	10. Zip Code: 14094	
11. Telephone Number	12. e-Mail		
13. **Check if your establishment's name or address changed** ☐	14. **Did you produce or distribute in 2010?** ☒ **Yes** ☐ **No**		
15. Company Name: VanDeMark Chemical Inc			
16. Company Site Address: 1 North Transit Road			
17. City: Lockport	18. State or Country: NY	19. Zip Code: 14094	
20. Company Mailing Address: 1 North Transit Road			
21. City: Lockport	22. State or Country: NY	23. Zip Code: 14094	
24. Telephone Number: 716-433-6764	25. e-Mail: p.cook@vdmchemical.com		
26. **Check if your company name or address changed** ☐	27. **Check if your Authorized Agent changed** ☐		

Pesticide Production Information

28. Product Code: 1 (If "6," attach formulation per instructions.)			29. EPA Product Registration No.: 39967-48	
30. Product Name: KBR 3023 Technical			31. Product Classification: 04	
32. Product Type: 1	33. Market Sold To: 1	34. RUP Status: 2	35. Unit of Measurement: K	
36. Amount Produced, Repackaged or Relabeled		[2010]	24,000	
37. Amount Sold or Distributed - U.S.		[2010]	24,000	
38. Amount Sold or Distributed - Foreign (**Foreign** establishments **enter "0"**)		[2010]	24,000	
39. Amount To Be Produced, Repackaged or Relabeled in		[2011]		

40. Name of Company Official or Authorized Agent: Michael Kucharski	41. Title of Company Official or Authorized Agent: CEO
42. Signature of Company Official or Authorized Agent (Original signature required): M. A. Kucharski	43. Date: 1/4/11

Reviewer	EPA Office	Post Mark Date	Date Reviewed	Reporting Year **2010**

Where to Submit Reports

DOMESTIC PRODUCERS: Submit reports to the following EPA Regional Office where **your company headquarters is located.**

EPA Regional Offices	States/Terr. Covered	EPA Regional Offices	States/Terr. Covered
U.S. EPA Region 1 **Kan Tham** Toxics and Pesticides Unit (OES 05-4) 5 Post Office Square, Suite 100 Boston, MA 02109-3912 Telephone: 617-918-1872	**CT, MA** **ME, NH** **RI, VT**	**U.S. EPA Region 6** **Chuck Ruple** Pesticides Section (6PD-P) 1445 Ross Avenue Dallas, TX 75202-2733 Telephone: 214-665-6534	**AR, LA** **NM, OK** **TX**
U.S. EPA Region 2 **Michael Kramer** Pesticides Team (MS-500) 2890 Woodbridge Avenue Edison, NJ 08837-3679 Telephone: 732-321-6610	**NJ, NY** **PR, VI**	**U.S. EPA Region 7** **Delbert Kelley** Pesticides Section (WWPD/TOPE/PEST) 901 N. 5th Street Kansas City, KS 66101-2798 Telephone: 913-551-7371	**IA, KS** **MO, NE**
U.S. EPA Region 3 **Kyla Townsend-McIntyre** Pesticides and Asbestos Programs Branch (3LC62) 1650 Arch Street Philadelphia, PA 19103-2029 Telephone: 215-814-2045	**DC, DE** **MD, PA** **VA, WV**	**U.S. EPA Region 8** **Kathleen Craig** Enforcement Division (8ENF-PJ) 1595 Wynkoop Denver, CO 80202 Telephone: 303-312-6049	**CO, MT** **ND, SD** **UT, WY**
U.S. EPA Region 4 **Jacquelyn Wilkerson** Chemical Products & Asbestos Section (APTMD) 61 Forsyth Street, SW Atlanta, GA 30303-8960 Telephone: 404-562-9011	**AL, FL** **GA, KY** **MS, NC** **SC, TN**	**U.S. EPA Region 9** **Glenda Dugan** Pesticides Office (CED-5) 75 Hawthorne Street San Francisco, CA 94105-3901 Telephone: 415-947-4204	**AZ, CA** **GU, HI** **MP, NV**
U.S. EPA Region 5 **Gail Muffitt** PTCS (LC-8J) 77 W. Jackson Blvd. Chicago, IL 60604-3507 Telephone: 312-886-6008	**IL, IN** **MI, MN** **OH, WI**	**U.S. EPA Region 10** **Erin Halbert** Pesticides and Toxics Unit (OCE-084) 1200 Sixth Avenue, Suite 900 Seattle, WA 98101-1128 Telephone: 206-553-4627	**AK, ID** **OR, WA**

FOREIGN PRODUCERS: Submit reports to the **following EPA Washington, DC address:**

U.S. Postal Service Mail Address	**Courier Delivery Address**
Michelle Stevenson U.S. Environmental Protection Agency Agriculture Division (2225A) 1200 Pennsylvania Avenue, NW Washington, DC 20460-0001 USA Telephone: 202-564-4203	Michelle Stevenson U.S. Environmental Protection Agency Agriculture Division Ariel Rios Building – South 1200 Pennsylvania Avenue, NW, Room 6102 Washington, DC 20004 USA

NOTE: The Agency does not notify you when your report is received. To ensure the Agency receives the report, you may wish to send it by certified or registered mail, return receipt requested.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

January 23, 2008

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

MICHAEL A KUCHARSKI
VAN DE MARK CHEMICAL, INC
1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094-

Subject: Assignment of New EPA Company Number

Dear Registrant:

The Office of Pesticide Programs received your request for a company/distributor number. The company number assigned to you is 84910.

You are required to notify the Agency of any change in name or address. All requests for change of company name and/or address, appointment of agent or withdrawal of an agent's appointment, must be sent to the following address:

Document Processing Desk (COADR)
Office of Pesticide Programs (7504P)
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, N.W.
Washington, DC 20460

All products must be registered with the Agency prior to shipment and/or sale. Forms and instructions for registering pesticide products can be obtained by calling the Registration Support Branch at (703) 305-6249. If you are only distributing a product you must complete the Notice of Supplemental Registration of Distributor (EPA form 8570-5). This form can also be obtained by calling the number listed above.

Sincerely,

Adrienne Tunna

Front End Processing Staff
Information Services Branch
Information Technology & Resources Management Division

VDM02099

PBS Number
9-088625

New York State Department of Environmental Conservation
PETROLEUM BULK STORAGE CERTIFICATE

625 Broadway, 11th Floor, Albany, NY 12233-7020 Phone: 518-402-9553

Region 9 NYSDEC - PBS Unit
270 Michigan Avenue
Buffalo, NY 14203-2999
(716) 851-7220

TANK NUMBER	TANK LOCATION	DATE INSTALLED	TANK TYPE	PRODUCT STORED	CAPACITY (GALLONS)	DATE LAST TESTED	TESTING DUE DATE
ST-103	Aboveground - No Contact (on saddles, legs, rack, cradle, etc.)	12/01/1991	Steel/Carbon Steel/Iron	#2 Fuel Oil	10,000		*
ST-105	Aboveground - No Contact (on saddles, legs, rack, cradle, etc.)	12/01/1991	Steel/Carbon Steel/Iron	Gasoline	290		*
ST-106	Aboveground - No Contact (on saddles, legs, rack, cradle, etc.)	12/01/1991	Steel/Carbon Steel/Iron	#2 Fuel Oil	500		*
ST-118	Aboveground - No Contact (on saddles, legs, rack, cradle, etc.)	02/17/2003	Steel/Carbon Steel/Iron	Diesel	300		*

*** Aboveground tanks require monthly visual inspections and may need documented internal inspections as described in 6 NYCRR Part 613**

OWNER:
VANDEMARK CHEMICAL, INC.
1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094

SITE:
VANDEMARK CHEMICAL, INC.
1 NORTH TRANSIT ROAD

LOCKPORT, NY 14094

ON-SITE OPERATOR: VANDEMARK CHEMICAL, INC.
(716) 433-6764

PRIMARY OPERATOR:

EMERGENCY CONTACT: CHRIS BANACH
(716) 433-6764

MAILING CORRESPONDENCE:

CHRIS BANACH
VANDEMARK CHEMICAL, INC.
1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094

ISSUED BY: Commissioner
Joe Martens
PBS NUMBER: **9-088625**
DATE ISSUED: 02/14/2012
EXPIRATION DATE: 03/24/2017
FEE PAID: $500.00

As an authorized representative of the above named facility I affirm under penalty of perjury that the information displayed on this form is correct to the best of my knowledge. Additionally, I recognize that I am responsible for assuring that this facility is in compliance with all sections of 6 NYCRR Parts 612, 613 and 614, and applicable sections of 6 NYCRR Subpart 374-2 (used oil tanks only), not just those cited below:

-- The facility must be re-registered if there is a transfer of ownership
-- The Department must be notified within 30 days prior to adding, replacing, reconditioning, or permanently closing a stationary tank
-- The facility must be operated in accordance with the code for storing petroleum 6NYCRR Part 613.
-- Any new facility or substantially modified facility must comply with 6NYCRR Part 614.
-- **This certificate must be signed and posted on the premises at all times.** Posting must be at the tank, at the entrance of the facility, or the main office where the storage tanks are located
-- Any person with knowledge of a spill leak or discharge must report the incident to DEC within two hours **(1-800-457-7362)**.

2/22/12
Signature of Representative/ Owner — Date

PAUL AMELS, COO
Name and Title of Authorized Representative/Owner (Please Print)

Print Date: 2/17/2012

THIS REGISTRATION CERTIFICATE IS NON-TRANSFERABLE

BEFORE COPYING FORM, ATTACH SITE IDENTIFICATION LABEL OR ENTER

SITE NAME: VANDEMARK CHEMICAL, INC.

EPA ID NO: **NYD175773779**

GM FORM

N.Y.S DEPARTMENT OF ENVIRONMENTAL CONSERVATION

2011 HAZARDOUS WASTE REPORT

WASTE GENERATION AND MANAGEMENT

Instructions: Please see the detailed instructions begining on page 19 of the instructions and forms booklet before completing this form

SEC. 1

A. Waste description
DIMETHYLFORMAMIDE

B. EPA hazardous waste code	C. State hazardous waste code
D001	

D. Source code	G08	E. Form code	W203	F. Quantity generated in 2011	10,040.00
Management method code for source code G25				UOM	POUNDS
				Density	☐ 1 lbs/gal ☐ 2 sg

G. Waste minization code	H. Wastewater		
X	N	Exempt Remedial	N
		Exempt Recycling	N

SEC. 2

Was any of this waste managed on site?
☐ 1. Yes (CONTINUE TO ON-SITE PROCESS SYSTEM 1 ☒ 2. No (SKIP TO SEC.3)

	On-site management method code	Quantity treated, disposed, or recycled on site in 2011
ON-SITE PROCESS 1		
ON-SITE PROCESS 2		

SEC. 3

A. Was any of this waste shipped off site in 2011 for treatment, disposal, or recycling?
☒ 1 Yes (CONTINUE TO BOX B) ☐ 2 No (FORM IS COMPLETE)

	B. EPA ID No. of facility to which waste was shipped	C. Off-site management method code shipped to	D. Total quantity shipped in 2011
SITE 1	NYD080469935	H050	10040.00
SITE 2			
SITE 3			

Comments:

BEFORE COPYING FORM, ATTACH SITE IDENTIFICATION LABEL OR ENTER

SITE NAME: VANDEMARK CHEMICAL, INC.

EPA ID NO: **NYD175773779**

GM FORM

N.Y.S DEPARTMENT OF ENVIRONMENTAL CONSERVATION

2011 HAZARDOUS WASTE REPORT

WASTE GENERATION AND MANAGEMENT

Instructions: Please see the detailed instructions begining on page 19 of the instructions and forms booklet before completing this form

SEC. 1

A. Waste description
WASTE FLAMMABLE LIQUIDS

B. EPA hazardous waste code	C. State hazardous waste code
D001 D021 D022 F002 F003	

D. Source code / Management method code for source code	E. Form code	F. Quantity generated in 2011 / UOM / Density
G08 / G25	W204	148,850.00 / POUNDS / ☐ 1 lbs/gal ☐ 2 sg

G. Waste minization code	H. Wastewater	
X	N	Exempt Remedial N / Exempt Recycling N

SEC. 2

Was any of this waste managed on site?
☐ 1. Yes (CONTINUE TO ON-SITE PROCESS SYSTEM 1 ☒ 2. No (SKIP TO SEC.3)

	On-site management method code	Quantity treated, disposed, or recycled on site in 2011
ON-SITE PROCESS 1		
ON-SITE PROCESS 2		

SEC. 3

A. Was any of this waste shipped off site in 2011 for treatment, disposal, or recycling?
☒ 1 Yes (CONTINUE TO BOX B) ☐ 2 No (FORM IS COMPLETE)

	B. EPA ID No. of facility to which waste was shipped	C. Off-site management method code shipped to	D. Total quantity shipped in 2011
SITE 1	NYD080469935	H050	148850.00
SITE 2			
SITE 3			

Comments:

BEFORE COPYING FORM, ATTACH SITE IDENTIFICATION LABEL OR ENTER

SITE NAME: VANDEMARK CHEMICAL, INC.

EPA ID NO: **NYD175773779**

GM FORM

N.Y.S DEPARTMENT OF ENVIRONMENTAL CONSERVATION

2011 HAZARDOUS WASTE REPORT

WASTE GENERATION AND MANAGEMENT

Instructions: Please see the detailed instructions begining on page 19 of the instructions and forms booklet before completing this form

SEC. 1

A. Waste description
BENZYL CARBAZATE

B. EPA hazardous waste code	C. State hazardous waste code
D001 F005	

D. Source code	E. Form code	F. Quantity generated in 2011
G08	W219	612,440.00
Management method code for source code G25		UOM POUNDS
		Density ☐ 1 lbs/gal ☐ 2 sg

G. Waste minization code	H. Wastewater	
X	N	Exempt Remedial N
		Exempt Recycling N

SEC. 2

Was any of this waste managed on site?
☐ 1. Yes (CONTINUE TO ON-SITE PROCESS SYSTEM 1 ☒ 2. No (SKIP TO SEC.3)

	On-site management method code	Quantity treated, disposed, or recycled on site in 2011
ON-SITE PROCESS 1		
ON-SITE PROCESS 2		

SEC. 3

A. Was any of this waste shipped off site in 2011 for treatment, disposal, or recycling?
☒ 1 Yes (CONTINUE TO BOX B) ☐ 2 No (FORM IS COMPLETE)

	B. EPA ID No. of facility to which waste was shipped	C. Off-site management method code shipped to	D. Total quantity shipped in 2011
SITE 1	NYD080469935	H040	612440.00
SITE 2			
SITE 3			

Comments:

BEFORE COPYING FORM, ATTACH SITE IDENTIFICATION LABEL OR ENTER

SITE NAME: VANDEMARK CHEMICAL, INC.

EPA ID NO: **NYD175773779**

GM FORM

N.Y.S DEPARTMENT OF ENVIRONMENTAL CONSERVATION

2011 HAZARDOUS WASTE REPORT

WASTE GENERATION AND MANAGEMENT

Instructions: Please see the detailed instructions begining on page 19 of the instructions and forms booklet before completing this form

SEC. 1

A. Waste description
HAZARDOUS SOLIDS

B. EPA hazardous waste code	C. State hazardous waste code
D021 D022 F002 F003 F005	

D. Source code / Management method code for source code	E. Form code	F. Quantity generated in 2011 / UOM / Density
G13 / G25	W002	26,480.00 / POUNDS / ☐ 1 lbs/gal ☐ 2 sg

G. Waste minization code	H. Wastewater	
X	N	Exempt Remedial N / Exempt Recycling N

SEC. 2

Was any of this waste managed on site?
☐ 1. Yes (CONTINUE TO ON-SITE PROCESS SYSTEM 1 ☒ 2. No (SKIP TO SEC.3)

	On-site management method code	Quantity treated, disposed, or recycled on site in 2011
ON-SITE PROCESS 1		
ON-SITE PROCESS 2		

SEC. 3

A. Was any of this waste shipped off site in 2011 for treatment, disposal, or recycling?
☒ 1 Yes (CONTINUE TO BOX B) ☐ 2 No (FORM IS COMPLETE)

	B. EPA ID No. of facility to which waste was shipped	C. Off-site management method code shipped to	D. Total quantity shipped in 2011
SITE 1	ARD069748192	H040	26480.00
SITE 2			
SITE 3			

Comments:

BEFORE COPYING FORM, ATTACH SITE IDENTIFICATION LABEL OR ENTER

SITE NAME: VANDEMARK CHEMICAL, INC.

EPA ID NO: **NYD175773779**

GM FORM

N.Y.S DEPARTMENT OF ENVIRONMENTAL CONSERVATION

2011 HAZARDOUS WASTE REPORT

WASTE GENERATION AND MANAGEMENT

Instructions: Please see the detailed instructions begining on page 19 of the instructions and forms booklet before completing this form

SEC. 1

A. Waste description
BENZYL CARBAZATE SLUDGES

B. EPA hazardous waste code	C. State hazardous waste code
D001 F005	

D. Source code / Management method code for source code	E. Form code	F. Quantity generated in 2011 / UOM / Density
G14 / G25	W609	170.00 / POUNDS / ☐ 1 lbs/gal ☐ 2 sg

G. Waste minization code	H. Wastewater	
X	N	Exempt Remedial N / Exempt Recycling N

SEC. 2

Was any of this waste managed on site?
☐ 1. Yes (CONTINUE TO ON-SITE PROCESS SYSTEM 1 ☒ 2. No (SKIP TO SEC.3)

	On-site management method code	Quantity treated, disposed, or recycled on site in 2011
ON-SITE PROCESS 1		
ON-SITE PROCESS 2		

SEC. 3

A. Was any of this waste shipped off site in 2011 for treatment, disposal, or recycling?
☒ 1 Yes (CONTINUE TO BOX B) ☐ 2 No (FORM IS COMPLETE)

	B. EPA ID No. of facility to which waste was shipped	C. Off-site management method code shipped to	D. Total quantity shipped in 2011
SITE 1	ARD069748192	H040	170.00
SITE 2			
SITE 3			

Comments:

BEFORE COPYING FORM, ATTACH SITE IDENTIFICATION LABEL OR ENTER

SITE NAME: VANDEMARK CHEMICAL, INC.

EPA ID NO: **NYD175773779**

GM FORM

N.Y.S DEPARTMENT OF ENVIRONMENTAL CONSERVATION

2011 HAZARDOUS WASTE REPORT

WASTE GENERATION AND MANAGEMENT

Instructions: Please see the detailed instructions begining on page 19 of the instructions and forms booklet before completing this form

SEC. 1

A. Waste description
MIXED AQUEOUS/ORGANIC (H040)

B. EPA hazardous waste code	C. State hazardous waste code
D001 F003 F005	

D. Source code / Management method code for source code	E. Form code	F. Quantity generated in 2011 / UOM / Density
G08 / G25	W219	68,780.00 / POUNDS / ☐ 1 lbs/gal ☐ 2 sg

G. Waste minization code	H. Wastewater	
X	N	Exempt Remedial N / Exempt Recycling N

SEC. 2

Was any of this waste managed on site?
☐ 1. Yes (CONTINUE TO ON-SITE PROCESS SYSTEM 1 ☒ 2. No (SKIP TO SEC.3)

	On-site management method code	Quantity treated, disposed, or recycled on site in 2011
ON-SITE PROCESS 1		
ON-SITE PROCESS 2		

SEC. 3

A. Was any of this waste shipped off site in 2011 for treatment, disposal, or recycling?
☒ 1 Yes (CONTINUE TO BOX B) ☐ 2 No (FORM IS COMPLETE)

	B. EPA ID No. of facility to which waste was shipped	C. Off-site management method code shipped to	D. Total quantity shipped in 2011
SITE 1	NYD080469935	H040	68780.00
SITE 2			
SITE 3			

Comments:

BEFORE COPYING FORM, ATTACH SITE IDENTIFICATION LABEL OR ENTER

SITE NAME: VANDEMARK CHEMICAL, INC.

EPA ID NO: **NYD175773779**

GM FORM

N.Y.S DEPARTMENT OF ENVIRONMENTAL CONSERVATION

2011 HAZARDOUS WASTE REPORT

WASTE GENERATION AND MANAGEMENT

Instructions: Please see the detailed instructions begining on page 19 of the instructions and forms booklet before completing this form

SEC. 1	A. Waste description MIXED AQUEOUS/ORGANIC (H050)		
B. EPA hazardous waste code D001 F003 F005		C. State hazardous waste code	
D. Source code G08 Management method code for source code G25	E. Form code W219	F. Quantity generated in 2011 143,560.00 UOM POUNDS Density ☐ 1 lbs/gal ☐ 2 sg	
G. Waste minization code X	H. Wastewater N	Exempt Remedial N Exempt Recycling N	

SEC. 2	Was any of this waste managed on site? ☐ 1. Yes (CONTINUE TO ON-SITE PROCESS SYSTEM 1 ☒ 2. No (SKIP TO SEC.3)

	On-site management method code	Quantity treated, disposed, or recycled on site in 2011
ON-SITE PROCESS 1		
ON-SITE PROCESS 2		

SEC. 3	A. Was any of this waste shipped off site in 2011 for treatment, disposal, or recycling? ☒ 1 Yes (CONTINUE TO BOX B) ☐ 2 No (FORM IS COMPLETE)

	B. EPA ID No. of facility to which waste was shipped	C. Off-site management method code shipped to	D. Total quantity shipped in 2011
SITE 1	NYD080469935	H050	143560.00
SITE 2			
SITE 3			

Comments:

BEFORE COPYING FORM, ATTACH SITE IDENTIFICATION LABEL OR ENTER

SITE NAME: VANDEMARK CHEMICAL, INC.

EPA ID NO: **NYD175773779**

GM FORM

N.Y.S DEPARTMENT OF ENVIRONMENTAL CONSERVATION

2011 HAZARDOUS WASTE REPORT

WASTE GENERATION AND MANAGEMENT

Instructions: Please see the detailed instructions begining on page 19 of the instructions and forms booklet before completing this form

SEC. 1	A. Waste description AQUEOUS TANK SLUDGE		
B. EPA hazardous waste code D021 D022 F002 F003 F005		C. State hazardous waste code	
D. Source code G13 Management method code for source code G25	E. Form code W609	F. Quantity generated in 2011 19,018.00 UOM POUNDS Density ☐ 1 lbs/gal ☐ 2 sg	
G. Waste minization code X	H. Wastewater N	Exempt Remedial N Exempt Recycling N	

SEC. 2	Was any of this waste managed on site? ☐ 1. Yes (CONTINUE TO ON-SITE PROCESS SYSTEM 1 ☒ 2. No (SKIP TO SEC.3)	
	On-site management method code	Quantity treated, disposed, or recycled on site in 2011
ON-SITE PROCESS 1		
ON-SITE PROCESS 2		

SEC. 3	A. Was any of this waste shipped off site in 2011 for treatment, disposal, or recycling? ☒ 1 Yes (CONTINUE TO BOX B) ☐ 2 No (FORM IS COMPLETE)		
	B. EPA ID No. of facility to which waste was shipped	C. Off-site management method code shipped to	D. Total quantity shipped in 2011
SITE 1	NYD080469935	H040	19018.00
SITE 2			
SITE 3			

Comments:

BEFORE COPYING FORM, ATTACH SITE IDENTIFICATION LABEL OR ENTER

SITE NAME: VANDEMARK CHEMICAL, INC.

EPA ID NO: **NYD175773779**

GM FORM

N.Y.S DEPARTMENT OF ENVIRONMENTAL CONSERVATION

2011 HAZARDOUS WASTE REPORT

WASTE GENERATION AND MANAGEMENT

Instructions: Please see the detailed instructions begining on page 19 of the instructions and forms booklet before completing this form

SEC. 1

A. Waste description
SCRUBBER WATER WITH ORGANICS

B. EPA hazardous waste code	C. State hazardous waste code
D001 D002 D021 F002 F003	

D. Source code	E. Form code	F. Quantity generated in 2011
G21	W113	2,329.00
Management method code for source code G25		UOM POUNDS
		Density ☐ 1 lbs/gal ☐ 2 sg

G. Waste minization code	H. Wastewater	
X	N	Exempt Remedial N
		Exempt Recycling N

SEC. 2

Was any of this waste managed on site?
☐ 1. Yes (CONTINUE TO ON-SITE PROCESS SYSTEM 1 ☒ 2. No (SKIP TO SEC.3)

	On-site management method code	Quantity treated, disposed, or recycled on site in 2011
ON-SITE PROCESS 1		
ON-SITE PROCESS 2		

SEC. 3

A. Was any of this waste shipped off site in 2011 for treatment, disposal, or recycling?
☒ 1 Yes (CONTINUE TO BOX B) ☐ 2 No (FORM IS COMPLETE)

	B. EPA ID No. of facility to which waste was shipped	C. Off-site management method code shipped to	D. Total quantity shipped in 2011
SITE 1	CTD002593887	H040	2329.00
SITE 2			
SITE 3			

Comments:

BEFORE COPYING FORM, ATTACH SITE IDENTIFICATION LABEL OR ENTER

SITE NAME: VANDEMARK CHEMICAL, INC.

EPA ID NO: **NYD175773779**

GM FORM

N.Y.S DEPARTMENT OF ENVIRONMENTAL CONSERVATION

2011 HAZARDOUS WASTE REPORT

WASTE GENERATION AND MANAGEMENT

Instructions: Please see the detailed instructions begining on page 19 of the instructions and forms booklet before completing this form

SEC. 1

A. Waste description
DMF/MIXED SOLVENTS

B. EPA hazardous waste code	C. State hazardous waste code
D021 F002 F003 F005	

D. Source code / Management method code for source code	E. Form code	F. Quantity generated in 2011 / UOM / Density
G08 / G25	W204	1,899.00 / POUNDS / ☐ 1 lbs/gal ☐ 2 sg

G. Waste minization code	H. Wastewater	Exempt Remedial	Exempt Recycling
X	N	N	N

SEC. 2

Was any of this waste managed on site?
☐ 1. Yes (CONTINUE TO ON-SITE PROCESS SYSTEM 1 ☒ 2. No (SKIP TO SEC.3)

	On-site management method code	Quantity treated, disposed, or recycled on site in 2011
ON-SITE PROCESS 1		
ON-SITE PROCESS 2		

SEC. 3

A. Was any of this waste shipped off site in 2011 for treatment, disposal, or recycling?
☒ 1 Yes (CONTINUE TO BOX B) ☐ 2 No (FORM IS COMPLETE)

	B. EPA ID No. of facility to which waste was shipped	C. Off-site management method code shipped to	D. Total quantity shipped in 2011
SITE 1	NYD080469935	H050	1899.00
SITE 2			
SITE 3			

Comments:

BEFORE COPYING FORM, ATTACH SITE IDENTIFICATION LABEL OR ENTER

SITE NAME: VANDEMARK CHEMICAL, INC.

EPA ID NO: **NYD175773779**

GM FORM

N.Y.S DEPARTMENT OF ENVIRONMENTAL CONSERVATION

2011 HAZARDOUS WASTE REPORT

WASTE GENERATION AND MANAGEMENT

Instructions: Please see the detailed instructions begining on page 19 of the instructions and forms booklet before completing this form

SEC. 1	A. Waste description OFF SPEC AQUEOUS TANK SLUDGE		
B. EPA hazardous waste code D021 F002 F003 F005		C. State hazardous waste code	
D. Source code G08 Management method code for source code G25	E. Form code W609	F. Quantity generated in 2011 2,500.00 UOM POUNDS Density ☐ 1 lbs/gal ☐ 2 sg	
G. Waste minization code X	H. Wastewater N	Exempt Remedial N Exempt Recycling N	

SEC. 2 Was any of this waste managed on site?
☐ 1. Yes (CONTINUE TO ON-SITE PROCESS SYSTEM 1 ☒ 2. No (SKIP TO SEC.3)

	On-site management method code	Quantity treated, disposed, or recycled on site in 2011
ON-SITE PROCESS 1		
ON-SITE PROCESS 2		

SEC. 3 A. Was any of this waste shipped off site in 2011 for treatment, disposal, or recycling?
☒ 1 Yes (CONTINUE TO BOX B) ☐ 2 No (FORM IS COMPLETE)

	B. EPA ID No. of facility to which waste was shipped	C. Off-site management method code shipped to	D. Total quantity shipped in 2011
SITE 1	IND000646943	H040	2500.00
SITE 2			
SITE 3			

Comments:

BEFORE COPYING FORM, ATTACH SITE IDENTIFICATION LABEL OR ENTER

SITE NAME: VANDEMARK CHEMICAL, INC.

EPA ID NO: **NYD175773779**

GM FORM

N.Y.S DEPARTMENT OF ENVIRONMENTAL CONSERVATION

2011 HAZARDOUS WASTE REPORT

WASTE GENERATION AND MANAGEMENT

Instructions: Please see the detailed instructions begining on page 19 of the instructions and forms booklet before completing this form

SEC. 1	A. Waste description BARIUM CHLORIDE SOLUTION		
B. EPA hazardous waste code D002 D005		C. State hazardous waste code	
D. Source code G11 Management method code for source code G25	E. Form code W119	F. Quantity generated in 2011 496.00 UOM POUNDS Density ☐ 1 lbs/gal ☐ 2 sg	
G. Waste minization code X	H. Wastewater N	Exempt Remedial N Exempt Recycling N	

SEC. 2	Was any of this waste managed on site? ☐ 1. Yes (CONTINUE TO ON-SITE PROCESS SYSTEM 1 ☒ 2. No (SKIP TO SEC.3)	
	On-site management method code	Quantity treated, disposed, or recycled on site in 2011
ON-SITE PROCESS 1		
ON-SITE PROCESS 2		

SEC. 3	A. Was any of this waste shipped off site in 2011 for treatment, disposal, or recycling? ☒ 1 Yes (CONTINUE TO BOX B) ☐ 2 No (FORM IS COMPLETE)		
	B. EPA ID No. of facility to which waste was shipped	C. Off-site management method code shipped to	D. Total quantity shipped in 2011
SITE 1	ARD069748192	H111	496.00
SITE 2			
SITE 3			

Comments:

BEFORE COPYING FORM, ATTACH SITE IDENTIFICATION LABEL OR ENTER

SITE NAME: VANDEMARK CHEMICAL, INC.

EPA ID NO: **NYD175773779**

GM FORM

N.Y.S DEPARTMENT OF ENVIRONMENTAL CONSERVATION

2011 HAZARDOUS WASTE REPORT

WASTE GENERATION AND MANAGEMENT

Instructions: Please see the detailed instructions begining on page 19 of the instructions and forms booklet before completing this form

SEC. 1

A. Waste description
CARBON HCL SOLVENTS

B. EPA hazardous waste code	C. State hazardous waste code
D021 F002 F005	

D. Source code	E. Form code	F. Quantity generated in 2011
G21	W409	285.00
Management method code for source code G25		UOM POUNDS
		Density ☐ 1 lbs/gal ☐ 2 sg

G. Waste minization code	H. Wastewater	
X	N	Exempt Remedial N
		Exempt Recycling N

SEC. 2

Was any of this waste managed on site?
☐ 1. Yes (CONTINUE TO ON-SITE PROCESS SYSTEM 1 ☒ 2. No (SKIP TO SEC.3)

	On-site management method code	Quantity treated, disposed, or recycled on site in 2011
ON-SITE PROCESS 1		
ON-SITE PROCESS 2		

SEC. 3

A. Was any of this waste shipped off site in 2011 for treatment, disposal, or recycling?
☒ 1 Yes (CONTINUE TO BOX B) ☐ 2 No (FORM IS COMPLETE)

	B. EPA ID No. of facility to which waste was shipped	C. Off-site management method code shipped to	D. Total quantity shipped in 2011
SITE 1	ARD069748192	H040	285.00
SITE 2			
SITE 3			

Comments:

BEFORE COPYING FORM, ATTACH SITE IDENTIFICATION LABEL OR ENTER

SITE NAME: VANDEMARK CHEMICAL, INC.

EPA ID NO: **NYD175773779**

GM FORM

N.Y.S DEPARTMENT OF ENVIRONMENTAL CONSERVATION

2011 HAZARDOUS WASTE REPORT

WASTE GENERATION AND MANAGEMENT

Instructions: Please see the detailed instructions begining on page 19 of the instructions and forms booklet before completing this form

SEC. 1	A. Waste description LAB NON REACTIVE LIQUIDS		
B. EPA hazardous waste code D001 D021 D022 F002 F003		C. State hazardous waste code	
D. Source code G08 Management method code for source code G25	E. Form code W204	F. Quantity generated in 2011 4,441.00 UOM POUNDS Density ☐ 1 lbs/gal ☐ 2 sg	
G. Waste minization code X	H. Wastewater N	Exempt Remedial N Exempt Recycling N	

SEC. 2	Was any of this waste managed on site? ☐ 1. Yes (CONTINUE TO ON-SITE PROCESS SYSTEM 1 ☒ 2. No (SKIP TO SEC.3)	
	On-site management method code	Quantity treated, disposed, or recycled on site in 2011
ON-SITE PROCESS 1		
ON-SITE PROCESS 2		

SEC. 3	A. Was any of this waste shipped off site in 2011 for treatment, disposal, or recycling? ☒ 1 Yes (CONTINUE TO BOX B) ☐ 2 No (FORM IS COMPLETE)		
	B. EPA ID No. of facility to which waste was shipped	C. Off-site management method code shipped to	D. Total quantity shipped in 2011
SITE 1	ARD069748192	H040	4441.00
SITE 2			
SITE 3			

Comments:

BEFORE COPYING FORM, ATTACH SITE IDENTIFICATION LABEL OR ENTER

SITE NAME: VANDEMARK CHEMICAL, INC.

EPA ID NO: **NYD175773779**

GM FORM

N.Y.S DEPARTMENT OF ENVIRONMENTAL CONSERVATION

2011 HAZARDOUS WASTE REPORT

WASTE GENERATION AND MANAGEMENT

Instructions: Please see the detailed instructions begining on page 19 of the instructions and forms booklet before completing this form

SEC. 1	A. Waste description CHDI RESIDUE SOLIDS		
B. EPA hazardous waste code D003 D021 F002		C. State hazardous waste code	
D. Source code G08 Management method code for source code G25	E. Form code W210	F. Quantity generated in 2011 614.00 UOM POUNDS Density ☐ 1 lbs/gal ☐ 2 sg	
G. Waste minization code X	H. Wastewater N	Exempt Remedial N Exempt Recycling N	

SEC. 2	Was any of this waste managed on site? ☐ 1. Yes (CONTINUE TO ON-SITE PROCESS SYSTEM 1 ☒ 2. No (SKIP TO SEC.3)

	On-site management method code	Quantity treated, disposed, or recycled on site in 2011
ON-SITE PROCESS 1		
ON-SITE PROCESS 2		

SEC. 3	A. Was any of this waste shipped off site in 2011 for treatment, disposal, or recycling? ☒ 1 Yes (CONTINUE TO BOX B) ☐ 2 No (FORM IS COMPLETE)

	B. EPA ID No. of facility to which waste was shipped	C. Off-site management method code shipped to	D. Total quantity shipped in 2011
SITE 1	ARD069748192	H040	614.00
SITE 2			
SITE 3			

Comments:

BEFORE COPYING FORM, ATTACH SITE IDENTIFICATION LABEL OR ENTER

SITE NAME: VANDEMARK CHEMICAL, INC.

EPA ID NO: **NYD175773779**

GM FORM

N.Y.S DEPARTMENT OF ENVIRONMENTAL CONSERVATION

2011 HAZARDOUS WASTE REPORT

WASTE GENERATION AND MANAGEMENT

Instructions: Please see the detailed instructions begining on page 19 of the instructions and forms booklet before completing this form

SEC. 1	A. Waste description MIXED NON-REACTIVE SOLVENTS, LOW PH		
B. EPA hazardous waste code D001 D002 D021 D022 F002		C. State hazardous waste code	
D. Source code G08 Management method code for source code G25	E. Form code W203	F. Quantity generated in 2011 1,204.00 UOM POUNDS Density ☐ 1 lbs/gal ☐ 2 sg	
G. Waste minization code X	H. Wastewater N	Exempt Remedial N Exempt Recycling N	

SEC. 2	Was any of this waste managed on site? ☐ 1. Yes (CONTINUE TO ON-SITE PROCESS SYSTEM 1 ☒ 2. No (SKIP TO SEC.3)	
	On-site management method code	Quantity treated, disposed, or recycled on site in 2011
ON-SITE PROCESS 1		
ON-SITE PROCESS 2		

SEC. 3	A. Was any of this waste shipped off site in 2011 for treatment, disposal, or recycling? ☒ 1 Yes (CONTINUE TO BOX B) ☐ 2 No (FORM IS COMPLETE)		
	B. EPA ID No. of facility to which waste was shipped	C. Off-site management method code shipped to	D. Total quantity shipped in 2011
SITE 1	ARD069748192	H040	1204.00
SITE 2			
SITE 3			

Comments:

BEFORE COPYING FORM, ATTACH SITE IDENTIFICATION LABEL OR ENTER

SITE NAME: VANDEMARK CHEMICAL, INC.

EPA ID NO: **NYD175773779**

GM FORM

N.Y.S DEPARTMENT OF ENVIRONMENTAL CONSERVATION

2011 HAZARDOUS WASTE REPORT

WASTE GENERATION AND MANAGEMENT

Instructions: Please see the detailed instructions begining on page 19 of the instructions and forms booklet before completing this form

SEC. 1

A. Waste description
TOLUENE DEA

B. EPA hazardous waste code
D001 F005

C. State hazardous waste code

D. Source code G09
Management method code for source code G25

E. Form code
W203

F. Quantity generated in 2011 666.00
UOM POUNDS
Density ☐ 1 lbs/gal ☐ 2 sg

G. Waste minization code
X

H. Wastewater
N

Exempt Remedial N
Exempt Recycling N

SEC. 2

Was any of this waste managed on site?
☐ 1. Yes (CONTINUE TO ON-SITE PROCESS SYSTEM 1 ☒ 2. No (SKIP TO SEC.3)

	On-site management method code	Quantity treated, disposed, or recycled on site in 2011
ON-SITE PROCESS 1		
ON-SITE PROCESS 2		

SEC. 3

A. Was any of this waste shipped off site in 2011 for treatment, disposal, or recycling?
☒ 1 Yes (CONTINUE TO BOX B) ☐ 2 No (FORM IS COMPLETE)

	B. EPA ID No. of facility to which waste was shipped	C. Off-site management method code shipped to	D. Total quantity shipped in 2011
SITE 1	NYD080496935	H050	666.00
SITE 2			
SITE 3			

Comments:

BEFORE COPYING FORM, ATTACH SITE IDENTIFICATION LABEL OR ENTER

SITE NAME: VANDEMARK CHEMICAL, INC.

EPA ID NO: **NYD175773779**

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N.Y.S DEPARTMENT OF ENVIRONMENTAL CONSERVATION

2011 HAZARDOUS WASTE REPORT

WASTE GENERATION AND MANAGEMENT

Instructions: Please see the detailed instructions begining on page 19 of the instructions and forms booklet before completing this form

SEC. 1

A. Waste description
PTSI PRECUT

B. EPA hazardous waste code	C. State hazardous waste code
D003 D021	

D. Source code / Management method code for source code	E. Form code	F. Quantity generated in 2011 / UOM / Density
G09 / G25	W210	1,756.00 / POUNDS / ☐ 1 lbs/gal ☐ 2 sg

G. Waste minization code	H. Wastewater	
X	N	Exempt Remedial N / Exempt Recycling N

SEC. 2

Was any of this waste managed on site?
☐ 1. Yes (CONTINUE TO ON-SITE PROCESS SYSTEM 1 ☒ 2. No (SKIP TO SEC.3)

	On-site management method code	Quantity treated, disposed, or recycled on site in 2011
ON-SITE PROCESS 1		
ON-SITE PROCESS 2		

SEC. 3

A. Was any of this waste shipped off site in 2011 for treatment, disposal, or recycling?
☒ 1 Yes (CONTINUE TO BOX B) ☐ 2 No (FORM IS COMPLETE)

	B. EPA ID No. of facility to which waste was shipped	C. Off-site management method code shipped to	D. Total quantity shipped in 2011
SITE 1	ARD069748192	H040	1756.00
SITE 2			
SITE 3			

Comments:

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SITE NAME: VANDEMARK CHEMICAL, INC.

EPA ID NO: **NYD175773779**

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N.Y.S DEPARTMENT OF ENVIRONMENTAL CONSERVATION

2011 HAZARDOUS WASTE REPORT

WASTE GENERATION AND MANAGEMENT

Instructions: Please see the detailed instructions begining on page 19 of the instructions and forms booklet before completing this form

SEC. 1

A. Waste description
DBAD

B. EPA hazardous waste code	C. State hazardous waste code
D021 D022	

D. Source code	E. Form code	F. Quantity generated in 2011
G11	W210	984.00
Management method code for source code G25		UOM POUNDS
		Density ☐ 1 lbs/gal ☐ 2 sg

G. Waste minization code	H. Wastewater	
X	N	Exempt Remedial N
		Exempt Recycling N

SEC. 2

Was any of this waste managed on site?
☐ 1. Yes (CONTINUE TO ON-SITE PROCESS SYSTEM 1 ☒ 2. No (SKIP TO SEC.3)

	On-site management method code	Quantity treated, disposed, or recycled on site in 2011
ON-SITE PROCESS 1		
ON-SITE PROCESS 2		

SEC. 3

A. Was any of this waste shipped off site in 2011 for treatment, disposal, or recycling?
☒ 1 Yes (CONTINUE TO BOX B) ☐ 2 No (FORM IS COMPLETE)

	B. EPA ID No. of facility to which waste was shipped	C. Off-site management method code shipped to	D. Total quantity shipped in 2011
SITE 1	ARD069748192	H040	984.00
SITE 2			
SITE 3			

Comments:

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SITE NAME: VANDEMARK CHEMICAL, INC.

EPA ID NO: **NYD175773779**

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N.Y.S DEPARTMENT OF ENVIRONMENTAL CONSERVATION

2011 HAZARDOUS WASTE REPORT

WASTE GENERATION AND MANAGEMENT

Instructions: Please see the detailed instructions begining on page 19 of the instructions and forms booklet before completing this form

SEC. 1

A. Waste description
HCL SOLVENT RAG LAYER

B. EPA hazardous waste code	C. State hazardous waste code
D001 D002 D021 F002 F003	

D. Source code / Management method code for source code	E. Form code	F. Quantity generated in 2011 / UOM / Density
G08 / G25	W219	852.00 / POUNDS / ☐ 1 lbs/gal ☐ 2 sg

G. Waste minization code	H. Wastewater	
X	N	Exempt Remedial N / Exempt Recycling N

SEC. 2

Was any of this waste managed on site?
☐ 1. Yes (CONTINUE TO ON-SITE PROCESS SYSTEM 1 ☒ 2. No (SKIP TO SEC.3)

	On-site management method code	Quantity treated, disposed, or recycled on site in 2011
ON-SITE PROCESS 1		
ON-SITE PROCESS 2		

SEC. 3

A. Was any of this waste shipped off site in 2011 for treatment, disposal, or recycling?
☒ 1 Yes (CONTINUE TO BOX B) ☐ 2 No (FORM IS COMPLETE)

	B. EPA ID No. of facility to which waste was shipped	C. Off-site management method code shipped to	D. Total quantity shipped in 2011
SITE 1	CTD002593887	H061	852.00
SITE 2			
SITE 3			

Comments:

BEFORE COPYING FORM, ATTACH SITE IDENTIFICATION LABEL OR ENTER

SITE NAME: VANDEMARK CHEMICAL, INC.

EPA ID NO: **NYD175773779**

GM FORM

N.Y.S DEPARTMENT OF ENVIRONMENTAL CONSERVATION

2011 HAZARDOUS WASTE REPORT

WASTE GENERATION AND MANAGEMENT

Instructions: Please see the detailed instructions begining on page 19 of the instructions and forms booklet before completing this form

SEC. 1	A. Waste description ADI WITH XYLENE		
B. EPA hazardous waste code D001 F003		C. State hazardous waste code	
D. Source code G08 Management method code for source code G25	E. Form code W203	F. Quantity generated in 2011 703.00 UOM POUNDS Density ☐ 1 lbs/gal ☐ 2 sg	
G. Waste minization code X	H. Wastewater N	Exempt Remedial N Exempt Recycling N	

SEC. 2	Was any of this waste managed on site? ☐ 1. Yes (CONTINUE TO ON-SITE PROCESS SYSTEM 1 ☒ 2. No (SKIP TO SEC.3)

	On-site management method code	Quantity treated, disposed, or recycled on site in 2011
ON-SITE PROCESS 1		
ON-SITE PROCESS 2		

SEC. 3	A. Was any of this waste shipped off site in 2011 for treatment, disposal, or recycling? ☒ 1 Yes (CONTINUE TO BOX B) ☐ 2 No (FORM IS COMPLETE)

	B. EPA ID No. of facility to which waste was shipped	C. Off-site management method code shipped to	D. Total quantity shipped in 2011
SITE 1	ARD069748192	H040	703.00
SITE 2			
SITE 3			

Comments:

BEFORE COPYING FORM, ATTACH SITE IDENTIFICATION LABEL OR ENTER

SITE NAME: VANDEMARK CHEMICAL, INC.

EPA ID NO: **NYD175773779**

GM FORM

N.Y.S DEPARTMENT OF ENVIRONMENTAL CONSERVATION

2011 HAZARDOUS WASTE REPORT

WASTE GENERATION AND MANAGEMENT

Instructions: Please see the detailed instructions begining on page 19 of the instructions and forms booklet before completing this form

SEC. 1

A. Waste description
AMIDE CHLORIDE

B. EPA hazardous waste code	C. State hazardous waste code
D003	

D. Source code / Management method code for source code	E. Form code	F. Quantity generated in 2011 / UOM / Density
G11 / G25	W119	3,431.00 / POUNDS / ☐ 1 lbs/gal ☐ 2 sg

G. Waste minization code	H. Wastewater	
X	N	Exempt Remedial N / Exempt Recycling N

SEC. 2

Was any of this waste managed on site?
☐ 1. Yes (CONTINUE TO ON-SITE PROCESS SYSTEM 1 ☒ 2. No (SKIP TO SEC.3)

	On-site management method code	Quantity treated, disposed, or recycled on site in 2011
ON-SITE PROCESS 1		
ON-SITE PROCESS 2		

SEC. 3

A. Was any of this waste shipped off site in 2011 for treatment, disposal, or recycling?
☒ 1 Yes (CONTINUE TO BOX B) ☐ 2 No (FORM IS COMPLETE)

	B. EPA ID No. of facility to which waste was shipped	C. Off-site management method code shipped to	D. Total quantity shipped in 2011
SITE 1	ARD069748192	H040	3431.00
SITE 2			
SITE 3			

Comments:

BEFORE COPYING FORM, ATTACH SITE IDENTIFICATION LABEL OR ENTER

SITE NAME: VANDEMARK CHEMICAL, INC.

EPA ID NO: **NYD175773779**

GM FORM

N.Y.S DEPARTMENT OF ENVIRONMENTAL CONSERVATION

2011 HAZARDOUS WASTE REPORT

WASTE GENERATION AND MANAGEMENT

Instructions: Please see the detailed instructions begining on page 19 of the instructions and forms booklet before completing this form

SEC. 1

A. Waste description
NON REACTIVE LABPACK

B. EPA hazardous waste code	C. State hazardous waste code
D001 D002	

D. Source code / Management method code for source code	E. Form code	F. Quantity generated in 2011 / UOM / Density
G11 / G25	W001	70.00 / POUNDS / ☐ 1 lbs/gal ☐ 2 sg

G. Waste minization code	H. Wastewater	
X	N	Exempt Remedial N / Exempt Recycling N

SEC. 2

Was any of this waste managed on site?
☐ 1. Yes (CONTINUE TO ON-SITE PROCESS SYSTEM 1 ☒ 2. No (SKIP TO SEC.3)

	On-site management method code	Quantity treated, disposed, or recycled on site in 2011
ON-SITE PROCESS 1		
ON-SITE PROCESS 2		

SEC. 3

A. Was any of this waste shipped off site in 2011 for treatment, disposal, or recycling?
☒ 1 Yes (CONTINUE TO BOX B) ☐ 2 No (FORM IS COMPLETE)

	B. EPA ID No. of facility to which waste was shipped	C. Off-site management method code shipped to	D. Total quantity shipped in 2011
SITE 1	ARD069748192	H040	70.00
SITE 2			
SITE 3			

Comments:

BEFORE COPYING FORM, ATTACH SITE IDENTIFICATION LABEL OR ENTER

SITE NAME: VANDEMARK CHEMICAL, INC.

EPA ID NO: **NYD175773779**

GM FORM

N.Y.S DEPARTMENT OF ENVIRONMENTAL CONSERVATION

2011 HAZARDOUS WASTE REPORT

WASTE GENERATION AND MANAGEMENT

Instructions: Please see the detailed instructions begining on page 19 of the instructions and forms booklet before completing this form

SEC. 1	A. Waste description SPENT CARBON CHEMNY WW		
B. EPA hazardous waste code F002 F003 F005		C. State hazardous waste code	
D. Source code G23 Management method code for source code G25	E. Form code W409	F. Quantity generated in 2011 108,000.00 UOM POUNDS Density ☐ 1 lbs/gal ☐ 2 sg	
G. Waste minization code X	H. Wastewater N	Exempt Remedial N Exempt Recycling N	

SEC. 2	Was any of this waste managed on site? ☐ 1. Yes (CONTINUE TO ON-SITE PROCESS SYSTEM 1 ☒ 2. No (SKIP TO SEC.3)	
	On-site management method code	Quantity treated, disposed, or recycled on site in 2011
ON-SITE PROCESS 1		
ON-SITE PROCESS 2		

SEC. 3	A. Was any of this waste shipped off site in 2011 for treatment, disposal, or recycling? ☒ 1 Yes (CONTINUE TO BOX B) ☐ 2 No (FORM IS COMPLETE)		
	B. EPA ID No. of facility to which waste was shipped	C. Off-site management method code shipped to	D. Total quantity shipped in 2011
SITE 1	PAD987270725	H039	108000.00
SITE 2			
SITE 3			

Comments:

BEFORE COPYING FORM, ATTACH SITE IDENTIFICATION LABEL OR ENTER

SITE NAME: VANDEMARK CHEMICAL, INC.

EPA ID NO: **NYD175773779**

GM FORM

N.Y.S DEPARTMENT OF ENVIRONMENTAL CONSERVATION

2011 HAZARDOUS WASTE REPORT

WASTE GENERATION AND MANAGEMENT

Instructions: Please see the detailed instructions begining on page 19 of the instructions and forms booklet before completing this form

SEC. 1	A. Waste description SPENT CARBON TOLWNY		
B. EPA hazardous waste code D001 F002 F005		C. State hazardous waste code	
D. Source code G21 Management method code for source code G25	E. Form code W409	F. Quantity generated in 2011 13,800.00 UOM POUNDS Density ☐ 1 lbs/gal ☐ 2 sg	
G. Waste minization code X	H. Wastewater N	Exempt Remedial N Exempt Recycling N	

SEC. 2	Was any of this waste managed on site? ☐ 1. Yes (CONTINUE TO ON-SITE PROCESS SYSTEM 1 ☒ 2. No (SKIP TO SEC.3)

	On-site management method code	Quantity treated, disposed, or recycled on site in 2011
ON-SITE PROCESS 1		
ON-SITE PROCESS 2		

SEC. 3	A. Was any of this waste shipped off site in 2011 for treatment, disposal, or recycling? ☒ 1 Yes (CONTINUE TO BOX B) ☐ 2 No (FORM IS COMPLETE)

	B. EPA ID No. of facility to which waste was shipped	C. Off-site management method code shipped to	D. Total quantity shipped in 2011
SITE 1	PAD987270725	H039	13800.00
SITE 2			
SITE 3			

Comments:

BEFORE COPYING FORM, ATTACH SITE IDENTIFICATION LABEL OR ENTER

SITE NAME: VANDEMARK CHEMICAL, INC.

EPA ID NO: **NYD175773779**

GM FORM

N.Y.S DEPARTMENT OF ENVIRONMENTAL CONSERVATION

2011 HAZARDOUS WASTE REPORT

WASTE GENERATION AND MANAGEMENT

Instructions: Please see the detailed instructions begining on page 19 of the instructions and forms booklet before completing this form

SEC. 1

A. Waste description
SPENT CARBON VDMNY AF

B. EPA hazardous waste code	C. State hazardous waste code
D001 D021 F002	

D. Source code / Management method code for source code G25	E. Form code	F. Quantity generated in 2011 / UOM / Density
G21 /	W409	840.00 / POUNDS / ☐ 1 lbs/gal ☐ 2 sg

G. Waste minization code	H. Wastewater	
X	N	Exempt Remedial N / Exempt Recycling N

SEC. 2

Was any of this waste managed on site?
☐ 1. Yes (CONTINUE TO ON-SITE PROCESS SYSTEM 1 ☒ 2. No (SKIP TO SEC.3)

	On-site management method code	Quantity treated, disposed, or recycled on site in 2011
ON-SITE PROCESS 1		
ON-SITE PROCESS 2		

SEC. 3

A. Was any of this waste shipped off site in 2011 for treatment, disposal, or recycling?
☒ 1 Yes (CONTINUE TO BOX B) ☐ 2 No (FORM IS COMPLETE)

	B. EPA ID No. of facility to which waste was shipped	C. Off-site management method code shipped to	D. Total quantity shipped in 2011
SITE 1	PAD987270725	H039	840.00
SITE 2			
SITE 3			

Comments:

BEFORE COPYING FORM, ATTACH SITE IDENTIFICATION LABEL OR ENTER

SITE NAME: VANDEMARK CHEMICAL, INC.

EPA ID NO: **NYD175773779**

GM FORM

N.Y.S DEPARTMENT OF ENVIRONMENTAL CONSERVATION

2011 HAZARDOUS WASTE REPORT

WASTE GENERATION AND MANAGEMENT

Instructions: Please see the detailed instructions begining on page 19 of the instructions and forms booklet before completing this form

SEC. 1

A. Waste description
SPENT CARBON SOLVNY CP

B. EPA hazardous waste code	C. State hazardous waste code
D001 D021 F002 F005	

D. Source code / Management method code for source code G25	E. Form code	F. Quantity generated in 2011 / UOM / Density
G21	W409	7,600.00 / POUNDS / ☐ 1 lbs/gal ☐ 2 sg

G. Waste minization code	H. Wastewater	
X	N	Exempt Remedial N / Exempt Recycling N

SEC. 2

Was any of this waste managed on site?
☐ 1. Yes (CONTINUE TO ON-SITE PROCESS SYSTEM 1 ☒ 2. No (SKIP TO SEC.3)

	On-site management method code	Quantity treated, disposed, or recycled on site in 2011
ON-SITE PROCESS 1		
ON-SITE PROCESS 2		

SEC. 3

A. Was any of this waste shipped off site in 2011 for treatment, disposal, or recycling?
☒ 1 Yes (CONTINUE TO BOX B) ☐ 2 No (FORM IS COMPLETE)

	B. EPA ID No. of facility to which waste was shipped	C. Off-site management method code shipped to	D. Total quantity shipped in 2011
SITE 1	PAD987270725	H039	7600.00
SITE 2			
SITE 3			

Comments:

BEFORE COPYING FORM, ATTACH SITE IDENTIFICATION LABEL OR ENTER

SITE NAME: VANDEMARK CHEMICAL, INC.

EPA ID NO: **NYD175773779**

GM FORM

N.Y.S DEPARTMENT OF ENVIRONMENTAL CONSERVATION

2011 HAZARDOUS WASTE REPORT

WASTE GENERATION AND MANAGEMENT

Instructions: Please see the detailed instructions begining on page 19 of the instructions and forms booklet before completing this form

SEC. 1	A. Waste description SPENT CARBON TETRNY CP		
B. EPA hazardous waste code D001		C. State hazardous waste code	
D. Source code G21 Management method code for source code G25	E. Form code W409	F. Quantity generated in 2011 1,800.00 UOM POUNDS Density ☐ 1 lbs/gal ☐ 2 sg	
G. Waste minization code X	H. Wastewater N	Exempt Remedial N Exempt Recycling N	

SEC. 2 Was any of this waste managed on site?
☐ 1. Yes (CONTINUE TO ON-SITE PROCESS SYSTEM 1 ☒ 2. No (SKIP TO SEC.3)

	On-site management method code	Quantity treated, disposed, or recycled on site in 2011
ON-SITE PROCESS 1		
ON-SITE PROCESS 2		

SEC. 3 A. Was any of this waste shipped off site in 2011 for treatment, disposal, or recycling?
☒ 1 Yes (CONTINUE TO BOX B) ☐ 2 No (FORM IS COMPLETE)

	B. EPA ID No. of facility to which waste was shipped	C. Off-site management method code shipped to	D. Total quantity shipped in 2011
SITE 1	PAD987270725	H039	1800.00
SITE 2			
SITE 3			

Comments:

BEFORE COPYING FORM, ATTACH SITE IDENTIFICATION LABEL OR ENTER

SITE NAME: VANDEMARK CHEMICAL, INC.

EPA ID NO: **NYD175773779**

GM FORM

N.Y.S DEPARTMENT OF ENVIRONMENTAL CONSERVATION

2011 HAZARDOUS WASTE REPORT

WASTE GENERATION AND MANAGEMENT

Instructions: Please see the detailed instructions begining on page 19 of the instructions and forms booklet before completing this form

SEC. 1

A. Waste description
SPENT CARBON LCKPNYWW

B. EPA hazardous waste code	C. State hazardous waste code
D001	

D. Source code	E. Form code	F. Quantity generated in 2011
G23	W409	45,600.00
Management method code for source code G25		UOM POUNDS
		Density ☐ 1 lbs/gal ☐ 2 sg

G. Waste minization code	H. Wastewater	
X	N	Exempt Remedial N
		Exempt Recycling N

SEC. 2

Was any of this waste managed on site?
☐ 1. Yes (CONTINUE TO ON-SITE PROCESS SYSTEM 1 ☒ 2. No (SKIP TO SEC.3)

	On-site management method code	Quantity treated, disposed, or recycled on site in 2011
ON-SITE PROCESS 1		
ON-SITE PROCESS 2		

SEC. 3

A. Was any of this waste shipped off site in 2011 for treatment, disposal, or recycling?
☒ 1 Yes (CONTINUE TO BOX B) ☐ 2 No (FORM IS COMPLETE)

	B. EPA ID No. of facility to which waste was shipped	C. Off-site management method code shipped to	D. Total quantity shipped in 2011
SITE 1	PAD987270725	H039	45600.00
SITE 2			
SITE 3			

Comments:

BEFORE COPYING FORM, ATTACH SITE IDENTIFICATION LABEL OR ENTER

SITE NAME: VANDEMARK CHEMICAL, INC.

EPA ID NO: **NYD175773779**

GM FORM

N.Y.S DEPARTMENT OF ENVIRONMENTAL CONSERVATION

2011 HAZARDOUS WASTE REPORT

WASTE GENERATION AND MANAGEMENT

Instructions: Please see the detailed instructions begining on page 19 of the instructions and forms booklet before completing this form

SEC. 1

A. Waste description
CORROSIVE WASTEWATER CONTAINING SODIUM HYDROXIDE OR HYDROCHLORIC ACID TREATED ON SITE BY ELEMENTARY NEUTRALIZATION (EXEMPT WWT SYSTEM)

B. EPA hazardous waste code	C. State hazardous waste code
D002	

D. Source code	E. Form code	F. Quantity generated in 2011
G21	W113	133.10
Management method code for source code G25		UOM SHORT TONS
		Density ☐ 1 lbs/gal ☐ 2 sg

G. Waste minization code	H. Wastewater	
X	Y	Exempt Remedial N
		Exempt Recycling N

SEC. 2

Was any of this waste managed on site?
☒ 1. Yes (CONTINUE TO ON-SITE PROCESS SYSTEM 1 ☐ 2. No (SKIP TO SEC.3)

	On-site management method code	Quantity treated, disposed, or recycled on site in 2011
ON-SITE PROCESS 1	H135	133.1
ON-SITE PROCESS 2		

SEC. 3

A. Was any of this waste shipped off site in 2011 for treatment, disposal, or recycling?
☐ 1 Yes (CONTINUE TO BOX B) ☒ 2 No (FORM IS COMPLETE)

	B. EPA ID No. of facility to which waste was shipped	C. Off-site management method code shipped to	D. Total quantity shipped in 2011
SITE 1			
SITE 2			
SITE 3			

Comments:

BEFORE COPYING FORM, ATTACH SITE IDENTIFICATION LABEL OR ENTER

SITE NAME: VANDEMARK CHEMICAL, INC.

EPA ID NO: **NYD175773779**

GM FORM

N.Y.S DEPARTMENT OF ENVIRONMENTAL CONSERVATION

2011 HAZARDOUS WASTE REPORT

WASTE GENERATION AND MANAGEMENT

Instructions: Please see the detailed instructions begining on page 19 of the instructions and forms booklet before completing this form

SEC. 1

A. Waste description
TOXIC WASTEWATER CONTAINING ORGANICS, DISCHARGED TO LOCAL POTW AFTER CARBON TREATMENT (EXEMPT WWT SYSTEM)

B. EPA hazardous waste code	C. State hazardous waste code
F002 F003 F005	

D. Source code / Management method code for source code G25	E. Form code	F. Quantity generated in 2011 / UOM / Density
G21	W113	20,066.00 SHORT TONS ☐ 1 lbs/gal ☐ 2 sg

G. Waste minization code	H. Wastewater	
Y	Y	Exempt Remedial N; Exempt Recycling N

SEC. 2

Was any of this waste managed on site?
☒ 1. Yes (CONTINUE TO ON-SITE PROCESS SYSTEM 1 ☐ 2. No (SKIP TO SEC.3)

	On-site management method code	Quantity treated, disposed, or recycled on site in 2011
ON-SITE PROCESS 1	H135	20066.0
ON-SITE PROCESS 2		

SEC. 3

A. Was any of this waste shipped off site in 2011 for treatment, disposal, or recycling?
☐ 1 Yes (CONTINUE TO BOX B) ☒ 2 No (FORM IS COMPLETE)

	B. EPA ID No. of facility to which waste was shipped	C. Off-site management method code shipped to	D. Total quantity shipped in 2011
SITE 1			
SITE 2			
SITE 3			

Comments:

INSTALLATION OF A SECOND ACID ABSORBER SYSTEM HELPED FURTHER REDUCE THE QUANTITY OF ACIDIC PROCESS OFF-GASES TO OUR SCRUBBER. THE EXCESS RECOVERED ACID IS SOLD AS A CO-PRODUCT.

Alliance for Uniform HazMat Transportation Procedures
Uniform Program Credentials

VANDEMARK CHEMICAL INC
VANDEMARK
1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094

ALLIANCE FOR UNIFORM HAZMAT TRANSPORTATION PROCEDURES

USDOT Census #	**00016688**	
MC Docket #	**00258471**	
EPA Transporter ID #	**N/A**	48445
Intrastate Motor Carrier #:	**N/A**	278249

Phone Number to call in case of a accident or emergency: (716) 433-6764 -- 24 Emergency HM Contact

Uniform Program ID:	**UPM-0016688-OH**
Certified By:	**Leonard Shenk**
Issuance Date:	**29-Oct-2012** Expiration Date: **01-Jan-2014**
Issuing Agency:	**PUBLIC UTILITIES COMMISSION OF OHIO**
Agency Telephone:	**(614) 466-3392**

THE PUBLIC UTILITIES COMMISSION OF OHIO

84735

UNITED STATES OF AMERICA
DEPARTMENT OF TRANSPORTATION
PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION

HAZARDOUS MATERIALS CERTIFICATE OF REGISTRATION FOR REGISTRATION YEAR(S) 2010-2013

Registrant: VANDEMARK CHEMICAL INC DBA VANDEMARK
Attn: DEBBIE TAYLOR
1 NORTH TRANSIT RD
LOCKPORT, NY 14094

This certifies that the registrant is registered with the U.S. Department of Transportation as required by 49 CFR Part 107, Subpart G.

This certificate is issued under the authority of 49 U.S.C. 5108. It is unlawful to alter or falsify this document.

Reg. No: 051110 551 088SU Issued: 05/11/2010 Expires: 06/30/2013

Record Keeping Requirements for the Registration Program

The following must be maintained at the principal place of business for a period of three years from the date of issuance of this Certificate of Registration:

(1) A copy of the registration statement filed with PHMSA; and
(2) This Certificate of Registration

Each person subject to the registration requirement must furnish that person's Certificate of Registration (or a copy) and all other records and information pertaining to the information contained in the registration statement to an authorized representative or special agent of the U. S. Department of Transportation upon request.

Each motor carrier (private or for-hire) and each vessel operator subject to the registration requirement must keep a copy of the current Certificate of Registration or another document bearing the registration number identified as the "U.S. DOT Hazmat Reg. No." in each truck and truck tractor or vessel (trailers and semi-trailers not included) used to transport hazardous materials subject to the registration requirement. The Certificate of Registration or document bearing the registration number must be made available, upon request, to enforcement personnel.

For information, contact the Hazardous Materials Registration Manager, PHH-62, Pipeline and Hazardous Materials Safety Administration, U.S. Department of Transportation, 1200 New Jersey Avenue, SE, Washington, DC 20590, telephone (202) 366-4109.

OMB No. 2126-0013

U.S Department of Transportation
Federal Motor Carrier
Safety Administration

Combined Motor Carrier Identification Report and HM Permit Application

REASON FOR FILING (Check Only One)

☐ NEW APPLICATION ☒ BIENNIAL UPDATE OR CHANGES ☐ OUT OF BUSINESS NOTIFICATION ☐ REAPPLICATION (AFTER REVOCATION OF NEW ENTRANT)

1. NAME OF MOTOR CARRIER	2. TRADE OR D.B.A. (DOING BUSINESS AS) NAME
VANDEMARK CHEMICAL INC	VANDEMARK

3. PRINCIPAL STREET ADDRESS/ROUTE NUMBER	4. CITY	5. MAILING ADDRESS (P O BOX)	6. MAILING CITY
1 NORTH TRANSIT ROAD	LOCKPORT	1 NORTH TRANSIT ROAD	LOCKPORT

7. STATE/PROVINCE	8. ZIP CODE + 4	9.COLONIA (MEXICO ONLY)	10. STATE/PROVINCE	11. ZIP CODE+4	12.COLONIA (MEXICO ONLY)
NEW YORK	14094		NEW YORK	14094	

13. PRINCIPAL BUSINESS PHONE NUMBER	14. PRINCIPAL CONTACT CELLULAR PHONE NUMBER	15. PRINCIPAL BUSINESS FAX NUMBER
(716) 433-6764		(716) 433-2850

16. USDOT NO.	17. MC OR MX NO.	18. DUN & BRADSTREET NO.	19. IRS/TAX ID NO.	20. INTERNET E-MAIL ADDRESS
16688	MC258471	175773779	EIN# 160757316 SSN#	

21. COMPANY OPERATION (Circle all that apply)
(A) Interstate Carrier B. Intrastate Hazmat Carrier C. Intrastate Non-Hazmat Carrier (D) Interstate Shipper E. Intrastate Shipper F. Vehicle Registrant Only

22. CARRIER MILEAGE (to nearest 10,000 miles for Last Calendar Year) YEAR
174000 2009

23. OPERATION CLASSIFICATION (Circle All that Apply)
(A) Authorized For-Hire D. Private Passengers (Business) G. U. S. Mail J. Local Government
B. Exempt For-Hire E. Private Passengers (Non-Business) H. Federal Government K. Indian Tribe
(C) Private Property F. Migrant I. State Government L. Other

24. CARGO CLASSIFICATIONS (Circle All that Apply)
(A) GENERAL FREIGHT; B. HOUSEHOLD GOODS; C. METAL; SHEETS; COILS; ROLLS; D. MOTOR VEHICLES; E. DRIVE AWAY/TOWAWAY; F. LOGS, POLES, BEAMS, LUMBER; G. BUILDING MATERIALS; H. MOBILE HOMES; I. MACHINERY, LARGE OBJECTS; J. FRESH PRODUCE; (K) LIQUIDS/GASES; (L) INTERMODAL CONT.; M. PASSENGERS; N. OIL FIELD EQUIPMENT; O. LIVESTOCK; P. GRAIN, FEED, HAY; Q. COAL/COKE; R. MEAT; S. GARBAGE, REFUSE, TRASH; T. U.S. MAIL; (U) CHEMICALS; (V) COMMODITIES DRY BULK; W. REFRIGERATED FOOD; X. BEVERAGES; Y. PAPER PRODUCTS; Z. UTILITY; AA. FARM SUPPLIES; BB. CONSTRUCTION; CC. WATER WELL; DD. OTHER

25. HAZARDOUS MATERIALS CARRIED OR SHIPPED (Circle All that Apply) C-CARRIED S-SHIPPED B(BULK) - IN CARGO TANKS NB(NON-BULK) - IN PACKAGE

C	S	A. DIV 1.1	B	NB	C	S	K. DIV 2.2A (Ammonia)	B	NB	C	S	U. DIV 4.2	B	NB	C	S	EE. HRCQ	B	NB
C	S	B. DIV 1.2	B	NB	C	S	L. DIV 2.3A	B	NB	C	S	V. DIV 4.3	B	NB	C	S	FF. CLASS 8	B	NB
C	S	C. DIV 1.3	B	NB	C	S	M. DIV 2.3B	B	NB	C	S	W. DIV 5.1	B	NB	C	S	GG. CLASS 8A	B	NB
C	S	D. DIV 1.4	B	NB	C	S	N. DIV 2.3C	B	NB	C	S	X. DIV 5.2	B	NB	C	S	HH. CLASS 8B	B	NB
C	S	E. DIV 1.5	B	NB	C	S	O. DIV 2.3D	B	NB	C	S	Y. DIV 6.2	B	NB	C	S	II. CLASS 9	B	NB
C	S	F. DIV 1.6	B	NB	C	S	P. Class 3	B	NB	C	S	Z. DIV 6.1A	B	NB	C	S	JJ. ELEVATED TEMP MAT.	B	NB
(C)	S	G. DIV 2.1	(B)	NB	C	S	Q. Class 3A	B	NB	C	S	AA. DIV 6.1B	B	NB	C	S	KK. INFECTIOUS WASTE	B	NB
(C)	S	H. DIV 2.1 LPG	(B)	NB	C	S	R. Class 3B	B	NB	C	S	BB. DIV 6.1 Poison	B	NB	C	S	LL. MARINE POLLUTANTS	B	NB
(C)	S	I. DIV 2.1 (Methane)	(B)	NB	C	S	S. COM LIQ	B	NB	C	S	CC. DIV 6.1 SOLID	B	NB	C	S	MM. HAZARDOUS SUB(RQ)	B	NB
(C)	S	J. DIV 2.2	(B)	NB	C	S	T. DIV 4.1	B	NB	C	S	DD. CLASS 7	B	NB	C	S	NN. HAZARDOUS WASTE	B	NB
																	OO. ORM	B	NB

26. NUMBER OF VEHICLES THAT CAN BE OPERATED IN THE U.S.

	Straight Trucks	Truck Tractors	Trailers	Hazmat Cargo Tank Trucks	Hazmat Cargo Tank Trailers	Motor Coach	School Bus			Mini-bus	Van		Limousine		
							Number of vehicles carrying number of passengers (including the driver) below								
							1-8	9-15	16+	16+	1-8	9-15	1-8	9-15	16+
OWNED	0	0	0	0	0	0			0	0					0
TERM LEASED	0	2	3	0	0	0			0	0					0
TRIP LEASED	0	0	0	0	0	0			0	0					0

27. DRIVER INFORMATION	INTERSTATE	INTRASTATE	TOTAL DRIVERS	TOTAL CDL DRIVERS
Within 100-Mile Radius	0	0	2	2
Beyond 100-Mile Radius	2	0		

28. IS YOUR U.S. DOT NUMBER REGISTRATION CURRENTLY REVOKED BY THE FEDERAL MOTOR CARRIER SAFETY ADMINISTRATION? Yes_____ No X
If Yes, enter your U.S. DOT Number.

29. PLEASE ENTER NAME(S) OF SOLE PROPRIETOR(S), OFFICERS OR PARTNERS AND TITLES (e.g. PRESIDENT, TREASURER, GENERAL PARTNER, LIMITED PARTNER)

1. PAUL AMEIS, COO (Please print Name)
2. ROBERT BIGOS, CFO (Please print Name)

VDM02133

30. WHICH OF THE FOLLOWING HAZARDOUS MATERIAL(S) DOES YOUR COMPANY TRANSPORT, CHECK ALL THAT APPLY:

- [ ] Highway Route Controlled Quantities (HRCQ) of Radioactive materials
- [ ] More than 25 kg (55 pounds) of a Division 1.1, 1.2, or 1.3, or a quantity of Division 1.5 material that requires placarding
- [X] For materials that meet the definition of "material poisonous by inhalation" (TIH) as defined in 49 CFR 171.8; More than 1 liter (1.08 quarts) per package of a material meeting the definition of a Hazard Zone A TIH material, a material meeting the definition of a Hazard Zone B TIH material in a bulk package (capacity greater than 450 liters (119 gallons), or a material meeting the definition of a Hazard Zone C or D TIH material in a bulk packaging that has a capacity greater than 13,248 liters (3,500 gallons).
- [X] Shipments of compressed or refrigerated liquid methane or liquefied natural gas with a methane content of at least 85% in a bulk packaging that has a capacity greater than 13,248 liters (3,500 gallons)

31. IF YOU CHECK QUESTION 30, ARE YOU APPLYING FOR OR RENEWING A HM SAFETY PERMIT? PLEASE CHECK ONE:

[ ] INITIAL [X] RENEWAL [ ] UPDATE

32. IF YOUR COMPANY DOES NOT HAVE A U.S. DOT NUMBER, HOW MANY ACCIDENTS AS DEFINED IN 49 CFR 390.5 HAS YOUR COMPANY HAD IN THE PAST 365 DAYS?

0

33. DOES YOUR COMPANY CERTIFY THEY HAVE A SATISFACTORY SECURITY PROGRAM IN PLACE AS REQUIRED IN 49 CFR PART 385 SUBPART E? [X] Yes [ ] No

34. IS YOUR COMPANY REQUIRED BY ANY STATE(S) TO HAVE A PERMIT FOR ANY OF THE HAZARDOUS MATERIALS LISTED IN QUESTION 30? [X] Yes [ ] No

35. IF YOUR ANSWER TO QUESTION 34 IS YES, CHECK THE STATE(S) IN WHICH YOU HAVE THE PERMIT.

[ ] AL	[ ] AK	[ ] AR	[ ] AZ	[ ] CA	[ ] CO	[ ] CT	[ ] DC	[ ] DE	[ ] FL	[ ] GA
[ ] HI	[ ] ID	[ ] IL	[ ] IN	[ ] IA	[ ] KS	[ ] KY	[ ] LA	[ ] MA	[ ] MD	[ ] ME
[X] MI	[ ] MN	[ ] MO	[ ] MS	[ ] MT	[ ] NC	[ ] ND	[ ] NE	[ ] NH	[ ] NJ	[ ] NM
[X] NV	[ ] NY	[X] OH	[ ] OK	[ ] OR	[ ] PA	[ ] PR	[ ] RI	[ ] SC	[ ] SD	[ ] TN
[ ] TX	[ ] UT	[ ] VT	[ ] VA	[ ] WA	[X] WV	[ ] WI	[ ] WY			

NOTE:

All motor carriers must comply with all pertinent Federal, State, local and tribal statutory and regulatory requirements when operating within the United States. Such requirements include, but are not limited to, all applicable statutory and regulatory requirements administered by the U.S. Department of Labor, or by a State agency operating a plan pursuant to Section 18 of the Occupational Safety and Health Act of 1970 ("OSHA State plan agency"). Such requirements also include all applicable statutory and regulatory environmental standards and requirements administered by the U.S. Environmental Protection Agency or a State, local or tribal environmental protection agency. Compliance with these statutory and regulatory requirements may require motor carriers and/or individual operators to produce documents for review and inspection for the purpose of determining compliance with such statutes and regulations.

30. CERTIFICATION STATEMENT (to be completed by an authorized official)

I, JANET B SCOTT (Please print Name) certify that I am familiar with the Federal Motor Carrier Safety Regulations and/or Federal Hazardous Materials Regulations. Under penalties of perjury, I declare that the information entered on this report is, to the best of my knowledge and belief, true, correct, and complete.

Signature JANET B SCOTT Date 08/25/2010 Title PURCHASING/LOGISTICS MANA (Please print)

VDM02134

U.S. Department
of Transportation
**Federal Motor
Carrier Safety
Administration**

1200 New Jersey Ave., S.E.
Washington, DC 20590

September 12, 2012

In reply refer to:
USDOT Number: 16688

PAUL AMEIS
COO
VANDEMARK CHEMICAL INC
VANDEMARK
1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094

HAZARDOUS MATERIALS SAFETY PERMIT
HM Safety Permit ID: US-16688-NY-HMSP
Effective Date: September 12, 2012

Dear PAUL AMEIS:

The Hazardous Materials Safety Permit (HMSP) is verification of the motor carrier's permission to engage in the transportation of hazardous materials listed in 49 CFR 385.403 by motor vehicle in interstate, intrastate, or foreign commerce.

This HMSP will be effective beginning September 12, 2012 and remain effective through August 31, 2014 if your company maintains compliance with the requirements pertaining to the safe and secure movement of hazardous materials for the protection of the public (49 CFR 385 and other applicable Federal Motor Carrier Safety Regulations and Hazardous Material Regulations). Failure to maintain compliance will constitute sufficient grounds for suspension or revocation of this authority.

Willful and persistent noncompliance with applicable safety fitness regulations as evidenced by a Department of Transportation safety fitness rating less than "Satisfactory" or by other indicators, could result in a proceeding requiring the holder of this permit to show cause as to why this authority should not be suspended or revoked.

For questions regarding this document you may contact the FMCSA Hazardous Materials Division at 202-366-6121.

Sincerely,

Joseph P. DeLorenzo
Director, Office of Enforcement and Compliance

ENDORSEMENT FOR
MOTOR CARRIER POLICIES OF INSURANCE FOR PUBLIC LIABILITY
UNDER SECTIONS 29 AND 30 OF THE MOTOR CARRIER ACT OF 1980

Form Approved
OMB No. 2126-0074

Issued to VANDEMARK CHEMICAL, INC of LOCKPORT, NY

Dated at PHILADELPHIA, PA this 11TH day of SEPTEMBER 2012

Amending Policy No. BAP 9323707 Effective Date November 8, 2011

Name of Insurance Company Zurich America Insurance Company

Telephone Number (800) 237-8134 . Countersigned by: [signature]

The policy to which this endorsement is attached provides primary or excess insurance, as indicated by "X", for the limits shown:

[X] This insurance is primary and the company shall not be liable for amounts in excess of $ 1,000,000 for each accident.
[ ] This insurance is excess and the company shall not be liable for amounts in excess of $ - for each accident.
In excess of the underlying limit of $ - for each accident.

Whenever required by the Federal Highway Administration (FHWA) or the Interstate Commerce Commission (ICC), the company agrees to furnish the FHWA or the ICC a duplicate of said policy and all its endorsements. The company also agrees, upon telephone request by an authorizedrepresentative of the FHWA or the ICC, to verify that the policy is in force as of a particular date.

Cancellation of this endorsement may be effected by the company or the insured by giving (1) thirty-five (35) days notice in writing to the other party (said 35 days notice to commence from the date the notice is mailed, proof of mailing shall be sufficient proof of notice), and (2) if the insured is subject to the ICC's jurisdiction, by providing thirty (30) days notice to the ICC (said 30 days notice to commence from the date the notice is received by the ICC at it's office in Washington, D. C.).

DEFINITIONS AS USED IN THIS ENDORSEMENT

ACCIDENT includes continuous or repeated exposure to conditions which result in bodily injury, property damage, or environmental damage which the insured neither expected nor intended.

MOTOR VEHICLE means a land vehicle, machine, truck, tractor, trailer, or semitrailer propelled or drawn by mechanical power and used on a highway for transporting property, or any combination thereof.

BODILY INJURY means injury to the body, sickness, or disease to any person, including death resulting from any of these.

ENVIRONMENTAL RESTORATION means restitution for the loss, damage, or destruction of natural resources arising out of the accidental discharge, dispersal, release or escape into or upon the land atmosphere, watercourse, or body of water, of any commodity transported by a motor carrier. This shall include the cost of removal and the cost of necessary measures taken to minimize or mitigate damage to human health, the natural environment, fish, shellfish, and wildlife.

PROPERTY DAMAGE means damage to or loss of use of tangible property.

PUBLIC LIABILITY means liability for bodily injury, property damage, and environmental restoration.

The insurance policy to which this endorsement is attached provides automobile liability insurance and is amended to assure compliance by the insured, within the limits stated herein, as a motor carrier of property, with Sections 29 and 30 of the Motor Carrier Act of 1980 and the rules and regulations of the Federal Highway Administration (FHWA) and the Interstate Commerce Commission (ICC)

In consideration of the premium stated in the policy to which this endorsement is attached, the insurer (the company) agrees to pay, within the limits of liability described herein, any final judgment recovered against the insured for public liability resulting from negligence in the operation, maintenance or use of motor vehicles subject to the financial responsibility requirements of Sections 29 and 30 of the Motor Carrier Act of 1980 regardless of whether or not each motor vehicle is specifically described in the policy and whether or not such negligence occurs on any route or in any territory authorized to be served by the insured or elsewhere. Such insurance as is afforded, for public liability, does not apply to injury to or death of the insured's employees while engaged in the course of their employment, or property transported by the insured, designated as cargo. It is understood and agreed that no condition, provision, stipulation, or limitation contained in the policy, this endorsement, or any other endorsement thereon, or violation thereof, shall relieve the company from liability or from the payment of any final judgement, within the limits of liability herein described, irrespective of the financial condition, insolvency or bankruptcy of the insured. However, all terms, conditions and limitations in the policy to which the endorsement is attached shall remain in full force and effect as binding between the insured and the company. The insured agrees to reinburse the company for any payment made by the company on account of any accident, claim, or suit involving a breach of the terms of the policy, and for any payment that the company would not have been obligated to make under the provisions of the policy except for the agreement contained in this endorsement.

It is further understood and agreed that, upon failure of the company to pay any final judgment recovered against the insured as provided herein, the judgment creditor may maintain an action in any court of competent jurisdiction

The limits of the company's liability for the amounts prescribed in this endorsement apply separately, to each accident, and any payment under the policy because of any one accident shall not operate to reduce the liability of the company for the payment of final judgments resulting from any other accident.

The Motor Carrier Act of 1980 requires limits of financial responsibility according to the type of carriage and commodity transported by the motor carrier. It is the MOTOR CARRIER'S obligation to obtain the required limits of financial responsibility.
THE SCHEDULE OF LIMITS SHOWN ON THE REVERSE SIDE DOES NOT PROVIDE COVERAGE.
The limits shown in the schedule are for information purposes only.

SCHEDULE OF LIMITS
Public Liability

Type of Carriage	Commodity Transported	Minimum Insurance	
(1) For-hire (in interstate or foreign commerce).	Property (nonhazardous).	$	750,000
(2) For-hire and Private (in interstate, foreign, or intrastate commerce).	Hazardous substancedo, as defined in 49 CFR 171.8, transported in cargo tanks, portable tanks, or hopper-type vehicles with capacities in excess of 3,500 water gallons; or in-bulk Divisions 1.1, 1.2, and 1.3 materials; any quantity of Division 2.3 Hazard Zone A or Division 6.1, Packing Group 1, Hazard Zone A material; in bulk Division 2.1 or 2.2; or highway route controlled quantities of a Class 7 material as defined in 49 CFR 173.403.	$	5,000,000
(3) For-hire and Private (in interstate or foreign commerce: in any quantity) for (in intrastate commerce: in bulk only).	Oil listed in 49 CFR 172.101; hazardous materials and hazardous substances defined in 49 CFR 171.8 and listed in 49 CFR 172.101, but not mentioned in (2) above or (4) below.	$	1,000,000
(4) For-hire and Private (in interstate or foreign commerce).	Any quantity of Division 1.1, 1.2 or 1.3 material; any quantity of a Division 2.3, Hazard Zone A, or Division 6.1, Packing Group 1, Hazard Zone A material; or highway route controlled quantities of a Class 7 material as defined in 49 CFR 173.403.	$	5,000,000

Note: The type of carriage listed under numbers (1), (2), and (3) applies to vehicles with a gross vehicle weight rating of 10,000 pounds or more. The type of carriage listed under number (4) applies to all ehicles with a gross vehicle weight rating of less thank 10,000 pounds.

SCHEDULE OF LIMITS
Public Liability
For-hire motor carriers of passengers operating in interstate or foreign commerce

Vehicle Seating Capacity	Minimum Insurance	
(1) Any vehicle with a seating capacity of 16 passengers or more.	$	5,000,000
(2) Any vehicle with a seating capacity of 15 passengers or less.	$	1,500,000

VDM02137

ENDORSEMENT FOR
MOTOR CARRIER POLICIES OF INSURANCE FOR PUBLIC LIABILITY
UNDER SECTIONS 29 AND 30 OF THE MOTOR CARRIER ACT OF 1980

Form Approved
OMB No. 2125-0074

Issued to VANDEMARK CHEMICAL, INC of LOCKPORT, NY

Dated at PHILAPELPHIA, PA this 11TH day of 11-Sep 2012

Amending Policy No. SEO 6556134 Effective Date November 8, 2011

Name of Insurance Company Zurich America Insurance Company

Telephone Number (800) 237-8134 . Countersigned by: Matthew Milano

The policy to which this endorsement is attached provides primary or excess insurance, as indicated by " ", for [x] a limits shown:

[ ] This insurance is primary and the company shall not be liable for amounts in excess of $ - for each accident.

[x] This insurance is excess and the company shall not be liable for amounts in excess of $ 4,000,000 for each accident. In excess of the underlying limit of $ 1,000,000 for each accident.

Whenever required by the Federal Highway Administration (FHWA) or the Interstate Commerce Commission (ICC), the company agrees to furnish the FHWA or the ICC a duplicate of said policy and all its endorsements. The company also agrees, upon telephone request by an authorizedrepresentative of the FHWA or the ICC, to verify that the policy is in force as of a particular date.

Cancellation of this endorsement may be effected by the company or the insured by giving (1) thirty-five (35) days notice in writing to the other party (said 35 days notice to commence from the date the notice is mailed, proof of mailing shall be sufficient proof of notice), and (2) if the insured is subject to the ICC's jurisdiction, by providing thirty (30) days notice to the ICC (said 30 days notice to commence from the date the notice is received by the ICC at it's office in Washington, D. C.).

DEFINITIONS AS USED IN THIS ENDORSEMENT

ACCIDENT includes continuous or repeated exposure to conditions which result in bodily injury, property damage, or environmental damage which the insured neither expected nor intended.

MOTOR VEHICLE means a land vehicle, machine, truck, tractor, trailer, or semitrailer propelled or drawn by mechanical power and used on a highway for transporting property, or any combination thereof.

BODILY INJURY means injury to the body, sickness, or disease to any person, including death resulting from any of these.

ENVIRONMENTAL RESTORATION means restitution for the loss, damage, or destruction of natural resources arising out of the accidental discharge, dispersal, release or escape into or upon the land atmosphere, watercourse, or body of water, of any commodity transported by a motor carrier. This shall include the cost of removal and the cost of necessary measures taken to minimize or mitigate damage to human health, the natural environment, fish, shellfish, and wildlife.

PROPERTY DAMAGE means damage to or loss of use of tangible property.

PUBLIC LIABILITY means liability for bodily injury, property damage, and environmental restoration.

The insurance policy to which this endorsement is attached provides automobile liability insurance and is amended to assure compliance by the insured, within the limits stated herein, as a motor carrier of property, with Sections 29 and 30 of the Motor Carrier Act of 1980 and the rules and regulations of the Federal Highway Administration (FHWA) and the Insterstate Commerce Commission (ICC)

In consideration of the premium stated in the policy to which this endorsement is attached, the insurer (the company) agrees to pay, within the limits of liability described herein, any final judgment recovered against the insured for public liability resulting from negligence in the operation, maintenance or use of motor vehicles subject to the financial responsibility requirements of Sections 29 and 30 of the Motor Carrier Act of 1980 regardless of whether or not each motor vehicle is specifically described in the policy and whether or not such negligence occurs on any route or in any territory authorized to be served by the insured or elsewhere. Such insurance as is afforded, for public liability, does not apply to injury to or death of the insured's employees while engaged in the course of their employment, or property transported by the insured, designated as cargo. It is understood and agreed that no condition, provision, stipulation, or limitation contained in the policy, this endorsement, or any other endorsement thereon, or violation thereof, shall relieve the company from liability or from the payment of any final judgement, within the limits of liability herein described, irrespective of the financial condition, insolvency or bankruptcy of the insured. However, all terms, conditions and limitations in the policy to which the endorsement is attached shall remain in full force and effect as binding between the insured and the company. The insured agrees to reinburse the company for any payment made by the company on account of any accident, claim, or suit involving a breach of the terms of the policy, and for any payment that the company would not have been obligated to make under the provisions of the policy except for the agreement contained in this endorsement.

It is further understood and agreed that, upon failure of the company to pay any final judgment recovered against the insured as provided herein, the judgment creditor may maintain an action in any court of competent jurisdiction

The limits of the company's liability for the amounts prescribed in this endorsement apply separately, to each accident, and any payment under the policy because of any one accident shall not operate to reduce the liability of the company for the payment of final judgments resulting from any other accident.

The Motor Carrier Act of 1980 requires limits of financial responsibility according to the type of carriage and commodity transported by the motor carrier. It is the MOTOR CARRIER'S obligation to obtain the required limits of financial responsibility.

THE SCHEDULE OF LIMITS SHOWN ON THE REVERSE SIDE DOES NOT PROVIDE COVERAGE.

The limits shown in the schedule are for information purposes only.

SCHEDULE OF LIMITS
Public Liability

Type of Carriage	Commodity Transported	Minimum Insurance	
(1) For-hire (in interstate or foreign commerce).	Property (nonhazardous).	$	750,000
(2) For-hire and Private (in interstate, foreign, or intrastate commerce).	Hazardous substances, as defined in 49 CFR 171.8, transported in cargo tanks, portable tanks, or hopper-type vehicles with capacities in excess of 3,500 water gallons; or in-bulk Divisions 1.1, 1.2, and 1.3 materials; any quantity of Division 2.3 Hazard Zone A or Division 6.1, Packing Group 1, Hazard Zone A material; in bulk Division 2.1 or 2.2; or highway route controlled quantities of a Class 7 material as defined in 49 CFR 173.403.	$	5,000,000
(3) For-hire and Private (in interstate or foreign commerce; in any quantity) for (in intrastate commerce; in bulk only).	Oil listed in 49 CFR 172.101; hazardous materials and hazardous substances defined in 49 CFR 171.8 and listed in 49 CFR 172.101, but not mentioned in (2) above or (4) below.	$	1,000,000
(4) For-hire and Private (in interstate or foreign commerce).	Any quantity of Division 1.1, 1.2 or 1.3 material; any quantity of a Division 2.3, Hazard Zone A, or Division 6.1, Packing Group 1, Hazard Zone A material; or highway route controlled quantities of a Class 7 material as defined in 49 CFR 173.403.	$	5,000,000

Note: The type of carriage listed under numbers (1), (2), and (3) applies to vehicles with a gross vehicle weight rating of 10,000 pounds or more. The type of carriage listed under number (4) applies to all vehicles with a gross vehicle weight rating of less thank 10,000 pounds.

SCHEDULE OF LIMITS
Public Liability
For-hire motor carriers of passengers operating in interstate or foreign commerce

Vehicle Seating Capacity	Minimum Insurance	
(1) Any vehicle with a seating capacity of 16 passengers or more.	$	5,000,000
(2) Any vehicle with a seating capacity of 15 passengers or less.	$	1,500,000

VDM02139

New York State Department of Environmental Conservation
Division of Water
Bureau of Water Permits, 4th Floor
625 Broadway, Albany, New York 12233-3505
Phone: (518) 402-8111 • **Fax:** (518) 402-9029
Website: www.dec.state.ny.us

Joe Martens
Commissioner

2/10/2012

CHRIS BANACH
VANDEMARK CHEMICAL, INC.
ONE NORTH TRANSIT ROAD
LOCKPORT NY 14094

Dear Owner/Operator:

This letter will confirm receipt of your No Exposure Certification form for the following facility:

VANDEMARK CHEMICAL, INC.
ONE NORTH TRANSIT ROAD
LOCKPORT NY 14094

This facility has been granted exclusion from permitting under the terms and conditions imposed by the New York State Department of Environmental Conservation (DEC) SPDES Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity (GP-0-06-002). It is not, however, a DEC determination of the validity of the information you provided. Your signature on the No Exposure Certification form certifies that you have read, understood and are implementing all of the applicable requirements. An important aspect of this certification requires that you have correctly determined whether you are eligible for exclusion.

You will need to submit a No Exposure Certification form once every five years. Additionally, if you determine you are no longer eligible for the No Exposure Certification, you must apply for coverage under SPDES General Permit #0-06-002 (stormwater discharges associated with industrial activity.) Copies of the permit or blank Notice of Intent forms may be obtained by contacting me at 518-402-8109 or via the Internet at: http://www.dec.ny.gov/chemical/8468.html.

Note: No Exposure Certification only relieves a facility of the responsibility to obtain a permit for industrial stormwater, other than construction stormwater, and does not necessarily mean you do not need other required permits. You should check with your Regional Permit Administrator (http://www.dec.ny.gov/about/558.html) for further information.

Sincerely,

Toni Cioffi

Toni Cioffi
Environmental Program Specialist

tc

New York State Department of Environmental Conservation
Division of Water
Bureau of Water Permits, 4th Floor
625 Broadway, Albany, New York 12233-3505
Phone: (518) 402-8111 • **FAX:** (518) 402-9029
Website: www.dec.state.ny.us

Joe Martens
Commissioner

March 5, 2012

VANDEMARK CHEMICAL INC.
1 NORTH TRANSIT RD
LOCKPORT, NY 14094

Re: Acknowledgement of Notice of Intent or Termination for Coverage Under SPDES Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity (GP-0-06-002)

Dear CHRIS BANACH:

This is to acknowledge that the New York State Department of Environmental Conservation has received a complete Notice of Intent (NOI) for coverage under the State Pollutant Discharge Elimination System (SPDES) General Permit GP-0-06-002 for the following facility:

VANDEMARK CHEMICAL INC
1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094-2323

The permit identification number for this facility is NYR00F095. Please be sure to include this permit identification number on any forms or correspondence you send us related to this general permit.

Unless notified by the Department to the contrary, this authorization becomes effective 30 calendar days after the NOI receive date of 2/9/2012, and is conditioned upon the following:

5. The information submitted in the NOIT received by the Department is accurate and complete.
6. The Permittee has developed and is implementing a Stormwater Pollution Prevention Plan (SWPPP) that complies with GP-0-06-002.
7. When applicable, project review pursuant to the State Environmental Quality Review Act (SEQR) has been satisfied.
8. All applicable Uniform Procedures Act (Environmental Conservation Law, 6NYRCC Part 621) permits have been obtained. Contact your Regional Permit Administrator (http://www.dec.ny.gov/permits/363.html) for further information.

Please be advised that an Annual Certification Report must be completed and submitted for each facility that has obtained permit coverage under this general permit. A copy of the Annual Certification Report is available on the DEC website, listed on the next page. An Annual Certification Report must be completed at the end of calendar year 2012 and must be submitted by March 31, 2013, to:

New York State Department of Environmental Conservation
Division of Water
Bureau of Water Permits, 4th Floor
625 Broadway, Albany, New York 12233-3505
Phone: (518) 402-8111 • **FAX:** (518) 402-9029
Website: www.dec.state.ny.us

Joe Martens
Commissioner

March 5, 2012

VANDEMARK CHEMICAL INC.
1 NORTH TRANSIT RD
LOCKPORT, NY 14094

Re: Acknowledgement of Notice of Intent or Termination for Coverage Under SPDES Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity (GP-0-06-002)

Dear CHRIS BANACH:

This is to acknowledge that the New York State Department of Environmental Conservation has received a complete Notice of Intent (NOI) for coverage under the State Pollutant Discharge Elimination System (SPDES) General Permit GP-0-06-002 for the following facility:

VANDEMARK CHEMICAL INC
1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094-2323

The permit identification number for this facility is NYR00F095. Please be sure to include this permit identification number on any forms or correspondence you send us related to this general permit.

Unless notified by the Department to the contrary, this authorization becomes effective 30 calendar days after the NOI receive date of 2/9/2012, and is conditioned upon the following:

5. The information submitted in the NOIT received by the Department is accurate and complete.
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7. When applicable, project review pursuant to the State Environmental Quality Review Act (SEQR) has been satisfied.
8. All applicable Uniform Procedures Act (Environmental Conservation Law, 6NYRCC Part 621) permits have been obtained. Contact your Regional Permit Administrator (http://www.dec.ny.gov/permits/363.html) for further information.

Please be advised that an Annual Certification Report must be completed and submitted for each facility that has obtained permit coverage under this general permit. A copy of the Annual Certification Report is available on the DEC website, listed on the next page. An Annual Certification Report must be completed at the end of calendar year 2012 and must be submitted by March 31, 2013, to:

Industrial Stormwater General Permit Coordinator
NYSDEC, Division of Water
Bureau of Water Permits
625 Broadway
Albany, New York 12233-3505

An Annual Certification Report must be completed and submitted for each calendar year, thereafter, by March 31st.

In addition to the above, if your facility has stormwater discharges that are subject to benchmark or compliance monitoring (based upon information submitted in your NOIT), then you are required to submit your sampling results on Discharge Monitoring Report (DMR) forms. These forms must be completed and submitted along with your Annual Certification Report as indicated above. DMRs will be sent to your facility in 2012. Only results submitted on DMRs provided by the Department will be accepted. Permittees are responsible for making sure they understand all monitoring requirements and have the appropriate forms. If you do not receive the correct DMRs, please contact the Department.

If there are changes to your existing general permit or if you no longer need this general permit you must submit a NOIT form to modify or terminate your general permit as soon as possible. If you are selling the facility, it is your responsibility to submit a NOIT terminating your coverage and you must notify the new owner, in writing, of the need to obtain the general permit for stormwater discharges.

DEC's website contains the following links related to the SPDES Multi-Sector General Permit:

Stormwater Information Page	http://www.dec.ny.gov/chemical/8468.html
Multi-Sector General Permit	http://www.dec.ny.gov/chemical/9009.html
The MSGP Toolbox:	
Notice of Intent or Termination Form	http://www.dec.ny.gov/chemical/62803.html
Annual Certification Form	http://www.dec.ny.gov/chemical/9009.html
No Exposure Page	http://www.dec.ny.gov/chemical/62833.html
No Exposure Certification Form	http://www.dec.ny.gov/docs/water_pdf/noexposure.pdf
Stormwater Interactive Map	http://www.dec.ny.gov/imsmaps/stormwater/viewer.htm

The annual regulatory fee for the SPDES Multi-Sector General Permit will be billed by the Department each fall.

Coverage under this permit does not necessarily mean that you do not need other permits under the Uniform Procedures Act. You should check with your Regional Permit Administrator (http://www.dec.ny.gov/permits/363.html) for further information.

If you have any questions, please contact Carol Lamb-LaFay at (518) 402-8123.

Tier 2 Online Submission Report

Reporting period : From January 1, 2010 to December 31, 2010

Facility Name	VanDemark Chemical Inc.	**Facility ID**	1641417
Department Name		**Facility Email**	
Physical Address	1 N. Transit , Lockport, Niagara county , NY - 14094 , USA	**Latitude / Longitude**	43.168857 / -78.696554
Mail Address	, , -	**Method of Determination**	
NAICS	325199 - All Other Basic Organic Chemical Manufacturing	**Location Description**	
Dun & Bradstreet			

Contact Information	Name	Phone	Email	Mail address
Emergency Contact	Pamela Cook	716-433-6764 (24-hour)	p.cook@vdmchemical.com	1 North Transit, Lockport, COUNTY, NY - 14094, USA
Owner / Operator	Paul Ameis	716-433-6764 (24-hour)	p.ameis@snpe.com	1 North Transit, Lockport, , NY - 14094, USA

Chemical Inventory Information

Chemical Description	Physical & Health Hazards	Inventory	Mixture components	Storage locations and codes (Non- Confidential)
CAS 123911 Trade Secret [ ] Chem. Name 1, 4-DIOXANE Pure [X] Mixture [ ] Solid [ ] Liquid [X] Gas [ ] EHS [ ] **State Specific Information** No State specific information	Fire [X] Pressure [ ] Reactive [ ] Acute [X] Chronic [X]	99.0 Max. Daily Amount 99.0 Avg. Daily Amount 365 No. of Days On-site		1) A-10: Type M, Pressure 1, Temperature 4 2) UN1165 ERG#127: Type M, Pressure 1, Temperature 4
CAS 71410 Trade Secret [ ] Chem. Name 1-Pentanol Pure [X] Mixture [ ] Solid [ ] Liquid [X] Gas [ ] EHS [ ] **State Specific Information** No State specific information	Fire [X] Pressure [ ] Reactive [ ] Acute [X] Chronic []	9999.0 Max. Daily Amount 9999.0 Avg. Daily Amount 30 No. of Days On-site		1) E-2: Type D, Pressure 1, Temperature 4 2) UN1105, ERG#129: Type D, Pressure 1, Temperature 4
CAS 94995 Trade Secret [ ] Chem. Name 2,4-dichlorobenzyl chloride	Fire [ ] Pressure [ ]	99999.0 Max. Daily Amount 99999.0 Avg. Daily Amount		1) E-1: Type D, Pressure 1, Temperature 4

VDM02144

Tier 2 Online Submission Report

Reporting period : From January 1, 2010 to December 31, 2010

Chemical Description	Physical & Health Hazards	Inventory	Mixture components	Storage locations and codes (Non- Confidential)
Pure [X] Mixture [ ] Solid [ ] Liquid [X] Gas [ ] EHS [ ] **State Specific Information** No State specific information	Reactive [ ] Acute [X] Chronic []	60 No. of Days On-site		2) UN1760, ERG#154: Type D, Pressure 1, Temperature 4
CAS 57683713 Trade Secret [ ] Chem. Name 2-(cargomethoxy)benzenesulfonamide Pure [X] Mixture [ ] Solid [X] Liquid [ ] Gas [ ] EHS [ ] **State Specific Information** No State specific information	Fire [ ] Pressure [ ] Reactive [ ] Acute [X] Chronic []	999999.0 Max. Daily Amount 99999.0 Avg. Daily Amount 150 No. of Days On-site		1) E-1,C-1: Type K, Pressure 1, Temperature 4 2) Non-regulated: Type K, Pressure 1, Temperature 4
CAS 0000 Trade Secret [ ] Chem. Name 2-CMBSI 40% in xylene Pure [ ] Mixture [X] Solid [ ] Liquid [X] Gas [ ] EHS [ ] **State Specific Information** No State specific information	Fire [X] Pressure [ ] Reactive [X] Acute [X] Chronic [X]	99999.0 Max. Daily Amount 99999.0 Avg. Daily Amount 120 No. of Days On-site	Chemical Name-2-carbomethoxybenzenesulfonyl isocyanate (CAS 74222-95-0) Percentage-40.0 Unit-Wt Chemical Name-XYLENE (CAS 1330-20-7) Percentage-60.0 Unit-Wt	1) DK-4: Type A, Pressure 1, Temperature 5 2) UN2478 ERG#155: Type A, Pressure 1, Temperature 5 3) Parking lot: Type P, Pressure 1, Temperature 4
CAS 88142 Trade Secret [ ] Chem. Name 2-FUROIC ACID Pure [X] Mixture [ ] Solid [X] Liquid [ ] Gas [ ] EHS [ ] **State Specific Information** No State specific information	Fire [ ] Pressure [ ] Reactive [ ] Acute [X] Chronic []	99.0 Max. Daily Amount 99.0 Avg. Daily Amount 365 No. of Days On-site		1) A-10: Type J, Pressure 1, Temperature 4 2) NON DOT REGULATED: Type J, Pressure 1, Temperature 4
CAS 818611 Trade Secret [ ] Chem. Name 2-HYDROXYETHYL ACRYLATE	Fire [ ] Pressure [ ]	9999.0 Max. Daily Amount 9999.0 Avg. Daily Amount		1) NON DOT REGULATED: Type M, Pressure 1, Temperature 4

VDM02145

Tier 2 Online Submission Report

Reporting period : From January 1, 2010 to December 31, 2010

Chemical Description	Physical & Health Hazards	Inventory	Mixture components	Storage locations and codes (Non- Confidential)
Pure [X] Mixture [ ] Solid [ ] Liquid [X] Gas [ ] EHS [ ] **State Specific Information** No State specific information	Reactive [ ] Acute [X] Chronic []	365 No. of Days On-site		2) E-1: Type M, Pressure 1, Temperature 4
CAS 1484840 Trade Secret [ ] Chem. Name 2-piperidineethanol (HEPP) Pure [X] Mixture [ ] Solid [X] Liquid [ ] Gas [ ] EHS [ ] **State Specific Information** No State specific information	Fire [X] Pressure [ ] Reactive [X] Acute [X] Chronic [X]	99999.0 Max. Daily Amount 9999.0 Avg. Daily Amount 30 No. of Days On-site		1) DK-10/DK-12 Area: Type P, Pressure 1, Temperature 5 2) UN3263 ERG#154: Type P, Pressure 1, Temperature 5
CAS 461825 Trade Secret [ ] Chem. Name 4-(trifluoromethoxy)analine Pure [X] Mixture [ ] Solid [ ] Liquid [X] Gas [ ] EHS [ ] **State Specific Information** No State specific information	Fire [X] Pressure [ ] Reactive [ ] Acute [X] Chronic [X]	99999.0 Max. Daily Amount 99999.0 Avg. Daily Amount 30 No. of Days On-site		1) DK-10 unloading pad: Type P, Pressure 1, Temperature 4 2) UN2810 ERG#153: Type R, Pressure 1, Temperature 4
CAS 35037731 Trade Secret [ ] Chem. Name 4-trifluormethoxyphenyl isocyanate Pure [X] Mixture [ ] Solid [ ] Liquid [X] Gas [ ] EHS [ ] **State Specific Information** No State specific information	Fire [X] Pressure [ ] Reactive [X] Acute [X] Chronic [X]	99999.0 Max. Daily Amount 9999.0 Avg. Daily Amount 30 No. of Days On-site		1) E-1: Type D, Pressure 1, Temperature 4 2) UN3382 ERG#151: Type R, Pressure 1, Temperature 4
CAS 0000 Trade Secret [ ] Chem. Name 40% Benzyl Carbazate in Toluene Pure [ ] Mixture [X] Solid [ ] Liquid [X] Gas [ ] EHS [ ]	Fire [X] Pressure [ ] Reactive [ ] Acute [X] Chronic [X]	99999.0 Max. Daily Amount 99999.0 Avg. Daily Amount 180 No. of Days On-site	Chemical Name-Benzyl Carbazate (CAS 5331-43-1) Percentage-40.0 Unit-Wt Chemical Name-TOLUENE	1) UN1993 ERG #128: Type A, Pressure 1, Temperature 4 2) DK-4 storage tank area: Type A, Pressure 1, Temperature 4

VDM02146

Tier 2 Online Submission Report

Reporting period : From January 1, 2010 to December 31, 2010

Chemical Description	Physical & Health Hazards	Inventory	Mixture components	Storage locations and codes (Non- Confidential)
State Specific Information No State specific information			(CAS 108-88-3) Percentage-60.0 Unit-Wt	
CAS 67641 Trade Secret [ ] Chem. Name ACETONE Pure [X] Mixture [ ] Solid [ ] Liquid [X] Gas [ ] EHS [ ] **State Specific Information** No State specific information	Fire [X] Pressure [ ] Reactive [ ] Acute [X] Chronic []	9999.0 Max. Daily Amount 9999.0 Avg. Daily Amount 365 No. of Days On-site		1) A-5: Type M, Pressure 1, Temperature 4 2) E-2: Type D, Pressure 1, Temperature 4 3) A-10: Type M, Pressure 1, Temperature 4 4) UN1090 ERG #127: Type M, Pressure 1, Temperature 4 5) B-6: Type D, Pressure 1, Temperature 4
CAS 75058 Trade Secret [ ] Chem. Name ACETONITRILE Pure [X] Mixture [ ] Solid [ ] Liquid [X] Gas [ ] EHS [ ] **State Specific Information** No State specific information	Fire [X] Pressure [ ] Reactive [ ] Acute [X] Chronic []	99.0 Max. Daily Amount 99.0 Avg. Daily Amount 365 No. of Days On-site		1) A-5: Type M, Pressure 1, Temperature 4 2) UN1648 ERG #131: Type R, Pressure 1, Temperature 4 3) B-6: Type G, Pressure 1, Temperature 4
CAS 74862 Trade Secret [ ] Chem. Name Acetylene Pure [X] Mixture [ ] Solid [ ] Liquid [ ] Gas [X] EHS [ ] **State Specific Information** No State specific information	Fire [X] Pressure [X] Reactive [ ] Acute [ ] Chronic []	999.0 Max. Daily Amount 999.0 Avg. Daily Amount 365 No. of Days On-site		1) B-4: Type L, Pressure 2, Temperature 4 2) A-5A: Type L, Pressure 2, Temperature 4 3) UN1001 ERG #116: Type R, Pressure 1, Temperature 4
CAS 63225536 Trade Secret [ ] Chem. Name Acticryl CL-1039 (2-propenoic acid, 2-[[(butylamino)carbonyl]oxy]ethyl ester Pure [X] Mixture [ ] Solid [ ] Liquid [X] Gas [ ] EHS [ ] **State Specific Information**	Fire [X] Pressure [ ] Reactive [ ] Acute [X] Chronic []	99999.0 Max. Daily Amount 9999.0 Avg. Daily Amount 240 No. of Days On-site		1) E-1: Type D, Pressure 1, Temperature 4 2) Non regulated: Type D, Pressure 1, Temperature 4

VDM02147

Tier 2 Online Submission Report

Reporting period : From January 1, 2010 to December 31, 2010

Chemical Description	Physical & Health Hazards	Inventory	Mixture components	Storage locations and codes (Non- Confidential)
No State specific information				
CAS 7440440 Trade Secret [ ] Chem. Name Activated Carbon Pure [X] Mixture [ ] Solid [X] Liquid [ ] Gas [ ] EHS [ ] **State Specific Information** No State specific information	Fire [X] Pressure [ ] Reactive [X] Acute [X] Chronic []	99999.0 Max. Daily Amount 9999.0 Avg. Daily Amount 365 No. of Days On-site		1) C-1B: Type Q, Pressure 1, Temperature 4 2) E-1: Type I, Pressure 1, Temperature 4 3) DK-5: Type R, Pressure 1, Temperature 4 4) UN1362 ERG #138: Type R, Pressure 1, Temperature 4
CAS 0000000 Trade Secret [ ] Chem. Name ADA Pure [ ] Mixture [X] Solid [ ] Liquid [X] Gas [ ] EHS [ ] **State Specific Information** No State specific information	Fire [ ] Pressure [ ] Reactive [ ] Acute [X] Chronic [X]	99999.0 Max. Daily Amount 9999.0 Avg. Daily Amount 120 No. of Days On-site	Chemical Name-1,3-bis(aminomethyl)cyclohexane (CAS 2579-20-6) Percentage-50.0 Unit-Weight Chemical Name-1,4-bis(aminomethyl)cyclohexane (CAS 2549-93-1) Percentage-50.0 Unit-	1) DK-10,DK12 area: Type P, Pressure 1, Temperature 4 2) UN2922, ERG #154: Type P, Pressure 1, Temperature 4
CAS 000000 Trade Secret [ ] Chem. Name ADI Pure [ ] Mixture [X] Solid [ ] Liquid [X] Gas [ ] EHS [ ] **State Specific Information** No State specific information	Fire [ ] Pressure [ ] Reactive [X] Acute [X] Chronic [X]	9999.0 Max. Daily Amount 9999.0 Avg. Daily Amount 120 No. of Days On-site	Chemical Name-1,3-bis(isocyanatomethyl)cyclohexane) (CAS 38661-72-2) Percentage-50.0 Unit- Chemical Name-1,4-bis(isocyanatomethyl)cyclohexane (CAS 10347-54-3) Percentage-50.0 Unit-	1) E-1: Type D, Pressure 1, Temperature 4 2) UN2206, ERG#155: Type D, Pressure 1, Temperature 4
CAS 0000 Trade Secret [ ] Chem. Name Aliquat 336 Pure [ ] Mixture [X] Solid [ ] Liquid [X] Gas [ ]	Fire [X] Pressure [ ] Reactive [X]	9999.0 Max. Daily Amount 999.0 Avg. Daily Amount 365 No. of Days On-site	Chemical Name-Fatty alcohol C8-C10 (CAS 68603-15-6)	1) UN2810, ERG #153: Type D, Pressure 1, Temperature 4 2) E-1: Type D, Pressure 1, Temperature 4

VDM02148

Tier 2 Online Submission Report

Reporting period : From January 1, 2010 to December 31, 2010

Chemical Description	Physical & Health Hazards	Inventory	Mixture components	Storage locations and codes (Non- Confidential)
EHS [ ] **State Specific Information** No State specific information	Acute [X] Chronic []		Percentage-10.0 Unit-Wt Chemical Name-1-octanaminium, N-methyl-N-, N-dioctyl-,CHL (CAS 5137-55-3) Percentage-90.0 Unit-Wt	
CAS 0000 Trade Secret [ ] Chem. Name Amide chloride/ vilsmeier reagent Pure [ ] Mixture [X] Solid [X] Liquid [ ] Gas [ ] EHS [ ] **State Specific Information** No State specific information	Fire [ ] Pressure [ ] Reactive [X] Acute [X] Chronic [X]	99999.0 Max. Daily Amount 99999.0 Avg. Daily Amount 365 No. of Days On-site	Chemical Name-DDimethylchloroformiminium chloride (CAS 3724-43-4) Percentage-95.0 Unit-Wt Chemical Name-DIMETHYL FORMAMIDE (CAS 68-12-2) Percentage-5.0 Unit-Wt	1) E-1: Type E, Pressure 1, Temperature 6 2) UN 2923 ERG#154: Type E, Pressure 1, Temperature 6
CAS 100516 Trade Secret [ ] Chem. Name BENZYL ALCOHOL Pure [X] Mixture [ ] Solid [ ] Liquid [X] Gas [ ] EHS [ ] **State Specific Information** No State specific information	Fire [X] Pressure [ ] Reactive [ ] Acute [X] Chronic [X]	999999.0 Max. Daily Amount 99999.0 Avg. Daily Amount 365 No. of Days On-site		1) DK-4: Type A, Pressure 1, Temperature 4 2) Non DOT Regulated: Type a, Pressure 1, Temperature 4 3) E-1: Type E, Pressure 1, Temperature 4
CAS 5531431 Trade Secret [ ] Chem. Name Benzyl Carbazate Pure [X] Mixture [ ] Solid [X] Liquid [ ] Gas [ ] EHS [ ] **State Specific Information**	Fire [X] Pressure [ ] Reactive [ ] Acute [X] Chronic []	9999.0 Max. Daily Amount 9999.0 Avg. Daily Amount 365 No. of Days On-site		1) E-1: Type K, Pressure 1, Temperature 4 2) Non DOT Regulated: Type K, Pressure 1, Temperature 4

VDM02149

Tier 2 Online Submission Report

Reporting period : From January 1, 2009 to December 31, 2009

Facility Name	VanDemark Chemical Inc.	**Facility ID**	1174776
Department Name		**Facility Email**	
Physical Address	1 N. Transit, Lockport, Niagara county , NY - 14094, USA	**Latitude / Longitude**	43.168857 / -78.696554
Mail Address	, , -	**Method of Determination**	
NAICS	325199 - All Other Basic Organic Chemical Manufacturing	**Location Description**	
Dun & Bradstreet			

Contact Information	Name	Phone	Email	Mail address
Emergency Contact	Pamela Cook	716-433-6764 (24-hour)	p.cook@vdmchemical.com	1 North Transit, Lockport, COUNTY, NY - 14094, USA
Owner / Operator	Paul Ameis	716-433-6764 (24-hour)	p.ameis@snpe.com	1 North Transit, Lockport, , NY - 14094, USA

Chemical Inventory Information

Chemical Description	Physical & Health Hazards	Inventory	Mixture components	Storage locations and codes (Non- Confidential)
CAS 123911 Trade Secret [ ] Chem. Name 1, 4-DIOXANE Pure [X] Mixture [ ] Solid [ ] Liquid [X] Gas [ ] EHS [ ]	Fire [X] Pressure [ ] Reactive [ ] Acute [X] Chronic [X]	99.0 Max. Daily Amount 99.0 Avg. Daily Amount 365 No. of Days On-site		1) A-10: Type M, Pressure 1, Temperature 4 2) UN1165 ERG#127: Type M, Pressure 1, Temperature 4
CAS Trade Secret [ ] Chem. Name 2-CMBSI - 30% in xylene Pure [ ] Mixture [X] Solid [ ] Liquid [X] Gas [ ] EHS [ ]	Fire [X] Pressure [ ] Reactive [X] Acute [X] Chronic [X]	99999.0 Max. Daily Amount 99999.0 Avg. Daily Amount 180 No. of Days On-site		1) Parking lot: Type P, Pressure 1, Temperature 4 2) DK-4: Type A, Pressure 1, Temperature 5 3) UN 1993 ERG#128: Type A, Pressure 1, Temperature 4
CAS Trade Secret [ ] Chem. Name 2-CMBSI 40% in xylene Pure [ ] Mixture [X] Solid [ ] Liquid [X] Gas [ ] EHS [ ]	Fire [X] Pressure [ ] Reactive [X] Acute [X] Chronic [X]	99999.0 Max. Daily Amount 99999.0 Avg. Daily Amount 120 No. of Days On-site	Chemical Name-2-carbomethoxybenzenesulfonyl isocyanate (CAS 74222-95-0) Percentage-40.0 Unit-Wt	1) DK-4: Type A, Pressure 1, Temperature 5 2) UN2478 ERG#155: Type A, Pressure 1, Temperature 5 3) Parking lot: Type P, Pressure 1, Temperature 4

VDM02150

Tier 2 Online Submission Report

Reporting period : From January 1, 2009 to December 31, 2009

Chemical Description	Physical & Health Hazards	Inventory	Mixture components	Storage locations and codes (Non- Confidential)
			Chemical Name-XYLENE (CAS 1330-20-7) Percentage-60.0 Unit-Wt	
CAS 88142 Trade Secret [ ] Chem. Name 2-FUROIC ACID Pure [X] Mixture [ ] Solid [X] Liquid [ ] Gas [ ] EHS [ ]	Fire [ ] Pressure [ ] Reactive [ ] Acute [X] Chronic [ ]	99.0 Max. Daily Amount 99.0 Avg. Daily Amount 365 No. of Days On-site		1) A-10: Type J, Pressure 1, Temperature 4 2) NON DOT REGULATED: Type J, Pressure 1, Temperature 4
CAS 818611 Trade Secret [ ] Chem. Name 2-HYDROXYETHYL ACRYLATE Pure [X] Mixture [ ] Solid [ ] Liquid [X] Gas [ ] EHS [ ]	Fire [ ] Pressure [ ] Reactive [ ] Acute [X] Chronic [ ]	9999.0 Max. Daily Amount 9999.0 Avg. Daily Amount 365 No. of Days On-site		1) NON DOT REGULATED: Type M, Pressure 1, Temperature 4 2) E-1: Type M, Pressure 1, Temperature 4
CAS 1484840 Trade Secret [ ] Chem. Name 2-piperidineethanol (HEPP) Pure [X] Mixture [ ] Solid [X] Liquid [ ] Gas [ ] EHS [ ]	Fire [X] Pressure [ ] Reactive [X] Acute [X] Chronic [X]	99999.0 Max. Daily Amount 99999.0 Avg. Daily Amount 0 No. of Days On-site		1) DK-10/DK-12 Area: Type P, Pressure 1, Temperature 5 2) UN3263 ERG#154: Type P, Pressure 1, Temperature 5
CAS 35037731 Trade Secret [ ] Chem. Name 4-triflurormethoxyphenyl isocyanate Pure [X] Mixture [ ] Solid [ ] Liquid [X] Gas [ ] EHS [ ]	Fire [X] Pressure [ ] Reactive [X] Acute [X] Chronic [X]	99999.0 Max. Daily Amount 99999.0 Avg. Daily Amount 30 No. of Days On-site		1) E-1: Type D, Pressure 1, Temperature 4 2) UN3382 ERG#151: Type R, Pressure 1, Temperature 4
CAS Trade Secret [ ] Chem. Name 40% Benzyl Carbazate in Toluene Pure [ ] Mixture [X] Solid [ ] Liquid [X] Gas [ ] EHS [ ]	Fire [X] Pressure [ ] Reactive [ ] Acute [X] Chronic [X]	99999.0 Max. Daily Amount 99999.0 Avg. Daily Amount 180 No. of Days On-site	Chemical Name-Benzyl Carbazate (CAS 5331-43-1) Percentage-40.0 Unit-Wt Chemical Name-TOLUENE (CAS 108-88-3) Percentage-60.0	1) UN1993 ERG #128: Type A, Pressure 1, Temperature 4 2) DK-4 storage tank area: Type A, Pressure 1, Temperature 4

VDM02151

Tier 2 Online Submission Report

Reporting period : From January 1, 2009 to December 31, 2009

Chemical Description	Physical & Health Hazards	Inventory	Mixture components	Storage locations and codes (Non- Confidential)
			Unit-Wt	
CAS 67641 Trade Secret [ ] Chem. Name ACETONE Pure [X] Mixture [ ] Solid [ ] Liquid [X] Gas [ ] EHS [ ]	Fire [X] Pressure [ ] Reactive [ ] Acute [X] Chronic [ ]	9999.0 Max. Daily Amount 9999.0 Avg. Daily Amount 365 No. of Days On-site		1) A-5: Type M, Pressure 1, Temperature 4 2) E-2: Type D, Pressure 1, Temperature 4 3) A-10: Type M, Pressure 1, Temperature 4 4) UN1090 ERG #127: Type M, Pressure 1, Temperature 4 5) B-6: Type D, Pressure 1, Temperature 4
CAS 75058 Trade Secret [ ] Chem. Name ACETONITRILE Pure [X] Mixture [ ] Solid [ ] Liquid [X] Gas [ ] EHS [ ]	Fire [X] Pressure [ ] Reactive [ ] Acute [X] Chronic [ ]	99.0 Max. Daily Amount 99.0 Avg. Daily Amount 365 No. of Days On-site		1) A-5: Type M, Pressure 1, Temperature 4 2) UN1648 ERG #131: Type R, Pressure 1, Temperature 4 3) B-6: Type G, Pressure 1, Temperature 4
CAS 74862 Trade Secret [ ] Chem. Name Acetylene Pure [X] Mixture [ ] Solid [ ] Liquid [ ] Gas [X] EHS [ ]	Fire [X] Pressure [X] Reactive [ ] Acute [ ] Chronic [ ]	999.0 Max. Daily Amount 999.0 Avg. Daily Amount 365 No. of Days On-site		1) B-4: Type L, Pressure 2, Temperature 4 2) A-5A: Type L, Pressure 2, Temperature 4 3) UN1001 ERG #116: Type R, Pressure 1, Temperature 4
CAS 7440440 Trade Secret [ ] Chem. Name Activated Carbon Pure [X] Mixture [ ] Solid [X] Liquid [ ] Gas [ ] EHS [ ]	Fire [X] Pressure [ ] Reactive [X] Acute [X] Chronic [ ]	99999.0 Max. Daily Amount 9999.0 Avg. Daily Amount 365 No. of Days On-site		1) C-1B: Type O, Pressure 1, Temperature 4 2) E-1: Type I, Pressure 1, Temperature 4 3) DK-5: Type R, Pressure 1, Temperature 4 4) UN1362 ERG #138: Type R, Pressure 1, Temperature 4
CAS Trade Secret [ ] Chem. Name Aliquat 336 Pure [ ] Mixture [X] Solid [ ] Liquid [X] Gas [ ] EHS [ ]	Fire [X] Pressure [ ] Reactive [X] Acute [X] Chronic [ ]	9999.0 Max. Daily Amount 999.0 Avg. Daily Amount 365 No. of Days On-site	Chemical Name-Fatty alcohol C8-C10 (CAS 68603-15-6) Percentage-10.0 Unit-Wt Chemical Name-1-octanaminium, N-methyl-N-, N-dioctyl-,CHL (CAS 5137-55-3) Percentage-90.0	1) UN2810, ERG #153: Type D, Pressure 1, Temperature 4 2) E-1: Type D, Pressure 1, Temperature 4

VDM02152

Tier 2 Online Submission Report

Reporting period : From January 1, 2009 to December 31, 2009

Chemical Description	Physical & Health Hazards	Inventory	Mixture components	Storage locations and codes (Non- Confidential)
			Unit-Wt	
CAS Trade Secret [ ] Chem. Name Amide chloride/ vilsmeier reagent Pure [ ] Mixture [X] Solid [X] Liquid [ ] Gas [ ] EHS [ ]	Fire [ ] Pressure [ ] Reactive [X] Acute [X] Chronic [X]	99999.0 Max. Daily Amount 99999.0 Avg. Daily Amount 365 No. of Days On-site	Chemical Name-DDimethylchloroformiminium chloride (CAS 3724-43-4) Percentage-95.0 Unit-Wt Chemical Name-DIMETHYL FORMAMIDE (CAS 68-12-2) Percentage-5.0 Unit-Wt	1) E-1: Type E, Pressure 1, Temperature 6 2) UN 2923 ERG#154: Type E, Pressure 1, Temperature 6
CAS Trade Secret [X] Chem. Name Avanel N 1525-90 Pure [X] Mixture [ ] Solid [ ] Liquid [X] Gas [ ] EHS [ ]	Fire [X] Pressure [ ] Reactive [ ] Acute [X] Chronic [ ]	99999.0 Max. Daily Amount 99999.0 Avg. Daily Amount 60 No. of Days On-site		1) NON DOT REGULATED: Type O, Pressure 1, Temperature 4 2) D-1, E-1: Type O, Pressure 1, Temperature 4
CAS Trade Secret [X] Chem. Name Avanel N 925 Pure [X] Mixture [ ] Solid [ ] Liquid [X] Gas [ ] EHS [ ]	Fire [X] Pressure [ ] Reactive [ ] Acute [X] Chronic [ ]	99999.0 Max. Daily Amount 9999.0 Avg. Daily Amount 210 No. of Days On-site		1) E-1, C-1: Type O, Pressure 1, Temperature 4 2) Non DOT regulated: Type O, Pressure 1, Temperature 4
CAS Trade Secret [X] Chem. Name Avanel N-374 Pure [X] Mixture [ ] Solid [ ] Liquid [X] Gas [ ] EHS [ ]	Fire [X] Pressure [ ] Reactive [ ] Acute [X] Chronic [ ]	99999.0 Max. Daily Amount 9999.0 Avg. Daily Amount 270 No. of Days On-site		1) E-1: Type O, Pressure 1, Temperature 4 2) Non DOT Regulated: Type O, Pressure 1, Temperature 4
CAS 100516 Trade Secret [ ] Chem. Name BENZYL ALCOHOL Pure [X] Mixture [ ] Solid [ ] Liquid [X] Gas [ ] EHS [ ]	Fire [X] Pressure [ ] Reactive [ ] Acute [X]	99999.0 Max. Daily Amount 99999.0 Avg. Daily Amount 365 No. of Days On-site		1) DK-4: Type A, Pressure 1, Temperature 4 2) Non DOT Regulated: Type a, Pressure 1, Temperature 4

VDM02153

Tier 2 Online Submission Report

Reporting period : From January 1, 2009 to December 31, 2009

Chemical Description	Physical & Health Hazards	Inventory	Mixture components	Storage locations and codes (Non- Confidential)
	Chronic [X]			
CAS 5631431 Trade Secret [ ] Chem. Name Benzyl Carbazate Pure [X] Mixture [ ] Solid [X] Liquid [ ] Gas [ ] EHS [ ]	Fire [X] Pressure [ ] Reactive [ ] Acute [X] Chronic [ ]	9999.0 Max. Daily Amount 9999.0 Avg. Daily Amount 360 No. of Days On-site		1) E-1: Type K, Pressure 1, Temperature 4 2) Non DOT Regulated: Type K, Pressure 1, Temperature 4
CAS 501531 Trade Secret [ ] Chem. Name BENZYL CHLOROFORMATE Pure [X] Mixture [ ] Solid [ ] Liquid [X] Gas [ ] EHS [ ]	Fire [X] Pressure [ ] Reactive [X] Acute [X] Chronic [X]	999999.0 Max. Daily Amount 99999.0 Avg. Daily Amount 365 No. of Days On-site		1) Trailers behind E-1: Type E, Pressure 1, Temperature 6 2) DK-10: Type A, Pressure 1, Temperature 6 3) UN 1739 ERG #137: Type E, Pressure 1, Temperature 6
CAS Trade Secret [ ] Chem. Name Breathing Air Pure [ ] Mixture [X] Solid [ ] Liquid [ ] Gas [X] EHS [ ]	Fire [ ] Pressure [X] Reactive [ ] Acute [ ] Chronic [ ]	9999.0 Max. Daily Amount 9999.0 Avg. Daily Amount 365 No. of Days On-site		1) D-7: Type L, Pressure 2, Temperature 4 2) B-5B: Type L, Pressure 2, Temperature 4 3) D-1: Type L, Pressure 2, Temperature 4 4) Under S-1: Type L, Pressure 2, Temperature 4 5) A-10: Type L, Pressure 2, Temperature 4 6) A-5A,: Type L, Pressure 2, Temperature 4 7) D-3: Type L, Pressure 2, Temperature 4 8) Under S-8: Type L, Pressure 2, Temperature 4 9) UN1002 ERG #122: Type R, Pressure 1, Temperature 4 10) B-5: Type L, Pressure 2, Temperature 4 11) B-9: Type L, Pressure 2, Temperature 4
CAS Trade Secret [ ] Chem. Name Buffer Solutions Pure [ ] Mixture [X] Solid [ ] Liquid [X] Gas [ ] EHS [ ]	Fire [ ] Pressure [ ] Reactive [ ] Acute [X] Chronic [ ]	99.0 Max. Daily Amount 99.0 Avg. Daily Amount 365 No. of Days On-site		1) D-2A: Type R, Pressure 1, Temperature 4 2) A-5: Type R, Pressure 1, Temperature 4 3) A-10: Type R, Pressure 1, Temperature 4 4) NON DOT REGULATED: Type R, Pressure 1, Temperature 4 5) B-5: Type R, Pressure 1, Temperature 4 6) B-8: Type R, Pressure 1, Temperature 4

VDM02154

Tier 2 Online Submission Report

Reporting period : From January 1, 2009 to December 31, 2009

Chemical Description	Physical & Health Hazards	Inventory	Mixture components	Storage locations and codes (Non- Confidential)
CAS 10043524 Trade Secret [ ] Chem. Name CALCIUM CHLORIDE Pure [X] Mixture [ ] Solid [X] Liquid [ ] Gas [ ] EHS [ ]	Fire [ ] Pressure [ ] Reactive [X] Acute [X] Chronic [ ]	99999.0 Max. Daily Amount 99999.0 Avg. Daily Amount 365 No. of Days On-site		1) Non DOT Regulated: Type R, Pressure 1, Temperature 4 2) PT-21: Type A, Pressure 2, Temperature 5 3) ST-9: Type A, Pressure 2, Temperature 5 4) C-1: Type J, Pressure 1, Temperature 4
CAS Trade Secret [ ] Chem. Name CAM 2 HYTURB OIL Pure [X] Mixture [ ] Solid [ ] Liquid [X] Gas [ ] EHS [ ]	Fire [X] Pressure [ ] Reactive [ ] Acute [X] Chronic [ ]	9999.0 Max. Daily Amount 9999.0 Avg. Daily Amount 365 No. of Days On-site		1) C-1C: Type D, Pressure 1, Temperature 4 2) D-5: Type D, Pressure 1, Temperature 4 3) UN1270 ERG#128: Type R, Pressure 1, Temperature 4
CAS 41844717 Trade Secret [ ] Chem. Name Carbaester Pure [X] Mixture [ ] Solid [ ] Liquid [X] Gas [ ] EHS [ ]	Fire [ ] Pressure [ ] Reactive [ ] Acute [X] Chronic [ ]	9999.0 Max. Daily Amount 9999.0 Avg. Daily Amount 365 No. of Days On-site		1) C-1: Type I, Pressure 1, Temperature 4 2) Nonregulated: Type I, Pressure 1, Temperature 4
CAS 124389 Trade Secret [ ] Chem. Name CARBON DIOXIDE Pure [X] Mixture [ ] Solid [ ] Liquid [ ] Gas [X] EHS [ ]	Fire [X] Pressure [ ] Reactive [ ] Acute [X] Chronic [ ]	999.0 Max. Daily Amount 999.0 Avg. Daily Amount 365 No. of Days On-site		1) UN1013 ERG#120: Type R, Pressure 1, Temperature 4 2) A-5: Type L, Pressure 2, Temperature 4
CAS 630080 Trade Secret [ ] Chem. Name Carbon Monoxide Pure [X] Mixture [ ] Solid [ ] Liquid [ ] Gas [X] EHS [ ]	Fire [X] Pressure [X] Reactive [ ] Acute [X] Chronic [ ]	99999.0 Max. Daily Amount 99999.0 Avg. Daily Amount 365 No. of Days On-site		1) B-1 (WEST of): Type R, Pressure 2, Temperature 4 2) UN9202 ERG #168: Type R, Pressure 1, Temperature 4 3) B-9: Type R, Pressure 2, Temperature 6
CAS 56235 Trade Secret [ ] Chem. Name CARBON TETRACHLORIDE Pure [X] Mixture [ ] Solid [ ] Liquid [X] Gas [ ] EHS [ ]	Fire [ ] Pressure [ ] Reactive [ ] Acute [X] Chronic [X]	99.0 Max. Daily Amount 99.0 Avg. Daily Amount 365 No. of Days On-site		1) B-6: Type M, Pressure 1, Temperature 4 2) UN1846 ERG #155: Type R, Pressure 1, Temperature 4

VDM02155

SEND COMPLETED FORM TO: NY SDEC, 625 BROADWAY, ALBNY, NY 1223-7250	NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION **SITE IDENTIFICATION FORM (2009)**
1. Reason for Submittal MARK ALL BOX(ES) THAT APPLY	**Reason for Submittal:** ☐ To provide initial Notification of Regulated Waste Activity (to obtain an EPA ID Number for hazardous waste, Universal waste, or used oil activities). ☐ To provide Subsequent Notification of Regulated Waste Activity (to update site identification information). ☐ As a component of a First RCRA Hazardous Waste Part A Permit Application. ☐ As a component of a Revised RCRA Hazardous Waste Part A Permit Application (Amendment # _____ ☒ As a component of the Hazardous Waste Report.
2. Site EPA ID Number	**EPA ID Number:** **NYD175773779**
3. Site Name	**Name:** VANDEMARK CHEMICAL INC
4. Site Location Information	**Street Adress:** 1 NORTH TRANSIT ROAD **City, Town, or Village:** LOCKPORT **State:** NY **County Name:** NIAGARA **Zip Code:** 14094
5. Site Land Type	**Site Land Type:** ☒ Private ☐ County ☐ District ☐ Federal ☐ Indian ☐ Municipal ☐ State ☐ Other
6. NAICS Code(s) for the Site	**A.** 32519 **B.** **C.** **D.**
7. Site Mailing Address	**Street or P. O. Box:** 1 NORTH TRANSIT ROAD **City, Town, or Village:** LOCKPORT **State:** NY **Country:** UNITED STATES **Zip Code:** 14094
8. Site Contact Person	**First Name:** PAMELA **MI:** **Last Name:** COOK **Phone Number:** 7164336764 **Extension:** 150 **Email Address:** p.cook@vdmchemical.com
9. Operator and Legal Owner of the Site	**A. Name of Site's Operator:** VANDEMARK CHEMICAL INC **Date Became Operator:** 6/15/2007 **Operator Type:** ☒ Private ☐ County ☐ District ☐ Federal ☐ Indian ☐ Municipal ☐ State ☐ Other
	B. Name of Site's Legal Owner: VANDEMARK CHEMICAL CO., INC **Date Became Owner:** 6/15/2007 **Owner Type:** ☒ Private ☐ County ☐ District ☐ Federal ☐ Indian ☐ Municipal ☐ State ☐ Other

EPA ID Number: NYD175773779

9. Legal Owner Address (continued)	Street or P. O. Box: 1 NORTH TRANSIT ROAD	
	City: LOCKPORT	State: NY
	Country: UNITED STATES	Zip Code: 14094

10. Type of Regulated Waste Activity
Mark Yes or No for all activities; complete any additional boxes as instructed.

A. Hazardous Waste Activities
Complete all parts for 1 through 6.

Y☒ N☐ **1. Generator of Hazardous Waste**
If Yes, choose only one of the following - a, b, or c.

- ☒ a. LQG: Greater than 1,000 kg/mo (2,200 lbs./mo.) of non-acute hazardous waste; or
- ☐ b. SQG:. 100 to 1,000 kg/mo (220 - 2,200 lbs./mo.) of non-acute hazardous waste; or
- ☐ c. CESQG: Less than 100 kg/mo (220 lbs./mo.) of non-acute hazardous waste

In addition, indicate other generator activities.

Y☐ N☒ d. United States Importer of Hazardous Waste

Y☐ N☒ e. Mixed Waste (hazardous and radioactive) Generator

Y☐ N☒ **2. Transporter of Hazardous Waste**

Y☐ N☒ **3. Treater, Storer, or Disposer of Hazardous Waste (at your site)**
Note: A hazardous waste permit is required for this activity.

Y☐ N☒ **4. Recycler of Hazardous Waste (at your site)**

Y☐ N☒ **5. Exempt Boiler and/or Industrial Furnace**
If Yes, mark each that applies.

- ☐ a. Small Quantity On-site Burner Exemption
- ☐ b. Smelting, Melting, and Refining Furnace Exemption

Y☐ N☒ **6. Underground Injection Control**

B. Universal Waste Activities

Y☐ N☒ **1. Large Quantity Handler of Universal Waste (accumulate 5,000 kg or more) [refer to your State regulations to determine what is regulated]. Indicate types of universal**

	Generate	Managed
a. Batteries		☐
b. Pesticides		☐
c. Mercury containing equipment		☐
d. Lamps		☐
e. Other (specify)	☐	☐
f. Other (specify)	☐	☐
g. Other (specify)	☐	☐

Y☐ N☒ **2. Destination Facility for Universal Waste**
Note: A hazardous waste permit may be required for this

C. Used Oil Activities
Mark all boxes that apply

Y☐ N☒ **1. Used Oil Transporter**
If Yes, mark each that applies.

- ☐ a. Transporter
- ☐ b. Transfer Facility

Y☐ N☒ **2. Used Oil Processor and/or Re-refiner**
If Yes, mark each that applies.

- ☐ a. Processor
- ☐ b. Re-refiner

Y☐ N☒ **3. Off-Specification Used Oil Burner**

Y☐ N☒ **4. Used Oil Fuel Marketer**
If Yes, mark each that applies.

- ☐ a. Marketer Who Directs Shipment of Off-Specification Used Oil to Off-Specification Used Oil Burner
- ☐ b. Marketer Who First Claims the Used Oil Meets the Specifications

. Description of Hazardous Wastes

A. Waste Codes for Federally Regulated Hazardous Wastes.

Please list the waste codes of the Federal hazardous wastes handled at your site. List them in the order they are presented in the regulations (e.g., D001, D003, F007, U112). Use an additional page if more spaces are needed.

D001, D002, D003, D005, D021, D022, F002, F003, F005, LABP

B. Waste Codes for State-Regulated (i.e., non-Federal) Hazardous Wastes.

Please list the waste codes of the State-regulated hazardous wastes handled at your site. List them in the order they are presented in the regulations. Use an additional page if more spaces are needed for waste codes.

12. Comments

13. Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature of Operator, Owner, or an Authorized Representative	Name and Official Title (type or print)	Date Signed (mm/dd/yyyy)
	PAUL AMEIS, COO	02/25/2010

BEFORE COPYING FORM, ATTACH SITE IDENTIFICATION LABEL OR ENTER

SITE NAME: VANDEMARK CHEMICAL INC

EPA ID NO: **NYD175773779**

FORM GM

N.Y.S DEPARTMENT OF ENVIRONMENTAL CONSERVATION

2009 HAZARDOUS WASTE REPORT

WASTE GENERATION AND MANAGEMENT

Instructions: Please see the detailed instructions begining on page 19 of the instructions and forms booklet before completing this form

SEC. 1

A. Waste description
FLAMMABLE AQUEOUS WASTE FROM PRODUCTION OF BENZYL CARBAZATE CONTAINING HYDRAZINE AND TOLUENE

B. EPA hazardous waste code	C. State hazardous waste code		
D001 F005			
D. Source code: G07	E. Form code: W113	F. Quantity generated in 2009: 559,684.00	G. UOM: POUNDS ☐ 1 lbs/gal ☐ 2 sg Density
Management method code for source code G25			

SEC. 2

Was any of this waste managed on site?
☐ 1. Yes (CONTINUE TO ON-SITE PROCESS SYSTEM 1 ☒ 2. No (SKIP TO SEC.3)

	On-site management method code	Quantity treated, disposed, or recycled on site in 2009
ON-SITE PROCESS 1		
ON-SITE PROCESS 2		

SEC. 3

A. Was any of this waste shipped off site in 2009 for treatment, disposal, or recycling?
☒ 1 Yes (CONTINUE TO BOX B) ☐ 2 No (FORM IS COMPLETE)

	B. EPA ID No. of facility to which waste was shipped	C. Off-site management method code shipped to	D. Total Quantity Shipped in 2009
SITE 1	NYD080469935	H040	559,684.00
SITE 2			
SITE 3			

Comments:

BEFORE COPYING FORM, ATTACH SITE IDENTIFICATION LABEL OR ENTER

SITE NAME: VANDEMARK CHEMICAL INC

EPA ID NO: **NYD175773779**

FORM GM

N.Y.S DEPARTMENT OF ENVIRONMENTAL CONSERVATION

2009 HAZARDOUS WASTE REPORT

WASTE GENERATION AND MANAGEMENT

Instructions: Please see the detailed instructions begining on page 19 of the instructions and forms booklet before completing this form

SEC. 1

A. Waste description
BARIUM CHLORIDE SOLUTION

B. EPA hazardous waste code	C. State hazardous waste code		
D002 D005			
D. Source code: G22 / Management method code for source code: G25	E. Form code: W105	F. Quantity generated in 2009: 468.00	G. UOM: POUNDS; Density: ☐ 1 lbs/gal ☐ 2 sg

SEC. 2

Was any of this waste managed on site?
☐ 1. Yes (CONTINUE TO ON-SITE PROCESS SYSTEM 1 ☒ 2. No (SKIP TO SEC.3)

	On-site management method code	Quantity treated, disposed, or recycled on site in 2009
ON-SITE PROCESS 1		
ON-SITE PROCESS 2		

SEC. 3

A. Was any of this waste shipped off site in 2009 for treatment, disposal, or recycling?
☒ 1 Yes (CONTINUE TO BOX B) ☐ 2 No (FORM IS COMPLETE)

	B. EPA ID No. of facility to which waste was shipped	C. Off-site management method code shipped to	D. Total Quantity Shipped in 2009
SITE 1	ARD069748192	H141	468.00
SITE 2			
SITE 3			

Comments:

BEFORE COPYING FORM, ATTACH SITE IDENTIFICATION LABEL OR ENTER

SITE NAME: VANDEMARK CHEMICAL INC

EPA ID NO: **NYD175773779**

FORM GM

N.Y.S DEPARTMENT OF ENVIRONMENTAL CONSERVATION

2009 HAZARDOUS WASTE REPORT

WASTE GENERATION AND MANAGEMENT

Instructions: Please see the detailed instructions begining on page 19 of the instructions and forms booklet before completing this form

SEC. 1

A. Waste description
BARIUM CHLORIDE SOLUTION

B. EPA hazardous waste code	C. State hazardous waste code		
D002 D005			
D. Source code: G22 / Management method code for source code: G25	E. Form code: W105	F. Quantity generated in 2009: 415.00	G. UOM: POUNDS; Density: ☐ 1 lbs/gal ☐ 2 sg

SEC. 2

Was any of this waste managed on site?
☐ 1. Yes (CONTINUE TO ON-SITE PROCESS SYSTEM 1 ☒ 2. No (SKIP TO SEC.3)

	On-site management method code	Quantity treated, disposed, or recycled on site in 2009
ON-SITE PROCESS 1		
ON-SITE PROCESS 2		

SEC. 3

A. Was any of this waste shipped off site in 2009 for treatment, disposal, or recycling?
☒ 1 Yes (CONTINUE TO BOX B) ☐ 2 No (FORM IS COMPLETE)

	B. EPA ID No. of facility to which waste was shipped	C. Off-site management method code shipped to	D. Total Quantity Shipped in 2009
SITE 1	ARD069748192	H040	415.00
SITE 2			
SITE 3			

Comments:

BEFORE COPYING FORM, ATTACH SITE IDENTIFICATION LABEL OR ENTER

SITE NAME: VANDEMARK CHEMICAL INC

EPA ID NO: **NYD175773779**

FORM GM

N.Y.S DEPARTMENT OF ENVIRONMENTAL CONSERVATION

2009 HAZARDOUS WASTE REPORT

WASTE GENERATION AND MANAGEMENT

Instructions: Please see the detailed instructions begining on page 19 of the instructions and forms booklet before completing this form

SEC. 1	A. Waste description FLAMMABLE LIQUIDS		
B. EPA hazardous waste code D001 D021 D022 F002 F003 F005		C. State hazardous waste code	
D. Source code G08 Management method code for source code G25	E. Form code W204	F. Quantity generated in 2009 121,484.00	G. UOM POUNDS ☐ 1 lbs/gal ☐ 2 sg

SEC. 2	Was any of this waste managed on site? ☐ 1. Yes (CONTINUE TO ON-SITE PROCESS SYSTEM 1 ☒ 2. No (SKIP TO SEC.3)	
	On-site management method code	Quantity treated, disposed, or recycled on site in 2009
ON-SITE PROCESS 1		
ON-SITE PROCESS 2		

SEC. 3	A. Was any of this waste shipped off site in 2009 for treatment, disposal, or recycling? ☒ 1 Yes (CONTINUE TO BOX B) ☐ 2 No (FORM IS COMPLETE)		
	B. EPA ID No. of facility to which waste was shipped	C. Off-site management method code shipped to	D. Total Quantity Shipped in 2009
SITE 1	NYD080469935	H050	121,484.00
SITE 2			
SITE 3			

Comments:

CBS Number
9-000232

New York State Department of Environmental Conservation
CHEMICAL BULK STORAGE CERTIFICATE

625 Broadway, 11th Floor, Albany, NY 12233-7020 Phone: 518-402-9553

Region 9
270 Michigan Avenue
Buffalo, NY 14203-2999
(716) 851-7220

TANK NUMBER	DATE INSTALLED	TANK LOCATION AND TYPE	CAPACITY (GALLONS)	HAZARDOUS SUBSTANCE	% HAZ SUBST	CHEMICAL ABSTRACT #
ST-35	06/01/2002	AST - Stainless Steel Alloy	15,000	TOLUENE	100.00	108-88-3
ST-5	01/01/1988	AST - Steel/Carbon Steel/Iron	11,000	CAUSTIC SODA	22.00	1310-73-2
ST-6	01/01/1988	AST - Steel/Carbon Steel/Iron	5,500	CAUSTIC SODA	22.00	1310-73-2
ST-7	10/01/1990	AST - Steel/Carbon Steel/Iron	1,000	DIMETHYL FORMAMIDE	100.00	68-12-2
ST-8	06/01/1990	AST - Steel/Carbon Steel/Iron	7,500	PHOSGENE	1.00	75-44-5
				CHLOROBENZENE	99.00	108-90-7

OWNER:
VAN DEMARK CHEMICAL, INC.
1 N. TRANSIT RD.
LOCKPORT, NY 14094

OPERATOR: VAN DEMARK CHEMICAL, INC.
(716) 433-6764

EMERGENCY CONTACT: PAMELA COOK
(716) 433-6764

SITE:
VAN DEMARK CHEMICAL, INC.
1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094

MAILING CORRESPONDENCE:

PAMELA COOK
VAN DEMARK CHEMICAL, INC.
1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094

ISSUED BY:	Commissioner Alexander B. Grannis
CBS NUMBER:	9-000232
DATE ISSUED:	11/12/2009
EXPIRATION DATE:	11/06/2011
FEE PAID:	$ 2,625.00

As an authorized representative of the above named facility, I hereby certify that the information on this form is true and correct. Additionally, I recognize that I am responsible for assuring that this facility is in compliance with all sections of ECL Article 40 and 6 NYCRR Parts 595, 596, 597, 598, and 599, not just those cited below:

-- The facility must be re-registered if there is a transfer of ownership.
-- The facility has maintained it's requirements relating to daily, monthly, annual and five year inspections as required by Part 598.7 and has has it's SPR annually updated as required by Part 598.1(k).
-- The Department must be notified within 3 business days prior to adding, replacing, reconditioning, or permanently closing a stationary tank.
-- **This certificate must be signed and posted on the premises at all times. Posting must be at the tank, at the entrance of the facility, or the main office where the storage tanks are located.**
-- Any person with knowledge of a spill, leak or discharge must report the incident to DEC within two hours **(1-800-457-7362)**.

Signature of Representative/ Owner — Date: 11/16/09

Paul Ameis, COO
Name and Title of Authorized Representative/Owner (Please Print)

Print Date: 11/12/2009

THIS REGISTRATION CERTIFICATE IS NON-TRANSFERABLE

VDM02163

CBS Number
9-000232

New York State Department of Environmental Conservation
CHEMICAL BULK STORAGE CERTIFICATE

625 Broadway, 11th Floor, Albany, NY 12233-7020 Phone: 518-402-9553

Region 9
270 Michigan Avenue
Buffalo, NY 14203-2999
(716) 851-7220

TANK NUMBER	DATE INSTALLED	TANK LOCATION AND TYPE	CAPACITY (GALLONS)	HAZARDOUS SUBSTANCE	% HAZ SUBST	CHEMICAL ABSTRACT #
ST-25	10/01/1997	AST - Stainless Steel Alloy	15,000			
				CHLOROFORM	1.00	67-66-3
				CHLOROBENZENE	90.00	108-90-7
				HEPTANE	9.00	142-82-5
ST-26A	10/29/2007	AST - Steel/Carbon Steel/Iron	10,301			
				BENZENE CHLORO-	100.00	108-90-7
ST-27	10/01/1997	AST - Stainless Steel Alloy	15,000			
				TOLUENE	2.00	108-88-3
				DIETHYLAMINE	98.00	109-89-7
ST-28	10/01/1997	AST - Stainless Steel Alloy	15,000			
				TOLUENE	100.00	108-88-3
ST-29	10/01/1997	AST - Stainless Steel Alloy	15,000			
				BENZENE CHLORO-	100.00	108-90-7
ST-3	02/17/2006	AST - Steel/Carbon Steel/Iron	10,400			
				TOLUENE	100.00	108-88-3
ST-30	10/01/1997	AST - Stainless Steel Alloy	15,000			
				METHANOL	100.00	67-56-1
ST-31A	01/20/2008	AST - Steel/Carbon Steel/Iron	10,000			
				TOLUENE	100.00	108-88-3

OWNER:
VAN DEMARK CHEMICAL, INC.
1 N. TRANSIT RD.
LOCKPORT, NY 14094

OPERATOR: VAN DEMARK CHEMICAL, INC.
(716) 433-6764

EMERGENCY CONTACT: PAMELA COOK
(716) 433-6764

ISSUED BY: Commissioner
Alexander B. Grannis
CBS NUMBER: 9-000232
DATE ISSUED: 11/12/2009
EXPIRATION DATE: 11/06/2011
FEE PAID: $ 2,625.00

SITE:
VAN DEMARK CHEMICAL, INC.
1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094

MAILING CORRESPONDENCE:

PAMELA COOK
VAN DEMARK CHEMICAL, INC.
1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094

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-- The Department must be notified within 3 business days prior to adding, replacing, reconditioning, or permanently closing a stationary tank.
-- **This certificate must be signed and posted on the premises at all times. Posting must be at the tank, at the entrance of the facility, or the main office where the storage tanks are located.**
-- Any person with knowledge of a spill, leak or discharge must report the incident to DEC within two hours (1-800-457-7362).

Signature of Representative/ Owner — Date: 11/16/09

Paul Ameis, COO
Name and Title of Authorized Representative/Owner (Print)

Print Date: 11/12/2009

THIS REGISTRATION CERTIFICATE IS NON-TRANSFERABLE

VDM02164

CBS Number
9-000232

New York State Department of Environmental Conservation
CHEMICAL BULK STORAGE CERTIFICATE

625 Broadway, 11th Floor, Albany, NY 12233-7020 Phone: 518-402-9553

Region 9
270 Michigan Avenue
Buffalo, NY 14203-2999
(716) 851-7220

TANK NUMBER	DATE INSTALLED	TANK LOCATION AND TYPE	CAPACITY (GALLONS)	HAZARDOUS SUBSTANCE	% HAZ SUBST	CHEMICAL ABSTRACT #
PT 34	11/01/2001	AST - Steel/Carbon Steel/Iron	2,000	TOLUENE	100.00	108-88-3
PT-15B	04/01/2005	AST - Fiberglass Reinforced Plastic (FRP)	15,000	HYDROGEN CHLORIDE	32.00	7647-01-0
PT-19	10/01/1990	AST - Steel/Carbon Steel/Iron	250	DIMETHYL FORMAMIDE	100.00	68-12-2
PT-20	03/01/1991	AST - Steel/Carbon Steel/Iron	200	CHLOROBENZENE	100.00	108-90-7
ST-100	01/11/1991	AST - Steel/Carbon Steel/Iron	200	CAUSTIC SODA	22.00	1310-73-2
ST-119	05/01/2005	AST - Steel/Carbon Steel/Iron	8,761	2-PROPYN-1-OL	100.00	107-19-7
ST-14	10/01/1992	AST - Stainless Steel Alloy	4,000	CHLOROBENZENE	100.00	108-90-7
ST-2	11/01/1988	AST - Steel/Carbon Steel/Iron	9,000	TOLUENE	100.00	108-88-3
ST-21	10/01/1992	AST - Stainless Steel Alloy	10,000	2-PROPYN-1-OL	100.00	107-19-7
ST-22	10/01/1992	AST - Steel/Carbon Steel/Iron	12,500	CAUSTIC SODA	25.00	1310-73-2

OWNER:
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1 N. TRANSIT RD.
LOCKPORT, NY 14094

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EMERGENCY CONTACT: PAMELA COOK
(716) 433-6764

SITE:
VAN DEMARK CHEMICAL, INC.
1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094

MAILING CORRESPONDENCE:

PAMELA COOK
VAN DEMARK CHEMICAL, INC.
1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094

ISSUED BY:	Commissioner Alexander B. Grannis
CBS NUMBER:	9-000232
DATE ISSUED:	11/12/2009
EXPIRATION DATE:	11/06/2011
FEE PAID:	$ 2,625.00

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-- Any person with knowledge of a spill, leak or discharge must report the incident to DEC within two hours (1-800-457-7362).

Signature of Representative/ Owner — Date: 11/16/09

Paul Amels, COO
Name and Title of Authorized Representative/Owner (Please Print)

Print Date: 11/12/2009

THIS REGISTRATION CERTIFICATE IS NON-TRANSFERABLE

VDM02165

Exchange: Project Seed
User: Pat Fitzgerald
Date and time: 9/11/2012 4:16:52 PM

Document properties

Title: Copy of 312 Report
Index number: 14.3.5
Location: Environmental Matters\Environmental Permits
Mime type: APPLICATION/PDF
Page count: 21
Note:

Created on: 7/28/2011 1:14:43 PM
Created by: Matt Iodice
Last modified on: 7/28/2011 1:14:47 PM
Last modified by: Matt Iodice

Tier 2 Online Submission Report

Reporting period : From January 1, 2009 to December 31, 2009

Facility Name	VanDemark Chemical Inc.	**Facility ID**	1174776
Department Name		**Facility Email**	
Physical Address	1 N. Transit, Lockport, Niagara county, NY - 14094, USA	**Latitude / Longitude**	43.168857 / -78.696554
Mail Address	, , -	**Method of Determination**	
NAICS	325199 - All Other Basic Organic Chemical Manufacturing	**Location Description**	
Dun & Bradstreet			

Contact Information	Name	Phone	Email	Mail address
Emergency Contact	Pamela Cook	716-433-6764 (24-hour)	p.cook@vdmchemical.com	1 North Transit, Lockport, COUNTY, NY - 14094, USA
Owner / Operator	Paul Ameis	716-433-6764 (24-hour)	p.ameis@snpe.com	1 North Transit, Lockport, , NY - 14094, USA

Chemical Inventory Information

Chemical Description	Physical & Health Hazards	Inventory	Mixture components	Storage locations and codes (Non- Confidential)
CAS 123911 Trade Secret [ ] Chem. Name 1, 4-DIOXANE Pure [X] Mixture [ ] Solid [ ] Liquid [X] Gas [ ] EHS [ ]	Fire [X] Pressure [ ] Reactive [ ] Acute [X] Chronic [X]	99.0 Max. Daily Amount 99.0 Avg. Daily Amount 365 No. of Days On-site		1) A-10: Type M, Pressure 1, Temperature 4 2) UN1165 ERG#127: Type M, Pressure 1, Temperature 4
CAS Trade Secret [ ] Chem. Name 2-CMBSI - 30% in xylene Pure [ ] Mixture [X] Solid [ ] Liquid [X] Gas [ ] EHS [ ]	Fire [X] Pressure [ ] Reactive [X] Acute [X] Chronic [X]	99999.0 Max. Daily Amount 99999.0 Avg. Daily Amount 180 No. of Days On-site		1) Parking lot: Type P, Pressure 1, Temperature 4 2) DK-4: Type A, Pressure 1, Temperature 5 3) UN 1993 ERG#128: Type A, Pressure 1, Temperature 4
CAS Trade Secret [ ] Chem. Name 2-CMBSI 40% in xylene Pure [ ] Mixture [X] Solid [ ] Liquid [X] Gas [ ] EHS [ ]	Fire [X] Pressure [ ] Reactive [X] Acute [X] Chronic [X]	99999.0 Max. Daily Amount 99999.0 Avg. Daily Amount 120 No. of Days On-site	Chemical Name-2-carbomethoxybenzenesulfonyl isocyanate (CAS 74222-95-0) Percentage-40.0 Unit-Wt	1) DK-4: Type A, Pressure 1, Temperature 5 2) UN2478 ERG#155: Type A, Pressure 1, Temperature 5 3) Parking lot: Type P, Pressure 1, Temperature 4

VDM02167

Tier 2 Online Submission Report

Reporting period : From January 1, 2009 to December 31, 2009

Chemical Description	Physical & Health Hazards	Inventory	Mixture components	Storage locations and codes (Non- Confidential)
			Chemical Name-XYLENE (CAS 1330-20-7) Percentage-60.0 Unit-Wt	
CAS 88142 Trade Secret [ ] Chem. Name 2-FUROIC ACID Pure [X] Mixture [ ] Solid [X] Liquid [ ] Gas [ ] EHS [ ]	Fire [ ] Pressure [ ] Reactive [ ] Acute [X] Chronic [ ]	99.0 Max. Daily Amount 99.0 Avg. Daily Amount 365 No. of Days On-site		1) A-10: Type J, Pressure 1, Temperature 4 2) NON DOT REGULATED: Type J, Pressure 1, Temperature 4
CAS 818611 Trade Secret [ ] Chem. Name 2-HYDROXYETHYL ACRYLATE Pure [X] Mixture [ ] Solid [ ] Liquid [X] Gas [ ] EHS [ ]	Fire [ ] Pressure [ ] Reactive [ ] Acute [X] Chronic [ ]	9999.0 Max. Daily Amount 9999.0 Avg. Daily Amount 365 No. of Days On-site		1) NON DOT REGULATED: Type M, Pressure 1, Temperature 4 2) E-1: Type M, Pressure 1, Temperature 4
CAS 1484840 Trade Secret [ ] Chem. Name 2-piperidineethanol (HEPP) Pure [X] Mixture [ ] Solid [X] Liquid [ ] Gas [ ] EHS [ ]	Fire [X] Pressure [ ] Reactive [X] Acute [X] Chronic [X]	99999.0 Max. Daily Amount 99999.0 Avg. Daily Amount 0 No. of Days On-site		1) DK-10/DK-12 Area: Type P, Pressure 1, Temperature 5 2) UN3263 ERG#154: Type P, Pressure 1, Temperature 5
CAS 35037731 Trade Secret [ ] Chem. Name 4-triflurormethoxyphenyl isocyanate Pure [X] Mixture [ ] Solid [ ] Liquid [X] Gas [ ] EHS [ ]	Fire [X] Pressure [ ] Reactive [X] Acute [X] Chronic [X]	99999.0 Max. Daily Amount 99999.0 Avg. Daily Amount 30 No. of Days On-site		1) E-1: Type D, Pressure 1, Temperature 4 2) UN3382 ERG#151: Type R, Pressure 1, Temperature 4
CAS Trade Secret [ ] Chem. Name 40% Benzyl Carbazate in Toluene Pure [ ] Mixture [X] Solid [ ] Liquid [X] Gas [ ] EHS [ ]	Fire [X] Pressure [ ] Reactive [ ] Acute [X] Chronic [X]	99999.0 Max. Daily Amount 99999.0 Avg. Daily Amount 180 No. of Days On-site	Chemical Name-Benzyl Carbazate (CAS 5331-43-1) Percentage-40.0 Unit-Wt Chemical Name-TOLUENE (CAS 108-88-3) Percentage-60.0	1) UN1993 ERG #128: Type A, Pressure 1, Temperature 4 2) DK-4 storage tank area: Type A, Pressure 1, Temperature 4

VDM02168

Tier 2 Online Submission Report

Reporting period : From January 1, 2009 to December 31, 2009

Chemical Description	Physical & Health Hazards	Inventory	Mixture components	Storage locations and codes (Non- Confidential)
			Unit-Wt	
CAS 67641 Trade Secret [ ] Chem. Name ACETONE Pure [X] Mixture [ ] Solid [ ] Liquid [X] Gas [ ] EHS [ ]	Fire [X] Pressure [ ] Reactive [ ] Acute [X] Chronic [ ]	9999.0 Max. Daily Amount 9999.0 Avg. Daily Amount 365 No. of Days On-site		1) A-5: Type M, Pressure 1, Temperature 4 2) E-2: Type D, Pressure 1, Temperature 4 3) A-10: Type M, Pressure 1, Temperature 4 4) UN1090 ERG #127: Type M, Pressure 1, Temperature 4 5) B-6: Type D, Pressure 1, Temperature 4
CAS 75058 Trade Secret [ ] Chem. Name ACETONITRILE Pure [X] Mixture [ ] Solid [ ] Liquid [X] Gas [ ] EHS [ ]	Fire [X] Pressure [ ] Reactive [ ] Acute [X] Chronic [ ]	99.0 Max. Daily Amount 99.0 Avg. Daily Amount 365 No. of Days On-site		1) A-5: Type M, Pressure 1, Temperature 4 2) UN1648 ERG #131: Type R, Pressure 1, Temperature 4 3) B-6: Type G, Pressure 1, Temperature 4
CAS 74862 Trade Secret [ ] Chem. Name Acetylene Pure [X] Mixture [ ] Solid [ ] Liquid [ ] Gas [X] EHS [ ]	Fire [X] Pressure [X] Reactive [ ] Acute [ ] Chronic [ ]	999.0 Max. Daily Amount 999.0 Avg. Daily Amount 365 No. of Days On-site		1) B-4: Type L, Pressure 2, Temperature 4 2) A-5A: Type L, Pressure 2, Temperature 4 3) UN1001 ERG #116: Type R, Pressure 1, Temperature 4
CAS 7440440 Trade Secret [ ] Chem. Name Activated Carbon Pure [X] Mixture [ ] Solid [X] Liquid [ ] Gas [ ] EHS [ ]	Fire [X] Pressure [ ] Reactive [X] Acute [X] Chronic [ ]	99999.0 Max. Daily Amount 9999.0 Avg. Daily Amount 365 No. of Days On-site		1) C-1B: Type O, Pressure 1, Temperature 4 2) E-1: Type I, Pressure 1, Temperature 4 3) DK-5: Type R, Pressure 1, Temperature 4 4) UN1362 ERG #138: Type R, Pressure 1, Temperature 4
CAS Trade Secret [ ] Chem. Name Aliquat 336 Pure [ ] Mixture [X] Solid [ ] Liquid [X] Gas [ ] EHS [ ]	Fire [X] Pressure [ ] Reactive [X] Acute [X] Chronic [ ]	9999.0 Max. Daily Amount 999.0 Avg. Daily Amount 365 No. of Days On-site	Chemical Name-Fatty alcohol C8-C10 (CAS 68603-15-6) Percentage-10.0 Unit-Wt Chemical Name-1-octanaminium, N-methyl-N-, N-dioctyl-,CHL (CAS 5137-55-3) Percentage-90.0	1) UN2810, ERG #153: Type D, Pressure 1, Temperature 4 2) E-1: Type D, Pressure 1, Temperature 4

VDM02169

Tier 2 Online Submission Report

Reporting period : From January 1, 2009 to December 31, 2009

Chemical Description	Physical & Health Hazards	Inventory	Mixture components	Storage locations and codes (Non- Confidential)
			Unit-Wt	
CAS Trade Secret [ ] Chem. Name Amide chloride/ vilsmeier reagent Pure [ ] Mixture [X] Solid [X] Liquid [ ] Gas [ ] EHS [ ]	Fire [ ] Pressure [ ] Reactive [X] Acute [X] Chronic [X]	99999.0 Max. Daily Amount 99999.0 Avg. Daily Amount 365 No. of Days On-site	Chemical Name-DDimethylchloroformiminium chloride (CAS 3724-43-4) Percentage-95.0 Unit-Wt Chemical Name-DIMETHYL FORMAMIDE (CAS 68-12-2) Percentage-5.0 Unit-Wt	1) E-1: Type E, Pressure 1, Temperature 6 2) UN 2923 ERG#154: Type E, Pressure 1, Temperature 6
CAS Trade Secret [X] Chem. Name Avanel N 1525-90 Pure [X] Mixture [ ] Solid [ ] Liquid [X] Gas [ ] EHS [ ]	Fire [X] Pressure [ ] Reactive [ ] Acute [X] Chronic [ ]	99999.0 Max. Daily Amount 99999.0 Avg. Daily Amount 60 No. of Days On-site		1) NON DOT REGULATED: Type O, Pressure 1, Temperature 4 2) D-1, E-1: Type O, Pressure 1, Temperature 4
CAS Trade Secret [X] Chem. Name Avanel N 925 Pure [X] Mixture [ ] Solid [ ] Liquid [X] Gas [ ] EHS [ ]	Fire [X] Pressure [ ] Reactive [ ] Acute [X] Chronic [ ]	99999.0 Max. Daily Amount 9999.0 Avg. Daily Amount 210 No. of Days On-site		1) E-1, C-1: Type O, Pressure 1, Temperature 4 2) Non DOT regulated: Type O, Pressure 1, Temperature 4
CAS Trade Secret [X] Chem. Name Avanel N-374 Pure [X] Mixture [ ] Solid [ ] Liquid [X] Gas [ ] EHS [ ]	Fire [X] Pressure [ ] Reactive [ ] Acute [X] Chronic [ ]	99999.0 Max. Daily Amount 9999.0 Avg. Daily Amount 270 No. of Days On-site		1) E-1: Type O, Pressure 1, Temperature 4 2) Non DOT Regulated: Type O, Pressure 1, Temperature 4
CAS 100516 Trade Secret [ ] Chem. Name BENZYL ALCOHOL Pure [X] Mixture [ ] Solid [ ] Liquid [X] Gas [ ] EHS [ ]	Fire [X] Pressure [ ] Reactive [ ] Acute [X]	99999.0 Max. Daily Amount 99999.0 Avg. Daily Amount 365 No. of Days On-site		1) DK-4: Type A, Pressure 1, Temperature 4 2) Non DOT Regulated: Type a, Pressure 1, Temperature 4

VDM02170

Tier 2 Online Submission Report

Reporting period : From January 1, 2009 to December 31, 2009

Chemical Description	Physical & Health Hazards	Inventory	Mixture components	Storage locations and codes (Non- Confidential)
	Chronic [X]			
CAS 5531431 Trade Secret [ ] Chem. Name Benzyl Carbazate Pure [X] Mixture [ ] Solid [X] Liquid [ ] Gas [ ] EHS [ ]	Fire [X] Pressure [ ] Reactive [ ] Acute [X] Chronic [ ]	9999.0 Max. Daily Amount 9999.0 Avg. Daily Amount 360 No. of Days On-site		1) E-1: Type K, Pressure 1, Temperature 4 2) Non DOT Regulated: Type K, Pressure 1, Temperature 4
CAS 501531 Trade Secret [ ] Chem. Name BENZYL CHLOROFORMATE Pure [X] Mixture [ ] Solid [ ] Liquid [X] Gas [ ] EHS [ ]	Fire [X] Pressure [ ] Reactive [X] Acute [X] Chronic [X]	999999.0 Max. Daily Amount 99999.0 Avg. Daily Amount 365 No. of Days On-site		1) Trailers behind E-1: Type E, Pressure 1, Temperature 6 2) DK-10: Type A, Pressure 1, Temperature 6 3) UN 1739 ERG #137: Type E, Pressure 1, Temperature 6
CAS Trade Secret [ ] Chem. Name Breathing Air Pure [ ] Mixture [X] Solid [ ] Liquid [ ] Gas [X] EHS [ ]	Fire [ ] Pressure [X] Reactive [ ] Acute [ ] Chronic [ ]	9999.0 Max. Daily Amount 9999.0 Avg. Daily Amount 365 No. of Days On-site		1) D-7: Type L, Pressure 2, Temperature 4 2) B-5B: Type L, Pressure 2, Temperature 4 3) D-1: Type L, Pressure 2, Temperature 4 4) Under S-1: Type L, Pressure 2, Temperature 4 5) A-10: Type L, Pressure 2, Temperature 4 6) A-5A,: Type L, Pressure 2, Temperature 4 7) D-3: Type L, Pressure 2, Temperature 4 8) Under S-8: Type L, Pressure 2, Temperature 4 9) UN1002 ERG #122: Type R, Pressure 1, Temperature 4 10) B-5: Type L, Pressure 2, Temperature 4 11) B-9: Type L, Pressure 2, Temperature 4
CAS Trade Secret [ ] Chem. Name Buffer Solutions Pure [ ] Mixture [X] Solid [ ] Liquid [X] Gas [ ] EHS [ ]	Fire [ ] Pressure [ ] Reactive [ ] Acute [X] Chronic [ ]	99.0 Max. Daily Amount 99.0 Avg. Daily Amount 365 No. of Days On-site		1) D-2A: Type R, Pressure 1, Temperature 4 2) A-5: Type R, Pressure 1, Temperature 4 3) A-10: Type R, Pressure 1, Temperature 4 4) NON DOT REGULATED: Type R, Pressure 1, Temperature 4 5) B-5: Type R, Pressure 1, Temperature 4 6) B-8: Type R, Pressure 1, Temperature 4

VDM02171

Tier 2 Online Submission Report

Reporting period : From January 1, 2009 to December 31, 2009

Chemical Description	Physical & Health Hazards	Inventory	Mixture components	Storage locations and codes (Non- Confidential)
CAS 10043524 Trade Secret [ ] Chem. Name CALCIUM CHLORIDE Pure [X] Mixture [ ] Solid [X] Liquid [ ] Gas [ ] EHS [ ]	Fire [ ] Pressure [ ] Reactive [X] Acute [X] Chronic [ ]	99999.0 Max. Daily Amount 99999.0 Avg. Daily Amount 365 No. of Days On-site		1) Non DOT Regulated: Type R, Pressure 1, Temperature 4 2) PT-21: Type A, Pressure 2, Temperature 5 3) ST-9: Type A, Pressure 2, Temperature 5 4) C-1: Type J, Pressure 1, Temperature 4
CAS Trade Secret [ ] Chem. Name CAM 2 HYTURB OIL Pure [X] Mixture [ ] Solid [ ] Liquid [X] Gas [ ] EHS [ ]	Fire [X] Pressure [ ] Reactive [ ] Acute [X] Chronic [ ]	9999.0 Max. Daily Amount 9999.0 Avg. Daily Amount 365 No. of Days On-site		1) C-1C: Type D, Pressure 1, Temperature 4 2) D-5: Type D, Pressure 1, Temperature 4 3) UN1270 ERG#128: Type R, Pressure 1, Temperature 4
CAS 41844717 Trade Secret [ ] Chem. Name Carbaester Pure [X] Mixture [ ] Solid [ ] Liquid [X] Gas [ ] EHS [ ]	Fire [ ] Pressure [ ] Reactive [ ] Acute [X] Chronic [ ]	9999.0 Max. Daily Amount 9999.0 Avg. Daily Amount 365 No. of Days On-site		1) C-1: Type I, Pressure 1, Temperature 4 2) Nonregulated: Type I, Pressure 1, Temperature 4
CAS 124389 Trade Secret [ ] Chem. Name CARBON DIOXIDE Pure [X] Mixture [ ] Solid [ ] Liquid [ ] Gas [X] EHS [ ]	Fire [X] Pressure [ ] Reactive [ ] Acute [X] Chronic [ ]	999.0 Max. Daily Amount 999.0 Avg. Daily Amount 365 No. of Days On-site		1) UN1013 ERG#120: Type R, Pressure 1, Temperature 4 2) A-5: Type L, Pressure 2, Temperature 4
CAS 630080 Trade Secret [ ] Chem. Name Carbon Monoxide Pure [X] Mixture [ ] Solid [ ] Liquid [ ] Gas [X] EHS [ ]	Fire [X] Pressure [X] Reactive [ ] Acute [X] Chronic [ ]	99999.0 Max. Daily Amount 99999.0 Avg. Daily Amount 365 No. of Days On-site		1) B-1 (WEST of): Type R, Pressure 2, Temperature 4 2) UN9202 ERG #168: Type R, Pressure 1, Temperature 4 3) B-9: Type R, Pressure 2, Temperature 6
CAS 56235 Trade Secret [ ] Chem. Name CARBON TETRACHLORIDE Pure [X] Mixture [ ] Solid [ ] Liquid [X] Gas [ ] EHS [ ]	Fire [ ] Pressure [ ] Reactive [ ] Acute [X] Chronic [X]	99.0 Max. Daily Amount 99.0 Avg. Daily Amount 365 No. of Days On-site		1) B-6: Type M, Pressure 1, Temperature 4 2) UN1846 ERG #155: Type R, Pressure 1, Temperature 4

New York State Department of Environmental Conservation
Division of Environmental Permits, Region 9
270 Michigan Avenue, Buffalo, New York, 14203-2915
Phone: (716) 851-7165 · **Fax:** (716) 851-7168
Website: www.dec.ny.gov

Alexander B. Grannis
Commissioner

September 23, 2008

Mr. Richard G. Shotell
President
Vanchlor Company, Incorporated
45 Main Street
Lockport, New York 14094

Dear Mr. Shotell:

PART 373 PERMIT RENEWAL
VANCHLOR COMPANY, INCORPORATED
CITY OF LOCKPORT – NIAGARA COUNTY
DEC NO. 9-2909-00049/00003
EPA ID NO. NYD991290529

Enclosed is the referenced 6 NYCRR Part 373 Permit which has been renewed September 23, 2008. The Notice of Complete Application for the permit renewal was published in The Lockport Union Sun and Journal and in the Department's Environmental Notice Bulletin on Wednesday, August 6, 2008. A radio announcement regarding the permit renewal was broadcast on WLVL once between the hours of 7:00 a.m. and 9:00 p.m. and once again between 4:00 p.m. and 6:00 p.m. The public comment period on the permit renewal expired on September 22, 2008, and no comments were received by the Department as of that date.

If you have any questions regarding the administrative processing of the permit renewal, please contact Mr. Jeffrey Dietz or me at (716) 851-7165. Technical questions relating to specific permit conditions may be directed to Mr. Stanley Radon at (716) 851-7220.

Respectfully,

Steven J. Doleski

Steven J. Doleski
Regional Permit Administrator

JED:vm

Enclosure

cc (w/enc.): Mr. James Strickland/Mr. Stanley Radon, Region 9,
Division of Solid and Hazardous Materials
Mr. Lawrence Thomas, Central Office, Division of Solid and Hazardous Materials
Ms. Denise Radtke, Central Office, Division of Solid and Hazardous Materials
Mr. James Reidy, RCRA Program Branch, USEPA Region II
Mr. Matt Forcucci, NYS Department of Health
Mr. James Devald, Niagara County Health Department
Ms. Pamela Cook, VanDeMark Chemical Company, Incorporated
cc (w/o enc.): Mr. Daniel David, NYSDEC Regional Engineer

PERMIT

Under the Environmental Conservation Law (ECL)

Permittee and Facility Information

Permit Issued To:
VANCHLOR CO INC
45 MAIN ST
LOCKPORT, NY 14094
(716) 434-2624

Facility:
VANCHLOR CO
600 MILL ST
LOCKPORT, NY 14094

Facility Permit Contact:
RICHARD G SHOTELL
VANCHLOR CO INC
45 MAIN ST
LOCKPORT, NY 14094
(716) 434-2624

Environmental Contact:
PAMELA J COOK
VANDEMARK CHEMICAL INC
1 N TRANSIT RD
LOCKPORT, NY 14094-2399
(716) 433-6764

Facility Location: in LOCKPORT in NIAGARA COUNTY
Facility Principal Reference Point: NYTM-E: 199.07 NYTM-N: 4788.1
Latitude: 43°11'08.6" Longitude: 79°42'10.9"

Authorized Activity: Post-Closure care of a 2.5 acre closed hazardous waste landfill containing chemical waste by-products generated from VanDeMark Chemical Company's prior production of silicon tetrachloride. Certification of closure accepted by the New York State Department of Environmental Conservation on October 11, 1988.

Permit Authorizations

Resource Conservation and Recovery Act - Under Article 27, TItle 9
Permit ID 9-2909-00049/00003
Renewal Effective Date: 9/23/2008 Expiration Date: 9/22/2013

NYSDEC Approval

By acceptance of this permit, the permittee agrees that the permit is contingent upon strict compliance with the ECL, all applicable regulations, and all conditions included as part of this permit.

Permit Administrator: STEVEN J DOLESKI, Regional Permit Administrator
Address: NYSDEC REGION 9 HEADQUARTERS
270 MICHIGAN AVE
BUFFALO, NY 14203 -2915

Authorized Signature: Steven J. Doleski Date 9/23/2008

VDM02174

Distribution List

PAMELA J COOK
RICHARD G SHOTELL
JAMES STRICKLAND
STANLEY RADON
LAWRENCE M THOMAS
DENISE RADTKE
JAMES M REIDY
MATT FORCUCCI
JAMES J DEVALD

Permit Components

RESOURCE CONSERVATION AND RECOVERY ACT PERMIT CONDITIONS

GENERAL CONDITIONS, APPLY TO ALL AUTHORIZED PERMITS

NOTIFICATION OF OTHER PERMITTEE OBLIGATIONS

RESOURCE CONSERVATION AND RECOVERY ACT PERMIT CONDITIONS

1. **Specified Modules and Attachments** The Permittee must operate the facility in strict accordance with the modules and attachemnts to this permit as specified below:

Modules

Module I	Post-Closure Regulatory Provisions
Module II	Groundwater Monitoring
Module III	Post-Closure Care Conditions

Attachments

Attachment II-A	Groundwater Monitoring Plan
Attachment II-B	Well Purging/Sampling Data
Attachment II-C	Groundwater Monitoring System Inspection Plan and Forum
attachment II-D	Laboratory QA/QC Deliverables

GENERAL CONDITIONS - Apply to ALL Authorized Permits:

1. **Facility Inspection by The Department** The permitted site or facility, including relevant records, is subject to inspection at reasonable hours and intervals by an authorized representative of the Department of Environmental Conservation (the Department) to determine whether the permittee is complying with this permit and the ECL. Such representative may order the work suspended pursuant to ECL 71- 0301 and SAPA 401(3).

The permittee shall provide a person to accompany the Department's representative during an inspection to the permit area when requested by the Department.

A copy of this permit, including all referenced maps, drawings and special conditions, must be available for inspection by the Department at all times at the project site or facility. Failure to produce a copy of the permit upon request by a Department representative is a violation of this permit.

2. **Relationship of this Permit to Other Department Orders and Determinations** Unless expressly provided for by the Department, issuance of this permit does not modify, supersede or rescind any order or determination previously issued by the Department or any of the terms, conditions or requirements contained in such order or determination.

3. **Applications For Permit Renewals, Modifications or Transfers** The permittee must submit a separate written application to the Department for permit renewal, modification or transfer of this permit. Such application must include any forms or supplemental information the Department requires. Any renewal, modification or transfer granted by the Department must be in writing. Submission of applications for permit renewal, modification or transfer are to be submitted to:

Regional Permit Administrator
NYSDEC REGION 9 HEADQUARTERS
270 MICHIGAN AVE
BUFFALO, NY14203 -2915

4. **Submission of Renewal Application** The permittee must submit a renewal application at least 180 days before permit expiration for the following permit authorizations: Resource Conservation and Recovery Act.

5. **Permit Modifications, Suspensions and Revocations by the Department** The Department reserves the right to modify, suspend or revoke this permit. The grounds for modification, suspension or revocation include:

a. materially false or inaccurate statements in the permit application or supporting papers;

b. failure by the permittee to comply with any terms or conditions of the permit;

c. exceeding the scope of the project as described in the permit application;

d. newly discovered material information or a material change in environmental conditions, relevant technology or applicable law or regulations since the issuance of the existing permit;

e. noncompliance with previously issued permit conditions, orders of the commissioner, any provisions of the Environmental Conservation Law or regulations of the Department related to the permitted activity.

6. **Permit Transfer** Permits are transferrable unless specifically prohibited by statute, regulation or another permit condition. Applications for permit transfer should be submitted prior to actual transfer of ownership.

NOTIFICATION OF OTHER PERMITTEE OBLIGATIONS

Item A: Permittee Accepts Legal Responsibility and Agrees to Indemnification
The permittee, excepting state or federal agencies, expressly agrees to indemnify and hold harmless the Department of Environmental Conservation of the State of New York, its representatives, employees, and agents ("DEC") for all claims, suits, actions, and damages, to the extent attributable to the permittee's acts or omissions in connection with the permittee's undertaking of activities in connection with, or operation and maintenance of, the facility or facilities authorized by the permit whether in compliance or not in compliance with the terms and conditions of the permit. This indemnification does not extend to any claims, suits, actions, or damages to the extent attributable to DEC's own negligent or intentional acts or omissions, or to any claims, suits, or actions naming the DEC and arising under Article 78 of the New York Civil Practice Laws and Rules or any citizen suit or civil rights provision under federal or state laws.

Item B: Permittee's Contractors to Comply with Permit
The permittee is responsible for informing its independent contractors, employees, agents and assigns of their responsibility to comply with this permit, including all special conditions while acting as the permittee's agent with respect to the permitted activities, and such persons shall be subject to the same sanctions for violations of the Environmental Conservation Law as those prescribed for the permittee.

Item C: Permittee Responsible for Obtaining Other Required Permits
The permittee is responsible for obtaining any other permits, approvals, lands, easements and rights-of-way that may be required to carry out the activities that are authorized by this permit.

Item D: No Right to Trespass or Interfere with Riparian Rights
This permit does not convey to the permittee any right to trespass upon the lands or interfere with the riparian rights of others in order to perform the permitted work nor does it authorize the impairment of any rights, title, or interest in real or personal property held or vested in a person not a party to the permit.

VDM02177

Exchange: Project Seed
User: Pat Fitzgerald
Date and time: 9/11/2012 4:17:55 PM

Document properties

Title: DOT permit
Index number: 14.3.7
Location: Environmental Matters\Environmental Permits
Mime type: APPLICATION/PDF
Page count: 3
Note:

Created on: 10/21/2011 1:42:52 PM
Created by: Matt Iodice
Last modified on: 10/21/2011 1:42:53 PM
Last modified by: Matt Iodice

UNITED STATES OF AMERICA
DEPARTMENT OF TRANSPORTATION
PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION

HAZARDOUS MATERIALS CERTIFICATE OF REGISTRATION FOR REGISTRATION YEAR(S) 2010-2013

Registrant: VANDEMARK CHEMICAL INC DBA VANDEMARK
Attn: DEBBIE TAYLOR
1 NORTH TRANSIT RD
LOCKPORT, NY 14094

This certifies that the registrant is registered with the U.S. Department of Transportation as required by 49 CFR Part 107, Subpart G.

This certificate is issued under the authority of 49 U.S.C. 5108. It is unlawful to alter or falsify this document.

Reg. No: 051110 551 088SU Issued: 05/11/2010 Expires: 06/30/2013

Record Keeping Requirements for the Registration Program

The following must be maintained at the principal place of business for a period of three years from the date of issuance of this Certificate of Registration:

(1) A copy of the registration statement filed with PHMSA; and
(2) This Certificate of Registration

Each person subject to the registration requirement must furnish that person's Certificate of Registration (or a copy) and all other records and information pertaining to the information contained in the registration statement to an authorized representative or special agent of the U. S. Department of Transportation upon request.

Each motor carrier (private or for-hire) and each vessel operator subject to the registration requirement must keep a copy of the current Certificate of Registration or another document bearing the registration number identified as the "U.S. DOT Hazmat Reg. No." in each truck and truck tractor or vessel (trailers and semi-trailers not included) used to transport hazardous materials subject to the registration requirement. The Certificate of Registration or document bearing the registration number must be made available, upon request, to enforcement personnel.

For information, contact the Hazardous Materials Registration Manager, PHH-62, Pipeline and Hazardous Materials Safety Administration, U.S. Department of Transportation, 1200 New Jersey Avenue, SE, Washington, DC 20590, telephone (202) 366-4109.

OMB No. 2126-0013

U.S. Department of Transportation
Federal Motor Carrier Safety Administration

Combined Motor Carrier Identification Report and HM Permit Application

REASON FOR FILING (Check Only One)

☐ NEW APPLICATION ☒ BIENNIAL UPDATE OR CHANGES ☐ OUT OF BUSINESS NOTIFICATION ☐ REAPPLICATION (AFTER REVOCATION OF NEW ENTRANT)

1. NAME OF MOTOR CARRIER	2. TRADE OR D.B.A. (DOING BUSINESS AS) NAME
VANDEMARK CHEMICAL INC	VANDEMARK

3. PRINCIPAL STREET ADDRESS/ROUTE NUMBER	4. CITY	5. MAILING ADDRESS (P O BOX)	6. MAILING CITY
1 NORTH TRANSIT ROAD	LOCKPORT	1 NORTH TRANSIT ROAD	LOCKPORT

7. STATE/PROVINCE	8. ZIP CODE + 4	9.COLONIA (MEXICO ONLY)	10. STATE/PROVINCE	11. ZIP CODE+4	12.COLONIA (MEXICO ONLY)
NEW YORK	14094		NEW YORK	14094	

13. PRINCIPAL BUSINESS PHONE NUMBER	14. PRINCIPAL CONTACT CELLULAR PHONE NUMBER	15. PRINCIPAL BUSINESS FAX NUMBER
(716) 433-6764		(716) 433-2850

16. USDOT NO.	17. MC OR MX NO.	18. DUN & BRADSTREET NO.	19. IRS/TAX ID NO.	20. INTERNET E-MAIL ADDRESS
16688	MC258471	175773779	EIN# 160757316 SSN#	

21. COMPANY OPERATION (Circle all that apply)
(A) Interstate Carrier B. Intrastate Hazmat Carrier C. Intrastate Non-Hazmat Carrier (D) Interstate Shipper E. Intrastate Shipper F. Vehicle Registrant Only

22. CARRIER MILEAGE (to nearest 10,000 miles for Last Calendar Year) YEAR
174000 2009

23. OPERATION CLASSIFICATION (Circle All that Apply)
(A) Authorized For-Hire D. Private Passengers (Business) G. U. S. Mail J. Local Government
B. Exempt For-Hire E. Private Passengers (Non-Business) H. Federal Government K. Indian Tribe
(C) Private Property F. Migrant I. State Government L. Other

24. CARGO CLASSIFICATIONS (Circle All that Apply)
(A) GENERAL FREIGHT; B. HOUSEHOLD GOODS; C. METAL; SHEETS; COILS; ROLLS; D. MOTOR VEHICLES; E. DRIVE AWAY/TOWAWAY; F. LOGS, POLES, BEAMS, LUMBER; G. BUILDING MATERIALS; H. MOBILE HOMES; I. MACHINERY, LARGE OBJECTS; J. FRESH PRODUCE; (K) LIQUIDS/GASES; (L) INTERMODAL CONT.; M. PASSENGERS; N. OIL FIELD EQUIPMENT; O. LIVESTOCK; P. GRAIN, FEED, HAY; Q. COAL/COKE; R. MEAT; S. GARBAGE, REFUSE, TRASH; T. U.S. MAIL; (U) CHEMICALS; (V) COMMODITIES DRY BULK; W. REFRIGERATED FOOD; X. BEVERAGES; Y. PAPER PRODUCTS; Z. UTILITY; AA. FARM SUPPLIES; BB. CONSTRUCTION; CC. WATER WELL; DD. OTHER

25. HAZARDOUS MATERIALS CARRIED OR SHIPPED (Circle All that Apply) C-CARRIED S-SHIPPED B(BULK) - IN CARGO TANKS NB(NON-BULK) - IN PACKAGE

C	S	A. DIV 1.1	B	NB	C	S	K. DIV 2.2A (Ammonia)	B	NB	(C)	(S)	U. DIV 4.2	(B)	(NB)	C	S	EE. HRCQ	B	NB
C	S	B. DIV 1.2	B	NB	(C)	(S)	L. DIV 2.3A	(B)	(NB)	(C)	(S)	V. DIV 4.3	(B)	(NB)	(C)	(S)	FF. CLASS 8	(B)	(NB)
C	S	C. DIV 1.3	B	NB	(C)	(S)	M. DIV 2.3B	(B)	(NB)	(C)	(S)	W. DIV 5.1	(B)	(NB)	(C)	(S)	GG. CLASS 8A	(B)	(NB)
C	S	D. DIV 1.4	B	NB	(C)	(S)	N. DIV 2.3C	(B)	(NB)	(C)	(S)	X. DIV 5.2	(B)	(NB)	(C)	(S)	HH. CLASS 8B	(B)	(NB)
C	S	E. DIV 1.5	B	NB	(C)	(S)	O. DIV 2.3D	(B)	(NB)	(C)	(S)	Y. DIV 6.2	(B)	(NB)	(C)	(S)	II. CLASS 9	(B)	(NB)
C	S	F. DIV 1.6	B	NB	(C)	(S)	P. Class 3	(B)	(NB)	(C)	(S)	Z. DIV 6.1A	(B)	(NB)	C	S	JJ. ELEVATED TEMP MAT.	B	NB
(C)	S	G. DIV 2.1	(B)	(NB)	(C)	(S)	Q. Class 3A	(B)	(NB)	(C)	(S)	AA. DIV 6.1B	(B)	(NB)	C	S	KK. INFECTIOUS WASTE	B	NB
(C)	S	H. DIV 2.1 LPG	(B)	(NB)	(C)	(S)	R. Class 3B	(B)	(NB)	(C)	(S)	BB. DIV 6.1 Poison	(B)	(NB)	(C)	(S)	LL. MARINE POLLUTANTS	(B)	(NB)
(C)	S	I. DIV 2.1 (Methane)	(B)	(NB)	(C)	(S)	S. COM LIQ	(B)	(NB)	(C)	(S)	CC. DIV 6.1 SOLID	(B)	(NB)	(C)	(S)	MM. HAZARDOUS SUB(RQ)	(B)	(NB)
(C)	S	J. DIV 2.2	(B)	(NB)	(C)	(S)	T. DIV 4.1	(B)	(NB)	C	S	DD. CLASS 7	B	NB	(C)	(S)	NN. HAZARDOUS WASTE	(B)	(NB)
															C	S	OO. ORM	B	NB

26. NUMBER OF VEHICLES THAT CAN BE OPERATED IN THE U.S.

	Straight Trucks	Truck Tractors	Trailers	Hazmat Cargo Tank Trucks	Hazmat Cargo Tank Trailers	Motor Coach	School Bus			Mini-bus	Van		Limousine		
							Number of vehicles carrying number of passengers (including the driver) below								
							1-8	9-15	16+	16+	1-8	9-15	1-8	9-15	16+
OWNED	0	0	0	0	0	0			0	0					0
TERM LEASED	0	2	3	0	0	0			0	0					0
TRIP LEASED	0	0	0	0	0	0			0	0					0

27. DRIVER INFORMATION	INTERSTATE	INTRASTATE	TOTAL DRIVERS	TOTAL CDL DRIVERS
Within 100-Mile Radius	0	0	2	2
Beyond 100-Mile Radius	2	0		

28. IS YOUR U.S. DOT NUMBER REGISTRATION CURRENTLY REVOKED BY THE FEDERAL MOTOR CARRIER SAFETY ADMINISTRATION? Yes_____ No X
If Yes, enter your U.S. DOT Number.

29. PLEASE ENTER NAME(S) OF SOLE PROPRIETOR(S), OFFICERS OR PARTNERS AND TITLES (e.g. PRESIDENT, TREASURER, GENERAL PARTNER, LIMITED PARTNER)

1. PAUL AMEIS, COO (Please print Name)

2. ROBERT BIGOS, CFO (Please print Name)

VDM02180

30. WHICH OF THE FOLLOWING HAZARDOUS MATERIAL(S) DOES YOUR COMPANY TRANSPORT, CHECK ALL THAT APPLY:

- [ ] Highway Route Controlled Quantities (HRCQ) of Radioactive materials
- [ ] More than 25 kg (55 pounds) of a Division 1.1, 1.2, or 1.3, or a quantity of Division 1.5 material that requires placarding
- [X] For materials that meet the definition of "material poisonous by inhalation" (TIH) as defined in 49 CFR 171.8; More than 1 liter (1.08 quarts) per package of a material meeting the definition of a Hazard Zone A TIH material, a material meeting the definition of a Hazard Zone B TIH material in a bulk package (capacity greater than 450 liters (119 gallons), or a material meeting the definition of a Hazard Zone C or D TIH material in a bulk packaging that has a capacity greater than 13,248 liters (3,500 gallons).
- [X] Shipments of compressed or refrigerated liquid methane or liquefied natural gas with a methane content of at least 85% in a bulk packaging that has a capacity greater than 13,248 liters (3,500 gallons)

31. IF YOU CHECK QUESTION 30, ARE YOU APPLYING FOR OR RENEWING A HM SAFETY PERMIT? PLEASE CHECK ONE:

[ ] INITIAL [X] RENEWAL [ ] UPDATE

32. IF YOUR COMPANY DOES NOT HAVE A U.S. DOT NUMBER, HOW MANY ACCIDENTS AS DEFINED IN 49 CFR 390.5 HAS YOUR COMPANY HAD IN THE PAST 365 DAYS?

0

33. DOES YOUR COMPANY CERTIFY THEY HAVE A SATISFACTORY SECURITY PROGRAM IN PLACE AS REQUIRED IN 49 CFR PART 385 SUBPART E? [X] Yes [ ] No

34. IS YOUR COMPANY REQUIRED BY ANY STATE(S) TO HAVE A PERMIT FOR ANY OF THE HAZARDOUS MATERIALS LISTED IN QUESTION 30? [X] Yes [ ] No

35. IF YOUR ANSWER TO QUESTION 34 IS YES, CHECK THE STATE(S) IN WHICH YOU HAVE THE PERMIT.

[ ] AL	[ ] AK	[ ] AR	[ ] AZ	[ ] CA	[ ] CO	[ ] CT	[ ] DC	[ ] DE	[ ] FL	[ ] GA
[ ] HI	[ ] ID	[ ] IL	[ ] IN	[ ] IA	[ ] KS	[ ] KY	[ ] LA	[ ] MA	[ ] MD	[ ] ME
[X] MI	[ ] MN	[ ] MO	[ ] MS	[ ] MT	[ ] NC	[ ] ND	[ ] NE	[ ] NH	[ ] NJ	[ ] NM
[X] NV	[ ] NY	[X] OH	[ ] OK	[ ] OR	[ ] PA	[ ] PR	[ ] RI	[ ] SC	[ ] SD	[ ] TN
[ ] TX	[ ] UT	[ ] VT	[ ] VA	[ ] WA	[X] WV	[ ] WI	[ ] WY			

NOTE:

All motor carriers must comply with all pertinent Federal, State, local and tribal statutory and regulatory requirements when operating within the United States. Such requirements include, but are not limited to, all applicable statutory and regulatory requirements administered by the U.S. Department of Labor, or by a State agency operating a plan pursuant to Section 18 of the Occupational Safety and Health Act of 1970 ("OSHA State plan agency"). Such requirements also include all applicable statutory and regulatory environmental standards and requirements administered by the U.S. Environmental Protection Agency or a State, local or tribal environmental protection agency. Compliance with these statutory and regulatory requirements may require motor carriers and/or individual operators to produce documents for review and inspection for the purpose of determining compliance with such statutes and regulations.

30. CERTIFICATION STATEMENT (to be completed by an authorized official)

I, JANET B SCOTT (Please print Name) certify that I am familiar with the Federal Motor Carrier Safety Regulations and/or Federal Hazardous Materials Regulations. Under penalties of perjury, I declare that the information entered on this report is, to the best of my knowledge and belief, true, correct, and complete.

Signature JANET B SCOTT Date 08/25/2010 Title PURCHASING/LOGISTICS MAN/ (Please print)

U.S. Department
of Transportation

East Building, PHH-30
1200 New Jersey Avenue S.E.
Washington, D.C. 20590

**Pipeline and Hazardous
Materials Safety Administration**

4/13/2011

Bill Barger
All-Pak Dangerous Goods, a Division of Berlin Packaging (Former Grantee All-Pak, Inc.)
1195 Washington Pike
Bridgeville, PA 15017

We have received your application for renewal of DOT-SP 9168 and are processing your request. The application for renewal of your special permit was filed in a timely manner as prescribed in §107.109(b), i.e., at least 60 days prior to the expiration date; therefore, you may continue to use your special permit until final administrative action is taken.

If you have any questions regarding this requirement, please contact the Office of Hazardous Materials Special Permits and Approvals at (202) 366-4535.

Sincerely,

For Dr. Magdy El-Sibaie
Associate Administrator for Hazardous Materials Safety

Tracking No: 2011021183

July 3, 2007

U.S. Department
of Transportation

Pipeline and Hazardous
Materials Safety Administration

East Building, PHH - 30
1200 New Jersey Avenue, Southeast
Washington, D.C. 20590

DOT-SP 9168
(SIXTEENTH REVISION)

EXPIRATION DATE: April 30, 2011

(FOR RENEWAL, SEE 49 CFR 107.109)

1. GRANTEE: All-Pak, Incorporated
Bridgeville, PA

2. PURPOSE AND LIMITATIONS:

a. This special permit authorizes the manufacture, mark, sale and use of the specially designed combination packagings described herein for transportation in commerce of the materials listed in paragraph 6 without hazard labels or placards, with quantity limits not exceeding one liter for liquids or 2.85 kilograms for solids. This special permit provides no relief from the Hazardous Materials Regulations (HMR) other than as specifically stated herein.

b. The safety analyses performed in development of this special permit only considered the hazards and risks associated with transportation in commerce.

3. REGULATORY SYSTEM AFFECTED: 49 CFR Parts 106, 107 and 171-180.

4. REGULATIONS FROM WHICH EXEMPTED: 49 CFR §§ 173.13(a) in that Division 5.2 and toxic by inhalation (TIH) materials are included; § 173.13(b) in that passenger-carrying aircraft is authorized for certain materials; § 173.13(c)(1)(ii) in that absorbent material may be placed inside the inner barrier bag; and §§ 173.13(c)(1)(iv) and § 173.13(c)(2)(iii) in that a protective frame is authorized in place of an inner fiberboard box.

5. BASIS: This special permit is based on the application of All-Pak, Incorporated dated April 30, 2007, submitted in accordance with 49 CFR 107.109.

6. HAZARDOUS MATERIALS (49 CFR § 172.101):

Hazardous Materials Description[1]			
Proper Shipping Name	**Hazard Class/ Division**	**Identification Number**	**Packing Group**
Flammable, liquids	3	As Appropriate	I, II or III
Flammable solids[2,3]	4.1	As Appropriate	II or III
Pyrophoric materials[4]	4.2	As Appropriate	I
Self heating materials[3]	4.2	As Appropriate	II or III
Dangerous When Wet materials	4.3	As Appropriate	I, II or III
Oxidizers[4]	5.1	As Appropriate	I, II or III
Organic peroxides[2,3]	5.2	As Appropriate	II
Toxic materials[4]	6.1	As Appropriate	I, II or III
Corrosive materials	8	As Appropriate	I, II or III
Miscellaneous hazardous materials	9	As Appropriate	II or III

[1] - Only hazardous materials permitted to be transported aboard a passenger-carrying aircraft by column (9A) of the Hazardous Materials Table in § 172.101 are authorized for transport aboard passenger-carrying aircraft; only hazardous materials permitted to be transported aboard a cargo aircraft by column (9B) of the Hazardous Materials Table in § 172.101 are authorized for transport aboard cargo-only aircraft.

[2] - Excludes Type A, B and C materials.

[3] - Excludes materials which require temperature control.

[4] - As restricted by paragraphs 7.c and 7.d.

7. SAFETY CONTROL MEASURES:

a. PACKAGING - Packagings manufactured under this special permit prior to March 31, 2000, are authorized for continued use; however, no new manufacture is authorized. Packagings manufactured after April 1, 2000 must meet the following requirements:

(1) Liquid hazardous material must be placed in a tightly closed glass, metal or plastic inner packaging(s) with a total capacity not exceeding 1.2 liters in volume per completed package. The inner packaging(s) must be sealed and must be compatible with the product. Inner packaging(s) must have sufficient outage so that they will not become liquid full at 55°C. The net quantity (measured at 20°C) in the inner packaging(s) may not exceed one liter;

(2) Solid hazardous material must be placed in a tightly closed glass, metal or plastic inner packaging(s). The net quantity of material in the inner packaging(s) may not exceed 2.85 kilograms. The inner packaging(s) must be sealed and must be compatible with the product;

(3) Inner packaging(s) containing liquid, pyrophoric material, or dangerous when wet material must be:

(i) Surrounded by non-reactive absorbent material, in sufficient quantity to completely absorb the entire contents of the inner packaging(s) and placed into a hermetically sealed (e.g., goose-necked and tied, heat sealed, etc.) barrier bag (4 mils minimum) which is impervious to the lading; or

(ii) Placed into a hermetically sealed barrier bag (4 mils minimum) which is impervious to the lading and surrounded by non-reactive absorbent material in sufficient quantity to completely absorb the entire contents of the inner packaging(s).

(4) The inner packaging(s) (barrier bag and absorbent material, if required) must be placed in a metal can with a sufficient quantity of non-reactive filler material to immobilize the inner packaging(s) and fill all void spaces;

(5) The metal can must be hermetically sealed for Division 4.2, 4.3 and TIH materials;

(6) The metal can and barrier bag must be placed in an outer packaging with a protective frame insert which is designed to prevent impact and movement of the metal can. Up to four frame inserts may be placed into an outer package. The outer package must conform to § 173.201 for liquids and § 173.211 for solids.

(7) All closures must be held securely in place by positive means.

b. TESTING -

(1) The completed package, assembled as for transportation and with the inner packaging(s) filled 98% full with liquid, must be successfully tested in accordance with 49 CFR Part 178 at the Packing Group I level.

(2) The metal can with inner packaging(s) filled 98% full, must be successfully tested in accordance with 49 CFR Part 178 at the Packing Group I level. In addition for TIH, and pyrophoric materials, the metal can must be capable of withstanding a pressure differential of 100 kPa.

(3) For transportation by aircraft, the completed package must be offered in conformance with § 173.27(c).

c. ADDITIONAL SAFETY CONTROL MEASURES FOR A MATERIAL TOXIC BY INHALATION - The following provisions are applicable to materials meeting the definition of "material toxic by inhalation" in § 171.8 that are packaged in accordance with the requirements of this special permit:

(1) Each outside package must be marked "INHALATION HAZARD" in letters at least 12.0 mm (one-half inch) high on a contrasting background in close proximity to the marking specified in paragraph 8.f.

(2) Shipping papers must contain a notation "TOXIC INHALATION HAZARD" in addition to the shipping paper requirements of Subpart C of Part 172.

d. MATERIALS WHICH MAY NOT BE TRANSPORTED BY PASSENGER CARRYING AIRCRAFT -

(1) Materials which meet the definition of "material toxic by inhalation" in § 171.8 (any zone).

(2) Materials which meet the definition of oxidizer, at the Packing Group I level in accordance with § 173.127(b)(1)(i).

8. SPECIAL PROVISIONS:

a. In accordance with the provisions of Paragraph (b) of § 173.22a, persons may use the packaging(s) authorized by this special permit for the transportation of the hazardous materials specified in paragraph 6, only in conformance with the terms of this special permit.

b. A person who is not a holder of this special permit, but receives a package covered by this special permit, may reoffer it for transportation provided no modification or change is made to the package or its contents and it is offered for transportation in conformance with this special permit and the HMR.

c. A current copy of this special permit must be maintained at each facility where the package is offered or reoffered for transportation.

d. Each packaging manufactured under the authority of this special permit must be either (1) marked with the name of the manufacturer and location (city and state) of the facility at which it is manufactured or (2) marked with a registration symbol designated by the Office of Hazardous Materials Special Permits and Approvals for a specific manufacturing facility.

e. A current copy of this special permit must be maintained at each facility where the package is manufactured under this special permit. It must be made available to a DOT representative upon request.

f. MARKING and LABELING

(1) Each package shipped under this special permit must be marked "DOT-SP 9168 - NO HAZARD LABELS REQUIRED" in letters at least 12.0 mm (one-half inch) high on a contrasting background in proximity to required DOT markings.

(2) Each package that is offered for transportation by aircraft which contains a material which is not authorized to be transported aboard a passenger-carrying aircraft by column (9A) of the Hazardous Materials Table in § 172.101 must bear a CARGO ONLY AIRCRAFT label.

(3) If the inner metal can is not capable of withstanding a pressure differential of 100 kPa, then the can must be marked in letters at least 6.0 mm (one-quarter inch) high on a contrasting background that the can is not suitable for TIH or Pyrophoric Materials.

g. Packagings permanently marked 'DOT-E 9168', prior to October 1, 2007 may continue to be used under this special permit for the remaining service life of the packaging or until the special permit is no longer valid. Packagings marked on or after October 1, 2007 must be marked 'DOT-SP 9168'.

h. Shipping papers displaying 'DOT-E 9168' may continue to be used until October 1, 2007, provided the special permit remains valid.

9. MODES OF TRANSPORTATION AUTHORIZED: Motor vehicle, rail freight, cargo aircraft only with restrictions (see paragraph 7.c), and passenger-carrying aircraft with restrictions (see paragraph 7.d).

10. MODAL REQUIREMENTS: A current copy of this special permit must be carried aboard each aircraft used to transport packages covered by this special permit. The shipper must furnish a current copy of this special permit to the air carrier before or at the time the shipment is tendered.

11. COMPLIANCE: Failure by a person to comply with any of the following may result in suspension or revocation of this special permit and penalties prescribed by the Federal hazardous materials transportation law, 49 U.S.C. 5101 et seq:

    - All terms and conditions prescribed in this special permit and the Hazardous Materials Regulations, Parts 171-180.
    - Persons operating under the terms of this special permit must comply with the security plan requirement in Subpart I of Part 172 of the HMR, when applicable.
    - Registration required by § 107.601 et seq., when applicable.

    Each "Hazmat employee", as defined in § 171.8, who performs a function subject to this special permit must receive training on the requirements and conditions of this special permit in addition to the training required by §§ 172.700 through 172.704.

    No person may use or apply this special permit, including display of its number, when this special permit has expired or is otherwise no longer in effect.

    Under Title VII of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU)- 'The Hazardous Materials Safety and Security Reauthorization Act of 2005' (Pub. L. 109-59), 119 Stat. 1144 (August 10, 2005), amended the Federal hazardous materials transportation law by changing the term 'exemption' to 'special permit' and authorizes a special permit to be granted up to two years for new special permits and up to four years for renewals.

12. REPORTING REQUIREMENTS: Shipments or operations conducted under this special permit are subject to the Hazardous Materials Incident Reporting requirements specified in 49 CFR §§ 171.15 - Immediate notice of certain hazardous materials incidents, and 171.16 - detailed hazardous

materials incident reports. In addition, the grantee(s) of this special permit must notify the Associate Administrator for Hazardous Materials Safety, in writing, of any incident involving a package, shipment or operation conducted under terms of this special permit.

Issued in Washington, D.C.:

Diane LaValle

for Bob Richard
Deputy Associate Administrator
for Hazardous Materials Safety

Address all inquiries to: Associate Administrator for Hazardous Materials Safety, Pipeline and Hazardous Materials Safety Administration, Department of Transportation, Washington, D.C. 20590. Attention: PHH-31.

Copies of this special permit may be obtained by accessing the Hazardous Materials Safety Homepage at http://hazmat.dot.gov/sp_app/special_permits/spec_perm_index.htm Photo reproductions and legible reductions of this special permit are permitted. Any alteration of this special permit is prohibited.

PO: RDT/AM

February 25, 2009

U.S. Department
of Transportation

East Building, PHH-30
1200 New Jersey Avenue S.E.
Washington, D.C. 20590

**Pipeline and Hazardous
Materials Safety Administration**

DOT-SP 12443
(SEVENTH REVISION)

(FOR RENEWAL, SEE 49 CFR § 107.109)

1. GRANTEE: (See individual authorization letter)

2. PURPOSE AND LIMITATION:

a. This special permit authorizes tank cars, containing hazardous materials identified in paragraph 6, to remain standing with unloading connections attached when no product is being transferred, provided that a minimal level of monitoring, as specified in this special permit is maintained. This special permit provides no relief from the Hazardous Materials Regulation (HMR) other than as specifically stated herein. The most recent revision supersedes all previous revisions.

b. The safety analyses performed in development of this special permit only considered the hazards and risks associated with transportation in commerce.

c. Unless otherwise stated herein, this special permit consists of the special permit authorization letter issued to the grantee together with this document.

3. REGULATORY SYSTEM AFFECTED: 49 CFR Parts 106, 107 and 171-180.

4. REGULATIONS FROM WHICH EXEMPTED: 49 CFR § 172.302(c) in that marking the special permit number on tank cars is waived; and § 174.67 (i) and (j), except as specified herein.

5. BASIS: This special permit is based on the Pipeline and Hazardous Materials Safety Administration's (PHMSA) editorial review under § 107.121 initiated on December 4, 2008.

6. HAZARDOUS MATERIALS (49 CFR § 172.101):

Hazardous Materials Description			
Proper Shipping Name	**Hazard Class/ Division**	**Identification Number**	**Packing Group**
Hazardous materials authorized by § 172.101 and Part 173 to be shipped in tank cars	Class 2, 3, 4, 5, 6, 8, & 9	As appropriate	As appropriate

7. PACKAGING:

a. Prescribed packagings are DOT or non-DOT specification tank cars authorized for the material specified meeting all DOT specification requirements.

b. The facility operator must secure access to the track to prevent entry by other rail equipment, including motorized service vehicles. Derails, lined and blocked switches, portable bumper blocks, or other processes or methods that provide an equivalent level of security may be used to satisfy this requirement.

c. The facility operator shall designate an employee responsible for on-site monitoring of the transfer facility in the absence of the unloader. The designated employee must be made familiar with the nature and properties of the product contained in the tank car, procedures to be followed in the event of an emergency; and, in the event of an emergency, have the ability and authority to take responsive actions.

d. When a signaling system is used (including a monitoring system or a sensing device), the system must be capable of alerting the designated employee in the event of an emergency and providing immediate notification of any monitoring system malfunction. If the monitoring system does not have self-monitoring capability, the designated employee shall check the monitoring system hourly for proper operation. (For recommendations on the selection, installation and maintenance of signaling systems see NFPA 72 - Installation, Maintenance and Use of Protective Signaling Systems.)

e. In the absence of the unloader:

(i) The tank car and facility shutoff valves must be secured in the closed position;

(ii) No product may be transferred; and

(iii) The requirements of § 174.67(a)(2) and (3) apply.

8. SPECIAL PROVISIONS.

a. At each facility unloading tank cars under this special permit, the facility operator shall have written safety procedures on file at each location that uses this special permit. The facility operator shall instruct each employee performing any function under this special permit on the contents of these procedures and ensure compliance with them. The written procedures must contain at least the following:

(1) A physical description of the facility including the address and hours of operation.

(2) A drawing of the transfer facility showing natural and manmade barriers, locations of protective equipment (i.e., derail, portable bumper blocks, and caution sign), locations of emergency equipment and locations of signaling equipment.

(3) Procedures for monitoring the transfer facility [see paragraphs 7.c. and d.].

(4) Information on the contents of the tank car including:

(i) Chemical or common name of the product

(ii) Health and physical hazards involved in handling the product

(iii) Emergency and first aid procedures

(5) Procedures for securing the transfer facility and protective equipment. [See paragraph 7.b.]

(6) Equipment available for employee safety and procedures for using the equipment.

(7) Procedures and limitations for movement of tank cars in the vicinity of the transfer facility.

(8) Testing and maintenance of system components including signaling systems.

(9) Training requirements for designated employees responsible for monitoring the transfer facility.

(10) Procedural steps in the event of an emergency, including names and phone numbers of key personnel and public agencies to contact.

(11) Procedures for reviewing incidents to determine whether the written procedures require revision or modification to prevent future occurrences and amending those procedures when the review necessitates changes.

b. The facility operator must establish and maintain liaison with fire, police and other appropriate public officials to learn the responsibilities and resources of each governmental agency that may be called upon to respond to an emergency involving the tank car and transfer facility and acquaint the officials with the facility's capabilities and procedures in the event of an emergency.

c. The marking requirements in § 172.302(c) are waived.

d. A current copy of this special permit must be maintained at each facility where this special permit is utilized. A current copy of this special permit must be made available to a DOT representative upon request.

9. MODES OF TRANSPORTATION AUTHORIZED: Rail freight.

10. MODAL REQUIREMENTS: None as a requirement of this special permit.

11. COMPLIANCE. Failure by a person to comply with any of the following may result in suspension or revocation of this special permit and penalties prescribed by Federal hazardous materials transportation law, 49 U.S.C. 5101 et seq:

- All terms and conditions prescribed in this special permit and the Hazardous Materials Regulations, 49 CFR Parts 171-180.

- Persons operating under the terms of this special permit must comply with the security plan requirement in Subpart I of Part 172 of the HMR, when applicable.

- Registration required by § 107.601 et seq., when applicable.

Each "Hazmat employee", as defined in § 171.8 who performs a function subject to this special permit must receive training on the requirements and conditions of this special permit in addition to the training required by §§ 172.700 through 172.704.

No person may use or apply this special permit, including display of its number, when the special permit has expired or is otherwise no longer in effect unless a regulation has been amended making the special permit no longer necessary.

Under Title VII of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU)- 'The Hazardous Materials Safety and Security Reauthorization Act of 2005' (Pub. L. 109-59), 119 Stat. 1144 (August 10, 2005), amended the Federal hazardous materials transportation law by changing the term "exemption" to "special permit" and authorizes a special permit to be granted up to two years for new special permits and up to four years for renewals.

12. REPORTING REQUIREMENTS. Shipments or operations conducted under this special permit are subject to the Hazardous Materials Incident Reporting requirements specified in 49 CFR 171.15 - Immediate notice of certain hazardous materials incidents, and 171.16 - Detailed hazardous materials incident reports. In addition, the grantee(s) of this special permit must notify the Associate Administrator for Hazardous Materials Safety, in writing, of any incident involving a package, shipment or operation conducted under terms of this special permit.

Issued in Washington, D.C.:

Diane LaValle

for Theodore L. Willke
Associate Administrator for Hazardous Materials Safety

Address all inquiries to: Associate Administrator for Hazardous Materials Safety, Pipeline and Hazardous Materials Safety Administration, Department of Transportation, Washington, D.C. 20590. Attention: PHH-31.

Copies of this special permit may be obtained by accessing the Hazardous Materials safety Homepage at http://hazmat.dot.gov/sp_app/special_permits/spec_perm_index.htm Photo reproductions and legible reductions of this special permit are permitted. Any alteration of this special permit is prohibited.

PO: dl

VanDeMark

Phosgene Chemistry • Custom Chemicals

September 12, 2007

Mr. Will Welisevich
Ombudsman\Environmental Project Manager
Empire State Development
Liberty Building
424 Main Street, Suite 717
Buffalo, NY 14202

Dear Mr. Welisevich,

The Niagara County Industrial Development Agency was awarded $500,000 toward a $1,851,000 capital project to assist ISOCHEM, Inc. of Lockport, New York in purchasing a process control system and distillation equipment to reduce pollution at their manufacturing facility in Lockport. The project will reduce carbon monoxide and phosgene process losses lowering the internal scrubbing system load by 175 tons per year. This reduced load will reduce the use of sodium hydroxide by 100 tons per year, which will reduce sewer discharge by 278,000 gallons per year. Additionally the installation of distillation equipment will allow ISOCHEM Inc. to reclaim 220 tons per year of hazardous solvent waste; and yield a total economic benefit of $1,561,150 annually.

On June 18, 2007 it was announced that Buckingham Capital Partners II, L.P., New York, New York, had acquired ISOCHEM, Inc. renaming the company VanDeMark Chemical Inc., taking the name from the company's founding years. It is projects like this that have created strong value with our new ownership, and they are excited to work closely with New York State to continue with the completion of not only this project, but other future expansion potentials. It is critical to have the support of local government to implement such creative projects that help solidify VanDeMark's sustainability in Lockport, New York as a key environmentally responsible partner with the Empire State Development Corporation and the Niagara County Industrial Development Agency.

Sincerely,

Michael A. Kucharski
CEO

VanDeMark Chemical Inc.
One North Transit Road, Lockport, NY 14094
Tel: 716-433-6764 • Fax: 716-433-2850
www.vdmchemical.com

Empire State Development

FILE COPY

July 13, 2006

Paul Ameis
Executive Vice President / COO
ISOCHEM Inc.
1 North Transit Road
Lockport, NY 14094

Dear Mr Ameis:

On behalf of Governor George E. Pataki and Charles A. Gargano, Chairman of Empire State Development ("ESD"), please allow me to express our enthusiasm for working with ISOCHEM Inc. on the proposed pollution prevention project to reduce carbon monoxide and phosgene emissions from the facility located at 1 North Transit Road Lockport, New York. To assist you with this project, we are pleased to offer this Environmental Investment Program incentive valued at $500,000.

ESD's incentive proposal is designed to encourage you to proceed with this project in New York State. As we understand it, the project involves the purchasing and installation of process control equipment to significantly reduce the discharge of carbon monoxide and phosgene emissions from the operation. Additionally ISOCHEM will install a distillation system that will reduce hazardous waste disposal and enable the facility to produce new products.

The growth and prosperity of ISOCHEM Inc. in New York State is a top priority for Empire State Development. We value the opportunity to encourage this proposed investment and look forward to working with you to bring this project to fruition. The attached Empire State Development Incentive Proposal provides details of our offer. If you plan to accept, please acknowledge your decision by endorsing the last page of the proposal, returning the original to Suzanne Wickham, Contract Administrator, Environmental Services Unit, 30 South Pearl Street, Albany, NY 12245 and one copy to me.

Your written response is required within the next 30 days. Should you have any questions or wish to discuss the offer further, please do not hesitate to call Will Welisevich at 716/856-8123 ext 248. We sincerely thank you, again, for considering the Empire State.

Very truly yours,

Timothy Doolittle
Regional Director

cc: Suzanne H. Wickham
Susan L. Figueroa - NCIDA

Attachments
ESD Incentive Proposal

Western New York Region
420 Main Street, Suite 717, Liberty Bldg. Buffalo, New York 14202
Tel 716-856-8111, Fax 716-856-1744, Home Page http://www.empire.state.ny.us

EMPIRE STATE DEVELOPMENT
INCENTIVE PROPOSAL

prepared exclusively for

ISOCHEM Inc.

June 21, 2006

This Incentive Proposal outlines the general terms and conditions of the incentive being offered by Empire State Development ("ESD") to ISOCHEM Inc. in Lockport, Niagara County to assist with its Environmental Investment Program (EIP) project. **This offer is subject to the availability of funds, and compliance with program requirements.**

I. GENERAL INFORMATION

a) Contact Information:	Paul Ameis Executive Vice President / COO ISOCHEM Inc. 1 North Transit Road Lockport, NY 14094 Phone: 716-433-6764 ext 134 Fax: 716-433-2850
b) Project Locations(s):	1 North Transit Road Lockport, NY 14094
c) Type of Business:	Manufacturer
d) Number of Full-time, Permanent Employees at Project Site(s) as of Today's Date: 6/26/06	95
e) Number of Part-time, Seasonal or Contract Employees at Project Site(s) as of Today's Date:	N/A

II. PROJECT SPECIFICS

a) Project Description:

Capital project to assist ISOCHEM Inc. in purchasing a process control system (Phase 1) and distillation equipment (Phase 2) for this pollution prevention project at their manufacturing facility.

b) Performance Target(s) Commitment:

By the end of the project, ISOCHEM Inc. will have installed a process control system that will: reduce Carbon Monoxide air emissions by 113 tons/year and phosgene emissions by 62 tons/year; reduce the use of Sodium Hydroxide by 100 tons/year, reducing sewer discharge by 278,000 gallons/year; and yield the company an economic benefit of $239,000.

Additionally ISOCHEM Inc. will have installed a distillation system that will reclaim 220 tons/year of hazardous solvent waste yielding an economic benefit of new product sales and saving of $1,322,150.

c) Milestone Schedule:

Milestone #1:

- Phase I Process Control System equipment will have been ordered, received and installed
- Phase II Distillation System 1st Stage equipment will have been ordered (reboiler, column, condenser) received and installed.

Milestone #2:

- Phase I Process Control System equipment will be operational and will have attained 75% of (Phase I) target; CO emissions reduced at by 84 tons per year, phosgene emissions reduced by 46 tons per year and sodium hydroxide usage will be reduced by 75 tons per year, sewer discharge will be reduced by 208,000 gallons per year. Savings of $179,250 will be achieved.
- Phase II Distillation System 1st Stage Distillation equipment running for production of CHDI.
- Phase II Distillation System 2nd Stage equipment specified and on order. (solvent receivers, solvent storage tanks, and dedicated vacuum system).

c) Milestone Schedule (continued):

Milestone #3:

- Phase 1 CO reduction confirmed (100% target) with no quality issues based on several months running.

Milestone #4:

- Phase II Distillation System 2nd stage equipment received and installation complete. Solvent distillation and reuse at 25% of target lbs. equating to the recovery of 42 tons of solvent.

Milestone #5:

- Project complete; Phase II Distillation System will have been operating for 4 months and will have reached 100% of target rate for recovery of solvents.

d) Disbursement Schedule:

EIP will disburse up to fifty percent (50%) of eligible funds upon ISOCHEM successfully completing Milestone #2 listed above. An additional twenty-five percent (25%) of eligible funds will be disbursed upon successful completion of Milestone #3. The final twenty-five percent (25%) of funds will be disbursed upon successful completion of one hundred percent (100%) of the Performance Targets and completion of contract reporting requirements.

III. PROJECT BUDGET

You have informed us that the following costs will be incurred to complete this project. It is understood that these costs are estimates, based on the best information available to date, and that figures may change. If so, please inform your EIP contact as soon as possible.

Machinery/Equipment:	$1,649,000
Professional Services:	$202,000
Total Estimated Cost:	$1,851,000

IV. ESD INCENTIVES

Environmental Investment Program

a) Amount:	$500,000
b) Use of Funds:	Machinery & Equipment for CO and Chlorine Control System; Distillation Column; Professional Services; Software & Engineering Design
c) Contingencies:	The company must be in compliance with all appropriate federal, state and local laws and regulations at the time of contract.

Expiration of Offer: This proposal expires 30 days from the date of this Incentive Proposal unless endorsed below and received from the company prior to the expiration date.

APPROVED BY: _____ Date: 21 JUNE 2006

Amy Schoch
Deputy Commissioner and Senior Vice President, Policy and Programs
Empire State Development

ACCEPTED BY: _____ Date: 7/14/06

E Paul A. Amis COO
(Printed Name & Title)

BS Number 000232

New York State Department of Environmental Conservation
CHEMICAL BULK STORAGE CERTIFICATE

625 Broadway, 11th Floor, Albany, NY 12233-7020 Phone: 518-402-9553

Region 9
270 Michigan Avenue
Buffalo, NY 14203-2999
(716) 851-7220

TANK NUMBER	DATE INSTALLED	TANK LOCATION AND TYPE	CAPACITY (GALLONS)	HAZARDOUS SUBSTANCE	% HAZ SUBST	CHEMICAL ABSTRACT #
PT 34	11/01/2001	AST - Steel/Carbon Steel/Iron	2,000	TOLUENE	100.00	108-88-3
PT-15B	04/01/2005	AST - Fiberglass Reinforced Plastic (FRP)	15,000	HYDROGEN CHLORIDE	32.00	7647-01-0
PT-19	10/01/1990	AST - Steel/Carbon Steel/Iron	250	DIMETHYL FORMAMIDE	100.00	68-12-2
PT-20	03/01/1991	AST - Steel/Carbon Steel/Iron	200	CHLOROBENZENE	100.00	108-90-7
ST-100	01/11/1991	AST - Steel/Carbon Steel/Iron	200	CAUSTIC SODA	22.00	1310-73-2
ST-119	05/01/2005	AST - Steel/Carbon Steel/Iron	8,761	2-PROPYN-1-OL	100.00	107-19-7
ST-14	10/01/1992	AST - Stainless Steel Alloy	4,000	CHLOROBENZENE	100.00	108-90-7
ST-2	11/01/1988	AST - Steel/Carbon Steel/Iron	9,000	TOLUENE	100.00	108-88-3
ST-21	10/01/1992	AST - Stainless Steel Alloy	10,000	2-PROPYN-1-OL	100.00	107-19-7
ST-22	10/01/1992	AST - Steel/Carbon Steel/Iron	12,500	CAUSTIC SODA	25.00	1310-73-2

OWNER:
VAN DEMARK CHEMICAL, INC.
1 N. TRANSIT RD.
LOCKPORT, NY 14094

OPERATOR: VAN DEMARK CHEMICAL, INC.
(716) 433-6764

EMERGENCY CONTACT: CHRIS BANACH
(716) 433-6764

ISSUED BY: Commissioner
Joe Martens

CBS NUMBER: 9-000232
DATE ISSUED: 10/18/2011
EXPIRATION DATE: 11/06/2013
FEE PAID: $ 2,625.00

SITE:
VAN DEMARK CHEMICAL, INC.
1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094

MAILING CORRESPONDENCE:

CHRIS BANACH
VAN DEMARK CHEMICAL, INC.
1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094

As an authorized representative of the above named facility, I hereby certify that the information on this form is true and correct. Additionally, I recognize that I am responsible for assuring that this facility is in compliance with all sections of ECL Article 40 and 6 NYCRR Parts 595, 596, 597, 598, and 599, not just those cited below:

-- The facility must be re-registered if there is a transfer of ownership.
-- The facility has maintained it's requirements relating to daily, monthly, annual and five year inspections as required by Part 598.7 and has has it's SPR annually updated as required by Part 598.1(k).
-- The Department must be notified within 3 business days prior to adding, replacing, reconditioning, or permanently closing a stationary tank.
-- **This certificate must be signed and posted on the premises at all times. Posting must be at the tank, at the entrance of the facility, or the main office where the storage tanks are located.**
-- Any person with knowledge of a spill, leak or discharge must report the incident to DEC within two hours (1-800-457-7362).

Signature of Representative/ Owner — Date: 10/21/11

Paul A. Ames / COO
Name and Title of Authorized Representative/Owner (Please Print)

Print Date: 10/18/2011

THIS REGISTRATION CERTIFICATE IS NON-TRANSFERABLE

VDM02203

OCT-21-2011 13:34 van Demark Chemical 716 433 6000 P.001

CBS Number: 9-000232

New York State Department of Environmental Conservation
CHEMICAL BULK STORAGE CERTIFICATE

625 Broadway, 11th Floor, Albany, NY 12233-7020 Phone: 518-402-9553

Region 9
270 Michigan Avenue
Buffalo, NY 14203-2999
(716) 851-7220

TANK NUMBER	DATE INSTALLED	TANK LOCATION AND TYPE	CAPACITY (GALLONS)	HAZARDOUS SUBSTANCE	% HAZ SUBST	CHEMICAL ABSTRACT #
ST-25	10/01/1997	AST - Stainless Steel Alloy	15,000			
				CHLOROFORM	1.00	67-66-3
				CHLOROBENZENE	90.00	108-90-7
ST-26A	10/29/2007	AST - Steel/Carbon Steel/Iron	10,301			
				BENZENE CHLORO-	100.00	108-90-7
ST-27	10/01/1997	AST - Stainless Steel Alloy	15,000			
				TOLUENE	2.00	108-88-3
				DIETHYLAMINE	98.00	109-89-7
ST-28	10/01/1997	AST - Stainless Steel Alloy	15,000			
				TOLUENE	100.00	108-88-3
ST-29	10/01/1997	AST - Stainless Steel Alloy	15,000			
				BENZENE CHLORO-	100.00	108-90-7
ST-3	02/17/2006	AST - Steel/Carbon Steel/Iron	10,400			
				TOLUENE	100.00	108-88-3
ST-30	10/01/1997	AST - Stainless Steel Alloy	15,000			
				METHANOL	100.00	67-56-1
ST-31A	01/20/2008	AST - Steel/Carbon Steel/Iron	10,000			
				TOLUENE	100.00	108-88-3
ST-35	06/01/2002	AST - Stainless Steel Alloy	15,000			
				TOLUENE	100.00	108-88-3

OWNER:
VAN DEMARK CHEMICAL, INC.
1 N. TRANSIT RD.
LOCKPORT, NY 14094

OPERATOR: VAN DEMARK CHEMICAL, INC.
(716) 433-6764

EMERGENCY CONTACT: CHRIS BANACH
(716) 433-6764

SITE:
VAN DEMARK CHEMICAL, INC.
1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094

MAILING CORRESPONDENCE:

CHRIS BANACH
VAN DEMARK CHEMICAL, INC.
1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094

ISSUED BY: Commissioner
Joe Martens

CBS NUMBER: 9-000232
DATE ISSUED: 10/18/2011
EXPIRATION DATE: 11/06/2013
FEE PAID: $ 2,625.00

As an authorized representative of the above named facility, I hereby certify that the information on this form is true and correct. Additionally, I recognize that I am responsible for assuring that this facility is in compliance with all sections of ECL Article 40 and 6 NYCRR Parts 595, 596, 597, 598, and 599, not just those cited below:

-- The facility must be re-registered if there is a transfer of ownership.
-- The facility has maintained it's requirements relating to daily, monthly, annual and five year inspections as required by Part 598.7 and has has it's SPR annually updated as required by Part 598.1(k).
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-- This certificate must be signed and posted on the premises at all times. Posting must be at the tank, at the entrance of the facility, or the main office where the storage tanks are located.
-- Any person with knowledge of a spill, leak or discharge must report the incident to DEC within two hours (1-800-457-7362).

Signature of Representative/ Owner — Date: 10/21/11

Paul A. Ames / COO
Name and Title of Authorized Representative/Owner (Please Print)

Print Date: 10/18/2011

THIS REGISTRATION CERTIFICATE IS NON-TRANSFERABLE

VDM02204

OCT-21-2011 13:36 VAN DEMARK CHEMICAL 716 433 2800 P.002

CBS Number
9-000232

New York State Department of Environmental Conservation
CHEMICAL BULK STORAGE CERTIFICATE

625 Broadway, 11th Floor, Albany, NY 12233-7020 Phone: 518-402-9553

Region 9
270 Michigan Avenue
Buffalo, NY 14203-2999
(716) 851-7220

TANK NUMBER	DATE INSTALLED	TANK LOCATION AND TYPE	CAPACITY (GALLONS)	HAZARDOUS SUBSTANCE	% HAZ SUBST	CHEMICAL ABSTRACT #
ST-5	01/01/1988	AST - Steel/Carbon Steel/Iron	11,000	CAUSTIC SODA	22.00	1310-73-2
ST-6	01/01/1988	AST - Steel/Carbon Steel/Iron	5,500	CAUSTIC SODA	22.00	1310-73-2
ST-7	10/01/1990	AST - Steel/Carbon Steel/Iron	1,000	DIMETHYL FORMAMIDE	100.00	68-12-2
ST-8	06/01/1990	AST - Steel/Carbon Steel/Iron	7,500	PHOSGENE	1.00	75-44-5
				CHLOROBENZENE	99.00	108-90-7

OWNER:
VAN DEMARK CHEMICAL, INC.
1 N. TRANSIT RD.
LOCKPORT, NY 14094

OPERATOR: VAN DEMARK CHEMICAL, INC.
(716) 433-6764
EMERGENCY CONTACT: CHRIS BANACH
(716) 433-6764

ISSUED BY: Commissioner
Joe Martens
CBS NUMBER: 9-000232
DATE ISSUED: 10/18/2011
EXPIRATION DATE: 11/06/2013
FEE PAID: $ 2,625.00

SITE:
VAN DEMARK CHEMICAL, INC.
1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094

MAILING CORRESPONDENCE:

CHRIS BANACH
VAN DEMARK CHEMICAL, INC.
1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094

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Signature of Representative/ Owner — Date: 10/21/11

Paul A. Amels COO
Name and Title of Authorized Representative/Owner (Please Print)

Print Date: 10/18/2011

THIS REGISTRATION CERTIFICATE IS NON-TRANSFERABLE

VDM02205

OCT-21-2011 13:32 Van Demark Chemical 716 433 2850 P.001

CBS Number 000232

New York State Department of Environmental Conservation

CHEMICAL BULK STORAGE CERTIFICATE

625 Broadway, 11th Floor, Albany, NY 12233-7020 Phone: 518-402-9553

Region 9
270 Michigan Avenue
Buffalo, NY 14203-2999
(716) 851-7220

TANK NUMBER	DATE INSTALLED	TANK LOCATION AND TYPE	CAPACITY (GALLONS)	HAZARDOUS SUBSTANCE	% HAZ SUBST	CHEMICAL ABSTRACT #
PT 34	11/01/2001	AST - Steel/Carbon Steel/Iron	2,000	TOLUENE	100.00	108-88-3
PT-15B	04/01/2005	AST - Fiberglass Reinforced Plastic (FRP)	15,000	HYDROGEN CHLORIDE	32.00	7647-01-0
PT-19	10/01/1990	AST - Steel/Carbon Steel/Iron	250	DIMETHYL FORMAMIDE	100.00	68-12-2
PT-20	03/01/1991	AST - Steel/Carbon Steel/Iron	200	CHLOROBENZENE	100.00	108-90-7
ST-100	01/11/1991	AST - Steel/Carbon Steel/Iron	200	CAUSTIC SODA	22.00	1310-73-2
ST-119	05/01/2005	AST - Steel/Carbon Steel/Iron	8,761	2-PROPYN-1-OL	100.00	107-19-7
ST-14	10/01/1992	AST - Stainless Steel Alloy	4,000	CHLOROBENZENE	100.00	108-90-7
ST-2	11/01/1988	AST - Steel/Carbon Steel/Iron	9,000	TOLUENE	100.00	108-88-3
ST-21	10/01/1992	AST - Stainless Steel Alloy	10,000	2-PROPYN-1-OL	100.00	107-19-7
ST-22	10/01/1992	AST - Steel/Carbon Steel/Iron	12,500	CAUSTIC SODA	25.00	1310-73-2

OWNER:
VAN DEMARK CHEMICAL, INC.
1 N. TRANSIT RD.
LOCKPORT, NY 14094

OPERATOR: VAN DEMARK CHEMICAL, INC.
(716) 433-6764

EMERGENCY CONTACT: CHRIS BANACH
(716) 433-6764

ISSUED BY: Commissioner
Joe Martens

CBS NUMBER: 9-000232
DATE ISSUED: 10/18/2011
EXPIRATION DATE: 11/06/2013
FEE PAID: $ 2,625.00

SITE:
VAN DEMARK CHEMICAL, INC.
1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094

MAILING CORRESPONDENCE:

CHRIS BANACH
VAN DEMARK CHEMICAL, INC.
1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094

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-- Any person with knowledge of a spill, leak or discharge must report the incident to DEC within two hours (1-800-457-7362).

Paul A. Ameis 10/21/11
Signature of Representative/ Owner Date

Paul A. Ameis / COO
Name and Title of Authorized Representative/Owner (Please Print)

Print Date: 10/18/2011

THIS REGISTRATION CERTIFICATE IS NON-TRANSFERABLE

VDM02206

CBS Number 9-000232

New York State Department of Environmental Conservation
CHEMICAL BULK STORAGE CERTIFICATE

625 Broadway, 11th Floor, Albany, NY 12233-7020 Phone: 518-402-9553

Region 9
270 Michigan Avenue
Buffalo, NY 14203-2999
(716) 851-7220

TANK NUMBER	DATE INSTALLED	TANK LOCATION AND TYPE	CAPACITY (GALLONS)	HAZARDOUS SUBSTANCE	% HAZ SUBST	CHEMICAL ABSTRACT #
ST-25	10/01/1997	AST - Stainless Steel Alloy	15,000			
				CHLOROFORM	1.00	67-66-3
				CHLOROBENZENE	90.00	108-90-7
ST-26A	10/29/2007	AST - Steel/Carbon Steel/Iron	10,301			
				BENZENE CHLORO-	100.00	108-90-7
ST-27	10/01/1997	AST - Stainless Steel Alloy	15,000			
				TOLUENE	2.00	108-88-3
				DIETHYLAMINE	98.00	109-89-7
ST-28	10/01/1997	AST - Stainless Steel Alloy	15,000			
				TOLUENE	100.00	108-88-3
ST-29	10/01/1997	AST - Stainless Steel Alloy	15,000			
				BENZENE CHLORO-	100.00	108-90-7
ST-3	02/17/2006	AST - Steel/Carbon Steel/Iron	10,400			
				TOLUENE	100.00	108-88-3
ST-30	10/01/1997	AST - Stainless Steel Alloy	15,000			
				METHANOL	100.00	67-56-1
ST-31A	01/20/2008	AST - Steel/Carbon Steel/Iron	10,000			
				TOLUENE	100.00	108-88-3
ST-35	06/01/2002	AST - Stainless Steel Alloy	15,000			
				TOLUENE	100.00	108-88-3

OWNER:
VAN DEMARK CHEMICAL, INC.
1 N. TRANSIT RD.
LOCKPORT, NY 14094

OPERATOR: VAN DEMARK CHEMICAL, INC.
(716) 433-6764

EMERGENCY CONTACT: CHRIS BANACH
(716) 433-6764

SITE:
VAN DEMARK CHEMICAL, INC.
1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094

MAILING CORRESPONDENCE:

CHRIS BANACH
VAN DEMARK CHEMICAL, INC.
1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094

ISSUED BY: Commissioner
Joe Martens
CBS NUMBER: 9-000232
DATE ISSUED: 10/18/2011
EXPIRATION DATE: 11/06/2013
FEE PAID: $ 2,625.00

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Paul A. Ames — 10/21/11
Signature of Representative/ Owner — Date

Paul A. Ames / COO
Name and Title of Authorized Representative/Owner (Please Print)

Print Date: 10/18/2011

THIS REGISTRATION CERTIFICATE IS NON-TRANSFERABLE

VDM02207

OCT-21-2011 13:32 Van Demark Chemical 716 433 2000 P.002

CBS Number
9-000232

New York State Department of Environmental Conservation
CHEMICAL BULK STORAGE CERTIFICATE

625 Broadway, 11th Floor, Albany, NY 12233-7020 Phone: 518-402-9553

Region 9
270 Michigan Avenue
Buffalo, NY 14203-2999
(716) 851-7220

TANK NUMBER	DATE INSTALLED	TANK LOCATION AND TYPE	CAPACITY (GALLONS)	HAZARDOUS SUBSTANCE	% HAZ SUBST	CHEMICAL ABSTRACT #
ST-5	01/01/1988	AST - Steel/Carbon Steel/Iron	11,000	CAUSTIC SODA	22.00	1310-73-2
ST-6	01/01/1988	AST - Steel/Carbon Steel/Iron	5,500	CAUSTIC SODA	22.00	1310-73-2
ST-7	10/01/1990	AST - Steel/Carbon Steel/Iron	1,000	DIMETHYL FORMAMIDE	100.00	68-12-2
ST-8	06/01/1990	AST - Steel/Carbon Steel/Iron	7,500	PHOSGENE	1.00	75-44-5
				CHLOROBENZENE	99.00	108-90-7

OWNER:
VAN DEMARK CHEMICAL, INC.
1 N. TRANSIT RD.
LOCKPORT, NY 14094

OPERATOR: VAN DEMARK CHEMICAL, INC.
(716) 433-6764

EMERGENCY CONTACT: CHRIS BANACH
(716) 433-6764

ISSUED BY: Commissioner
Joe Martens

CBS NUMBER: 9-000232
DATE ISSUED: 10/18/2011
EXPIRATION DATE: 11/06/2013
FEE PAID: $ 2,625.00

SITE:
VAN DEMARK CHEMICAL, INC.
1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094

MAILING CORRESPONDENCE:

CHRIS BANACH
VAN DEMARK CHEMICAL, INC.
1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094

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-- Any person with knowledge of a spill, leak or discharge must report the incident to DEC within two hours **(1-800-457-7362)**.

Signature of Representative/ Owner — Date: 10/21/11

Paul A. Ames / COO
Name and Title of Authorized Representative/Owner (Please Print)

Print Date: 10/18/2011

THIS REGISTRATION CERTIFICATE IS NON-TRANSFERABLE

VDM02208

91-20-5 (5/97)

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

State Pollutant Discharge Elimination System (SPDES)

NOTICE / RENEWAL APPLICATION / PERMIT

RECEIVED NYSDEC
ENVIRONMENTAL PERMITS

Please read **ALL** instructions on the back before completing this application form. Please **TYPE** or **PRINT** clearly in ink.

PART 1 - NOTICE

04/15/2009

Permittee Contact Name, Title, Address

VANDEMARK CHEMICAL INC
~~MATTHEW BARMASSE~~ PAMELA Cook
1 NORTH TRANSIT RD.
LOCKPORT NY 14094

Facility and SPDES Permit Information

Name: VANDEMARK CHEMICAL INC
Ind. Code: 9999 County: NIAGARA
DEC No.: 9-2909-00107/00029
SPDES No.: NY 020 4323
Expiration Date: 02/01/2010
Application Due By: 08/05/2009

Are these name(s) & address(es) correct? if not, please write corrections above.

The State Pollutant Discharge Elimination System Permit for the facility referenced above expires on the date indicated. You are required by law to file a complete renewal application **at least 180 days prior to expiration of your current permit. Note the "Application Due By" date above.**

CAUTION: This short application form and attached questionnaire are the only forms acceptable for permit renewal. Sign Part 2 below and mail only this form and the completed questionnaire using the enclosed envelope. *Effective April 1, 1994 the Department no longer assesses SPDES application fees.*

If there are changes to your discharge, or to operations affecting the discharge, then in addition to this renewal application, you must also submit a separate permit modification application to the Regional Permit Administrator for the DEC region in which the facility is located, as required by your current permit. See the reverse side of this page for instructions on filing a modification request.

PART 2 - RENEWAL APPLICATION

CERTIFICATION: I hereby affirm that under penalty of perjury that the information provided on this form and all attachments submitted herewith is true to the best of my knowledge and belief. False statements made herein are punishable as a Class A misdemeanor pursuant to section 210.45 of the Penal Law.

Paul Ameis — COO

Name of person signing application (see instructions on back) — Title

Signature — 7/29/09 — Date

PART 3 - PERMIT (Below this line - Official Use Only)

Effective Date: 4/1/10 Expiration Date: 3/31/15

William R. Adriance

Permit Administrator

Address: NYSDEC - Division of Environmental Permits
Bureau of Environmental Analysis
625 Broadway, Albany, NY 12233-1750

William R. Adriance — MAR 5 2010

Signature — Date

This permit together with the previous valid permit for this facility issued 2/1/05 and subsequent modifications constitute authorization to discharge wastewater in accordance with all terms, conditions and limitations specified in the previously issued valid permit, modifications thereof or issued as part of this permit, including any special or general conditions attached hereto. Nothing in this permit shall be deemed to waive the Department's authority to initiate a modification of this permit on the grounds specified in 6NYCRR §621.14, 6NYCRR §754.4 or 6NYCRR §757.1 existing at the time this permit is issued or which arise thereafter.

~~Attachments: General Conditions dated ___/___~~

VDM02209

Please enter the numbers from your current permit:

DEC Number: 9-2409-000107/00029

SPDES Number: NY 020 4323

SPDES RENEWAL APPLICATION
QUESTIONNAIRE

THIS PAGE MUST BE COMPLETED AND RETURNED WITH YOUR COMPLETED APPLICATION

Please TYPE or PRINT neatly using adequate pressure to make ALL copies legible. Keep a copy for your records.

1. Has the SPDES permit for your facility been modified in the past 5 years ☐ YES ☒ NO

2. Dischargers who use, manufacture, store, handle or discharge toxic or hazardous pollutants are subject to Industrial Best Management Practices (BMP) plan requirements for toxic or hazardous substances. A BMP plan prevents or minimizes the potential for release of pollutants to receiving waters from such ancillary industrial activities, including material storage areas; plant site runoff; in-plant transfer; process and material storage areas; loading and unloading operations, and sludge and waste disposal areas.

   Does your facility conduct ancillary activities as described above, which are not covered by BMP requirements in your current permit? ☐ YES ☒ NO

Please indicate which of the following best describes the situation at your facility:

☒ None of the concerns on the "Self Evaluation List" seem to apply to my facility at this time and I will not be applying for a modification of the SPDES permit in the foreseeable future.

☐ Yes, some of the items on the "Self Evaluation List" have led me to believe that the permit for this facility needs to be modified. I already have a complete modification application pending with the Department.

☐ Yes, some of the items on the "Self Evaluation List" have led me to believe that the SPDES permit for this facility may need to be Modified. I have requested the appropriate forms by phone OR I have completed and attached the "Request For SPDES Application Forms" (included in this renewal package) to allow me to submit a permittee-initiated Modification application. See The "Request For SPDES Application Forms" page for a toll free 800 number.

☐ The items on the "Self Evaluation List" have left me unable to conclude whether my permit needs to be modified at this time. I am reporting the following general concerns about my permit:

_____

_____

_____

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_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

DISTRIBUTION: Regional Water Engineer
Regional Permit Administrator
Central Office (BWP)

New York State Department of Environmental Conservation
Division of Environmental Permits, Region 9
270 Michigan Avenue, Buffalo, New York, 14203-2915
Phone: (716) 851-7165 • FAX: (716) 851-7168
Website: www.dec.ny.gov

Peter Iwanowicz
Acting Commissioner

December 7, 2010

Ms. Pamela J. Cook
Environmental Manager
VanDeMark Chemical, Inc.
1 North Transit Road
Lockport, NY 14094

Dear Ms. Cook:

AIR TITLE V FACILITY PERMIT RENEWAL
TRANSMITTAL LETTER
CITY OF LOCKPORT - NIAGARA COUNTY
DEC NO. 9-2909-00107/00001

Enclosed is your permit which was issued in accordance with applicable provisions of the Environmental Conservation Law. The permit is valid for only that project, activity or operation expressly authorized. If modifications are desired after permit issuance, you must submit the proposed revisions and receive written approval from the Permit Administrator prior to initiating any change. If the Department determines that the modification represents a material change in the scope of the authorized project, activity, operation or permit conditions, you will be required to submit a new application for permit.

PLEASE REVIEW ALL PERMIT CONDITIONS CAREFULLY, INCLUDING ANY MONITORING REQUIREMENTS AND/OR COMPLIANCE SCHEDULE THAT MAY BE REQURIED. IN PARTICULAR, IDENTIFY YOUR INITIAL RESPONSIBILITIES UNDER THIS PERMIT IN ORDER TO ASSURE TIMELY ACTION AND AVOID LATE REPORTING IF REQUIRED. SINCE FAILURE TO COMPLY PRECISELY WITH PERMIT CONDITIONS MAY BE TREATED AS A VIOLATION OF THE ENVIRONMENTAL CONSERVATION LAW, **YOU ARE REQUESTED TO PROVIDE A COPY OF THE PERMIT TO THE PROJECT CONTRACTOR, FACILITY OPERATOR AND OTHER PERSONS DIRECTLY RESPONSIBLE FOR PERMIT IMPLEMENTATION (IF ANY).**

If you have any question regarding the administrative processing of this permit or request for modification, please contact this office at the above address. Technical questions relating to the specific conditions should be directed to Ms. Jacqueline DiPronio, Environmental Engineer II at 716-851-7130.

Respectfully,
David S. Denk
Regional Permit Administrator

MFP
Enclosure
cc: Mr. Alfred Carlacci, Region 9 Division of Air Resources/Attn: Ms. Jacqueline DiPronio

40 years of stewardship 1970-2010

PERMIT
Under the Environmental Conservation Law (ECL)

IDENTIFICATION INFORMATION

Permit Type: Air Title V Facility
Permit ID: 9-2909-00107/00001
Effective Date: 12/07/2010 Expiration Date: 12/06/2015

Permit Issued To: VANDEMARK CHEMICAL INC
1 NORTH TRANSIT RD
LOCKPORT, NY 14094

Facility: VANDEMARK CHEMICAL INC
1 NORTH TRANSIT RD
LOCKPORT, NY 14094

Contact: PAMELA J COOK
VANDEMARK CHEMICAL INC
1 N TRANSIT RD
LOCKPORT, NY 14094-2399
(716) 433-6764

Description:

VanDeMark Title V Permit Renewal

This Title V permit renewal describes the applicable requirements for Vandemark Inc., located in Lockport, New York. VanDeMark is a manufacturer of custom chemicals on a batch or semi-continuous basis. Custom chemicals include but are not limited to phosgene and phosgene derivatives. The facility is subject to the Title V major source permitting requirements of 40 CFR Part 70 and 6NYCRR, Part 201-6 as determined by actual emissions of carbon monoxide (CO) in excess of 100 tons per year.

Additional contaminants emitted from the facility include but are not limited to nitrogen oxides, sulfur dioxide, volatile organic compounds, and various hazardous air pollutants such as phosgene, chlorine, chlorobenzene, and hydrogen chloride. Attached to this permit is an operational flexibility protocol to address minor modifications as per the requirements of 6NYCRR, Part 201-6.5(f)(2).

This renewal contains previously established emission caps limiting emissions of volatile organic compounds to less than 50 tons during any consecutive twelve month period to avoid applicability to the reasonably available control requirements of 6NYCRR, Part 212.10 (Major Sources of VOC and NOx) and 6NYCRR, Part 229 (Volatile Organic Liquid Storage Tanks). The permit also restates the cap limiting emissions of sulfur dioxide during the production of Carbaester to less than the 40 ton deminimus for PSD applicability. VanDeMark has chosen to limit sulfur dioxide emissions from the entire facility to less than 40 tons in order to avoid the need for any future applicability determinations and noticing requirements in the event of the modification or addition of new sources emitting sulfur dioxide.

By acceptance of this permit, the permittee agrees that the permit is contingent upon strict compliance with the ECL, all applicable regulations, the General Conditions specified and any Special Conditions included as part of this permit.

Permit Administrator: DOUGLAS E BORSCHEL
270 MICHIGAN AVE
BUFFALO, NY 14203-2999

Authorized Signature: Douglas E Borschel Date: 12/7/2010

Notification of Other State Permittee Obligations

Item A: Permittee Accepts Legal Responsibility and Agrees to Indemnification

The permittee expressly agrees to indemnify and hold harmless the Department of Environmental Conservation of the State of New York, its representatives, employees and agents ("DEC") for all claims, suits, actions, and damages, to the extent attributable to the permittee's acts or omissions in connection with the compliance permittee's undertaking of activities in connection with, or operation and maintenance of, the facility or facilities authorized by the permit whether in compliance or not in any compliance with the terms and conditions of the permit. This indemnification does not extend to any claims, suits, actions, or damages to the extent attributable to DEC's own negligent or intentional acts or omissions, or to any claims, suits, or actions naming the DEC and arising under article 78 of the New York Civil Practice Laws and Rules or any citizen suit or civil rights provision under federal or state laws.

Item B: Permittee's Contractors to Comply with Permit

The permittee is responsible for informing its independent contractors, employees, agents and assigns of their responsibility to comply with this permit, including all special conditions while acting as the permittee's agent with respect to the permitted activities, and such persons shall be subject to the same sanctions for violations of the Environmental Conservation Law as those prescribed for the permittee.

Item C: Permittee Responsible for Obtaining Other Required Permits

The permittee is responsible for obtaining any other permits, approvals, lands, easements and rights-of-way that may be required to carry out the activities that are authorized by this permit.

Item D: No Right to Trespass or Interfere with Riparian Rights

This permit does not convey to the permittee any right to trespass upon the lands or interfere with the riparian rights of others in order to perform the permitted work nor does it authorize the impairment of any rights, title, or interest in real or personal property held or vested in a person not a party to the permit.

PAGE LOCATION OF CONDITIONS

PAGE

DEC GENERAL CONDITIONS
General Provisions
5 1 Facility Inspection by the Department
5 2 Relationship of this Permit to Other Department Orders and Determinations
5 3 Applications for permit renewals, modifications and transfers
6 4 Permit modifications, suspensions or revocations by the Department
Facility Level
6 5 Submission of application for permit modification or renewal-REGION 9 HEADQUARTERS

PART I. SPECIFIC CONDITIONS

A. Wastewater Discharge Limitations[1,2]

The Industrial User shall not exceed the effluent limitations specified below, effective June 1 , 2008

Parameter	Monthly Avg, mg/Liter	Daily Maximum, mg/L
pH	N/A	5.5 - 9.5 S.U.[3]
Acetic Acid	N/A	6.8
Ethanol	N/A	5.4
Tetrahydrofuran (THF)	N/A	20.0
Total Phosphorus	N/A	5.00
Total Lead	N/A	0.20
Total Zinc	N/A	2.80

Parameter	Monthly Avg,lbs/day	Daily Maximum,lbs/day
Diethylamine (DEA)	N/A	137
Di-n-butylamine (DBA)	N/A	137
n-Butylamine (NBA)	N/A	199
Propargyl Alcohol (POH)	N/A	200
Propargyl n-Butylcarbonate (PNBC)	N/A	53
Tetrabutylurea (TBU)	N/A	137

Parameter	Monthly Avg,lbs/day[4]	Daily Maximum,lbs/day[4]
Total Cyanide	0.043	0.124

Parameter	Monthly Avg,lbs/day[5]	Daily Maximum,lbs/day[5]
Acenaphthene	0.0026	0.0063
Anthracene	0.0026	0.0063
Benzene	0.0077	0.0180
Bis(2-ethylhexyl)phthalate	0.0128	0.0346
Bromodichloromethane	0.0191	0.0510
Bromoform	0.0263	0.1066
Bromomethane	0.0191	0.0510
Carbon Tetrachloride	0.0191	0.0510
Chlorobenzene	0.0191	0.0510
Chloroethane	0.0148	0.0396
Chloroform	0.0149	0.0436
Chloromethane	0.0148	0.0396
Dibromochloromethane	0.0263	0.1066
Di-n-butyl phthalate	0.0027	0.0058
1,2-Dichlorobenzene	0.0263	0.1066
1,3-Dichlorobenzene	0.0191	0.0510
1,4-Dichlorobenzene	0.0191	0.0510
1,1-Dichloroethane	0.0030	0.0079
1,2-Dichloroethane	0.0242	0.0771
1,1-Dichloroethene	0.0030	0.0081
1,2-trans-dichloroethene	0.0034	0.0089
1,2-Dichloropropane	0.0263	0.1066
1,3-Dichloropropene	0.0263	0.1066
Diethyl phthalate	0.0062	0.0152
Dimethyl phthalate	0.0026	0.0063
4,6-Ditro-2-methylphenol	0.0105	0.0372
Ethylbenzene	0.0191	0.0510

PART I. SPECIFIC CONDITIONS

A. Wastewater Discharge Limitations (continued)

Parameter	Monthly Avg, lbs/day[5]	Daily Maximum, lbs/day[5]
Fluoranthene	0.0030	0.0073
Fluorene	0.0026	0.0063
Hexachlorobenzene	0.0263	0.1066
Hexachlorobutadiene	0.0191	0.0510
Hexachloroethane	0.0263	0.1066
Methylene Chloride	0.0048	0.0228
Naphthalene	0.0026	0.0063
Nitrobenzene	0.3004	0.8596
2-Nitrophenol	0.0087	0.0310
4-Nitrophenol	0.0218	0.0773
Phenanthrene	0.0026	0.0063
Pyrene	0.0027	0.0064
Tetrachloroethene	0.0070	0.0220
Toluene	0.0099	0.0038
1,2,4-Trichlorobenzene	0.0263	0.1066
1,1,1-Trichloroethane	0.0030	0.0079
1,1,2-Trichloroethane	0.0043	0.0171
Trichloroethene	0.0035	0.0093
Vinyl Chloride	0.0130	0.0231

Notes:

1. In accordance with 40 CFR § 403.12 (g); if a violation of Wastewater Discharge Limitation(s) as specified above occurs, the following actions must be taken:
   a. Notification by Permittee, to the Pretreatment Coordinator, of Permit Violation, within twenty-four (24) hours of knowledge of violation.
   b. Permittee shall repeat sampling and analysis, for parameter(s) in violation and resubmit both sets of results to the Control Authority within thirty (30) days of violation knowledge.
   c. All analyses shall be performed in accordance with 40 CFR § 403.12 (g) (4).
   d. If no history of non-compliance of that compound and no history of usage on site, resampling will not be necessary. However, if it is a compound(s) Vandemark uses, resampling and analysis is required and submit both set of results to the Control Authority within thirty (30) days of violation knowledge.
2. The above limits are to be applied at Monitoring Station 01.
3. S.U. = Standard Units
4. Mass limit determined using concentration limit from 40 CFR § 414.111 times an average daily cyanide bearing flow of 12,500 GPD.
5. Mass limit determined using concentration limit from 40 CFR § 414.111 times an average daily process flow of 16,100 GPD.

PART I. SPECIFIC CONDITIONS

B. Surcharges for Excess Strength

If the User exceeds the following discharge concentrations for the parameters listed below, effective 01 June, 2008, a surcharge for excess strength shall be assessed in accordance with the Code of the City of Lockport, Chapter 150. Sewers, Section 150-31.

Parameter	Daily Maximum, mg/Liter
TSS	350
BOD_5	250

C. Monitoring Requirements[1]

During the period beginning June 1, 2008 and lasting until May 31, 2012, discharge from the permitted facility outfall(s) shall be monitored by the Permittee as specified below:

Sample Point	Parameter [14]	Sampling Period	Sample Type	Sample Freq
M.S. 01[2]	pH	continuous	continuous	continuous
M.S. 01	COD	2-24 hours	composite	1/M.P.[3]
M.S. 01	BOD_5[4]	24 hr. day	composite	Daily
M.S. 01	TSS	2-24 hours	composite	1/M.P.
M.S. 01	Total P	2-24 hours	composite	1/M.P.
M.S. 01	Cyanide, Total	2-24 hours	grab[5]	1/M.P.
M.S. 01	Lead, Total	2-24 hours	composite	1/M.P.
M.S. 01	Zinc, Total	2-24 hours	composite	1/M.P.
M.S. 01	Purgeable Organics[6]	2-24 hours	grab[5]	1/M.P.[15]
M.S. 01	Semi-Volatile Organics[7]	2-24 hours	composite	1/M.P.
M.S. 01	Flow	24 hr. day	usage meter	Daily
M.S. 01	Flow-Maximum	24 hr. day	usage meter	Daily
M.S. 01	Total phenols[8]	1-24 hours	grab[5]	1/M.P.
M.S. 01	POH,NBA,PNBC[9]	1-24 hours	grab	Weekly
M.S. 01	DEA[10]	1-24 hours	grab	Weekly
M.S. 01	TBU,DBA[11]	1-24 hours	grab	Weekly
M.S. 01	Acetic Acid, Ethanol[12]	1-24 hours	grab	Weekly
M.S. 01	THF[13]	1-24 hours	grab	Weekly

PART I. SPECIFIC CONDITIONS

C. Monitoring Requirements[1] (Continued)

NOTES:

1. All samples shall be collected in accordance with the procedures and methods specified in the City of Lockport "Sampling Analytical Guidelines Sheet," revised June 1991, and 40 CFR Part 136.

2. M.S. 01 = Monitoring Station 01, located immediately south of Vandemark Building B-5, phosgene department.

3. M.P. = Monitoring Period [see Part I (D)].

4. Daily composite wastewater samples are collected by Vandemark and analyzed by the City of Lockport Wastewater Treatment Facility laboratory.

5. As per 40 CFR § 403.12 (b)(5)(iii) and 40 CFR § 403.12 (g)(3), a minimum of four (4) grab samples must be collected and either composited prior to analysis or run separately and averaged. Sample collection is to be evenly spaced throughout the workday.

6. Analysis for Purgeable Organics shall be conducted using EPA 624.

7. Analysis for Semi-Volatile Organics shall be conducted using EPA 625.

8. Monitoring Requirement applicable when use or production of phenols occurs.

9. Monitoring Requirement applicable when use or production of PNBC occurs.

10. Monitoring Requirement applicable when use or production of HEGCL occurs.

11. Monitoring Requirement applicable when use or production of TBU occurs.

12. No Sampling Required unless BOD is greater than 3000 mg/L and must have a functioning LEL.

13. Monitoring Requirement applicable when use or production of THF occurs.

14. If a compound cannot be analyzed by EPA 624 or EPA 625, it will be analyzed by a validated analytical method determined by the laboratory analyzing the sample.

15. Monitoring Required applicable when use or production of Picaridin occurs to *include* the four(4)brominated organic pollutants covered under the 40 C.F.R. Part 455 Table 6 Pesticide standards and must be included during at least one of Vandemark's self-monitoring if a campaign is discharged.

PART I. SPECIFIC CONDITIONS

D. Discharge Monitoring Report Requirements

During the period beginning June 1, 2008 and lasting until May 31, 2012, discharge monitoring results shall be summarized and reported to the Pretreatment Coordinator of the City of Lockport Wastewater Treatment Facility. Also required in each report is submittal of a statement making the following certification as in 40 CFR § 403.6 (a) (2) (ii):

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

This statement must be signed by one of the following SIU representatives:

1. Responsible corporate officer if SIU is a corporation;

2. General partner or proprietor if SIU is a partnership or sole proprietorship respectively;

3. By a duly authorized representative of (1) or (2) as stated above. If authorized representative signs the certifying statement, then the following must be observed:

   a. Authorization of duly authorized representative must be done in writing and be submitted to the Control Authority.

   b. Authorization must specify a name or position/title which has responsibility for overall operation of facility.

   c. New authorization satisfying these conditions must be submitted when no longer accurate as a result of individual or position change. This authorization submittal is required prior to or together with any reports signed by newly designated representative.

PART I. SPECIFIC CONDITIONS

D. Discharge Monitoring Report Requirements (continued)

These reports shall be submitted by the Permittee on the dates specified below:

Sample Point	Monitoring Period	Report Date
M.S.01[1]	June 1 to November 30 of every year	On or before January 1 immediately following end of monitoring period
M.S.01[1]	December 1 to May 31 of every year	On or before July 1 immediately following end of monitoring period

Notes:

1. Refer to Note 2 page 4 of 12.

E. Special Requirements

1. Slug Discharge and/or Hazardous Materials Spills and Response Requirements Plan

During the period beginning the effective date of this permit and lasting until May 31, 2012, the storage and use of the hazardous materials listed below in the quantities indicated shall be controlled by the Permittee according to the approved Spill Prevention Control and Countermeasures (SPCC) Plan which has been previously prepared/revised and submitted for this facility, with a last revision date of 30 November 2007. These substances in the quantities indicated are in accordance with information submitted by the Permittee in application for permit submitted 30 November 2007. It shall be the responsibility of the Permittee to provide written notification to the City of Lockport in the event that types and/or quantities of substances of concern change. This plan shall identify the hazardous substances stored, identification and controls of slug discharges, the procedure and equipment which will be used to contain and clean up spills and/or slugs and the measures which will be implemented to prevent the entry of spilled hazardous substances and/or slugs into the City of Lockport collection system. Vandemark Chemical, Inc. will continue to submit to the City of Lockport, any revisions, within thirty (30) days of any effective date.

Substance of Concern	Average Amount Stored
As specified in application for permit date 30 November 2007.	

Brine is also a substance of concern. If brine is discharged over fifty (50) gallons, it must be reported as a *slug discharge* and follow the procedures set forth in Part I E.2 and 3 below. Additionally, copper and zinc must be sampled as soon as the discharge is known and submit the results within thirty (30) days.

CITY OF LOCKPORT PUBLIC UTILITIES DEPARTMENT

Wastewater & Compost Facilities
611 West Jackson Street
Lockport, NY 14094-1736
Phone (716) 433-1612
Fax (716) 433-1397

Water Filtration & Maintenance
1 Locks Plaza
Lockport, NY 14094-3623
Phone (716) 439-6678
Fax (716) 439-6602

Paula Sattelberg, Director of Utilities

June 24, 2009

Pamela J. Cook
Environmental, Health, Safety and Quality Manager
VandeMark Chemical, Inc.
One North Transit Road
Lockport, NY 14094

Re: Wastewater Discharge Permit No. CL860111 Amendment

Dear Ms. Cook,

Enclosed you will find an amended pages for your discharge permit.

Please remove current pages from your original permit and replace with revised pages. Destroy obsolete permit pages. All pages where a change occurred are marked with a revision number. The revision is for toluene's daily and monthly limits which were switched in Revision I.

If you have any questions please contact me at 433-1613.

Sincerely,

Victoria A. Haenle

Victoria A. Haenle
CITY OF LOCKPORT
Pretreatment Coordinator

Enc.

PART I. SPECIFIC CONDITIONS

A. Wastewater Discharge Limitations[1,2]
The Industrial User shall not exceed the effluent limitations specified below, effective June 1 , 2008

Parameter	Monthly Avg, mg/Liter	Daily Maximum, mg/L
pH	N/A	5.5 - 9.5 S.U.[3]
Acetic Acid	N/A	6.8
Ethanol	N/A	5.4
Tetrahydrofuran (THF)	N/A	20.0
Total Phosphorus	N/A	5.00
Total Lead	N/A	0.20
Total Zinc	N/A	2.80

Parameter	Monthly Avg, lbs/day	Daily Maximum, lbs/day
Diethylamine (DEA)	N/A	137
Di-n-butylamine (DBA)	N/A	137
n-Butylamine (NBA)	N/A	199
Propargyl Alcohol (POH)	N/A	200
Propargyl n-Butylcarbonate (PNBC)	N/A	53
Tetrabutylurea (TBU)	N/A	137

Parameter	Monthly Avg, lbs/day[4]	Daily Maximum, lbs/day[4]
Total Cyanide	0.043	0.124

Parameter	Monthly Avg, lbs/day[5]	Daily Maximum, lbs/day[5]
Acenaphthene	0.0026	0.0063
Anthracene	0.0026	0.0063
Benzene	0.0077	0.0180
Bis(2-ethylhexyl)phthalate	0.0128	0.0346
Bromodichloromethane	0.0191	0.0510
Bromoform	0.0263	0.1066
Bromomethane	0.0191	0.0510
Carbon Tetrachloride	0.0191	0.0510
Chlorobenzene	0.0191	0.0510
Chloroethane	0.0148	0.0396
Chloroform	0.0149	0.0436
Chloromethane	0.0148	0.0396
Dibromochloromethane	0.0263	0.1066
Di-n-butyl phthalate	0.0027	0.0058
1,2-Dichlorobenzene	0.0263	0.1066
1,3-Dichlorobenzene	0.0191	0.0510
1,4-Dichlorobenzene	0.0191	0.0510
1,1-Dichloroethane	0.0030	0.0079
1,2-Dichloroethane	0.0242	0.0771
1,1-Dichloroethene	0.0030	0.0081
1,2-trans-dichloroethene	0.0034	0.0089
1,2-Dichloropropane	0.0263	0.1066
1,3-Dichloropropene	0.0263	0.1066
Diethyl phthalate	0.0062	0.0152
Dimethyl phthalate	0.0026	0.0063
4,6-Ditro-2-methylphenol	0.0105	0.0372
Ethylbenzene	0.0191	0.0510

PART I. SPECIFIC CONDITIONS

A. Wastewater Discharge Limitations (continued)

Parameter	Monthly Avg, lbs/day[5]	Daily Maximum, lbs/day[5]
Fluoranthene	0.0030	0.0073
Fluorene	0.0026	0.0063
Hexachlorobenzene	0.0263	0.1066
Hexachlorobutadiene	0.0191	0.0510
Hexachloroethane	0.0263	0.1066
Methylene Chloride	0.0048	0.0228
Naphthalene	0.0026	0.0063
Nitrobenzene	0.3004	0.8596
2-Nitrophenol	0.0087	0.0310
4-Nitrophenol	0.0218	0.0773
Phenanthrene	0.0026	0.0063
Pyrene	0.0027	0.0064
Tetrachloroethene	0.0070	0.0220
Toluene	0.0099	0.0038
1,2,4-Trichlorobenzene	0.0263	0.1066
1,1,1-Trichloroethane	0.0030	0.0079
1,1,2-Trichloroethane	0.0043	0.0171
Trichloroethene	0.0035	0.0093
Vinyl Chloride	0.0130	0.0231

Notes:

1. In accordance with 40 CFR § 403.12 (g); if a violation of Wastewater Discharge Limitation(s) as specified above occurs, the following actions must be taken:
   a. Notification by Permittee, to the Pretreatment Coordinator, of Permit Violation, within twenty-four (24) hours of knowledge of violation.
   b. Permittee shall repeat sampling and analysis, for parameter(s) in violation and resubmit both sets of results to the Control Authority within thirty (30) days of violation knowledge.
   c. All analyses shall be performed in accordance with 40 CFR § 403.12 (g) (4).
   d. If no history of non-compliance of that compound and no history of usage on site, resampling will not be necessary. However, if it is a compound(s) Vandemark uses, resampling and analysis is required and submit both set of results to the Control Authority within thirty (30) days of violation knowledge.
2. The above limits are to be applied at Monitoring Station 01.
3. S.U. = Standard Units
4. Mass limit determined using concentration limit from 40 CFR § 414.111 times an average daily cyanide bearing flow of 12,500 GPD.
5. Mass limit determined using concentration limit from 40 CFR § 414.111 times an average daily process flow of 16,100 GPD.

PART I. SPECIFIC CONDITIONS

A. Wastewater Discharge Limitations (continued)

Parameter	Monthly Avg, lbs/day[5]	Daily Maximum, lbs/day[5]
Fluoranthene	0.0030	0.0073
Fluorene	0.0026	0.0063
Hexachlorobenzene	0.0263	0.1066
Hexachlorobutadiene	0.0191	0.0510
Hexachloroethane	0.0263	0.1066
Methylene Chloride	0.0048	0.0228
Naphthalene	0.0026	0.0063
Nitrobenzene	0.3004	0.8596
2-Nitrophenol	0.0087	0.0310
4-Nitrophenol	0.0218	0.0773
Phenanthrene	0.0026	0.0063
Pyrene	0.0027	0.0064
Tetrachloroethene	0.0070	0.0220
Toluene	0.0038	0.0099
1,2,4-Trichlorobenzene	0.0263	0.1066
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Vinyl Chloride	0.0130	0.0231

Notes:

1. In accordance with 40 CFR § 403.12 (g); if a violation of Wastewater Discharge Limitation(s) as specified above occurs, the following actions must be taken:
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2. The above limits are to be applied at Monitoring Station 01.
3. S.U. = Standard Units
4. Mass limit determined using concentration limit from 40 CFR § 414.111 times an average daily cyanide bearing flow of 12,500 GPD.
5. Mass limit determined using concentration limit from 40 CFR § 414.111 times an average daily process flow of 16,100 GPD.

PART I. SPECIFIC CONDITIONS

B. Surcharges for Excess Strength

If the User exceeds the following discharge concentrations for the parameters listed below, effective 01 June, 2008, a surcharge for excess strength shall be assessed in accordance with the Code of the City of Lockport, Chapter 150. Sewers, Section 150-31.

Parameter	Daily Maximum, mg/Liter
TSS	350
BOD_5	250

C. Monitoring Requirements[1]

During the period beginning June 1, 2008 and lasting until May 31, 2012, discharge from the permitted facility outfall(s) shall be monitored by the Permittee as specified below:

Sample Point	Parameter [14]	Sampling Period	Sample Type	Sample Freq
M.S. 01[2]	pH	continuous	continuous	continuous
M.S. 01	COD	2-24 hours	composite	1/M.P.[3]
M.S. 01	BOD_5[4]	24 hr. day	composite	Daily
M.S. 01	TSS	2-24 hours	composite	1/M.P.
M.S. 01	Total P	2-24 hours	composite	1/M.P.
M.S. 01	Cyanide, Total	2-24 hours	grab[5]	1/M.P.
M.S. 01	Lead, Total	2-24 hours	composite	1/M.P.
M.S. 01	Zinc, Total	2-24 hours	composite	1/M.P.
M.S. 01	Purgeable Organics[6]	2-24 hours	grab[5]	1/M.P.[15]
M.S. 01	Semi-Volatile Organics[7]	2-24 hours	composite	1/M.P.
M.S. 01	Flow	24 hr. day	usage meter	Daily
M.S. 01	Flow-Maximum	24 hr. day	usage meter	Daily
M.S. 01	Total phenols[8]	1-24 hours	grab[5]	1/M.P.
M.S. 01	POH,NBA,PNBC[9]	1-24 hours	grab	Weekly
M.S. 01	DEA[10]	1-24 hours	grab	Weekly
M.S. 01	TBU,DBA[11]	1-24 hours	grab	Weekly
M.S. 01	Acetic Acid, Ethanol[12]	1-24 hours	grab	Weekly
M.S. 01	THF[13]	1-24 hours	grab	Weekly

PART I. SPECIFIC CONDITIONS

C. Monitoring Requirements[1] (Continued)

NOTES:

1. All samples shall be collected in accordance with the procedures and methods specified in the City of Lockport "Sampling Analytical Guidelines Sheet," revised June 1991, and 40 CFR Part 136.

2. M.S. 01 = Monitoring Station 01, located immediately south of Vandemark Building B-5, phosgene department.

3. M.P. = Monitoring Period [see Part I (D)].

4. Daily composite wastewater samples are collected by Vandemark and analyzed by the City of Lockport Wastewater Treatment Facility laboratory.

5. As per 40 CFR § 403.12 (b)(5)(iii) and 40 CFR § 403.12 (g)(3), a minimum of four (4) grab samples must be collected and either composited prior to analysis or run separately and averaged. Sample collection is to be evenly spaced throughout the workday.

6. Analysis for Purgeable Organics shall be conducted using EPA 624.

7. Analysis for Semi-Volatile Organics shall be conducted using EPA 625.

8. Monitoring Requirement applicable when use or production of phenols occurs.

9. Monitoring Requirement applicable when use or production of PNBC occurs.

10. Monitoring Requirement applicable when use or production of HEGCL occurs.

11. Monitoring Requirement applicable when use or production of TBU occurs.

12. No Sampling Required unless BOD is greater than 3000 mg/L and must have a functioning LEL.

13. Monitoring Requirement applicable when use or production of THF occurs.

14. If a compound cannot be analyzed by EPA 624 or EPA 625, it will be analyzed by a validated analytical method determined by the laboratory analyzing the sample.

15. Monitoring Required applicable when use or production of Picaridin occurs to *include* the four(4)brominated organic pollutants covered under the 40 C.F.R. Part 455 Table 6 Pesticide standards and must be included during at least one of Vandemark's self-monitoring if a campaign is discharged.

PART I. SPECIFIC CONDITIONS

D. Discharge Monitoring Report Requirements

During the period beginning June 1, 2008 and lasting until May 31, 2012, discharge monitoring results shall be summarized and reported to the Pretreatment Coordinator of the City of Lockport Wastewater Treatment Facility. Also required in each report is submittal of a statement making the following certification as in 40 CFR § 403.6 (a) (2) (ii):

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

This statement must be signed by one of the following SIU representatives:

1. Responsible corporate officer if SIU is a corporation;

2. General partner or proprietor if SIU is a partnership or sole proprietorship respectively;

3. By a duly authorized representative of (1) or (2) as stated above. If authorized representative signs the certifying statement, then the following must be observed:

   a. Authorization of duly authorized representative must be done in writing and be submitted to the Control Authority.

   b. Authorization must specify a name or position/title which has responsibility for overall operation of facility.

   c. New authorization satisfying these conditions must be submitted when no longer accurate as a result of individual or position change. This authorization submittal is required prior to or together with any reports signed by newly designated representative.

New York State Envrionmental Program Fees

	2008	2009	2010*
Air	$85.05	$85.05	$94.05
Haz Waste	$115,000.00	$33,000.00	$55,105.33
SDPES	$475.00	$568.75	$600.00

*Haz waste programs fees restrucutred in 2010 an additional bill has not yet been received. VDM will pay but protest the fee.

New York State Quarterly Hazardous Waste Fees

	2008	2009	2010
1st qtr	$807.30	$1,581.30	$1,863.50
2nd qtr	$1,531.00	$2,007.00	$858.60
3rd qtr	$599.72	$1,120.20	$48.60
4th qtr	$2,611.80	$118.80	$325.80
Total	$5,549.82	$4,827.30	$3,096.50

Wastewater Fee to City of Lockport

	2008	2009	2010
Total	$9,978.09	$12,929.39	$11,314.71

CITY OF LOCKPORT PUBLIC UTILITIES DEPARTMENT

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Lockport, NY 14094-1736
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Water Filtration & Maintenance
1 Locks Plaza
Lockport, NY 14094-3623
Phone (716) 439-6678
Fax (716) 439-6602

Paula Sattelberg, Director of Utilities

June 24, 2009

Pamela J. Cook
Environmental, Health, Safety and Quality Manager
VandeMark Chemical, Inc.
One North Transit Road
Lockport, NY 14094

Re: Wastewater Discharge Permit No. CL860111 Amendment

Dear Ms. Cook,

Enclosed you will find an amended pages for your discharge permit.

Please remove current pages from your original permit and replace with revised pages. Destroy obsolete permit pages. All pages where a change occurred are marked with a revision number. The revision is for toluene's daily and monthly limits which were switched in Revision I.

If you have any questions please contact me at 433-1613.

Sincerely,

Victoria A. Haenle

Victoria A. Haenle
CITY OF LOCKPORT
Pretreatment Coordinator

Enc.

PART I. SPECIFIC CONDITIONS

A. Wastewater Discharge Limitations[1,2]
The Industrial User shall not exceed the effluent limitations specified below, effective June 1 , 2008

Parameter	Monthly Avg, mg/Liter	Daily Maximum, mg/L
pH	N/A	5.5 - 9.5 S.U.[3]
Acetic Acid	N/A	6.8
Ethanol	N/A	5.4
Tetrahydrofuran (THF)	N/A	20.0
Total Phosphorus	N/A	5.00
Total Lead	N/A	0.20
Total Zinc	N/A	2.80

Parameter	Monthly Avg,lbs/day	Daily Maximum,lbs/day
Diethylamine (DEA)	N/A	137
Di-n-butylamine (DBA)	N/A	137
n-Butylamine (NBA)	N/A	199
Propargyl Alcohol (POH)	N/A	200
Propargyl n-Butylcarbonate (PNBC)	N/A	53
Tetrabutylurea (TBU)	N/A	137

Parameter	Monthly Avg,lbs/day[4]	Daily Maximum,lbs/day[4]
Total Cyanide	0.043	0.124

Parameter	Monthly Avg,lbs/day[5]	Daily Maximum,lbs/day[5]
Acenaphthene	0.0026	0.0063
Anthracene	0.0026	0.0063
Benzene	0.0077	0.0180
Bis(2-ethylhexyl)phthalate	0.0128	0.0346
Bromodichloromethane	0.0191	0.0510
Bromoform	0.0263	0.1066
Bromomethane	0.0191	0.0510
Carbon Tetrachloride	0.0191	0.0510
Chlorobenzene	0.0191	0.0510
Chloroethane	0.0148	0.0396
Chloroform	0.0149	0.0436
Chloromethane	0.0148	0.0396
Dibromochloromethane	0.0263	0.1066
Di-n-butyl phthalate	0.0027	0.0058
1,2-Dichlorobenzene	0.0263	0.1066
1,3-Dichlorobenzene	0.0191	0.0510
1,4-Dichlorobenzene	0.0191	0.0510
1,1-Dichloroethane	0.0030	0.0079
1,2-Dichloroethane	0.0242	0.0771
1,1-Dichloroethene	0.0030	0.0081
1,2-trans-dichloroethene	0.0034	0.0089
1,2-Dichloropropane	0.0263	0.1066
1,3-Dichloropropene	0.0263	0.1066
Diethyl phthalate	0.0062	0.0152
Dimethyl phthalate	0.0026	0.0063
4,6-Ditro-2-methylphenol	0.0105	0.0372
Ethylbenzene	0.0191	0.0510

PART I. SPECIFIC CONDITIONS

A. Wastewater Discharge Limitations (continued)

Parameter	Monthly Avg, lbs/day[5]	Daily Maximum, lbs/day[5]
Fluoranthene	0.0030	0.0073
Fluorene	0.0026	0.0063
Hexachlorobenzene	0.0263	0.1066
Hexachlorobutadiene	0.0191	0.0510
Hexachloroethane	0.0263	0.1066
Methylene Chloride	0.0048	0.0228
Naphthalene	0.0026	0.0063
Nitrobenzene	0.3004	0.8596
2-Nitrophenol	0.0087	0.0310
4-Nitrophenol	0.0218	0.0773
Phenanthrene	0.0026	0.0063
Pyrene	0.0027	0.0064
Tetrachloroethene	0.0070	0.0220
Toluene	0.0099	0.0038
1,2,4-Trichlorobenzene	0.0263	0.1066
1,1,1-Trichloroethane	0.0030	0.0079
1,1,2-Trichloroethane	0.0043	0.0171
Trichloroethene	0.0035	0.0093
Vinyl Chloride	0.0130	0.0231

Notes:

1. In accordance with 40 CFR § 403.12 (g); if a violation of Wastewater Discharge Limitation(s) as specified above occurs, the following actions must be taken:
   a. Notification by Permittee, to the Pretreatment Coordinator, of Permit Violation, within twenty-four (24) hours of knowledge of violation.
   b. Permittee shall repeat sampling and analysis, for parameter(s) in violation and resubmit both sets of results to the Control Authority within thirty (30) days of violation knowledge.
   c. All analyses shall be performed in accordance with 40 CFR § 403.12 (g) (4).
   d. If no history of non-compliance of that compound and no history of usage on site, resampling will not be necessary. However, if it is a compound(s) Vandemark uses, resampling and analysis is required and submit both set of results to the Control Authority within thirty (30) days of violation knowledge.
2. The above limits are to be applied at Monitoring Station 01.
3. S.U. = Standard Units
4. Mass limit determined using concentration limit from 40 CFR § 414.111 times an average daily cyanide bearing flow of 12,500 GPD.
5. Mass limit determined using concentration limit from 40 CFR § 414.111 times an average daily process flow of 16,100 GPD.

PART I. SPECIFIC CONDITIONS

A. Wastewater Discharge Limitations (continued)

Parameter	Monthly Avg, lbs/day[5]	Daily Maximum, lbs/day[5]
Fluoranthene	0.0030	0.0073
Fluorene	0.0026	0.0063
Hexachlorobenzene	0.0263	0.1066
Hexachlorobutadiene	0.0191	0.0510
Hexachloroethane	0.0263	0.1066
Methylene Chloride	0.0048	0.0228
Naphthalene	0.0026	0.0063
Nitrobenzene	0.3004	0.8596
2-Nitrophenol	0.0087	0.0310
4-Nitrophenol	0.0218	0.0773
Phenanthrene	0.0026	0.0063
Pyrene	0.0027	0.0064
Tetrachloroethene	0.0070	0.0220
Toluene	0.0038	0.0099
1,2,4-Trichlorobenzene	0.0263	0.1066
1,1,1-Trichloroethane	0.0030	0.0079
1,1,2-Trichloroethane	0.0043	0.0171
Trichloroethene	0.0035	0.0093
Vinyl Chloride	0.0130	0.0231

Notes:

1. In accordance with 40 CFR § 403.12 (g); if a violation of Wastewater Discharge Limitation(s) as specified above occurs, the following actions must be taken:
   a. Notification by Permittee, to the Pretreatment Coordinator, of Permit Violation, within twenty-four (24) hours of knowledge of violation.
   b. Permittee shall repeat sampling and analysis, for parameter(s) in violation and resubmit both sets of results to the Control Authority within thirty (30) days of violation knowledge.
   c. All analyses shall be performed in accordance with 40 CFR § 403.12 (g) (4).
   d. If no history of non-compliance of that compound and no history of usage on site, resampling will not be necessary. However, if it is a compound(s) Vandemark uses, resampling and analysis is required and submit both set of results to the Control Authority within thirty (30) days of violation knowledge.
2. The above limits are to be applied at Monitoring Station 01.
3. S.U. = Standard Units
4. Mass limit determined using concentration limit from 40 CFR § 414.111 times an average daily cyanide bearing flow of 12,500 GPD.
5. Mass limit determined using concentration limit from 40 CFR § 414.111 times an average daily process flow of 16,100 GPD.

PART I. SPECIFIC CONDITIONS

B. Surcharges for Excess Strength

If the User exceeds the following discharge concentrations for the parameters listed below, effective 01 June, 2008, a surcharge for excess strength shall be assessed in accordance with the Code of the City of Lockport, Chapter 150. Sewers, Section 150-31.

Parameter	Daily Maximum, mg/Liter
TSS	350
BOD_5	250

C. Monitoring Requirements[1]

During the period beginning June 1, 2008 and lasting until May 31, 2012, discharge from the permitted facility outfall(s) shall be monitored by the Permittee as specified below:

Sample Point	Parameter [14]	Sampling Period	Sample Type	Sample Freq
M.S. 01[2]	pH	continuous	continuous	continuous
M.S. 01	COD	2-24 hours	composite	1/M.P.[3]
M.S. 01	BOD_5[4]	24 hr. day	composite	Daily
M.S. 01	TSS	2-24 hours	composite	1/M.P.
M.S. 01	Total P	2-24 hours	composite	1/M.P.
M.S. 01	Cyanide, Total	2-24 hours	grab[5]	1/M.P.
M.S. 01	Lead, Total	2-24 hours	composite	1/M.P.
M.S. 01	Zinc, Total	2-24 hours	composite	1/M.P.
M.S. 01	Purgeable Organics[6]	2-24 hours	grab[5]	1/M.P.[15]
M.S. 01	Semi-Volatile Organics[7]	2-24 hours	composite	1/M.P.
M.S. 01	Flow	24 hr. day	usage meter	Daily
M.S. 01	Flow-Maximum	24 hr. day	usage meter	Daily
M.S. 01	Total phenols[8]	1-24 hours	grab[5]	1/M.P.
M.S. 01	POH,NBA,PNBC[9]	1-24 hours	grab	Weekly
M.S. 01	DEA[10]	1-24 hours	grab	Weekly
M.S. 01	TBU,DBA[11]	1-24 hours	grab	Weekly
M.S. 01	Acetic Acid, Ethanol[12]	1-24 hours	grab	Weekly
M.S. 01	THF[13]	1-24 hours	grab	Weekly

PART I. SPECIFIC CONDITIONS

C. Monitoring Requirements[1] (Continued)

NOTES:

1. All samples shall be collected in accordance with the procedures and methods specified in the City of Lockport "Sampling Analytical Guidelines Sheet," revised June 1991, and 40 CFR Part 136.

2. M.S. 01 = Monitoring Station 01, located immediately south of Vandemark Building B-5, phosgene department.

3. M.P. = Monitoring Period [see Part I (D)].

4. Daily composite wastewater samples are collected by Vandemark and analyzed by the City of Lockport Wastewater Treatment Facility laboratory.

5. As per 40 CFR § 403.12 (b)(5)(iii) and 40 CFR § 403.12 (g)(3), a minimum of four (4) grab samples must be collected and either composited prior to analysis or run separately and averaged. Sample collection is to be evenly spaced throughout the workday.

6. Analysis for Purgeable Organics shall be conducted using EPA 624.

7. Analysis for Semi-Volatile Organics shall be conducted using EPA 625.

8. Monitoring Requirement applicable when use or production of phenols occurs.

9. Monitoring Requirement applicable when use or production of PNBC occurs.

10. Monitoring Requirement applicable when use or production of HEGCL occurs.

11. Monitoring Requirement applicable when use or production of TBU occurs.

12. No Sampling Required unless BOD is greater than 3000 mg/L and must have a functioning LEL.

13. Monitoring Requirement applicable when use or production of THF occurs.

14. If a compound cannot be analyzed by EPA 624 or EPA 625, it will be analyzed by a validated analytical method determined by the laboratory analyzing the sample.

15. Monitoring Required applicable when use or production of Picaridin occurs to *include* the four(4)brominated organic pollutants covered under the 40 C.F.R. Part 455 Table 6 Pesticide standards and must be included during at least one of Vandemark's self-monitoring if a campaign is discharged.

EPA
United States Environmental Protection Agency

FORM R

Section 313 of the Emergency Planning and Community Right-to-know Act of 1986, also known as Title III of the Superfund Amendments and Reauthorization Act.

TRI Facility ID Number: **14094VNDMR1NORT**

Toxic Chemical, Category or Generic Name: **Chlorine**

WHERE TO SEND COMPLETED FORMS:	1. TRI Data Processing Center P.O.Box 1513 Lanham, MD 20703-1513 *** File Copy Only: Do Not Submit paper form to EPA ***	2. APPROPRIATE STATE OFFICE (See instructions in Appendix F)

This section only applies if you are revising or withdrawing a previously submitted form, otherwise leave blank:	Revision (enter up to two code(s)) [ ][ ]	Withdrawal (enter up to two code(s)) [ ][ ]

Important: See Instructions to determine when "Not Applicable (NA)" boxes should be checked.

Part I. FACILITY IDENTIFICATION INFORMATION

SECTION 1. REPORTING YEAR : **2010**

SECTION 2. TRADE SECRET INFORMATION

2.1 Are you claiming the toxic chemical identified on page 2 trade secret? [ ] Yes (Answer question 2.2; Attach substantiation forms) [X] NO (Do not answer 2.2; Go to Section 3)	2.2 Is this copy [ ] Sanitized [ ] Unsanitized (Answer only if "YES" in 2.1)	

SECTION 3. CERTIFICATION (Important: Read and sign after completing all form sections.)

I hereby certify that I have reviewed the attached documents and that, to the best of my knowledge and belief, the submitted information is true and complete and that the amounts and values in this report are accurate based on reasonable estimates using data available to the preparers of this report.

Name and official title of owner/operator or senior management official:	Signature:	Date Signed:
:		

SECTION 4. FACILITY IDENTIFICATION

	TRI Facility ID Number	14094VNDMR1NORT
Facility or Establishment Name **VANDEMARK CHEMICAL INC**	Facility or Establishment Name or Mailing Address(if different from street address) **NA**	
Street **1 N TRANSIT RD**	Mailing Address	
City/County/State/Zip Code **LOCKPORT / Niagara / NY / 14094**	City/State/Zip Code / /	Country (Non-US)

4.2	This report contains information for : (Important: check a or b; check c or d if applicable)	a. [X] An Entire facility	b. [ ] Part of a facility	c. [ ] A Federal facility	d. [ ] GOCO

4.3	Technical Contact name	**PAMELA COOK**		Email Address **P.COOK@VDMCHEMICAL.COM**		Telephone Number (include area code) **7164336764**	
4.4	Public Contact name	**PAMELA COOK**		Email Address **P.COOK@VDMCHEMICAL.COM**		Telephone Number (include area code) **7164336764**	
4.5	NAICS Code (s) (6 digits)	a. **325199 (Primary)**	b.	c.	d.	e.	f.

4.7	Dun and Bradstreet Number(s) (9 digits)
	a. **NA**
	b.

SECTION 5. PARENT COMPANY INFORMATION

5.1	Name of Parent Company	NA [X]	**NA**
5.2	Parent Company's Dun & Bradstreet Number	NA [X]	

EPA FORM R
PART II. CHEMICAL - SPECIFIC INFORMATION

TRI Facility ID Number: **14094VNDMR1NORT**

Toxic Chemical, Category or Generic Name: **Chlorine**

SECTION 1. TOXIC CHEMICAL IDENTITY (Important DO NOT complete this section if you completed Section 2 below.)

1.1	CAS Number (Important: Enter only one number exactly as it appears on the Section 313 list. Enter category code if reporting a chemical category.) **7782505**
1.2	Toxic Chemical or Chemical Category Name (Important: Enter only one name exactly as it appears on the Section 313 list.) **Chlorine**
1.3	Generic Chemical Name (Important: Complete only if Part I, Section 2.1 is checked "yes". Generic Name must be structurally descriptive). **NA**

SECTION 2. MIXTURE COMPONENT IDENTITY (Important: DO NOT complete this section if you completed Section 1 above.)

2.1	Generic Chemical Name Provided by Supplier (Important: Maximum of 70 characters, including numbers, spaces, and punctuation.) **NA**

SECTION 3. ACTIVITIES AND USES OF THE TOXIC CHEMICAL AT THE FACILITY
(Important: Check all that apply.)

3.1 Manufacture the toxic chemical:	3.2 Process the toxic chemical:	3.3 Otherwise use the toxic chemical:
a. [ ] Produce b. [ ] Import		
If produce or import: c. [ ] For on-site use/processing d. [ ] For sale/distribution e. [ ] As a byproduct f. [ ] As an impurity	a. [X] As a reactant b. [ ] As a formulation component c. [ ] As an article component d. [ ] Repackaging e. [ ] As an impurity	a. [ ] As a chemical processing aid b. [ ] As a manufacturing aid c. [ ] Ancillary or other use

SECTION 4. MAXIMUM AMOUNT OF THE TOXIC CHEMICAL ONSITE AT ANY TIME DURING THE CALENDAR YEAR

4.1	[**05**] (Enter two-digit code from instruction package.)

SECTION 5.QUANTITY OF THE TOXIC CHEMICAL ENTERING EACH ENVIRONMENTAL MEDIUM ONSITE

			A. Total Release (pounds/year*) (Enter range code or estimate**)	B. Basis of Estimate (enter code)	C. % From Stormwater
5.1	Fugitive or non-point air emissions	NA [ ]	**106.19**	**E1**	
5.2	Stack or point air emissions	NA [ ]	**40**	**C**	
5.3	Discharges to receiving streams or water bodies (enter one name per box)				
	Stream or Water Body Name				
5.3.1	**NA**				

*For Dioxin and Dioxin-like Compounds, report in grams/year
**Range Codes: A=1-10 pounds; B=11-499 pounds; C=500-999 pounds.

EPA FORM R PART II. CHEMICAL - SPECIFIC INFORMATION (CONTINUED)	TRI Facility ID Number 14094VNDMR1NORT Toxic Chemical, Category or Generic Name Chlorine

SECTION 5. QUANTITY OF THE TOXIC CHEMICAL ENTERING EACH ENVIRONMENTAL MEDIUM ONSITE (Continued)

		NA	A. Total Release (pounds/year*) (enter range code** or estimate)	B. Basis of Estimate (enter code)
5.4.1	Underground Injection onsite to Class I wells	[X]		
5.4.2	Underground Injection onsite to Class II-V wells	[X]		
5.5	Disposal to land onsite			
5.5.1.A	RCRA subtitle C landfills	[X]		
5.5.1.B	Other landfills	[X]		
5.5.2	Land treatment/application farming	[X]		
5.5.3A	RCRA Subtitle C surface impoundments	[X]		
5.5.3B	Other surface impoundments	[X]		
5.5.4	Other disposal	[X]		

SECTION 6. TRANSFERS OF THE TOXIC CHEMICAL IN WASTES TO OFF-SITE LOCATIONS

6.1 DISCHARGES TO PUBLICLY OWNED TREATMENT WORKS (POTWs)

6.1.A Total Quantity Transferred to POTWs and Basis of Estimate

6.1.A Total Transfers (pounds/year*) (enter range code** or estimate)	6.1.A.2 Basis of Estimate (enter code)
NA	

*For Dioxin and Dioxin-like Compounds, report in grams/yea

**Range Codes: A=1-10 pounds; B=11-499 pounds; C=500-999 pounds

EPA FORM R PART II. CHEMICAL - SPECIFIC INFORMATION (CONTINUED)	TRI Facility ID Number 14094VNDMR1NORT Toxic Chemical, Category or Generic Name Chlorine

SECTION 6.2 TRANSFERS TO OTHER OFF-SITE LOCATIONS

6.2.1 Off-Site EPA Identification Number (RCRA ID No.)	
Off-Site Location Name	NA
Off-Site Address	

City		State		County		Zip		Country (Non-US)	
Is location under control of reporting facility or parent company?						[ ] Yes [ ] No			

A. Total Transfers (pounds/year*) (enter range code** or estimate)	B. Basis of Estimate (enter code)	C. Type of Waste Treatment/Disposal/ Recycling/Energy Recovery (enter code)

SECTION 7A. ONSITE WASTE TREATMENT METHODS AND EFFICIENCY

[ ] Not Applicable (NA) - Check here if no on-site waste treatment is applied to any waste stream containing the toxic chemical or chemical category.

a. General Waste Stream (enter code)	b. Waste Treatment Method(s) Sequence [enter 3-character code(s)]	d. Waste Treatment Efficiency Estimate
7A. 1 a	**7A. 1 b**	**7A. 1 d**
A	2 : **A03**	**E2**

*For Dioxin and Dioxin-like Compounds, report in grams/year

**Range Codes: A=1-10 pounds; B=11-499 pounds; C=500-999 pounds.

EPA FORM R
PART II. CHEMICAL - SPECIFIC INFORMATION (CONTINUED)

TRI Facility ID Number
14094VNDMR1NORT
Toxic Chemical, Category or Generic Name
Chlorine

SECTION 7B. ON-SITE ENERGY RECOVERY PROCESSES

[X] Not Applicable (NA) - Check here if no on-site energy recovery is applied to any waste stream containing the toxic chemical or chemical category.

Energy Recovery Methods [enter 3-character code(s)]

SECTION 7C. ON-SITE RECYCLING PROCESSES

[X] Not Applicable (NA) - Check here if no on-site recycling is applied to any waste stream containing the toxic chemical or chemical category.

Recycling Methods [enter 3-character code(s)]

SECTION 8. SOURCE REDUCTION AND RECYCLING ACTIVITIES

		Column A Prior Year (pounds/year*)	Column B Current Reporting Year (pounds/year*)	Column C Following Year (pounds/year*)	Column D Second Following Year (pounds/year*)
8.1					
8.1a	Total on-site disposal to Class I Underground Injection Wells, RCRA Subtitle C landfills, and other landfills	NA	NA	NA	NA
8.1b	Total other on-site disposal or other releases	100.54	146.19	150	150
8.1c	Total off-site disposal to Class I Underground Injection Wells, RCRA Subtitle C landfills, and other landfills	NA	NA	NA	NA
8.1d	Total other off-site disposal or other releases	NA	NA	NA	NA
	Quantity used for energy recovery onsite	NA	NA	NA	NA
8.3	Quantity used for energy recovery offsite	NA	NA	NA	NA
8.4	Quantity recycled onsite	NA	NA	NA	NA
8.5	Quantity recycled offsite	NA	NA	NA	NA
8.6	Quantity treated onsite	100.54	146	146.19	150
8.7	Quantity treated offsite	NA	NA	NA	NA
8.8	Quantity released to the environment as a result of remedial actions, catastrophic events, or one-time events not associated with production processes (pounds/year)		NA		
8.9	Production ratio or activity index		1.24		
8.10	Did your facility engage in any source reduction activities for this chemical during the reporting year? If not, enter "NA" in Section 8.10.1 and answer Section 8.11.				

	Source Reduction Activities [enter code(s)]	Methods to Identify Activity (enter codes)		
8.10. 1	NA			
8.11	If you wish to submit additional optional information on source reduction, recycling, or pollution control activities, check "Yes."		Yes [ ]	

*For Dioxin and Dioxin-like Compounds, report in grams/yea

TRI Facility ID Number
14094VNDMR1NORT
Toxic Chemical, Category or Generic Name
Chlorine

Additional optional information on source reduction, recycling, or pollution control activities.

*** File Copy Only: Do Not Submit paper form to EPA ***

1 2 3 4 5 Additional Info
(IMPORTANT: Type or print; read instructions before completing form)

Form Approved OMB Number: 2070-0093
Approval Expires:

EPA
United States Environmental Protection Agency

FORM R

Section 313 of the Emergency Planning and Community Right-to-know Act of 1986, also known as Title III of the Superfund Amendments and Reauthorization Act.

TRI Facility ID Number: **14094VNDMR1NORT**

Toxic Chemical, Category or Generic Name: **Chlorobenzene**

WHERE TO SEND COMPLETED FORMS:	1. TRI Data Processing Center P.O.Box 1513 Lanham, MD 20703-1513 *** File Copy Only: Do Not Submit paper form to EPA ***	2. APPROPRIATE STATE OFFICE (See instructions in Appendix F)

This section only applies if you are revising or withdrawing a previously submitted form, otherwise leave blank:	Revision (enter up to two code(s)) [ ][ ]	Withdrawal (enter up to two code(s)) [ ][ ]

Important: See Instructions to determine when "Not Applicable (NA)" boxes should be checked.

Part I. FACILITY IDENTIFICATION INFORMATION

SECTION 1. REPORTING YEAR : **2010**

SECTION 2. TRADE SECRET INFORMATION

2.1 Are you claiming the toxic chemical identified on page 2 trade secret? [ ] Yes (Answer question 2.2; Attach substantiation forms) [X] NO (Do not answer 2.2; Go to Section 3)	2.2 Is this copy [ ] Sanitized [ ] Unsanitized (Answer only if "YES" in 2.1)	

SECTION 3. CERTIFICATION (Important: Read and sign after completing all form sections.)

I hereby certify that I have reviewed the attached documents and that, to the best of my knowledge and belief, the submitted information is true and complete and that the amounts and values in this report are accurate based on reasonable estimates using data available to the preparers of this report.

Name and official title of owner/operator or senior management official:	Signature:	Date Signed:
:		

SECTION 4. FACILITY IDENTIFICATION

	TRI Facility ID Number	**14094VNDMR1NORT**
Facility or Establishment Name **VANDEMARK CHEMICAL INC**	Facility or Establishment Name or Mailing Address(if different from street address) **NA**	
Street **1 N TRANSIT RD**	Mailing Address	
City/County/State/Zip Code **LOCKPORT / Niagara / NY / 14094**	City/State/Zip Code / /	Country (Non-US)

4.2	This report contains information for : (Important: check a or b; check c or d if applicable)	a. [X] An Entire facility	b. [ ] Part of a facility	c. [ ] A Federal facility	d. [ ] GOCO

4.3	Technical Contact name	**PAMELA COOK**		Email Address **P.COOK@VDMCHEMICAL.COM**		Telephone Number (include area code) **7164336764**	
4.4	Public Contact name	**PAMELA COOK**		Email Address **P.COOK@VDMCHEMICAL.COM**		Telephone Number (include area code) **7164336764**	
4.5	NAICS Code (s) (6 digits)	a. **325199 (Primary)**	b.	c.	d.	e.	f.

4.7	Dun and Bradstreet Number(s) (9 digits)
	a. **NA**
	b.

SECTION 5. PARENT COMPANY INFORMATION

5.1	Name of Parent Company	NA [X]	**NA**
5.2	Parent Company's Dun & Bradstreet Number	NA [X]	

EPA FORM R PART II. CHEMICAL - SPECIFIC INFORMATION	TRI Facility ID Number 14094VNDMR1NORT Toxic Chemical, Category or Generic Name Chlorobenzene

SECTION 1. TOXIC CHEMICAL IDENTITY (Important DO NOT complete this section if you completed Section 2 below.)

1.1	CAS Number (Important: Enter only one number exactly as it appears on the Section 313 list. Enter category code if reporting a chemical category.) 108907
1.2	Toxic Chemical or Chemical Category Name (Important: Enter only one name exactly as it appears on the Section 313 list.) Chlorobenzene
1.3	Generic Chemical Name (Important: Complete only if Part I, Section 2.1 is checked "yes". Generic Name must be structurally descriptive). NA

SECTION 2. MIXTURE COMPONENT IDENTITY (Important: DO NOT complete this section if you completed Section 1 above.)

2.1	Generic Chemical Name Provided by Supplier (Important: Maximum of 70 characters, including numbers, spaces, and punctuation.) NA

SECTION 3. ACTIVITIES AND USES OF THE TOXIC CHEMICAL AT THE FACILITY
(Important: Check all that apply.)

3.1 Manufacture the toxic chemical:	3.2 Process the toxic chemical:	3.3 Otherwise use the toxic chemical:
a. [ ] Produce b. [ ] Import		
If produce or import: c. [ ] For on-site use/processing d. [ ] For sale/distribution e. [ ] As a byproduct f. [ ] As an impurity	a. [ ] As a reactant b. [ ] As a formulation component c. [ ] As an article component d. [ ] Repackaging e. [ ] As an impurity	a. [X] As a chemical processing aid b. [ ] As a manufacturing aid c. [ ] Ancillary or other use

SECTION 4. MAXIMUM AMOUNT OF THE TOXIC CHEMICAL ONSITE AT ANY TIME DURING THE CALENDAR YEAR

4.1	[04] (Enter two-digit code from instruction package.)

SECTION 5.QUANTITY OF THE TOXIC CHEMICAL ENTERING EACH ENVIRONMENTAL MEDIUM ONSITE

			A. Total Release (pounds/year*) (Enter range code or estimate**)	B. Basis of Estimate (enter code)	C. % From Stormwater
5.1	Fugitive or non-point air emissions	NA [ ]	A	O	
5.2	Stack or point air emissions	NA [ ]	131.66	O	
5.3	Discharges to receiving streams or water bodies (enter one name per box)				
	Stream or Water Body Name				
5.3.1	NA				

*For Dioxin and Dioxin-like Compounds, report in grams/year

**Range Codes: A=1-10 pounds; B=11-499 pounds; C=500-999 pounds.

EPA FORM R
PART II. CHEMICAL - SPECIFIC INFORMATION (CONTINUED)

TRI Facility ID Number
14094VNDMR1NORT
Toxic Chemical, Category or Generic Name
Chlorobenzene

SECTION 5. QUANTITY OF THE TOXIC CHEMICAL ENTERING EACH ENVIRONMENTAL MEDIUM ONSITE (Continued)

		NA	A. Total Release (pounds/year*) (enter range code** or estimate)	B. Basis of Estimate (enter code)
5.4.1	Underground Injection onsite to Class I wells	[X]		
5.4.2	Underground Injection onsite to Class II-V wells	[X]		
5.5	Disposal to land onsite			
5.5.1.A	RCRA subtitle C landfills	[X]		
5.5.1.B	Other landfills	[X]		
5.5.2	Land treatment/application farming	[X]		
5.5.3A	RCRA Subtitle C surface impoundments	[X]		
5.5.3B	Other surface impoundments	[X]		
5.5.4	Other disposal	[X]		

SECTION 6. TRANSFERS OF THE TOXIC CHEMICAL IN WASTES TO OFF-SITE LOCATIONS

6.1 DISCHARGES TO PUBLICLY OWNED TREATMENT WORKS (POTWs)

6.1.A Total Quantity Transferred to POTWs and Basis of Estimate

6.1.A.1 Total Transfers (pounds/year*) (enter range code** or estimate)	6.1.A.2 Basis of Estimate (enter code)
5.32	M2

6.1.B. 2 POTW Name	CITY OF LOCKPORT						
POTW Address	PLANK ROAD						
City	LOCKPORT	State	NY	County	Niagara	Zip	14094

*For Dioxin and Dioxin-like Compounds, report in grams/yea

**Range Codes: A=1-10 pounds; B=11-499 pounds; C=500-999 pounds

EPA FORM R PART II. CHEMICAL - SPECIFIC INFORMATION (CONTINUED)	TRI Facility ID Number 14094VNDMR1NORT Toxic Chemical, Category or Generic Name Chlorobenzene

SECTION 6.2 TRANSFERS TO OTHER OFF-SITE LOCATIONS

6.2.1 Off-Site EPA Identification Number (RCRA ID No.)	PAD987270725
Off-Site Location Name	SIEMENS WATER TECHNOLOGIES INC
Off-Site Address	118 PARK ROAD

City	DARLINGTON	State	PA	County	Beaver	Zip	16115	Country (Non-US)	
Is location under control of reporting facility or parent company?						[ ] Yes [X] No			

A. Total Transfers (pounds/year*) (enter range code** or estimate)	B. Basis of Estimate (enter code)	C. Type of Waste Treatment/Disposal/ Recycling/Energy Recovery (enter code)
1 . 7983	1 . O	1 . M50

6.2.2 Off-Site EPA Identification Number (RCRA ID No.)	ARD069748192
Off-Site Location Name	CLEAN HARBORS INC
Off-Site Address	309 AMERICAN CIRCLE

City	EL DORADO	State	AR	County	Columbia	Zip	71730	Country (Non-US)	
Is location under control of reporting facility or parent company?						[ ] Yes [X] No			

A. Total Transfers (pounds/year*) (enter range code** or estimate)	B. Basis of Estimate (enter code)	C. Type of Waste Treatment/Disposal/ Recycling/Energy Recovery (enter code)
1 . 2037	1 . O	1 . M50

6.2.3 Off-Site EPA Identification Number (RCRA ID No.)	NYD080469935
Off-Site Location Name	NORLITE
Off-Site Address	628 SOUTH SARATOGA ST

City	COHOES	State	NY	County	Albany	Zip	12047	Country (Non-US)	
Is location under control of reporting facility or parent company?						[ ] Yes [X] No			

A. Total Transfers (pounds/year*) (enter range code** or estimate)	B. Basis of Estimate (enter code)	C. Type of Waste Treatment/Disposal/ Recycling/Energy Recovery (enter code)
1 . 24982	1 . O	1 . M50

SECTION 7A. ONSITE WASTE TREATMENT METHODS AND EFFICIENCY

[ ] Not Applicable (NA) - Check here if no on-site waste treatment is applied to any waste stream containing the toxic chemical or chemical category.

a. General Waste Stream (enter code)	b. Waste Treatment Method(s) Sequence [enter 3-character code(s)]	d. Waste Treatment Efficiency Estimate
7A. 1 a	7A. 1 b	7A. 1 d
A	2 : A03	E4
7A. 2 a	7A. 2 b	7A. 2 d
A	2 : A02 3 : A04	E4
7A. 3 a	7A. 3 b	7A. 3 d
W	2 : H082	E4

*For Dioxin and Dioxin-like Compounds, report in grams/year

**Range Codes: A=1-10 pounds; B=11-499 pounds; C=500-999 pounds.

EPA FORM R
PART II. CHEMICAL - SPECIFIC INFORMATION (CONTINUED)

TRI Facility ID Number: **14094VNDMR1NORT**

Toxic Chemical, Category or Generic Name: **Chlorobenzene**

SECTION 7B. ON-SITE ENERGY RECOVERY PROCESSES

[X] Not Applicable (NA) - Check here if no on-site energy recovery is applied to any waste stream containing the toxic chemical or chemical category.

Energy Recovery Methods [enter 3-character code(s)]

SECTION 7C. ON-SITE RECYCLING PROCESSES

[ ] Not Applicable (NA) - Check here if no on-site recycling is applied to any waste stream containing the toxic chemical or chemical category.

Recycling Methods [enter 3-character code(s)]

1. H20

SECTION 8. SOURCE REDUCTION AND RECYCLING ACTIVITIES

		Column A Prior Year (pounds/year*)	Column B Current Reporting Year (pounds/year*)	Column C Following Year (pounds/year*)	Column D Second Following Year (pounds/year*)
8.1					
8.1a	Total on-site disposal to Class I Underground Injection Wells, RCRA Subtitle C landfills, and other landfills	NA	NA	NA	NA
8.1b	Total other on-site disposal or other releases	50.9	136.66	150	150
8.1c	Total off-site disposal to Class I Underground Injection Wells, RCRA Subtitle C landfills, and other landfills	0	0	0	9
8.1d	Total other off-site disposal or other releases	0	0	0	9
8.2	Quantity used for energy recovery onsite	NA	NA	NA	NA
8.3	Quantity used for energy recovery offsite	NA	NA	NA	NA
8.4	Quantity recycled onsite	102242	6000	10000	10000
8.5	Quantity recycled offsite	NA	NA	NA	NA
8.6	Quantity treated onsite	0	0	0	0
8.7	Quantity treated offsite	80147.9196	35007.32	25000	25000
8.8	Quantity released to the environment as a result of remedial actions, catastrophic events, or one-time events not associated with production processes (pounds/year)		NA		
8.9	Production ratio or activity index		1.22		
8.10	Did your facility engage in any source reduction activities for this chemical during the reporting year? If not, enter "NA" in Section 8.10.1 and answer Section 8.11.				

	Source Reduction Activities [enter code(s)]	Methods to Identify Activity (enter codes)		
8.10.1	NA			
8.11	If you wish to submit additional optional information on source reduction, recycling, or pollution control activities, check "Yes."		Yes [ ]	

EPA Form 9350-1 (Rev.) - Previous editions are obsolete.

*For Dioxin and Dioxin-like Compounds, report in grams/yea

TRI Facility ID Number
14094VNDMR1NORT
Toxic Chemical, Category or Generic Name
Chlorobenzene

Additional optional information on source reduction, recycling, or pollution control activities.

*** File Copy Only: Do Not Submit paper form to EPA ***

1 2 3 4 5 Additional Info
(IMPORTANT: Type or print; read instructions before completing form)

Form Approved OMB Number: 2070-0093
Approval Expires:

EPA
United States Environmental Protection Agency

FORM R

Section 313 of the Emergency Planning and Community Right-to-know Act of 1986, also known as Title III of the Superfund Amendments and Reauthorization Act.

TRI Facility ID Number: **14094VNDMR1NORT**

Toxic Chemical, Category or Generic Name: **Hydrochloric acid (1995 and after "Acid Aerosols" only)**

WHERE TO SEND COMPLETED FORMS:	1. TRI Data Processing Center P.O.Box 1513 Lanham, MD 20703-1513 *** File Copy Only: Do Not Submit paper form to EPA ***	2. APPROPRIATE STATE OFFICE (See instructions in Appendix F)

This section only applies if you are revising or withdrawing a previously submitted form, otherwise leave blank:	Revision (enter up to two code(s)) [ ][ ]	Withdrawal (enter up to two code(s)) [ ][ ]

Important: See Instructions to determine when "Not Applicable (NA)" boxes should be checked.

Part I. FACILITY IDENTIFICATION INFORMATION

SECTION 1. REPORTING YEAR : **2010**

SECTION 2. TRADE SECRET INFORMATION

2.1 Are you claiming the toxic chemical identified on page 2 trade secret? [ ] Yes (Answer question 2.2; Attach substantiation forms) [X] NO (Do not answer 2.2; Go to Section 3)	2.2 Is this copy [ ] Sanitized [ ] Unsanitized (Answer only if "YES" in 2.1)	

SECTION 3. CERTIFICATION (Important: Read and sign after completing all form sections.)

I hereby certify that I have reviewed the attached documents and that, to the best of my knowledge and belief, the submitted information is true and complete and that the amounts and values in this report are accurate based on reasonable estimates using data available to the preparers of this report.

Name and official title of owner/operator or senior management official:	Signature:	Date Signed:
:		

SECTION 4. FACILITY IDENTIFICATION

4.1		TRI Facility ID Number	14094VNDMR1NORT
Facility or Establishment Name: **VANDEMARK CHEMICAL INC**		Facility or Establishment Name or Mailing Address(if different from street address): **NA**	
Street: **1 N TRANSIT RD**		Mailing Address	
City/County/State/Zip Code: **LOCKPORT / Niagara / NY / 14094**		City/State/Zip Code: / /	Country (Non-US)

4.2	This report contains information for : (Important: check a or b; check c or d if applicable)	a. [X] An Entire facility	b. [ ] Part of a facility	c. [ ] A Federal facility	d. [ ] GOCO

4.3	Technical Contact name	**PAMELA COOK**		Email Address: **P.COOK@VDMCHEMICAL.COM**		Telephone Number (include area code): **7164336764**	
4.4	Public Contact name	**PAMELA COOK**		Email Address: **P.COOK@VDMCHEMICAL.COM**		Telephone Number (include area code): **7164336764**	
4.5	NAICS Code (s) (6 digits)	a. **325199 (Primary)**	b.	c.	d.	e.	f.

4.7	Dun and Bradstreet Number(s) (9 digits)
	a. **NA**
	b.

SECTION 5. PARENT COMPANY INFORMATION

5.1	Name of Parent Company	NA [X]	**NA**
5.2	Parent Company's Dun & Bradstreet Number	NA [X]	

EPA FORM R PART II. CHEMICAL - SPECIFIC INFORMATION	TRI Facility ID Number 14094VNDMR1NORT Toxic Chemical, Category or Generic Name Hydrochloric acid (1995 and after "Acid Aer[illegible] only)

SECTION 1. TOXIC CHEMICAL IDENTITY (Important DO NOT complete this section if you completed Section 2 below.)

1.1	CAS Number (Important: Enter only one number exactly as it appears on the Section 313 list. Enter category code if reporting a chemical category.) 7647010
1.2	Toxic Chemical or Chemical Category Name (Important: Enter only one name exactly as it appears on the Section 313 list.) Hydrochloric acid (1995 and after "Acid Aerosols" only)
1.3	Generic Chemical Name (Important: Complete only if Part I, Section 2.1 is checked "yes". Generic Name must be structurally descriptive). NA

SECTION 2. MIXTURE COMPONENT IDENTITY (Important: DO NOT complete this section if you completed Section 1 above.)

2.1	Generic Chemical Name Provided by Supplier (Important: Maximum of 70 characters, including numbers, spaces, and punctuation.) NA

SECTION 3. ACTIVITIES AND USES OF THE TOXIC CHEMICAL AT THE FACILITY
(Important: Check all that apply.)

3.1 Manufacture the toxic chemical:	3.2 Process the toxic chemical:	3.3 Otherwise use the toxic chemical:
a. [X] Produce b. [ ] Import		
If produce or import: c. [ ] For on-site use/processing d. [ ] For sale/distribution e. [X] As a byproduct f. [ ] As an impurity	a. [X] As a reactant b. [ ] As a formulation component c. [ ] As an article component d. [ ] Repackaging e. [ ] As an impurity	a. [X] As a chemical processing aid b. [ ] As a manufacturing aid c. [ ] Ancillary or other use

SECTION 4. MAXIMUM AMOUNT OF THE TOXIC CHEMICAL ONSITE AT ANY TIME DURING THE CALENDAR YEAR

4.1	[05] (Enter two-digit code from instruction package.)

SECTION 5.QUANTITY OF THE TOXIC CHEMICAL ENTERING EACH ENVIRONMENTAL MEDIUM ONSITE

			A. Total Release (pounds/year*) (Enter range code or estimate**)	B. Basis of Estimate (enter code)	C. % From Stormwater
5.1	Fugitive or non-point air emissions	NA [ ]	A	O	
5.2	Stack or point air emissions	NA [ ]	1714	O	
5.3	Discharges to receiving streams or water bodies (enter one name per box)				
	Stream or Water Body Name				
5.3.1	NA				

*For Dioxin and Dioxin-like Compounds, report in grams/year

**Range Codes: A=1-10 pounds; B=11-499 pounds; C=500-999 pounds.

EPA FORM R PART II. CHEMICAL - SPECIFIC INFORMATION (CONTINUED)	TRI Facility ID Number 14094VNDMR1NORT Toxic Chemical, Category or Generic Name Hydrochloric acid (1995 and after "Acid Aerosols" only)

SECTION 5. QUANTITY OF THE TOXIC CHEMICAL ENTERING EACH ENVIRONMENTAL MEDIUM ONSITE (Continued)

		NA	A. Total Release (pounds/year*) (enter range code** or estimate)	B. Basis of Estimate (enter code)
5.4.1	Underground Injection onsite to Class I wells	[X]		
5.4.2	Underground Injection onsite to Class II-V wells	[X]		
5.5	Disposal to land onsite			
5.5.1.A	RCRA subtitle C landfills	[X]		
5.5.1.B	Other landfills	[X]		
5.5.2	Land treatment/application farming	[X]		
5.5.3A	RCRA Subtitle C surface impoundments	[X]		
5.5.3B	Other surface impoundments	[X]		
5.5.4	Other disposal	[X]		

SECTION 6. TRANSFERS OF THE TOXIC CHEMICAL IN WASTES TO OFF-SITE LOCATIONS

6.1 DISCHARGES TO PUBLICLY OWNED TREATMENT WORKS (POTWs)

6.1 Total Quantity Transferred to POTWs and Basis of Estimate

6.1.A Total Transfers (pounds/year*) (enter range code** or estimate)	6.1.A.2 Basis of Estimate (enter code)
NA	

*For Dioxin and Dioxin-like Compounds, report in grams/yea

**Range Codes: A=1-10 pounds; B=11-499 pounds; C=500-999 pounds

EPA FORM R PART II. CHEMICAL - SPECIFIC INFORMATION (CONTINUED)	TRI Facility ID Number 14094VNDMR1NORT Toxic Chemical, Category or Generic Name Hydrochloric acid (1995 and after "Acid Aer… only)

SECTION 6.2 TRANSFERS TO OTHER OFF-SITE LOCATIONS

6.2.1 Off-Site EPA Identification Number (RCRA ID No.)	
Off-Site Location Name	NA
Off-Site Address	

City		State		County		Zip		Country (Non-US)	
Is location under control of reporting facility or parent company?						[ ] Yes [ ] No			

A. Total Transfers (pounds/year*) (enter range code** or estimate)	B. Basis of Estimate (enter code)	C. Type of Waste Treatment/Disposal/ Recycling/Energy Recovery (enter code)

SECTION 7A. ONSITE WASTE TREATMENT METHODS AND EFFICIENCY

[ ] Not Applicable (NA) - Check here if no on-site waste treatment is applied to any waste stream containing the toxic chemical or chemical category.

a. General Waste Stream (enter code)	b. Waste Treatment Method(s) Sequence [enter 3-character code(s)]	d. Waste Treatment Efficiency Estimate
7A. 1 a	**7A. 1 b**	**7A. 1 d**
A	2 : **A03**	**E3**

*For Dioxin and Dioxin-like Compounds, report in grams/year

EPA Form 9350-1 (Rev.) - Previous editions are obsolete.

**Range Codes: A=1-10 pounds; B=11-499 pounds; C=500-999 pounds.

EPA FORM R PART II. CHEMICAL - SPECIFIC INFORMATION (CONTINUED)	TRI Facility ID Number 14094VNDMR1NORT Toxic Chemical, Category or Generic Name Hydrochloric acid (1995 and after "Acid Aerosols" only)

SECTION 7B. ON-SITE ENERGY RECOVERY PROCESSES

[X] Not Applicable (NA) - Check here if no on-site energy recovery is applied to any waste stream containing the toxic chemical or chemical category.

Energy Recovery Methods [enter 3-character code(s)]

SECTION 7C. ON-SITE RECYCLING PROCESSES

[X] Not Applicable (NA) - Check here if no on-site recycling is applied to any waste stream containing the toxic chemical or chemical category.

Recycling Methods [enter 3-character code(s)]

SECTION 8. SOURCE REDUCTION AND RECYCLING ACTIVITIES

		Column A Prior Year (pounds/year*)	Column B Current Reporting Year (pounds/year*)	Column C Following Year (pounds/year*)	Column D Second Following Year (pounds/year*)
8.1					
8.1a	Total on-site disposal to Class I Underground Injection Wells, RCRA Subtitle C landfills, and other landfills	NA	NA	NA	NA
8.1b	Total other on-site disposal or other releases	1579	1724	2000	2000
8.1c	Total off-site disposal to Class I Underground Injection Wells, RCRA Subtitle C landfills, and other landfills	NA	NA	NA	NA
8.1d	Total other off-site disposal or other releases	NA	NA	NA	NA
	Quantity used for energy recovery onsite	NA	NA	NA	NA
8.3	Quantity used for energy recovery offsite	NA	NA	NA	NA
8.4	Quantity recycled onsite	NA	NA	NA	NA
8.5	Quantity recycled offsite	NA	NA	NA	NA
8.6	Quantity treated onsite	0	0	0	0
8.7	Quantity treated offsite	NA	NA	NA	NA
8.8	Quantity released to the environment as a result of remedial actions, catastrophic events, or one-time events not associated with production processes (pounds/year)		0		
8.9	Production ratio or activity index		1.22		
8.10	Did your facility engage in any source reduction activities for this chemical during the reporting year? If not, enter "NA" in Section 8.10.1 and answer Section 8.11.				

	Source Reduction Activities [enter code(s)]	Methods to Identify Activity (enter codes)		
8.10. 1	NA			
8.11	If you wish to submit additional optional information on source reduction, recycling, or pollution control activities, check "Yes."		Yes [ ]	

EPA Form 9350-1 (Rev.) - Previous editions are obsolete.

*For Dioxin and Dioxin-like Compounds, report in grams/yea

TRI Facility ID Number
14094VNDMR1NORT
Toxic Chemical, Category or Generic Name
Hydrochloric acid (1995 and after "Acid Aerosols" only)

Additional optional information on source reduction, recycling, or pollution control activities.

*** File Copy Only: Do Not Submit paper form to EPA ***

I 2 3 4 5 Additional Info
(IMPORTANT: Type or print; read instructions before completing form)

Form Approved OMB Number: 2070-0093
Approval Expires:

EPA
United States Environmental Protection Agency

FORM R

Section 313 of the Emergency Planning and Community Right-to-know Act of 1986, also known as Title III of the Superfund Amendments and Reauthorization Act.

TRI Facility ID Number: **14094VNDMR1NORT**

Toxic Chemical, Category or Generic Name: **Methanol**

WHERE TO SEND COMPLETED FORMS:	1. TRI Data Processing Center P.O.Box 1513 Lanham, MD 20703-1513 *** File Copy Only: Do Not Submit paper form to EPA ***	2. APPROPRIATE STATE OFFICE (See instructions in Appendix F)

This section only applies if you are revising or withdrawing a previously submitted form, otherwise leave blank:	Revision (enter up to two code(s)) [ ][ ]	Withdrawal (enter up to two code(s)) [ ][ ]

Important: See Instructions to determine when "Not Applicable (NA)" boxes should be checked.

Part I. FACILITY IDENTIFICATION INFORMATION

SECTION 1. REPORTING YEAR : **2010**

SECTION 2. TRADE SECRET INFORMATION

2.1 Are you claiming the toxic chemical identified on page 2 trade secret? [ ] Yes (Answer question 2.2; Attach substantiation forms) [X] NO (Do not answer 2.2; Go to Section 3)	2.2 Is this copy [ ] Sanitized [ ] Unsanitized (Answer only if "YES" in 2.1)	

SECTION 3. CERTIFICATION (Important: Read and sign after completing all form sections.)

I hereby certify that I have reviewed the attached documents and that, to the best of my knowledge and belief, the submitted information is true and complete and that the amounts and values in this report are accurate based on reasonable estimates using data available to the preparers of this report.

Name and official title of owner/operator or senior management official:	Signature:	Date Signed:
:		

SECTION 4. FACILITY IDENTIFICATION

	TRI Facility ID Number	14094VNDMR1NORT
Facility or Establishment Name **VANDEMARK CHEMICAL INC**	Facility or Establishment Name or Mailing Address(if different from street address) **NA**	
Street **1 N TRANSIT RD**	Mailing Address	
City/County/State/Zip Code **LOCKPORT / Niagara / NY / 14094**	City/State/Zip Code / /	Country (Non-US)

4.2	This report contains information for : (Important: check a or b; check c or d if applicable)	a. [X] An Entire facility	b. [ ] Part of a facility	c. [ ] A Federal facility	d. [ ] GOCO

4.3	Technical Contact name	**PAMELA COOK**		Email Address **P.COOK@VDMCHEMICAL.COM**		Telephone Number (include area code) **7164336764**	
4.4	Public Contact name	**PAMELA COOK**		Email Address **P.COOK@VDMCHEMICAL.COM**		Telephone Number (include area code) **7164336764**	
4.5	NAICS Code (s) (6 digits)	a. **325199 (Primary)**	b.	c.	d.	e.	f.

4.7	Dun and Bradstreet Number(s) (9 digits)
	a. **NA**
	b.

SECTION 5. PARENT COMPANY INFORMATION

5.1	Name of Parent Company	NA [X]	**NA**
5.2	Parent Company's Dun & Bradstreet Number	NA [X]	

EPA FORM R PART II. CHEMICAL - SPECIFIC INFORMATION	TRI Facility ID Number 14094VNDMR1NORT Toxic Chemical, Category or Generic Name Methanol

SECTION 1. TOXIC CHEMICAL IDENTITY (Important DO NOT complete this section if you completed Section 2 below.)

1.1	CAS Number (Important: Enter only one number exactly as it appears on the Section 313 list. Enter category code if reporting a chemical category.) 67561
1.2	Toxic Chemical or Chemical Category Name (Important: Enter only one name exactly as it appears on the Section 313 list.) Methanol
1.3	Generic Chemical Name (Important: Complete only if Part I, Section 2.1 is checked "yes". Generic Name must be structurally descriptive). NA

SECTION 2. MIXTURE COMPONENT IDENTITY (Important: DO NOT complete this section if you completed Section 1 above.)

2.1	Generic Chemical Name Provided by Supplier (Important: Maximum of 70 characters, including numbers, spaces, and punctuation.) NA

SECTION 3. ACTIVITIES AND USES OF THE TOXIC CHEMICAL AT THE FACILITY
(Important: Check all that apply.)

3.1 Manufacture the toxic chemical:	3.2 Process the toxic chemical:	3.3 Otherwise use the toxic chemical:
a. [ ] Produce b. [ ] Import		
If produce or import: c. [ ] For on-site use/processing d. [ ] For sale/distribution e. [ ] As a byproduct f. [ ] As an impurity	a. [X] As a reactant b. [ ] As a formulation component c. [ ] As an article component d. [ ] Repackaging e. [ ] As an impurity	a. [X] As a chemical processing aid b. [ ] As a manufacturing aid c. [X] Ancillary or other use

SECTION 4. MAXIMUM AMOUNT OF THE TOXIC CHEMICAL ONSITE AT ANY TIME DURING THE CALENDAR YEAR

4.1	[04] (Enter two-digit code from instruction package.)

SECTION 5.QUANTITY OF THE TOXIC CHEMICAL ENTERING EACH ENVIRONMENTAL MEDIUM ONSITE

			A. Total Release (pounds/year*) (Enter range code or estimate**)	B. Basis of Estimate (enter code)	C. % From Stormwater
5.1	Fugitive or non-point air emissions	NA [ ]	A	O	
5.2	Stack or point air emissions	NA [ ]	28	O	
5.3	Discharges to receiving streams or water bodies (enter one name per box)				
	Stream or Water Body Name				
5.3.1	NA				

*For Dioxin and Dioxin-like Compounds, report in grams/year

**Range Codes: A=1-10 pounds; B=11-499 pounds; C=500-999 pounds.

EPA FORM R
PART II. CHEMICAL - SPECIFIC INFORMATION (CONTINUED)

TRI Facility ID Number
14094VNDMR1NORT
Toxic Chemical, Category or Generic Name
Methanol

SECTION 5. QUANTITY OF THE TOXIC CHEMICAL ENTERING EACH ENVIRONMENTAL MEDIUM ONSITE (Continued)

		NA	A. Total Release (pounds/year*) (enter range code** or estimate)	B. Basis of Estimate (enter code)
5.4.1	Underground Injection onsite to Class I wells	[X]		
5.4.2	Underground Injection onsite to Class II-V wells	[X]		
5.5	Disposal to land onsite			
5.5.1.A	RCRA subtitle C landfills	[X]		
5.5.1.B	Other landfills	[X]		
5.5.2	Land treatment/application farming	[X]		
5.5.3A	RCRA Subtitle C surface impoundments	[X]		
5.5.3B	Other surface impoundments	[X]		
5.5.4	Other disposal	[X]		

SECTION 6. TRANSFERS OF THE TOXIC CHEMICAL IN WASTES TO OFF-SITE LOCATIONS

6.1 DISCHARGES TO PUBLICLY OWNED TREATMENT WORKS (POTWs)

6.1.A Total Quantity Transferred to POTWs and Basis of Estimate

6.1.A.1 Total Transfers (pounds/year*) (enter range code** or estimate)	6.1.A.2 Basis of Estimate (enter code)
18412.83	M2

6.1.B. 2 POTW Name	CITY OF LOCKPORT						
POTW Address	PLANK ROAD						
City	LOCKPORT	State	NY	County	Niagara	Zip	14094

*For Dioxin and Dioxin-like Compounds, report in grams/yea

**Range Codes: A=1-10 pounds; B=11-499 pounds; C=500-999 pounds

EPA FORM R PART II. CHEMICAL - SPECIFIC INFORMATION (CONTINUED)	TRI Facility ID Number 14094VNDMR1NORT Toxic Chemical, Category or Generic Name Methanol

SECTION 6.2 TRANSFERS TO OTHER OFF-SITE LOCATIONS

6.2.1 Off-Site EPA Identification Number (RCRA ID No.)	PAD987270725
Off-Site Location Name	SIEMENS WATER TECHNOLOGIES INC
Off-Site Address	118 PARK ROAD

City	DARLINGTON	State	PA	County	Beaver	Zip	16115	Country (Non-US)	
Is location under control of reporting facility or parent company?						[ ] Yes [X] No			

A. Total Transfers (pounds/year*) (enter range code** or estimate)	B. Basis of Estimate (enter code)	C. Type of Waste Treatment/Disposal/ Recycling/Energy Recovery (enter code)
1 . 635.2	1 . O	1 . M50

6.2.2 Off-Site EPA Identification Number (RCRA ID No.)	ARD069748192
Off-Site Location Name	CLEAN HARBORS INC
Off-Site Address	309 AMERICAN CIRCLE

City	EL DORADO	State	AR	County	Columbia	Zip	71730	Country (Non-US)	
Is location under control of reporting facility or parent company?						[ ] Yes [X] No			

A. Total Transfers (pounds/year*) (enter range code** or estimate)	B. Basis of Estimate (enter code)	C. Type of Waste Treatment/Disposal/ Recycling/Energy Recovery (enter code)
1 . 5976	1 . O	1 . M50

6.2.3 Off-Site EPA Identification Number (RCRA ID No.)	CTD002593887
Off-Site Location Name	BRIDGEPORT UNITED RECYCLING
Off-Site Address	50 CROSS STREET

City	BRIDGEPORT	State	CT	County	Fairfield	Zip	06610	Country (Non-US)	
Is location under control of reporting facility or parent company?						[ ] Yes [X] No			

A. Total Transfers (pounds/year*) (enter range code** or estimate)	B. Basis of Estimate (enter code)	C. Type of Waste Treatment/Disposal/ Recycling/Energy Recovery (enter code)
1 . 0	1 . O	1 . M90

6.2.4 Off-Site EPA Identification Number (RCRA ID No.)	NYD080469935
Off-Site Location Name	NORLITE
Off-Site Address	628 SOUTH SARATOGA ST

City	COHOES	State	NY	County	Albany	Zip	12047	Country (Non-US)	
Is location under control of reporting facility or parent company?						[ ] Yes [X] No			

A. Total Transfers (pounds/year*) (enter range code** or estimate)	B. Basis of Estimate (enter code)	C. Type of Waste Treatment/Disposal/ Recycling/Energy Recovery (enter code)
1 . 40375.1	1 . O	1 . M50

SECTION 7A. ONSITE WASTE TREATMENT METHODS AND EFFICIENCY

[ ] Not Applicable (NA) - Check here if no on-site waste treatment is applied to any waste stream containing the toxic chemical or chemical category.

a. General Waste Stream (enter code)	b. Waste Treatment Method(s) Sequence [enter 3-character code(s)]	d. Waste Treatment Efficiency Estimate
7A. 1 a	7A. 1 b	7A. 1 d
A	2 : A03	E5
7A. 2 a	7A. 2 b	7A. 2 d
A	2 : A02 3 : A04	E5

**Range Codes: A=1-10 pounds; B=11-499 pounds; C=500-999 pounds

EPA FORM R
PART II. CHEMICAL - SPECIFIC INFORMATION (CONTINUED)

TRI Facility ID Number: 14094VNDMR1NORT

Toxic Chemical, Category or Generic Name: Methanol

SECTION 7B. ON-SITE ENERGY RECOVERY PROCESSES

[X] Not Applicable (NA) - Check here if no on-site energy recovery is applied to any waste stream containing the toxic chemical or chemical category.

Energy Recovery Methods [enter 3-character code(s)]

SECTION 7C. ON-SITE RECYCLING PROCESSES

[ ] Not Applicable (NA) - Check here if no on-site recycling is applied to any waste stream containing the toxic chemical or chemical category.

Recycling Methods [enter 3-character code(s)]

1. H20

SECTION 8. SOURCE REDUCTION AND RECYCLING ACTIVITIES

		Column A Prior Year (pounds/year*)	Column B Current Reporting Year (pounds/year*)	Column C Following Year (pounds/year*)	Column D Second Following Year (pounds/year*)
8.1					
8.1a	Total on-site disposal to Class I Underground Injection Wells, RCRA Subtitle C landfills, and other landfills	NA	NA	NA	NA
8.1b	Total other on-site disposal or other releases	22	38	30	30
8.1c	Total off-site disposal to Class I Underground Injection Wells, RCRA Subtitle C landfills, and other landfills	0	0	0	0
8.1d	Total other off-site disposal or other releases	4.9	0	0	0
8.2	Quantity used for energy recovery onsite	NA	NA	NA	NA
8.3	Quantity used for energy recovery offsite	NA	NA	NA	NA
8.4	Quantity recycled onsite	5074	0	5000	5000
8.5	Quantity recycled offsite	NA	NA	NA	NA
8.6	Quantity treated onsite	NA	NA	NA	NA
8.7	Quantity treated offsite	62245.5	65399.13	75000	75000
8.8	Quantity released to the environment as a result of remedial actions, catastrophic events, or one-time events not associated with production processes (pounds/year)		0		
8.9	Production ratio or activity index		1.22		
8.10	Did your facility engage in any source reduction activities for this chemical during the reporting year? If not, enter "NA" in Section 8.10.1 and answer Section 8.11.				

	Source Reduction Activities [enter code(s)]	Methods to Identify Activity (enter codes)		
8.10.1	NA			
8.11	If you wish to submit additional optional information on source reduction, recycling, or pollution control activities, check "Yes."	Yes [ ]		

*For Dioxin and Dioxin-like Compounds, report in grams/year

1 2 3 4 5 Additional Info

TRI Facility ID Number
14094VNDMR1NORT
Toxic Chemical, Category or Generic Name
Me ·ıol

Additional optional information on source reduction, recycling, or pollution control activities.

*** File Copy Only: Do Not Submit paper form to EPA ***

1 2 3 4 5 Additional Info
(IMPORTANT: Type or print; read instructions before completing form)

Form Approved OMB Number: 2070-0093
Approval Expires:

EPA	FORM R	TRI Facility ID Number
United States Environmental Protection Agency	Section 313 of the Emergency Planning and Community Right-to-know Act of 1986, also known as Title III of the Superfund Amendments and Reauthorization Act.	14094VNDMR1NORT
		Toxic Chemical, Category or Generic Name
		N,N-Dimethylformamide

WHERE TO SEND COMPLETED FORMS:	1. TRI Data Processing Center P.O.Box 1513 Lanham, MD 20703-1513 *** File Copy Only: Do Not Submit paper form to EPA ***	2. APPROPRIATE STATE OFFICE (See instructions in Appendix F)

This section only applies if you are revising or withdrawing a previously submitted form, otherwise leave blank:	Revision (enter up to two code(s)) [ ][ ]	Withdrawal (enter up to two code(s)) [ ][ ]

Important: See Instructions to determine when "Not Applicable (NA)" boxes should be checked.

Part I. FACILITY IDENTIFICATION INFORMATION

SECTION 1. REPORTING YEAR : 2010

SECTION 2. TRADE SECRET INFORMATION

2.1 Are you claiming the toxic chemical identified on page 2 trade secret? [ ] Yes (Answer question 2.2; Attach substantiation forms) [X] NO (Do not answer 2.2; Go to Section 3)	2.2 Is this copy [ ] Sanitized [ ] Unsanitized (Answer only if "YES" in 2.1)	

SECTION 3. CERTIFICATION (Important: Read and sign after completing all form sections.)

I hereby certify that I have reviewed the attached documents and that, to the best of my knowledge and belief, the submitted information is true and complete and that the amounts and values in this report are accurate based on reasonable estimates using data available to the preparers of this report.

Name and official title of owner/operator or senior management official:	Signature:	Date Signed:
:		

SECTION 4. FACILITY IDENTIFICATION

4.1		TRI Facility ID Number	14094VNDMR1NORT
Facility or Establishment Name VANDEMARK CHEMICAL INC		Facility or Establishment Name or Mailing Address(if different from street address) NA	
Street 1 N TRANSIT RD		Mailing Address	
City/County/State/Zip Code LOCKPORT / Niagara / NY / 14094		City/State/Zip Code / /	Country (Non-US)

4.2	This report contains information for : (Important: check a or b; check c or d if applicable)	a. [X] An Entire facility	b. [ ] Part of a facility	c. [ ] A Federal facility	d. [ ] GOCO

4.3	Technical Contact name	PAMELA COOK		Email Address P.COOK@VDMCHEMICAL.COM		Telephone Number (include area code) 7164336764	
4.4	Public Contact name	PAMELA COOK		Email Address P.COOK@VDMCHEMICAL.COM		Telephone Number (include area code) 7164336764	
4.5	NAICS Code (s) (6 digits)	a. 325199 (Primary)	b.	c.	d.	e.	f.

4.7	Dun and Bradstreet Number(s) (9 digits)
	a. NA
	b.

SECTION 5. PARENT COMPANY INFORMATION

5.1	Name of Parent Company	NA [X]	NA
5.2	Parent Company's Dun & Bradstreet Number	NA [X]	

EPA FORM R PART II. CHEMICAL - SPECIFIC INFORMATION	TRI Facility ID Number 14094VNDMR1NORT Toxic Chemical, Category or Generic Name N,N-Dimethylformamide

SECTION 1. TOXIC CHEMICAL IDENTITY (Important DO NOT complete this section if you completed Section 2 below.)

1.1	CAS Number (Important: Enter only one number exactly as it appears on the Section 313 list. Enter category code if reporting a chemical category.) 68122
1.2	Toxic Chemical or Chemical Category Name (Important: Enter only one name exactly as it appears on the Section 313 list.) N,N-Dimethylformamide
1.3	Generic Chemical Name (Important: Complete only if Part I, Section 2.1 is checked "yes". Generic Name must be structurally descriptive). NA

SECTION 2. MIXTURE COMPONENT IDENTITY (Important: DO NOT complete this section if you completed Section 1 above.)

2.1	Generic Chemical Name Provided by Supplier (Important: Maximum of 70 characters, including numbers, spaces, and punctuation.) NA

SECTION 3. ACTIVITIES AND USES OF THE TOXIC CHEMICAL AT THE FACILITY
(Important: Check all that apply.)

3.1 Manufacture the toxic chemical:	3.2 Process the toxic chemical:	3.3 Otherwise use the toxic chemical:
a. [ ] Produce b. [ ] Import		
If produce or import: c. [ ] For on-site use/processing d. [ ] For sale/distribution e. [ ] As a byproduct f. [ ] As an impurity	a. [X] As a reactant b. [ ] As a formulation component c. [ ] As an article component d. [ ] Repackaging e. [ ] As an impurity	a. [X] As a chemical processing aid b. [ ] As a manufacturing aid c. [ ] Ancillary or other use

SECTION 4. MAXIMUM AMOUNT OF THE TOXIC CHEMICAL ONSITE AT ANY TIME DURING THE CALENDAR YEAR

[04] (Enter two-digit code from instruction package.)

SECTION 5.QUANTITY OF THE TOXIC CHEMICAL ENTERING EACH ENVIRONMENTAL MEDIUM ONSITE

			A. Total Release (pounds/year*) (Enter range code or estimate**)	B. Basis of Estimate (enter code)	C. % From Stormwater
5.1	Fugitive or non-point air emissions	NA [ ]	A	O	
5.2	Stack or point air emissions	NA [ ]	222.03	O	
5.3	Discharges to receiving streams or water bodies (enter one name per box)				
	Stream or Water Body Name				
5.3.1	NA				

*For Dioxin and Dioxin-like Compounds, report in grams/yea

**Range Codes: A=1-10 pounds; B=11-499 pounds; C=500-999 pounds

EPA FORM R
PART II. CHEMICAL - SPECIFIC INFORMATION (CONTINUED)

TRI Facility ID Number	Toxic Chemical, Category or Generic Name
14094VNDMR1NORT	N,N-Dimethylformamide

SECTION 5. QUANTITY OF THE TOXIC CHEMICAL ENTERING EACH ENVIRONMENTAL MEDIUM ONSITE (Continued)

		NA	A. Total Release (pounds/year*) (enter range code** or estimate)	B. Basis of Estimate (enter code)
5.4.1	Underground Injection onsite to Class I wells	[X]		
5.4.2	Underground Injection onsite to Class II-V wells	[X]		
5.5	Disposal to land onsite			
5.5.1.A	RCRA subtitle C landfills	[X]		
5.5.1.B	Other landfills	[X]		
5.5.2	Land treatment/application farming	[X]		
5.5.3A	RCRA Subtitle C surface impoundments	[X]		
5.5.3B	Other surface impoundments	[X]		
5.5.4	Other disposal	[X]		

SECTION 6. TRANSFERS OF THE TOXIC CHEMICAL IN WASTES TO OFF-SITE LOCATIONS

6.1 DISCHARGES TO PUBLICLY OWNED TREATMENT WORKS (POTWs)

6.1.A Total Quantity Transferred to POTWs and Basis of Estimate

6.1.A.1 Total Transfers (pounds/year*) (enter range code** or estimate)	6.1.A.2 Basis of Estimate (enter code)
128.7	O

6.1.B. 2 POTW Name	CITY OF LOCKPORT						
POTW Address	PLANK ROAD						
City	LOCKPORT	State	NY	County	Niagara	Zip	14094

*For Dioxin and Dioxin-like Compounds, report in grams/year

**Range Codes: A=1-10 pounds; B=11-499 pounds; C=500-999 pounds.

EPA FORM R PART II. CHEMICAL - SPECIFIC INFORMATION (CONTINUED)	TRI Facility ID Number 14094VNDMR1NORT Toxic Chemical, Category or Generic Name N,N-Dimethylformamide

SECTION 6.2 TRANSFERS TO OTHER OFF-SITE LOCATIONS

6.2.1 Off-Site EPA Identification Number (RCRA ID No.)	PAD987270725
Off-Site Location Name	SIEMENS WATER TECHNOLOGIES INC
Off-Site Address	118 PARK ROAD

City	DARLINGTON	State	PA	County	Beaver	Zip	16115	Country (Non-US)	
Is location under control of reporting facility or parent company?						[ ] Yes [X] No			

A. Total Transfers (pounds/year*) (enter range code** or estimate)	B. Basis of Estimate (enter code)	C. Type of Waste Treatment/Disposal/ Recycling/Energy Recovery (enter code)
1 . 2	1 . O	1 . M50

6.2.2 Off-Site EPA Identification Number (RCRA ID No.)	ARD069748192
Off-Site Location Name	CLEAN HARBORS INC
Off-Site Address	309 AMERICAN CIRCLE

City	EL DORADO	State	AR	County	Columbia	Zip	71730	Country (Non-US)	
Is location under control of reporting facility or parent company?						[ ] Yes [X] No			

A. Total Transfers (pounds/year*) (enter range code** or estimate)	B. Basis of Estimate (enter code)	C. Type of Waste Treatment/Disposal/ Recycling/Energy Recovery (enter code)
1 . 0	1 . O	1 . M50

6.2.3 Off-Site EPA Identification Number (RCRA ID No.)	NYD080469935
Off-Site Location Name	NORLITE
Off-Site Address	628 SOUTH SARATOGA ST

City	COHOES	State	NY	County	Albany	Zip	12047	Country (Non-US)	
Is location under control of reporting facility or parent company?						[ ] Yes [X] No			

A. Total Transfers (pounds/year*) (enter range code** or estimate)	B. Basis of Estimate (enter code)	C. Type of Waste Treatment/Disposal/ Recycling/Energy Recovery (enter code)
1 . 8365	1 . O	1 . M50

SECTION 7A. ONSITE WASTE TREATMENT METHODS AND EFFICIENCY

[ ] Not Applicable (NA) - Check here if no on-site waste treatment is applied to any waste stream containing the toxic chemical or chemical category.

a. General Waste Stream (enter code)	b. Waste Treatment Method(s) Sequence [enter 3-character code(s)]	d. Waste Treatment Efficiency Estimate
7A. 1 a	7A. 1 b	7A. 1 d
W	2 : H082	E4
7A. 2 a	7A. 2 b	7A. 2 d
A	2 : A03	E4

*For Dioxin and Dioxin-like Compounds, report in grams/yea

**Range Codes: A=1-10 pounds; B=11-499 pounds; C=500-999 pounds

EPA FORM R
PART II. CHEMICAL - SPECIFIC INFORMATION (CONTINUED)

TRI Facility ID Number: **14094VNDMR1NORT**

Toxic Chemical, Category or Generic Name: **N,N-Dimethylformamide**

SECTION 7B. ON-SITE ENERGY RECOVERY PROCESSES

[X] Not Applicable (NA) - Check here if no on-site energy recovery is applied to any waste stream containing the toxic chemical or chemical category.

Energy Recovery Methods [enter 3-character code(s)]

SECTION 7C. ON-SITE RECYCLING PROCESSES

[ ] Not Applicable (NA) - Check here if no on-site recycling is applied to any waste stream containing the toxic chemical or chemical category.

Recycling Methods [enter 3-character code(s)]

1. H20

SECTION 8. SOURCE REDUCTION AND RECYCLING ACTIVITIES

		Column A Prior Year (pounds/year*)	Column B Current Reporting Year (pounds/year*)	Column C Following Year (pounds/year*)	Column D Second Following Year (pounds/year*)
8.1					
8.1a	Total on-site disposal to Class I Underground Injection Wells, RCRA Subtitle C landfills, and other landfills	NA	NA	NA	NA
8.1b	Total other on-site disposal or other releases	228.71	232.03	250	250
8.1c	Total off-site disposal to Class I Underground Injection Wells, RCRA Subtitle C landfills, and other landfills	0	0	0	0
8.1d	Total other off-site disposal or other releases	0	0	0	0
8.2	Quantity used for energy recovery onsite	NA	NA	NA	NA
8.3	Quantity used for energy recovery offsite	NA	NA	NA	NA
8.4	Quantity recycled onsite	1681	0	2000	2000
8.5	Quantity recycled offsite	NA	NA	NA	NA
8.6	Quantity treated onsite	0	0	0	0
8.7	Quantity treated offsite	5121.38	8495.7	7500	7500
8.8	Quantity released to the environment as a result of remedial actions, catastrophic events, or one-time events not associated with production processes (pounds/year)		0		
8.9	Production ratio or activity index		1.22		
8.10	Did your facility engage in any source reduction activities for this chemical during the reporting year? If not, enter "NA" in Section 8.10.1 and answer Section 8.11.				

	Source Reduction Activities [enter code(s)]	Methods to Identify Activity (enter codes)		
8.10.1	NA			
8.11	If you wish to submit additional optional information on source reduction, recycling, or pollution control activities, check "Yes."	Yes [ ]		

EPA Form 9350-1 (Rev.) - Previous editions are obsolete.

*For Dioxin and Dioxin-like Compounds, report in grams/year

TRI Facility ID Number
14094VNDMR1NORT
Toxic Chemical, Category or Generic Name
N,N-Dimethylformamide

Additional optional information on source reduction, recycling, or pollution control activities.

*** File Copy Only: Do Not Submit paper form to EPA ***

1 2 3 4 5 Additional Info
(IMPORTANT: Type or print; read instructions before completing form)

Form Approved OMB Number: **2070-0093**
Approval Expires:

EPA United States Environmental Protection Agency	**FORM R** Section 313 of the Emergency Planning and Community Right-to-know Act of 1986, also known as Title III of the Superfund Amendments and Reauthorization Act.	TRI Facility ID Number **14094VNDMR1NORT** Toxic Chemical, Category or Generic Name **Phenol**

WHERE TO SEND COMPLETED FORMS:	1. TRI Data Processing Center P.O.Box 1513 Lanham, MD 20703-1513 *** File Copy Only: Do Not Submit paper form to EPA ***	2. APPROPRIATE STATE OFFICE (See instructions in Appendix F)

This section only applies if you are revising or withdrawing a previously submitted form, otherwise leave blank:	Revision (enter up to two code(s)) [ ][ ]	Withdrawal (enter up to two code(s)) [ ][ ]

Important: See Instructions to determine when "Not Applicable (NA)" boxes should be checked.

Part I. FACILITY IDENTIFICATION INFORMATION

SECTION 1. REPORTING YEAR : **2010**

SECTION 2. TRADE SECRET INFORMATION

2.1 Are you claiming the toxic chemical identified on page 2 trade secret? [ ] Yes (Answer question 2.2; Attach substantiation forms) [**X**] NO (Do not answer 2.2; Go to Section 3)	2.2 Is this copy [ ] Sanitized [ ] Unsanitized (Answer only if "YES" in 2.1)	

SECTION 3. CERTIFICATION (Important: Read and sign after completing all form sections.)

I hereby certify that I have reviewed the attached documents and that, to the best of my knowledge and belief, the submitted information is true and complete and that the amounts and values in this report are accurate based on reasonable estimates using data available to the preparers of this report.

Name and official title of owner/operator or senior management official:	Signature:	Date Signed:
:		

SECTION 4. FACILITY IDENTIFICATION

4.1		TRI Facility ID Number	**14094VNDMR1NORT**
Facility or Establishment Name **VANDEMARK CHEMICAL INC**		Facility or Establishment Name or Mailing Address(if different from street address) **NA**	
Street **1 N TRANSIT RD**		Mailing Address	
City/County/State/Zip Code **LOCKPORT / Niagara / NY / 14094**		City/State/Zip Code / /	Country (Non-US)

4.2	This report contains information for : (Important: check a or b; check c or d if applicable)	a. [**X**] An Entire facility	b. [ ] Part of a facility	c. [ ] A Federal facility	d. [ ] GOCO

4.3	Technical Contact name	**PAMELA COOK**		Email Address **P.COOK@VDMCHEMICAL.COM**		Telephone Number (include area code) **7164336764**	
4.4	Public Contact name	**PAMELA COOK**		Email Address **P.COOK@VDMCHEMICAL.COM**		Telephone Number (include area code) **7164336764**	
4.5	NAICS Code (s) (6 digits)	a. **325199 (Primary)**	b.	c.	d.	e.	f.

4.7	Dun and Bradstreet Number(s) (9 digits)
	a. **NA**
	b.

SECTION 5. PARENT COMPANY INFORMATION

5.1	Name of Parent Company	NA [**X**]	**NA**
5.2	Parent Company's Dun & Bradstreet Number	NA [**X**]	

EPA FORM R
PART II. CHEMICAL - SPECIFIC INFORMATION

TRI Facility ID Number: 14094VNDMR1NORT

Toxic Chemical, Category or Generic Name: Phenol

SECTION 1. TOXIC CHEMICAL IDENTITY (Important DO NOT complete this section if you completed Section 2 below.)

1.1	CAS Number (Important: Enter only one number exactly as it appears on the Section 313 list. Enter category code if reporting a chemical category.) **108952**
1.2	Toxic Chemical or Chemical Category Name (Important: Enter only one name exactly as it appears on the Section 313 list.) **Phenol**
1.3	Generic Chemical Name (Important: Complete only if Part I, Section 2.1 is checked "yes". Generic Name must be structurally descriptive). **NA**

SECTION 2. MIXTURE COMPONENT IDENTITY (Important: DO NOT complete this section if you completed Section 1 above.)

2.1	Generic Chemical Name Provided by Supplier (Important: Maximum of 70 characters, including numbers, spaces, and punctuation.) **NA**

SECTION 3. ACTIVITIES AND USES OF THE TOXIC CHEMICAL AT THE FACILITY
(Important: Check all that apply.)

3.1 Manufacture the toxic chemical:	3.2 Process the toxic chemical:	3.3 Otherwise use the toxic chemical:
a. [ ] Produce b. [ ] Import		
If produce or import: c. [ ] For on-site use/processing d. [ ] For sale/distribution e. [ ] As a byproduct f. [ ] As an impurity	a. [X] As a reactant b. [ ] As a formulation component c. [ ] As an article component d. [ ] Repackaging e. [ ] As an impurity	a. [ ] As a chemical processing aid b. [ ] As a manufacturing aid c. [ ] Ancillary or other use

SECTION 4. MAXIMUM AMOUNT OF THE TOXIC CHEMICAL ONSITE AT ANY TIME DURING THE CALENDAR YEAR

[**04**] (Enter two-digit code from instruction package.)

SECTION 5.QUANTITY OF THE TOXIC CHEMICAL ENTERING EACH ENVIRONMENTAL MEDIUM ONSITE

			A. Total Release (pounds/year*) (Enter range code or estimate**)	B. Basis of Estimate (enter code)	C. % From Stormwater
5.1	Fugitive or non-point air emissions	NA [ ]	A	O	
5.2	Stack or point air emissions	NA [ ]	1	O	
5.3	Discharges to receiving streams or water bodies (enter one name per box)				
	Stream or Water Body Name				
5.3.1	NA				

*For Dioxin and Dioxin-like Compounds, report in grams/yea

**Range Codes: A=1-10 pounds; B=11-499 pounds; C=500-999 pounds

EPA FORM R PART II. CHEMICAL - SPECIFIC INFORMATION (CONTINUED)	TRI Facility ID Number 14094VNDMR1NORT Toxic Chemical, Category or Generic Name Phenol

SECTION 5. QUANTITY OF THE TOXIC CHEMICAL ENTERING EACH ENVIRONMENTAL MEDIUM ONSITE (Continued)

		NA	A. Total Release (pounds/year*) (enter range code** or estimate)	B. Basis of Estimate (enter code)
5.4.1	Underground Injection onsite to Class I wells	[X]		
5.4.2	Underground Injection onsite to Class II-V wells	[X]		
5.5	Disposal to land onsite			
5.5.1.A	RCRA subtitle C landfills	[X]		
5.5.1.B	Other landfills	[X]		
5.5.2	Land treatment/application farming	[X]		
5.5.3A	RCRA Subtitle C surface impoundments	[X]		
5.5.3B	Other surface impoundments	[X]		
5.5.4	Other disposal	[X]		

SECTION 6. TRANSFERS OF THE TOXIC CHEMICAL IN WASTES TO OFF-SITE LOCATIONS

6.1 DISCHARGES TO PUBLICLY OWNED TREATMENT WORKS (POTWs)

6.1.A Total Quantity Transferred to POTWs and Basis of Estimate

6.1.A.1 Total Transfers (pounds/year*) (enter range code** or estimate)	6.1.A.2 Basis of Estimate (enter code)
5992.1	O

6.1.B. 2 POTW Name	CITY OF LOCKPORT						
POTW Address	PLANK ROAD						
City	LOCKPORT	State	NY	County	Niagara	Zip	14094

*For Dioxin and Dioxin-like Compounds, report in grams/year

**Range Codes: A=1-10 pounds; B=11-499 pounds; C=500-999 pounds.

EPA FORM R PART II. CHEMICAL - SPECIFIC INFORMATION (CONTINUED)	TRI Facility ID Number 14094VNDMR1NORT Toxic Chemical, Category or Generic Name Phenol

SECTION 6.2 TRANSFERS TO OTHER OFF-SITE LOCATIONS

6.2.1 Off-Site EPA Identification Number (RCRA ID No.)	
Off-Site Location Name	NA
Off-Site Address	

City		State		County		Zip		Country (Non-US)	
Is location under control of reporting facility or parent company?						[ ] Yes [ ] No			

A. Total Transfers (pounds/year*) (enter range code** or estimate)	B. Basis of Estimate (enter code)	C. Type of Waste Treatment/Disposal/ Recycling/Energy Recovery (enter code)

SECTION 7A. ONSITE WASTE TREATMENT METHODS AND EFFICIENCY

[ ] Not Applicable (NA) - Check here if no on-site waste treatment is applied to any waste stream containing the toxic chemical or chemical category.

a. General Waste Stream (enter code)	b. Waste Treatment Method(s) Sequence [enter 3-character code(s)]	d. Waste Treatment Efficiency Estimate
7A. 1 a	7A. 1 b	7A. 1 d
A	2 : A03	E4

*For Dioxin and Dioxin-like Compounds, report in grams/yea

EPA Form 9350-1 (Rev.) - Previous editions are obsolete.

**Range Codes: A=1-10 pounds; B=11-499 pounds; C=500-999 pounds

EPA FORM R
PART II. CHEMICAL - SPECIFIC INFORMATION (CONTINUED)

TRI Facility ID Number: 14094VNDMR1NORT

Toxic Chemical, Category or Generic Name: Phenol

SECTION 7B. ON-SITE ENERGY RECOVERY PROCESSES

[X] Not Applicable (NA) - Check here if no on-site energy recovery is applied to any waste stream containing the toxic chemical or chemical category.

Energy Recovery Methods [enter 3-character code(s)]

SECTION 7C. ON-SITE RECYCLING PROCESSES

[X] Not Applicable (NA) - Check here if no on-site recycling is applied to any waste stream containing the toxic chemical or chemical category.

Recycling Methods [enter 3-character code(s)]

SECTION 8. SOURCE REDUCTION AND RECYCLING ACTIVITIES

		Column A Prior Year (pounds/year*)	Column B Current Reporting Year (pounds/year*)	Column C Following Year (pounds/year*)	Column D Second Following Year (pounds/year*)
8.1					
8.1a	Total on-site disposal to Class I Underground Injection Wells, RCRA Subtitle C landfills, and other landfills	NA	NA	NA	NA
8.1b	Total other on-site disposal or other releases	6	11	10	10
8.1c	Total off-site disposal to Class I Underground Injection Wells, RCRA Subtitle C landfills, and other landfills	0	0	0	0
8.1d	Total other off-site disposal or other releases	0	0	0	0
8.2	Quantity used for energy recovery onsite	NA	NA	NA	NA
8.3	Quantity used for energy recovery offsite	NA	NA	NA	NA
8.4	Quantity recycled onsite	NA	NA	NA	NA
8.5	Quantity recycled offsite	NA	NA	NA	NA
8.6	Quantity treated onsite	0	0	0	0
8.7	Quantity treated offsite	108.9	5992.1	5000	5000
8.8	Quantity released to the environment as a result of remedial actions, catastrophic events, or one-time events not associated with production processes (pounds/year)		0		
8.9	Production ratio or activity index		2.12		
8.10	Did your facility engage in any source reduction activities for this chemical during the reporting year? If not, enter "NA" in Section 8.10.1 and answer Section 8.11.				

	Source Reduction Activities [enter code(s)]	Methods to Identify Activity (enter codes)		
8.10.1	NA			
8.11	If you wish to submit additional optional information on source reduction, recycling, or pollution control activities, check "Yes."	Yes [ ]		

1 2 3 4 5 Additional Info

TRI Facility ID Number
14094VNDMR1NORT
Toxic Chemical, Category or Generic Name
Ph

Additional optional information on source reduction, recycling, or pollution control activities.

*** File Copy Only: Do Not Submit paper form to EPA ***

1 2 3 4 5 Additional Info
(IMPORTANT: Type or print; read instructions before completing form)

Form Approved OMB Number: 2070-0093
Approval Expires:

EPA	FORM R	TRI Facility ID Number
United States Environmental Protection Agency	Section 313 of the Emergency Planning and Community Right-to-know Act of 1986, also known as Title III of the Superfund Amendments and Reauthorization Act.	14094VNDMR1NORT
		Toxic Chemical, Category or Generic Name
		Phosgene

WHERE TO SEND COMPLETED FORMS:	1. TRI Data Processing Center P.O.Box 1513 Lanham, MD 20703-1513 *** File Copy Only: Do Not Submit paper form to EPA ***	2. APPROPRIATE STATE OFFICE (See instructions in Appendix F)

This section only applies if you are revising or withdrawing a previously submitted form, otherwise leave blank:	Revision (enter up to two code(s)) [ ][ ]	Withdrawal (enter up to two code(s)) [ ][ ]

Important: See Instructions to determine when "Not Applicable (NA)" boxes should be checked.

Part I. FACILITY IDENTIFICATION INFORMATION

SECTION 1. REPORTING YEAR : **2010**

SECTION 2. TRADE SECRET INFORMATION

2.1 Are you claiming the toxic chemical identified on page 2 trade secret? [ ] Yes (Answer question 2.2; Attach substantiation forms) [X] NO (Do not answer 2.2; Go to Section 3)	2.2 Is this copy [ ] Sanitized [ ] Unsanitized (Answer only if "YES" in 2.1)	

SECTION 3. CERTIFICATION (Important: Read and sign after completing all form sections.)

I hereby certify that I have reviewed the attached documents and that, to the best of my knowledge and belief, the submitted information is true and complete and that the amounts and values in this report are accurate based on reasonable estimates using data available to the preparers of this report.

Name and official title of owner/operator or senior management official:	Signature:	Date Signed:
:		

SECTION 4. FACILITY IDENTIFICATION

4.1		TRI Facility ID Number	14094VNDMR1NORT
Facility or Establishment Name **VANDEMARK CHEMICAL INC**		Facility or Establishment Name or Mailing Address(if different from street address) **NA**	
Street **1 N TRANSIT RD**		Mailing Address	
City/County/State/Zip Code **LOCKPORT / Niagara / NY / 14094**		City/State/Zip Code / /	Country (Non-US)

4.2	This report contains information for : (Important: check a or b; check c or d if applicable)	a. [X] An Entire facility	b. [ ] Part of a facility	c. [ ] A Federal facility	d. [ ] GOCO

4.3	Technical Contact name	**PAMELA COOK**	Email Address **P.COOK@VDMCHEMICAL.COM**	Telephone Number (include area code) **7164336764**	
4.4	Public Contact name	**PAMELA COOK**	Email Address **P.COOK@VDMCHEMICAL.COM**	Telephone Number (include area code) **7164336764**	
4.5	NAICS Code (s) (6 digits)	a. **325199 (Primary)**	b.	c.	d.	e.	f.

4.7	Dun and Bradstreet Number(s) (9 digits)
	a. **NA**
	b.

SECTION 5. PARENT COMPANY INFORMATION

5.1	Name of Parent Company	NA [X]	**NA**
5.2	Parent Company's Dun & Bradstreet Number	NA [X]	

EPA FORM R
PART II. CHEMICAL - SPECIFIC INFORMATION

TRI Facility ID Number: 14094VNDMR1NORT

Toxic Chemical, Category or Generic Name: Phosgene

SECTION 1. TOXIC CHEMICAL IDENTITY (Important DO NOT complete this section if you completed Section 2 below.)

1.1	CAS Number (Important: Enter only one number exactly as it appears on the Section 313 list. Enter category code if reporting a chemical category.)
	75445
1.2	Toxic Chemical or Chemical Category Name (Important: Enter only one name exactly as it appears on the Section 313 list.)
	Phosgene
1.3	Generic Chemical Name (Important: Complete only if Part I, Section 2.1 is checked "yes". Generic Name must be structurally descriptive).
	NA

SECTION 2. MIXTURE COMPONENT IDENTITY (Important: DO NOT complete this section if you completed Section 1 above.)

2.1	Generic Chemical Name Provided by Supplier (Important: Maximum of 70 characters, including numbers, spaces, and punctuation.)
	NA

SECTION 3. ACTIVITIES AND USES OF THE TOXIC CHEMICAL AT THE FACILITY
(Important: Check all that apply.)

3.1 Manufacture the toxic chemical:	3.2 Process the toxic chemical:	3.3 Otherwise use the toxic chemical:
a. [X] Produce b. [ ] Import		
If produce or import: c. [X] For on-site use/processing d. [X] For sale/distribution e. [ ] As a byproduct f. [ ] As an impurity	a. [X] As a reactant b. [ ] As a formulation component c. [ ] As an article component d. [ ] Repackaging e. [ ] As an impurity	a. [ ] As a chemical processing aid b. [ ] As a manufacturing aid c. [ ] Ancillary or other use

SECTION 4. MAXIMUM AMOUNT OF THE TOXIC CHEMICAL ONSITE AT ANY TIME DURING THE CALENDAR YEAR

[05] (Enter two-digit code from instruction package.)

SECTION 5.QUANTITY OF THE TOXIC CHEMICAL ENTERING EACH ENVIRONMENTAL MEDIUM ONSITE

			A. Total Release (pounds/year*) (Enter range code or estimate**)	B. Basis of Estimate (enter code)	C. % From Stormwater
5.1	Fugitive or non-point air emissions	NA [ ]	A	O	
5.2	Stack or point air emissions	NA [ ]	204	C	
5.3	Discharges to receiving streams or water bodies (enter one name per box)				
	Stream or Water Body Name				
5.3.1	NA				

*For Dioxin and Dioxin-like Compounds, report in grams/yea

**Range Codes: A=1-10 pounds; B=11-499 pounds; C=500-999 pounds

EPA FORM R
PART II. CHEMICAL - SPECIFIC INFORMATION (CONTINUED)

TRI Facility ID Number: **14094VNDMR1NORT**

Toxic Chemical, Category or Generic Name: **Phosgene**

SECTION 5. QUANTITY OF THE TOXIC CHEMICAL ENTERING EACH ENVIRONMENTAL MEDIUM ONSITE (Continued)

		NA	A. Total Release (pounds/year*) (enter range code** or estimate)	B. Basis of Estimate (enter code)
5.4.1	Underground Injection onsite to Class I wells	[X]		
5.4.2	Underground Injection onsite to Class II-V wells	[X]		
5.5	Disposal to land onsite			
5.5.1.A	RCRA subtitle C landfills	[X]		
5.5.1.B	Other landfills	[X]		
5.5.2	Land treatment/application farming	[X]		
5.5.3A	RCRA Subtitle C surface impoundments	[X]		
5.5.3B	Other surface impoundments	[X]		
5.5.4	Other disposal	[X]		

SECTION 6. TRANSFERS OF THE TOXIC CHEMICAL IN WASTES TO OFF-SITE LOCATIONS

6.1 DISCHARGES TO PUBLICLY OWNED TREATMENT WORKS (POTWs)

6.1.A Total Quantity Transferred to POTWs and Basis of Estimate

6.1.A.1 Total Transfers (pounds/year*) (enter range code** or estimate)	6.1.A.2 Basis of Estimate (enter code)
NA	

*For Dioxin and Dioxin-like Compounds, report in grams/year

**Range Codes: A=1-10 pounds; B=11-499 pounds; C=500-999 pounds.

EPA FORM R PART II. CHEMICAL - SPECIFIC INFORMATION (CONTINUED)	TRI Facility ID Number 14094VNDMR1NORT Toxic Chemical, Category or Generic Name Phosgene

SECTION 6.2 TRANSFERS TO OTHER OFF-SITE LOCATIONS

6.2.1 Off-Site EPA Identification Number (RCRA ID No.)	
Off-Site Location Name	NA
Off-Site Address	

City		State		County		Zip		Country (Non-US)	
Is location under control of reporting facility or parent company?						[ ] Yes [ ] No			

A. Total Transfers (pounds/year*) (enter range code** or estimate)	B. Basis of Estimate (enter code)	C. Type of Waste Treatment/Disposal/ Recycling/Energy Recovery (enter code)

SECTION 7A. ONSITE WASTE TREATMENT METHODS AND EFFICIENCY

[ ] Not Applicable (NA) - Check here if no on-site waste treatment is applied to any waste stream containing the toxic chemical or chemical category.

a. General Waste Stream (enter code)	b. Waste Treatment Method(s) Sequence [enter 3-character code(s)]	d. Waste Treatment Efficiency Estimate
7A. 1 a	**7A. 1 b**	**7A. 1 d**
A	2 : **A03**	**E2**

*For Dioxin and Dioxin-like Compounds, report in grams/yea

EPA Form 9350-1 (Rev.) - Previous editions are obsolete.

**Range Codes: A=1-10 pounds; B=11-499 pounds; C=500-999 pounds

EPA FORM R
PART II. CHEMICAL - SPECIFIC INFORMATION (CONTINUED)

TRI Facility ID Number: **14094VNDMR1NORT**

Toxic Chemical, Category or Generic Name: **Phosgene**

SECTION 7B. ON-SITE ENERGY RECOVERY PROCESSES

[X] Not Applicable (NA) - Check here if no on-site energy recovery is applied to any waste stream containing the toxic chemical or chemical category.

Energy Recovery Methods [enter 3-character code(s)]

SECTION 7C. ON-SITE RECYCLING PROCESSES

[X] Not Applicable (NA) - Check here if no on-site recycling is applied to any waste stream containing the toxic chemical or chemical category.

Recycling Methods [enter 3-character code(s)]

SECTION 8. SOURCE REDUCTION AND RECYCLING ACTIVITIES

		Column A Prior Year (pounds/year*)	Column B Current Reporting Year (pounds/year*)	Column C Following Year (pounds/year*)	Column D Second Following Year (pounds/year*)
8.1					
8.1a	Total on-site disposal to Class I Underground Injection Wells, RCRA Subtitle C landfills, and other landfills	NA	NA	NA	NA
8.1b	Total other on-site disposal or other releases	197	214	250	300
8.1c	Total off-site disposal to Class I Underground Injection Wells, RCRA Subtitle C landfills, and other landfills	NA	NA	NA	NA
8.1d	Total other off-site disposal or other releases	NA	NA	NA	NA
8.2	Quantity used for energy recovery onsite	NA	NA	NA	NA
8.3	Quantity used for energy recovery offsite	NA	NA	NA	NA
8.4	Quantity recycled onsite	NA	NA	NA	NA
8.5	Quantity recycled offsite	NA	NA	NA	NA
8.6	Quantity treated onsite	0	0	0	NA
8.7	Quantity treated offsite	NA	NA	NA	NA
8.8	Quantity released to the environment as a result of remedial actions, catastrophic events, or one-time events not associated with production processes (pounds/year)		0		
8.9	Production ratio or activity index		1.27		
8.10	Did your facility engage in any source reduction activities for this chemical during the reporting year? If not, enter "NA" in Section 8.10.1 and answer Section 8.11.				

	Source Reduction Activities [enter code(s)]	Methods to Identify Activity (enter codes)		
8.10.1	NA			
8.11	If you wish to submit additional optional information on source reduction, recycling, or pollution control activities, check "Yes."	Yes [ ]		

*For Dioxin and Dioxin-like Compounds, report in grams/year

1 2 3 4 5 Additional Info

TRI Facility ID Number
14094VNDMR1NORT
Toxic Chemical, Category or Generic Name
Ph[illegible]ne

Additional optional information on source reduction, recycling, or pollution control activities.

EPA
United States Environmental Protection Agency

FORM R

Section 313 of the Emergency Planning and Community Right-to-know Act of 1986, also known as Title III of the Superfund Amendments and Reauthorization Act.

TRI Facility ID Number: **14094VNDMR1NORT**

Toxic Chemical, Category or Generic Name: **Propargyl alcohol**

WHERE TO SEND COMPLETED FORMS:	1. TRI Data Processing Center P.O.Box 1513 Lanham, MD 20703-1513 *** File Copy Only: Do Not Submit paper form to EPA ***	2. APPROPRIATE STATE OFFICE (See instructions in Appendix F)

This section only applies if you are revising or withdrawing a previously submitted form, otherwise leave blank:	Revision (enter up to two code(s)) [ ][ ]	Withdrawal (enter up to two code(s)) [ ][ ]

Important: See Instructions to determine when "Not Applicable (NA)" boxes should be checked.

Part I. FACILITY IDENTIFICATION INFORMATION

SECTION 1. REPORTING YEAR : **2010**

SECTION 2. TRADE SECRET INFORMATION

2.1 Are you claiming the toxic chemical identified on page 2 trade secret?
[ ] Yes (Answer question 2.2; Attach substantiation forms)
[X] NO (Do not answer 2.2; Go to Section 3)

2.2 Is this copy
[ ] Sanitized [ ] Unsanitized
(Answer only if "YES" in 2.1)

SECTION 3. CERTIFICATION (Important: Read and sign after completing all form sections.)

I hereby certify that I have reviewed the attached documents and that, to the best of my knowledge and belief, the submitted information is true and complete and that the amounts and values in this report are accurate based on reasonable estimates using data available to the preparers of this report.

Name and official title of owner/operator or senior management official:	Signature:	Date Signed:
:		

SECTION 4. FACILITY IDENTIFICATION

4.1		TRI Facility ID Number	14094VNDMR1NORT
Facility or Establishment Name: **VANDEMARK CHEMICAL INC**		Facility or Establishment Name or Mailing Address(if different from street address): **NA**	
Street: **1 N TRANSIT RD**		Mailing Address	
City/County/State/Zip Code: **LOCKPORT / Niagara / NY / 14094**		City/State/Zip Code: / /	Country (Non-US):

4.2	This report contains information for : (Important: check a or b; check c or d if applicable)	a. [X] An Entire facility	b. [ ] Part of a facility	c. [ ] A Federal facility	d. [ ] GOCO

4.3	Technical Contact name	**PAMELA COOK**		Email Address: **P.COOK@VDMCHEMICAL.COM**		Telephone Number (include area code): **7164336764**	
4.4	Public Contact name	**PAMELA COOK**		Email Address: **P.COOK@VDMCHEMICAL.COM**		Telephone Number (include area code): **7164336764**	
4.5	NAICS Code (s) (6 digits)	a. **325199 (Primary)**	b.	c.	d.	e.	f.

4.7	Dun and Bradstreet Number(s) (9 digits)
	a. **NA**
	b.

SECTION 5. PARENT COMPANY INFORMATION

5.1	Name of Parent Company	NA [X]	**NA**
5.2	Parent Company's Dun & Bradstreet Number	NA [X]	

EPA FORM R
PART II. CHEMICAL - SPECIFIC INFORMATION

TRI Facility ID Number: **14094VNDMR1NORT**

Toxic Chemical, Category or Generic Name: **Propargyl alcohol**

SECTION 1. TOXIC CHEMICAL IDENTITY (Important DO NOT complete this section if you completed Section 2 below.)

1.1	CAS Number (Important: Enter only one number exactly as it appears on the Section 313 list. Enter category code if reporting a chemical category.) **107197**
1.2	Toxic Chemical or Chemical Category Name (Important: Enter only one name exactly as it appears on the Section 313 list.) **Propargyl alcohol**
1.3	Generic Chemical Name (Important: Complete only if Part I, Section 2.1 is checked "yes". Generic Name must be structurally descriptive). **NA**

SECTION 2. MIXTURE COMPONENT IDENTITY (Important: DO NOT complete this section if you completed Section 1 above.)

2.1	Generic Chemical Name Provided by Supplier (Important: Maximum of 70 characters, including numbers, spaces, and punctuation.) **NA**

SECTION 3. ACTIVITIES AND USES OF THE TOXIC CHEMICAL AT THE FACILITY
(Important: Check all that apply.)

3.1 Manufacture the toxic chemical:	3.2 Process the toxic chemical:	3.3 Otherwise use the toxic chemical:
a. [ ] Produce b. [ ] Import		
If produce or import: c. [ ] For on-site use/processing d. [ ] For sale/distribution e. [ ] As a byproduct f. [ ] As an impurity	a. [X] As a reactant b. [ ] As a formulation component c. [ ] As an article component d. [ ] Repackaging e. [ ] As an impurity	a. [ ] As a chemical processing aid b. [ ] As a manufacturing aid c. [ ] Ancillary or other use

SECTION 4. MAXIMUM AMOUNT OF THE TOXIC CHEMICAL ONSITE AT ANY TIME DURING THE CALENDAR YEAR

[**04**] (Enter two-digit code from instruction package.)

SECTION 5.QUANTITY OF THE TOXIC CHEMICAL ENTERING EACH ENVIRONMENTAL MEDIUM ONSITE

			A. Total Release (pounds/year*) (Enter range code or estimate**)	B. Basis of Estimate (enter code)	C. % From Stormwater
5.1	Fugitive or non-point air emissions	NA [ ]	**A**	**O**	
5.2	Stack or point air emissions	NA [ ]	**50**	**C**	
5.3	Discharges to receiving streams or water bodies (enter one name per box)				
	Stream or Water Body Name				
5.3.1	**NA**				

*For Dioxin and Dioxin-like Compounds, report in grams/yea

**Range Codes: A=1-10 pounds; B=11-499 pounds; C=500-999 pounds

EPA FORM R
PART II. CHEMICAL - SPECIFIC INFORMATION (CONTINUED)

TRI Facility ID Number
14094VNDMR1NORT
Toxic Chemical, Category or Generic Name
Propargyl alcohol

SECTION 5. QUANTITY OF THE TOXIC CHEMICAL ENTERING EACH ENVIRONMENTAL MEDIUM ONSITE (Continued)

		NA	A. Total Release (pounds/year*) (enter range code** or estimate)	B. Basis of Estimate (enter code)
5.4.1	Underground Injection onsite to Class I wells	[X]		
5.4.2	Underground Injection onsite to Class II-V wells	[X]		
5.5	Disposal to land onsite			
5.5.1.A	RCRA subtitle C landfills	[X]		
5.5.1.B	Other landfills	[X]		
5.5.2	Land treatment/application farming	[X]		
5.5.3A	RCRA Subtitle C surface impoundments	[X]		
5.5.3B	Other surface impoundments	[X]		
5.5.4	Other disposal	[X]		

SECTION 6. TRANSFERS OF THE TOXIC CHEMICAL IN WASTES TO OFF-SITE LOCATIONS

6.1 DISCHARGES TO PUBLICLY OWNED TREATMENT WORKS (POTWs)

6.1.A Total Quantity Transferred to POTWs and Basis of Estimate

6.1.A.1 Total Transfers (pounds/year*) (enter range code** or estimate)	6.1.A.2 Basis of Estimate (enter code)
10666.21	M2

6.1.B. 2 POTW Name	CITY OF LOCKPORT						
POTW Address	PLANK ROAD						
City	LOCKPORT	State	NY	County	Niagara	Zip	14094

*For Dioxin and Dioxin-like Compounds, report in grams/year

**Range Codes: A=1-10 pounds; B=11-499 pounds; C=500-999 pounds.

EPA FORM R PART II. CHEMICAL - SPECIFIC INFORMATION (CONTINUED)	TRI Facility ID Number 14094VNDMR1NORT Toxic Chemical, Category or Generic Name Propargyl alcohol

SECTION 6.2 TRANSFERS TO OTHER OFF-SITE LOCATIONS

6.2.1 Off-Site EPA Identification Number (RCRA ID No.)	PAD987270725
Off-Site Location Name	SIEMENS WATER TECHNOLOGIES INC
Off-Site Address	118 PARK ROAD

City	DARLINGTON	State	PA	County	Beaver	Zip	16115	Country (Non-US)	
Is location under control of reporting facility or parent company?						[ ] Yes [X] No			

A. Total Transfers (pounds/year*) (enter range code** or estimate)	B. Basis of Estimate (enter code)	C. Type of Waste Treatment/Disposal/ Recycling/Energy Recovery (enter code)
1 . 3350	1 . O	1 . M50

6.2.2 Off-Site EPA Identification Number (RCRA ID No.)	NYD080469935
Off-Site Location Name	NORLITE
Off-Site Address	628 SOUTH SARATOGA ST

City	COHOES	State	NY	County	Albany	Zip	12047	Country (Non-US)	
Is location under control of reporting facility or parent company?						[ ] Yes [X] No			

A. Total Transfers (pounds/year*) (enter range code** or estimate)	B. Basis of Estimate (enter code)	C. Type of Waste Treatment/Disposal/ Recycling/Energy Recovery (enter code)
1 . 1400	1 . O	1 . M50

SECTION 7A. ONSITE WASTE TREATMENT METHODS AND EFFICIENCY

[ ] Not Applicable (NA) - Check here if no on-site waste treatment is applied to any waste stream containing the toxic chemical or chemical category.

a. General Waste Stream (enter code)	b. Waste Treatment Method(s) Sequence [enter 3-character code(s)]	d. Waste Treatment Efficiency Estimate
7A. 1 a	7A. 1 b	7A. 1 d
A	2 : A03	E4

*For Dioxin and Dioxin-like Compounds, report in grams/yea

**Range Codes: A=1-10 pounds; B=11-499 pounds; C=500-999 pounds

EPA FORM R PART II. CHEMICAL - SPECIFIC INFORMATION (CONTINUED)	TRI Facility ID Number 14094VNDMR1NORT Toxic Chemical, Category or Generic Name Propargyl alcohol

SECTION 7B. ON-SITE ENERGY RECOVERY PROCESSES

[X] Not Applicable (NA) - Check here if no on-site energy recovery is applied to any waste stream containing the toxic chemical or chemical category.

Energy Recovery Methods [enter 3-character code(s)]

SECTION 7C. ON-SITE RECYCLING PROCESSES

[X] Not Applicable (NA) - Check here if no on-site recycling is applied to any waste stream containing the toxic chemical or chemical category.

Recycling Methods [enter 3-character code(s)]

SECTION 8. SOURCE REDUCTION AND RECYCLING ACTIVITIES

		Column A Prior Year (pounds/year*)	Column B Current Reporting Year (pounds/year*)	Column C Following Year (pounds/year*)	Column D Second Following Year (pounds/year*)
8.1					
8.1a	Total on-site disposal to Class I Underground Injection Wells, RCRA Subtitle C landfills, and other landfills	NA	NA	NA	NA
8.1b	Total other on-site disposal or other releases	51	60	60	60
8.1c	Total off-site disposal to Class I Underground Injection Wells, RCRA Subtitle C landfills, and other landfills	0	0	0	0
8.1d	Total other off-site disposal or other releases	0	0	0	0
8.2	Quantity used for energy recovery onsite	NA	NA	NA	NA
8.3	Quantity used for energy recovery offsite	NA	NA	NA	NA
8.4	Quantity recycled onsite	NA	NA	NA	NA
8.5	Quantity recycled offsite	NA	NA	NA	NA
8.6	Quantity treated onsite	0	0	0	0
8.7	Quantity treated offsite	8845.67	15416.21	9000	9000
8.8	Quantity released to the environment as a result of remedial actions, catastrophic events, or one-time events not associated with production processes (pounds/year)		0		
8.9	Production ratio or activity index		1.22		
8.10	Did your facility engage in any source reduction activities for this chemical during the reporting year? If not, enter "NA" in Section 8.10.1 and answer Section 8.11.				

	Source Reduction Activities [enter code(s)]	Methods to Identify Activity (enter codes)		
8.10.1	NA			
8.11	If you wish to submit additional optional information on source reduction, recycling, or pollution control activities, check "Yes."		Yes [ ]	

EPA Form 9350-1 (Rev.) - Previous editions are obsolete.

*For Dioxin and Dioxin-like Compounds, report in grams/year

TRI Facility ID Number
14094VNDMR1NORT
Toxic Chemical, Category or Generic Name
Pr[illegible]gyl alcohol

Additional optional information on source reduction, recycling, or pollution control activities.

EPA	FORM R	TRI Facility ID Number
United States Environmental Protection Agency	Section 313 of the Emergency Planning and Community Right-to-know Act of 1986, also known as Title III of the Superfund Amendments and Reauthorization Act.	14094VNDMR1NORT
		Toxic Chemical, Category or Generic Name
		sec-Butyl alcohol

WHERE TO SEND COMPLETED FORMS:	1. TRI Data Processing Center P.O.Box 1513 Lanham, MD 20703-1513 *** File Copy Only: Do Not Submit paper form to EPA ***	2. APPROPRIATE STATE OFFICE (See instructions in Appendix F)

This section only applies if you are revising or withdrawing a previously submitted form, otherwise leave blank:	Revision (enter up to two code(s)) [ ][ ]	Withdrawal (enter up to two code(s)) [ ][ ]

Important: See Instructions to determine when "Not Applicable (NA)" boxes should be checked.

Part I. FACILITY IDENTIFICATION INFORMATION

SECTION 1. REPORTING YEAR : **2010**

SECTION 2. TRADE SECRET INFORMATION

2.1 Are you claiming the toxic chemical identified on page 2 trade secret? [ ] Yes (Answer question 2.2; Attach substantiation forms) [X] NO (Do not answer 2.2; Go to Section 3)	2.2 Is this copy [ ] Sanitized [ ] Unsanitized (Answer only if "YES" in 2.1)	

SECTION 3. CERTIFICATION (Important: Read and sign after completing all form sections.)

I hereby certify that I have reviewed the attached documents and that, to the best of my knowledge and belief, the submitted information is true and complete and that the amounts and values in this report are accurate based on reasonable estimates using data available to the preparers of this report.

Name and official title of owner/operator or senior management official:	Signature:	Date Signed:
:		

SECTION 4. FACILITY IDENTIFICATION

4.1		TRI Facility ID Number	14094VNDMR1NORT
Facility or Establishment Name **VANDEMARK CHEMICAL INC**		Facility or Establishment Name or Mailing Address(if different from street address) **NA**	
Street **1 N TRANSIT RD**		Mailing Address	
City/County/State/Zip Code **LOCKPORT / Niagara / NY / 14094**		City/State/Zip Code / /	Country (Non-US)

4.2	This report contains information for : (Important: check a or b; check c or d if applicable)	a. [X] An Entire facility	b. [ ] Part of a facility	c. [ ] A Federal facility	d. [ ] GOCO

4.3	Technical Contact name	**PAMELA COOK**		Email Address **P.COOK@VDMCHEMICAL.COM**		Telephone Number (include area code) **7164336764**	
4.4	Public Contact name	**PAMELA COOK**		Email Address **P.COOK@VDMCHEMICAL.COM**		Telephone Number (include area code) **7164336764**	
4.5	NAICS Code (s) (6 digits)	a. **325199 (Primary)**	b.	c.	d.	e.	f.

4.7	Dun and Bradstreet Number(s) (9 digits)
	a. **NA**
	b.

SECTION 5. PARENT COMPANY INFORMATION

5.1	Name of Parent Company	NA [X]	**NA**
5.2	Parent Company's Dun & Bradstreet Number	NA [X]	

EPA FORM R
PART II. CHEMICAL - SPECIFIC INFORMATION

TRI Facility ID Number: **14094VNDMR1NORT**

Toxic Chemical, Category or Generic Name: **sec-Butyl alcohol**

SECTION 1. TOXIC CHEMICAL IDENTITY (Important DO NOT complete this section if you completed Section 2 below.)

1.1	CAS Number (Important: Enter only one number exactly as it appears on the Section 313 list. Enter category code if reporting a chemical category.) **78922**
1.2	Toxic Chemical or Chemical Category Name (Important: Enter only one name exactly as it appears on the Section 313 list.) **sec-Butyl alcohol**
1.3	Generic Chemical Name (Important: Complete only if Part I, Section 2.1 is checked "yes". Generic Name must be structurally descriptive). **NA**

SECTION 2. MIXTURE COMPONENT IDENTITY (Important: DO NOT complete this section if you completed Section 1 above.)

2.1	Generic Chemical Name Provided by Supplier (Important: Maximum of 70 characters, including numbers, spaces, and punctuation.) **NA**

SECTION 3. ACTIVITIES AND USES OF THE TOXIC CHEMICAL AT THE FACILITY
(Important: Check all that apply.)

3.1 Manufacture the toxic chemical:	3.2 Process the toxic chemical:	3.3 Otherwise use the toxic chemical:
a. [ ] Produce b. [ ] Import		
If produce or import: c. [ ] For on-site use/processing d. [ ] For sale/distribution e. [ ] As a byproduct f. [ ] As an impurity	a. [X] As a reactant b. [ ] As a formulation component c. [ ] As an article component d. [ ] Repackaging e. [ ] As an impurity	a. [ ] As a chemical processing aid b. [ ] As a manufacturing aid c. [ ] Ancillary or other use

SECTION 4. MAXIMUM AMOUNT OF THE TOXIC CHEMICAL ONSITE AT ANY TIME DURING THE CALENDAR YEAR

[**04**] (Enter two-digit code from instruction package.)

SECTION 5.QUANTITY OF THE TOXIC CHEMICAL ENTERING EACH ENVIRONMENTAL MEDIUM ONSITE

			A. Total Release (pounds/year*) (Enter range code or estimate**)	B. Basis of Estimate (enter code)	C. % From Stormwater
5.1	Fugitive or non-point air emissions	NA [ ]	**A**	**O**	
5.2	Stack or point air emissions	NA [ ]	**2**	**C**	
5.3	Discharges to receiving streams or water bodies (enter one name per box)				
	Stream or Water Body Name				
5.3.1	**NA**				

*For Dioxin and Dioxin-like Compounds, report in grams/yea

**Range Codes: A=1-10 pounds; B=11-499 pounds; C=500-999 pounds

EPA FORM R
PART II. CHEMICAL - SPECIFIC INFORMATION (CONTINUED)

TRI Facility ID Number	Toxic Chemical, Category or Generic Name
14094VNDMR1NORT	sec-Butyl alcohol

SECTION 5. QUANTITY OF THE TOXIC CHEMICAL ENTERING EACH ENVIRONMENTAL MEDIUM ONSITE (Continued)

		NA	A. Total Release (pounds/year*) (enter range code** or estimate)	B. Basis of Estimate (enter code)
5.4.1	Underground Injection onsite to Class I wells	[X]		
5.4.2	Underground Injection onsite to Class II-V wells	[X]		
5.5	Disposal to land onsite			
5.5.1.A	RCRA subtitle C landfills	[X]		
5.5.1.B	Other landfills	[X]		
5.5.2	Land treatment/application farming	[X]		
5.5.3A	RCRA Subtitle C surface impoundments	[X]		
5.5.3B	Other surface impoundments	[X]		
5.5.4	Other disposal	[X]		

SECTION 6. TRANSFERS OF THE TOXIC CHEMICAL IN WASTES TO OFF-SITE LOCATIONS

6.1 DISCHARGES TO PUBLICLY OWNED TREATMENT WORKS (POTWs)

6.1.A Total Quantity Transferred to POTWs and Basis of Estimate

6.1.A.1 Total Transfers (pounds/year*) (enter range code** or estimate)	6.1.A.2 Basis of Estimate (enter code)
96.53	M2

6.1.B. 2 POTW Name	CITY OF LOCKPORT						
POTW Address	PLANK ROAD						
City	LOCKPORT	State	NY	County	Niagara	Zip	14094

*For Dioxin and Dioxin-like Compounds, report in grams/year

**Range Codes: A=1-10 pounds; B=11-499 pounds; C=500-999 pounds.

EPA FORM R PART II. CHEMICAL - SPECIFIC INFORMATION (CONTINUED)	TRI Facility ID Number 14094VNDMR1NORT Toxic Chemical, Category or Generic Name sec-Butyl alcohol

SECTION 6.2 TRANSFERS TO OTHER OFF-SITE LOCATIONS

6.2.1 Off-Site EPA Identification Number (RCRA ID No.)	
Off-Site Location Name	NA
Off-Site Address	

City		State		County		Zip		Country (Non-US)	
Is location under control of reporting facility or parent company?						[ ] Yes [ ] No			

A. Total Transfers (pounds/year*) (enter range code** or estimate)	B. Basis of Estimate (enter code)	C. Type of Waste Treatment/Disposal/ Recycling/Energy Recovery (enter code)

SECTION 7A. ONSITE WASTE TREATMENT METHODS AND EFFICIENCY

[ ] Not Applicable (NA) - Check here if no on-site waste treatment is applied to any waste stream containing the toxic chemical or chemical category.

a. General Waste Stream (enter code)	b. Waste Treatment Method(s) Sequence [enter 3-character code(s)]	d. Waste Treatment Efficiency Estimate
7A. 1 a	**7A. 1 b**	**7A. 1 d**
A	2 : **A03**	**E5**

*For Dioxin and Dioxin-like Compounds, report in grams/yea

EPA Form 9350-1 (Rev.) - Previous editions are obsolete.

**Range Codes: A=1-10 pounds; B=11-499 pounds; C=500-999 pounds

EPA FORM R
PART II. CHEMICAL - SPECIFIC INFORMATION (CONTINUED)

TRI Facility ID Number: 14094VNDMR1NORT

Toxic Chemical, Category or Generic Name: sec-Butyl alcohol

SECTION 7B. ON-SITE ENERGY RECOVERY PROCESSES

[X] Not Applicable (NA) - Check here if no on-site energy recovery is applied to any waste stream containing the toxic chemical or chemical category.

Energy Recovery Methods [enter 3-character code(s)]

SECTION 7C. ON-SITE RECYCLING PROCESSES

[X] Not Applicable (NA) - Check here if no on-site recycling is applied to any waste stream containing the toxic chemical or chemical category.

Recycling Methods [enter 3-character code(s)]

SECTION 8. SOURCE REDUCTION AND RECYCLING ACTIVITIES

		Column A Prior Year (pounds/year*)	Column B Current Reporting Year (pounds/year*)	Column C Following Year (pounds/year*)	Column D Second Following Year (pounds/year*)
8.1					
8.1a	Total on-site disposal to Class I Underground Injection Wells, RCRA Subtitle C landfills, and other landfills	NA	NA	NA	NA
8.1b	Total other on-site disposal or other releases	0	12	15	15
8.1c	Total off-site disposal to Class I Underground Injection Wells, RCRA Subtitle C landfills, and other landfills	NA	0	NA	NA
8.1d	Total other off-site disposal or other releases	0	0	0	0
8.2	Quantity used for energy recovery onsite	NA	NA	NA	NA
8.3	Quantity used for energy recovery offsite	NA	NA	NA	NA
8.4	Quantity recycled onsite	0	NA	NA	NA
8.5	Quantity recycled offsite	0	NA	NA	NA
8.6	Quantity treated onsite	0	0	0	0
8.7	Quantity treated offsite	0	96.53	100	100
8.8	Quantity released to the environment as a result of remedial actions, catastrophic events, or one-time events not associated with production processes (pounds/year)		0		
8.9	Production ratio or activity index		100		
8.10	Did your facility engage in any source reduction activities for this chemical during the reporting year? If not, enter "NA" in Section 8.10.1 and answer Section 8.11.				

	Source Reduction Activities [enter code(s)]	Methods to Identify Activity (enter codes)		
8.10.1	NA			
8.11	If you wish to submit additional optional information on source reduction, recycling, or pollution control activities, check "Yes."	Yes [ ]		

*For Dioxin and Dioxin-like Compounds, report in grams/year

1 2 3 4 5 Additional Info

TRI Facility ID Number
14094VNDMR1NORT
Toxic Chemical, Category or Generic Name
sec-butyl alcohol

Additional optional information on source reduction, recycling, or pollution control activities.

*** File Copy Only: Do Not Submit paper form to EPA ***

1 2 3 4 5 Additional Info

(IMPORTANT: Type or print; read instructions before completing form)

Form Approved OMB Number: 2070-0093
Approval Expires:

EPA
United States Environmental Protection Agency

FORM R

Section 313 of the Emergency Planning and Community Right-to-know Act of 1986, also known as Title III of the Superfund Amendments and Reauthorization Act.

TRI Facility ID Number: **14094VNDMR1NORT**

Toxic Chemical, Category or Generic Name: **Toluene**

WHERE TO SEND COMPLETED FORMS:	1. TRI Data Processing Center P.O.Box 1513 Lanham, MD 20703-1513 *** File Copy Only: Do Not Submit paper form to EPA ***	2. APPROPRIATE STATE OFFICE (See instructions in Appendix F)

This section only applies if you are revising or withdrawing a previously submitted form, otherwise leave blank:	Revision (enter up to two code(s)) [ ][ ]	Withdrawal (enter up to two code(s)) [ ][ ]

Important: See Instructions to determine when "Not Applicable (NA)" boxes should be checked.

Part I. FACILITY IDENTIFICATION INFORMATION

SECTION 1. REPORTING YEAR : **2010**

SECTION 2. TRADE SECRET INFORMATION

2.1 Are you claiming the toxic chemical identified on page 2 trade secret? [ ] Yes (Answer question 2.2; Attach substantiation forms) [X] NO (Do not answer 2.2; Go to Section 3)	2.2 Is this copy [ ] Sanitized [ ] Unsanitized (Answer only if "YES" in 2.1)	

SECTION 3. CERTIFICATION (Important: Read and sign after completing all form sections.)

I hereby certify that I have reviewed the attached documents and that, to the best of my knowledge and belief, the submitted information is true and complete and that the amounts and values in this report are accurate based on reasonable estimates using data available to the preparers of this report.

Name and official title of owner/operator or senior management official:	Signature:	Date Signed:
:		

SECTION 4. FACILITY IDENTIFICATION

4.1		TRI Facility ID Number	14094VNDMR1NORT
Facility or Establishment Name: **VANDEMARK CHEMICAL INC**		Facility or Establishment Name or Mailing Address(if different from street address): **NA**	
Street: **1 N TRANSIT RD**		Mailing Address	
City/County/State/Zip Code: **LOCKPORT / Niagara / NY / 14094**		City/State/Zip Code: / /	Country (Non-US):

4.2	This report contains information for : (Important: check a or b; check c or d if applicable)	a. [X] An Entire facility	b. [ ] Part of a facility	c. [ ] A Federal facility	d. [ ] GOCO

4.3	Technical Contact name	**PAMELA COOK**		Email Address: **P.COOK@VDMCHEMICAL.COM**		Telephone Number (include area code): **7164336764**	
4.4	Public Contact name	**PAMELA COOK**		Email Address: **P.COOK@VDMCHEMICAL.COM**		Telephone Number (include area code): **7164336764**	
4.5	NAICS Code (s) (6 digits)	a. **325199 (Primary)**	b.	c.	d.	e.	f.

4.7	Dun and Bradstreet Number(s) (9 digits)
	a. **NA**
	b.

SECTION 5. PARENT COMPANY INFORMATION

5.1	Name of Parent Company	NA [X]	**NA**
5.2	Parent Company's Dun & Bradstreet Number	NA [X]	

EPA FORM R
PART II. CHEMICAL - SPECIFIC INFORMATION

TRI Facility ID Number: **14094VNDMR1NORT**

Toxic Chemical, Category or Generic Name: **Toluene**

SECTION 1. TOXIC CHEMICAL IDENTITY (Important DO NOT complete this section if you completed Section 2 below.)

1.1	CAS Number (Important: Enter only one number exactly as it appears on the Section 313 list. Enter category code if reporting a chemical category.) **108883**
1.2	Toxic Chemical or Chemical Category Name (Important: Enter only one name exactly as it appears on the Section 313 list.) **Toluene**
1.3	Generic Chemical Name (Important: Complete only if Part I, Section 2.1 is checked "yes". Generic Name must be structurally descriptive). **NA**

SECTION 2. MIXTURE COMPONENT IDENTITY (Important: DO NOT complete this section if you completed Section 1 above.)

2.1	Generic Chemical Name Provided by Supplier (Important: Maximum of 70 characters, including numbers, spaces, and punctuation.) **NA**

SECTION 3. ACTIVITIES AND USES OF THE TOXIC CHEMICAL AT THE FACILITY
(Important: Check all that apply.)

3.1 Manufacture the toxic chemical:	3.2 Process the toxic chemical:	3.3 Otherwise use the toxic chemical:
a. [ ] Produce b. [ ] Import		
If produce or import: c. [ ] For on-site use/processing d. [ ] For sale/distribution e. [ ] As a byproduct f. [ ] As an impurity	a. [ ] As a reactant b. [X] As a formulation component c. [ ] As an article component d. [ ] Repackaging e. [ ] As an impurity	a. [X] As a chemical processing aid b. [ ] As a manufacturing aid c. [ ] Ancillary or other use

SECTION 4. MAXIMUM AMOUNT OF THE TOXIC CHEMICAL ONSITE AT ANY TIME DURING THE CALENDAR YEAR

[**05**] (Enter two-digit code from instruction package.)

SECTION 5.QUANTITY OF THE TOXIC CHEMICAL ENTERING EACH ENVIRONMENTAL MEDIUM ONSITE

			A. Total Release (pounds/year*) (Enter range code or estimate**)	B. Basis of Estimate (enter code)	C. % From Stormwater
5.1	Fugitive or non-point air emissions	NA [ ]	**A**	**O**	
5.2	Stack or point air emissions	NA [ ]	**570**	**C**	
5.3	Discharges to receiving streams or water bodies (enter one name per box)				
	Stream or Water Body Name				
5.3.1	**NA**				

*For Dioxin and Dioxin-like Compounds, report in grams/yea

EPA Form 9350-1 (Rev.) - Previous editions are obsolete.

**Range Codes: A=1-10 pounds; B=11-499 pounds; C=500-999 pounds

EPA FORM R
PART II. CHEMICAL - SPECIFIC INFORMATION (CONTINUED)

TRI Facility ID Number	
14094VNDMR1NORT	
Toxic Chemical, Category or Generic Name	
Toluene	

SECTION 5. QUANTITY OF THE TOXIC CHEMICAL ENTERING EACH ENVIRONMENTAL MEDIUM ONSITE (Continued)

		NA	A. Total Release (pounds/year*) (enter range code** or estimate)	B. Basis of Estimate (enter code)
5.4.1	Underground Injection onsite to Class I wells	[X]		
5.4.2	Underground Injection onsite to Class II-V wells	[X]		
5.5	Disposal to land onsite			
5.5.1.A	RCRA subtitle C landfills	[X]		
5.5.1.B	Other landfills	[X]		
5.5.2	Land treatment/application farming	[X]		
5.5.3A	RCRA Subtitle C surface impoundments	[X]		
5.5.3B	Other surface impoundments	[X]		
5.5.4	Other disposal	[X]		

SECTION 6. TRANSFERS OF THE TOXIC CHEMICAL IN WASTES TO OFF-SITE LOCATIONS

6.1 DISCHARGES TO PUBLICLY OWNED TREATMENT WORKS (POTWs)

6.1.A Total Quantity Transferred to POTWs and Basis of Estimate

6.1.A.1 Total Transfers (pounds/year*) (enter range code** or estimate)	6.1.A.2 Basis of Estimate (enter code)
3.56	M2

6.1.B. 2 POTW Name	CITY OF LOCKPORT						
POTW Address	PLANK ROAD						
City	LOCKPORT	State	NY	County	Niagara	Zip	14094

*For Dioxin and Dioxin-like Compounds, report in grams/year

**Range Codes: A=1-10 pounds; B=11-499 pounds; C=500-999 pounds.

EPA FORM R PART II. CHEMICAL - SPECIFIC INFORMATION (CONTINUED)	TRI Facility ID Number 14094VNDMR1NORT Toxic Chemical, Category or Generic Name Toluene

SECTION 6.2 TRANSFERS TO OTHER OFF-SITE LOCATIONS

6.2.1 Off-Site EPA Identification Number (RCRA ID No.)	PAD987270725
Off-Site Location Name	SIEMENS WATER TECHNOLOGIES INC
Off-Site Address	118 PARK ROAD

City	DARLINGTON	State	PA	County	Beaver	Zip	16115	Country (Non-US)	
Is location under control of reporting facility or parent company?						[ ] Yes [X] No			

A. Total Transfers (pounds/year*) (enter range code** or estimate)	B. Basis of Estimate (enter code)	C. Type of Waste Treatment/Disposal/ Recycling/Energy Recovery (enter code)
1 . 3459	1 . O	1 . M50

6.2.2 Off-Site EPA Identification Number (RCRA ID No.)	ARD069748192
Off-Site Location Name	CLEAN HARBORS INC
Off-Site Address	309 AMERICAN CIRCLE

City	EL DORADO	State	AR	County	Columbia	Zip	71730	Country (Non-US)	
Is location under control of reporting facility or parent company?						[ ] Yes [X] No			

A. Total Transfers (pounds/year*) (enter range code** or estimate)	B. Basis of Estimate (enter code)	C. Type of Waste Treatment/Disposal/ Recycling/Energy Recovery (enter code)
1 . 3222	1 . O	1 . M50

6.2.3 Off-Site EPA Identification Number (RCRA ID No.)	NYD080469935
Off-Site Location Name	NORLITE
Off-Site Address	628 SOUTH SARATOGA ST

City	COHOES	State	NY	County	Albany	Zip	12047	Country (Non-US)	
Is location under control of reporting facility or parent company?						[ ] Yes [X] No			

A. Total Transfers (pounds/year*) (enter range code** or estimate)	B. Basis of Estimate (enter code)	C. Type of Waste Treatment/Disposal/ Recycling/Energy Recovery (enter code)
1 . 80097	1 . O	1 . M50

SECTION 7A. ONSITE WASTE TREATMENT METHODS AND EFFICIENCY

[ ] Not Applicable (NA) - Check here if no on-site waste treatment is applied to any waste stream containing the toxic chemical or chemical category.

a. General Waste Stream (enter code)	b. Waste Treatment Method(s) Sequence [enter 3-character code(s)]	d. Waste Treatment Efficiency Estimate
7A. 1 a	7A. 1 b	7A. 1 d
A	2 : A02 3 : A04	E4
7A. 2 a	7A. 2 b	7A. 2 d
A	2 : A03	E4
7A. 3 a	7A. 3 b	7A. 3 d
W	2 : H082	E4

*For Dioxin and Dioxin-like Compounds, report in grams/yea

**Range Codes: A=1-10 pounds; B=11-499 pounds; C=500-999 pounds

EPA FORM R
PART II. CHEMICAL - SPECIFIC INFORMATION (CONTINUED)

TRI Facility ID Number: **14094VNDMR1NORT**

Toxic Chemical, Category or Generic Name: **Toluene**

SECTION 7B. ON-SITE ENERGY RECOVERY PROCESSES

[X] Not Applicable (NA) - Check here if no on-site energy recovery is applied to any waste stream containing the toxic chemical or chemical category.

Energy Recovery Methods [enter 3-character code(s)]

SECTION 7C. ON-SITE RECYCLING PROCESSES

[ ] Not Applicable (NA) - Check here if no on-site recycling is applied to any waste stream containing the toxic chemical or chemical category.

Recycling Methods [enter 3-character code(s)]

1. H20

SECTION 8. SOURCE REDUCTION AND RECYCLING ACTIVITIES

		Column A Prior Year (pounds/year*)	Column B Current Reporting Year (pounds/year*)	Column C Following Year (pounds/year*)	Column D Second Following Year (pounds/year*)
8.1					
8.1a	Total on-site disposal to Class I Underground Injection Wells, RCRA Subtitle C landfills, and other landfills	NA	NA	NA	NA
8.1b	Total other on-site disposal or other releases	561	580	500	500
8.1c	Total off-site disposal to Class I Underground Injection Wells, RCRA Subtitle C landfills, and other landfills	0	0	0	0
8.1d	Total other off-site disposal or other releases	0	0	0	0
8.2	Quantity used for energy recovery onsite	NA	NA	NA	NA
8.3	Quantity used for energy recovery offsite	NA	NA	NA	NA
8.4	Quantity recycled onsite	38086	47000	50000	50000
8.5	Quantity recycled offsite	NA	NA	NA	NA
8.6	Quantity treated onsite	0	0	0	0
8.7	Quantity treated offsite	200449.2	86781.56	50000	50000
8.8	Quantity released to the environment as a result of remedial actions, catastrophic events, or one-time events not associated with production processes (pounds/year)		0		
8.9	Production ratio or activity index		1.22		
8.10	Did your facility engage in any source reduction activities for this chemical during the reporting year? If not, enter "NA" in Section 8.10.1 and answer Section 8.11.				

	Source Reduction Activities [enter code(s)]	Methods to Identify Activity (enter codes)		
8.10.1	NA			
8.11	If you wish to submit additional optional information on source reduction, recycling, or pollution control activities, check "Yes."		Yes [ ]	

EPA Form 9350-1 (Rev.) - Previous editions are obsolete.

*For Dioxin and Dioxin-like Compounds, report in grams/year

1 2 3 4 5 Additional Info

TRI Facility ID Number
14094VNDMR1NORT
Toxic Chemical, Category or Generic Name
To[illegible]e

Additional optional information on source reduction, recycling, or pollution control activities.

*** File Copy Only: Do Not Submit paper form to EPA ***

1 2 3 4 5 Additional Info
(IMPORTANT: Type or print; read instructions before completing form)

Form Approved OMB Number: 2070-0093
Approval Expires:

EPA
United States Environmental Protection Agency

FORM R

Section 313 of the Emergency Planning and Community Right-to-know Act of 1986, also known as Title III of the Superfund Amendments and Reauthorization Act.

TRI Facility ID Number: **14094VNDMR1NORT**

Toxic Chemical, Category or Generic Name: **Xylene (mixed isomers)**

WHERE TO SEND COMPLETED FORMS:	1. TRI Data Processing Center P.O.Box 1513 Lanham, MD 20703-1513 *** File Copy Only: Do Not Submit paper form to EPA ***	2. APPROPRIATE STATE OFFICE (See instructions in Appendix F)

This section only applies if you are revising or withdrawing a previously submitted form, otherwise leave blank:	Revision (enter up to two code(s)) [ ][ ]	Withdrawal (enter up to two code(s)) [ ][ ]

Important: See Instructions to determine when "Not Applicable (NA)" boxes should be checked.

Part I. FACILITY IDENTIFICATION INFORMATION

SECTION 1. REPORTING YEAR : **2010**

SECTION 2. TRADE SECRET INFORMATION

2.1 Are you claiming the toxic chemical identified on page 2 trade secret? [ ] Yes (Answer question 2.2; Attach substantiation forms) [**X**] NO (Do not answer 2.2; Go to Section 3)	2.2 Is this copy [ ] Sanitized [ ] Unsanitized (Answer only if "YES" in 2.1)	

SECTION 3. CERTIFICATION (Important: Read and sign after completing all form sections.)

I hereby certify that I have reviewed the attached documents and that, to the best of my knowledge and belief, the submitted information is true and complete and that the amounts and values in this report are accurate based on reasonable estimates using data available to the preparers of this report.

Name and official title of owner/operator or senior management official:	Signature:	Date Signed:
:		

SECTION 4. FACILITY IDENTIFICATION

4.1		TRI Facility ID Number	**14094VNDMR1NORT**
Facility or Establishment Name **VANDEMARK CHEMICAL INC**		Facility or Establishment Name or Mailing Address(if different from street address) **NA**	
Street **1 N TRANSIT RD**		Mailing Address	
City/County/State/Zip Code **LOCKPORT / Niagara / NY / 14094**		City/State/Zip Code / /	Country (Non-US)

4.2	This report contains information for : (Important: check a or b; check c or d if applicable)	a. [**X**] An Entire facility	b. [ ] Part of a facility	c. [ ] A Federal facility	d. [ ] GOCO

4.3	Technical Contact name	**PAMELA COOK**		Email Address **P.COOK@VDMCHEMICAL.COM**		Telephone Number (include area code) **7164336764**	
4.4	Public Contact name	**PAMELA COOK**		Email Address **P.COOK@VDMCHEMICAL.COM**		Telephone Number (include area code) **7164336764**	
4.5	NAICS Code (s) (6 digits)	a. **325199 (Primary)**	b.	c.	d.	e.	f.

4.7	Dun and Bradstreet Number(s) (9 digits)
	a. **NA**
	b.

SECTION 5. PARENT COMPANY INFORMATION

5.1	Name of Parent Company	NA [**X**]	**NA**
5.2	Parent Company's Dun & Bradstreet Number	NA [**X**]	

EPA FORM R
PART II. CHEMICAL - SPECIFIC INFORMATION

TRI Facility ID Number: 14094VNDMR1NORT

Toxic Chemical, Category or Generic Name: Xylene (mixed isomers)

SECTION 1. TOXIC CHEMICAL IDENTITY (Important DO NOT complete this section if you completed Section 2 below.)

1.1	CAS Number (Important: Enter only one number exactly as it appears on the Section 313 list. Enter category code if reporting a chemical category.)
	1330207
1.2	Toxic Chemical or Chemical Category Name (Important: Enter only one name exactly as it appears on the Section 313 list.)
	Xylene (mixed isomers)
1.3	Generic Chemical Name (Important: Complete only if Part I, Section 2.1 is checked "yes". Generic Name must be structurally descriptive).
	NA

SECTION 2. MIXTURE COMPONENT IDENTITY (Important: DO NOT complete this section if you completed Section 1 above.)

2.1	Generic Chemical Name Provided by Supplier (Important: Maximum of 70 characters, including numbers, spaces, and punctuation.)
	NA

SECTION 3. ACTIVITIES AND USES OF THE TOXIC CHEMICAL AT THE FACILITY
(Important: Check all that apply.)

3.1 Manufacture the toxic chemical:	3.2 Process the toxic chemical:	3.3 Otherwise use the toxic chemical:
a. [ ] Produce b. [ ] Import		
If produce or import: c. [ ] For on-site use/processing d. [ ] For sale/distribution e. [ ] As a byproduct f. [ ] As an impurity	a. [ ] As a reactant b. [X] As a formulation component c. [ ] As an article component d. [ ] Repackaging e. [ ] As an impurity	a. [X] As a chemical processing aid b. [ ] As a manufacturing aid c. [ ] Ancillary or other use

SECTION 4. MAXIMUM AMOUNT OF THE TOXIC CHEMICAL ONSITE AT ANY TIME DURING THE CALENDAR YEAR

[05] (Enter two-digit code from instruction package.)

SECTION 5.QUANTITY OF THE TOXIC CHEMICAL ENTERING EACH ENVIRONMENTAL MEDIUM ONSITE

			A. Total Release (pounds/year*) (Enter range code or estimate**)	B. Basis of Estimate (enter code)	C. % From Stormwater
5.1	Fugitive or non-point air emissions	NA [ ]	A	O	
5.2	Stack or point air emissions	NA [ ]	79	O	
5.3	Discharges to receiving streams or water bodies (enter one name per box)				
	Stream or Water Body Name				
5.3.1	NA				

*For Dioxin and Dioxin-like Compounds, report in grams/yea
**Range Codes: A=1-10 pounds; B=11-499 pounds; C=500-999 pounds

EPA FORM R
PART II. CHEMICAL - SPECIFIC INFORMATION (CONTINUED)

TRI Facility ID Number
14094VNDMR1NORT
Toxic Chemical, Category or Generic Name
Xylene (mixed isomers)

SECTION 5. QUANTITY OF THE TOXIC CHEMICAL ENTERING EACH ENVIRONMENTAL MEDIUM ONSITE (Continued)

		NA	A. Total Release (pounds/year*) (enter range code** or estimate)	B. Basis of Estimate (enter code)
5.4.1	Underground Injection onsite to Class I wells	[X]		
5.4.2	Underground Injection onsite to Class II-V wells	[X]		
5.5	Disposal to land onsite			
5.5.1.A	RCRA subtitle C landfills	[X]		
5.5.1.B	Other landfills	[X]		
5.5.2	Land treatment/application farming	[X]		
5.5.3A	RCRA Subtitle C surface impoundments	[X]		
5.5.3B	Other surface impoundments	[X]		
5.5.4	Other disposal	[X]		

SECTION 6. TRANSFERS OF THE TOXIC CHEMICAL IN WASTES TO OFF-SITE LOCATIONS

6.1 DISCHARGES TO PUBLICLY OWNED TREATMENT WORKS (POTWs)

6.1.A Total Quantity Transferred to POTWs and Basis of Estimate

6.1.A.1 Total Transfers (pounds/year*) (enter range code** or estimate)	6.1.A.2 Basis of Estimate (enter code)
393.03	O

6.1.B. 2 POTW Name	CITY OF LOCKPORT						
POTW Address	PLANK ROAD						
City	LOCKPORT	State	NY	County	Niagara	Zip	14094

*For Dioxin and Dioxin-like Compounds, report in grams/year

**Range Codes: A=1-10 pounds; B=11-499 pounds; C=500-999 pounds.

EPA FORM R PART II. CHEMICAL - SPECIFIC INFORMATION (CONTINUED)	TRI Facility ID Number 14094VNDMR1NORT Toxic Chemical, Category or Generic Name Xylene (mixed isomers)

SECTION 6.2 TRANSFERS TO OTHER OFF-SITE LOCATIONS

6.2.1 Off-Site EPA Identification Number (RCRA ID No.)	PAD987270725
Off-Site Location Name	SIEMENS WATER TECHNOLOGIES INC
Off-Site Address	118 PARK ROAD

City	DARLINGTON	State	PA	County	Beaver	Zip	16115	Country (Non-US)	

Is location under control of reporting facility or parent company?	[ ] Yes [X] No

A. Total Transfers (pounds/year*) (enter range code** or estimate)	B. Basis of Estimate (enter code)	C. Type of Waste Treatment/Disposal/ Recycling/Energy Recovery (enter code)
1 . 3537.27	1 . O	1 . M50

6.2.2 Off-Site EPA Identification Number (RCRA ID No.)	NYD080469935
Off-Site Location Name	NORLITE
Off-Site Address	628 SOUTH SARATOGA ST

City	COHOES	State	NY	County	Albany	Zip	12047	Country (Non-US)	

Is location under control of reporting facility or parent company?	[ ] Yes [X] No

A. Total Transfers (pounds/year*) (enter range code** or estimate)	B. Basis of Estimate (enter code)	C. Type of Waste Treatment/Disposal/ Recycling/Energy Recovery (enter code)
1 . 4745	1 . C	1 . M50

SECTION 7A. ONSITE WASTE TREATMENT METHODS AND EFFICIENCY

[ ] Not Applicable (NA) - Check here if no on-site waste treatment is applied to any waste stream containing the toxic chemical or chemical category.

a. General Waste Stream (enter code)	b. Waste Treatment Method(s) Sequence [enter 3-character code(s)]	d. Waste Treatment Efficiency Estimate
7A. 1 a	7A. 1 b	7A. 1 d
W	2 : H082	E5
7A. 2 a	7A. 2 b	7A. 2 d
A	2 : A03	E3
7A. 3 a	7A. 3 b	7A. 3 d
A	2 : A02 3 : A04	E5

*For Dioxin and Dioxin-like Compounds, report in grams/yea

**Range Codes: A=1-10 pounds; B=11-499 pounds; C=500-999 pounds

EPA FORM R
PART II. CHEMICAL - SPECIFIC INFORMATION (CONTINUED)

TRI Facility ID Number: 14094VNDMR1NORT

Toxic Chemical, Category or Generic Name: Xylene (mixed isomers)

SECTION 7B. ON-SITE ENERGY RECOVERY PROCESSES

[X] Not Applicable (NA) - Check here if no on-site energy recovery is applied to any waste stream containing the toxic chemical or chemical category.

Energy Recovery Methods [enter 3-character code(s)]

SECTION 7C. ON-SITE RECYCLING PROCESSES

[ ] Not Applicable (NA) - Check here if no on-site recycling is applied to any waste stream containing the toxic chemical or chemical category.

Recycling Methods [enter 3-character code(s)]

1. H20

SECTION 8. SOURCE REDUCTION AND RECYCLING ACTIVITIES

		Column A Prior Year (pounds/year*)	Column B Current Reporting Year (pounds/year*)	Column C Following Year (pounds/year*)	Column D Second Following Year (pounds/year*)
8.1					
8.1a	Total on-site disposal to Class I Underground Injection Wells, RCRA Subtitle C landfills, and other landfills	NA	NA	NA	NA
8.1b	Total other on-site disposal or other releases	59	89	100	100
8.1c	Total off-site disposal to Class I Underground Injection Wells, RCRA Subtitle C landfills, and other landfills	0	0	0	0
8.1d	Total other off-site disposal or other releases	0	0	0	0
8.2	Quantity used for energy recovery onsite	NA	NA	NA	NA
8.3	Quantity used for energy recovery offsite	NA	NA	NA	NA
8.4	Quantity recycled onsite	17817	49450	50000	50000
8.5	Quantity recycled offsite	NA	NA	NA	NA
8.6	Quantity treated onsite	0	0	0	0
8.7	Quantity treated offsite	8295.48	8675.3	7500	7500
8.8	Quantity released to the environment as a result of remedial actions, catastrophic events, or one-time events not associated with production processes (pounds/year)		0		
8.9	Production ratio or activity index		0.78		
8.10	Did your facility engage in any source reduction activities for this chemical during the reporting year? If not, enter "NA" in Section 8.10.1 and answer Section 8.11.				

	Source Reduction Activities [enter code(s)]	Methods to Identify Activity (enter codes)		
8.10.1	NA			
8.11	If you wish to submit additional optional information on source reduction, recycling, or pollution control activities, check "Yes."		Yes [ ]	

EPA Form 9350-1 (Rev.) - Previous editions are obsolete.

*For Dioxin and Dioxin-like Compounds, report in grams/year

TRI Facility ID Number
14094VNDMR1NORT
Toxic Chemical, Category or Generic Name
Xy (mixed isomers)

Additional optional information on source reduction, recycling, or pollution control activities.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DECLARATION OF ELECTRONIC FILING OF THE
2011 ANNUAL HAZARDOUS WASTE REPORT

For the calendar year January 1, 2011, through December 31, 2011

EPA ID NYD175773779

Site/Company Name VANDEMARK CHEMICAL, INC.

Site Address ONE NORTH TRANSIT ROAD

City LOCKPORT State NY Zip 14094

Mailing Address ONE NORTH TRANSIT ROAD

City LOCKPORT State NY Zip 14094

Contact Name CHRIS BANACH Phone No 716-433-6764 Ext 411

Contact Title EHSQ MANAGER

Part 1 - Waste Generation and Management Information (Tons only)

1. Total hazardous waste generated(non-wastewater) in 2011	614.6040	Tons
2. Total hazardous waste generated(wastewater only) in 2011	20,199.1000	Tons
3. Total hazardous waste received from off-site in 2011		Tons

Part II - Declaration of Filer

I certify under penalty of law that the amounts described in Part I above agree with the amounts shown on my 2011 Hazardous Waste Report, which I filed electronically, and that this document and all attachments were prepared under my direction or supervision, in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties under Section 3008 of the Resource Conservation and Recovery Act for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Part III- Signature of Certification

Last Name BANACH First Name CHRIS Title EHSQ MANAGER

Signature _____ Date 02/20/2012

Part IV - Method of File Transmittal

____3 1/2" Diskette or CD ____Email (Send to (ejrobbin@gw.dec.state.ny.us)) __X__ ARM Web Site

Note: This is not the 2010 Annual Hazardous Waste Report. Only file this form if you submitted your 2010 Annual Hazardous Waste Report electronically. For questions regarding this form please contact the NYSDEC=s Annual Reporting Section at (518) 402-8730.

Submit Date: 02/20/2012

Section 1. Registration Information

Reason for Resubmission	5-year update (40 CFR 68.190(b)(1))
1.1 Source Identification	
1.1.a. Facility Name	VanDeMark Chemical Inc.
1.1.b. Parent Company #1 Name	Buckingham VanDeMark Holding Corp
1.1.c. Parent Company #2 Name	
1.2 EPA Facility Identifier	100000133358
1.3 Other EPA Systems Facility Identifier	
1.4 Dun and Bradstreet Numbers (DUNS)	
1.4.a. Facility DUNS	
1.4.b. Parent Company #1 DUNS	
1.4.c. Parent Company #2 DUNS	
1.5 Facility Location	
1.5.a. Street - Line 1	1 North Transit Road
1.5.b. Street - Line 2	
1.5.c. City	Lockport
1.5.d. State	NY
1.5.e. Zip Code - Zip +4 Code	14094
1.5.f. County	NIAGARA
1.5.g. Facility Latitude (in decimal degrees)	43.183778
1.5.h. Facility Longitude (in decimal degrees)	-078.697500
1.5.i. Method for determining Lat/Long	GPS Code Measurements (Psuedo Range) Differential (DGPS)
1.5.j. Description of location identified by Lat/Long	Process Unit
1.5.k. Horizontal Accuracy Measure (meters)	1
1.5.l. Horizontal Reference Datum Code	North American Datum of 1983
1.5.m. Source Map Scale Number	
1.6 Owner or Operator	
1.6.a. Name	VanDeMark Chemical Inc.
1.6.b. Phone	(716) 433-6764
1.6.c. Street - Line 1	1 North Transit Road
1.6.d. Street - Line 2	
1.6.e. City	Lockport
1.6.f. State	NY
1.6.g. Zip Code - Zip +4 Code	14094
Foreign Country	
Foreign State/Province	
Foreign Zip/Postal Code	
1.7 Name, title and email address of person or position responsible for RMP (part 68) implementation	
1.7.a. Name of person	Chris Banach
1.7.b. Title of person or position	EHSQ Manager
1.7.c. Email address of person or position	

Section 1. Registration Information

1.8 Emergency Contact	
1.8.a. Name	Chris Banach
1.8.b. Title of person or position	EHSQ Manager
1.8.c. Phone	(716) 433-6764
1.8.d. 24-Hour Phone	(716) 433-6764
1.8.e. 24-Hour Phone Extension/PIN #	411
1.8.f. Email address for emergency contact	c.banach@vdmchemical.com
1.9 Other Points of Contact	
1.9.a. Facility or Parent Company E-mail Address	c.banach@vdmchemical.com
1.9.b. Facility Public Contact Phone Number	(716) 433-6764
1.9.c. Facility or Parent Company WWW Homepage Address	www.vdmchemical.com
1.10 Local Emergency Planning Committee (LEPC)	Niagara County LEPC
1.11 Number of fulltime equivalent (FTEs) employees on site	81
1.12 Covered by	
1.12.a. OSHA PSM	Y
1.12.b. EPCRA section 302	Y
1.12.c. CAA Title V Air Operating Permit Program	Y
1.12.d. Air Operating Permit ID #	929090010700001
1.13 OSHA Star or Merit Ranking	
1.14 Last Safety Inspection (by an External Agency) Date	05/20/2008
1.15 Last Safety Inspection Performed by an External Agency	OSHA
1.16 Will this RMP involve Predictive Filing?	
1.18 RMP Preparer Information	
1.18.a. Name	Chris Banach
1.18.b. Phone	(716) 433-6764
1.18.c. Street - Line 1	1 North Transit Road
1.18.d. Street - Line 2	
1.18.e. City	Lockport
1.18.f. State	NY
1.18.g. Zip	14094
Foreign Country	
Foreign State/Province	
Foreign Zip Code	

Section 1. Registration Information

Section 1.17 Process Specific Information

Process 1

Process ID #	1000032910		
Process Description	PHOSGENE PRODUCTION		
1.17.a. Program Level	3		
1.17.b. NAICS Code(s)			
325199 (All Other Basic Organic Chemical Manufacturing)			
1.17.c. Chemical(s)			
	Chemical Name	CAS Number	Quantity
	Phosgene [Carbonic dichloride]	75-44-5	244000
	Chlorine	7782-50-5	900000

Section 1. Registration Information

Section 1.17 Process Specific Information

Process 2

Process ID #	1000032911		
Process Description	PHOSGENE DERIVATIVES		
1.17.a. Program Level	3		
1.17.b. NAICS Code(s)			
325199 (All Other Basic Organic Chemical Manufacturing)			
1.17.c. Chemical(s)			
	Chemical Name	CAS Number	Quantity
	Phosgene [Carbonic dichloride]	75-44-5	12000

Section 2. Toxics: Worst Case

Scenario 1

Process Name	PHOSGENE PRODUCTION
2.1 Chemical	
2.1.a. Name	Chlorine
2.1.b. Percent Weight of Chemical	100
2.2 Physical State	Gas liquified by pressure
2.3 Model Used	EPA's RMP*Comp(TM)
2.4 Scenario	Gas Release
2.5 Quantity Released (lbs)	180000
2.6 Release Rate (lbs/min)	18000
2.7 Release Duration (mins)	10
2.8 Wind Speed (meters/sec)	1.5
2.9 Atmospheric stability class	F
2.10 Topography	Urban
2.11 Distance to endpoint (miles)	14
2.12 Estimated residential population within distance to endpoint (numbers)	199196
2.13 Public receptors within distance to endpoint	
2.13.a. Schools	Y
2.13.b. Residences	Y
2.13.c. Hospitals	Y
2.13.d. Prison/Correctional Facilities	Y
2.13.e. Recreational Areas	Y
2.13.f. Major commercial, office or industrial areas	Y
2.13.g. Other	
2.14 Environmental receptors within distance to endpoint	
2.14.a. National or State Parks, Forests or Monuments	Y
2.14.b. Officially Designated Wildlife Sanctuaries, Preserves or Refuges	Y
2.14.c. Federal Wilderness Area	
2.14.d. Other	
2.15 Passive mitigation considered	
2.15.a. Dikes	
2.15.b. Enclosures	
2.15.c. Berms	
2.15.d. Drains	
2.15.e. Sumps	
2.15.f. Other	
2.16 Graphic file	

Section 3. Toxics: Alternative Release

Scenario 1

Process Name	PHOSGENE PRODUCTION
3.1 Chemical	
3.1.a. Name	Phosgene [Carbonic dichloride]
3.1.b. Percent Weight of Chemical	100
3.2 Physical State	Gas liquified by pressure
3.3 Model Used	EPA's RMP*Comp(TM)
3.4 Scenario	Transfer hose failure
3.5 Quantity Released (lbs)	50
3.6 Release Rate (lbs/min)	5
3.7 Release Duration (mins)	10
3.8 Wind Speed (meters/sec)	3
3.9 Atmospheric stability class	D
3.10 Topography	Urban
3.11 Distance to endpoint (miles)	0.3
3.12 Estimated residential population within distance to endpoint (numbers)	166
3.13 Public receptors within distance to endpoint	
3.13.a. Schools	
3.13.b. Residences	Y
3.13.c. Hospitals	
3.13.d. Prison/Correctional Facilities	
3.13.e. Recreational Areas	
3.13.f. Major commercial, office or industrial areas	
3.13.g. Other	
3.14 Environmental receptors within distance to endpoint	
3.14.a. National or State Parks, Forests or Monuments	
3.14.b. Officially Designated Wildlife Sanctuaries, Preserves or Refuges	
3.14.c. Federal Wilderness Area	
3.14.d. Other	
3.15 Passive mitigation considered	
3.15.a. Dikes	
3.15.b. Enclosures	
3.15.c. Berms	
3.15.d. Drains	
3.15.e. Sumps	
3.15.f. Other	
3.16 Active mitigation considered	
3.16.a. Sprinkler systems	
3.16.b. Deluge systems	
3.16.c. Water curtain	
3.16.d. Neutralization	Y
3.16.e. Excess flow valve	
3.16.f. Flares	

Section 3. Toxics: Alternative Release

3.16.g. Scrubbers	Y
3.16.h. Emergency shutdown systems	Y
3.16.i. Other	MONITORING DEVICES
3.17 Graphic file	

Section 3. Toxics: Alternative Release

Scenario 2

Process Name	PHOSGENE PRODUCTION
3.1 Chemical	
3.1.a. Name	Chlorine
3.1.b. Percent Weight of Chemical	100
3.2 Physical State	Gas liquified by pressure
3.3 Model Used	EPA's RMP*Comp(TM)
3.4 Scenario	Transfer hose failure
3.5 Quantity Released (lbs)	450
3.6 Release Rate (lbs/min)	90
3.7 Release Duration (mins)	5
3.8 Wind Speed (meters/sec)	3
3.9 Atmospheric stability class	D
3.10 Topography	Urban
3.11 Distance to endpoint (miles)	0.2
3.12 Estimated residential population within distance to endpoint (numbers)	31
3.13 Public receptors within distance to endpoint	
3.13.a. Schools	
3.13.b. Residences	Y
3.13.c. Hospitals	
3.13.d. Prison/Correctional Facilities	
3.13.e. Recreational Areas	
3.13.f. Major commercial, office or industrial areas	Y
3.13.g. Other	
3.14 Environmental receptors within distance to endpoint	
3.14.a. National or State Parks, Forests or Monuments	
3.14.b. Officially Designated Wildlife Sanctuaries, Preserves or Refuges	
3.14.c. Federal Wilderness Area	
3.14.d. Other	
3.15 Passive mitigation considered	
3.15.a. Dikes	
3.15.b. Enclosures	
3.15.c. Berms	
3.15.d. Drains	
3.15.e. Sumps	
3.15.f. Other	
3.16 Active mitigation considered	
3.16.a. Sprinkler systems	
3.16.b. Deluge systems	
3.16.c. Water curtain	
3.16.d. Neutralization	Y
3.16.e. Excess flow valve	
3.16.f. Flares	

Section 3. Toxics: Alternative Release

3.16.g. Scrubbers	Y
3.16.h. Emergency shutdown systems	Y
3.16.i. Other	MONITORING DEVICES
3.17 Graphic file	

Section 3. Toxics: Alternative Release

Scenario 3

Process Name	PHOSGENE DERIVATIVES
3.1 Chemical	
3.1.a. Name	Phosgene [Carbonic dichloride]
3.1.b. Percent Weight of Chemical	100
3.2 Physical State	Gas
3.3 Model Used	EPA's RMP*Comp(TM)
3.4 Scenario	other
3.5 Quantity Released (lbs)	32
3.6 Release Rate (lbs/min)	16
3.7 Release Duration (mins)	2
3.8 Wind Speed (meters/sec)	3
3.9 Atmospheric stability class	D
3.10 Topography	Urban
3.11 Distance to endpoint (miles)	0.5
3.12 Estimated residential population within distance to endpoint (numbers)	1186
3.13 Public receptors within distance to endpoint	
3.13.a. Schools	
3.13.b. Residences	Y
3.13.c. Hospitals	
3.13.d. Prison/Correctional Facilities	
3.13.e. Recreational Areas	
3.13.f. Major commercial, office or industrial areas	Y
3.13.g. Other	
3.14 Environmental receptors within distance to endpoint	
3.14.a. National or State Parks, Forests or Monuments	
3.14.b. Officially Designated Wildlife Sanctuaries, Preserves or Refuges	
3.14.c. Federal Wilderness Area	
3.14.d. Other	
3.15 Passive mitigation considered	
3.15.a. Dikes	
3.15.b. Enclosures	
3.15.c. Berms	
3.15.d. Drains	
3.15.e. Sumps	
3.15.f. Other	
3.16 Active mitigation considered	
3.16.a. Sprinkler systems	
3.16.b. Deluge systems	
3.16.c. Water curtain	
3.16.d. Neutralization	
3.16.e. Excess flow valve	
3.16.f. Flares	

Section 3. Toxics: Alternative Release

3.16.g. Scrubbers	
3.16.h. Emergency shutdown systems	
3.16.i. Other	
3.17 Graphic file	

Section 6. Five-Year Accident History

Accident 1

6.1 Date of accident		03/12/1998		
6.2 Time accident began		10:15 AM		
6.3 NAICS Code of process involved		325199 (All Other Basic Organic Chemical Manufacturing)		
6.4 Release duration		5 Hours 0 Mins		
6.5 Chemicals involved				
	Chemical Name	CAS Number	Quantity released (lbs)	Percent weight of chemical
	Chlorine	7782-50-5	450	100
6.6 Release Event				
6.6.a. Gas release		Y		
6.6.b. Liquid spills/evaporation		Y		
6.6.c. Fire				
6.6.d. Explosion				
6.6.e. Uncontrolled/Runaway reaction				
6.7 Release Source				
6.7.a. Storage vessel				
6.7.b. Piping				
6.7.c. Process vessel				
6.7.d. Transfer hose		Y		
6.7.e. Valve				
6.7.f. Pump				
6.7.g. Joint				
6.7.h. Other		railcar		
6.8 Weather conditions at time of event				
6.8.a. Wind speed and direction		6 miles/hr WNW		
6.8.b. Temperature (F)		20		
6.8.c. Atmospheric stability class		A		
6.8.d. Precipitation present				
6.8.e. Unknown weather conditions				
6.9 On-site Impacts				
	Employees or contractors	Public responders	Public	
6.9.a. Deaths	0	0	0	
6.9.b. Injuries	0	0	0	
6.9.c. Property damage ($)	45000			
6.10 Known off-site impacts				
6.10.a. Deaths		0		
6.10.b. Hospitalizations		0		
6.10.c. Other medical treatments		2		
6.10.d. Evacuated		0		
6.10.e. Sheltered-in-place		150		
6.10.f. Property damage ($)		0		
6.10.g. Environmental damage				

Section 6. Five-Year Accident History

6.10.g.1. Fish or animal kills	
6.10.g.2. Tree, lawn, shrub or crop damage	
6.10.g.3. Water contamination	
6.10.g.4. Soil contamination	
6.10.g.5. Other	
6.11 Initiating event	Human error
6.12 Contributing factors	
6.12.a. Equipment failure	
6.12.b. Human error	Y
6.12.c. Improper procedures	
6.12.d. Overpressurization	
6.12.e. Upset condition	
6.12.f. By-pass condition	
6.12.g. Maintenance activity/inactivity	
6.12.h. Process design failure	
6.12.i. Unsuitable equipment	
6.12.j. Unusual weather conditions	
6.12.k. Management error	
6.12.l. Other	
6.13 Off-site responders notified	Notified and Responded
6.14 Changes introduced as a result of the accident	
6.14.a. Improved/upgraded equipment	Y
6.14.b. Revised maintenance	
6.14.c. Revised training	Y
6.14.d. Revised operating procedures	Y
6.14.e. New process controls	Y
6.14.f. New mitigation systems	
6.14.g. Revised emergency response plan	Y
6.14.h. Changed process	
6.14.i. Reduced inventory	
6.14.j. None	
6.14.k. Other	

Section 7. Prevention Program: Program Level 3

Program 1

Prevention Program Description: PHOSGENE PRODUCTION	
7.1 NAICS Code for process	
7.1.a. Process Name	1000032910 (PHOSGENE PRODUCTION)
7.1.b. NAICS	325199 (All Other Basic Organic Chemical Manufacturing)
7.2 Chemicals	
Phosgene [Carbonic dichloride]	
Chlorine	
7.3 Date on which the safety information was last reviewed or revised	09/10/2010
7.4 Process Hazard Analysis (PHA)	
7.4.a. Date of last PHA or PHA update	09/10/2010
7.4.b. Technique used	
7.4.b.1. What if	
7.4.b.2. Checklist	
7.4.b.3. What if/Checklist Combined	
7.4.b.4. HAZOP	Y
7.4.b.5. Failure mode & effects analysis	
7.4.b.6. Fault tree analysis	
7.4.b.7. Other	
7.4.c. Expected or actual date of completion of all changes resulting from last PHA or PHA update	10/20/2010
7.4.d. Major hazards identified	
7.4.d.1. Toxic release	Y
7.4.d.2. Fire	Y
7.4.d.3. Explosion	Y
7.4.d.4. Runaway reaction	
7.4.d.5. Polymerization	
7.4.d.6. Overpressurization	Y
7.4.d.7. Corrosion	Y
7.4.d.8. Overfilling	Y
7.4.d.9. Contamination	Y
7.4.d.10. Equipment failure	Y
7.4.d.11. Loss of cooling, heating, electricity, instrument air	Y
7.4.d.12. Earthquake	
7.4.d.13. Floods	
7.4.d.14. Tornado	
7.4.d.15. Hurricanes	
7.4.d.16. Other	
7.4.e. Process controls in use	
7.4.e.1. Vents	Y
7.4.e.2. Relief valves	Y
7.4.e.3. Check valves	Y
7.4.e.4. Scrubbers	Y

Section 7. Prevention Program: Program Level 3

7.4.e.5. Flares	Y
7.4.e.6. Manual shutoffs	Y
7.4.e.7. Automatic shutoffs	Y
7.4.e.8. Interlocks	Y
7.4.e.9. Alarms and procedures	Y
7.4.e.10. Keyed bypass	
7.4.e.11. Emergency air supply	Y
7.4.e.12. Emergency power	Y
7.4.e.13. Backup pump	Y
7.4.e.14. Grounding equipment	Y
7.4.e.15. Inhibitor additions	
7.4.e.16. Rupture disks	Y
7.4.e.17. Excess flow device	Y
7.4.e.18. Quench system	
7.4.e.19. Purge system	
7.4.e.20. None	
7.4.e.21. Other	
7.4.f. Mitigation systems in use	
7.4.f.1. Sprinkler system	
7.4.f.2. Dikes	Y
7.4.f.3. Fire walls	
7.4.f.4. Blast walls	
7.4.f.5. Deluge system	
7.4.f.6. Water curtain	
7.4.f.7. Enclosure	Y
7.4.f.8. Neutralization	Y
7.4.f.9. None	
7.4.f.10. Other	scrubbers
7.4.g. Monitoring/detection systems in use	
7.4.g.1. Process area detectors	Y
7.4.g.2. Perimeter monitors	Y
7.4.g.3. None	
7.4.g.4. Other	
7.4.h. Changes since last PHA update	
7.4.h.1. Reduction in chemical inventory	Y
7.4.h.2. Increase in chemical inventory	
7.4.h.3. Change in process parameters	Y
7.4.h.4. Installation of process controls	Y
7.4.h.5. Installation of process detection systems	Y
7.4.h.6. Installation of perimeter monitoring systems	Y
7.4.h.7. Installation of mitigation systems	Y
7.4.h.8. None recommended	
7.4.h.9. None	
7.4.h.10. Other	
7.5 Date of most recent review or revision of operating procedures	05/03/2011

Section 7. Prevention Program: Program Level 3

7.6 Training	
7.6.a. Date of most recent review or revision of training programs	03/17/2011
7.6.b. Type of training provided	
7.6.b.1. Classroom	Y
7.6.b.2. On the job	Y
7.6.b.3. Other	
7.6.c. Type of competency testing used	
7.6.c.1. Written test	Y
7.6.c.2. Oral test	
7.6.c.3. Demonstration	Y
7.6.c.4. Observation	Y
7.6.c.5. Other	
7.7 Maintenance	
7.7.a. Date of most recent review or revision of maintenance procedures	05/03/2011
7.7.b. Date of most recent equipment inspection or test	11/09/2011
7.7.c. Equipment most recently inspected or tested (equipment list)	see maintenance files, annual
7.8 Management of change	
7.8.a. Date of most recent changes that triggered management of change procedures	02/07/2011
7.8.b. Date of most recent review or revision of management of change procedures	04/20/2011
7.9 Date of most recent pre-startup review	01/28/2011
7.10 Compliance audits	
7.10.a. Date of most recent compliance audits	10/08/2008
7.10.b. Expected or actual date of completion of all changes resulting from the compliance audits	06/02/2011
7.11 Incident investigation	
7.11.a. Date of most recent incident investigation	11/15/2011
7.11.b. Expected or actual date of completion of all changes resulting from the incident investigation	12/15/2011
7.12 Date of most recent review or revision of employee participation plans	09/10/2010
7.13 Date of most recent review or revision of hot work permit procedures	11/09/2011
7.14 Date of most recent review or revision of contractor safety procedures	10/15/2010
7.15 Date of most recent evaluation of contractor safety performance	02/09/2012

Section 7. Prevention Program: Program Level 3

Program 2

Prevention Program Description: PHOSGENE DERIVATIVES	
7.1 NAICS Code for process	
7.1.a. Process Name	1000032911 (PHOSGENE DERIVATIVES)
7.1.b. NAICS	325199 (All Other Basic Organic Chemical Manufacturing)
7.2 Chemicals	
Phosgene [Carbonic dichloride]	
7.3 Date on which the safety information was last reviewed or revised	08/03/2011
7.4 Process Hazard Analysis (PHA)	
7.4.a. Date of last PHA or PHA update	05/05/2011
7.4.b. Technique used	
7.4.b.1. What if	
7.4.b.2. Checklist	
7.4.b.3. What if/Checklist Combined	
7.4.b.4. HAZOP	Y
7.4.b.5. Failure mode & effects analysis	
7.4.b.6. Fault tree analysis	
7.4.b.7. Other	
7.4.c. Expected or actual date of completion of all changes resulting from last PHA or PHA update	08/03/2011
7.4.d. Major hazards identified	
7.4.d.1. Toxic release	Y
7.4.d.2. Fire	Y
7.4.d.3. Explosion	Y
7.4.d.4. Runaway reaction	
7.4.d.5. Polymerization	
7.4.d.6. Overpressurization	Y
7.4.d.7. Corrosion	Y
7.4.d.8. Overfilling	Y
7.4.d.9. Contamination	Y
7.4.d.10. Equipment failure	Y
7.4.d.11. Loss of cooling, heating, electricity, instrument air	Y
7.4.d.12. Earthquake	
7.4.d.13. Floods	
7.4.d.14. Tornado	
7.4.d.15. Hurricanes	
7.4.d.16. Other	
7.4.e. Process controls in use	
7.4.e.1. Vents	Y
7.4.e.2. Relief valves	Y
7.4.e.3. Check valves	Y
7.4.e.4. Scrubbers	Y
7.4.e.5. Flares	

Section 7. Prevention Program: Program Level 3

7.4.e.6. Manual shutoffs	Y
7.4.e.7. Automatic shutoffs	Y
7.4.e.8. Interlocks	Y
7.4.e.9. Alarms and procedures	Y
7.4.e.10. Keyed bypass	
7.4.e.11. Emergency air supply	Y
7.4.e.12. Emergency power	Y
7.4.e.13. Backup pump	Y
7.4.e.14. Grounding equipment	Y
7.4.e.15. Inhibitor additions	
7.4.e.16. Rupture disks	Y
7.4.e.17. Excess flow device	
7.4.e.18. Quench system	
7.4.e.19. Purge system	
7.4.e.20. None	
7.4.e.21. Other	
7.4.f. Mitigation systems in use	
7.4.f.1. Sprinkler system	
7.4.f.2. Dikes	Y
7.4.f.3. Fire walls	
7.4.f.4. Blast walls	
7.4.f.5. Deluge system	
7.4.f.6. Water curtain	
7.4.f.7. Enclosure	Y
7.4.f.8. Neutralization	Y
7.4.f.9. None	
7.4.f.10. Other	
7.4.g. Monitoring/detection systems in use	
7.4.g.1. Process area detectors	Y
7.4.g.2. Perimeter monitors	Y
7.4.g.3. None	
7.4.g.4. Other	
7.4.h. Changes since last PHA update	
7.4.h.1. Reduction in chemical inventory	
7.4.h.2. Increase in chemical inventory	
7.4.h.3. Change in process parameters	Y
7.4.h.4. Installation of process controls	Y
7.4.h.5. Installation of process detection systems	
7.4.h.6. Installation of perimeter monitoring systems	
7.4.h.7. Installation of mitigation systems	
7.4.h.8. None recommended	
7.4.h.9. None	
7.4.h.10. Other	
7.5 Date of most recent review or revision of operating procedures	08/03/2011

Section 7. Prevention Program: Program Level 3

7.6 Training	
7.6.a. Date of most recent review or revision of training programs	08/03/2011
7.6.b. Type of training provided	
7.6.b.1. Classroom	Y
7.6.b.2. On the job	Y
7.6.b.3. Other	
7.6.c. Type of competency testing used	
7.6.c.1. Written test	Y
7.6.c.2. Oral test	
7.6.c.3. Demonstration	Y
7.6.c.4. Observation	Y
7.6.c.5. Other	
7.7 Maintenance	
7.7.a. Date of most recent review or revision of maintenance procedures	01/04/2012
7.7.b. Date of most recent equipment inspection or test	01/04/2012
7.7.c. Equipment most recently inspected or tested (equipment list)	SEE PM PROGRAM
7.8 Management of change	
7.8.a. Date of most recent changes that triggered management of change procedures	02/28/2012
7.8.b. Date of most recent review or revision of management of change procedures	04/20/2011
7.9 Date of most recent pre-startup review	09/26/2011
7.10 Compliance audits	
7.10.a. Date of most recent compliance audits	10/08/2008
7.10.b. Expected or actual date of completion of all changes resulting from the compliance audits	06/02/2011
7.11 Incident investigation	
7.11.a. Date of most recent incident investigation	01/02/2012
7.11.b. Expected or actual date of completion of all changes resulting from the incident investigation	02/15/2012
7.12 Date of most recent review or revision of employee participation plans	09/10/2010
7.13 Date of most recent review or revision of hot work permit procedures	11/09/2011
7.14 Date of most recent review or revision of contractor safety procedures	10/15/2010
7.15 Date of most recent evaluation of contractor safety performance	02/09/2012

Section 9. Emergency Response

9.1 Written emergency response (ER) plan	
9.1.a. Is your facility included in the written community emergency response plan?	Y
9.1.b. Does your facility have its own written emergency response plan?	Y
9.2 Does your facility's ER plan include specific actions to be taken in response to accidental releases of regulated substances?	Y
9.3 Does your facility's ER plan include procedures for informing the public and local agencies responding to accidental releases?	Y
9.4 Does your facility's ER plan include information on emergency health care?	Y
9.5 Date of most recent review or update of your facility's ER plan	03/11/2011
9.6 Date of most recent ER training for your facility's employees	11/09/2011
9.7 Local agency with which your facility's ER plan or response activities are coordinated	
9.7.a. Name of agency	LOCKPORT FIRE DEPARTMENT
9.7.b. Phone number	(716) 439-6611
9.8 Subject to	
9.8.a. OSHA Regulations at 29 CFR 1910.38	Y
9.8.b. OSHA Regulations at 29 CFR 1910.120	Y
9.8.c. Clean Water Act Regulations at 40 CFR 112	Y
9.8.d. RCRA Regulations at 40 CFR 264, 265, 279.52	Y
9.8.e. OPA-90 Regulations at 40 CFR 112, 33 CFR 154, 49 CFR 194, 30 CFR 254	
9.8.f. State EPCRA Rules of Laws	
9.8.g. Other	

Executive Summary

VANDEMARK CHEMICAL INC. PRODUCES PHOSGENE AND PHOSGENE DERIVATIVES. THE FACILITY IS AN RMP FACILITY DUE TO THE PRESENCE AND QUANTITY OF TWO REGULATED SUBSTANCES, PHOSGENE AND CHLORINE. VANDEMARK CHEMICAL INC. IS COMMITTED TO RESPONSIBLE CARE, AND HAS ENVIRONMENTAL HEALTH AND SAFETY PROGRAMS IN PLACE TO MEET THOSE REQUIREMENTS. THESE PROGRAMS INCLUDE A PROGRAM TO MINIMIZE THE POTENTIAL FOR ACCIDENTAL RELEASES AND FOR RESPONDING TO EMERGENCIES WHEN THEY OCCUR. THESE PROGRAMS ARE COORDINATED WITH THE LOCAL EMERGENCY RESPONSE AGENCIES IN LOCKPORT AND NIAGARA COUNTY. VANDEMARK CHEMICAL INC. HAS NOT HAD ANY ACCIDENTS INVOLVING REGULATED SUBSTANCES THAT WERE COVERED UNDER THIS RULE IN THE LAST 5 YEARS. THE LAST REPORTABLE ACCIDENT OCCURRED IN 1998, A CHLORINE RELEASE. SECURITY MEASURES HAVE BEEN IMPLEMENTED TO MEET THE REQUIREMENTS OF THE RESPONSIBLE CARE SECURITY CODE AND MINIMIZE THREAT POTENTIALS. VANDEMARK CHEMICAL INC. IS CONTINUOUSLY EVALUATING PROGRAMS AND PROJECTS TO IMPROVE SAFETY AND REDUCE THE RISK OF AN ACCIDENTAL RELEASE/EXPOSURE, FIRE OR ENVIRONMENTAL IMPACT.

2012 AN ADDITIONAL $25,000 HAS BEEN INVESTED IN SECURITY UPGRADES IDENTIFED DURING INTERNAL AUDITS. 2010 - 2011 WE INVESTED OVER $60,000 IN EMERGENCY UPGRADES TO INCLUDE BACK-UP POWER ENHANCEMENTS AND ALTERNATE POWER SOURCES FOR OUR SCRUBBER SYSTEM. WE ALSO ESTABLISHED A SECONDARY LOCATION FOR EMERGENCY RESPONSE EQUIPMENT WITHIN OUR FACILITY TO ENSURE WE HAVE TWO LOCATIONS EQUIPPED WITH ESSENTIAL RESPONSE GEAR IN THE EVENT OF AN EMERGENCY.

WE HAVE CONTRACTED A THIRD PARTY PSM AUDITOR TO PERFORM AN AUDIT OF OUR PSM PROGRAM FOR THE APRIL 2012 TIMEFRAME.

Tier 2 Online Submission Report

Reporting period : From January 11 to December 31, 2011

Facility Name	VanDeMark Chemical Inc.	**Facility ID**	2910306
Company Name	VanDeMark Chemical Inc.	**Facility Email**	
Department Name		**Facility Note**	
Physical Address	1 N. Transit , Lockport, Niagara county , NY - 14094 , USA	**Latitude / Longitude**	43.168857 / -78.696554
Mail Address	1 N. Transit , Lockport , NY - 14094	**Method of Determination**	
NAICS	325199 - All Other Basic Organic Chemical Manufacturing	**Location Description**	
Dun & Bradstreet			

Contact Information	Name	Phone	Email	Mail address
Emergency Contact	Chris Banach	716-433-6764 (24-hour)	c.banach@vdmchemical.com	1 North Transit, Lockport, COUNTY, NY - 14094, USA
Owner / Operator	Paul Ameis	716-433-6764 (24-hour)	p.ameis@snpe.com	1 North Transit, Lockport, , NY - 14094, USA

Chemical Inventory Information

Chemical Description	Physical & Health Hazards	Inventory	Mixture components	Storage locations and codes (Non- Confidential)
CAS 94995 Trade Secret [ ] Chem. Name 2,4-dichlorobenzyl chloride Pure [X] Mixture [ ] Solid [ ] Liquid [X] Gas [ ] EHS [ ] **State Specific Information** No State specific information	Fire [ ] Pressure [ ] Reactive [ ] Acute [X] Chronic []	44,000 Max. Daily Amount 1,000 Avg. Daily Amount 365 No. of Days On-site		1) E-1: Type D, Pressure 1, Temperature 4 2) UN1760, ERG#154: Type D, Pressure 1, Temperature 4
CAS 57683713 Trade Secret [ ] Chem. Name 2-(carbomethoxy)benzenesulfonamide Pure [X] Mixture [ ] Solid [X] Liquid [ ] Gas [ ] EHS [ ] **State Specific Information** No State specific information	Fire [ ] Pressure [ ] Reactive [ ] Acute [X] Chronic []	108,000 Max. Daily Amount 3,000 Avg. Daily Amount 240 No. of Days On-site		1) E-1,C-1: Type K, Pressure 1, Temperature 4 2) Non-regulated: Type K, Pressure 1, Temperature 4

Tier 2 Online Submission Report

Reporting period : From January 1, 2011 to December 31, 2011

Chemical Description	Physical & Health Hazards	Inventory	Mixture components	Storage locations and codes (Non- Confidential)
CAS 74222950 Trade Secret [ ] Chem. Name 2-CMBSI 40% in xylene Pure [ ] Mixture [X] Solid [ ] Liquid [X] Gas [ ] EHS [ ] **State Specific Information** No State specific information	Fire [X] Pressure [ ] Reactive [X] Acute [X] Chronic [X]	60,000 Max. Daily Amount 600 Avg. Daily Amount 330 No. of Days On-site	Chemical Name-2-carbomethoxybenzenesulfonyl isocyanate (CAS 74222-95-0) Percentage-40.0 Unit-Wt Chemical Name-XYLENE (CAS 1330-20-7) Percentage-60.0 Unit-Wt	1) DK-4: Type A, Pressure 1, Temperature 5 2) UN2478 ERG#155: Type A, Pressure 1, Temperature 5 3) Parking lot: Type P, Pressure 1, Temperature 4
CAS 461825 Trade Secret [ ] Chem. Name 4-(trifluoromethoxy)analine Pure [X] Mixture [ ] Solid [ ] Liquid [X] Gas [ ] EHS [ ] **State Specific Information** No State specific information	Fire [X] Pressure [ ] Reactive [ ] Acute [X] Chronic [X]	180,000 Max. Daily Amount 3,000 Avg. Daily Amount 330 No. of Days On-site		1) DK-10 unloading pad: Type P, Pressure 1, Temperature 4 2) UN2810 ERG#153: Type R, Pressure 1, Temperature 4
CAS 35037731 Trade Secret [ ] Chem. Name 4-triflurormethoxyphenyl isocyanate Pure [X] Mixture [ ] Solid [ ] Liquid [X] Gas [ ] EHS [ ] **State Specific Information** No State specific information	Fire [X] Pressure [ ] Reactive [X] Acute [X] Chronic [X]	35,000 Max. Daily Amount 700 Avg. Daily Amount 60 No. of Days On-site		1) E-1: Type D, Pressure 1, Temperature 4 2) UN3382 ERG#151: Type R, Pressure 1, Temperature 4
CAS 5331431 Trade Secret [ ] Chem. Name 40% Benzyl Carbazate in Toluene Pure [ ] Mixture [X] Solid [ ] Liquid [X] Gas [ ] EHS [ ] **State Specific Information** No State specific information	Fire [X] Pressure [ ] Reactive [ ] Acute [X] Chronic [X]	27,000 Max. Daily Amount 700 Avg. Daily Amount 120 No. of Days On-site	Chemical Name-Benzyl Carbazate (CAS 5331-43-1) Percentage-40.0 Unit-Wt Chemical Name-TOLUENE (CAS 108-88-3) Percentage-60.0	1) UN1993 ERG #128: Type A, Pressure 1, Temperature 4 2) DK-4 storage tank area: Type A, Pressure 1, Temperature 4

VDM02326

Tier 2 Online Submission Report

Reporting period : From January 1, 2011 to December 31, 2011

Chemical Description	Physical & Health Hazards	Inventory	Mixture components	Storage locations and codes (Non- Confidential)
			Unit-Wt	
CAS 63225536 Trade Secret [ ] Chem. Name Acticryl CL-1039 (2-propenoic acid, 2-[[(butylamino)carbonyl]oxy]ethyl ester Pure [X] Mixture [ ] Solid [ ] Liquid [X] Gas [ ] EHS [ ] **State Specific Information** No State specific information	Fire [X] Pressure [ ] Reactive [ ] Acute [X] Chronic []	11,000 Max. Daily Amount 200 Avg. Daily Amount 365 No. of Days On-site		1) E-1: Type D, Pressure 1, Temperature 4 2) Non regulated: Type D, Pressure 1, Temperature 4
CAS 3724434 Trade Secret [ ] Chem. Name Amide chloride/ vilsmeier reagent Pure [ ] Mixture [X] Solid [X] Liquid [ ] Gas [ ] EHS [ ] **State Specific Information** No State specific information	Fire [ ] Pressure [ ] Reactive [X] Acute [X] Chronic [X]	54,000 Max. Daily Amount 800 Avg. Daily Amount 365 No. of Days On-site	Chemical Name-DDimethylchloroformiminium chloride (CAS 3724-43-4) Percentage-95.0 Unit-Wt Chemical Name-DIMETHYL FORMAMIDE (CAS 68-12-2) Percentage-5.0 Unit-Wt	1) E-1: Type E, Pressure 1, Temperature 6 2) UN 2923 ERG#154: Type E, Pressure 1, Temperature 6
CAS 100516 Trade Secret [ ] Chem. Name BENZYL ALCOHOL Pure [X] Mixture [ ] Solid [ ] Liquid [X] Gas [ ] EHS [ ] **State Specific Information** No State specific information	Fire [X] Pressure [ ] Reactive [ ] Acute [X] Chronic [X]	110,000 Max. Daily Amount 3,000 Avg. Daily Amount 365 No. of Days On-site		1) DK-4: Type A, Pressure 1, Temperature 4 2) Non DOT Regulated: Type a, Pressure 1, Temperature 4 3) E-1: Type E, Pressure 1, Temperature 4
CAS 501531 Trade Secret [ ] Chem. Name BENZYL CHLOROFORMATE Pure [X] Mixture [ ] Solid [ ] Liquid [X] Gas [ ] EHS [ ]	Fire [X] Pressure [ ] Reactive [X] Acute [X]	149,000 Max. Daily Amount 3,000 Avg. Daily Amount 365 No. of Days On-site		1) Trailers behind E-1: Type E, Pressure 1, Temperature 6 2) DK-10: Type A, Pressure 1, Temperature 6

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Tier 2 Online Submission Report

Reporting period : From January 1, 2011 to December 31, 2011

Chemical Description	Physical & Health Hazards	Inventory	Mixture components	Storage locations and codes (Non- Confidential)
State Specific Information No State specific information	Chronic [X]			**3)** UN 1739 ERG #137: Type E, Pressure 1, Temperature 6
CAS 630080 Trade Secret [ ] Chem. Name Carbon Monoxide Pure [X] Mixture [ ] Solid [ ] Liquid [ ] Gas [X] EHS [ ] **State Specific Information** No State specific information	Fire [X] Pressure [X] Reactive [ ] Acute [X] Chronic []	38,000 Max. Daily Amount 750 Avg. Daily Amount 365 No. of Days On-site		**1)** B-1 (WEST of): Type R, Pressure 2, Temperature 4 **2)** UN9202 ERG #168: Type R, Pressure 1, Temperature 4 **3)** B-9: Type R, Pressure 2, Temperature 6
CAS 1310732 Trade Secret [ ] Chem. Name CAUSTIC SODA Pure [ ] Mixture [X] Solid [ ] Liquid [X] Gas [ ] EHS [ ] **State Specific Information** No State specific information	Fire [ ] Pressure [ ] Reactive [X] Acute [X] Chronic []	62,000 Max. Daily Amount 1,100 Avg. Daily Amount 365 No. of Days On-site	Chemical Name-SODIUM HYDROXIDE (CAS 1310-73-2) Percentage-50.0 Unit-Wt	**1)** UN1824 ERG#154: Type E, Pressure 1, Temperature 4 **2)** DK-3, DK-10: Type A, Pressure 1, Temperature 5 **3)** E-1, C-1: Type E, Pressure 1, Temperature 4
CAS 7782505 Trade Secret [ ] Chem. Name CHLORINE Pure [X] Mixture [ ] Solid [ ] Liquid [ ] Gas [X] EHS [X] **State Specific Information** No State specific information	Fire [X] Pressure [X] Reactive [X] Acute [X] Chronic [X]	484,000 Max. Daily Amount 7,800 Avg. Daily Amount 365 No. of Days On-site		**1)** UN1017 ERG #124: Type L, Pressure 2, Temperature 4 **2)** D-7: Type L, Pressure 2, Temperature 4 **3)** Rail yard: Type Q, Pressure 1, Temperature 4
CAS 67663 Trade Secret [ ] Chem. Name CHLOROFORM Pure [X] Mixture [ ] Solid [ ] Liquid [X] Gas [ ] EHS [X] **State Specific Information** No State specific information	Fire [ ] Pressure [ ] Reactive [ ] Acute [X] Chronic [X]	11,000 Max. Daily Amount 200 Avg. Daily Amount 365 No. of Days On-site		**1)** DK-4: Type A, Pressure 1, Temperature 4 **2)** UN1888 ERG #151: Type D, Pressure 1, Temperature 4 **3)** E-1, D-7: Type D, Pressure 1, Temperature 4

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Tier 2 Online Submission Report

Reporting period : From January 11 to December 31, 2011

Chemical Description	Physical & Health Hazards	Inventory	Mixture components	Storage locations and codes (Non- Confidential)
CAS 68955566 Trade Secret [ ] Chem. Name DDA (AMINES, C-36 ALKYLENEDI - (hYDROGENATED) Pure [X] Mixture [ ] Solid [ ] Liquid [X] Gas [ ] EHS [ ] **State Specific Information** No State specific information	Fire [X] Pressure [ ] Reactive [X] Acute [X] Chronic []	51,000 Max. Daily Amount 2,000 Avg. Daily Amount 30 No. of Days On-site		**1)** DK-10 AREA: Type P, Pressure 1, Temperature 4 **2)** NON DOT REGULATED: Type P, Pressure 1, Temperature 4
CAS 2449050 Trade Secret [ ] Chem. Name Dibenzylazodicarboxylate Pure [X] Mixture [ ] Solid [X] Liquid [ ] Gas [ ] EHS [ ] **State Specific Information** No State specific information	Fire [X] Pressure [ ] Reactive [ ] Acute [X] Chronic []	43,000 Max. Daily Amount 800 Avg. Daily Amount 365 No. of Days On-site		**1)** Non-regulated: Type I, Pressure 1, Temperature 6 **2)** E-1: Type I, Pressure 1, Temperature 6
CAS 00000 Trade Secret [ ] Chem. Name DIDCC (Diethyliminodiacetate carbomoyl chloride) Pure [ ] Mixture [X] Solid [X] Liquid [X] Gas [ ] EHS [ ] **State Specific Information** No State specific information	Fire [X] Pressure [ ] Reactive [X] Acute [X] Chronic [X]	12,000 Max. Daily Amount 400 Avg. Daily Amount 240 No. of Days On-site	Chemical Name-Diethyliminodiacetate carbamoyl chloride (CAS Propietary) Percentage-95.0 Unit-Weight Chemical Name-toluene (CAS 108-88-3) Percentage-5.0 Unit-Weight	**1)** E-2: Type D, Pressure 1, Temperature 4 **2)** UN3129, ERG#138: Type D, Pressure 1, Temperature 4
CAS 109897 Trade Secret [ ] Chem. Name DIETHYLAMINE Pure [X] Mixture [ ] Solid [ ] Liquid [X] Gas [ ] EHS [ ] **State Specific Information**	Fire [X] Pressure [ ] Reactive [ ] Acute [X] Chronic [X]	50,000 Max. Daily Amount 1,600 Avg. Daily Amount 365 No. of Days On-site		**1)** DK-10 / DK-12 Area: Type P, Pressure 1, Temperature 4 **2)** UN1154 ERG#132: Type A, Pressure 1, Temperature 4 **3)** DK-4: Type A, Pressure 1, Temperature 4

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Tier 2 Online Submission Report

Reporting period : From January 1, 2011 to December 31, 2011

Chemical Description	Physical & Health Hazards	Inventory	Mixture components	Storage locations and codes (Non- Confidential)
No State specific information				
CAS 68239065 Trade Secret [ ] Chem. Name Dimeryl diisocyanate Pure [X] Mixture [ ] Solid [ ] Liquid [X] Gas [ ] EHS [ ] **State Specific Information** No State specific information	Fire [ ] Pressure [ ] Reactive [ ] Acute [X] Chronic [X]	13,000 Max. Daily Amount 500 Avg. Daily Amount 30 No. of Days On-site		1) E-1, D-7: Type D, Pressure 1, Temperature 4 2) NON DOT REGULATED: Type D, Pressure 1, Temperature 4
CAS 68122 Trade Secret [ ] Chem. Name DIMETHYL FORMAMIDE Pure [X] Mixture [ ] Solid [ ] Liquid [X] Gas [ ] EHS [ ] **State Specific Information** No State specific information	Fire [X] Pressure [ ] Reactive [ ] Acute [X] Chronic [X]	34,000 Max. Daily Amount 700 Avg. Daily Amount 365 No. of Days On-site		1) ST-7 in DK-10: Type A, Pressure 1, Temperature 4 2) E-2: Type E, Pressure 1, Temperature 4 3) UN2265 ERG #129: Type E, Pressure 1, Temperature 4
CAS 1742149 Trade Secret [ ] Chem. Name DXE (1,1-ETHYLEDENEBIS (3,4-DIMETHYL-BENZENE) Pure [X] Mixture [ ] Solid [ ] Liquid [X] Gas [ ] EHS [ ] **State Specific Information** No State specific information	Fire [ ] Pressure [ ] Reactive [ ] Acute [X] Chronic []	11,000 Max. Daily Amount 300 Avg. Daily Amount 365 No. of Days On-site		1) E-1: Type D, Pressure 1, Temperature 4 2) A-10: Type F, Pressure 1, Temperature 4 3) NON DOT REGULATED: Type D, Pressure 1, Temperature 4
CAS 541413 Trade Secret [ ] Chem. Name Ethyl chloroformate Pure [X] Mixture [ ] Solid [ ] Liquid [X] Gas [ ] EHS [ ] **State Specific Information** No State specific information	Fire [X] Pressure [ ] Reactive [X] Acute [X] Chronic [X]	59,000 Max. Daily Amount 400 Avg. Daily Amount 300 No. of Days On-site		1) E-2: Type E, Pressure 1, Temperature 4 2) UN1182, ERG#155: Type E, Pressure 1, Temperature 4
CAS 0000 [illegible] Secret [ ]	Fire [X]	15,000 Max. Daily Am[illegible]		1) ST-106: Type A, Pressure 1, Tempe[illegible]re 4

VDM02330

Tier 2 Online Submission Report

Reporting period : From January 11 to December 31, 2011

Chemical Description	Physical & Health Hazards	Inventory	Mixture components	Storage locations and codes (Non- Confidential)
Chem. Name Fuel Oil #2 Pure [X] Mixture [ ] Solid [ ] Liquid [X] Gas [ ] EHS [ ] **State Specific Information** No State specific information	Pressure [ ] Reactive [ ] Acute [X] Chronic []	500 Avg. Daily Amount 365 No. of Days On-site		2) ST-118: Type A, Pressure 1, Temperature 4 3) UN1993 ERG#128: Type R, Pressure 1, Temperature 4 4) ST-103: Type A, Pressure 1, Temperature 4
CAS 69082764 Trade Secret [ ] Chem. Name HEGCL Solution Pure [ ] Mixture [X] Solid [ ] Liquid [X] Gas [ ] EHS [ ] **State Specific Information** No State specific information	Fire [X] Pressure [ ] Reactive [ ] Acute [X] Chronic [X]	78,000 Max. Daily Amount 1,000 Avg. Daily Amount 365 No. of Days On-site	Chemical Name-hexaethyl guanidinium chloride (CAS 690820-76-4) Percentage-35.0 Unit-Weight	1) DK-4, DK-12: Type A, Pressure 1, Temperature 4 2) E-1: Type O, Pressure 1, Temperature 4 3) E-1, C-1: Type E, Pressure 1, Temperature 4 4) Non -DOT regulated materials: Type R, Pressure 1, Temperature 4
CAS 426260766 Trade Secret [ ] Chem. Name Heptane, Branched, Cyclic and Linear Pure [X] Mixture [ ] Solid [ ] Liquid [X] Gas [ ] EHS [ ] **State Specific Information** No State specific information	Fire [X] Pressure [ ] Reactive [ ] Acute [X] Chronic [X]	69,000 Max. Daily Amount 3,000 Avg. Daily Amount 365 No. of Days On-site		1) E-2: Type D, Pressure 1, Temperature 4 2) E-2: Type E, Pressure 1, Temperature 4 3) UN 1206 ERG#128: Type E, Pressure 1, Temperature 4 4) DK-4 DK-10: Type A, Pressure 1, Temperature 4
CAS 302012 Trade Secret [ ] Chem. Name HYDRAZINE, AQUEOUS SOLUTIONS, WITH MORE THAN 64% HYDRAZINE Pure [ ] Mixture [X] Solid [ ] Liquid [X] Gas [ ] EHS [X] **State Specific Information** No State specific information	Fire [X] Pressure [ ] Reactive [X] Acute [X] Chronic [X]	641,000 Max. Daily Amount 34,000 Avg. Daily Amount 240 No. of Days On-site	Chemical Name-HYDRAZINE (CAS 302-01-2) Percentage-64.0 Unit-Wt	1) DK-4 ST-26A (Waste Tank): Type A, Pressure 1, Temperature 4 2) Un2030 ERG#153: Type P, Pressure 1, Temperature 4 3) E-2, D-7: Type O, Pressure 1, Temperature 4 4) Behind E-1: Type P, Pressure 1, Temperature 4 5) DK-10/DK-12 Area: Type P, Pressure 1, Temperature 4
CAS 7647010 Trade Secret [ ] Chem. Name hydrochloric acid 32% Pure [ ] Mixture [X] Solid [ ] Liquid [X] Gas [ ]	Fire [ ] Pressure [ ] Reactive [X]	110,000 Max. Daily Amount 3,000 Avg. Daily Amount 365 No. of Days On-site		1) DK-5: Type A, Pressure 1, Temperature 4 2) UN1789 ERG#157: Type Q, Pressure 1, Temperature 4

VDM02331

Tier 2 Online Submission Report

Reporting period : From January 1, 2011 to December 31, 2011

Chemical Description	Physical & Health Hazards	Inventory	Mixture components	Storage locations and codes (Non- Confidential)
EHS [ ] **State Specific Information** No State specific information	Acute [X] Chronic [X]			
CAS 67630 Trade Secret [ ] Chem. Name Isopropyl alcohol Pure [X] Mixture [ ] Solid [ ] Liquid [X] Gas [ ] EHS [ ] **State Specific Information** No State specific information	Fire [X] Pressure [ ] Reactive [ ] Acute [X] Chronic [X]	33,000 Max. Daily Amount 900 Avg. Daily Amount 60 No. of Days On-site		1) E-2: Type D, Pressure 1, Temperature 4 2) E-2: Type O, Pressure 1, Temperature 4 3) UN1219, ERG#129: Type O, Pressure 1, Temperature 4
CAS 63912 Trade Secret [ ] Chem. Name L-PHENYLALANINE Pure [X] Mixture [ ] Solid [X] Liquid [ ] Gas [ ] EHS [ ] **State Specific Information** No State specific information	Fire [ ] Pressure [ ] Reactive [ ] Acute [X] Chronic [X]	16,000 Max. Daily Amount 200 Avg. Daily Amount 180 No. of Days On-site		1) A-10: Type R, Pressure 1, Temperature 4 2) E-1: Type I, Pressure 1, Temperature 4 3) NON DOT REGULATED: Type R, Pressure 1, Temperature 4
CAS 67561 Trade Secret [ ] Chem. Name Methanol Pure [X] Mixture [ ] Solid [ ] Liquid [X] Gas [ ] EHS [ ] **State Specific Information** No State specific information	Fire [X] Pressure [ ] Reactive [ ] Acute [X] Chronic [X]	36,000 Max. Daily Amount 700 Avg. Daily Amount 365 No. of Days On-site		1) E-2: Type D, Pressure 1, Temperature 4 2) UN1230 ERG#131: Type R, Pressure 1, Temperature 4
CAS 79221 Trade Secret [ ] Chem. Name METHYL CHLOROFORMATE Pure [X] Mixture [ ] Solid [ ] Liquid [X] Gas [ ] EHS [X] **State Specific Information**	Fire [X] Pressure [X] Reactive [X] Acute [X] Chronic [X]	16,000 Max. Daily Amount 200 Avg. Daily Amount 365 No. of Days On-site		1) UN1238 ERG#155: Type R, Pressure 1, Temperature 4 2) Rfer trailer behind E-1: Type D, Pressure 1, Temperature 6

VDM02332

Tier 2 Online Submission Report

Reporting period : From January 1, 2011 to December 31, 2011

Chemical Description	Physical & Health Hazards	Inventory	Mixture components	Storage locations and codes (Non- Confidential)
No State specific information				
CAS 51850954 Trade Secret [ ] Chem. Name N,N-(2,4-dichlorobenzyl)hydroxylamine Pure [X] Mixture [ ] Solid [X] Liquid [ ] Gas [ ] EHS [ ] **State Specific Information** No State specific information	Fire [ ] Pressure [ ] Reactive [ ] Acute [X] Chronic []	33,000 Max. Daily Amount 700 Avg. Daily Amount 270 No. of Days On-site		1) E-1: Type I, Pressure 1, Temperature 4 2) Non-DOT regulated: Type I, Pressure 1, Temperature 4
CAS 109739 Trade Secret [ ] Chem. Name n-butyl amine Pure [X] Mixture [ ] Solid [ ] Liquid [X] Gas [ ] EHS [ ] **State Specific Information** No State specific information	Fire [X] Pressure [ ] Reactive [ ] Acute [X] Chronic [X]	53,000 Max. Daily Amount 600 Avg. Daily Amount 365 No. of Days On-site		1) DK-10: Type P, Pressure 1, Temperature 4 2) E-2: Type D, Pressure 1, Temperature 4 3) UN1125 ERG#132: Type R, Pressure 1, Temperature 4
CAS 111364 Trade Secret [ ] Chem. Name N-BUTYL ISOCYANATE Pure [X] Mixture [ ] Solid [ ] Liquid [X] Gas [ ] EHS [ ] **State Specific Information** No State specific information	Fire [X] Pressure [ ] Reactive [X] Acute [X] Chronic [X]	19,000 Max. Daily Amount 400 Avg. Daily Amount 365 No. of Days On-site		1) ST-3/DK-7: Type A, Pressure 1, Temperature 4 2) UN2485 ERG#155: Type R, Pressure 1, Temperature 4 3) D-7: Type D, Pressure 1, Temperature 4 4) C-1A: Type E, Pressure 1, Temperature 4 5) E-2: Type D, Pressure 1, Temperature 4
CAS 638415 Trade Secret [ ] Chem. Name Pentyl Chloroformate Pure [X] Mixture [ ] Solid [ ] Liquid [X] Gas [ ] EHS [ ] **State Specific Information** No State specific information	Fire [X] Pressure [ ] Reactive [X] Acute [X] Chronic []	83,000 Max. Daily Amount 2,000 Avg. Daily Amount 365 No. of Days On-site		1) E-2: Type E, Pressure 1, Temperature 4 2) UN2742, ERG#155: Type E, Pressure 1, Temperature 4
CAS 1885149 Trade Secret [ ] Chem. Name PHENYL CHLOROFORMATE	Fire [X] Pressure [ ]	64,000 Max. Daily Amount 2,000 Avg. Daily Amount		1) UN2746 ERG#156: Type R, Pressure 1, Temperature 4

Tier 2 Online Submission Report

Reporting period : From January 1, 2011 to December 31, 2011

Chemical Description	Physical & Health Hazards	Inventory	Mixture components	Storage locations and codes (Non- Confidential)
Pure [X] Mixture [ ] Solid [ ] Liquid [X] Gas [ ] EHS [ ] **State Specific Information** No State specific information	Reactive [X] Acute [X] Chronic [X]	365 No. of Days On-site		**2)** E-2: Type E, Pressure 1, Temperature 4 **3)** ST-2/DK-10: Type A, Pressure 1, Temperature 4
CAS 75445 Trade Secret [ ] Chem. Name PHOSGENE Pure [X] Mixture [ ] Solid [ ] Liquid [X] Gas [ ] EHS [X] **State Specific Information** No State specific information	Fire [ ] Pressure [X] Reactive [X] Acute [X] Chronic []	233,000 Max. Daily Amount 7,000 Avg. Daily Amount 365 No. of Days On-site		**1)** A-10: Type L, Pressure 2, Temperature 4 **2)** B-5: Type L, Pressure 2, Temperature 4 **3)** D-1B: Type L, Pressure 2, Temperature 4 **4)** B-6C: Type L, Pressure 2, Temperature 4 **5)** D-3A: Type L, Pressure 2, Temperature 4 **6)** B-9: Type R, Pressure 2, Temperature 5 **7)** North of C-10: Type L, Pressure 2, Temperature 4 **8)** D-1A: Type L, Pressure 2, Temperature 4 **9)** UN1076 ERG #125: Type R, Pressure 1, Temperature 4 **10)** A-5: Type L, Pressure 2, Temperature 4 **11)** B-5B: Type R, Pressure 2, Temperature 5 **12)** B-10: Type L, Pressure 2, Temperature 4
CAS 76114733 Trade Secret [ ] Chem. Name PNBC (Propargyl-n-butylcarbamate) Pure [X] Mixture [ ] Solid [ ] Liquid [X] Gas [ ] EHS [ ] **State Specific Information** No State specific information	Fire [X] Pressure [ ] Reactive [X] Acute [X] Chronic [X]	139,000 Max. Daily Amount 2,000 Avg. Daily Amount 300 No. of Days On-site		**1)** ST-2: Type A, Pressure 1, Temperature 4 **2)** UN2810 ERG#153: Type R, Pressure 1, Temperature 4 **3)** ST-26: Type R, Pressure 1, Temperature 4
CAS 584087 Trade Secret [ ] Chem. Name Potassium carbonate Pure [X] Mixture [ ] Solid [X] Liquid [ ] Gas [ ] EHS [ ] **State Specific Information**	Fire [ ] Pressure [ ] Reactive [X] Acute [X] Chronic []	15,000 Max. Daily Amount 400 Avg. Daily Amount 365 No. of Days On-site		**1)** E-1, C-1: Type J, Pressure 1, Temperature 4 **2)** Non-regulated: Type J, Pressure 1, Temperature 4

VDM02334

Tier 2 Online Submission Report

Reporting period : From January 11 to December 31, 2011

Chemical Description	Physical & Health Hazards	Inventory	Mixture components	Storage locations and codes (Non- Confidential)
No State specific information				
CAS 107197 Trade Secret [ ] Chem. Name PROPARGYL ALCOHOL Pure [X] Mixture [ ] Solid [ ] Liquid [X] Gas [ ] EHS [ ] **State Specific Information** No State specific information	Fire [X] Pressure [ ] Reactive [ ] Acute [X] Chronic [X]	52,000 Max. Daily Amount 1,200 Avg. Daily Amount 365 No. of Days On-site		1) E-2: Type E, Pressure 1, Temperature 4 2) ST-27: Type A, Pressure 1, Temperature 4 3) E-2: Type D, Pressure 1, Temperature 4 4) UN1986 ERG#131: Type R, Pressure 1, Temperature 4
CAS 35718082 Trade Secret [ ] Chem. Name Propargyl chloroformate Pure [X] Mixture [ ] Solid [ ] Liquid [X] Gas [ ] EHS [ ] **State Specific Information** No State specific information	Fire [X] Pressure [ ] Reactive [X] Acute [X] Chronic []	81,000 Max. Daily Amount 1,700 Avg. Daily Amount 120 No. of Days On-site		1) D-7, DK-10: Type C, Pressure 1, Temperature 4 2) UN2742 ERG #155: Type C, Pressure 1, Temperature 4
CAS 70553 Trade Secret [ ] Chem. Name PTSA (p-toluene sulfamide) Pure [X] Mixture [ ] Solid [X] Liquid [ ] Gas [ ] EHS [ ] **State Specific Information** No State specific information	Fire [ ] Pressure [ ] Reactive [ ] Acute [X] Chronic [X]	733,000 Max. Daily Amount 11,000 Avg. Daily Amount 365 No. of Days On-site		1) C-1A: Type J, Pressure 1, Temperature 4 2) Non DOT Regulated: Type R, Pressure 1, Temperature 4 3) E-1: Type J, Pressure 1, Temperature 4
CAS 4083641 Trade Secret [ ] Chem. Name PTSI (p-toluenesolfonyl isocyanate) Pure [X] Mixture [ ] Solid [ ] Liquid [X] Gas [ ] EHS [ ] **State Specific Information** No State specific information	Fire [X] Pressure [ ] Reactive [X] Acute [X] Chronic [X]	261,000 Max. Daily Amount 4,400 Avg. Daily Amount 365 No. of Days On-site		1) ST-32/Dk12: Type A, Pressure 1, Temperature 4 2) C-1 Staging: Type D, Pressure 1, Temperature 4 3) E-1: Type F, Pressure 1, Temperature 4 4) Non DOT Regulated: Type R, Pressure 1, Temperature 4 5) C-1 Staging: Type F, Pressure 1, Temperature 4 6) E-1: Type D, Pressure 1, Temperature 4
CAS 78922 Trade Secret [ ] Chem. Name S-BUTYL ALCOHOL	Fire [X] Pressure [ ]	23,000 Max. Daily Amount 500 Avg. Daily Amount		1) E-2: Type D, Pressure 1, Temperature 4

VDM02335

Tier 2 Online Submission Report

Reporting period : From January 1, 2011 to December 31, 2011

Chemical Description	Physical & Health Hazards	Inventory	Mixture components	Storage locations and codes (Non- Confidential)
Pure [X] Mixture [ ] Solid [ ] Liquid [X] Gas [ ] EHS [ ] **State Specific Information** No State specific information	Reactive [ ] Acute [X] Chronic [X]	365 No. of Days On-site		2) UN1120 ERG#129: Type D, Pressure 1, Temperature 4
CAS 119515387 Trade Secret [ ] Chem. Name Saltidin (Icaridin) Pure [X] Mixture [ ] Solid [ ] Liquid [X] Gas [ ] EHS [ ] **State Specific Information** No State specific information	Fire [X] Pressure [ ] Reactive [ ] Acute [X] Chronic [X]	40,000 Max. Daily Amount 1,400 Avg. Daily Amount 30 No. of Days On-site		1) Non DOT Regulated: Type D, Pressure 1, Temperature 4 2) E-1: Type D, Pressure 1, Temperature 4
CAS 17462587 Trade Secret [ ] Chem. Name SEC-BUTYL CHLOROFORMATE Pure [X] Mixture [ ] Solid [ ] Liquid [X] Gas [ ] EHS [ ] **State Specific Information** No State specific information	Fire [X] Pressure [ ] Reactive [X] Acute [X] Chronic [X]	40,000 Max. Daily Amount 400 Avg. Daily Amount 360 No. of Days On-site		1) Trailers behind E-1: Type E, Pressure 1, Temperature 6 2) NA2742 ERG #155: Type A, Pressure 1, Temperature 6 3) DK-10: Type A, Pressure 1, Temperature 6
CAS 7631905 Trade Secret [ ] Chem. Name SODIM BISULFITE SOLUTION Pure [ ] Mixture [X] Solid [ ] Liquid [X] Gas [ ] EHS [ ] **State Specific Information** No State specific information	Fire [ ] Pressure [ ] Reactive [X] Acute [X] Chronic []	12,000 Max. Daily Amount 200 Avg. Daily Amount 365 No. of Days On-site	Chemical Name-SODIUM BISULFITE (CAS 7631-90-5) Percentage-40.0 Unit-Wt	1) E-1, C-1: Type E, Pressure 1, Temperature 4 2) UN2693 ERG# 154: Type E, Pressure 1, Temperature 4
CAS 497198 Trade Secret [ ] Chem. Name Sodium Carbonate Pure [X] Mixture [ ] Solid [X] Liquid [ ] Gas [ ] EHS [ ]	Fire [ ] Pressure [ ] Reactive [ ] Acute [X] Chronic []	12,000 Max. Daily Amount 200 Avg. Daily Amount 330 No. of Days On-site		1) E-1, C-1: Type J, Pressure 1, Temperature 4 2) NON DOT REGULATED: Type J, Pressure 1, Temperature 4

VDM02336

Tier 2 Online Submission Report

Reporting period : From January 11 to December 31, 2011

Chemical Description	Physical & Health Hazards	Inventory	Mixture components	Storage locations and codes (Non- Confidential)
State Specific Information No State specific information				
CAS 7681529 Trade Secret [ ] Chem. Name Sodium hypochlorite solution Pure [ ] Mixture [X] Solid [ ] Liquid [X] Gas [ ] EHS [ ] **State Specific Information** No State specific information	Fire [ ] Pressure [ ] Reactive [ ] Acute [X] Chronic []	22,000 Max. Daily Amount 750 Avg. Daily Amount 365 No. of Days On-site	Chemical Name-Sodium hypochlorite (CAS 7681-52-9) Percentage-12.5 Unit-Weight	1) E-1, C-1: Type E, Pressure 1, Temperature 4 2) E-1, C-1: Type Q, Pressure 1, Temperature 4 3) UN1791, ERG#154: Type Q, Pressure 1, Temperature 4
CAS 7664939 Trade Secret [ ] Chem. Name Sulfuric Acid 20% Pure [ ] Mixture [X] Solid [ ] Liquid [X] Gas [ ] EHS [X] **State Specific Information** No State specific information	Fire [ ] Pressure [ ] Reactive [ ] Acute [X] Chronic []	9,500 Max. Daily Amount 320 Avg. Daily Amount 330 No. of Days On-site		1) E-1: Type E, Pressure 1, Temperature 4 2) UN 2796 ERG#157: Type E, Pressure 1, Temperature 4
CAS 1187037 Trade Secret [ ] Chem. Name Tetraethyl urea Pure [X] Mixture [ ] Solid [ ] Liquid [X] Gas [ ] EHS [ ] **State Specific Information** No State specific information	Fire [ ] Pressure [ ] Reactive [ ] Acute [X] Chronic []	63,000 Max. Daily Amount 1,400 Avg. Daily Amount 60 No. of Days On-site		1) UN2810 ERG #153: Type R, Pressure 1, Temperature 4 2) C-1: Type D, Pressure 1, Temperature 4
CAS 7719097 Trade Secret [ ] Chem. Name THIONYL CHLORIDE Pure [X] Mixture [ ] Solid [ ] Liquid [X] Gas [ ] EHS [ ] **State Specific Information** No State specific information	Fire [ ] Pressure [ ] Reactive [X] Acute [X] Chronic [X]	23,000 Max. Daily Amount 250 Avg. Daily Amount 365 No. of Days On-site		1) E-1: Type E, Pressure 1, Temperature 4 2) UN1836 ERG# 137: Type E, Pressure 1, Temperature 4
CAS 108883 Trade Secret [ ]	Fire [X]	400,000 Max. Daily Amount		1) E-2: Type D, Pressure 1, Temperature 4

VDM02337

Tier 2 Online Submission Report

Reporting period : From January 1, 2011 to December 31, 2011

Chemical Description	Physical & Health Hazards	Inventory	Mixture components	Storage locations and codes (Non- Confidential)
Chem. Name TOLUENE Pure [X] Mixture [ ] Solid [ ] Liquid [X] Gas [ ] EHS [ ] **State Specific Information** No State specific information	Pressure [ ] Reactive [ ] Acute [X] Chronic [X]	8,000 Avg. Daily Amount 365 No. of Days On-site		**2)** ST-14/ST-26/ST-28 - DK-4: Type A, Pressure 1, Temperature 4 **3)** UN1294 ERG 3130: Type R, Pressure 1, Temperature 4 **4)** B-6: Type G, Pressure 1, Temperature 4 **5)** A-10: Type M, Pressure 1, Temperature 4
CAS 1330207 Trade Secret [ ] Chem. Name Xylene Pure [X] Mixture [ ] Solid [ ] Liquid [X] Gas [ ] EHS [ ] **State Specific Information** No State specific information	Fire [X] Pressure [ ] Reactive [ ] Acute [X] Chronic [X]	175,000 Max. Daily Amount 3,000 Avg. Daily Amount 365 No. of Days On-site		**1)** DK-4: Type A, Pressure 1, Temperature 5 **2)** DK-4: Type A, Pressure 1, Temperature 4 **3)** E-2: Type D, Pressure 1, Temperature 4 **4)** UN1307 ERG#130: Type R, Pressure 1, Temperature 4

State Specific Information

No State specific information

Certification

I certify under penalty of law that I have personally examined and am familiar with the information submitted in pages __ through __ , and that based on my inquiry of those individuals responsible for obtaining the information, I believe that the submitted information is true, accurate and complete.

Paul Ameis

Name and official title of owner/operator OR owner/operator's authorized representative | Signature | Date signed

VDM02338

U.S. Department
of Transportation

**Pipeline and Hazardous
Materials Safety Administration**

East Building, PHH-30
1200 New Jersey Avenue S.E.
Washington, D.C. 20590

April 4, 2012

Janet Scott
Purchasing/Traffic Manager
VanDeMark Chemical Inc.
1 North Transit Road
Lockport, NY. 14094

Dear Janet Scott:

This is in response to your March 19, 2012 application request for renewal of Special Permit DOT-SP 12443 which authorize rail cars containing Class 8 hazardous materials to remain attached to unloading connectors without the physical presence of an unloader.

In accordance with 49 CFR 107.113(e) and (g), your application is denied for the following reason(s):

> This special permit is no longer necessary. The provisions of DOT-SP 12443 were incorporated into the Hazardous Materials Regulations under Docket No. HM-223 in a final rule published in the Federal Register on October 30, 2003 (68 FR 61941). This authority is now contained in 49 CFR 174.67(j) and (k), and became effective on October 1, 2004. A copy of the final rule can also be found at: http://www.phmsa.dot.gov/hazmat/regs/rulemaking/final.

You may request reconsideration of this decision within 20 days of receipt of this decision. In accordance with 49 CFR 107.123 a request for reconsideration must:

1) Be in writing;
2) State in detail any alleged errors of fact and law;
3) Enclose any additional information needed to support the request; and

4) State in detail the modification of the final decision sought.

If you have any questions, please do not hesitate to contact this office at (202) 366-4535.

Sincerely,

for Dr. Magdy El-Sibaie
Associate Administrator for Hazardous Materials Safety

CITY OF LOCKPORT PUBLIC UTILITIES DEPARTMENT

Wastewater & Compost Facilities
611 West Jackson Street
Lockport, NY 14094-1736
Phone (716) 433-1612
Fax (716) 433-1397

Water Filtration & Maintenance
1 Locks Plaza
Lockport, NY 14094-3623
Phone (716) 439-6678
Fax (716) 439-6602

Paula Sattelberg, Director of Utilities

23 May 2012

Chris Banach
Safety/Environmental Manager
Vandemark Chemical, Inc.
One North Transit Street
Lockport, NY 14094

Certified Mail
7010 0780 0002 1060 1498

Dear Mr. Banach,

Enclosed you will find City of Lockport Wastewater Discharge Permit No. CL860111, which is effective 01 June 2012 through 31 May 2016. This permit replaces all previous contracts or permits that may have existed between your company and the City for purpose of waste treatment. Upon the effective date of the enclosed permit, all such previous agreements shall become invalid. Please note there is a change to the permit. As of 1 June 2012, sampling for Total Suspended Solids and Total Phosphorus are no longer required.

Thank you for your attention.

Sincerely,

Victoria A. Haenle

Victoria A. Haenle
CITY OF LOCKPORT
Pretreatment Coordinator

enc.

CITY OF LOCKPORT
WASTEWATER DISCHARGE PERMIT

PERMIT NO. CL860111

In accordance with all terms and conditions of the City of Lockport Sewer Ordinance Part II General Legislation, Chapter 150, Sewers of the Code of the City of Lockport and also with any applicable provisions of Federal or State law or regulation, permission is hereby granted to:

VanDeMark Chemical Inc. (Name of Business) **2819, 2869** (SIC Code)

1 North Transit Road, Lockport, NY 14094 (Address of Business)

for the discharge of Process Wastewater into the City of Lockport collection system at: 1 North Transit Road, Lockport, NY 14094 This permit is granted in accordance with the original application filed on January 3, 1986 in the Office of the City Clerk of the City of Lockport, and the current reapplication filed on 26 January 2012 with the office of the Pretreatment Coordinator of the City of Lockport. It is in conformity with plans, specifications, and other data submitted in support of the above applications, all of which are filed with the considered as part of this permit, together with the following named conditions and requirements.

Effective this 01st day of June, 2012 to expire on the 31st day of May, 2016.

Mayor

Victoria C. Haenle

Pretreatment Coordinator

PART I. SPECIFIC CONDITIONS

A. Wastewater Discharge Limitations[1,2]

The Industrial User shall not exceed the effluent limitations specified below, effective June 1, 2012

Parameter	Monthly Avg, mg/Liter	Daily Maximum, mg/L
pH	N/A	5.5 - 9.5 S.U.[3]
Acetic Acid	N/A	6.8
Ethanol	N/A	5.4
Tetrahydrofuran (THF)	N/A	20.0
Total Lead	N/A	0.20
Total Zinc	N/A	2.80

Parameter	Monthly Avg, lbs/day	Daily Maximum, lbs/day
Diethylamine (DEA)	N/A	137
Di-n-butylamine (DBA)	N/A	137
n-Butylamine (NBA)	N/A	199
Propargyl Alcohol (POH)	N/A	200
Propargyl n-Butylcarbonate (PNBC)	N/A	53
Tetrabutylurea (TBU)	N/A	137

Parameter	Monthly Avg, lbs/day[4]	Daily Maximum, lbs/day[4]
Total Cyanide	0.043	0.124

Parameter	Monthly Avg, lbs/day[5]	Daily Maximum, lbs/day[5]
Acenaphthene	0.0026	0.0063
Anthracene	0.0026	0.0063
Benzene	0.0077	0.0180
Bis(2-ethylhexyl)phthalate	0.0128	0.0346
Bromodichloromethane	0.0191	0.0510
Bromoform	0.0263	0.1066
Bromomethane	0.0191	0.0510
Carbon Tetrachloride	0.0191	0.0510
Chlorobenzene	0.0191	0.0510
Chloroethane	0.0148	0.0396
Chloroform	0.0149	0.0436
Chloromethane	0.0148	0.0396
Dibromochloromethane	0.0263	0.1066
Di-n-butyl phthalate	0.0027	0.0058
1,2-Dichlorobenzene	0.0263	0.1066
1,3-Dichlorobenzene	0.0191	0.0510
1,4-Dichlorobenzene	0.0191	0.0510
1,1-Dichloroethane	0.0030	0.0079
1,2-Dichloroethane	0.0242	0.0771
1,1-Dichloroethene	0.0030	0.0081
1,2-trans-dichloroethene	0.0034	0.0089
1,2-Dichloropropane	0.0263	0.1066
1,3-Dichloropropene	0.0263	0.1066
Diethyl phthalate	0.0062	0.0152
Dimethyl phthalate	0.0026	0.0063
4,6-Ditro-2-methylphenol	0.0105	0.0372
Ethylbenzene	0.0191	0.0510

PART I. SPECIFIC CONDITIONS

A. Wastewater Discharge Limitations (continued)

Parameter	Monthly Avg, lbs/day[5]	Daily Maximum, lbs/day[5]
Fluoranthene	0.0030	0.0073
Fluorene	0.0026	0.0063
Hexachlorobenzene	0.0263	0.1066
Hexachlorobutadiene	0.0191	0.0510
Hexachloroethane	0.0263	0.1066
Methylene Chloride	0.0048	0.0228
Naphthalene	0.0026	0.0063
Nitrobenzene	0.3004	0.8596
2-Nitrophenol	0.0087	0.0310
4-Nitrophenol	0.0218	0.0773
Phenanthrene	0.0026	0.0063
Pyrene	0.0027	0.0064
Tetrachloroethene	0.0070	0.0220
Toluene	0.0038	0.0099
1,2,4-Trichlorobenzene	0.0263	0.1066
1,1,1-Trichloroethane	0.0030	0.0079
1,1,2-Trichloroethane	0.0043	0.0171
Trichloroethene	0.0035	0.0093
Vinyl Chloride	0.0130	0.0231

Notes:

1. In accordance with 40 CFR § 403.12 (g); if a violation of Wastewater Discharge Limitation(s) as specified above occurs, the following actions must be taken:

    a. Notification by Permittee, to the Pretreatment Coordinator, of Permit Violation, within twenty-four (24) hours of knowledge of violation.
    b. Permittee shall repeat sampling and analysis, for parameter(s) in violation and resubmit both sets of results to the Control Authority within thirty (30) days of violation knowledge.
    c. All analyses shall be performed in accordance with 40 CFR § 403.12 (g) (4).
    d. If no history of non-compliance of that compound and no history of usage on site, resampling will not be necessary. However, if it is a compound(s) Vandemark uses, resampling and analysis is required and submit both set of results to the Control Authority within thirty (30) days of violation knowledge.

2. The above limits are to be applied at Monitoring Station 01.
3. S.U. = Standard Units
4. Mass limit determined using concentration limit from 40 CFR § 414.111 times an average daily cyanide bearing flow of 12,500 GPD.
5. Mass limit determined using concentration limit from 40 CFR § 414.111 times an average daily process flow of 16,100 GPD.

PART I. SPECIFIC CONDITIONS

B. Surcharges for Excess Strength

If the User exceeds the following discharge concentrations for the parameters listed below, effective 01 June, 2012, a surcharge for excess strength shall be assessed in accordance with the Code of the City of Lockport, Chapter 150. Sewers, Section 150-31.

Parameter	Daily Maximum, mg/Liter
BOD_5	250

C. Monitoring Requirements[1]

During the period beginning June 1, 2012 and lasting until May 31, 2016, discharge from the permitted facility outfall(s) shall be monitored by the Permittee as specified below:

Sample Point	Parameter [14]	Sampling Period	Sample Type	Sample Freq
M.S. 01[2]	pH	continuous	continuous	continuous
M.S. 01	COD	2-24 hours	composite	1/M.P.[3]
M.S. 01	BOD_5[4]	24 hr. day	composite	Daily
M.S. 01	Cyanide, Total	2-24 hours	grab[5]	1/M.P.
M.S. 01	Lead, Total	2-24 hours	composite	1/M.P.
M.S. 01	Zinc, Total	2-24 hours	composite	1/M.P.
M.S. 01	Purgeable Organics[6]	2-24 hours	grab[5]	1/M.P.[15]
M.S. 01	Semi-Volatile Organics[7]	2-24 hours	composite	1/M.P.
M.S. 01	Flow	24 hr. day	usage meter	Daily
M.S. 01	Flow-Maximum	24 hr. day	usage meter	Daily
M.S. 01	Total phenols[8]	1-24 hours	grab[5]	1/M.P.
M.S. 01	POH,NBA,PNBC[9]	1-24 hours	grab	Weekly
M.S. 01	DEA[10]	1-24 hours	grab	Weekly
M.S. 01	TBU,DBA[11]	1-24 hours	grab	Weekly
M.S. 01	Acetic Acid, Ethanol[12]	1-24 hours	grab	Weekly
M.S. 01	THF[13]	1-24 hours	grab	Weekly

PART I. SPECIFIC CONDITIONS

C. Monitoring Requirements[1] (Continued)

NOTES:

1. All samples shall be collected in accordance with the procedures and methods specified in the City of Lockport "Sampling Analytical Guidelines Sheet," revised June 1991, and 40 CFR Part 136.

2. M.S. 01 = Monitoring Station 01, located immediately south of Vandemark Building B-5, phosgene department.

3. M.P. = Monitoring Period [see Part I (D)].

4. Daily composite wastewater samples are collected by Vandemark and analyzed by the City of Lockport Wastewater Treatment Facility laboratory.

5. As per 40 CFR § 403.12 (b)(5)(iii) and 40 CFR § 403.12 (g)(3), a minimum of four (4) grab samples must be collected and either composited prior to analysis or run separately and averaged. Sample collection is to be evenly spaced throughout the workday.

6. Analysis for Purgeable Organics shall be conducted using EPA 624.

7. Analysis for Semi-Volatile Organics shall be conducted using EPA 625.

8. Monitoring Requirement applicable when use or production of phenols occurs.

9. Monitoring Requirement applicable when use or production of PNBC occurs.

10. Monitoring Requirement applicable when use or production of HEGCL occurs.

11. Monitoring Requirement applicable when use or production of TBU occurs.

12. No Sampling Required unless BOD is greater than 3000 mg/L and must have a functioning LEL.

13. Monitoring Requirement applicable when use or production of THF occurs.

14. If a compound cannot be analyzed by EPA 624 or EPA 625, it will be analyzed by a validated analytical method determined by the laboratory analyzing the sample.

15. Monitoring Required applicable when use or production of Picaridin occurs to *include* the four(4)brominated organic pollutants covered under the 40 C.F.R. Part 455 Table 6 Pesticide standards and must be included during at least one of Vandemark's self-monitoring if a campaign is discharged.

PART I. SPECIFIC CONDITIONS

D. Discharge Monitoring Report Requirements

During the period beginning June 1, 2012 and lasting until May 31, 2016, discharge monitoring results shall be summarized and reported to the Pretreatment Coordinator of the City of Lockport Wastewater Treatment Facility. Also required in each report is submittal of a statement making the following certification as in 40 CFR § 403.6 (a) (2) (ii):

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

This statement must be signed by one of the following SIU representatives:

1. Responsible corporate officer if SIU is a corporation;

2. General partner or proprietor if SIU is a partnership or sole proprietorship respectively;

3. By a duly authorized representative of (1) or (2) as stated above. If authorized representative signs the certifying statement, then the following must be observed:

   a. Authorization of duly authorized representative must be done in writing and be submitted to the Control Authority.

   b. Authorization must specify a name or position/title which has responsibility for overall operation of facility.

   c. New authorization satisfying these conditions must be submitted when no longer accurate as a result of individual or position change. This authorization submittal is required prior to or together with any reports signed by newly designated representative.

PART I. SPECIFIC CONDITIONS

D. Discharge Monitoring Report Requirements (continued)

These reports shall be submitted by the Permittee on the dates specified below:

Sample Point	Monitoring Period	Report Date
M.S.01[1]	June 1 to November 30 of every year	On or before January 1 immediately following end of monitoring period
M.S.01[1]	December 1 to May 31 of every year	On or before July 1 immediately following end of monitoring period

Notes:

1. Refer to Note 2 page 4 of 12.

E. Special Requirements

1. Slug Discharge and/or Hazardous Materials Spills and Response Requirements Plan

During the period beginning the effective date of this permit and lasting until May 31, 2016, the storage and use of the hazardous materials listed below in the quantities indicated shall be controlled by the Permittee according to the approved Spill Prevention Control and Countermeasures (SPCC) Plan which has been previously prepared/revised and submitted for this facility, with a last revision date of September 2011. These substances in the quantities indicated are in accordance with information submitted by the Permittee in application for permit submitted 26 January 2012. It shall be the responsibility of the Permittee to provide written notification to the City of Lockport in the event that types and/or quantities of substances of concern change. This plan shall identify the hazardous substances stored, identification and controls of slug discharges, the procedure and equipment which will be used to contain and clean up spills and/or slugs and the measures which will be implemented to prevent the entry of spilled hazardous substances and/or slugs into the City of Lockport collection system. Vandemark Chemical,Inc. will continue to submit to the City of Lockport, any revisions, within thirty (30) days of any effective date.

Substance of Concern	Average Amount Stored
As specified in application for permit date 26 January 2012.	

Brine is also a substance of concern. If brine is discharged over fifty (50) gallons, it must be reported as a *slug discharge* and follow the procedures set forth in Part I E.2 and 3 below. Additionally, copper and zinc must be sampled as soon as the discharge is known and submit the results within thirty (30) days.

PART I. SPECIFIC CONDITIONS

E. Special Requirements (continued)

2. Notification of a Spill and/or Slug Discharge

In the event of a spill and/or slug discharge and/or **potential discharge** that ***may lead*** to a spill/slug discharge and/or the possibility exists that a discharge may have occurred to the POTW, the Permittee must, **IMMEDIATELY** notify the City of Lockport Treatment Plant Spill Line at 434-1004 (business numbers 433-1612 or 433-1613 during the hours of 7:00am to 3:20pm), and all other persons or agencies requiring notification. After hours, contact the Lockport Water Department at 433-1646 ext 0. The notification shall include location of discharge, type of waste, concentration, volume, duration and corrective actions being taken.

a.) *Potential Discharges* include any event where insufficient information exists to determine whether or not a discharge has occurred.

3. Written Report

Within five (5) days following an accidental slug or spill discharge, the Permittee shall submit to the City of Lockport, a written report. The report shall describe the location of the discharge, type of waste, concentration and volume, slug or spill containment, clean up and disposal, and measures taken, or to be taken, by the Permittee to avoid similar future occurrences. All reports shall be submitted to the following addresses:

Director of Utilities and Pretreatment Coordinator
Lockport Wastewater Treatment Plant
611 West Jackson Street
Lockport, NY 14094

4. City of Lockport Wastewater Discharge Permit Fee

In accordance with Section 150-31 of the City of Lockport Sewer Ordinance, an annual Wastewater Discharge Permit Fee is established.

5. Applicable Federal Regulations

The facility to which this permit applies is subject to the Federal regulations for Organic Chemicals and Plastics and Synthetic Fibers Category Effluent Limitations, 40 CFR Part 414. The facility to which this permit is issued shall be responsible for and comply with those standards.

PART II. GENERAL CONDITIONS

A. Federal Regulations, General Discharge Prohibitions and Conditions

The User to which this permit is issued shall comply with the 40 CFR, Part 403 General Pretreatment Standards and 40 CFR Chapter 1, Subchapter N, Parts 405-471 as applicable. Additionally, the User shall comply with all state requirements and the general discharge prohibitions and conditions in the Code of the City of Lockport, Chapter 150 Sewers.

B. Power and Authority of Inspectors

The Director of Utilities, Pretreatment Coordinator, duly authorized employees of the City, employees of NYSDEC and employees of the USEPA bearing proper credentials and identification, shall be permitted to enter upon such properties as may be necessary for the purposes of inspection, observation, records examination, measurement, sampling and testing in accordance with provisions of the City of Lockport Sewer Ordinance, the National Categorical Pretreatment Standards, State or other pretreatment requirements. The City has the authority to require an industrial user to install monitoring equipment in a suitable location so the POTW can monitor the User's discharge and the User can conduct self-monitoring.

C. Records Retention

The User shall retain and preserve for no less than three (3) years, any records, books, documents, memoranda, reports, correspondence and any and all summaries thereof, relating to monitoring, sampling and chemical analyses made by or in behalf of the User in connection with it's discharge.

All records that pertain to matters that are the subject of special orders or any other enforcement or litigation activities brought by the City shall be retained and preserved by the User until all enforcement activities have concluded and all periods of limitation with respect to any and all appeals have expired.

D. Confidential Information

Except for data determined to be confidential under Section 150-47 of the City of Lockport Sewer Ordinance, all records relating to compliance with pretreatment standards shall be made available to officials of the EPA or the approval authority upon request. Wastewater constituents and characteristics submitted to the City shall be available to the public without restriction upon written request.

PART II. GENERAL CONDITIONS

E. Recording of Results

For each measurement or sample taken pursuant to the requirements of this permit, the User shall record the following information:

1. The exact place, date, and time of sampling;
2. The dates the analyses were performed;
3. The person(s) who performed the analyses;
4. The analytical techniques or methods used;
5. The sampling techniques or methods used, the person(s)who performed the sampling; and
6. The results of all required analyses.

F. Signatory Requirements

All reports required by this permit shall be signed by a principal executive officer of the User, or their designee, as specified in Part I. Specific Conditions, D. Discharge Monitoring Report Requirements.

G. Excessive Discharge

No user shall ever increase the use of process water or, in any way, attempt to dilute a discharge as a partial or complete substitute for adequate treatment or pretreatment to achieve compliance with the requirements of limitations contained in the City of Lockport Sewer Ordinance, any National Pretreatment Standard requirement or any pollutant specific limitation developed by the City or State. This dilution prohibition is in accordance with 40 CFR § 403.6(d).

Where process effluent is mixed prior to treatment with wastewaters other than those generated by the regulated process, fixed alternative limits may be derived by the POTW. These alternative limits shall be applied to the mixed effluent, and will be derived in accordance with the combined waste stream formula as presented in 40 CFR § 403.6(e).

H. Proper Disposal of Pretreatment Sludges and Spent Chemicals

The disposal of sludges and spent chemicals generated shall be done in accordance with Section 405 of the Clean Water Act and Subtitles C and D of the Resource Conservation and Recovery Act, and as specified in 40 CFR § 403.12(p).

PART II. GENERAL CONDITIONS

I. Revocation of Permit

Any User who violates the following conditions of the City of Lockport Sewer Ordinance or a wastewater discharge permit or order, or any applicable state or federal law, is subject to having the Permit revoked in accordance with the procedures of the Sewer Use Ordinance:

1. Failure of a User to factually report the wastewater constituents and characteristics of its discharge;
2. Failure of the User to report substantial change in operations, volume or character of pollutants in discharge, including listed or characteristic hazardous wastes for which the Permittee has submitted initial notification under 40 CFR § 403.12(p);
3. Refusal of reasonable access by the City, State, EPA or their designees to the User's premises for the purpose of inspection or monitoring; or,
4. Violation of conditions of the User's permit.

J. Remedies for Offenses

As specified in the City of Lockport Sewer Ordinance, this Permit, and applicable Federal or State regulations, the City/POTW has the right and authority to seek or access Administrative Enforcement and/or Judicial Remedies for offenses. In accordance with Sections 150-59 and 150-60 of the City of Lockport Sewer Ordinance, fines of up to $5000 per violation per day may be levied for civil and criminal offenses.

K. Emergency Suspension of Permit

The Director of Utilities may suspend the service of the POTW and/or the wastewater discharge permit of any User when such suspension is necessary, in the opinion of the Director of Utilities, or their designee in order to stop an actual or threatened discharge which presents or may present an imminent or substantial endangerment to the health or welfare of persons, to the environment, causes interference to the POTW Treatment Plant or causes the City to violate any condition of its SPDES Permit. In the event of an emergency situation, the Director of Utilities or their designee is required only to give verbal notice in order to immediately and effectively halt a discharge which presents an imminent endangerment to the City's facilities, the environment, or the health and welfare of persons.

PART II. GENERAL CONDITIONS

K. Emergency Suspension of Permit (continued)

Any person or User notified of a suspension of service of the POTW and/or this Wastewater Discharge Permit shall immediately stop or eliminate the discharge. In the event of a failure of the person or user to comply voluntarily with the suspension order, the Director of Utilities or their designee shall take such steps as deemed necessary, including immediate severance of the sewer connection, to prevent or minimize damage to the POTW or endangerment to any person(s). The Director of Utilities or their designee shall reinstate the Wastewater Discharge Permit and/or POTW service upon proof of the elimination of the non-complying discharge. A detailed written statement submitted by the User describing the causes of the harmful contribution and the measures taken to prevent any future occurrence shall be submitted to the Director of Utilities or their designee within fifteen (15) days of the date of occurrence.

L. Nontransferability

Wastewater discharge permits are issued to a specific User at a specific facility. A wastewater discharge permit shall not be reassigned, transferred, or sold to a new owner, new user, different premises, or new or changed operation.

M. Falsifying Information or Tampering With Monitoring Equipment

Any person who knowingly makes any false statements, representation or certification in any application, record, report, plan or other document filed or required to be maintained pursuant to the City of Lockport Sewer Ordinance, or wastewater discharge permit, or who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required under this Ordinance, shall, upon conviction, pay a penalty to be recovered in a civil action in a court of competent jurisdiction, in the name of the City.

PART II. GENERAL CONDITIONS

N. Duration of Permit

Wastewater discharge permits shall be issued for a specified time period, not to exceed five (5) years. A permit may be issued for a period less than a year or may be stated to expire on a specific date. The User shall apply for permit reissuance a minimum of one hundred-eighty(180)days prior to the expiration of the User's existing permit. The terms and conditions of the permit may be subject to modification by the City during the term of the permit as limitations or requirements are modified or other just cause exists. The User shall be informed of any proposed changes in the permit at least thirty(30)days prior to the effective date of change. Any changes or new conditions in the permit shall include a reasonable time schedule for compliance.

O. Severability

The provisions of this permit are severable. If any of the provisions, words, phrases, clauses or terms, or the application thereof to any person, firm or corporation, or to any circumstances, shall be held invalid, illegal or unconstitutional by any court of competent jurisdiction, such decision of findings shall not in any way affect the validity, legality, or constitutionality of any other provision, work, phrase, clause or term, and they shall continue in full force and effect.

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MODULE I - STANDARD CONDITIONS

A. Effect of Permit

The Permittee must comply with all terms and conditions of this Permit. This Permit consists of the conditions contained herein (including those in any attachments and appendices) and the applicable regulations contained in 6NYCRR Parts 370 through 374, 621 and 624. Applicable regulations are those which are in effect on the date of issuance of this Permit.

The Permittee is allowed to manage the closed hazardous waste management units in accordance with the conditions of this Permit. Issuance of this Permit does not convey property rights of any sort or any exclusive privilege; nor does it authorize any injury to persons or property, any invasion of other private rights, or any infringement of Federal, State or local laws or regulations. Compliance with the terms of this Permit does not constitute a defense to any other law providing for protection of public health or the environment.

B. Permit Actions

This Permit may be modified, revoked, or suspended for cause as specified in 6NYCRR 621. The filing of a request for a permit modification, revocation and reissuance, or suspension; or the notification of planned changes or anticipated noncompliance on the part of the Permittee does not stay the applicability or enforceability of any permit condition.

C. Severability

The provisions of this Permit are severable, and if any provision of this Permit, or the application of any provision of this Permit to any circumstance is held invalid, the application of such provision to other circumstances and the remainder of this Permit shall not be affected thereby.

D. Duties and Requirements

1. Duty to Comply. The Permittee shall comply with all conditions of this Permit. Any Permit noncompliance constitutes a violation of the ECL Article 27, Title 9 and is grounds for enforcement action; permit suspension, revocation, or modification; or denial of a permit renewal application.

2. Duty to Reapply. The Permittee shall submit a complete application for permit renewal at least 180 days before this Permit expires and shall obtain a new permit.

3. Need to Halt or Reduce Activity Not a Defense. It shall not be a defense for the Permittee in an enforcement action that it would

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have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this Permit.

4. Duty to Mitigate. The Permittee shall take all steps to minimize or correct any adverse impact on human health or the environment resulting from noncompliance with this Permit.

5. Proper Operation and Maintenance. The Permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Permittee to achieve compliance with the conditions of this Permit. Proper operation and maintenance includes, but is not limited to, effective performance, adequate funding, adequate operator staffing and training, and adequate process and laboratory controls, including appropriate quality assurance/quality control procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of this Permit.

6. Inspection and Entry. The Permittee shall allow the Commissioner, or an authorized representative, including authorized Environmental Protection Agency (EPA) representatives, upon the presentation of credentials and other documents as may be required by law to:

   (a) Enter at reasonable times upon the Permittee's premises where a regulated activity is located or conducted or areas subject to corrective action pursuant to this Permit, or where records must be kept under the conditions of this Permit;

   (b) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Permit, including any and all confidential data;

   (c) Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Permit; and

   (d) Sample or monitor, at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the ECL, any substances or parameters at any location.

7. Duty to Provide Information. The Permittee shall furnish to the Commissioner, within a reasonable time, any relevant information which the Commissioner may request to determine whether cause exists for modifying, revoking and reissuing, or suspending this Permit, or to determine compliance with this Permit. The Permittee shall also furnish to the Commissioner, upon request, copies of records required to be kept by this Permit.

8. Twenty-four Hour Reporting. The Permittee shall report to the Commissioner any noncompliance which may endanger human health or the environment. Any such information shall be reported orally

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within twenty-four (24) hours from the time the Permittee becomes aware of the circumstances. This report shall include the following:

(a) Information concerning the release of any hazardous waste or constituent which may cause endangerment to public drinking water supplies.

(b) Any information of a release or discharge of hazardous waste or of a fire or explosion at the facility, which could threaten the environment or human health outside the facility.

(c) The description of the occurance and its cause must include:

(i) Name, address, and telephone number of the operator;

(ii) Name, address, and telephone number of the facility;

(iii) Date, time, and type of incident;

(iv) Name and quantity of materials involved;

(v) The extent of injuries, if any;

(vi) An assessment of actual or potential hazard to the environment and human health inside and outside the facility, where this is applicable; and

(vii) Estimated quantity and disposition of recovered material that resulted from the incident.

A written submission shall also be provided to the Commissioner within five (5) days of the time the Permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the periods of noncompliance (including exact dates and times); whether the noncompliance has been corrected; and if not, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance (See Permit Condition D.4. of Module I). The Permittee need not comply with the five (5) days written notice requirement if the Commissioner waives the requirement and the Permittee submits a written report within fifteen (15) days of the time the Permittee becomes aware of the circumstances.

The oral reports required above may be made by contacting the National Response Center 24-hour toll free number at (800) 424-8802 and the New York State 24-hour oil and hazardous material spill notification number, (800) 457-7362, or any designated telephone number which may subsequently replace the ones listed above.

9. Additional Noncompliance Reporting. The Permittee shall report all instances of noncompliance (including release of hazardous waste,

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fire or explosion) not required to be reported under Module I, Condition D.8. or 15. Such noncompliance shall be reported at the time monitoring reports are submitted. The reports shall contain the information listed in Module I, Condition D.8.(c)(i-vii).

10. Anticipated Noncompliance. The Permittee shall give advance notice to the Commissioner of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements. Compliance with Permit Condition D.3. of Module I is still effective in this situation.

11. Other Information. Whenever the Permittee becomes aware that he failed to submit any relevant facts in the permit application, or submitted incorrect information in a permit application or in any report to the Commissioner, the Permittee shall immediately submit such facts or information.

12. Compliance Schedules. Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this Permit shall be submitted no later than fourteen (14) days following each schedule date.

13. Annual Report. The Permittee shall submit an annual report covering facility activities during the calendar year in accordance with the requirements of 6NYCRR 373-2.5(e).

14. Monitoring and Records.

    (a) Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. The methods used to obtain a representative sample of the waste to be analyzed must be the appropriate method from Appendix 19 of 6NYCRR Part 371 or an equivalent method approved by the Commissioner. Laboratory Methods must be those specified in Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, EPA Publication SW-846, Third Edition, 1986, later approved revisions, or equivalent methods approved by the Commissioner.

    (b) The Permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original chart recordings for continuous monitoring instrumentation, copies of all reports and records required by this Permit, certification required by 6NYCRR Part 373-2.5(c)(2)(ix), and records of all data used to complete the application for this Permit until post-closure certification of the facility is approved by the Commissioner. For land disposal facilities, the monitoring data required under 6NYCRR Part 373-2.6 must be kept throughout the post-closure care period.

    (c) Records of monitoring information shall specify:

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NEW YORK STATE DEPARTMENT OF
ENVIRONMENTAL CONSERVATION
DRAFT
6NYCRR PART 373
POST-CLOSURE PERMIT
VAN DE MARK CHEMICAL CO., INC.
LOCKPORT, NEW YORK

PERMIT

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

HAZARDOUS AND SOLID WASTE AMENDMENTS OF 1984
PERMIT

Permittee: VanDeMark Chemical Co., Inc. I.D.Number: NYD991290529
Effective Date: DRAFT
Expiration Date: _____

This Permit is issued by the United States Environmental Protection Agency ("EPA" or "Agency") under authority of the Resource Conservation and Recovery Act ("RCRA") of 1976, Subtitle C, 42 U.S.C. Sections 6921-6931, the Hazardous and Solid Waste Amendments ("HSWA") of 1984, and EPA regulations promulgated pursuant thereto, to VanDeMark Chemical Co., Inc. (hereafter called the "Permittee"), to operate a hazardous waste management facility located in Lockport, New York.

In accordance with HSWA, this Permit requires the Permittee to:

1. Determine the nature, extent and rate of migration of hazardous waste and/or hazardous constituents in soils, groundwater, surface water, subsurface gas and/or air at any solid waste management unit(s) at the facility regardless of the time waste was placed in such unit, and to develop appropriate corrective action for any such releases;

2. Comply with any other applicable statutory or regulatory requirements imposed pursuant to RCRA and HSWA.

This Permit, in conjunction with the 6NYCRR Part 373 Permit to be issued by the State of New York, constitutes the RCRA permit for this facility.

The Permittee must comply with all terms and conditions of this Permit. This Permit consists of the conditions contained herein (Module I pages I-1 to I-9, Module II page II-1, Module III pages III-1 to III-8, and applicable regulations contained in 40 C.F.R. Parts 124, 260 through 264, 268, and 270 as specified in this Permit. Applicable regulations are those which are in effect on the date of issuance of this Permit, except as provided in 40 C.F.R. §124.86(c) for RCRA permits being processed under Subpart E or F of Part 124 (see 40 C.F.R. §270.32(c)). A permit may be modified, however, to incorporate new regulations pursuant to 40 C.F.R. §270.41(a)(3) and 40 C.F.R. §270.32(c).

This Permit is based on the assumption that the information provided in the Permittee's Part B application, submitted on March 29, 1989 and all succeeding revisions and data submissions, is accurate. Further, this Permit is based, in part, on the provisions of Sections 206, 212, and 224 of HSWA, which modify Sections 3002, 3004 and 3005 of RCRA. The Permittee's failure in the application or during the permit issuance process to disclose fully all relevant facts, or the Permittee's misrepresentation of any relevant facts at any time may be grounds for the termination, revocation and reissuance, or

VDM02363

Eighteen Mile Creek

New York

EPA ID#: NYN000206456

EPA REGION 2

Congressional District(s): 28,29

Niagara

LOCKPORT, NY

NPL LISTING HISTORY
Proposed Date: 9/16/2011
Final Date: 3/15/2012

Site Description

The Eighteen Mile Creek Site is located in Niagara County, New York and consists of contaminated sediments, soil and groundwater. The Creek flows north for approximately 15 miles and discharges to Lake Ontario in Olcott, New York. The headwaters consist of an East and West Branch which are immediately north of the New York State Barge Canal. The branches merge to form the main body of the Creek at the Clinton Street bridge in Lockport, New York

The Site has been divided into two parts: the Eighteen Mile Creek Corridor, which extends from the Creek's headwaters at the Barge Canal to Harwood Road in Lockport, and the Sediment Study Area. The Corridor contains most of the Site's legacy contamination. The Corridor includes approximately 4,000 feet of the Creek, as well as properties located along Mill Street, Water Street and Clinton Street in the City of Lockport. The Corridor was the focus of a Remedial Investigation (RI) and Supplemental RI completed by the New York State Department of Environmental Conservation (NYSDEC) in 2009. The Creek Sediment Study Area extends from Harwood Road to the Creek's discharge into Lake Ontario and includes numerous contaminated depositional areas. Sediment samples were collected in the Study Area for almost the entire length of the Creek to Burt Dam, and was the focus of a Great Lakes National Program Office (GLNPO) study which was completed in March 2011.

Threat and Contaminants

Recent site investigation work performed by the NYSDEC has indicated that the soil at numerous properties along the Eighteen Mile Creek and the Creek sediments are contaminated with lead, zinc and copper, pesticide/insecticides, PCBs, benzo(a)pyrene, dioxins, and furans. Contaminated groundwater was also found along the west side of the Creek in the Corridor study area.

Possible sources of contamination include contaminant migration from hazardous waste sites and other contaminated properties located along the Creek, as well as industrial and municipal wastewater and storm water discharges, and combined sewer outfalls discharges.

Cleanup Approach

EPA proposed to include the Eighteen Mile Creek Site on the federal National Priorities List in the Federal Register on September 15, 2011. The Notice provided a two month public comment period which ended on November 15, 2011. On March 15, 2012, the site was inlcuded on the federal National Priorites List (NPL). In May 2012, EPA initiated a federal, remedial investigation and feasibility study of the Site.

Cleanup Progress

EPA will evaluate the remedial investigation and sampling reports produced by the New York State Department of Environmental Conservation and and the Great Lakes National Program Office and use them as a basis for conducting a federal remedial investigation (RI) of the Eighteen Mile Corridor Study Area and the Creek Sediment Study Area. A federal remedial investigation and feasibility study of the Site began in May 2012.

Site Repositories

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Once EPA's Remedial Investigation and Feasibility Study of the Site is initiated, Site documents will be available at EPA's Superfund Records Center at 290 Broadway, New York, New York and at the Lockport Public Library at 23 East Avenue, Lockport, NY 14194.

VDM02365

New York State Department of Environmental Conservation

PUBLIC NOTICE | **State Superfund Program**

Receive Site Information by Email. See next page to Learn How.

Site Name: Eighteenmile Creek Sediments October 4, 2012
Site No. 932156
Site Location: Eighteenmile Creek (Between Harwood St., City of Lockport and Lake Ontario at Olcott), Niagara County, NY 14094

Inactive Hazardous Waste Disposal Site Classification Notice

The Inactive Hazardous Waste Disposal Site Program (the State Superfund Program) is the State's program for identifying, investigating, and cleaning up sites where the disposal of hazardous waste may present a threat to public health and/or the environment. The New York State Department of Environmental Conservation (Department) maintains a list of these sites in the Registry of Inactive Hazardous Waste Disposal Sites (the "Registry"). The site identified above, and located on a map on the reverse side of this page, was recently added to the Registry as a Class 2 site that presents a significant threat to public health and/or the environment for the following reason(s):

The site was listed in USEPA's National Priority List (NPL) in March 2012 and public notification of this listing provided. When a site is placed on the NPL, DEC also includes the site in the State Registry of Inactive Hazardous Waste Sites as a class 2 site, and we are currently in the process of listing this site. The site extends from Harwood Street in the City of Lockport to Lake Ontario, a distance of approximately 15 miles. This site is immediately downstream of the Eighteenmile Creek Corridor Site (Site No. 932121) located in the City of Lockport. Sediment in the creek is contaminated with PCBs and metals, and there is a fish advisory (all species - eat none) for the entire creek. Furthermore, there is a potential for people to be exposed to the contamination through recreational use of the creek. Additional investigation is needed to define the nature and extent of contamination and to select appropriate remedial measures.

The Department will keep you informed throughout the investigation and cleanup of the site.

If you own property adjacent to this site and are renting or leasing your property to someone else, please share this information with them. If you no longer wish to be on the contact list for this site or otherwise need to correct our records, please contact the Department's Project Manager listed below.

FOR MORE SITE INFORMATION

Additional information about this site can be found using the Department's "Environmental Site Remediation Database Search" engine which is located on the internet at: www.dec.ny.gov/cfmx/extapps/derexternal/index.cfm?pageid=3

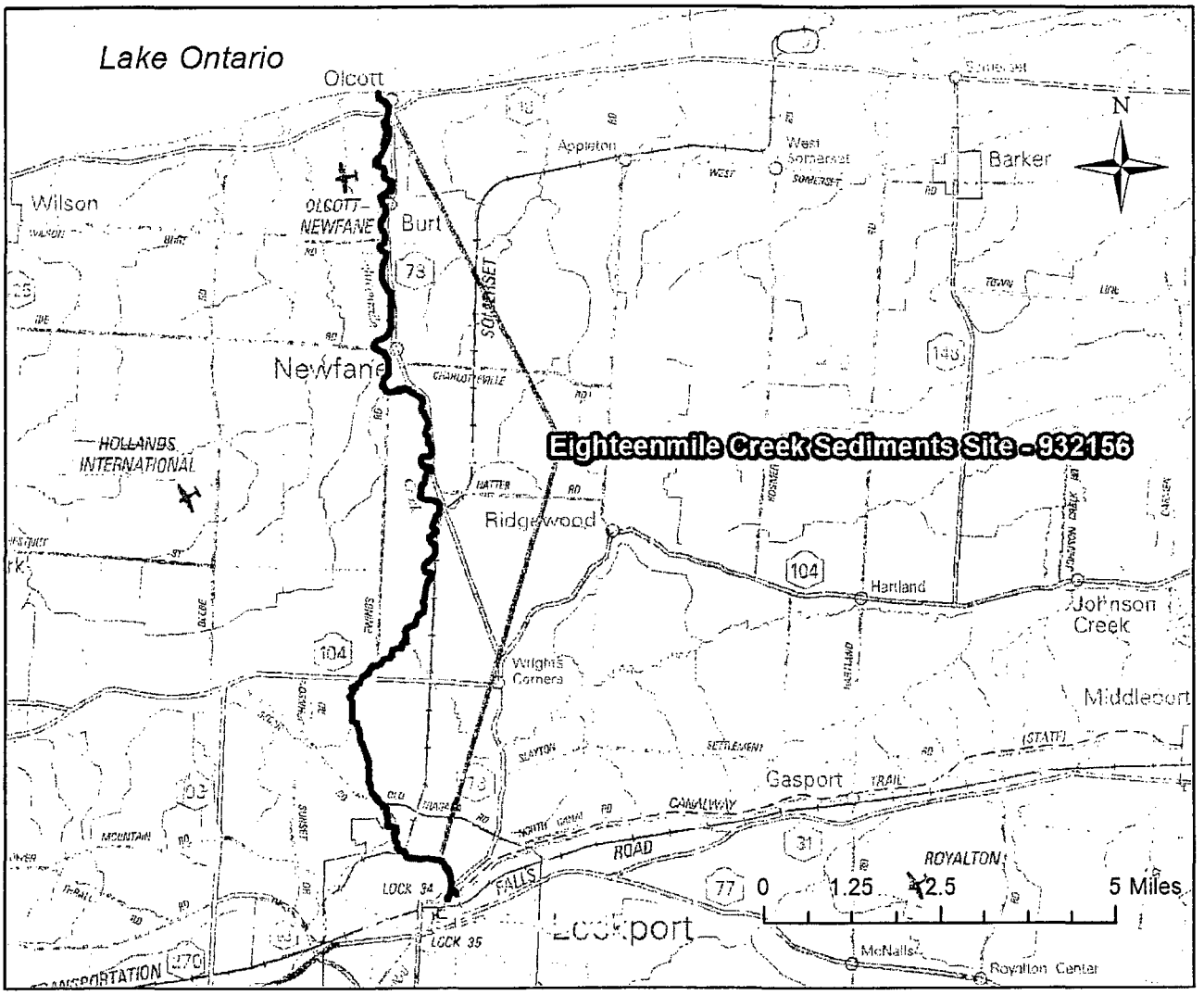
Comments and questions are always welcome and should be directed as follows:

Project Related Questions
Mr. Glenn May, Project Manager
NYS Department of Environmental Conservation
Division of Environmental Remediation
270 Michigan Avenue
Buffalo, NY 14203
gmmay@gw.dec.state.ny.us
715-851-7220

Site Related Health Questions
Mr. Matthew Forcucci
New York State Department of Health
584 Delaware Avenue
Buffalo, NY 14202
716-847-4501
beei@health.state.ny.us

The Department is sending you this notice in accordance with Environmental Conservation Law Article 27, Title 13 and its companion regulation (6 NYCRR 375-2.7(b)(6)(ii)) which requires the Department to notify all parties on the contact list for this site of this recent action.

Approximate Site Location
Eighteenmile Creek Sediments
Site ID: 932156
Harwood St., City of Lockport to Lake Ontario at Olcott
Niagara County, NY



Receive Site Updates by Email
Have site information such as this public notice sent right to your email inbox. NYSDEC invites you to sign up with one or more contaminated sites county email listservs available at the following web page: www.dec.ny.gov/chemical/61092.html . It's *quick*, it's *free*, and it will help keep you *better informed.*

As a listserv member, you will periodically receive site-related information/announcements for all contaminated sites in the county(ies) you select.

You may continue also to receive paper copies of site information for a time after you sign up with a county listserv, until the transition to electronic distribution is complete.

Note: Please disregard if you received this notice by way of a county email listserv.

NEW YORK STATE
DEPARTMENT OF
ENVIRONMENTAL CONSERVATION

DEC Permit Applications List

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○ Status ○ Place Name ○ Applicant

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VDM02368

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VDM02369

Click on name of facility to get specific application detail

Facility: Vandemark Chemical Inc
Applicant: Vandemark Chemical Inc
Permit Type: Process, Exhaust, Ventilation (Construct)
Status: Expired
Description: PC, EP.S2,S3,S4,S5

Other Known IDs:
2909000327 - Division of Air Resources ID (NYSDEC)
00061 - Compliance Data System ID (USEPA)
NYD002116192 - Facility INdex Database System ID (USEPA)
0327 - National Emissions Data System ID (USEPA)
NYD002116192 - Resource Conservation Recovery Act ID (USEPA)
NYR00F095 - State Pollutant Discharge Elimination System ID (USEPA)
NYRNX0724 - State Pollutant Discharge Elimination System ID (USEPA)
NY0001295 - State Pollutant Discharge Elimination System ID (USEPA)
NY0204323 - State Pollutant Discharge Elimination System ID (USEPA)

Place Name: Lockport
App. Type: Modification
Receipt Date: 04/05/1990
Stimulus: No

Facility: Vandemark Chemical Inc
Applicant: Vandemark Chemical Inc
Permit Type: Process, Exhaust, Ventilation (Construct)
Status: Expired
Description: PC, EP.S2,S3,S4,S5

Other Known IDs:
2909000327 - Division of Air Resources ID (NYSDEC)
00061 - Compliance Data System ID (USEPA)
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Receipt Date: 04/05/1990
Stimulus: No

Facility: Vandemark Chemical Inc
Applicant: Vandemark Chemical Inc
Permit Type: Process, Exhaust, Ventilation (Construct)
Status: Expired
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NY0204323 - State Pollutant Discharge Elimination System ID (USEPA)

Place Name: Lockport
App. Type: Modification
Receipt Date: 04/05/1990
Stimulus: No

Facility: Vandemark Chemical Inc
Place Name: Lockport
Applicant: Vandemark Chemical Inc
App. Type: New
Permit Type: Process, Exhaust, Ventilation (Operate)
Receipt Date: 06/15/1990
Status: Issued
Stimulus: No
Description: CO, EP.S2,S4

Other Known IDs:
2909000327 - Division of Air Resources ID (NYSDEC)
00061 - Compliance Data System ID (USEPA)
NYD002116192 - Facility INdex Database System ID (USEPA)
0327 - National Emissions Data System ID (USEPA)
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NY0204323 - State Pollutant Discharge Elimination System ID (USEPA)

Facility: Vandemark Chemical Inc
Place Name: Lockport
Applicant: Vandemark Chemical Inc
App. Type: New
Permit Type: Process, Exhaust, Ventilation (Operate)
Receipt Date: 06/15/1990
Status: Expired
Stimulus: No
Description: CO, EP.S2,S4

Other Known IDs:
2909000327 - Division of Air Resources ID (NYSDEC)
00061 - Compliance Data System ID (USEPA)
NYD002116192 - Facility INdex Database System ID (USEPA)
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NY0204323 - State Pollutant Discharge Elimination System ID (USEPA)

Facility: Vandemark Chemical Inc
Place Name: Lockport
Applicant: Vandemark Chemical Inc
App. Type: New
Permit Type: Process, Exhaust, Ventilation (Operate)
Receipt Date: 08/10/1990
Status: Issued
Stimulus: No
Description: CO EP S12

Other Known IDs:
2909000327 - Division of Air Resources ID (NYSDEC)
00061 - Compliance Data System ID (USEPA)
NYD002116192 - Facility INdex Database System ID (USEPA)
0327 - National Emissions Data System ID (USEPA)
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NY0204323 - State Pollutant Discharge Elimination System ID (USEPA)

Facility: Vandemark Chemical Inc
Place Name: Lockport
Applicant: Vandemark Chemical Inc
App. Type: New
Permit Type: Process, Exhaust, Ventilation (Operate)
Receipt Date: 11/15/1990

Status: Issued **Stimulus:** No

Description: CO, EP.S3,S5

Other Known IDs:
2909000327 - Division of Air Resources ID (NYSDEC)
00061 - Compliance Data System ID (USEPA)
NYD002116192 - Facility INdex Database System ID (USEPA)
0327 - National Emissions Data System ID (USEPA)
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NY0204323 - State Pollutant Discharge Elimination System ID (USEPA)

Facility: Vandemark Chemical Inc **Place Name:** Lockport

Applicant: Vandemark Chemical Inc **App. Type:** New

Permit Type: Process, Exhaust, Ventilation (Operate) **Receipt Date:** 11/15/1990

Status: Expired **Stimulus:** No

Description: CO, EP.S3,S5

Other Known IDs:
2909000327 - Division of Air Resources ID (NYSDEC)
00061 - Compliance Data System ID (USEPA)
NYD002116192 - Facility INdex Database System ID (USEPA)
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NY0204323 - State Pollutant Discharge Elimination System ID (USEPA)

Facility: Vandemark Chemical Inc **Place Name:** Lockport

Applicant: Vandemark Chemical Inc **App. Type:** Modification

Permit Type: Industrial SPDES - Surface Discharge **Receipt Date:** 01/15/1991

Status: Discontinued **Stimulus:** No

Description: SPDES #NY-0001295 DELETION

Other Known IDs:
2909000327 - Division of Air Resources ID (NYSDEC)
00061 - Compliance Data System ID (USEPA)
NYD002116192 - Facility INdex Database System ID (USEPA)
0327 - National Emissions Data System ID (USEPA)
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NY0204323 - State Pollutant Discharge Elimination System ID (USEPA)

Facility: Vandemark Chemical Inc **Place Name:** Lockport

Applicant: Vandemark Chemical Inc **App. Type:** Renewal

Permit Type: Process, Exhaust, Ventilation (Operate) **Receipt Date:** 04/19/1991

Status: Issued **Stimulus:** No

Description: AIR RECERT

Other Known IDs:	2909000327 - Division of Air Resources ID (NYSDEC) 00061 - Compliance Data System ID (USEPA) NYD002116192 - Facility INdex Database System ID (USEPA) 0327 - National Emissions Data System ID (USEPA) NYD002116192 - Resource Conservation Recovery Act ID (USEPA) NYR00F095 - State Pollutant Discharge Elimination System ID (USEPA) NYRNX0724 - State Pollutant Discharge Elimination System ID (USEPA) NY0001295 - State Pollutant Discharge Elimination System ID (USEPA) NY0204323 - State Pollutant Discharge Elimination System ID (USEPA)

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DEC Permit Applications List

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○ Status ○ Place Name ○ Applicant

Re-sort

VDM02377

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VDM02378

Click on name of facility to get specific application detail

Facility: Vandemark Chemical Inc
Place Name: Lockport
Applicant: Vandemark Chemical Inc
App. Type: New
Permit Type: Process, Exhaust, Ventilation (Operate)
Receipt Date: 12/19/1994
Status: Expired
Stimulus: No
Description: CO, 19 EMISSION POINTS

Other Known IDs:
2909000327 - Division of Air Resources ID (NYSDEC)
00061 - Compliance Data System ID (USEPA)
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Facility: Vandemark Chemical Inc
Place Name: Lockport
Applicant: Vandemark Chemical Inc
App. Type: New
Permit Type: Process, Exhaust, Ventilation (Operate)
Receipt Date: 12/19/1994
Status: Expired
Stimulus: No
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Facility: Vandemark Chemical Inc
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Receipt Date: 12/19/1994
Status: Expired
Stimulus: No
Description: CO, 19 EMISSION POINTS

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Facility: Vandemark Chemical Inc
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App. Type: New
Permit Type: Process, Exhaust, Ventilation (Operate)
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Status: Expired
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Facility: Vandemark Chemical Inc
Place Name: Lockport
Applicant: Vandemark Chemical Inc
App. Type: New
Permit Type: Process, Exhaust, Ventilation (Operate)
Receipt Date: 12/19/1994

Status: Withdrawn by Applicant **Stimulus:** No

Description: CO, 19 EMISSION POINTS

Other Known IDs:
2909000327 - Division of Air Resources ID (NYSDEC)
00061 - Compliance Data System ID (USEPA)
NYD002116192 - Facility INdex Database System ID (USEPA)
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Facility: Vandemark Chemical Inc **Place Name:** Lockport

Applicant: Vandemark Chemical Inc **App. Type:** New

Permit Type: Process, Exhaust, Ventilation (Operate) **Receipt Date:** 12/19/1994

Status: Expired **Stimulus:** No

Description: CO, 19 EMISSION POINTS

Other Known IDs:
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Facility: Vandemark Chemical Inc **Place Name:** Lockport

Applicant: Vandemark Chemical Inc **App. Type:** New

Permit Type: Process, Exhaust, Ventilation (Operate) **Receipt Date:** 12/19/1994

Status: Expired **Stimulus:** No

Description: CO, 19 EMISSION POINTS

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Facility: Vandemark Chemical Inc **Place Name:** Lockport

Applicant: Vandemark Chemical Inc **App. Type:** New

Permit Type: Process, Exhaust, Ventilation (Operate) **Receipt Date:** 12/19/1994

Status: Expired **Stimulus:** No

Description: CO, 19 EMISSION POINTS

Other Known IDs:	2909000327 - Division of Air Resources ID (NYSDEC) 00061 - Compliance Data System ID (USEPA) NYD002116192 - Facility INdex Database System ID (USEPA) 0327 - National Emissions Data System ID (USEPA) NYD002116192 - Resource Conservation Recovery Act ID (USEPA) NYR00F095 - State Pollutant Discharge Elimination System ID (USEPA) NYRNX0724 - State Pollutant Discharge Elimination System ID (USEPA) NY0001295 - State Pollutant Discharge Elimination System ID (USEPA) NY0204323 - State Pollutant Discharge Elimination System ID (USEPA)

VDM02382

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Search Wizard Instructions

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VDM02385

NEW YORK STATE
DEPARTMENT OF
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DEC Permit Applications List

Sort Option

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○ Status ○ Place Name ○ Applicant

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Help New Search

VDM02387

Click on name of facility to get specific application detail

Facility: Vandemark Chemical Inc
Place Name: Lockport
Applicant: Vandemark Chemical Inc
App. Type: New
Permit Type: Process, Exhaust, Ventilation (Operate)
Receipt Date: 12/19/1994
Status: Expired
Stimulus: No
Description: CO, 19 EMISSION POINTS

Other Known IDs:
2909000327 - Division of Air Resources ID (NYSDEC)
00061 - Compliance Data System ID (USEPA)
NYD002116192 - Facility INdex Database System ID (USEPA)
0327 - National Emissions Data System ID (USEPA)
NYD002116192 - Resource Conservation Recovery Act ID (USEPA)
NYR00F095 - State Pollutant Discharge Elimination System ID (USEPA)
NYRNX0724 - State Pollutant Discharge Elimination System ID (USEPA)
NY0001295 - State Pollutant Discharge Elimination System ID (USEPA)
NY0204323 - State Pollutant Discharge Elimination System ID (USEPA)

Facility: Vandemark Chemical Inc
Place Name: Lockport
Applicant: Vandemark Chemical Inc
App. Type: New
Permit Type: Process, Exhaust, Ventilation (Operate)
Receipt Date: 12/19/1994
Status: Expired
Stimulus: No
Description: CO, 19 EMISSION POINTS

Other Known IDs:
2909000327 - Division of Air Resources ID (NYSDEC)
00061 - Compliance Data System ID (USEPA)
NYD002116192 - Facility INdex Database System ID (USEPA)
0327 - National Emissions Data System ID (USEPA)
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NYRNX0724 - State Pollutant Discharge Elimination System ID (USEPA)
NY0001295 - State Pollutant Discharge Elimination System ID (USEPA)
NY0204323 - State Pollutant Discharge Elimination System ID (USEPA)

Facility: Vandemark Chemical Inc
Place Name: Lockport
Applicant: Vandemark Chemical Inc
App. Type: New
Permit Type: Process, Exhaust, Ventilation (Operate)
Receipt Date: 12/19/1994
Status: Expired
Stimulus: No
Description: CO, EP'S S7, S8, S9, S10, S11, S25

Other Known IDs:
2909000327 - Division of Air Resources ID (NYSDEC)
00061 - Compliance Data System ID (USEPA)
NYD002116192 - Facility INdex Database System ID (USEPA)
0327 - National Emissions Data System ID (USEPA)
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Facility: Vandemark Chemical Inc
Place Name: Lockport
Applicant: Vandemark Chemical Inc
App. Type: New
Permit Type: Process, Exhaust, Ventilation (Operate)
Receipt Date: 12/19/1994
Status: Expired
Stimulus: No
Description: CO, EP'S S7, S8, S9, S10, S11, S25

Other Known IDs:
2909000327 - Division of Air Resources ID (NYSDEC)
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NYD002116192 - Facility INdex Database System ID (USEPA)
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Facility: Vandemark Chemical Inc
Place Name: Lockport
Applicant: Vandemark Chemical Inc
App. Type: New
Permit Type: Process, Exhaust, Ventilation (Operate)
Receipt Date: 12/19/1994
Status: Expired
Stimulus: No
Description: CO, EP'S S7, S8, S9, S10, S11, S25

Other Known IDs:
2909000327 - Division of Air Resources ID (NYSDEC)
00061 - Compliance Data System ID (USEPA)
NYD002116192 - Facility INdex Database System ID (USEPA)
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Facility: Vandemark Chemical Inc
Place Name: Lockport
Applicant: Vandemark Chemical Inc
App. Type: New
Permit Type: Process, Exhaust, Ventilation (Operate)
Receipt Date: 12/19/1994
Status: Expired
Stimulus: No
Description: CO, EP'S S7, S8, S9, S10, S11, S25

Other Known IDs:
2909000327 - Division of Air Resources ID (NYSDEC)
00061 - Compliance Data System ID (USEPA)
NYD002116192 - Facility INdex Database System ID (USEPA)
0327 - National Emissions Data System ID (USEPA)
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NY0001295 - State Pollutant Discharge Elimination System ID (USEPA)
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Facility: Vandemark Chemical Inc
Place Name: Lockport
Applicant: Vandemark Chemical Inc
App. Type: New
Permit Type: Process, Exhaust, Ventilation (Operate)
Receipt Date: 12/19/1994

Status: Expired **Stimulus:** No

Description: CO, EP'S S7, S8, S9, S10, S11, S25

Other Known IDs:
2909000327 - Division of Air Resources ID (NYSDEC)
00061 - Compliance Data System ID (USEPA)
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NY0204323 - State Pollutant Discharge Elimination System ID (USEPA)

Facility: Vandemark Chemical Inc **Place Name:** Lockport

Applicant: Vandemark Chemical Inc **App. Type:** New

Permit Type: Process, Exhaust, Ventilation (Operate) **Receipt Date:** 12/19/1994

Status: Expired **Stimulus:** No

Description: CO, 19 EMISSION POINTS

Other Known IDs:
2909000327 - Division of Air Resources ID (NYSDEC)
00061 - Compliance Data System ID (USEPA)
NYD002116192 - Facility INdex Database System ID (USEPA)
0327 - National Emissions Data System ID (USEPA)
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NY0001295 - State Pollutant Discharge Elimination System ID (USEPA)
NY0204323 - State Pollutant Discharge Elimination System ID (USEPA)

Facility: Vandemark Chemical Inc **Place Name:** Lockport

Applicant: Vandemark Chemical Inc **App. Type:** New

Permit Type: Process, Exhaust, Ventilation (Operate) **Receipt Date:** 02/04/1997

Status: Expired **Stimulus:** No

Description: CO EP 000S1

Other Known IDs:
2909000327 - Division of Air Resources ID (NYSDEC)
00061 - Compliance Data System ID (USEPA)
NYD002116192 - Facility INdex Database System ID (USEPA)
0327 - National Emissions Data System ID (USEPA)
NYD002116192 - Resource Conservation Recovery Act ID (USEPA)
NYR00F095 - State Pollutant Discharge Elimination System ID (USEPA)
NYRNX0724 - State Pollutant Discharge Elimination System ID (USEPA)
NY0001295 - State Pollutant Discharge Elimination System ID (USEPA)
NY0204323 - State Pollutant Discharge Elimination System ID (USEPA)

Facility: Vandemark Chemical Inc **Place Name:** Lockport

Applicant: Vandemark Chemical Inc **App. Type:** New

Permit Type: Air State Facility **Receipt Date:** 10/30/1997

Status: Issued **Stimulus:** No

Description: ASF

Other Known IDs:	2909000327 - Division of Air Resources ID (NYSDEC) 00061 - Compliance Data System ID (USEPA) NYD002116192 - Facility INdex Database System ID (USEPA) 0327 - National Emissions Data System ID (USEPA) NYD002116192 - Resource Conservation Recovery Act ID (USEPA) NYR00F095 - State Pollutant Discharge Elimination System ID (USEPA) NYRNX0724 - State Pollutant Discharge Elimination System ID (USEPA) NY0001295 - State Pollutant Discharge Elimination System ID (USEPA) NY0204323 - State Pollutant Discharge Elimination System ID (USEPA)

Records 51 through 60 of 70 **Previous 10 Records Next 10 Records**

Help New Search

VDM02393

Search Wizard Instructions

Email feedback to the Department regarding the search wizard.

VDM02394

NEW YORK STATE
DEPARTMENT OF
ENVIRONMENTAL CONSERVATION

DEC Permit Applications List

Sort Option

○ Receipt Date ○ Facility ○ Permit Type

○ Status ○ Place Name ○ Applicant

Re-sort

VDM02395

Help New Search

Click on name of facility to get specific application detail

Facility: Vandemark Chemical Inc
Place Name: Lockport
Applicant: Vandemark Chemical Inc
App. Type: New
Permit Type: Air Title V Facility
Receipt Date: 12/10/1998
Status: Expired
Stimulus: No
Description: VAN DEMARK GROUP (COMBINED VAN CHEM & VAN DEMARK)
Other Known IDs:
2909000327 - Division of Air Resources ID (NYSDEC)
00061 - Compliance Data System ID (USEPA)
NYD002116192 - Facility INdex Database System ID (USEPA)
0327 - National Emissions Data System ID (USEPA)
NYD002116192 - Resource Conservation Recovery Act ID (USEPA)
NYR00F095 - State Pollutant Discharge Elimination System ID (USEPA)
NYRNX0724 - State Pollutant Discharge Elimination System ID (USEPA)
NY0001295 - State Pollutant Discharge Elimination System ID (USEPA)
NY0204323 - State Pollutant Discharge Elimination System ID (USEPA)

Facility: Vandemark Chemical Inc
Place Name: Lockport
Applicant: Vandemark Chemical Inc
App. Type: Renewal
Permit Type: Industrial SPDES - Surface Discharge
Receipt Date: 08/02/1999
Status: Expired
Stimulus: No
Description: FAST TRACK RENEWAL #NY 020 4323
Other Known IDs:
2909000327 - Division of Air Resources ID (NYSDEC)
00061 - Compliance Data System ID (USEPA)
NYD002116192 - Facility INdex Database System ID (USEPA)
0327 - National Emissions Data System ID (USEPA)
NYD002116192 - Resource Conservation Recovery Act ID (USEPA)
NYR00F095 - State Pollutant Discharge Elimination System ID (USEPA)
NYRNX0724 - State Pollutant Discharge Elimination System ID (USEPA)
NY0001295 - State Pollutant Discharge Elimination System ID (USEPA)
NY0204323 - State Pollutant Discharge Elimination System ID (USEPA)

Facility: Vandemark Chemical Inc
Place Name: Lockport
Applicant: Vandemark Chemical Inc
App. Type: New
Permit Type: Air Title V Facility
Receipt Date: 03/07/2000
Status: Expired
Stimulus: No
Description: ASF MODIFICATION TO PERMIT
Other Known IDs:
2909000327 - Division of Air Resources ID (NYSDEC)
00061 - Compliance Data System ID (USEPA)
NYD002116192 - Facility INdex Database System ID (USEPA)
0327 - National Emissions Data System ID (USEPA)
NYD002116192 - Resource Conservation Recovery Act ID (USEPA)
NYR00F095 - State Pollutant Discharge Elimination System ID (USEPA)
NYRNX0724 - State Pollutant Discharge Elimination System ID (USEPA)
NY0001295 - State Pollutant Discharge Elimination System ID (USEPA)
NY0204323 - State Pollutant Discharge Elimination System ID (USEPA)

Facility: Vandemark Chemical Inc
Place Name: Lockport
Applicant: Isochem Inc
App. Type: New
Permit Type: Air State Facility
Receipt Date: 06/17/2002
Status: Withdrawn by Applicant
Stimulus: No
Description: asf
Other Known IDs:
2909000327 - Division of Air Resources ID (NYSDEC)
00061 - Compliance Data System ID (USEPA)
NYD002116192 - Facility INdex Database System ID (USEPA)
0327 - National Emissions Data System ID (USEPA)
NYD002116192 - Resource Conservation Recovery Act ID (USEPA)
NYR00F095 - State Pollutant Discharge Elimination System ID (USEPA)
NYRNX0724 - State Pollutant Discharge Elimination System ID (USEPA)
NY0001295 - State Pollutant Discharge Elimination System ID (USEPA)
NY0204323 - State Pollutant Discharge Elimination System ID (USEPA)

Facility: Vandemark Chemical Inc
Place Name: Lockport
Applicant: Isochem Inc
App. Type: Department Initiate Modification
Permit Type: Air Title V Facility
Receipt Date: 11/17/2003
Status: Expired
Stimulus: No
Description: Modification to Correct Expiration Date
Other Known IDs:
2909000327 - Division of Air Resources ID (NYSDEC)
00061 - Compliance Data System ID (USEPA)
NYD002116192 - Facility INdex Database System ID (USEPA)
0327 - National Emissions Data System ID (USEPA)
NYD002116192 - Resource Conservation Recovery Act ID (USEPA)
NYR00F095 - State Pollutant Discharge Elimination System ID (USEPA)
NYRNX0724 - State Pollutant Discharge Elimination System ID (USEPA)
NY0001295 - State Pollutant Discharge Elimination System ID (USEPA)
NY0204323 - State Pollutant Discharge Elimination System ID (USEPA)

Facility: Vandemark Chemical Inc
Place Name: Lockport
Applicant: Isochem Inc
App. Type: Renewal
Permit Type: Industrial SPDES - Surface Discharge
Receipt Date: 07/26/2004
Status: Expired
Stimulus: No
Description: SPDES Fast Track Renewal NY 020 4323
Other Known IDs:
2909000327 - Division of Air Resources ID (NYSDEC)
00061 - Compliance Data System ID (USEPA)
NYD002116192 - Facility INdex Database System ID (USEPA)
0327 - National Emissions Data System ID (USEPA)
NYD002116192 - Resource Conservation Recovery Act ID (USEPA)
NYR00F095 - State Pollutant Discharge Elimination System ID (USEPA)
NYRNX0724 - State Pollutant Discharge Elimination System ID (USEPA)
NY0001295 - State Pollutant Discharge Elimination System ID (USEPA)
NY0204323 - State Pollutant Discharge Elimination System ID (USEPA)

Facility: Vandemark Chemical Inc
Place Name: Lockport
Applicant: Isochem Inc
App. Type: Renewal

Permit Type: Air Title V Facility
Receipt Date: 09/17/2004
Status: Expired
Stimulus: No
Description: ATV RENEWAL
Other Known IDs:
2909000327 - Division of Air Resources ID (NYSDEC)
00061 - Compliance Data System ID (USEPA)
NYD002116192 - Facility INdex Database System ID (USEPA)
0327 - National Emissions Data System ID (USEPA)
NYD002116192 - Resource Conservation Recovery Act ID (USEPA)
NYR00F095 - State Pollutant Discharge Elimination System ID (USEPA)
NYRNX0724 - State Pollutant Discharge Elimination System ID (USEPA)
NY0001295 - State Pollutant Discharge Elimination System ID (USEPA)
NY0204323 - State Pollutant Discharge Elimination System ID (USEPA)

Facility: Vandemark Chemical Inc
Place Name: Lockport
Applicant: Vandemark Chemical Inc
App. Type: Minor Modification
Permit Type: Air Title V Facility
Receipt Date: 07/10/2007
Status: Expired
Stimulus: No
Description: PERMIT TRANSFER
Other Known IDs:
2909000327 - Division of Air Resources ID (NYSDEC)
00061 - Compliance Data System ID (USEPA)
NYD002116192 - Facility INdex Database System ID (USEPA)
0327 - National Emissions Data System ID (USEPA)
NYD002116192 - Resource Conservation Recovery Act ID (USEPA)
NYR00F095 - State Pollutant Discharge Elimination System ID (USEPA)
NYRNX0724 - State Pollutant Discharge Elimination System ID (USEPA)
NY0001295 - State Pollutant Discharge Elimination System ID (USEPA)
NY0204323 - State Pollutant Discharge Elimination System ID (USEPA)

Facility: Vandemark Chemical Inc
Place Name: Lockport
Applicant: Vandemark Chemical Inc
App. Type: Renewal
Permit Type: Industrial SPDES - Surface Discharge
Receipt Date: 08/03/2009
Status: Issued
Stimulus: No
Description: SPDES Fast Track Renewal for # NY 020 4323
Other Known IDs:
2909000327 - Division of Air Resources ID (NYSDEC)
00061 - Compliance Data System ID (USEPA)
NYD002116192 - Facility INdex Database System ID (USEPA)
0327 - National Emissions Data System ID (USEPA)
NYD002116192 - Resource Conservation Recovery Act ID (USEPA)
NYR00F095 - State Pollutant Discharge Elimination System ID (USEPA)
NYRNX0724 - State Pollutant Discharge Elimination System ID (USEPA)
NY0001295 - State Pollutant Discharge Elimination System ID (USEPA)
NY0204323 - State Pollutant Discharge Elimination System ID (USEPA)

Facility: Vandemark Chemical Inc
Place Name: Lockport
Applicant: Vandemark Chemical Inc
App. Type: Renewal
Permit Type: Air Title V Facility
Receipt Date: 04/16/2010
Status: Issued
Stimulus: No
Description: ATV renewal

Other Known IDs:	2909000327 - Division of Air Resources ID (NYSDEC) 00061 - Compliance Data System ID (USEPA) NYD002116192 - Facility INdex Database System ID (USEPA) 0327 - National Emissions Data System ID (USEPA) NYD002116192 - Resource Conservation Recovery Act ID (USEPA) NYR00F095 - State Pollutant Discharge Elimination System ID (USEPA) NYRNX0724 - State Pollutant Discharge Elimination System ID (USEPA) NY0001295 - State Pollutant Discharge Elimination System ID (USEPA) NY0204323 - State Pollutant Discharge Elimination System ID (USEPA)

VDM02400

Records 61 through 70 of 70 **Previous 10 Records No Next Records**

Help New Search

Search Wizard Instructions

Email feedback to the Department regarding the search wizard.

VDM02403

NEW YORK STATE
DEPARTMENT OF
ENVIRONMENTAL CONSERVATION

DEC Permit Applications List

Sort Option

○ Receipt Date ○ Facility ○ Permit Type

○ Status ○ Place Name ○ Applicant

Re-sort

VDM02404

Help New Search

Click on name of facility to get specific application detail

Facility: Vandemark Chemical Inc
Place Name: Lockport
Applicant: Vandemark Chemical Inc
App. Type: New
Permit Type: Process, Exhaust, Ventilation (Operate)
Receipt Date: 09/19/1991
Status: Withdrawn by Applicant
Stimulus: No
Description: CO, EP.S2,S3 DELETE S4,S5

Other Known IDs:
2909000327 - Division of Air Resources ID (NYSDEC)
00061 - Compliance Data System ID (USEPA)
NYD002116192 - Facility INdex Database System ID (USEPA)
0327 - National Emissions Data System ID (USEPA)
NYD002116192 - Resource Conservation Recovery Act ID (USEPA)
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NY0001295 - State Pollutant Discharge Elimination System ID (USEPA)
NY0204323 - State Pollutant Discharge Elimination System ID (USEPA)

Facility: Vandemark Chemical Inc
Place Name: Lockport
Applicant: Vandemark Chemical Inc
App. Type: New
Permit Type: Process, Exhaust, Ventilation (Operate)
Receipt Date: 09/19/1991
Status: Withdrawn by Applicant
Stimulus: No
Description: CO, EP.S2,S3 DELETE S4,S5

Other Known IDs:
2909000327 - Division of Air Resources ID (NYSDEC)
00061 - Compliance Data System ID (USEPA)
NYD002116192 - Facility INdex Database System ID (USEPA)
0327 - National Emissions Data System ID (USEPA)
NYD002116192 - Resource Conservation Recovery Act ID (USEPA)
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NY0001295 - State Pollutant Discharge Elimination System ID (USEPA)
NY0204323 - State Pollutant Discharge Elimination System ID (USEPA)

Facility: Vandemark Chemical Inc
Place Name: Lockport
Applicant: Vandemark Chemical Inc
App. Type: Modification
Permit Type: Process, Exhaust, Ventilation (Operate)
Receipt Date: 07/30/1993
Status: Withdrawn by Applicant
Stimulus: No
Description: CO, EP 000S2

Other Known IDs:
2909000327 - Division of Air Resources ID (NYSDEC)
00061 - Compliance Data System ID (USEPA)
NYD002116192 - Facility INdex Database System ID (USEPA)
0327 - National Emissions Data System ID (USEPA)
NYD002116192 - Resource Conservation Recovery Act ID (USEPA)
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NY0001295 - State Pollutant Discharge Elimination System ID (USEPA)
NY0204323 - State Pollutant Discharge Elimination System ID (USEPA)

Facility: Vandemark Chemical Inc
Place Name: Lockport
Applicant: Vandemark Chemical Inc
App. Type: New
Permit Type: Process, Exhaust, Ventilation (Operate)
Receipt Date: 07/30/1993
Status: Expired
Stimulus: No
Description: PC, EP 00006

Other Known IDs:
2909000327 - Division of Air Resources ID (NYSDEC)
00061 - Compliance Data System ID (USEPA)
NYD002116192 - Facility INdex Database System ID (USEPA)
0327 - National Emissions Data System ID (USEPA)
NYD002116192 - Resource Conservation Recovery Act ID (USEPA)
NYR00F095 - State Pollutant Discharge Elimination System ID (USEPA)
NYRNX0724 - State Pollutant Discharge Elimination System ID (USEPA)
NY0001295 - State Pollutant Discharge Elimination System ID (USEPA)
NY0204323 - State Pollutant Discharge Elimination System ID (USEPA)

Facility: Vandemark Chemical Inc
Place Name: Lockport
Applicant: Vandemark Chemical Inc
App. Type: Modification
Permit Type: Process, Exhaust, Ventilation (Operate)
Receipt Date: 10/26/1993
Status: Expired
Stimulus: No
Description: PERMIT MODIFICATION CONSOLIDATING 000S1 - 000S5

Other Known IDs:
2909000327 - Division of Air Resources ID (NYSDEC)
00061 - Compliance Data System ID (USEPA)
NYD002116192 - Facility INdex Database System ID (USEPA)
0327 - National Emissions Data System ID (USEPA)
NYD002116192 - Resource Conservation Recovery Act ID (USEPA)
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NY0001295 - State Pollutant Discharge Elimination System ID (USEPA)
NY0204323 - State Pollutant Discharge Elimination System ID (USEPA)

Facility: Vandemark Chemical Inc
Place Name: Lockport
Applicant: Vandemark Chemical Inc
App. Type: Renewal
Permit Type: Industrial SPDES - Surface Discharge
Receipt Date: 11/17/1994
Status: Issued
Stimulus: No
Description: SPDES NY 0204323 RENEWAL

Other Known IDs:
2909000327 - Division of Air Resources ID (NYSDEC)
00061 - Compliance Data System ID (USEPA)
NYD002116192 - Facility INdex Database System ID (USEPA)
0327 - National Emissions Data System ID (USEPA)
NYD002116192 - Resource Conservation Recovery Act ID (USEPA)
NYR00F095 - State Pollutant Discharge Elimination System ID (USEPA)
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NY0001295 - State Pollutant Discharge Elimination System ID (USEPA)
NY0204323 - State Pollutant Discharge Elimination System ID (USEPA)

Facility: Vandemark Chemical Inc
Place Name: Lockport
Applicant: Vandemark Chemical Inc
App. Type: Modification
Permit Type: Process, Exhaust, Ventilation (Operate)
Receipt Date: 12/06/1994

Status: Expired **Stimulus:** No

Description: CO, EP 000S2

Other Known IDs:
2909000327 - Division of Air Resources ID (NYSDEC)
00061 - Compliance Data System ID (USEPA)
NYD002116192 - Facility INdex Database System ID (USEPA)
0327 - National Emissions Data System ID (USEPA)
NYD002116192 - Resource Conservation Recovery Act ID (USEPA)
NYR00F095 - State Pollutant Discharge Elimination System ID (USEPA)
NYRNX0724 - State Pollutant Discharge Elimination System ID (USEPA)
NY0001295 - State Pollutant Discharge Elimination System ID (USEPA)
NY0204323 - State Pollutant Discharge Elimination System ID (USEPA)

Facility: Vandemark Chemical Inc **Place Name:** Lockport

Applicant: Vandemark Chemical Inc **App. Type:** New

Permit Type: Process, Exhaust, Ventilation (Operate) **Receipt Date:** 12/19/1994

Status: Expired **Stimulus:** No

Description: CO, 19 EMISSION POINTS

Other Known IDs:
2909000327 - Division of Air Resources ID (NYSDEC)
00061 - Compliance Data System ID (USEPA)
NYD002116192 - Facility INdex Database System ID (USEPA)
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NYRNX0724 - State Pollutant Discharge Elimination System ID (USEPA)
NY0001295 - State Pollutant Discharge Elimination System ID (USEPA)
NY0204323 - State Pollutant Discharge Elimination System ID (USEPA)

Facility: Vandemark Chemical Inc **Place Name:** Lockport

Applicant: Vandemark Chemical Inc **App. Type:** New

Permit Type: Process, Exhaust, Ventilation (Operate) **Receipt Date:** 12/19/1994

Status: Expired **Stimulus:** No

Description: CO, 19 EMISSION POINTS

Other Known IDs:
2909000327 - Division of Air Resources ID (NYSDEC)
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NY0001295 - State Pollutant Discharge Elimination System ID (USEPA)
NY0204323 - State Pollutant Discharge Elimination System ID (USEPA)

Facility: Vandemark Chemical Inc **Place Name:** Lockport

Applicant: Vandemark Chemical Inc **App. Type:** New

Permit Type: Process, Exhaust, Ventilation (Operate) **Receipt Date:** 12/19/1994

Status: Expired **Stimulus:** No

Description: CO, 19 EMISSION POINTS

Other Known IDs:	2909000327 - Division of Air Resources ID (NYSDEC) 00061 - Compliance Data System ID (USEPA) NYD002116192 - Facility INdex Database System ID (USEPA) 0327 - National Emissions Data System ID (USEPA) NYD002116192 - Resource Conservation Recovery Act ID (USEPA) NYR00F095 - State Pollutant Discharge Elimination System ID (USEPA) NYRNX0724 - State Pollutant Discharge Elimination System ID (USEPA) NY0001295 - State Pollutant Discharge Elimination System ID (USEPA) NY0204323 - State Pollutant Discharge Elimination System ID (USEPA)

VDM02409

Records 31 through 40 of 70 **Previous 10 Records Next 10 Records**

Help New Search

Search Wizard Instructions

Email feedback to the Department regarding the search wizard.

VDM02412

NEW YORK STATE
DEPARTMENT OF
ENVIRONMENTAL CONSERVATION

DEC Permit Applications List

Sort Option

○ Receipt Date ○ Facility ○ Permit Type

○ Status ○ Place Name ○ Applicant

Re-sort

Help New Search

VDM02414

Click on name of facility to get specific application detail

Facility: Vandemark Chemical Inc
Place Name: Lockport
Applicant: Vandemark Chemical Inc
App. Type: Renewal
Permit Type: Process, Exhaust, Ventilation (Operate)
Receipt Date: 08/23/1988
Status: Expired
Stimulus: No
Description: AIR RECERTS

Other Known IDs:
2909000327 - Division of Air Resources ID (NYSDEC)
00061 - Compliance Data System ID (USEPA)
NYD002116192 - Facility INdex Database System ID (USEPA)
0327 - National Emissions Data System ID (USEPA)
NYD002116192 - Resource Conservation Recovery Act ID (USEPA)
NYR00F095 - State Pollutant Discharge Elimination System ID (USEPA)
NYRNX0724 - State Pollutant Discharge Elimination System ID (USEPA)
NY0001295 - State Pollutant Discharge Elimination System ID (USEPA)
NY0204323 - State Pollutant Discharge Elimination System ID (USEPA)

Facility: Vandemark Chemical Inc
Place Name: Lockport
Applicant: Vandemark Chemical Inc
App. Type: Renewal
Permit Type: Process, Exhaust, Ventilation (Operate)
Receipt Date: 08/23/1988
Status: Expired
Stimulus: No
Description: AIR RECERTS

Other Known IDs:
2909000327 - Division of Air Resources ID (NYSDEC)
00061 - Compliance Data System ID (USEPA)
NYD002116192 - Facility INdex Database System ID (USEPA)
0327 - National Emissions Data System ID (USEPA)
NYD002116192 - Resource Conservation Recovery Act ID (USEPA)
NYR00F095 - State Pollutant Discharge Elimination System ID (USEPA)
NYRNX0724 - State Pollutant Discharge Elimination System ID (USEPA)
NY0001295 - State Pollutant Discharge Elimination System ID (USEPA)
NY0204323 - State Pollutant Discharge Elimination System ID (USEPA)

Facility: Vandemark Chemical Inc
Place Name: Lockport
Applicant: Vandemark Chemical Inc
App. Type: Renewal
Permit Type: Process, Exhaust, Ventilation (Operate)
Receipt Date: 08/23/1988
Status: Expired
Stimulus: No
Description: AIR RECERTS

Other Known IDs:
2909000327 - Division of Air Resources ID (NYSDEC)
00061 - Compliance Data System ID (USEPA)
NYD002116192 - Facility INdex Database System ID (USEPA)
0327 - National Emissions Data System ID (USEPA)
NYD002116192 - Resource Conservation Recovery Act ID (USEPA)
NYR00F095 - State Pollutant Discharge Elimination System ID (USEPA)
NYRNX0724 - State Pollutant Discharge Elimination System ID (USEPA)
NY0001295 - State Pollutant Discharge Elimination System ID (USEPA)
NY0204323 - State Pollutant Discharge Elimination System ID (USEPA)

Facility: Vandemark Chemical Inc
Applicant: Vandemark Chemical Inc
Permit Type: Process, Exhaust, Ventilation (Operate)
Status: Expired
Description: AIR RECERTS
Other Known IDs: 2909000327 - Division of Air Resources ID (NYSDEC)
00061 - Compliance Data System ID (USEPA)
NYD002116192 - Facility INdex Database System ID (USEPA)
0327 - National Emissions Data System ID (USEPA)
NYD002116192 - Resource Conservation Recovery Act ID (USEPA)
NYR00F095 - State Pollutant Discharge Elimination System ID (USEPA)
NYRNX0724 - State Pollutant Discharge Elimination System ID (USEPA)
NY0001295 - State Pollutant Discharge Elimination System ID (USEPA)
NY0204323 - State Pollutant Discharge Elimination System ID (USEPA)
Place Name: Lockport
App. Type: Renewal
Receipt Date: 08/23/1988
Stimulus: No

Facility: Vandemark Chemical Inc
Applicant: Vandemark Chemical Inc
Permit Type: Process, Exhaust, Ventilation (Construct)
Status: Expired
Description: MOD TO CERT. TO OPERATE EPS 000P3 & 00S12
Other Known IDs: 2909000327 - Division of Air Resources ID (NYSDEC)
00061 - Compliance Data System ID (USEPA)
NYD002116192 - Facility INdex Database System ID (USEPA)
0327 - National Emissions Data System ID (USEPA)
NYD002116192 - Resource Conservation Recovery Act ID (USEPA)
NYR00F095 - State Pollutant Discharge Elimination System ID (USEPA)
NYRNX0724 - State Pollutant Discharge Elimination System ID (USEPA)
NY0001295 - State Pollutant Discharge Elimination System ID (USEPA)
NY0204323 - State Pollutant Discharge Elimination System ID (USEPA)
Place Name: Lockport
App. Type: New
Receipt Date: 09/16/1988
Stimulus: No

Facility: Vandemark Chemical Inc
Applicant: Vandemark Chemical Inc
Permit Type: Process, Exhaust, Ventilation (Construct)
Status: Expired
Description: MOD TO CERT. TO OPERATE EPS 000P3 & 00S12
Other Known IDs: 2909000327 - Division of Air Resources ID (NYSDEC)
00061 - Compliance Data System ID (USEPA)
NYD002116192 - Facility INdex Database System ID (USEPA)
0327 - National Emissions Data System ID (USEPA)
NYD002116192 - Resource Conservation Recovery Act ID (USEPA)
NYR00F095 - State Pollutant Discharge Elimination System ID (USEPA)
NYRNX0724 - State Pollutant Discharge Elimination System ID (USEPA)
NY0001295 - State Pollutant Discharge Elimination System ID (USEPA)
NY0204323 - State Pollutant Discharge Elimination System ID (USEPA)
Place Name: Lockport
App. Type: New
Receipt Date: 09/16/1988
Stimulus: No

Facility: Vandemark Chemical Inc
Applicant: Vandemark Chemical Inc
Permit Type: Process, Exhaust, Ventilation (Construct)
Place Name: Lockport
App. Type: Modification
Receipt Date: 10/17/1988

Status: Expired **Stimulus:** No

Description: EXTENT EXPIRATION DATE

Other Known IDs:
2909000327 - Division of Air Resources ID (NYSDEC)
00061 - Compliance Data System ID (USEPA)
NYD002116192 - Facility INdex Database System ID (USEPA)
0327 - National Emissions Data System ID (USEPA)
NYD002116192 - Resource Conservation Recovery Act ID (USEPA)
NYR00F095 - State Pollutant Discharge Elimination System ID (USEPA)
NYRNX0724 - State Pollutant Discharge Elimination System ID (USEPA)
NY0001295 - State Pollutant Discharge Elimination System ID (USEPA)
NY0204323 - State Pollutant Discharge Elimination System ID (USEPA)

Facility: Vandemark Chemical Inc **Place Name:** Lockport

Applicant: Vandemark Chemical Inc **App. Type:** Modification

Permit Type: Process, Exhaust, Ventilation (Construct) **Receipt Date:** 10/17/1988

Status: Expired **Stimulus:** No

Description: EXTENT EXPIRATION DATE

Other Known IDs:
2909000327 - Division of Air Resources ID (NYSDEC)
00061 - Compliance Data System ID (USEPA)
NYD002116192 - Facility INdex Database System ID (USEPA)
0327 - National Emissions Data System ID (USEPA)
NYD002116192 - Resource Conservation Recovery Act ID (USEPA)
NYR00F095 - State Pollutant Discharge Elimination System ID (USEPA)
NYRNX0724 - State Pollutant Discharge Elimination System ID (USEPA)
NY0001295 - State Pollutant Discharge Elimination System ID (USEPA)
NY0204323 - State Pollutant Discharge Elimination System ID (USEPA)

Facility: Vandemark Chemical Inc **Place Name:** Lockport

Applicant: Vandemark Chemical Inc **App. Type:** Renewal

Permit Type: Process, Exhaust, Ventilation (Operate) **Receipt Date:** 02/02/1989

Status: Expired **Stimulus:** No

Description: AIR RECERTS

Other Known IDs:
2909000327 - Division of Air Resources ID (NYSDEC)
00061 - Compliance Data System ID (USEPA)
NYD002116192 - Facility INdex Database System ID (USEPA)
0327 - National Emissions Data System ID (USEPA)
NYD002116192 - Resource Conservation Recovery Act ID (USEPA)
NYR00F095 - State Pollutant Discharge Elimination System ID (USEPA)
NYRNX0724 - State Pollutant Discharge Elimination System ID (USEPA)
NY0001295 - State Pollutant Discharge Elimination System ID (USEPA)
NY0204323 - State Pollutant Discharge Elimination System ID (USEPA)

Facility: Vandemark Chemical Inc **Place Name:** Lockport

Applicant: Vandemark Chemical Inc **App. Type:** Renewal

Permit Type: Process, Exhaust, Ventilation (Operate) **Receipt Date:** 02/02/1989

Status: Expired **Stimulus:** No

Description: AIR RECERTS

Other Known IDs:	2909000327 - Division of Air Resources ID (NYSDEC) 00061 - Compliance Data System ID (USEPA) NYD002116192 - Facility INdex Database System ID (USEPA) 0327 - National Emissions Data System ID (USEPA) NYD002116192 - Resource Conservation Recovery Act ID (USEPA) NYR00F095 - State Pollutant Discharge Elimination System ID (USEPA) NYRNX0724 - State Pollutant Discharge Elimination System ID (USEPA) NY0001295 - State Pollutant Discharge Elimination System ID (USEPA) NY0204323 - State Pollutant Discharge Elimination System ID (USEPA)

Records 1 through 10 of 70 **No Previous Records** **Next 10 Records**

Help New Search

VDM02420

Search Wizard Instructions

Email feedback to the Department regarding the search wizard.

VDM02421

2008 SPEDES

VanDeMark
Phosgene Chemistry • Custom Chemicals

Date: 01/21/08

To: NYSDEC
Division of Water
Bureau of Watershed Compliance Programs
625 Broadway 4th Floor
Albany, NY 12233-3506

CC: NYSDEC
Regional Water Quality Engineer
270 Michigan Ave.
Buffalo, NY 14203-2999
Attn: Rob Locey

Niagara County Health Dept.
5467 Upper Mountain Road
Suite 100
Lockport, NY 14094
Attn: Ron Gwozdek

RE: SPDES Report

Enclosed please find the SPDES report for the month of December 2007. If you have any questions, please contact me at 716-433-6764 ext. 150.

Sincerely,

Pamela J Cook

Pamela J. Cook
Quality Assurance / Environmental Coordinator
e-mail: p.cook@vdmchemical.com

VanDeMark Chemical Inc.
One North Transit Road, Lockport, NY 14094
Tel: 716-433-6764 • Fax: 716-433-2850
www.vdmchemical.com

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

Form Approved
No. 2040-0004

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location If Different)*

NAME: VANDEMARK CHEMICAL, INC.
ADDRESS: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
FACILITY: VANDEMARK CHEMICAL, INC.
LOCATION: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
ATTN:MATTHEW BARMASSE

NY0204323	001M
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD						
	YEAR	MO	DAY		YEAR	MO	DAY
FROM	07	12	01	TO	07	12	31

DMR MAILING ZIP CODE: 14094
MINOR
(SUBR09)
NON-CONTACT COOLING WATER
External Outfall

No Discharge ☒

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Temperature, water deg. fahrenheit	SAMPLE MEASUREMENT	******	******		******	******					
00011 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		******	******	90 DAILY MX	deg F		Monthly	GRAB
Flow rate	SAMPLE MEASUREMENT				******	******	******				
00056 1 0 Effluent Gross	PERMIT REQUIREMENT	50000 DAILY AV	Req. Mon. DAILY MX	gal/d	******	******	******			Monthly	INSTAN
pH	SAMPLE MEASUREMENT	******	******			******					
00400 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		6 MINIMUM	******	9 MAXIMUM	SU		Monthly	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Paul Ameis, COO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	Paul Ameis	716 433-6764		08	01	21
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA Code	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

VDM02424

NATIONAL POLLUTANT DISCHA[illegible]ELIMINATION SYSTEM (NPDES)
DISCHARGE MONI[illegible]NG REPORT (DMR)

[illegible] Approved
[illegible] No. 2040-0004

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

NAME: VANDEMARK CHEMICAL, INC.
ADDRESS: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
FACILITY: VANDEMARK CHEMICAL, INC.
LOCATION: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
ATTN:MATTHEW BARMASSE

NY0204323	004M
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	07	12	01	TO	07	12	31

DMR MAILING ZIP CODE: 14094
MINOR
(SUBR09)
NON-CONTACT COOLING WATER
External Outfall

No Discharge ☒

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Temperature, water deg. fahrenheit	SAMPLE MEASUREMENT	******	******		******	******					
00011 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		******	******	90 DAILY MX	deg F		Monthly	GRAB
Flow rate	SAMPLE MEASUREMENT				******	******	******				
00056 1 0 Effluent Gross	PERMIT REQUIREMENT	330000 DAILY AV	Req. Mon. DAILY MX	gal/d	******	******	******			Monthly	INSTAN
pH	SAMPLE MEASUREMENT	******	******			******					
00400 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		6 MINIMUM	******	9 MAXIMUM	SU		Monthly	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Paul Ameis, COO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	Paul Ameis	716	433 6764	08	01	21
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA Code	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

VDM02425

VanDeMark

Phosgene Chemistry • Custom Chemicals

Date: 02/18/08

To: NYSDEC
Division of Water
Bureau of Watershed Compliance Programs
625 Broadway 4th Floor
Albany, NY 12233-3506

CC: NYSDEC
Regional Water Quality Engineer
270 Michigan Ave.
Buffalo, NY 14203-2999
Attn: Rob Locey

Niagara County Health Dept.
5467 Upper Mountain Road
Suite 100
Lockport, NY 14094
Attn: Ron Gwozdek

RE: SPDES Report

Enclosed please find the SPDES report for the month of January 2008. If you have any questions, please contact me at 716-433-6764 ext. 150.

Sincerely,

Pamela J. Cook
EHSQ Manager
e-mail: p.cook@vdmchemical.com

VanDeMark Chemical Inc.
One North Transit Road, Lockport, NY 14094
Tel: 716-433-6764 • Fax: 716-433-2850
www.vdmchemical.com

NATIONAL POLLUTANT DISCHAR[illegible]LIMINATION SYSTEM (NPDES)
DISCHARGE MONIT[illegible]G REPORT (DMR)

Approved
No. 2040-0004

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

NAME: VANDEMARK CHEMICAL, INC.
ADDRESS: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
FACILITY: VANDEMARK CHEMICAL, INC.
LOCATION: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
ATTN:MATTHEW BARMASSE

NY0204323	001M
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD						
	YEAR	MO	DAY		YEAR	MO	DAY
FROM	08	01	01	TO	08	01	31

DMR MAILING ZIP CODE: 14094
MINOR
(SUBR09)
NON-CONTACT COOLING WATER
External Outfall

No Discharge ☒

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Temperature, water deg. fahrenheit	SAMPLE MEASUREMENT	******	******		******	******					
00011 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		******	******	90 DAILY MX	deg F		Monthly	GRAB
Flow rate	SAMPLE MEASUREMENT				******	******	******				
00056 1 0 Effluent Gross	PERMIT REQUIREMENT	50000 DAILY AV	Req. Mon. DAILY MX	gal/d	******	******	******			Monthly	INSTAN
pH	SAMPLE MEASUREMENT	******	******			******					
00400 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		6 MINIMUM	******	9 MAXIMUM	SU		Monthly	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Paul Ameis COO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	[signature]	7164336764		08	02	18
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA Code	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

VDM02427

NATIONAL POLLUTANT DISCHA ELIMINATION SYSTEM (NPDES)
DISCHARGE MONI NG REPORT (DMR)

m Approved
3 No. 2040-0004

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location If Different)*

NAME: VANDEMARK CHEMICAL, INC.
ADDRESS: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
FACILITY: VANDEMARK CHEMICAL, INC.
LOCATION: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
ATTN:MATTHEW BARMASSE

NY0204323	004M
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD						
	YEAR	MO	DAY		YEAR	MO	DAY
FROM	08	01	01	TO	08	01	31

DMR MAILING ZIP CODE: 14094
MINOR
(SUBR09)
NON-CONTACT COOLING WATER
External Outfall

No Discharge ☒

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Temperature, water deg. fahrenheit	SAMPLE MEASUREMENT	******	******		******	******					
00011 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		******	******	90 DAILY MX	deg F		Monthly	GRAB
Flow rate	SAMPLE MEASUREMENT				******	******	******				
00056 1 0 Effluent Gross	PERMIT REQUIREMENT	330000 DAILY AV	Req. Mon. DAILY MX	gal/d	******	******	******			Monthly	INSTAN
pH	SAMPLE MEASUREMENT	******	******			******					
00400 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		6 MINIMUM	******	9 MAXIMUM	SU		Monthly	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Paul Ameis COO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.		716 433 6467		08	02	18
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA Code	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

VDM02428

VanDeMark
Phosgene Chemistry • Custom Chemicals

Date: 03/24/08

To: NYSDEC
Division of Water
Bureau of Watershed Compliance Programs
625 Broadway 4th Floor
Albany, NY 12233-3506

CC: NYSDEC
Regional Water Quality Engineer
270 Michigan Ave.
Buffalo, NY 14203-2999
Attn: Rob Locey

Niagara County Health Dept.
5467 Upper Mountain Road
Suite 100
Lockport, NY 14094
Attn: Ron Gwozdek

RE: SPDES Report

Enclosed please find the quarterly SPDES report and the month of February 2008. If you have any questions, please contact me at 716-433-6764 ext. 150.

Sincerely,

Pamela J. Cook
EHSQ Manager
e-mail: p.cook@vdmchemical.com

VanDeMark Chemical Inc.
One North Transit Road, Lockport, NY 14094
Tel: 716-433-6764 • Fax: 716-433-2850
www.vdmchemical.com

VDM02430

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

Form Approved
OMB No. 2040-0004

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

NAME: VANDEMARK CHEMICAL, INC.
ADDRESS: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
FACILITY: VANDEMARK CHEMICAL, INC.
LOCATION: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
ATTN:MATTHEW BARMASSE

NY0204323	001M
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	08	02	01	TO	08	02	29

DMR MAILING ZIP CODE: 14094
MINOR
(SUBR09)
NON-CONTACT COOLING WATER
External Outfall
No Discharge ☒

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Temperature, water deg. fahrenheit	SAMPLE MEASUREMENT	******	******		******	******					
00011 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		******	******	90 DAILY MX	deg F		Monthly	GRAB
Flow rate	SAMPLE MEASUREMENT				******	******	******				
00056 1 0 Effluent Gross	PERMIT REQUIREMENT	50000 DAILY AV	Req. Mon. DAILY MX	gal/d	******	******	******			Monthly	INSTAN
pH	SAMPLE MEASUREMENT	******	******			******					
00400 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		6 MINIMUM	******	9 MAXIMUM	SU		Monthly	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Paul Amelio CEO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	Paul Amelio	7164336764		08	03	24
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA Code	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

Form Approved
OMB No. 2040-0004

VDM02431

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location If Different)*

NAME: VANDEMARK CHEMICAL, INC.
ADDRESS: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
FACILITY: VANDEMARK CHEMICAL, INC.
LOCATION: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
ATTN:MATTHEW BARMASSE

NY0204323	004M
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	08	02	01	TO	08	02	29

DMR MAILING ZIP CODE: 14094
MINOR
(SUBR09)
NON-CONTACT COOLING WATER
External Outfall
No Discharge ☒

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Temperature, water deg. fahrenheit	SAMPLE MEASUREMENT	******	******		******	******					
00011 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		******	******	90 DAILY MX	deg F		Monthly	GRAB
Flow rate	SAMPLE MEASUREMENT				******	******	******				
00056 1 0 Effluent Gross	PERMIT REQUIREMENT	330000 DAILY AV	Req. Mon. DAILY MX	gal/d	******	******	******			Monthly	INSTAN
pH	SAMPLE MEASUREMENT	******	******			******					
00400 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		6 MINIMUM	******	9 MAXIMUM	SU		Monthly	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Paul Amels COO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	716	4336764	08	03	24
TYPED OR PRINTED			AREA Code	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

Form Approved
OMB No. 2040-0004

VDM02432

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location If Different)*

NAME: VANDEMARK CHEMICAL, INC.
ADDRESS: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
FACILITY: VANDEMARK CHEMICAL, INC.
LOCATION: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
ATTN:MATTHEW BARMASSE

NY0204323	001Q
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	07	12	01	TO	08	02	29

DMR MAILING ZIP CODE: 14094
MINOR
(SUBR09)
NON-CONTACT COOLING WATER QTR
External Outfall
No Discharge ☒

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Solids, total suspended	SAMPLE MEASUREMENT	******	******		******	< 2.0	< 2.0	mg/L	0	1/1	Grab
00530 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		******	Req. Mon. DAILY AV	Req. Mon. DAILY MX	mg/L		Quarterly	GRAB
Solids, total suspended	SAMPLE MEASUREMENT	******	******		******	NODI 9					
00530 7 0 Intake from Stream	PERMIT REQUIREMENT	******	******		******	Req. Mon. DAILY AV	Req. Mon. DAILY MX	mg/L		Quarterly	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Paul Ameis COO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	716	4336764	08	03	29
TYPED OR PRINTED			AREA Code	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

MONITORING LOCATION 7 IS INTAKE FROM STREAM. IF NO INTAKE FROM STREAM DURING MONITORING PERIODENTER "NODI 9" IN THE QUANTITY AVERAGE COLUMN.FOR AMOUNTS BELOW DETECTION LIMIT PLEASE ENTER THE MDL PRECEDED BY THE < SYMBOL.

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)

DISCHARGE MONITORING REPORT (DMR)

Form Approved
OMB No. 2040-0004

VDM02433

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

NAME: VANDEMARK CHEMICAL, INC.
ADDRESS: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094

FACILITY: VANDEMARK CHEMICAL, INC.
LOCATION: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094

ATTN:MATTHEW BARMASSE

NY0204323	004Q
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	07	12	01	TO	08	02	29

DMR MAILING ZIP CODE: 14094
MINOR
(SUBR09)
NON-CONTACT COOLING WATER QTR
External Outfall

No Discharge ☒

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Solids, total suspended	SAMPLE MEASUREMENT	******	******		******						
00530 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		******	Req. Mon. DAILY AV	Req. Mon. DAILY MX	mg/L		Quarterly	GRAB
Solids, total suspended	SAMPLE MEASUREMENT	******	******		******						
00530 7 0 Intake from Stream	PERMIT REQUIREMENT	******	******		******	Req. Mon. DAILY AV	Req. Mon. DAILY MX	mg/L		Quarterly	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Paul Ames COO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	Paul Ames	716	433-7647	08	03	24
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA Code	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)
MONITORING LOCATION '7' IS INTAKE FROM STREAM. IF NO INTAKE FROM STREAM DURING MONITORING PERIOD,ENTER "NODI 9" IN THE QUANTITY AVERAGE COLUMN.

Organization Name	Project Name	# of Samples / # of Bottles
VanDeMark Chemical Inc.	SPDES Sample	1
Street Address	**Client PO / Release #**	**Turnaround / Date Results Needed**
One North Transit Road		
City, State, ZIP	**Date Sampled**	**IsleChem Project #**
Lockport, NY		NY801227 9900
Contact Person	**QC reporting level requested:** Std Full	**Are RUSH charges authorized?** Yes No
Pamela J. Cook p.cook@snpe.com		
Phone# and Fax#		
716-433-6764 x 150 cell: 716-609-1476		

Sample ID	Sample Location	Date/time	Matrix	Comp	Grab	TSS	COD	4104	1602	HNO3	HCL	NaOH	H2SO4	unpres.		Comments
SPDES			Water		x	x								x		134939
SPDES			Water		x		x									134940 Added H_2SO_4 upon receipt.

Sampled By	Date	Time	Received by	Date	Time
M. Pfaff	1/25/08	14:30	William Durell	1-29-08	0820
Relinquished by	**Date**	**Time**	**Received by**	**Date**	**Time**
William Durell	1-29-08	0820		1-29-08	0820
Relinquished by	**Date**	**Time**	**Received by**	**Date**	**Time**
	1-29-08	0820	Patricia Hayes	1/29/08	0820
Relinquished by	**Date**	**Time**	**Received by lab**	**Date**	**Time**
				1-29-08	

IsleChem, LLC
2801 Long Road
Grand Island, NY 14072
716-773-8614
Fax: 716-773-8517

Chain of Custody

by relinquishing these sample to IsleChem, LLC. you are accepting the current IsleChem, LLC terms and conditions for the sale of services

Relinquished by P. Haggerty @ 1300

VDM02434

Sample Results

Sample ID: 1 Client: VandeMark Chemical, Inc.
Lab ID / Vessel 56921 / 134939, 134940 Report ID: NY801227.0.9900
Location: SPDES / Field Grab - Water Sampled: 1/28/2008

Parameters / Method	Analyte	Sample Results	Units	Analyst	Date
Chemical Oxygen Demand / EPA 410.4 Rev 2.0	Chemical Oxygen Demand	<10	mg/L	MF	2/7/2008
Solids, Total Suspended / EPA 160.2	Solids, Total Suspended	<2.0	mg/L	MF	1/31/2008

end of Lab ID number 56921

General Disclaimer
•The test results are submitted pursuant to IsleChem LLC's current terms and conditions of sale, including the company's standard warranty and limitation of liability provisions. No responsibility or liability is assumed for the manner in which the results are used or interpreted.
•This report is issued for the benefit of and may be relied upon by the client named above. The client bears full responsibility for deciding the level of testing for sample submitted to IsleChem LLC.
•These results pertain only to the items tested.
•This report shall not be reproduced except in full.
•If the sample(s) represented by these test results were not collected by IsleChem LLC then the test results are limited to the reported values determine by the analytical testing process. IsleChem LLC makes no representation regarding the sample's collection technique, condition, volume, homogeneity or any other aspect of the sample(s) prior to IsleChem LLC taking possession of the sample(s) and the influence it may have on the results.
•Unless notified in writing to return the samples covered by this report IsleChem LLC will store what remains of the sample(s), if anything, for a period of 60 days before discarding, unless otherwise required by law. A shipping and handling fee with be charged for the return of any sample(s).
•Certain analytes may not be covered by the NYS DOH or NELAP fields of accreditation. Results for those analytes are generated by the cited method using QA/QC guidelines from IsleChem's Quality Control Manual, where applicable.

The test results in this report meet all NELAP requirements for parameters that are within IsleChem's field of accreditation. Any exceptions to NELAP requirements are noted in the comments field.

IsleChem, LLC
2801 Long Road
Grand Island
New York 14072
Tel: (716) 773-8614
Fax: (716) 773-8517
Visit us on the web at www.islechem.com

VDM02435

VanDeMark
Phosgene Chemistry • Custom Chemicals

Date: 04/02/08

To: NYSDEC
Division of Water
Bureau of Watershed Compliance Programs
625 Broadway 4th Floor
Albany, NY 12233-3506

CC: NYSDEC
Regional Water Quality Engineer
270 Michigan Ave.
Buffalo, NY 14203-2999
Attn: Rob Locey

Niagara County Health Dept.
5467 Upper Mountain Road
Suite 100
Lockport, NY 14094
Attn: Ron Gwozdek

RE: SPDES Report

Enclosed please find the SPDES report for the month of March 2008. If you have any questions, please contact me at 716-433-6764 ext. 150.

Sincerely,

Pamela J. Cook

Pamela J. Cook
EHSQ Manager
e-mail: p.cook@vdmchemical.com

VanDeMark Chemical Inc.
One North Transit Road, Lockport, NY 14094
Tel: 716-433-6764 • Fax: 716-433-2850
www.vdmchemical.com

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

Form Approved
No. 2040-0004

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

NAME: VANDEMARK CHEMICAL, INC.
ADDRESS: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
FACILITY: VANDEMARK CHEMICAL, INC.
LOCATION: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
ATTN:MATTHEW BARMASSE

NY0204323	001M
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	08	03	01	TO	08	03	31

DMR MAILING ZIP CODE: 14094
MINOR
(SUBR09)
NON-CONTACT COOLING WATER
External Outfall

No Discharge ☒

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Temperature, water deg. fahrenheit	SAMPLE MEASUREMENT	******	******		******	******					
00011 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		******	******	90 DAILY MX	deg F		Monthly	GRAB
Flow rate	SAMPLE MEASUREMENT				******	******	******				
00056 1 0 Effluent Gross	PERMIT REQUIREMENT	50000 DAILY AV	Req. Mon. DAILY MX	gal/d	******	******	******			Monthly	INSTAN
pH	SAMPLE MEASUREMENT	******	******			******					
00400 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		6 MINIMUM	******	9 MAXIMUM	SU		Monthly	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Paul Amels, COO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.		716	4336764	08	04	02
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA Code	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

VDM02437

NATIONAL POLLUTANT DISCHAR[illegible]LIMINATION SYSTEM (NPDES)
DISCHARGE MONIT[illegible]G REPORT (DMR)

[illegible]Approved
No. 2040-0004

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

NAME: VANDEMARK CHEMICAL, INC.
ADDRESS: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
FACILITY: VANDEMARK CHEMICAL, INC.
LOCATION: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
ATTN:MATTHEW BARMASSE

NY0204323	004M
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	08	03	01	TO	08	03	31

DMR MAILING ZIP CODE: 14094
MINOR
(SUBR09)
NON-CONTACT COOLING WATER
External Outfall

No Discharge ☒

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Temperature, water deg. fahrenheit	SAMPLE MEASUREMENT	******	******		******	******					
00011 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		******	******	90 DAILY MX	deg F		Monthly	GRAB
Flow rate	SAMPLE MEASUREMENT				******	******	******				
00056 1 0 Effluent Gross	PERMIT REQUIREMENT	330000 DAILY AV	Req. Mon. DAILY MX	gal/d	******	******	******			Monthly	INSTAN
pH	SAMPLE MEASUREMENT	******	******			******					
00400 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		6 MINIMUM	******	9 MAXIMUM	SU		Monthly	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Paul Ameis, COO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	Paul Ameis	716 433-6764		08	01	02
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA Code	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

VDM02438

VanDeMark
Phosgene Chemistry • Custom Chemicals

Date: 05/12/08

To: NYSDEC
Division of Water
Bureau of Watershed Compliance Programs
625 Broadway 4th Floor
Albany, NY 12233-3506

CC: NYSDEC
Regional Water Quality Engineer
270 Michigan Ave.
Buffalo, NY 14203-2999
Attn: Rob Locey

Niagara County Health Dept.
5467 Upper Mountain Road
Suite 100
Lockport, NY 14094
Attn: Ron Gwozdek

RE: SPDES Report

Enclosed please find the SPDES report for the month of April 2008. If you have any questions, please contact me at 716-433-6764 ext. 150.

Sincerely,

Pamela J. Cook
EHSQ Manager
e-mail: p.cook@vdmchemical.com

VanDeMark Chemical Inc.
One North Transit Road, Lockport, NY 14094
Tel: 716-433-6764 • Fax: 716-433-2850
www.vdmchemical.com

NATIONAL POLLUTANT DISCHAR[illegible]IMINATION SYSTEM (NPDES)
DISCHARGE MONIT[illegible]G REPORT (DMR)

Approved
No. 2040-0004

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

NAME: VANDEMARK CHEMICAL, INC.
ADDRESS: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
FACILITY: VANDEMARK CHEMICAL, INC.
LOCATION: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
ATTN:MATTHEW BARMASSE

NY0204323	004M
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	08	04	01	TO	08	04	30

DMR MAILING ZIP CODE: 14094
MINOR
(SUBR09)
NON-CONTACT COOLING WATER
External Outfall

No Discharge ☒

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Temperature, water deg. fahrenheit	SAMPLE MEASUREMENT	******	******		******	******					
00011 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		******	******	90 DAILY MX	deg F		Monthly	GRAB
Flow rate	SAMPLE MEASUREMENT				******	******	******				
00056 1 0 Effluent Gross	PERMIT REQUIREMENT	330000 DAILY AV	Req. Mon. DAILY MX	gal/d	******	******	******			Monthly	INSTAN
pH	SAMPLE MEASUREMENT	******	******			******					
00400 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		6 MINIMUM	******	9 MAXIMUM	SU		Monthly	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Paul Ameis, COO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	716-433-6764		08	05	12
TYPED OR PRINTED			AREA Code	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

VDM02440

NATIONAL POLLUTANT DISCHAF[illegible]LIMINATION SYSTEM (NPDES)
DISCHARGE MONIT[illegible]G REPORT (DMR)

Approved
No. 2040-0004

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location If Different)*

NAME: VANDEMARK CHEMICAL, INC.
ADDRESS: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
FACILITY: VANDEMARK CHEMICAL, INC.
LOCATION: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
ATTN:MATTHEW BARMASSE

NY0204323	001M
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD						
	YEAR	MO	DAY		YEAR	MO	DAY
FROM	08	04	01	TO	08	04	30

DMR MAILING ZIP CODE: 14094
MINOR
(SUBR09)
NON-CONTACT COOLING WATER
External Outfall

No Discharge ☒

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Temperature, water deg. fahrenheit	SAMPLE MEASUREMENT	******	******		******	******					
00011 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		******	******	90 DAILY MX	deg F		Monthly	GRAB
Flow rate	SAMPLE MEASUREMENT				******	******	******				
00056 1 0 Effluent Gross	PERMIT REQUIREMENT	50000 DAILY AV	Req. Mon. DAILY MX	gal/d	******	******	******			Monthly	INSTAN
pH	SAMPLE MEASUREMENT	******	******			******					
00400 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		6 MINIMUM	******	9 MAXIMUM	SU		Monthly	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Paul Ameis, COO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.		7164336764		08	05	12
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA Code	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

VDM02441

VanDeMark

Phosgene Chemistry • Custom Chemicals

Date: 6/10/08

To: NYSDEC
Division of Water
Bureau of Watershed Compliance Programs
625 Broadway 4th Floor
Albany, NY 12233-3506

CC: NYSDEC
Regional Water Quality Engineer
270 Michigan Ave.
Buffalo, NY 14203-2999
Attn: Rob Locey

Niagara County Health Dept.
5467 Upper Mountain Road
Suite 100
Lockport, NY 14094
Attn: Ron Gwozdek

RE: SPDES Report

Enclosed please find the SPDES report for the month of May 2008, also enclosed are the semi-annual and quarterly reports. If you have any questions, please contact me at 716-433-6764 ext. 150.

Sincerely,

Pamela J. Cook
EHSQ Manager
e-mail: p.cook@vdmchemical.com

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

Form Approved
OMB No. 2040-0004

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

NAME: VANDEMARK CHEMICAL, INC.
ADDRESS: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
FACILITY: VANDEMARK CHEMICAL, INC.
LOCATION: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
ATTN:MATTHEW BARMASSE

NY0204323	001M
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD						
	YEAR	MO	DAY		YEAR	MO	DAY
FROM	08	05	01	TO	08	05	31

DMR MAILING ZIP CODE: 14094
MINOR
(SUBR09)
NON-CONTACT COOLING WATER
External Outfall

No Discharge ☒

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Temperature, water deg. fahrenheit	SAMPLE MEASUREMENT	******	******		******	******					
00011 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		******	******	90 DAILY MX	deg F		Monthly	GRAB
Flow rate	SAMPLE MEASUREMENT				******	******	******				
00056 1 0 Effluent Gross	PERMIT REQUIREMENT	50000 DAILY AV	Req. Mon. DAILY MX	gal/d	******	******	******			Monthly	INSTAN
pH	SAMPLE MEASUREMENT	******	******			******					
00400 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		6 MINIMUM	******	9 MAXIMUM	SU		Monthly	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Paul Ameis, COO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	716 433-6764		08	06	09
TYPED OR PRINTED			AREA Code	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

Form Approved
OMB No. 2040-0004

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

NAME: VANDEMARK CHEMICAL, INC.
ADDRESS: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
FACILITY: VANDEMARK CHEMICAL, INC.
LOCATION: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
ATTN:MATTHEW BARMASSE

NY0204323	004M
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	08	05	01	TO	08	05	31

DMR MAILING ZIP CODE: 14094
MINOR
(SUBR09)
NON-CONTACT COOLING WATER
External Outfall

No Discharge ☒

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Temperature, water deg. fahrenheit	SAMPLE MEASUREMENT	******	******		******	******					
00011 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		******	******	90 DAILY MX	deg F		Monthly	GRAB
Flow rate	SAMPLE MEASUREMENT				******	******	******				
00056 1 0 Effluent Gross	PERMIT REQUIREMENT	330000 DAILY AV	Req. Mon. DAILY MX	gal/d	******	******	******			Monthly	INSTAN
pH	SAMPLE MEASUREMENT	******	******			******					
00400 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		6 MINIMUM	******	9 MAXIMUM	SU		Monthly	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Paul Ameis, COO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	Paul	716-433-6764		08	06	09
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA Code	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

Form Approved
OMB No. 2040-0004

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

NAME: VANDEMARK CHEMICAL, INC.
ADDRESS: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
FACILITY: VANDEMARK CHEMICAL, INC.
LOCATION: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
ATTN:MATTHEW BARMASSE

NY0204323	001Q
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	08	03	01	TO	08	05	31

DMR MAILING ZIP CODE: 14094
MINOR
(SUBR09)
NON-CONTACT COOLING WATER QTR
External Outfall
No Discharge ☒

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Solids, total suspended	SAMPLE MEASUREMENT	******	******		******						
00530 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		******	Req. Mon. DAILY AV	Req. Mon. DAILY MX	mg/L		Quarterly	GRAB
Solids, total suspended	SAMPLE MEASUREMENT	******	******		******						
00530 7 0 Intake from Stream	PERMIT REQUIREMENT	******	******		******	Req. Mon. DAILY AV	Req. Mon. DAILY MX	mg/L		Quarterly	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Paul Ameis, COO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	Paul Ameis	716 433-6764		08	06	09
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA Code	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)
MONITORING LOCATION 7 IS INTAKE FROM STREAM. IF NO INTAKE FROM STREAM DURING MONITORING PERIODENTER "NODI 9" IN THE QUANTITY AVERAGE COLUMN.FOR AMOUNTS BELOW DETECTION LIMIT PLEASE ENTER THE MDL PRECEDED BY THE < SYMBOL.

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

Form Approved
OMB No. 2040-0004

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

NAME: VANDEMARK CHEMICAL, INC.
ADDRESS: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094

FACILITY: VANDEMARK CHEMICAL, INC.
LOCATION: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094

ATTN:MATTHEW BARMASSE

NY0204323	004Q
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	08	03	01	TO	08	05	31

DMR MAILING ZIP CODE: 14094
MINOR
(SUBR09)
NON-CONTACT COOLING WATER QTR
External Outfall

No Discharge ☒

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Solids, total suspended	SAMPLE MEASUREMENT	******	******		******						
00530 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		******	Req. Mon. DAILY AV	Req. Mon. DAILY MX	mg/L		Quarterly	GRAB
Solids, total suspended	SAMPLE MEASUREMENT	******	******		******						
00530 7 0 Intake from Stream	PERMIT REQUIREMENT	******	******		******	Req. Mon. DAILY AV	Req. Mon. DAILY MX	mg/L		Quarterly	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Paul Ameis, COO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	716	433-6761	08	06	09
TYPED OR PRINTED			AREA Code	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)
MONITORING LOCATION '7' IS INTAKE FROM STREAM. IF NO INTAKE FROM STREAM DURING MONITORING PERIOD,ENTER "NODI 9" IN THE QUANTITY AVERAGE COLUMN.

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

Form Approved
OMB No. 2040-0004

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

NAME: VANDEMARK CHEMICAL, INC.
ADDRESS: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
FACILITY: VANDEMARK CHEMICAL, INC.
LOCATION: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
ATTN:MATTHEW BARMASSE

NY0204323	001S
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD						
	YEAR	MO	DAY		YEAR	MO	DAY
FROM	07	12	01	TO	08	05	31

DMR MAILING ZIP CODE: 14094
MINOR
(SUBR09)
NON-CONTACT COOLING WATER SEMI
External Outfall

No Discharge ☒

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Oxygen demand, chem. (low level) (COD)	SAMPLE MEASUREMENT	******	******		******	<10	<10	mg/l	0	1/1	Grab
00335 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		******	Req. Mon. DAILY AV	Req. Mon. DAILY MX	mg/L		Semiannual	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Paul Ameis, COO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	Paul Ameis	716	433-6764	08	06	09
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA Code	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

Form Approved
OMB No. 2040-0004

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

NAME: VANDEMARK CHEMICAL, INC.
ADDRESS: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094

FACILITY: VANDEMARK CHEMICAL, INC.
LOCATION: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094

ATTN:MATTHEW BARMASSE

NY0204323	004S
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	07	12	01	TO	08	05	31

DMR MAILING ZIP CODE: 14094
MINOR
(SUBR09)
NON-CONTACT COOLING WATER SEMI
External Outfall

No Discharge ☒

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Oxygen demand, chem. (low level) (COD)	SAMPLE MEASUREMENT	******	******		******						
00335 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		******	Req. Mon. DAILY AV	Req. Mon. DAILY MX	mg/L		Semiannual	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Paul Ameis, COO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	Paul Ameis SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	7166433616		08	06	09
TYPED OR PRINTED			AREA Code	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

=======

IsleChem, LLC
2801 Long Road
Grand Island
New York 14072
Tel: (716) 773-8614
Fax: (716) 773-8517

IsleChem, LLC Analysis Report

Project: Water Samples for Analysis

Phase:
Sample Date: 1/28/2008
Sample Time: 2:30:00 PM

Report Date: Thursday, February 07, 2008
Report ID: NY801227.0.9900
PO# / Release#: /
Reference #:
Report Status: **Final**

performed at the request of: Pamela J Cook
VandeMark Chemical, Inc.

One North Transit Road
Lockport, NY 14094-2399

The enclosed sample results table(s) are for 1 sample(s) received by IsleChem LLC on 1/29/2008 submitted by VandeMark Chemical, Inc.

Authorized Signature:

☑ Richard V. Finn, Manager of Chemical Testing
☐ Martin Ruszaj, Director of Chemical Testing

Laboratory Personnel Legend:

FB	Fred Bozek
DD	David Domroes
MF	Mary Ferguson
RVF	Richard (Dick) V. Finn
EF	Eric Fischer
VJH	Vivian Hoffman
MR	Martin S. Ruszaj
RS	Ron Stacy

VDM02449

Sample Results

Sample ID:	1	Client:	VandeMark Chemical, Inc.
Lab ID / Vessel	56921 / 134939, 134940	Report ID:	NY801227.0.9900
Location:	SPDES / Field Grab - Water	Sampled:	1/28/2008

Parameters / Method	Analyte	Sample Results	Units	Analyst	Date
Chemical Oxygen Demand / EPA 410.4 Rev 2.0	Chemical Oxygen Demand	**<10**	**mg/L**	MF	2/7/2008
Solids, Total Suspended / EPA 160.2	Solids, Total Suspended	**<2.0**	**mg/L**	MF	1/31/2008

end of Lab ID number 56921

General Disclaimer

•The test results are submitted pursuant to IsleChem LLC's current terms and conditions of sale, including the company's standard warranty and limitation of liability provisions. No responsibility or liability is assumed for the manner in which the results are used or interpreted.

•This report is issued for the benefit of and may be relied upon by the client named above. The client bears full responsibility for deciding the level of testing for sample submitted to IsleChem LLC.

•These results pertain only to the items tested.

•This report shall not be reproduced except in full.

•If the sample(s) represented by these test results were not collected by IsleChem LLC then the test results are limited to the reported values determine by the analytical testing process. IsleChem LLC makes no representation regarding the sample's collection technique, condition, volume, homogeneity or any other aspect of the sample(s) prior to IsleChem LLC taking possession of the sample(s) and the influence it may have on the results.

•Unless notified in writing to return the samples covered by this report IsleChem LLC will store what remains of the sample(s), if anything, for a period of 60 days before discarding, unless otherwise required by law. A shipping and handling fee with be charged for the return of any sample(s).

•Certain analytes may not be covered by the NYS DOH or NELAP fields of accreditation. Results for those analytes are generated by the cited method using QA/QC guidelines from IsleChem's Quality Control Manual, where applicable.

The test results in this report meet all NELAP requirements for parameters that are within IsleChem's field of accreditation. Any exceptions to NELAP requirements are noted in the comments field.

IsleChem, LLC
2801 Long Road
Grand Island
New York 14072
Tel: (716) 773-8614
Fax: (716) 773-8517
Visit us on the web at www.islechem.com

Organization Name	Project Name	# of Samples / # of Bottles
VanDeMark Chemical Inc.	SPDES Sample	1
Street Address	**Client PO / Release #**	**Turnaround / Date Results Needed**
One North Transit Road		
City, State, ZIP	**Date Sampled**	**IsleChem Project #**
Lockport, NY		NY801227 9900

Contact Person	Phone# and Fax#	QC reporting level requested: Std Full	Are RUSH charges authorized? Yes No
Pamela J. Cook p.cook@snpe.com	716-433-6764 x 150 cell: 716-609-1476		

Sample ID	Sample Location	Date/time	Matrix	Comp	Grab	TSS	COD	4104	1602	HNO3	HCL	NaOH	H2SO4	unpres.		Comments
SPDES			Water		x	x								x		134939
SPDES			Water		x		x							134940		Added H_2SO_4 upon receipt.

Sampled By	Date	Time	Received by	Date	Time
L.L. Pfaff	1/28/08	14:30	William Thrall	1-29-08	0820
Relinquished by	**Date**	**Time**	**Received by**	**Date**	**Time**
William Thrall	1-29-08	0820		1-29-08	0820
Relinquished by	**Date**	**Time**	**Received by**	**Date**	**Time**
	1-29-08	0820	Patricia Hagerty	1/29/08	0820
Relinquished by	**Date**	**Time**	**Received by lab**	**Date**	**Time**
				1-29-08	

IsleChem, LLC
2801 Long Road
Grand Island, NY 14072
716-773-8614
Fax: 716-773-8517

Chain of Custody

by relinquishing these sample to IsleChem, LLC. you are accepting the current IsleChem, LLC terms and conditions for the sale of services

Relinquished by P. Hagerty @ 1300

VDM02451

VanDeMark
Phosgene Chemistry • Custom Chemicals

Date: 7/1/08

To: NYSDEC
Division of Water
Bureau of Watershed Compliance Programs
625 Broadway 4th Floor
Albany, NY 12233-3506

CC: NYSDEC
Regional Water Quality Engineer
270 Michigan Ave.
Buffalo, NY 14203-2999
Attn: Rob Locey

Niagara County Health Dept.
5467 Upper Mountain Road
Suite 100
Lockport, NY 14094
Attn: Ron Gwozdek

RE: SPDES Report

Enclosed please find the SPDES report for the month of June 2008. If you have any questions, please contact me at 716-433-6764 ext. 150.

Sincerely,

Pamela J. Cook
EHSQ Manager
e-mail: p.cook@vdmchemical.com

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

Form Approved
OMB No. 2040-0004

VDM02453

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

NAME: VANDEMARK CHEMICAL, INC.
ADDRESS: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094

FACILITY: VANDEMARK CHEMICAL, INC.
LOCATION: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094

ATTN:MATTHEW BARMASSE

NY0204323	001M
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	08	06	01	TO	08	06	30

DMR MAILING ZIP CODE: 14094
MINOR
(SUBR09)
NON-CONTACT COOLING WATER
External Outfall

No Discharge ☒

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Temperature, water deg. fahrenheit	SAMPLE MEASUREMENT	******	******		******	******					
00011 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		******	******	90 DAILY MX	deg F		Monthly	GRAB
Flow rate	SAMPLE MEASUREMENT				******	******	******				
00056 1 0 Effluent Gross	PERMIT REQUIREMENT	50000 DAILY AV	Req. Mon. DAILY MX	gal/d	******	******	******			Monthly	INSTAN
pH	SAMPLE MEASUREMENT	******	******			******					
00400 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		6 MINIMUM	******	9 MAXIMUM	SU		Monthly	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Paul Ameis, (CX)	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.		716	4336764	08	07	04
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA Code	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

Form Approved
OMB No. 2040-0004

VDM02454

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

NAME: VANDEMARK CHEMICAL, INC.
ADDRESS: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094

FACILITY: VANDEMARK CHEMICAL, INC.
LOCATION: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094

ATTN:MATTHEW BARMASSE

NY0204323	004M
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	08	06	01	TO	08	06	30

DMR MAILING ZIP CODE: 14094
MINOR
(SUBR09)
NON-CONTACT COOLING WATER
External Outfall

No Discharge ☒

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Temperature, water deg. fahrenheit	SAMPLE MEASUREMENT	******	******		******	******					
00011 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		******	******	90 DAILY MX	deg F		Monthly	GRAB
Flow rate	SAMPLE MEASUREMENT				******	******	******				
00056 1 0 Effluent Gross	PERMIT REQUIREMENT	330000 DAILY AV	Req. Mon. DAILY MX	gal/d	******	******	******			Monthly	INSTAN
pH	SAMPLE MEASUREMENT	******	******			******					
00400 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		6 MINIMUM	******	9 MAXIMUM	SU		Monthly	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Paul Ameis, COO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.		7164336764		08	07	01
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA Code	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

NATIONAL POLLUTANT DISCHARG[illegible]IINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

F[illegible]roved
Ob[illegible].2040-0004

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

NAME: VANDEMARK CHEMICAL, INC.
ADDRESS: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094

FACILITY: VANDEMARK CHEMICAL, INC.
LOCATION: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094

ATTN:PAMELA COOK

NY0204323	001M
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	08	07	01	TO	08	07	31

DMR MAILING ZIP CODE: 14094
MINOR
(SUBR09)
NON-CONTACT COOLING WATER
External Outfall

No Discharge ☒

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Temperature, water deg. fahrenheit	SAMPLE MEASUREMENT	******	******		******	******					
00011 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		******	******	90 DAILY MX	deg F		Monthly	GRAB
Flow rate	SAMPLE MEASUREMENT				******	******	******				
00056 1 0 Effluent Gross	PERMIT REQUIREMENT	50000 DAILY AV	Req. Mon. DAILY MX	gal/d	******	******	******			Monthly	INSTAN
pH	SAMPLE MEASUREMENT	******	******			******					
00400 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		6 MINIMUM	******	9 MAXIMUM	SU		Monthly	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Paul Ameis COO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	716	4336764	08	08	01
TYPED OR PRINTED			AREA Code	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

VDM02455

NATIONAL POLLUTANT DISCHARG' ...MINATION SYSTEM (NPDES)
DISCHARGE MONITOR... REPORT (DMR)

F... ...roved
O... ...2040-0004

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

NAME: VANDEMARK CHEMICAL, INC.
ADDRESS: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094

FACILITY: VANDEMARK CHEMICAL, INC.
LOCATION: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094

ATTN:PAMELA COOK

NY0204323	004M
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	08	07	01	TO	08	07	31

DMR MAILING ZIP CODE: 14094
MINOR
(SUBR09)
NON-CONTACT COOLING WATER
External Outfall

No Discharge ☒

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Temperature, water deg. fahrenheit	SAMPLE MEASUREMENT	******	******		******	******					
00011 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		******	******	90 DAILY MX	deg F		Monthly	GRAB
Flow rate	SAMPLE MEASUREMENT				******	******	******				
00056 1 0 Effluent Gross	PERMIT REQUIREMENT	330000 DAILY AV	Req. Mon. DAILY MX	gal/d	******	******	******			Monthly	INSTAN
pH	SAMPLE MEASUREMENT	******	******			******					
00400 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		6 MINIMUM	******	9 MAXIMUM	SU		Monthly	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Paul Ameis, COO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	716-1336764		08	08	01
TYPED OR PRINTED			AREA Code	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

VDM02456

VanDeMark
Phosgene Chemistry • Custom Chemicals

Date: 09/03/08

To: NYSDEC
Division of Water
Bureau of Watershed Compliance Programs
625 Broadway 4th Floor
Albany, NY 12233-3506

CC: NYSDEC
Regional Water Quality Engineer
270 Michigan Ave.
Buffalo, NY 14203-2999
Attn: Rob Locey

Niagara County Health Dept.
5467 Upper Mountain Road
Suite 100
Lockport, NY 14094
Attn: Ron Gwozdek

RE: SPDES Report

Enclosed please find the SPDES report for the month of July 2008. If you have any questions, please contact me at 716-433-6764 ext. 150.

Sincerely,

Pamela J. Cook
EHSQ Manager
e-mail: p.cook@vdmchemical.com

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

Approved
2040-0004

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

NAME: VANDEMARK CHEMICAL, INC.
ADDRESS: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094

FACILITY: VANDEMARK CHEMICAL, INC.
LOCATION: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094

ATTN:PAMELA COOK

NY0204323	001M
PERMIT NUMBER	DISCHARGE NUMBER

	YEAR	MO	DAY		YEAR	MO	DAY
FROM	08	08	01	TO	08	08	31

DMR Mailing ZIP CODE: 14094
MINOR
(SUBR09)
NON-CONTACT COOLING WATER
External Outfall
No Discharge ☒

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Temperature, water deg. fahrenheit	SAMPLE MEASUREMENT	******	******		******	******					
00011 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		******	******	90 DAILY MX	deg F		Monthly	GRAB
Flow rate	SAMPLE MEASUREMENT				******	******	******				
00056 1 0 Effluent Gross	PERMIT REQUIREMENT	50000 DAILY AV	Req. Mon. DAILY MX	gal/d	******	******	******			Monthly	INSTAN
pH	SAMPLE MEASUREMENT	******	******			******					
00400 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		6 MINIMUM	******	9 MAXIMUM	SU		Monthly	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Paul Ameis, COO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.		716 433 6764		08	09	03
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA Code	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

VDM02458

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

Approved
O.M.B. No. 2040-0004

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

NAME: VANDEMARK CHEMICAL, INC.
ADDRESS: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094

FACILITY: VANDEMARK CHEMICAL, INC.
LOCATION: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094

ATTN:PAMELA COOK

NY0204323	004M
PERMIT NUMBER	DISCHARGE NUMBER

	YEAR	MO	DAY		YEAR	MO	DAY
FROM	08	08	01	TO	08	08	31

DMR Mailing ZIP CODE: 14094
MINOR
(SUBR09)
NON-CONTACT COOLING WATER
External Outfall

No Discharge ☒

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Temperature, water deg. fahrenheit	SAMPLE MEASUREMENT	******	******		******	******					
00011 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		******	******	90 DAILY MX	deg F		Monthly	GRAB
Flow rate	SAMPLE MEASUREMENT				******	******	******				
00056 1 0 Effluent Gross	PERMIT REQUIREMENT	330000 DAILY AV	Req. Mon. DAILY MX	gal/d	******	******	******			Monthly	INSTAN
pH	SAMPLE MEASUREMENT	******	******			******					
00400 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		6 MINIMUM	******	9 MAXIMUM	SU		Monthly	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Paul Amels, (CC)	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.		716	4336764	08	09	03
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA Code	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

VDM002459

NATIONAL POLLUTANT DISCHARG[illegible]MINATION SYSTEM (NPDES)
DISCHARGE MONITO[illegible] REPORT (DMR)

F[illegible]proved
O[illegible]2040-0004

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

NAME: VANDEMARK CHEMICAL, INC.
ADDRESS: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094

FACILITY: VANDEMARK CHEMICAL, INC.
LOCATION: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094

ATTN:PAMELA COOK

NY0204323	001Q
PERMIT NUMBER	DISCHARGE NUMBER

	YEAR	MO	DAY		YEAR	MO	DAY
FROM	08	06	01	TO	08	08	31

DMR Mailing ZIP CODE: 14094
MINOR
(SUBR09)
NON-CONTACT COOLING WATER QTR
External Outfall

No Discharge ☒

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Solids, total suspended	SAMPLE MEASUREMENT	******	******		******						
00530 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		******	Req. Mon. DAILY AV	Req. Mon. DAILY MX	mg/L		Quarterly	GRAB
Solids, total suspended	SAMPLE MEASUREMENT	******	******		******						
00530 7 0 Intake from Stream	PERMIT REQUIREMENT	******	******		******	Req. Mon. DAILY AV	Req. Mon. DAILY MX	mg/L		Quarterly	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Paul Ameis, COO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	Paul Ameis	7166336764		08	09	03
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA Code	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

MONITORING LOCATION 7 IS INTAKE FROM STREAM. IF NO INTAKE FROM STREAM DURING MONITORING PERIODENTER "NODI 9" IN THE QUANTITY AVERAGE COLUMN.FOR AMOUNTS BELOW DETECTION LIMIT PLEASE ENTER THE MDL PRECEDED BY THE < SYMBOL.

VDM02460

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

Approved
OMB No. 2040-0004

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

NAME: VANDEMARK CHEMICAL, INC.
ADDRESS: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094

FACILITY: VANDEMARK CHEMICAL, INC.
LOCATION: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094

ATTN:PAMELA COOK

NY0204323	004Q
PERMIT NUMBER	DISCHARGE NUMBER

	YEAR	MO	DAY		YEAR	MO	DAY
FROM	08	06	01	TO	08	08	31

DMR Mailing ZIP CODE: 14094
MINOR
(SUBR09)
NON-CONTACT COOLING WATER QTR
External Outfall
No Discharge ☒

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Solids, total suspended	SAMPLE MEASUREMENT	******	******		******						
00530 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		******	Req. Mon. DAILY AV	Req. Mon. DAILY MX	mg/L		Quarterly	GRAB
Solids, total suspended	SAMPLE MEASUREMENT	******	******		******						
00530 7 0 Intake from Stream	PERMIT REQUIREMENT	******	******		******	Req. Mon. DAILY AV	Req. Mon. DAILY MX	mg/L		Quarterly	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Paul Ames, COO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	Paul Ames	7164336764		08	09	03
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA Code	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)
MONITORING LOCATION '7' IS INTAKE FROM STREAM. IF NO INTAKE FROM STREAM DURING MONITORING PERIOD, ENTER "NODI 9" IN THE QUANTITY AVERAGE COLUMN.

VDM02461

VanDeMark

Phosgene Chemistry • Custom Chemicals

Date: 10/02/08

To: NYSDEC
Division of Water
Bureau of Watershed Compliance Programs
625 Broadway 4th Floor
Albany, NY 12233-3506

CC: NYSDEC
Regional Water Quality Engineer
270 Michigan Ave.
Buffalo, NY 14203-2999
Attn: Rob Locey

Niagara County Health Dept.
5467 Upper Mountain Road
Suite 100
Lockport, NY 14094
Attn: Ron Gwozdek

RE: SPDES Report

Enclosed please find the SPDES report for the month of August 2008. If you have any questions, please contact me at 716-433-6764 ext. 150.

Sincerely,

Pamela J. Cook
EHSQ Manager
e-mail: p.cook@vdmchemical.com

VanDeMark Chemical Inc.
One North Transit Road, Lockport, NY 14094
Tel: 716-433-6764 • Fax: 716-433-2850
www.vdmchemical.com

VDM02463

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

Form Approved
OMB No. 2040-0004

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

NAME: VANDEMARK CHEMICAL, INC.
ADDRESS: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094

FACILITY: VANDEMARK CHEMICAL, INC.
LOCATION: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094

ATTN:PAMELA COOK

NY0204323	001M
PERMIT NUMBER	DISCHARGE NUMBER

	YEAR	MO	DAY		YEAR	MO	DAY
FROM	08	09	01	TO	08	09	30

DMR Mailing ZIP CODE: 14094
MINOR
(SUBR09)
NON-CONTACT COOLING WATER
External Outfall

No Discharge ☒

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Temperature, water deg. fahrenheit	SAMPLE MEASUREMENT	******	******		******	******					
00011 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		******	******	90 DAILY MX	deg F		Monthly	GRAB
Flow rate	SAMPLE MEASUREMENT				******	******	******				
00056 1 0 Effluent Gross	PERMIT REQUIREMENT	50000 DAILY AV	Req. Mon. DAILY MX	gal/d	******	******	******			Monthly	INSTAN
pH	SAMPLE MEASUREMENT	******	******			******					
00400 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		6 MINIMUM	******	9 MAXIMUM	SU		Monthly	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Paul Ameis, COO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	716-433-6764		08	10	01
TYPED OR PRINTED			AREA Code	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

Form Approved
OMB No. 2040-0004

Page 2

VDM02464

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

NAME: VANDEMARK CHEMICAL, INC.
ADDRESS: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094

FACILITY: VANDEMARK CHEMICAL, INC.
LOCATION: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094

ATTN:PAMELA COOK

NY0204323	004M
PERMIT NUMBER	DISCHARGE NUMBER

	YEAR	MO	DAY		YEAR	MO	DAY
FROM	08	09	01	TO	08	09	30

DMR Mailing ZIP CODE: 14094
MINOR
(SUBR09)
NON-CONTACT COOLING WATER
External Outfall

No Discharge ☒

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Temperature, water deg. fahrenheit	SAMPLE MEASUREMENT	******	******		******	******					
00011 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		******	******	90 DAILY MX	deg F		Monthly	GRAB
Flow rate	SAMPLE MEASUREMENT				******	******	******				
00056 1 0 Effluent Gross	PERMIT REQUIREMENT	330000 DAILY AV	Req. Mon. DAILY MX	gal/d	******	******	******			Monthly	INSTAN
pH	SAMPLE MEASUREMENT	******	******			******					
00400 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		6 MINIMUM	******	9 MAXIMUM	SU		Monthly	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Paul Amejs COO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	716 433 6764		08	10	01
TYPED OR PRINTED			AREA Code	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

Form Approved
OMB No. 2040-0004

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

NAME: VANDEMARK CHEMICAL, INC.
ADDRESS: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094

FACILITY: VANDEMARK CHEMICAL, INC.
LOCATION: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094

ATTN:PAMELA COOK

NY0204323	001M
PERMIT NUMBER	DISCHARGE NUMBER

	YEAR	MO	DAY		YEAR	MO	DAY
FROM	08	09	01	TO	08	09	30

DMR Mailing ZIP CODE: 14094
MINOR
(SUBR09)
NON-CONTACT COOLING WATER
External Outfall

No Discharge ☒

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Temperature, water deg. fahrenheit	SAMPLE MEASUREMENT	******	******		******	******					
00011 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		******	******	90 DAILY MX	deg F		Monthly	GRAB
Flow rate	SAMPLE MEASUREMENT				******	******	******				
00056 1 0 Effluent Gross	PERMIT REQUIREMENT	50000 DAILY AV	Req. Mon. DAILY MX	gal/d	******	******	******			Monthly	INSTAN
pH	SAMPLE MEASUREMENT	******	******			******					
00400 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		6 MINIMUM	******	9 MAXIMUM	SU		Monthly	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Paul Ameis, COO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	716-433-6764		08	10	01
TYPED OR PRINTED			AREA Code	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

Form Approved
OMB No. 2040-0004

VDM02466

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

NAME: VANDEMARK CHEMICAL, INC.
ADDRESS: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094

FACILITY: VANDEMARK CHEMICAL, INC.
LOCATION: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094

ATTN:PAMELA COOK

NY0204323	004M
PERMIT NUMBER	DISCHARGE NUMBER

	YEAR	MO	DAY		YEAR	MO	DAY
FROM	08	09	01	TO	08	09	30

DMR Mailing ZIP CODE: 14094
MINOR
(SUBR09)
NON-CONTACT COOLING WATER
External Outfall

No Discharge ☒

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Temperature, water deg. fahrenheit	SAMPLE MEASUREMENT	******	******		******	******					
00011 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		******	******	90 DAILY MX	deg F		Monthly	GRAB
Flow rate	SAMPLE MEASUREMENT				******	******	******				
00056 1 0 Effluent Gross	PERMIT REQUIREMENT	330000 DAILY AV	Req. Mon. DAILY MX	gal/d	******	******	******			Monthly	INSTAN
pH	SAMPLE MEASUREMENT	******	******			******					
00400 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		6 MINIMUM	******	9 MAXIMUM	SU		Monthly	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Paul Amejs COO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	Paul	716 433 6764		08	10	01
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA Code	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

VanDeMark

Phosgene Chemistry • Custom Chemicals

Date: 11/03/08

To: NYSDEC
Division of Water
Bureau of Watershed Compliance Programs
625 Broadway 4th Floor
Albany, NY 12233-3506

CC: NYSDEC
Regional Water Quality Engineer
270 Michigan Ave.
Buffalo, NY 14203-2999
Attn: Rob Locey

Niagara County Health Dept.
5467 Upper Mountain Road
Suite 100
Lockport, NY 14094
Attn: Ron Gwozdek

RE: SPDES Report

Enclosed please find the SPDES report for the month of October 2008. If you have any questions, please contact me at 716-433-6764 ext. 150.

Sincerely,

Pamela J. Cook

Pamela J. Cook
EHSQ Manager
e-mail: p.cook@vdmchemical.com

VanDeMark Chemical Inc.
One North Transit Road, Lockport, NY 14094
Tel: 716-433-6764 • Fax: 716-433-2850
www.vdmchemical.com

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

Approved
OMB No. 2040-0004

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

NAME: VANDEMARK CHEMICAL, INC.
ADDRESS: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094

FACILITY: VANDEMARK CHEMICAL, INC.
LOCATION: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094

ATTN:PAMELA COOK

NY0204323	004M
PERMIT NUMBER	DISCHARGE NUMBER

	YEAR	MO	DAY		YEAR	MO	DAY
FROM	08	10	01	TO	08	10	31

DMR Mailing ZIP CODE: 14094
MINOR
(SUBR09)
NON-CONTACT COOLING WATER
External Outfall
No Discharge ☒

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Temperature, water deg. fahrenheit	SAMPLE MEASUREMENT	******	******		******	******					
00011 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		******	******	90 DAILY MX	deg F		Monthly	GRAB
Flow rate	SAMPLE MEASUREMENT				******	******	******				
00056 1 0 Effluent Gross	PERMIT REQUIREMENT	330000 DAILY AV	Req. Mon. DAILY MX	gal/d	******	******	******			Monthly	INSTAN
pH	SAMPLE MEASUREMENT	******	******			******					
00400 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		6 MINIMUM	******	9 MAXIMUM	SU		Monthly	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Paul Ameis, COO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	Paul Ameis	716	4336764	08	11	03
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA Code	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

VDM02468

NATIONAL POLLUTANT DISCHAR IMINATION SYSTEM (NPDES)
DISCHARGE MONITO...G REPORT (DMR)

pproved
lo. 2040-0004

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

NAME: VANDEMARK CHEMICAL, INC.
ADDRESS: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094

FACILITY: VANDEMARK CHEMICAL, INC.
LOCATION: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094

ATTN:PAMELA COOK

NY0204323	001M
PERMIT NUMBER	DISCHARGE NUMBER

	YEAR	MO	DAY		YEAR	MO	DAY
FROM	08	10	01	TO	08	10	31

DMR Mailing ZIP CODE: 14094
MINOR
(SUBR09)
NON-CONTACT COOLING WATER
External Outfall

No Discharge ☒

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Temperature, water deg. fahrenheit	SAMPLE MEASUREMENT	******	******		******	******					
00011 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		******	******	90 DAILY MX	deg F		Monthly	GRAB
Flow rate	SAMPLE MEASUREMENT				******	******	******				
00056 1 0 Effluent Gross	PERMIT REQUIREMENT	50000 DAILY AV	Req. Mon. DAILY MX	gal/d	******	******	******			Monthly	INSTAN
pH	SAMPLE MEASUREMENT	******	******			******					
00400 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		6 MINIMUM	******	9 MAXIMUM	SU		Monthly	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Paul Ameis COO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	716	4336764	08	11	03
TYPED OR PRINTED			AREA Code	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

VDM02469

VanDeMark

Phosgene Chemistry • Custom Chemicals

Date: 12/01/08

To: NYSDEC
Division of Water
Bureau of Watershed Compliance Programs
625 Broadway 4th Floor
Albany, NY 12233-3506

CC: NYSDEC
Regional Water Quality Engineer
270 Michigan Ave.
Buffalo, NY 14203-2999
Attn: Rob Locey

Niagara County Health Dept.
5467 Upper Mountain Road
Suite 100
Lockport, NY 14094
Attn: Ron Gwozdek

RE: SPDES Report

Enclosed please find the SPDES report for the month of November 2008 and the Fourth (4th) Quarter report. If you have any questions, please contact me at 716-433-6764 ext. 150.

Sincerely,

Pamela J. Cook
EHSQ Manager
e-mail: p.cook@vdmchemical.com

VanDeMark Chemical Inc.
One North Transit Road, Lockport, NY 14094
Tel: 716-433-6764 • Fax: 716-433-2850
www.vdmchemical.com

NATIONAL POLLUTANT DISCHAR[illegible]LIMINATION SYSTEM (NPDES)
DISCHARGE MONIT[illegible]S REPORT (DMR)

Approved
lo. 2040-0004

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

NAME: VANDEMARK CHEMICAL, INC.
ADDRESS: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094

FACILITY: VANDEMARK CHEMICAL, INC.
LOCATION: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094

ATTN: PAMELA COOK

NY0204323	001M
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD			
	MM/DD/YYYY		MM/DD/YYYY
FROM	11/01/2008	TO	11/30/2008

DMR Mailing ZIP CODE: 14094
MINOR
(SUBR 09)
NON-CONTACT COOLING WATER
External Outfall

No Discharge ☒

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Temperature, water deg. fahrenheit	SAMPLE MEASUREMENT	******	******	******	******	******					
00011 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******	******	******	******	90 DAILY MX	deg F		Monthly	GRAB
Flow rate	SAMPLE MEASUREMENT				******	******	******	******			
00056 1 0 Effluent Gross	PERMIT REQUIREMENT	50000 DAILY AV	Req. Mon. DAILY MX	gal/d	******	******	******	******		Monthly	INSTAN
pH	SAMPLE MEASUREMENT	******	******	******		******					
00400 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******	******	6 MINIMUM	******	9 MAXIMUM	SU		Monthly	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE
Paul Ameis, COO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	Paul Ameis	716-433-6764		12/1/08
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA Code	NUMBER	MM/DD/YYYY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

VDM02471

NATIONAL POLLUTANT DISCHAR[illegible]IMINATION SYSTEM (NPDES)
DISCHARGE MONITO[illegible]G REPORT (DMR)

Approved
No. 2040-0004

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

NAME: VANDEMARK CHEMICAL, INC.
ADDRESS: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
FACILITY: VANDEMARK CHEMICAL, INC.
LOCATION: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094

ATTN: PAMELA COOK

NY0204323	001Q
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD			
	MM/DD/YYYY		MM/DD/YYYY
FROM	09/01/2008	TO	11/30/2008

DMR Mailing ZIP CODE: 14094
MINOR
(SUBR 09)
NON-CONTACT COOLING WATER QTR
External Outfall
No Discharge ☒

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Solids, total suspended	SAMPLE MEASUREMENT	******	******	******	******						
00530 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******	******	******	Req. Mon. DAILY AV	Req. Mon. DAILY MX	mg/L		Quarterly	GRAB
Solids, total suspended	SAMPLE MEASUREMENT	******	******	******	******						
00530 7 0 Intake from Stream	PERMIT REQUIREMENT	******	******	******	******	Req. Mon. DAILY AV	Req. Mon. DAILY MX	mg/L		Quarterly	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE
Paul Ameis, COO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	Paul Ameis	716	4336764	12/1/08
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA Code	NUMBER	MM/DD/YYYY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

MONITORING LOCATION 7 IS INTAKE FROM STREAM. IF NO INTAKE FROM STREAM DURING MONITORING PERIODENTER 'NODI 9" IN THE QUANTITY AVERAGE COLUMN.FOR AMOUNTS BELOW DETECTION LIMIT PLEASE EN

VDM02472

NATIONAL POLLUTANT DISCHAR[illegible]IMINATION SYSTEM (NPDES)
DISCHARGE MONI[illegible]G REPORT (DMR)

Approved
No. 2040-0004

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

NAME: VANDEMARK CHEMICAL, INC.
ADDRESS: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
FACILITY: VANDEMARK CHEMICAL, INC.
LOCATION: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094

ATTN: PAMELA COOK

NY0204323	001S
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD			
	MM/DD/YYYY		MM/DD/YYYY
FROM	06/01/2008	TO	11/30/2008

DMR Mailing ZIP CODE: 14094
MINOR
(SUBR 09)
NON-CONTACT COOLING WATER SEMI
External Outfall

No Discharge ☒

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Oxygen demand, chem. (low level) (COD)	SAMPLE MEASUREMENT	******	******	******	******						
00335 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******	******	******	Req. Mon. DAILY AV	Req. Mon. DAILY MX	mg/L		Semiannual	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE
Paul Ameis, COO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	Paul Ameis	716-4336764		12/11/08
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA Code	NUMBER	MM/DD/YYYY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

VDM02473

NATIONAL POLLUTANT DISCHAR[illegible]IMINATION SYSTEM (NPDES)
DISCHARGE MONIT[illegible]3 REPORT (DMR)

Approved
[illegible]o. 2040-0004

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

NAME: VANDEMARK CHEMICAL, INC.
ADDRESS: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
FACILITY: VANDEMARK CHEMICAL, INC.
LOCATION: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
ATTN: PAMELA COOK

NY0204323	004M
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD			
	MM/DD/YYYY		MM/DD/YYYY
FROM	11/01/2008	TO	11/30/2008

DMR Mailing ZIP CODE: 14094
MINOR
(SUBR 09)
NON-CONTACT COOLING WATER
External Outfall
No Discharge ☒

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Temperature, water deg. fahrenheit	SAMPLE MEASUREMENT	******	******	******	******	******					
00011 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******	******	******	******	90 DAILY MX	deg F		Monthly	GRAB
Flow rate	SAMPLE MEASUREMENT				******	******	******	******			
00056 1 0 Effluent Gross	PERMIT REQUIREMENT	330000 DAILY AV	Req. Mon. DAILY MX	gal/d	******	******	******	******		Monthly	INSTAN
pH	SAMPLE MEASUREMENT	******	******	******		******					
00400 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******	******	6 MINIMUM	******	9 MAXIMUM	SU		Monthly	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE
Paul Ameis, COO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	Paul Ameis	716	4336764	12/1/08
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA Code	NUMBER	MM/DD/YYYY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

VDM02474

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

Approved
No. 2040-0004

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

NAME: VANDEMARK CHEMICAL, INC.
ADDRESS: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094

FACILITY: VANDEMARK CHEMICAL, INC.
LOCATION: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094

ATTN: PAMELA COOK

NY0204323	004Q
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD			
	MM/DD/YYYY		MM/DD/YYYY
FROM	09/01/2008	TO	11/30/2008

DMR Mailing ZIP CODE: 14094
MINOR
(SUBR 09)
NON-CONTACT COOLING WATER QTR
External Outfall
No Discharge ☒

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Solids, total suspended	SAMPLE MEASUREMENT	******	******	******	******						
00530 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******	******	******	Req. Mon. DAILY AV	Req. Mon. DAILY MX	mg/L		Quarterly	GRAB
Solids, total suspended	SAMPLE MEASUREMENT	******	******	******	******						
00530 7 0 Intake from Stream	PERMIT REQUIREMENT	******	******	******	******	Req. Mon. DAILY AV	Req. Mon. DAILY MX	mg/L		Quarterly	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE
Paul Ameis, COO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	Paul Ameis	716-4336764		12 1 08
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA Code	NUMBER	MM/DD/YYYY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

MONITORING LOCATION '7' IS INTAKE FROM STREAM. IF NO INTAKE FROM STREAM DURING MONITORING PERIOD,ENTER "NODI 9" IN THE QUANTITY AVERAGE COLUMN.

VDM02475

NATIONAL POLLUTANT DISCHA[illegible]LIMINATION SYSTEM (NPDES)
DISCHARGE MONIT[illegible].G REPORT (DMR)

Approved
No. 2040-0004

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

NAME: VANDEMARK CHEMICAL, INC.
ADDRESS: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094

FACILITY: VANDEMARK CHEMICAL, INC.
LOCATION: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094

ATTN: PAMELA COOK

NY0204323	004S
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD			
	MM/DD/YYYY		MM/DD/YYYY
FROM	06/01/2008	TO	11/30/2008

DMR Mailing ZIP CODE: 14094
MINOR
(SUBR 09)
NON-CONTACT COOLING WATER SEMI
External Outfall

No Discharge ☒

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Oxygen demand, chem. (low level) (COD)	SAMPLE MEASUREMENT	******	******	******	******						
00335 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******	******	******	Req. Mon. DAILY AV	Req. Mon. DAILY MX	mg/L		Semiannual	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE
Paul Ameis, COO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	Paul A	716	4336764	12/1/08
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA Code	NUMBER	MM/DD/YYYY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

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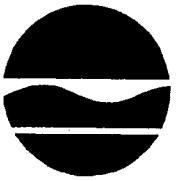
VDM02476

SPDES 2006

New York State Department of Environmental Conservation
Division of Water
reau of Water Compliance, 4th Floor
625 Broadway, Albany, New York 12233-3506
Phone: (518) 402-8177 • **FAX:** (518) 402-8082
Website: www.dec.state.ny.us



Denise M. Sheehan
Commissioner

August 14, 2006

Important Notice

Re: Discharge Monitoring Reports (DMRs)

Dear SPDES Permittee:

The Environmental Protection Agency (EPA) is modernizing it's Permit Compliance System (PCS). The new data-base system Integrated Compliance Information System (ICIS) will generate DMRs that are very similar to PCS DMRs, but they will not be printed on multi part forms. You will have to make copies of your completed DMR.

The original DMR should be sent to our office as you currently do and a copy sent to the other offices that you send them to now. Please make sure to keep a copy for your records. This new procedure will start with the September DMRs.

Please contact Bud Tozer at (518) 402-8083 or myself at (518) 402-8154 if you have any questions on this.

Sincerely,

Charles S. Haugh Jr., P.E.

Charles S. Haugh Jr., P.E.
SPDES Compliance Information Section
Bureau of Water Compliance

ISOCHEM
GROUPE SNPE

Date: 01/10/06

To: NYSDEC
Division of Water
Bureau of Watershed Compliance Programs
625 Broadway 4th Floor
Albany, NY 12233-3506

CC: NYSDEC
Regional Water Quality Engineer
270 Michigan Ave.
Buffalo, NY 14203-2999
Attn: Rob Locey

Niagara County Health Dept.
5467 Upper Mountain Road
Suite 100
Lockport, NY 14094
Attn: Ron Gwozdek

From: Pam Cook - Environmental Engineer - Ext.: 150

RE: SPDES Report

Enclosed please find the SPDES monthly report for December 2005. If you have any questions, please contact me at 716-433-6764 ext. 150.

Sincerely,

Pamela J Cook (ah)

Pamela J. Cook
Environmental Engineer
e-mail: p.cook@snpe.com

ISOCHEM Inc.
One North Transit Road - Lockport, New York 14094-2399 - Tel 716 433 6764 - Fax 716 433 2850

Form Approved.
No. 2040-0004

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*
NAME ISOCHEM, INC
ADDRESS ISOCHEM, INC
1 NORTH TRANSIT ROAD
LOCKPORT NY 14094
FACILITY ISOCHEM, INC
LOCATION LOCKPORT NY 14094
ATTN: MATTHEW BARMASSE

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM *(NPDES)*
DISCHARGE MONITORING REPORT *(DMR)*

NY0204323 — PERMIT NUMBER
001 M — DISCHARGE NUMBER

MONITORING PERIOD

	YEAR	MO	DAY		YEAR	MO	DAY
FROM	05	12	01	TO	05	12	31

MINOR
(SUBR 09)
F - FINAL
NON-CONTACT COOLING WATER

*** NO DISCHARGE [ ] ***

NOTE: Read Instructions before completing this form.

PARAMETER		QUANTITY OR LOADING AVERAGE	QUANTITY OR LOADING MAXIMUM	QUANTITY OR LOADING UNITS	QUALITY OR CONCENTRATION MINIMUM	QUALITY OR CONCENTRATION AVERAGE	QUALITY OR CONCENTRATION MAXIMUM	QUALITY OR CONCENTRATION UNITS	NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
TEMPERATURE, WATER DEG. FAHRENHEIT	SAMPLE MEASUREMENT	******	******		******	******	44	(15)	0	1/1	Grab
00011 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	******	******	90 DAILY MX	DEG. F		ONCE/ MONTH	GRAB
FLOW RATE	SAMPLE MEASUREMENT	780	780	(07)	******	******	******		0	1/1	Instan
00056 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	50000 DAILY AV	REPORT DAILY MX	GPD	******	******	******	**** ****		ONCE/ MONTH	INSTAN
PH	SAMPLE MEASUREMENT	******	******		7.6	******	7.6	(12)	0	1/1	Grab
00400 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	6.0 MINIMUM	******	9.0 MAXIMUM	SU		ONCE/ MONTH	GRAB
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER
PAUL AMEIS
COO
TYPED OR PRINTED

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE: AREA CODE 716, NUMBER 433-6764

DATE: YEAR 06, MO 01, DAY 09

COMMENTS AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here)*

EPA Form 3320-1 (Rev. 2/99) Previous editions may be used.

PAGE OF

VDM02480

Paperwork Reduction Act Notice

Public reporting burden for this collection of information is estimated to vary from a range of 10 hours as an average per response for some minor facilities, to 110 hours as an average per response for some major facilities, with a weighted average for major and minor facilities of 18 hours per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Chief, Information Policy Branch, PM-223, U.S. Environmental Protection Agency, 401 M Street, SW, Washington, DC 20460; and to the Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, DC 20503.

General Instructions

1. If form has been partially completed by preprinting, disregard instructions directed at entry of that information already preprinted.
2. Enter "*Permittee Name/Mailing Address* (and facility name/location, if different)," "*Permit Number*," and "*Discharge Number*" where indicated. (A separate form is required for each discharge.)
3. Enter dates beginning and ending "*Monitoring Period*" covered by form where indicated.
4. Enter each "*Parameter*" as specified in monitoring requirements of permit.
5. Enter "*Sample Measurement*" data for each parameter under "*Quantity*" and "*Quality*" in units specified in permit. "*Average*" is normally arithmetic average (geometric average for bacterial parameters) of all sample measurements for each parameter obtained during "*Monitoring Period*"; "*Maximum*" and "*Minimum*" are normally extreme high and low measurements obtained during "*Monitoring Period.*" (Note to municipals with secondary treatment requirement: Enter 30-day average of sample measurements under "*Average*," and enter maximum 7-day average of sample measurements obtained during monitoring period under "*Maximum.*")
6. Enter "*Permit Requirement*" for each parameter under "*Quantity*" and "*Quality*" as specified in permit.
7. Under "*No Ex*" enter number of sample measurements during monitoring period that exceed maximum (and/or minimum or 7-day average as appropriate) permit requirement for each parameter. If none, enter "*0.*"
8. Enter "*Frequency of Analysis*" both as "*Sample Measurement*" (actual frequency of sampling and analysis used during monitoring period) and as "*Permit Requirement*" specified in permit. (e.g., Enter "*Cont,*" for continuous monitoring, "*1/7*" for one day per week, "*1/30*" for one day per month, "*1/90*" for one day per quarter, etc.)
9. Enter "*Sample Type*" both as "*Sample Measurement*" (actual sample type used during monitoring period) and as "*Permit Requirement,*" (e.g., Enter "*Grab*" for individual sample, "*24HC*" for 24-hour composite, "*N/A*" for continuous monitoring, etc.)
10. Where violations of permit requirements are reported, attach a brief explanation to describe cause and corrective actions taken, and reference each violation by date.
11. If "no discharge" occurs during monitoring period, enter "*No Discharge*" across form in place of data entry.
12. Enter "*Name/Title of Principal Executive Officer*" with "*Signature of Principal Executive Officer of Authorized Agent,*" "*Telephone Number,*" and "*Date*" at bottom of form.
13. Mail signed Report to Office(s) by date(s) specified in permit. Retain copy for your records.
14. More detailed instructions for use of this *Discharge Monitoring Report (DMR)* form may be obtained from Office(s) specified in permit.

Legal Notice

This report is required by law (33 U.S.C. 1318; 40 C.F.R. 125.27). Failure to report or failure to report truthfully can result in civil penalties not to exceed $10,000 per day of violation; or in criminal penalties not to exceed $25,000 per day of violation, or by imprisonment for not more than one year, or by both.

VDM02481

Form Approved.
) No. 2040-0004

PERMITTEE NAME/AD SS *(Include Facility Name/Location if Different)*
NAME ISOC , INC
ADDRESS ISOCHEM, INC
1 NORTH TRANSIT ROAD
LOCKPORT NY 14094
FACILITY ISOCHEM, INC
LOCATION LOCKPORT NY 14094
ATTN: MATTHEW BARMASSE

NATIONAL POLLUTANT ARGE ELIMINATION SYSTEM *(NPDES)*
DISCHARGE ITORING REPORT *(DMR)*

NY0204323 — PERMIT NUMBER
004 M — DISCHARGE NUMBER

MONITORING PERIOD

	YEAR	MO	DAY		YEAR	MO	DAY
FROM	05	12	01	TO	05	12	31

MINOR
(SUBR 09)
F - FINAL
NON-CONTACT COOLING WATER

*** NO DISCHARGE [X] ***
NOTE: Read Instructions before completing this form.

PARAMETER		QUANTITY OR LOADING AVERAGE	QUANTITY OR LOADING MAXIMUM	QUANTITY OR LOADING UNITS	QUALITY OR CONCENTRATION MINIMUM	QUALITY OR CONCENTRATION AVERAGE	QUALITY OR CONCENTRATION MAXIMUM	QUALITY OR CONCENTRATION UNITS	NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
TEMPERATURE, WATER DEG. FAHRENHEIT	SAMPLE MEASUREMENT	*******	*******		*******	*******		(15)			
00011 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	*******	******* **** ****		*******	*******	90 DAILY MX	DEG. F		ONCE/ MONTH	GRAB
FLOW RATE	SAMPLE MEASUREMENT			(07)	*******	*******	*******				
00056 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	330000 DAILY AV	REPORT DAILY MX	GPD	*******	*******	*******	**** ****		ONCE/ MONTH	INSTAN
PH	SAMPLE MEASUREMENT	*******	*******			*******		(12)			
00400 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	*******	******* **** ****		6.0 MINIMUM	*******	9.0 MAXIMUM	SU		ONCE/ MONTH	GRAB
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE	DATE		
PAUL AMES COO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA CODE 716 NUMBER 4336764	YEAR 06	MO 01	DAY 09
TYPED OR PRINTED						

COMMENTS AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here)*

VDM02482

Paperwork Reduction Act Notice

Public reporting burden for this collection of information is estimated to vary from a range of 10 hours as an average per response for some minor facilities, to 110 hours as an average per response for some major facilities, with a weighted average for major and minor facilities of 18 hours per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Chief, Information Policy Branch, PM-223, U.S. Environmental Protection Agency, 401 M Street, SW, Washington, DC 20460; and to the Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, DC 20503.

General Instructions

1. If form has been partially completed by preprinting, disregard instructions directed at entry of that information already preprinted.
2. Enter "*Permittee Name/Mailing Address* (and facility name/location, if different)," "*Permit Number*," and "*Discharge Number*" where indicated. (A separate form is required for each discharge.)
3. Enter dates beginning and ending "*Monitoring Period*" covered by form where indicated.
4. Enter each "*Parameter*" as specified in monitoring requirements of permit.
5. Enter "*Sample Measurement*" data for each parameter under "*Quantity*" and "*Quality*" in units specified in permit. "*Average*" is normally arithmetic average (geometric average for bacterial parameters) of all sample measurements for each parameter obtained during "*Monitoring Period*"; "*Maximum*" and "*Minimum*" are normally extreme high and low measurements obtained during "*Monitoring Period*." (Note to municipals with secondary treatment requirement: Enter 30-day average of sample measurements under "*Average*," and enter maximum 7-day average of sample measurements obtained during monitoring period under "*Maximum*.")
6. Enter "*Permit Requirement*" for each parameter under "*Quantity*" and "*Quality*" as specified in permit.
7. Under "*No Ex*" enter number of sample measurements during monitoring period that exceed maximum (and/or minimum or 7-day average as appropriate) permit requirement for each parameter. If none, enter "*0*."
8. Enter "*Frequency of Analysis*" both as "*Sample Measurement*" (actual frequency of sampling and analysis used during monitoring period) and as "*Permit Requirement*" specified in permit. (e.g., Enter "*Cont*," for continuous monitoring, "*1/7*" for one day per week, "*1/30*" for one day per month, "*1/90*" for one day per quarter, etc.)
9. Enter "*Sample Type*" both as "*Sample Measurement*" (actual sample type used during monitoring period) and as "*Permit Requirement*," (e.g., Enter "*Grab*" for individual sample, "*24HC*" for 24-hour composite, "*N/A*" for continuous monitoring, etc.)
10. Where violations of permit requirements are reported, attach a brief explanation to describe cause and corrective actions taken, and reference each violation by date.
11. If "no discharge" occurs during monitoring period, enter "*No Discharge*" across form in place of data entry.
12. Enter "*Name/Title of Principal Executive Officer*" with "*Signature of Principal Executive Officer of Authorized Agent*," "*Telephone Number*," and "*Date*" at bottom of form.
13. Mail signed Report to Office(s) by date(s) specified in permit. Retain copy for your records.
14. More detailed instructions for use of this *Discharge Monitoring Report (DMR)* form may be obtained from Office(s) specified in permit.

Legal Notice

This report is required by law (33 U.S.C. 1318; 40 C.F.R. 125.27). Failure to report or failure to report truthfully can result in civil penalties not to exceed $10,000 per day of violation; or in criminal penalties not to exceed $25,000 per day of violation, or by imprisonment for not more than one year, or by both.

Pilot Lab SPDES Outfall Report

Date	Gallons	Temp (F)	pH	Initials
12/1/2005	1,450,780	N/A	N/A	MP
12/2/2005	1,450,780	N/A	N/A	MP
12/3/2005	1,450,780	N/A	N/A	MP
12/4/2005	1,450,780	N/A	N/A	MP
12/5/2005	1,450,780	N/A	N/A	MP
12/6/2005	1,450,780	N/A	N/A	MP
12/7/2005	1,450,780	N/A	N/A	MP
12/8/2005	1,450,780	N/A	N/A	MP
12/9/2005	1,450,780	N/A	N/A	MP
12/10/2005	1,450,780	N/A	N/A	MP
12/11/2005	1,450,780	N/A	N/A	MP
12/12/2005	1,450,780	N/A	N/A	MP
12/13/2005	1,451,560	44	7.6	MP
12/14/2005	1,451,560	N/A	N/A	MP
12/15/2005	1,451,560	N/A	N/A	MP
12/16/2005	1,451,560	N/A	N/A	MP
12/17/2005	1,451,560	N/A	N/A	MP
12/18/2005	1,451,560	N/A	N/A	MP
12/19/2005	1,451,560	N/A	N/A	MP
12/20/2005	1,451,560	N/A	N/A	MP
12/21/2005	1,451,560	N/A	N/A	MP
12/22/2005	1,451,560	N/A	N/A	MP
12/23/2005	1,451,560	N/A	N/A	MP
12/24/2005	1,451,560	N/A	N/A	MP
12/25/2005	1,451,560	N/A	N/A	MP
12/26/2005	1,451,560	N/A	N/A	MP
12/27/2005	1,451,560	N/A	N/A	MP
12/28/2005	1,451,560	N/A	N/A	MP
12/29/2005	1,451,560	N/A	N/A	MP
12/30/2005	1,451,560	N/A	N/A	MP
12/31/2005	1,451,560	N/A	N/A	MP
Total outfall 12/05	780			

ISOCHEM
GROUPE SNPE

Date: 02/07/06

To: NYSDEC
Division of Water
Bureau of Watershed Compliance Programs
625 Broadway 4th Floor
Albany, NY 12233-3506

CC: NYSDEC
Regional Water Quality Engineer
270 Michigan Ave.
Buffalo, NY 14203-2999
Attn: Rob Locey

Niagara County Health Dept.
5467 Upper Mountain Road
Suite 100
Lockport, NY 14094
Attn: Ron Gwozdek

From: Pam Cook - Environmental Engineer - Ext.: 150

RE: SPDES Report

Enclosed please find the SPDES monthly report for January 2006. If you have any questions, please contact me at 716-433-6764 ext. 150.

Sincerely,

Pamela J Cook

Pamela J. Cook
Environmental Engineer
e-mail: p.cook@snpe.com

ISOCHEM Inc.
One North Transit Road - Lockport, New York 14094-2399 - Tel 716 433 6764 - Fax 716 433 2850

PERMITTEE NAME/AR[illegible]SS (*Include Facility Name/Location if Different*)

NAME ISOC[illegible], INC

ADDRESS ISOCHEM, INC
1 NORTH TRANSIT ROAD
LOCKPORT NY 14094

FACILITY ISOCHEM, INC

LOCATION LOCKPORT NY 14094

ATTN: MATTHEW BARMASSE

NATIONAL POLLUTANT [illegible]ARGE ELIMINATION SYSTEM (*NPDES*)
DISCHARGE [illegible]ITORING REPORT (*DMR*)

NY0204323	001 M
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD	YEAR	MO.	DAY.		YEAR	MO.	DAY.
FROM	06	01	01	TO	06	01	01

Form Approved.
[illegible] No. 2040-0004

MINOR
(SUBR 09)
F - FINAL
NON-CONTACT COOLING WATER

*** NO DISCHARGE [X] ***

NOTE: Read Instructions before completing this form.

PARAMETER		QUANTITY OR LOADING AVERAGE	MAXIMUM	UNITS	QUALITY OR CONCENTRATION MINIMUM	AVERAGE	MAXIMUM	UNITS	NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
TEMPERATURE, WATER DEG. FAHRENHEIT	SAMPLE MEASUREMENT	******	******		******	******		(15)			
00011 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	******	******	90 DAILY MX	DEG. F		ONCE/ MONTH	GRAB
FLOW RATE	SAMPLE MEASUREMENT			(07)	******	******	******				
00056 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	50000 DAILY AV	REPORT DAILY MX	GPD	******	******	******	**** ****		ONCE/ MONTH	INSTAN
PH	SAMPLE MEASUREMENT	******	******			******		(12)			
00400 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	6.0 MINIMUM	******	9.0 MAXIMUM	SU		ONCE/ MONTH	GRAB
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Paul Ameis Executive VP/COO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	[signature]	716	433-6764	06	03	07
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA CODE	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (*Reference all attachments here*)

VDM02486

Paperwork Reduction Act Notice

Public reporting burden for this collection of information is estimated to vary from a range of 10 hours as an average per response for some minor facilities, to 110 hours as an average per response for some major facilities, with a weighted average for major and minor facilities of 18 hours per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Chief, Information Policy Branch, PM-223, U.S. Environmental Protection Agency, 401 M Street, SW, Washington, DC 20460; and to the Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, DC 20503.

General Instructions

1. If form has been partially completed by preprinting, disregard instructions directed at entry of that information already preprinted.
2. Enter "*Permittee Name/Mailing Address* (and facility name/location, if different)," "*Permit Number*," and "*Discharge Number*" where indicated. (A separate form is required for each discharge.)
3. Enter dates beginning and ending "*Monitoring Period*" covered by form where indicated.
4. Enter each "*Parameter*" as specified in monitoring requirements of permit.
5. Enter "*Sample Measurement*" data for each parameter under "*Quantity*" and "*Quality*" in units specified in permit. "*Average*" is normally arithmetic average (geometric average for bacterial parameters) of all sample measurements for each parameter obtained during "*Monitoring Period*"; "*Maximum*" and "*Minimum*" are normally extreme high and low measurements obtained during "*Monitoring Period.*" (Note to municipals with secondary treatment requirement: Enter 30-day average of sample measurements under "*Average*," and enter maximum 7-day average of sample measurements obtained during monitoring period under "*Maximum.*")
6. Enter "*Permit Requirement*" for each parameter under "*Quantity*" and "*Quality*" as specified in permit.
7. Under "*No Ex*" enter number of sample measurements during monitoring period that exceed maximum (and/or minimum or 7-day average as appropriate) permit requirement for each parameter. If none, enter "*0.*"
8. Enter "*Frequency of Analysis*" both as "*Sample Measurement*" (actual frequency of sampling and analysis used during monitoring period) and as "*Permit Requirement*" specified in permit. (e.g., Enter "*Cont*," for continuous monitoring, "*1/7*" for one day per week, "*1/30*" for one day per month, "*1/90*" for one day per quarter, etc.)
9. Enter "*Sample Type*" both as "*Sample Measurement*" (actual sample type used during monitoring period) and as "*Permit Requirement*," (e.g., Enter "*Grab*" for individual sample, "*24HC*" for 24-hour composite, "*N/A*" for continuous monitoring, etc.)
10. Where violations of permit requirements are reported, attach a brief explanation to describe cause and corrective actions taken, and reference each violation by date.
11. If "no discharge" occurs during monitoring period, enter "*No Discharge*" across form in place of data entry.
12. Enter "*Name/Title of Principal Executive Officer*" with "*Signature of Principal Executive Officer of Authorized Agent*," "*Telephone Number*," and "*Date*" at bottom of form.
13. Mail signed Report to Office(s) by date(s) specified in permit. Retain copy for your records.
14. More detailed instructions for use of this *Discharge Monitoring Report (DMR)* form may be obtained from Office(s) specified in permit.

Legal Notice

This report is required by law (33 U.S.C. 1318; 40 C.F.R. 125.27). Failure to report or failure to report truthfully can result in civil penalties not to exceed $10,000 per day of violation; or in criminal penalties not to exceed $25,000 per day of violation, or by imprisonment for not more than one year, or by both.

VDM02487

Form Approved.
No. 2040-0004

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*
NAME ISOCHEM, INC
ADDRESS ISOCHEM, INC
1 NORTH TRANSIT ROAD
LOCKPORT NY 14094
FACILITY ISOCHEM, INC
LOCATION LOCKPORT NY 14094
ATTN: MATTHEW BARMASSE

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM *(NPDES)*
DISCHARGE MONITORING REPORT *(DMR)*

NY0204323 — PERMIT NUMBER
004 M — DISCHARGE NUMBER

MONITORING PERIOD
FROM YEAR 06 MO 01 DAY 01 TO YEAR 06 MO 01 DAY 31

MINOR
(SUBR 09)
F - FINAL
NON-CONTACT COOLING WATER

*** NO DISCHARGE [X] ***

NOTE: Read Instructions before completing this form.

PARAMETER		QUANTITY OR LOADING AVERAGE	QUANTITY OR LOADING MAXIMUM	QUANTITY OR LOADING UNITS	QUALITY OR CONCENTRATION MINIMUM	QUALITY OR CONCENTRATION AVERAGE	QUALITY OR CONCENTRATION MAXIMUM	QUALITY OR CONCENTRATION UNITS	NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
TEMPERATURE, WATER DEG. FAHRENHEIT 00011 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT	*******	*******		*******	*******		(15)			
	PERMIT REQUIREMENT	*******	*******	**** ****	*******	*******	90 DAILY MX	DEG. F		ONCE/ MONTH	GRAB
FLOW RATE 00056 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT			(07)	*******	*******	*******				
	PERMIT REQUIREMENT	330000 DAILY AV	REPORT DAILY MX	GPD	*******	*******	*******	**** ****		ONCE/ MONTH	INSTAN
PH 00400 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT	*******	*******			*******		(12)			
	PERMIT REQUIREMENT	*******	*******	**** ****	6.0 MINIMUM	*******	9.0 MAXIMUM	SU		ONCE/ MONTH	GRAB
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER
Paul Ameis
Executive VP/COO
TYPED OR PRINTED

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE
AREA CODE 716 NUMBER 433-6764

DATE
YEAR 06 MO 02 DAY 07

COMMENTS AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here)*

VDM02488

Paperwork Reduction Act Notice

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2. Enter "*Permittee Name/Mailing Address* (and facility name/location, if different)," "*Permit Number*," and "*Discharge Number*" where indicated. (A separate form is required for each discharge.)
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5. Enter "*Sample Measurement*" data for each parameter under "*Quantity*" and "*Quality*" in units specified in permit. "*Average*" is normally arithmetic average (geometric average for bacterial parameters) of all sample measurements for each parameter obtained during "*Monitoring Period*"; "*Maximum*" and "*Minimum*" are normally extreme high and low measurements obtained during "*Monitoring Period.*" (Note to municipals with secondary treatment requirement: Enter 30-day average of sample measurements under "*Average*," and enter maximum 7-day average of sample measurements obtained during monitoring period under "*Maximum.*")
6. Enter "*Permit Requirement*" for each parameter under "*Quantity*" and "*Quality*" as specified in permit.
7. Under "*No Ex*" enter number of sample measurements during monitoring period that exceed maximum (and/or minimum or 7-day average as appropriate) permit requirement for each parameter. If none, enter "*0.*"
8. Enter "*Frequency of Analysis*" both as "*Sample Measurement*" (actual frequency of sampling and analysis used during monitoring period) and as "*Permit Requirement*" specified in permit. (e.g., Enter "*Cont*," for continuous monitoring, "*1/7*" for one day per week, "*1/30*" for one day per month, "*1/90*" for one day per quarter, etc.)
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12. Enter "*Name/Title of Principal Executive Officer*" with "*Signature of Principal Executive Officer of Authorized Agent*," "*Telephone Number*," and "*Date*" at bottom of form.
13. Mail signed Report to Office(s) by date(s) specified in permit. Retain copy for your records.
14. More detailed instructions for use of this *Discharge Monitoring Report (DMR)* form may be obtained from Office(s) specified in permit.

Legal Notice

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VDM02489

ISOCHEM
GROUPE SNPE

Date: 03/03/06

To: NYSDEC
Division of Water
Bureau of Watershed Compliance Programs
625 Broadway 4th Floor
Albany, NY 12233-3506

CC: NYSDEC
Regional Water Quality Engineer
270 Michigan Ave.
Buffalo, NY 14203-2999
Attn: Rob Locey

Niagara County Health Dept.
5467 Upper Mountain Road
Suite 100
Lockport, NY 14094
Attn: Ron Gwozdek

From: Pam Cook - Environmental Engineer - Ext.: 150

RE: SPDES Report

Enclosed please find the SPDES monthly report for February 2006. If you have any questions, please contact me at 716-433-6764 ext. 150.

Sincerely,

Pamela J Cook

Pamela J. Cook
Environmental Engineer
e-mail: p.cook@snpe.com

Pilot Lab SPDES Outfall Report

Date	Gallons	Temp (F)	pH	Initials
2/1/2006	1,451,985	n/a	n/a	MP
2/2/2006	not flowing	n/a	n/a	MP
2/3/2006	not flowing	n/a	n/a	MP
2/4/2006	not flowing	n/a	n/a	MP
2/5/2006	not flowing	n/a	n/a	MP
2/6/2006	not flowing	n/a	n/a	MP
2/7/2006	not flowing	n/a	n/a	MP
2/8/2006	not flowing	n/a	n/a	MP
2/9/2006	not flowing	n/a	n/a	MP
2/10/2006	not flowing	n/a	n/a	MP
2/11/2006	not flowing	n/a	n/a	MP
2/12/2006	not flowing	n/a	n/a	MP
2/13/2006	not flowing	n/a	n/a	MP
2/14/2006	not flowing	n/a	n/a	MP
2/15/2006	not flowing	n/a	n/a	MP
2/16/2006	not flowing	n/a	n/a	MP
2/17/2006	not flowing	n/a	n/a	MP
2/18/2006	not flowing	n/a	n/a	MP
2/19/2006	not flowing	n/a	n/a	MP
2/20/2006	not flowing	n/a	n/a	MP
2/21/2006	not flowing	n/a	n/a	MP
2/22/2006	not flowing	n/a	n/a	MP
2/23/2006	not flowing	n/a	n/a	MP
2/24/2006	not flowing	n/a	n/a	MP
2/25/2006	not flowing	n/a	n/a	MP
2/26/2006	not flowing	n/a	n/a	MP
2/27/2006	not flowing	n/a	n/a	MP
2/28/2006	1,451,985	n/a	n/a	MP
Total outfall 2/06	0			

PERMITTEE NAME/AF[illegible]SS *(Include Facility Name/Location if Different)*

NAME ISOC[illegible], INC

ADDRESS ISOCHEM, INC
1 NORTH TRANSIT ROAD
LOCKPORT NY 14094

FACILITY ISOCHEM, INC

LOCATION LOCKPORT NY 14094

ATTN: MATTHEW BARMASSE

NATIONAL POLLUTANT [illegible]ARGE ELIMINATION SYSTEM *(NPDES)*
DISCHARGE [illegible]ITORING REPORT *(DMR)*

NY0204323	001 M
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD	YEAR	MO.	DAY		YEAR	MO.	DAY
FROM	06	02	01	TO	06	02	28

Form Approved.
[illegible]3 No. 2040-0004

MINOR
(SUBR 09)
F - FINAL
NON-CONTACT COOLING WATER

*** NO DISCHARGE [X] ***

NOTE: Read Instructions before completing this form.

PARAMETER		QUANTITY OR LOADING AVERAGE	QUANTITY OR LOADING MAXIMUM	QUANTITY OR LOADING UNITS	QUALITY OR CONCENTRATION MINIMUM	QUALITY OR CONCENTRATION AVERAGE	QUALITY OR CONCENTRATION MAXIMUM	QUALITY OR CONCENTRATION UNITS	NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
TEMPERATURE, WATER DEG. FAHRENHEIT	SAMPLE MEASUREMENT	******	******		******	******		(15)			
00011 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	******	******	90 DAILY MX	DEG. F		ONCE/ MONTH	GRAB
FLOW RATE	SAMPLE MEASUREMENT			(07)	******	******	******				
00056 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	50000 DAILY AV	REPORT DAILY MX	GPD	******	******	******	**** ****		ONCE/ MONTH	INSTAN
PH	SAMPLE MEASUREMENT	******	******			******		(12)			
00400 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	6.0 MINIMUM	******	9.0 MAXIMUM	SU		ONCE/ MONTH	GRAB
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Paul Ameis, COO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	[signature]	716	433-6764	06	03	
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA CODE	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here)*

VDM02492

Form Approved.
OMB No. 2040-0004

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*
NAME ISOCHEM, INC
ADDRESS ISOCHEM, INC
1 NORTH TRANSIT ROAD
LOCKPORT NY 14094
FACILITY ISOCHEM, INC
LOCATION LOCKPORT NY 14094
ATTN: MATTHEW BARMASSE

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM *(NPDES)*
DISCHARGE MONITORING REPORT *(DMR)*

NY0204323 — PERMIT NUMBER
004 G — DISCHARGE NUMBER

MONITORING PERIOD
FROM YEAR 09 MO 12 DAY 01 TO YEAR 00 MO 02 DAY 29

MINOR
(SUBR 09)
F - FINAL
NON-CONTACT COOLING WATER QTR

*** NO DISCHARGE [X] ***

NOTE: Read Instructions before completing this form.

PARAMETER		QUANTITY OR LOADING AVERAGE	QUANTITY OR LOADING MAXIMUM	QUANTITY OR LOADING UNITS	QUALITY OR CONCENTRATION MINIMUM	QUALITY OR CONCENTRATION AVERAGE	QUALITY OR CONCENTRATION MAXIMUM	QUALITY OR CONCENTRATION UNITS	NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
SOLIDS, TOTAL SUSPENDED 00530 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT	*******	*******		*******			(19)			
	PERMIT REQUIREMENT	*******	*******	**** ****	*******	REPORT DAILY AV	REPORT DAILY MX	MG/L		3/TRLY	GRAB
SOLIDS, TOTAL SUSPENDED 00530 7 0 0 INTAKE FROM STREAM	SAMPLE MEASUREMENT	*******	*******		*******			(19)			
	PERMIT REQUIREMENT	*******	*******	**** ****	*******	REPORT DAILY AV	REPORT DAILY MX	MG/L		3/TRLY	GRAB
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER
Paul Ameis
COO
TYPED OR PRINTED

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE: AREA CODE 716 NUMBER 423-6761
DATE: YEAR 96 MO 03 DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here)*
MONITORING LOCATION '7' IS INTAKE FROM STREAM. IF NO INTAKE FROM STREAM DURING MONITORING PERIOD, ENTER "NODI 9" IN THE QUANTITY AVERAGE COLUMN.

VDM02493

Form Approved.
3 No. 2040-0004

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*
NAME ISOC[illegible], INC
ADDRESS ISOCHEM, INC
1 NORTH TRANSIT ROAD
LOCKPORT NY 14094
FACILITY ISOCHEM, INC
LOCATION LOCKPORT NY 14094
ATTN: MATTHEW BARMASSE

NATIONAL POLLUTANT [illegible]ARGE ELIMINATION SYSTEM *(NPDES)*
DISCHARGE [illegible]ITORING REPORT *(DMR)*

NY0204323	004 M
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD

	YEAR	MO.	DAY		YEAR	MO.	DAY
FROM	05	02	01	TO	05	02	28

MINOR
(SUBR 09)
F - FINAL
NON-CONTACT COOLING WATER

*** NO DISCHARGE [X] ***

NOTE: Read Instructions before completing this form.

PARAMETER		QUANTITY OR LOADING AVERAGE	QUANTITY OR LOADING MAXIMUM	QUANTITY OR LOADING UNITS	QUALITY OR CONCENTRATION MINIMUM	QUALITY OR CONCENTRATION AVERAGE	QUALITY OR CONCENTRATION MAXIMUM	QUALITY OR CONCENTRATION UNITS	NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
TEMPERATURE, WATER DEG. FAHRENHEIT 00011 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT	*******	*******		*******	*******		(15)			
	PERMIT REQUIREMENT	*******	*******	**** ****	*******	*******	90 DAILY MX	DEG. F		ONCE/ MONTH	GRAB
FLOW RATE 00056 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT			(07)	*******	*******	*******				
	PERMIT REQUIREMENT	330000 DAILY AV	REPORT DAILY MX	GPD	*******	*******	*******	**** ****		ONCE/ MONTH	INSTAN
PH 00400 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT	*******	*******			*******		(12)			
	PERMIT REQUIREMENT	*******	*******	**** ****	6.0 MINIMUM	*******	9.0 MAXIMUM	SU		ONCE/ MONTH	GRAB
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER		TELEPHONE	DATE		
Paul Annis, COO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	716 433 6764	06	03	
TYPED OR PRINTED	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA CODE NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here)*

VDM024494

Form Approved.
No. 2040-0004

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*
NAME ISOCHEM, INC
ADDRESS ISOCHEM, INC
1 NORTH TRANSIT ROAD
LOCKPORT NY 14094
FACILITY ISOCHEM, INC
LOCATION LOCKPORT NY 14094
ATTN: MATTHEW BARMASSE

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM *(NPDES)*
DISCHARGE MONITORING REPORT *(DMR)*

NY0204323	001 Q
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD
FROM YEAR 95 MO 12 DAY 01 TO YEAR 96 MO 02 DAY 28

MINOR
(SUBR 09)
F - FINAL
NON-CONTACT COOLING WATER QTR

*** NO DISCHARGE ( ) ***

NOTE: Read Instructions before completing this form.

PARAMETER		QUANTITY OR LOADING AVERAGE	QUANTITY OR LOADING MAXIMUM	QUANTITY OR LOADING UNITS	QUALITY OR CONCENTRATION MINIMUM	QUALITY OR CONCENTRATION AVERAGE	QUALITY OR CONCENTRATION MAXIMUM	QUALITY OR CONCENTRATION UNITS	NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
SOLIDS, TOTAL SUSPENDED 00530 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT	******	******		******	NO SAMPLE		(19)			
	PERMIT REQUIREMENT	******	******	**** ****	******	REPORT DAILY AV	REPORT DAILY MX	MG/L		QTRLY	GRAB
SOLIDS, TOTAL SUSPENDED 00530 7 0 0 INTAKE FROM STREAM	SAMPLE MEASUREMENT	******	******		******	NODI 9		(19)			
	PERMIT REQUIREMENT	******	******	**** ****	******	REPORT DAILY AV	REPORT DAILY MX	MG/L		QTRLY	GRAB
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT	No sample taken during quarter									
	SAMPLE MEASUREMENT	because there was only a discharge									
	PERMIT REQUIREMENT	of 180 gallons on one day for									
	SAMPLE MEASUREMENT	the whole quarter.									
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER
Paul Ahles, COO
TYPED OR PRINTED

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE AREA CODE 716 NUMBER 433-6764

DATE YEAR 96 MO 03 DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here)*
MONITORING LOCATION 7 IS INTAKE FROM STREAM. IF NO INTAKE FROM STREAM DURING MONITORING PERIOD ENTER "NODI 9" IN THE QUANTITY AVERAGE COLUMN.
FOR AMOUNTS BELOW DETECTION LIMIT PLEASE ENTER THE MDL PRECEDED BY THE < SYMBOL.

EPA Form 3320-1 (Rev. 2/88) Previous editions may be used. 04443/OTHW13n-1&16rm

VDM02495

ISOCHEM
GROUPE SNPE

Date: 04/05/06

To: NYSDEC
Division of Water
Bureau of Watershed Compliance Programs
625 Broadway 4th Floor
Albany, NY 12233-3506

CC: NYSDEC
Regional Water Quality Engineer
270 Michigan Ave.
Buffalo, NY 14203-2999
Attn: Rob Locey

Niagara County Health Dept.
5467 Upper Mountain Road
Suite 100
Lockport, NY 14094
Attn: Ron Gwozdek

From: Pam Cook - Environmental Engineer - Ext.: 150

RE: SPDES Report

Enclosed please find the SPDES monthly report for March 2006. If you have any questions, please contact me at 716-433-6764 ext. 150.

Sincerely,

Pamela J. Cook
Environmental Engineer
e-mail: p.cook@snpe.com

ISOCHEM Inc.
One North Transit Road - Lockport, New York 14094-2399 - Tel 716 433 6764 - Fax 716 433 2850

VDM02497

Form Approved.
OMB No. 2040-0004

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

NAME ISOCHEM, INC

ADDRESS ISOCHEM, INC
1 NORTH TRANSIT ROAD
LOCKPORT NY 14094

FACILITY LOCATION ISOCHEM, INC
LOCKPORT NY 14094

ATTN: MATTHEW BARMASSE

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM *(NPDES)*
DISCHARGE MONITORING REPORT *(DMR)*

NY0204323	004 M
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD

	YEAR	MO	DAY		YEAR	MO	DAY
FROM	06	03	01	TO	06	03	31

MINOR
(SUBR 09)
F - FINAL
NON-CONTACT COOLING WATER

*** NO DISCHARGE [X] ***

NOTE: Read Instructions before completing this form.

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		AVERAGE	MAXIMUM	UNITS	MINIMUM	AVERAGE	MAXIMUM	UNITS			
TEMPERATURE, WATER DEG. FAHRENHEIT	SAMPLE MEASUREMENT	******	******		******	******		(15)			
00011 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	******	******	90 DAILY MX	DEG. F		ONCE/ MONTH	GRAB
FLOW RATE	SAMPLE MEASUREMENT			(07)	******	******	******				
00056 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	330000 DAILY AV	REPORT DAILY MX	GPD	******	******	******	**** ****		ONCE/ MONTH	INSTAN
PH	SAMPLE MEASUREMENT	******	******			******		(12)			
00400 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	6.0 MINIMUM	******	9.0 MAXIMUM	SU		ONCE/ MONTH	GRAB
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER		TELEPHONE	DATE
Paul Ameis COO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	716 433-6764	06 04 04
TYPED OR PRINTED	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA CODE NUMBER	YEAR MO DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here)*

VDM02498

Form Approved.
OMB No. 2040-0004

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

NAME ISOCHEM, INC

ADDRESS ISOCHEM, INC
1 NORTH TRANSIT ROAD
LOCKPORT NY 14094

FACILITY ISOCHEM, INC

LOCATION LOCKPORT NY 14094

ATTN: MATTHEW BARMASSE

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM *(NPDES)*
DISCHARGE MONITORING REPORT *(DMR)*

NY0204323	001 M
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD

	YEAR	MO	DAY		YEAR	MO	DAY
FROM	06	03	01	TO	06	03	31

MINOR
(SUBR 09)
F - FINAL
NON-CONTACT COOLING WATER

*** NO DISCHARGE [X] ***

NOTE: Read Instructions before completing this form.

PARAMETER		QUANTITY OR LOADING AVERAGE	QUANTITY OR LOADING MAXIMUM	QUANTITY OR LOADING UNITS	QUALITY OR CONCENTRATION MINIMUM	QUALITY OR CONCENTRATION AVERAGE	QUALITY OR CONCENTRATION MAXIMUM	QUALITY OR CONCENTRATION UNITS	NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
TEMPERATURE, WATER DEG. FAHRENHEIT	SAMPLE MEASUREMENT	******	******		******	******		(15)			
00011 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	******	******	90 DAILY MX	DEG. F		ONCE/ MONTH	GRAB
FLOW RATE	SAMPLE MEASUREMENT			(07)	******	******	******				
00056 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	50000 DAILY AV	REPORT DAILY MX	GPD	******	******	******	**** ****		ONCE/ MONTH	INSTAN
PH	SAMPLE MEASUREMENT	******	******			******		(12)			
00400 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	6.0 MINIMUM	******	9.0 MAXIMUM	SU		ONCE/ MONTH	GRAB
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER

Paul Ameis COO

TYPED OR PRINTED

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE		DATE		
716	433-6764	06	04	04
AREA CODE	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here)*

EPA Form 3320-1 (Rev. 3/99) Previous editions may be used.

04924/010315-1953 This is a 4-part form.

PAGE 1 OF

ISOCHEM
GROUPE SNPE

Date: 05/04/06

To: NYSDEC
Division of Water
Bureau of Watershed Compliance Programs
625 Broadway 4th Floor
Albany, NY 12233-3506

CC: NYSDEC
Regional Water Quality Engineer
270 Michigan Ave.
Buffalo, NY 14203-2999
Attn: Rob Locey

Niagara County Health Dept.
5467 Upper Mountain Road
Suite 100
Lockport, NY 14094
Attn: Ron Gwozdek

From: Pam Cook - Environmental Engineer - Ext.: 150

RE: SPDES Report

Enclosed please find the SPDES monthly report for April 2006. If you have any questions, please contact me at 716-433-6764 ext. 150.

Sincerely,

Pamela J. Cook
Environmental Engineer
e-mail: p.cook@snpe.com

ISOCHEM Inc.
One North Transit Road - Lockport, New York 14094-2399 - Tel 716 433 6764 - Fax 716 433 2850

Form Approved.
No. 2040-0004

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*
NAME ISOC , INC
ADDRESS ISOCHEM, INC
1 NORTH TRANSIT ROAD
LOCKPORT NY 14094
FACILITY ISOCHEM, INC
LOCATION LOCKPORT NY 14094
ATTN: MATTHEW BARMASSE

NATIONAL POLLUTANT ARGE ELIMINATION SYSTEM *(NPDES)*
DISCHARGE ITORING REPORT *(DMR)*

NY0204323 — PERMIT NUMBER
004 M — DISCHARGE NUMBER

MONITORING PERIOD
FROM YEAR 04 MO 01 DAY TO YEAR 04 MO 30 DAY

MINOR
(SUBR 09)
F - FINAL
NON-CONTACT COOLING WATER
*** NO DISCHARGE ***
NOTE: Read Instructions before completing this form.

PARAMETER		QUANTITY OR LOADING AVERAGE	QUANTITY OR LOADING MAXIMUM	QUANTITY OR LOADING UNITS	QUALITY OR CONCENTRATION MINIMUM	QUALITY OR CONCENTRATION AVERAGE	QUALITY OR CONCENTRATION MAXIMUM	QUALITY OR CONCENTRATION UNITS	NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
TEMPERATURE, WATER DEG. FAHRENHEIT 00011 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT	******	******		******	******		(15)			
	PERMIT REQUIREMENT	******	******	**** ****	******	******	90 DAILY MX	DEG. F		ONCE/ MONTH	GRAB
FLOW RATE 00056 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT			(07)	******	******	******				
	PERMIT REQUIREMENT	330000 DAILY AV	REPORT DAILY MX	GPD	******	******	******	**** ****		ONCE/ MONTH	INSTAN
PH 00400 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT	******	******			******		(12)			
	PERMIT REQUIREMENT	******	******	**** ****	6.0 MINIMUM	******	9.0 MAXIMUM	SU		ONCE/ MONTH	GRAB
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER		TELEPHONE			DATE		
Paul Ameis Exec VP/COO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.		716	433-6761	06	05	04
TYPED OR PRINTED	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA CODE	NUMBER		YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here)*

VDM02500

Form Approved.
No. 2040-0004

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

NAME ISOCHEM, INC

ADDRESS ISOCHEM, INC
1 NORTH TRANSIT ROAD
LOCKPORT NY 14094

FACILITY ISOCHEM, INC

LOCATION LOCKPORT NY 14094

ATTN: MATTHEW BARMASSE

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM *(NPDES)* DISCHARGE MONITORING REPORT *(DMR)*

NY0204323 — PERMIT NUMBER

001 M — DISCHARGE NUMBER

MONITORING PERIOD

	YEAR	MO	DAY		YEAR	MO	DAY
FROM	03	04	01	TO	05	04	30

MINOR
(SUBR 09)
F - FINAL
NON-CONTACT COOLING WATER

*** NO DISCHARGE [X] ***

NOTE: Read Instructions before completing this form.

PARAMETER		QUANTITY OR LOADING AVERAGE	QUANTITY OR LOADING MAXIMUM	QUANTITY OR LOADING UNITS	QUALITY OR CONCENTRATION MINIMUM	QUALITY OR CONCENTRATION AVERAGE	QUALITY OR CONCENTRATION MAXIMUM	QUALITY OR CONCENTRATION UNITS	NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
TEMPERATURE, WATER DEG. FAHRENHEIT 00011 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT	*******	*******		*******	*******		(15)			
	PERMIT REQUIREMENT	*******	*******	****** ****	*******	*******	90 DAILY MX	DEG. F		ONCE/ MONTH	GRAB
FLOW RATE 00056 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT			(07)	*******	*******	*******				
	PERMIT REQUIREMENT	50000 DAILY AV	REPORT DAILY MX	GPD	*******	*******	*******	****** ****		ONCE/ MONTH	INSTAN
PH 00400 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT	*******	*******			*******		(12)			
	PERMIT REQUIREMENT	*******	*******	****** ****	6.0 MINIMUM	*******	9.0 MAXIMUM	SU		ONCE/ MONTH	GRAB
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER

Paul Amels
Exec VP/COO
TYPED OR PRINTED

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE: AREA CODE 716 NUMBER 433-6625

DATE: YEAR 06 MO 05 DAY 04

COMMENTS AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here)*

VDM02501

New York State Department of Environmental Conservation
Division of Water
Bureau of Water Compliance, 4th Floor
625 Broadway, Albany, New York 12233-3506
Phone: (518) 402-8177 • **FAX:** (518) 402-8082
Website: www.dec.ny.gov

Alexander B. Grannis
Commissioner

April 7, 2008

SENT BY CERTIFIED MAIL

VANDEMARK CHEMICAL, INC.
1 NORTH TRANSIT ROAD
LOCKPORT NY, 14094

Re: NOTICE OF VIOLATION: Failure to Submit Complete SPDES DMR
Facility: VANDEMARK CHEMICAL, INC.
SPDES No: NY0204323

Dear Permittee:

One or more of your Discharge Monitoring Reports (DMRs) **have not been received** or were **incomplete**, as is more fully described on the enclosed Appendix to this letter.

Failure to submit a required DMR is a violation of your SPDES permit and Article 17 of the New York State Environmental Conservation Law, and subjects you to a financial penalty. In addition, it may violate the Federal Clean Water Act and USEPA regulations.

In order to resolve and settle this matter without a financial penalty, you must complete the back page of this letter and return it along with any required DMRs within 30 days of the date of this letter. If you have any questions, please call Koon Tang at 518-402-8213 . Thank you in advance for your cooperation.

Please be advised, if you do not complete the back page of this letter and return it along with any required DMRs within 30 days of the date of this letter, an Order on Consent will be sent to you concerning the violations in the enclosed Appendix and there will be no opportunity to settle or resolve this matter without payment of a substantial financial penalty, as is allowed by law. This is part of a State-wide initiative and no exceptions to the time frame or penalty will be accommodated due to limited agency resources and due to the critical importance of SPDES compliance by all permit holders to the proper maintenance, monitoring and stewardship of the waters of New York State.

Sincerely yours,

Koon Tang
Chief, Compliance Assurance Section

Encls. (reverse side of letter and Appendix)

cc: Jerry Palumbo

New York State Department of Environmental Conservation
Division of Water
Bureau of Water Compliance, 4th Floor
625 Broadway, Albany, New York 12233-3506
Phone: (518) 402-8177 • FAX: (518) 402-8082
Website: www.dec.ny.gov

Alexander B. Grannis
Commissioner

April 1, 2008

- SINGLE OPPORTUNITY TO RESOLVE VIOLATION WITHOUT PENALTY -
EXPIRES 30 DAYS AFTER DATE OF THIS LETTER

Check and complete at least one of the below in order to resolve this matter (more than one may apply):

[X] **The DMR(s) was (were) sent to NYSDEC on the following date(s): 6/14/06 ; and I have attached to this letter complete photocopy(ies) of the DMR(s).**

[ ] **The DMR(s) was (were) not sent to NYSDEC. Attached are all original(s) required in the Appendix.** (If you need a DMR blank form, you must call the above-listed telephone number, obtain the DMR form, complete it as required in your Permit and the Appendix hereto, and submit within the allotted 30 days from the date of this letter.)

The permittee mailing address ("DMR Mailing Address"), as identified in the SPDES permit, is no longer valid. Please change to: _____

_____

[ ] **I am no longer required to submit DMRs because** _____

_____

(Please attach supporting documentation, if any.)

By (Signature): _____

Print Name: _____

Title: _____

Company: _____

Date: _____

Mail a copy of both sides of this letter and any attachments to: SPDES Compliance Information Section, NYSDEC Division of Water, 625 Broadway - 4th Flr, Albany, New York 12233-3506.

Mail a copy of both sides of this letter and any attachments to the NYSDEC Regional Engineer, as is required in your SPDES Permit. (See your SPDES Permit for address information.)

Retain a copy of both sides of this letter and any attachments you enclose for your records.

APPENDIX

SPDES Permit Violations:
Overdue Discharge Monitoring Reports (DMRs)

NY0204323 - VANDEMARK CHEMICAL, INC.

Outfall	Monitoring Period End Date	DMR Due Date	Location of Violation (Town/County)
001S	5/31/06	6/28/06	LOCKPORT/Niagara

ISOCHEM
GROUPE SNPE

Date: 06/14/06

To: NYSDEC
Division of Water
Bureau of Watershed Compliance Programs
625 Broadway 4th Floor
Albany, NY 12233-3506

CC: NYSDEC
Regional Water Quality Engineer
270 Michigan Ave.
Buffalo, NY 14203-2999
Attn: Rob Locey

Niagara County Health Dept.
5467 Upper Mountain Road
Suite 100
Lockport, NY 14094
Attn: Ron Gwozdek

From: Pam Cook - Environmental Engineer - Ext.: 150

RE: SPDES Report

Enclosed please find the SPDES monthly report for May 2006. If you have any questions, please contact me at 716-433-6764 ext. 150.

Sincerely,

Pamela J. Cook
Environmental Engineer
e-mail: p.cook@snpe.com

ISOCHEM Inc.
One North Transit Road - Lockport, New York 14094-2399 - Tel 716 433 6764 - Fax 716 433 2850

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

NAME ISOCHEM, INC

ADDRESS ISOCHEM, INC
1 NORTH TRANSIT ROAD
LOCKPORT NY 14094

FACILITY ISOCHEM, INC

LOCATION LOCKPORT NY 14094

ATTN: MATTHEW BARMASSE

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM *(NPDES)*
DISCHARGE MONITORING REPORT *(DMR)*

Form Approved.
No. 2040-0004

NY0204323	001 M
PERMIT NUMBER	DISCHARGE NUMBER

MINOR
(SUBR 09)
F - FINAL
NON-CONTACT COOLING WATER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	06	05	01	TO	06	05	31

*** NO DISCHARGE [X] ***

NOTE: Read Instructions before completing this form.

PARAMETER		QUANTITY OR LOADING AVERAGE	MAXIMUM	UNITS	QUALITY OR CONCENTRATION MINIMUM	AVERAGE	MAXIMUM	UNITS	NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
TEMPERATURE, WATER DEG. FAHRENHEIT	SAMPLE MEASUREMENT	******	******		******	******		(15)			
00011 1 0 0 EFFLUENT GROSS VALU	PERMIT REQUIREMENT	******	******	**** ****	******	******	90 DAILY MX	DEG. F		ONCE/ MONTH	GRAB
FLOW RATE	SAMPLE MEASUREMENT			(07)	******	******	******				
00056 1 0 0 EFFLUENT GROSS VALU	PERMIT REQUIREMENT	50000 DAILY AV	REPORT DAILY MX	GPD	******	******	******	**** ****		ONCE/ MONTH	INSTAN
PH	SAMPLE MEASUREMENT	******	******			******		(12)			
00400 1 0 0 EFFLUENT GROSS VALU	PERMIT REQUIREMENT	******	******	**** ****	6.0 MINIMUM	******	9.0 MAXIMUM	SU		ONCE/ MONTH	GRAB
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER		TELEPHONE		DATE		
Paul Ameis ExVP/COO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.					
TYPED OR PRINTED	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	716 AREA CODE	433-6761 NUMBER	06 YEAR	06 MO	14 DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here)*

VDM02506

Form Approved.
No. 2040-0004

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

NAME ISOCHEM, INC

ADDRESS ISOCHEM, INC
1 NORTH TRANSIT ROAD
LOCKPORT NY 14094

FACILITY LOCATION ISOCHEM, INC
LOCKPORT NY 14094

ATTN: MATTHEW BARMASSE

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM *(NPDES)*
DISCHARGE MONITORING REPORT *(DMR)*

NY0204323 — PERMIT NUMBER

001 Q — DISCHARGE NUMBER

MONITORING PERIOD

	YEAR	MO	DAY		YEAR	MO	DAY
FROM	06	03	01	TO	06	05	31

MINOR
(SUBR 09)
F - FINAL
NON-CONTACT COOLING WATER QTR

*** NO DISCHARGE [X] ***

NOTE: Read Instructions before completing this form.

PARAMETER		QUANTITY OR LOADING AVERAGE	QUANTITY OR LOADING MAXIMUM	QUANTITY OR LOADING UNITS	QUALITY OR CONCENTRATION MINIMUM	QUALITY OR CONCENTRATION AVERAGE	QUALITY OR CONCENTRATION MAXIMUM	QUALITY OR CONCENTRATION UNITS	NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
SOLIDS, TOTAL SUSPENDED	SAMPLE MEASUREMENT	******	******		******			(19)			
00530 1 0 0 EFFLUENT GROSS VALU	PERMIT REQUIREMENT	******	******	**** ****	******	REPORT DAILY AV	REPORT DAILY MX	MG/L		QTRLY	GRAB
SOLIDS, TOTAL SUSPENDED	SAMPLE MEASUREMENT	******	******		******			(19)			
00530 7 0 0 INTAKE FROM STREAM	PERMIT REQUIREMENT	******	******	**** ****	******	REPORT DAILY AV	REPORT DAILY MX	MG/L		QTRLY	GRAB
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER

Paul Ameis
Ex VP /COO

TYPED OR PRINTED

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE

AREA CODE	NUMBER
716	433-6768

DATE

YEAR	MO	DAY
06	06	14

COMMENTS AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here)*

MONITORING LOCATION 7 IS INTAKE FROM STREAM. IF NO INTAKE FROM STREAM DURING MONITORING PERIOD ENTER "NODI 9" IN THE QUANTITY AVERAGE COLUMN.
FOR AMOUNTS BELOW DETECTION LIMIT PLEASE ENTER THE MDL PRECEDED BY THE < SYMBOL

VDM02507

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if Different)

NAME ISOCHEM, INC

ADDRESS ISOCHEM, INC
1 NORTH TRANSIT ROAD
LOCKPORT NY 14094

FACILITY ISOCHEM, INC

LOCATION LOCKPORT NY 14094

ATTN: MATTHEW BARMASSE

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) DISCHARGE MONITORING REPORT (DMR)

NY0204323 PERMIT NUMBER

001 S DISCHARGE NUMBER

MONITORING PERIOD

	YEAR	MO	DAY		YEAR	MO	DAY
FROM	05	12	01	TO	06	05	31

Form Approved. No. 2040-0004

MINOR
(SUBR 09)
F - FINAL
NON-CONTACT COOLING WATER SEMI

*** NO DISCHARGE [ ] ***

NOTE: Read Instructions before completing this form.

PARAMETER		QUANTITY OR LOADING AVERAGE	QUANTITY OR LOADING MAXIMUM	QUANTITY OR LOADING UNITS	QUALITY OR CONCENTRATION MINIMUM	QUALITY OR CONCENTRATION AVERAGE	QUALITY OR CONCENTRATION MAXIMUM	QUALITY OR CONCENTRATION UNITS	NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
OXYGEN DEMAND, CHEM (LOW LEVEL) (COD)	SAMPLE MEASUREMENT	*******	*******		*******	NA	NA	(19)		0	NA
00335 1 0 0 EFFLUENT GROSS VALU	PERMIT REQUIREMENT	*******	*******	***** *****	*******	REPORT DAILY AV	REPORT DAILY MX	MG/L		SEMI-ANNUAL	GRAB
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT		There was		flow of 780gal	for only one		day			
	PERMIT REQUIREMENT		during this monitoring period								
	SAMPLE MEASUREMENT		no sample was taken.								
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE	DATE		
Paul Ameis Ex VP/COO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	Paul Ameis SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	716 433-6761 AREA CODE NUMBER	06 YEAR	06 MO	14 DAY
TYPED OR PRINTED						

COMMENTS AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here)*

VDM02508

Form Approved.
No. 2040-0004

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

NAME ISOCHEM, INC

ADDRESS ISOCHEM, INC
1 NORTH TRANSIT ROAD
LOCKPORT NY 14094

FACILITY LOCATION ISOCHEM, INC
LOCKPORT NY 14094

ATTN: MATTHEW BARMASSE

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM *(NPDES)*
DISCHARGE MONITORING REPORT *(DMR)*

NY0204323 — PERMIT NUMBER

004 M — DISCHARGE NUMBER

MONITORING PERIOD

	YEAR	MO	DAY		YEAR	MO	DAY
FROM	06	05	01	TO	06	05	31

MINOR
(SUBR 09)
F - FINAL
NON-CONTACT COOLING WATER

*** NO DISCHARGE [X] ***

NOTE: Read Instructions before completing this form.

PARAMETER		QUANTITY OR LOADING AVERAGE	QUANTITY OR LOADING MAXIMUM	QUANTITY OR LOADING UNITS	QUALITY OR CONCENTRATION MINIMUM	QUALITY OR CONCENTRATION AVERAGE	QUALITY OR CONCENTRATION MAXIMUM	QUALITY OR CONCENTRATION UNITS	NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
TEMPERATURE, WATER DEG. FAHRENHEIT 00011 1 0 0 EFFLUENT GROSS VALU	SAMPLE MEASUREMENT	*******	*******		*******	*******		(15)			
	PERMIT REQUIREMENT	*******	*******	**** ****	*******	*******	90 DAILY MX	DEG. F		ONCE/ MONTH	GRAB
FLOW RATE 00056 1 0 0 EFFLUENT GROSS VALU	SAMPLE MEASUREMENT			(07)	*******	*******	*******				
	PERMIT REQUIREMENT	330000 DAILY AV	REPORT DAILY MX	GPD	*******	*******	*******	**** ****		ONCE/ MONTH	INSTAN
PH 00400 1 0 0 EFFLUENT GROSS VALU	SAMPLE MEASUREMENT	*******	*******			*******		(12)			
	PERMIT REQUIREMENT	*******	*******	**** ****	6.0 MINIMUM	*******	9.0 MAXIMUM	SU		ONCE/ MONTH	GRAB
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER

Paul Ameis
Ex VP/COO

TYPED OR PRINTED

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE

AREA CODE	NUMBER
716	433-6764

DATE

YEAR	MO	DAY
06	06	14

COMMENTS AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here)*

EPA Form 3320-1 (Rev. 3/99) Previous editions may be used. This is part 1 of the form.

PAGE OF

VDM025509

PERMITTEE NAME/AD[illegible]S (*Include Facility Name/Location if Different*)

NAME ISOC[illegible], INC

ADDRESS ISOCHEM, INC
1 NORTH TRANSIT ROAD
LOCKPORT NY 14094

FACILITY ISOCHEM, INC

LOCATION LOCKPORT NY 14094

ATTN: MATTHEW BARMASSE

NATIONAL POLLUTANT [illegible]ARGE ELIMINATION SYSTEM (*NPDES*)
DISCHARGE [illegible]TORING REPORT (*DMR*)

Form Approved.
No. 2040-0004

NY0204323	004 Q
PERMIT NUMBER	DISCHARGE NUMBER

MINOR
(SUBR 09)
F - FINAL
NON-CONTACT COOLING WATER QTR

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	06	03	01	TO	06	05	31

*** NO DISCHARGE ~~X~~ ***

NOTE: Read Instructions before completing this form.

PARAMETER		QUANTITY OR LOADING AVERAGE	MAXIMUM	UNITS	QUALITY OR CONCENTRATION MINIMUM	AVERAGE	MAXIMUM	UNITS	NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
SOLIDS, TOTAL SUSPENDED 00530 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT	******	******		******			(19)			
	PERMIT REQUIREMENT	******	******	**** ****	******	REPORT DAILY AV	REPORT DAILY MX	MG/L		QTRLY	GRAB
SOLIDS, TOTAL SUSPENDED 00530 7 0 0 INTAKE FROM STREAM	SAMPLE MEASUREMENT	******	******		******			(19)			
	PERMIT REQUIREMENT	******	******	**** ****	******	REPORT DAILY AV	REPORT DAILY MX	MG/L		QTRLY	GRAB
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER		TELEPHONE		DATE		
Paul Ameis Ex VP/COO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	716	433-6764	06	06	14
TYPED OR PRINTED	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA CODE	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (*Reference all attachments here*)

MONITORING LOCATION '7' IS INTAKE FROM STREAM. IF NO INTAKE FROM STREAM DURING MONITORING PERIOD, ENTER "NODI 9" IN THE QUANTITY AVERAGE COLUMN.

PAGE OF

VDM02510

Form Approved.
No. 2040-0004

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

NAME ISOCHEM, INC

ADDRESS ISOCHEM, INC
1 NORTH TRANSIT ROAD
LOCKPORT NY 14094

FACILITY ISOCHEM, INC

LOCATION LOCKPORT NY 14094

ATTN: MATTHEW BARMASSE

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM *(NPDES)*
DISCHARGE MONITORING REPORT *(DMR)*

NY0204323 — PERMIT NUMBER

004 S — DISCHARGE NUMBER

MONITORING PERIOD

	YEAR	MO	DAY		YEAR	MO	DAY
FROM	05	12	01	TO	06	05	31

MINOR
(SUBR 09)
F - FINAL
NON-CONTACT COOLING WATER SEMI

*** NO DISCHARGE X ***

NOTE: Read Instructions before completing this form.

PARAMETER		QUANTITY OR LOADING AVERAGE	QUANTITY OR LOADING MAXIMUM	QUANTITY OR LOADING UNITS	QUALITY OR CONCENTRATION MINIMUM	QUALITY OR CONCENTRATION AVERAGE	QUALITY OR CONCENTRATION MAXIMUM	QUALITY OR CONCENTRATION UNITS	NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
OXYGEN DEMAND, CHEM. (LOW LEVEL) (COD) 00335 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT	******	******		******			(19)			
	PERMIT REQUIREMENT	******	******	**** ****	******	REPORT DAILY AV	REPORT DAILY MX	MG/L		SEMI-ANNUAL	GRAB
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER

Paul Ames
Ex VP/COO

TYPED OR PRINTED

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE

AREA CODE	NUMBER
716	433-6769

DATE

YEAR	MO	DAY
06	06	14

COMMENTS AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here)*

VDM02511

ISOCHEM
GROUPE SNPE

Date: 07/24/06

To: NYSDEC
Division of Water
Bureau of Watershed Compliance Programs
625 Broadway 4th Floor
Albany, NY 12233-3506

CC: NYSDEC
Regional Water Quality Engineer
270 Michigan Ave.
Buffalo, NY 14203-2999
Attn: Rob Locey

Niagara County Health Dept.
5467 Upper Mountain Road
Suite 100
Lockport, NY 14094
Attn: Ron Gwozdek

From: Pam Cook - Environmental Engineer - Ext.: 150

RE: SPDES Report

Enclosed please find the SPDES monthly report for June 2006. If you have any questions, please contact me at 716-433-6764 ext. 150.

Sincerely,

Pamela J. Cook
Environmental Engineer
e-mail: p.cook@snpe.com

ISOCHEM Inc.
One North Transit Road - Lockport, New York 14094-2399 - Tel 716 433 6764 - Fax 716 433 2850

Form Approved.
No. 2040-0004

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

NAME ISOCHEM, INC

ADDRESS ISOCHEM, INC
1 NORTH TRANSIT ROAD
LOCKPORT NY 14094

FACILITY LOCATION ISOCHEM, INC
LOCKPORT NY 14094

ATTN: MATTHEW BARMASSE

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM *(NPDES)*
DISCHARGE MONITORING REPORT *(DMR)*

NY0204323 — PERMIT NUMBER
004 M — DISCHARGE NUMBER

MONITORING PERIOD

	YEAR	MO	DAY		YEAR	MO	DAY
FROM	06	06	01	TO	06	06	30

MINOR
(SUBR 09)
F - FINAL
NON-CONTACT COOLING WATER

*** NO DISCHARGE [X] ***

NOTE: Read Instructions before completing this form.

PARAMETER		QUANTITY OR LOADING AVERAGE	QUANTITY OR LOADING MAXIMUM	QUANTITY OR LOADING UNITS	QUALITY OR CONCENTRATION MINIMUM	QUALITY OR CONCENTRATION AVERAGE	QUALITY OR CONCENTRATION MAXIMUM	QUALITY OR CONCENTRATION UNITS	NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
TEMPERATURE, WATER DEG. FAHRENHEIT	SAMPLE MEASUREMENT	******	******		******	******		(15)			
00011 1 0 0 EFFLUENT GROSS VALU	PERMIT REQUIREMENT	******	******	**** ****	******	******	90 DAILY MX	DEG. F		ONCE/ MONTH	GRAB
FLOW RATE	SAMPLE MEASUREMENT			(07)	******	******	******				
00056 1 0 0 EFFLUENT GROSS VALU	PERMIT REQUIREMENT	330000 DAILY AV	REPORT DAILY MX	GPD	******	******	******	**** ****		ONCE/ MONTH	INSTAN
PH	SAMPLE MEASUREMENT	******	******			******		(12)			
00400 1 0 0 EFFLUENT GROSS VALU	PERMIT REQUIREMENT	******	******	**** ****	6.0 MINIMUM	******	9.0 MAXIMUM	SU		ONCE/ MONTH	GRAB
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Paul Ameis Ex VP/COO TYPED OR PRINTED	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA CODE 716	NUMBER 433-6764	YEAR 06	MO 07	DAY 24

COMMENTS AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here)*

EPA Form 3320-1 (Rev. 3/99) Previous editions may be used. (This is a 4-part form)

VDM002513

Form Approved.
No. 2040-0004

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

NAME ISOCHEM, INC

ADDRESS ISOCHEM, INC
1 NORTH TRANSIT ROAD
LOCKPORT NY 14094

FACILITY LOCATION ISOCHEM, INC
LOCKPORT NY 14094

ATTN: MATTHEW BARMASSE

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM *(NPDES)*
MONITORING REPORT *(DMR)*

NY0204323	001 M
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD

	YEAR	MO	DAY		YEAR	MO	DAY
FROM	06	06	01	TO	06	06	30

MINOR
(SUBR 09)
F - FINAL
NON-CONTACT COOLING WATER

*** NO DISCHARGE [X] ***
NOTE: Read Instructions before completing this form.

PARAMETER		QUANTITY OR LOADING AVERAGE	QUANTITY OR LOADING MAXIMUM	QUANTITY OR LOADING UNITS	QUALITY OR CONCENTRATION MINIMUM	QUALITY OR CONCENTRATION AVERAGE	QUALITY OR CONCENTRATION MAXIMUM	QUALITY OR CONCENTRATION UNITS	NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
TEMPERATURE, WATER DEG. FAHRENHEIT 00011 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT	*******	*******		*******	*******		(15)			
	PERMIT REQUIREMENT	*******	*******	***** *****	*******	*******	90 DAILY MX	DEG. F		ONCE/ MONTH	GRAB
FLOW RATE 00056 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT			(07)	*******	*******	*******				
	PERMIT REQUIREMENT	50000 DAILY AV	REPORT DAILY MX	GPD	*******	*******	*******	***** *****		ONCE/ MONTH	INSTAN
PH 00400 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT	*******	*******			*******		(12)			
	PERMIT REQUIREMENT	*******	*******	***** *****	6.0 MINIMUM	*******	9.0 MAXIMUM	SU		ONCE/ MONTH	GRAB
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER		TELEPHONE			DATE		
Paul Ameis Ex. VP/COO TYPED OR PRINTED	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA CODE 716	NUMBER 433-6769	YEAR 06	MO 07	DAY 24

COMMENTS AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here)*

EPA Form 3320-1 (Rev. 3/99) Previous editions are obsolete. This is a 4 part form

VDM02514

ISOCHEM
GROUPE SNPE

Date: 08/21/06

To: NYSDEC
Division of Water
Bureau of Watershed Compliance Programs
625 Broadway 4th Floor
Albany, NY 12233-3506

CC: NYSDEC
Regional Water Quality Engineer
270 Michigan Ave.
Buffalo, NY 14203-2999
Attn: Rob Locey

Niagara County Health Dept.
5467 Upper Mountain Road
Suite 100
Lockport, NY 14094
Attn: Ron Gwozdek

From: Pam Cook - Environmental Engineer - Ext.: 150

RE: SPDES Report

Enclosed please find the SPDES monthly report for July 2006. If you have any questions, please contact me at 716-433-6764 ext. 150.

Sincerely,

Pamela J. Cook
Environmental Engineer
e-mail: p.cook@snpe.com

Form Approved.
No. 2040-0004

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

NAME ISOCHEM, INC

ADDRESS ISOCHEM, INC
1 NORTH TRANSIT ROAD
LOCKPORT NY 14094

FACILITY ISOCHEM, INC

LOCATION LOCKPORT NY 14094

ATTN: MATTHEW BARMASSE

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM *(NPDES)*
DISCHARGE MONITORING REPORT *(DMR)*

NY0204323 — PERMIT NUMBER

001 M — DISCHARGE NUMBER

MONITORING PERIOD

	YEAR	MO	DAY		YEAR	MO	DAY
FROM	06	07	01	TO	06	07	31

MINOR
(SUBR 09)
F - FINAL
NON-CONTACT COOLING WATER

*** NO DISCHARGE [X] ***

NOTE: Read Instructions before completing this form.

PARAMETER		QUANTITY OR LOADING AVERAGE	QUANTITY OR LOADING MAXIMUM	QUANTITY OR LOADING UNITS	QUALITY OR CONCENTRATION MINIMUM	QUALITY OR CONCENTRATION AVERAGE	QUALITY OR CONCENTRATION MAXIMUM	QUALITY OR CONCENTRATION UNITS	NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
TEMPERATURE, WATER DEG. FAHRENHEIT	SAMPLE MEASUREMENT	*******	*******		*******	*******		(15)			
00011 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	*******	*******	**** ****	*******	*******	90 DAILY MX	DEG. F		ONCE/ MONTH	GRAB
FLOW RATE	SAMPLE MEASUREMENT			(07)	*******	*******	*******				
00056 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	50000 DAILY AV	REPORT DAILY MX	GPD	*******	*******	*******	**** ****		ONCE/ MONTH	INSTAN
PH	SAMPLE MEASUREMENT	*******	*******			*******		(12)			
00400 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	*******	*******	**** ****	6.0 MINIMUM	*******	9.0 MAXIMUM	SU		ONCE/ MONTH	GRAB
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER

Paul Ameis
Ex VP/COO
TYPED OR PRINTED

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE

AREA CODE	NUMBER
716	433-6764

DATE

YEAR	MO	DAY
06	08	21

COMMENTS AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here)*

VDM02516

PERMITTEE NAME/AD[illegible]S *(Include Facility Name/Location if Different)*
NAME ISOCH[illegible], INC
ADDRESS ISOCHEM, INC
1 NORTH TRANSIT ROAD
LOCKPORT NY 14094
FACILITY ISOCHEM, INC
LOCATION LOCKPORT NY 14094
ATTN: MATTHEW BARMASSE

NATIONAL POLLUTANT[illegible]RGE ELIMINATION SYSTEM *(NPDES)*
DISCHARGE [illegible]ITORING REPORT *(DMR)*

Form Approved.
No. 2040-0004

NY0204323	004 M
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD

	YEAR	MO	DAY		YEAR	MO	DAY
FROM	06	07	01	TO	06	07	31

MINOR
(SUBR 09)
F - FINAL
NON-CONTACT COOLING WATER

*** NO DISCHARGE [X] ***

NOTE: Read Instructions before completing this form.

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		AVERAGE	MAXIMUM	UNITS	MINIMUM	AVERAGE	MAXIMUM	UNITS			
TEMPERATURE, WATER DEG. FAHRENHEIT	SAMPLE MEASUREMENT	*******	*******		*******	*******		(15)			
00011 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	*******	*******	**** ****	*******	*******	90 DAILY MX	DEG. F		ONCE/ MONTH	GRAB
FLOW RATE	SAMPLE MEASUREMENT			(07)	*******	*******	*******				
00056 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	330000 DAILY AV	REPORT DAILY MX	GPD	*******	*******	*******	**** ****		ONCE/ MONTH	INSTAN
PH	SAMPLE MEASUREMENT	*******	*******			*******		(12)			
00400 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	*******	*******	**** ****	6.0 MINIMUM	*******	9.0 MAXIMUM	SU		ONCE/ MONTH	GRAB
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Paul Ameis Ex VP/COO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	716	433-6761	06	08	31
TYPED OR PRINTED			AREA CODE	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here)*

EPA Form [illegible] PAGE 1 OF

VDM02517

ISOCHEM
GROUPE SNPE

Date: 09/12/06

To: NYSDEC
Division of Water
Bureau of Watershed Compliance Programs
625 Broadway 4th Floor
Albany, NY 12233-3506

CC: NYSDEC
Regional Water Quality Engineer
270 Michigan Ave.
Buffalo, NY 14203-2999
Attn: Rob Locey

Niagara County Health Dept.
5467 Upper Mountain Road
Suite 100
Lockport, NY 14094
Attn: Ron Gwozdek

From: Pam Cook - Environmental Engineer - Ext.: 150

RE: SPDES Report

Enclosed please find the SPDES monthly report for August 2006 and 2nd Quarter reports. If you have any questions, please contact me at 716-433-6764 ext. 150.

Sincerely,

Pamela J Cook

Pamela J. Cook
Environmental Engineer
e-mail: p.cook@snpe.com

ISOCHEM Inc.
One North Transit Road - Lockport, New York 14094-2399 - Tel 716 433 6764 - Fax 716 433 2850

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if Different)

NAME ISOCHEM, INC

ADDRESS ISOCHEM, INC
1 NORTH TRANSIT ROAD
LOCKPORT NY 14094

FACILITY ISOCHEM, INC

LOCATION LOCKPORT NY 14094

ATTN: MATTHEW BARMASSE

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) DISCHARGE MONITORING REPORT (DMR)

Form Approved. No. 2040-0004

NY0204323 — PERMIT NUMBER

001 Q — DISCHARGE NUMBER

MONITORING PERIOD: FROM YEAR 06 MO 06 DAY 01 TO YEAR 06 MO 06 DAY 31

MINOR
(SUBR 09)
F - FINAL
NON-CONTACT COOLING WATER QTR

*** NO DISCHARGE ~~X~~ ***

NOTE: Read Instructions before completing this form.

PARAMETER		QUANTITY OR LOADING AVERAGE	QUANTITY OR LOADING MAXIMUM	QUANTITY OR LOADING UNITS	QUALITY OR CONCENTRATION MINIMUM	QUALITY OR CONCENTRATION AVERAGE	QUALITY OR CONCENTRATION MAXIMUM	QUALITY OR CONCENTRATION UNITS	NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
SOLIDS, TOTAL SUSPENDED 00530 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT	*******	*******		*******	<4	<4	(19)	0	1/0	Grab
	PERMIT REQUIREMENT	*******	******* **** ****		*******	REPORT DAILY AV	REPORT DAILY MX	MG/L		3TRLY	GRAB
SOLIDS, TOTAL SUSPENDED 00530 7 0 0 INTAKE FROM STREAM	SAMPLE MEASUREMENT	*******	*******		*******	NODI9		(19)			
	PERMIT REQUIREMENT	*******	******* **** ****		*******	REPORT DAILY AV	REPORT DAILY MX	MG/L		3TRLY	GRAB
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER

Paul Ameis
Ex VP/COO
TYPED OR PRINTED

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SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE: AREA CODE 716 NUMBER 433-6764

DATE: YEAR 06 MO 09 DAY 12

COMMENTS AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here)*

MONITORING LOCATION 7 IS INTAKE FROM STREAM. IF NO INTAKE FROM STREAM DURING MONITORING PERIOD ENTER "NODI 9" IN THE QUANTITY AVERAGE COLUMN.
FOR AMOUNTS BELOW DETECTION LIMIT PLEASE ENTER THE MDL PRECEDED BY THE < SYMBOL.

EPA Form 3320-1 (Rev. 9/99) Previous editions may be used.

PAGE OF

VDM02519

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

NAME ISOCHEM, INC

ADDRESS ISOCHEM, INC
1 NORTH TRANSIT ROAD
LOCKPORT NY 14094

FACILITY ISOCHEM, INC

LOCATION LOCKPORT NY 14094

ATTN: MATTHEW BARMASSE

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM *(NPDES)* DISCHARGE MONITORING REPORT *(DMR)*

Approved. No. 2040-0004

NY0204323 — PERMIT NUMBER

001 M — DISCHARGE NUMBER

MINOR
(SUBR 09)
F - FINAL
NON-CONTACT COOLING WATER

MONITORING PERIOD

	YEAR	MO	DAY		YEAR	MO	DAY
FROM	06	08	01	TO	06	08	31

*** NO DISCHARGE [X] ***

NOTE: Read Instructions before completing this form.

PARAMETER		QUANTITY OR LOADING AVERAGE	QUANTITY OR LOADING MAXIMUM	QUANTITY OR LOADING UNITS	QUALITY OR CONCENTRATION MINIMUM	QUALITY OR CONCENTRATION AVERAGE	QUALITY OR CONCENTRATION MAXIMUM	QUALITY OR CONCENTRATION UNITS	NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
TEMPERATURE, WATER DEG. FAHRENHEIT	SAMPLE MEASUREMENT	*******	*******		*******	*******		(15)			
00011 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	*******	*******	**** ****	*******	*******	90 DAILY MX	DEG. F		ONCE/ MONTH	GRAB
FLOW RATE	SAMPLE MEASUREMENT			(07)	*******	*******	*******				
00056 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	50000 DAILY AV	REPORT DAILY MX	GPD	*******	*******	*******	**** ****		ONCE/ MONTH	INSTAN
PH	SAMPLE MEASUREMENT	*******	*******			*******		(12)			/
00400 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	*******	*******	**** ****	6.0 MINIMUM	*******	9.0 MAXIMUM	SU		ONCE/ MONTH	GRAB
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER

Paul Ames
Ex VP/COO
TYPED OR PRINTED

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE — AREA CODE 716 NUMBER 433-6764

DATE — YEAR 06 MO 09 DAY 12

COMMENTS AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here)*

VDM02520

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

NAME ISOCH , INC

ADDRESS ISOCHEM, INC
1 NORTH TRANSIT ROAD
LOCKPORT NY 14094

FACILITY ISOCHEM, INC
LOCATION LOCKPORT NY 14094

ATTN: MATTHEW BARMASSE

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM *(NPDES)* DISCHARGE MONITORING REPORT *(DMR)*

Form Approved. No. 2040-0004

NY0204323 — PERMIT NUMBER

004 M — DISCHARGE NUMBER

MONITORING PERIOD

	YEAR	MO	DAY		YEAR	MO	DAY
FROM	06	06	01	TO	06	08	31

MINOR
(SUBR 09)
F - FINAL
NON-CONTACT COOLING WATER

*** NO DISCHARGE [X] ***

NOTE: Read Instructions before completing this form.

PARAMETER		QUANTITY OR LOADING AVERAGE	QUANTITY OR LOADING MAXIMUM	QUANTITY OR LOADING UNITS	QUALITY OR CONCENTRATION MINIMUM	QUALITY OR CONCENTRATION AVERAGE	QUALITY OR CONCENTRATION MAXIMUM	QUALITY OR CONCENTRATION UNITS	NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
TEMPERATURE, WATER DEG. FAHRENHEIT 00011 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT	*******	*******		*******	*******		(15)			
	PERMIT REQUIREMENT	*******	*******	**** ****	*******	*******	90 DAILY MX	DEG. F		ONCE/ MONTH	GRAB
FLOW RATE 00056 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT			(07)	*******	*******	*******				
	PERMIT REQUIREMENT	330000 DAILY AV	REPORT DAILY MX	GPD	*******	*******	*******	**** ****		ONCE/ MONTH	INSTAN
PH 00400 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT	*******	*******			*******		(12)			
	PERMIT REQUIREMENT	*******	*******	**** ****	6.0 MINIMUM	*******	9.0 MAXIMUM	SU		ONCE/ MONTH	GRAB
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER

Paul Ameis
Ex VP/COO

TYPED OR PRINTED

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SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE: AREA CODE 716 NUMBER 433-6764

DATE: YEAR 06 MO 09 DAY 12

COMMENTS AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here)*

EPA Form 3320-1 (Rev. 9/00) Previous editions may be used

PAGE OF

VDM02521

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if Different)

NAME ISOCHEM, INC

ADDRESS ISOCHEM, INC
1 NORTH TRANSIT ROAD
LOCKPORT NY 14094

FACILITY ISOCHEM, INC

LOCATION LOCKPORT NY 14094

ATTN: MATTHEW BARMASSE

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) DISCHARGE MONITORING REPORT (DMR)

Form Approved. OMB No. 2040-0004

NY0204323	004 Q
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD

	YEAR	MO	DAY		YEAR	MO	DAY
FROM	06	06	01	TO	06	08	31

MINOR
(SUBR 09)
F - FINAL
NON-CONTACT COOLING WATER QTR

*** NO DISCHARGE [X] ***

NOTE: Read Instructions before completing this form.

PARAMETER		QUANTITY OR LOADING AVERAGE	QUANTITY OR LOADING MAXIMUM	QUANTITY OR LOADING UNITS	QUALITY OR CONCENTRATION MINIMUM	QUALITY OR CONCENTRATION AVERAGE	QUALITY OR CONCENTRATION MAXIMUM	QUALITY OR CONCENTRATION UNITS	NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
SOLIDS, TOTAL SUSPENDED 00530 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT	*******	*******		*******			(19)			
	PERMIT REQUIREMENT	*******	******* **** ****		*******	REPORT DAILY AV	REPORT DAILY MX	MG/L		QTRLY	GRAB
SOLIDS, TOTAL SUSPENDED 00530 7 0 0 INTAKE FROM STREAM	SAMPLE MEASUREMENT	*******	*******		*******			(19)			
	PERMIT REQUIREMENT	*******	******* **** ****		*******	REPORT DAILY AV	REPORT DAILY MX	MG/L		QTRLY	GRAB
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER

Paul Ameis
Ex VP/COO

TYPED OR PRINTED

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE: AREA CODE 716 NUMBER 4336764

DATE: YEAR 06 MO 09 DAY 12

COMMENTS AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here)*

MONITORING LOCATION '7' IS INTAKE FROM STREAM. IF NO INTAKE FROM STREAM DURING MONITORING PERIOD, ENTER "NODI 9" IN THE QUANTITY AVERAGE COLUMN.

VDM02522

IsleChem, LLC
2801 Long Road
Grand Island
New York 14072
Tel: (716) 773-8614
Fax: (716) 773-8517

Laboratory Analysis Report

Project: Water Samples for Analysis

SPDES Samples

Phase:
Sample Date: 6/27/2006
Sample Time: 08:00 AM

Report Date: Friday, June 30, 2006
Report ID: NY606118.0.3020
PO# / Release#: /
Reference #:
Report Status: **Final**

performed at the request of: Pamela J Cook
ISOCHEM, Inc.

One North Transit Road
Lockport, NY 14094-2399

The enclosed sample results table(s) are for 2 sample(s) received by IsleChem LLC on 6/27/2006 submitted by ISOCHEM, Inc.

Authorized Signature:

☐ Richard V. Finn, Manager of Chemical Testing
☑ Martin Ruszaj, Director of Chemical Testing

Laboratory Personnel Legend:

SJB	Stanley Biernat
FB	Fred Bozek
MF	Mary Ferguson
RVF	Richard (Dick) V. Finn
EF	Eric Fischer
VJH	Vivian Hoffman
MR	Martin S. Ruszaj
RS	Ron Stacy

VDM02523

Sample Results

Sample ID:	118-0627-01	Client:	ISOCHEM, Inc.
Lab ID / Vessel	15299 / 108227	Report ID:	NY606118.0.3020
Location:	SPDES / Field Grab - Water	Sampled:	6/27/2006

Parameters / Method	Analyte	Sample Results	Units	Analyst Date
Wet Chemistry Procedures				
Chemical Oxygen Demand (COD) / EPA 410.4	Chemical Oxygen Demand	21	mg/L	MF 6/28/2006
Total Suspended Solids (TSS) / EPA 160.2	Total Suspended Solids	<4	mg/L	MF 6/27/2006

end of sample 15299

General Disclaimer

•The test results are submitted pursuant to IsleChem LLC's current terms and conditions of sale, including the company's standard warranty and limitation of liability provisions. No responsibility or liability is assumed for the manner in which the results are used or interpreted.

•This report is issued for the benefit of and may be relied upon by the client named above. The client bears full responsibility for deciding the level of testing for sample submitted to IsleChem LLC.

•These results pertain only to the items tested.

•This report shall not be reproduced except in full.

•If the sample(s) represented by these test results were not collected by IsleChem LLC then the test results are limited to the reported values determine by the analytical testing process. IsleChem LLC makes no representation regarding the sample's collection technique, condition, volume, homogeneity or any other aspect of the sample(s) prior to IsleChem LLC taking possession of the sample(s) and the influence it may have on the results.

•Unless notified in writing to return the samples covered by this report IsleChem LLC will store what remains of the sample(s), if anything, for a period of 60 days before discarding, unless otherwise required by law. A shipping and handling fee with be charged for the return of any sample(s).

•Certain analytes may not be covered by the NYS DOH or NELAP fields of accreditation. Results for those analytes are generated by the cited method using QA/QC guidelines from IsleChem's Quality Control Manual, where applicable.

Organization Name	Project Name	# of Samples / # of Bottles
ISOCHEM, Inc.	SPDES Samples	2
Street Address	**Client PO / Release #**	**Turnaround / Date Results Needed**
One North Transit Road		
City, State, ZIP	**Date Sampled**	**IsleChem Project #**
Lockport, NY		NW606118 3020
Contact Person	**QC reporting level requested:** Std Full	Are RUSH charges authorized? Yes No
Pamela J. Cook p.cook@snpe.com		
Phone# and Fax#		
716-433-6764 x 150 cell: 716-609-1476		

Sample ID	Sample Location	Date/time	Matrix	Comp	Grab	TSS	COD	4104	1602	HNO3	HCL	NaOH	H2SO4	unpres.		Comments
SPDES		6/27/2006	Water		x	x								x		108227
SPDES		6/27/2006	Water		x		x							x		108228
			Water		x									x		
			Water		x									x		

Sampled By	Date	Time	Received by	Date	Time
M. Klett	6/27/06	8:00	John Kenyon	6-27-06	0800
Relinquished by	**Date**	**Time**	**Received by**	**Date**	**Time**
John Kenyon	6-27-06	0830	[signature]	6-27-06	0830
Relinquished by	**Date**	**Time**	**Received by**	**Date**	**Time**
[signature]	6-27-06	0830	Daniel Wagner	06/27/06	0830
Relinquished by	**Date**	**Time**	**Received by lab**	**Date**	**Time**
			MaryLou McElroy	6-27-06	925 am

IsleChem, LLC
2801 Long Road
Grand Island, NY 14072
716-773-8614
Fax: 716-773-8517

Chain of Custody

by relinquishing these sample to IsleChem, LLC. you are accepting the current IsleChem, LLC terms and conditions for the sale of services

VDM02525

ISOCHEM
GROUPE SNPE

Date: 10/25/06

To: NYSDEC
Division of Water
Bureau of Watershed Compliance Programs
625 Broadway 4th Floor
Albany, NY 12233-3506

CC: NYSDEC
Regional Water Quality Engineer
270 Michigan Ave.
Buffalo, NY 14203-2999
Attn: Rob Locey

Niagara County Health Dept.
5467 Upper Mountain Road
Suite 100
Lockport, NY 14094
Attn: Ron Gwozdek

From: Pam Cook - Environmental Engineer - Ext.: 150

RE: SPDES Report

Enclosed please find the SPDES monthly report for September 2006. If you have any questions, please contact me at 716-433-6764 ext. 150.

Sincerely,

Pamela J Cook lah

Pamela J. Cook
Environmental Engineer
e-mail: p.cook@snpe.com

ISOCHEM Inc.
One North Transit Road - Lockport, New York 14094-2399 - Tel 716 433 6764 - Fax 716 433 2850

NATIONAL POLLUTANT DISCHARGE E[illegible]IATION SYSTEM (NPDES)
DISCHARGE MONITORING[illegible]EPORT (DMR)

Approved
No. 2040-0004

MITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

ME: ISOCHEM, INC
DRESS: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
CILITY: ISOCHEM, INC
CATION: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
TN:MATTHEW BARMASSE

NY0204323	001M
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	06	09	01	TO	06	09	30

DMR MAILING ZIP CODE: 14094
MINOR
(SUBR09)
NON-CONTACT COOLING WATER
External Outfall

No Data Indicator ☒

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
mperature, water deg. fahrenheit	SAMPLE MEASUREMENT										
011 1 0 luent Gross	PERMIT REQUIREMENT	******	******		******	******	90 DAILY MX	deg F		Once Per Month	GRAB
)w rate	SAMPLE MEASUREMENT										
056 1 0 luent Gross	PERMIT REQUIREMENT	50000 DAILY AV	Req. Mon. DAILY MX	gal/d	******	******	******			Once Per Month	INSTAN
	SAMPLE MEASUREMENT										
400 1 0 luent Gross	PERMIT REQUIREMENT	******	******		6 MINIMUM	******	9 MAXIMUM	pH		Once Per Month	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
ul Ameis, ExVP/COO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	716 433 6764		06	10	25
TYPED OR PRINTED			AREA Code	NUMBER	YEAR	MO	DAY

OMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

VDM02527

NATIONAL POLLUTANT DISCHARGE E[illegible]ATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

[illegible]pproved
[illegible] No. 2040-0004

MITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

ME: ISOCHEM, INC
DRESS: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
CILITY: ISOCHEM, INC
CATION: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
TN:MATTHEW BARMASSE

NY0204323	004M
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	06	09	01	TO	06	09	30

DMR MAILING ZIP CODE: 14094
MINOR
(SUBR09)
NON-CONTACT COOLING WATER
External Outfall

No Data Indicator ☒

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
mperature, water deg. fahrenheit	SAMPLE MEASUREMENT										
011 1 0 luent Gross	PERMIT REQUIREMENT	******	******		******	******	90 DAILY MX	deg F		Once Per Month	GRAB
w rate	SAMPLE MEASUREMENT										
056 1 0 luent Gross	PERMIT REQUIREMENT	330000 DAILY AV	Req. Mon. DAILY MX	gal/d	******	******	******			Once Per Month	INSTAN
	SAMPLE MEASUREMENT										
400 1 0 luent Gross	PERMIT REQUIREMENT	******	******		6 MINIMUM	******	9 MAXIMUM	pH		Once Per Month	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Paul Amelio / Ex VP / COO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	716	433-6024	04	10	25
TYPED OR PRINTED			AREA Code	NUMBER	YEAR	MO	DAY

)MMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

VDM02528

ISOCHEM
GROUPE SNPE

Date: 11/03/06

To: NYSDEC
Division of Water
Bureau of Watershed Compliance Programs
625 Broadway 4th Floor
Albany, NY 12233-3506

CC: NYSDEC
Regional Water Quality Engineer
270 Michigan Ave.
Buffalo, NY 14203-2999
Attn: Rob Locey

Niagara County Health Dept.
5467 Upper Mountain Road
Suite 100
Lockport, NY 14094
Attn: Ron Gwozdek

From: Pam Cook - Environmental Engineer - Ext.: 150

RE: SPDES Report

Enclosed please find the SPDES monthly report for October 2006. If you have any questions, please contact me at 716-433-6764 ext. 150.

Sincerely,

Pamela J Cook (ah)

Pamela J. Cook
Environmental Engineer
e-mail: p.cook@snpe.com

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

Form Approved
OMB No. 2040-0004

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

NAME: ISOCHEM, INC
ADDRESS: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
FACILITY: ISOCHEM, INC
LOCATION: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
ATTN:MATTHEW BARMASSE

NY0204323	004M
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	06	10	01	TO	06	10	31

DMR MAILING ZIP CODE: 14094
MINOR
(SUBR09)
NON-CONTACT COOLING WATER
External Outfall

No Data Indicator [X]

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Temperature, water deg. fahrenheit	SAMPLE MEASUREMENT	******	******		******	******					
00011 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		******	******	90 DAILY MX	deg F		Once Per Month	GRAB
Flow rate	SAMPLE MEASUREMENT				******	******	******				
00056 1 0 Effluent Gross	PERMIT REQUIREMENT	330000 DAILY AV	Req. Mon. DAILY MX	gal/d	******	******	******			Once Per Month	INSTAN
pH	SAMPLE MEASUREMENT	******	******			******					
00400 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		6 MINIMUM	******	9 MAXIMUM	SU		Once Per Month	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Paul Ames EXVP/COO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	716	433-6764	06	11	02
TYPED OR PRINTED			AREA Code	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

VDM02530

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONI IG REPORT (DMR)

Form Approved
OMB No. 2040-0004

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

NAME: ISOCHEM, INC
ADDRESS: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
FACILITY: ISOCHEM, INC
LOCATION: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
ATTN:MATTHEW BARMASSE

NY0204323	001M
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	06	10	01	TO	06	10	31

DMR MAILING ZIP CODE: 14094
MINOR
(SUBR09)
NON-CONTACT COOLING WATER
External Outfall

No Data Indicator ☒

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Temperature, water deg. fahrenheit	SAMPLE MEASUREMENT	******	******		******	******					
00011 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		******	******	90 DAILY MX	deg F		Once Per Month	GRAB
Flow rate	SAMPLE MEASUREMENT				******	******	******				
00056 1 0 Effluent Gross	PERMIT REQUIREMENT	60000 DAILY AV	Req. Mon. DAILY MX	gal/d	******	******	******			Once Per Month	INSTAN
pH	SAMPLE MEASUREMENT	******	******			******					
00400 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		6 MINIMUM	******	9 MAXIMUM	SU		Once Per Month	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Paul Kmetis Ex VP/COO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.		716 433-6764		06	11	07
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA Code	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

VDM02531

New York State Department of Environmental Conservation
Division of Water, 4th Floor
625 Broadway, Albany, New York 12233-3500
Phone: (518) 402-8177 • **FAX:** (518) 402-8082
Website: www.dec.state.ny.us

Denise M. Sheehan
Commissioner

October 30, 2006

IMPORTANT NOTICE

RE: NEW DISCHARGE MONITORING REPORTS (DMRs)

Dear SPDES Permittee:

Your new Discharge Monitoring Report (DMR) is enclosed. EPA is continuing to work on some remaining issues with their new system, causing the October DMRs to be a little late. We expect these issues to be resolved by next month.

We noted a few problems with the September submissions. In order for us to process your DMRs, you need to **send the original to our office**. The "No discharge" box has been changed to "No Data Indicator", but the function is the same. If you have no discharge, please check the "No Data Indicator" box at the upper right. The DMRs are no longer printed on multi-part forms. Therefore, when making copies for yourself and other offices, please ensure that all the parameters and information are copied correctly. Also, please remember that the parameter order may be different.

If you have any questions concerning the DMR forms, please contact one of our staff listed below.

REGIONS 1,5,6 & 7	John Marra	(518) 402-8090
REGIONS 2 & 9	Roland Tozer	(518) 402-8083
REGIONS 3,4 & 8	Steve Vogler	(518) 402-8085

In addition, if you have any address changes on your DMR, please contact Noui Bouasay-Gibson at (518) 402-8191.

Sincerely,

Charles S. Haugh Jr., P.E.

Charles S. Haugh Jr., P.E.
SPDES Compliance Information Section
Bureau of Water Compliance

ISOCHEM
GROUPE SNPE

Date: 12/04/06

To: NYSDEC
Division of Water
Bureau of Watershed Compliance Programs
625 Broadway 4th Floor
Albany, NY 12233-3506

CC: NYSDEC
Regional Water Quality Engineer
270 Michigan Ave.
Buffalo, NY 14203-2999
Attn: Rob Locey

Niagara County Health Dept.
5467 Upper Mountain Road
Suite 100
Lockport, NY 14094
Attn: Ron Gwozdek

From: Pam Cook - Environmental Engineer - Ext.: 150

RE: SPDES Report

Enclosed please find the SPDES monthly report for November 2006. If you have any questions, please contact me at 716-433-6764 ext. 150.

Sincerely,

Pamela J Cook

Pamela J. Cook
Environmental Engineer
e-mail: p.cook@snpe.com

ISOCHEM Inc.
One North Transit Road - Lockport, New York 14094-2399 - Tel 716 433 6764 - Fax 716 433 2850

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

Form Approved
OMB No. 2040-0004

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

NAME: ISOCHEM, INC
ADDRESS: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
FACILITY: ISOCHEM, INC
LOCATION: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
ATTN:MATTHEW BARMASSE

NY0204323	004M
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	06	11	01	TO	06	11	30

DMR MAILING ZIP CODE: 14094
MINOR
(SUBR09)
NON-CONTACT COOLING WATER
External Outfall

No Data Indicator ☒

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
emperature, water deg. fahrenheit	SAMPLE MEASUREMENT	******	******		******	******					
0011 1 0 ffluent Gross	PERMIT REQUIREMENT	******	******		******	******	90 DAILY MX	deg F		Once Per Month	GRAB
low rate	SAMPLE MEASUREMENT				******	******	******				
0056 1 0 ffluent Gross	PERMIT REQUIREMENT	330000 DAILY AV	Req. Mon. DAILY MX	gal/d	******	******	******			Once Per Month	INSTAN
H	SAMPLE MEASUREMENT	******	******			******					
0400 1 0 ffluent Gross	PERMIT REQUIREMENT	******	******		6 MINIMUM	******	9 MAXIMUM	SU		Once Per Month	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Paul Ameis, ExVP/COO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	716	4336704	06	12	04
TYPED OR PRINTED			AREA Code	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

Form Approved
OMB No. 2040-0004

ERMITTEE NAME/ADDRESS *(Include Facility Name/Location If Different)*

AME: ISOCHEM, INC
DDRESS: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
ACILITY: ISOCHEM, INC
OCATION: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
TTN:MATTHEW BARMASSE

NY0204323	004Q
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	06	09	01	TO	06	11	30

DMR MAILING ZIP CODE: 14094
MINOR
(SUBR09)
NON-CONTACT COOLING WATER QTR
External Outfall

No Data Indicator ☒

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
olids, total suspended	SAMPLE MEASUREMENT	******	******		******						
0530 1 0 ffluent Gross	PERMIT REQUIREMENT	******	******		******	Req. Mon. DAILY AV	Req. Mon. DAILY MX	mg/L		Quarterly	GRAB
olids, total suspended	SAMPLE MEASUREMENT	******	******		******						
0530 7 0 ıtake from Stream	PERMIT REQUIREMENT	******	******		******	Req. Mon. DAILY AV	Req. Mon. DAILY MX	mg/L		Quarterly	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Paul Ameis Ex VP/COO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	Paul Ameis	716	433-6764	06	12	04
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA Code	NUMBER	YEAR	MO	DAY

OMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)
IONITORING LOCATI IS INTAKE FROM STREAM. IF NO INTAKE FROM STREAM DURING MONITORING PEP ENTER 'NODI 9' IN THE QUANTITY AVERAGE COLUMN.

VDM02536

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

Form Approved
OMB No. 2040-0004

ERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

AME: ISOCHEM, INC
DDRESS: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
ACILITY: ISOCHEM, INC
OCATION: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
ITTN:MATTHEW BARMASSE

NY0204323	004S
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	06	06	01	TO	06	11	30

DMR MAILING ZIP CODE: 14094
MINOR
(SUBR09)
NON-CONTACT COOLING WATER SEMI
External Outfall

No Data Indicator ☒

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
)xygen demand, chem. (low level) COD)	SAMPLE MEASUREMENT	******	******		******						
0335 1 0 ffluent Gross	PERMIT REQUIREMENT	******	******		******	Req. Mon. DAILY AV	Req. Mon. DAILY MX	mg/L		Semiannual	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Paul Ameis Ex VP/COO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	Paul Ameis	716 433-6765		06	12	04
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA Code	NUMBER	YEAR	MO	DAY

OMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

VDM02537

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

Form Approved
OMB No. 2040-0004

ERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

AME: ISOCHEM, INC
DDRESS: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
ACILITY: ISOCHEM, INC
OCATION: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
ITTN:MATTHEW BARMASSE

NY0204323	001M
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	06	11	01	TO	06	11	30

DMR MAILING ZIP CODE: 14094
MINOR
(SUBR09)
NON-CONTACT COOLING WATER
External Outfall

No Data Indicator [X]

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
emperature, water deg. fahrenheit	SAMPLE MEASUREMENT	******	******		******	******					
0011 1 0 ffluent Gross	PERMIT REQUIREMENT	******	******		******	******	90 DAILY MX	deg F		Once Per Month	GRAB
low rate	SAMPLE MEASUREMENT				******	******	******				
0056 1 0 ffluent Gross	PERMIT REQUIREMENT	50000 DAILY AV	Req. Mon. DAILY MX	gal/d	******	******	******			Once Per Month	INSTAN
H	SAMPLE MEASUREMENT	******	******			******					
0400 1 0 ffluent Gross	PERMIT REQUIREMENT	******	******		6 MINIMUM	******	9 MAXIMUM	SU		Once Per Month	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Paul Ameis ExVP/COO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	Paul Ameis	716	4331764	06	12	04
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA Code	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

VDM02538

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

Form Approved
OMB No. 2040-0004

ERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

IAME: ISOCHEM, INC
DDRESS: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
ACILITY: ISOCHEM, INC
OCATION: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
TTN:MATTHEW BARMASSE

NY0204323	001Q
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	06	09	01	TO	06	11	30

DMR MAILING ZIP CODE: 14094
MINOR
(SUBR09)
NON-CONTACT COOLING WATER QTR
External Outfall

No Data Indicator ☐

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
olids, total suspended	SAMPLE MEASUREMENT	******	******		******	< 3.5	< 3.5	mg/l	0	1/1	Grab
0530 1 0 ffluent Gross	PERMIT REQUIREMENT	******	******		******	Req. Mon. DAILY AV	Req. Mon. DAILY MX	mg/L		Quarterly	GRAB
olids, total suspended	SAMPLE MEASUREMENT	******	******		******	NODI9	NODI9		0	1/1	Grab
0530 7 0 ntake from Stream	PERMIT REQUIREMENT	******	******		******	Req. Mon. DAILY AV	Req. Mon. DAILY MX	mg/L		Quarterly	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Paul Ameis, Ex VP/COO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	Paul Ameis	716	433-6764	06	12	04
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA Code	NUMBER	YEAR	MO	DAY

OMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

ONITORING LOCATI S INTAKE FROM STREAM. IF NO INTAKE FROM STREAM DURING MONITORING PER ITER "NODI 9" IN THE QUANTITY AVERAGE COLUMN.FOR AMOUNTS BELOW DETECTI MIT PLEASE
NTER THE MDL PRE) BY THE < SYMBOL.

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

Form Approved
OMB No. 2040-0004

ERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

AME: ISOCHEM, INC
DDRESS: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
ACILITY: ISOCHEM, INC
OCATION: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
TTN:MATTHEW BARMASSE

NY0204323	001S
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	06	06	01	TO	06	11	30

DMR MAILING ZIP CODE: 14094
MINOR
(SUBR09)
NON-CONTACT COOLING WATER SEMI
External Outfall
No Data Indicator ☐

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
)xygen demand, chem. (low level) COD)	SAMPLE MEASUREMENT	******	******		******	21	21	mg/L	0	1/1	Grab
0335 1 0 ffluent Gross	PERMIT REQUIREMENT	******	******		******	Req. Mon. DAILY AV	Req. Mon. DAILY MX	mg/L		Semiannual	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Paul Amels, Ex VP (CY)	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	716	4336764	06	12	04
TYPED OR PRINTED			AREA Code	NUMBER	YEAR	MO	DAY

OMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

Laboratory Analysis Result Table

Client: Pamela J Cook
ISOCHEM, Inc.

One North Transit Road
Lockport, NY 14094-2399

Report Date: Friday, September 29, 2006
Report ID: **NY609120.0.4075**
PO# / Release# /
Reference #:
Sample Date: **Tuesday, September 26, 2006**
Sample Time: **07:30 AM**
Report Status: **Final**

Project: **Water Samples for Analysis**

SPDES 1

Phase:
Batch: --

Authorized Signature:

☑ Richard V. Finn, Manager of Chemical Testing
☐ Martin Ruszaj, Director of Chemical Testing

Sample ID / Analyte Group / Method	Lab ID / Vessel	Location / Description / Analyte	Results	Units		Analyst Date
The following result table is for 1 samples received by IsleChem LLC on 09/26/2006 submitted by Mathew Platt						
Also enclosed is the paperwork submitted with the samples.						
1	22173 / 111444	SPDES 1 / Field Grab - Water				
Total Suspended Solids (TSS)						
EPA 160.2		Total Suspended Solids	**<3.5**	**mg/L**	MF	9/26/2006
end of Lab ID number 22173						

IsleChem, LLC
2801 Long Road
Grand Island
New York 14072
Tel: (716) 773-8614
Fax: (716) 773-8517

NYS DOH ELAP ID# 11862

VDM02540

Sample ID	Lab ID / Vessel	Location / Description			Analyst
Analyte Group / Method		Analyte	Results	Units	Date

General Disclaimer

•The test results are submitted pursuant to IsleChem LLC's current terms and conditions of sale, including the company's standard warranty and limitation of liability provisions. No responsibility or liability is assumed for the manner in which the results are used or interpreted.

•This report is issued for the benefit of and may be relied upon by the client named above. The client bears full responsibility for deciding the level of testing for sample submitted to IsleChem LLC.

•These results pertain only to the items tested.

•This report shall not be reproduced except in full.

•If the sample(s) represented by these test results were not collected by IsleChem LLC then the test results are limited to the reported values determine by the analytical testing process. IsleChem LLC makes no representation regarding the sample's collection technique, condition, volume, homogeneity or any other aspect of the sample(s) prior to IsleChem LLC taking possession of the sample(s) and the influence it may have on the results.

•Unless notified in writing to return the samples covered by this report IsleChem LLC will store what remains of the sample(s), if anything, for a period of 60 days before discarding, unless otherwise required by law. A shipping and handling fee with be charged for the return of any sample(s).

•Certain analytes may not be covered by the NYS DOH or NELAP fields of accreditation. Results for those analytes are generated by the cited method using QA/QC guidelines from IsleChem's Quality Control Manual, where applicable.

The test results in this report meet all NELAP requirements for parameters that are within IsleChem's field of accreditation. Any exceptions to NELAP requirements are noted in the comments field.

IsleChem, LLC
2801 Long Road
Grand Island
New York 14072
Tel: (716) 773-8614
Fax: (716) 773-8517

NYS DOH ELAP ID# 11862

Client: ISOCHEM, Inc.
Project: NY609120.0.4075
Report Status: Final

VDM02541

Organization Name	Project	# of Samples / # of Bottles
ISOCHEM, Inc.		
Street Address	**Client PO / Release #**	**Turnaround / Date Results Needed**
One North Transit Road		
City, State, ZIP	**Date Sampled**	**IsleChem Project #**
Lockport, NY		NY609120.4005
Contact Person	**QC reporting level requested:** Std Full	**Are RUSH charges authorized?** Yes No
Pamela J. Cook p.cook@snpe.com		
Phone# and Fax#		
716-433-6764 x 150 cell: 716-609-1476		

Sample ID	Sample Location	Matrix	Comp	Grab	5 (1-5)	Bottle Type / Preservative
111444	SPDES-1			X	X	

Sampled By	Date	Time	Received by	Date	Time
Matthew Platt	9/26/06	07:30		9/26/06	0825
Relinquished by	**Date**	**Time**	**Received by**	**Date**	**Time**
	9/26/06	0825		9.26.06	083
Relinquished by	**Date**	**Time**	**Received by**	**Date**	**Time**
	9/26/06	105	Patrick J Hagerty	09/26/06	1050
Relinquished by	**Date**	**Time**	**Received by lab**	**Date**	**Time**
			Mary Lou McEvoy	9-26-06	1252

IsleChem, LLC
2801 Long Road
Grand Island, NY 14072
716-773-8614
Fax: 716-773-8517

Chain of Custody

by relinquishing these sample to IsleChem, LLC. you are accepting the current IsleChem, LLC terms and conditions for the sale of services

IsleChem, LLC
2801 Long Road
Grand Island
New York 14072
Tel: (716) 773-8614
Fax: (716) 773-8517

Laboratory Analysis Report

Project: Water Samples for Analysis

SPDES Samples

Phase:
Sample Date: 6/27/2006
Sample Time: 08:00 AM

Report Date: Friday, June 30, 2006
Report ID: NY606118.0.3020
PO# / Release#: /
Reference #:
Report Status: **Final**

performed at the request of: Pamela J Cook
ISOCHEM, Inc.

One North Transit Road
Lockport, NY 14094-2399

The enclosed sample results table(s) are for 2 sample(s) received by IsleChem LLC on 6/27/2006 submitted by ISOCHEM, Inc.

Authorized Signature: Martin Ruszaj

☐ Richard V. Finn, Manager of Chemical Testing
☒ Martin Ruszaj, Director of Chemical Testing

Laboratory Personnel Legend:

SJB	Stanley Biernat
FB	Fred Bozek
MF	Mary Ferguson
RVF	Richard (Dick) V. Finn
EF	Eric Fischer
VJH	Vivian Hoffman
MR	Martin S. Ruszaj
RS	Ron Stacy

VDM02543

Sample Results

Sample ID:	118-0627-01	Client:	ISOCHEM, Inc.
Lab ID / Vessel	15299 / 108227	Report ID:	NY606118.0.3020
Location:	SPDES / Field Grab - Water	Sampled:	6/27/2006

Parameters / Method	Analyte	Sample Results	Units	Analyst Date
Wet Chemistry Procedures				
Chemical Oxygen Demand (COD) / EPA 410.4	Chemical Oxygen Demand	21	mg/L	MF 6/28/2006
Total Suspended Solids (TSS) / EPA 160.2	Total Suspended Solids	<4	mg/L	MF 6/27/2006

end of sample 15299

General Disclaimer

•The test results are submitted pursuant to IsleChem LLC's current terms and conditions of sale, including the company's standard warranty and limitation of liability provisions. No responsibility or liability is assumed for the manner in which the results are used or interpreted.

•This report is issued for the benefit of and may be relied upon by the client named above. The client bears full responsibility for deciding the level of testing for sample submitted to IsleChem LLC.

•These results pertain only to the items tested.

•This report shall not be reproduced except in full.

•If the sample(s) represented by these test results were not collected by IsleChem LLC then the test results are limited to the reported values determine by the analytical testing process. IsleChem LLC makes no representation regarding the sample's collection technique, condition, volume, homogeneity or any other aspect of the sample(s) prior to IsleChem LLC taking possession of the sample(s) and the influence it may have on the results.

•Unless notified in writing to return the samples covered by this report IsleChem LLC will store what remains of the sample(s), if anything, for a period of 60 days before discarding, unless otherwise required by law. A shipping and handling fee with be charged for the return of any sample(s).

•Certain analytes may not be covered by the NYS DOH or NELAP fields of accreditation. Results for those analytes are generated by the cited method using QA/QC guidelines from IsleChem's Quality Control Manual, where applicable.

Organization Name	Project Name	# of Samples / # of Bottles
ISOCHEM, Inc.	SPDES Samples	2
Street Address	**Client PO / Release #**	**Turnaround / Date Results Needed**
One North Transit Road		
City, State, ZIP	**Date Sampled**	**IsleChem Project #**
Lockport, NY		NY606118.3020
Contact Person	**QC reporting level requested:** Std Full	Are RUSH charges authorized? Yes No
Pamela J. Cook p.cook@snpe.com		
Phone# and Fax#		
716-433-6764 x 150 cell: 716-609-1476		

Sample ID	Sample Location	Date/time	Matrix	Comp	Grab	TSS	COD	4104	1602	HNO3	HCL	NaOH	H2SO4	unpres.		Comments
SPDES		6/27/2006	Water		x	x								x		108227
SPDES		6/27/2006	Water		x		x							x		108228
			Water		x									x		
			Water		x									x		

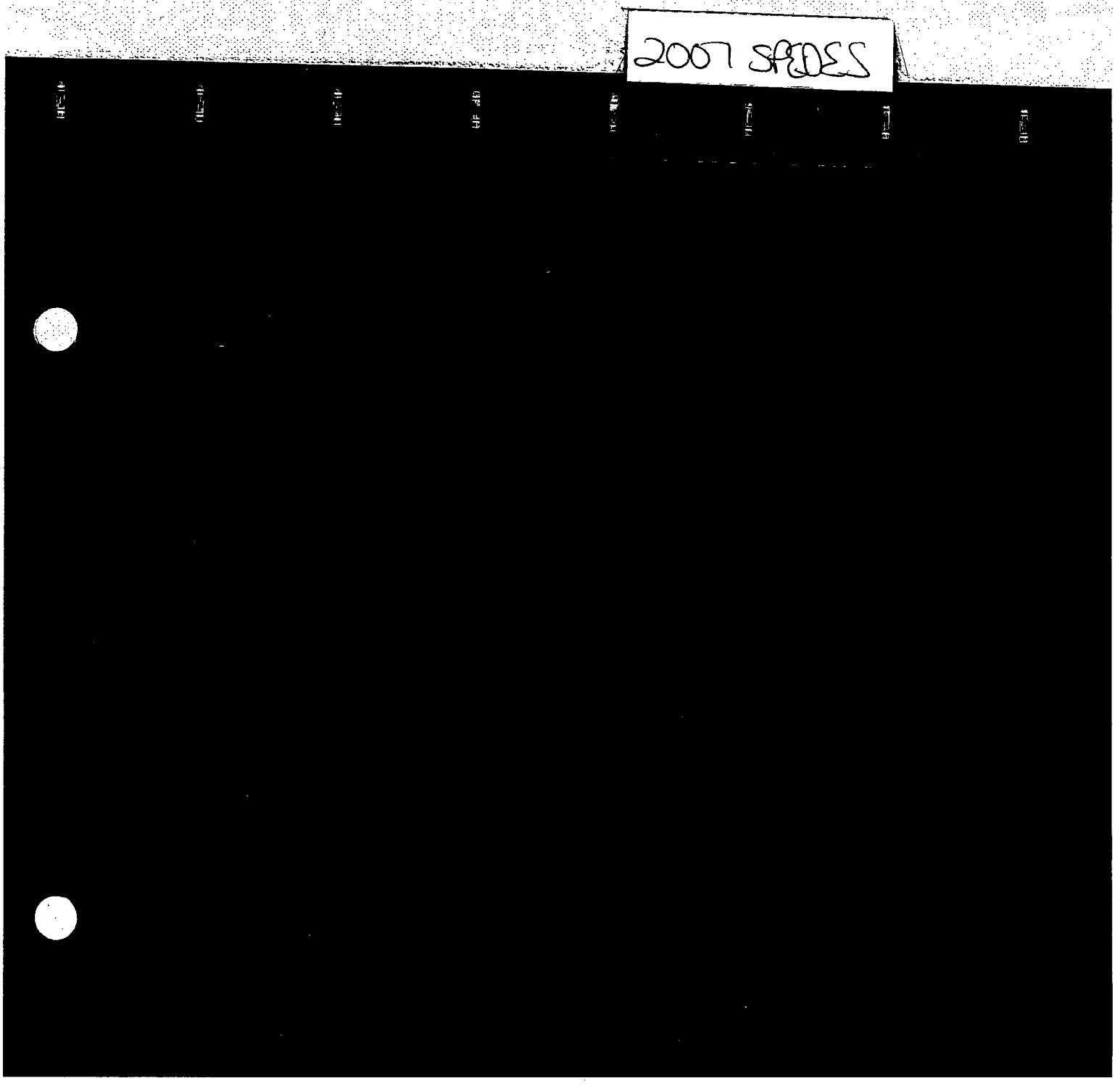
Sampled By	Date	Time	Received by	Date	Time
M. Plott	6/27/06	8:00		6/27/06	0800
Relinquished by	**Date**	**Time**	**Received by**	**Date**	**Time**
	6/27/06	0830		6-27-06	0830
Relinquished by	**Date**	**Time**	**Received by**	**Date**	**Time**
	6/27/06	0830		06/27/06	0830
Relinquished by	**Date**	**Time**	**Received by lab**	**Date**	**Time**
				6-27-06	925 am

IsleChem, LLC
2801 Long Road
Grand Island, NY 14072
716-773-8614
Fax: 716-773-8517

Chain of Custody

by relinquishing these sample to IsleChem, LLC. you are accepting the current IsleChem, LLC terms and conditions for the sale of services

VDM02545


2007 SPEECS

ISOCHEM
GROUPE SNPE

Date: 01/08/07

To: NYSDEC
Division of Water
Bureau of Watershed Compliance Programs
625 Broadway 4th Floor
Albany, NY 12233-3506

CC: NYSDEC
Regional Water Quality Engineer
270 Michigan Ave.
Buffalo, NY 14203-2999
Attn: Rob Locey

Niagara County Health Dept.
5467 Upper Mountain Road
Suite 100
Lockport, NY 14094
Attn: Ron Gwozdek

From: Pam Cook - Environmental Engineer - Ext.: 150

RE: SPDES Report

Enclosed please find the SPDES monthly report for December 2006. If you have any questions, please contact me at 716-433-6764 ext. 150.

Sincerely,

Pamela J. Cook
Environmental Engineer
e-mail: p.cook@snpe.com

ISOCHEM Inc.
One North Transit Road - Lockport, New York 14094-2399 - Tel 716 433 6764 - Fax 716 433 2850

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

Form Approved
OMB No. 2040-0004

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

NAME: ISOCHEM, INC
ADDRESS: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
FACILITY: ISOCHEM, INC
LOCATION: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
ATTN:MATTHEW BARMASSE

NY0204323	001M
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	06	12	01	TO	06	12	31

DMR MAILING ZIP CODE: 14094
MINOR
(SUBR09)
NON-CONTACT COOLING WATER
External Outfall

No Data Indicator ☒

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Temperature, water deg. fahrenheit	SAMPLE MEASUREMENT	******	******		******	******					
00011 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		******	******	90 DAILY MX	deg F		Once Per Month	GRAB
Flow rate	SAMPLE MEASUREMENT				******	******	******				
00056 1 0 Effluent Gross	PERMIT REQUIREMENT	50000 DAILY AV	Req. Mon. DAILY MX	gal/d	******	******	******			Once Per Month	INSTAN
pH	SAMPLE MEASUREMENT	******	******			******					
00400 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		6 MINIMUM	******	9 MAXIMUM	SU		Once Per Month	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Paul Ameis, Ex VP/COO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	716 433-6764		07	01	08
TYPED OR PRINTED			AREA Code	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

Form Approved
OMB No. 2040-0004

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

NAME: ISOCHEM, INC
ADDRESS: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
FACILITY: ISOCHEM, INC
LOCATION: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
ATTN:MATTHEW BARMASSE

NY0204323	004M
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	06	12	01	TO	06	12	31

DMR MAILING ZIP CODE: 14094
MINOR
(SUBR09)
NON-CONTACT COOLING WATER
External Outfall

No Data Indicator ☒

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Temperature, water deg. fahrenheit	SAMPLE MEASUREMENT	******	******		******	******					
00011 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		******	******	90 DAILY MX	deg F		Once Per Month	GRAB
Flow rate	SAMPLE MEASUREMENT				******	******	******				
00056 1 0 Effluent Gross	PERMIT REQUIREMENT	330000 DAILY AV	Req. Mon. DAILY MX	gal/d	******	******	******			Once Per Month	INSTAN
pH	SAMPLE MEASUREMENT	******	******			******					
00400 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		6 MINIMUM	******	9 MAXIMUM	SU		Once Per Month	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Paul Ameris, Ex VP/COO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.		716	433-6764	15	01	08
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA Code	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

ISOCHEM
GROUPE SNPE

Date: 02/19/07

To: NYSDEC
Division of Water
Bureau of Watershed Compliance Programs
625 Broadway 4th Floor
Albany, NY 12233-3506

CC: NYSDEC
Regional Water Quality Engineer
270 Michigan Ave.
Buffalo, NY 14203-2999
Attn: Rob Locey

Niagara County Health Dept.
5467 Upper Mountain Road
Suite 100
Lockport, NY 14094
Attn: Ron Gwozdek

From: Pam Cook - Environmental Engineer - Ext.: 150

RE: SPDES Report

Enclosed please find the SPDES monthly report for January 2007. If you have any questions, please contact me at 716-433-6764 ext. 150.

Sincerely,

Pamela J Cook

Pamela J. Cook
Environmental Engineer
e-mail: p.cook@snpe.com

ISOCHEM Inc.
One North Transit Road - Lockport, New York 14094-2399 - Tel 716 433 6764 - Fax 716 433 2850

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

Form Approved
OMB No. 2040-0004

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

NAME: ISOCHEM, INC
ADDRESS: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
FACILITY: ISOCHEM, INC
LOCATION: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
ATTN:MATTHEW BARMASSE

NY0204323	004M
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	07	01	01	TO	07	01	31

DMR MAILING ZIP CODE: 14094
MINOR
(SUBR09)
NON-CONTACT COOLING WATER
External Outfall
No Discharge ☒

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Temperature, water deg. fahrenheit	SAMPLE MEASUREMENT	******	******		******	******					
00011 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		******	******	90 DAILY MX	deg F		Once Per Month	GRAB
Flow rate	SAMPLE MEASUREMENT				******	******	******				
50056 1 0 Effluent Gross	PERMIT REQUIREMENT	330000 DAILY AV	Req. Mon. DAILY MX	gal/d	******	******	******			Once Per Month	INSTAN
pH	SAMPLE MEASUREMENT	******	******			******					
00400 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		6 MINIMUM	******	9 MAXIMUM	SU		Once Per Month	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Paul Ameis Ex VP/COO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	716	4336764	07	02	20
TYPED OR PRINTED			AREA Code	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

VDM02551

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

Form Approved
OMB No. 2040-0004

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

NAME: ISOCHEM, INC
ADDRESS: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
FACILITY: ISOCHEM, INC
LOCATION: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
ATTN:MATTHEW BARMASSE

NY0204323	001M
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	07	01	01	TO	07	01	31

DMR MAILING ZIP CODE: 14094
MINOR
(SUBR09)
NON-CONTACT COOLING WATER
External Outfall

No Discharge ☒

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Temperature, water deg. fahrenheit	SAMPLE MEASUREMENT	******	******		******	******					
00011 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		******	******	90 DAILY MX	deg F		Once Per Month	GRAB
Flow rate	SAMPLE MEASUREMENT				******	******	******				
00056 1 0 Effluent Gross	PERMIT REQUIREMENT	50000 DAILY AV	Req. Mon. DAILY MX	gal/d	******	******	******			Once Per Month	INSTAN
pH	SAMPLE MEASUREMENT	******	******			******					
00400 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		6 MINIMUM	******	9 MAXIMUM	SU		Once Per Month	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Paul Ameis, Ex VP/CAO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	716	433-6761	07	02	20
TYPED OR PRINTED			AREA Code	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

VDM02552

ISOCHEM
GROUPE SNPE

Date: 03/01/07

To: NYSDEC
Division of Water
Bureau of Watershed Compliance Programs
625 Broadway 4th Floor
Albany, NY 12233-3506

CC: NYSDEC
Regional Water Quality Engineer
270 Michigan Ave.
Buffalo, NY 14203-2999
Attn: Rob Locey

Niagara County Health Dept.
5467 Upper Mountain Road
Suite 100
Lockport, NY 14094
Attn: Ron Gwozdek

From: Pam Cook - Environmental Engineer - Ext.: 150

RE: SPDES Report

Enclosed please find the SPDES quarterly report for December 06 through February 07.
If you have any questions, please contact me at 716-433-6764 ext. 150.

Sincerely,

Pamela J. Cook
Environmental Engineer
e-mail: p.cook@snpe.com

ISOCHEM Inc.
One North Transit Road - Lockport, New York 14094-2399 - Tel 716 433 6764 - Fax 716 433 2850

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

Form Approved
OMB No. 2040-0004

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

NAME: ISOCHEM, INC
ADDRESS: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
FACILITY: ISOCHEM, INC
LOCATION: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
ATTN:MATTHEW BARMASSE

NY0204323	001Q
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD						
	YEAR	MO	DAY		YEAR	MO	DAY
FROM	06	12	01	TO	07	02	28

DMR MAILING ZIP CODE: 14094
MINOR
(SUBR09)
NON-CONTACT COOLING WATER QTR
External Outfall
No Discharge ☒

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Solids, total suspended	SAMPLE MEASUREMENT	******	******		******	<2.0	<2.0	mg/L	0	1/1	Grab
00530 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		******	Req. Mon. DAILY AV	Req. Mon. DAILY MX	mg/L		Quarterly	GRAB
Solids, total suspended	SAMPLE MEASUREMENT	******	******		******	NODI9					
00530 7 0 Intake from Stream	PERMIT REQUIREMENT	******	******		******	Req. Mon. DAILY AV	Req. Mon. DAILY MX	mg/L		Quarterly	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Paul Ameis, ExVP/COO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	Paul Ameis	716	433-6764	07	03	
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA Code	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)
MONITORING LOCATION 7 IS INTAKE FROM STREAM. IF NO INTAKE FROM STREAM DURING MONITORING PERIODENTER "NODI 9" IN THE QUANTITY AVERAGE COLUMN.FOR AMOUNTS BELOW DETECTION LIMIT PLEASE ENTER THE MDL PRECEDED BY THE < SYMBOL.

VDM02554

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

Form Approved
OMB No. 2040-0004

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

NAME: ISOCHEM, INC
ADDRESS: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
FACILITY: ISOCHEM, INC
LOCATION: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
ATTN:MATTHEW BARMASSE

NY0204323	004M
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD						
	YEAR	MO	DAY		YEAR	MO	DAY
FROM	07	02	01	TO	07	02	28

DMR MAILING ZIP CODE: 14094
MINOR
(SUBR09)
NON-CONTACT COOLING WATER
External Outfall

No Discharge ☒

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Temperature, water deg. fahrenheit	SAMPLE MEASUREMENT	******	******		******	******					
00011 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		******	******	90 DAILY MX	deg F		MONTHLY	GRAB
Flow rate	SAMPLE MEASUREMENT				******	******	******				
00056 1 0 Effluent Gross	PERMIT REQUIREMENT	330000 DAILY AV	Req. Mon. DAILY MX	gal/d	******	******	******			MONTHLY	INSTAN
pH	SAMPLE MEASUREMENT	******	******			******					
00400 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		6 MINIMUM	******	9 MAXIMUM	SU		MONTHLY	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Paul Ameis, Ex VP/COO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.		716	4336764	07	03	
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA Code	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

VDM02555

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONIT G REPORT (DMR)

Form Approved
OMB No. 2040-0004

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

NAME: ISOCHEM, INC
ADDRESS: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
FACILITY: ISOCHEM, INC
LOCATION: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
ATTN:MATTHEW BARMASSE

NY0204323	001M
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	07	02	01	TO	07	02	28

DMR MAILING ZIP CODE: 14094
MINOR
(SUBR09)
NON-CONTACT COOLING WATER
External Outfall

No Discharge ☒

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Temperature, water deg. fahrenheit	SAMPLE MEASUREMENT	******	******		******	******					
00011 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		******	******	90 DAILY MX	deg F		MONTHLY	GRAB
Flow rate	SAMPLE MEASUREMENT				******	******	******				
00056 1 0 Effluent Gross	PERMIT REQUIREMENT	50000 DAILY AV	Req. Mon. DAILY MX	gal/d	******	******	******			MONTHLY	INSTAN
pH	SAMPLE MEASUREMENT	******	******			******					
00400 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		6 MINIMUM	******	9 MAXIMUM	SU		MONTHLY	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Paul Amels, Ex VP/COO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	Paul A. Amels	716	433-6762	07	03	
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA Code	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

VDM02556

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

Form Approved
OMB No. 2040-0004

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

NAME: ISOCHEM, INC
ADDRESS: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
FACILITY: ISOCHEM, INC
LOCATION: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
ATTN:MATTHEW BARMASSE

NY0204323	004Q
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	06	12	01	TO	07	02	28

DMR MAILING ZIP CODE: 14094
MINOR
(SUBR09)
NON-CONTACT COOLING WATER QTR
External Outfall

No Discharge ☒

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Solids, total suspended	SAMPLE MEASUREMENT	******	******		******						
00530 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		******	Req. Mon. DAILY AV	Req. Mon. DAILY MX	mg/L		Quarterly	GRAB
Solids, total suspended	SAMPLE MEASUREMENT	******	******		******						
00530 7 0 Intake from Stream	PERMIT REQUIREMENT	******	******		******	Req. Mon. DAILY AV	Req. Mon. DAILY MX	mg/L		Quarterly	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Paul Amris Ex VP/COO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	Paul Amris	716	4336764	07	03	
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA Code	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)
MONITORING LOCATION '7' IS INTAKE FROM STREAM. IF NO INTAKE FROM STREAM DURING MONITORING PERIOD,ENTER 'NODI 9' IN THE QUANTITY AVERAGE COLUMN.

VDM02557

IsleChem, LLC
2801 Long Road
rand Island
New York 14072
Tel: (716) 773-8614
Fax: (716) 773-8517

Laboratory Analysis Report

Project: Water Samples for Analysis

Phase:
Sample Date: 12/12/2006
Sample Time: 9:15 AM

Report Date: Friday, December 15, 2006
Report ID: NY612061.0.4766
PO# / Release#: /
Reference #:
Report Status: **Final**

performed at the request of: Pamela J Cook
ISOCHEM, Inc.

One North Transit Road
Lockport, NY 14094-2399

The enclosed sample results table(s) are for 1 sample(s) received by IsleChem LLC on 12/12/2006 submitted by ISOCHEM, Inc.

Authorized Signature:

☑ Richard V. Finn, Manager of Chemical Testing
☐ Martin Ruszaj, Director of Chemical Testing

Laboratory Personnel Legend:

WMA	William M. Anspach
SJB	Stanley Biernat
FB	Fred Bozek
DD	David Domroes
MF	Mary Ferguson
RVF	Richard (Dick) V. Finn
EF	Eric Fischer
VJH	Vivian Hoffman
MR	Martin S. Ruszaj
RS	Ron Stacy

VDM02558

Sample Results

Sample ID:	1	Client:	ISOCHEM, Inc.
Lab ID / Vessel	26245 / 114675, 114676	Report ID:	NY612061.0.4766
Location:	SPDES / Field Grab - Water	Sampled:	12/12/2006

Parameters / Method	Analyte	Sample Results	Units	Analyst	Date
Wet Chemistry Procedures					
Chemical Oxygen Demand (COD) / EPA 410.4	Chemical Oxygen Demand	**<10**	**mg/L**	MF	12/14/2006
Total Suspended Solids (TSS) / EPA 160.2	Total Suspended Solids	**<2.0**	**mg/L**	MF	12/12/2006

end of Lab ID number 26245

General Disclaimer

•The test results are submitted pursuant to IsleChem LLC's current terms and conditions of sale, including the company's standard warranty and limitation of liability provisions. No responsibility or liability is assumed for the manner in which the results are used or interpreted.

•This report is issued for the benefit of and may be relied upon by the client named above. The client bears full responsibility for deciding the level of testing for sample submitted to IsleChem LLC.

•These results pertain only to the items tested.

•This report shall not be reproduced except in full.

•If the sample(s) represented by these test results were not collected by IsleChem LLC then the test results are limited to the reported values determine by the analytical testing process. IsleChem LLC makes no representation regarding the sample's collection technique, condition, volume, homogeneity or any other aspect of the sample(s) prior to IsleChem LLC taking possession of the sample(s) and the influence it may have on the results.

•Unless notified in writing to return the samples covered by this report IsleChem LLC will store what remains of the sample(s), if anything, for a period of 60 days before discarding, unless otherwise required by law. A shipping and handling fee with be charged for the return of any sample(s).

•Certain analytes may not be covered by the NYS DOH or NELAP fields of accreditation. Results for those analytes are generated by the cited method using QA/QC guidelines from IsleChem's Quality Control Manual, where applicable.

The test results in this report meet all NELAP requirements for parameters that are within IsleChem's field of accreditation. Any exceptions to NELAP requirements are noted in the comments field.

IsleChem, LLC
2801 Long Road
Grand Island
New York 14072
Tel: (716) 773-8614
Fax: (716) 773-8517

VDM02559

Organization Name	Project Name	# of Samples / # of Bottles
ISOCHEM, Inc.	SPDES Samples	2
Street Address	**Client PO / Release #**	**Turnaround / Date Results Needed**
One North Transit Road		
City, State, ZIP	**Date Sampled**	**IsleChem Project #**
Lockport, NY	12/12/06	NY612061 4-166
Contact Person	**QC reporting level requested:** Std Full	**Are RUSH charges authorized?** Yes No
Pamela J. Cook p.cook@snpe.com		
Phone# and Fax#		
716-433-6764 x 150 cell: 716-609-1476		

Sample ID	Sample Location	Date/time	Matrix	Comp	Grab	TSS	COD	4104	1602	HNO3	HCL	NaOH	H2SO4	unpres.		Comments
SPDES	114675	12/12/2006	Water		x	x								x		
SPDES	114676	12/12/2006	Water		x		x							x		
			Water		x									x		
			Water		x									x		

Sampled By	Date	Time	Received by	Date	Time
	12/12/06	9:15		12/12/06	9:15
Relinquished by	**Date**	**Time**	**Received by**	**Date**	**Time**
	12/12/06	0830		12/12/06	930
Relinquished by	**Date**	**Time**	**Received by**	**Date**	**Time**
	12/12/06	1:15			
Relinquished by	**Date**	**Time**	**Received by lab**	**Date**	**Time**
				12/13/06	10:15

IsleChem, LLC
2801 Long Road
Grand Island, NY 14072
716-773-8614
Fax: 716-773-8517

Chain of Custody

by relinquishing these sample to IsleChem, LLC. you are accepting the current IsleChem, LLC terms and conditions for the sale of services

VDM02560

ISOCHEM
GROUPE SNPE

Date: 04/03/07

To: NYSDEC
Division of Water
Bureau of Watershed Compliance Programs
625 Broadway 4th Floor
Albany, NY 12233-3506

CC: NYSDEC
Regional Water Quality Engineer
270 Michigan Ave.
Buffalo, NY 14203-2999
Attn: Rob Locey

Niagara County Health Dept.
5467 Upper Mountain Road
Suite 100
Lockport, NY 14094
Attn: Ron Gwozdek

From: Pam Cook - Environmental Engineer - Ext.: 150

RE: SPDES Report

Enclosed please find the SPDES report for the month of March 2007. If you have any questions, please contact me at 716-433-6764 ext. 150.

Sincerely,

Pamela J. Cook

Pamela J. Cook
Environmental Engineer
e-mail: p.cook@snpe.com

VDM02562

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

Form Approved
OMB No. 2040-0004

ERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

AME: ISOCHEM, INC
DDRESS: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
ACILITY: ISOCHEM, INC
OCATION: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
ITTN:MATTHEW BARMASSE

NY0204323	001M
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	07	03	01	TO	07	03	31

DMR MAILING ZIP CODE: 14094
MINOR
(SUBR09)
NON-CONTACT COOLING WATER
External Outfall

No Discharge ☒

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
emperature, water deg. fahrenheit	SAMPLE MEASUREMENT	******	******		******	******					
0011 1 0 ffluent Gross	PERMIT REQUIREMENT	******	******		******	******	90 DAILY MX	deg F		MONTHLY	GRAB
low rate	SAMPLE MEASUREMENT				******	******	******				
0056 1 0 ffluent Gross	PERMIT REQUIREMENT	50000 DAILY AV	Req. Mon. DAILY MX	gal/d	******	******	******			MONTHLY	INSTAN
H	SAMPLE MEASUREMENT	******	******			******					
0400 1 0 ffluent Gross	PERMIT REQUIREMENT	******	******		6 MINIMUM	******	9 MAXIMUM	SU		MONTHLY	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Paul Ameis, ExVP/COO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	Paul Ameis	716 433-6764		07	04	03
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA Code	NUMBER	YEAR	MO	DAY

:OMMENTS AND EXPLA" "TION OF ANY VIOLATIONS (Reference all attachments here)

VDM02563

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

Form Approved
OMB No. 2040-0004

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

NAME: ISOCHEM, INC
ADDRESS: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
FACILITY: ISOCHEM, INC
LOCATION: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
ATTN:MATTHEW BARMASSE

NY0204323	004M
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	07	03	01	TO	07	03	31

DMR MAILING ZIP CODE: 14094
MINOR
(SUBR09)
NON-CONTACT COOLING WATER
External Outfall

No Discharge ☒

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Temperature, water deg. fahrenheit	SAMPLE MEASUREMENT	******	******		******	******					
00011 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		******	******	90 DAILY MX	deg F		MONTHLY	GRAB
Flow rate	SAMPLE MEASUREMENT				******	******	******				
00056 1 0 Effluent Gross	PERMIT REQUIREMENT	330000 DAILY AV	Req. Mon. DAILY MX	gal/d	******	******	******			MONTHLY	INSTAN
pH	SAMPLE MEASUREMENT	******	******			******					
00400 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		6 MINIMUM	******	9 MAXIMUM	SU		MONTHLY	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Paul Annis ExVP/COO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	716	433-6764	07	04	03
TYPED OR PRINTED			AREA Code	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

ISOCHEM
GROUPE SNPE

Date: 05/04/07

To: NYSDEC
Division of Water
Bureau of Watershed Compliance Programs
625 Broadway 4th Floor
Albany, NY 12233-3506

CC: NYSDEC
Regional Water Quality Engineer
270 Michigan Ave.
Buffalo, NY 14203-2999
Attn: Rob Locey

Niagara County Health Dept.
5467 Upper Mountain Road
Suite 100
Lockport, NY 14094
Attn: Ron Gwozdek

From: Pam Cook - Environmental Engineer - Ext.: 150

RE: SPDES Report

Enclosed please find the SPDES report for the month of April 2007. If you have any questions, please contact me at 716-433-6764 ext. 150.

Sincerely,

Pamela J Cook

Pamela J. Cook
Environmental Engineer
e-mail: p.cook@snpe.com

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

Form Approved
OMB No. 2040-0004

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

NAME: ISOCHEM, INC
ADDRESS: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
FACILITY: ISOCHEM, INC
LOCATION: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
ATTN:MATTHEW BARMASSE

NY0204323	004M
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD						
	YEAR	MO	DAY		YEAR	MO	DAY
FROM	07	04	01	TO	07	04	30

DMR MAILING ZIP CODE: 14094
MINOR
(SUBR09)
NON-CONTACT COOLING WATER
External Outfall
No Discharge ☒

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Temperature, water deg. fahrenheit	SAMPLE MEASUREMENT	******	******		******	******					
00011 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		******	******	90 DAILY MX	deg F		MONTHLY	GRAB
Flow rate	SAMPLE MEASUREMENT				******	******	******				
00056 1 0 Effluent Gross	PERMIT REQUIREMENT	330000 DAILY AV	Req. Mon. DAILY MX	gal/d	******	******	******			MONTHLY	INSTAN
pH	SAMPLE MEASUREMENT	******	******			******					
00400 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		6 MINIMUM	******	9 MAXIMUM	SU		MONTHLY	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Paul Annesis Ex VP/COO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	Paul Annesis	716	433-6764	07	15	
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA Code	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

VDM02565

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

Form Approved
OMB No. 2040-0004

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

NAME: ISOCHEM, INC
ADDRESS: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
FACILITY: ISOCHEM, INC
LOCATION: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
ATTN:MATTHEW BARMASSE

NY0204323	001M
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	07	04	01	TO	07	04	30

DMR MAILING ZIP CODE: 14094
MINOR
(SUBR09)
NON-CONTACT COOLING WATER
External Outfall

No Discharge ☐

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Temperature, water deg. fahrenheit	SAMPLE MEASUREMENT	******	******		******	******	50	°F	0	3/3	Grab
00011 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		******	******	90 DAILY MX	deg F		MONTHLY	GRAB
Flow rate	SAMPLE MEASUREMENT	6130	11040	GPD	******	******	******		0	Continuous	
00056 1 0 Effluent Gross	PERMIT REQUIREMENT	50000 DAILY AV	Req. Mon. DAILY MX	gal/d	******	******	******			MONTHLY	INSTAN
pH	SAMPLE MEASUREMENT	******	******		7.7	******	7.7		0	1/3	Grab
00400 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		6 MINIMUM	******	9 MAXIMUM	SU		MONTHLY	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Paul Ameis Ex VP/COO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	Paul Ameis	716	433-6768	07	05	
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA Code	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

VDM02566

Pilot Lab SPDES Outfall Report

Date	Gallons	Temp (F)	pH	Initials	
4/2/2007	1,451,560	50	n/a	MP	
4/3/2007	1,458,810	50	n/a	MP	7250
4/4/2007	not flowing	n/a	n/a	MP	
4/5/2007	not flowing	n/a	n/a	MP	
4/6/2007	not flowing	n/a	n/a	MP	
4/7/2007	not flowing	n/a	n/a	MP	
4/8/2007	not flowing	n/a	n/a	MP	
4/9/2007	not flowing	n/a	n/a	MP	
4/10/2007	not flowing	n/a	n/a	MP	
4/11/2007	not flowing	n/a	n/a	MP	
4/12/2007	not flowing	n/a	n/a	MP	
4/13/2007	not flowing	n/a	n/a	MP	
4/14/2007	not flowing	n/a	n/a	MP	
4/15/2007	not flowing	n/a	n/a	MP	
4/16/2007	1,469,850	50	n/a	MP	11040
4/17/2007	not flowing	n/a	n/a	MP	
4/18/2007	not flowing	n/a	n/a	MP	
4/19/2007	not flowing	n/a	n/a	MP	
4/20/2007	not flowing	n/a	n/a	MP	
4/21/2007	not flowing	n/a	n/a	MP	
4/22/2007	not flowing	n/a	n/a	MP	
4/23/2007	not flowing	n/a	n/a	MP	
4/24/2007	not flowing	n/a	n/a	MP	
4/25/2007	not flowing	n/a	n/a	MP	
4/26/2007	not flowing	n/a	n/a	MP	
4/27/2007	not flowing	n/a	n/a	MP	
4/28/2007	not flowing	n/a	n/a	MP	
4/29/2007	not flowing	n/a	n/a	MP	
4/30/2007	1,469,950	50	7.7	MP	100
Total outfall 4/07	18,390				18390
					6130

ISOCHEM
GROUPE SNPE

Date: 06/06/07

To: NYSDEC
Division of Water
Bureau of Watershed Compliance Programs
625 Broadway 4th Floor
Albany, NY 12233-3506

CC: NYSDEC
Regional Water Quality Engineer
270 Michigan Ave.
Buffalo, NY 14203-2999
Attn: Rob Locey

Niagara County Health Dept.
5467 Upper Mountain Road
Suite 100
Lockport, NY 14094
Attn: Ron Gwozdek

From: Pam Cook - Environmental Engineer - Ext.: 150

RE: SPDES Report

Enclosed please find the SPDES report for the month of May 2007, also the quarterly and semi-annual reports. If you have any questions, please contact me at 716-433-6764 ext. 150.

Sincerely,

Pamela J Cook

Pamela J. Cook
Environmental Engineer
e-mail: p.cook@snpe.com

ISOCHEM Inc.
One North Transit Road - Lockport, New York 14094-2399 - Tel 716 433 6764 - Fax 716 433 2850

VDM02569

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

Form Approved
OMB No. 2040-0004

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

NAME: ISOCHEM, INC
ADDRESS: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094

FACILITY: ISOCHEM, INC
LOCATION: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094

ATTN:MATTHEW BARMASSE

NY0204323	001M
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	07	05	01	TO	07	05	31

DMR MAILING ZIP CODE: 14094
MINOR
(SUBR09)
NON-CONTACT COOLING WATER
External Outfall

No Discharge ☒

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
mperature, water deg. fahrenheit	SAMPLE MEASUREMENT	******	******		******	******					
011 1 0 fluent Gross	PERMIT REQUIREMENT	******	******		******	******	90 DAILY MX	deg F		Monthly	GRAB
ow rate	SAMPLE MEASUREMENT				******	******	******				
056 1 0 fluent Gross	PERMIT REQUIREMENT	50000 DAILY AV	Req. Mon. DAILY MX	gal/d	******	******	******			Monthly	INSTAN
	SAMPLE MEASUREMENT	******	******			******					
400 1 0 fluent Gross	PERMIT REQUIREMENT	******	******		6 MINIMUM	******	9 MAXIMUM	SU		Monthly	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Paul Ames, ExVP/COO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	Paul Ames	716	433-6764	07	06	06
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA Code	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

VDM02570

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

Form Approved
OMB No. 2040-0004

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

NAME: ISOCHEM, INC
ADDRESS: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
FACILITY: ISOCHEM, INC
LOCATION: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
ATTN:MATTHEW BARMASSE

NY0204323	004M
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	07	05	01	TO	07	05	31

DMR MAILING ZIP CODE: 14094
MINOR
(SUBR09)
NON-CONTACT COOLING WATER
External Outfall

No Discharge ☒

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
mperature, water deg. fahrenheit	SAMPLE MEASUREMENT	******	******		******	******					
011 1 0 fluent Gross	PERMIT REQUIREMENT	******	******		******	******	90 DAILY MX	deg F		Monthly	GRAB
ow rate	SAMPLE MEASUREMENT				******	******	******				
056 1 0 fluent Gross	PERMIT REQUIREMENT	330000 DAILY AV	Req. Mon. DAILY MX	gal/d	******	******	******			Monthly	INSTAN
l	SAMPLE MEASUREMENT	******	******			******					
400 1 0 fluent Gross	PERMIT REQUIREMENT	******	******		6 MINIMUM	******	9 MAXIMUM	SU		Monthly	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Paul Ameis, Ex VP/COO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	716 433-6764		07	06	06
TYPED OR PRINTED			AREA Code	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

Form Approved
OMB No. 2040-0004

RMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

ME: ISOCHEM, INC
DDRESS: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
CILITY: ISOCHEM, INC
CATION: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
TTN:MATTHEW BARMASSE

NY0204323	001Q
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	07	03	01	TO	07	05	31

DMR MAILING ZIP CODE: 14094
MINOR
(SUBR09)
NON-CONTACT COOLING WATER QTR
External Outfall
No Discharge ☐

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
lids, total suspended	SAMPLE MEASUREMENT	******	******		******	<4.0	<4.0	mg/L	0	1/1	Grab
530 1 0 fluent Gross	PERMIT REQUIREMENT	******	******		******	Req. Mon. DAILY AV	Req. Mon. DAILY MX	mg/L		Quarterly	GRAB
lids, total suspended	SAMPLE MEASUREMENT	******	******		******	NODI 9					
530 7 0 ake from Stream	PERMIT REQUIREMENT	******	******		******	Req. Mon. DAILY AV	Req. Mon. DAILY MX	mg/L		Quarterly	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Paul Ameis, Ex VP/COO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	Paul Ameis	716	4336764	07	06	06
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA Code	NUMBER	YEAR	MO	DAY

OMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

ONITORING LOCATIC INTAKE FROM STREAM. IF NO INTAKE FROM STREAM DURING MONITORING PERI TER "NODI 9" IN THE QUANTITY AVERAGE COLUMN.FOR AMOUNTS BELOW DETECTI IT PLEASE ITER THE MDL PREC D BY THE < SYMBOL.

VDM02572

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

Form Approved
OMB No. 2040-0004

RMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

\ME: ISOCHEM, INC
)DRESS: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
\CILITY: ISOCHEM, INC
)CATION: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
ITN:MATTHEW BARMASSE

NY0204323	004Q
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	07	03	01	TO	07	05	31

DMR MAILING ZIP CODE: 14094
MINOR
(SUBR09)
NON-CONTACT COOLING WATER QTR
External Outfall
No Discharge ☒

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
)lids, total suspended	SAMPLE MEASUREMENT	******	******		******						
)530 1 0 fluent Gross	PERMIT REQUIREMENT	******	******		******	Req. Mon. DAILY AV	Req. Mon. DAILY MX	mg/L		Quarterly	GRAB
)lids, total suspended	SAMPLE MEASUREMENT	******	******		******						
)530 7 0 :ake from Stream	PERMIT REQUIREMENT	******	******		******	Req. Mon. DAILY AV	Req. Mon. DAILY MX	mg/L		Quarterly	GRAB

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TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA Code	NUMBER	YEAR	MO	DAY

)MMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)
)NITORING LOCATIC S INTAKE FROM STREAM. IF NO INTAKE FROM STREAM DURING MONITORING PER NTER "NODI 9" IN THE QUANTITY AVERAGE COLUMN.

A Form 3320-1 (Rev.01/06) Previous editions may be used.

VDM02573

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

Form Approved
OMB No. 2040-0004

Page 5

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

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LOCKPORT, NY 14094
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FROM	06	12	01	TO	07	05	31

DMR MAILING ZIP CODE: 14094
MINOR
(SUBR09)
NON-CONTACT COOLING WATER SEMI
External Outfall

No Discharge ☐

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
ygen demand, chem. (low level) OD)	SAMPLE MEASUREMENT	******	******		******	<10	<10	mg/L	0	1/1	Grab
0335 1 0 fluent Gross	PERMIT REQUIREMENT	******	******		******	Req. Mon. DAILY AV	Req. Mon. DAILY MX	mg/L		Semiannual	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
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TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA Code	NUMBER	YEAR	MO	DAY

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Form Approved
OMB No. 2040-0004

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LOCATION: 1 NORTH TRANSIT ROAD
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NY0204323	004S
PERMIT NUMBER	DISCHARGE NUMBER

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FROM	06	12	01	TO	07	05	31

DMR MAILING ZIP CODE: 14094
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(SUBR09)
NON-CONTACT COOLING WATER SEMI
External Outfall

No Discharge ☒

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
ygen demand, chem. (low level) OD)	SAMPLE MEASUREMENT	******	******		******						
335 1 0 fluent Gross	PERMIT REQUIREMENT	******	******		******	Req. Mon. DAILY AV	Req. Mon. DAILY MX	mg/L		Semiannual	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
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TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA Code	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

IsleChem, LLC
3801 Long Road
Grand Island
New York 14072
Tel: (716) 773-8614
Fax: (716) 773-8517

Laboratory Analysis Report

Project: Water Samples for Analysis

SPDES Analysis

Phase:
Sample Date: 3/8/2007
Sample Time: 10:00 AM

Report Date: Thursday, March 15, 2007
Report ID: NY703038.0.5477
PO# / Release#: 113895 /
Reference #:
Report Status: **Final**

performed at the request of: Pamela J Cook
ISOCHEM, Inc.

One North Transit Road
Lockport, NY 14094-2399

The enclosed sample results table(s) are for 1 sample(s) received by IsleChem LLC on 3/8/2007 submitted by ISOCHEM, Inc.

Authorized Signature:

☑ Richard V. Finn, Manager of Chemical Testing
☐ Martin Ruszaj, Director of Chemical Testing

Laboratory Personnel Legend:

WMA	William M. Anspach
SJB	Stanley Biernat
FB	Fred Bozek
DD	David Domroes
MF	Mary Ferguson
RVF	Richard (Dick) V. Finn
EF	Eric Fischer
VJH	Vivian Hoffman
MR	Martin S. Ruszaj
RS	Ron Stacy

VDM02575

Sample Results

Sample ID:	1	Client:	ISOCHEM, Inc.
Lab ID / Vessel	30473 / 117669	Report ID:	NY703038.0.5477
Location:	SPDES / Field Grab - Water	Sampled:	3/8/2007

Parameters / Method	Analyte	Sample Results	Units	Analyst	Date
Wet Chemistry Procedures					
Total Suspended Solids (TSS) / EPA 160.2	Total Suspended Solids	**<4.0**	**mg/L**	MF	3/9/2007

end of Lab ID number 30473

General Disclaimer

•The test results are submitted pursuant to IsleChem LLC's current terms and conditions of sale, including the company's standard warranty and limitation of liability provisions. No responsibility or liability is assumed for the manner in which the results are used or interpreted.

•This report is issued for the benefit of and may be relied upon by the client named above. The client bears full responsibility for deciding the level of testing for sample submitted to IsleChem LLC.

•These results pertain only to the items tested.

•This report shall not be reproduced except in full.

•If the sample(s) represented by these test results were not collected by IsleChem LLC then the test results are limited to the reported values determine by the analytical testing process. IsleChem LLC makes no representation regarding the sample's collection technique, condition, volume, homogeneity or any other aspect of the sample(s) prior to IsleChem LLC taking possession of the sample(s) and the influence it may have on the results.

•Unless notified in writing to return the samples covered by this report IsleChem LLC will store what remains of the sample(s), if anything, for a period of 60 days before discarding, unless otherwise required by law. A shipping and handling fee with be charged for the return of any sample(s).

•Certain analytes may not be covered by the NYS DOH or NELAP fields of accreditation. Results for those analytes are generated by the cited method using QA/QC guidelines from IsleChem's Quality Control Manual, where applicable.

The test results in this report meet all NELAP requirements for parameters that are within IsleChem's field of accreditation. Any exceptions to NELAP requirements are noted in the comments field.

IsleChem, LLC
2801 Long Road
Grand Island
New York 14072
Tel: (716) 773-8614
Fax: (716) 773-8517

VDM02576

VDM02577

Organization Name	Project Name	# of Samples / # of Bottles
ISOCHEM, Inc.	SPDES Sample	1
Street Address	**Client PO / Release #**	**Turnaround / Date Results Needed**
One North Transit Road		
City, State, ZIP	**Date Sampled**	**IsleChem Project #**
Lockport, NY		NY 703038 5477
Contact Person	**QC reporting level requested:** Std Full	Are RUSH charges authorized? Yes No
Pamela J. Cook p.cook@snpe.com		
Phone# and Fax#		
716-433-6764 x 150 cell: 716-609-1476		

Sample ID	Sample Location	Date/time	Matrix	Comp	Grab	TSS	COD	4104	1602	HNO3	HCL	NaOH	H2SO4	unpres.		Comments
SPDES	117669	3/8/07 1000	Water		x	x								x		

Sampled By	Date	Time	Received by	Date	Time
	3/8/07	10:00		3/8/07	10:00
Relinquished by	**Date**	**Time**	**Received by**	**Date**	**Time**
	3/8/07	10:24		3/8/07	10:25
Relinquished by	**Date**	**Time**	**Received by**	**Date**	**Time**
	3/8/07	11:29		3/8/07	11:29
Relinquished by	**Date**	**Time**	**Received by lab**	**Date**	**Time**
	3/8/07	12:45		3-8-07	1245

IsleChem, LLC
2801 Long Road
Grand Island, NY 14072
716-773-8614
Fax: 716-773-8517

Chain of Custody

by relinquishing these sample to IsleChem, LLC. you are accepting the current IsleChem, LLC terms and conditions for the sale of services

Sample Results

Sample ID:	1	Client:	ISOCHEM, Inc.
Lab ID / Vessel	26245 / 114675, 114676	Report ID:	NY612061.0.4766
Location:	SPDES / Field Grab - Water	Sampled:	12/12/2006

Parameters / Method	Analyte	Sample Results	Units	Analyst	Date
Wet Chemistry Procedures					
Chemical Oxygen Demand (COD) / EPA 410.4	Chemical Oxygen Demand	**<10**	**mg/L**	MF	12/14/2006
Total Suspended Solids (TSS) / EPA 160.2	Total Suspended Solids	**<2.0**	**mg/L**	MF	12/12/2006

end of Lab ID number 26245

General Disclaimer

•The test results are submitted pursuant to IsleChem LLC's current terms and conditions of sale, including the company's standard warranty and limitation of liability provisions. No responsibility or liability is assumed for the manner in which the results are used or interpreted.

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•These results pertain only to the items tested.

•This report shall not be reproduced except in full.

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IsleChem, LLC
2801 Long Road
Grand Island
New York 14072
Tel: (716) 773-8614
Fax: (716) 773-8517

VDM02578

Organization Name	Project Name	# of Samples / # of Bottles
ISOCHEM, Inc.	SPDES Samples	2
Street Address	**Client PO / Release #**	**Turnaround / Date Results Needed**
One North Transit Road		
City, State, ZIP	**Date Sampled**	**IsleChem Project #**
Lockport, NY	12/12/06	NY612061 4766
Contact Person	**QC reporting level requested:** Std Full	Are RUSH charges authorized? Yes No
Pamela J. Cook p.cook@snpe.com		
Phone# and Fax#		
716-433-6764 x 150 cell: 716-609-1476		

Sample ID	Sample Location	Date/time	Matrix	Comp	Grab	TSS	COD	4104	1602	HNO3	HCL	NaOH	H2SO4	unpres.		Comments
SPDES	114675	12/12/2006	Water		x	x								x		
SPDES	114676	12/12/2006	Water		x		x							x		
			Water		x									x		
			Water		x									x		

Sampled By	Date	Time	Received by	Date	Time	
	12/12/06	9:15		12/12/06	9:15	**IsleChem, LLC** 2801 Long Road Grand Island, NY 14072 716-773-8614 Fax: 716-773-8517
Relinquished by	Date	Time	Received by	Date	Time	
	12/12/06	0930		12/12/06	930	
Relinquished by	Date	Time	Received by	Date	Time	
	12/12/06	1:15				
Relinquished by	Date	Time	Received by lab	Date	Time	
				12/13/06	10:15	**Chain of Custody**

by relinquishing these sample to IsleChem, LLC. you are accepting the current IsleChem, LLC terms and conditions for the sale of services

VDM02579

VanDeMark
Phosgene Chemistry • Custom Chemicals

Date: 07/10/07

To: NYSDEC
Division of Water
Bureau of Watershed Compliance Programs
625 Broadway 4th Floor
Albany, NY 12233-3506

CC: NYSDEC
Regional Water Quality Engineer
270 Michigan Ave.
Buffalo, NY 14203-2999
Attn: Rob Locey

Niagara County Health Dept.
5467 Upper Mountain Road
Suite 100
Lockport, NY 14094
Attn: Ron Gwozdek

RE: SPDES Report

Enclosed please find the SPDES report for the month of June 2007. If you have any questions, please contact me at 716-433-6764 ext. 150.

Sincerely,

Pamela J. Cook
Quality Assurance / Environmental Coordinator
e-mail: p.cook@vdmchemical.com

VanDeMark Chemical Inc.
One North Transit Road, Lockport, NY 14094
Tel: 716-433-6764 • Fax: 716-433-2850
www.vdmchemical.com

NATIONAL POLLUTANT DISCH ELIMINATION SYSTEM (NPDES)

DISCHARGE MONITORING REPORT (DMR)

) Approved
OMB No. 2040-0004

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

NAME: ~~ISOCHEM, INC~~ VanDeMark Chemical Inc.
ADDRESS: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
FACILITY: ~~ISOCHEM, INC~~ VanDeMark Chemical Inc.
LOCATION: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
ATTN:MATTHEW BARMASSE

NY0204323	001M
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	07	06	01	TO	07	06	30

DMR MAILING ZIP CODE: 14094
MINOR
(SUBR09)
NON-CONTACT COOLING WATER
External Outfall

No Discharge ☒

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Temperature, water deg. fahrenheit	SAMPLE MEASUREMENT	******	******		******	******					
00011 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		******	******	90 DAILY MX	deg F		Monthly	GRAB
Flow rate	SAMPLE MEASUREMENT				******	******	******				
00056 1 0 Effluent Gross	PERMIT REQUIREMENT	50000 DAILY AV	Req. Mon. DAILY MX	gal/d	******	******	******			Monthly	INSTAN
pH	SAMPLE MEASUREMENT	******	******			******					
00400 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		6 MINIMUM	******	9 MAXIMUM	SU		Monthly	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
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TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA Code	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

VDM02581

NATIONAL POLLUTANT DISCH ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

n Approved
OMB No. 2040-0004

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

NAME: ~~ISOCHEM, INC~~ VanDeMark Chemical Inc
ADDRESS: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
FACILITY: ~~ISOCHEM, INC~~ VanDeMark Chemical Inc.
LOCATION: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
ATTN:MATTHEW BARMASSE

NY0204323	004M
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD						
	YEAR	MO	DAY		YEAR	MO	DAY
FROM	07	06	01	TO	07	06	30

DMR MAILING ZIP CODE: 14094
MINOR
(SUBR09)
NON-CONTACT COOLING WATER
External Outfall

No Discharge ☒

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Temperature, water deg. fahrenheit	SAMPLE MEASUREMENT	******	******		******	******					
00011 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		******	******	90 DAILY MX	deg F		Monthly	GRAB
Flow rate	SAMPLE MEASUREMENT				******	******	******				
00056 1 0 Effluent Gross	PERMIT REQUIREMENT	330000 DAILY AV	Req. Mon. DAILY MX	gal/d	******	******	******			Monthly	INSTAN
pH	SAMPLE MEASUREMENT	******	******			******					
00400 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		6 MINIMUM	******	9 MAXIMUM	SU		Monthly	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
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TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA Code	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

VDM02582

6. Engineering Monthly Safety Activity Summary

Month: June - 07 Week: ____ Supervisor: Chet Lipka

Reviewed by: _____ Date: 7/1/07

Proactive Safety activities to be practices & encouraged

- Safety suggestions
- Safety Work Orders
- Safety Audit participation
- Safety Inspections
- Safety Training
- JSO / JSA participation
- Daily safety talks
- Safety topic coaching
- Permits review
- Recognition awards
- Hazards Reviews participation
- Pre-Start-up Walk Through participation
- PMR Generation / PMR Close-Out
- Personal Safety Contacts
- Process Safety Mtgs.
- Process Safety / Design Discussions
- Corrective Action Mtgs.
- Outside Training (OSHA, etc...)
- Haz-Mat Activities (Drills, Training)
-

Comments:

CHET	• Attended annual safety training
	• PT-10 vent system modifications completed during shutdown
	• New Phosgene Dept. process alarm system ordered and installation begun.
	•
	•
	•
PHIL	• Attended annual safety training day
	• Attended 2-CMBSI Hazard Review
	• Called and presented Actycryl Hazard Review 5 year
	• Completed procedure for modifications to PT-10 and vent system
	•
STEVE	• Close out action items on PMR's; 06-002, 003, 040, 082, 084, 07-015, 027, 032, 037, 039
	• Safety work order #20071601, insulate exposed steam line (burn hazard)
	• Reviewed hot work permits daily during shut-down
	•
	•

VanDeMark
Phosgene Chemistry • Custom Chemicals

Date: 07/10/07

To: NYSDEC
Division of Water
Bureau of Watershed Compliance Programs
625 Broadway 4th Floor
Albany, NY 12233-3506

CC: NYSDEC
Regional Water Quality Engineer
270 Michigan Ave.
Buffalo, NY 14203-2999
Attn: Rob Locey

Niagara County Health Dept.
5467 Upper Mountain Road
Suite 100
Lockport, NY 14094
Attn: Ron Gwozdek

RE: SPDES Report

Enclosed please find the SPDES report for the month of June 2007. If you have any questions, please contact me at 716-433-6764 ext. 150.

Sincerely,

Pamela J. Cook
Quality Assurance / Environmental Coordinator
e-mail: p.cook@vdmchemical.com

VanDeMark Chemical Inc.
One North Transit Road, Lockport, NY 14094
Tel: 716-433-6764 • Fax: 716-433-2850
www.vdmchemical.com

NATIONAL POLLUTANT DISCH[illegible] ELIMINATION SYSTEM (NPDES)

DISCHARGE MONITORING REPORT (DMR)

[illegible] Approved
OMB No. 2040-0004

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

NAME: ~~ISOCHEM, INC~~ VanDeMark Chemical Inc.
ADDRESS: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
FACILITY: ~~ISOCHEM, INC~~ VanDeMark Chemical Inc.
LOCATION: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
ATTN:MATTHEW BARMASSE

NY0204323	001M
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	07	06	01	TO	07	06	30

DMR MAILING ZIP CODE: 14094
MINOR
(SUBR09)
NON-CONTACT COOLING WATER
External Outfall

No Discharge ☒

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Temperature, water deg. fahrenheit	SAMPLE MEASUREMENT	******	******		******	******					
00011 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		******	******	90 DAILY MX	deg F		Monthly	GRAB
Flow rate	SAMPLE MEASUREMENT				******	******	******				
00056 1 0 Effluent Gross	PERMIT REQUIREMENT	50000 DAILY AV	Req. Mon. DAILY MX	gal/d	******	******	******			Monthly	INSTAN
pH	SAMPLE MEASUREMENT	******	******			******					
00400 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		6 MINIMUM	******	9 MAXIMUM	SU		Monthly	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Paul Ameis, Ex VP/COO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	Paul Ameis	716 4336764		07	07	09
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA Code	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

VDM02585

NATIONAL POLLUTANT DISCH ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

n Approved
OMB No. 2040-0004

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

NAME: ~~ISOCHEM, INC~~ VanDeMark Chemical Inc
ADDRESS: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
FACILITY: ~~ISOCHEM, INC~~ VanDeMark Chemical Inc
LOCATION: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
ATTN:MATTHEW BARMASSE

NY0204323	004M
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD						
	YEAR	MO	DAY		YEAR	MO	DAY
FROM	07	06	01	TO	07	06	30

DMR MAILING ZIP CODE: 14094
MINOR
(SUBR09)
NON-CONTACT COOLING WATER
External Outfall

No Discharge ☒

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Temperature, water deg. fahrenheit	SAMPLE MEASUREMENT	******	******		******	******					
00011 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		******	******	90 DAILY MX	deg F		Monthly	GRAB
Flow rate	SAMPLE MEASUREMENT				******	******	******				
00056 1 0 Effluent Gross	PERMIT REQUIREMENT	330000 DAILY AV	Req. Mon. DAILY MX	gal/d	******	******	******			Monthly	INSTAN
pH	SAMPLE MEASUREMENT	******	******			******					
00400 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		6 MINIMUM	******	9 MAXIMUM	SU		Monthly	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Paul Ameis, ExVP/COO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	Paul Ameis	716-433-6764		07	07	09
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA Code	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

VDM02586

6. Engineering Monthly Safety Activity Summary

Month: June - 07 Week: ____ Supervisor: Chet Lipka

Reviewed by: _____ Date: 7/1/07

Proactive Safety activities to be practices & encouraged

- Safety suggestions
- Safety Work Orders
- Safety Audit participation
- Safety Inspections
- Safety Training
- JSO / JSA participation
- Daily safety talks
- Safety topic coaching
- Permits review
- Recognition awards
- Hazards Reviews participation
- Pre-Start-up Walk Through participation
- PMR Generation / PMR Close-Out
- Personal Safety Contacts
- Process Safety Mtgs.
- Process Safety / Design Discussions
- Corrective Action Mtgs.
- Outside Training (OSHA, etc...)
- Haz-Mat Activities (Drills, Training)
-

Comments:

CHET	• Attended annual safety training
	• PT-10 vent system modifications completed during shutdown
	• New Phosgene Dept. process alarm system ordered and installation begun.
	•
	•
	•
PHIL	• Attended annual safety training day
	• Attended 2-CMBSI Hazard Review
	• Called and presented Actycryl Hazard Review 5 year
	• Completed procedure for modifications to PT-10 and vent system
	•
STEVE	• Close out action items on PMR's; 06-002, 003, 040, 082, 084, 07-015, 027, 032, 037, 039
	• Safety work order #20071601, insulate exposed steam line (burn hazard)
	• Reviewed hot work permits daily during shut-down
	•
	•

VanDeMark

Phosgene Chemistry • Custom Chemicals

Date: 08/01/07

To: NYSDEC
Division of Water
Bureau of Watershed Compliance Programs
625 Broadway 4th Floor
Albany, NY 12233-3506

CC: NYSDEC
Regional Water Quality Engineer
270 Michigan Ave.
Buffalo, NY 14203-2999
Attn: Rob Locey

Niagara County Health Dept.
5467 Upper Mountain Road
Suite 100
Lockport, NY 14094
Attn: Ron Gwozdek

RE: SPDES Report

Enclosed please find the SPDES report for the month of July 2007. If you have any questions, please contact me at 716-433-6764 ext. 150.

Sincerely,

Pamela J. Cook
Quality Assurance / Environmental Coordinator
e-mail: p.cook@vdmchemical.com

VanDeMark Chemical Inc.
One North Transit Road, Lockport, NY 14094
Tel: 716-433-6764 • Fax: 716-433-2850
www.vdmchemical.com

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)

DISCHARGE MONITORING REPORT (DMR)

OMB No. 2040-0004

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

NAME: ISOCHEM, INC
ADDRESS: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
FACILITY: ISOCHEM, INC
LOCATION: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
ATTN:MATTHEW BARMASSE

NY0204323	004M
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	07	07	01	TO	07	07	31

DMR MAILING ZIP CODE: 14094
MINOR
(SUBR09)
NON-CONTACT COOLING WATER
External Outfall

No Discharge ☒

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Temperature, water deg. fahrenheit	SAMPLE MEASUREMENT	******	******		******	******					
00011 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		******	******	90 DAILY MX	deg F		Monthly	GRAB
Flow rate	SAMPLE MEASUREMENT				******	******	******				
00056 1 0 Effluent Gross	PERMIT REQUIREMENT	330000 DAILY AV	Req. Mon. DAILY MX	gal/d	******	******	******			Monthly	INSTAN
pH	SAMPLE MEASUREMENT	******	******			******					
00400 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		6 MINIMUM	******	9 MAXIMUM	SU		Monthly	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Paul Ameis, Ex VP/COO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	Paul Ameis	716	433-6764	07	08	01
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA Code	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

VDM02589

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)

DISCHARGE MO[illegible]RING REPORT (DMR)

Approved
1B No. 2040-0004

PERMITTE[illegible]AME/ADDRESS *(Include Facility Name/Location if Different)*

NAME: ISOCHEM, INC
ADDRESS: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
FACILITY: ISOCHEM, INC
LOCATION: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
ATTN:MATTHEW BARMASSE

NY0204323	001M
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD						
	YEAR	MO	DAY		YEAR	MO	DAY
FROM	07	07	01	TO	07	07	31

DMR MAILING ZIP CODE: 14094
MINOR
(SUBR09)
NON-CONTACT COOLING WATER
External Outfall

No Discharge ☒

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Temperature, water deg. fahrenheit	SAMPLE MEASUREMENT	******	******		******	******					
00011 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		******	******	90 DAILY MX	deg F		Monthly	GRAB
Flow rate	SAMPLE MEASUREMENT				******	******	******				
00056 1 0 Effluent Gross	PERMIT REQUIREMENT	50000 DAILY AV	Req. Mon. DAILY MX	gal/d	******	******	******			Monthly	INSTAN
pH	SAMPLE MEASUREMENT	******	******			******					
00400 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		6 MINIMUM	******	9 MAXIMUM	SU		Monthly	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Paul Ameis Ex VP/COO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	Paul Ameis	716	433-6764	07	08	01
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA Code	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

VDM02590

VanDeMark

Phosgene Chemistry • Custom Chemicals

Date: 09/07/07

To: NYSDEC
Division of Water
Bureau of Watershed Compliance Programs
625 Broadway 4th Floor
Albany, NY 12233-3506

CC: NYSDEC
Regional Water Quality Engineer
270 Michigan Ave.
Buffalo, NY 14203-2999
Attn: Rob Locey

Niagara County Health Dept.
5467 Upper Mountain Road
Suite 100
Lockport, NY 14094
Attn: Ron Gwozdek

RE: SPDES Report

Enclosed please find the SPDES report for the month of August 2007, and the Quarterly Report. If you have any questions, please contact me at 716-433-6764 ext. 150.

Sincerely,

Pamela J Cook

Pamela J. Cook
Quality Assurance / Environmental Coordinator
e-mail: p.cook@vdmchemical.com

VanDeMark Chemical Inc.
One North Transit Road, Lockport, NY 14094
Tel: 716-433-6764 • Fax: 716-433-2850
www.vdmchemical.com

NATIONAL POLLUTANT DISCHARGE EL[illegible]ATION SYSTEM (NPDES)
DISCHARGE MONITORING [illegible]ORT (DMR)

[illegible], 2040-0004

SMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

NAME: ISOCHEM, INC
ADDRESS: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
FACILITY: ISOCHEM, INC
LOCATION: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
ATTN:MATTHEW BARMASSE

NY0204323	004M
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD						
	YEAR	MO	DAY		YEAR	MO	DAY
FROM	07	08	01	TO	07	08	31

DMR MAILING ZIP CODE: 14094
MINOR
(SUBR09)
NON-CONTACT COOLING WATER
External Outfall

No Discharge ☒

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
emperature, water deg. fahrenheit	SAMPLE MEASUREMENT	******	******		******	******					
00011 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		******	******	90 DAILY MX	deg F		Monthly	GRAB
low rate	SAMPLE MEASUREMENT				******	******	******				
00056 1 0 Effluent Gross	PERMIT REQUIREMENT	330000 DAILY AV	Req. Mon. DAILY MX	gal/d	******	******	******			Monthly	INSTAN
pH	SAMPLE MEASUREMENT	******	******			******					
00400 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		6 MINIMUM	******	9 MAXIMUM	SU		Monthly	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Paul Ameis, Ex VP/COO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	Paul Ameis	7164336764		07	09	07
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA Code	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

VDM02592

NATIONAL POLLUTANT DISCHARGE EL[illegible]ATION SYSTEM (NPDES)
DISCHARGE MONITORING [illegible]ORT (DMR)

Fo[illegible]pproved
([illegible]2040-0004

IMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

ME: ISOCHEM, INC
DRESS: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
CILITY: ISOCHEM, INC
CATION: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
TN:MATTHEW BARMASSE

NY0204323	001M
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	07	08	01	TO	07	08	31

DMR MAILING ZIP CODE: 14094
MINOR
(SUBR09)
NON-CONTACT COOLING WATER
External Outfall
No Discharge ☒

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
mperature, water deg. fahrenheit	SAMPLE MEASUREMENT	******	******		******	******					
011 1 0 fluent Gross	PERMIT REQUIREMENT	******	******		******	******	90 DAILY MX	deg F		Monthly	GRAB
ow rate	SAMPLE MEASUREMENT				******	******	******				
056 1 0 fluent Gross	PERMIT REQUIREMENT	50000 DAILY AV	Req. Mon. DAILY MX	gal/d	******	******	******			Monthly	INSTAN
	SAMPLE MEASUREMENT	******	******			******					
400 1 0 fluent Gross	PERMIT REQUIREMENT	******	******		6 MINIMUM	******	9 MAXIMUM	SU		Monthly	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Paul Ameis, Ex VP/COO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.		7164336769		07	09	07
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA Code	NUMBER	YEAR	MO	DAY

OMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

VDM02593

NATIONAL POLLUTANT DISCHARGE EL[illegible]ATION SYSTEM (NPDES)
DISCHARGE MONITORING [illegible]ORT (DMR)

Form Approved
O[illegible]2040-0004

IMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

ME: ISOCHEM, INC
DRESS: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
CILITY: ISOCHEM, INC
CATION: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
TN:MATTHEW BARMASSE

NY0204323	001Q
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	07	06	01	TO	07	08	31

DMR MAILING ZIP CODE: 14094
MINOR
(SUBR09)
NON-CONTACT COOLING WATER QTR
External Outfall
No Discharge ☒

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
lids, total suspended	SAMPLE MEASUREMENT	******	******		******	"2.5"	2.5	mg/L	0	1/1	GRAB
530 1 0 luent Gross	PERMIT REQUIREMENT	******	******		******	Req. Mon. DAILY AV	Req. Mon. DAILY MX	mg/L		Quarterly	GRAB
lids, total suspended	SAMPLE MEASUREMENT	******	******		******	"NODI 9"					
530 7 0 ake from Stream	PERMIT REQUIREMENT	******	******		******	Req. Mon. DAILY AV	Req. Mon. DAILY MX	mg/L		Quarterly	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Paul Ames / ExUP / COO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	Paul Ames	716 4336764		07	09	07
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA Code	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)
MONITORING LOCATION 7 IS INTAKE FROM STREAM. IF NO INTAKE FROM STREAM DURING MONITORING PERIODENTER "NODI 9" IN THE QUANTITY AVERAGE COLUMN.FOR AMOUNTS BELOW DETECTION LIMIT PLEASE NTER THE MDL PRECEDED BY THE < SYMBOL.

VDM002594

NATIONAL POLLUTANT DISCHARGE EL[illegible]ATION SYSTEM (NPDES)
DISCHARGE MONITORING [illegible]PORT (DMR)

Fr[illegible]pproved
([illegible]2040-0004

IMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

ME: ISOCHEM, INC
DRESS: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
CILITY: ISOCHEM, INC
CATION: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
TN:MATTHEW BARMASSE

NY0204323	004Q
PERMIT NUMBER	DISCHARGE NUMBER

	MONITORING PERIOD						
	YEAR	MO	DAY		YEAR	MO	DAY
FROM	07	06	01	TO	07	08	31

DMR MAILING ZIP CODE: 14094
MINOR
(SUBR09)
NON-CONTACT COOLING WATER QTR
External Outfall

No Discharge ☒

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
lids, total suspended	SAMPLE MEASUREMENT	******	******		******						
530 1 0 fluent Gross	PERMIT REQUIREMENT	******	******		******	Req. Mon. DAILY AV	Req. Mon. DAILY MX	mg/L		Quarterly	GRAB
lids, total suspended	SAMPLE MEASUREMENT	******	******		******						
530 7 0 take from Stream	PERMIT REQUIREMENT	******	******		******	Req. Mon. DAILY AV	Req. Mon. DAILY MX	mg/L		Quarterly	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Paul Ameis Ex VP/COO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	Paul Ameis	716	4336764	07	09	07
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA Code	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)
MONITORING LOCATION '7' IS INTAKE FROM STREAM. IF NO INTAKE FROM STREAM DURING MONITORING PERIOD,ENTER "NODI 9" IN THE QUANTITY AVERAGE COLUMN.

EPA Form 3320-1 (Rev 01/06) Previous editions may be used.

VDM02595

Sample Results

Sample ID: 1 Client: ISOCHEM, Inc.
Lab ID / Vessel 38987 / 122221, 122222 Report ID: NY706063.0.6775
Location: SPDES / Field Grab - Water Sampled: 6/11/2007

Parameters / Method	Analyte	Sample Results	Units	Analyst	Date
Wet Chemistry Procedures					
Chemical Oxygen Demand (COD) / EPA 410.4	Chemical Oxygen Demand	**16**	**mg/L**	MF	6/13/2007
Total Suspended Solids (TSS) / EPA 160.2	Total Suspended Solids	**2.5**	**mg/L**	MF	6/12/2007

end of Lab ID number 38987

General Disclaimer
•The test results are submitted pursuant to IsleChem LLC's current terms and conditions of sale, including the company's standard warranty and limitation of liability provisions. No responsibility or liability is assumed for the manner in which the results are used or interpreted.
•This report is issued for the benefit of and may be relied upon by the client named above. The client bears full responsibility for deciding the level of testing for sample submitted to IsleChem LLC.
•These results pertain only to the items tested.
•This report shall not be reproduced except in full.
•If the sample(s) represented by these test results were not collected by IsleChem LLC then the test results are limited to the reported values determine by the analytical testing process. IsleChem LLC makes no representation regarding the sample's collection technique, condition, volume, homogeneity or any other aspect of the sample(s) prior to IsleChem LLC taking possession of the sample(s) and the influence it may have on the results.
•Unless notified in writing to return the samples covered by this report IsleChem LLC will store what remains of the sample(s), if anything, for a period of 60 days before discarding, unless otherwise required by law. A shipping and handling fee with be charged for the return of any sample(s).
•Certain analytes may not be covered by the NYS DOH or NELAP fields of accreditation. Results for those analytes are generated by the cited method using QA/QC guidelines from IsleChem's Quality Control Manual, where applicable.

The test results in this report meet all NELAP requirements for parameters that are within IsleChem's field of accreditation. Any exceptions to NELAP requirements are noted in the comments field.

IsleChem, LLC
2801 Long Road
Grand Island
New York 14072
Tel: (716) 773-8614
Fax: (716) 773-8517

VDM02596

VanDeMark

Phosgene Chemistry • Custom Chemicals

Date: 10/08/07

To: NYSDEC
Division of Water
Bureau of Watershed Compliance Programs
625 Broadway 4th Floor
Albany, NY 12233-3506

CC: NYSDEC
Regional Water Quality Engineer
270 Michigan Ave.
Buffalo, NY 14203-2999
Attn: Rob Locey

Niagara County Health Dept.
5467 Upper Mountain Road
Suite 100
Lockport, NY 14094
Attn: Ron Gwozdek

RE: SPDES Report

Enclosed please find the SPDES report for the month of September 2007 Report. If you have any questions, please contact me at 716-433-6764 ext. 150.

Sincerely,

Pamela J. Cook

Pamela J. Cook
Quality Assurance / Environmental Coordinator
e-mail: p.cook@vdmchemical.com

VanDeMark Chemical Inc.
One North Transit Road, Lockport, NY 14094
Tel: 716-433-6764 • Fax: 716-433-2850
www.vdmchemical.com

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

Form Approved
OMB No. 2040-0004

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

NAME: ISOCHEM, INC
ADDRESS: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
FACILITY: ISOCHEM, INC
LOCATION: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
ATTN:MATTHEW BARMASSE

NY0204323	001M
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	07	09	01	TO	07	09	30

DMR MAILING ZIP CODE: 14094
MINOR
(SUBR09)
NON-CONTACT COOLING WATER
External Outfall

No Discharge ☐

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Temperature, water deg. fahrenheit	SAMPLE MEASUREMENT	******	******		******	******	60	°F	O	1/4	Grab
00011 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		******	******	90 DAILY MX	deg F		Monthly	GRAB
Flow rate	SAMPLE MEASUREMENT	3290	3290	gal/d	******	******	******		O	con.	INSTAN
00056 1 0 Effluent Gross	PERMIT REQUIREMENT	50000 DAILY AV	Req. Mon. DAILY MX	gal/d	******	******	******			Monthly	INSTAN
pH	SAMPLE MEASUREMENT	******	******		7.7	******	7.7		O	1/4	Grab
00400 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		6 MINIMUM	******	9 MAXIMUM	SU		Monthly	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Paul Ameis, Ex VP/COO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	Paul Ameis	716	4336764	07	10	
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA Code	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)

DISCHARGE MONITORING REPORT (DMR)

Form Approved
OMB No. 2040-0004

VDM02599

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

NAME: ISOCHEM, INC
ADDRESS: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
FACILITY: ISOCHEM, INC
LOCATION: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
ATTN:MATTHEW BARMASSE

NY0204323	004M
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD						
	YEAR	MO	DAY		YEAR	MO	DAY
FROM	07	09	01	TO	07	09	30

DMR MAILING ZIP CODE: 14094
MINOR
(SUBR09)
NON-CONTACT COOLING WATER
External Outfall

No Discharge ☒

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Temperature, water deg. fahrenheit	SAMPLE MEASUREMENT	******	******		******	******					
00011 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		******	******	90 DAILY MX	deg F		Monthly	GRAB
Flow rate	SAMPLE MEASUREMENT				******	******	******				
00056 1 0 Effluent Gross	PERMIT REQUIREMENT	330000 DAILY AV.	Req. Mon. DAILY MX	gal/d	******	******	******			Monthly	INSTAN
pH	SAMPLE MEASUREMENT	******	******			******					
00400 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		6 MINIMUM	******	9 MAXIMUM	SU		Monthly	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Paul Ameis, ExVP/COO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	Paul Ameis	716	4336764	07	10	
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA Code	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

VanDeMark

Phosgene Chemistry • Custom Chemicals

COPY

VanDeMark Chemical Inc.
One North Transit Road
Lockport, New York 14094-2399
Phone: 716-433-6764x126
Fax: 716-433-2850
Email: m.barmasse@vdmchemical.com

MEMO: QESS DEPARTMENT

Date: **July 5th 2007**

To: **NYSDEC**

From: Matthew Barmasse – Director of Quality, Environmental, Safety and Security - Ext.:126

RE: Permit transfer.

Please transfer all permits a certificates from Isochem Inc. to VanDeMark Chemical Inc.. Isochem Inc. was sold to Buckingham Capital Partners June 15th 2007. The name of the new company is VanDeMark Chemical Inc.

The permits and certificates are as follows:

- EPA ID #: NYD 175773779. (Note – application to USEPA Region 2 attached.)
- SPDES permit: NY0204323
- Title V permit: 9-2909-00107/00001
- Petroleum bulk storage: 9-088625
- Chemical bulk storage: 9-000232

Any questions, please contact me at your convenience.

Sincerely,

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

RECEIVED
REGION 9 PERMITS
JUL 10 2007
NYS DEPT. OF
ENVIRONMENTAL CONSERVATION

Application For Permit Transfer and Application for Transfer of Pending Application

(In Accordance with Uniform Procedures, 6NYCRR Part 621)

NOTE: Please read ALL instructions before completing this application. Please TYPE or PRINT clearly in ink.

PART 1 – TRANSFEREE (New Owner/Operator/Lessee/Applicant) COMPLETES:

1. LIST PERMIT NUMBER(S) AND THEIR EFFECTIVE AND EXPIRATION DATES: SEE ATTACHED LIST

LIST PENDING APPLICATION NUMBER(S): NONE

2. NAME OF TRANSFEREE: VANDEMARK CHEMICAL INC.

STREET ADDRESS, CITY, STATE, ZIP CODE: 1 NORTH TRANSIT ROAD, LOCKPORT, NY 14094

If other than an individual, provide Taxpayer ID Number: 160757316

TELEPHONE NUMBER (Daytime): (716) 433-6764

TRANSFEREE IS A/AN: [✓] Owner [✓] Operator [ ] Lessee [✓] Applicant [ ] Municipality/Governmental Agency (check all that apply)

3. NAME OF FACILITY/PROJECT: VANDEMARK CHEMICAL INC.

STREET ADDRESS. CITY. STATE. ZIP CODE: 1 NORTH TRANSIT ROAD, LOCKPORT, NY 14094

COUNTY NIAGARA TOWN LOCKPORT

4. FACILITY CONTACT NAME: MATTHEW BARMASSE

STREET ADDRESS. CITY. STATE. ZIP CODE: SAME

TELEPHONE NUMBER (Daytime) (716) 433-6764

5. HAS WORK BEGUN ON THE PROJECT?
Yes [✓] No [ ] If "No," proposed starting date: 6/15/2007 Approximate completion date: 6/15/2007
If there will be any modifications to the current or proposed operation or construction, the transferee must attach a statement specifying the details.

6. CERTIFICATION: This certifies that the transferee seeks to be the legally responsible party for operations or project development either authorized by the permits identified above or proposed in applications identified above. The transferee has a copy of the permit(s) and/or application(s) and understands and will comply with all conditions in the referenced permit(s) and supports the content of referenced application(s). Facility operations/project scope/discharges/emissions will remain the same as authorized or as proposed in pending applications. Further, I hereby affirm that under penalty of perjury that information provided on this form and all attachments submitted herewith is true to the best of my knowledge and belief. False statements made herein are punishable as a Class A misdemeanor pursuant to Section 210.45 of the Penal Law.

Printed Name and Title of Transferee: MICHAEL KUCHARSKI, CHIEF EXECUTIVE OFFICER

Signature of Transferee: Michael A. Kucharski Date: 07/06/07

PART 2 – TRANSFEROR (Present or Former Owner/Operator/Lessee/Applicant) COMPLETES:

1. NAME OF TRANSFEROR: ISOCHEM INC.

STREET ADDRESS. CITY. STATE. ZIP CODE: 1 NORTH TRANSIT ROAD LOCKPORT, NY 14094

If other than an individual, provide Taxpayer ID Number: 160757316

TELEPHONE NUMBER (Daytime): (716) 433-6764

2. NAME OF FACILITY/PROJECT, if different from Facility Name in Part 1:

3. CERTIFICATION: This certifies that the facility and/or application referenced in Part 1 of this form [ ] will be / [✓] was transferred to the party identified as the new transferee (owner/operator/lessee/applicant) on 6/15/2007 (date).

Printed Name and Title of Transferor: MICHAEL KUCHARSKI, CHIEF EXECUTIVE OFFICER

Signature of Transferor: Michael A. Kucharski Date: 07/06/07

PART 3 – PERMIT TRANSFER VALIDATION SECTION – DEPARTMENT OF ENVIRONMENTAL CONSERVATION COMPLETES:

[X] Transfer of permit approved, effective as of 7/11/2007. Transferee subject to conditions of original permit, without exception.
[ ] Transfer of permit approved, with the following modifications or contingencies related to this Permit Transfer:

[ ] See attached revised permit page(s):
[ ] Transfer of application approved. See attached for additional information required.
[ ] Transfer denied, new application required. Please complete the enclosed permit application and return it to the undersigned Regional Permit Administrator at the address listed on the reverse side of this from.

PERMIT ADMINISTRATOR
Name Douglas Borschel Signature Douglas E. Borschel Date 7/11/07

VDM02601

Pilot Lab SPDES Outfall Report

Date	Gallons	Temp (F)	pH	Initials	
9/1/2007	not flowing	n/a	n/a	MP	
9/2/2007	not flowing	n/a	n/a	MP	
9/3/2007	not flowing	n/a	n/a	MP	
9/4/2007	not flowing	n/a	n/a	MP	
9/5/2007	not flowing	n/a	n/a	MP	
9/6/2007	not flowing	n/a	n/a	MP	
9/7/2007	not flowing	n/a	n/a	MP	
9/8/2007	not flowing	n/a	n/a	MP	
9/9/2007	not flowing	n/a	n/a	MP	
9/10/2007	not flowing	n/a	n/a	MP	
9/11/2007	not flowing	n/a	n/a	MP	
9/12/2007	not flowing	n/a	n/a	MP	
9/13/2007	not flowing	n/a	n/a	MP	
9/14/2007	not flowing	n/a	n/a	MP	
9/15/2007	not flowing	n/a	n/a	MP	
9/16/2007	not flowing	n/a	n/a	MP	
9/17/2007	not flowing	n/a	n/a	MP	
9/18/2007	not flowing	n/a	n/a	MP	
9/19/2007	not flowing	n/a	n/a	MP	
9/20/2007	not flowing	n/a	n/a	MP	
9/21/2007	not flowing	n/a	n/a	MP	
9/22/2007	not flowing	n/a	n/a	MP	
9/23/2007	not flowing	n/a	n/a	MP	
9/24/2007	not flowing	n/a	n/a	MP	
9/25/2007	not flowing	n/a	n/a	MP	
9/26/2007	1,460,540	60	n/a	MP	
9/27/2007	1,463,830	60	n/a	MP	3,290
9/28/2007	1,467,120	60	n/a	MP	3,290
9/29/2007	1,470,410	60	7.7	MP	3,290
Total outfall 9/07	9,870				

VanDeMark

Phosgene Chemistry • Custom Chemicals

Date: 11/07/07

To: NYSDEC
Division of Water
Bureau of Watershed Compliance Programs
625 Broadway 4th Floor
Albany, NY 12233-3506

CC: NYSDEC
Regional Water Quality Engineer
270 Michigan Ave.
Buffalo, NY 14203-2999
Attn: Rob Locey

Niagara County Health Dept.
5467 Upper Mountain Road
Suite 100
Lockport, NY 14094
Attn: Ron Gwozdek

RE: SPDES Report

Enclosed please find the SPDES report for the month of October 2007 Report. If you have any questions, please contact me at 716-433-6764 ext. 150.

Sincerely,

Pamela J. Cook
Quality Assurance / Environmental Coordinator
e-mail: p.cook@vdmchemical.com

VanDeMark Chemical Inc.
One North Transit Road, Lockport, NY 14094
Tel: 716-433-6764 • Fax: 716-433-2850
www.vdmchemical.com

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

Form Approved
OMB No. 2040-0004

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

NAME: ~~ISOCHEM, INC~~ VANDENARK CHEMICAL INC
ADDRESS: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094

FACILITY: ~~ISOCHEM, INC~~ VANDENARK CHEMICAL INC
LOCATION: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094

ATTN:PAM COOK

NY0204323	004M
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	07	10	01	TO	07	10	31

DMR MAILING ZIP CODE: 14094
MINOR
(SUBR09)
NON-CONTACT COOLING WATER
External Outfall

No Discharge ☒

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Temperature, water deg. fahrenheit	SAMPLE MEASUREMENT	******	******		******	******					
00011 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		******	******	90 DAILY MX	deg F		Monthly	GRAB
Flow rate	SAMPLE MEASUREMENT				******	******	******				
00056 1 0 Effluent Gross	PERMIT REQUIREMENT	330000 DAILY AV	Req. Mon. DAILY MX	gal/d	******	******	******			Monthly	INSTAN
pH	SAMPLE MEASUREMENT	******	******			******					
00400 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		6 MINIMUM	******	9 MAXIMUM	SU		Monthly	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Paul Ameis COO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	Paul Ameis	716 433 6764		07	11	07
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA Code	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

VDM02605

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

Form Approved
OMB No. 2040-0004

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

NAME: ~~ISOCHEM, INC~~ VANDEMARK CHEMICAL INC
ADDRESS: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094

FACILITY: ~~ISOCHEM, INC~~ VANDEMARK CHEMICAL INC
LOCATION: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094

ATTN:PAM COOK

NY0204323	001M
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	07	10	01	TO	07	10	31

DMR MAILING ZIP CODE: 14094
MINOR
(SUBR09)
NON-CONTACT COOLING WATER
External Outfall

No Discharge ☐

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Temperature, water deg. fahrenheit	SAMPLE MEASUREMENT	******	******		******	******	60	°F	0	3/3	Grab
00011 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		******	******	90 DAILY MX	deg F		Monthly	GRAB
Flow rate	SAMPLE MEASUREMENT	4738	9005	gal/d	******	******	******		0		Continuous
00056 1 0 Effluent Gross	PERMIT REQUIREMENT	50000 DAILY AV	Req. Mon. DAILY MX	gal/d	******	******	******			Monthly	INSTAN
pH	SAMPLE MEASUREMENT	******	******		7	******	7		0	1/3	Grab
00400 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		6 MINIMUM	******	9 MAXIMUM	SU		Monthly	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	TELEPHONE		DATE		
Paul Ameis COO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	Paul Ameis	716	4336764	07	11	07
TYPED OR PRINTED			AREA Code	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

Date	Gallons	Temp (F)	pH	Initials
10/1/2007	1,479,415	60	n/a	MP
10/2/2007	1,482,020	60	n/a	MP
10/3/2007	1,484,625	60	7	MP

9,005
2,605
2,605
14,215
4738

VanDeMark

Phosgene Chemistry • Custom Chemicals

Date: 12/17/07

To: NYSDEC
Division of Water
Bureau of Watershed Compliance Programs
625 Broadway 4th Floor
Albany, NY 12233-3506

CC: NYSDEC
Regional Water Quality Engineer
270 Michigan Ave.
Buffalo, NY 14203-2999
Attn: Rob Locey

Niagara County Health Dept.
5467 Upper Mountain Road
Suite 100
Lockport, NY 14094
Attn: Ron Gwozdek

RE: SPDES Report

Enclosed please find the SPDES report for the month of November, the Semi Annual and Quarter reports for 2007. If you have any questions, please contact me at 716-433-6764 ext. 150.

Sincerely,

Pamela J. Cook
Quality Assurance / Environmental Coordinator
e-mail: p.cook@vdmchemical.com

VanDeMark Chemical Inc.
One North Transit Road, Lockport, NY 14094
Tel: 716-433-6764 • Fax: 716-433-2850
www.vdmchemical.com

NATIONAL POLLUTANT DISCHAR[illegible]LIMINATION SYSTEM (NPDES)
DISCHARGE MONIT[illegible]G REPORT (DMR)

Approved
No. 2040-0004

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

NAME: VANDEMARK CHEMICAL, INC.
ADDRESS: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
FACILITY: VANDEMARK CHEMICAL, INC.
LOCATION: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
ATTN:MATTHEW BARMASSE

NY0204323	004S
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	07	06	01	TO	07	11	30

DMR MAILING ZIP CODE: 14094
MINOR
(SUBR09)
NON-CONTACT COOLING WATER SEMI
External Outfall
No Discharge ☒

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Oxygen demand, chem. (low level) (COD)	SAMPLE MEASUREMENT	******	******		******						
00335 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		******	Req. Mon. DAILY AV	Req. Mon. DAILY MX	mg/L		Semiannual	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Paul Amels COO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.		716	4336764	07	12	17
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA Code	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)
=======

VDM02608

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

Approved
No. 2040-0004

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

NAME: VANDEMARK CHEMICAL, INC.
ADDRESS: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
FACILITY: VANDEMARK CHEMICAL, INC.
LOCATION: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
ATTN:MATTHEW BARMASSE

NY0204323	004Q
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD						
	YEAR	MO	DAY		YEAR	MO	DAY
FROM	07	09	01	TO	07	11	30

DMR MAILING ZIP CODE: 14094
MINOR
(SUBR09)
NON-CONTACT COOLING WATER QTR
External Outfall

No Discharge ☒

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Solids, total suspended	SAMPLE MEASUREMENT	******	******		******						
00530 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		******	Req. Mon. DAILY AV	Req. Mon. DAILY MX	mg/L		Quarterly	GRAB
Solids, total suspended	SAMPLE MEASUREMENT	******	******		******						
00530 7 0 Intake from Stream	PERMIT REQUIREMENT	******	******		******	Req. Mon. DAILY AV	Req. Mon. DAILY MX	mg/L		Quarterly	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Paul Amels COO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	Paul Amels	716	4336164	07	12	17
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA Code	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)
MONITORING LOCATION '7' IS INTAKE FROM STREAM. IF NO INTAKE FROM STREAM DURING MONITORING PERIOD,ENTER "NODI 9" IN THE QUANTITY AVERAGE COLUMN.

VDM002609

NATIONAL POLLUTANT DISCHAR[illegible]LIMINATION SYSTEM (NPDES)
DISCHARGE MONIT[illegible]G REPORT (DMR)

[illegible]Approved
No. 2040-0004

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

NAME: VANDEMARK CHEMICAL, INC.
ADDRESS: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
FACILITY: VANDEMARK CHEMICAL, INC.
LOCATION: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
ATTN:MATTHEW BARMASSE

NY0204323	004M
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	07	11	01	TO	07	11	30

DMR MAILING ZIP CODE: 14094
MINOR
(SUBR09)
NON-CONTACT COOLING WATER
External Outfall

No Discharge ☒

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Temperature, water deg. fahrenheit	SAMPLE MEASUREMENT	******	******		******	******					
00011 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		******	******	90 DAILY MX	deg F		Monthly	GRAB
Flow rate	SAMPLE MEASUREMENT				******	******	******				
00056 1 0 Effluent Gross	PERMIT REQUIREMENT	330000 DAILY AV	Req. Mon. DAILY MX	gal/d	******	******	******			Monthly	INSTAN
pH	SAMPLE MEASUREMENT	******	******			******					
00400 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		6 MINIMUM	******	9 MAXIMUM	SU		Monthly	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Paul Ameis COO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	Paul Ameis	716 4336764		07	12	17
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA Code	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

VDM02610

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

Approved
No. 2040-0004

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

NAME: VANDEMARK CHEMICAL, INC.
ADDRESS: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
FACILITY: VANDEMARK CHEMICAL, INC.
LOCATION: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
ATTN:MATTHEW BARMASSE

NY0204323	001S
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	07	06	01	TO	07	11	30

DMR MAILING ZIP CODE: 14094
MINOR
(SUBR09)
NON-CONTACT COOLING WATER SEMI
External Outfall
No Discharge ☐

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Oxygen demand, chem. (low level) (COD)	SAMPLE MEASUREMENT	******	******		******	16	16	mg/L	0	1/1	GRAB
00335 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		******	Req. Mon. DAILY AV	Req. Mon. DAILY MX	mg/L		Semiannual	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Paul Ameis COO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	716	4336764	07	12	17
TYPED OR PRINTED			AREA Code	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

VDM02611

NATIONAL POLLUTANT DISCHAR[illegible]LIMINATION SYSTEM (NPDES)
DISCHARGE MONI[illegible].G REPORT (DMR)

[illegible]n Approved
[illegible] No. 2040-0004

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location If Different)*

NAME: VANDEMARK CHEMICAL, INC.
ADDRESS: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
FACILITY: VANDEMARK CHEMICAL, INC.
LOCATION: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
ATTN:MATTHEW BARMASSE

NY0204323	001Q
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	07	09	01	TO	07	11	30

DMR MAILING ZIP CODE: 14094
MINOR
(SUBR09)
NON-CONTACT COOLING WATER QTR
External Outfall
No Discharge ☐

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Solids, total suspended	SAMPLE MEASUREMENT	******	******		******	<3.3	<3.3	mg/L	0	1/1	Grab
00530 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		******	Req. Mon. DAILY AV	Req. Mon. DAILY MX	mg/L		Quarterly	GRAB
Solids, total suspended	SAMPLE MEASUREMENT	******	******		******	NODI 9					
00530 7 0 Intake from Stream	PERMIT REQUIREMENT	******	******		******	Req. Mon. DAILY AV	Req. Mon. DAILY MX	mg/L		Quarterly	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Paul Ameis COO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	Paul Ameis	716 433-6764		07	12	17
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA Code	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

MONITORING LOCATION 7 IS INTAKE FROM STREAM. IF NO INTAKE FROM STREAM DURING MONITORING PERIODENTER "NODI 9" IN THE QUANTITY AVERAGE COLUMN.FOR AMOUNTS BELOW DETECTION LIMIT PLEASE ENTER THE MDL PRECEDED BY THE < SYMBOL.

VDM02612

NATIONAL POLLUTANT DISCHAR[illegible]LIMINATION SYSTEM (NPDES)
DISCHARGE MONI[illegible]G REPORT (DMR)

[illegible]Approved
[illegible] No. 2040-0004

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location If Different)*

NAME: VANDEMARK CHEMICAL, INC.
ADDRESS: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
FACILITY: VANDEMARK CHEMICAL, INC.
LOCATION: 1 NORTH TRANSIT ROAD
LOCKPORT, NY 14094
ATTN:MATTHEW BARMASSE

NY0204323	001M
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	07	11	01	TO	07	11	30

DMR MAILING ZIP CODE: 14094
MINOR
(SUBR09)
NON-CONTACT COOLING WATER
External Outfall

No Discharge ☒

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Temperature, water deg. fahrenheit	SAMPLE MEASUREMENT	******	******		******	******					
00011 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		******	******	90 DAILY MX	deg F		Monthly	GRAB
Flow rate	SAMPLE MEASUREMENT				******	******	******				
00056 1 0 Effluent Gross	PERMIT REQUIREMENT	50000 DAILY AV	Req. Mon. DAILY MX	gal/d	******	******	******			Monthly	INSTAN
pH	SAMPLE MEASUREMENT	******	******			******					
00400 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******		6 MINIMUM	******	9 MAXIMUM	SU		Monthly	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Paul Ameis COO	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	Paul Ameis	7164336764		07	12	17
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA Code	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

VDM02613

IsleChem, LLC
2801 Long Road
Grand Island
New York 14072
Tel: (716) 773-8614
Fax: (716) 773-8517

Laboratory Analysis Report

Project: Water Samples for Analysis

Phase:
Sample Date: 11/28/2007
Sample Time: 9:00 AM

Report Date: Wednesday, December 05, 2007
Report ID: NY712009.0.9160
PO# / Release#: /
Reference #:
Report Status: **Final**

performed at the request of: Pamela J Cook
VandeMark Chemical, Inc.

One North Transit Road
Lockport, NY 14094-2399

The enclosed sample results table(s) are for 1 sample(s) received by IsleChem LLC on 12/4/2007 submitted by VandeMark Chemical, Inc.

Authorized Signature:

Richard V. Finn, Manager of Chemical Testing

Laboratory Personnel Legend:

FB	Fred Bozek
DD	David Domroes
MF	Mary Ferguson
RVF	Richard (Dick) V. Finn
EF	Eric Fischer
VJH	Vivian Hoffman
MR	Martin S. Ruszaj
RS	Ron Stacy

Sample Results

Sample ID:	1	Client:	VandeMark Chemical, Inc.
Lab ID / Vessel	53358 / 131552	Report ID:	NY712009.0.9160
Location:	SPDES Sample / Field Grab - Water	Sampled:	11/28/2007

Parameters / Method	Analyte	Sample Results	Units	Analyst	Date
Solids, Total Suspended / EPA 160.2	Solids, Total Suspended	**<3.3**	**mg/L**	MF	12/5/2007

end of Lab ID number 53358

General Disclaimer

•The test results are submitted pursuant to IsleChem LLC's current terms and conditions of sale, including the company's standard warranty and limitation of liability provisions. No responsibility or liability is assumed for the manner in which the results are used or interpreted.

•This report is issued for the benefit of and may be relied upon by the client named above. The client bears full responsibility for deciding the level of testing for sample submitted to IsleChem LLC.

•These results pertain only to the items tested.

•This report shall not be reproduced except in full.

•If the sample(s) represented by these test results were not collected by IsleChem LLC then the test results are limited to the reported values determine by the analytical testing process. IsleChem LLC makes no representation regarding the sample's collection technique, condition, volume, homogeneity or any other aspect of the sample(s) prior to IsleChem LLC taking possession of the sample(s) and the influence it may have on the results.

•Unless notified in writing to return the samples covered by this report IsleChem LLC will store what remains of the sample(s), if anything, for a period of 60 days before discarding, unless otherwise required by law. A shipping and handling fee with be charged for the return of any sample(s).

•Certain analytes may not be covered by the NYS DOH or NELAP fields of accreditation. Results for those analytes are generated by the cited method using QA/QC guidelines from IsleChem's Quality Control Manual, where applicable.

The test results in this report meet all NELAP requirements for parameters that are within IsleChem's field of accreditation. Any exceptions to NELAP requirements are noted in the comments field.

IsleChem, LLC
2801 Long Road
Grand Island
New York 14072
Tel: (716) 773-8614
Fax: (716) 773-8517

VDM02615

IsleChem, LLC
2801 Long Road
Grand Island
New York 14072
Tel: (716) 773-8614
Fax: (716) 773-8517

Laboratory Analysis Report

Project: SPDES Sample for Analysis

Phase:
Sample Date: 6/11/2007
Sample Time: 8:00 AM

Report Date: Wednesday, June 13, 2007
Report ID: NY706063.0.6775
PO# / Release#: /
Reference #:
Report Status: **Final**

performed at the request of: Pamela J Cook
ISOCHEM, Inc.

One North Transit Road
Lockport, NY 14094-2399

The enclosed sample results table(s) are for 1 sample(s) received by IsleChem LLC on 6/12/2007 submitted by ISOCHEM, Inc.

Authorized Signature:

☑ Richard V. Finn, Manager of Chemical Testing
☐ Martin Ruszaj, Director of Chemical Testing

Laboratory Personnel Legend:

WMA	William M. Anspach
SJB	Stanley Biernat
FB	Fred Bozek
DD	David Domroes
MF	Mary Ferguson
RVF	Richard (Dick) V. Finn
EF	Eric Fischer
VJH	Vivian Hoffman
MR	Martin S. Ruszaj
RS	Ron Stacy

VDM02616

Sample Results

Sample ID:	1	Client:	ISOCHEM, Inc.
Lab ID / Vessel	38987 / 122221, 122222	Report ID:	NY706063.0.6775
Location:	SPDES / Field Grab - Water	Sampled:	6/11/2007

Parameters / Method	Analyte	Sample Results	Units	Analyst	Date
Wet Chemistry Procedures					
Chemical Oxygen Demand (COD) / EPA 410.4	Chemical Oxygen Demand	**16**	**mg/L**	MF	6/13/2007
Total Suspended Solids (TSS) / EPA 160.2	Total Suspended Solids	**2.5**	**mg/L**	MF	6/12/2007

end of Lab ID number 38987

General Disclaimer

•The test results are submitted pursuant to IsleChem LLC's current terms and conditions of sale, including the company's standard warranty and limitation of liability provisions. No responsibility or liability is assumed for the manner in which the results are used or interpreted.

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•These results pertain only to the items tested.

•This report shall not be reproduced except in full.

•If the sample(s) represented by these test results were not collected by IsleChem LLC then the test results are limited to the reported values determine by the analytical testing process. IsleChem LLC makes no representation regarding the sample's collection technique, condition, volume, homogeneity or any other aspect of the sample(s) prior to IsleChem LLC taking possession of the sample(s) and the influence it may have on the results.

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•Certain analytes may not be covered by the NYS DOH or NELAP fields of accreditation. Results for those analytes are generated by the cited method using QA/QC guidelines from IsleChem's Quality Control Manual, where applicable.

The test results in this report meet all NELAP requirements for parameters that are within IsleChem's field of accreditation. Any exceptions to NELAP requirements are noted in the comments field.

IsleChem, LLC
2801 Long Road
Grand Island
New York 14072
Tel: (716) 773-8614
Fax: (716) 773-8517

VDM02617

Organization Name	Project Name	# of Samples / # of Bottles
ISOCHEM, Inc.	SPDES Sample	2
Street Address	**Client PO / Release #**	**Turnaround / Date Results Needed**
One North Transit Road		
City, State, ZIP	**Date Sampled**	**IsleChem Project #**
Lockport, NY		NY 706063 6775
Contact Person	**QC reporting level requested:** Std Full	**Are RUSH charges authorized?** Yes No
Pamela J. Cook p.cook@snpe.com		
Phone# and Fax#		
716-433-6764 x 150 cell: 716-609-1476		

Sample ID	Sample Location	Date/time	Matrix	Comp	Grab	TSS	COD	4104	1602	HNO3	HCL	NaOH	H2SO4	unpres.		Comments
SPDES - TSS	122221		Water		x	x								x		
SPDES - COD	122222		Water		x		X							X		

Sampled By	Date	Time	Received by	Date	Time
Matt Platt	6/11/07	8:00		6-11-07	0800
Relinquished by	**Date**	**Time**	**Received by**	**Date**	**Time**
	6/12/07	08:10		6/12/07	0810
Relinquished by	**Date**	**Time**	**Received by**	**Date**	**Time**
	6/12/07	0812		06/12/07	0810
Relinquished by	**Date**	**Time**	**Received by lab**	**Date**	**Time**
	06/12/07	0800		6-12-07	910

IsleChem, LLC
2801 Long Road
Grand Island, NY 14072
716-773-8614
Fax: 716-773-8517

Chain of Custody

by relinquishing these sample to IsleChem, LLC. you are accepting the current IsleChem, LLC terms and conditions for the sale of services

VDM02618

IsleChem, LLC
2801 Long Road
Grand Island
New York 14072
Tel: (716) 773-8614
Fax: (716) 773-8517

Laboratory Analysis Report

Project: Water Samples for Analysis

Phase:
Sample Date: 11/28/2007
Sample Time: 9:00 AM

Report Date: Wednesday, December 05, 2007
Report ID: NY712009.0.9160
PO# / Release#: /
Reference #:
Report Status: **Final**

performed at the request of: Pamela J Cook
VandeMark Chemical, Inc.

One North Transit Road
Lockport, NY 14094-2399

The enclosed sample results table(s) are for 1 sample(s) received by IsleChem LLC on 12/4/2007 submitted by VandeMark Chemical, Inc.

Authorized Signature:

☑ Richard V. Finn, Manager of Chemical Testing
☐ Martin Ruszaj, Director of Chemical Testing

Laboratory Personnel Legend:

FB	Fred Bozek
DD	David Domroes
MF	Mary Ferguson
RVF	Richard (Dick) V. Finn
EF	Eric Fischer
VJH	Vivian Hoffman
MR	Martin S. Ruszaj
RS	Ron Stacy

Sample Results

Sample ID:	1	Client:	VandeMark Chemical, Inc.
Lab ID / Vessel	53358 / 131552	Report ID:	NY712009.0.9160
Location:	SPDES Sample / Field Grab - Water	Sampled:	11/28/2007

Parameters / Method	Analyte	Sample Results	Units	Analyst	Date
Solids, Total Suspended / EPA 160.2	Solids, Total Suspended	**<3.3**	**mg/L**	MF	12/5/2007

end of Lab ID number 53358

General Disclaimer

•The test results are submitted pursuant to IsleChem LLC's current terms and conditions of sale, including the company's standard warranty and limitation of liability provisions. No responsibility or liability is assumed for the manner in which the results are used or interpreted.

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•These results pertain only to the items tested.

•This report shall not be reproduced except in full.

•If the sample(s) represented by these test results were not collected by IsleChem LLC then the test results are limited to the reported values determine by the analytical testing process. IsleChem LLC makes no representation regarding the sample's collection technique, condition, volume, homogeneity or any other aspect of the sample(s) prior to IsleChem LLC taking possession of the sample(s) and the influence it may have on the results.

•Unless notified in writing to return the samples covered by this report IsleChem LLC will store what remains of the sample(s), if anything, for a period of 60 days before discarding, unless otherwise required by law. A shipping and handling fee with be charged for the return of any sample(s).

•Certain analytes may not be covered by the NYS DOH or NELAP fields of accreditation. Results for those analytes are generated by the cited method using QA/QC guidelines from IsleChem's Quality Control Manual, where applicable.

The test results in this report meet all NELAP requirements for parameters that are within IsleChem's field of accreditation. Any exceptions to NELAP requirements are noted in the comments field.

IsleChem, LLC
2801 Long Road
Grand Island
New York 14072
Tel: (716) 773-8614
Fax: (716) 773-8517

VDM02621

Organization Name	Project Name	# of Samples / # of Bottles
VanDeMark Chemical Inc.	SPDES Sample	1
Street Address	**Client PO / Release #**	**Turnaround / Date Results Needed**
One North Transit Road		
City, State, ZIP	**Date Sampled**	**IsleChem Project #**
Lockport, NY		NY 712009 9160
Contact Person	**QC reporting level requested:** Std Full	**Are RUSH charges authorized?** Yes No
Pamela J. Cook p.cook@snpe.com		
Phone# and Fax#		
716-433-6764 x 150 cell: 716-609-1476		

Sample ID	Sample Location	Date/time	Matrix	Comp	Grab	TSS	COD	4104	1602	HNO3	HCL	NaOH	H2SO4	unpres.		Comments
SPDES			Water		x	x								x		
SPDES 1 (2x8oz)		09:00hrs 11/28/07														
131552																

Sampled By	Date	Time	Received by	Date	Time
M. Platt	11/28/07	09:00		11-28-07	0900
Relinquished by	**Date**	**Time**	**Received by**	**Date**	**Time**
Clyde Fougnier	12/4/07	0815		12/4/7	0815
Relinquished by	**Date**	**Time**	**Received by**	**Date**	**Time**
	12/4/07	8:40	Patrick J Hogeboom	12/4/07	0840
Relinquished by	**Date**	**Time**	**Received by Lab**	**Date**	**Time**
Patrick J Hogeboom	12/4/07	0920		12-4-07	925a

IsleChem, LLC
2801 Long Road
Grand Island, NY 14072
716-773-8614
Fax: 716-773-8517

Chain of Custody

by relinquishing these sample to IsleChem, LLC. you are accepting the current IsleChem, LLC terms and conditions for the sale of services

IRONSHORE
your safe harbour

Depth in Leadership. Trusted Partnerships.

IRONSHORE
your safe harbour

IRONSHORE SPECIALTY INSURANCE COMPANY

75 Federal St
Boston, MA 02110
Toll Free: (877) IRON411

Insured Name:
Policy Number:

SITE POLLUTION INCIDENT LEGAL LIABILITY SELECT (SPILLS)

IMPORTANT INFORMATION FOR THE INSURED: CAREFULLY REVIEW THIS POLICY IN FULL. IT CONTAINS PROVISIONS WHICH RESTRICT, EXCLUDE OR OTHERWISE REDUCE OR CURTAIL COVERAGE, AND IT MAY BE DIFFERENT FROM OTHER INSURANCE POLICIES THAT YOU HAVE SEEN OR PURCHASED IN THE PAST. LEGAL FEES AND EXPENSES ARE INCLUDED WITHIN AND ERODE THE LIMITS OF LIABILITY AND ARE SUBJECT TO THE DEDUCTIBLE.

SOME COVERAGES AFFORDED BY THIS POLICY ARE LIMITED TO CLAIMS THAT ARE FIRST MADE AND REPORTED TO THE INSURER WITHIN THE POLICY PERIOD OR, IF APPLICABLE, THE EXTENDED REPORTING PERIOD.

THE HEADINGS DO NOT CONSTITUTE TERMS OR CONDITIONS OF THIS POLICY AND ARE INCLUDED SOLELY FOR CONVENIENCE. THE HEADINGS SHALL NOT IN ANY MANNER MODIFY OR OTHERWISE AFFECT ANY OF THE PROVISIONS OF THIS POLICY. DEFINED TERMS APPEAR IN BOLD FONT.

Subject to and contingent upon the **Named Insured's** payment in full of the premium when due and any applicable deductible and in reliance upon the truth, accuracy, and completeness of the statements in the insurance application and any materials submitted in connection therewith or prior thereto, and subject to all terms, conditions, limitations, and exclusions of this Policy, the Company agrees with the **Named Insured** to the following:

I. COVERAGE GRANTS

ONLY THOSE SPECIFIC COVERAGES INDICATED ON THE DECLARATIONS AS PURCHASED BY THE NAMED INSURED ARE APPLICABLE.

A. REMEDIATION EXPENSES

To pay on behalf of the **Insured**:

Coverage A.1—Onsite Pollution

1. **Remediation Expenses** incurred exclusively for remediation of **Pollutants** that are on or under a **Covered Property**, provided such **Remediation Expenses** arise from **Onsite Pollution** and result from:
   a. **Pre-Existing Conditions**, or
   b. **New Conditions**.

Coverage A.2—Offsite Pollution

2. **Remediation Expenses** incurred exclusively for remediation of **Pollutants** that are beyond the boundaries of the **Covered Property**, provided such **Remediation Expenses** arise from **Offsite Pollution** and result from:

   a. **Pre-Existing Conditions**, or

   b. **New Conditions**.

3. Coverage under Section **I.A.1** and **A.2** shall apply only if:

   a. i. the **Pollution Incident** is first discovered by the Insured during the **Policy Period**. Discovery of a **Pollution Incident** happens when a **Responsible Insured** first becomes aware of the **Pollution Incident**; and

   ii. the **Insured** reports the **Pollution Incident** to the Company, in writing, during the **Policy Period**; and

   iii. the **Pollution Incident** is promptly reported by the **Insured** to the appropriate governmental authority as required by **Environmental Laws**;

or,

   b. The **Insured** becomes legally obligated to pay such **Remediation Expenses** as a result of a **Claim**, and the **Claim** is first made against the **Insured** and reported to the Company in writing during the **Policy Period**, or during the **Extended Reporting Period** if applicable.

B. EMERGENCY RESPONSE EXPENSES

To pay on behalf of the **Insured**, **Emergency Response Expenses** incurred by or on behalf of the **Insured**. The **Emergency Response Expenses** must: (1) arise from: (a) a **Pollution Incident** on, under or migrating from a **Covered Property** that is first discovered by the **Insured** during the **Policy Period**; or (b) a **Pollution Incident** resulting from **Transportation** during the **Policy Period**; and (2) be reported to the Company in accordance with Section **IV.**, Paragraph **B.** For this Coverage to apply, the **Pollution Incident** giving rise to the **Emergency Response Expenses** must be unexpected and unintended from the standpoint of the **Insured**.

C. THIRD-PARTY CLAIMS

To pay on behalf of the **Insured, Loss** that the **Insured** becomes legally obligated to pay as a result of **Claims** for **Bodily Injury** or **Property Damage** arising from:

Coverage C.1—Onsite Pollution

1. **Onsite Pollution** resulting from:

   a. **Pre-Existing Conditions**, or

   b. **New Conditions**,

if such **Bodily Injury** or **Property Damage** takes place while the person injured or the property damaged is within the boundaries of the **Covered Property**.

Coverage C.2—Offsite Pollution

2. **Offsite Pollution** resulting from:

   a. **Pre-Existing Conditions**, or

   b. **New Conditions**,

if such **Bodily Injury** or **Property Damage** takes place while the person injured or the property damaged is beyond the boundaries of the **Covered Property**.

Coverage under **I.C.1** and **C.2** shall apply only if such **Claims** are first made against the **Insured** and reported to the Company in writing during the **Policy Period**, or during the **Extended Reporting Period** if applicable.

D. TRANSPORTATION

To pay on behalf of the **Insured, Loss** that the **Insured** becomes legally obligated to pay as a result of **Claims** for **Bodily Injury, Property Damage** or **Remediation Expenses** resulting from:

1. **Pre-Existing Conditions**, or
2. **New Conditions**,

which **Pre-Existing Conditions** or **New Conditions** arise from **Transportation**, provided such **Claims** are first made against the **Insured** and reported to the Company in writing during the **Policy Period**, or during the **Extended Reporting Period** if applicable.

E. WASTE DISPOSAL ACTIVITIES

To pay on behalf of the **Insured, Loss** that the **Insured** becomes legally obligated to pay as a result of **Claims** for **Bodily Injury, Property Damage** or **Remediation Expenses** that arise from a **Pollution Incident** resulting from **Waste Disposal Activities**. The **Waste Disposal Activities** must take place on or after the Waste Disposal Retroactive Date set forth in Item 7. of the Declarations, or the date that the **Insured** first began operations if no Waste Disposal Retroactive Date is indicated in the Declarations. This coverage shall apply only if such **Claims** are first made against the **Insured** and reported to the Company in writing during the **Policy Period**, or during the **Extended Reporting Period** if applicable.

F. BUSINESS INTERRUPTION

To pay the **Insured's Business Interruption Expenses** and **Extra Expenses** during the **Period of Interruption** that directly result from **Onsite Pollution**. This coverage shall apply only if the **Pollution Incident** giving rise to the **Business Interruption Expenses** or **Extra Expenses** is first discovered by the **Insured** and reported to the Company during the **Policy Period**. Discovery of a **Pollution Incident** happens when a **Responsible Insured** first becomes aware of the **Pollution Incident**.

II. DEFENSE

The Company has the right and duty to defend, including the right to select and appoint counsel to represent, the **Insured** against any **Claim,** even if groundless, false or fraudulent, to which this Policy applies. However, the Company has no duty to defend the **Insured** against any **Claim** to which this Policy does not apply. The Company shall not be obligated to commence or continue to investigate, defend, pay or settle any **Claim** after the applicable Limit of Liability described in Section **VI.** has been exhausted. Upon the **Insured's** satisfaction of any applicable deductible amounts, **Legal Costs** shall reduce the Limits of Liability shown in Item 3. of the Declarations. With respect to any such **Claim** being defended by the Company, the Company shall pay all reasonable expenses incurred by the **Insured** at the Company's request to assist it in the investigation or defense of the **Claim**, including actual loss of earnings up to $750 a day because of time off from work subject to an aggregate limit of $7,500 for all such expenses.

The **Insured** shall not admit or assume liability or settle or negotiate to settle any **Claim** without the prior written consent of the Company. The **Insured** must notify the Company of all settlement offers and the Company will in turn present all settlement offers to the **Insured**. If the Company recommends a monetary settlement which is acceptable to a claimant and is within the Limits of Liability and the **Insured** refuses to consent to such settlement, then the Company's duty to defend shall end, the **Insured** shall thereafter negotiate and defend such **Claim** independently of the Company, and the Company's liability shall not exceed the amount, less the Deductible, for which the **Claim** could have been settled if such recommendation was consented to.

To the extent the **Insured** is entitled pursuant to applicable laws to select independent counsel at the Company's expense, the attorneys' fees and other costs or expenses the Company will pay are limited to the rates the Company would pay to counsel the Company would have retained or could otherwise have retained in the community where the **Claim** is being defended. Such independent counsel must also meet any reasonable requirements, experience, or qualifications standards that the Company may deem appropriate. All such counsel shall keep the Company fully informed and shall promptly respond to requests for information from the Company.

III. EXCLUSIONS - ALL COVERAGES

This Policy does not insure and none of the coverages provided by this Policy apply to **Loss, Business Interruption Expenses** or **Extra Expenses** arising out of or in any way relating to any of the following:

A. ASBESTOS AND LEAD-BASED PAINT

Any asbestos, asbestos containing materials or lead-based paint in, on, or applied to any building or other structure. This exclusion does not apply to Coverage **C.** (Third-Party Claims), or to **Remediation Expenses** for the remediation of soil, surfacewater or groundwater.

B. CONTRACTUAL LIABILITY

Any liability assumed by an **Insured** through or by contract or agreement. This exclusion does not apply to liability that the **Insured** would have had in the absence of the contract or agreement or to liability assumed in an **Insured Contract.**

C. CRIMINAL PUNISHMENTS

Any criminal fines, criminal penalties or criminal assessments.

D. EMPLOYER LIABILITY

Any **Bodily Injury** to:

a. an **Insured,** or an employee of an **Insured** or its parent, subsidiary or affiliate while engaged in employment by the **Insured** or its parent, subsidiary or affiliate; or

b. any person whose right to assert a **Claim** against the **Insured** arises by reason of any employment, blood, marital, or any other relationship with the **Insured** or its parent, subsidiary or affiliate.

This exclusion applies whether the **Insured** may be liable as an employer or in any other capacity, and to any obligation to share damages with or repay someone else who must pay damages because of such **Bodily Injury.**

E. INSURED'S INTERNAL EXPENSES

Any costs, charges or expenses incurred by the **Insured** for goods supplied or services performed by the staff or salaried employees of the **Insured**, or its parent, subsidiary or affiliate, unless such costs, charges or expenses are incurred with the prior written approval of the Company, which it may grant or withhold in its sole discretion.

F. INSURED'S NON-COMPLIANCE

Any **Pollution Incidents** or **Remediation Expenses** that result from or are associated with a **Responsible Insured's** intentional disregard of, or deliberate, knowing, willful or dishonest non-compliance with any **Environmental Law**, including but not limited to the failure to comply with any regulation applicable to air emissions or effluent discharges, or any other statute, regulation, ordinance, order, administrative complaint, notice of violation, notice letter, or instruction by or on behalf of any governmental agency or representative or other federal, state, local or other applicable legal requirement.

However, this exclusion shall not apply to non-compliance based upon: 1) the **Insured's** good faith reliance upon written advice of qualified counsel received in advance of such non-compliance or upon the Company's written consent; or 2) an **Insured's** reasonable efforts to mitigate a **Pollution Incident** that necessitates immediate action, provided that such **Pollution Incident** is reported to the Company within fourteen (14) days of its commencement.

G. INSURED VS INSURED

Any **Claim** by or on behalf of any **Insured** against any other **Insured**.

H. MATERIAL CHANGE IN USE

A material change in use at any **Covered Property** from the use at such **Covered Property** on the **Inception Date**. A material change in use shall mean any use different from the use identified in Item 10. of the Declarations. This exclusion shall not apply if the **Insured** submits prior written notice no less than thirty (30) days prior to such material change, and the Company approves such material change in an endorsement to this Policy issued within thirty (30) days of such notice. The Company is under no obligation to approve any such change in use, but may do so, in its sole discretion, dependent upon such terms and conditions (including but not limited to the payment of additional premium) as the Company may impose. If the Company approves the material change in use, the **Insured** shall agree to any changes to the terms and conditions to this Policy and pay any additional premium as the Company may require prior to the endorsement of such material change.

I. NON-DISCLOSURE

Any **Pollution Incident**:

a. which is known by a **Responsible Insured** prior to the **Inception Date** and not specifically disclosed in writing in the application for this Policy; or

b. on, under or migrating from a **Covered Property** which is known by a **Responsible Insured** and not specifically disclosed to the Company in writing prior to the Company's addition of such **Covered Property** by endorsement to this Policy.

J. NUCLEAR AND RADIOLOGICAL MATERIAL – INTENTIONAL OR UNLAWFUL RELEASE

Any nuclear or radiological materials of any nature or any of their by-products which are intentionally or unlawfully dispersed or released by any person, including but not limited to the dispersal or release by use of an explosive device.

K. PROPERTY DAMAGE TO CONVEYANCES

Any **Property Damage** to any truck, rail car, trailer, rolling stock, intermodal container, shipping container, container, aircraft, vessel, engine, or any other conveyance of any nature utilized during **Transportation**. This exclusion does not apply to **Claims** made by third-party carriers of the **Insured** for such **Property Damage** arising from the **Insured's** negligence.

L. UNDERGROUND STORAGE TANKS

Any **Underground Storage Tank** which is: i) known to a **Responsible Insured** as of either the **Inception Date** or, for properties added to the Policy during the **Policy Period**, the date on which the property first becomes covered under this Policy; or ii) installed during the **Policy Period**. This exclusion does not apply to **Underground Storage Tanks** which have been closed, abandoned in place or removed in accordance with all applicable **Environmental Laws** prior to the **Inception Date** or the date on which a property added during the **Policy Period** first becomes covered under this Policy, or to **Underground Storage Tanks** scheduled to this Policy by endorsement.

M. WAR

Any consequence, whether direct or indirect, of war, invasion, act of foreign enemy, hostilities, whether war be declared or not, civil war, rebellion, revolution, insurrection or military or usurped power, strike, riot or civil commotion.

N. WORKERS COMPENSATION, UNEMPLOYMENT, SOCIAL SECURITY, DISABILITY AND SIMILAR LAWS

Any obligation pursuant to any worker's compensation, unemployment insurance, social security, disability benefits or any similar or related laws.

IV. CLAIMS AND NOTICE PROVISIONS

As a condition precedent to any coverage provided by this Policy, the **Insured** must do each and all of the following:

A. Without limiting the requirements in any insuring agreements in this Policy, in the event of any **Pollution Incident**, **Claim**, **Remediation Expenses**, **Loss**, **Legal Costs**, **Business Interruption Expenses** or **Extra Expenses**, the **Insured** shall provide notice thereof as soon as practicable to the Company's address set forth in the Declarations or (as such address may hereinafter be modified by the Company in writing). In addition, the **Insured** shall provide notice as soon as practicable to the Company's address set forth in the Declarations of any events or circumstances that may reasonably be expected to give rise to a **Pollution Incident**, **Claim**, **Remediation Expenses**, **Loss**, **Legal Costs**, **Business Interruption Expenses** or **Extra Expenses**. All such notice shall include detailed information pertaining to:

1. the appropriate person to contact regarding the **Pollution Incident**, **Claim**, **Remediation Expenses**, **Loss**, **Legal Costs**, **Business Interruption Expenses** or **Extra Expenses**;
2. the location of and a description of the **Pollution Incident**;
3. a description of the **Pollution Incident**, **Claim**, **Remediation Expenses**, **Loss**, **Legal Costs**, **Business Interruption Expenses** or **Extra Expenses**, as applicable;
4. any response actions taken by the **Insured** relating to the **Claim** or **Pollution Incident**; and
5. Any other pertinent information in the **Insured's** possession or control concerning any actual or potential **Pollution Incident**, **Claim**, **Remediation Expenses**, **Loss**, **Legal Costs**, **Business Interruption Expenses** or **Extra Expenses**.

B. In the event that **Emergency Response Expenses** are incurred, the **Insured** must provide all available information relating to such **Emergency Response Expenses** and the **Pollution Incident** giving rise thereto to the Company within fourteen (14) days of commencement of the **Pollution Incident**. Such information shall include all applicable information detailed in Paragraph **A.** of this Section.

C. Without limiting the requirements in any insuring agreements in this Policy, the **Insured** shall provide notice as soon as practicable of any **Claim**, but, in any event, during the **Policy Period**, or **Extended Reporting Period**, if applicable. The **Insured** shall furnish all information requested by the Company, including, but not limited to, the following information as soon as practicable after the receipt by the **Insured** or the **Insured's** representative or agent:

1. Copies of any demands, notices, summonses, or legal papers received by the **Insured**;
2. All correspondence between the **Insured** and any third party claimants;
3. All reports, notes or other documents prepared by persons hired by the **Insured** to investigate the **Claim**;
4. All expert reports, investigations and data collected by experts retained by the **Insured** whether or not the **Insured** intends to use the material for any purpose; and

All other information which the Company may require concerning the **Claim** whether or not the **Insured** deems such to be relevant to the **Claim**.

V. RIGHTS OF THE COMPANY AND DUTIES OF THE INSURED IN THE EVENT OF POLLUTION INCIDENT

A. THE COMPANY'S RIGHTS

The Company shall have the right, but not the duty, to assume direct control over the incurrence of **Remediation Expenses** or **Emergency Response Expenses** and to participate in decisions regarding any covered **Remediation Expenses** or **Emergency Response Expenses** upon receiving notice as provided in Section **IV.** of this Policy. Any **Remediation Expenses** or **Emergency Response Expenses** expended by the Company in taking such action will be deemed incurred or expended by the **Insured** and shall be applied against the Limits of Liability and deductible under this Policy as described in Section **VI.**

B. THE INSURED'S DUTIES

The **Named Insured** shall have the duty to clean up the **Pollution Incident** to the extent required by **Environmental Laws**, by retaining, under written contract, competent professionals or contractors mutually acceptable to the Company and the **Named Insured**. The Company retains the right but not the obligation to review and approve all bids and contracts prior to issuance or execution. The Company shall be informed of all progress at reasonable intervals and shall have the right but not the duty to review and approve all aspects of any such clean up prior to submittal to any regulatory agency that is authorized to review and approve such clean up submittals. The **Named Insured** shall notify the Company of actions and measures taken pursuant to this Paragraph prior to the execution of those actions and measures, unless such notice is not possible under the circumstances because actions or measures constitute **Emergency Response Expenses** or **Environmental Laws** require immediate remediation of the **Pollution Incident**.

The **Insured** shall make all reasonable attempts to mitigate and minimize any **Loss, Business Interruption Expenses** and **Extra Expenses** upon discovery of a **Pollution Incident**.

VI. LIMITS OF LIABILITY AND DEDUCTIBLE

Without regard to the number of **Insureds, Covered Properties, Pollution Incidents, Claims** or claimants, the following limits of liability apply:

A. POLICY AGGREGATE LIMIT OF LIABILITY

The most the Company will pay for all **Loss, Business Interruption Expenses** and **Extra Expenses** covered under this Policy shall not exceed the Policy Aggregate Limit of Liability set forth in Item 2. of the Declarations.

B. COVERAGE SECTION AGGREGATE LIMIT OF LIABILITY

Subject to Paragraph **A.** above, the most the Company will pay for all **Loss** covered under each particular coverage section indicated as purchased in the Declarations shall not exceed the Coverage Section Aggregate Limit of Liability applicable to that particular coverage section.

Subject to Paragraph **A.** above, the most the Company will pay for all **Business Interruption Expenses** and **Extra Expenses** covered under Coverage **F.** shall be the lesser of:

1. the **Business Interruption Expenses** and **Extra Expenses** incurred during the number of days set forth in Item 3. for Coverage **F.** of the Declarations; and
2. the dollar amount set forth in Item 3. for Coverage **F.** of the Declarations.

C. EACH INCIDENT LIMIT OF LIABILITY

Subject to Paragraphs **A.** and **B.** above, for each Coverage under this policy, the most the Company will pay for all **Loss** arising out of the same, related or continuous **Pollution Incident(s)** is the Each Incident Limit of Liability applicable to such coverage set forth in Item 3. of the Declarations.

D. DEDUCTIBLE

Subject to Paragraphs **A.**, **B.**, and **C.** above, the Company will pay all **Loss** in excess of the applicable deductible amount set forth in Item 3. of the Declarations. The deductible is the obligation of the **Named Insured** and applies to all **Loss** arising out of the same, related or continuous **Pollution Incident(s)**.

Subject to Paragraphs **A.** and **B.** above, the Company will pay all **Business Interruption Expenses** and **Extra Expenses** in excess of the **Business Interruption Expenses** and **Extra Expenses** incurred after expiration of the number of days in a **Period of Interruption** stated in Item 3. of the Declarations.

The Company may, but is under no obligation to, advance amounts for **Loss**, **Business Interruption Expenses** and **Extra Expenses** within the deductible. The **Named Insured** shall promptly reimburse the Company for advancing any such amounts within the deductible upon the Company's request.

E. MULTIPLE COVERAGES

If the same, related or continuous **Pollution Incident(s)** result in coverage under more than one coverage section, the most the Company shall pay for all **Loss**, **Business Interruption Expenses** and **Extra Expenses** arising from such **Pollution Incident(s)** shall not exceed the highest Each Incident Limit of Liability, or the Coverage Section Aggregate solely with regard to Coverage **F.**, stated in Item 3. of the Declarations among all of the coverages applicable to the **Loss**, **Business Interruption Expenses** or **Extra Expenses**.

Furthermore, if more than one deductible is applicable, only the highest deductible applicable pursuant to Paragraph **D.** of this Section applicable to the **Loss**, **Business Interruption Expenses** or **Extra Expenses** shall apply.

F. MULTIPLE POLICY PERIODS

If:

1. a **Pollution Incident** is first discovered by the **Insured** and reported to the Company during the **Policy Period**, and a related or continuous **Pollution Incident** is first discovered by the **Insured** and reported to the Company; or
2. a **Claim** is first made against the **Insured** and reported to the Company during the **Policy Period**, and a **Claim** arising from the same, related or continuous **Pollution Incident** is first made against the **Insured** and reported to the Company;

during the policy period of a subsequent policy issued by the Company to the **Insured** in accordance with all the terms and conditions of that policy, then:

a. all such **Pollution Incidents** shall be deemed to be one **Pollution Incident** and to have been first discovered by the **Insured** and reported to the Company during this **Policy Period**, and shall be subject to the applicable Each Incident Limit of Liability or the Coverage **F.** Limit of Liability, and the Deductible thereunder, as the case may be, set forth in Item 3. of the Declarations; and

b. all such **Claims** shall be deemed to have been first made against the **Insured** and reported to the Company during this **Policy Period** and to arise from one **Pollution Incident**, and shall be subject to the applicable Each Incident Limit of Liability and Deductible set forth in Item 3. of the Declarations.

Paragraph **F.** of this Section applies only if the **Insured** has maintained Site Pollution Incident Legal Liability Select coverage with the Company on a continuous, uninterrupted basis since (i) the first such **Pollution Incident** was

discovered by the **Insured** and reported to the Company, or (ii) the first such **Claim** was made against the **Insured** and reported to the Company, providing coverage substantially the same as that provided by the applicable Coverage Part of this policy for (i) **Pollution Incidents** first discovered by the **Insured** and reported to the Company during the policy period, or (ii) **Claims** first made against the **Insured** and reported to the Company during the policy period.

VII. CONDITIONS

A. ACTION AGAINST COMPANY

No action brought by any organization or entity, other than an **Insured**, shall lie against the Company unless, as a condition precedent thereto, the **Insured** has fully complied with all of the terms and conditions of this Policy and the amount of the **Insured's** obligation to pay shall have been finally determined either by judgment against the **Insured** after actual trial or by written agreement of the **Insured**, the claimant and the Company.

Any person or entity or the legal representative thereof who has secured such judgment or written agreement shall thereafter be entitled to recover under this Policy to the extent of the insurance afforded by this Policy to the **Insured** at issue and subject to the terms, conditions, exclusions and limitations of the Policy. No person or entity shall have any right under this Policy to join the Company as a party to any action against the **Insured** to determine the **Insured's** liability, nor shall the Company be impleaded by the **Insured** or its legal representative.

B. ASSIGNMENT

Assignment of interest under this Policy shall not bind the Company unless and until its consent is endorsed hereto, which consent shall not be unreasonably denied.

C. AUDIT AND INSPECTION

The Company shall be permitted, but not required, upon reasonable prior notice to inspect, sample and/or monitor any **Covered Property** and operations conducted thereon. Neither this right to make inspections, sample and/or monitor, nor the actual undertaking thereof, nor any report thereon shall constitute an undertaking on behalf of the **Insured** or others to determine or warrant that a **Covered Property** or operation is legal, appropriate, safe, healthful or conforms to any standard or requirement or is in compliance with any **Environmental Law** or other **Law**. The Company will not manage or exercise control over any **Covered Property** or operation. The Company shall also have the right to interview persons employed by or affiliated with the **Insured**.

D. BANKRUPTCY

Bankruptcy or insolvency of the **Insured** or of the **Insured's** estate shall not relieve the Company of its obligations hereunder.

E. CANCELLATION

This Policy may be cancelled by the **Named Insured** by surrendering it to the Company or by mailing to the Company written notice stating when thereafter cancellation shall be effective.

The Policy may be cancelled by the Company by mailing to the **Named Insured** at its address set forth in the Declarations, a notice stating when, not less than ninety (90) days (or ten (10) days for nonpayment of premium) thereafter such cancellation shall be effective. The Company may cancel this Policy for only the following reasons:

1. Fraud or misrepresentation;
2. Any **Insured's** failure to comply with the terms, conditions or contractual obligations under this Policy including failure to pay the deductible when due; or
3. Nonpayment of premium when due.

The mailing of notice as aforesaid shall be sufficient proof of notice. The time of surrender or the effective date and hour of cancellation stated in the notice shall become the end of the **Policy Period**. Actual delivery of such written notice either by the **Named Insured** or by the Company shall be equivalent to mailing.

If the **Named Insured** cancels, earned premium shall be computed in accordance with the customary short rate table and procedure after applying the minimum earned premium amount set forth in Item 9. of the Declarations. If the Company cancels, earned premium shall be computed pro rata. Premium adjustment may be either at the time cancellation is affected or as soon as practicable after cancellation becomes effective, but payment or tender of unearned premium is not a condition precedent to the effectiveness of cancellation.

F. CHANGES

Notice to or knowledge possessed by any person or entity shall not effect waiver or change in any part of this Policy or estop the Company from asserting any right under the terms of this Policy. The terms, definitions, conditions, exclusions and limitations of this Policy shall not be waived or changed, except as provided by endorsement issued by the Company attached to this Policy. No agent or broker has any authority to change or modify this Policy, waive any of its provisions, or issue any endorsements.

G. CHOICE OF FORUM

In the event that the **Insured** and the Company have any dispute concerning or relating to this Policy, including its formation, coverage provided hereunder, or the meaning, interpretation or operation of any term, condition, definition or provision of this Policy resulting in litigation, arbitration or other form of dispute resolution, the **Insured** agrees with the Company that any such litigation and any arbitration or other form of dispute resolution shall take place in the appropriate federal or state courts located in New York, New York.

H. CHOICE OF LAW

In the event that the **Insured** and the Company have any dispute concerning or relating to this Policy, including its formation, coverage provided hereunder, or the meaning, interpretation or operation of any term, condition, definition or provision of this Policy resulting in litigation, arbitration or other form of dispute resolution, the **Insured** agrees with the Company that the internal laws of the State of New York shall apply without giving effect to any conflicts or choice of law principles. The terms and conditions of this Policy shall not be deemed to constitute a contract of adhesion and shall not be construed in favor of or against any party hereto by reason or authorship or otherwise.

I. CONDITION OF PAYMENT

It is hereby agreed that any payment under this Policy shall only be made in full compliance with all United States of America economic and trade sanction laws or regulations, including, but not limited to, sanctions, laws and regulations administered and enforced by the U.S. Treasury Department's Office of Foreign Assets Control ("OFAC").

J. COOPERATION

The **Insured** agrees with the Company to assist and cooperate in the fulfillment of the terms of the Policy, including the investigation, adjustment, defense or settlement of any **Claim** or in connection with the clean-up and mitigation of a **Pollution Incident**. Such cooperation may also include participating in meetings; requiring the **Insured** to submit to examination under oath; testifying at hearings, depositions and trials; or securing evidence. The Company may also require written statements or the **Insured's** attendance at meetings with the Company in the course of its investigation or defense. The **Insured** must assist the Company in effecting settlement and obtaining the attendance of witnesses. Further, the **Insured** must assist the Company in the pursuit of any coverage that may be available from other insurers or insurance policies for any amounts which also may be covered under this Policy. In addition, the **Insured** shall, to the extent feasible, permit and assist the Company and its representatives in interviewing persons and collecting documents and in viewing, inspecting, or reviewing at any time the **Covered Property**, any other property, or any documents related in any manner to this Policy, any **Claims** or **Loss**, or any coverage provided hereunder. No such inspection or review shall impose any liability, responsibility, or obligation on the Company of any nature. The **Insured** shall take any other actions to assist the Company as the Company may request from time to time.

K. ENFORCEABILITY

If any part of this policy is deemed invalid or unenforceable, it shall not affect the validity or enforceability of any other part of this policy, which shall be enforced to the full extent permitted by law.

L. HEADINGS

The descriptions in the headings of this Policy are solely for convenience and form no part of the Policy terms and conditions.

M. INDEPENDENT COUNSEL

In the event the **Insured** is entitled by law to select independent counsel to oversee the Company's defense of a **Claim** at the Company's expense, the attorney fees and all other litigation expenses the Company must pay to that counsel are limited to the rates the Company actually pays to counsel the Company retains in the ordinary course of business in the defense of similar **Claims** or suits in the community where the **Claim** arose or is being defended.

Additionally, the Company may exercise the right to require that such counsel have certain minimum qualifications with respect to their competency including experience in defending **Claims** or suits similar to the one pending against the **Insured** and to require such counsel have errors and omissions insurance coverage. As respects any such counsel, the **Insured** agrees that counsel will timely respond to our request for information regarding the **Claims** or suit.

Furthermore, the **Insured** may at any time, by the **Insured's** written consent, freely and fully waive these rights to select independent counsel.

N. OTHER INSURANCE

If other valid and collectible insurance is available to the **Insured** for **Claims**, **Emergency Response Expenses**, **Pollution Incidents**, **Loss**, **Remediation Expenses**, **Legal Costs**, **Business Interruption Expenses** or **Extra Expenses**, the Company's obligations are limited as follows:

1. This insurance is primary except when any other insurance is also primary. In that case, the Company will share with all the other insurance by the method described in Paragraph 2. below.

2. If the other insurance permits contribution by equal shares, the Company will follow this method also. Under this approach each insurer contributes equal amounts until it has paid its applicable limit of insurance or none of the **Claims, Emergency Response Expenses, Pollution Incidents, Loss, Remediation Expenses, Legal Costs, Business Interruption Expenses** or **Extra Expenses** payable under this Policy remains, whichever comes first.

3. If the other insurance does not permit contribution by equal shares, the Company will contribute by limits. Under this method, each insurer's share is based on the ratio of its applicable limit of insurance to the total applicable limits of insurance of all insurers.

O. POLICY TERRITORY

This Policy and any coverage provided hereunder is only applicable to **Pollution Incidents** occurring in the United States, its territories and possessions.

P. REPRESENTATIONS

By accepting this Policy, the **Named Insured** agrees:

1. The statements in the Declarations and Application are true, accurate and complete in all respects and contain no material omissions;

2. Those statements are the **Named Insured's** agreements and representations; and

3. The Company has issued this Policy in reliance upon those statements and these representations.

Further, the **Named Insured** agrees that this Policy embodies all agreements existing between the **Insured** and the Company or any of its agents relating to this insurance.

Q. SEPARATION OF INSUREDS

Except with respect to the Limits of Liability, Section **III.**, Paragraph **G. (Insured** vs. **Insured)** and any rights and duties specifically assigned to the first **Named Insured** set forth in Item 1. of the Declarations, this insurance applies:

1. As if each **Insured** were the only **Insured**; and

2. Separately to each **Insured** against whom a **Claim** is made.

Misrepresentation, concealment, breach of condition or violation of any duty under this Policy by one **Insured** shall not prejudice the interest or coverage for another **Insured** who did not participate or assist in such misrepresentation, concealment, breach of condition or violation of duty, except where an **Insured** is a parent, subsidiary or affiliate of the **Insured** that misrepresented, concealed or breached a term or condition of or violated a duty under this Policy or participated or assisted therein.

R. SERVICE OF SUIT

Subject to and without waiving the forum selection clause in Section **VII.**, Paragraph **G.** of this Policy, it is agreed that in the event of failure of the Company to pay any amount claimed to be due hereunder, the Company, at the request of the **Insured**, will submit to the jurisdiction of a court of competent jurisdiction within the United States. Nothing in this condition constitutes or should be understood to constitute a waiver of the Company's rights to commence an action in any court of competent jurisdiction in the United States, to remove an action to a United States District Court, or to seek a transfer of a case to another court as permitted by the laws of the United States or of any state in the United States. It is further agreed that service of process in such suit may be made upon the Company, and that in any suit instituted against the Company upon this contract, the Company will abide by the final decision of such court or of any appellate court in the event of any appeal.

Further, pursuant to any statute of any state, territory, or district of the United States which makes provision therefore, the Company hereby designates the Superintendent, Commissioner, Director of Insurance, or other officer specified for that purpose in the statute, or his or her successor or successors in office as its true and lawful attorney upon whom may be served any lawful process in any action, suit or proceeding instituted by or on behalf of the Insured or any beneficiary hereunder arising out of this contract of insurance, and hereby designates the above named Counsel as the person to whom the said officer is authorized to mail such process or a true copy thereof.

S. SOLE AGENT

The **Named Insured** first identified in Item 1. of the Declarations is responsible for payment of all premiums and deductibles, and will act as the sole agent on behalf of all **Insureds** with respect to provision and receipt of notice(s), including notice of cancellation or non-renewal, receipt and acceptance of any endorsement(s) or any other changes to this Policy, return of any premium, assignment of interest under this Policy, as well as exercise of any applicable **Extended Reporting Period**, unless any such responsibilities are otherwise designated by endorsement.

T. SUBROGATION

In the event of any payment under this Policy, the Company shall be subrogated to all of an **Insured's** rights of recovery against any person or entity, including without limitation any rights to contribution from another insurer. An **Insured** shall execute and deliver instruments and papers and do whatever else is necessary to secure and perfect such rights. No **Insured** shall do anything to impair, reduce, impede, prejudice, curtail or waive such rights. Any recovery obtained through subrogation, after expenses incurred in such subrogation are deducted by the Company, shall be applied first to the **Insured** to the extent of any payments in excess of the limit of coverage, if any; then to the Company to the extent of its payment under the Policy; and then to the **Insured** to the extent of its deductible.

U. VOLUNTARY PAYMENTS AND ADMISSION OF LIABILITY

No **Insured** shall admit liability, settle or attempt to settle or otherwise dispose of any **Claim**, waive or extend any statute of limitation or statute of repose or the accrual thereof, or, except at the **Insured's** own cost, voluntarily make any payment, assume any obligation, or incur any expense without the Company's prior written consent.

This Condition shall not apply if such payment or obligation is an **Emergency Response Expense** or is pursuant to **Environmental Laws** that require immediate remediation of a **Pollution Incident.**

VIII. EXTENDED REPORTING PERIOD

A. AUTOMATIC EXTENDED REPORTING PERIOD

The **Named Insured** shall be entitled to an Automatic **Extended Reporting Period** for a period of ninety (90) days following the effective date of termination of this Policy for no additional premium. This Automatic **Extended Reporting Period** shall not apply where:

1. the **Named Insured** has purchased the Optional **Extended Reporting Period** available under paragraph **B.** below;
2. the Policy is terminated for fraud or non-payment of premium; or
3. the **Insured** has purchased other insurance to replace the insurance provided under this Policy.

The Automatic **Extended Reporting Period** shall apply as follows:

1. A **Claim** first made against the **Insured** during the **Policy Period** and reported to the Company, in writing, during the ninety (90) days immediately following the effective date of such termination will be deemed to have been made on the last day of the **Policy Period,** provided that the **Claim** is otherwise covered under this Policy.
2. A **Claim** first made against the **Insured** and reported to the Company, in writing, during the ninety (90) days immediately following the effective date of such termination will be deemed to have been made on the last day of the **Policy Period**, provided such **Claim** arises from a **Pollution Incident** which commenced prior to such termination and is otherwise covered under this Policy.

B. OPTIONAL EXTENDED REPORTING PERIOD

The **Named Insured** shall be entitled (except if this Policy is terminated for fraud or the non-payment of premium) to purchase an Optional **Extended Reporting Period** upon termination of this Policy subject to the following terms and conditions:

The **Named Insured** shall be entitled to purchase an Optional **Extended Reporting Period** of up to forty-eight (48) months beginning on the effective date of termination of this Policy for an additional premium of not more than 200% of the total Policy premium, provided that the **Named Insured** requests such Optional **Extended Reporting Period** in writing within thirty (30) days of the effective date of termination of this Policy;

Once the **Named Insured** has paid the additional premium, the Optional **Extended Reporting Period** may not be cancelled by the Company, and such premium shall be fully earned; and

The Optional **Extended Reporting Period** shall apply only to **Claims** first made against the **Insured** and reported to the Company during the Optional **Extended Reporting Period**, but only if such **Claims** arise from a **Pollution Incident** which commenced prior to termination of this Policy and are otherwise covered by this Policy.

It is a condition precedent to the coverage provided in this paragraph **B.** that the **Named Insured** pay any additional premium within thirty (30) days of such termination.

Neither the Automatic **Extended Reporting Period** nor the Optional **Extended Reporting Period** shall modify, reinstate or increase the limits of liability of this Policy, and any payment made during the Automatic **Extended Reporting Period** or the Optional **Extended Reporting Period** shall reduce the available limits of liability.

IX. DEFINITIONS

A. Bodily Injury means physical injury, sickness, disease, building-related illness, mental anguish, shock or emotional distress, sustained by any person, including death resulting therefrom. **Bodily Injury** shall also include medical monitoring costs.

B. Business Interruption Expenses means:

1. net profit or loss, including **Rental Value**, before taxes that would have been earned or incurred by the **Insured** during the **Period of Interruption**; and
2. continuing normal operating expenses incurred by the **Insured** during the **Period of Interruption**, including payroll expense for employees of the **Insured**, except employees under contract, officers, executives, and department managers,

due to the reasonable and necessary interruption of the **Insured's** operations at a **Covered Property** during the **Period of Interruption**.

If the **Insured** would have incurred a net loss under Paragraph **B**.1. above, such net loss shall reduce the operating expenses recoverable under Paragraph **B**.2. above.

C. **Cargo** means goods, products, or waste transported for delivery by a carrier properly licensed to transport such goods, products or waste.

D. **Claim** means a demand, notice or assertion of a legal right alleging liability or responsibility on the part of the **Insured**.

E. **Conveyance** means any auto, railcar, train, watercraft or aircraft. **Conveyance** shall not include pipelines.

F. **Covered Property** means those locations specifically scheduled to Item 5. of the Declarations, or any other location specifically endorsed to the Policy as a **Covered Property**.

G. **Emergency Response Expenses** means reasonable and necessary expenses, including **Legal Costs** incurred with the Company's prior written consent which consent shall not be unreasonably withheld or delayed, incurred in the remediation of soil, surfacewater, groundwater or other **Pollutants** that must be and are incurred:

1. in response to a **Pollution Incident** that necessitates immediate action; and
2. within seven (7) days of the commencement of such **Pollution Incident** or as approved by the Company in writing.

Emergency Response Expenses do not include any expenses, damages, costs or any other liability of any nature for **Bodily Injury**.

H. **Environmental Laws** means any federal, state, provincial, municipal or local laws, including, but not limited to, statutes, rules, ordinances, guidance documents, regulations and all amendments thereto, including state voluntary cleanup or risk based action guidance, and governmental, judicial or administrative orders and directives, that are applicable to a **Pollution Incident.**

I. **Environmental Professional** means an individual approved and designated by the Company in writing who is duly certified or licensed in a recognized field of environmental science as required by a state board, a professional association, or both, who meet certain minimum qualifications and who maintain specified levels of errors and omissions insurance coverage acceptable to the Company. The Company shall consult with the insured in conjunction with the selection of the **Environmental Professional.**

J. **Extended Reporting Period** means the **Automatic Extended Reporting Period** or, if applicable, the Optional **Extended Reporting Period** of this Policy as set forth in Section **VIII.** of the Policy.

K. **Extra Expenses** means reasonable and necessary expenses incurred by the **Insured**, over and above the **Insured's** continuing normal operating expenses, during the **Period of Interruption**, that the **Insured** would not have incurred had there been no **Onsite Pollution** discovered at the **Covered Property**, provided that the expenses are incurred solely to avoid or minimize the interruption of business and to continue operations:

1. at the **Covered Property**; or
2. at replacement or temporary location(s), including:
   a. relocation expenses; and
   b. cost to equip and operate the replacement or temporary location(s).

Extra Expenses will be reduced by any salvage or other value of property obtained for temporary or other use during the **Period of Interruption** that remains after the resumption of normal operations.

L. **Inception Date** means the applicable date set forth in Item 4. of the Declarations.

M. **Insured** means a **Named Insured**, and any past or present director, officer, partner, member, employee, temporary worker or leased worker of the **Named Insured.**

N. **Insured Contract** means those contracts or agreements, if any, listed on a Schedule of Insured Contracts endorsed to this Policy.

O. **Legal Costs** means attorneys' fees and other costs, charges and expenses incurred in the investigation, adjustment, defense, or settlement of any **Claim** for **Loss**, or in connection with the payment of any **Remediation Expenses. Legal Costs** include the fees and expenses of consultants, expert witnesses, accountants, court reporters, and other vendors, for goods or services in connection with such investigation, adjustment, defense, or settlement, whether incurred by the **Insured**, defense counsel, or the Company.

P. **Legionella** means legionella pneumophila.

Q. **Loss** means:

1. a monetary judgment, award or settlement of compensatory damages arising from **Bodily Injury** or **Property Damage**;
2. punitive, exemplary or multiplied damages, and civil fines, penalties and assessments to the extent any of the foregoing is insurable under applicable law, arising from **Bodily Injury** or **Property Damage**;
3. **Legal Costs**;
4. **Remediation Expenses**; and
5. **Emergency Response Expenses.**

R. **Mold Matter** means mold, mildew, and fungi, whether or not such **Mold Matter** is living.

S. **Named Insured** means:

1. the person or entity identified in Item 1. of the Declarations;
2. any business entity in which the person or entity listed in Item 1. of the Declarations has an ownership interest of 50% or more during the **Policy Period**; and
3. any other person or entity listed as a **Named Insured** by endorsement to this Policy.

T. **Natural Resource Damage** means the physical injury to or destruction of, as well as the assessment of such injury or destruction, including the resulting loss of value of land, fish, wildlife, biota, air, water, groundwater, drinking water supplies, and other such resources belonging to, managed by, held in trust by, appertaining to, or otherwise controlled by the United States (including the resources of the fishery conservation zone established by the Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. 1801 et seq.)), any State, Local or Provincial government, any foreign government, any Native American tribe, or, if such resources are subject to a trust restriction on alienation, any member of a Native American tribe.

U. **New Conditions** means **Pollution Incidents** which first commenced on or after the date set forth in Item 8. of the Declarations.

V. **Non-Owned Disposal Sites** means transfer, storage, treatment or disposal facilities which are utilized by the **Insured** for the transfer, storage, treatment or disposal of waste materials, which facilities are not owned, operated or rented by the **Insured**, provided that:

1. the waste materials first originate from a **Covered Property**;
2. the transfer, storage, treatment or disposal facility is properly licensed and permitted by the appropriate federal, state or local authority to accept such waste materials as of the date of the transfer, storage, treatment or disposal of such waste materials; and

3. the transfer, storage or disposal facility is not listed on a proposed or final Federal National Priorities List (Superfund), or any equivalent state or local list as of the earlier of: a) the **Inception Date**; or b) the inception date of the first Site Pollution Incident Legal Liability Select policy issued by the Company to the **Insured** of which this is a continuous and uninterrupted renewal.

W. Offsite Pollution means a **Pollution Incident** that has migrated from a **Covered Property** to a location beyond its boundaries. **Offsite Pollution** does not include any **Onsite Pollution**.

X. Onsite Pollution means a **Pollution Incident** on or under the **Covered Property. Onsite Pollution** does not include any **Offsite Pollution**.

Y. Period of Interruption means the period of time that begins with the interruption of the **Insured's** operations at a **Covered Property** due to a **Pollution Incident** and ends on the earliest of (1) when the **Covered Property** is reasonably restored to operations, (2) when the **Covered Property** should have been restored to operations with reasonable speed and quality, or (3) when business activities resume at a new permanent location. The expiration date of this policy will not reduce the **Period of Interruption. Period of Interruption** shall not include any period of time prior to the commencement of normal operations at a **Covered Property**, including but not limited to a delay in the opening of or a delay in the completion of construction at a **Covered Property**.

Z. Policy Period means the applicable period stated in Item 4. of the Declarations. However, if this Policy is cancelled by the **Named Insured** or the Company, the **Policy Period** terminates on the effective date and time of cancellation.

AA. Pollutants means any solid, liquid, gaseous or thermal irritant, or contaminant, including smoke, soot, vapors, fumes, acids, alkalis, chemicals, hazardous substances, hazardous materials; waste materials, including medical, infectious and pathological wastes, at levels in excess of those naturally occurring. **Pollutants** includes electromagnetic fields, **Mold Matter** and **Legionella.**

BB. Pollution Incident means:

1. the presence of **Mold Matter**; and
2. the discharge, dispersal, release, escape, migration, or seepage of **Pollutants** on, in, into, or upon land and structures thereupon, the atmosphere, surface water, or groundwater.

Pollution Incident includes the illicit abandonment of **Pollutants** at a **Covered Property** provided that such abandonment was committed by parties other than **Insureds** and without the knowledge of a **Responsible Insured**.

CC. Pre-Existing Conditions means **Pollution Incidents** which first commenced prior to the date specified in Item 8. of the Declarations.

DD. Property Damage means:

1. Physical injury to or destruction of tangible property of parties other than the **Insured**, including the resulting loss of use of that property;
2. Loss of use of tangible property owned by parties other than the **Insured**, that is not physically injured or destroyed;
3. Diminished value of property owned by parties other than the **Insured;** and
4. **Natural Resource Damage.**

Property Damage does not include **Remediation Expenses**.

EE. Remediation Expenses means reasonable and necessary expenses, including associated **Legal Costs** incurred with the Company's prior written consent, incurred to investigate, remove, dispose of, abate, contain, treat, neutralize, monitor or test a **Pollution Incident:**

1. to the extent required by **Environmental Laws**, including but not limited to statutes, rules, ordinances, guidance documents, regulations and all amendments thereto, including state voluntary cleanup or risk based corrective action guidance, governing the liability or responsibilities of the **Insured** to respond to a **Pollution Incident**; or
2. in the absence of items in 1. above, to the extent recommended in writing by an **Environmental Professional**; or
3. to the extent incurred by the government or any political subdivision of the United States of America or any state, territory or possession thereof, or by parties other than **Insureds.**

Remediation Expenses also include **Restoration Costs.**

FF. Rental Value means:

1. the total anticipated rental income from tenant occupancy of the **Covered Property** as furnished and equipped by the **Insured;**
2. all charges that are the legal obligation of the tenant(s) pursuant to a lease and that would otherwise be the **Insured's** obligations, and
3. the fair rental value of any portion of the **Covered Property** that is occupied by the **Insured** during the **Period of Interruption**, less any rental income the **Insured** could earn:
   a. by complete or partial rental of the **Covered Property**, or
   b. by making use of other property on the **Covered Property** or elsewhere.

GG. Responsible Insured means:

1. the manager or supervisor of the **Named Insured** responsible for environmental affairs or health and safety affairs, control or compliance at a **Covered Property;**
2. the manager of a **Covered Property**; and
3. any officer, director or partner of the **Named Insured.**

HH. Restoration Costs means reasonable and necessary costs incurred by the **Insured** with the Company's prior written consent, to repair, restore or replace damaged real or personal property damaged during work performed in the course of incurring **Remediation Expenses** in order to restore the property to the condition it was in prior to being damaged during such work. **Restoration Costs** shall not exceed the lesser of actual cash value of such real or personal property or the cost of repairing, restoring or replacing the damaged property with other property of like kind and quality. An adjustment for depreciation and physical condition shall be made in determining actual cash value. If a repair or replacement results in better than like kind or quality, the Company will not pay for the amount of the betterment, except to the extent such betterments of the damaged property entail the use of materials which are environmentally preferable to those materials which comprised the damaged property. Such environmentally preferable material must be certified as such by an applicable independent certifying body, where such certification is available, or, in the absence of such certification, based on the judgment of the Company in its sole discretion.

II. Transportation means the movement of **Cargo** by a **Conveyance** from the place where it is accepted by a carrier until it is moved:

1. To the place where the carrier finally delivers it; or
2. In the case of waste, to a waste disposal or treatment facility to which the carrier delivers it.

Transportation includes the carrier's loading and unloading of **Cargo** onto or from a **Conveyance** provided that the loading or unloading is performed by or on behalf of the **Named Insured**.

JJ. **Underground Storage Tank** means any tank, including any piping and appurtenances connected to the tank, that has at least ten (10) percent of its combined volume underground which is in existence as of the **Inception Date** or which is installed after the **Inception Date**.

KK. **Waste Disposal Activities** means the processing, treatment or disposal, or the arranging for the processing, treatment or disposal, of waste at a **Non-Owned Disposal Site**, provided that such waste first originates from a **Covered Property**.

IN WITNESS WHEREOF, the Insurer has caused this Policy to be executed and attested, but this Policy will not be valid unless countersigned by a duly authorized representative of the Insurer, to the extent required by applicable law.

Ironshore Specialty Insurance Company by:

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Ironshore Holdings (U.S.) Inc.
IronEnviro SM

Toby Smith
One State Street Plaza, 7th Floor
New York, New York 10004
Phone: 646.826.6778
toby.smith@ironshore.com

DATE: December 22, 2011

ATTN: Gene Devine
The Treiber Group/Arthur J. Gallagher Risk Management Services, Inc.
377 Oak Street
Garden City, NY 11530-0601
PHONE: 516.622.2483
Email: Gene_Devine@AJG.com

Ironshore Environmental (IronEnviro℠) Insurance Binder for:
First Named Insured: VanDeMark Chemical Inc.
Mailing Address: One North Transit Road
Lockport, NY 14094

Policy Form: **SITE POLLUTION INCIDENT LEGAL LIABILITY SELECT (SPILLS)**
Policy Period: From: 12/22/11 to: 12/22/21

Issuing Company: Ironshore Specialty Insurance Company
Policy Number: 001243700

Dear Gene,

We appreciate the opportunity to offer the following insurance binder for the above captioned insured. Below is a summary of premiums, commission, terms and conditions of the binder.

LIMITS, DEDUCTIBLE, TERM AND PREMIUM

Option	Coverage	Deductible Each Incident	Each Incident Limit	Coverage Aggregate Limit	Policy Aggregate Limit	Term (years)	Policy Premium
1	A.1.a., A.2.a., C.1.a., C.2.a., D.1., E.	$100,000	$10,000,000	$10,000,000	$10,000,000	10	$221,000

COVERAGES DESCRIPTIONS:
Coverage A.1.a: Remediation Expenses – Onsite Pre-Existing Conditions
Coverage 1.b: Remediation Expenses – Onsite New Conditions
Coverage A.2.a: Remediation Expenses – Offsite Pre-Existing Conditions
Coverage 2.b: Remediation Expenses – Offsite New Conditions
Coverage B: Emergency Response Expenses
Coverage C.1.a: Third Party Claims – Onsite Pre-Existing Conditions
Coverage C.1.b: Third Party Claims – Onsite New Conditions
Coverage C.2.a: Third Party Claims – Offsite Pre-Existing Conditions

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Coverage C.2.b: Third Party Claims – Offsite New Conditions
Coverage D.1: Transportation – Pre-Existing Conditions
Coverage D.2: Transportation – New Conditions
Coverage E: Waste Disposal Activities
Coverage F: Business Interruption

ADDITIONAL POLICY INFORMATION

Waste Disposal Retroactive Date: None
Separation Date Between Pre and New Conditions Coverage: Inception Date
Minimum Earned Premium: 100%
Intended Use: Chemical Manufacturing Plant
Commission: 15%

COVERED PROPERTY(IES):

- One North Transit Road
  Lockport, NY 14094

COVERAGE FORMS AND ENDORSEMENT SCHEDULE:

Name	Number	Fill-In Information
SITE POLLUTION INCIDENT LEGAL LIABILITY SELECT (SPILLS) Coverage Form	IE.COV.SPILLS.SEL.001 (08.10 ed)	None
SITE POLLUTION INCIDENT LEGAL LIABILITY SELECT (SPILLS) Declarations Page	IE.DEC.SPILLS. SEL.001 (08.10 ed)	See Above
Notice of Claims	IE.PN.ALL.002 (05/09)	None
Statement of No Terrorism Exclusion	MNSCPT	None
Nuclear and Radiological Material Exclusion Amendatory Endorsement	IE.END.SPILLS.SEL.022 (08.10 ed)	None
Known Conditions Exclusion	MNSCPT	None
Capital Improvement Exclusion	MNSCPT	None
Voluntary Site Investigation Exclusion	MNSCPT	None
Waste Disposal Activities Coverage – Pre-Existing Conditions Only	MNSCPT	None
Disclosed Documents Endorsement	MNSCPT	None
Named Insured Endorsement	MNSCPT	SNPE, Inc.

CONDITIONS OF THE BINDER:
This binder is subject to receipt, review and acceptance of the following PRIOR TO binding unless otherwise noted:

None.

Important: In order to complete the underwriting process, we require that you send us the additional information requested above. We are not required to bind coverage prior to our receipt, review and underwriting approval of the above information. However, if we do bind coverage prior to such approval, it shall be for a period of not more than 10 days. Such binding of coverage shall be void ab initio ("from the beginning") if we have not received, reviewed and approved in writing such materials within 10 days from the effective date of the binder. Payment of premium shall not operate to extend the binding period or nullify the automatic voiding as described above.

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The premium must be remitted to the address below within thirty (30) days of effective date or fifteen (15) days from billing, whichever is later. This ten (10) day conditional binder may be extended only in writing signed by the Company. Payment of premium shall not operate to extend the binding period or nullify the automatic voiding as described above.

Premium is payable within 30 days of the effective date and should be remitted to:

Ironshore Insurance Services, LLC
One State Street Plaza
New York, NY 10004
Att: Kas Mela

This binder is provided on the basis that all information given to Insurer by or on behalf of the Insured in its underwriting submission and/or in its responses to the underwriter's requests for information is reliable, truthful, and complete to the best of the Insured's information and knowledge. The Insurer relies on the "duty of disclosure" as it exists under applicable law, and rejects any attempt to negate that duty wholly or partially. The Insured, by accepting this binder, waives the effect of any purported disclaimers of the Insured's duty to disclose to underwriters all material facts to the best of its knowledge that may be contained in such submission or in its responses to questions or requests for information, or in emails, cd roms, or internet websites used in providing or transmitting underwriting information.

This binder and all the terms, conditions and provisions contained within this letter are work product that was developed by or on behalf of, and is owned by the company identified above. The Broker and the entity(s) to whom this letter is provided by the Company agree that they will hold this binder and the terms, conditions and provisions contained within this letter with any person or entity which (1) sells insurance, or (2) is not sent this letter directly by the Company, unless such person or entity agrees that it will not provide this binder or any of the terms, conditions and provisions contained within this letter to any person or entity which sells insurance. In the event that the Broker or any of the entity(s) to whom this letter is provided by the Company do not agree with this provision, please return all originals and copies of this binder to the Company.

Thank you for your business! Please feel free to contact me if you have any questions or concerns regarding this binder.

Sincerely,

Toby Smith
Vice President

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IRONSHORE SPECIALTY INSURANCE COMPANY

75 Federal St
Boston, MA 02110
(877) IRON411

Endorsement

Policy Number: **Effective Date of Endorsement:**
Insured Name:

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY

STATEMENT OF NO TERRORISM EXCLUSION ENDORSEMENT

This endorsement modifies insurance provided under the following:

SITE POLLUTION INCIDENT LEGAL LIABILITY SELECT (SPILLS)

It is hereby agreed that the policy is amended as follows:

1. Pursuant to the requirements of the Terrorism Risk Insurance Act of 2002, as amended by the Terrorism Risk Insurance Program Reauthorization Act of 2007, (collectively "TRIA") the **Insured** has been provided notice that the **Insured** may elect to purchase coverage for loss arising directly or indirectly as a result of a certified "act of terrorism" as defined by Section 102., Definitions, of the Act and any revisions or amendments thereto and the premium charge for such coverage.

   After receiving such notice, the **Insured** elected to purchase this Policy without an exclusion for **certified acts of terrorism** or **other acts of terrorism**. Therefore, it is hereby agreed that in consideration of the premium paid, this Policy does not contain a terrorism exclusion.

2. **Disclosure Of Premium**

   You are hereby notified in accordance with the federal Terrorism Risk Insurance Act of 2002, as amended in 2007 (the "Act"), that a portion of your premium is attributable to coverage for **certified acts of terrorism**. The portion of your premium attributable to such coverage is shown in the in the policy Declarations.

3. **Disclosure Of Federal Participation In Payment Of Terrorism Losses**

   The United States Government, Department of the Treasury, will pay a share of terrorism losses insured under the federal program. The federal share equals 85% of that portion of the amount of such insured losses that exceeds the applicable insurer retention. However, if aggregate insured losses attributable to terrorist acts certified under the Act exceed $100 billion in a Program Year (January 1 through December 31), the Treasury shall not make any payment for any portion of the amount of such losses that exceeds $100 billion.

4. **Cap On Insurer Participation In Payment Of Terrorism Losses**

If aggregate insured losses attributable to **certified acts of terrorism** exceed $100 billion in a Program Year (January 1 through December 31) and we have met our insurer deductible under the Act, we shall not be liable for the payment of any portion of the amount of such losses that exceeds $100 billion, and in such case insured losses up to that amount are subject to pro rata allocation in accordance with procedures established by the Secretary of the Treasury.

5. For the purposes of this endorsement, the following definitions are added:

   a. **Any injury or damage** means any injury or damage covered under the policy and includes but is not limited to **bodily injury, property damage, environmental damage, remediation expense, emergency response expense, personal and advertising injury**, negligent acts, errors or omissions or **professional incident** as may be defined in the policy.

   b. **Other act of terrorism** means:

      (1) A violent act or an act that is dangerous to human life, property or infrastructure that is committed by an individual or individuals and that appears to be part of an effort to coerce a civilian population or to influence the policy or affect the conduct of any government by coercion; and

      (2) The act is not a **certified act of terrorism.**

   c. **Certified act of terrorism** means an act that is certified by the Secretary of the Treasury, in concurrence with the Secretary of State and the Attorney General of the United States, to be an act of terrorism pursuant to the federal Terrorism Risk Insurance Act. The criteria contained in the Terrorism Risk Insurance Act for a certified act of terrorism include the following:

      (1) The act resulted in insured losses in excess of $5 million in the aggregate, attributable to all types of insurance subject to the Terrorism Risk Insurance Act;

      (2) The act resulted in damage:

         (a) Within the United States (including its territories and possessions and Puerto Rico); or

         (b) Outside of the United States in the case of:

            i. An air carrier (as defined in the Section 40102 of title 49, United States Code) or United States flag vessel (or a vessel based principally in the United States, on which United States income tax is paid and whose insurance coverage is subject to regulation in the United States), regardless of where the loss occurs; or

            ii. The premises of any United States mission; and

      (3) The act is a violent act or an act that is dangerous to human life, property or infrastructure and is committed by an individual or individuals as part of an effort to coerce the civilian population of the United States or to influence the policy or affect the conduct of the United States Government by coercion.

ALL OTHER TERMS, CONDITIONS OF THIS POLICY REMAIN UNCHANGED.

Authorized Representative

December 23, 2011
Date

IRONSHORE SPECIALTY INSURANCE COMPANY
75 Federal St
Boston, MA 02110
(877) IRON411

Endorsement #

Policy Number: **Effective Date of Endorsement:**
Insured Name:

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY

NUCLEAR AND RADIOLOGICAL EXCLUSION AMENDATORY ENDORSEMENT

This endorsement modifies insurance provided under the following:

SITE POLLUTION INCIDENT LEGAL LIABILITY SELECT (SPILLS)

It is hereby agreed that the policy to which this Endorsement is attached is amended as follows:

Section **III. EXCLUSIONS**, Paragraph **J. NUCLEAR AND RADIOLOGICAL MATERIAL – INTENTIONAL OR UNLAWFUL RELEASE** is deleted in its entirety.

ALL OTHER TERMS, CONDITIONS OF THIS POLICY REMAIN UNCHANGED.

_____ December 23, 2011
Authorized Representative Date

IRONSHORE
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IRONSHORE SPECIALTY INSURANCE COMPANY

75 Federal St
Boston, MA 02110
(877) IRON411
Endorsement #

Policy Number:
Insured Name:

Effective Date of Endorsement:

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY

KNOWN CONDITIONS EXCLUSION

This endorsement modifies insurance provided under the following:
SITE POLLUTION INCIDENT LEGAL LIABILITY SELECT (SPILLS)
It is hereby agreed that the policy to which this Endorsement is attached is amended as follows:

The following is added to Section **III. EXCLUSIONS**:

KNOWN CONDITIONS

1. Any **Pollution Incident** due to or associated with Coal Tar, Benzene, 1,2-Dichoroethane, Ethylbenzene, Isopropylbenzene, Toluene, Xylenes, Acenapththene, Anthracene, Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)flouranthene, Benzo(k)flouranthene, Chrysene, Flouranthene, Fluorene, Indeno(1,2,3-c,d)pyrene, Napthalene, Phenathrene, Pyrene, 1,1-Dichloroethane, 1,2-Dichloroethane, 1,1-Dichloroethene, Vinyl Chloride, Arsenic, Cadmium, Chromium, Copper, Lead, Magnesium, Nickel, Zinc, Chloroform, Benzo (G,H,I)Perylene, Dibenzo(A,H)Anthracene, Chlorine, Methylene chloride, 1,1,1-Trichloroethene, Chloroethane, Chlorobenzene, Cis-1,2-Dichloroethene, Dibenzofuran or 2-Methylnapthalene, or any additives to or by-products of any of the foregoing; or
2. Any **Pollution Incident** due to or associated with the Old Upper Mountain Road Landfill Site.

However, this exclusion shall not apply to **Claims** for **Bodily Injury** or **Property Damage**.

This Exclusion shall be amended, in whole or part, upon the receipt, satisfactory review and approval by the Company, in its reasonable discretion, of a Certificate of Closure, No Further Action Letter, or equivalent documentation issued by the appropriate governmental agency or a closure report prepared by a qualified environmental consultant. In the event that this Exclusion is amended, the amended Exclusion shall in any event exclude **Remediation Expenses** or **Loss** incurred or **Claims** first made prior to the effective date of such amended Exclusion. Such amended Exclusion may also exclude **Claims** first made after the effective date of such amended Exclusion. The amendment of this Exclusion shall not be effective until endorsed onto the Policy.

ALL OTHER TERMS, CONDITIONS OF THIS POLICY REMAIN UNCHANGED.

_____
Authorized Representative

December 23, 2011
Date

IRONSHORE
your safe harbour

IRONSHORE SPECIALTY INSURANCE COMPANY

75 Federal St
Boston, MA 02110
(877) IRON411

Endorsement #

Policy Number:
Insured Name:

Effective Date of Endorsement:

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY

VOLUNTARY SITE INVESTIGATION EXCLUSION ENDORSEMENT

This endorsement modifies insurance provided under the following:

SITE POLLUTION INCIDENT LEGAL LIABILITY SELECT (SPILLS)

It is hereby agreed that the policy to which this Endorsement is attached is amended as follows:

The following is added to Section **III. EXCLUSIONS – ALL COVERAGES:**

VOLUNTARY SITE INVESTIGATION:

Any **Pollutants**, or any additives to or by-products thereof, discovered during any voluntary investigation, including but not limited to investigations performed: a) by the **Insured** or any other party; or b) as part of a property transfer or sale. Investigations include, but are not limited to, intrusive investigations or the taking or testing of soil, groundwater, surfacewater or sediment samples from any of the **Covered Property(s)**.

ALL OTHER TERMS, CONDITIONS AND EXCLUSIONS REMAIN UNCHANGED.

_____
Authorized Representative

December 23, 2011
Date

IRONSHORE
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IRONSHORE SPECIALTY INSURANCE COMPANY

75 Federal St
Boston, MA 02110
(877) IRON411

Endorsement #

Policy Number:
Insured Name:

Effective Date of Endorsement:

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY

CAPITAL IMPROVEMENTS EXCLUSION ENDORSEMENT

This endorsement modifies insurance provided under the following:

SITE POLLUTION INCIDENT LEGAL LIABILITY SELECT (SPILLS)

It is hereby agreed that the policy to which this Endorsement is attached is amended as follows:

The following is added to Section **III. EXCLUSIONS – ALL COVERAGES**:

CAPITAL IMPROVEMENT:

Any **Capital Improvement** at a **Covered Property(ies)**.

It is hereby agreed that the following is added to Section **IX. DEFINITIONS**:

Capital Improvement means any activity that:

1. disturbs or alters the foundations or other subsurface installations of existing buildings or structures; or
2. requires subsurface excavation or site regrading including, but not limited to, construction, installation or demolition of buildings, structures, systems or utilities on the **Covered Property(ies)**.

ALL OTHER TERMS, CONDITIONS AND EXCLUSIONS REMAIN UNCHANGED.

_____
Authorized Representative

December 23, 2011
Date

IRONSHORE
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IRONSHORE SPECIALTY INSURANCE COMPANY

75 Federal St
Boston, MA 02110
(877) IRON411

Endorsement #

Policy Number:
Insured Name:

Effective Date of Endorsement:

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY

WASTE DISPOSAL ACTIVITIES COVERAGE – PRE-EXISTING CONDITIONS ONLY ENDORSEMENT

This endorsement modifies insurance provided under the following:

SITE POLLUTION INCIDENT LEGAL LIABILITY SELECT (SPILLS)

It is hereby agreed that Section **I. COVERAGE GRANTS**, Paragraph **E. WASTE DISPOSAL ACTIVITIES** is hereby deleted in its entirety and replaced with the following:

E. WASTE DISPOSAL ACTIVITIES

To pay on behalf of the **Insured**, **Loss** that the **Insured** becomes legally obligated to pay as a result of **Claims** for **Bodily Injury**, **Property Damage** or **Remediation Expenses** that arise from a **Pollution Incident** resulting from **Waste Disposal Activities**, provided that such **Pollution Incident** commences prior to the **Inception Date**. The **Waste Disposal Activities** must take place on or after the Waste Disposal Retroactive Date set forth in Item 7. of the Declarations, or the date that the **Insured** first began operations if no Waste Disposal Retroactive Date is indicated in the Declarations. This coverage shall apply only if such **Claims** are first made against the **Insured** and reported to the Company in writing during the **Policy Period**, or during the **Extended Reporting Period** if applicable.

ALL OTHER TERMS, CONDITIONS AND EXCLUSIONS REMAIN UNCHANGED.

_____
Authorized Representative

December 23, 2011
Date

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IRONSHORE SPECIALTY INSURANCE COMPANY

75 Federal St
Boston, MA 02110
(877) IRON411

Endorsement #

Policy Number:
Insured Name:

Effective Date of Endorsement:

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY

DISCLOSED DOCUMENTS ENDORSEMENT

This endorsement modifies insurance provided under the following:

SITE POLLUTION INCIDENT LEGAL LIABILITY SELECT (SPILLS)

It is hereby agreed that the policy to which this Endorsement is attached is amended as follows:

The following is added to Section **III. EXCLUSIONS – ALL COVERAGES**, Paragraph **I. NON-DISCLOSURE**:

> The Company acknowledges receipt of the documents listed below. **Pollution Incidents** identified in these documents are deemed disclosed to the Company. All other exclusions, in the Policy form or added by endorsement, applicable to such **Pollution Incidents** still apply and are not amended, altered or changed by this Endorsement.

DISCLOSED DOCUMENTS LIST

Author	Document	Date
Benchmark Environmental Engineering & Science, PLLC	Lockport facility 2007 Site Monitoring Program and Creek Bank Annual Assessment	12/14/2007
Environmental Resources Management	Phase I ESA and Limited Compliance Review	12/15/2006
Dames & Moore Group	Phase I/II Environmental Audit	9/17/1999
Dames & Moore Group	Phase II Environmental Audit Appendix A – Scope of Work	7/15/1999
Dames & Moore Group	Phase II Environmental Audit Appendix B & C – Curricula Vitae & Site Photographs	8/1999, 9/17/1999
Dames & Moore Group	Phase II Environmental Audit Appendix D & E – Hazardous Material Inventory & Documentation for Aboveground Storage Tanks	2/24/1998 4/9/1998

New York State Department of Environmental Conservation	ESA Phase II Appendix G: Hazardous Waste Documentation	3/1/1999
City of Lockport	ESA Phase II Appendix H: Sanitary Wastewater Documentation	5/31/2000
	ESA Phase II Appendix I: Spills Reported by VanDeMark Group	1/7/1999
Vista Information Solutions, Inc.	ESA Phase II Appendix J: Environmental Databases	7/19/1999
Dames & Moore Group	ESA Phase II Appendix K: Soil Boring Logs & Monitoring Well Construction Diagrams	8/16/1999
Columbia Analytical Services	ESA Phase II Appendix L: Laboratory Analytical Results	8/16/1999
Columbia Analytical Services	ESA Phase II Appendix L2: Laboratory Reference Spike Summary	8/19/1999
Golder Associates Inc.	Coal Tar Delineation Overburden/Bedrock Borehole Location Map	9/9/10
Golder Associates Inc.	SNPE – VanDeMark Chemical DNAPL Assessment & Supplemental Work Plan	12/21/2009
Golder Associates Inc.	SNPE – VanDeMark Chemical 2010 Supplemental DNAPL Investigation Summary Report	8/18/2010
Benchmark Environmental Engineering & Science, PLLC	Lockport Facility Creek Bank Clean-up Work Plan	10/7/2008
Golder Associates Inc.	Remediation Status Information Letter	2/2/2011
Golder Associates Inc.	Opinion of Probable Costs for Worse Case Lower and Upper Creek Bank Remedial Measures	2/2011
Environmental Resources Management	Review of Remedial Activities and Remedial Reserve Estimates	2/15/2011
New York State Department of Environmental Conservation	Order on Consent 08-10	7/13/2011
Golder Associates Inc.	Interim Corrective Measures Work Plan	2/2011
Golder Associates inc.	Focused Corrective Measures Study	4/2010
US EPA	Form R (Section 313 of the Emergency Planning and Community Right-to-know Act of 1986)	2009
VanDeMark Chemical, Inc.	Fees 2008-2010	

VanDeMark Chemical Inc.	Health and Safety Program	9/10/10
New York State Department of Environmental Conservation	State Pollutant Discharge Elimination System NOTICE/RENEWAL APPLICATION/PERMIT	4/15/2009
New York State Department of Environmental Conservation	Air Title V Facility Permit Renewal Transmittal Letter	12/7/2010
Ferguson Electric Service Co., Inc.	Fluid Analysis Report	6/15/2001
New York State Department of Environmental Conservation	Air Title V Facility Permit Renewal Transmittal Letter	12/7/2010
City of Lockport Public Utilities Department	Wastewater Discharge Permit No. CL860111 Amendment	6/24/2009
Benchmark Environmental Engineering & Science, PLLC	Lockport Facility Summary of Site Reconnaissance Activities	2/26/2007
Benchmark Environmental Engineering & Science, PLLC	Lockport Facility Summary of Supplemental Field Investigation and Sampling Activities	11/30/2006
Benchmark Environmental Engineering & Science, PLLC	Lockport Facility Supplemental Field Investigation & Sampling Report No. 2	12/22/2006
Benchmark Environmental Engineering & Science, PLLC	Lockport Facility DNAPL Assessment Report	3/23/2007
Benchmark Environmental Engineering & Science, PLLC	Lockport Facility Proposed Site Monitoring Program and Creek Bank Clean-up Approach	6/4/2007
Benchmark Environmental Engineering & Science, PLLC	Lockport Facility Creek Bank Clean-up Closeout Report	9/12/2007
Benchmark Environmental Engineering & Science, PLLC	Lockport Facility Revised Site Monitoring Program and Creek Bank Clean-up Approach	7/18/2007

Benchmark Environmental Engineering & Science, PLLC	Lockport Facility Supplement to December 2008 Creek Bank Clean-up Report – Summary of Work Performed	5/20/2009
New York State Department of Environmental Conservation	2010 Supplemental DNAPL Investigation Summary Report	9/8/2010
New York State Department of Environmental Conservation	Interim Corrective Measures Work Plan	5/5/2011
New York State Department of Environmental Conservation	Focused Corrective Measure Study	5/6/2011
Golder Associates Inc.	Responses to NYSDEC Comments on the SNPE – VanDeMark Chemical 2010 Supplemental DNAPL Investigation Summary Report	11/4/2010
Golder Associates Inc.	SNPE – VanDeMark Chemical DNAPL Assessment & Supplemental Work Plan	12/21/2009
Golder Associates Inc.	SNPE – VanDeMark Chemical 2010 Supplemental DNAPL Investigation Summary Report	8/18/2010
New York State Department of Environmental Conservation	SNPE – VanDeMark Chemical DNAPL Assessment & Supplemental Work Plan	1/7/2010
Golder Associates Inc.	Focused Corrective Measures Study	4/2010
Golder Associates Inc.	Interim Corrective Measures Work Plan	2/2011
	Tier 2 Online Submission Report (Reporting Period: From 1/1/2010 to 12/31/2010)	
	Tier 2 Online Submission Report (Reporting Period: From 1/1/2009 to 12/31/2009)	
New York State Department of Environmental Conservation	Site Identification Form (component of the Hazardous Waste Report)	
New York State Department of Environmental Conservation	Chemical Bulk Storage Certificate	11/16/2009
	Tier 2 Online Submission Report (Reporting Period: From 1/1/2009 to 12/31/2009)	
New York State	Part 373 Permit Renewal	8/23/2008

Department of Environmental Conservation		
USA Department of Transportation Pipeline and Hazardous Materials Safety Administration	Hazardous Materials Certificate of Registration for Registration Year(s) 2010-2013	8/25/2010
US Department of Transportation Pipeline and Hazardous Materials Safety Administration	Hazardous Materials Renewal Application	4/13/2011
US Department of Transportation Pipeline and Hazardous Materials Safety Administration	Special permit authorizing tank cars to remain standing with unloading connections attached when no product is being transferred	2/25/2009
VanDeMark Chemical, Inc.	Email correspondence between VanDeMark and Empire State Development	8/12/2007
New York State Department of Environmental Conservation	Chemical Bulk Storage Certificate	10/21/2011
VanDeMark Chemical, Inc.	NPDES Discharge Monitoring Report	7/7/2011
VanDeMark Chemical, Inc.	NPDES Discharge Monitoring Report	8/3/2011
VanDeMark Chemical, Inc.	NPDES Discharge Monitoring Report	9/5/2011
Niagara County Department of Health Environmental Health Division	Annual SPDES Inspection	1/11/2010
City of Lockport Public Utilities Department	2010 Annual Facility Inspection	10/20/2010
City of Lockport Public Utilities Department	2011-1 Discharge Monitoring Report(DMR) – Wastewater Discharge Permit (WDP) No. CL860111	7/1/2011
VanDeMark Chemical, Inc.	Chemical Bulk Storage Spill Prevention Report	7/2011
US EPA	Form 2 (section 313 of the Emergency Planning and Community Right-to-know Act of 1986)	2010
US EPA	Assignment of NEW EPA Company Number	1/23/2008
US EPA	Pesticide Report for Pesticide-Producing and Device-Producing Establishments	1/4/2011
City of Lockport Public	Wastewater Discharge Permit No. CL860111 Amendment	6/24/2009

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Utilities Department		
VanDeMark Chemical, Inc.	2010 Production Summary	7/2010
New York State Department of Environmental Conservation	Order on Consent	11/30/2011
Environ	Phase II Investigation and Findings	9/14/2011
WTS	Quote for the Safe and Lawful Transportation and Disposal of Benzyl Carbazate Waste	10/7/2009
Waste Technology Services, Inc.	VanDeMark Waste Disposal Program	
	Production Residue 2011 By Product	2011
	Hazardous Waste Report Worksheet	2011
Environ	Phase I Environmental Site Assessment and Limited Environmental Compliance Review	September 2011

ALL OTHER TERMS, CONDITIONS AND EXCLUSIONS REMAIN UNCHANGED.

_____ December 23, 2011

Authorized Representative Date

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Endorsement #

Policy Number: **Effective Date of Endorsement:**
Insured Name:

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY

NAMED INSURED

This endorsement modifies insurance provided under the following:

SITE POLLUTION INCIDENT LEGAL LIABILITY SELECT (SPILLS)
CONTRACTORS ENVIRONMENTAL LEGAL LIABILITY (CELL)
ENVIRONMENTAL PROTECTIVE INSURANCE COVERAGE PACKAGE (EPIC PAC)
ENVIRONMENTAL EXCESS LIABILITY

It is hereby agreed that the following are added to **Item 1.** of the Declarations as Named Insureds:

SNPE, Inc.