PORSF
11.3.245.1V32

NABISCO WAREHOUSE SITE

SOIL AND GROUND WATER SAMPLING AND ASBESTOS SURVEY

RIEDEL ENVIRONMENTAL SERVICES, INC.

A SUBSIDIARY OF RIEDEL ENVIRONMENTAL TECHNOLOGIES, INC.

"IMAGINEERING A CLEANER WORLD"

USEPA SF
1336409

SCHN00171151

NABISCO WAREHOUSE SITE

SOIL AND GROUND WATER SAMPLING AND ASBESTOS SURVEY

Prepared for:

Ashland Chemical, Inc.
5200 Blazer Parkway
Dublin, Ohio 43017

Prepared by:

Riedel Environmental Services, Inc.
Foot of North Portsmouth Avenue
P.O. Box 03096
Portland, Oregon 97203-0096
(503)286-4656

October 11, 1990

Nabisco.JR

TABLE OF CONTENTS

SECTION		TITLE	PAGE NUMBER
1		INTRODUCTION	1
	1.1	Location and Regional Hydrogeology	1
	1.2	Review of Oregon Department of Environmental Quality (DEQ) Files	1
	1.3	Previous Underground Storage Tank Activities	2
2		FIELD ACTIVITIES	3
	2.1	Location of Soil Borings and Monitoring Wells	3
	2.2	Soil Sampling	4
	2.3	Monitoring Well Installation	4
	2.4	Ground Water Sampling	5
	2.5	Asbestos Survey	6
		Warehouse	6
		Warehouse Refrigeration Area	6
		Nabisco Offices	6
		Roof Areas	7
		Roof HVAC Penthouse	7
		Sample Number and Areas Sampled	7
3		SAMPLE RESULTS	8
	3.1	Results of UST Sampling	8
	3.2	Results of Solvent Analysis	8
4		DISCUSSION AND RESULTS	9
	4.1	UST Site	9
	4.2	Solvents	9
	4.3	Asbestos	10
5		RECOMMENDATIONS	11
6		LIMITATIONS	12

LIST OF FIGURES

FIGURE	TITLE
1	SITE LOCATION MAP
2	BORING/MONITORING WELL LOCATION MAP

LIST OF APPENDICES

APPENDIX	TITLE
A	DEQ FILES
B	BORING AND WELL LOGS
C	LABORATORY ANALYTICAL RESULTS
D	DEQ MATRIX CLEANUP GUIDELINES

SECTION I

SECTION 1 INTRODUCTION

On August 30, 31, and September 6, 1990 Riedel Environmental Services, Inc. (RES) conducted a limited soil and ground water investigation at the Nabisco warehouse property in Portland Oregon. This was in an effort to delineate the extent of soil and ground water contamination associated with the earlier removal of four underground storage tanks (USTs) located on the property. In addition, an asbestos survey of the warehouse and office buildings was conducted to determine if asbestos containing materials (ACM) were present. The scope of work was later increased to include sampling for solvents.

1.1 Location and Regional Hydrogeology

The site is located at 3322 N.W. 35th in Portland, Oregon approximately one-half mile south of the Willamette River, Section 54, Township 1N, Range 1E (see Figure 1).

This region was originally a low lying area adjacent to the Willamette River, until it was filled with dredged river sands in the early 1900's. Since the mid 1900's, the area surrounding the site has been used for industrial purposes and remains so today.

Depth to ground water in the silty dredge sands is generally less than 20 feet and tends to flow from the northwest to the southeast.

1.2 Review of Oregon Department of Environmental Quality (DEQ) Files

Prior to performing field activities, RES reviewed records at the Oregon Department of Environmental (DEQ) Regional Office in Portland, Oregon. In addition to the Nabisco property, information was available on the Owens/Corning Fiberglass property located approximately 100 yards northwest of the Nabisco site. Copies of excerpts from these two files are included in Appendix A. In addition, RES spoke with the case officer for the Terminal Transfer site located along the eastern boundary of the Nabisco property. The following is a brief summary of our findings:

- Nabisco Site: UST site with diesel contamination

  DEQ has requested confirmation sampling to document the cleanup effort associated with the tank removal.

SCHN00171157

- Owens/Corning: Trumbull Asphalt Fume Line, free-phase hydrocarbons currently present on the water table, possibility of more than one contaminant plume.

  DEQ has requested further delineation of the contaminant plume(s), as well as notification of off-site property owners.

- Terminal Transfer: UST site with free-phase hydrocarbons present on the water table, no indication of off-site migration at this time.

  Remediation is underway, however, DEQ has requested further delineation of the contaminant plume.

1.3 Previous Underground Storage Tank Activities

According to correspondence contained in the DEQ files, four USTs were removed from the Nabisco property by the Tom New Construction Company during November, 1989. The four tanks - one 500-gallon, one 5,000-gallon, one 10,000-gallon and one 15,000-gallon - were located in three separate areas.

Analytical results for Total Petroleum Hydrocarbons (TPH), EPA Method 418.1, indicated low levels of contamination under the 500-gallon and 10,000-gallon tanks (306 parts per million (ppm) and 4.5 ppm, respectively). Much higher levels of 29,500 and 2,860 ppm were found beneath both the 5,000-gallon and 15,000-gallon tanks. Both of these tanks were located south of the truck scale and were excavated from a single pit (see Figure 2).

Approximately 1,000 cubic yards of what was characterized as diesel contaminated soil was excavated from this pit and disposed at the Hillsboro Landfill. No records of samples taken from the pit after the removal of this soil or Quality Assurance/Quality Control (QA/QC) documentation from earlier sampling were found.

SCHN00171158

SECTION 2 FIELD ACTIVITIES

The drilling was conducted on August 30 and 31, 1990. A truck-mounted MR 24 Prospector, hollow-stem auger drilling rig was used for the work. Soil samples were collected for logging and analytical purposes utilizing a split-spoon sampler, with brass liners, driven by a 140 pound hammer using standard techniques. The borings were logged by a RES Geologist according to the Unified Soils Classification System. Copies of the logs are includes in Appendix B.

Decontamination procedures were followed during the drilling and sampling program to assure no significant cross-contamination between the borings. The augers, drill bit, and split-spoon sampler were steam cleaned prior to each boring.

After sampling, those borings not completed as monitoring wells were abandoned utilizing a bentonite grout. Abandoned borings were capped with cold patch asphalt.

2.1 Location of Soil Borings and Monitoring Wells

The boring locations are shown in Figure 2. Monitoring wells were constructed in Borings B-1 and B-2. The locations were based on historical on-site activities as well as the assumed ground water gradient.

Borings B-3, B-4, B-5, B-6 and B-7 were located along the side walls of the original tank excavation in order to identify if any residual contamination existed from the USTs excavated immediately south of the weigh scale. Based on the analytical results of samples collected by Tom New Construction Company, no sampling associated with the 500-gallon or 10,000-gallon tank excavations was conducted. Boring B-5 was drilled approximately three feet east of boring B-4 after hydrocarbon odor was detected in the cuttings from boring B-4, but not in the samples taken at five-foot intervals. This allowed for sampling the most likely zone of contamination to characterize the western wall of the original tank excavation.

Boring B-1, which was completed as monitoring well MW-1, was located in the assumed down-gradient direction from the tank excavation. This assumption was based on the water table contour map generated from the Trumbull Asphalt site (see Appendix A). Boring B-2 was completed as MW-2 located in the assumed upgradient direction from the tank excavation. In addition to serving as a control point for the excavation, MW-2 was located along the northern property boundary in an effort to document ground water quality entering the site.

SCHN00171159

2.2 Soil Sampling

Samples were collected at approximately five-foot intervals, and additional samples were collected where hydrocarbon boundaries were anticipated. Samples were screened in the field for contamination by volatile organic compounds using a HNU model PI 101 photo-ionizing detector (PID) calibrated to Benzene. This was accomplished by placing soils collected in the brass liners into a new zip-lock baggy. After waiting at least 10 minutes for the sample to volatilize, the PID probe tip was inserted and the maximum reading was recorded.

The ends of the brass liners containing samples to be sent to the laboratory for analysis, were covered with teflon tape, caped, labeled, and placed on ice. At the request of Ashland Chemical, Inc., additional samples from borings B-3, B-5, B-6 and B-7 were collected and given to a representative from the Tom New Construction Company.

Sampling equipment was decontaminated with a steam cleaner prior to the collection of each sample. Samples were delivered to Columbia Analytical Laboratories on September 1, 1990. A copy of the Chain-of-Custody record is included in Appendix C. Soil samples were analyzed for the following:

- Hydrocarbon Scan (EPA Methods 3550/Modified 8015)
- Benzene, Toluene, Ethyl Benzene, Total Xylenes (BTEX) (EPA Methods 5030/8020)

In addition, a soil sample obtained at a depth of 15-16.5 feet in B-2 suspected of solvent contamination was submitted for Volatile Organics Analysis (EPA Method 8010).

2.3 Monitoring Well Installation

The monitoring wells were constructed of two-inch diameter Schedule 40, flush-threaded PVC screen and risers. The screen is a 0.01 slot size and the filter pack is 8-12 Monterey silica sand. Each well was completed to a depth of 20 feet. Each well has 15 feet of screen, which extends through the air/water table interface. As-built diagrams for each well are included with the well logs in Appendix B.

The wells were constructed with hollow-stem auger drilling methods. When the total depth of a boring was reached, the well screen and casing were lowered through the augers to the desired depth. The filter pack sand was added as the augers were removed, with a minimum of one foot of sand maintained in the bottom of the augers to assure uniform placement of the sand. The well screen

SCHN00171160

was covered with one foot of sand. A two-foot thick seal of bentonite pellets was placed above the sand pack. A flush-mount, traffic-rated cover was then set in concrete which extends to the bentonite seal to complete the well installation. Water tight locking caps were installed to prevent surface water from entering the wells.

The wells were developed on August 31, 1990 using a rig-mounted surge block. After surging was completed, the wells were bailed to remove silt drawn in through the well screen during surging. Both wells recovered to their original water level within a few minutes of bailing.

The monitoring wells were gauged using an ORS interface probe. The probe is capable of sensing both water and free-phase petroleum hydrocarbons and is precise to 0.01 foot. Well elevations were surveyed to within 0.01 foot based on a reference point created on the railway loading dock.

2.4 Ground Water Sampling

The monitoring wells were sampled on September 6, 1990. Each well was bailed three well volumes to ensure that a characteristic sample was obtained. The pH, conductivity, and temperature of the purged water was measured using a Presto-Tek model-38 probe and purging was continued until these parameters stabilized. The samples were obtained using a bottom emptying teflon bailer. A flow control valve was fitted to the bailer to transfer water to the sample bottles. Sample bottles were prepared and provided by the contract laboratory. After obtaining a sample, the bottle was labeled and placed on ice in a cooler for holding prior to submittal to the laboratory.

Sampling equipment was decontaminated before purging each well. The equipment was washed in a solution of Alconox detergent and doubled rinsed in distilled water. A new bailer line was used for each well.

The water samples were shipped to Columbia Analytical Services, Inc. on September 6, 1990 via over night parcel delivery. Copies of the Chain-of-Custody record are provided in Appendix C. The samples were analyzed for the following parameters:

- Purgeable Halocarbons and Aromatics (EPA methods 601/602, GC)
- Hydrocarbon Scan (EPA Methods 3510/Modified 8015)

SCHN00171161

2.5 Asbestos Survey

A visual walk around inspection was made of the Nabisco Warehouse facility on 8/31/90 to ascertain the presence of asbestos containing materials (ACM) in and around the facility. The inspection was limited to areas that could be viewed without demolition of walls, ceilings, or other structures where physical construction prevented inspection.

Warehouse

A complete walk around was made of the entire warehouse area. No suspected ACM was seen on walls, on pipe work, or other surfaces. Exterior walls and the ceiling are solid and cannot conceal ACM. Pipe work is limited to the fire suppression system which is not insulated. Heating is provided by natural gas fired space heaters.

Three small enclosures (used for storage and office space) have been built inside the warehouse at some time after initial construction. Inspection of these offices did not reveal any likely ACM on wall surfaces or on the roof surfaces above these structures. These units are standard stud and sheetrock/plywood construction. Insulation behind the wall covering could not be viewed. However, it is most probable that fiberglass would be the insulation found. These spaces have a acoustic tile covering that appears to be a pressed paper product. Samples of ceiling tile were collected.

Warehouse Refrigeration Area

An inspection of this area revealed no likely ACM on any exposed piping or wall surfaces. Interior walls are covered by paneling which appears to be a pressed wood fiber product backed with fiber glass insulation. This was confirmed in two different areas by viewing existing holes in the wall. Samples of wall board and insulation were collected.

Nabisco Offices

No obvious ACM was seen in any of the offices viewed. Ceiling tile appeared to be the same type seen in the warehouse. Interior walls appear to be sheetrock over what is assumed to be wood studs. Note that no inspection could be made of the space above the interior ceiling as there are no crawl space entry points. There is approximately 2-3 feet of space above the ceiling. This space contains HVAC duct work, electrical, and fire suppression piping. Floors were covered with an asphalt based tile which potentially contains ACM. No fraying of floor tile was seen and no samples were collected. A sample of ceiling tile was collected.

SCHN00171162

Ceilings and wall coverings in other offices leased to other companies are the same as those in the Nabisco offices. Above ceiling or behind wall inspection could not be performed because of the lack of an entry point. The same type of ceiling tile was seen throughout with one exception (Joe Gonzales office) in the Cordano Chemical space. This has an acoustical tile which is different than other areas. A sample of this tile was collected and analyzed.

Roof Areas

The entire roof was observed with no obvious friable ACM being noted. The roof is covered with standard asphalt roofing material. Piping for air conditioning units on the roof was covered by rubber foam insulation.

Roof HVAC Penthouse

An inspection of this area revealed no likely ACM with the exception of a cloth coupler in the HVAC system that could possibly contain ACM. HVAC duct work is covered with fiberglass. Interior walls are covered with sheetrock. A sample of decaying wallboard was collected along with some of the insulation used to cover duct work.

SAMPLE #	AREA SAMPLED
Bulk-4	Air handler joint tape
Bulk-5	Wall board from HVAC penthouse
Bulk-6	Ceiling tile Nabisco office near men bathroom
Bulk-7	Ceiling tile warehouse office (west side)
Bulk-8	Ceiling tile Cordano Chemical office

SCHN00171163

SECTION 3 SAMPLE RESULTS

3.1 Results of UST Sampling

SOIL

Diesel was detected in samples from borings B-3, B-5 and B-6. Borings B-3 and B-6 contained relatively low levels of 180 ppm and 10 ppm, respectively. **Sample B-5 taken from 7-8.5 feet, however, contained 19,400 ppm,** which greatly exceeds the DEQ's Matrix Clean-up Guidelines of up to 1,000 ppm, depending on the Matrix Score of the site (see page 57 - Appendix D).

GROUND WATER

No petroleum hydrocarbons were detected in the ground water analyzed from MW-1 or MW-2. Ground water elevations measured in the two wells indicated that MW-1 was generally downgradient from MW-2, however, determination of the exact flow direction would require more data points.

3.2 Results of Solvent Analysis

GROUND WATER

The results of the ground water sampling summarized in Table 1 are expressed in micro grams per liter (ug/l). The certificates of analyses for the samples are included in Appendix B.

TABLE 1

Analysis	MW-1	MW-2	Detection Limit	Standard Drinking Water Limit
Cis 1,2-Dichloroethene	N/D	**1,340**	0.5	NE
Tetrachloroethene	N/D	**35,500**	0.5	NE
Trichloroethene	N/D	**5,040**	0.5	5.0

N/D - Below Detection Limits
NE - No Standard Set

SOIL

Analytical results from the soil sample collected from 15-16.5 feet in Boring B-2 indicate the presence of low levels of the same three solvents detected in the ground water results presented in Table 1.

SCHN00171164

SECTION 4 DISCUSSION OF RESULTS

4.1 UST Site

The UST excavation still contains diesel contaminated soils above current Oregon DEQ cleanup guidelines as established in OAR 340-122-205 to 340-122-260 included in Appendix D.

Depending on the target cleanup level established for this site, allowable Total Petroleum Hydrocarbon (TPH) levels remaining in the soil could be as high as 1,000 ppm. The TPH levels of 19,400 ppm detected in boring B-5 certainly exceeds this level. Although contamination was present in boring B-3 and B-6, levels detected are within allowable limits.

While the extent of the contamination detected in boring B-5 is not known at this time, some assumptions can be made. Due to diesel's low density compared to that of water, free product which leaked from the tank would float atop the ground water. As a result, the depth of contaminated soil should not exceed the seasonal low ground water table elevation. Although this elevation is not known, the soil sample collected from 15 to 16.5 feet in boring B-3 did not contain detectable quantities of TPH even though 180 ppm was present from 10 to 11.5 feet.

NO GW problem

The lack of contamination in soil from borings B-1 and B-7 as well ground water in MW-1 would tend to indicate that contamination does not extend to the east or southeast.

If there is any significant quantities of contaminated soil remaining from the UST site, they would most likely be located under the weight scale and garage building. Records from the initial tank excavation indicate that removal of contaminated soil under the weight scale was halted due to concerns for undermining the structure.

check

4.2 Solvents

Both trichloroethene and tetrachloroethene are commonly used degreasers. They are frequently introduced to the ground water via leaking waste oil tanks utilized in garages and metal shops. Cis 1,2-dichlorothene is formed as a breakdown product from the reductive dehalogenation of trichloroethene and tetrachlorothene and is typically found in increasing proportions downgradient from a source.

The high level of solvents detected in MW-1 may have migrated onto the Nabisco site from the property immediately to the north. In addition to this being the assumed upgradient direction, at least one old vent pipe indicative of an UST was noted as well a small stockpile of 55-gallon drums.

SCHN00171165

4.3 Asbestos

All samples sent to the laboratory for analysis were found to contain less than 1.0% by volume asbestos material, with the exception of the air handler unit which was almost pure asbestos material. Certificate of Analysis is included in Appendix C.

The health impact of this material on personnel working around the HVAC unit is not significant as long as the material is not being roughly handled. The impact to personnel inside the facility is unknown as RES was unable to determine if the material is exposed to the circulating air inside the HVAC system.

SCHN00171166

SECTION 5 RECOMMENDATIONS

The properties adjacent to the Nabisco Warehouse have been industrial sites for many years. As the cursory review conducted during this study pointed out, at least two properties within close proximity of the Nabisco site have documented ground water contamination. It is very likely that the site immediately north of the property is the source of the solvents.

Ground water elevations taken during this investigation as well as those observed from the other properties indicate very little gradient. This makes monitoring more difficult and results in the need for more monitoring wells to ensure the quality of ground water entering the Nabisco site is well documented.

RES feels that additional characterization of this site would be advisable in order to establish what conditions currently exist on the property. If Ashland Chemical, Inc. should decide to occupy this site, RES would advise that monitoring wells be installed in order to document the possible future migration of contaminants from other properties.

The future Scope of Work for the site could include the following:

- Assess the extent of the solvent plume
- Determine if diesel contaminated soils exist under the weight scale and garage building
- Define the remaining perimeter of site with additional monitoring wells

SCHN00171167

SECTION 6 LIMITATIONS

The opinion expressed herein is based on the information collected during our survey, our present understanding of the site conditions and our professional judgment in light of such information at the time of preparation of this opinion. We are not responsible for the accuracy of information provided by individuals or entities which is used by us or others in connection with the preparation of this opinion. This report is an opinion work, and no warranty is either express, implied or made as to the conclusions, advice and recommendations offered in this report. The opinion expressed herein is for the sole benefit of and may be relied upon only by Ashland Chemical Corporation. Neither this opinion nor any extract herefrom or reference hereto shall be furnished to, quoted to or relied upon by any other person, firm or corporation without our express written permission.

SCHN00171168

FIGURE 1

SITE LOCATION MAP

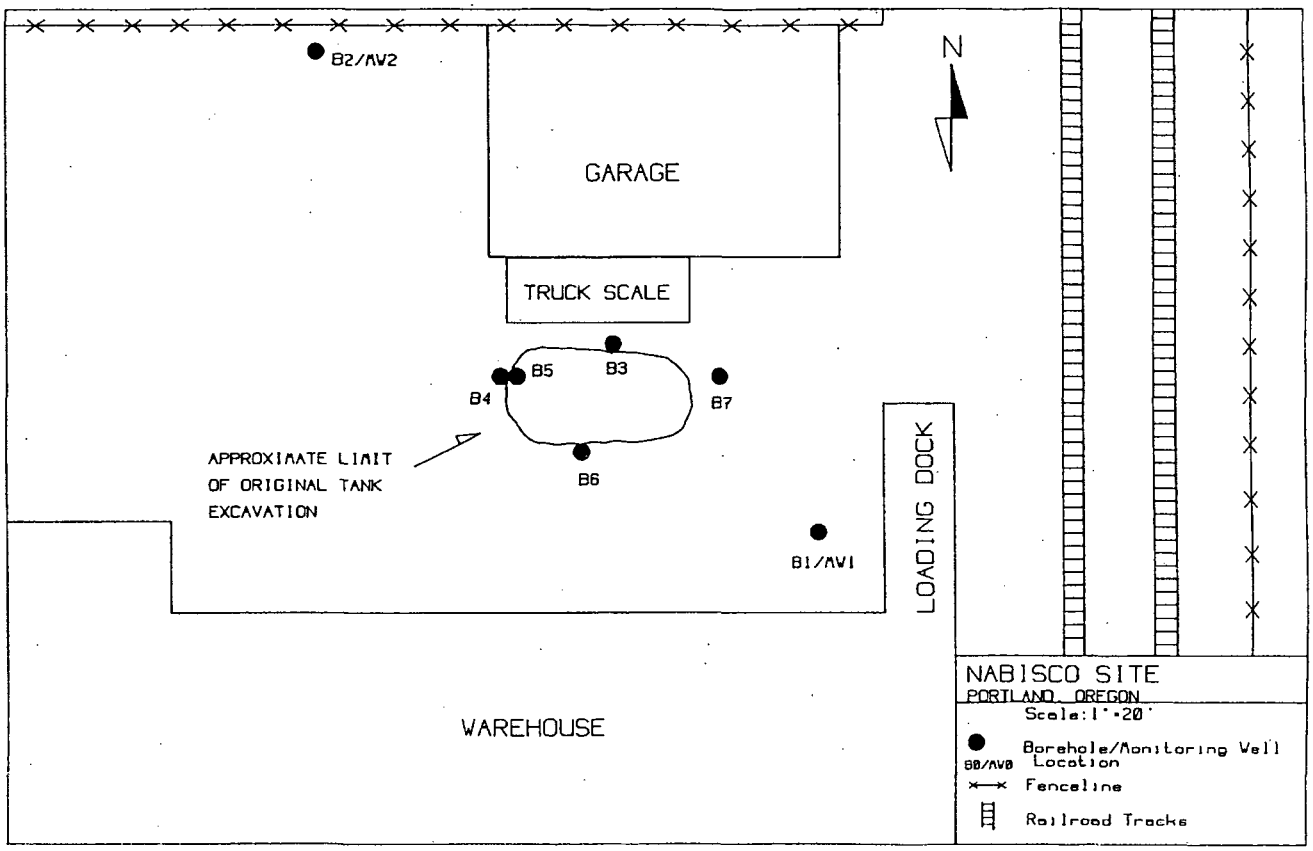
SCHN00171169

SCHN00171170

FIGURE 2

BORING/MONITORING WELL SITE MAP

Nabisco.JR



SCHN00171172

APPENDIX A

DEQ FILES

NEIL GOLDSCHMIDT
GOVERNOR

Department of Environmental Quality

811 SW SIXTH AVENUE, PORTLAND, OREGON 97204-1390 PHONE (503) 229-5696

August 13, 1990

Mr. Ernest Agostino
Hill Investment
10345 SW Greenleaf Terrace
Tigard, Oregon 97224

Re: UST-Multnomah County
Hill Investment-Nabisco Warehouse

Dear Mr. Agostino:

We have completed our review of Tom New Construction's report, dated August 3, 1990, concerning the underground storage tank decommissioning and contaminated soil cleanup conducted at your facility located at 3322 NW 35th Avenue in Portland, Oregon.

The following requirements of the Oregon Administrative Rules (OAR) 340-122-201 through 340-122-360, were not met:

1: No closure samples were taken after soil removal was conducted.

2: No groundwater samples were collected.

3: No matrix evaluation was performed for the site to establish an appropriate cleanup level.

4: Chain-of-Custody forms were not included in the report.

Because this information was missing from the report, additional soil and groundwater samples must be taken from the site and analyzed according to the parameters outlined in the OARs. The soil and groundwater samples should be collected as soon as possible and the results of the laboratory analyses submitted to the Department in report form. If you are unable to do the additional investigation within the next 30 days, please submit a letter explaining the delay and detailing when the work will be undertaken and completed.

If you have any questions regarding this matter, please contact me at (503) 229-6923.

Sincerely,

Andree Pollock
UST Cleanup Specialist
Northwest Region

cc: Environmental Cleanup Division, UST Cleanup Section
Tom New Construction
P.O. Box 16061
Portland, Oregon
Attn: Dean Haworth

Department of Environmental Quality

811 SW SIXTH AVENUE, PORTLAND, OREGON 97204-1390 PHONE (503) 229-5696

July 24, 1990

Mr. David Crowle
Owens/Corning Fiberglass
Environmental Affairs Department
Fiberglass Tower
Toledo, Ohio 43659

Re: UST-Multnomah County
Trumbull Asphalt Fume Line

Dear Mr. Crowle:

We have completed our review of the information that has been submitted to the Department to date concerning the contamination identified at the Trumbull Asphalt Plant in Portland, Oregon.

This information indicates that significant soil and groundwater contamination remain at the site. Up to 162,013 parts per million total petroleum hydrocarbons were identified in the soil at the site and free product was identified on the groundwater. Additional investigation and cleanup are necessary in order to mitigate the environmental hazards at the site.

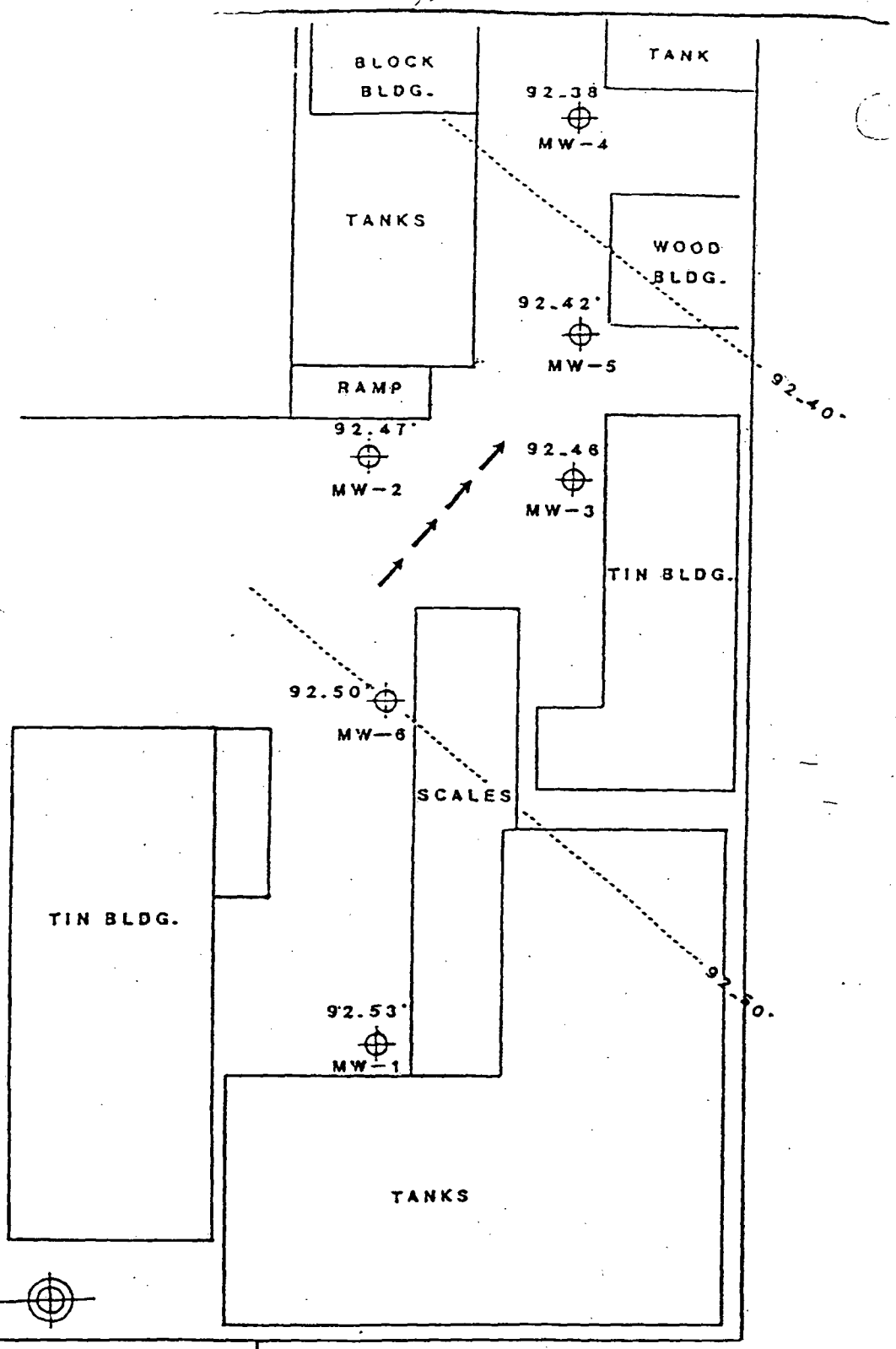
Specifically, the following concerns must be met:

1: The investigation conducted by Crosby and Overton identified the highest concentrations of contamination in the south west portion of the property. Other than the soil gas study, no additional investigation has been conducted in this portion of the property. Although some questions have been raised in the past about possible offsite contamination impacting your facility, your facility is the most likely source of this contamination.

2: We concur that the soil gas study indicates that there may be two separate plumes on the property. However, no investigation has been conducted in the northern portion of the soil gas plume to identify the concentrations of contamination or potential source of this problem.

We are concerned that the release was identified two years ago and that insufficient investigation and no significant cleanup has been conducted to date. Additional investigation must be conducted as soon as possible to define the limits of the contamination both on and offsite. This will require notifying off site property owners of the problem. A copy of the sampling plan must be submitted to the Department for review prior to implementation.

Figure 7.



LEGEND

⊕ = MONITORING WELL LOCATION

↗ = DIRECTION OF GROUNDWATER MOVEMENT

MW = MONITORING WELL NUMBER

.50' = GROUNDWATER ELEVATION (RELATIVE)

SRH ENVIRONMENTAL MANAGEMENT

SCALE 1"=30'	CHECKED BY	DRAWN BY
DATE		
SIZE	TRUMBULL ASPHALT GROUNDWATER ELEVATIONS AND MOVEMENT	DRAWING NO.

SCHN00171177

APPENDIX B

BORING AND MONITORING WELL LOGS

SCHN00171178

FIELD LOG OF WELL B1/MW1

PROJECT NO.: 2730-1717
PROJECT NAME: Ashland Chemical
GEOLOGIST: James R. Romer
DRILLING CO.: Criamon Drilling
DRILLING METHOD: Hollow Stem Auger 8 1/4" ID

DATE: August 30, 1990
LOCATION: Nobisco Site
ELEVATION: 95.87' (based on 100' BM)
WATER LEVEL: 86.87' (9.00')

DEPTH (ft)	SAMPLE #	BLOWS/6"	MOISTURE	OVA PPM	GRAPHIC	USCS	DESCRIPTION	REMARKS
						SM	Brown silty sand (River dredge fill)	
5		4 4 6		ND			Same as above	
			▽					
10	B1 Drill	4 4 6		ND			Grey Silty Sand: Saturated	
15		7 10 12		ND				
20								

RIEDEL ENVIRONMENTAL SERVICES

SCHN00171179

FIELD LOG OF WELL B2/MW2

PROJECT NO.: 2730-1717
PROJECT NAME: Ashland Chemical
GEOLOGIST: James R. Romer
DRILLING CO.: Criswell Drilling
DRILLING METHOD: Hollow Stem Auger 9 1/2" ID

DATE: August 30 1990
LOCATION: Nabisco Site
ELEVATION: 97.05'[Based on 100' BA]
WATER LEVEL: 86.9' [10.15']

DEPTH (ft)	SAMPLE #	BLOWS/6"	MOISTURE	OVA PPM	GRAPHIC	USCS	DESCRIPTION	REMARKS
						SM	Brown to Grey Silty Sand (Fill)	
5	B2 s.s.	7 9 12		8 peak				
							Grey Silty Sand; Saturated	
10		4 7 9		8				
							Same as above	
15		7 10 4		16 sust				
20		8 15 7						No Recovery of sample

RIEDEL ENVIRONMENTAL SERVICES

FIELD LOG OF WELL B3

PROJECT NO.: 2730-1717
PROJECT NAME: Ashland Chemical
GEOLOGIST: James R. Romer
DRILLING CO.: Crismon Drilling
DRILLING METHOD: Hollow Stem Auger 8 1/4" ID

DATE: August 30, 1990
LOCATION: Nabisco Site, Portland, OR.
ELEVATION: 96.11' (based on 100' BM)
WATER LEVEL: approx. 86.61' (9.5')

DEPTH (ft)	SAMPLE #	BLOWS/6"	MOISTURE	OVA PPM	GRAPHIC	USCS	DESCRIPTION	REMARKS
							Crushed Angular Rock	
						SM	Brown Silty Sand (Fill)	
5		4 6 6		NO			Grey Silty Sand	
10	B3 8-11.5	3 4 5		NO			Grey Silty Sand	Odor and Sheen
		12 24 27					Same as above	Odor and Sheen
15	B3 15-16.5	5 17 22					Same as above	Slight Odor
							Total Depth 16.5'	
20							Abandoned with 2' bentonite pellets	
							followed by 6 bentonite slurry	

RIEDEL ENVIRONMENTAL SERVICES

SCHN00171181

FIELD LOG OF WELL B4

PROJECT NO.: 2730-1717
PROJECT NAME: Ashland Chemical
GEOLOGIST: James R. Romer
DRILLING CO.: Crisman Drilling
DRILLING METHOD: Hollow Stem Auger 8 1/4" ID

DATE: August 31, 1990
LOCATION: Nabisco Site, Portland, OR
ELEVATION: 96.05' [based on 100' BA]
WATER LEVEL: approx. 86.55' [9.5']

DEPTH (ft)	SAMPLE #	BLOWS/6"	MOISTURE	OVA PPM	GRAPHIC	USCS	DESCRIPTION	REMARKS
5	X	4 6 17				sm	Brown Silty Sand (Fill)	
							Transition between brown to grey sand	Slight Odor
10	X	17 24 24		ND			Grey Silty Sand: Saturated	
15								

RIEDEL ENVIRONMENTAL SERVICES

FIELD LOG OF WELL B5

PROJECT NO.: 2730-1717
PROJECT NAME: Ashland Chemical
GEOLOGIST: James R. Romer
DRILLING CO.: Criamon Drilling
DRILLING METHOD: Hollow Stem Auger 8 1/4" ID

DATE: August 31, 1990
LOCATION: Nabisco Site, Portland, OR
ELEVATION: 96.06' (based on 100'BA)
WATER LEVEL: approx. 86.06' (9.0')

DEPTH (ft)	SAMPLE #	BLOWS/6"	MOISTURE	OVA PPM	GRAPHIC	USCS	DESCRIPTION	REMARKS
						sm	Brown Silty Sand (Fill)	
5								
	B5 7-8.5	7 4 5 13 14 19		90 40			Gray sand interface	Odor
							Saturated capillary fringe	
10							Gray sand; saturated	Odor and sheen
15								

RIEDEL ENVIRONMENTAL SERVICES

SCHN00171183

FIELD LOG OF WELL B6

PROJECT NO.: 2730-1717
PROJECT NAME: Ashland Chemical
GEOLOGIST: James R. Romer
DRILLING CO.: Crisman Drilling
DRILLING METHOD: Hollow Stem Auger 8 1/4" ID

DATE: August 31, 1990
LOCATION: Nabisco Site, Portland, OR.
ELEVATION: 95.80' [based on 100' BA]
WATER LEVEL: approx. 86.8' [9.0']

DEPTH (ft)	SAMPLE #	BLOWS/6"	MOISTURE	OVA PPM	GRAPHIC	USCS	DESCRIPTION	REMARKS
						sm	Brown Silty Sand (Fill)	
5								
	B6	17 8 4 5 5 6					Transition to grey sand/Capillary Fringe	
10							Grey Sand: Saturated	Odor and sheen
							Total Depth 10'	
15								

RIEDEL ENVIRONMENTAL SERVICES

SCHN00171184

FIELD LOG OF WELL B7

PROJECT NO.: 2730-1717
PROJECT NAME: Ashland Chemical
GEOLOGIST: James R. Romer
DRILLING CO.: Criteman Drilling
DRILLING METHOD: Hollow Stem Auger 8 1/4" ID

DATE: August 31, 1990
LOCATION: Nabisco Site, Portland, OR.
ELEVATION: 95.95' [based on 100'BA]
WATER LEVEL: approx. 86.95' [9.0']

DEPTH (ft)	SAMPLE #	BLOWS/6"	MOISTURE	OVA PPM	GRAPHIC	USCS	DESCRIPTION	REMARKS
5								
		8 8 12 3 3 5		4		sm	Tan Silty Sand (Fill); Moist	Slight Odor
	B7						Grey transition	
				2				
10								
15								

RIEDEL ENVIRONMENTAL SERVICES

SCHN00171185

APPENDIX C

LABORATORY ANALYTICAL RESULTS

Columbia Analytical Services INC.

September 21, 1990

Jim Romer
Riedel Environmental
P.O. Box 03096
Portland, OR 97203-0096

RE: Ashland Chemical-Nabisco/Project #2730-1717

Dear Jim:

Enclosed are the results of the water samples submitted to our lab on September 7, 1990. Preliminary results were faxed on September 18, 1990. For your reference, our service request number for this work is K903253.

Please call if you have any questions.

Respectfully submitted:

Colin Elliott

Colin B. Elliott
COLUMBIA ANALYTICAL SERVICES, INC.

mbm/CBE

1317 South 13th Avenue • P.O. Box 479 • Kelso, Washington 98626 • Telephone 206/577-7222 • Fax 206/636-1068

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

CLIENT: Riedel Environmental
SUBMITTED BY: Jim Romer
PROJECT: Ashland Chemical-Nabisco
SAMPLE DESCRIPTION: Water

DATE RECEIVED: 09/07/90
DATE EXTRACTED: 09/13/90
DATE ANALYZED: 09/17/90
WORK ORDER #: K903253

Hydrocarbon Scan
EPA Methods 3510/Modified 8015
µg/L (ppb)

Sample Name	Lab Code	MRL	Diesel
MW1	3253-1	50	ND
MW2	3253-2	50	ND
Method Blank	3253-MB	50	ND

MRL means Method Reporting Limit
ND means None Detected at or above the MRL

Approved by Colin Elliott Date 9/21/90

217 South 43rd Avenue • P.O. Box 479 • Kelso, Washington 98626 • Telephone 206/577-7222 • Fax 206/636-1068

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

CLIENT: Riedel Environmental
SUBMITTED BY: Jim Romer
PROJECT: Ashland Chemical-Nabisco
SAMPLE DESCRIPTION: Water

DATE RECEIVED: 09/07/90
DATE ANALYZED: 09/12,13/90
WORK ORDER #: K903253

Volatile Organics Analysis
EPA Methods 8010/8020
µg/L (ppb)

Sample Name:		MW1	MW2	Method Blank
Lab Code:	MRL	3253-1	3253-2	3253-MB
Dichlorodifluoromethane	1	ND	ND	ND
Chloromethane	1	ND	ND	ND
Vinyl Chloride	0.5	ND	ND	ND
Bromomethane	0.5	ND	ND	ND
Chloroethane	0.5	ND	ND	ND
Trichlorofluoromethane	0.5	ND	ND	ND
1,1-Dichloroethene	0.5	ND	ND	ND
Freon 113	0.5	ND	ND	ND
Methylene Chloride	2	ND	ND	ND
Trans 1,2-Dichloroethene	0.5	ND	ND	ND
Cis 1,2-Dichloroethene	0.5	ND	1,340	ND
1,1-Dichloroethane	0.5	ND	ND	ND
Chloroform	0.5	ND	ND	ND
1,1,1-Trichloroethane	0.5	ND	ND	ND
Carbon Tetrachloride	0.5	ND	ND	ND
Benzene	0.5	ND	ND	ND
1,2-Dichloroethane	0.5	ND	ND	ND
Trichloroethene	0.5	ND	5,040	ND
1,2-Dichloropropane	0.5	ND	ND	ND
Bromodichloromethane	0.5	ND	ND	ND
2-Chloroethylvinyl ether	5	ND	ND	ND
Trans 1,3-Dichloropropene	0.5	ND	ND	ND
Toluene	0.5	ND	ND	ND
Cis 1,3-Dichloropropene	0.5	ND	ND	ND
1,1,2-Trichloroethane	0.5	ND	ND	ND
Tetrachloroethene	0.5	ND	35,500	ND
Dibromochloromethane	0.5	ND	ND	ND
Chlorobenzene	0.5	ND	ND	ND
Ethylbenzene	0.5	ND	ND	ND
Bromoform	0.5	ND	ND	ND
1,1,2,2-Tetrachloroethane	0.5	ND	ND	ND
1,3 Dichlorobenzene	1	ND	ND	ND
1,4 Dichlorobenzene	1	ND	ND	ND
1,2 Dichlorobenzene	1	ND	ND	ND
Total Xylenes	1	ND	ND	ND

ND means None Detected at or above the MRL
MRL means Method Reporting Limit

Approved by Colin Elliott Date 9/21/90

1317 South 13th Avenue • P.O. Box 479 • Kelso, Washington 98626 • Telephone 206/577-7222 • Fax 206/636-1068

Columbia Analytical Services INC.

September 20, 1990

Guy M. Neal
Riedel Environmental
P.O. Box 03096
Portland, OR 97203-0096

RE: Nabisco Project

Dear Guy:

Enclosed are the results of the soil samples submitted to our lab on September 1, 1990. The preliminary results were faxed September 18, 1990. For your reference, our service request number for this work is K903167.

Please call if you have any questions.

Respectfully submitted:

Colin Elliott

Colin B. Elliott
COLUMBIA ANALYTICAL SERVICES, INC.

das/CBE

917 South 13th Avenue • P.O. Box 479 • Kelso, Washington 98626 • Telephone 206/577-7222 • Fax 206/636-1068

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

CLIENT: Riedel Environmental
SUBMITTED BY: Guy M. Neal
PROJECT: Nabisco
SAMPLE DESCRIPTION: Soil

DATE RECEIVED: 09/01/90
DATE EXTRACTED: 09/10/90
DATE ANALYZED: 09/12/90
WORK ORDER #: K903167

Hydrocarbon Scan
EPA Methods 3550/Modified 8015
mg/Kg (ppm)
Dry Weight Basis

Sample Name	Lab Code	MRL	Diesel
B1 10-11.5'	3167-1	10	ND
B2 5-6.5'	3167-2	10	ND
B3 10-11.5'	3167-3	10	180
B5 7-8.5'	3167-4	10	19,400
B6 8.5-9.0'	3167-5	10	10
B7 8.0-8.5'	3167-6	10	ND
B3 15-16.5'	3167-7	10	ND
Method Blank	3167-MB	10	ND

MRL means Method Reporting Limit
ND means None Detected at or above the MRL

Approved by Colin Elliott Date 9/20/90

SCHN00171191

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

CLIENT: Riedel Environmental
SUBMITTED BY: Guy M. Neal
PROJECT: Nabisco
SAMPLE DESCRIPTION: Soil

DATE RECEIVED: 09/01/90
DATE EXTRACTED: 09/07/90
DATE ANALYZED: 09/07-08/90
WORK ORDER #: K903167

BTEX Analyses
EPA Methods 5030/8020
mg/Kg (ppm)
Dry Weight Basis

Sample Name:		B1 10-11.5'	B2 5-6.5'	B3 10-11.5'
Lab Code:		3167-1	3167-2	3167-3
	MRL			
Benzene	0.05	ND	ND	ND
Toluene	0.05	ND	ND	ND
Ethyl Benzene	0.05	ND	ND	ND
Total Xylenes	0.05	ND	ND	ND

MRL means Method Reporting Limit
ND means None Detected at or above the MRL

Approved by Alan Elliott Date 9/20/90

217 South 43rd Avenue • P.O. Box 479 • Kelso, Washington 98626 • Telephone 206/577-7222 • Fax 206/636-1068

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

CLIENT: Riedel Environmental
SUBMITTED BY: Guy M. Neal
PROJECT: Nabisco
SAMPLE DESCRIPTION: Soil

DATE RECEIVED: 09/01/90
DATE EXTRACTED: 09/07/90
DATE ANALYZED: 09/07-08/90
WORK ORDER #: K903167

BTEX Analyses
EPA Methods 5030/8020
mg/Kg (ppm)
Dry Weight Basis

Sample Name:		B5 7-8.5'	B6 8.5-9.0'	B7 8.0-8.5'
Lab Code:		3167-4	3167-5	3167-6
	MRL			
Benzene	0.05	ND	ND	ND
Toluene	0.05	0.14	ND	ND
Ethyl Benzene	0.05	0.17	ND	ND
Total Xylenes	0.05	0.67	ND	ND

MRL means Method Reporting Limit
ND means None Detected at or above the MRL

Approved by Colin Elliott Date 9/20/90

SCHN00171193

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

CLIENT: Riedel Environmental
SUBMITTED BY: Guy M. Neal
PROJECT: Nabisco
SAMPLE DESCRIPTION: Soil

DATE RECEIVED: 09/01/90
DATE EXTRACTED: 09/07/90
DATE ANALYZED: 09/07-08/90
WORK ORDER #: K903167

BTEX Analyses
EPA Methods 5030/8020
mg/Kg (ppm)
Dry Weight Basis

Sample Name:		B3 15-16.5'	Method Blank
Lab Code:		3167-7	3167-MB
	MRL		
Benzene	0.05	ND	ND
Toluene	0.05	ND	ND
Ethyl Benzene	0.05	ND	ND
Total Xylenes	0.05	ND	ND

MRL means Method Reporting Limit
ND means None Detected at or above the MRL

Approved by Colin Elliott Date 9/20/90

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

CLIENT: Riedel Environmental
SUBMITTED BY: Guy M. Neal
PROJECT: Nabisco
SAMPLE DESCRIPTION: Soil

DATE RECEIVED: 09/01/90
DATE EXTRACTED: 09/07/90
DATE ANALYZED: 09/07-08/90
WORK ORDER #: K903167

Volatile Organics Analysis
EPA Methods 8010
mg/Kg (ppm) Dry Weight Basis

Sample Name:		B2 15-16.5'	Method Blank
Lab Code:		3167-8	3167-MB
	MRL		
Dichlorodifluoromethane	0.1	ND	ND
Chloromethane	0.1	ND	ND
Vinyl Chloride	0.05	ND	ND
Bromomethane	0.05	ND	ND
Chloroethane	0.05	ND	ND
Trichlorofluoromethane	0.05	ND	ND
1,1-Dichloroethene	0.05	ND	ND
Freon 113	0.05	ND	ND
Methylene Chloride	0.2	ND	ND
Trans 1,2-Dichloroethene	0.05	ND	ND
Cis 1,2-Dichloroethene	0.05	1.7	ND
1,1-Dichloroethane	0.05	ND	ND
Chloroform	0.05	ND	ND
1,1,1-Trichloroethane	0.05	ND	ND
Carbon Tetrachloride	0.05	ND	ND
1,2-Dichloroethane	0.05	ND	ND
Trichloroethene	0.05	2.1	ND
1,2-Dichloropropane	0.05	ND	ND
Bromodichloromethane	0.05	ND	ND
2-Chloroethylvinyl ether	0.5	ND	ND
Trans 1,3-Dichloropropene	0.05	ND	ND
Cis 1,3-Dichloropropene	0.05	ND	ND
1,1,2-Trichloroethane	0.05	ND	ND
Tetrachloroethene	0.05	3.1	ND
Dibromochloromethane	0.05	ND	ND
Chlorobenzene	0.05	ND	ND
Bromoform	0.05	ND	ND
1,1,2,2-Tetrachloroethane	0.05	ND	ND
1,3 Dichlorobenzene	0.1	ND	ND
1,4 Dichlorobenzene	0.1	ND	ND
1,2 Dichlorobenzene	0.1	ND	ND

ND means None Detected at or above the MRL
MRL means Method Reporting Limit

Approved by Colin Elliott Date 9/20/90

APPENDIX A

LABORATORY QC RESULTS

COLUMBIA ANALYTICAL SERVICES, INC.

CLIENT: Riedel Environmental
SUBMITTED BY: Guy M. Neal
PROJECT: Nabisco
SAMPLE DESCRIPTION: Soil

DATE RECEIVED: 09/01/90
DATE EXTRACTED: 09/10/90
DATE ANALYZED: 09/12/90
WORK ORDER #: K903167

QA/QC Report
Surrogate Recovery Summary
Hydrocarbon Scan
EPA Methods 3550/Modified 8015
Dry Weight Basis

Sample Name	Lab Code	Percent Recovery
B1 10-11.5'	3167-1	109
B2 5-6.5'	3167-2	103
B3 10-11.5'	3167-3	109
B5 7-8.5'	3167-4	97.9
B6 8.5-9.0'	3167-5	107
B7 8.0-8.5'	3167-6	87.6
B3 15-16.5'	3167-7	105
B1 10-11.5'	3167-1MS	105
B1 10-11.5'	3167-1DMS	113
Method Blank	3167-MB	108
CAS Acceptance Criteria		65-115

Approved by Odin Elliott, Date 9/20/90

COLUMBIA ANALYTICAL SERVICES, INC.

CLIENT: Riedel Environmental
SUBMITTED BY: Guy M. Neal
PROJECT: Nabisco
SAMPLE DESCRIPTION: Soil

DATE RECEIVED: 09/01/90
DATE EXTRACTED: 09/10/90
DATE ANALYZED: 09/12/90
WORK ORDER #: K903167

QA/QC Report
Matrix Spike Summary
Hydrocarbon Scan
EPA Methods 3550/Modified 8015
mg/Kg (ppm)
Dry Weight Basis

Sample Name: B1 10-11.5'

Lab Code	Compound	MRL	Spike Level	Sample Result	Spike Result	% Recovery
3167-1MS	Diesel	10	820	ND	869	106
3167-1DMS	Diesel	10	829	ND	889	107

CAS Acceptance Criteria 45-110

MRL means Method Reporting Limit
ND means None Detected at or above the MRL

Approved by Colin Elliott Date 9/30/90

COLUMBIA ANALYTICAL SERVICES, INC.

CLIENT: Riedel Environmental
SUBMITTED BY: Guy M. Neal
PROJECT: Nabisco
SAMPLE DESCRIPTION: Soil

DATE RECEIVED: 09/01/90
DATE EXTRACTED: 09/07/90
DATE ANALYZED: 09/07-08/90
WORK ORDER #: K903167

QA/QC Report
Surrogate Recovery Summary
EPA Method 8020

Sample Name	Lab Code	Percent Recovery
B1 10-11.5'	3167-1	78.1
B2 5-6.5'	3167-2	103
B3 10-11.5'	3167-3	88.5
B5 7-8.5'	3167-4	75.1
B6 8.5-9.0'	3167-5	95.5
B7 8.0-8.5'	3167-6	103
B3 15-16.5'	3167-7	93.0
B2 5-6.5'	3167-2MS	106
B2 5-6.5'	3167-2DMS	95.2
Method Blank	3167-MB	57.6

CAS Acceptance Criteria 50-130

Approved by Adam Elliott Date 9/20/90

COLUMBIA ANALYTICAL SERVICES, INC.

CLIENT: Riedel Environmental
SUBMITTED BY: Guy M. Neal
PROJECT: Nabisco
SAMPLE DESCRIPTION: Soil

DATE RECEIVED: 09/01/90
DATE EXTRACTED: 09/07/90
DATE ANALYZED: 09/07-08/90
WORK ORDER #: K903167

QA/QC Report
Matrix Spike & Duplicate Matrix Spike Summary
EPA Method 8020
mg/Kg (ppm)

Sample Name: B2 5-6.5'
Lab Code: 3167-2MS/DMS

Parameter	Spike Level MS	Spike Level DMS	Sample Result	Spike Result MS	Spike Result DMS	% Recovery MS	% Recovery DMS	EPA % Acceptance Criteria
Toluene	1.00	1.00	ND	0.79	0.80	79	80	46-148
Benzene	1.00	1.00	ND	0.79	0.80	79	80	39-150

ND means None Detected

Approved by Adrian Elliott Date 9/30/90

COLUMBIA ANALYTICAL SERVICES, INC.

CLIENT: Riedel Environmental
SUBMITTED BY: Guy M. Neal
PROJECT: Nabisco
SAMPLE DESCRIPTION: Soil

DATE RECEIVED: 09/01/90
DATE EXTRACTED: 09/07/90
DATE ANALYZED: 09/07-08/90
WORK ORDER #: K903167

QA/QC Report
Surrogate Recovery Summary
Volatile Organic Analytes
EPA Methods 8010/8020

Sample Name	Lab Code	Percent Recovery
B2 15-16.5'	3167-8	94.4
CAS Acceptance Criteria		50-130

Approved by Glen Elliott Date 9/20/90

COLUMBIA ANALYTICAL SERVICES, INC.

CLIENT: Riedel Environmental
SUBMITTED BY: Guy M. Neal
PROJECT: Nabisco
SAMPLE DESCRIPTION: Soil

DATE RECEIVED: 09/01/90
DATE EXTRACTED: 09/07/90
DATE ANALYZED: 09/07-08/90
WORK ORDER #: K903167

QA/QC Report
Matrix Spike & Duplicate matrix Spike Summary
Volatile Organics Analyses
EPA Method 8010
mg/Kg (ppm)

Sample Name: B2 5-6.5'
Lab Code: 3167-2MS/DMS

Parameter	Spike Level MS	Spike Level DMS	Sample Result	Spike Result MS	Spike Result DMS	% Recovery MS	% Recovery DMS	EPA % Acceptance Criteria
1,1-Dichloroethene	1.0	1.0	ND	1.61	1.60	161	160	28-167
Trichloroethene	1.0	1.0	ND	1.31	1.38	131	138	35-146
Tetrachloroethene	1.0	1.0	ND	1.71	1.74	*171	*174	26-162

ND means None Detected

* Outside acceptance limits due to matrix effects.

Approved by Glen Elliott, Date 9/20/90

COLUMBIA ANALYTICAL SERVICES, INC.

CLIENT: Riedel Environmental
SUBMITTED BY: Jim Romer
PROJECT: Ashland Chemical-Nabisco
SAMPLE DESCRIPTION: Water

DATE RECEIVED: 09/07/90
DATE ANALYZED: 09/12,13/90
WORK ORDER #: K903253

QA/QC Report
Surrogate Recovery Summary
Volatile Organic Analytes
EPA Methods 8010/8020

Sample Name	Lab Code	Percent Recovery
MW1	3253-1	116
MW2	3253-2	128
Method Blank	3253-MB	109
CAS Acceptance Criteria		55-130

Approved by Colin E Clutt Date 9/20/90

1317 South 43rd Avenue • P.O. Box 479 • Kelso, Washington 98626 • Telephone 206/577-7222 • Fax 206/636-1061

COLUMBIA ANALYTICAL SERVICES, INC.

CLIENT: Riedel Environmental
SUBMITTED BY: Jim Romer
PROJECT: Ashland Chemical-Nabisco
SAMPLE DESCRIPTION: Water

DATE RECEIVED: 09/07/90
DATE EXTRACTED: 09/13/90
DATE ANALYZED: 09/17/90
WORK ORDER #: K903253

QA/QC Report
Surrogate Recovery Summary
Hydrocarbon Scan
EPA Methods 3510/Modified 8015

Sample Name	Lab Code	Percent Recovery
MW1	3253-1	91.3
MW2	3253-2	91.4
Method Blank	3253-MB	97.8
CAS Acceptance Criteria		45-115

Approved by Colin Elliott Date 9/21/90

1317 South 13th Avenue • P.O. Box 479 • Kelso Washington 98626 • Telephone 206/577-7222 • Fax 206/636-1068

PROJ. NO. 2730-1717

PROJECT NAME: ASHLAND CHEMICAL / NABISCO

SAMPLERS: (Signature)

K3553

STAT. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	EPA 601	EPA 602	EPA 8015 (diesel)				REMARKS
MW1	09-06-90	1345		X	NABISCO	3	1	1	1				
MW2	09-06-90	1435		X	NABISCO	3	1	1	1				

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)	Date/Time	Remarks	
			9/7/90 1030		

Split Samples: ☐ Accepted ☐ Declined Signature

RIEDEL ENVIRONMENTAL SERVICES, INC.

"Imagineering a cleaner world"

SCHN00171205

Nabisco

SAMPLERS: (Signature) James R. Ro[illegible]

STAT. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	BTEX (8020)	8015 Diesel	8010				REMARKS
B1	8/30/90	930			10-11.5'	1	✓	✓					
B2	8/30/90	1030			5-6.5'	1	✓	✓					
B3	8/30/90	1600			10-11.5	1	✓	✓					
B5	8/31/90	1030			7-8.5	1	✓	✓					
B6	8/31/90	1140			8.5-9.0	1	✓	✓					
B7	8/31/90	1430			8.0-8.5	1	✓	✓					
B3	8/30/90	1640			15-16.5	1	✓	✓					
B2	8/30/90	1120			15-16.5	1			✓				

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
James R. Ro[illegible]	9/1/90 1430				
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)	Date/Time	Remarks	
		[illegible]	9/1/90 1432	PO# 107411	

"Imagineering a cleaner world"

Split Samples: ☐ Accepted ☐ Declined Signature

RIEDEL ENVIRONMENTAL SERVICES, INC.

SCHN00171206

APPENDIX D

DEQ MATRIX CLEANUP LEVELS

NABISCO WAREHOUSE SITE

SOIL AND GROUND WATER SAMPLING

ROUND II

RIEDEL ENVIRONMENTAL SERVICES, INC.

A SUBSIDIARY OF RIEDEL ENVIRONMENTAL TECHNOLOGIES, INC.

"IMAGINEERING A CLEANER WORLD"

SCHN00171208

NABISCO WAREHOUSE SITE

SOIL AND GROUND WATER SAMPLING

ROUND II

Prepared for:

Ashland Chemical, Inc.
5200 Blazer Parkway
Dublin, Ohio 43017

Prepared by:

Riedel Environmental Services, Inc.
Foot of North Portsmouth
P.O. Box 03096
Portland, Oregon 97203-0096
(503)286-4656

November 10, 1990

Nabisco2.JR

SCHN00171209

TABLE OF CONTENTS

SECTION		TITLE	PAGE NUMBER
1		INTRODUCTION	1
	1.1	Objectives	1
	1.2	Location	1
	1.3	Review of Oregon Department of Environmental Quality (DEQ) Files	2
2		FIELD ACTIVITIES	3
	2.1	Location of Soil Borings and Monitoring Wells	3
	2.2	Soil Sampling	4
	2.3	Monitoring Well Installation	5
	2.4	Ground Water Sampling	6
3		SAMPLE RESULTS	7
	3.1	Results of Underground Storage Tank Excavation	7
	3.2	Results of Solvent Analysis	7
4		DISCUSSION AND RESULTS	8
	4.1	Underground Storage Tank Site	8
	4.2	Hydrogeology	
	4.3	Solvents	8
5		CONCLUSIONS	10
6		RECOMMENDATIONS	11
7		LIMITATIONS	12

SCHN00171210

LIST OF FIGURES

FIGURE	TITLE
1	SITE LOCATION MAP
2	BORING/MONITORING WELL LOCATION MAP
3	WATER TABLE CONTOUR MAP

Nabisco2.JR

LIST OF APPENDICES

APPENDIX	TITLE
A	DEQ FILES
B	BORING AND WELL LOGS
C	LABORATORY ANALYTICAL RESULTS

Nabisco2.JR

SECTION 1 INTRODUCTION

On August 30, 31, and September 6, 1990, Riedel Environmental Services, Inc. (RES) conducted a limited soil and ground water investigation at the Nabisco warehouse property in Portland Oregon. This was in an effort to delineate the extent of soil and ground water contamination associated with the earlier removal of underground storage tanks (USTs) located on the property. The results of this investigation were presented in a report entitled "Nabisco Warehouse Site - Soil and Ground Water Sampling and Asbestos Survey" dated October 11, 1990. The findings of this report included the discovery of chlorinated solvents in the ground water analyzed from monitoring well MW-2 located along the Northern property boundary. In addition, diesel contaminated soil was found associated with the UST excavation located south of the truck weight scale. As a result, RES conducted a second round of soil and ground water sampling at the Nabisco site on October 23, 24, and 27, 1990. The following report details the activities and findings of this effort.

1.1 Objectives

Following the results of the initial round of sampling at the Nabisco site, several areas of concern arose. The second round of soil and ground water sampling was designed to address these concerns by accomplishing the following objectives:

- Determine if the hydrocarbon contamination detected along the northern and western boundaries of the 5,000 and 15,000-gallon UST excavation extended underneath the garage building.

- Delineate the extent of the solvents found in the ground water analyzed from monitoring well MW-2.

- Determine if there is any gross soil contamination associated with the former waste oil tank excavation.

1.2 Location

The site is located at 3322 N.W. 35th in Portland, Oregon approximately one-half mile south of the Willamette River, Section 54, Township 1N, Range 1E (see Figure 1).

This region was originally a low lying area adjacent to the Willamette River, until it was filled with dredged river sands in the early 1900's. Since the mid 1900's, the area surrounding the site has been used for industrial purposes and remains so today.

SCHN00171213

1.3 Review of Oregon Department of Environmental Quality (DEQ) Files

Following Round I sampling results, RES reviewed the DEQ records for the property immediately to the north of the Nabisco property. Although the current tenant is Chase Bag, the property is owned by the Schnitzer Investment Corporation.

According to DEQ records, the property at 3720 Yeon (identification number 6320) does not currently have any USTs registered with the state. One UST was decommissioned in May of 1986. Records regarding the decommissioning are included in Appendix A. Unfortunately, no reference to location or sampling is available.

SCHN00171214

SECTION 2 FIELD ACTIVITIES

The drilling was conducted on October 23 and 24, 1990. A truck-mounted MR 24 Prospector, hollow-stem auger drilling rig was used for the work. Soil samples were collected for logging and analytical purposes utilizing a split-spoon sampler with brass liners, driven by a 140 pound hammer using standard techniques. The borings were logged by a RES Geologist according to the Unified Soils Classification System. Copies of the logs are includes in Appendix B.

Decontamination procedures were followed during the drilling and sampling program to assure no significant cross-contamination between the borings. The augers, drill bit, and split-spoon sampler were steam cleaned prior to each boring.

After sampling, those borings not completed as monitoring wells were abandoned utilizing a 5% bentonite cement grout. Boring B-9 located inside the garage was capped with concrete.

2.1 Location of Soil Borings and Monitoring Wells

The boring locations are shown in Figure 2. Monitoring wells were constructed in borings B-10, B-11, and B-12. The locations were based on historical on-site activities as well as the assumed ground water gradient.

Boring B-8 was located approximately in the center of the 500-gallon waste oil tank excavation in order to identify if any residual contamination existed from the former UST. Based on the analytical results of samples collected by Tom New Construction Company, Total Petroleum Hydrocarbon (TPH) levels in the soil under this tank were 306 ppm. The matrix cleanup level for diesel at this site was established at 500 ppm; as a result, no soil was excavated. It should be noted that the apparent excavation site, which was explored by boring B-8 during this investigation, does not correspond to the excavation location depicted in the map provided to the DEQ by the Tom New Construction Company (see Appendix A).

Boring B-9 was located inside the garage as close to the contaminated area of the UST excavation as possible (see Figure 2). Prior to drilling, the floor slab was penetrated utilizing a concrete coring machine.

SCHN00171215

SECTION 2 FIELD ACTIVITIES

The drilling was conducted on October 23 and 24, 1990. A truck-mounted MR 24 Prospector, hollow-stem auger drilling rig was used for the work. Soil samples were collected for logging and analytical purposes utilizing a split-spoon sampler with brass liners, driven by a 140 pound hammer using standard techniques. The borings were logged by a RES Geologist according to the Unified Soils Classification System. Copies of the logs are includes in Appendix B.

Decontamination procedures were followed during the drilling and sampling program to assure no significant cross-contamination between the borings. The augers, drill bit, and split-spoon sampler were steam cleaned prior to each boring.

After sampling, those borings not completed as monitoring wells were abandoned utilizing a 5% bentonite cement grout. Boring B-9 located inside the garage was capped with concrete.

2.1 Location of Soil Borings and Monitoring Wells

The boring locations are shown in Figure 2. Monitoring wells were constructed in borings B-10, B-11, and B-12. The locations were based on historical on-site activities as well as the assumed ground water gradient.

Boring B-8 was located approximately in the center of the 500-gallon waste oil tank excavation in order to identify if any residual contamination existed from the former UST. Based on the analytical results of samples collected by Tom New Construction Company, Total Petroleum Hydrocarbon (TPH) levels in the soil under this tank were 306 ppm. The matrix cleanup level for diesel at this site was established at 500 ppm; as a result, no soil was excavated. It should be noted that the apparent excavation site, which was explored by boring B-8 during this investigation, does not correspond to the excavation location depicted in the map provided to the DEQ by the Tom New Construction Company (see Appendix A).

Boring B-9 was located inside the garage as close to the contaminated area of the UST excavation as possible (see Figure 2). Prior to drilling, the floor slab was penetrated utilizing a concrete coring machine.

SCHN00171216

Boring B-9 was also sampled continuously from 5 to 11 feet through the water table located at approximately nine feet. None of the samples screened in the field indicated hydrocarbon contamination.

Borings B-10, B-11, and B-12 were sampled 6 to 7 feet below the water table in order to detect the presence of solvents, which tend to "sink" in an aquifer. Volatiles were detected in all of the borings. Samples taken from 15 to 16.5 feet in borings B-11 and B-12 were taken to the laboratory and analyzed for Volatile Organics (EPA Methods 8010/8020).

2.3 Monitoring Well Installation

The monitoring wells were constructed of two-inch diameter Schedule 40, flush-threaded PVC screen and risers. The screen is a 0.01 slot size and the filter pack is 10-20 Monterey silica sand. Each well was completed to a depth of 20 feet. Each well has 15 feet of screen which extends through the air/water table interface. As-built diagrams for each well are included with the well logs in Appendix B.

The wells were constructed with hollow-stem auger drilling methods. When the total depth of a boring was reached, the well screen and casing were lowered through the augers to the desired depth. The filter pack sand was added as the augers were removed. A minimum of one foot of sand was maintained in the bottom of the augers to assure uniform placement of the sand. The well screen was covered with one foot of sand. A two-foot thick seal of bentonite pellets was placed above the sand pack. A flush-mount, traffic-rated cover was then set in concrete which extends to the bentonite seal to complete the well installation. Watertight locking caps were installed to prevent surface water from entering the wells.

The wells were developed on October 24, 1990 using a rig-mounted surge block. After surging was completed, the wells were bailed to remove silt drawn in through the well screen during surging.

The monitoring wells were gauged using an ORS interface probe. The probe is capable of sensing both water and free-phase petroleum hydrocarbons and is precise to 0.01 foot. Well elevations were surveyed to within 0.01 foot based on a reference point created on the railway loading dock.

SCHN00171217

2.4 Ground Water Sampling

The monitoring wells were sampled on October 27, 1990. Each well was bailed three well volumes to ensure that a characteristic sample was obtained. The pH, conductivity, and temperature of the purged water was measured using a Presto-Tek model 38 probe, and purging was continued until these parameters stabilized. The samples were obtained using a bottom emptying teflon bailer. A flow control valve was fitted to the bailer to transfer water to the sample bottles. Sample bottles were prepared and provided by the contract laboratory. After obtaining a sample, the bottle was labeled and placed on ice in a cooler for holding, prior to submittal to the laboratory.

Sampling equipment was decontaminated before purging each well. The equipment was washed in a solution of Alconox detergent and doubled rinsed in distilled water. A new bailer line was used for each well.

The water samples were picked up by Columbia Analytical Services, Inc. on October 27, 1990. Copies of the Certificate of Analysis and Chain-of-Custody record are provided in Appendix C. The samples were analyzed for the following parameters:

- Volatile Organic Analysis (EPA Methods 8010/8020)

SCHN00171218

SECTION 3 SAMPLE RESULTS

3.1 Results of UST Sampling

Diesel and oil were detected in the sample from boring B-8 in concentrations of 45,100 ppm and 9,200 ppm, respectively. These levels greatly exceed the matrix clean-up level of 500 ppm established for this site. No solvents or BETX were detected. The only leachable metal detected was 2 ppm of Barium, which is well below the 100 ppm regulatory limit established in 40CFR, Part 261.

3.2 Results of Solvent Analysis

GROUND WATER

The results of the ground water sampling summarized in Table 1 are expressed in micro grams per liter (ug/l). The certificates of analyses for the samples are included in Appendix B.

TABLE 1

Analysis	MW-2*	MW-3	MW-4	MW-5	Current MCL** (ug/l)
Cis 1,2-Dichloroethene	1,340	790	3,580	42	NE
Tetrachloroethene	35,500	5.6	420	5.0	NE
Trichloroethene	5,040	481	1,560	18	5
Trans 1,2-Dichloroethene	ND	0.8	38	ND	NE
Vinyl Chloride	ND	45	380	47	2
Chloroethane	ND	0	3.5	0	NE

* - Results from October 11, 1990 Report
** - Maximum Contaminant Level for Drinking Water
ND - Below Detection Limits
NE - No Standard Set

SOIL

Analytical results from the soil sample collected from 15-16.5 feet in Boring B-4 indicate the presence of low levels of Trichloroethene and Cis 1,2-Dichloroethene.

SCHN00171219

SECTION 4 DISCUSSION OF RESULTS

4.1 Underground Storage Tank Site

The former waste oil UST excavation still contains diesel and oil contaminated soils above current Oregon DEQ cleanup guidelines of 500 ppm as established in OAR 340-122-205 to 340-122-260.

While the extent of the contamination detected in boring B-8 is not known at this time, some assumptions can be made. Due to diesel's low density compared to that of water, free product which leaked from the tank would float atop the ground water. As a result, the depth of contaminated soil should not exceed the seasonal low water table.

The results from boring B-9 indicate that the diesel contamination from the 15,000 and 5,000-gallon USTs does not extend significantly north of the excavation to the soils underlying the garage building.

4.2 Hydrogeology

Depth to ground water in the silty dredge sands was found to be between 9 and 10 feet, with relatively little gradient. The gradient measured at the site on November 2, 1990 was .0009. The greatest difference between ground water elevations was .08 feet between monitoring wells MW-2 and MW-4. Ground water elevations surveyed from the five monitoring wells were used to construct a water table contour map (see Figure 3). The resulting gradient indicates that ground water flow on the site is from the north - northeast to the south - southwest as indicated by the flow direction arrow.

4.3 Solvents

Both trichloroethene and tetrachloroethene are commonly used degreasers. They are frequently introduced to the ground water via leaking waste oil tanks utilized in garages and metal shops.
Cis 1,2-dichloroethene and vinyl chloride are formed as breakdown products from the reductive dehalogenation of trichloroethene and tetrachlorothene and are typically found in increasing proportions downgradient from a source.

SCHN00171220

The ratio of trichloroethene/cis 1,2-dichloroethene detected in monitoring well MW-2 during the September 6, 1990 sampling was 5,040 ppb/1,340 ppb or 3.8. The same ratio found in monitoring well MW-4 was 1,560 ppb/3,580 ppb or 0.4. In addition, the presence of previously undetected vinyl chloride (308 ppb) as well as the reduction of tetrachloroethene levels from 35,500 ppb to 420 ppb strongly support the conclusion that monitoring well MW-4 lies downgradient from the solvent source.

The levels of solvents found in monitoring wells MW-3 and MW-5 indicate that while these wells are also downgradient from the solvent source, they do not appear to be located as close to the center of the plume as monitoring well MW-4. Based on trichloroethene concentrations, monitoring well MW-5 is located closer to an edge of the plume than monitoring well MW-3.

SCHN00171221

SECTION 5 CONCLUSIONS

While the full extent of the solvent plume at the Nabisco site can not be determined without additional monitoring wells, this limited investigation has certainly shown it to be of significant size. Based on the results from monitoring well MW-4, the leading edge of the solvent plume probably extends beneath the warehouse. In terms of the volume of water containing solvents above regulatory limits, it must be assumed that contamination exists to the base of the aquifer.

In terms of remediation techniques, a pump and treatment system utilizing an air stripping tower is the most common. Costs for such a system would vary considerable depending on design parameters based on information beyond the scope of this investigation. However, systems can run in excess of $100,000.00 and are often operated over several years.

Obviously, a key element in any cleanup operation is the identification and elimination of the source. RES does not feel that the source of the solvents detected during the course of this investigation is located on the Nabisco property.

The high level of solvents detected in monitoring well MW-2 may have migrated onto the Nabisco site from the property immediately to the north. In addition to this being in the upgradient direction, at least one old vent pipe indicative of an UST was noted as well a small stockpile of 55-gallon adhesive drums.

SCHN00171222

SECTION 6 RECOMMENDATIONS

The State of Oregon Department of Environmental Quality (DEQ) is responsible for overseeing cleanup of contaminated ground water in the state. Although the UST program has a relatively well defined set of rules and procedures to follow, not all ground water contamination problems fall into this category. Those that do not are normally dealt with on more of a case-by-case basis.

As a result, early involvement of the DEQ is advised to ensure that remediation efforts address the needs and concerns of the state. RES feels that any plan approved by the DEQ will have to address the following:

- Locate and remove the source of the solvent contamination
- Delineate the full extent of the ground water contamination
- Determine aquifer conductivity
- Develop a Remedial Action Plan
- Implement approved plan

SCHN00171223

SECTION 7 LIMITATIONS

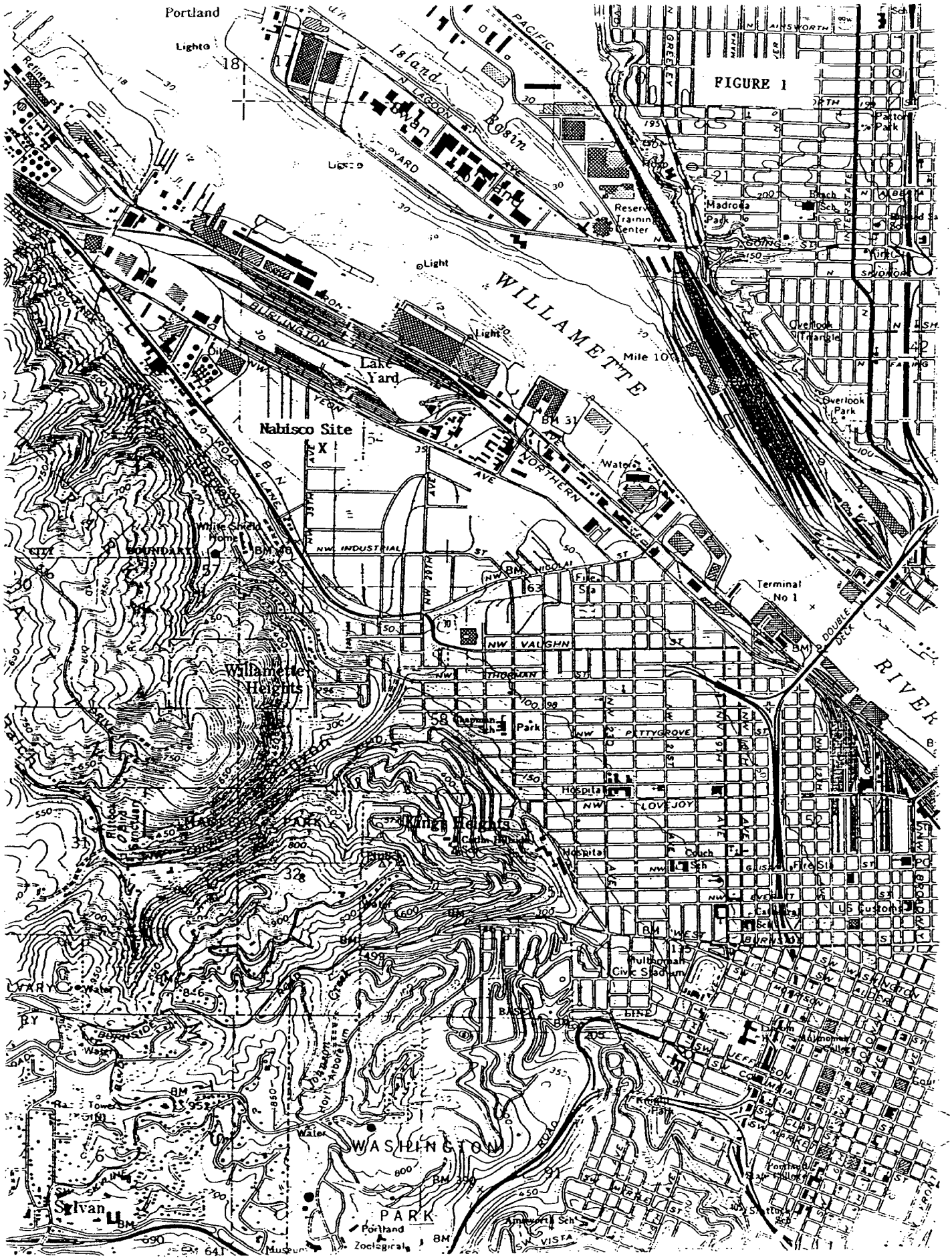
The opinion expressed herein is based on the information collected during our survey, our present understanding of the site conditions and our professional judgment in light of such information at the time of preparation of this opinion. We are not responsible for the accuracy of information provided by individuals or entities which is used by us or others in connection with the preparation of this opinion. This report is an opinion work, and no warranty is either express, implied or made as to the conclusions, advice and recommendations offered in this report. The opinion expressed herein is for the sole benefit of and may be relied upon only by Ashland Chemical Corporation. Neither this opinion nor any extract herefrom or reference hereto shall be furnished to, quoted to or relied upon by any other person, firm or corporation without our express written permission.

SCHN00171224

FIGURE 1

SITE LOCATION MAP

Nabisco2.JR



SCHN00171226

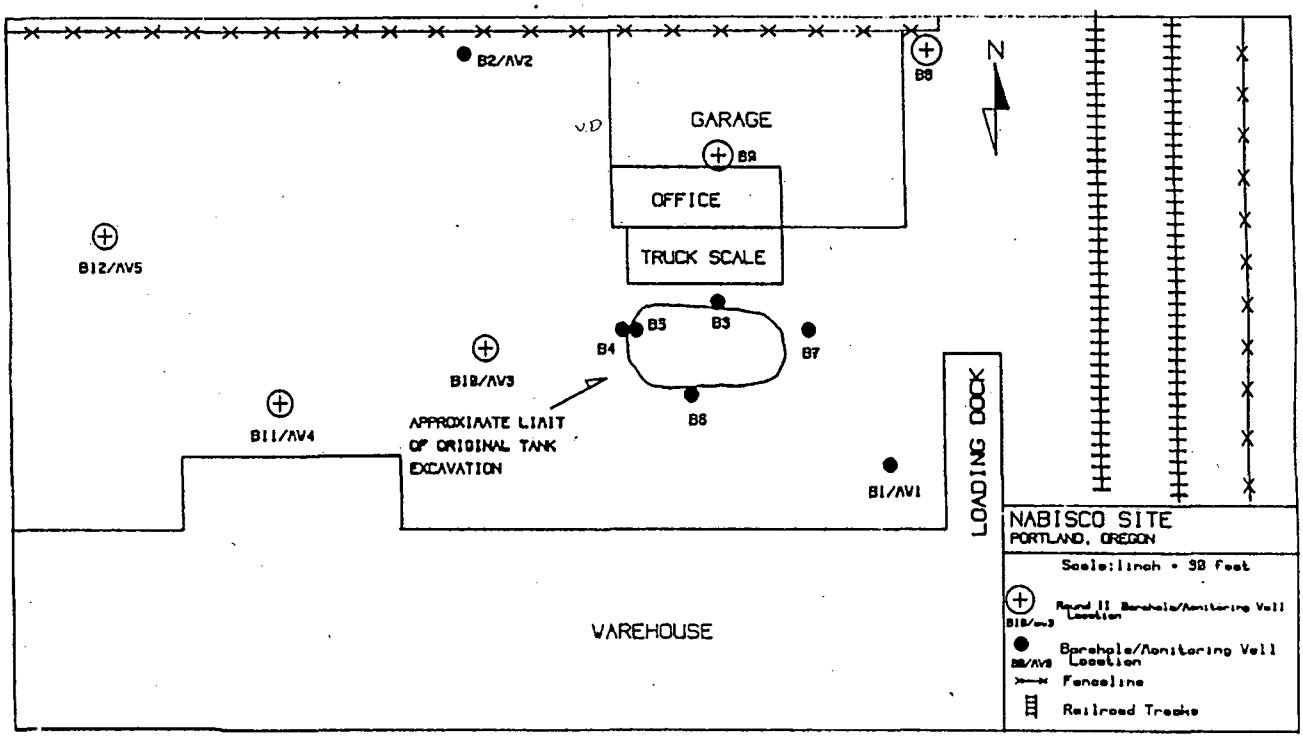
FIGURE 2

BORING/MONITORING WELL SITE MAP

Nabisco2.JR

FIGURE 2

BORING/MONITORING WELL LOCATION MAP

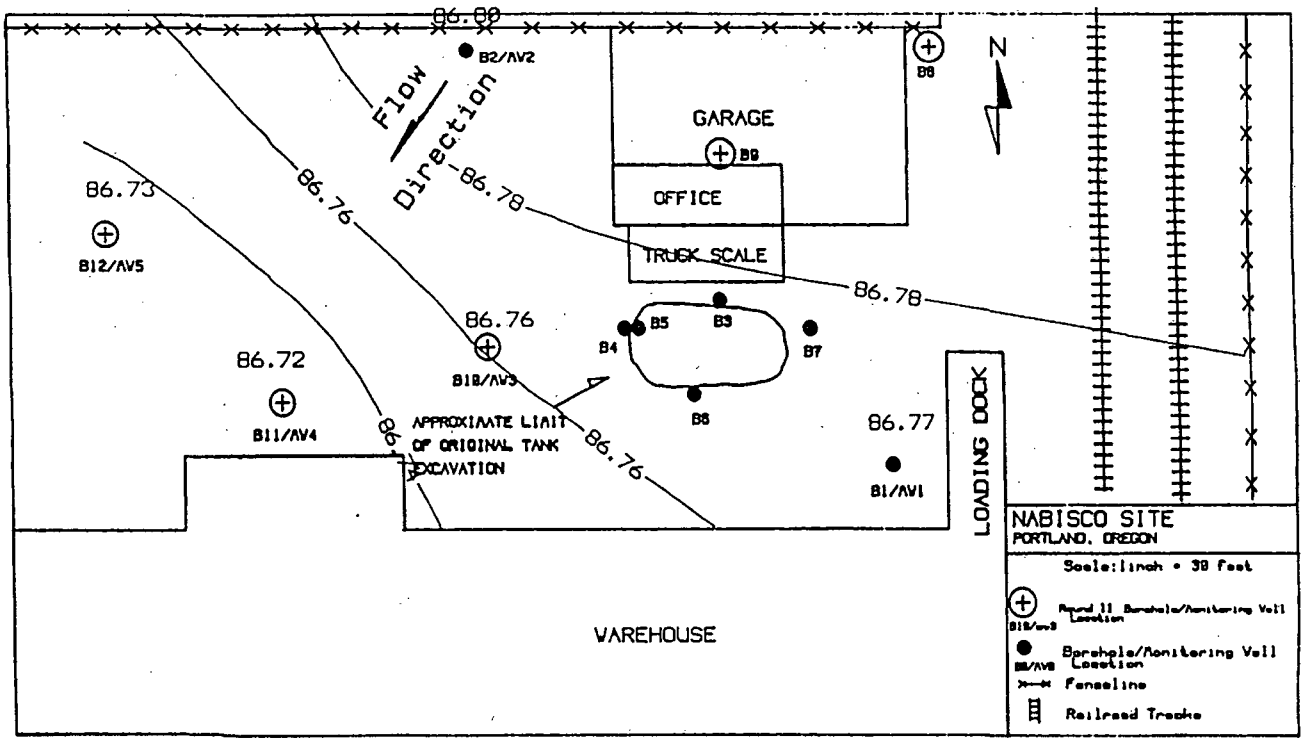


SCHN00171228

FIGURE 3

WATER TABLE CONTOUR MAP

SCHN00171229



WATER TABLE CONTOUR MAP

NOVEMBER 2, 1990

SCHN00171230

APPENDIX A

DEPARTMENT OF ENVIRONMENTAL QUALITY FILES

SCHN00171231

Notification for Underground Storage Tanks

FORM APPROVED
OMB NO. 2050-0049
APPROVAL EXPIRES 6-30-88

STATE USE ONLY

I.D. Number 6320

Date Received

GENERAL INFORMATION

Notification is required by Federal law for all underground tanks that have been used to store regulated substances since January 1, 1974, that are in the ground as of May 8, 1986, or that are brought into use after May 8, 1986. The information requested is required by Section 9002 of the Resource Conservation and Recovery Act, (RCRA), as amended.

The primary purpose of this notification program is to locate and evaluate underground tanks that store or have stored petroleum or hazardous substances. It is expected that the information you provide will be based on reasonably available records, or, in the absence of such records, your knowledge, belief, or recollection.

Who Must Notify? Section 9002 of RCRA, as amended, requires that, unless exempted, owners of underground tanks that store regulated substances must notify designated State or local agencies of the existence of their tanks. Owner means—

(a) in the case of an underground storage tank in use on November 8, 1984, or brought into use after that date, any person who owns an underground storage tank used for the storage, use, or dispensing of regulated substances, and

(b) in the case of any underground storage tank in use before November 8, 1984, but no longer in use on that date, any person who owned such tank immediately before the discontinuation of its use.

What Tanks Are Included? Underground storage tank is defined as any one or combination of tanks that (1) is used to contain an accumulation of "regulated substances," and (2) whose volume (including connected underground piping) is 10% or more beneath the ground. Some examples are underground tanks storing 1. gasoline, used oil, or diesel fuel, and 2. industrial solvents, pesticides, herbicides or fumigants.

What Tanks Are Excluded? Tanks removed from the ground are not subject to notification. Other tanks excluded from notification are:
1. farm or residential tanks of 1,100 gallons or less capacity used for storing motor fuel for noncommercial purposes;
2. tanks used for storing heating oil for consumptive use on the premises where stored;
3. septic tanks;
4. pipeline facilities (including gathering lines) regulated under the Natural Gas Pipeline Safety Act of 1968, or the Hazardous Liquid Pipeline Safety Act of 1979, or which is an intrastate pipeline facility regulated under State laws;
5. surface impoundments, pits, ponds, or lagoons;
6. storm water or waste water collection systems;
7. flow-through process tanks;
8. liquid traps or associated gathering lines directly related to oil or gas production and gathering operations;
9. storage tanks situated in an underground area (such as a basement, cellar, mineworking, drift, shaft, or tunnel) if the storage tank is situated upon or above the surface of the floor.

MAY 1 1900

What Substances Are Covered? The notification requirements apply to underground storage tanks that contain regulated substances. This includes any substance defined as hazardous in section 101 (14) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), with the exception of those substances regulated as hazardous waste under Subtitle C of RCRA. It also includes petroleum, e.g., crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute).

Where To Notify? Completed notification forms should be sent to the address given at the top of this page.

When To Notify? 1. Owners of underground storage tanks in use or that have been taken out of operation after January 1, 1974, but still in the ground, must notify by May 8, 1986. 2. Owners who bring underground storage tanks into use after May 8, 1986, must notify within 30 days of bringing the tanks into use.

Penalties: Any owner who knowingly fails to notify or submits false information shall be subject to a civil penalty not to exceed $10,000 for each tank for which notification is not given or for which false information is submitted.

INSTRUCTIONS

Please type or print in ink all items except "signature" in Section V. **This form must by completed for each location containing underground storage tanks.** If more than 5 tanks are owned at this location, photocopy the reverse side, and staple continuation sheets to this form.

Indicate number of continuation sheets attached: 1

I. OWNERSHIP OF TANK(S)

Owner Name (Corporation, Individual, Public Agency, or Other Entity): Schnitzer Investment Corp

Street Address: 3200 NW Yeon Ave.

County: Portland

City: Portland State: OR ZIP Code: 97210

Area Code: 503 Phone Number: 224-9900

Type of Owner (Mark all that apply ☒)

- ☒ Current
- ☐ Former
- ☐ State or Local Gov't
- ☐ Federal Gov't (GSA facility I.D. no. 56620)
- ☒ Private or Corporate
- ☐ Ownership uncertain

II. LOCATION OF TANK(S)

(If same as Section 1, mark box here ☐)

Facility Name or Company Site Identifier, as applicable: Chase Bag Company

Street Address or State Road, as applicable: 3720 NW Yeon

County: Multnomah

City (nearest): Portland State: Or. ZIP Code: 97210

Indicate number of tanks at this location: 1

Mark box here if tank(s) are located on land within an Indian reservation or on other Indian trust lands ☐

III. CONTACT PERSON AT TANK LOCATION

Name (If same as Section I, mark box here ☐): Frank Secord

Job Title: Tenant

Area Code: 503 Phone Number: 241-7787

IV. TYPE OF NOTIFICATION

☐ Mark box here only if this is an amended or subsequent notification for this location.

V. CERTIFICATION (Read and sign after completing Section VI.)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete.

Name and official title of owner or owner's authorized representative: Linda M. Wakefield, V.P.

Signature: Linda M. Wakefield

Date Signed: 5/1/86

CONTINUE ON REVERSE SIDE

SCHN00171232

Owner Name (from Section I EPA Form) [illegible] Location (from Section II EPA form) [illegible] Page [illegible] of [illegible] Pages

OREGON UNDERGROUND STORAGE TANK (UST) SURVEY

The underground storage tank program will soon include performance standards for new tanks and regulations for leak detection/prevention and corrective actions which will affect owners and operators of underground storage tanks. In preparation for these new requirements, the Department has prepared a state-wide survey. The Department requests that owners of underground storage tanks complete the survey questions.

Your response to these questions will assist the Department in developing a cost-effective and responsive state-wide regulatory program. In addition, owners of underground storage tanks may find the survey useful in the management of such tanks.

INSTRUCTIONS

Please type or print in ink all items. Please complete one survey form for each location containing underground storage tanks. Tank I.D. should correspond to Tank I.D. on EPA form 7530-1 for the respective facility location. If more than five tanks are owned at this location, photocopy this survey or request additional forms from DEQ, and staple continuation sheets to this survey.

Tank Identification No.	Tank No. /	Tank No.	Tank No.	Tank No.	Tank No.
1. Status of Tank (Check One) — If temporarily out of use, Estimated time out of use: 1 month - 6 months	☐	☐	☐	☐	☐
6 months - 1 year	☐	☐	☐	☐	☐
1 year - 5 years	☐	☐	☐	☐	☐
5 years or more	☒	☐	☐	☐	☐
Estimated date to be brought back into use (mo/yr)	/	/	/	/	/
2. Was tank new at time of installation? (Y/N)	UNKNOWN				
3. Containment Systems (check one) — Single-walled tank	☐	☐	☐	☐	☐
Double-walled tank	☐	☐	☐	☐	☐
Pit-lining system	☐	☐	☐	☐	☐
Unknown	☒	☐	☐	☐	☐
4. Leak Detection System (check all that apply) — Visual	☐	☐	☐	☐	☐
Stock inventory	☐	☐	☐	☐	☐
Tile drain	☐	☐	☐	☐	☐
Vapor wells	☐	☐	☐	☐	☐
Sensor instrument (specify type):					
In-ground detector	☐	☐	☐	☐	☐
Within walls of double-walled tank	☐	☐	☐	☐	☐
Ground water monitoring wells	☐	☐	☐	☐	☐
Continuous in piping	☐	☐	☐	☐	☐
Pressure test	☐	☐	☐	☐	☐
Internal inspection	☐	☐	☐	☐	☐
Other, specify					
None	☐	☐	☐	☐	☐
Unknown	☒	☐	☐	☐	☐
5. Overfill Protection (Yes/No)	UNKNOWN				
6. Location of Piping (check all that apply) — No parts in contact with soil	☐	☐	☐	☐	☐
Parts contacting the soil which are:					
Unprotected metal	☐	☐	☐	☐	☐
Made of corrosion resistant materials	☐	☐	☐	☐	☐
Corrosion-resisted coated	☐	☐	☐	☐	☐
Cathodically protected	☐	☐	☐	☐	☐
Double-walled	☐	☐	☐	☐	☐
Within a secondary containment	☐	☐	☐	☐	☐
Interior lined	☐	☐	☐	☐	☐
Unknown	☒	☐	☐	☐	☐
7. History of Tank Repairs (check one except as indicated) — If tank repaired, indicate date of last repairs (mo/yr)	/	/	/	/	/
None	☐	☐	☐	☐	☐
Unknown	☒	☐	☐	☐	☐
8. History of Pipe Repairs (check one except as indicated) — If pipe repaired, indicate date (mo/yr)	/	/	/	/	/
None	☐	☐	☐	☐	☐
Unknown	☒	☐	☐	☐	☐

THANK YOU FOR YOUR ASSISTANCE

RECEIVED MAY 1 1985 Dept. of Environmental Quality

SCHN00171233

Owner Name (from Section I) Schnitzer Invest. Location (from Section II) 3720 NW Yeon Page No. 2 of 3 Pages

VI. DESCRIPTION OF UNDERGROUND STORAGE TANKS *(Complete for each tank at this location.)*

	Tank No. 1	Tank No.	Tank No.	Tank No.	Tank No.
Tank Identification No. (e.g., ABC-123), or Arbitrarily Assigned Sequential Number (e.g., 1,2,3...)					
1. Status of Tank *(Mark all that apply ☒)* — Currently in Use	☐	☐	☐	☐	☐
Temporarily Out of Use	☒	☐	☐	☐	☐
Permanently Out of Use	☐	☐	☐	☐	☐
Brought into Use after 5/8/86	☐	☐	☐	☐	☐
2. Estimated Age (Years)	unknown				
3. Estimated Total Capacity (Gallons)	1,000				
4. Material of Construction *(Mark one ☒)* — Steel	☐	☐	☐	☐	☐
Concrete	☐	☐	☐	☐	☐
Fiberglass Reinforced Plastic	☐	☐	☐	☐	☐
Unknown	☒	☐	☐	☐	☐
Other, Please Specify					
5. Internal Protection *(Mark all that apply ☒)* — Cathodic Protection	☐	☐	☐	☐	☐
Interior Lining (e.g., epoxy resins)	☐	☐	☐	☐	☐
None	☐	☐	☐	☐	☐
Unknown	☒	☐	☐	☐	☐
Other, Please Specify					
6. External Protection *(Mark all that apply ☒)* — Cathodic Protection	☐	☐	☐	☐	☐
Painted (e.g., asphaltic)	☐	☐	☐	☐	☐
Fiberglass Reinforced Plastic Coated	☐	☐	☐	☐	☐
None	☐	☐	☐	☐	☐
Unknown	☒	☐	☐	☐	☐
Other, Please Specify					
7. Piping *(Mark all that apply ☒)* — Bare Steel	☐	☐	☐	☐	☐
Galvanized Steel	☐	☐	☐	☐	☐
Fiberglass Reinforced Plastic	☐	☐	☐	☐	☐
Cathodically Protected	☐	☐	☐	☐	☐
Unknown	☒	☐	☐	☐	☐
Other, Please Specify					
8. Substance Currently or Last Stored in Greatest Quantity by Volume *(Mark all that apply ☒)* — **a. Empty**	☐	☐	☐	☐	☐
b. Petroleum					
Diesel	☐	☐	☐	☐	☐
Kerosene	☐	☐	☐	☐	☐
Gasoline (including alcohol blends)	☐	☐	☐	☐	☐
Used Oil	☐	☐	☐	☐	☐
Other, Please Specify					
c. Hazardous Substance	☐	☐	☐	☐	☐
Please Indicate Name of Principal CERCLA Substance					
OR Chemical Abstract Service (CAS) No.					
Mark box ☒ if tank stores a mixture of substances	☐	☐	☐	☐	☐
d. Unknown	☒	☐	☐	☐	☐
9. Additional Information (for tanks permanently taken out of service)					
a. Estimated date last used (mo/yr)	/	/	/	/	/
b. Estimated quantity of substance remaining (gal.)					
c. Mark box ☒ if tank was filled with inert material (e.g., sand, concrete)	☐	☐	☐	☐	☐

☆ U.S. Government Printing Office: 1986—496-735

SCHN00171234

COFFEY LABORATORIES, INC.
12423 N.E. WHITAKER WAY
PORTLAND, OR 97230
PHONE: (503) 254-1794
FAX: (503) 254-1452

November 14, 1989
Log #A891109-X2
Project Name: Hill Investment

Tom New Construction
P.O. Box 16061
Portland, OR 97216
Attention: Tom New

Samples Collected: 11/08/89 0930 hrs.
Samples Received: 11/08/89

Analysis Requested: Total Petroleum Hydrocarbons in soil by modified EPA Method 418.1

SAMPLE ID	SAMPLE RESULTS
500 Gallon	306
10,000 Gallon	4.5

Detection Limit: 3.0 mg/kg

Results expressed as mg/kg unless otherwise noted.

Sincerely,

Victor A. Perry,
Quality Assurance

Sincerely,

Susan M. Coffey,
President

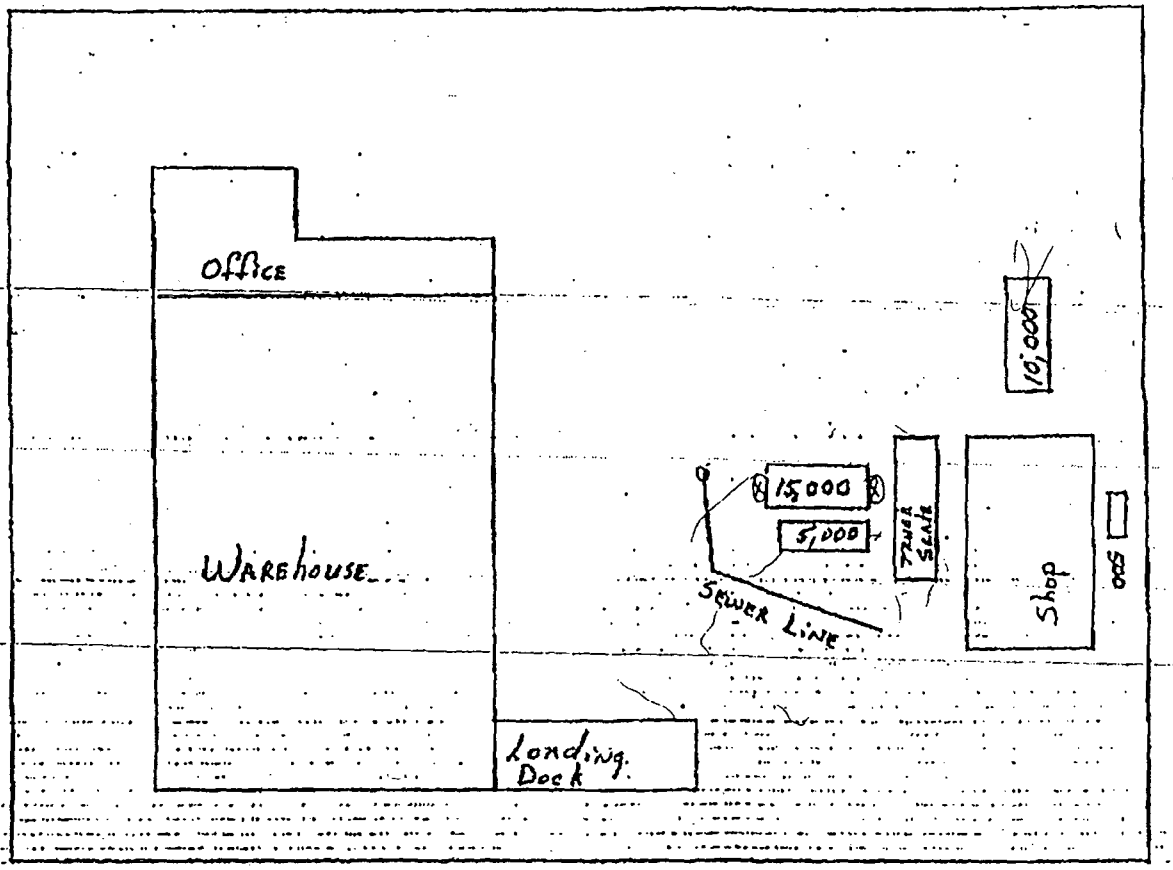
SMC/lws

This report is for the sole and exclusive use of the client. Samples are retained a maximum of 15 days from the report date, or until the maximum holding time expires.

COPY

08/23/90 15:15

SCHN00171235



SCHN00171236

APPENDIX B

BORING AND MONITORING WELL LOGS

SCHN00171237

FIELD LOG OF BORING B-8

PROJECT NO.: 2730-1717
PROJECT NAME: Ashland Chemical
GEOLOGIST: James R. Romer
DRILLING CO.: Crisman Drilling
DRILLING METHOD: Hollow Stem Auger 8 1/4" ID

DATE: October 23, 1990
LOCATION: Nabisco Site, Portland, OR
ELEVATION:
WATER LEVEL: Approximately 9'

DEPTH (ft)	SAMPLE #	BLOWS/6"	MOISTURE	OVA PPM	GRAPHIC	USCS	DESCRIPTION	REMARKS
5		6 9 7 7 7 9		1.2 3.0		SM	Brown Silty Sand (Fill)	
		6 9 11 4 9 11		120 35			Transition between brown to gray sand Grey Silty Sand: Saturated	Odor and Sheen
10								
15								

"Imagineering A Cleaner World"

RIEDEL ENVIRONMENTAL SERVICES, INC.

SCHN00171238

FIELD LOG OF BORING B-9

PROJECT NO.: 2730-1717
DATE: October 23, 1990
PROJECT NAME: Ashland Chemical
LOCATION: Nabisco Site, Portland, OR
GEOLOGIST: James R. Romer
DRILLING CO.: Crisman Drilling
ELEVATION:
DRILLING METHOD: Hollow Stem Auger 8 1/4" ID
WATER LEVEL: Approximately 9 '

DEPTH (ft)	SAMPLE #	BLOWS/6"	MOISTURE	OVA PPM	GRAPHIC	USCS	DESCRIPTION	REMARKS
5		7 9 11		ND		SM	Brown Silty Sand (Fill)	
		7 9 14		ND				
		12 14 24		ND			Transition between brown to grey sand	Slight Odor
10		6 6 6		ND			Grey Silty Sand: Saturated	
15								

"Imagineering A Cleaner World"

RIEDEL ENVIRONMENTAL SERVICES, INC.

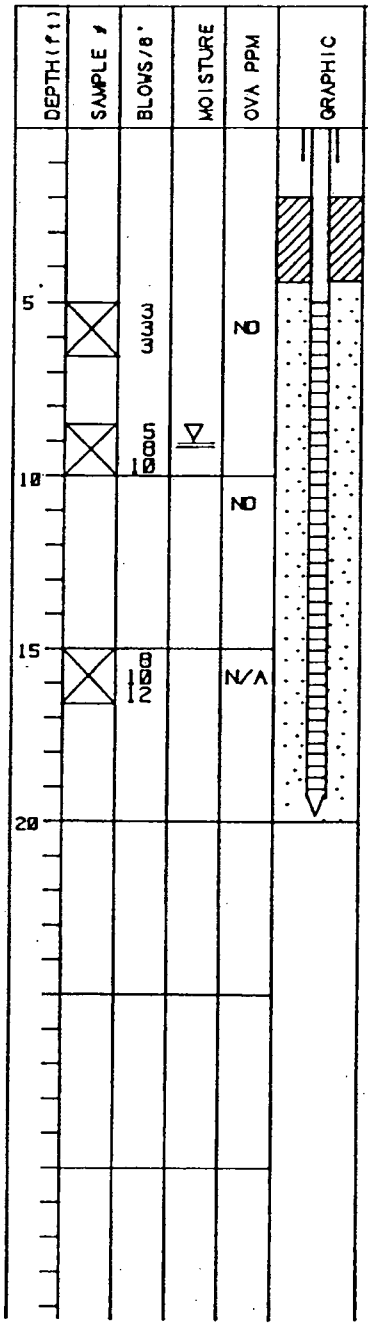
SCHN00171239

FIELD LOG OF WELL B10/MW3

PROJECT NO.: 2730-1717
PROJECT NAME: Ashland Chemical
GEOLOGIST: James R. Romer
DRILLING CO.: Crisman Drilling
DRILLING METHOD: Hollow Stem Auger 8 1/4" ID

DATE: October 23, 1990
LOCATION: Nebisco Site
ELEVATION 96.11' (based on 100'BA)
WATER LEVEL: 86.76' (9.35' depth)

DEPTH (ft)	SAMPLE #	BLOWS/6"	MOISTURE	OVA PPM	GRAPHIC	USCS	DESCRIPTION	REMARKS
						SM	Brown silty sand (River dredge fill)	
5	X	3 3 3		NO			Same as above	
	X	5 8 10	▽				Grey Silty Sand: Saturated	Transition
10				NO				
15	X	18 20 22		N/A				
20								



"Imagineering A Cleaner World"

RIEDEL ENVIRONMENTAL SERVICES, INC.

SCHN00171240

FIELD LOG OF WELL B-11/MW-4

PROJECT NO.: 2730-1717
PROJECT NAME: Ashland Chemical
GEOLOGIST: James R. Romer
DRILLING CO.: Crismon Drilling
DRILLING METHOD: Hollow Stem Auger 8 1/4" ID

DATE: October 24, 1990
LOCATION: Nabisco Site
ELEVATION: 95.88' (based on 100'BA)
WATER LEVEL: 86.72' (9.16'depth)

DEPTH (ft)	SAMPLE #	BLOWS/6"	MOISTURE	OVA PPM	GRAPHIC	USCS	DESCRIPTION	REMARKS
						SM	Brown silty sand (River dredge fill)	
5	X	8 9 9 10		ND			Same as above	
	X	9 12 19	▽	1.5			Grey Silty Sand: Saturated	Transition
10								
15	X	5 7 10		1000 plus			Grey Silty Sand: Saturated	
20								

"Imagineering A Cleaner World"

RIEDEL ENVIRONMENTAL SERVICES, INC.

SCHN00171241

FIELD LOG OF WELL B-12/MW-5

PROJECT NO.: 2730-1717
PROJECT NAME: Ashland Chemical
GEOLOGIST: James R. Romer
DRILLING CO.: Criemon Drilling
DRILLING METHOD: Hollow Stem Auger 8 1/4" ID

DATE: October 24, 1990
LOCATION: Nabisco Site
ELEVATION: 96.07' (based on 100'BA)
WATER LEVEL: 86.73' (9.34' depth)

DEPTH (ft)	SAMPLE #	BLOWS/6"	MOISTURE	OVA PPM	GRAPHIC	USCS	DESCRIPTION	REMARKS
						SM	Brown silty sand (River dredge fill)	
5	X	8 9 11		13			Same as above	
	X	3 4 6	▽	110			Grey Silty Sand: Saturated	Transition
10								
15	X	50/5"		1000 plus			Grey Silty Sand: Saturated	
20								

"Imagineering A Cleaner World"

RIEDEL ENVIRONMENTAL SERVICES, INC.

SCHN00171242

APPENDIX C

LABORATORY ANALYTICAL RESULTS

Columbia Analytical Services inc.

November 7, 1990

Jim Romer
Riedel Environmental
P.O. Box 03096
Portland, OR 97203-0096

Re: **Nabisco/Project #2730-1717**

Dear Jim:

Enclosed are the results of the rush water samples submitted to our lab on October 28, 1990. Preliminary results were transmitted via facsimile on November 2, 1990. For your reference, our service request number for this work is K904104.

A problem with instrument performance required raising the MRL value for the BTEX parameters. Results for all remaining parameters were not effected. I apologize for any inconvenience this may have caused.

Please call if you have any questions.

Respectfully submitted,

Columbia Analytical Services, Inc.

Colin Elliott

Colin B. Elliott
Senior Project Chemist

mbm/CBE

317 South 13th Avenue • P.O. Box 479 • Kelso, Washington 98626 • Telephone 206/577-7222 • Fax 206/636-1068

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

CLIENT: Riedel Environmental
SUBMITTED BY: Jim Romer
PROJECT: Nabisco/#2730-1717
SAMPLE DESCRIPTION: Water

DATE RECEIVED: 10/25/90
DATE ANALYZED: 10/31/90
WORK ORDER #: K904104

Volatile Organics Analysis
EPA Methods 8010/8020
µg/L (ppb)

Sample Name:		MW3	MW4	MW5
Lab Code:	MRL*	4104-1	4104-2	4104-3
Dichlorodifluoromethane	1	ND	ND	ND
Chloromethane	1	ND	ND	ND
Vinyl Chloride	0.5	45	308	47
Bromomethane	0.5	ND	ND	ND
Chloroethane	0.5	ND	3.5	ND
Trichlorofluoromethane	0.5	ND	ND	ND
1,1-Dichloroethene	0.5	0.5	ND	ND
Freon 113	0.5	ND	ND	ND
Methylene Chloride	2	ND	ND	ND
Trans 1,2-Dichloroethene	0.5	0.8	38	ND
Cis 1,2-Dichloroethene	0.5	790	3580	42
1,1-Dichloroethane	0.5	ND	ND	ND
Chloroform	0.5	ND	ND	ND
1,1,1-Trichloroethane	0.5	ND	ND	ND
Carbon Tetrachloride	0.5	ND	ND	ND
Benzene	5	ND	ND	ND
1,2-Dichloroethane	0.5	ND	ND	ND
Trichloroethene	0.5	481	1560	18
1,2-Dichloropropane	0.5	ND	ND	ND
Bromodichloromethane	0.5	ND	ND	ND
2-Chloroethylvinyl ether	5	ND	ND	ND
Trans 1,3-Dichloropropene	0.5	ND	ND	ND
Toluene	5	ND	ND	ND
Cis 1,3-Dichloropropene	0.5	ND	ND	ND
1,1,2-Trichloroethane	0.5	ND	ND	ND
Tetrachloroethene	0.5	5.6	420	5.0
Dibromochloromethane	0.5	ND	ND	ND
Chlorobenzene	0.5	ND	ND	ND
Ethylbenzene	5	ND	ND	ND
Bromoform	0.5	ND	ND	ND
1,1,2,2-Tetrachloroethane	0.5	ND	ND	ND
1,3 Dichlorobenzene	1	ND	ND	ND
1,4 Dichlorobenzene	1	ND	ND	ND
1,2 Dichlorobenzene	1	ND	ND	ND
Total Xylenes	5	ND	ND	ND

ND means None Detected at or above the MRL
MRL means Method Reporting Limit
* Elevated MRL values due to instrument problems for the BTEX parameters.

Approved by Colin Elliott Date 11/7/90

1317 South 13th Avenue • P.O. Box 479 • Kelso, Washington 98626 • Telephone 206/577-7222 • Fax 206/636-1068

COLUMBIA ANALYTICAL SERVICES, INC.

CLIENT: Riedel Environmental
SUBMITTED BY: Jim Romer
PROJECT: Nabisco/#2730-1717
SAMPLE DESCRIPTION: Water

DATE RECEIVED: 10/28/90
DATE ANALYZED: 10/31/90
WORK ORDER #: K904104

QA/QC Report
Surrogate Recovery Summary
Volatile Organic Analytes
EPA Methods 8010/8020

Sample Name	Lab Code	Percent Recovery
MW3	4104-1	80.9
MW4	4104-2	93.4
MW5	4104-3	79.4
Method Blank	4104-MB	60.5
CAS Acceptance Criteria		50-130

Approved by Colin Elliott Date 11/7/90

1317 South 13th Avenue • P.O. Box 479 • Kelso, Washington 98626 • Telephone 206/577-7222 • Fax 206/636-1068

2730 1717 | Nabisco

K-4104

SAMPLERS: (Signature) James R. Ross

STAT. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	601 & 602						REMARKS
	10/27/90	1315		/	MW3	2	/						
	10/27/90	1400		/	MW4	2	/						
	10/27/90	1440		/	MW5	2	/						

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
James R. Ross	10/27/90 1545	Carroll Tolston	Carroll Tolston	10/27/90 20:22	Colin Elliott
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)	Date/Time	Remarks	

"Imagineering a cleaner world"

Split Samples: ☐ Accepted ☐ Declined Signature

RIEDEL ENVIRONMENTAL SERVICES, INC.

SCHN00171247

Columbia Analytical Services INC.

November 7, 1990

Jim Romer
Riedel Environmental
P.O. Box 03096
Portland, OR 97203-0096

Re: **Nabisco/Project #2740-1717**

Dear Jim:

Enclosed are the results of the soil samples submitted to our lab on October 25, 1990. For your reference, our service request number for this work is K904067.

Please call if you have any questions.

Respectfully submitted,

Columbia Analytical Services, Inc.

Colin Elliott

Colin B. Elliott
Senior Project Chemist

mbm/CBE

1317 South 13th Avenue • P.O. Box 479 • Kelso, Washington 98626 • Telephone 206/577-7222 • Fax 206/636-1068

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

CLIENT: Riedel Environmental
SUBMITTED BY: Jim Romer
PROJECT: Nabisco/#2740-1717
SAMPLE DESCRIPTION: Soil

DATE RECEIVED: 10/25/90
DATE TCLP PERFORMED: 10/30/90
DATE ANALYZED: 11/01/90
WORK ORDER #: K904067

TCLP Extract
EPA Method 1311
Metals
mg/L (ppm)

Sample Name:				B-8	Method Blank
Lab Code:				4067-1	4067-MB
Parameters	Analysis Methods	MRL	Regulatory Limit*		
Arsenic	6010	0.1	5.0	ND	ND
Barium	6010	0.1	100	2	1
Cadmium	6010	0.01	1.0	ND	ND
Chromium	6010	0.01	5.0	ND	ND
Lead	6010	0.05	5.0	ND	ND
Mercury	7470	0.001	0.2	ND	ND
Selenium	6010	0.1	1.0	ND	ND
Silver	6010	0.01	5.0	ND	ND

ND means None Detected at or above the MRL
MRL means Method Reporting Limit

* From 40 CFR Part 261, et. al.

Approved by Colin Elliott Date 11/7/90

317 South 13th Avenue • P.O. Box 479 • Kelso, Washington 98626 • Telephone 206/577-7222 • Fax 206/636-1068

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

CLIENT: Riedel Environmental
SUBMITTED BY: Jim Romer
PROJECT: Nabisco/#2740-1717
SAMPLE DESCRIPTION: Soil

DATE RECEIVED: 10/15/90
DATE EXTRACTED: 10/31/90
DATE ANALYZED: 11/02/90
WORK ORDER #: K904067

Volatile Organics Analysis
EPA Methods 8010/8020
mg/Kg (ppm)
Dry Weight Basis

Sample Name:		B-8
Lab Code:		4067-1
	MRL*	
Dichlorodifluoromethane	1	ND
Chloromethane	1	ND
Vinyl Chloride	0.5	ND
Bromomethane	0.5	ND
Chloroethane	0.5	ND
Trichlorofluoromethane	0.5	ND
1,1-Dichloroethene	0.5	ND
Freon 113	0.5	ND
Methylene Chloride	2	ND
Trans 1,2-Dichloroethene	0.5	ND
Cis 1,2-Dichloroethene	0.5	ND
1,1-Dichloroethane	0.5	ND
Chloroform	0.5	ND
1,1,1-Trichloroethane	0.5	ND
Carbon Tetrachloride	0.5	ND
Benzene	0.5	ND
1,2-Dichloroethane	0.5	ND
Trichloroethene	0.5	ND
1,2-Dichloropropane	0.5	ND
Bromodichloromethane	0.5	ND
2-Chloroethylvinyl ether	5	ND
Trans 1,3-Dichloropropene	0.5	ND
Toluene	0.5	ND
Cis 1,3-Dichloropropene	0.5	ND
1,1,2-Trichloroethane	0.5	ND
Tetrachloroethene	0.5	ND
Dibromochloromethane	0.5	ND
Chlorobenzene	0.5	ND
Ethylbenzene	0.5	ND
Bromoform	0.5	ND
1,1,2,2-Tetrachloroethane	0.5	ND
1,3 Dichlorobenzene	1	ND
1,4 Dichlorobenzene	1	ND
1,2 Dichlorobenzene	1	ND
Total Xylenes	1	ND

ND means None Detected at or above the MRL
MRL means Method Reporting Limit
* Elevated MRLs due to matrix interferences.

Approved by Colin Elliott Date 11/7/90

00002

317 South 13th Avenue • P.O. Box 479 • Kelso, Washington 98626 • Telephone 206/577-7222 • Fax 206/636-1068

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

CLIENT: Riedel Environmental
SUBMITTED BY: Jim Romer
PROJECT: Nabisco/#2740-1717
SAMPLE DESCRIPTION: Soil

DATE RECEIVED: 10/25/90
DATE EXTRACTED: 10/31/90
DATE ANALYZED: 10/31/90
WORK ORDER #: K904067

Volatile Organics Analysis
EPA Methods 8010/8020
mg/Kg (ppm)
Dry Weight Basis

Sample Name:		MW-4	MW-5
Lab Code:		4067-2	4067-3
	MRL		
Dichlorodifluoromethane	0.1	ND	ND
Chloromethane	0.1	ND	ND
Vinyl Chloride	0.05	ND	ND
Bromomethane	0.05	ND	ND
Chloroethane	0.05	ND	ND
Trichlorofluoromethane	0.05	ND	ND
1,1-Dichloroethene	0.05	ND	ND
Freon 113	0.05	ND	ND
Methylene Chloride	0.2	ND	ND
Trans 1,2-Dichloroethene	0.05	ND	ND
Cis 1,2-Dichloroethene	0.05	ND	1.3
1,1-Dichloroethane	0.05	ND	ND
Chloroform	0.05	ND	ND
1,1,1-Trichloroethane	0.05	ND	ND
Carbon Tetrachloride	0.05	ND	ND
Benzene	0.05	ND	ND
1,2-Dichloroethane	0.05	ND	ND
Trichloroethene	0.05	ND	0.33
1,2-Dichloropropane	0.05	ND	ND
Bromodichloromethane	0.05	ND	ND
2-Chloroethylvinyl ether	0.5	ND	ND
Trans 1,3-Dichloropropene	0.05	ND	ND
Toluene	0.05	ND	ND
Cis 1,3-Dichloropropene	0.05	ND	ND
1,1,2-Trichloroethane	0.05	ND	ND
Tetrachloroethene	0.05	ND	ND
Dibromochloromethane	0.05	ND	ND
Chlorobenzene	0.05	ND	ND
Ethylbenzene	0.05	ND	ND
Bromoform	0.05	ND	ND
1,1,2,2-Tetrachloroethane	0.05	ND	ND
1,3 Dichlorobenzene	0.1	ND	ND
1,4 Dichlorobenzene	0.1	ND	ND
1,2 Dichlorobenzene	0.1	ND	ND
Total Xylenes	0.1	ND	ND

ND means None Detected at or above the MRL
MRL means Method Reporting Limit

Approved by Colin Elliott Date 11/7/90

00013

1317 South 13th Avenue • P.O. Box 479 • Kelso, Washington 98626 • Telephone 206/577-7222 • Fax 206/636-1068

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

CLIENT: Riedel Environmental
SUBMITTED BY: Jim Romer
PROJECT: Nabisco/#2740-1717
SAMPLE DESCRIPTION: Soil

DATE RECEIVED: 10/25/90
DATE EXTRACTED: 10/31/90
DATE ANALYZED: 10/31/90
WORK ORDER #: K904067

Volatile Organics Analysis
EPA Methods 8010/8020
mg/Kg (ppm)
Dry Weight Basis

Sample Name:		Method Blank
Lab Code:		4067-MB
	MRL	
Dichlorodifluoromethane	0.1	ND
Chloromethane	0.1	ND
Vinyl Chloride	0.05	ND
Bromomethane	0.05	ND
Chloroethane	0.05	ND
Trichlorofluoromethane	0.05	ND
1,1-Dichloroethene	0.05	ND
Freon 113	0.05	ND
Methylene Chloride	0.2	ND
Trans 1,2-Dichloroethene	0.05	ND
Cis 1,2-Dichloroethene	0.05	ND
1,1-Dichloroethane	0.05	ND
Chloroform	0.05	ND
1,1,1-Trichloroethane	0.05	ND
Carbon Tetrachloride	0.05	ND
Benzene	0.05	ND
1,2-Dichloroethane	0.05	ND
Trichloroethene	0.05	ND
1,2-Dichloropropane	0.05	ND
Bromodichloromethane	0.05	ND
2-Chloroethylvinyl ether	0.5	ND
Trans 1,3-Dichloropropene	0.05	ND
Toluene	0.05	ND
Cis 1,3-Dichloropropene	0.05	ND
1,1,2-Trichloroethane	0.05	ND
Tetrachloroethene	0.05	ND
Dibromochloromethane	0.05	ND
Chlorobenzene	0.05	ND
Ethylbenzene	0.05	ND
Bromoform	0.05	ND
1,1,2,2-Tetrachloroethane	0.05	ND
1,3 Dichlorobenzene	0.1	ND
1,4 Dichlorobenzene	0.1	ND
1,2 Dichlorobenzene	0.1	ND
Total Xylenes	0.1	ND

ND means None Detected at or above the MRL
MRL means Method Reporting Limit

Approved by Alvin Elliott Date 11/7/90

00004

1317 South 13th Avenue • P.O. Box 479 • Kelso, Washington 98626 • Telephone 206/577-7222 • Fax 206/636-1068

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

CLIENT: Riedel Environmental
SUBMITTED BY: Jim Romer
PROJECT: Nabisco/#2740-1717
SAMPLE DESCRIPTION: Soil

DATE RECEIVED: 10/25/90
DATE EXTRACTED: 10/26/90
DATE ANALYZED: 10/30/90
WORK ORDER #: K904067

Hydrocarbon Scan
EPA Methods 3550/Modified 8015
mg/Kg (ppm)
Dry Weight Basis

Sample Name	Lab Code	MRL	Diesel	Jet Fuel	Gasoline	Kerosene	Mineral Spirits	Oil*
B-8	4067-1	100	45,100	ND	ND	ND	ND	9,200
Method Blank	4067-MB	10	ND	ND	ND	ND	ND	ND

* Quantitated using hydraulic oil as a standard.
ND means None Detected at or above the MRL
MRL means Method Reporting Limit

Approved by Colin Elliott Date 11/7/90

00005

317 South 13th Avenue • P.O. Box 479 • Kelso, Washington 98626 • Telephone 206/577-7222 • Fax 206/636-1068

APPENDIX A

LABORATORY QC RESULTS

1317 South 13th Avenue • P.O. Box 479 • Kelso, Washington 98626 • Telephone 206/577-7222 • Fax 206/636-1068

COLUMBIA ANALYTICAL SERVICES, INC.

CLIENT: Riedel Environmental
SUBMITTED BY: Jim Romer
PROJECT: Nabisco/#2740-1717
SAMPLE DESCRIPTION: Soil

DATE RECEIVED: 10/25/90
WORK ORDER #: K904067

QA/QC Report
Duplicate Results
TCLP Metals
mg/L
in TCLP Extract

Sample Name: B-8
Lab Code: 4067-1

	Methods	MRL	A	B	Average	% Relative Difference
Arsenic	1311/6010	0.1	ND	ND	ND	-
Barium	1311/6010	0.1	2	2	2	<1
Cadmium	1311/6010	0.01	ND	ND	ND	-
Chromium	1311/6010	0.01	ND	ND	ND	-
Lead	1311/6010	0.05	ND	ND	ND	-
Mercury	1311/7470	0.001	ND	ND	ND	-
Selenium	1311/6010	0.1	ND	ND	ND	-
Silver	1311/6010	0.01	ND	ND	ND	-

ND means None Detected at or above the MRL
MRL means Method Reporting Limit

Approved by Colin Elliott Date 11/7/90

1317 South 13th Avenue • P.O. Box 479 • Kelso, Washington 98626 • Telephone 206/577-7222 • Fax 206/636-1068

COLUMBIA ANALYTICAL SERVICES, INC.

CLIENT: Riedel Environmental
SUBMITTED BY: Jim Romer
PROJECT: Nabisco/#2740-1717
SAMPLE DESCRIPTION: Soil

DATE RECEIVED: 10/25/90
WORK ORDER #: K904067

QA/QC Report
Matrix Spike Results
TCLP Metals
mg/L
in TCLP Extract

Sample Name: B-8
Lab Code: 4067-1

	Spike Level	MRL	Sample Result	Spike Result	% Recovery
Arsenic	5.0	0.1	ND	5.1	102
Barium	5.0	0.1	2	6	80
Cadmium	1.0	0.01	ND	0.97	97
Chromium	5.0	0.01	ND	4.64	93
Lead	5.0	0.05	ND	4.67	93
Mercury	0.001	0.001	ND	0.001	100
Selenium	1.0	0.1	ND	1.1	110
Silver	1.0	0.01	ND	1.0	100

ND means None Detected at or above the MRL
MRL means Method Reporting Limit

Approved by Alan Elliott Date 11/07/90

00008

1317 South 13th Avenue • P.O. Box 479 • Kelso, Washington 98626 • Telephone 206/577-7222 • Fax 206/636-1068

COLUMBIA ANALYTICAL SERVICES, INC.

CLIENT: Riedel Environmental
SUBMITTED BY: Jim Romer
PROJECT: Nabisco/#2740-1717
SAMPLE DESCRIPTION: Soil

DATE RECEIVED: 10/25/90
DATE EXTRACTED: 10/31/90
DATE ANALYZED: 10/31/90
WORK ORDER #: K904067

QA/QC Report
Surrogate Recovery Summary
Volatile Organic Analytes
EPA Methods 8010/8020

Sample Name	Lab Code	Percent Recovery
B-8	4067-1	61.0
MW-4	4067-2	65.3
MW-5	4067-3	59.5
Method Blank	4067-MB	57.3
CAS Acceptance Criteria		50-130

Approved by Glen Elliott Date 11/7/90

00009

1317 South 13th Avenue • P.O. Box 479 • Kelso, Washington 98626 • Telephone 206/577-7222 • Fax 206/636-1068

COLUMBIA ANALYTICAL SERVICES, INC.

CLIENT: Riedel Environmental
SUBMITTED BY: Jim Romer
PROJECT: Nabisco/#2740-1717
SAMPLE DESCRIPTION: Soil

DATE RECEIVED: 10/25/90
DATE EXTRACTED: 10/26/90
DATE ANALYZED: 10/30/90
WORK ORDER #: K904067

QA/QC Report
Surrogate Recovery Summary
Hydrocarbon Scan
EPA Methods 3550/Modified 8015
Dry Weight Basis

Sample Name	Lab Code	Percent Recovery
B-8	4067-1	*
Method Blank	4067-MB	83.9
CAS Acceptance Criteria		65-115

* Outside acceptance limits due to matrix interferences.

Approved by Colin Elliott Date 11/7/90

00010

317 South 13th Avenue • P.O. Box 479 • Kelso, Washington 98626 • Telephone 206/577-7222 • Fax 206/636-1068

2140-1717 | NABISCO

SAMPLERS: (Signature) James R. Ro[illegible]

STAT. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	8015M	8010/8020	TCLP (Metals)				REMARKS
B-8	10/23/90				9.5'	1	✓	✓	✓				5 day Turn Around
MW4	10/24/90				15-16.5'	1		✓					"
MW5	10/24/90				15-16.5'	1		✓					"

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
James R. Ro[illegible]	10/25/90 1630				
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)	Date/Time	Remarks	
		Ruth Allison	10/25/90		

"Imagineering a cleaner world"

Split Samples: ☐ Accepted ☐ Declined Signature

[illegible]NTAL SERVICES, INC.

SCHN00171259

APPENDIX E

SCHN00171275

Appendix E - Site Reconnaissance Photographs

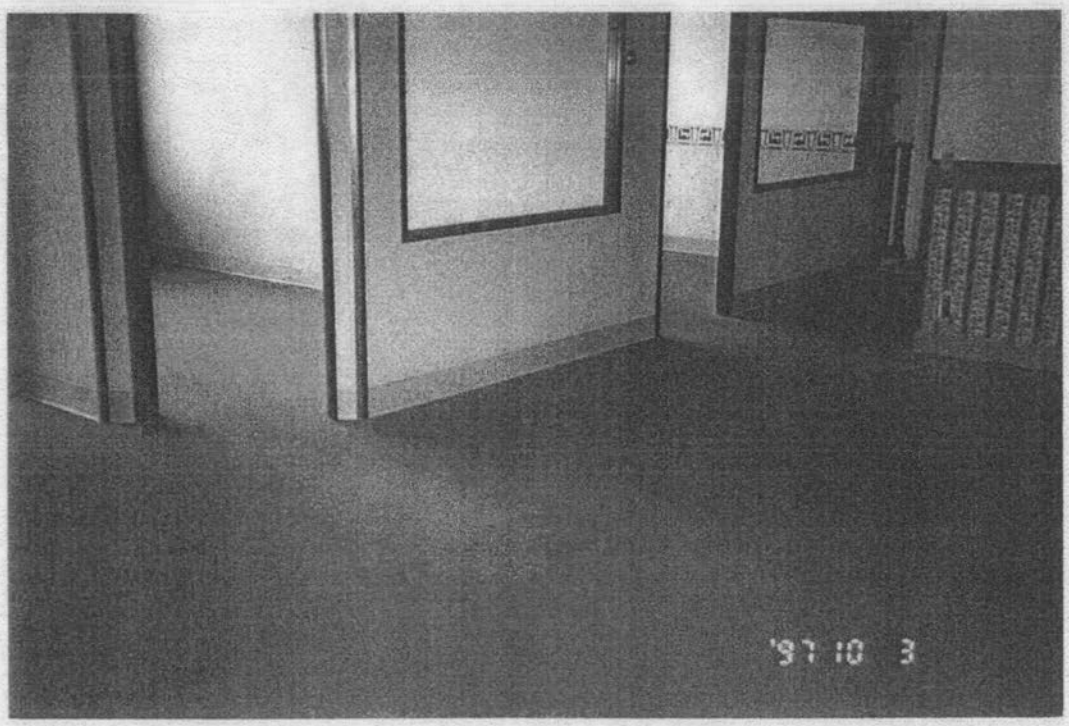
Looking southeast at front of building.

SCHN00171277

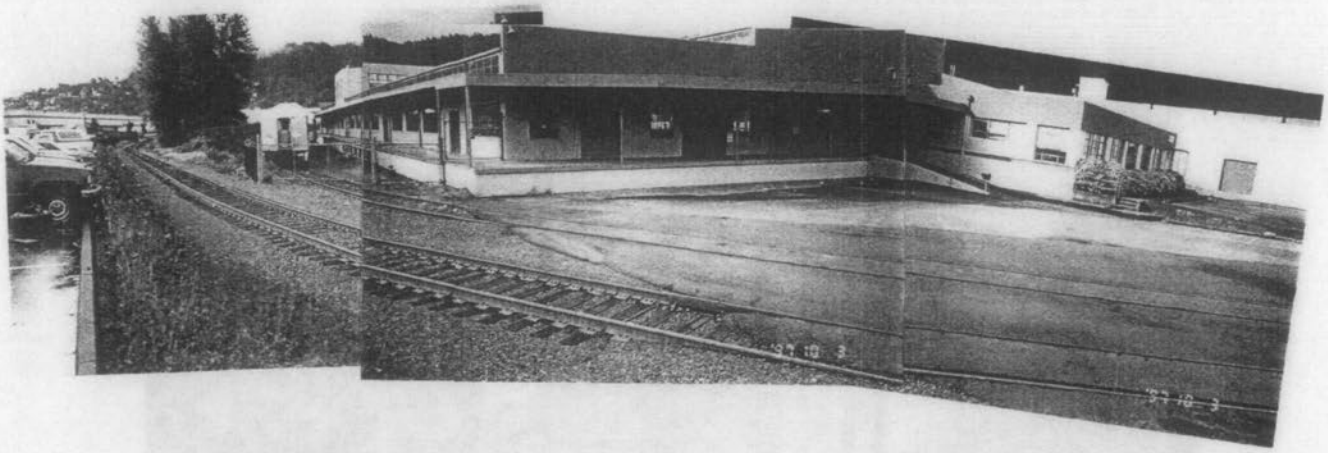
Looking northwest at rear of building from southeast corner of site.

Looking southeast from northwest corner of inside building.

SCHN00171279



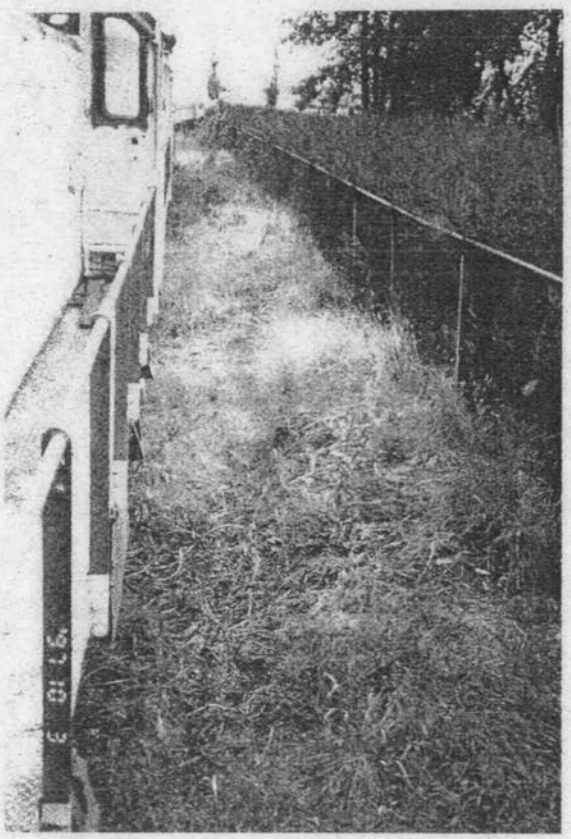
Front offices.



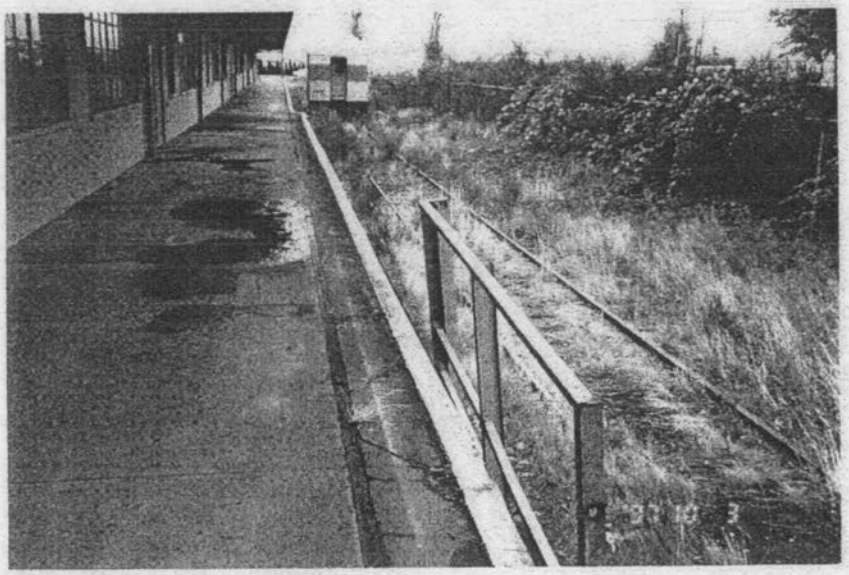
Looking south at front of building.

SCHN00171281

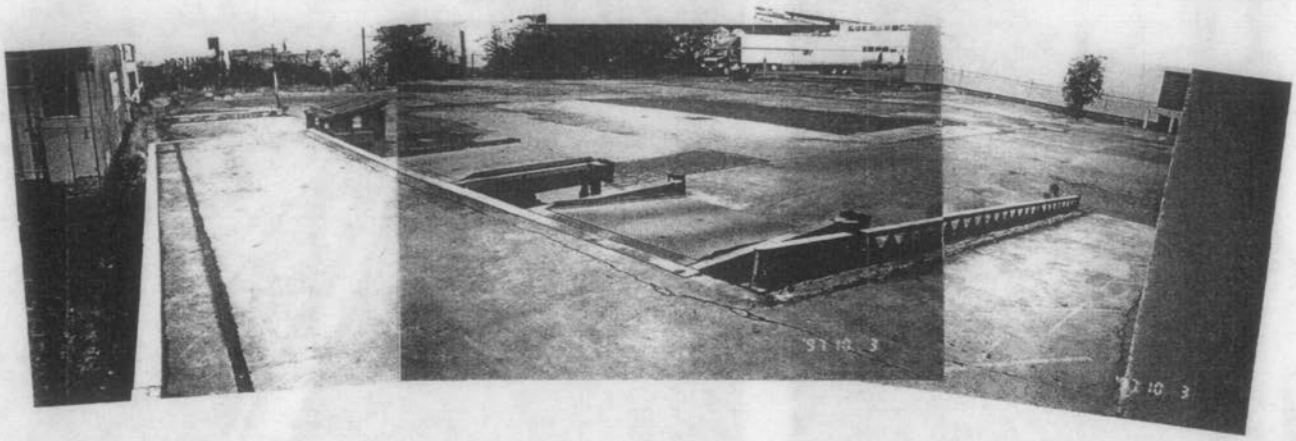
Looking north down east property line.



Looking north down east property line.



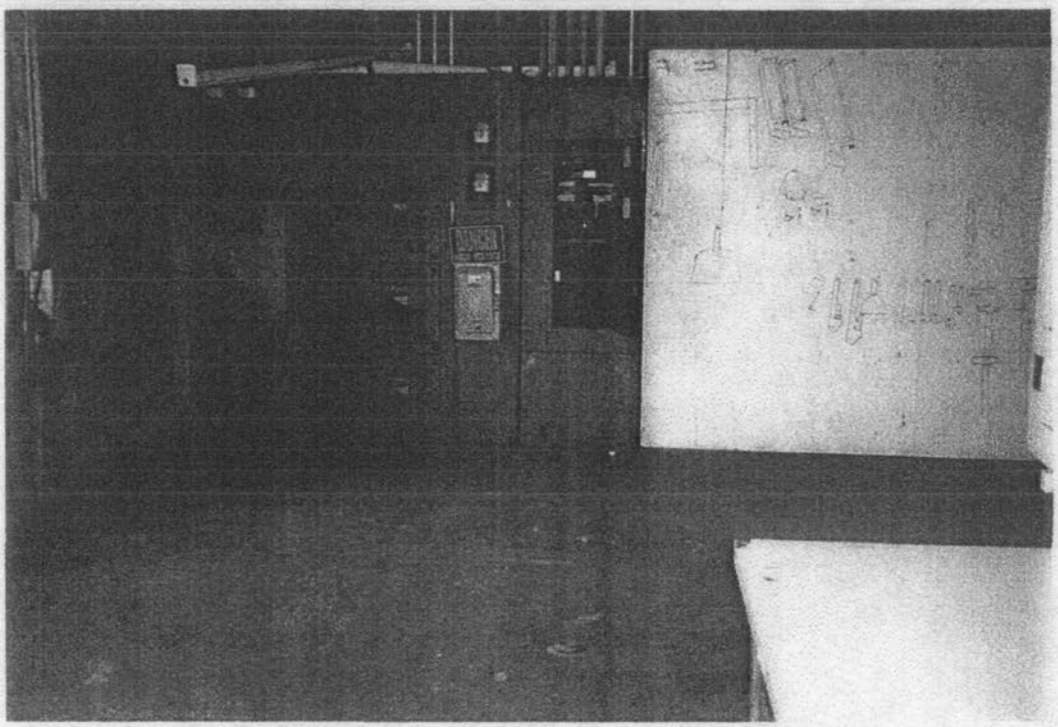
SCHN00171282



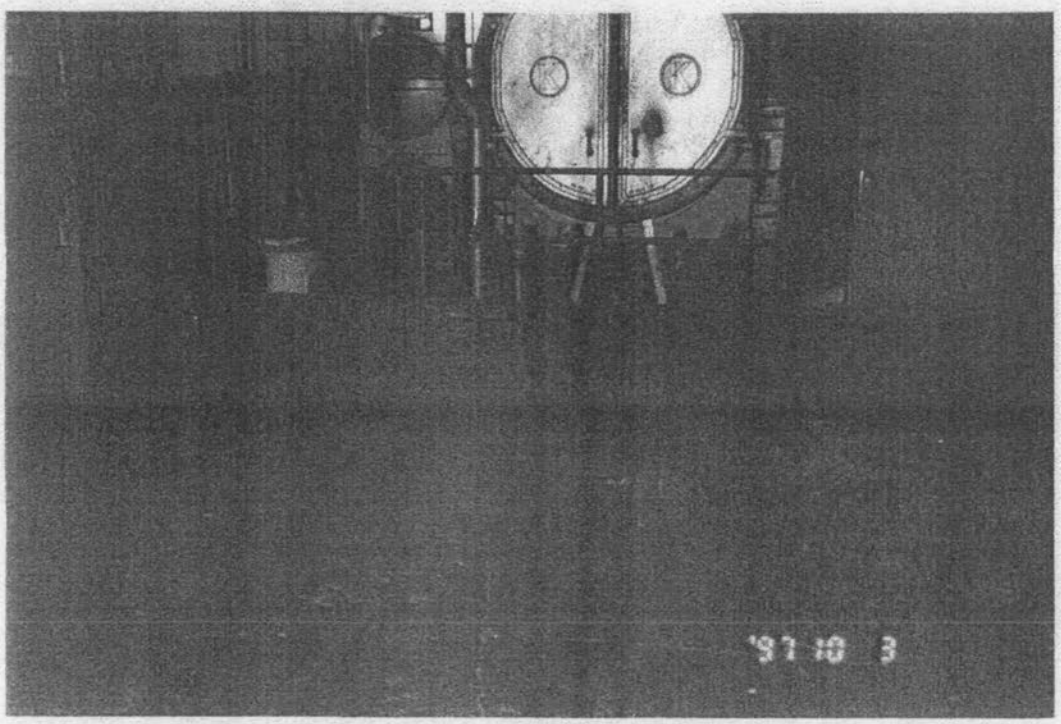
Looking southwest from southeast corner of building.

Looking north down west property line.

Looking northeast from southwest corner of site.

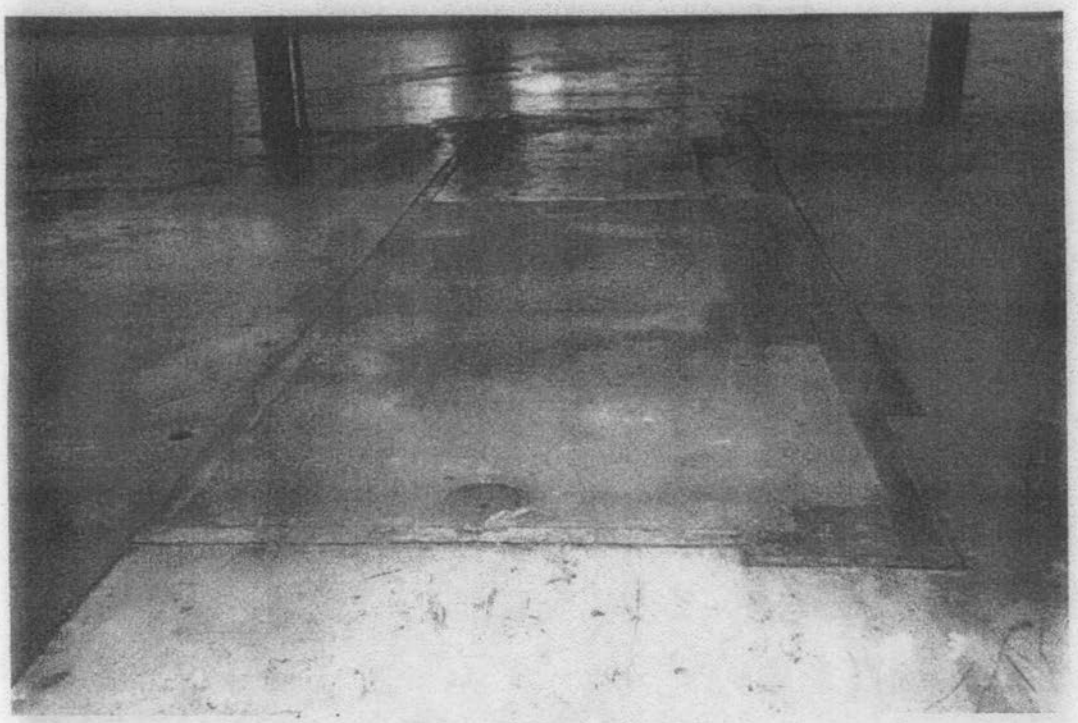


Electrical equipment in transformer room.

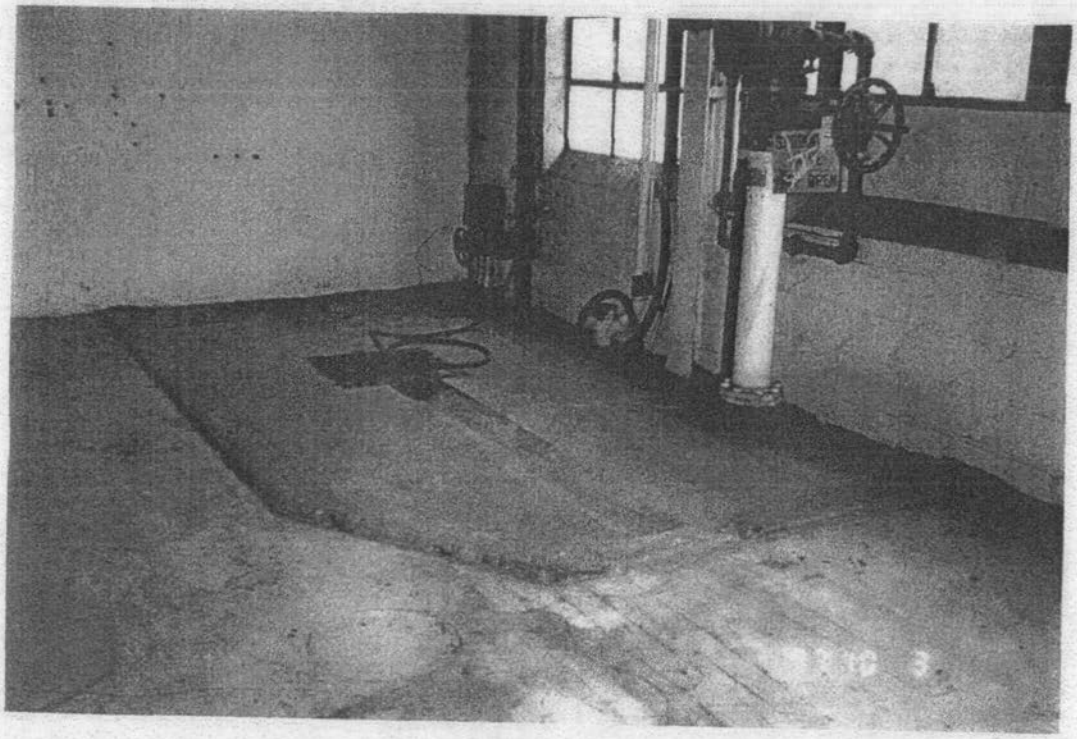


Boiler room. Floor drain in foreground.

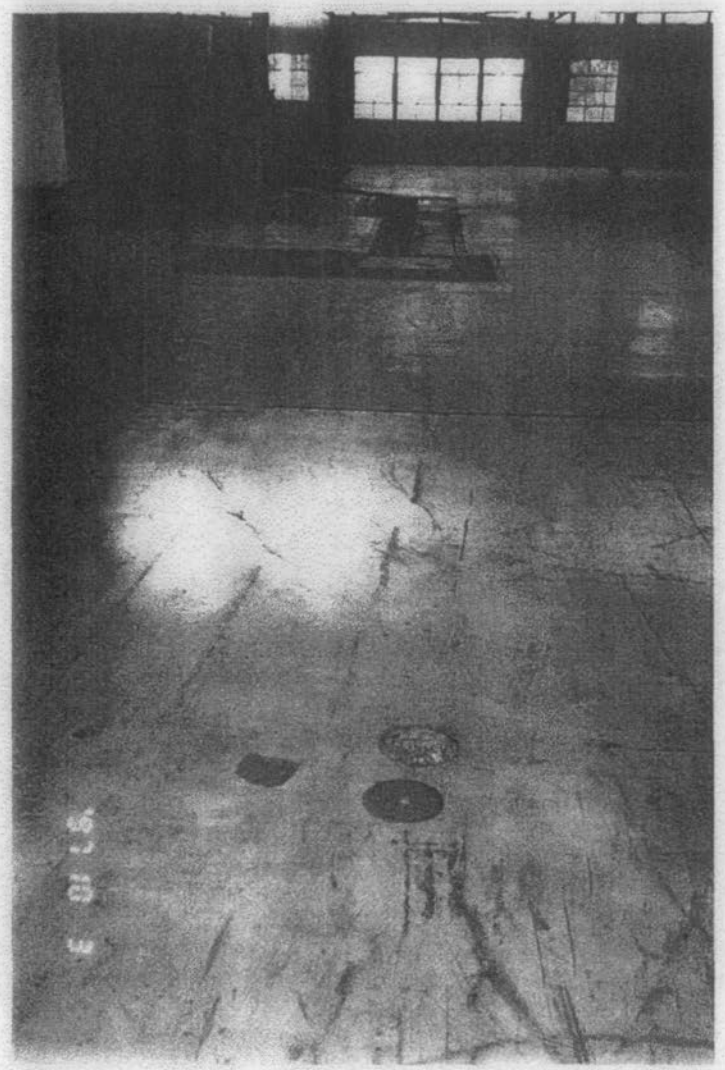
Compressor near boiler room.



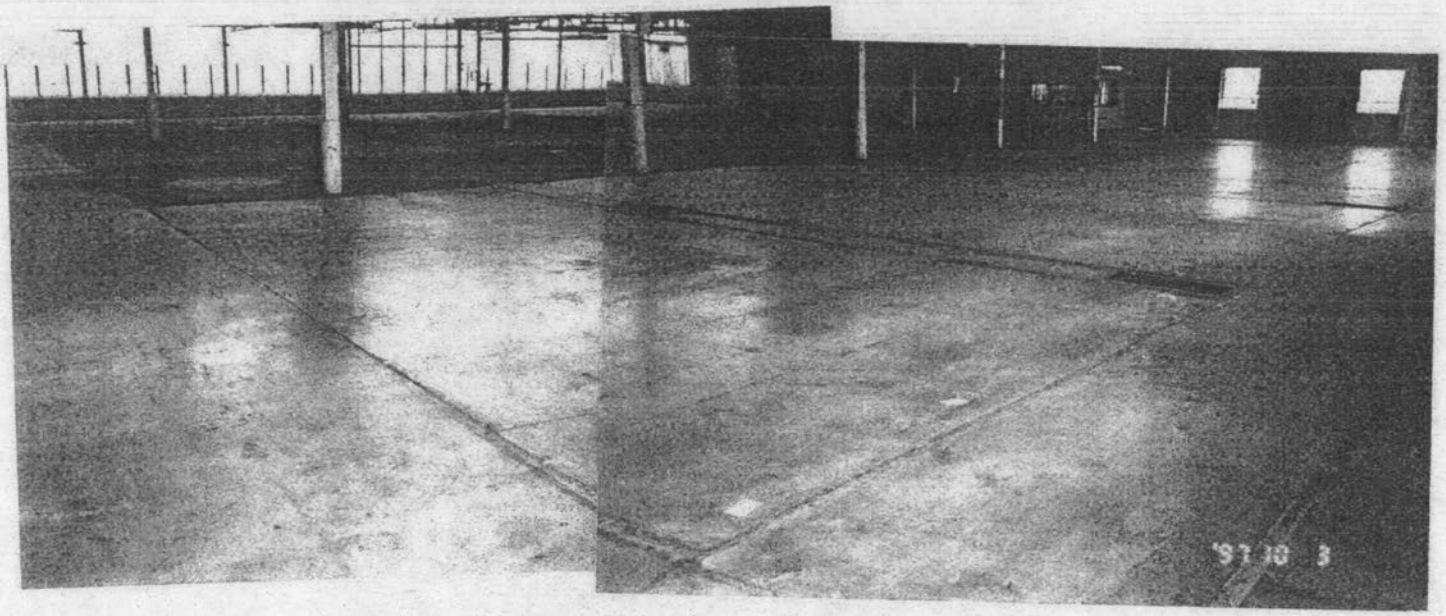
Filled in pit in building floor.



Wash area with sump in southwest corner of building.



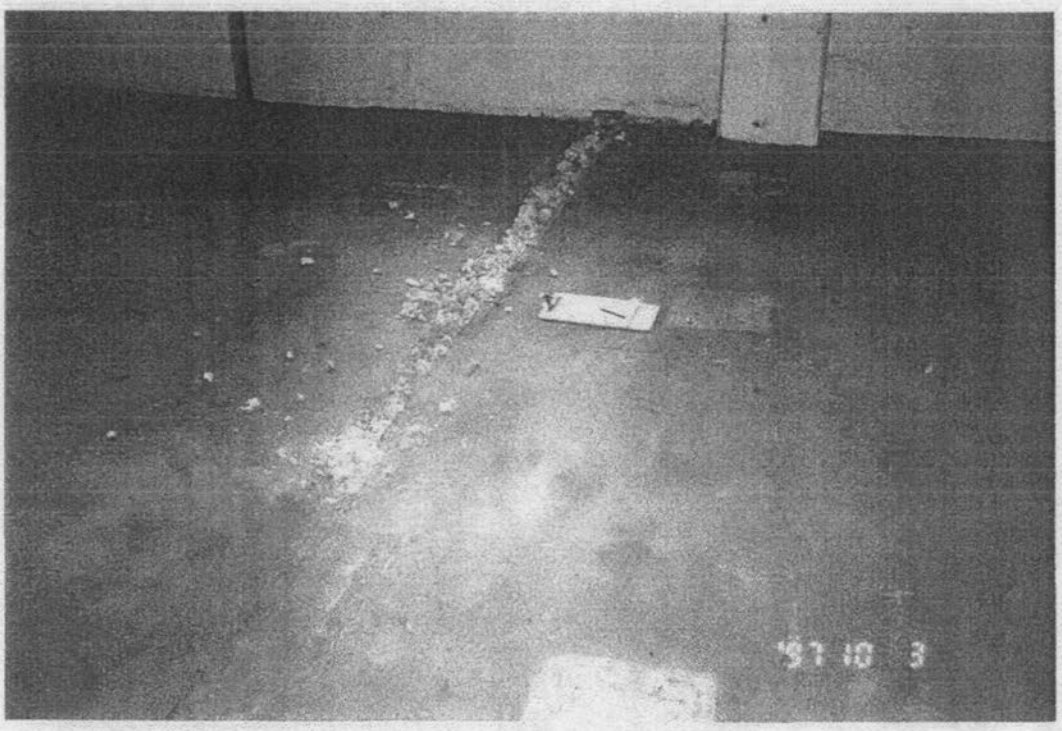
Filled in pits and floor drain in building.



Looking northwest toward apparent former sub-floor ventilation ducts or drain.

SCHN00171290

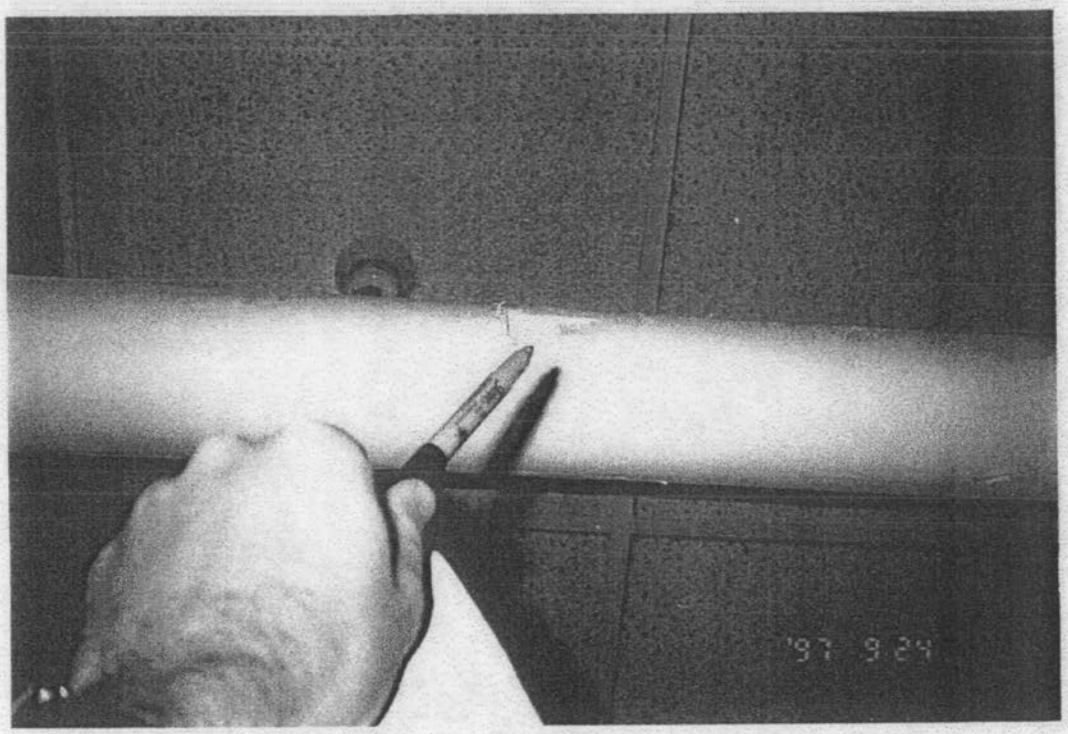
Open drain in building.



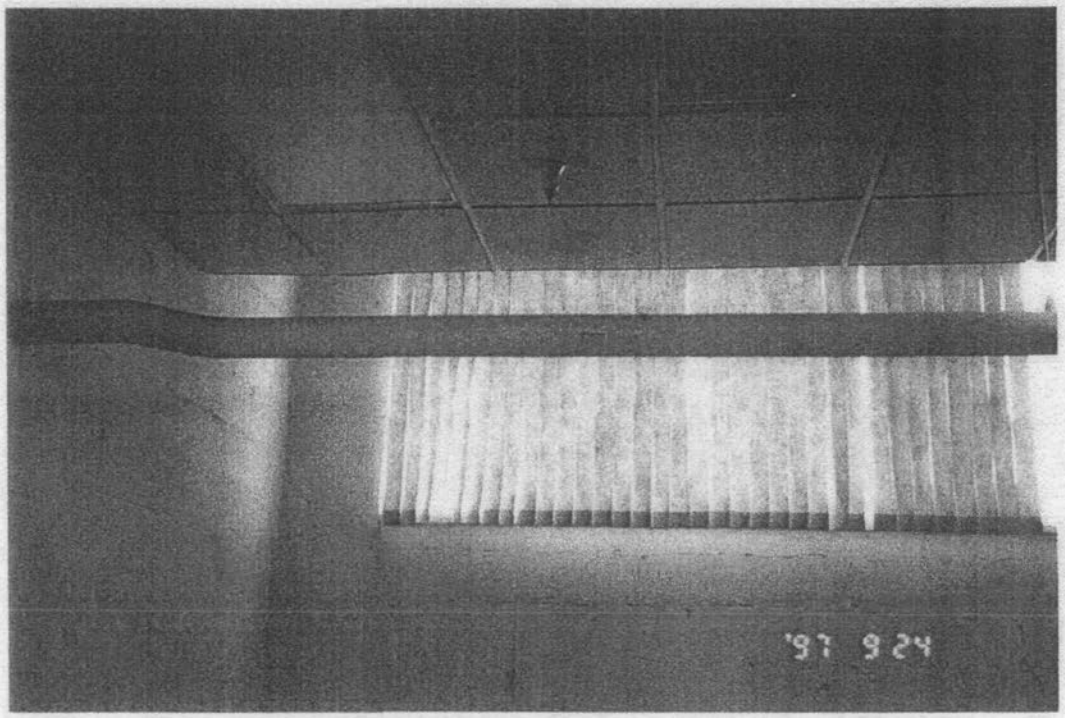
Crystalline material along concrete floor seam in former acid storage area.

Crystalline material along concrete floor seam in former acid storage area .

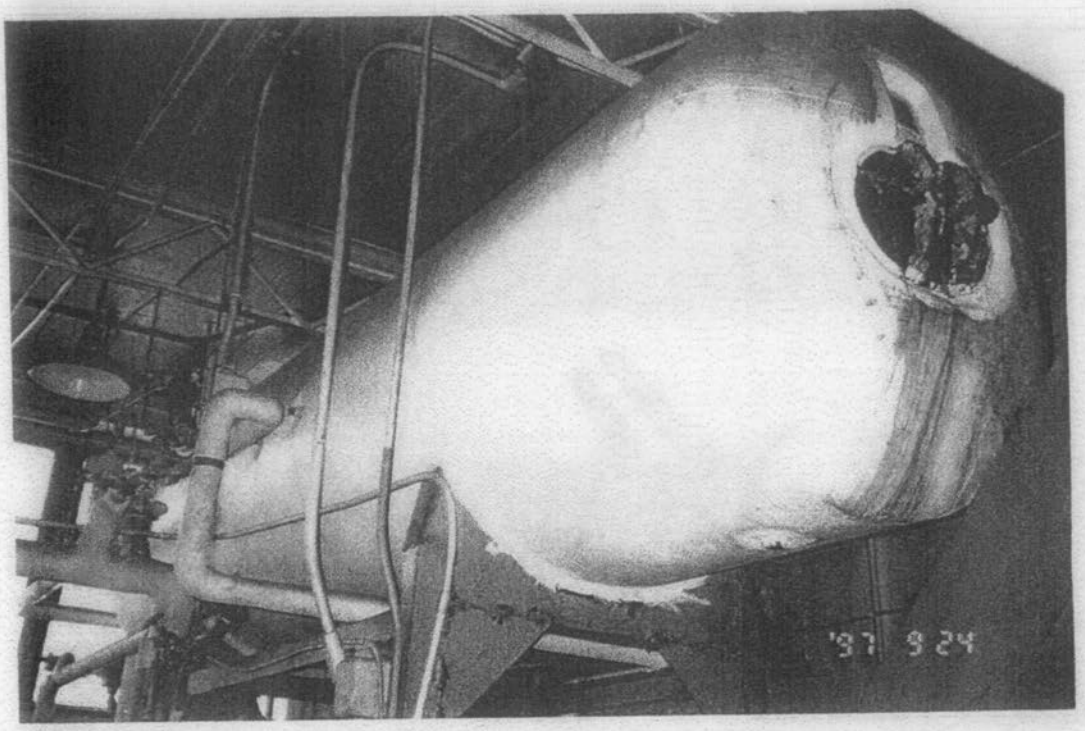
Hole in concrete floor to apparent former sub-floor ventilation duct.



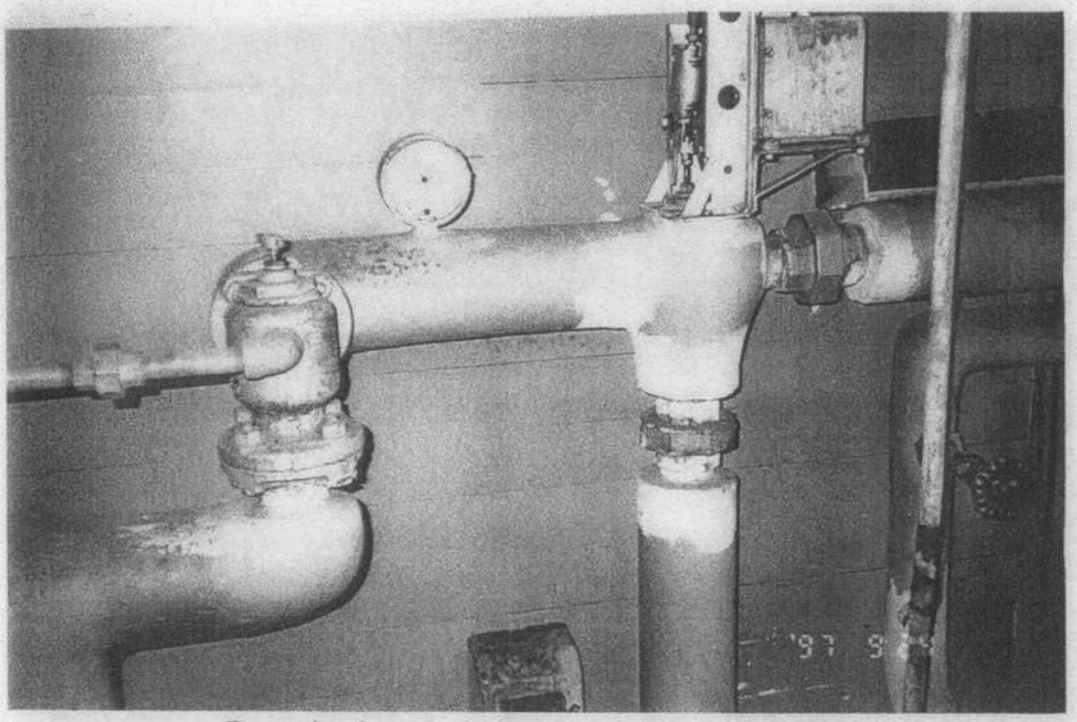
Damaged linear pipe insulation in upstairs office.



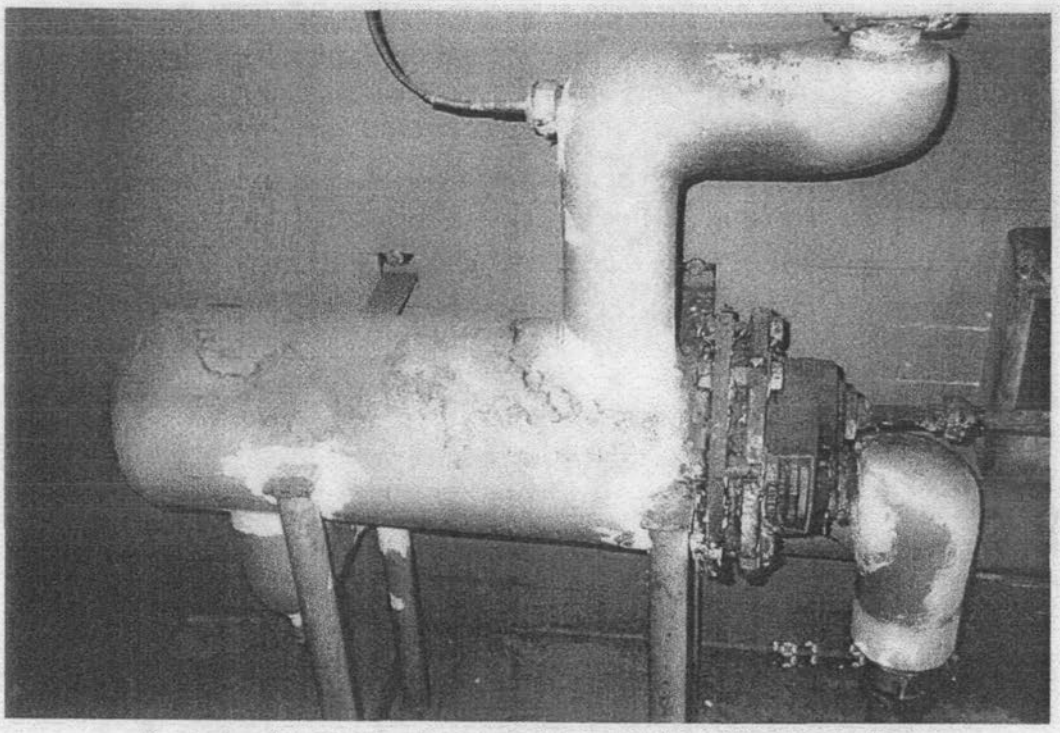
Damaged linear pipe insulation - upstairs office next to boiler room.



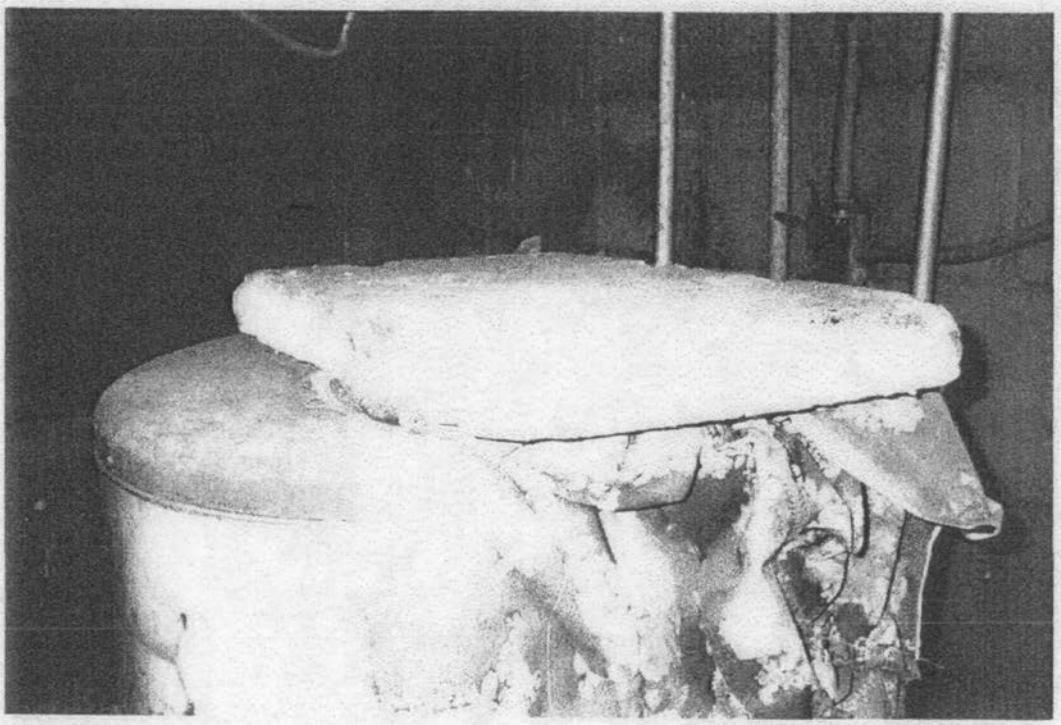
Steam boiler tank in upstairs office area. Jacket presumed to contain asbestos. ACM in good condition.



Example of repaired pipe insulation presumed ACM.

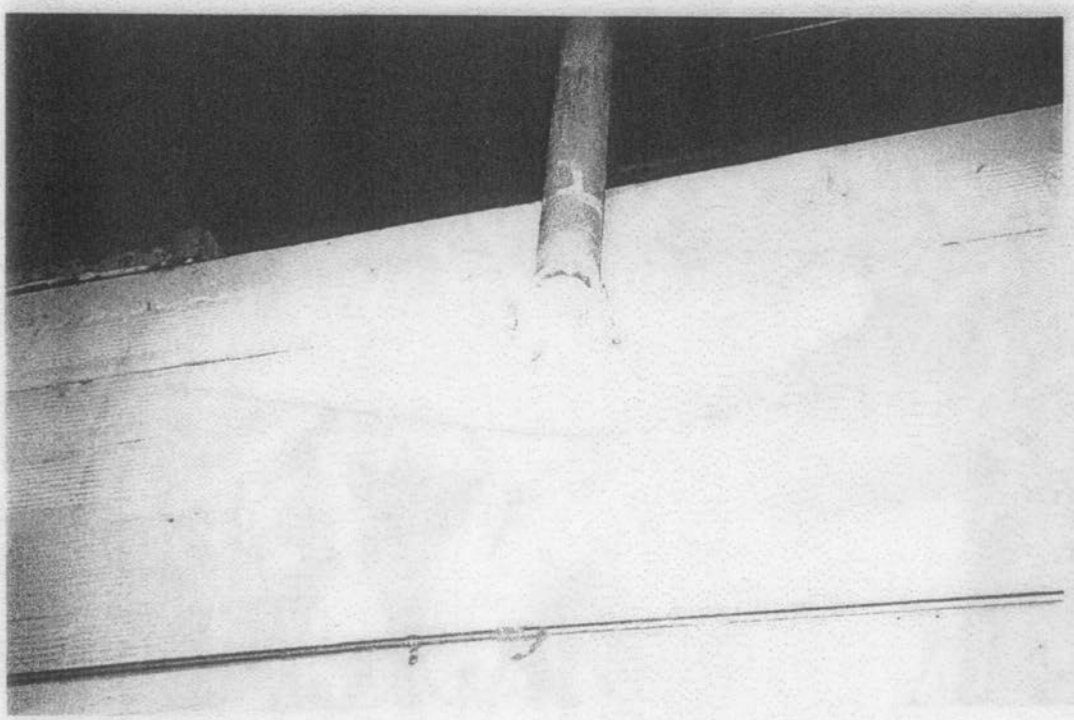


Example of repaired valves and pipe insulation office area boiler room.

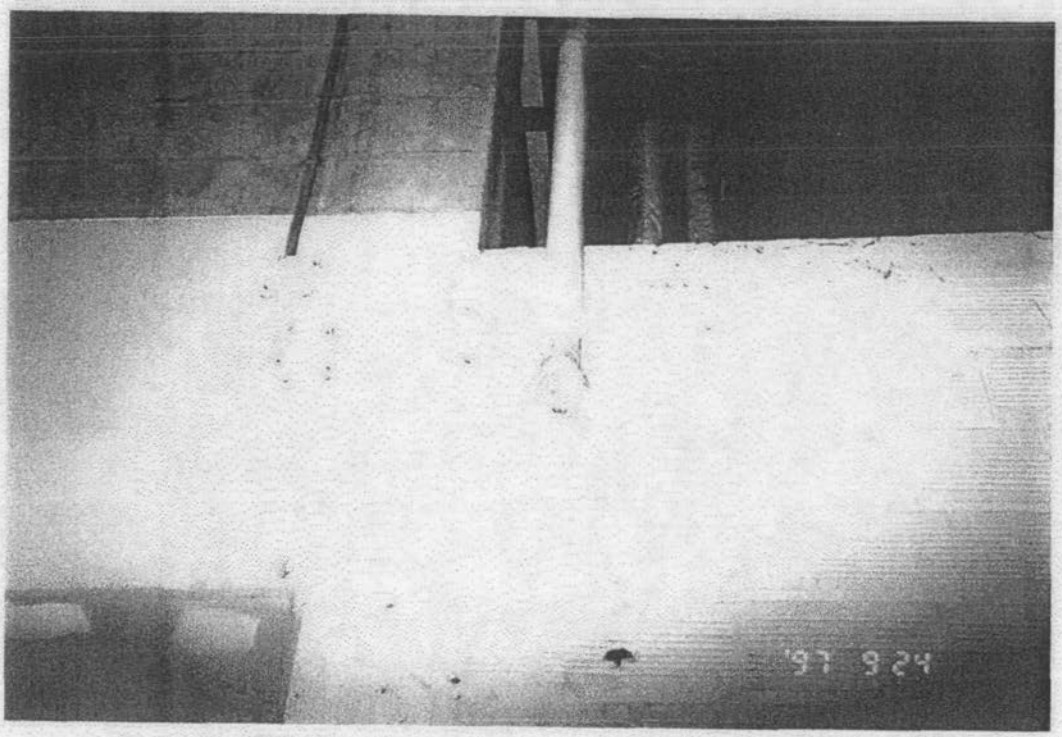


Calcium silicate block noted in warehouse boiler room.

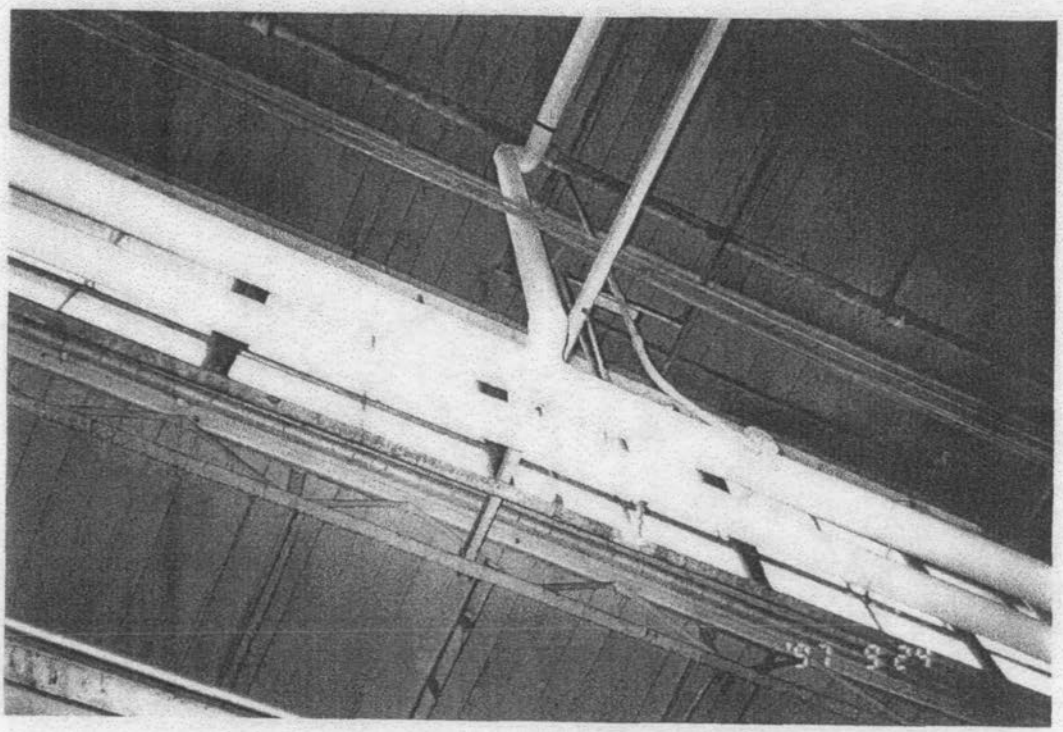
Presumed ACM sloughing off boiler jacket. Material coming from between boiler and jacket.



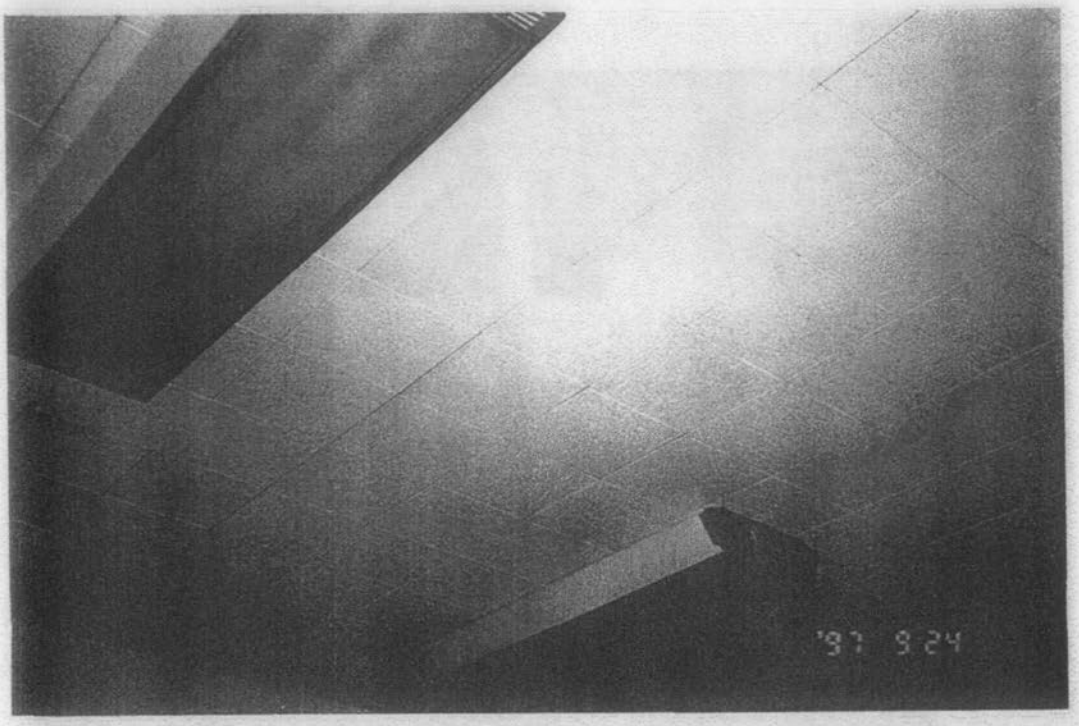
Damaged elbow in main warehouse in SW vicinity. Presumed ACM.



Damaged elbow in main warehouse in SW vicinity. Presumed ACM.



Example of straight runs going East to West along main warehouse. Various areas of encapsulation using visqueen. Note damage elbow in picture.



Ceiling tile that may contain asbestos. All were in good condition.

9 x 9 vinyl flooring. Presumed to contain asbestos. In fair condition. No serious damage, surface wear noted.

APPENDIX F

SCHN00171300

Appendix F - Analytical Laboratory Reports

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

BOTHELL ▪ (425) 481-9200 ▪ FAX 485-2992
SPOKANE ▪ (509) 924-9200 ▪ FAX 924-9290
PORTLAND ▪ (503) 643-9200 ▪ FAX 644-2202

CH2M-Hill	Project:	Daisy Kingdom	Sampled:	9/24/97
825 N.E. Multnomah	Project Number:	130341.DK.01	Received:	9/30/97
Portland, OR 97232	Project Manager:	Aaron Leritz	Reported:	10/15/97 11:13

ANALYTICAL REPORT FOR SAMPLES:

Sample Description	Laboratory Sample Number	Sample Matrix	Date Sampled
SS-970924-01	P709554-01	Soil	9/24/97
SS-970924-02	P709554-02	Soil	9/24/97
SS-970924-03	P709554-03	Soil	9/24/97
SS-970924-04	P709554-04	Soil	9/24/97
SS-970924-05	P709554-05	Soil	9/24/97
SS-970924-06	P709554-06	Soil	9/24/97
SS-970924-07	P709554-07	Soil	9/24/97
SS-970924-04 & 05 Composite	P709554-08	Soil	9/24/97

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

BOTHELL ▪ (425) 481-9200 ▪ FAX 485-2992
SPOKANE ▪ (509) 924-9200 ▪ FAX 924-9290
PORTLAND ▪ (503) 643-9200 ▪ FAX 644-2202

CH2M-Hill	Project:	Daisy Kingdom	Sampled:	9/24/97
825 N.E. Multnomah	Project Number:	130341.DK.01	Received:	9/30/97
Portland, OR 97232	Project Manager:	Aaron Leritz	Reported:	10/15/97 11:13

Total Metals per EPA 6000/7000 Series Methods
North Creek Analytical - Portland

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method	Reporting Limit	Result	Units	Notes*
SS-970924-01			P709554-01				Soil	
Lead	1070006	9/30/97	10/1/97	EPA 6010A	10.0	ND	mg/kg dry	
SS-970924-02			P709554-02				Soil	
Lead	1070006	9/30/97	10/1/97	EPA 6010A	10.0	22.6	mg/kg dry	
SS-970924-03			P709554-03				Soil	
Lead	1070006	9/30/97	10/1/97	EPA 6010A	10.0	130	mg/kg dry	
SS-970924-04			P709554-04				Soil	
Lead	1070006	9/30/97	10/1/97	EPA 6010A	500	7240	mg/kg dry	
SS-970924-05			P709554-05				Soil	
Lead	1070006	9/30/97	10/1/97	EPA 6010A	500	6970	mg/kg dry	
SS-970924-06			P709554-06				Soil	
Lead	1070006	9/30/97	10/1/97	EPA 6010A	10.0	18.4	mg/kg dry	
SS-970924-07			P709554-07				Soil	
Lead	1070006	9/30/97	10/1/97	EPA 6010A	10.0	73.0	mg/kg dry	

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

BOTHELL ▪ (425) 481-9200 ▪ FAX 485-2992
SPOKANE ▪ (509) 924-9200 ▪ FAX 924-9290
PORTLAND ▪ (503) 643-9200 ▪ FAX 644-2202

CH2M-Hill	Project:	Daisy Kingdom	Sampled:	9/24/97
825 N.E. Multnomah	Project Number:	130341.DK.01	Received:	9/30/97
Portland, OR 97232	Project Manager:	Aaron Leritz	Reported:	10/15/97 11:13

TCLP Metals per EPA 1311/6000/7000 Series Methods
North Creek Analytical - Portland

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method	Reporting Limit	Result	Units	Notes*
SS-970924-04 & 05 Composite			**P709554-08**				**Soil**	
Lead	1070197	10/7/97	10/8/97	EPA 6010A	2.00	**17.1**	mg/l	

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

BOTHELL ▪ (425) 481-9200 ▪ FAX 485-2992
SPOKANE ▪ (509) 924-9200 ▪ FAX 924-9290
PORTLAND ▪ (503) 643-9200 ▪ FAX 644-2202

CH2M-Hill	Project:	Daisy Kingdom	Sampled:	9/24/97
825 N.E. Multnomah	Project Number:	130341.DK.01	Received:	9/30/97
Portland, OR 97232	Project Manager:	Aaron Leritz	Reported:	10/15/97 11:13

Dry Weight Determination
North Creek Analytical - Portland

Sample Name	Lab ID	Matrix	Result	Units
SS-970924-01	P709554-01	Soil	92.2	%
SS-970924-02	P709554-02	Soil	89.9	%
SS-970924-03	P709554-03	Soil	87.7	%
SS-970924-04	P709554-04	Soil	86.0	%
SS-970924-05	P709554-05	Soil	92.2	%
SS-970924-06	P709554-06	Soil	91.2	%
SS-970924-07	P709554-07	Soil	94.5	%

North Creek Analytical, Inc.

Sandra K. Wright, Project Manager

18939 120th Avenue N.E., Suite 101, Bothell, WA 98011-9508
East 11115 Montgomery, Suite B, Spokane, WA 99206-4776
9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132

SCHN00171305

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

BOTHELL ▪ (425) 481-9200 ▪ FAX 485-2992
SPOKANE ▪ (509) 924-9200 ▪ FAX 924-9290
PORTLAND ▪ (503) 643-9200 ▪ FAX 644-2202

CH2M-Hill	Project:	Daisy Kingdom	Sampled:	9/24/97
825 N.E. Multnomah	Project Number:	130341.DK.01	Received:	9/30/97
Portland, OR 97232	Project Manager:	Aaron Leritz	Reported:	10/15/97 11:13

Total Metals per EPA 6000/7000 Series Methods/Quality Control
North Creek Analytical - Portland

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 1070006	**Date Prepared: 9/30/97**				**Extraction Method: EPA 3050**					
Blank	**1070006-BLK1**									
Lead	10/1/97			ND	mg/kg dry	10.0				
LCS	**1070006-BS1**									
Lead	10/1/97	100		90.5	mg/kg dry	80.0-120	90.5			
Duplicate	**1070006-DUP1**		**P709554-01**							
Lead	10/1/97		ND	17.1	mg/kg dry			40.0		1
Matrix Spike	**1070006-MS1**		**P709554-01**							
Lead	10/1/97	108	ND	106	mg/kg dry	75.0-125	98.1			

North Creek Analytical, Inc.

**Refer to end of report for text of notes and definitions.*

SKW

Sandra K. Wright, Project Manager

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

BOTHELL ▪ (425) 481-9200 ▪ FAX 485-2992
SPOKANE ▪ (509) 924-9200 ▪ FAX 924-9290
PORTLAND ▪ (503) 643-9200 ▪ FAX 644-2202

CH2M-Hill	Project:	Daisy Kingdom	Sampled:	9/24/97
825 N.E. Multnomah	Project Number:	130341.DK.01	Received:	9/30/97
Portland, OR 97232	Project Manager:	Aaron Leritz	Reported:	10/15/97 11:13

TCLP Metals per EPA 1311/6000/7000 Series Methods/Quality Control
North Creek Analytical - Portland

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 1070197	**Date Prepared: 10/7/97**				**Extraction Method: EPA 1311/3020**					
Blank	**1070197-BLK1**									
Lead	10/8/97			**ND**	mg/l	**0.200**				
LCS	**1070197-BS1**									
Lead	10/8/97	2.00		2.13	mg/l	75.0-125	107			
Matrix Spike	**1070197-MS1**		**P709565-01**							
Lead	10/8/97	2.00	ND	2.08	mg/l	50.0-150	**104**			

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

BOTHELL ▪ (425) 481-9200 ▪ FAX 485-2992
SPOKANE ▪ (509) 924-9200 ▪ FAX 924-9290
PORTLAND ▪ (503) 643-9200 ▪ FAX 644-2202

CH2M-Hill	Project:	Daisy Kingdom	Sampled:	9/24/97
825 N.E. Multnomah	Project Number:	130341.DK.01	Received:	9/30/97
Portland, OR 97232	Project Manager:	Aaron Leritz	Reported:	10/15/97 11:13

Notes and Definitions

#	Note
1	Analyses are not controlled on RPD values from sample concentrations less than 5 times the reporting limit.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
Recov.	Recovery
RPD	Relative Percent Difference

North Creek Analytical, Inc.

Sandra K. Wright, Project Manager

NORTH CREEK ANALYTICAL

East 11115 Montgomery, Suite B, Spokane, WA 99206-4779 (509) 924-9200 FAX 924-9290
9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132 (503) 643-9200 FAX 644-2202

COPY

CHAIN OF CUSTODY REPORT

P709554

229

CLIENT: CH2M HILL
ADDRESS: 825 NE Multnomah Suite 1300 Portland, OR 97232
PHONE: 235-5000 FAX: 235-2445
PROJECT NAME: Daisy Kingdom
PROJECT NUMBER: 130341.DK.01
SAMPLED BY: Aaron Leritz

REPORT TO: Aaron Leritz & Ross Rieke / CH2M HILL
BILLING TO:
P.O. NUMBER:
NCA QUOTE #:

TURNAROUND REQUEST in Business Days *
Organic & Inorganic Analyses: 10 | ~~5~~ | 3 | 2 | 1 (Please Select One)
Fuels & Hydrocarbon Analyses: 5 | 3 | 2 | 1
* Turnaround Requests less than standard will incur Rush Char
FAX RESULTS BY :

Analysis Request: Pb at Portal

SAMPLE IDENTIFICATION: (NUMBER OR DESCRIPTION)	SAMPLING DATE / TIME	MATRIX (W,S,O)	# OF CONT.	Pb	COMMENTS & PRESERVATIVES USED	NCA SAMPLE NUMBER
1. SS-970924-01	9-24 / 1200	S	1	X	composite	
2. SS-970924-02	9-24 1210					
3. SS-970924-03	9-24 1220					
4. SS-970924-04	9-24 1230					
5. SS-970924-05	9-24 1240					
6. SS-970924-06	1250					
7. SS-970924-07	/ 1300					
8.						
9.						
10.						

RELINQUISHED BY: Aaron Leritz DATE: 9-24-97
PRINT NAME: Aaron Leritz FIRM: CH2M HILL TIME: 1320

RECEIVED BY: [signature] DATE: 9-30-97
PRINT NAME: Larry Spangler FIRM: NCA TIME: 0830

RELINQUISHED BY: [signature] DATE: 9-30-97
PRINT NAME: Larry Spangler FIRM: NCA TIME: 1110

RECEIVED BY: Karicline DATE: 9/30/97
PRINT NAME: KARICLINE FIRM: NCA TIME: 11:10

ADDITIONAL REMARKS: Samples are composites. Please homogenize before analysis

PAGE 1 OF 1

COC Rev 6, 10/94

SCHN00171309

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

BOTHELL ▪ (425) 481-9200 ▪ FAX 485-2992
SPOKANE ▪ (509) 924-9200 ▪ FAX 924-9290
PORTLAND ▪ (503) 643-9200 ▪ FAX 644-2202

CH2M-Hill	Project:	Schnitzer - Daisy Kingdom	Sampled:	10/9/97
825 N.E. Multnomah	Project Number:	13.341.DK.01	Received:	10/10/97
Portland, OR 97232	Project Manager:	Darren Nakata	Reported:	10/13/97 22:55

ANALYTICAL REPORT FOR SAMPLES:

Sample Description	Laboratory Sample Number	Sample Matrix	Date Sampled
8-06'	P710218-01	Soil	10/9/97
8-18'	P710218-02	Soil	10/9/97
8-36'	P710218-03	Soil	10/9/97
9-06'	P710218-04	Soil	10/9/97
9-18'	P710218-05	Soil	10/9/97
9-36'	P710218-06	Soil	10/9/97
10-06'	P710218-07	Soil	10/9/97
10-18'	P710218-08	Soil	10/9/97
10-36'	P710218-09	Soil	10/9/97
11-06'	P710218-10	Soil	10/9/97
11-18'	P710218-11	Soil	10/9/97
11-36'	P710218-12	Soil	10/9/97
12-06'	P710218-13	Soil	10/9/97
12-18'	P710218-14	Soil	10/9/97
12-36'	P710218-15	Soil	10/9/97
13-06	P710218-16	Soil	10/9/97
13-18	P710218-17	Soil	10/9/97
13-36	P710218-18	Soil	10/9/97
14-06	P710218-19	Soil	10/9/97
14-18	P710218-20	Soil	10/9/97

North Creek Analytical, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document.
This analytical report must be reproduced in its entirety.

Philip Nerenberg, Laboratory Manager

18939 120th Avenue N.E., Suite 101, Bothell, WA 98011-9508
East 11115 Montgomery, Suite B, Spokane, WA 99206-4776
9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

BOTHELL ▪ (425) 481-9200 ▪ FAX 485-2992
SPOKANE ▪ (509) 924-9200 ▪ FAX 924-9290
PORTLAND ▪ (503) 643-9200 ▪ FAX 644-2202

CH2M-Hill	Project:	Schnitzer - Daisy Kingdom	Sampled:	10/9/97
825 N.E. Multnomah	Project Number:	13.341.DK.01	Received:	10/10/97
Portland, OR 97232	Project Manager:	Darren Nakata	Reported:	10/13/97 22:55

ANALYTICAL REPORT FOR SAMPLES:

Sample Description	Laboratory Sample Number	Sample Matrix	Date Sampled
14-36	P710218-21	Soil	10/9/97
15-06	P710218-22	Soil	10/9/97
15-18	P710218-23	Soil	10/9/97
15-36	P710218-24	Soil	10/9/97
16-06	P710218-25	Soil	10/9/97
16-18	P710218-26	Soil	10/9/97
16-36	P710218-27	Soil	10/9/97
17-06	P710218-28	Soil	10/9/97
17-18	P710218-29	Soil	10/9/97
17-36	P710218-30	Soil	10/9/97
18-06	P710218-31	Soil	10/9/97
18-18	P710218-32	Soil	10/9/97
18-36	P710218-33	Soil	10/9/97
19-06	P710218-34	Soil	10/9/97
19-18	P710218-35	Soil	10/9/97
19-36	P710218-36	Soil	10/9/97
20-06	P710218-37	Soil	10/9/97
20-18	P710218-38	Soil	10/9/97
20-36	P710218-39	Soil	10/9/97
21-06	P710218-40	Soil	10/9/97

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

BOTHELL ▪ (425) 481-9200 ▪ FAX 485-2992
SPOKANE ▪ (509) 924-9200 ▪ FAX 924-9290
PORTLAND ▪ (503) 643-9200 ▪ FAX 644-2202

CH2M-Hill	Project:	Schnitzer - Daisy Kingdom	Sampled:	10/9/97
825 N.E. Multnomah	Project Number:	13.341.DK.01	Received:	10/10/97
Portland, OR 97232	Project Manager:	Darren Nakata	Reported:	10/13/97 22:55

ANALYTICAL REPORT FOR SAMPLES:

Sample Description	Laboratory Sample Number	Sample Matrix	Date Sampled
21-18	P710218-41	Soil	10/9/97
21-36	P710218-42	Soil	10/9/97
22-06	P710218-43	Soil	10/9/97
22-18	P710218-44	Soil	10/9/97
22-36	P710218-45	Soil	10/9/97
23-06	P710218-46	Soil	10/9/97
23-18	P710218-47	Soil	10/9/97
23-36	P710218-48	Soil	10/9/97

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

BOTHELL ▪ (425) 481-9200 ▪ FAX 485-2992
SPOKANE ▪ (509) 924-9200 ▪ FAX 924-9290
PORTLAND ▪ (503) 643-9200 ▪ FAX 644-2202

CH2M-Hill	Project:	Schnitzer - Daisy Kingdom	Sampled:	10/9/97
825 N.E. Multnomah	Project Number:	13.341.DK.01	Received:	10/10/97
Portland, OR 97232	Project Manager:	Darren Nakata	Reported:	10/13/97 22:55

Total Metals per EPA 6000/7000 Series Methods
North Creek Analytical - Portland

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method	Reporting Limit	Result	Units	Notes*
8-06'			**P710218-01**				**Soil**	
Lead	1070274	10/10/97	10/11/97	EPA 6010A	2000	**94600**	mg/kg dry	
8-18'			**P710218-02**				**Soil**	
Lead	1070274	10/10/97	10/11/97	EPA 6010A	1000	**10700**	mg/kg dry	
8-36'			**P710218-03**				**Soil**	
Lead	1070274	10/10/97	10/10/97	EPA 6010A	10.0	**11.3**	mg/kg dry	
9-06'			**P710218-04**				**Soil**	
Lead	1070274	10/10/97	10/10/97	EPA 6010A	10.0	**265**	mg/kg dry	
9-18'			**P710218-05**				**Soil**	
Lead	1070274	10/10/97	10/10/97	EPA 6010A	10.0	**13.6**	mg/kg dry	
9-36'			**P710218-06**				**Soil**	
Lead	1070274	10/10/97	10/10/97	EPA 6010A	10.0	ND	mg/kg dry	
10-06'			**P710218-07**				**Soil**	
Lead	1070274	10/10/97	10/11/97	EPA 6010A	1000	**8050**	mg/kg dry	
10-18'			**P710218-08**				**Soil**	
Lead	1070274	10/10/97	10/10/97	EPA 6010A	10.0	**77.3**	mg/kg dry	
10-36'			**P710218-09**				**Soil**	
Lead	1070274	10/10/97	10/10/97	EPA 6010A	10.0	ND	mg/kg dry	
11-06'			**P710218-10**				**Soil**	
Lead	1070274	10/10/97	10/10/97	EPA 6010A	10.0	**25.0**	mg/kg dry	
11-18'			**P710218-11**				**Soil**	
Lead	1070274	10/10/97	10/10/97	EPA 6010A	10.0	ND	mg/kg dry	
11-36'			**P710218-12**				**Soil**	
Lead	1070274	10/10/97	10/10/97	EPA 6010A	10.0	ND	mg/kg dry	
12-06'			**P710218-13**				**Soil**	
Lead	1070274	10/10/97	10/11/97	EPA 6010A	2000	**63100**	mg/kg dry	

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

BOTHELL ▪ (425) 481-9200 ▪ FAX 485-2992
SPOKANE ▪ (509) 924-9200 ▪ FAX 924-9290
PORTLAND ▪ (503) 643-9200 ▪ FAX 644-2202

CH2M-Hill	Project:	Schnitzer - Daisy Kingdom	Sampled:	10/9/97
825 N.E. Multnomah	Project Number:	13.341.DK.01	Received:	10/10/97
Portland, OR 97232	Project Manager:	Darren Nakata	Reported:	10/13/97 22:55

Total Metals per EPA 6000/7000 Series Methods
North Creek Analytical - Portland

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method	Reporting Limit	Result	Units	Notes*
12-18'			**P710218-14**				**Soil**	
Lead	1070274	10/10/97	10/10/97	EPA 6010A	10.0	**326**	mg/kg dry	
12-36'			**P710218-15**				**Soil**	
Lead	1070274	10/10/97	10/10/97	EPA 6010A	10.0	**24.7**	mg/kg dry	
13-06			**P710218-16**				**Soil**	
Lead	1070274	10/10/97	10/10/97	EPA 6010A	10.0	**65.5**	mg/kg dry	
13-18			**P710218-17**				**Soil**	
Lead	1070274	10/10/97	10/10/97	EPA 6010A	10.0	**11.1**	mg/kg dry	
13-36			**P710218-18**				**Soil**	
Lead	1070274	10/10/97	10/10/97	EPA 6010A	10.0	ND	mg/kg dry	
14-06			**P710218-19**				**Soil**	
Lead	1070274	10/10/97	10/11/97	EPA 6010A	2000	**74300**	mg/kg dry	
14-18			**P710218-20**				**Soil**	
Lead	1070274	10/10/97	10/11/97	EPA 6010A	100	**1480**	mg/kg dry	
14-36			**P710218-21**				**Soil**	
Lead	1070275	10/10/97	10/10/97	EPA 6010A	10.0	**207**	mg/kg dry	
15-06			**P710218-22**				**Soil**	
Lead	1070275	10/10/97	10/10/97	EPA 6010A	10.0	**260**	mg/kg dry	
15-18			**P710218-23**				**Soil**	
Lead	1070275	10/10/97	10/10/97	EPA 6010A	10.0	ND	mg/kg dry	
15-36			**P710218-24**				**Soil**	
Lead	1070275	10/10/97	10/10/97	EPA 6010A	10.0	ND	mg/kg dry	
16-06			**P710218-25**				**Soil**	
Lead	1070275	10/10/97	10/11/97	EPA 6010A	100	**2980**	mg/kg dry	
16-18			**P710218-26**				**Soil**	
Lead	1070275	10/10/97	10/10/97	EPA 6010A	10.0	**47.2**	mg/kg dry	

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

BOTHELL ▪ (425) 481-9200 ▪ FAX 485-2992
SPOKANE ▪ (509) 924-9200 ▪ FAX 924-9290
PORTLAND ▪ (503) 643-9200 ▪ FAX 644-2202

CH2M-Hill	Project:	Schnitzer - Daisy Kingdom	Sampled:	10/9/97
825 N.E. Multnomah	Project Number:	13.341.DK.01	Received:	10/10/97
Portland, OR 97232	Project Manager:	Darren Nakata	Reported:	10/13/97 22:55

Total Metals per EPA 6000/7000 Series Methods
North Creek Analytical - Portland

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method	Reporting Limit	Result	Units	Notes*
16-36			**P710218-27**				**Soil**	
Lead	1070275	10/10/97	10/10/97	EPA 6010A	10.0	ND	mg/kg dry	
17-06			**P710218-28**				**Soil**	
Lead	1070275	10/10/97	10/10/97	EPA 6010A	10.0	**11.7**	mg/kg dry	
17-18			**P710218-29**				**Soil**	
Lead	1070275	10/10/97	10/10/97	EPA 6010A	10.0	ND	mg/kg dry	
17-36			**P710218-30**				**Soil**	
Lead	1070275	10/10/97	10/10/97	EPA 6010A	10.0	ND	mg/kg dry	
18-06			**P710218-31**				**Soil**	
Lead	1070275	10/10/97	10/11/97	EPA 6010A	100	**1070**	mg/kg dry	
18-18			**P710218-32**				**Soil**	
Lead	1070275	10/10/97	10/10/97	EPA 6010A	10.0	**293**	mg/kg dry	
18-36			**P710218-33**				**Soil**	
Lead	1070275	10/10/97	10/10/97	EPA 6010A	10.0	**201**	mg/kg dry	
19-06			**P710218-34**				**Soil**	
Lead	1070275	10/10/97	10/10/97	EPA 6010A	10.0	ND	mg/kg dry	
19-18			**P710218-35**				**Soil**	
Lead	1070275	10/10/97	10/10/97	EPA 6010A	10.0	ND	mg/kg dry	
19-36			**P710218-36**				**Soil**	
Lead	1070275	10/10/97	10/10/97	EPA 6010A	10.0	ND	mg/kg dry	
20-06			**P710218-37**				**Soil**	
Lead	1070275	10/10/97	10/10/97	EPA 6010A	10.0	**11.4**	mg/kg dry	
20-18			**P710218-38**				**Soil**	
Lead	1070275	10/10/97	10/10/97	EPA 6010A	10.0	**15.8**	mg/kg dry	
20-36			**P710218-39**				**Soil**	
Lead	1070275	10/10/97	10/10/97	EPA 6010A	10.0	ND	mg/kg dry	

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

BOTHELL ▪ (425) 481-9200 ▪ FAX 485-2992
SPOKANE ▪ (509) 924-9200 ▪ FAX 924-9290
PORTLAND ▪ (503) 643-9200 ▪ FAX 644-2202

CH2M-Hill	Project:	Schnitzer - Daisy Kingdom	Sampled:	10/9/97
825 N.E. Multnomah	Project Number:	13.341.DK.01	Received:	10/10/97
Portland, OR 97232	Project Manager:	Darren Nakata	Reported:	10/13/97 22:55

Total Metals per EPA 6000/7000 Series Methods
North Creek Analytical - Portland

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method	Reporting Limit	Result	Units	Notes*
21-06			**P710218-40**				**Soil**	
Lead	1070275	10/10/97	10/10/97	EPA 6010A	10.0	**74.5**	mg/kg dry	
21-18			**P710218-41**				**Soil**	
Lead	1070276	10/10/97	10/11/97	EPA 6010A	10.0	ND	mg/kg dry	
21-36			**P710218-42**				**Soil**	
Lead	1070276	10/10/97	10/11/97	EPA 6010A	10.0	ND	mg/kg dry	
22-06			**P710218-43**				**Soil**	
Lead	1070276	10/10/97	10/11/97	EPA 6010A	100	**928**	mg/kg dry	
22-18			**P710218-44**				**Soil**	
Lead	1070276	10/10/97	10/11/97	EPA 6010A	10.0	ND	mg/kg dry	
22-36			**P710218-45**				**Soil**	
Lead	1070276	10/10/97	10/11/97	EPA 6010A	10.0	**14.6**	mg/kg dry	
23-06			**P710218-46**				**Soil**	
Lead	1070276	10/10/97	10/11/97	EPA 6010A	1000	**14800**	mg/kg dry	
23-18			**P710218-47**				**Soil**	
Lead	1070276	10/10/97	10/11/97	EPA 6010A	100	**1040**	mg/kg dry	
23-36			**P710218-48**				**Soil**	
Lead	1070276	10/10/97	10/11/97	EPA 6010A	10.0	ND	mg/kg dry	

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

BOTHELL ▪ (425) 481-9200 ▪ FAX 485-2992
SPOKANE ▪ (509) 924-9200 ▪ FAX 924-9290
PORTLAND ▪ (503) 643-9200 ▪ FAX 644-2202

CH2M-Hill	Project:	Schnitzer - Daisy Kingdom	Sampled:	10/9/97
825 N.E. Multnomah	Project Number:	13.341.DK.01	Received:	10/10/97
Portland, OR 97232	Project Manager:	Darren Nakata	Reported:	10/13/97 22:55

Dry Weight Determination
North Creek Analytical - Portland

Sample Name	Lab ID	Matrix	Result	Units
8-06'	P710218-01	Soil	80.8	%
8-18'	P710218-02	Soil	83.5	%
8-36'	P710218-03	Soil	92.1	%
9-06'	P710218-04	Soil	85.1	%
9-18'	P710218-05	Soil	83.7	%
9-36'	P710218-06	Soil	94.5	%
10-06'	P710218-07	Soil	85.7	%
10-18'	P710218-08	Soil	80.2	%
10-36'	P710218-09	Soil	88.8	%
11-06'	P710218-10	Soil	89.0	%
11-18'	P710218-11	Soil	87.3	%
11-36'	P710218-12	Soil	90.2	%
12-06'	P710218-13	Soil	85.4	%
12-18'	P710218-14	Soil	88.5	%
12-36'	P710218-15	Soil	94.5	%
13-06	P710218-16	Soil	84.8	%
13-18	P710218-17	Soil	92.2	%
13-36	P710218-18	Soil	90.2	%
14-06	P710218-19	Soil	73.4	%

North Creek Analytical, Inc.

Philip Nerenberg, Laboratory Manager

18939 120th Avenue N.E., Suite 101, Bothell, WA 98011-9508
East 11115 Montgomery, Suite B, Spokane, WA 99206-4776
9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

BOTHELL ▪ (425) 481-9200 ▪ FAX 485-2992
SPOKANE ▪ (509) 924-9200 ▪ FAX 924-9290
PORTLAND ▪ (503) 643-9200 ▪ FAX 644-2202

CH2M-Hill	Project:	Schnitzer - Daisy Kingdom	Sampled:	10/9/97
825 N.E. Multnomah	Project Number:	13.341.DK.01	Received:	10/10/97
Portland, OR 97232	Project Manager:	Darren Nakata	Reported:	10/13/97 22:55

Dry Weight Determination
North Creek Analytical - Portland

Sample Name	Lab ID	Matrix	Result	Units
14-18	P710218-20	Soil	85.8	%
14-36	P710218-21	Soil	82.7	%
15-06	P710218-22	Soil	89.2	%
15-18	P710218-23	Soil	90.9	%
15-36	P710218-24	Soil	90.5	%
16-06	P710218-25	Soil	91.0	%
16-18	P710218-26	Soil	91.1	%
16-36	P710218-27	Soil	84.8	%
17-06	P710218-28	Soil	88.3	%
17-18	P710218-29	Soil	92.7	%
17-36	P710218-30	Soil	89.8	%
18-06	P710218-31	Soil	94.5	%
18-18	P710218-32	Soil	88.5	%
18-36	P710218-33	Soil	84.8	%
19-06	P710218-34	Soil	88.8	%
19-18	P710218-35	Soil	84.6	%
19-36	P710218-36	Soil	86.8	%
20-06	P710218-37	Soil	88.9	%
20-18	P710218-38	Soil	89.1	%

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

BOTHELL ▪ (425) 481-9200 ▪ FAX 485-2992
SPOKANE ▪ (509) 924-9200 ▪ FAX 924-9290
PORTLAND ▪ (503) 643-9200 ▪ FAX 644-2202

CH2M-Hill	Project:	Schnitzer - Daisy Kingdom	Sampled:	10/9/97
825 N.E. Multnomah	Project Number:	13.341.DK.01	Received:	10/10/97
Portland, OR 97232	Project Manager:	Darren Nakata	Reported:	10/13/97 22:55

Dry Weight Determination
North Creek Analytical - Portland

Sample Name	Lab ID	Matrix	Result	Units
20-36	P710218-39	Soil	93.5	%
21-06	P710218-40	Soil	90.0	%
21-18	P710218-41	Soil	90.1	%
21-36	P710218-42	Soil	90.8	%
22-06	P710218-43	Soil	87.3	%
22-18	P710218-44	Soil	90.8	%
22-36	P710218-45	Soil	90.9	%
23-06	P710218-46	Soil	91.3	%
23-18	P710218-47	Soil	89.7	%
23-36	P710218-48	Soil	91.7	%

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

BOTHELL ▪ (425) 481-9200 ▪ FAX 485-2992
SPOKANE ▪ (509) 924-9200 ▪ FAX 924-9290
PORTLAND ▪ (503) 643-9200 ▪ FAX 644-2202

CH2M-Hill	Project:	Schnitzer - Daisy Kingdom	Sampled:	10/9/97
825 N.E. Multnomah	Project Number:	13.341.DK.01	Received:	10/10/97
Portland, OR 97232	Project Manager:	Darren Nakata	Reported:	10/13/97 22:55

Total Metals per EPA 6000/7000 Series Methods/Quality Control
North Creek Analytical - Portland

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 1070274	**Date Prepared: 10/10/97**				**Extraction Method: EPA 3050**					
Blank	**1070274-BLK1**									
Lead	10/10/97			**ND**	mg/kg dry	**10.0**				
LCS	**1070274-BS1**									
Lead	10/10/97	100		85.5	mg/kg dry	80.0-120	85.5			
Duplicate	**1070274-DUP1**		**P710218-03**							
Lead	10/10/97		11.3	**11.5**	mg/kg dry			40.0	**1.75**	
Matrix Spike	**1070274-MS1**		**P710218-03**							
Lead	10/10/97	109	11.3	118	mg/kg dry	75.0-125	**97.9**			
Batch: 1070275	**Date Prepared: 10/10/97**				**Extraction Method: EPA 3050**					
Blank	**1070275-BLK1**									
Lead	10/10/97			**ND**	mg/kg dry	**10.0**				
LCS	**1070275-BS1**									
Lead	10/10/97	100		84.0	mg/kg dry	80.0-120	84.0			
Duplicate	**1070275-DUP1**		**P710218-21**							
Lead	10/10/97		207	244	mg/kg dry			40.0	**16.4**	
Matrix Spike	**1070275-MS1**		**P710218-21**							
Lead	10/10/97	121	207	210	mg/kg dry	75.0-125	**2.48**			1
Batch: 1070276	**Date Prepared: 10/10/97**				**Extraction Method: EPA 3050**					
Blank	**1070276-BLK1**									
Lead	10/10/97			**ND**	mg/kg dry	**10.0**				
LCS	**1070276-BS1**									
Lead	10/10/97	100		83.0	mg/kg dry	80.0-120	83.0			
Duplicate	**1070276-DUP1**		**P710218-41**							
Lead	10/11/97		ND	ND	mg/kg dry			40.0		
Matrix Spike	**1070276-MS1**		**P710218-41**							
Lead	10/11/97	111	ND	96.0	mg/kg dry	75.0-125	**86.5**			

North Creek Analytical, Inc.

**Refer to end of report for text of notes and definitions.*

PN

Philip Nerenberg, Laboratory Manager

18939 120th Avenue N.E., Suite 101, Bothell, WA 98011-9508
East 11115 Montgomery, Suite B, Spokane, WA 99206-4776
9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

BOTHELL ▪ (425) 481-9200 ▪ FAX 485-2992
SPOKANE ▪ (509) 924-9200 ▪ FAX 924-9290
PORTLAND ▪ (503) 643-9200 ▪ FAX 644-2202

CH2M-Hill	Project:	Schnitzer - Daisy Kingdom	Sampled:	10/9/97
825 N.E. Multnomah	Project Number:	13.341.DK.01	Received:	10/10/97
Portland, OR 97232	Project Manager:	Darren Nakata	Reported:	10/13/97 22:55

Notes and Definitions

#	Note
1	Spike recovery is outside of control limits due to non-homogeneous sample matrix.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
Recov.	Recovery
RPD	Relative Percent Difference

North Creek Analytical, Inc.

Philip Nerenberg, Laboratory Manager

18939 120th Avenue N.E., Suite 101, Bothell, WA 98011-9508
East 11115 Montgomery, Suite B, Spokane, WA 99206-4776
9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132

SCHN00171321

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

18939 120th Avenue N.E., Suite 101, Bothell, WA 98011-9508 (206, 00 FAX 485-2992
East 11115 Montgomery, Suite B, Spokane, WA 99206-4779 (509) 924-9200 FAX 924-9290
9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132 (503) 643-9200 FAX 644-2202

CHAIN OF CUSTODY REPORT

Work Order # P710218

REPORT TO: DARREN NAKATA
ATTENTION: CH2M HILL
ADDRESS: 825 NE MULTNOMAH SUITE 1300
PORTLAND, OR 97232
PHONE: 503/235-5000 FAX: 503/235-2445
PROJECT NAME: SCHNITZER - DAISY KINGDOM
PROJECT NUMBER: 13.341.DK.01
SAMPLED BY: D. NAKATA / A. LERITZ

INVOICE TO: ROSS RIEKE
ATTENTION:
ADDRESS: SAME
P.O. NUMBER: NCA QUOTE #:

TURNAROUND REQUEST In Business Days *
Organic & Inorganic Analyses: 10 (Standard) | 7 | 5 | 4 | X | DN | 1 | Same Day
Fuels & Hydrocarbon Analyses: 5 (Standard) | 3-4 | 2 | 1 | Same Day
OTHER Specify:
* Turnaround Requests less than standard may incur Rush Charges.

	CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	NCA SAMPLE ID (Laboratory Use Only)	TOTAL LEAD	MATRIX (W, S, A, O)	# OF CONTAINERS	COMMENTS
1.	8-06	10/9/97 1320		X	S	1	HOLD ALL
2.	8-18	1325		X		1	FOR POSSIBLE
3.	8-36	1330		X		1	TCLP ANALYSIS
4.	9-06	1335		X		1	IN FUTURE
5.	9-18	1340		X		1	
6.	9-36	1345		X		1	
7.	10-06	1205		X		1	
8.	10-18	1210		X		1	
9.	10-36	1215		X		1	
10.	11-06	1350		X		1	

RELINQUISHED BY (Signature): [signature] DATE:
PRINT NAME: DARREN NAKATA FIRM: CH2M HILL TIME: 10/10/97

RECEIVED BY (Signature): [signature] DATE: ~~10-10-97~~
PRINT NAME: ~~Larry Spangler~~ FIRM: ~~NCA~~ TIME: ~~1155~~

RELINQUISHED BY (Signature): DATE:
PRINT NAME: FIRM: TIME:

RECEIVED BY (Signature): Sara McClurg DATE: 10-10-97
PRINT NAME: Sara McClurg FIRM: NCA TIME: 1200

ADDITIONAL REMARKS:

PAGE 1 OF 5

CHC Rev 8, 1/96

SCHN00171322

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

18939 120th Avenue N.E., Suite 101, Bothell, WA 98011-9508 (206) 481-9200 FAX 485-2992
East 11115 Montgomery, Suite B, Spokane, WA 99206-4779 (509) 924-9200 FAX 924-9290
9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132 (503) 643-9200 FAX 644-2202

CHAIN OF CUSTODY REPORT

Work Order # P710218

REPORT TO: DARREN NAKATA
ATTENTION: CH2M HILL
ADDRESS: 825 NE MULTNOMAH, SUITE 1300
PORTLAND, OR 97232
PHONE: 503/235-5000 FAX: 503/235-2445
PROJECT NAME: SCHNITZER- DAISY KINGDOM
PROJECT NUMBER: 130341.DK.01
SAMPLED BY: D.NAKATA / A.LERITZ

INVOICE TO: ROSS RIEKE
ATTENTION:
ADDRESS: SAME
P.O. NUMBER: NCA QUOTE #:

TURNAROUND REQUEST in Business Days *
Organic & Inorganic Analyses: 10 (Standard) 7 5 4 X DN 1 Same Day
Fuels & Hydrocarbon Analyses: 5 (Standard) 3-4 2 1 Same Day
OTHER Specify:
* Turnaround Requests less than standard may incur Rush Charges.

Analysis Request: TOTAL LEAD

	CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	NCA SAMPLE ID (Laboratory Use Only)	TOTAL LEAD	MATRIX (W, S, A, O)	# OF CONTAINERS	COMMENTS
1.	11-18	10/9/97 1355		X	S	1	HOLD ALL
2.	11-36	1400		X		1	FOR POSSIBLE
3.	12-06	1150		X		1	TCLP ANALYSIS
4.	12-18	1155		X		1	IN FUTURE
5.	12-36	1200		X		1	
6.	13-06	1405		X		1	
7.	13-18	1410		X		1	
8.	13-36	1415		X		1	
9.	14-06	1135		X		1	
10.	14-18	1140		X		1	

RELINQUISHED BY (Signature): [signature] DATE:
PRINT NAME: DARREN NAKATA FIRM: CH2M HILL TIME: 10/10/97
RECEIVED BY (Signature): Sara McClurg DATE: 10-10-97
PRINT NAME: Sara McClurg FIRM: NCA TIME: 1200

RELINQUISHED BY (Signature): DATE:
PRINT NAME: FIRM: TIME:
RECEIVED BY (Signature): DATE:
PRINT NAME: FIRM: TIME:

ADDITIONAL REMARKS:

COC Rev 8, 1/96

SCHN00171323

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

18939 120th Avenue N.E., Suite 101, Bothell, WA 98011-9508 (206) [illegible] FAX 485-2992
East 11115 Montgomery, Suite B, Spokane, WA 99206-4779 (509) 924-9200 FAX 924-9290
9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132 (503) 643-9200 FAX 644-2202

CHAIN OF CUSTODY REPORT

Work Order # P710218

REPORT TO: DARREN NAKATA
ATTENTION: CH2M HILL
ADDRESS: SAME
PHONE: FAX:
PROJECT NAME: SCHNITZER - DAISY KINGDOM
PROJECT NUMBER: 30341.DK.01
SAMPLED BY:

INVOICE TO: ROSS RIEKE
ATTENTION:
ADDRESS: SAME
P.O. NUMBER: NCA QUOTE #:

TURNAROUND REQUEST in Business Days *
Organic & Inorganic Analyses: 10 (Standard) | 7 | 5 | 4 | X | X | 1 | Same Day
Fuels & Hydrocarbon Analyses: 5 (Standard) | 3-4 | 2 | 1 | Same Day
OTHER Specify:
* Turnaround Requests less than standard may incur Rush Charges.

CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	NCA SAMPLE ID (Laboratory Use Only)	Analysis Request: TOTAL LEAD	MATRIX (W, S, A, O)	# OF CONTAINERS	COMMENTS
1. 14-36	10/9/97 1145		X	S	1	HOLD ALL
2. 15-06	1420		X		1	FOR POSSIBLE
3. 15-18	1425		X		1	TCLP ANALYSIS
4. 15-36	1430		X		1	IN FUTURE
5. 16-06	1120		X		1	
6. 16-18	1125		X		1	
7. 16-36	1130		X		1	
8. 17-06	1435		X		1	
9. 17-18	1440		X		1	
10. 17-36	1445		X		1	

RELINQUISHED BY (Signature)	DATE: 10/10/97	RECEIVED BY (Signature) Sara McClung	DATE: 10-10-97
PRINT NAME: DARREN NAKATA FIRM: CH2M HILL	TIME:	PRINT NAME: Sara McClung FIRM: NCA	TIME: 1200
RELINQUISHED BY (Signature)	DATE:	RECEIVED BY (Signature)	DATE:
PRINT NAME: FIRM:	TIME:	PRINT NAME: FIRM:	TIME:

ADDITIONAL REMARKS:

PAGE 3 OF 5

COC Rev 8, 1/96

SCHN00171324

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

18939 120th Avenue N.E., Suite 101, Bothell, WA 98011-9508 (206) 481-9200 FAX 485-2992
East 11115 Montgomery, Suite B, Spokane, WA 99206-4779 (509) 924-9200 FAX 924-9290
9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132 (503) 643-9200 FAX 644-2202

CHAIN OF CUSTODY REPORT

Work Order # P710218

REPORT TO: DARREN NAKATA
ATTENTION: CH2M HILL
ADDRESS: SAME
PHONE: FAX:
PROJECT NAME: SCHNITZER - DAISY KINGDOM
PROJECT NUMBER: 130341.DK.01
SAMPLED BY:

INVOICE TO: ROSS RIEKE
ATTENTION:
ADDRESS: SAME
P.O. NUMBER: NCA QUOTE #:

TURNAROUND REQUEST in Business Days *
Organic & Inorganic Analyses: 10 (Standard) | 7 | 5 | 4 | X | 2 | 1 | Same Day
Fuels & Hydrocarbon Analyses: 5 (Standard) | 3-4 | 2 | 1 | Same Day
OTHER Specify:
* Turnaround Requests less than standard may incur Rush Charges.

	CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	NCA SAMPLE ID (Laboratory Use Only)	TOTAL LEAD										MATRIX (W, S, A, O)	# OF CONTAINERS	COMMENTS
1.	18-06	10/9/97 1105		X										S	1	HOLD ALL
2.	18-18	1110		X											1	FOR POSSIBLE
3.	18-36	1115		X											1	TCLP ANALYSIS
4.	19-06	1450		X											1	IN FUTURE
5.	19-18	1455		X											1	
6.	19-36	1500		X											1	
7.	20-06	1005		X											1	
8.	20-18	1010		X											1	
9.	20-36	1015		X											1	
10.	21-06	1020		X											1	

RELINQUISHED BY (Signature): [signature]	DATE: 10/10/97	RECEIVED BY (Signature): Sara McClurg	DATE: 10-10-97
PRINT NAME: DARREN NAKATA	FIRM: CH2M HILL / TIME:	PRINT NAME: Sara McClurg	FIRM: NCA / TIME: 1200
RELINQUISHED BY (Signature):	DATE:	RECEIVED BY (Signature):	DATE:
PRINT NAME:	FIRM: / TIME:	PRINT NAME:	FIRM: / TIME:

ADDITIONAL REMARKS:

CCC Rev 8, 1/96

SCHN00171325

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

18939 120th Avenue N.E., Suite 101, Bothell, WA 98011-9508 (206) .00 FAX 485-2992
East 11115 Montgomery, Suite B, Spokane, WA 99206-4779 (509) 924-9200 FAX 924-9290
9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132 (503) 643-9200 FAX 644-2202

CHAIN OF CUSTODY REPORT

Work Order # P710218

REPORT TO: DARREN NAKATA
ATTENTION: CH2M HILL
ADDRESS: SAME
PHONE: FAX:
PROJECT NAME: SCHNITZER - DAISY KINGDOM
PROJECT NUMBER: 130341.DK.01
SAMPLED BY:

INVOICE TO: ROSS RIEKE
ATTENTION:
ADDRESS: SAME
P.O. NUMBER: NCA QUOTE #:

TURNAROUND REQUEST in Business Days *
Organic & Inorganic Analyses: 10 (Standard) | 7 | 5 | 4 | ~~3~~ | 2 | 1 | Same Day
Fuels & Hydrocarbon Analyses: 5 (Standard) | 3-4 | 2 | 1 | Same Day
OTHER Specify:
* Turnaround Requests less than standard may incur Rush Charges.

Analysis Request: TOTAL LEAD

CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	NCA SAMPLE ID (Laboratory Use Only)	TOTAL LEAD	MATRIX (W, S, A, O)	# OF CONTAINERS	COMMENTS
1. 21-18	10/9/97 1025		X	S	1	HOLD ALL
2. 21-36	1030		X		1	FOR POSSIBLE
3. 22-06	1035		X		1	TCLP ANALYSIS
4. 22-18	1040		X		1	IN FUTURE
5. 22-36	1045		X		1	
6. 23-06	1050		X		1	
7. 23-18	1055		X		1	
8. 23-36	1100		X		1	
9.					1	
10.					1	

RELINQUISHED BY (Signature): [signature] DATE: 10/10/97
PRINT NAME: DARREN NAKATA FIRM: CH2M HILL TIME:

RECEIVED BY (Signature): Sara McClurg DATE: 10-10-97
PRINT NAME: Sara McClurg FIRM: NCA TIME: 1200

RELINQUISHED BY (Signature): DATE:
PRINT NAME: FIRM: TIME:

RECEIVED BY (Signature): DATE:
PRINT NAME: FIRM: TIME:

ADDITIONAL REMARKS:

PAGE 5 OF 5

CCC Rev 8, 1996

SCHN00171326

APPENDIX G

SCHN00171327

Contents

Section	Page
Purpose and Scope of Environmental Site Assessment	1
Purpose of Environmental Site Assessment	1
Scope of Environmental Site Assessment	1
Limitations of Environmental Site Assessment	1
Site Location and Surrounding Property Uses	3
Current Site Condition and Use	3
Site and Adjacent Properties History	5
Property Ownership Since 1940	5
Property and Adjacent Property Use Since 1940	5
Emerson Hardwood	6
Daisy Kingdom Incorporated	7
Westport Supply Company	7
Previous Tenants	7
Wetlands Designations Onsite	7
Regulatory Agency Database Search	7
Subject Property	8
EPA CERCLIS List	8
EPA RCRIS List	9
DEQ ECSIS List	9
DEQ LUST List	10
DEQ CRL	10
DEQ UST List	10
Oregon State Fire Marshal	11
Local Fire Department	12
Summary of Regulatory Agency Database Search	12
Regulatory Agency File Review	13
Trumbull Asphalt (a.k.a. Owens Corning)	13
FTL, Incorporated (a.k.a. ANR Freight System)	14
Terminal Transfer, Incorporated (a.k.a. ATMS, Incorporated)	14
Daisy Kingdom (a.k.a. Chase Bay Company)	15
Ashland Chemical Company (a.k.a. the Nabisco Warehouse and the Hill Investment Company Sites)	16
Summary of Regulatory Agency File Review	17
SIC File Review	17
Site Reconnaissance	18
Subject Property	18
Adjacent Properties	19
Sampling and Analysis Performed for This Assessment	19
Asbestos	19
Radon	20
Lead-Based Paint	21
Drinking Water	21

Contents (continued)

Section	Page
Soil	22
Groundwater	22
Identified Environmental Concerns	22
References	24
Personnel Performing Site Assessment	24
Reports Reviewed	24
Persons Interviewed	28

Appendixes

A. ASTM Standard E 1527
B. Title Report
C. Historical Aerial Photographs
D. Owner/Occupant Questionnaire
E. Environmental Data Base Search Results
F. Written Inquiries to EPA and State Regulatory Agencies
G. Regulatory Agency File Information
H. SIC Environmental Files
I. Environmental Site Assessment Field Checklist
J. Site Reconnaissance Photographs
K. PSI Sampling Results
L. North Creek Analytical Results
M. Resumes of Project Personnel

Tables

1 Current Tenant Business Activities 5
2 Chemicals Used at Westport Supply Company 12
3 Results of Asbestos-Containing Material Sampling 20
4 Results of Radon Gas Survey 21
5 Results of Lead Analysis of Tap Water Samples 21

Figures

1 Site Location Map 2
2 Site Map 4

Purpose and Scope of Environmental Site Assessment

Purpose of Environmental Site Assessment

This report presents the results of the environmental site assessment performed for the Schnitzer Investment Corp. (SIC) Emerson Hardwood property (subject property) located at 3506 N.W. 35th Avenue in Portland, Oregon (Figure 1). This report has been prepared for SIC and the lending institution for the consideration of the proposed loan between SIC and the lending institution.

Scope of Environmental Site Assessment

The scope of the environmental assessment is based on the requirements of the Standard Practice for Environmental Site Assessment: Phase I Environmental Assessment Process. This document is presented in Appendix A. The primary elements of the scope of work for the environmental assessment are the following:

- Assess and review the site history and property ownership
- Perform a regulatory agency database search
- Review regulatory agency files
- Perform a reconnaissance of the site and surrounding area

This report presents the results of the above tasks and a discussion of the anticipated nature and extent of environmental concerns associated with the subject property that is based on the task findings. CH2M HILL performed the environmental assessment by identifying potential past or current activities on or near the subject properties that might have led to the release of hazardous substances or hazardous materials onto the subject properties (as used herein, the term *hazardous substance* includes hazardous materials).

It was beyond the scope of services for this environmental assessment to identify concerns associated with the offsite management of solid or hazardous substances and wastes originating from the subject property, unless these instances were discovered incidentally during the performance of this scope of work.

Limitations of Environmental Site Assessment

This environmental site assessment has been performed and this report has been prepared for the exclusive use of SIC and the lending institution. The services provided by CH2M HILL have been rendered in a manner consistent with the level of skill and care ordinarily exercised by members of the profession currently practicing under similar conditions.

CH2M HILL has relied upon the information provided by several sources not contracted by CH2M HILL in the preparation of this report. Reasonable and appropriate attempts were made to verify the information provided by these sources. CH2M HILL cannot guarantee the accuracy of the information provided by these sources that could not be reasonably and appropriately verified.

SCHN00171335

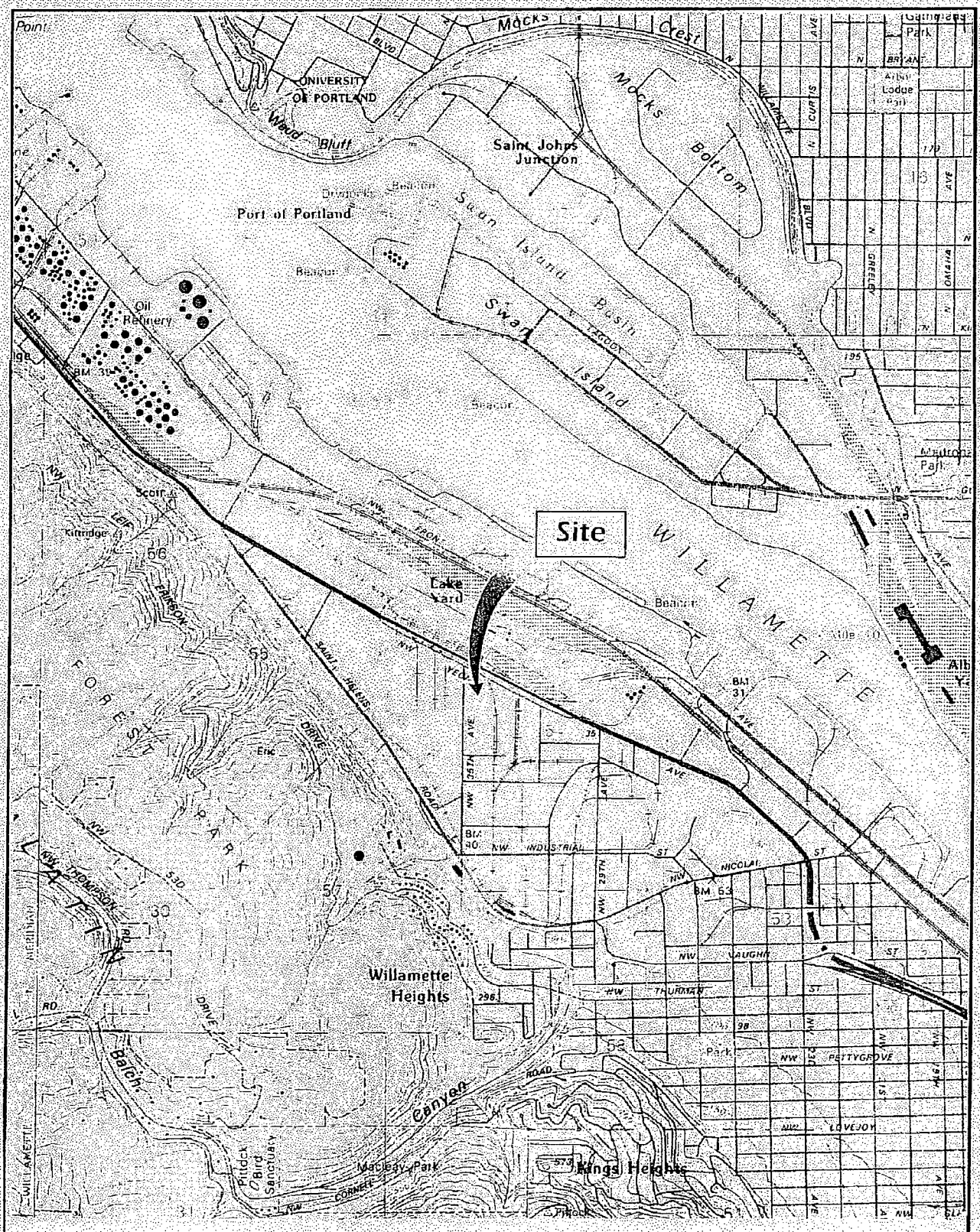


FIGURE 1

Site Location Map

EMERSON HARDWOOD SITE
3506 N.W. 35TH AVENUE
SCHNITZER INVESTMENT CORP., PORTLAND, OREGON

CH2MHILL

SCHN00171336

This report is not a legal representation or legal interpretation of environmental laws, rules, regulations, or policies of local, state, or federal governmental agencies.

No investigation is thorough enough to exclude the presence of hazardous substances at a given location. If hazardous substances or hazardous conditions have not been identified during the assessment, such a finding should not be construed as a guarantee of the absence of such substances or conditions.

Any opinions or recommendations presented herein apply to the environmental conditions existing at the time services were performed. CH2M HILL is unable to report on, or accurately predict, events that may change site conditions after the described services are performed, whether those events occur naturally or are caused by external forces. CH2M HILL assumes no responsibility for conditions the firm is not authorized to investigate or conditions that CH2M HILL determined did not have an environmental impact at the time the services were performed or that were not contained within the scope of the environmental assessment specified above.

Site Location and Surrounding Property Uses

The Emerson Hardwood property is located at 3506 N.W. 35th Avenue, on the southwest corner of the intersection of the N.W. 35th Avenue and N.W. Yeon Avenue rights-of-way, in Portland, Oregon (Figure 1). The land around the subject property is used exclusively for industrial and commercial purposes. There are no residences within approximately 1 mile of the site.

Soil in the subject site area consists of sand and silt to depths greater than 20 feet. Groundwater is present beneath the site within 20 feet of the ground surface. General groundwater flow is toward the north to the Willamette River. The site is located approximately 1,500 feet south of the Willamette River. The nearest water supply wells, located ½ mile east of the site, were constructed in 1962 and 1963. The well depths are approximately 574 and 679 feet, and the wells are reportedly used for industrial purposes. Several properties adjacent to the Emerson Hardwood property have onsite groundwater monitoring wells. There is no record that these wells are used for water supply purposes.

The Emerson Hardwood property is level and located a few blocks south of the Willamette River in the area formerly referred to as the Guild's Lake area. The site is bounded on the northwest by the N.W. Yeon Avenue right-of-way, on the northeast by a railroad track spur and the Daisy Kingdom Incorporated (Daisy Kingdom) warehouse, on the southeast by Ashland Chemical Company (Ashland Chemical), and on the southwest by the N.W. 35th Avenue right-of-way and a commercial warehouse. The industrial and commercial tenants located adjacent to the property as shown in Figure 2.

Current Site Condition and Use

Figure 2 shows the current layout of the Emerson Hardwood property. The size of the subject property is approximately 2½ acres. Approximately 95 percent of the site is covered by asphalt paving, concrete, or the building. The site is currently being used for office space

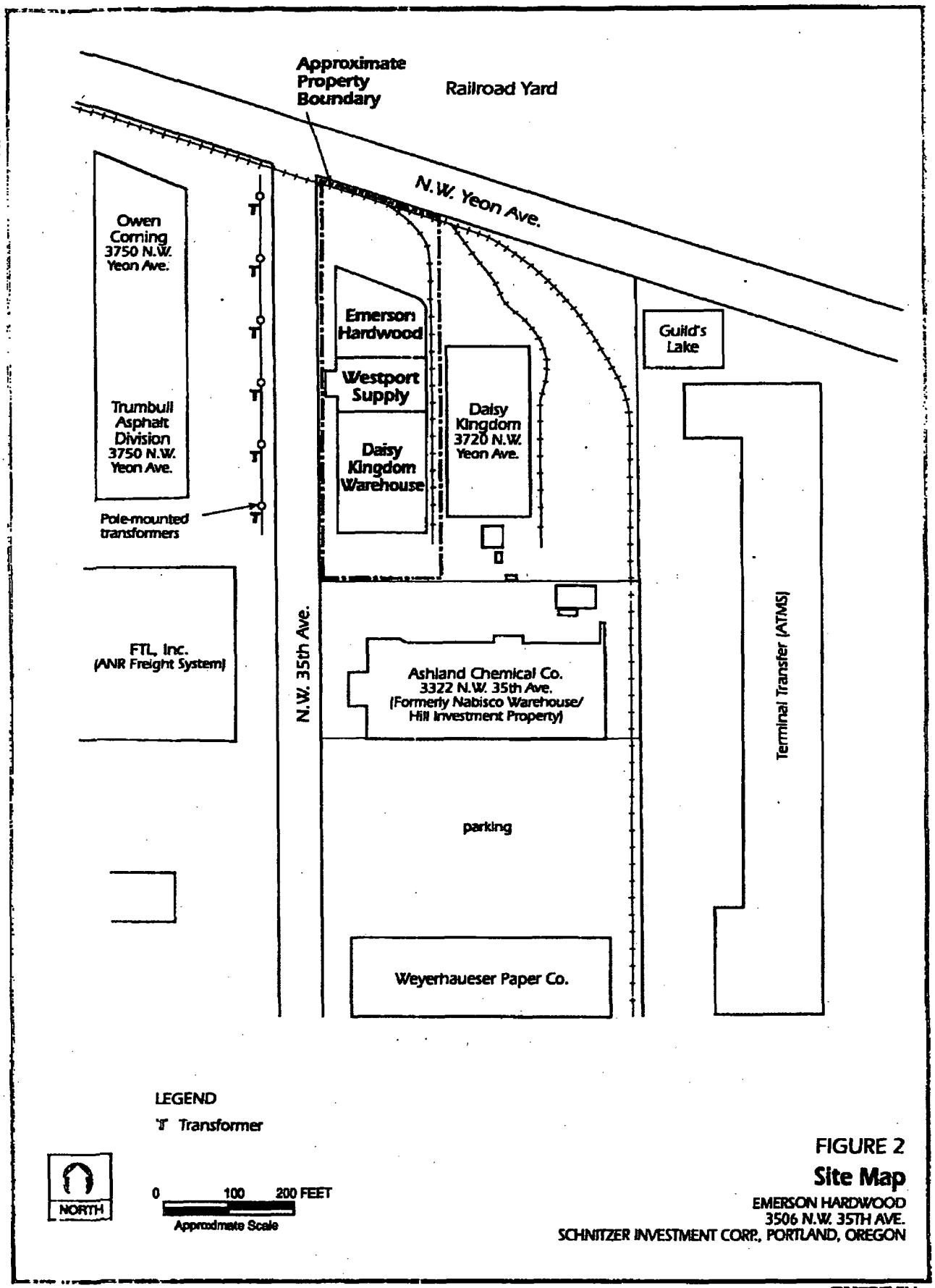


FIGURE 2
Site Map
EMERSON HARDWOOD
3506 N.W. 35TH AVE.
SCHNITZER INVESTMENT CORP., PORTLAND, OREGON

CH2MHILL

and warehouse storage by three tenants located in one 60,000-square-foot (approximate area) building. The tenants currently located at the site are listed in Table 1.

TABLE 1
Current Tenant Business Activities

Tenant Name	Business Activity
Emerson Hardwood Company	Wholesale distributor of wood flooring accessories
Daisy Kingdom Incorporated	Warehouse storage for retail clothing maker
Westport Supply Company	Dry cleaning chemical accessories supplier

The subject property is served by public water and sewer service.

Site and Adjacent Properties History

The history of the Emerson Hardwood property was assessed by reviewing available historical aerial photographs, Sanborn Fire Insurance maps, city directories, previous environmental assessment reports, and interviewing persons familiar with the site history.

Property Ownership Since 1940

The subject property ownership since 1940 was assessed by reviewing a title report provided by SIC. The subject property is approximately 2.5 acres of an approximately 5.2-acre parcel of land that was owned by the Union Pacific Railroad Company until 1946, when ownership was transferred to the Willard Storage Battery Company. In 1953 and 1954, ownership of the entire property was transferred to the Electric Storage Battery Company. The property was transferred to Great Western Properties, Inc. in 1959. In 1965, the property ownership was transferred to the Dan Davis Corporation, and in 1968, ownership transferred to the Mitchell Brothers Terminal Company. SIC bought the property in 1968. A copy of the title report for this property is provided in Appendix B. The subject property portion of the 5.2-acre site was not used for battery manufacturing or storage.

Property and Adjacent Property Use Since 1940

Aerial photographs of the subject property and surrounding area were reviewed for land use activities typically associated with the use, generation, storage, or disposal of hazardous substances. Historical aerial photographs dated 1940, 1948, 1957, 1961, 1967, 1872, 1977, 1980, 1986, 1991, and 1995 were reviewed. These aerial photographs, which show the location of the buildings on the property, are provided in Appendix C.

Aerial photographs indicate that prior to 1940, the subject property and the abutting properties to the south and east were undeveloped. The 1940 aerial photograph indicates that the Owens Corning Fiberglass Corporation building, across N.W. 35th Avenue to the west, and the Guild's Lake Yard of the Portland Railroad Company, across N.W. Yeon Avenue to the north, were present. The 1948 aerial photograph indicates that a commercial manufacturing facility to the east of the subject property was present.

SCHN00171339

The 1948 aerial photograph indicates that the subject property was used for a parking and lawn area. The adjacent property to the north does not appear to have changed. The property to the west has added a large building since the 1940 photograph, and the infrastructure of the property to the south appears to have been upgraded with the addition of roadways. In the aerial photographs, the subject property and adjacent properties did not appear to change significantly from 1948 to 1961, except for the addition of the Ashland Chemical Company building to the south of the subject property in the 1961 photograph.

It appears that the building on the subject property was built between 1961 and 1967. The 1967 aerial photograph shows the building on the subject property covering more than 90 percent of the subject property, with paved parking on the south end of the building. The aerial photographs from 1967 to 1995 indicate that no significant changes in the building structures were made on the adjacent properties. In 1972, the area near the west side and north side of the building appears to have been paved and used for automotive parking (west side) and commercial vehicle parking (south and north sides). Other than the changes previously noted, the aerial photographs from 1972, 1977, 1980, 1986, 1991, and 1995 show no significant changes to the subject property configuration.

City directories for 1940 through 1995 were reviewed to assess the types of businesses present on the subject property and adjacent properties. The subject property is listed with the Multnomah County Department of Assessment and Taxation as Tax Lot 80. Tax Lot 80 is listed at a street address of 3506-3536 N.W. 35th Avenue. The review of city directories revealed no listing at either 3506 N.W. 35th Avenue or 3536 N.W. 35th Avenue.

Sanborn Fire Insurance maps dated 1950 and 1969 were reviewed to assess the nature of industrial operations at the subject property and surrounding properties. The 1950 and 1969 maps indicated that the subject property was developed commercial land. The 1950 map showed the site was vacant and being used for parking for the adjacent Willard Storage Battery Company. The property to the south of the subject property is used as a housing project office. The N.W. Yeon Avenue and N.W. 35th Avenue rights-of-way are shown north and west of the subject property, respectively.

The 1967 map shows the site being used as a transfer warehouse. The existing building on the subject property has been constructed in the area that was used for parking on the 1957 map. The adjacent property to the east (currently the 3720 N.W. Yeon address in Figure 2), according to a city directory, is occupied by Great Western Chemical Company. Solvents and oils are indicated on the map in the southeast corner of the adjacent property. The housing project office is no longer present on the 1967 map.

On the basis of the Owner/Occupant Questionnaire (Appendix D) and interviews with Dan Johnson of Daisy Kingdom Incorporated, Jerome Peterson of Emerson Hardwood, and Ernie Tucker of Westport Supply Company (Westport Supply), the site was developed prior to 1970. According to SIC and tenant representatives, underground storage tanks (USTs) have never been located at the Emerson Hardwood property. The following sections briefly summarize the site information provided by each tenant interviewed.

Emerson Hardwood

Emerson Hardwood has been at the subject property for 3 years. The firm is a wholesale distributor of hardwood flooring and accessories. It uses and stores onsite wood products and wood finishes (varnishes, alcohol, and water- and oil-based finishes). Wood finishes are

SCHN00171340

stored in 5-gallon steel pails. No mixing or processing of wood finishes is performed on the subject property.

Daisy Kingdom Incorporated

Daisy Kingdom Incorporated uses a portion of the warehouse for storage. The main storage and distribution operation is located on the adjacent property. Daisy Kingdom stores fabric and materials in the warehouse. No manufacturing or production occurs onsite. Daisy Kingdom began using the warehouse in 1994.

Westport Supply Company

Westport Supply Company is a wholesale distributor of commercial dry-cleaning and laundry supplies. Materials are purchased from the manufacturers and stored onsite in bulk in pails and drums. No mixing or manufacturing occurs onsite. Westport Supply took over the operation in 1993 from Eastern Supply. Eastern Supply had moved onsite in 1993. According to Westport Supply, no leaks or spills of liquid products have occurred onsite and all spills of dry goods have been contained within the building and cleaned up without impact on the site.

Previous Tenants

A review of historical property files provided by SIC revealed the following former tenants at the property:

- Pihl Transfer and Storage Company—general wholesale distribution
- Nabisco
- Franz Bakery—bread product storage

These previous tenants did not perform any manufacturing, and activities associated with these tenants are not anticipated to have resulted in an environmental hazard on the subject site.

Wetlands Designations Onsite

Wetlands, as designated by the U.S. Fish and Wildlife Service National Wetland Inventory map or the Oregon Division of State Lands Wetlands Database, are not present on the Emerson Hardwood property. Although a detailed wetlands survey was not performed, no obvious evidence of potential wetlands (for example, ponded water or swampy areas) was observed on the subject property.

Regulatory Agency Database Search

CH2M HILL contracted with Environmental Data Resources, Inc. (EDR) and SAFE Research, Inc. (SAFE) to perform database searches of U.S. Environmental Protection Agency (EPA) and Oregon Department of Environmental Quality (DEQ) records. The following databases were reviewed.

SCHN00171341

- Databases searched to within 1 mile of the subject property:
  - EPA National Priorities List (NPL)
  - EPA Resource Conservation and Recovery Information System (RCRIS) (Search for Resource Conservation and Recovery Act [RCRA] treatment, storage, and disposal facilities)
  - DEQ Environmental Cleanup Information System (ECSIS)
  - DEQ Confirmed Release List (CRL)
- Databases searched to within ½ mile of the subject property:
  - EPA Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS)
  - DEQ Closure and Regular Solid Waste Active Disposal Permits
  - DEQ Leaking Underground Storage Tanks
- Databases searched to within ¼ mile of the subject property:
  - DEQ Underground Storage Tanks
  - EPA RCRIS (Search for RCRA Small-Quantity Generators)
  - EPA RCRIS (Search for RCRA Large-Quantity Generators)
- Databases searched for the subject property:
  - EPA Emergency Response Notification System (ERNS)
  - Oregon State Fire Marshal
  - Local Fire Department

Results of the database review that are discussed below represent combined information from the EDR and SAFE reports. Because the EDR and SAFE listings are based on the reported company's street address, the feature(s) of concern on a property may be closer to or farther from the subject property depending upon its actual layout.

After reviewing the EDR and SAFE reports, CH2M HILL observed inconsistencies and inaccuracies in the reporting of facility locations and distances. CH2M HILL has corrected, when possible, the inaccurate distances by using historical aerial photographs and information gathered during the site reconnaissance. Therefore, some location and distance discrepancies may be noted between the sites listed in this report and those listed in the EDR and SAFE reports in Appendix E.

Subject Property

The subject property is not listed on any of the databases listed above.

EPA CERCLIS List

The CERCLIS list is a compilation by the EPA of sites that the agency has investigated or is currently investigating for a release or threatened release of hazardous substances pursuant

SCHN00171342

to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

One listed site is located within ¼ to ½ mile of the subject property: Van Waters & Rogers Incorporated (VW&R).

EPA RCRIS List

RCRIS identifies selected information on sites that generate, transport, treat, or dispose of hazardous waste. A small-quantity generator (SQG) generates between 100 and 1,000 kilograms per month (kg/mo) of hazardous waste or less than 1 kg/mo of acutely hazardous waste. A large-quantity generator (LQG) generates greater than 1,000 kg/mo of hazardous waste or more than 1 kg/mo of acutely hazardous waste. Of the seven identified sites listed below, the Owens Corning Fiberglass Corporation (Owens Corning) and the Chase Packing Corporation sites are located adjacent to the subject property. The database revealed the following.

- ANR Freight System Incorporated (also known as [a.k.a.] FTL, Inc.)—approximately 500 feet southwest
- General Motors Parts Division—approximately 1,300 feet northeast of the subject property
- ATMS, Incorporated, (a.k.a. Terminal Transfer, Incorporated)—approximately 700 feet northeast of the subject property
- Chase Packaging Corporation (a.k.a. Daisy Kingdom)—adjacent to the eastern boundary of the subject property
- Coca Cola Bottling Company—approximately 1,300 feet northeast of the subject property
- Owens Corning Fiberglass Corporation (a.k.a. Trumbull Asphalt)—approximately 200 feet west of the subject property
- Carson Oil—approximately 1,300 feet south of the subject property
- There is one LQG located adjacent to the southern boundary of the subject property: Ashland Chemical Company (a.k.a. Nabisco Warehouse/Hill Investment Company).

DEQ ECSIS List

ECSIS is DEQ's equivalent to CERCLIS, and sites listed in ECSIS may or may not be listed in CERCLIS. The database contains sites in Oregon with contamination or potential contamination from hazardous substances. These sites have been evaluated in the past, are currently being evaluated, or will be evaluated in the future. ECSIS is used only to track the status of a site. The database review revealed a total of 40 sites within 1 mile of the Emerson Hardwood property.

- There are four sites adjacent to or near the subject property:
  - Nabisco Warehouse/Hill Investment Company (a.k.a. Ashland Chemical)—adjacent to the southern boundary of the subject property

- Trumbull Asphalt Fume Line (Trumbull) (a.k.a. Owens Corning)— approximately 200 feet west of the subject property
- FTL, Incorporated (a.k.a. ANR Freight Systems)—approximately 500 feet southwest of the subject property

DEQ LUST List

DEQ maintains an inventory of reported LUST incidents. There are a total of 30 sites from ¼ to ½ mile of the subject property with leaking UST records.

- There are three sites immediately adjacent to or within ¼ mile of the subject property:
  - Nabisco Warehouse/Hill Investment Company (a.k.a. Ashland Chemical)—adjacent to the southern boundary of the subject property
  - Trumbull Asphalt Fume Line (a.k.a. Owens Corning)—approximately 200 feet west of the subject property
  - Portland Railroad Company—approximately 1,000 feet north of the subject property

DEQ CRL

The CRL is DEQ's list of sites with confirmed releases of hazardous substances. There are 11 sites within 1 mile of the subject property with CRL records.

- Two sites are located within ⅛ mile of the subject property:
  - Nabisco Warehouse/Hill Investment Company (a.k.a. Ashland Chemical)—adjacent to the southern boundary of the subject property
  - Trumbull Asphalt Fume Line (a.k.a. Owens Corning)—approximately 200 feet west of the subject property

DEQ UST List

A review of the database of USTs revealed that six sites within approximately ⅛ to ¼ mile of the subject property had registered USTs with DEQ. One of these six sites, Chase Bag Company, is located immediately adjacent to the subject property, and the Hill Investment Company (Nabisco Warehouse) is located within ⅛ mile of the subject property.

- The six sites with USTs are the following:
  - ANR Freight System (a.k.a. FTL, Incorporated)—approximately 500 feet southwest of the subject property
  - Terminal Transfer, Inc. (a.k.a. ATMS, Incorporated)—approximately 700 feet northeast of the subject property
  - Chase Bag Company (a.k.a. Daisy Kingdom)—adjacent to the eastern boundary of the subject property

SCHN00171344

- Coca Cola Bottling Company—approximately 1,300 feet northeast of the subject property
- Hill Investment (a.k.a. Ashland Chemical and Nabisco Warehouse)—adjacent to the southern boundary of the subject property
- Carson Oil—approximately 1,300 feet south of the subject property

Oregon State Fire Marshal

The Oregon State Fire Marshal's office was contacted to determine whether the subject property or any adjacent sites are reported under Sections 302, 312, and 313 of the Superfund Amendments and Reauthorization Act (SARA) Title III—Emergency Planning and Community Right-to-Know Act (EPCRA). Section 302 requires any facility that produces, uses, or stores any of the substances on EPA's List of Extremely Hazardous Substances in a specified quantity equal to or greater than a threshold planning quantity, to notify the state emergency response commission (SERC). Section 312 requires any facilities subject to the Occupational Safety and Health Administration (OSHA) hazard communication standard to submit an emergency and hazardous chemical inventory form to the SERC, the local emergency planning commission (LEPC), and the local fire department. Section 313 requires annual reporting of releases of "toxic chemicals" to the environment that occur as a result of normal operations. There were four sites listed in the Oregon State Fire Marshal's records:

- Ashland Chemical Company (a.k.a. Nabisco Warehouse/Hill Investment Company)—approximately 200 feet southeast of the subject property at 3322 N.W. 35th Avenue
- Nabisco Warehouse/Hill Investment Company (a.k.a. Ashland Chemical Company)—approximately 200 feet southeast of the subject property at 3322 N.W. 35th Avenue
- FTL, Incorporated (a.k.a. ANR Freight System)—approximately 500 feet west-southwest of the subject property at 3333 N.W. 35th Avenue
- Westport Supply Company—tenant at the subject property at 3536 N.W. 35th Avenue

Chemicals reportedly stored at the subject property by Westport Supply Company are listed in Table 2.

SCHN00171345

TABLE 2
Chemicals Used at Westport Supply Company
3536 N.W. 35th Avenue
Portland, Oregon

Pyratex	Aquid	Assist	Unital
Sulfuric Acid	Dominate Alkali Builder	Starlene	Calwhite
Nutouch 5GL	Liq Control	So White	Lemon Soft
Impax	Dowper	Special Alkali 45	Control
Builder 300	Alert	Polycot	Tridet Liquid
Liquid Hi-Chlor	A02 Bleach	Edge	Accrue
Sodium Hypochlorite	Cloreze	Royal Blend	Konite
Factor Plus	Nutouch 20GL	Conclude Plus	Tri Liquid Sour
2276 Fabric Softener 30GL	Kindet	Concentrated Liquid Detergent	N-100
Sodium Thiosulfate	Drymet	Iif	Dryorth
Desoil	F-501 Bacteria Softener	Rinspeed	Liquid Insure
Force			

Source: Oregon State Fire Marshal, List of 312 Companies, July 1998.

Local Fire Department

The Portland Fire Department was contacted to determine whether USTs or aboveground storage tanks (ASTs) were registered with the local fire department. According to the Portland Fire Department records, there are no registered USTs or ASTs at the subject property.

Summary of Regulatory Agency Database Search

In our opinion, based on activities at the sites and the distance from each site to the subject property, all but five of the sites listed in the databases reviewed are not anticipated to cause an environmental impact on the subject property. The following five sites are considered, on the basis of their distance from the subject property and the activities occurring on the properties as indicated by the database information, to pose a potential threat to the environmental conditions on the subject property:

- Trumbull Asphalt (a.k.a. Owens Corning)
- FTL, Incorporated (a.k.a. ANR Freight System)
- Terminal Transfer, Inc. (a.k.a. ATMS, Incorporated)
- Chase Bag Company (a.k.a. Daisy Kingdom)
- Ashland Chemical Inc. (a.k.a. Hill Investment Co./Nabisco Warehouse)

SCHN00171346

Regulatory Agency File Review

To further assess the environmental conditions on the subject property and the potential impact to the subject property from nearby properties, DEQ files for the properties identified above as potentially having caused an impact to the subject property were reviewed. Reasonable and appropriate inquiry was made to regulatory agencies to determine whether environmental reports pertaining to the subject property had been produced. No environmental reports pertaining to the Emerson Hardwood were identified by a regulatory agency.

Copies of the letters sent to the various regulatory agencies requesting site environmental file information and letter responses from the agencies (if any) are provided in Appendix F. A list and copies of relevant file information reviewed are provided in Appendix G.

A brief description obtained from DEQ of these sites appears below.

Trumbull Asphalt (a.k.a. Owens Corning)

Trumbull Asphalt, a division of Owens Corning Fiberglass, is located adjacent to the subject property. The site consists of an asphalt manufacturing area that generally occupies the southern quarter of the site and includes 21 ASTs used for the storage of asphalt flux, processed asphalt, fuel oil, neutral oil, mineral spirits, and ferric chloride. There are also three converter tanks used for the processing of asphalt materials. The northwestern portion of the site is occupied by a commercial products warehouse used primarily for warehousing and finish product shipping. Hydraulic oil, motor oil, and antifreeze are stored in drums in the maintenance shop. The central portion of the site is occupied by the roofing production line building. Materials stored in the building include sand and roofing granules in portable 5,000-pound bins, lime in 100-pound bags, anti tak (coconut oil) in reusable 250-gallon totes, hot melt adhesives in 50-pound cartons, and small quantities of zinc oxide.

According to the June 22, 1992, preliminary assessment report prepared by SEACOR, soil samples taken near a former underground fume line, which runs from the knock-out tank and incinerator along the north side of the maintenance shop and boiler house, and USTs, which were located on the eastern side of the asphalt building, indicated petroleum products with a maximum concentration of 3,600 milligrams per kilogram (mg/kg) of total petroleum hydrocarbons (TPH). Analysis of soil samples taken from the southern property boundary indicated TPH concentrations of up to 162,000 mg/kg. According to the report, up to 12 inches of free petroleum product was observed in groundwater observation wells. Benzene, toluene, ethylbenzene, and xylenes (BTEX) were not detected in the groundwater.

Soil gas sampling conducted by SRH Environmental Management in April 1989 identified the potential for three source areas for subsurface volatile contamination. The three source areas were located near the UST farm in the southwest corner of the site, near the office building and boiler house along the southern property line, and near the northeastern corner of the former plastic shed west of the tank farm.

The fume line was decommissioned in July 1988. According to the groundwater investigation report prepared by SRH Environmental Management, dated August 28, 1989, groundwater depth at the site ranged from 7 to 8 feet below the ground surface (bgs). Groundwater generally appeared to flow toward the east toward the Emerson Hardwood property. TPH

SCHN00171347

concentrations in groundwater ranged from 200 micrograms per liter (µg/L) to 14,800 14.8 µg/L. Free floating product was observed to be ⅛ inch thick in monitoring Well No. 3 (9,350 mg/kg of TPH) located north of the boiler house in the central portion of the southern property boundary, and up to 12 inches thick in an unidentified observation well.

The Trumbull Asphalt site is currently under investigation by DEQ for contaminated groundwater. The Emerson Hardwood property is located east of the Trumbull Asphalt site in the general downgradient direction.

The presence of free product in the groundwater beneath the Trumbull site, the close proximity of the site to the subject property, and the general groundwater flow direction toward the subject property indicate that the groundwater beneath the subject property has been impacted.

FTL, Incorporated (a.k.a. ANR Freight System)

FTL, Incorporated, a.k.a. ANR Freight Terminal, and Coastal Corporation are truck terminals for dry goods transfer. USTs were removed from this site in July 1992, and a No Further Action letter was issued by the DEQ LUST Program. The most recent DEQ site summary report, dated July 22, 1996, identified groundwater contamination as an issue. Groundwater is reportedly contaminated with chlorinated solvents, petroleum-based solvents, and hydrocarbons. DEQ has issued the No Further Action determination for the petroleum hydrocarbon groundwater contamination only.

Four USTs (one 20,000-gallon diesel, one 1,000-gallon gasoline, one 8,000-gallon motor oil, and one 2,000-gallon used oil tank) were decommissioned by removal. Sampling from the tank excavations indicated soil contamination in the waste oil tank pit (550 mg/kg of hydrocarbons). Approximately 80 cubic yards of contaminated soil were removed from the oil tank pit and transported offsite for disposal. The remaining soil concentration in the excavation was 48 mg/kg of TPH. A single groundwater sample was obtained from the fuel storage tank excavation. The sample was analyzed for BTEX, which was not detected.

DEQ closed the UST site on September 3, 1992, by requiring no further investigation of the site with regard to the UST cleanup. There is no indication that activities associated with the cleanup of a leaking UST at this facility, located approximately 1,000 feet southwest of the site, has caused an environmental impact on the Emerson Hardwood property. However, the presence of chlorinated solvents in the groundwater beneath the FTL site and the groundwater flow direction toward the northeast indicates that groundwater beneath the subject property has been impacted.

Terminal Transfer, Incorporated (a.k.a. ATMS, Incorporated)

The Terminal Transfer, Incorporated site was developed in the late 1960s and has since been used as leased administrative office space and as a motor freight truck terminal and warehouse. Most of the site is currently occupied by a large warehouse that previously had adjoining truck service facilities, including a repair shop, degreasing station, an oil-water separator, fuel islands, and hydrants. On February 19 and 20, 1991, Terminal Transfer decommissioned six USTs by removing them: a 6,000-gallon oil tank, a 2,000-gallon waste oil tank, a 4,000-gallon regular gasoline tank, a 12, 000-gallon unleaded gasoline tank, and two 12,000-gallon diesel tanks. Soil samples were collected from the base of the excavation

SCHN00171348

for each tank. TPH concentrations ranged from 8 mg/kg at a depth of 8 ½ feet to 52,000 mg/kg at a depth of 12.5 feet. Approximately 12,000 cubic yards of petroleum-contaminated soil were excavated from the site. The soil was transported offsite for treatment. In a letter dated March 18, 1991, DEQ stated that "all contaminated soil related to the diesel fuel release has been excavated with the exception of contaminated soil that could not be removed without endangering the railroad line that runs along the western boundary of the property."

Fifteen monitoring wells were installed in August 1991 to a depth of approximately 25 feet and screened to approximately 10 feet. Analysis indicated that benzene is present in concentrations ranging from 46 µg/L to 734 µg/L, toluene from 55.5 µg/L to 5,810 µg/L, xylenes from 169 µg/L to 6,950 µg/L, ethylbenzene from 20 µg/L to 1,280 µg/L, and TPH from 1,800 µg/L to 6,000 µg/L. The well closest to the subject property is located approximately 250 feet east of the subject property. This well, monitoring Well No. 17, had a contaminant concentration of 390 µg/L of benzene.

According to an April 19, 1996, report, "Groundwater Monitoring And Sampling Draft Report, Former Terminal Transfer Inc., Property," prepared by Clayton Environmental, Incorporated, sampling was conducted in response to a DEQ request for further information pertaining to the groundwater quality of six wells. Three of these wells were located on the Terminal Transfer site, and three were located west of the site on the Burlington Northern Railroad property. According to the report, groundwater flows in a southwesterly direction. Petroleum hydrocarbons were present in the three onsite Terminal Transfer wells, which are located west of the contaminated soil remaining beneath the railroad spur, about 250 feet east of the subject property.

Two of the three wells located to the west of the Terminal Transfer property were "nondetect" for petroleum contaminants. The third well, located near the truck repair shop on the adjacent Ashland Chemical (former Nabisco/Hill Investment property) site, was found to have approximately 1.1 feet of free product.

According to the Clayton Environmental Consultants 1996 report, residual diesel contamination is still present in the soil along the western property boundary of the site, and groundwater in this area is above regulatory limits for petroleum contamination. The Terminal Transfer site is still currently under investigation by DEQ for contaminated groundwater.

Although the plume of contaminated groundwater to the west of the Terminal Transfer site has not been delineated, the Terminal Transfer site is not anticipated to have impacted the environmental conditions at the Emerson Hardwood property based on the distance and cross-gradient direction from the subject property.

Daisy Kingdom (a.k.a. Chase Bay Company)

According to DEQ files, a 1,000-gallon and a 12,000-gallon UST were removed from the adjacent Daisy Kingdom site in 1988, prior to when registration of such tanks was required. No contamination was encountered during the 1988 tank removal.

According to Mr. Dan Johnson of Daisy Kingdom, there was, until recently, an underground heating oil tank at the adjacent Daisy Kingdom property. That property is also owned by SIC. This heating oil tank was removed in August 1996 by SIC and is discussed in

SCHN00171349

the SIC File Review section of this report. This site was not listed in the DEQ database because DEQ does not require that underground heating oil tanks be registered.

Ashland Chemical Company (a.k.a. the Nabisco Warehouse and the Hill Investment Company Sites)

The Ashland Chemical Company site, a.k.a. the Nabisco Warehouse and Hill Investment Company site, is located adjacent to the southern boundary of the subject property. Ashland Chemical Company (Ashland Chemical) is a chemical supplier that receives various chemicals via bulk tanker truck. Materials are off-loaded into 55-gallon drums for shipment to customers. The facility specializes in solvents such as paint thinners and alcohols. The solvents are off-loaded by separate lines. The solvent lines are cleaned with high-pressure washers. Ashland Chemical, which sells a wide range of chemicals, is an LQG of hazardous waste. Wastes are stored in two areas: (1) the flammable storage area in the northeast corner inside the building and (2) the flammable truck rack outside on the north side of building. Hazardous materials are stored along the north wall of the warehouse, approximately 150 to 200 feet from the subject property.

According to the DEQ files, Ashland Chemical has documented several instances of improper responses to spilled materials. Cleanup material used to adsorbs spills has reportedly been disposed of in solid waste dumpsters located onsite. Leaks from 55-gallon drums of various listed hazardous materials have reportedly occurred onsite. October 11, 12, and 18, 1995, inspections of Ashland Chemical by DEQ resulted in various notices of violation for improper determination of hazardous wastes, improper labeling, storage beyond the 90-day limit, failure to identify emergency response agencies, failure to comply with land disposal restriction requirements, improper manifesting of hazardous waste, and improper waste storage procedures.

Chlorinated hydrocarbons were detected in the groundwater below this warehouse site (former Nabisco Warehouse site) in 1990. DEQ's current cleanup site summary report, dated July 25, 1996, identifies groundwater contamination as an issue, with a depth to groundwater of approximately 10 feet. In a November 10, 1990, Riedel Environmental Services, Inc., report, maximum concentrations of substances detected in groundwater at the site included the following:

- trans-1,2, -dichloroethylene at 38 µg/L
- cis-1,2,-dichloroethylene at 3,580 µg/L
- 1,1,2-tetrachloroethane at 35,500 µg/L
- Trichloroethylene at 5,040 µg/L
- Vinyl chloride at 380 µg/L

The trans-1,2,-dichloroethylene concentration is the only constituent that does not exceed the relevant DEQ groundwater action level. The highest concentrations of halogenated hydrocarbons were detected in the upgradient monitoring wells on the north property boundary, approximately 150 feet from the subject property. According to DEQ in an interoffice memorandum dated January 22, 1991, "This suggests that the plume may be migrating from offsite." According to a March 1994 Hart Crowser report, the groundwater flow direction across the site is inconsistent, but groundwater appears to flow away from the Emerson Hardwood property. Given that the Willamette River is located to the north within approximately 1,000 feet of the site, groundwater flow is anticipated to be to the

SCHN00171350

northeast from the Ashland Chemical site toward the Willamette River. DEQ concurred with this reasoning in June 1995. Monitoring wells at the Ashland Chemical site were abandoned in 1992.

Four USTs (one 500-gallon, one 5,000-gallon, one 10,000-gallon, and one 15,000-gallon tank) were identified in the March 1994 Hart Crowser report. These tanks were formerly located near the garage in the northeast corner of the property. The tanks were removed in November 1989. One tank was located west of the garage, two were located south of the garage between the garage and the warehouse, and one was located east of the garage. An AST and piping to the USTs was reportedly located on the adjacent property to the north (the main Daisy Kingdom site). According to the 1990 Riedel report, diesel- and oil-contaminated soil with concentrations above DEQ action levels was detected in the waste oil tank excavation east of the garage.

According to an October 11, 1990, Riedel report, "Nabisco Warehouse Site, Soil and Groundwater Sampling and Asbestos Survey," approximately 1,000 cubic yards of diesel-contaminated soil were removed from the tank excavations. The tank excavations were not sampled after removal of the contaminated soil.

The Ashland Chemical site is still under DEQ investigation for contaminated groundwater. There is a potential for contaminated groundwater associated with the cleanup of leaking USTs at this facility, located approximately 200 feet south of the site, to have an environmental impact on the Emerson Hardwood property. Groundwater in this area is expected to flow northeast toward the Willamette River. The Emerson Hardwood property is located north of the Ashland Chemical site in the downgradient direction.

The relatively high concentrations of chlorinated solvents in the groundwater beneath the Ashland Chemical site, the close proximity of the site to the subject property, and the general groundwater flow direction toward the subject property indicate that the groundwater beneath the subject property has been impacted.

Summary of Regulatory Agency File Review

On the basis of the results of the agency file review, several of the properties surrounding the subject property are anticipated to have affected environmental conditions at the subject property. In particular, contaminated groundwater has migrated to beneath the subject property from the Trumbull Asphalt and Ashland Chemical sites.

SIC File Review

Reasonable and appropriate inquiry was made to SIC and representatives of tenants at the subject property to determine whether environmental reports pertaining to the subject property had been produced. Environmental file information regarding the Emerson Hardwood property was provided by SIC and reviewed as a part of the environmental site assessment.

The file information consisted of previous environmental assessment reports and UST decommissioning reports. Specific reports and documentation reviewed included the following:

SCHN00171351

- Environmental Management Solutions. "Environmental Compliance Reviews of Lessee Operations at 3506 N.W. 35th and 3720 N.W. Yeon." January 14, 1991. The report states that:

  There is no record of hazardous substance spills, leaking underground tanks, or other onsite sources of contamination. The site inspection found the facility to be very clean with no evidence of spills or staining on the warehouse floor. There were no indications of spills along the exterior perimeter of the building, including the rail spur. There were no barrels, drums, or debris present.

  Three sewer manholes were observed inside the warehouse.

- Loren D. Obrist Excavating. "Removal of Tank at 3720 N.W. Yeon." September 26, 1996. The report states:

  "... but current ODEQ guidelines state that a minimum of 2 samples should be taken from the native soils below the ends of the tank and analyzed to determine whether these soils have been impacted by petroleum products. The samples taken of the soils at 12' below the ends of this tank show no indication of any significant impact."

  The results of samples collected were all nondetect. The method used was Oregon DEQ TPH-HCID and the method reporting limits were 20 mg/kg for TPH as gasoline, and 50 mg/kg for TPH as diesel and heavy oil.

According to Don Carpenter of SIC, the USTs were removed during August 1996. No stained soil or free product was observed in the tank excavation. Copies of relevant file information obtained from SIC and reviewed are presented in Appendix H.

Site Reconnaissance

The Emerson Hardwood property was visited on August 12, 1996, to observe the site and adjacent properties that might have an impact on the environmental conditions at the subject site. The site reconnaissance was performed by Aaron Leritz and Darren Nakata of CH2M HILL. Mr. Leritz and Mr. Nakata were accompanied by Mr. Johnson of Daisy Kingdom Incorporated, Mr. Peterson of Emerson Hardwood, and Mr. Tucker of Westport Supply Company. A copy of the field checklist completed during the site reconnaissance is provided in Appendix I. Photographs taken during the site reconnaissance are provided in Appendix J.

Subject Property

The subject property is generally flat and is occupied by one 60,000-square-foot (approximate area) concrete warehouse building. The site is bounded on the northwest by the N.W. Yeon Avenue right-of-way, on the northeast by a railroad track spur and the main Daisy Kingdom Incorporated factory and warehouse, on the southeast by Ashland Chemical Company, and on the southwest by the N.W. 35th Avenue right-of-way and a commercial warehouse.

The surface of the subject property is entirely covered with asphalt (parking), concrete (walkways), or a building. The warehouse is shared by three commercial tenants and is used primarily for product storage. No manufacturing or mixing operations occur onsite.

SCHN00171352

Products stored onsite that were observed during the site visit include hardwood flooring, commercial-grade dry-cleaning solvents, commercial laundry chemicals, and fabric.

During the site visit, 55-gallon drums of commercial-grade dry cleaning chemicals and laundry detergents were observed in the Westport Supply Company portion of the warehouse. Specific chemicals observed included fewer than five drums of sulfuric acid, about five drums of tetrachloroethylene, about five drums of petroleum, fewer than ten drums of bleaches, and one drum of laundry detergent. There was no visible evidence of releases of any of these materials in or around the building or around the drum storage areas. No floor drains were observed in the warehouse. The concrete floors were in good condition, with no major cracks or signs of wear.

A row of pole-mounted transformers was observed along the N.W. 35th Avenue right-of-way across the right-of-way from the subject property. The transformers are owned by the local public utility and do not contain polychlorinated biphenyls (PCBs). No transformers or high-voltage power lines were observed onsite. A pad-mounted transformer labeled "non-PCBs" was observed behind the adjacent Daisy Kingdom building. No leaks or stains were visible.

There were no indications of USTs onsite. Minor grease and oil staining was observed on the asphalt paving in various locations on the parking areas, loading docks, and driveways. This staining is consistent with typical staining on surfaces associated with large volumes of vehicle parking and transport.

Adjacent Properties

The Emerson Hardwood property is located near the Willamette River waterfront in a heavily industrialized portion of northwest Portland. Surrounding properties are primarily used for manufacturing or processing of materials for sale or for distribution. A large railroad transfer and storage yard is located north of the site across the N.W. Yeon Avenue right-of-way. The property is immediately bounded by public rights-of-way, railroad tracks, and the Daisy Kingdom warehouse. With the exception of landscaping beds scattered throughout this industrialized area, the surfaces of all properties are covered by buildings, asphalt, concrete, or railroad beds.

Sampling and Analysis Performed for This Assessment

Asbestos

Representative samples of suspect asbestos-containing material (ACM) were collected from the site by Professional Service Industries (PSI) under a subcontract with CH2M HILL. ACM was detected in the pipe insulation throughout the building and in the floor tile and mastic in the men's restroom in the international shipping area. Approximately 5,000 square feet of ACM is estimated to be in these areas. Appendix K and Table 3 present the results of the PSI suspect ACM sampling.

SCHN00171353

TABLE 3
Results of Asbestos-Containing Material Sampling

Site	Address	Sample Location	ACM (%)	Quantity (sq ft)	Conditions
Emerson Hardwood	3506 N.W. 35th Avenue	Pipe insulation	60	1,000	Good
Emerson Hardwood	3506 N.W. 35th Avenue	Men's restroom tile and mastic—international shipping	5 (tile) 3 (mastic)	5,000	Good

ND - Not detected.

Roof materials at the site were not sampled due to lack of safe access. If the roof had been accessible, it is not likely that a sample would have been collected in order to protect the integrity of the roof. It is anticipated, based on the age of the building, that asbestos is present in the materials used for the approximately 60,500 square feet of roofing.

Radon

A May 1996 draft report titled "Presentation of Radon Potential Maps to the Public: A Case History of Portland, Oregon," prepared by Scott F. Burns and Stuart G. Ashbaugh with Portland State University, and Ray Paris and George Toombs with the Radiation Control Section of the Oregon Health Division, was reviewed to provide information about radon on the Portland area.

EPA has established a level of 4 picoCuries per liter (pCi/L) as the action level for radon. Owners of buildings containing levels greater than this amount of radon are recommended to take "action" to be mitigated to reduce the radon levels. This action level is only an estimate of a concentration target to which indoor levels should be reduced.

On a national scale, one in every twelve homes has radon levels above the action level. In Oregon, a 1993 study by the Bonneville Power Administration of more than 1,135 homes in the Portland area revealed an elevated indoor radon level in one of every five homes.

According to the May 1996 draft report: *"Using data collected by the Oregon Health Division's Radiation Control Section, Portland was found to have elevated radon values in 22 percent of homes. A radon potential map has been produced for 39 zip code regions of Portland based on the rank sums of maximum radon values, averaging indoor radon values, and the percentage of homes with radon values >4pCi/L. Eight zip codes have high, 15 moderate, and 16 low radon potential."*

The subject property is located in zip code 97210, and according to the May 1996 draft report, this area is rated as having a low radon potential.

The atmosphere in the Emerson Hardwood building was sampled for the presence of radon by PSI under a subcontract with CH2M HILL. Appendix K and Table 4 present the results of the PSI radon sampling. None of the radon sampling results exceeded the EPA recommended exposure limit of 4 pCi/L.

SCHN00171354

TABLE 4
Results of Radon Gas Survey

Sample Location	Radon Levels (pCi/L)
Emerson Hardwood (warehouse)	0.2 U
Emerson Hardwood (Jerome Peterson's desk)	0.4
Westport (Judy's desk)	0.2 U
Westport (warehouse shelf)	0.2
Daisy Kingdom Inc. (southeast end of warehouse)	0.2 U

U—Not detected at the noted detection limit.

Lead-Based Paint

Representative samples of paint potentially containing lead were collected from the site by PSI under a subcontract with CH2M HILL. Appendix L presents the results of the PSI lead-based paint sampling. In summary, no lead was detected in paint samples taken from the site.

Drinking Water

Water samples were collected from three sampling locations at the site, as indicated in Table 5.

TABLE 5
Results of Lead Analysis of Tap Water Samples

Site	Address	Sample Identification Number	Sample Location	Total Lead Concentration (mg/L)
Emerson Hardwood	3738 N.W. Yeon Ave.	NW-06-3738-01	Coffee room	0.0025
Westport Supply Co.	3536 N.W. 35th Ave.	NW-06-3536-01	Coffee room	0.0024

U—Not detected at the noted detection limit.

To collect the samples, the water tap was opened and the water was allowed to run for 1 to 2 minutes. It was not possible to coordinate with property tenants and thus obtain first draw water samples. The samples were collected in 500-milliliter (ml) sample containers that were pre-preserved with nitric acid. Once the sample container was filled, the sample bottle was capped, labeled, placed in a cooler of ice for storage, and transported to North Creek Analytical Laboratory in Beaverton, Oregon, under chain-of-custody procedures for analysis. The samples were analyzed for total lead at North Creek Analytical Laboratory by EPA Method 200.8. The results of the analyses are presented in Table 5, and analytical reports are presented in Appendix L. All measured concentrations were less than the EPA

SCHN00171355

drinking water action level of 0.015 milligram per liter (mg/L) for lead (40 Code of Federal Regulations [CFR] Subpart I, Section 141.80).

Soil

On the basis of the lack of evidence suggesting soil contamination on the subject property, soil sampling was, in our opinion, not necessary for this environmental site assessment.

Groundwater

Based on the presence of contaminated groundwater and free product beneath adjacent upgradient sites, the groundwater beneath the subject property is anticipated to have been impacted. Given the preponderance of the evidence of groundwater contamination, groundwater sampling was not performed for the purposes of this environmental assessment.

Identified Environmental Concerns

The following are CH2M HILL judgments and opinions regarding environmental concerns based on the information presented in the previous sections and appendixes of this environmental assessment report.

- USTs have not been present on the site. USTs formerly located at up to three properties within 1 mile of the site are anticipated to have caused groundwater contamination beneath the subject property.
- ACM is present on the subject property. Approximately 60,500 square feet of ACM are presumed to be present in the roofing material. A total of 6,000 square feet of ACM are present in pipe insulation and in the men's restroom in the international shipping area. The ACM is in good condition and should not pose an environmental hazard until it is disturbed. ACMs on properties within 1 mile of the site have not caused an environmental hazard on the subject property.
- No transformers were observed at the Emerson Hardwood property. Electrical equipment located at the Emerson Hardwood property does not contain PCBs above regulated levels and has not caused an environmental hazard. Transformers and electrical equipment located within 1 mile of the subject property that contain PCBs above regulated levels have not caused an environmental hazard on the subject property.
- Lead-based paint is not present and has not caused an environmental hazard on the subject property. Lead-based paint on properties within 1 mile of the site has not caused an environmental hazard on the subject property.
- Petroleum products stored in 55-gallon drums are present at the site. On the basis of the quantity of drums and the manner in which they are stored and handled, it is not anticipated that these drums have caused an environmental hazard on the subject property. Past release of petroleum products on properties within 1 mile of the site are anticipated to have caused groundwater contamination beneath the Emerson Hardwood property.

SCHN00171356

- Fifty-five-gallon drums of various commercial-grade dry-cleaning chemicals were observed at the subject property in the space leased by Westport Supply Company. There were no indications at the time of the site visit that releases from these drums had occurred. According to Westport Supply Company staff, there have been no releases of materials on the subject property. No drums containing hazardous substances that have caused an environmental hazard on the subject property have been observed on properties within 1 mile of the site.
- There were no observed or reported material spills at the site. Historical spills of hazardous substances, chemicals, and solvents have occurred at the adjacent Ashland Chemical and Trumbull Asphalt sites and are anticipated to have caused groundwater contamination beneath the subject property.
- There was no observed evidence of stressed vegetation on the subject property. There was no observed evidence of stressed vegetation on properties within 1 mile of the subject property that suggested an environmental hazard on the subject property.
- There was no observed evidence of discolored or disturbed soil on the subject property. There was no observed evidence of discolored or disturbed soil on properties within 1 mile of the subject property that suggested an environmental hazard on the subject property. In general, SIC policies prevented contaminated material from being used at the subject property, as outlined in Appendix M.
- There were no unusual or noxious odors on the subject property. There were no unusual or noxious odors on properties within 1 mile of the subject property that suggested an environmental hazard on the subject property.
- Monitoring wells were not observed on the subject property. The presence of groundwater monitoring wells on several nearby and adjacent upgradient properties suggested groundwater contamination beneath the Emerson Hardwood property.
- No trails with no apparent outlets or purposes were observed on the subject property. No trails with no apparent outlets or purposes were observed on properties within 1 mile of the subject property that suggested an environmental hazard on the subject property.
- Several products used and stored at Westport Supply Company's portion of the subject property contain toxic and hazardous substances. There have been no reported spills or releases of these materials to the environment at the subject property. Releases of hazardous substances have occurred on adjacent and nearby sites and are anticipated to have caused groundwater contamination beneath the subject property.
- No radon levels above the recommended action levels were detected in the samples taken at the subject property. No radon on properties within 1 mile of the site has caused an environmental hazard on the subject property.
- No refrigerated drinking water fountains listed in the "Federal Register" as coolers that are not lead-free were observed on the subject property. No refrigerated drinking water fountains listed in the "Federal Register" as coolers that are not lead-free on properties within 1 mile of the subject property and that have caused an environmental hazard on the subject property have been observed.

SCHN00171357

- Results from analysis of drinking water samples taken from each of the tenant spaces at the subject property did not indicate levels of lead in the drinking water that exceeded the EPA level of 0.015 mg/L. No lead-contaminated drinking water within 1 mile of the subject property that had caused an environmental hazard on the subject property was observed.
- There were no reports of past or present dry-cleaning operations conducted at the subject property or on the properties within 1 mile of the subject property that had caused an environmental hazard on the subject property.
- Overhead transmission lines were not observed at the subject property.

Releases from nearby and adjacent sites are anticipated to have caused groundwater contamination beneath the subject property. Each of the sites where releases have occurred is undergoing site investigation and cleanup under DEQ oversight. There is no evidence or claim by the responsible parties that indicates any releases from the Emerson Hardwood property have caused or contributed to the groundwater contamination.

The groundwater contamination does not pose a threat to human health or to the environment. The groundwater contamination does not affect the use of the subject property. Water service is supplied to the industrial area around the site by the City of Portland and shallow groundwater is not used. The area around the subject property has been designated as an industrial sanctuary and recent attempts to modify uses and to locate commercial retail stores in the area have been denied. Most of the ground surface is paved. If groundwater remediation were to be required at the adjacent or nearby sites, such remediation would not be anticipated to affect the use of the Emerson Hardwood site.

References

Personnel Performing Site Assessment

This environmental site assessment was performed by Ross Rieke, Mark Bricker, Janeen Adamo, Aaron Leritz, and Darren Nakata. Resumes for these individuals are included in Appendix N.

Reports Reviewed

Ashland Chemical Inc. "Contingency Plan and Emergency Procedures." March 9, 1992.

CH2M HILL. "Environmental Site Assessment Field Checklist." August 12, 1996.

Clayton Environmental Consultants. "Groundwater Monitoring and Sampling Draft Report, Former Terminal Transfer Inc. Property." April 19, 1996.

Coastal Remediation Company. Letter to DEQ regarding final cleanup assessment report—ANR Freight System, Inc. terminal. August 21, 1992.

Crosby & Overton, Inc. "Report on Decommissioning Fume Line Project at Trumbull Asphalt, Portland, Oregon." 1988.

Environmental Data Resources, Inc. "The EDR-Radius Map with Geo-Check™." August 7, 1996.

SCHN00171358

Environmental Management Solutions. "Environmental Compliance Reviews of Lessee Operations at 3506 N.W. 35th and 3720 N.W. Yeon." January 14, 1991.

ERM-Northwest, Inc. Letter to DEQ regarding matrix report for ANR Freight System. February 25, 1991.

George D. Ward & Associates. "Final Site Closure Report: Former Terminal Transfer, Inc., Property, 3601 N.W. Yeon Street, Portland, Oregon, Part 1—Northwest Yeon Street Only." July 26, 1994.

_____. Letter to H. B. Fuller Company regarding assistance in determining the chemical components of a powder observed at the former Chase Bag Company site. June 28, 1993.

_____. Letter to Mike Fernandez, Department of Environmental Quality, regarding Terminal Transfer, Inc. January 18, 1991.

_____. "Terminal Transfer, Inc., Completion of Offsite Treatment of Diesel-Contaminated Soil, North Marine Drive." May 12, 1994.

Geotechnical Resources, Inc. "Collection of Samples of Material In-Place at Western Property Line at Terminal Transfer/Yeon Property." January 18, 1991.

_____. "Disposal of Contaminated Groundwater, Terminal Transfer Property, Portland, Oregon." June 4, 1990.

_____. "Fuel Line Decommissioning, Terminal Transfer, Portland, Oregon." March 9, 1990.

_____. "Fuel Line Decommissioning, Terminal Transfer, Portland, Oregon." February 27, 1990.

_____. "Materials and Information, Soil Remediation at Terminal Transfer/Yeon Street Property, Portland, Oregon." January 30, 1991.

_____. "Meeting with DEQ Regarding Terminal Transfer/Yeon Property." January 14, 1991.

_____. "Petroleum Contamination of Soils, Terminal Transfer/Yeon Street Property, Portland, Oregon." January 17, 1991.

_____. "Petroleum Contamination of Soils, Terminal Transfer/Yeon Street Property, Portland, Oregon." January 15, 1991.

_____. "Preliminary Report, Underground Storage Tank Decommissioning, Terminal Transfer, Portland, Oregon." February 21, 1991.

_____. "Preliminary Site Screening, Terminal Transfer Property, Portland, Oregon." March 2, 1989.

_____. "Remediation of Hydrocarbon Release, Terminal Transfer Property, Portland, Oregon." March 30, 1990.

_____. "Remediation of Soil and Groundwater Contamination by Hydrocarbons, Terminal Transfer Facility, Portland, Oregon." May 31, 1990.

SCHN00171359

_____. "Remediation of Soil and Groundwater Contamination by Gasoline, Terminal Transfer Facility, Portland, Oregon." May 1, 1991.

_____. "Remediation Plan for Soil and Groundwater Contamination by Gasoline, Terminal Transfer Facility, Portland, Oregon." June 19, 1990.

_____. "Remediation Plan for Soil and Groundwater Contamination by Gasoline, Terminal Transfer Facility, Portland, Oregon." June 14, 1990.

_____. "Results of TPH Analyses of Soil Samples Collected at Terminal Transfer by GRI." January 14, 1991.

_____. "Review of Corrective Action Plan Developed for the Terminal Transfer/Yeon Street Property by George D. Ward & Associates." February 27, 1991.

_____. "Soil and Groundwater Investigation Program, Terminal Transfer Site, Portland, Oregon." August 12, 1991.

_____. "Soil and Groundwater Monitoring Data Summary, Terminal Transfer/Yeon Street Property, Portland, Oregon." February 8, 1991.

_____. "Summary of Environmental Activities, Terminal Transfer/Yeon Street Property, Portland, Oregon." April 8, 1991.

Hart Crowser. "Corrective Action Plan Hill Investment Company Warehouse, 3322 N.W. 35th Avenue, Portland, Oregon." June 24, 1991.

_____. Letter to DEQ regarding response to site assessment information request, Hill Investment Co. property. June 30, 1995.

_____. "Semiannual Monitoring Report, Hill Investment Company Warehouse, Portland, Oregon." October 13, 1993.

Marks, Steven. Letter to Sheila Monroe, Oregon Department of Environmental Quality, regarding Terminal Transfer, File No. 26-89-013. December 14, 1995.

North Creek Analytical. "Schnitzer N.W. Mutual (test results)." August 20, 1996.

Oregon Department of Environmental Quality (DEQ). Interoffice Memorandum regarding site referral for the confirmed release list. January 22, 1991.

_____. Letter to George D. Ward regarding Terminal Transfer, Inc., File No. 26-89-013. March 18, 1991.

_____. Memorandum to Sheila Monroe, Northwest Region UST Cleanup Program, regarding Terminal Transfer, Inc., File No. 26-89-013. March 18, 1991.

_____. Letter to Hill Investment Co. regarding notification of state preliminary assessment, Nabisco Warehouse/Hill Investment Co. Database Site 1076. April 3, 1991.

_____. Letter to Hill Investment Company regarding notice to owners and operators of proposal to list contaminated property, Nabisco Warehouse & Hill Investment Co., 3322 N.W. 35th. June 26, 1991.

SCHN00171360

_____. Letter to Hill Investment Company regarding groundwater monitoring associated with UST—Multnomah County, Hill Investment. July 17, 1991.

_____. Interoffice Memorandum regarding Ashland Chemical inspection report. February 7, 1992.

_____. Letter to Ashland Chemical Company regarding response to the violation notice of NWR-HN-92-156. May 21, 1992.

_____. "Investigation Details, Ashland Chemical Co." May 3, 1994.

_____. Letter to Hill Investment Co. regarding site assessment information request, Hill Investment Co. June 13, 1995.

_____. Memorandum to Sheila Monroe, Northwest Region UST Cleanup Program, regarding Terminal Transfer, Inc., File Transfer. July 13, 1995.

_____. Letter to Hill Investment Co. regarding final evaluation of Hill Investment Co. site. July 20, 1995.

_____. Memorandum regarding Ashland Chemical Company. October 17, 1995.

_____. Letter to Ashland Chemical Company regarding notice of non-compliance. November 1, 1995.

_____. "Environmental Cleanup Site Information Site Summary Report." July 24, 1996.

_____. "Environmental Cleanup Site Information Site Summary Report." July 22, 1996.

PSI. "Summary of Asbestos, Radon, and Lead-Based Paint Surveys at N.W. 35th and Yeon, Portland, Oregon." September 3, 1996.

Riedel Environmental Services, Inc. "Nabisco Warehouse Site—Soil and Groundwater Sampling and Asbestos Survey Round I" (Ashland Chemical Site). October 11, 1990.

_____. "Nabisco Warehouse Site—Soil and Groundwater Sampling Round II" (Ashland Chemical Site). November 10, 1990.

SAFE Research, Inc. "Government Agency Database and Well Log Report." August 16, 1996.

Science & Engineering Analysis Corporation. "Preliminary Assessment: Trumbull Asphalt Plant." June 22, 1992.

_____. "Status Report on Quarterly Groundwater Monitoring, Trumbull Asphalt Plant, Portland, Oregon." January 19, 1993.

SRH Environmental Management. "Groundwater Contamination Remedial Investigation, Trumbull Asphalt Company, Portland, Oregon." August 28, 1989.

_____. "Summary Report: First Quarter Groundwater Monitoring, Trumbull Asphalt Company, Portland, Oregon." June 19, 1990.

SCHN00171361

SRH Pacific-Environmental Contractors. "UST Decommissioning Report, Quinn & Quinn Enterprises, Coca-Cola Facility." April 29, 1990.

Tom New Construction Company. Letter to DEQ regarding Nabisco Warehouse. February 14, 1991.

U.S. Technical Environmental Consulting, Inc. "Underground Storage Tank Closure Assessment, Coca-Cola Enterprises." May 31, 1990.

_____. "Underground Storage Tank Closure Assessment, Addendum No. 1, Coca-Cola Enterprises." June 18, 1991.

Persons Interviewed

Don Carpenter—Schnitzer Investment Corp.
Dan Johnson, Vice President—Daisy Kingdom Inc.
Jerome Peterson, Operations—Emerson Hardwood
Ernie Tucker, Site Manager—Westport Supply
Linda Wakefield, Vice President—Schnitzer Investment Corp.

SCHN00171362

Appendix A

SCHN00171363

APPENDIX A

ASTM Standard E 1527

PDX17301.DOC

Appendix B

SCHN00171389

APPENDIX B

Title Report

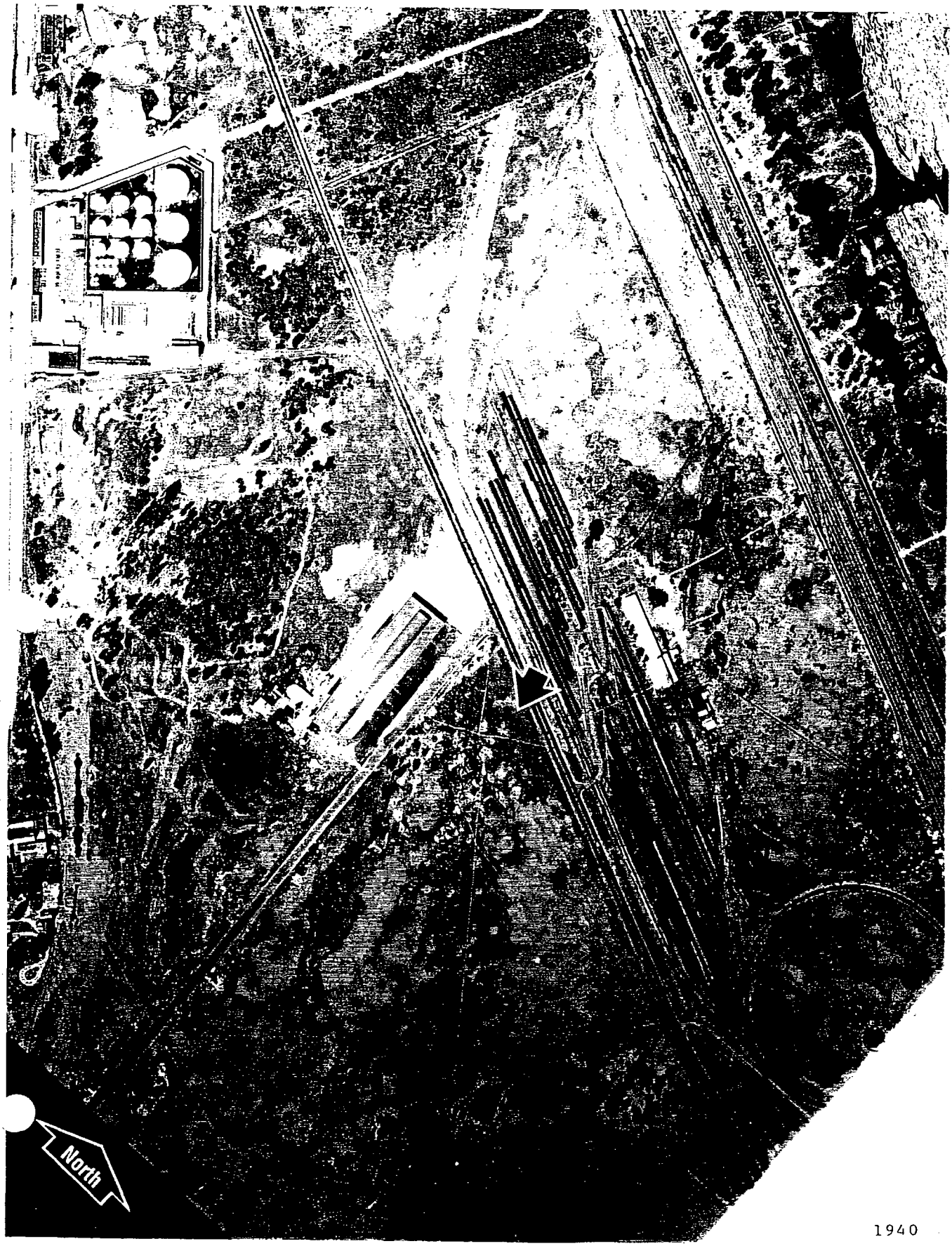
SCHN00171390

Appendix C

SCHN00171399

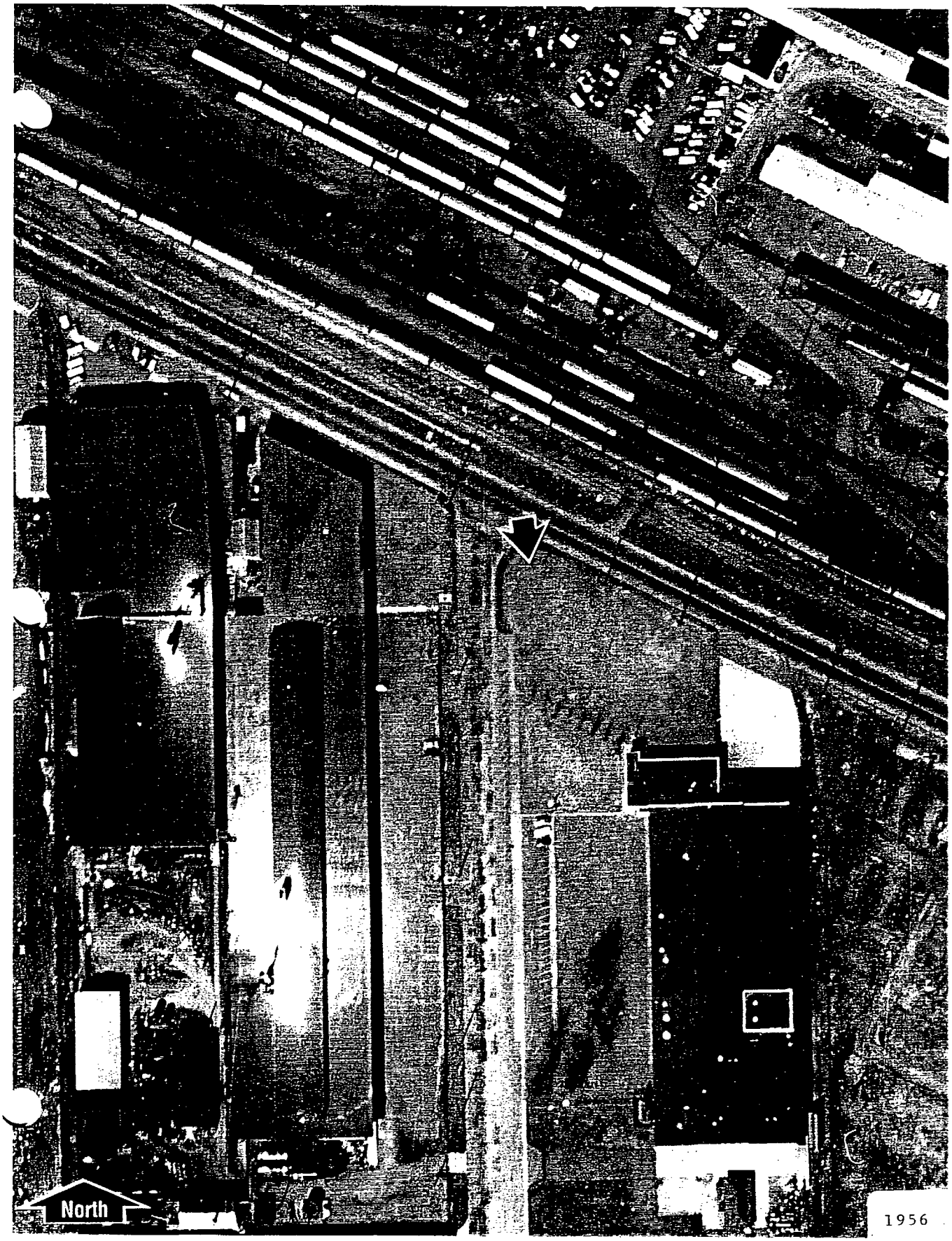
APPENDIX C

Historical Aerial Photographs

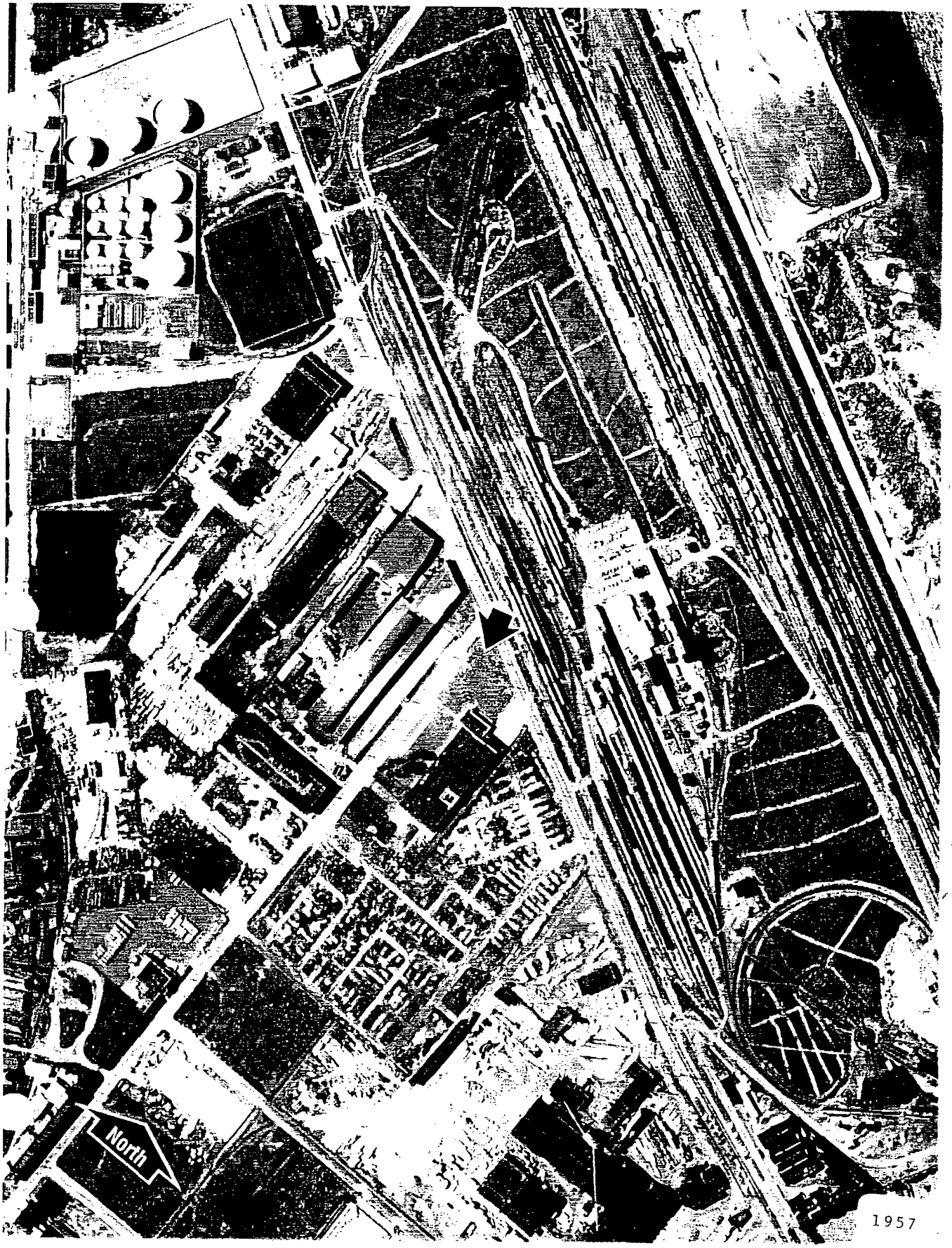


1940

SCHN00171401

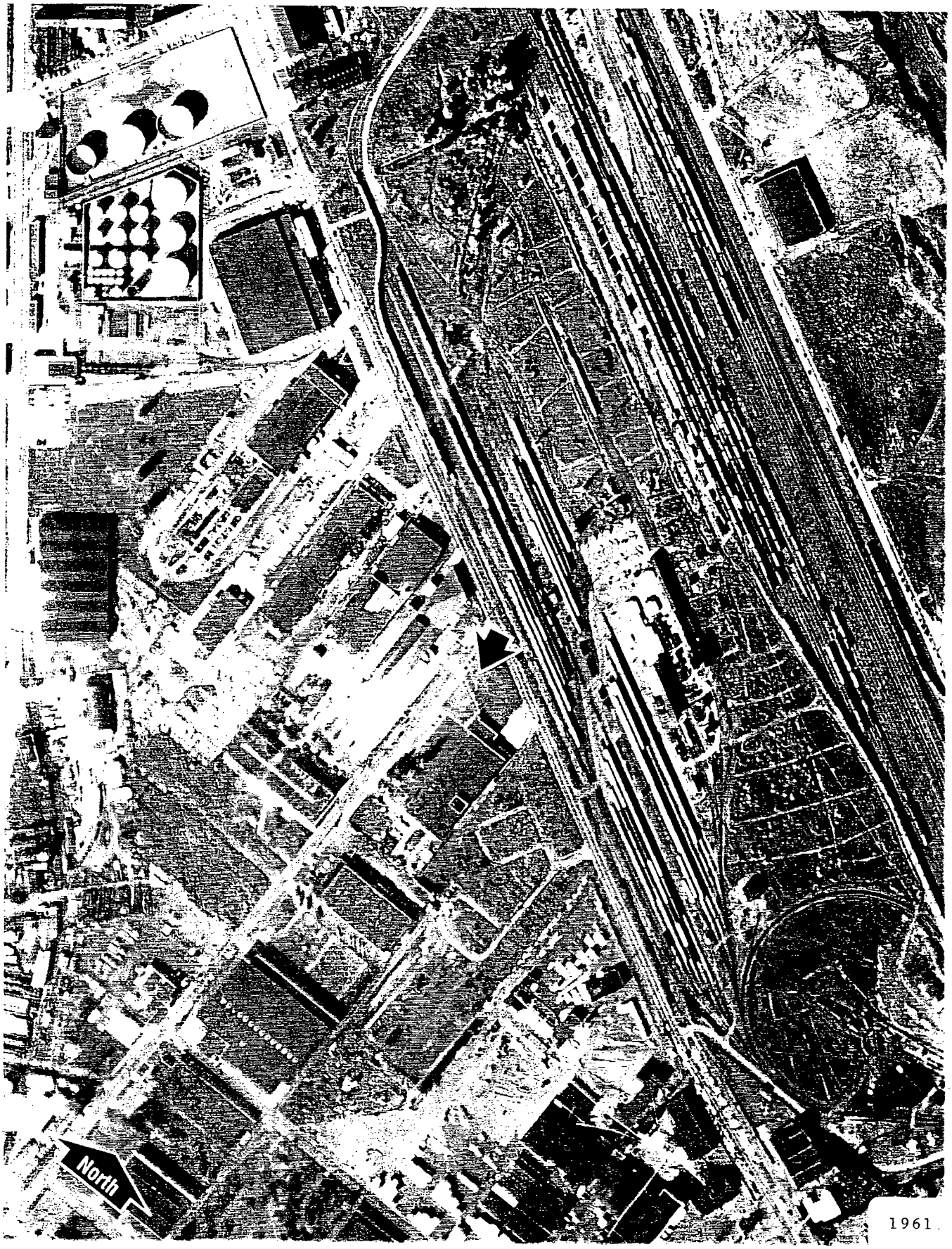


1956



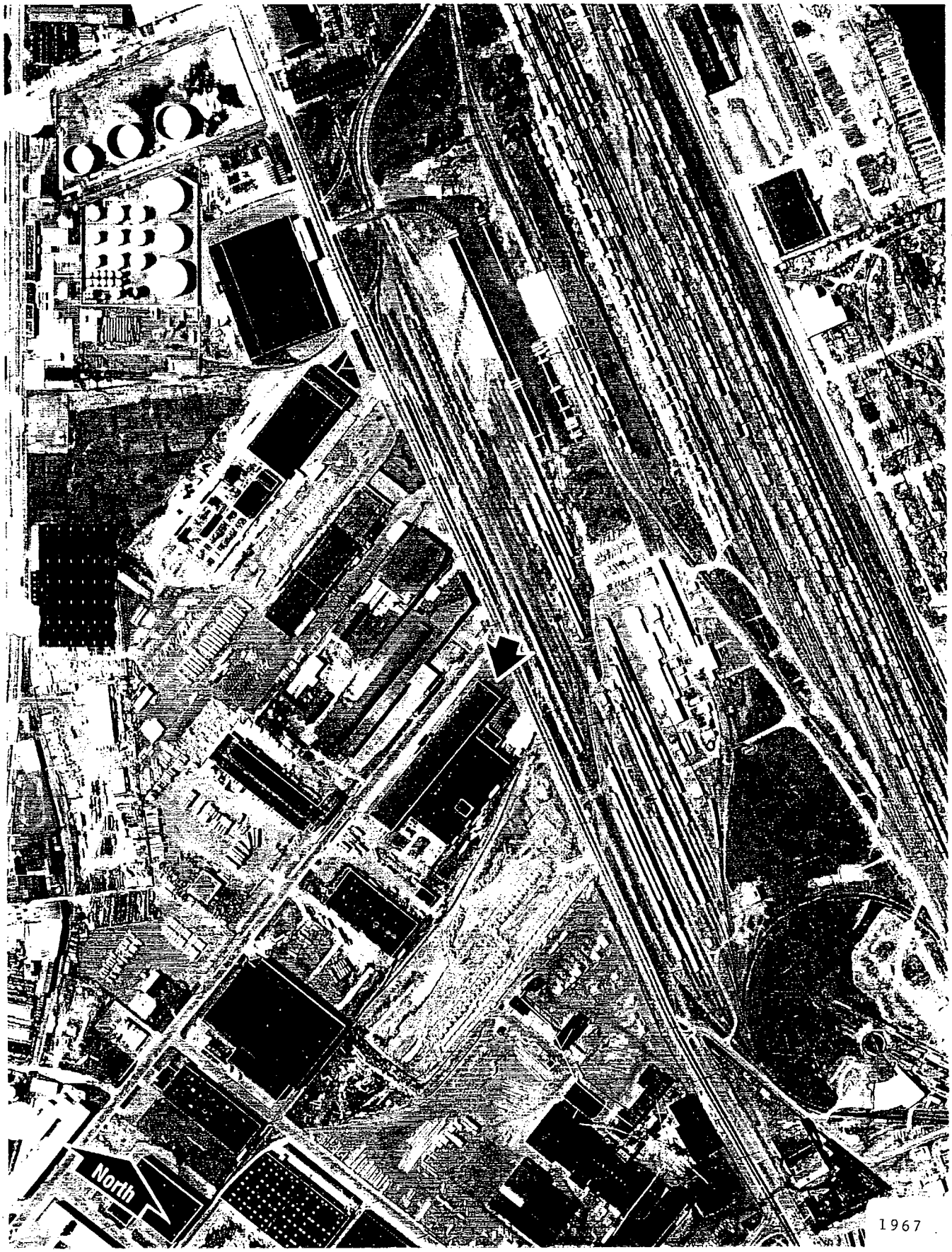
1957

SCHN00171403



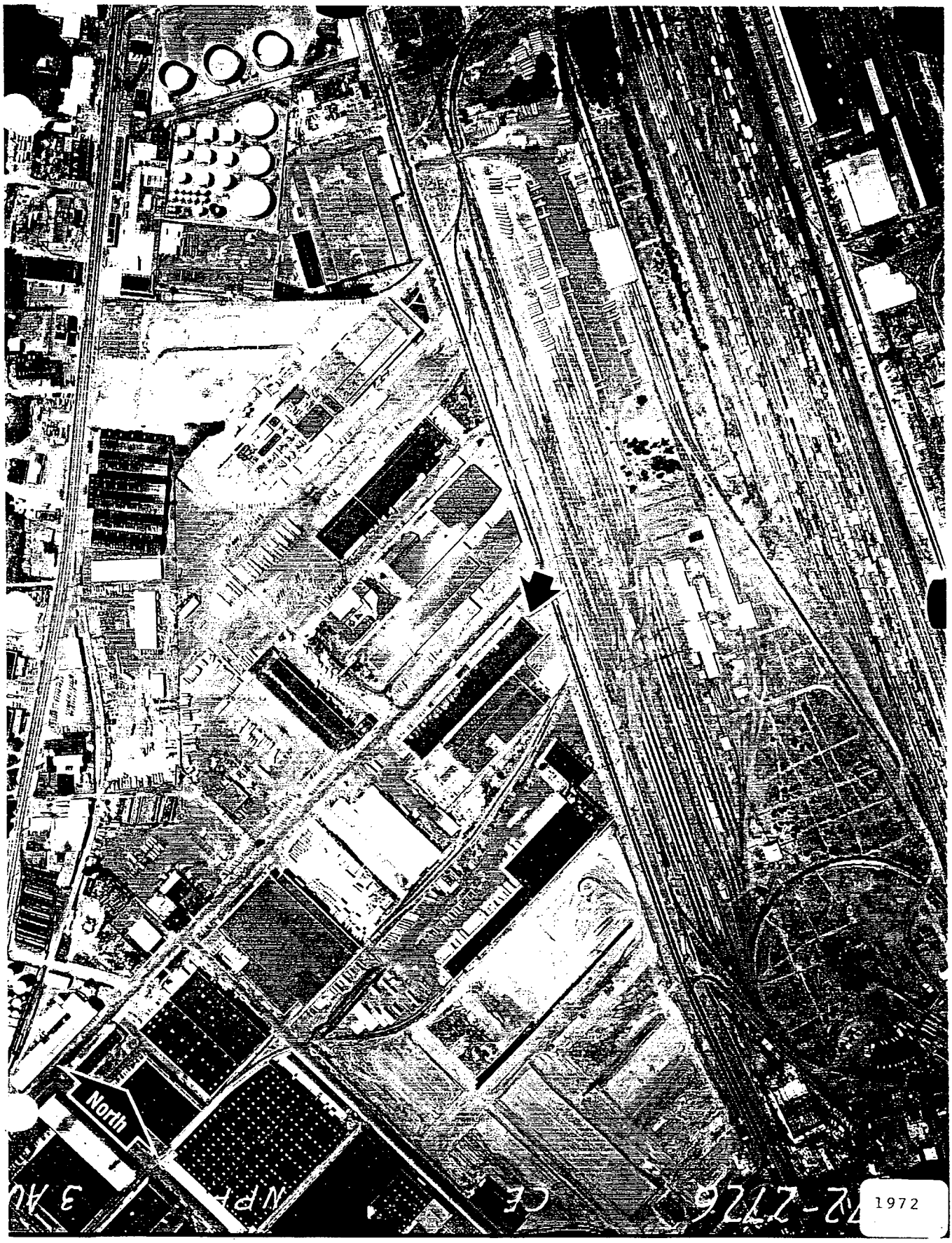
1961

SCHN00171404

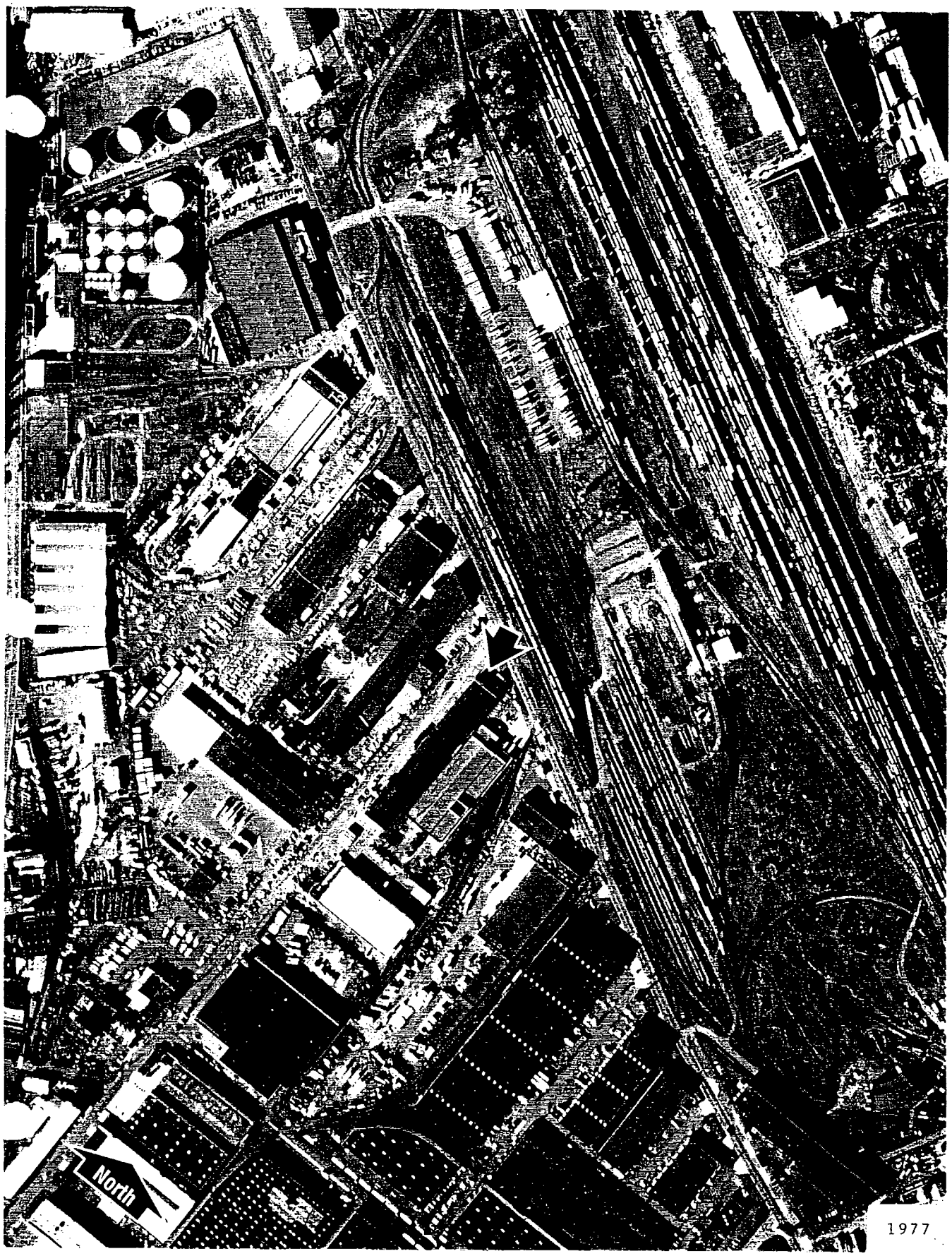


1967

SCHN00171405

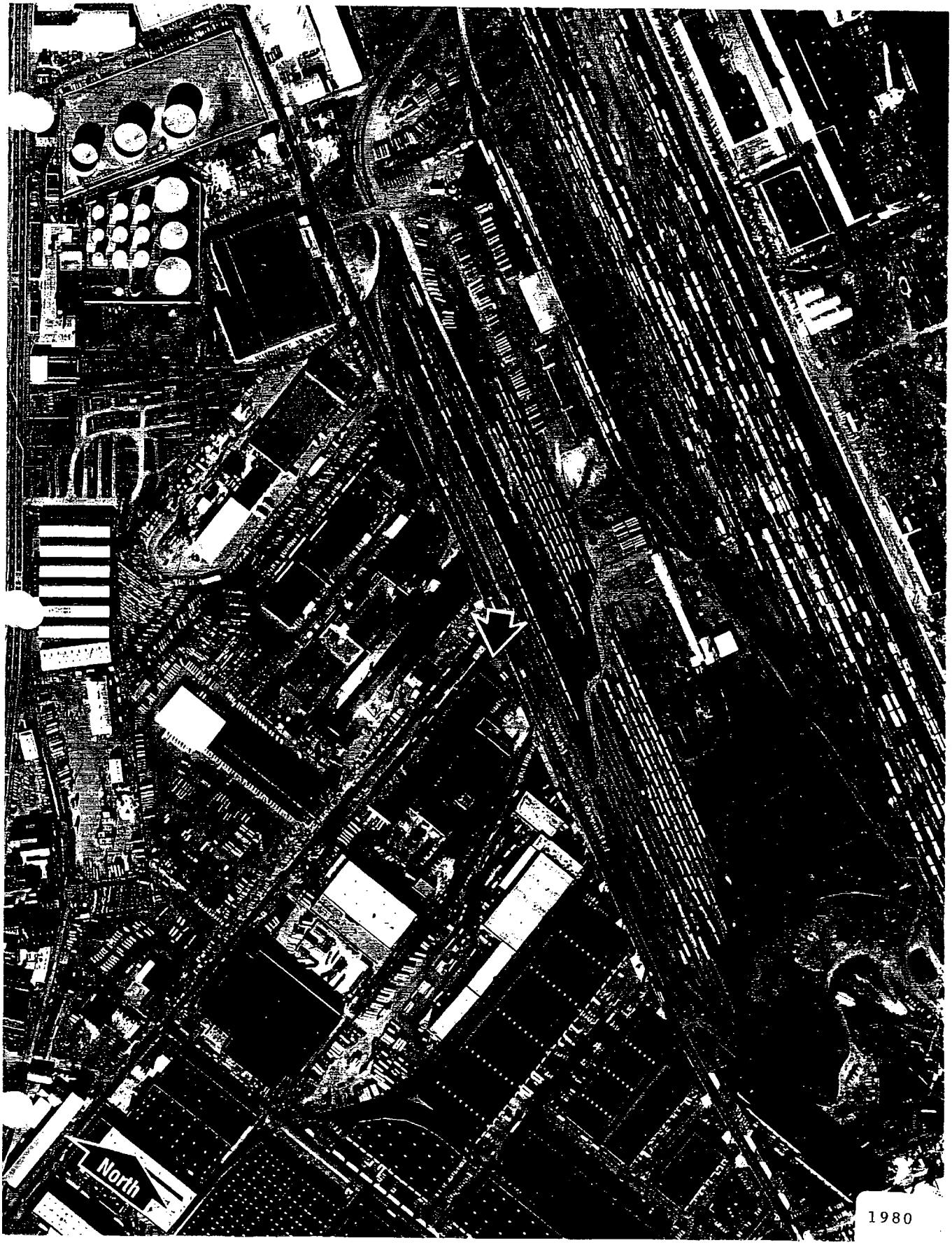


SCHN00171406



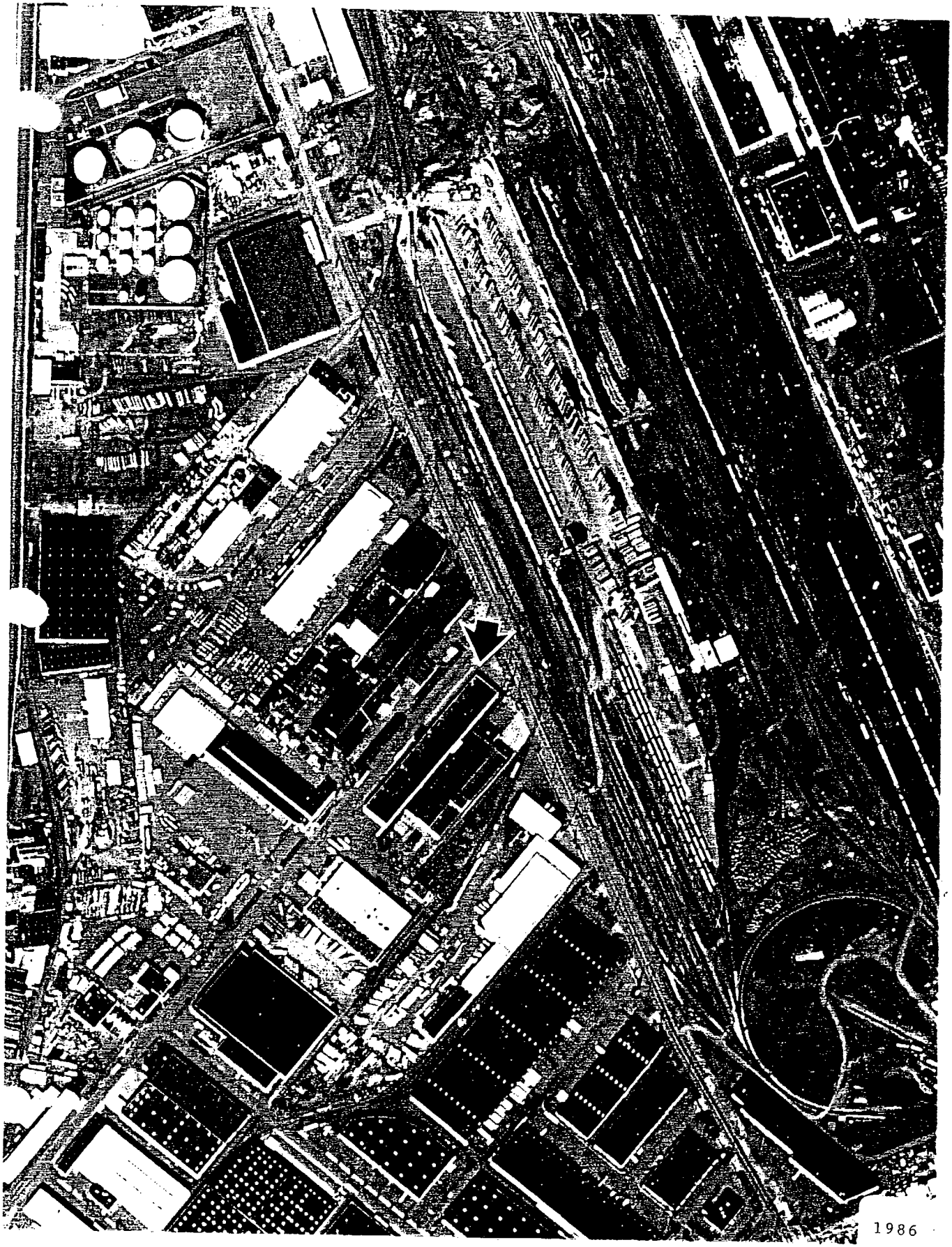
1977

SCHN00171407



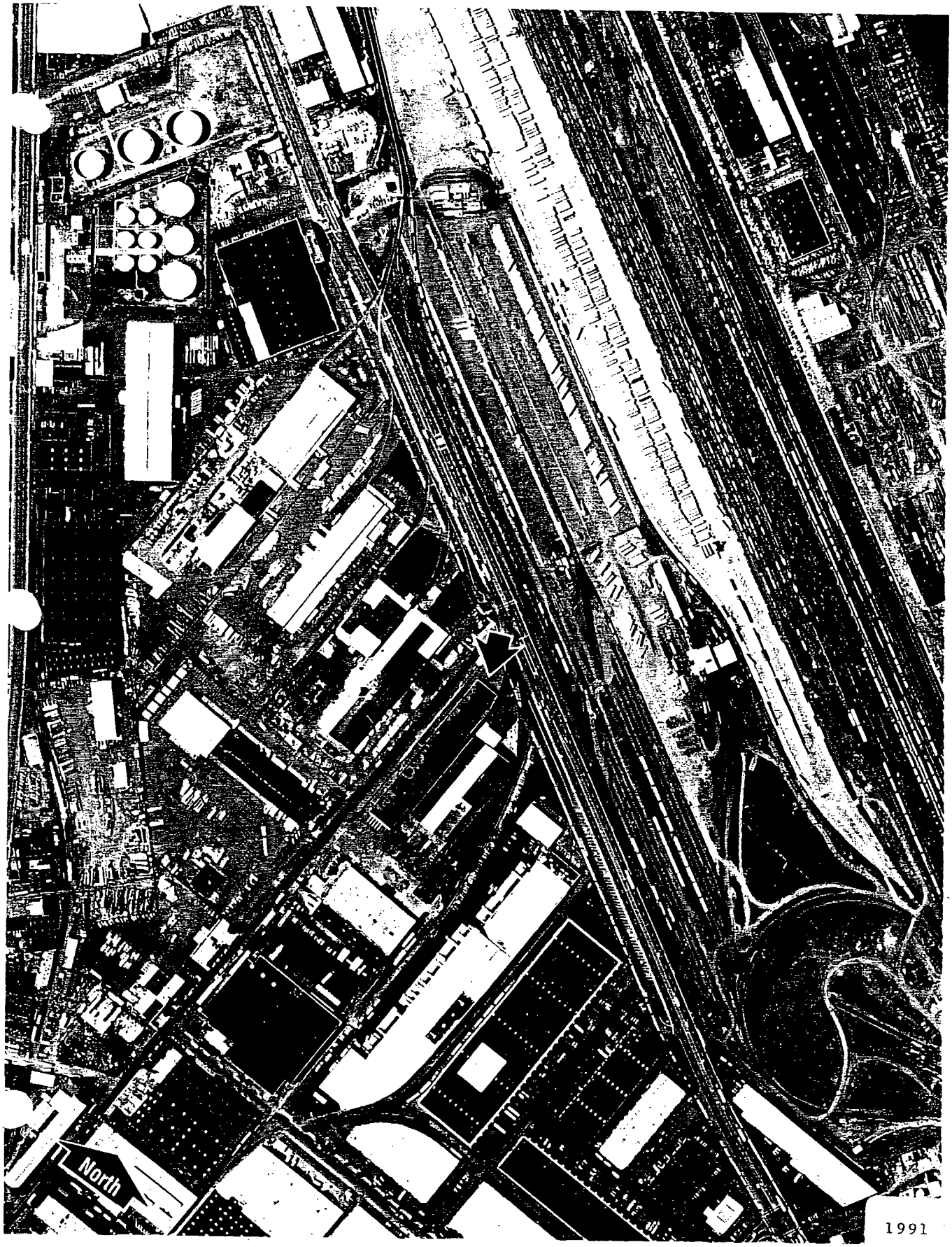
1980

SCHN00171408



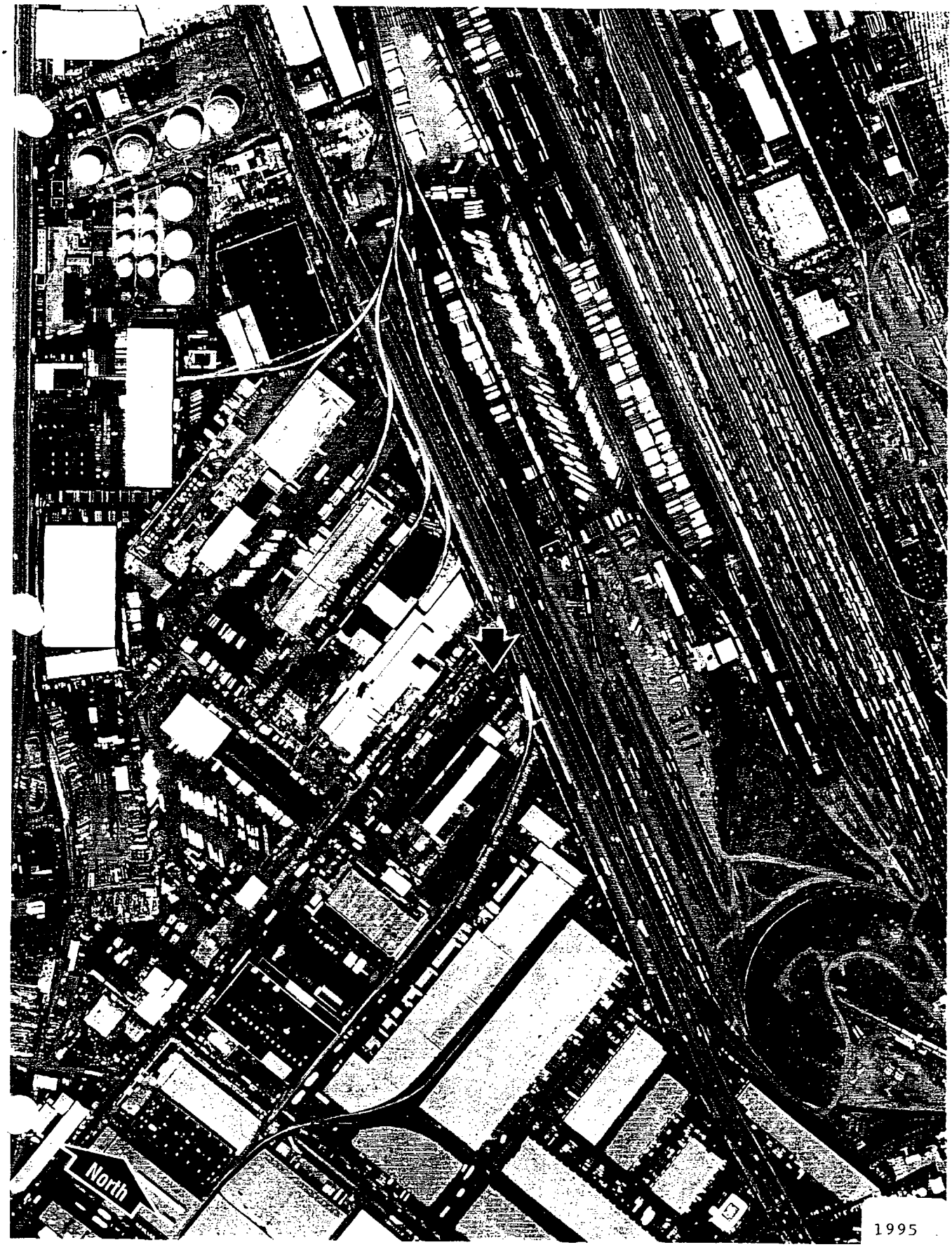
1986

SCHN00171409



1991

SCHN00171410



1995

SCHN00171411

Appendix D

SCHN00171412

APPENDIX D

Owner/Occupant Questionnaire

SCHN00171413

CH2M HILL

Owner/Occupant Questionnaire
for
Environmental and Hazardous Substance Assessment

Please respond to the best of your knowledge to the following questions regarding past and current uses of the property. Not all questions may pertain to the property. If a question is not applicable, simply mark the question as N/A. If supporting information is available regarding a response to a question (such as analytical results, well logs, environmental permits) please attach a copy to the questionnaire.

Property Address: 3720 N.W. Yeon Avenue
Portland, OR 97210

Questionnaire Responses Prepared by: Aaron Leritz
Contact Telephone Number: _____

Site Name: Daisy Kingdom/Emerson Hardwood

Preparer represents that to the best of the Preparer's knowledge the following statements and facts are true and correct, and that to the best of the Preparer's knowledge no material facts have been suppressed or misstated.

Dan Johnson/Daily Kingdom VP
Jerome Peterson/Emerson—Operations
Ernie Tucker/Westport

Name _____ Signature _____

Company _____ Date 8/12/96

Relationship to property: Owner ☐ Tenant ☑ Other ☐

If "other," describe: _____

SCHN00171414

General

1. When was the site acquired and for what purpose is the property currently used?

   Daisy Kingdom: Warehouse fabric-type product. Storage and distribution only.

2. Have there been previous owners/operators engaged in different uses of the site? Please explain.

   Daisy Kingdom—unknown.

   Emerson: 3 yrd onsite. Wholesale distribution of hardwood floors and accessories. Wood finishing tools. No manufacturing—inside built for Emerson prior to move-in. No knowledge of previous tenant, the site was vacant. Possibly bakery products—other end was Franz Bread.

3. What else is known about previous usage of the site or any portions of the site?

   Westport, Inc.: Previous → Van Water & Rogers (VW&R) had a subsidiary called East Port who was a distributor of dry cleaning/laundry supplies from manufacturer—no mixing or manufacturing onsite. Prior to November 1993 Eastern Supply—bought out by Westport. Eastern was present 1 year similar business as Westport.

4. Describe the products or services produced on this site. Include a general description of the manufacturing processes and the dates those processes were active.

   Westport: Perclor—5, 30, 55 gallon drums
   5—35-60 gallon pales
   30—15-20 gallon drums
   55—10

5. What is known about site soils and geology? Have borings been made? Have soils ever been tested for chemical contamination as a result of a leak, spill, or other incident?

   Daisy Kingdom: No.

   Emerson: None.

Westport: No serious spills; periodic leaks of dry laundry soap. No 55-gallon or 30-gallon drums of perc have been spilled or have leaked. None on soils or geology.

6. Have any state or federal environmental agencies required or participated in any testing of soils and/or groundwater? Please explain.

Daisy Kingdom:

Emerson: None.

Westport: None.

7. Are there any wells onsite? If so, please describe their use and location. Please include wells no longer in use.

City water, no wells known.

Daisy Kingdom: None.

Emerson: None.

Westport: None.

8. What raw materials are used at the site?

Daisy Kingdom: Fabric, textiles, paper.

Emerson: Wood product. Finishes → varnishes alcohol, water, oil base, accessors.

Westport: Laundry cleaners/soaps; solvents—percloroethelene, petroleum distallate high flash in drums 4 to 5 55-gal.; bleaches; sulfuric acid—1 to 2 drums 55-gal.; paper.

9. How are these materials received (truck, rail, etc.), and how are they stored (drum, tanks, etc.)?

Daisy Kingdom: Truck warehouse—none.

Emerson: Truck—5-gallon stock pails.

Westport: Truck—drums, 5-gallon plastics.

10. Are any of the following materials present onsite? Have any of the following materials been used, stored, or disposed of at this site?

	Yes	No		Yes	No
Arsenic		X	Hydraulics oils		X
Asbestos			Acids	✣	X
Cyanide		X	Caustics	✣	X
Heavy metals (cadmium, chromium, lead, mercury, nickel, zinc)		X	Pesticides		X
PCB-containing transformers/capacitors/ fluorescent ballast	♦		Reactive materials	✣	X
PCB-containing oil or fluids	X		Fluoride		X
Industrial solvents	✣	X	Radium		X
Cutting oils		X	Petroleum products (gasoline, diesel, kerosene, oils, or lubricants)	✣ ★	●

X All tenants
♦ Fluorescent ballast
✣ Westport (sulfuric & pellets)
★ Emerson Hardwood
● Daisy Kingdom

11. List all regulatory agencies with whom operators of this site have had contact.

Name of Agency	Address	Contact Person	Telephone Number
Daisy Kingdom: None			
Emerson: Fire Marshall			
Westport: None			

12. Please provide the names, addresses, and telephone numbers of private individuals who may have knowledge regarding these questions or other information concerning the environmental condition of the property.

Name	Address	Telephone Number	Relationship to Site
None			

Underground Tanks

13. Are any materials stored in underground tanks? Please discuss with respect to material stored, tank design and capacity, tanks materials, high level indicators and alarms, and leak detection systems or groundwater monitoring employed. How are materials transported to and from the tanks?

    Daisy Kingdom: None.

    Emerson: None.

    Westport: None.

14. Are any materials stored in above-ground tanks? Please discuss with respect to materials stored, tank design and capacity, tank materials, tank age, high level indicators and alarms, types of secondary containment structures employed (dikes, berms) and drainage. How are the materials transported to and from the tanks?

    No.

Air Emissions

15. Does the facility operate under a permit or license? Please attach copies of any air permits or licenses pertaining to operations on the property.

    No air emissions.

16. Please identify and describe all sources of air emissions.

    N/A

17. Please list all air pollution control devices at the plant.

N/A

18. Are air emissions monitored? If so, indicate frequency of monitoring.

N/A

Wastewater

19. Please describe all sources of process and non-process wastewater. Include information on characteristics and flows for each wastewater stream.

Daisy Kingdom: No process water—city sewer.

Emerson: City sewer.

Westport: City sewer/water.

20. Please describe any onsite wastewater treatment or pretreatment operations employed at the facility.

N/A

21. Have wastewaters ever been analyzed? Please provide and describe the results of any testing of wastewaters.

N/A

22. Are any wastewater streams discharged to a publicly owned treatments works? Please give details.

N/A

23. Are any wastewater streams discharged to septic tanks? Please discuss.

No.

24. Are any of the water discharges at this facility subject to:

- Effluent guidelines
- Pretreatment requirements
- State or local agency discharge limits
- County or local discharge ordinances

SCHN00171419

N/A

25. List all water discharge violation notices, such as warnings (verbal or written), citing, fines, informal meetings, or enforcement action proceedings, taken against this facility in the last 2 years, the reason(s) for each, and their current status.

N/A

26. Attach copies of all water permits specifically applicable to this facility.

N/A

Hazardous Materials, Hazardous Waste

27. Is the facility classified as any of the following:

- Hazardous waste generator
- Hazardous waste transporter
- Hazardous waste storage facility
- Hazardous waste treatment or disposal facility

No.

If yes, please describe the waste's treatment, disposal, and storage method.

28. Please attach a list all materials used, generated, or stored at this facility that are designated as "hazardous" or "suspected to be hazardous." For each material, please provide the following:

- **Solid and Hazardous Waste**—Please provide all documents pertaining to any hazardous waste generated at the property currently or in the past. These documents should include the EPA/DEQ identification number, all manifests, annual/biennial reports, and the results of any analyses done on these wastes. Please also indicate whether a RCRA treatment, storage, disposal, or recycling permits has ever been applied for or received.

N/A

- **Water/Discharges**—Please provide all permits to discharge wastewater, process water, contact or noncontact cooling water, and storm water, including water from cafeterias, restrooms, or other discharges. In addition, please provide any analytical data from samples of any wastewater discharges or any questionnaires pertaining to any discharged water (such as industrial pretreatment questionnaire) that may have been submitted to an environmental agency. If there have been any notices of violations, these should also be provided.

N/A

- **Air Emissions**—Please provide a list of all stacks, hoods, exhausts, vents, etc. (excluding those attached to a heating and ventilation system), all air permits or registrations issued, and all descriptions available regarding existing or planned air pollution control systems.

N/A

- **Releases and Storage Tanks**—Please provide all documents concerning past or current onsite or offsite releases and how these release were/are being cleaned up, all spill prevention plans, a list of all above-ground or underground storage tanks used to store petroleum or other chemical products (including there contents and capacity), and copies of any notifications or registrations filed with any state or federal agency concerning the existence of these tanks.

- **Occupation Safety and Health Administration (OSHA) Hazard Communication Standard**—Please provide material safety data sheets (MSDS) for all chemicals used at the site, and any documentation of the employee training program dealing with the Hazard Communication Standard. Also include any OSHA notices of violation.

N/A

- **SARA Title III Section 313 Reporting**—Please provide all records or documents submitted to any state or federal agency and all in-house documents used to evaluate whether the site is required to submit information to these agencies.

N/A

- **Other**—If any monitoring (voluntary or required by state or federal agencies) is being performed in any of the areas described above, please provide information. A schematic diagram of the site would be useful for a clearer understanding of all operations. Finally, provide all information available regarding the history of the site, including any prior environmental site assessments, asbestos surveys, historical disposal sites, and prior owners or operators.

29. Discuss any spills, leaks, or other incidents that have occurred. Were they reported? What actions were taken? Were any fines or penalties imposed?

N/A

Worker Safety

30. Please provide copies of any Hazardous Materials Management Plans, Risk Assessments, Hazardous Waste Contingency Plans, or Spill Prevention Plans that have been developed for the facility.

Daisy Kingdom: HMMP for MSDS, soaps, glass cleaners, fire extinguishers.

Emerson: MSDS copies.

Westport: All persons have taken a 40-hour course in HAZWOPPER. All MSDSs are in a binder accessible with product name.

31. Have any environmental or Occupational Safety and Health Administration (OSHA) compliance actions been brought against the company before either an administrative agency or a court for operation of the facility or any activities related to facility operation? Please provide details.

Daisy Kingdom: OSHA has not conducted any other inspections than those noted in previous Pb, sulfuric nothing above action limits.

Emerson: None.

Westport: None.

32. Please provide copies of any compliance orders, delayed compliance orders, consent orders, judgments, waivers, or variances that have been issued to the company under any environmental or OSHA regulatory program in conjunction with operation of the facility.

None

Other

33. Please provide any additional relevant information known about the site.

None.

Appendix E

SCHN00171423

APPENDIX E

Environmental Database Search Results

SCHN00171424

EDR Report

SCHN00171425

The EDR-Radius Map
with GeoCheck™

Emerson Hardwood Property
3506 NW 35th St.
Portland, OR 97210

Inquiry Number: 0129505.1r

August 07, 1996

Environmental Data Resources, Inc.

Creators of Toxicheck/®

The Source For Environmental Risk Management Data

3530 Post Road
Southport, Connecticut 06490

Nationwide Customer Service

Telephone: 1-800-352-0050
Fax: 1-800-231-6802

(b)(4) copyright

[redacted]

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

Disclaimer

This Report contains information obtained from a variety of public sources and EDR makes no representation or warranty regarding the accuracy, reliability, quality, or completeness of said information or the information contained in this report. The customer shall assume full responsibility for the use of this report.
No warranty of merchantability or of fitness for a particular purpose, expressed or implied, shall apply and EDR specifically disclaims the making of such warranties. In no event shall EDR be liable to anyone for special, incidental, consequential or exemplary damages. Copyright (c) 1996 by EDR. All rights reserved.

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

[redacted]

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

[redacted]

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

[redacted]

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

[redacted]

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

[redacted]

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

[redacted]

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

[redacted]

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

[redacted]

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

[redacted]

(b)(4) copyright

(b)(4) copyright

[redacted]

(b)(4) copyright

[redacted]

(b)(4) copyright

[redacted]

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

[redacted]

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

[redacted]

(b)(4) copyright

[redacted]

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

[redacted]

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

[redacted]

SCHN00171548

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

[redacted]

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

[redacted]

(b)(4) copyright

SAFE Research Results

SCHN00171561

SAFE Research, Inc.

3234 S.E. 39th Avenue • Portland, Oregon 97202
Phone (503)239-7752 • Fax (503)236-5404

Serving the Pacific Northwest with offices in Portland & Seattle

TRANSMITTAL

TO: CH2M Hill

825 NE Multnomah, Suite 1300

Portland, Oregon 97232

ATTENTION: Ms. Betty Huffman

SUBJECT PROPERTY: 3506 NW 35th, Portland

SCOPE ITEMS: Government Agency Databases, Well Logs

DATE: August 16, 1996

CLIENT PO NO:

SAFE Research,Inc JOB NO: 079626A

SENT BY: JSM

Department of Environmental Quality (DEQ) Lists

The following Regulatory Agency Lists were reviewed:

	Radius	Mapped Records
DEQ Leaking Underground Storage Tanks	½	30
DEQ Confirmed Release List - Summary	1	11
DEQ Environmental Cleanup Site Info. System	1	40

A summary of the information obtained is provided in Exhibit A. The report is divided into three sections:

First Section

Maps and printouts of computer identified sites.

Second Section

Quality Assurance\Quality Control printouts of computer identified sites having characteristics that might place them in the study area, but that could not be geographically mapped by the computer within the study area. **Please review this section carefully as there may be sites within your study area that were not mapped in the First Section.** If you identify additional sites that are within your study area and wish to have them included in a revised map, please contact SAFE Research, Inc. If you wish to have the review of these lists performed by SAFE Research personnel and the maps and lists revised prior to your review, please contact SAFE Research, Inc.

Third Section

1) Database list descriptions;

2) Results listed as "Records Found" being the number of computer identified and mapped records within the study area;

3) Limitations and Search Parameters.

Water Well Logs

The Oregon Department of Water Resources files were searched for recorded water well logs in:

County:	Multnomah
Township:	1N
Range:	1E
Section Numbers:	20 & 29

Exhibit B includes copies of the logs which were located for this area. Due to the minimal number of domestic well logs, all logs located within the section are provided for your review.

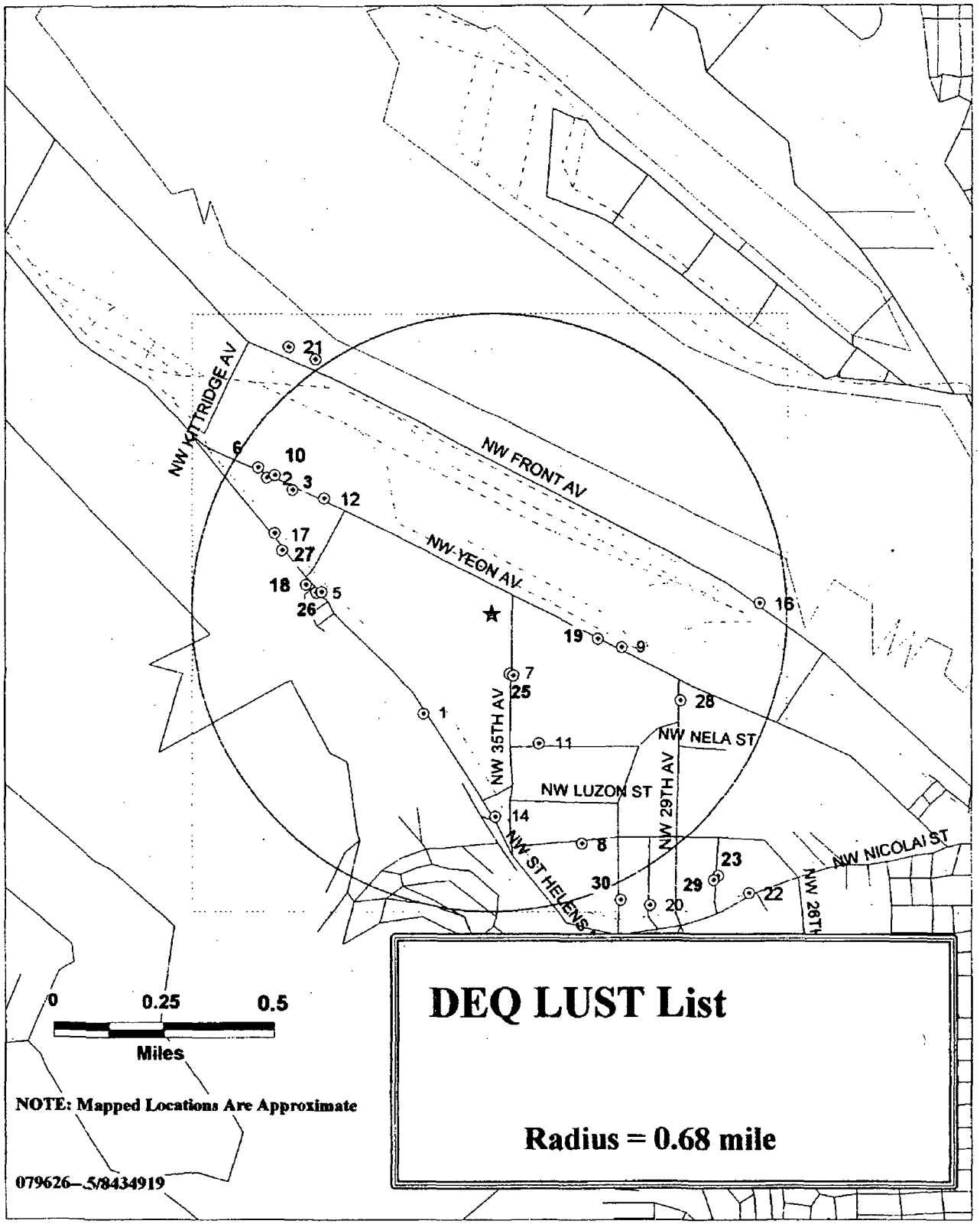
FOR: _YOUR INFORMATION X AS PER YOUR REQUEST
_YOUR APPROVAL _YOUR REVIEW _YOUR FILES

BY: Jodi Martin, SAFE Research, Inc.

safe.tmt/0796

EXHIBIT A

SCHN00171564



DEQ LUST List

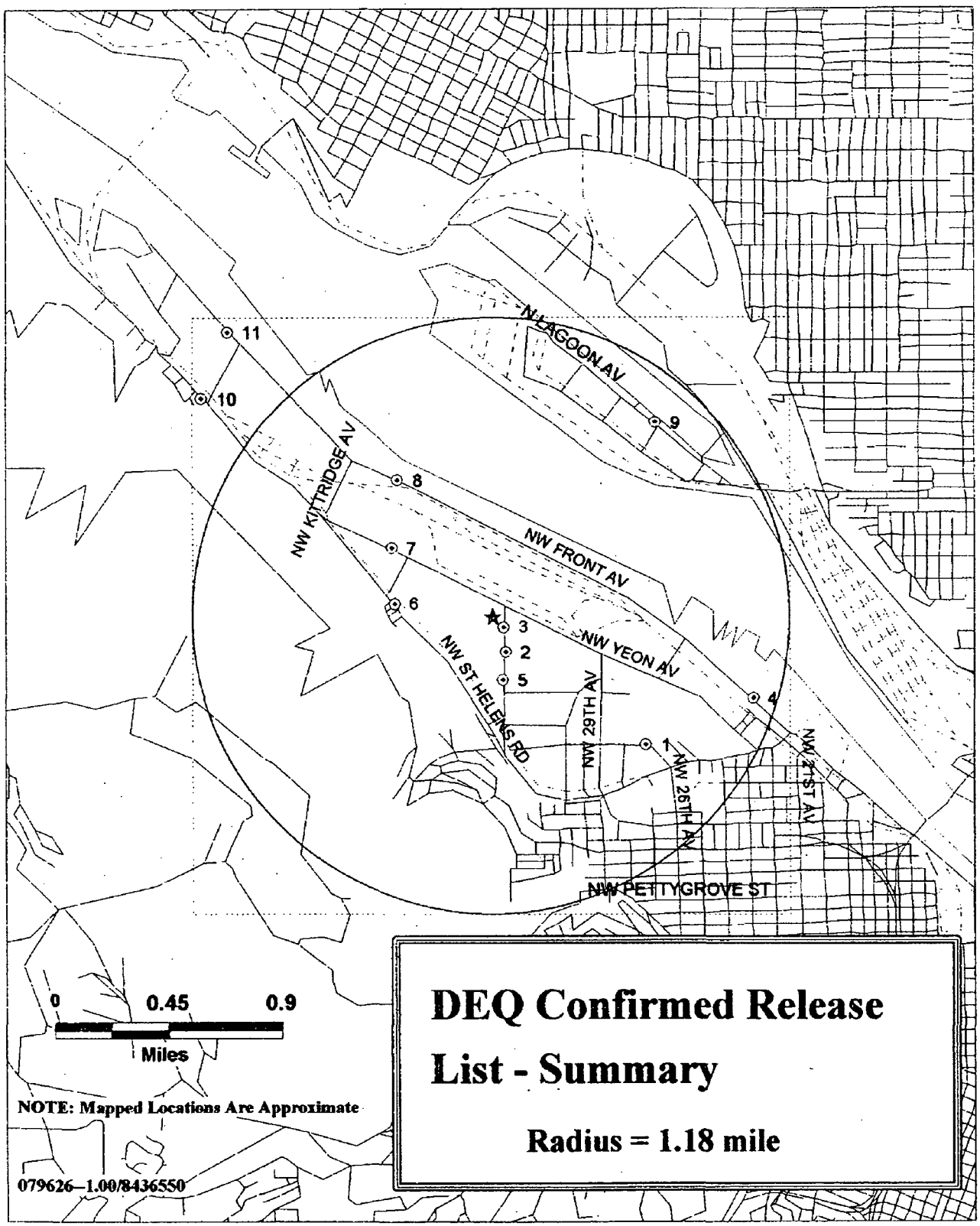
Radius = 0.68 mile

SAFE Research, Inc.

SCHN00171565

DEQ Leaking Underground Storage Tanks List

Record Number	Log Number	Name	Location	City	Zip	Region	Cleanup Start End & Complete
1	26-89-0165	HEMPHILL OIL COMPANY	3333 NW ST. HELENS RD.	PORTLAND	97210	NWR	;;
2	26-89-0176	SILVER EAGLE TRUCKING	4285 N.W. YEON	PORTLAND	97210	NWR	16-AUG-89;06-AG-90;18-SEP-89
3	26-90-0288	MCWHORTHER, INC.	4155 NW YEON	PORTLAND	97210	NWR	;;
4	26-90-0389	MCWHORTER, INC.	4155 N.W. YEON	PORTLAND	97210	NWR	15-OCT-90;15-JN-91;15-JAN-91
5	26-90-0415	CHRISTENSON OIL	3821 NW ST HELENS RD	PORTLAND	97210	NWR	26-OCT-90;;
6	26-90-0486	SCHNITZER INVESTMENT PROPERTY	4300 N.W. YEON	PORTLAND	97210	NWR	13-DEC-90;;
7	26-91-0063	A N R FREIGHT SYSTEM	3333 NW 35TH	PORTLAND	97210	NWR	07-FEB-91;;03-EP-92
8	26-91-0130	S.E. RYKOFF & CO.	3232 NW INDUSTRIAL	PORTLAND	97210	NWR	18-MAR-91;23-OT-91;23-OCT-91
9	26-91-0441	PORTLAND RAILROAD COMPANY	3500 NW YEON	PORTLAND	97210	NWR	;;
10	26-93-0149	EGW MACHINERY, INC.	4200 NW YEON	PORTLAND	97210	NWR	09-SEP-93;;06-AR-96
11	26-90-0219	NORTHWEST STEEL	3441 N.W. GUAM STREET	PORTLAND		NWR	;;
12	26-87-0014	CONVOY COMPANY	3900 NW YEON AVE	PORTLAND	97210	NWR	21-DEC-88;21-DC-88;21-DEC-8[illegible]
13	26-87-0030	CONVOY CORPORATION	3900 N.W. YEON	PORTLAND	97210	NWR	04-JAN-88;3[illegible]C-88;06-JAN-88
14	26-92-0163	QUALITY MILLWORK INC	2700 NW ST HELENS RD	PORTLAND	97210	NWR	18-JUN-92;;
15	26-92-0184	S.E. RYKOFF & CO.	3232 NW INDUSTRIAL	PORTLAND	97210	NWR	;;
16	26-91-0010	ENGINE-6	3660 N.W. FRONT AVE.	PORTLAND	97210	NWR	;;
17	26-94-0001	LAGRANDE STEEL CORP.	4000 NW ST HELENS RD	PORTLAND	97210	NWR	30-DEC-93;01-DC-95;11-SEP-95
18	26-87-0041	LAGRANDE CHAIN CORP.	3865 N.W. ST. HELENS ROAD	PORTLAND	97210	NWR	16-NOV-92;16-NV-92;16-NOV-92
19	26-88-0054	TRUMBALL ASPHALT FUME LINE	3570 N.W. YEON	PORTLAND	97210	NWR	17-JUL-92;;17-UL-92
20	26-88-0055	MAGID PROPERTY	2300 N.W. 30TH AVE.	PORTLAND	97210	NWR	11-SEP-88;16-SP-88;16-SEP-88
21	26-88-0075	LAKESIDE SITE	4440 N.W. FRONT	PORTLAND	97210	NWR	13-OCT-88;25-SP-89;13-OCT-88
22	26-90-0045	WHITE GMC TRUCKS OF PORTLAND, INC.	2705 N.W. NICOLAI ST.	PORTLAND	97210	NWR	30-JAN-90;10-MY-90;10-MAY-90
23	26-90-0158	COLUMBIA DISTRIBUTING CO.	2448 NW 28TH	PORTLAND	97210	NWR	02-APR-90;30-AR-90;30-APR-90
24	26-91-0064	GUNDERSON INCORPORATED	4350 N.W. FRONT	PORTLAND	97210	NWR	;;
25	26-91-0235	CARSON OIL COMPANY	3125 N.W. 35TH AVE.	PORTLAND	97210	NWR	;24-JUN-91;
26	26-92-0247	INDUSTRIAL EXPORT COMPANY (INDEX)	3340 N.W. ST. HELENS ROAD	PORTLAND	97210	NWR	29-AUG-92;;
27	26-93-0113	MYERS CONTAINER CORPORATION	3000 N.W. ST. HELENS ROAD	PORTLAND	97210	NWR	10-JUL-93;;
28	26-96-0134	GRINNELL SUPPLY SALES CO	3230 NW 29TH	PORTLAND	97210	NWR	06-MAR-96;;
29	26-92-0071	SCHMITT FORGE	2407 NW 28TH AVE	PORTLAND		NWR	04-APR-92;;
30	26-92-0161	PORTLAND FOUNDARY	2420 NW 31ST AVE	PORTLAND		NWR	;;



DEQ Confirmed Release List - Summary

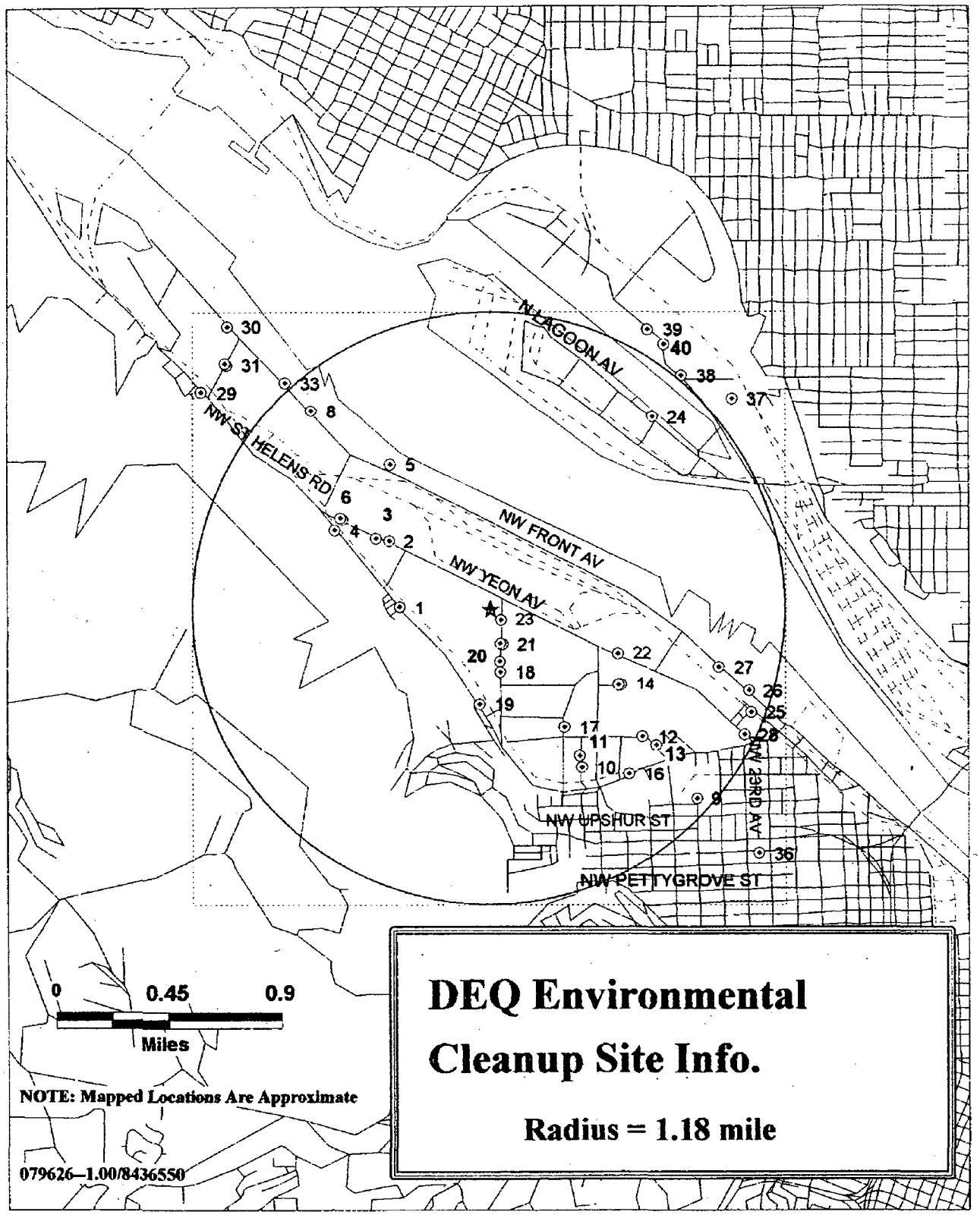
Radius = 1.18 mile

SAFE Research, Inc.

SCHN00171567

DEQ SUMMARY OF CONFIRMED RELEASE LIST AND
INVENTORY OF HAZARDOUS SUBSTANCE SITES
PHASE I AND PHASE II

RECORD NUMBER	SITE NAME	SITE ID	ADDRESS	CITY	ZIP
1	MARATHON - NW INDUSTRIAL ST PROPERTIES	404	2615-2619 NW INDUSTRIAL ST	PORTLAND	97210
2	NABISCO WAREHOUSE/ HILL INVESTMENT CO	1076	3322 NW 35TH AVE	PORTLAND	97210
3	TRUMBALL ASPHALT PLANT	1160	3605 NW 35TH AVE	PORTLAND	97210
4	SULZER BINGHAM PUMPS	1235	2800 NW FRONT AVE	PORTLAND	97210
5	COLUMBIA AMERICAN PLATING CO	29	3003 N W 35TH AVE	PORTLAND	97210
6	TEXACO PORTLAND TERMINAL	169	3800 NW ST HELENS RD	PORTLAND	97210
7	VAN WATERS & ROGERS	330	3950 NW YEON AVE	PORTLAND	97210
8	GUNDERSON INC	1155	4350 NW FRONT AVE	PORTLAND	97216
9	AUTOMOTIC VENDING	1430	5001 N LAGOON AVE	PORTLAND	97217
10	ANDERSON BROTHERS PROPERTY	970	5275 & 5315 NW ST HELENS RD	PORTLAND	97210
11	CHEVERON USA ASPHALT REFINERY	1281	5501 NW FRONT AVE	PORTLAND	97210



SAFE Research, Inc.

SCHN00171569

DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL CLEANUP SITE INFORMATION SYSTEM

Record Number	Site Name	Site Alias Name	Site Location	City// County	Site ID
1	TEXACO TERMINAL		3800 NW ST HELENS RD	PORTLAND// MULTNOMAH	169
2	VAN WATERS & ROGERS	SUBSIDARY OF UNIVAR	3950 NW YEON	PORTLAND// MULTNOMAH	330
3	MCWHORTER	MCCLOSKY VARNISH	4155 NW YEON AV	PORTLAND// MULTNOMAH	135
4	BRAZIL & CO		4315 NW ST HELENS ROAD	PORTLAND// MULTNOMAH	1026
5	GUNDERSON INC		4350 NW FRONT AVE	PORTLAND// MULTNOMAH	1155
6	MT. HOOD CHEMICAL CORP.		4444 NW YEON AV	PORTLAND// MULTNOMAH	81
7	DURA INDUSTRIES		4466 NW YEON AVENUE	PORTLAND// MULTNOMAH	111
8	TUBE FORGINGS OF AMERICA		5200 NW FRONT AVE	PORTLAND// MULTNOMAH	1239
9	ESCO PLANT #3		2141 NW 25TH AVENUE	PORTLAND// MULTNOMAH	112
10	GALVANIZERS CO		2406 NW 30TH AVE	PORTLAND// MULTNOMAH	1196
11	PACO PUMPS		2551 NW 30TH AVE	PORTLAND// MULTNOMAH	146
12	GUILDS LAKE	MARATHON - NW INDUSTRIAL ST PROPERTIES	2615-2619 NW INDUSTRIAL ST	PORTLAND// MULTNOMAH	404
13	MERCER INDUSTRIES PORTLAND		2636 NW 26TH AV	PORTLAND// MULTNOMAH	144
14	NUDELMAN & SON, INC.		2707 NW NELA ST	PORTLAND// MULTNOMAH	966
15	LONGVIEW CITY LAUNDRY & CLEANERS	LCL&C	2737 NW NELA ST	PORTLAND// MULTNOMAH	1395
16	SCHMITT FORGE	SCHMITT INDUSTRIES	2765 NW NICOLAI ST	PORTLAND// MULTNOMAH	1347
17	MOGUL CORP		2852 NW 31ST AV	PORTLAND// MULTNOMAH	13:
18	COLUMBIA AMERICAN PLATING COMPANY		3003 NW 35TH	PORTLAND// MULTNOMAH	29
19	MAGNUS CO INC		3074 NW ST HELENS RD	PORTLAND// MULTNOMAH	69
20	CARSON OIL - NW 35TH		3125 NW 35TH AVE	PORTLAND// MULTNOMAH	1405
21	NABISCO WAREHOUSE/HILL INVESTMENT CO.		3322 NW 35TH AV	PORTLAND// MULTNOMAH	1076
22	HERCULES, INC.		3366 NW YEON AVE	PORTLAND// MULTNOMAH	988
23	TRUMBALL ASPHALT PLANT		3605 NW 35TH AVE	PORTLAND// MULTNOMAH	1160
24	AUTOMATIC VENDING	IMP FOOD & VNDNG--AM VDNG SER--AUTO CIG SERV--CUST	5001 N LAGOON AVE	PORTLAND// MULTNOMAH	1430
25	STATES BATTERY CO.	GENERAL BATTERY CORP. (ORD #042483677)	2258 NW SUFFOLK ST	PORTLAND// MULTNOMAH	1007
26	SULZER-BINGHAM		2800 NW FRONT ST	PORTLAND// MULTNOMAH	1235
27	DASIC INTERNATIONAL CORP		3125 NW FRONT AVENUE	PORTLAND// MULTNOMAH	110
28	BURLINGTON NORTHERN HUB CENTER		NW YEON	PORTLAND// MULTNOMAH	100
29	BERRY TRANSPORT, INC.		5315 NW ST HELENS ROAD	PORTLAND// MULTNOMAH	970
30	CHEVERON USA ASPHALT REF		5501 NW FRONT AVE	PORTLAND// MULTNOMAH	1281
31	UNOCAL - WILLBRIDGE TERMINAL	UNION OIL - WILLBRIDGE TERMINAL	5528 NW DOANE AVE	PORTLAND// MULTNOMAH	177
32	CHEVRON-WILLBRIDGE DIST TERMINAL		5531 NW DOANE AVE	PORTLAND// MULTNOMAH	25
33	MCCALL OIL		5550 NW FRONT AV	PORTLAND// MULTNOMAH	134
34	CHEVRON ASPHALT		5501 NW FRONT ST	PORTLAND// MULTNOMAH	1513
35	FTL INC		3333 NW 35TH AVE	PORTLAND// MULTNOMAH	1820
36	CONSOLIDATED FREIGHTWAYS INC	CARSON OIL--CARSON OIL SAVIER ST	2244 NW SAVIER STREET	PORTLAND// MULTNOMAH	32
37	FRED MEYER - SWAN ISLAND	NORTH WEBSTER STREET - SWAN ISLAND	3205 N WEBSTER STREET	PORTLAND// MULTNOMAH	44

DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL CLEANUP SITE INFORMATION SYSTEM

Record Number	Site Name	Site Alias Name	Site Location	City// County	Site ID
38	FREIGHTLINER CORP		5400 N BASIN STREET	PORTLAND// MULTNOMAH	115
39	ISLAND HOLDINGS INC	FARMERS UNION CENTRAL EXCH--CENEX--PORT OF PORTLND	5885 N BASIN AVE	PORTLAND// MULTNOMAH	260
40	GI TRUCKING		5820 N BASIN AVE	PORTLAND// MULTNOMAH	1840

Quality Assurance/Quality Control
Report
Supplement to Environmental Records Search Report

Attached are database listings which the computer identified, based upon the search parameters*, but which it could not specifically confirm as occurring within the search parameter area. The sites presented on the previous pages are computer identified sites within the search area. The following lists may also include sites within the search area and should be reviewed.

If you would like the site locations on the following pages confirmed, please call SAFE Research.

* As listed in Search Parameters
- Business Name(s)
- Address(es)
- City(ies)
- County(ies)
- Zip(s)

DEQ Leaking Underground Storage Tanks List

Record Number	Log Number	Name	Location	City	Zip	Region	Cleanup Start End & Complete
0			Sites Mapped Elsewhere				;;
0							;;
1	26-89-0231	PORTLAND STATE UNIVERSITY/PARKING LOT	CORNER S.W. FIFTH & MONTGOMERY	PORTLAND	97201	NWR	18-OCT-89;02-NV-89;02-NOV-89
2	26-87-0038	HOLMAN PLANT (DIAMOND FUEL)	NE 42ND & HOLMAN	PORTLAND	97202	NWR	19-DEC-86;26-JN-87;13-JAN-87
3	26-89-0200	HOUSTON'S INC.	3939 SE 26TH AVE.	PORTLAND	97202	NWR	12-SEP-89;;16-UL-92
4	26-91-0374	SHARP AUTO BODY	4031 SE 26TH	PORTLAND	97202	NWR	20-SEP-91;29-JN-91;29-JUN-91
5	26-94-0047	ASTRO #238	4027 SE 39TH	PORTLAND	97202	NWR	14-MAR-94;15-NV-94;15-NOV-94
6	26-95-0233	(b) (6)	(b) (6)	PORTLAND	97202	NWR	05-SEP-95;14-FB-96;12-OCT-95
7	26-96-0030	(b) (6)	(b) (6)	PORTLAND	97202	NWR	23-JAN-96;15-MY-96;07-FEB-96
8	26-96-0187	ST VINCIENT DEPAUL #2	3600 SE 28TH	PORTLAND	97202	NWR	;;
9	26-96-0188	ST VINCIENT DEPAUL #1	3605 SE 28TH	PORTLAND	97202	NWR	;;
10	26-96-0286	(b) (6)	(b) (6)	PORTLAND	97202	NWR	09-MAY-96;;
11	26-96-0330	(b) (6)	(b) (6)	PORTLAND	97202	NWR	;;
12	26-89-0302	SCHNITZER INVESTMENT PROPERTY	S RIVERGATE INDUSTRIAL AREA	PORTLAND	97203	NWR	18-OCT-89;;16-UL-92
13	26-95-0105	(b) (6)	(b) (6)	PORTLAND	97206	NWR	02-MAY-95;13-SP-95;05-JUN-95
14	26-96-5015	(b) (6)	(b) (6)	PORTLAND	97206	NWR	19-JAN-96;;
15	26-89-0013	TERMINAL TRANSFER, INC.	3601 N.W. YEON AVE.	PORTLAND	97210	NWR	;;
16	26-89-0230	WILHELM TRUCKING CO.	3250 N.W. ST. HELENS RD.	PORTLAND	97210	NWR	16-OCT-89;19-FB-90;19-FEB-90
17	26-89-0280	HILL INVESTMENT/NABISCO WAREHOUSE	3322 N.W. 35TH	PORTLAND	97210	NWR	;;
18	26-89-0323	TEXACO PORTLAND, OR SALES TERMINAL	3800 N.W. ST. HELENS ROAD	PORTLAND	97210	NWR	21-DEC-89;04-JN-90;04-JAN-90
19	26-90-0001	BINGHAM CONSTRUCTION, INC.	3939 N.W. ST. HELENS RD.	PORTLAND	97210	NWR	;;
20	26-90-0126	COCA COLA OF OREGON	3599 N. W. YEON	PORTLAND	97210	NWR	10-APR-90;;
21	26-90-0160	FRED N. BAY NEWS CO.	3155 N.W. YEON	PORTLAND	97210	NWR	12-MAR-90;12-MR-90;12-MAR-90
22	26-90-0207	SPECIAL ASPHALT PRODUCTS, INC.	3537 N.W. ST. HELENS RD.	PORTLAND	97210	NWR	22-MAR-90;15-OT-90;15-OCT-90
23	26-90-0220	DASIC INTERNATIONAL CORP.	3125 NW FRONT STREET	PORTLAND	97210	NWR	19-JUN-90;11-FB-91;11-FEB-91
24	26-90-0277	SEALY MATTRESS CO.	3100 N.W. INDUSTRIAL	PORTLAND	97210	NWR	04-AUG-90;14-AG-90;14-AUG-90
25	26-90-0314	ABF FREIGHT SYSTEM	2825 N.W. YEON AVE.	PORTLAND	97210	NWR	31-AUG-91;04-MR-94;17-OCT-93
26	26-90-0334	SULZER - BINGHAM	2800 N.W. FRONT ST.	PORTLAND	97210	NWR	;;
27	26-90-0336	MCCULLOCH PROPERTY	4300 N.W. ST. HELENS ROAD	PORTLAND	97210	NWR	18-SEP-90;02-OT-90;02-OCT-90

DEQ Leaking Underground Storage Tanks List

Record Number	Log Number	Name	Location	City	Zip	Region	Cleanup Start End & Complete
28	26-90-0379	COURTESY TRUCKING (TRUCK TERM.,	3641 N.W. ST. HELENS ROAD	PORTLAND	97210	NWR	11-OCT-90;13-DC-90;13-DEC-90
29	26-91-0048	MCCRACKEN MOTOR FREIGHT, INC.	3147 N.W. FRONT ST.	PORTLAND	97210	NWR	;;
30	26-91-0113	CONSOLIDATED FREIGHT/TRANSCON LINES	3182 N.W. 26TH AVE.	PORTLAND	97210	NWR	12-MAR-91;03-SP-92;03-SEP-92
31	26-92-0029	GRAY'S CRANE	3445 N.W. FRONT	PORTLAND	97210	NWR	10-FEB-92;;
32	26-92-0252	FITCHETT & MCBREEN	2425 NW ST. HELENS RD.	PORTLAND	97210	NWR	;;
33	26-93-0048	CARSON OIL CO., INC.	2169 N.W. THURMAN ST.	PORTLAND	97210	NWR	;;
34	26-93-0168	ESCO CORPORATION	2770 N.W. YEON AVE.	PORTLAND	97210	NWR	29-SEP-93;;
35	26-93-6006	FRONT AVENUE BUSINESS CENTER AHOT	2901 NW FRONT AVENUE	PORTLAND	97210	NWR	03-FEB-93;;18-AR-93
36	26-93-6041	BELTSERVICE AHOT	3055 NW YEON	PORTLAND	97210	NWR	16-JUN-93;20-JL-94;29-OCT-93
37	26-95-5167	(b) (6)	(b) (6)	PORTLAND	97210	NWR	25-JUL-95;;14-AR-96
38	26-92-0307	GILSONITE, INC.	2946 N.E. COLUMBIA BLVD.	PORTLAND	97211	NWR	26-OCT-92;;01-AY-96
39	26-92-0324	AMERIGAS	3620 NE COLUMBIA BOULEVARD	PORTLAND	97211	NWR	17-NOV-92;;
40	26-93-6033	IDLEWINE AHOT	4403 NE 35TH PL	PORTLAND	97211	NWR	25-MAY-93;;25-AY-95
41	26-95-5194	(b) (6)	(b) (6)	PORTLAND	97211	NWR	19-OCT-95;09-N-96;20-NOV-95
42	26-92-5070			PORTLAND	97212	NWR	22-APR-92;;
43	26-96-0106			PORTLAND	97212	NWR	27-FEB-96;;
44	26-96-0352			PORTLAND	97212	NWR	10-JUN-96;;
45	26-96-0352			PORTLAND	97212	NWR	10-JUN-96;;
46	26-88-0089	EXLEY TRUCKING	2204 S.E. EIGHTH	PORTLAND	97214	NWR	11-NOV-88;01-DC-88;16-NOV-88
47	26-92-5074	CORNISH BURT	2292 S.E. 38TH	PORTLAND	97214	NWR	29-APR-92;;03-EP-93
48	26-93-6052	(b) (6)		PORTLAND	97214	NWR	16-JUL-93;;
49	26-89-0053	BELLAIR, INC.	3405 N. COLUMBIA BLVD.	PORTLAND	97217	NWR	06-APR-89;04-AG-89;04-AUG-89
50	26-89-0193	LINDE GASSES OF THE WEST	3411 N COLUMBIA	PORTLAND	97217	NWR	17-AUG-89;30-JN-91;30-JAN-91
51	26-91-0033	PORTLAND PROVISION CO.	N. COLUMBIA & N. PENINSULAR ST.	PORTLAND	97217	NWR	16-JAN-91;29-JN-92;29-JAN-92
52	26-93-0007	M B TERMINAL CO.	3841 N. COLUMBIA BLVD.	PORTLAND	97217	NWR	;;
53	26-89-0084	ROSS EQUIPMENT	4334 NE COLUMBIA BLVD	PORTLAND	97218	NWR	10-MAY-89;11-SP-89;11-SEP-89
54	26-89-0310	MARATHON LETOURNEAU SALES & SERVICE	4222 N.E. COLUMBIA BOULEVARD	PORTLAND	97218	NWR	13-DEC-89;13-DC-89;13-DEC-89
55	26-90-0189	MARATHON LETOURNEAU SALES & SERVICE	4222 N.E. COLUMBIA BOULEVARD	PORTLAND	97218	NWR	24-MAY-90;21-AG-90;29-NOV-90
56	26-92-0050	HALTON TRACTOR	4421 NE COLUMBIA BLVD	PORTLAND	97218	NWR	21-FEB-92;15-FB-96;25-NOV-95
57	26-92-0050	HALTON TRACTOR	4421 NE COLUMBIA BLVD	PORTLAND	97218	NWR	21-FEB-92;15-B-96;25-NOV-9

DEQ Leaking Underground Storage Tanks List

Record Number	Log Number	Name	Location	City	Zip	Region	Cleanup Start End & Complete
58	26-92-0050	HALTON TRACTOR	4421 NE COLUMBIA BLVD	PORTLAND	97218	NWR	21-FEB-92;15-F B-96;25-NOV-95
59	26-90-0367	(b) (6)		PORTLAND	97221	NWR	05-OCT-90;16-N V-90;
60	26-95-5113	(b) (6)		PORTLAND	97221	NWR	;;
61	26-89-0108	LINDQUIST DEVELOPMENT CO., INC.	2350 NW ST. HELENS RD.	PORTLAND	97242	NWR	07-JUN-89;28-N V-89;30-JUN-89
62	26-85-0004	ONE FINANCIAL CENTER	FIRST AND MORRISON ST	PORTLAND		NWR	02-DEC-85;16-N V-92;16-NOV-92
63	26-86-0003	FORMER UNOCAL STATION #430	S.W. FOURTH & BURNSIDE	PORTLAND		NWR	05-MAR-90;21-M R-91;21-MAR-91
64	26-87-0011	D. & H CERRUTI	3210 N.E. COLUMBIA	PORTLAND		NWR	03-AUG-87;03-A G-87;03-AUG-87
65	26-88-0005	CASEY FAMILY PROGRAM	S.E. 39TH & STARK	PORTLAND		NWR	07-APR-88;;
66	26-88-0007	VAN DYN CHOCLATE FACTORY	N.E. EIGHTH & BROADWAY	PORTLAND		NWR	28-JAN-88;28-J N-88;28-JAN-88
67	26-88-0010	STANDARD INSURANCE	S.E. 39TH & MALL STREET	PORTLAND		NWR	17-MAR-88;17-M R-88;17-MAR-88
68	26-88-0040	CONVENTION CENTER SITE	N.E. OREGON & SECOND	PORTLAND		NWR	15-JUL-88;10-M Y-91;01-AUG-88
69	26-88-0066	OREGON STATE HWY. PROPERTY	N.W. 19TH & THURMAN	PORTLAND		NWR	12-DEC-88;12-D C-88;12-DEC-88
70	26-89-0314	SIMMCO PROPERTIES BUILDING	S.E. THIRD & PINE (S.E. CORNER)	PORTLAND		NWR	13-DEC-89;14-D C-89;14-DEC-89
71	26-90-0297	PORTLAND FIRE BUREAU, OIL FIRE TRAINING	N.W. ST. HELENS BLVD. & N.W. MARINA WAY	PORTLAND		NWR	22-AUG-90;;16-UL-92
72	26-90-0387	U.S. POSTAL SERVICE	S.W. 40TH AVE. & MULTNOMAH	PORTLAND		NWR	;;
73	26-91-0190	HUMKE CO.	2211 NW NICOLAI	PORTLAND		NWR	;;
74	26-92-0225	SUPER ONE, INC.	SW CORNER OF 24TH & NW VAUGHN	PORTLAND		NWR	;;
75	26-92-0289	POOD FRONT	2375 NE THURMAN	PORTLAND		NWR	06-OCT-92;07-J N-93;07-JAN-93
76	26-92-5124	MAINLANDER PROPERTY HEATING OIL TANK	3009 SE 38TH	PORTLAND		NWR	17-AUG-93;;01-CT-93
77	26-93-0227	PGE-SUBSTATION E	2635 NW FRONT AVENUE	PORTLAND		NWR	;;
78	26-95-0060	(b) (6)		PORTLAND		NWR	17-MAR-95;29-S P-95;24-JUL-95
0			**********				;;
0			Unmapped Sites				;;
0			----------				;;
79	26-95-0112	DRAK CORPORATION	SE CORNER 39TH AND SE DIVISION (3930)	PORTLAND	97202	NWR	09-FEB-95;15-D C-95;27-OCT-95
80	26-89-0302	SCHNITZER INVESTMENT PROPERTY	S. RIVERGATE INDUSTRIAL AREA	PORTLAND	97203	NWR	;;
81	03-89-0096	FLEMING FOODS	S.E. MILWAUKIE EXPRESSWAY AT PHEASANT CT	PORTLAND	97208	NWR	22-MAY-89;26-J N-89;16-JUL-89
82	26-96-0103	(b) (6)		PORTLAND	97221	NWR	23-FEB-96;;
83	18-91-0002	CHEMULT				ER	21-JAN-91;21-J N-91;21-JAN-91
84	18-92-0010	OREGON AIRGUARD				ER	;;

DEQ Leaking Underground Storage Tanks List

Record Number	Log Number	Name	Location	City	Zip	Region	Cleanup Start End & Complete
85	26-91-0400	M. NELSON (H.O.TANK)		PORTLAND		NWR	;;
86	26-91-0430	STEINFELDS PICKLE FACILITY				NWR	03-OCT-91;09-AR-92;09-APR-92
87	26-93-5102	(b) (6)		PORTLAND		NWR	;;
88	26-93-5109			PORTLAND		NWR	;;
89	26-94-5010			PORTLAND		NWR	;;
90	26-94-5052			PORTLAND		NWR	;;
91	26-94-6001			PORTLAND		NWR	14-JAN-94;;
92	26-94-6044			PORTLAND		NWR	;;

DEQ SUMMARY OF CONFIRMED RELEASE LIST AND
INVENTORY OF HAZARDOUS SUBSTANCE SITES
PHASE I AND PHASE II

RECORD NUMBER	SITE NAME	SITE ID	ADDRESS	CITY	ZIP
0			Sites Mapped Elsewhere		0
0					0
1	HOUSTON INC	1052	3939 SE 26th AVE	PORTLAND	97202
2	HERTZ EQUIPMENT RENTAL FACILITY	1403	4939 NE COLUMBIA BLVD	PORTLAND	97218
3	GOULD INC. /NL INDUSTRIES INC.	49	5909 NW 61ST AVE	PORTLAND	97210
4	RHONE-POULENC INC - NW ST HELENS	155	6200 NW ST HELENS RD	PORTLAND	97210
5	PIERCE PACIFIC MANUFACTURING	1092	6540 NE 42ND AVE	PORTLAND	97218
0			**********		0
0			Unmapped Sites		0
0					0
6	GROUNDWATER NE 55TH AVE AND COLUMBIA BLVD	1015	5611 NE COLUMBIA BLVD NE 55TH AVE AND COLUMBIA BLV	PORTLAND	97218
7	MT HOOD NF SITE B	1561	FOREST RD 1509	UNKNOWN CITY	0
8	MT HOOD NF BARROW PIT	1560	FOREST RD 1509	UNKNOWN CITY	0
9	UNION STATION TRACK #5	1414	UNION STATION	PORTLAND	97209

DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL CLEANUP SITE INFORMATION SYSTEM

Record Number	Site Name	Site Alias Name	Site Location	City// County	Site ID
0			Sites Mapped Elsewhere	//	
0				//	
1	NICOLAI COMPANY	NICOLAI MORGAN	1812 N COLUMBIA BLVD	PORTLAND// MULTNOMAH	679
2	SIMPSON TIMBER CO. - PORTLAND	OREGON OVERLAY DIVISION	2301 N COLUMBIA BLVD	PORTLAND// MULTNOMAH	161
3	GENERAL ELECTRIC INDUSTRIAL CO.	G.E.N.C.O.--GENERAL INDUSTRIAL ELECTRIC CO.	2410 N COLUMBIA BLVD	PORTLAND// MULTNOMAH	916
4	GILSONITE INC		2946 NE COLUMBIA BLVD	PORTLAND// MULTNOMAH	1293
5	MALARKEY ROOFING CO		3131 N COLUMBIA BLVD	PORTLAND// MULTNOMAH	690
6	BP SERVICE STATION #11024		3323 NE KILLINGSWORTH ST	PORTLAND// MULTNOMAH	1431
7	MITCHELL BROS TRUCK LINES		3841 N COLUMBIA BLVD	PORTLAND// MULTNOMAH	339
8	HOUSTON INC.		3939 SE 26TH AVE	PORTLAND// MULTNOMAH	1052
9	HALTON TRACTOR CO		4421 NE COLUMBIA	PORTLAND// MULTNOMAH	121
10	HERTZ EQUIPMENT RENTAL FACILITY		4939 NE COLUMBIA BLVD	PORTLAND// BAKER	1403
11	GENERAL BATTERY CORP - SE 25TH AVE		4949 SE 25TH	PORTLAND// MULTNOMAH	45
12	PORTLAND, CITY OF - COLUMBIA BLVD POTW		5001 N COLUMBIA BLVD	PORTLAND// MULTNOMAH	783
13	MILLER PROPERTY		5421 NE COLUMBIA BLVD	POTLAND// MULTNOMAH	1040
14	RIEDEL COMPOST FACILITY	RIEDEL - MECO SITE	5611 NE COLUMBIA BLVD	PORTLAND// MULTNOMAH	1225
15	SHELL OIL CO WILLBRIDGE PLANT		5880 NW ST HELENS RD	PORTLAND// MULTNOMAH	160
16	DOANE LAKE STUDY	KOPPER'S	5900 NW 61ST AVE	PORTLAND// MULTNOMAH	36
17	DOANE LAKE STUDY	SCHNITZER INVESTMENT CORPORATION--WACKER SILTRONIC	5900 NW 61ST AVE	PORTLAND// MULTNOMAH	36
18	DOANE LAKE STUDY	LIQUID AIR CORPORATION-ACETYLENE PLANT	5900 NW 61ST AVE	PORTLAND// MULTNOMAH	36
19	DOANE LAKE STUDY	PENNWALT CHEMICAL CORPORATION--NW NATURAL GAS CO	5900 NW 61ST AVE	PORTLAND// MULTNOMAH	36
20	DOANE LAKE STUDY	ESCO/RHONE-POULENC	5900 NW 61ST AVE	PORTLAND// MULTNOMAH	36
21	PACIFIC NORTHERN OIL CO		5900 NW 61ST AV	PORTLAND// MULTNOMAH	396
22	GOULD INC/NL INDUSTRIES INC	GOULD INC	5909 NW 61ST	PORTLAND// MULTNOMAH	49
23	METRO CENTRAL TRANSFER STATION		6161 NW 61ST AV	PORTLAND// MULTNOMAH	1304
24	METRO CENTRAL TRANSFER STATION		6161 NW 61ST AV	PORTLAND// MULTNOMAH	1397
25	METRO CENTRAL TRANSFER STATION	AMERICAN STEEL INDUSTRIES, INC	6161 NW 61ST AV	PORTLAND// MULTNOMAH	1398
26	RHONE-POULENC INC	R-P INC AGROCHEMICAL DIV PLANT	6200 NW ST HELENS RD	PORTLAND// MULTNOMAH	155
27	GENSTAR ROOFING PRODUCTS	BIRD & SON	6350 NW FRONT AVENUE	PORTLAND// MULTNOMAH	117
28	ELF ATOCHEM NORTH AMERICA	PENNWALT CHEMICAL CORP--DOANE LAKE--ATOCHEM N. AM.	6400 NW FRONT AVE	PORTLAND// MULTNOMAH	398
29	COLUMBIA WOODWORKING COMPANY	AMERICAN POLE	6432 NE COLUMBIA BLVD	PORTLAND// MULTNOMAH	872
30	LIQUID AIR CORPORATION-ACETYLENE PLANT		6501 NW FRONT AV	PORTLAND// MULTNOMAH	66

DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL CLEANUP SITE INFORMATION SYSTEM

Record Number	Site Name	Site Alias Name	Site Location	City// County	Site ID
31	PIERCE PACIFIC MANUFACTURING		6540 NE 42ND AVE	PORTLAND// MULTNOMAH	1092
32	GROUNDWATER - N COLUMBIA & TYNDALL	ARMOR & CO	N COLUMBIA BLVD & N TYNDALL AVE	PORTLAND// MULTNOMAH	1161
33	GROUNDWATER - 55TH & COLUMBIA	RIEDEL OR COMPOST CO--ROCCI FACLTY--RWDS COMPST FA	NE 55TH AVE & COLUMBIA BLVD	PORTLAND// MULTNOMAH	1015
34	UNION AVE PCB SITE		NE UNION AVE & THOMPSON ST	PORTLAND// MULTNOMAH	991
35	NORTH WATERFRONT PARK		NW FRONT ST	PORTLAND// MULTNOMAH	876
36	PORT OF PORTLAND - SHIP REPAIR YARD		SWAN ISLAND	PORTLAND// MULTNOMAH	271
37	WAYNE DALTON - PORTLAND PLANT		5511 SE 26TH AVE	PORTLAND// MULTNOMAH	1533
0			**********	//	
0			Unmapped Sites	//	
0				//	
38	OAKS BOTTOM LANDFILL	SELLWOOD DUMP		PORTLAND// MULTNOMAH	1006
39	NORTH MARINE DRIVE			PORTLAND// MULTNOMAH	1170
40	SILVER BUTTE MINE			// BAKER	1449
41	J. PETERKORT & COMPANY			// BAKER	1501
42	SPRAGUE SEED ORCHARDS			// JOSEPHINE	784
43	DEKA LTD MILL SITES 1,2,3			// BAKER	8[illegible]
44	FERN RIDGE LAKE			// LANE	83[illegible]
45	HWY 224 & 37TH AVE	MILWAUKIE MARKETPLACE	37TH AVE & HWY 224	MILWAUKIE// MULT/CLAC	900
46	CROSBY & OVERTON		BUILDING NINE - SWAN ISLAND	PORTLAND// MULTNOMAH	877
47	ANDERSON DIESEL SPILL		HIGHWAY 201 N MP 8 AND 9	// MALHEUR	819
48	ANDERSON'S CHEVRON DIESEL SPILL		HIGHWAY 26 MP 182.5	// GRANT	502
49	LARKIN OIL COMPANY SPILL		HIGHWAY 395 MPS 7-8	// UMATILLA	509
50	ST HELENS RD GASOLINE SPILL		HWY 30 EAST OF CORNELIUS PASS RD	BURLINGTON// MULTNOMAH	337
51	MOCKS BOTTOM		NORTH OF SWAN ISLAND	PORTLAND// MULTNOMAH	1306
52	CROOKED RIVER NATIONAL GRASSLAND	CROOKED RIVER NG POLE TREATMENT	OCHOCO NATIONAL FOREST	// CROOK	1340
53	UNION STATION - TRACK #5	UNION STATION PARCEL 3	UNION STATION	PORTLAND// MULTNOMAH	1414
54	PENINSULA TERMINAL RAILROAD SITE		PENINSULA TERMINAL RAILROAD SITE	PORTLAND// MULTNOMAH	1505
55	LUCKY LASS MINE			// BAKER	1519
56	SLAVIN ROAD LANDFILL SITE			PORTLAND// MULTNOMAH	1520
57	HARVEY DUKE ESTATE			// LANE	1608
58	UPPER WILLAMETTE RIVER BASIN STUDY AREA			// LANE	1462
59	WILLAMETTE INDUSTRIES CULP CREEK RR LOADING AREA			// LANE	1609
60	WILLAMETTE RIVER BASIN STUDY AREA			// LANE	1567
61	MIDDLE WILLAMETTE RIVER BASIN STUDY AREA			// LINN	1547
62	GATEWAY PORSCHE			PORTLAND// MULTNOMAH	15[illegible]

DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL CLEANUP SITE INFORMATION SYSTEM

Record Number	Site Name	Site Alias Name	Site Location	City// County	Site ID
63	LOWER WILLAMETTE RIVER BASIN STUDY AREA			// MULTNOMAH	1544
64	MT HOOD NATIONAL FOREST - SITE B			// MULTNOMAH	1561
65	MT HOOD NATIONAL FOREST BORROW PIT			// MULTOMAH	1560
66	SOUTH SHORE WELLFIELD AREA GW CONTAMINATION			// MULTNOMAH	1527
67	WILLBRIDGE BULK FUEL AREA			PORTLAND// MULTNOMAH	1549
68	AMERICAN SHINGLE DISPOSAL SITE			// TILLAMOOK	1575
69	GRESHAM CITY OF OLD SHOP SITE			GRESHAM// MULTNOMAH	1675
70	JEEP EAGLE			GRESHAM// MULTNOMAH	1676
71	WESTWOOD DEVELOPMENT			PORTLAND// CLACKAMAS	1780
72	ODOT - COLUMBIA RIVER HWY MP 27.31		COLUMBIA RIVER HWY	// COLUMBIA	1770
73	ODOT - COLUMBIA RIVER HWY MP 27.70		COLUMBIA RIVER HWY	// COLUMBIA	1771
74	ODOT - COLUMBIA RIVER HWY MP 27.77		COLUMBIA RIVER HWY	// COLUMBIA	1772
75	ODOT - COLUMBIA RIVER HWY MP 27.82		COLUMBIA RIVER HWY	// COLUMBIA	1773
76	ODOT - COLUMBIA RIVER HWY MP 28.54		COLUMBIA RIVER HWY	// COLUMBIA	1769
77	ODOT - COLUMBIA RIVER HWY MP 28.58		COLUMBIA RIVER HWY	// COLUMBIA	1768
78	ODOT - COLUMBIA RIVER HWY MP 28.76		COLUMBIA RIVER HWY	// COLUMBIA	1774
79	ODOT - COLUMBIA RIVER HWY PROJECTS		COLUMBIA RIVER HWY	// COLUMBIA	1767
80	BIG LAKE			// LINN	1813
81	DEPARTMENT OF CORRECTIONS			// MARION	1759
82	AINSWORTH SUBSTATION (FORMER)		NE KILLINGSWORTH AT 14TH ST	PORTLAND// MULTNOMAH	1864
83	COLUMBIA SLOUGH CONSOLIDATION CONDUIT			PORTLAND// MULTNOMAH	1818
84	ODOT - SURPLUS PROPERTY		NW 22ND AVE	PORTLAND// MULTNOMAH	1693
85	PACIFICORP - SMALL SUBSTATIONS			// MULTNOMAH	1722
86	TUALATIN RIVER PIPELINE LEAK			// WASHINGTON	1682

TABLES SEARCHED

Environmental Protection Agency (EPA) and
Department of Environmental Quality (DEQ) Lists

As requested, the following Environmental Protection Agency and Department of Environmental Quality lists were reviewed:

* **DEQ LUST List**

This exhibit provides a summary of the information obtained for the study area. The results of the list searches follow the list descriptions and search parameters.

TABLE DESCRIPTIONS

DEQ LUST LIST

Searched by: City
Zip
Address (See Regulatory Agency Search Parameters)

[June 11, 1996]

This is a listing of below-ground releases from the petroleum UST system in any quantity; all above-ground releases to land from the petroleum UST system in excess of 42 gallons, or less than 42 gallons if the owner, permittee or responsible person is unable to contain or clean up the release within 24 hours; and all above-ground releases to water which result in a sheen on the water.

(source for the above information: Department of Environmental Quality, Cleanup Rules for Leaking Petroleum UST Systems; 340-122-205 Through 260)

Records Searched: 7818
Records Found : 30
See Printout for Results

LIMITATIONS

The database searches were conducted based upon the parameters as listed. * If you are aware of any potential parameters which would provide additional information please notify us immediately.

SAFE Research, Inc. assumes no responsibility for the results of the database searches due to errors of omissions made by the source of the list.

Our research is only one element of a prudent investigation of environmental risks associated with the property. At a minimum, this report should be supplemented by additional public and historic records reviews, and having a qualified professional physically examine the property for obvious contamination signs of contamination. A professional also should review this report to provide an expert opinion as to whether the database search results disclose a significant risk of contamination. Depending upon the extent of the risk indicated by such professional reviews, research and physical examination, such as soil or groundwater analysis, may be desirable.

In preparing this report, we have reviewed and relied exclusively on the public records specifically described in this report. Please be aware that information in the public records provides only a general description of the prior uses. Therefore, prior uses may have involved industrial activities not revealed by our research. Also, there is no guarantee that businesses limited their activities to the prior uses disclosed in the public records or that the public records are accurate or complete.

The use of the term 'hazardous substances' in this report shall mean any substance listed as hazardous under the Comprehensive Environmental Response, Compensation and Liability Act as of the data of this report. Although polychlorinated biphenyls ("PCBs") and asbestos are listed as hazardous substances, such substances are so common in commercial buildings that our research is of little value in evaluation the risk of contamination by such substances. Thus the use of the term 'hazardous substance' in this report shall not be construed to include PCBs or asbestos.

This report has been prepared exclusively for the use by the above addressee and may be relied upon only by that addressee. This report may not be relied upon only by any other person without our express written consent.

SAFE Research, Inc.

By: _____

J.P. Martin
President

* Business Names(s)
Address(es)
City(ies)
County(ies)
Zip(s)

SEARCH PARAMETERS

City Name	Abbrev	County Name	Abbrev	Zip Code
PORTLAND	PORTL	MULTNOMAH	MULT	
Portland	Portla			97210

Street Name	Type	Abbrev	Min Addr	Max Addr
NW 26TH AV	DI	26TH	2154	4499
NW 27TH AV	DI	27TH	2154	4499
NW 31ST AV	DI	31ST	2154	4499
NW ALEXANDRA AV	DI	ALEXAN	2154	4499
NW ALEXANDRA DR	DI	ALEXAN	2154	4499
NW COLUMBIA RIVER HWY	DI	COLUMB	2154	4499
NW ESSEX ST	DI	ESSEX	2154	4499
NW EXPRESS AV	DI	EXPRES	2154	4499
NW GROCE ST	DI	GROCE	2154	4499
NW KITTRIDGE AV	DI	KITTRI	2154	4499
NW PRINCESS DR	DI	PRINCE	2154	4499
NW ROTHESAY AV	DI	ROTHES	2154	4499
NW ST HELENS RD	DI	ST HEL	2154	4499
NW SUSSEX ST	DI	SUSSEX	2154	4499
T1N, R1E, SEC 19,20,29,30	DI	T1N	0	99999999
T1N, R1E, SEC 19,20,29,30	DI	SEC 19	0	99999999
T1N, R1E, SEC 19,20,29,30	DI	SEC 20	0	99999999
T1N, R1E, SEC 19,20,29,30	DI	SEC 29	0	99999999
T1N, R1E, SEC 19,20,29,30	DI	SEC 30	0	99999999
N BALLAST ST	EW	BALLAS	2154	4499
N CHANNEL AV	EW	CHANNE	2154	4499
NW ASPEN AV	EW	ASPEN	2154	4499
NW BELGRAVE AV	EW	BELGRA	2154	4499
NW BELGRAVE ST	EW	BELGRA	2154	4499
NW CAPITAL ST	EW	CAPITA	2154	4499
NW FRONT AV	EW	FRONT	2154	4499
NW GORDON ST	EW	GORDON	2154	4499
NW GUAM ST	EW	GUAM	2154	4499
NW INDUSTRIAL ST	EW	INDUST	2154	4499
NW LAKEVIEW ST	EW	LAKEVI	2154	4499
NW LEIF ERIKSON DR	EW	LEIF	2154	4499
NW LUZON ST	EW	LUZON	2154	4499
NW NELA ST	EW	NELA	2154	4499
NW NICOLAI ST	EW	NICOLA	2154	4499
NW PLAZA ST	EW	PLAZA	2154	4499
NW PLEASANT ST	EW	PLEASA	2154	4499
NW THURMAN ST	EW	THURMA	2154	4499
NW VAUGHN ST	EW	VAUGHN	2154	4499
NW YEON AV	EW	YEON	2154	4499
FOREST PARK	FE	FOREST	0	0
SP AND S RR	FE	S P AN	0	0

Street Name	Type	Abbrev	Min Addr	Max Addr
SP AND S RR	FE	SP AN	0	0
SP AND S RR	FE	SP&	0	0
SP AND S RR	FE	SP &	0	0
SP AND S RR	FE	S P &	0	0
T1N, R1E, SEC 19,20,29,30	FE	T1N	0	0
T1N, R1E, SEC 19,20,29,30	FE	SEC 19	0	0
T1N, R1E, SEC 19,20,29,30	FE	SEC 20	0	0
T1N, R1E, SEC 19,20,29,30	FE	SEC 29	0	0
T1N, R1E, SEC 19,20,29,30	FE	SEC 30	0	0
TERMINAL 2	FE	TERMIN	0	0
TERMINAL 2	FE	TERM	0	0
TERMINAL 2	FE	T 2	0	0
UNION PACIFIC RR	FE	UNION	0	0
UNION PACIFIC RR	FE	U P R	0	0
UNION PACIFIC RR	FE	UP R	0	0
UNION PACIFIC RR	FE	UPR	0	0
WILLAMETTE RIVER	FE	WILLAM	0	0
NW 26TH AV	NS	26TH	2200	4499
NW 27TH AV	NS	27TH	2200	4499
NW 28TH AV	NS	28TH	2200	4499
NW 29TH AV	NS	29TH	2200	4499
NW 30TH AV	NS	30TH	2200	4499
NW 31ST AV	NS	31ST	2200	4499
NW 32ND AV	NS	32ND	2200	4499
NW 33RD AV	NS	33RD	2200	4499
NW 34TH AV	NS	34TH	2200	4499
NW 35TH AV	NS	35TH	2200	4499
NW 36TH AV	NS	36TH	2200	4499
NW 37TH AV	NS	37TH	2200	4499
NW 38TH AV	NS	38TH	2200	4499
NW 39TH AV	NS	39TH	2200	4499
NW 40TH AV	NS	40TH	2200	4499
NW 41ST AV	NS	41ST	2200	4499
NW 42ND AV	NS	42ND	2200	4499
NW 43RD AV	NS	43RD	2200	4499
NW 44TH AV	NS	44TH	2200	4499
NW 45TH AV	NS	45TH	2200	4499
NW MAYFAIR AV	NS	MAYFAI	2200	4499

TABLES SEARCHED

Environmental Protection Agency (EPA) and
Department of Environmental Quality (DEQ) Lists

As requested, the following Environmental Protection Agency and Department of Environmental Quality lists were reviewed:

* **DEQ Confirmed Release List - Summary**

* **DEQ Environmental Cleanup Site Info.**

This exhibit provides a summary of the information obtained for the study area. The results of the list searches follow the list descriptions and search parameters.

TABLE DESCRIPTIONS

DEQ CONFIRMED RELEASE LIST - SUMMARY

Searched by: City
Zip
Address (See Regulatory Agency Search Parameters)

[April 25, 1996]

One of the environmental goals of the State of Oregon is to clean up sites throughout the state which are contaminated with hazardous wastes, petroleum products, and other hazardous substances. A key step in this process is to identify the contaminated sites. To accomplish this the Oregon legislature has directed the Department of Environmental Quality (DEQ) to implement a comprehensive site discovery program to:

a. Identify and assess releases or threats of releases of hazardous substances that may require removal or remedial action;

b. Publish two separate lists of facilities, or sites, where releases of hazardous substances have been confirmed:

   i. a Confirmed Release List (CRL), including all facilities with a confirmed release; and

   ii. an Inventory, including facilities with a confirmed release which in addition, based on a preliminary assessment, DEQ has determined require further investigation, removal, remedial action, or related long-term environmental or institutional controls; and

c. Rank facilities on the Inventory based on the long and short-term threats they pose to public health and the environment.

(Source: Department of Environmental Quality, SA\SM35\SM3746)

Records Searched: 236
Records Found : 11
See Printout for Results

DEQ ENVIRONMENTAL CLEANUP SITE INFO.

Searched by: City
County
Address (See Regulatory Agency Search Parameters)

[May 30, 1996]

The Environmental Cleanup Site Information list (previously the Site Assessment Database) includes all facilities entered into the Department's database pursuant to the site discovery requirements of ORS 466.560 This report provides the site name, location, county, DEQ region, and site identification number of:

- o sites where there has been a confirmed release of a hazardous substance,
- o sites where there has been a confirmed release and investigation or cleanup has been initiated or completed, and
- o sites where there has been no confirmed release but the Department has received information indicating there may have been a release of hazardous substances.

Note: Appearance in this report neither confirms nor denies the release of a hazardous substance at the facility; nor does it indicate whether or not the facility is contaminated or cleanup is necessary, currently underway or completed.

(source for the above information: Department of Environmental Quality, Site Assessment Database Report, SM2109; Working File, 03-28-89)

Records Searched: 1705
Records Found : 40
See Printout for Results

LIMITATIONS

The database searches were conducted based upon the parameters as listed. * If you are aware of any potential parameters which would provide additional information please notify us immediately.

SAFE Research, Inc. assumes no responsibility for the results of the database searches due to errors of omissions made by the source of the list.

Our research is only one element of a prudent investigation of environmental risks associated with the property. At a minimum, this report should be supplemented by additional public and historic records reviews, and having a qualified professional physically examine the property for obvious contamination signs of contamination. A professional also should review this report to provide an expert opinion as to whether the database search results disclose a significant risk of contamination. Depending upon the extent of the risk indicated by such professional reviews, research and physical examination, such as soil or groundwater analysis, may be desirable.

In preparing this report, we have reviewed and relied exclusively on the public records specifically described in this report. Please be aware that information in the public records provides only a general description of the prior uses. Therefore, prior uses may have involved industrial activities not revealed by our research. Also, there is no guarantee that businesses limited their activities to the prior uses disclosed in the public records or that the public records are accurate or complete.

The use of the term 'hazardous substances' in this report shall mean any substance listed as hazardous under the Comprehensive Environmental Response, Compensation and Liability Act as of the data of this report. Although polychlorinated biphenyls ("PCBs") and asbestos are listed as hazardous substances, such substances are so common in commercial buildings that our research is of little value in evaluation the risk of contamination by such substances. Thus the use of the term 'hazardous substance' in this report shall not be construed to include PCBs or asbestos.

This report has been prepared exclusively for the use by the above addressee and may be relied upon only by that addressee. This report may not be relied upon only by any other person without our express written consent.

SAFE Research, Inc.

By: _____

J.P. Martin
President

* Business Names(s)
  Address(es)
  City(ies)
  County(ies)
  Zip(s)

SEARCH PARAMETERS

City Name	Abbrev	County Name	Abbrev	Zip Code
PORTLAND	PORTL	MULTNOMAH	MULT	
Portland	Portla			97229
Portland	Portla			97217
Portland	Portla			97210
Portland	Portla			97227

Street Name	Type	Abbrev	Min Addr	Max Addr
N ANCHOR ST	DI	ANCHOR	1101	6599
N BALLAST ST	DI	BALLAS	1101	6599
N BASIN AV	DI	BASIN	1101	6599
N COMMERCE ST	DI	COMMER	1101	6599
N DOLPHIN ST	DI	DOLPHI	1101	6599
N SWAN ISL BOAT RAMP	DI	SWAN	1101	6599
N WILLAMETTE BLVD	DI	WILLAM	1101	6599
NW 34TH AV	DI	34TH	1101	6599
NW 53RD DR	DI	53RD	1101	6599
NW 55TH AV	DI	55TH	1101	6599
NW ALEXANDRA AV	DI	ALEXAN	1101	6599
NW ALEXANDRA DR	DI	ALEXAN	1101	6599
NW ASPEN AV	DI	ASPEN	1101	6599
NW BREWER ST	DI	BREWER	1101	6599
NW COLUMBIA RIVER HWY	DI	COLUMB	1101	6599
NW DOANE AV	DI	DOANE	1101	6599
NW ESSEX ST	DI	ESSEX	1101	6599
NW EXPRESS AV	DI	EXPRES	1101	6599
NW GROCE ST	DI	GROCE	1101	6599
NW HERMIT AV	DI	HERMIT	1101	6599
NW KITTRIDGE AV	DI	KITTRI	1101	6599
NW LEIF ERIKSON DR	DI	LEIF	1101	6599
NW PRINCESS DR	DI	PRINCE	1101	6599
NW ROTHESAY AV	DI	ROTHES	1101	6599
NW SILENT LA	DI	SILENT	1101	6599
NW ST HELENS RD	DI	ST HEL	1101	6599
NW SUFFOLK ST	DI	SUFFOL	1101	6599
NW SUSSEX ST	DI	SUSSEX	1101	6599
NW THOMPSON RD	DI	THOMPS	1101	6599
NW WARD WY	DI	WARD	1101	6599
T1N, R1E, SEC 17,21	DI	SEC 17	0	99999999
T1N, R1E, SEC 17,21	DI	SEC 21	0	99999999
T1N, R1E, SEC 19,20,29,30	DI	T1N	0	99999999
T1N, R1E, SEC 19,20,29,30	DI	SEC 19	0	99999999
T1N, R1E, SEC 19,20,29,30	DI	SEC 20	0	99999999
T1N, R1E, SEC 19,20,29,30	DI	SEC 29	0	99999999
T1N, R1E, SEC 19,20,29,30	DI	SEC 30	0	99999999
N CHANNEL AV	EW	CHANNE	1101	6599

Street Name	Type	Abbrev	Min Addr	Max Addr
N EMERSON CT	EW	EMERSO	1101	6599
N EMERSON DR	EW	EMERSO	1101	6599
N EMERSON ST	EW	EMERSO	1101	6599
N GOING ST	EW	GOING	1101	6599
N JESSUP ST	EW	JESSUP	1101	6599
N KILLINGSWORTH ST	EW	KILLIN	1101	6599
N LAGOON AV	EW	LAGOON	1101	6599
N WEBSTER ST	EW	WEBSTE	1101	6599
NW 25TH PL	EW	25TH	1101	6599
NW BELGRAVE AV	EW	BELGRA	1101	6599
NW BELGRAVE ST	EW	BELGRA	1101	6599
NW CAPITAL ST	EW	CAPITA	1101	6599
NW CORNELL RD	EW	CORNEL	1101	6599
NW FRANKLIN CT	EW	FRANKL	1101	6599
NW FRONT AV	EW	FRONT	1101	6599
NW GORDON ST	EW	GORDON	1101	6599
NW GUAM ST	EW	GUAM	1101	6599
NW INDUSTRIAL ST	EW	INDUST	1101	6599
NW LAKEVIEW ST	EW	LAKEVI	1101	6599
NW LUZON ST	EW	LUZON	1101	6599
NW MT VIEW RD	EW	MT VIE	1101	6599
NW NELA ST	EW	NELA	1101	6599
NW NICOLAI ST	EW	NICOLA	1101	6599
NW OVERTON ST	EW	OVERTO	1101	6599
NW PETTYGROVE ST	EW	PETTYG	1101	6599
NW PLAZA ST	EW	PLAZA	1101	6599
NW PLEASANT ST	EW	PLEASA	1101	6599
NW QUIMBY ST	EW	QUIMBY	1101	6599
NW RALEIGH ST	EW	RALEIG	1101	6599
NW REED ST	EW	REED	1101	6599
NW ROOSEVELT ST	EW	ROOSEV	1101	6599
NW SAVIER ST	EW	SAVIER	1101	6599
NW SHERLOCK AV	EW	SHERLO	1101	6599
NW SUMMIT AV	EW	SUMMIT	1101	6599
NW THURMAN ST	EW	THURMA	1101	6599
NW UPSHUR ST	EW	UPSHUR	1101	6599
NW VAUGHN ST	EW	VAUGHN	1101	6599
NW WESTOVER RD	EW	WESTOV	1101	6599
NW WILSON ST	EW	WILSON	1101	6599
NW WINDSOR ST	EW	WINDSO	1101	6599
NW YEON AV	EW	YEON	1101	6599
NW YORK ST	EW	YORK	1101	6599
FOREST PARK	FE	FOREST	0	0
S P AND S	FE	S P AN	0	0
S P AND S	FE	SP AN	0	0
S P AND S	FE	S P &	0	0
S P AND S	FE	SP &	0	0
S P AND S	FE	SP&	0	0
T1N, R1E, SEC 17,21	FE	SEC 17	0	0
T1N, R1E, SEC 17,21	FE	SEC 21	0	0

Street Name	Type	Abbrev	Min Addr	Max Addr
T1N, R1E, SEC 19,20,29,30	FE	T1N	0	0
T1N, R1E, SEC 19,20,29,30	FE	SEC 19	0	0
T1N, R1E, SEC 19,20,29,30	FE	SEC 20	0	0
T1N, R1E, SEC 19,20,29,30	FE	SEC 29	0	0
T1N, R1E, SEC 19,20,29,30	FE	SEC 30	0	0
TERMINAL 2	FE	TERMIN	0	0
TERMINAL 2	FE	TERM	0	0
TERMINAL 2	FE	T 2	0	0
UNION PACIFIC RR	FE	UNION	0	0
UNION PACIFIC RR	FE	U P R	0	0
UNION PACIFIC RR	FE	UP R	0	0
UNION PACIFIC RR	FE	UPR	0	0
WILLAMETTE RIVER	FE	WILLAM	0	0
N ATLANTIC AV	NS	ATLANT	1300	6599
N GREELEY AV	NS	GREELE	1300	6599
NW 21ST PL	NS	21ST	1300	6599
NW 22ND AV	NS	22ND	1300	6599
NW 22ND PL	NS	22ND	1300	6599
NW 23RD AV	NS	23RD	1300	6599
NW 23RD PL	NS	23RD	1300	6599
NW 24TH AV	NS	24TH	1300	6599
NW 24TH PL	NS	24TH	1300	6599
NW 25TH AV	NS	25TH	1300	6599
NW 26TH AV	NS	26TH	1300	6599
NW 27TH AV	NS	27TH	1300	6599
NW 28TH AV	NS	28TH	1300	6599
NW 28TH PL	NS	28TH	1300	6599
NW 29TH AV	NS	29TH	1300	6599
NW 30TH AV	NS	30TH	1300	6599
NW 31ST AV	NS	31ST	1300	6599
NW 32ND AV	NS	32ND	1300	6599
NW 33RD AV	NS	33RD	1300	6599
NW 34TH AV	NS	34TH	1300	6599
NW 35TH AV	NS	35TH	1300	6599
NW 36TH AV	NS	36TH	1300	6599
NW 37TH AV	NS	37TH	1300	6599
NW 38TH AV	NS	38TH	1300	6599
NW 39TH AV	NS	39TH	1300	6599
NW 40TH AV	NS	40TH	1300	6599
NW 41ST AV	NS	41ST	1300	6599
NW 42ND AV	NS	42ND	1300	6599
NW 43RD AV	NS	43RD	1300	6599
NW 44TH AV	NS	44TH	1300	6599
NW 45TH AV	NS	45TH	1300	6599
NW 46TH AV	NS	46TH	1300	6599
NW 47TH AV	NS	47TH	1300	6599
NW 48TH AV	NS	48TH	1300	6599
NW 49TH AV	NS	49TH	1300	6599
NW 50TH AV	NS	50TH	1300	6599
NW 51ST AV	NS	51ST	1300	6599

Street Name	Type	Abbrev	Min Addr	Max Addr
NW 52ND AV	NS	52ND	1300	6599
NW 53RD AV	NS	53RD	1300	6599
NW 54TH AV	NS	54TH	1300	6599
NW 55TH AV	NS	55TH	1300	6599
NW 56TH AV	NS	56TH	1300	6599
NW 57TH AV	NS	57TH	1300	6599
NW 58TH AV	NS	58TH	1300	6599
NW 59TH AV	NS	59TH	1300	6599
NW 60TH AV	NS	60TH	1300	6599
NW 61ST AV	NS	61ST	1300	6599
NW 62ND AV	NS	62ND	1300	6599
NW 63RD AV	NS	63RD	1300	6599
NW 64TH AV	NS	64TH	1300	6599
NW 65TH AV	NS	65TH	1300	6599
NW 66TH AV	NS	66TH	1300	6599
NW BALL AV	NS	BALL	1300	6599
NW MAYFAIR AV	NS	MAYFAI	1300	6599

EXHIBIT B

SCHN00171595

1N/1E/20

MULT 1876

STATE OF OREGON WATER WELL REPORT
(as required by ORS 537.765)

(START CARD) # W-28097

(1) OWNER: Mel Shulewitz Well Number 5-92
Name Indoor BillBoard/Northwest Inc.
Address P. O. Box 17555
City Portland State OR Zip 97217-0555

(2) TYPE OF WORK:
☒ New Well ☐ Deepen ☐ Recondition ☐ Abandon

(3) DRILL METHOD:
☐ Rotary Air ☐ Rotary Mud ☒ Cable
☐ Other

(4) PROPOSED USE:
☐ Domestic ☐ Community ☒ Industrial ☐ Irrigation
☐ Thermal ☐ Injection ☐ Other

(5) BORE HOLE CONSTRUCTION:
Special Construction approval ☐ Yes ☒ No Depth of Completed Well 164 ft.
Explosives used ☐ Yes ☐ No Type Amount

HOLE Diameter	From	To	SEAL Material	From	To	Amount sacks or pounds
12"	0	25	Bentonite	0	25	24 sacks
8"	25	164				

How was seal placed: Method ☐ A ☐ B ☐ C ☐ D ☐ E
☒ Other Bentonite
Backfill placed from ft. to ft. Material
Gravel placed from ft. to ft. Size of gravel

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:	8"	+1	164	.250	☒	☐	☒	☐
Liner:								

Final location of shoe(s) 164 feet

(7) PERFORATIONS/SCREENS:
☐ Perforations Method
☐ Screens Type Material

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
						☐	☐

(8) WELL TESTS: Minimum testing time is 1 hour
☐ Pump ☒ Bailer ☐ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
125 gpm	7 feet		1 hr.

Temperature of Water 52° Depth Artesian Flow Found
Was a water analysis done? ☐ Yes By whom
Did any strata contain water not suitable for intended use? ☐ Too little
☐ Salty ☐ Muddy ☐ Odor ☐ Colored ☐ Other
Depth of strata:

(9) LOCATION OF WELL by legal description:
County Multnomah Latitude Longitude
Township 1-North N or S. Range 1-East E or W. WM
Section 20 ¼ ¼
Tax Lot 97 Lot Block Subdivision
Street Address of Well (or nearest address) 5140 N. Channe
Portland, OR 97217

(10) STATIC WATER LEVEL:
29 ft. below land surface. Date 3/17/9
Artesian pressure lb. per square inch. Date

(11) WATER BEARING ZONES:
Depth at which water was first found 146 feet

From	To	Estimated Flow Rate	SW
146 feet	164 feet	125 gpm	29

(12) WELL LOG:
Ground elevation

Material	From	To	SW
Clay; silty, brown	0	23	
Sand & silt; gray	23	46	
Sand & wood; gray	46	65	
Sand & gravel; gray	65	79	
Sand; gray	79	132	
Clay; gray	132	146	
Sand & gravel	146	161	
Sand, gravel & cobbles	161	164	

Date started 3/9/92 Completed 3/17/92

(unbonded) Water Well Constructor Certification:
I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to my best knowledge and belief.
Signed Ronald F. McConnell, Owner, dba Steinman Bros. Drilling Company WWC Number 1 Date

(bonded) Water Well Constructor Certification:
I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon well construction standards. This report is true to the best of my knowledge and belief.
Signed Ronald F. McConnell WWC Number 1 Date 3/25/92

ORIGINAL & FIRST COPY - WATER RESOURCES DEPARTMENT SECOND COPY - CONSTRUCTOR THIRD COPY - CUSTOMER 9809C 10

SCHN00171596

MULT 1018

NOTICE TO WATER WELL CONTRACTOR
The original and first copy of this report are to be filed with the STATE ENGINEER, SALEM 10, OREGON within 30 days from the date of well completion.

WATER WELL REPORT
STATE OF OREGON
(Please type or print)

State Well No. 1N/1-29

State Permit No.

(1) OWNER:
Name HERCULES POWDER CO
Address 3366 NW. YEON AVE. PORTLAND, ORE.

(2) LOCATION OF WELL:
County MULT. Driller's well number 4148
¼ ¼ Section T. R. W.M.
Bearing and distance from section or subdivision corner

(3) TYPE OF WORK (check):
New Well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 12.

(4) PROPOSED USE (check):
Domestic ☐ Industrial ☒ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(5) TYPE OF WELL:
Rotary ☐ Driven ☐
Cable ☒ Jetted ☐
Dug ☐ Bored ☐

(6) CASING INSTALLED: Threaded ☐ Welded ☒
12" Diam. from 0 ft. to 195 ft. Gage .375
" Diam. from ft. to ft. Gage
" Diam. from ft. to ft. Gage

(7) PERFORATIONS: Perforated? ☐ Yes ☒ No
Type of perforator used
Size of perforations in. by in.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

(8) SCREENS: Well screen installed ☐ Yes ☒ No
Manufacturer's Name
Model No.
Diam. Slot size Set from ft. to ft.
Diam. Slot size Set from ft. to ft.

(9) CONSTRUCTION:
Well seal—Material used in seal CEMENT GROUT
Depth of seal 50 ft. Was a packer used? NO
Diameter of well bore to bottom of seal 16 in.
Were any loose strata cemented off? ☐ Yes ☒ No Depth
Was a drive shoe used? ☒ Yes ☐ No
Was well gravel packed? ☐ Yes ☒ No Size of gravel:
Gravel placed from ft. to ft.
Did any strata contain unusable water? ☐ Yes ☒ No
Type of water? Depth of strata
Method of sealing strata off

(10) WATER LEVELS:
Static level 32 ft. below land surface Date MAY 13/1963
Artesian pressure lbs. per square inch Date

(11) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? ☒ Yes ☐ No If yes, by whom? R.J. STRASSE
Yield: 365 gal./min. with 190 ft. drawdown after 12 hrs.
" " " "
" " " "
Bailer test gal./min. with ft. drawdown after hrs.
Artesian flow g.p.m. Date
Temperature of water 57 Was a chemical analysis made? ☒ Yes ☐ No

(12) WELL LOG: Diameter of well below casing
Depth drilled ft. Depth of completed well ft.
Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.

MATERIAL	FROM	TO
BROWN FILL SAND	0	28
DARK GREY SILT	28	49
GRAVEL, CLAY BINDER	49	96
GREY SILT	96	104
SAND, GRAVEL, AND CLAY	104	195
MEDIUM HARD BASALT	195	208
HARD GREY BASALT	208	234
BROWN BASALT	234	245
BLACK BASALT	245	252
HARD GREY BASALT	252	295
BLACK BASALT	295	319
HARD GREY BASALT	319	324
BLACK BASALT	324	364
HARD GREY BASALT	364	402
BLACK BASALT, CLAY SEAM	402	411
HARD GREY BASALT	411	420
MEDIUM SOFT BLACK BASALT	420	455
HARD GREY BASALT	455	509
BLACK ROCK AND CLAY	509	521
MEDIUM HARD BLACK BASALT	521	534
HARD GREY BASALT	534	594
BLACK SHALE AND ROCK	594	608
MEDIUM HARD BLACK BASALT	608	647
HARD GREY BASALT	647	679

Work started OCT 30 1962 Completed MAY 16 1963
Date well drilling machine moved off of well MAY 16 1963

(13) PUMP:
Manufacturer's Name LAYNE AND BOWLER
Type: DEEP WELL TURBINE H.P.

Water Well Contractor's Certification:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME R.J. STRASSER DRILLING CO (Person, firm or corporation) (Type or print)
Address 8110 SE SUNSET LANE PORTLAND, ORE.
Drilling Machine Operator's License No.
[Signed] Robert L. Strasser (Water Well Contractor)
Contractor's License No. 10 Date MAY 21

(USE ADDITIONAL SHEETS IF NECESSARY)

SCHN00171597

MULT 1017

NOTICE TO WATER WELL CONTRACTOR
The original and first copy of this report are to be filed with the STATE ENGINEER, SALEM 10, OREGON within 30 days from the date of well completion.

WATER WELL REPORT
STATE OF OREGON
(Please type or print)

State Well No. 1N/1-29

State Permit No.

(1) OWNER:
Name HERCULES POWDER CO
Address 3366 NW YEON AVE
PORTLAND ORE

(2) LOCATION OF WELL:
County MULT. Driller's well number 4133
¼ ¼ Section 29 T. 1N R. 1E W.M.
Bearing and distance from section or subdivision corner

(3) TYPE OF WORK (check):
New Well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐
Abandonment, describe material and procedure in Item 12.

(4) PROPOSED USE (check):
Domestic ☐ Industrial ☒ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(5) TYPE OF WELL:
Rotary ☐ Driven ☐
Cable ☒ Jetted ☐
Dug ☐ Bored ☐

(6) CASING INSTALLED: Threaded ☐ Welded ☐
12" Diam. from 0 ft. to 243 ft. Gage 330
" Diam. from ft. to ft. Gage
" Diam. from ft. to ft. Gage

(7) PERFORATIONS: Perforated? ☐ Yes ☒ No
Type of perforator used
Size of perforations in. by in.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

(8) SCREENS: Well screen installed ☐ Yes ☐ No
Manufacturer's Name
Model No.
Diam. Slot size Set from ft. to ft.
Diam. Slot size Set from ft. to ft.

(9) CONSTRUCTION:
Well seal—Material used in seal CEMENT GROUT
Depth of seal 31 ft. Was a packer used? NO
Diameter of well bore to bottom of seal 16 in.
Were any loose strata cemented off? ☐ Yes ☐ No Depth
Was a drive shoe used? ☐ Yes ☐ No
Was well gravel packed? ☐ Yes ☐ No Size of gravel:
Gravel placed from ft. to ft.
Did any strata contain unusable water? ☐ Yes ☒ No
Type of water? Depth of strata
Method of sealing strata off

(10) WATER LEVELS:
Static level 30 ft. below land surface Date 10/13/62
Artesian pressure lbs. per square inch Date

(11) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? ☐ Yes ☐ No If yes, by whom?
Yield: 315 gal./min. with 275 ft. drawdown after 1 hrs.
" 275 " 254 " 1/2 "
" 225 " 203 " 1/2 "
Bailer test gal./min. with ft. drawdown after hrs.
Artesian flow g.p.m. Date
Temperature of water Was a chemical analysis made? ☒ Yes ☐ No

(12) WELL LOG: Diameter of well below casing
Depth drilled ft. Depth of completed well ft.
Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.

MATERIAL	FROM	TO
SAND AND GRAVEL FINE	0	27
DARK GREY SILT	27	106
CLAY, GREEN AND BROWN	106	137
SAND, GRAVEL AND CLAY	137	201
SAND AND GRAVEL	201	207
CONGLOMERATE	207	243
MED HARD BASALT	243	262
SOFT BROWN ROCK	262	271
MED HARD GREY BASALT	271	295
HARD GREY BASALT SOME SEAMS	295	33
POROUS GREY ROCK	330	368
HARD GREY BASALT	368	372
MED HARD GREY BASALT	372	393
MED HARD BROWN	393	409
HARD GREY BASALT	409	413
POROUS BLACK ROCK	413	487
MED HARD GREY	487	496
HARD GREY BASALT	496	519
MED SOFT POROUS BLACK ROCK	519	556
HARD BLACK ROCK	556	574

Work started 7/2 1962 Completed 10/16 1962
Date well drilling machine moved off of well 10/17 1962

(13) PUMP:
Manufacturer's Name
Type: H.P.

Water Well Contractor's Certification:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME R.J. STRASSER DRILLING CO (Person, firm or corporation) (Type or print)
Address 8110 SE SUNSET LANE PORTLAND
Drilling Machine Operator's License No. GLENN ROMAN
[Signed] Robert L. Strasser (Water Well Contractor)
Contractor's License No. 10 Date OCT 22 1962

(USE ADDITIONAL SHEETS IF NECESSARY)

Appendix F

SCHN00171599

APPENDIX F

Written Inquiries to EPA and State Regulatory Agencies

SCHN00171600

Engineers
Planners
CH2M HILL Economists
Scientists

Portland Office

July 15, 1996

130341.NW.01

Barbara Hall
Department of Environmental Quality
811 S.W. 6th
Portland, OR 972

Dear Barb:

Subject: Freedom of Information Act Request
re: 9449 and 9445 North Burgard Way and 3506 N.W. 35th

Under the Freedom of Information Act I respectfully request any and all information regarding the following on and around 9449 and 9445 North Burgard Way and 3506 N.W. 35th in Portland, Oregon:

9449 and 9445 North Burgard Way
Crown Cork & Seal
Romar Transporation Systems
Blickle Co.

3506 N.W. 35th
Owens Corning
Daisy Kingdon
B&I Furniture
Mt. Hood Beverage Company
westport

Portland Terminal, Guilds Lake Yard -
3500 N.W. Yeon
Key Trucking, Inc.
FTL Inc.
Ashland Chemical Co.,
Division Ashland Inc., Distribution Center

Sincerely,

Betty Huffman/CH2M HILL
Regulatory Services

Serving Oregon and Southwest Washington from two locations:

Portland Office	***825 N.E. Multnomah, Suite 1300, Portland, OR 97232-2146***	***503.235.5000***	***503.235.2445 FAX***
Corvallis Office	*2300 NW Walnut Blvd., Corvallis, OR 97330-3538*	*503.752.4271*	*503.752.0276 FAX*

CH2M HILL
Engineers
Planners
Economists
Scientists

Portland Office

July 17, 1996

130341.NW.01

Stephanie Kercheval
FOIA Officer
U.S. EPA Region 10
M.S. EXA-142A
1200 6th Ave.
Seattle, WA 98101

Dear Ms. Kercheval:

Subject: Request for Information regarding properties on and near 3506 N.W. 35th, Portland, Oregon

I respectfully request any and all information regarding the following companies I in Portland, Oregon, with respect to groundwater, underground storage tanks, releases and suspected releases.

Company	Address
Emerson Hardwood Co.	3506 N.W. 35th
Westport Supply Co.	3506 N.W. 35th
Daisy Kingdom, Inc.	3506 N.W. 35th
West Port	N.W. Yeon (or N.W. 35th)
Owens Corning	N.W. Yeon (or N.W. 35th
Daisy Kingdom	N.W. Yeon
B&I Furniture	3601 N.W. Yeon
Portland Terminal - RR Company - Guilds Lake Yard	3500 N.W. Yeon
Key Trucking, Inc	3333 N.W. 35th
FTL, Inc.	3333 N.W. 35th
Ashland Chemical Co., Division Ashland Inc., Distibution Center	3322 N.W. 35th Ave.

Serving Oregon and Southwest Washington from two locations:

Portland Office	***825 N.E. Multnomah, Suite 1300, Portland, OR 97232-2146***	***503.235.5000***	***503.235.2445 FAX***
Corvallis Office	*2300 NW Walnut Blvd., Corvallis, OR 97330-3538*	*503.752.4271*	*503.752.0276 FAX*

If the cost of reproducing this information exceeds $150.00 please contact me before reproducing the documents.

Thank you for your timely response and effort in making this information available.

Sincerely,

CH2M HILL

Betty Huffman

Betty Huffman/CH2M HILL
Regulatory Services

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
SEATTLE, WA 98101

Request Acknowledgment

July 31, 1996

BETTY HUFFMAN
CH2M HILL
825 N.E. Multnomah, Suite 1300
Portland, OR 97232

Date of Your Request: July 17, 1996	Date Your Request was Received: July 30, 1996

SUBJECT:	PORTLAND FACILITIES

The Agency has ten (10) working days to respond to your request. You can expect a reply shortly after expiration of the ten-working day period. Further correspondence on this subject should cite the following Request Identification Number:

10-RIN-00676-96

Stephanie Ferchwal
Freedom of Information Officer (EXA-142)
553-8665

SCHN00171604

CH2M HILL
Engineers
Planners
Economists
Scientists

Portland Office

July 17, 1996

130341.NW.01

Diane Henry
4760 Portland Road N.E.
Salem, OR 97305

Dear Ms. Henry:

Subject: Request for Information regarding properties on and near 3506 N.W. 35th, Portland, Oregon

I respectfully request any and all information regarding the following companies in Portland, Oregon, with respect to EPCRA and SARA Title III reporting.

Company	Address
Emerson Hardwood Co.	3506 N.W. 35th
Westport Supply Co.	3506 N.W. 35th
Daisy Kingdom, Inc.	3506 N.W. 35th
West Port	N.W. Yeon (or N.W. 35th)
Owens Corning	N.W. Yeon (or N.W. 35th)
Daisy Kingdom	N.W. Yeon
B&I Furniture	3601 N.W. Yeon
Portland Terminal - RR Company - Guilds Lake Yard	3500 N.W. Yeon
Key Trucking, Inc.	3333 N.W. 35th
FTL, Inc.	3333 N.W. 35th
Ashland Chemical Co., Division Ashland Inc. Distribution Center	3322 N.w. 35th Ave.

Serving Oregon and Southwest Washington from two locations:

Portland Office	***825 N.E. Multnomah, Suite 1300, Portland, OR 97232-2146***	***503.235.5000***	***503.235.2445 FAX***
Corvallis Office	*2300 NW Walnut Blvd., Corvallis, OR 97330-3538*	*503.752.4271*	*503.752.0276 FAX*

Thank you for your timely response and effort in making this information available.

Sincerely,

CH2M HILL

Betty Huffman

Betty Huffman/CH2M HILL
Regulatory Services

CH2M HILL
825 NE Multnomah
Suite 1300
Portland, OR
97232-2146
Tel 503.235.5000
Fax 503.235.2445

CH2MHILL

August 27, 1996

130341.NW.01

Barb Hall
2020 S.W. 4th
Portland, OR

Dear Barb:

Subject: Request for Records

Janeen Adamo respectfully requests file review Wednesday, August 28, at 9:00 a.m. , for the following companies:

Company Name	Address	List
Ashland Chemical Company	3322 N.W. 35th	RCRIS
Nabisco Warehouse/Hill Investment Company	3322 N.W. 35th	DEQ/ECSIS DEQ/LUST DEQ/UST
Trumbull Asphalt Fume Line	3570 N.W. Yeon	DEQ/CRL DEQ/ECSIS DEQ/LUST
FTL, Inc.	3333 N.W. 35th	DEQ/ECSIS
Guilds Lake	2615-1619 Industrial	DEQ/ECSIS
Chase Packaging Corp/Chase Bag Company	3720 N.W. Yeon	RCRIS DEQ/UST
Portland Railroad Company	3500 N.W. Yeon	DEQ/LUST
Owens Corning Fiberglass Corp	3750 N.W. Yeon	RCRIS
ANR Freight System	3333 N.W. 35th	DEQ/LUST DEQ/UST
Terminal Transfer	3601 N.W. Yeon	DEQ/LUST DEQ/UST

Company Name	Address	List
CocaCola Bottling Co.	3599 N.W. Yeon	FINDS DEQ/LUST DEQ/UST
ATMS, Inc.	3601 N.W. Yeon	RCRIS SQG FINDS

Thank you for your help, it is sincerely appreciated.

Sincerely,

CH2M HILL

Betty Huffman

Betty Huffman/CH2M HILL
Environmental Management and Regulatory Services

Appendix G

SCHN00171609

APPENDIX G

Regulatory Agency File Information

DEQ Files on Hill Investment (a.k.a. Nabisco Warehouse and Ashland Chemical) Site
October 1990–July 1996

SCHN00171611

U.S. ENVIRONMENTAL PROTECTION AGENCY

ACKNOWLEDGEMENT OF NOTIFICATION
OF HAZARDOUS WASTE ACTIVITY
(VERIFICATION)

THIS IS TO ACKNOWLEDGE THAT YOU HAVE FILED A NOTIFICATION OF HAZARDOUS WASTE ACTIVITY FOR THE INSTALLATION LOCATED AT THE ADDRESS SHOWN BELOW TO COMPLY WITH SECTION 3010 OF THE RESOURCE CONSERVATION AND RECOVERY ACT (RCRA). YOUR EPA IDENTIFICATION NUMBER MUST BE INCLUDED ON ALL SHIPPING MANIFESTS FOR TRANSPORTING HAZARDOUS WASTES; ON ALL ANNUAL REPORTS THAT GENERATORS OF HAZARDOUS WASTE, AND OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE AND DISPOSAL FACILITIES MUST FILE WITH EPA; ON ALL APPLICATIONS FOR A FEDERAL HAZARDOUS WASTE PERMIT; AND OTHER HAZARDOUS WASTE MANAGEMENT REPORTS AND DOCUMENTS REQUIRED UNDER SUBTITLE C OF RCRA.

EPA I.D. NUMBER-->	ORD115485989		
MAILING ADDRESS-->	NABISCO BRANDS INC 3322 NW 35TH AVE PORTLAND	OR	97210
INSTALLATION ADDRESS-->	3322 NW 35TH AVE PORTLAND	OR	97210

01/11/1990

SCHN00171612

NABISCO FOODS
COMPANY

7 Campus Drive
P.O. Box 311
Parsippany, NJ 07054-0311
(201) 682-5000

December 29, 1989

RECEIVED
JAN 04 1990
Hazardous & Solid Waste Division
Department of Environmental Quality

Department of Environmental Quality
Hazardous and Solid Waste Division
811 S.W. Sixth Street
Portland, OR 97204

Attn: Susan Eidman

Dear Ms. Eidman:

Enclosed is an application for DEQ ID number. Please process this on a "rush" basis.

Thank you for your cooperation in this matter. If you have any questions, please call me at (201) 682-6215.

Sincerely,

NABISCO FOODS COMPANY

William B. Ely
Environmental Engineering

WBE/ekm
enclosure

0014

RUSH Please

RECEIVED
JAN 08 1990
WASTE MANAGEMENT BRANCH

1-5-90
#2323
cc: EPA
NWR

NABISCO BRANDS INC

SCHN00171613

OREGON DEQ Hazardous Waste
Filing Information Acknowledgement

Date December 16, 1993

Your recent communication is hereby acknowledged. This communication resulted in the following filing information action:

ACTION:

- [x] Modified/Added Status (as identified under Status)
- [ ] Issued New EPA ID Number (identified under Facility)
- [ ] Canceled or Withdrawn EPA ID Number (identified under Facility)
- [ ] Reactivate EPA ID Number (identified under Facility)

STATUS:

- [ ] Transporter
- [ ] Market/Burn Hazardous Waste Fuels
- [ ] Market/Burn Used Oil
- [ ] Recycler
- [ ] Generator Status effective NO CHANGE
  - [ ] Large Quantity Generator (LQG)
  - [ ] Small Quantity Generator (SQG)
  - [ ] Conditionally Exempt Small Quantity Generator (CEG)

FACILITY:

EPA ID Number ORD115485989

Facility Name ASHLAND CHEMICAL CO., DIV. ASHLAND OIL, INC.

Corporate Name ASHLAND OIL, INC.

Site Address 3322 NW 35TH AVE
PORTLAND OR 97210

This EPA ID Number is permanently assigned to the site location listed above and is to be used on all shipping papers, manifests and correspondence concerning hazardous waste pertaining to that site. If the name, ownership, status, contact name, or similar changes occur, you will need to update your filing information. If you sell, leave, or abandon the site you must update your filing information. If for any reason hazardous waste is no longer generated, stored, or disposed of at this site, you may want to request a temporary withdrawal or cancel the EPA ID Number. For these updates request a "Notification Form" from DEQ by calling 229-5913.

Please note that all generators must respond to the annual reporting requirements due by March 1 of each calendar year. Each facility with an open EPA ID Number will receive instructions the previous December. All LQGs and SQGs must generate a toxics use reduction plan or a toxics use reduction annual progress report and file the appropriate notice or report to DEQ by September 1 of the following year. For more information call the above number.

SCHN00171614

Ashland Chemical

Environmental, Health & Safety
G. W. Hammer
Vice President
(614) 889-3052

Ashland Chemical, Inc.
Subsidiary of
Ashland Oil, Inc.

Address Reply:
PO. Box 2219
Columbus, Ohio 43216

October 27, 1993

CERTIFIED MAIL

Oregon Department of Environmental Quality
Hazardous Waste Operations
811 Southwest 6th Avenue
Portland, OR 97204

U.S. EPA Region X
Waste Management Branch (HW-112)
1200 Sixth Avenue
Seattle, WA 98101

RECEIVED
NOV 02 1993
Hazardous & Solid Waste Division
Department of Environmental Quality

Dear Sirs and Mesdames:

The purpose of this letter is to inform you that, as of October 1, 1993, the operations and assets of Ashland Chemical, Inc. (formerly a wholly owned subsidiary of Ashland Oil, Inc.) were merged into its parent corporation, Ashland Oil, Inc. The company is now known as Ashland Chemical Company, Division of Ashland Oil, Inc. The following Ashland Chemical site with U.S. EPA ID Number is affected by this change:

U.S. EPA ID Number	Location Address
ORD 115 485 989	3322 NW 35th Avenue, Portland, OR 97210

This change in corporate status will have no effect of any kind on operations and management of this facility.

If there are any questions regarding this corporate restructuring and name change, please contact Judy Collin at (614) 889-4490.

Sincerely,

William C. Olasin

William C. Olasin
Compliance Manager

#6112 cc: EPA, NWR,

Headquarters
5200 Blazer Parkway
Dublin, Ohio 43017

Cable Address: Aroplaz OH
Telex: 245385
Answerback: ASHCHEM
Fax: (614) 793-6080

QUALITY

Ashland Chemical's
Commitment to
Quality and Productivity

RCRIS 12/16/93

SCHN00171615

Ashland Chemical

Environmental, Health & Safety
G. W. Hammer
Vice President
(614) 889-3052

RECEIVED
NOV 0 1 1993
WASTE MANAGEMENT BRANCH

Ashland Chemical Inc.
Subsidiary of
Ashland Oil, Inc.

Address Reply:
P.O. Box 2219
Columbus, Ohio 43216

October 27, 1993

CERTIFIED MAIL

Oregon Department of Environmental Quality
Hazardous Waste Operations
811 Southwest 6th Avenue
Portland, OR 97204

U.S. EPA Region X
Waste Management Branch (HW-112)
1200 Sixth Avenue
Seattle, WA 98101

Dear Sirs and Mesdames:

The purpose of this letter is to inform you that, as of October 1, 1993, the operations and assets of Ashland Chemical, Inc. (formerly a wholly owned subsidiary of Ashland Oil, Inc.) were merged into its parent corporation, Ashland Oil, Inc. The company is now known as Ashland Chemical Company, Division of Ashland Oil, Inc. The following Ashland Chemical site with U.S. EPA ID Number is affected by this change:

U.S. EPA ID Number	Location Address
ORD 115 485 989	3322 NW 35th Avenue, Portland, OR 97210

This change in corporate status will have no effect of any kind on operations and management of this facility.

If there are any questions regarding this corporate restructuring and name change, please contact Judy Collin at (614) 889-4490.

Sincerely,

William C. Olasin

William C. Olasin
Compliance Manager

Headquarters
5200 Blazer Parkway
Dublin, Ohio 43017

Cable Address: Aroplaz OH
Telex: 245385
Answerback: ASHCHEM
Fax: (614) 793-6080

QUALITY

Ashland Chemical's
Commitment to
Quality and Productivity

Ashland Chemical

Environmental, Health & Safety
G. W. Hammer
Vice President
(614) 889-3052

Ashland Chemical Inc.
Subsidiary of
Ashland Oil, Inc.

Address Reply:
P.O. Box 2219
Columbus, Ohio 43216

RECEIVED
NOV 0 1 1993
WASTE MANAGEMENT BRANCH

October 27, 1993

CERTIFIED MAIL

Oregon Department of Environmental Quality
Hazardous Waste Operations
811 Southwest 6th Avenue
Portland, OR 97204

U.S. EPA Region X
Waste Management Branch (HW-112)
1200 Sixth Avenue
Seattle, WA 98101

Dear Sirs and Mesdames:

The purpose of this letter is to inform you that, as of October 1, 1993, the operations and assets of Ashland Chemical, Inc. (formerly a wholly owned subsidiary of Ashland Oil, Inc.) were merged into its parent corporation, Ashland Oil, Inc. The company is now known as Ashland Chemical Company, Division of Ashland Oil, Inc. The following Ashland Chemical site with U.S. EPA ID Number is affected by this change:

U.S. EPA ID Number	Location Address
ORD 115 485 989	3322 NW 35th Avenue, Portland, OR 97210

This change in corporate status will have no effect of any kind on operations and management of this facility.

If there are any questions regarding this corporate restructuring and name change, please contact Judy Collin at (614) 889-4490.

Sincerely,

William C. Olasin

William C. Olasin
Compliance Manager

Headquarters
5200 Blazer Parkway
Dublin, Ohio 43017

Cable Address: Aroplaz OH
Telex: 245385
Answerback: ASHCHEM
Fax: (614) 793-6080

QUALITY FIRST
Ashland Chemical's
Commitment to
Quality and Productivity

NABISCO FOODS
COMPANY

7 Campus Drive
P.O. Box 311
Parsippany, NJ 07054-0311
(201) 682-5000

March 4, 1991

RECEIVED
MAR 08 1991
Hazardous ... Division
Department of Environmental Quality

Ms. Susan Eidman
Hazardous and Solid Waste Division
Department of Environmental Quality
811 SW Sixth Avenue
Portland, Oregon 97204-1390

NABISCO FOODS COMPANY - PORTLAND, OR FACILITY
EPA ID# ORD115485989
REQUEST FOR CHANGE IN GENERATOR STATUS

Dear Ms. Eidman:

This letter is to request a change in generator status from small quantity generator to conditionally exempt generator for the above referenced facility. This is the Nabisco Foods Company Facility located at 3322 N.W. 35th Avenue, Portland, Oregon 97210-1634.

This facility made a one time shipment on March 14, 1990.

If you have any questions, please contact me at (201) 682-6386.

Sincerely,

GEN-3

NABISCO FOODS COMPANY
Environmental Engineering

Douglas C. Emmett

Douglas C. Emmett
Supervisor, Environmental Engineering

DCE\dce
gs-por

3/11/91
#3127
cc. EPA
NWR

NABISCO BRANDS INC

4-15-91 PH

SCHN00171618

OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY
811 SW SIXTH AVE. PORTLAND, OREGON 97204

NEIL GOLDSCHMIDT
GOVERNOR

NOTIFICATION OF HAZARDOUS WASTE ACTIVITY

PLEASE REFER TO THE INSTRUCTIONS AND GUIDANCE DOCUMENT, SEVEN STEPS FOR IDENTIFYING HAZARDOUS WASTES, BEFORE COMPLETING THIS FORM. THE INFORMATION REQUESTED HERE IS REQUIRED BY OREGON ADMINISTRATIVE RULE 340-102-012. THIS FORM IS USED IN LIEU OF EPA NOTIFICATION FORM 8700-12 IN THE STATE OF OREGON.

OFFICIAL USE ONLY
DEQ 102-012-89
DATE RECEIVED

1. NAME OF SITE

NAME: Nabisco Brands, Inc.

☐ **2. DO NOT GENERATE HAZARDOUS WASTE** DELETE NAME FROM LIST
(CHECK BOX IF APPLICABLE) COMPLETE SECTION 5

3. DEQ/EPA IDENTIFICATION NUMBER

IF BUSINESS INSTALLATION HAS DEQ/EPA ID NUMBER

ENTER HERE (12 digit number) ORD115485989

RECEIVED
JAN 04 1990
Hazardous & Solid Waste Division
Department of Environmental Quality

4. REASON FOR NOTIFICATION

(MARK ONE BOX ONLY)
REQUEST IS TO

- ☒ 1. OBTAIN DEQ/EPA ID NUMBER
- ☐ 2. WITHDRAW DEQ/EPA ID NUMBER
- ☐ 3. CANCEL DEQ/EPA ID NUMBER
- ☐ 4. REACTIVATE DEQ/EPA ID NUMBER
- ☐ 5. UPDATE NOTIFICATION INFORMATION

5. SITE INFORMATION

A. PHYSICAL LOCATION OF SITE

STREET ADDRESS: 3322 N.W. 35th Avenue

COUNTY: Multnomah

CITY, STATE, ZIP: Portland OR 97210-1634

B. MAILING ADDRESS OF SITE

STREET/P.O. BOX: 3322 N.W. 35th Avenue

CITY, STATE, ZIP: Portland, OR 97210-1634

C. LEGAL OWNER OF SITE

NAME: Nabisco Brands, Inc.

STREET: 100 DeForest Avenue

P.O. BOX:

CITY, STATE, ZIP: East Hanover, NJ 07936

D. CONTACT AT THE SITE

NAME: Tracy Black

TITLE: Warehouse Supervisor

TELEPHONE: 503 228 6216 (WITH AREA CODE)

RUSH
1-5-90

E. STANDARD INDUSTRIAL CODE (SIC)

(REFER TO ENCLOSED SIC LISTING)

PRIMARY: 2050

SECONDARY:

#2323
cc: EPA
NWR

F. SITE CLASSIFICATION

(SEE INSTRUCTIONS FOR EXPLANATION)

IDENTIFY ONE CATEGORY FOR EACH "TYPE"

(MARK ONE BOX ON EACH LINE.)

	PRIVATE	FEDERAL	STATE	COUNTY	DISTRICT	MUNICIPAL	INDIAN
OWNER TYPE	X						
OPERATOR TYPE	X						
PROPERTY TYPE	X						

site 10500 HA
mail 100965

SCHN00171619

6. TYPE OF HAZARDOUS WASTE ACTIVITY

(MARK ALL APPROPRIATE BOX(ES))

YES NO
☐ [X] A. HAZARDOUS WASTE TRANSPORTERS (FOR TRANSPORTERS ONLY)
1. TYPE OF TRANSPORTER (MARK APPROPRIATE BOX(ES))
☐ a. FOR OWN WASTE ONLY
☐ b. FOR COMMERCIAL PURPOSES
2. MODE OF TRANSPORTATION
☐ a. AIR ☐ b. RAIL ☐ c. HIGHWAY ☐ d. WATER ☐ e. OTHER

YES NO
[X] ☐ B. HAZARDOUS WASTE GENERATOR

YES NO
☐ [X] C. HAZARDOUS WASTE TREATMENT (NOTE: PERMIT MAY BE REQUIRED.)

YES NO
☐ [X] D. HAZARDOUS WASTE STORAGE (NOTE: PERMIT MAY BE REQUIRED.)

YES NO
☐ [X] E. HAZARDOUS WASTE DISPOSAL (NOTE: PERMIT MAY BE REQUIRED.)

YES NO
☐ [X] F. HAZARDOUS WASTE RECYCLER
☐ 1. On-site ☐ 2. Off-site

YES NO
☐ [X] G. MARKET OR BURN HAZARDOUS WASTE FUELS
(MARK APPROPRIATE BOXES)
☐ 1. GENERATOR MARKETING TO BURNER
☐ 2. OTHER MARKETER
☐ 3. BURNER (INDICATE TYPE OF COMBUSTION DEVICE)
TYPE OF COMBUSTION DEVICE
(MARK ALL APPROPRIATE BOXES TO INDICATE TYPE OF COMBUSTION DEVICE(S) IN WHICH HAZARDOUS WASTE FUEL IS BURNED)
☐ a. UTILITY BOILER
☐ b. INDUSTRIAL BOILER
☐ c. INDUSTRIAL FURNACE
☐ d. OTHER (PLEASE SPECIFY): _____

YES NO
☐ [X] H. USED OIL FUEL ACTIVITIES (MARK APPROPRIATE BOXES)
☐ 1. GENERATOR MARKETING TO BURNER
☐ 2. OTHER MARKETER OF OFF-SPECIFICATION USED OIL
☐ 3. SPECIFICATION USED OIL FUEL MARKETER WHO FIRST CLAIMS USED OIL MEETS SPECIFICATIONS
☐ 4. BURNER OF OFF-SPECIFICATION USED OIL
(INDICATE TYPE OF COMBUSTION DEVICE)
TYPE OF COMBUSTION DEVICE
(MARK ALL APPROPRIATE BOXES TO INDICATE TYPE OF COMBUSTION DEVICE(S) IN WHICH OFF-SPECIFICATIONS USED OIL IS BURNED)
☐ a. UTILITY BOILER
☐ b. INDUSTRIAL BOILER
☐ c. INDUSTRIAL FURNACE
☐ d. OTHER (PLEASE SPECIFY): _____

7. DESCRIPTION OF HAZARDOUS WASTE - WASTE CODE

See attached waste profile

A. LISTED HAZARDOUS WASTE (SEE 40 CFR 261.30-33) USE ADDITIONAL SHEETS IF NECESSARY

K	K	K	K	F	F	F	F
P	P	P	P	U	U	U	U

B. CHARACTERISTIC HAZARDOUS WASTE (SEE 40CFR 261.20-24)

☐ IGNITABLE (D001)
☐ CORROSIVE (D002)
☐ REACTIVE (D003)
☐ EPTOXIC (MARK SPECIFIC CONTAMINANTS BELOW:)

☐ D004	☐ D008	☐ D012	☐ D016
☐ D005	☐ D009	☐ D013	☐ D017
☐ D006	☐ D010	☐ D014	
☐ D007	☐ D011	☐ D015	

C. OTHER WASTES (STATE OR NON-REGULATED WASTES REQUIRING AN ID NUMBER - SEE INSTRUCTIONS)

☐ X001 ☐ X002 ☐ X☐☐☐ ☐ X☐☐☐ ☐ X☐☐☐ ☐ OTHER (PLEASE SPECIFY): _____
USE ADDITIONAL SHEETS IF NECESSARY

8. HAZARDOUS WASTE GENERATOR STATUS

(COMPLETE IF APPLICABLE)

(MARK ONE ONLY) DETERMINE MAXIMUM AMOUNT OF HAZARDOUS WASTE GENERATED IN ANY ONE CALENDAR MONTH

☐ FRG (Fully Regulated Generator)
- generate 2,200 or more pounds of hazardous waste
- generate 2,200 or more pounds of spill cleanup debris
- generate more than 2.2 pounds of acutely hazardous waste
- generate more than 220 pounds of spill cleanup debris containing an acutely hazardous waste
- accumulate, at any time, more than 2.2 pounds of acutely hazardous waste on-site

[X] SQG (Small Quantity Generator)
- generate more than 220 pounds and less than 2,200 pounds of hazardous waste
- generate more than 220 pounds and less than 2,200 pounds of spill cleanup debris containing hazardous waste
- accumulate, at any time, more than a total of 2,200 pounds of hazardous waste on-site

☐ CEG (Conditionally Exempt Generator)
- generate 220 pounds or less of hazardous waste
- generate 220 pounds or less of spill cleanup debris containing hazardous waste
- generate 2.2 pounds or less of acutely hazardous waste
- accumulate, at any time, up to 2,200 pounds of hazardous waste on-site

(NOTE: RESPONSE IS OPTIONAL FOR CONDITIONALLY EXEMPT GENERATORS)

9. CERTIFICATION

SIGNATURE Patrick J. Orlando

Patrick J. Orlando	Vice President	12/28/89
NAME (please print or type)	OFFICIAL TITLE	DATE SIGNED

I certify that the information provided herein and appended hereto is true and accurate to the best of my knowledge, information and belief. Title 18 U > S > C > 1001 makes it a criminal offense for any person knowingly and willingly to make to any Agency or Department of the United States any false or fraudulent statements as to any matter wit its jurisdiction.

SCHN00171620

6. TYPE OF HAZARDOUS WASTE ACTIVITY

(MARK ALL APPROPRIATE BOXES)

YES [ ] NO [X] A. HAZARDOUS WASTE TRANSPORTERS (FOR TRANSPORTERS ONLY)
1. TYPE OF TRANSPORTER (MARK APPROPRIATE BOXES)
a. FOR OWN WASTE ONLY
b. FOR COMMERCIAL PURPOSES
2. MODE OF TRANSPORTATION
a. AIR b. RAIL c. HIGHWAY d. WATER e. OTHER

YES [X] NO [ ] B. HAZARDOUS WASTE GENERATOR

YES [ ] NO [X] C. HAZARDOUS WASTE TREATMENT (NOTE: PERMIT MAY BE REQUIRED)

YES [ ] NO [X] D. HAZARDOUS WASTE STORAGE (NOTE: PERMIT MAY BE REQUIRED)

YES [ ] NO [X] E. HAZARDOUS WASTE DISPOSAL (NOTE: PERMIT MAY BE REQUIRED)

YES [ ] NO [X] F. HAZARDOUS WASTE RECYCLER
[ ] 1. On-site [ ] 2. Off-site

YES [ ] NO [X] G. MARKET OR BURN HAZARDOUS WASTE FUELS
(MARK APPROPRIATE BOXES)
[ ] 1. GENERATOR MARKETING TO BURNER
2. OTHER MARKETER
3. BURNER (INDICATE TYPE OF COMBUSTION DEVICE)
TYPE OF COMBUSTION DEVICE
(MARK ALL APPROPRIATE BOXES TO INDICATE TYPE OF COMBUSTION DEVICE(S) IN WHICH HAZARDOUS WASTE FUEL IS BURNED)
a. UTILITY BOILER
b. INDUSTRIAL BOILER
c. INDUSTRIAL FURNACE
d. OTHER (PLEASE SPECIFY)

YES [ ] NO [X] H. USED OIL FUEL ACTIVITIES (MARK APPROPRIATE BOXES)
1. GENERATOR MARKETING TO BURNER
2. OTHER MARKETER OF OFF-SPECIFICATION USED OIL
3. SPECIFICATION USED OIL FUEL MARKETER WHO FILE CLAIMS USED OIL MEETS SPECIFICATIONS
4. BURNER OF OFF-SPECIFICATION USED OIL
(INDICATE TYPE OF COMBUSTION DEVICE)
TYPE OF COMBUSTION DEVICE
(MARK ALL APPROPRIATE BOXES TO INDICATE TYPE OF COMBUSTION DEVICE(S) IN WHICH OFF-SPECIFICATION USED OIL IS BURNED)
[ ] a. UTILITY BOILER
[ ] b. INDUSTRIAL BOILER
[ ] c. INDUSTRIAL FURNACE
[ ] d. OTHER (PLEASE SPECIFY): _____

7. DESCRIPTION OF HAZARDOUS WASTE - WASTE CODE

See attached waste profile

A. LISTED HAZARDOUS WASTE (SEE 40 CFR 261.30-33) USE ADDITIONAL SHEETS IF NECESSARY

K	K	K	K	F	F	F	F
P	P	P	P	U	U	U	U

B. CHARACTERISTIC HAZARDOUS WASTE (SEE 40CFR 261.20-24)

[ ] IGNITABLE (D001)
[ ] CORROSIVE (D002)
[ ] REACTIVE (D003)
[ ] EPTOXIC (MARK SPECIFIC CONTAMINANTS BELOW:)

[ ] D004	[ ] D008	[ ] D012	[ ] D016
[ ] D005	[ ] D009	[ ] D013	[ ] D017
[ ] D006	[ ] D010	[ ] D014	
[ ] D007	[ ] D011	[ ] D015	

RECEIVED
JAN 08 1990
WASTE MANAGEMENT BRANCH

C. OTHER WASTES (STATE OR NON-REGULATED WASTES REQUIRING AN ID NUMBER - SEE INSTRUCTIONS)

[ ] X 001 [ ] X 002 [ ] X [ ] X [ ] X [ ] OTHER (PLEASE SPECIFY) USE ADDITIONAL SHEETS IF NECESSARY

8. HAZARDOUS WASTE GENERATOR STATUS

(COMPLETE IF APPLICABLE)

(MARK ONE ONLY) DETERMINE MAXIMUM AMOUNT OF HAZARDOUS WASTE GENERATED IN ANY ONE CALENDAR MONTH

[ ] FRG (Fully Regulated Generator)
- generate 2,200 or more pounds of hazardous waste
- generate 2,200 or more pounds of spill cleanup debris
- generate more than 2.2 pounds of acutely hazardous waste
- generate more than 220 pounds of spill cleanup debris containing an acutely hazardous waste
- accumulate, at any time, more than 2.2 pounds of acutely hazardous waste on-site

[X] SQG (Small Quantity Generator)
- generate more than 220 pounds and less than 2,200 pounds of hazardous waste
- generate more than 220 pounds and less than 2,200 pounds of spill cleanup debris containing hazardous waste
- accumulate, at any time, more than a total of 2,200 pounds of hazardous waste on-site

[ ] CEG (Conditionally Exempt Generator)
- generate 220 pounds or less of hazardous waste
- generate 220 pounds or less of spill cleanup debris containing hazardous waste
- generate 2.2 pounds or less of acutely hazardous waste
- accumulate, at any time, up to 2,200 pounds of hazardous waste on-site

(NOTE: RESPONSE IS OPTIONAL FOR CONDITIONALLY EXEMPT GENERATORS)

9. CERTIFICATION

SIGNATURE _____

Patrick J. Orlando	Vice President	12/28/89
NAME (please print or type)	OFFICIAL TITLE	DATE SIGNED

I certify that the information provided herein and appended hereto is true and accurate to the best of my knowledge, information and belief. Title 18 U > S > C > 1001 makes it a criminal offense for any person knowingly and willingly to make to any Agency or Department of the United States any false or fraudulent statements as to any matter within its jurisdiction.

SCHN00171621

811 SW SIXTH AVE. PORTLAND, OREGON 97204

NEIL GOLDSCHMIDT
GOVERNOR

NOTIFICATION OF HAZARDOUS WASTE ACTIVITY

PLEASE REFER TO THE INSTRUCTIONS AND GUIDANCE DOCUMENT, SEVEN STEPS FOR IDENTIFYING HAZARDOUS WASTES, BEFORE COMPLETING THIS FORM. THE INFORMATION REQUESTED HERE IS REQUIRED BY OREGON ADMINISTRATIVE RULE 340-102 THIS FORM IS USED IN LIEU OF EPA NOTIFICATION FORM 8700-12 IN THE STATE OF OREGON.

OFFICIAL USE O
DEQ 102-012-
DATE RECEIV

1. NAME OF SITE

NAME Add

Nabisco Brands, Inc.

☐ **2. DO NOT GENERATE HAZARDOUS WASTE** DELETE NAME FROM LIST
(CHECK BOX IF APPLICABLE) COMPLETE SECTION 5

3. DEQ/EPA IDENTIFICATION NUMBER

IF BUSINESS INSTALLATION HAS DEQ/EPA ID NUMBER

ENTER HERE (12 digit number) OAD113485988

RECEIVED
JAN 04 1990
Hazardous & Solid Waste Division
Department of Environmental Quality

4. REASON FOR NOTIFICATION

(MARK ONE BOX ONLY)
REQUEST IS TO

- ☒ 1. OBTAIN DEQ/EPA ID NUMBER
- ☐ 2. WITHDRAW DEQ/EPA ID NUMBER
- ☐ 3. CANCEL DEQ/EPA ID NUMBER
- ☐ 4. REACTIVATE DEQ/EPA ID NUMBER
- ☐ 5. UPDATE NOTIFICATION INFORMATION

RECEIVED
JAN 08 1990
WASTE MANAGEMENT BRANCH

5. SITE INFORMATION

A. PHYSICAL LOCATION OF SITE

STREET ADDRESS: 3322 N.W. 35th Avenue

COUNTY: Multnomah

CITY, STATE, ZIP: Portland OR 97210-1634

B. MAILING ADDRESS OF SITE

STREET/P.O. BOX: 3322 N.W. 35th Avenue

CITY, STATE, ZIP: Portland, OR 97210-1634

C. LEGAL OWNER OF SITE

NAME: Nabisco Brands, Inc.

STREET: 100 DeForest Avenue

P.O. BOX:

CITY, STATE, ZIP: East Hanover, NJ 07936

D. CONTACT AT THE SITE

NAME: Tracy Black

TITLE: Warehouse Supervisor

TELEPHONE: 5032286216 (WITH AREA CODE)

1/10/90 KWR
#2323
cc: EPA
NWR

E. STANDARD INDUSTRIAL CODE (SIC)

(REFER TO ENCLOSED SIC LISTING)

PRIMARY: 2050

SECONDARY:

F. SITE CLASSIFICATION

(SEE INSTRUCTIONS FOR EXPLANATION)

IDENTIFY ONE CATEGORY FOR EACH "TYPE"

(MARK ONE BOX ON EACH LINE)

	PRIVATE	FEDERAL	STATE	COUNTY	DISTRICT	MUNICIPAL	INDIAN
OWNER TYPE	X						
OPERATOR TYPE	X						
PROPERTY TYPE	X						

SCHN00171622

RECEIVED
JAN 04 1990
Hazardous & Solid Waste Division
Department of Environmental Quality

CHEMPRO
GENERATOR'S WASTE MATERIAL PROFILE SHEET

PLEASE PRINT IN INK OR TYPE

CP# 55142
WASTE PROFILE SHEET CODE

CHEMPRO Facility: WASHOUGAL (SHADED AREAS FOR CHEMPRO USE ONLY) CP Sales Rep. R. ORR

A. GENERATOR INFORMATION

1. Generator Name: NABISCO BRANDS 2. Generator. USEPA/ ID:
3. Facility Address: 3322 NW 35TH
City: PORTLAND State OR Zip Code 97210
4. Generator Contact GREG P. SARGIS 5. Title: SUPV. 6. Phone: (503) 228 - 6216

B. MAIL CHEMPRO INVOICES TO: 1. ☒ Generating Facility (A. above), or
2. Company Name: 3. Phone: ( ) -
4. Address:
City: State Zip Code
5. Atten:

C. 1. NAME OF WASTE WASTE CONCRET DEGREASER (OPENED DRUM BUT CONTAINS PRODUCT)
2. PROCESS GENERATING WASTE INDUSTRIAL CLEANOUT
#. Is this waste a Dioxin listed waste as defined in 40 CFR 261.31 (e.g., F020, F021, F022, F023, F026, F027, or F028)?
☐ Yes ☒ No If yes, contact your CHEMPRO sales representative for assistance before completing this form.

D. PHYSICAL CHARACTERISTICS OF WASTE

1. COLOR:	2. PHYSICAL STATE @ 70°F:	3. Layers:	4. Specific Gravity:	5. Free Liquids
WATER WHITE	☐ Solid ☐ Semi-Solid ☒ Liquid ☐ Power Other:	☐ Multilayered ☐ Bi-Layered ☒ Single Phased	Range: .8-1	☒ Yes ☐ No Volume: 100 %

6. pH: ☐ < 2 ☐ 2-4 ☐ 4-6 ☒ 6-8 ☐ 8-10 ☐ 10-12.5 ☐ > 12.5 ☐ Range ☐ NA

7. Liquid Flash Point: ☒ < 70°F ☐ 70-99°F ☐ 100-139°F ☐ 140-199°F ☐ > 200 F ☐ None ☒ Closed Cup ☐ Open Cup

E. CHEMICAL COMPOSITION

1.	RANGE MIN.	MAX.	
			%
MINERAL SPIRITS		89	%
ETHYLENE GLYCOL MONOBUTYL ETHER		10	%
N-NONYL ACETATE		1	%
			%
			%
			%
			%
			%
			%
			%
			%
			%

Please note: The chemical composition total in the maximum column must be greater than or equal to 100%. TOTAL %

2. Indicate if this waste contains any of the following:

	NONE	OR	LESS THAN	OR	ACTUAL	
PCB's	☒		☐ < 50 ppm			ppm
Cyanides	☒		☐ < 50 ppm			ppm
Phenolics	☒		☐ < 50 ppm			ppm
Sulfides	☒		☐ < 50 ppm			ppm

F. METALS Indicate if this waste contains any of the following:

METAL	1. ☐ EP TOX/TCLP LESS THAN	or	2. ☒ Total LESS THAN (Parts Per Million)	ACTUAL
Arsenic	☒ < 5		☐ < 500	
Barium	☒ < 100			
Cadmium	☒ < 1		☐ < 100	
Chromium	☒ < 5			
Lead	☒ < 5		☐ < 500	
Mercury	☒ < 0.2		☐ < 20	
Selenium	☒ < 1		☐ < 100	
Silver	☒ < 5			
Chromium-Hex	☒ < 5		☐ < 500	
Copper	☒ < 5			
Nickel	☒ < 5		☐ < 134	
Thallium	☒ < 5		☐ < 130	
Zinc				
	☒ <			
	<			
	<			

RECEIVED
JAN 08 1990
WASTE MANAGEMENT BRANCH
#2323

TURN PAGE AND COMPLETE OTHER SIDE

SCHN00171623

GENERATOR'S WASTE MATERIAL PROFILE SHEET (Continued)

CP# 55142
WASTE PROFILE SHEET CODE

G. OTHER HAZARDOUS CHARACTERISTICS

1. Is this waste a listed solvent waste as defined by 40 CFR 261.31 (F001, F002, F003, F004, or F005)? ☐ Yes ☒ No
2. Does this waste contain greater than 1000 ppm total halogenated organic compounds? ☐ Yes ☒ No
3. Indicate if this waste is any of the following:

☐ RCRA Reactive ☐ Shock Sensitive ☐ Ecological ☐ Other _____
☐ Water Reactive ☐ Pyrophoric ☐ Pesticide Manufacturing Waste
☐ Explosive ☐ Radioactive ☐ Flammable Solid ☒ None of the Above

H. USEPA/STATE INFORMATION

1. USEPA Hazardous Waste? ☒ Yes ☐ No 2. USEPA Hazardous Waste Number(s): D001
3. State Hazardous Waste? ☒ Yes ☐ No 4. State Hazardous Waste Number(s): _____

I. SHIPPING INFORMATION

1. Is this a DOT Hazardous Material? ☒ Yes ☐ No 2. CERCLA Reportable Quantity (RQ): 100 lb.
3. Method of Shipment: ☐ Bulk Liquid ☐ Bulk Solid ☒ Drum (Type/Size): 55 DM Other: _____
4. Amount to ship now / units 55 Gal 5. Anticipated Annual Volume/Units: 1 / YR

US DOT DESCRIPTION:

1 RQ WASTE FLAMMABLE LIQUID, NOS.
6. RQ 7. PROPER SHIPPING NAME

FLAMMABLE LIQUID UN 1993 (MINERAL SPIRITS)
8. HAZARD CLASS 9. DOT ID NUMBER 10. ADDITIONAL DESCRIPTION

J. SPECIAL HANDLING INFORMATION _____

☐ Additional Page(s) Attached

K. GENERATOR CERTIFICATION I hereby certify that all information submitted in this and all attached documents contains true and accurate descriptions of this waste material, and all relevant information regarding known or suspected hazards in the possession of the generator has been disclosed.

1. Laurie Roberts (for Greg Sargis) SIGNATURE
2. Supervisor TITLE
3. GREG P. SARGIS NAME (TYPE OR PRINT)
4. JAN 08 1999 DATE

RECEIVED
WASTE MANAGEMENT BRANCH

SHADED AREA FOR CHEMPRO USE ONLY:

SAFETY & HEALTH SCREEN

H HEALTH ☐
F FIRE ☐
R REACTIVITY ☐
PERSONAL PROTECTION ☐

Additional Analysis

Minimum TLV _____ STEL _____ Ceiling _____ by _____ Vapor Pressure _____
Vapor Density _____

Classification

Codes _____ Health _____ Fire _____ Reactivity _____ PPE _____ Target Organ

Primary Potential Toxic Effect _____

Signature: _____

#2323

SCHN00171624

Sales Laboratory Report

Lab Number : 22005 CP Number: 55142

Generator Name : NABISCO
Sample Type : DEGREASER
Date of Receipt : 06/20/89 Analyst: RR

Data:

Physical Appearance	CLEAR COLORLESS LIQUID
pH	N/A
Hexavalent Chromium	N/A
Flash Point	<70 F
Chlorinated Solvents	NEGATIVE
Combustibility	POSITIVE
Phenolics	
Cyanide	
Sulfide	
Other	Sp. Gr. = 0.96

Metals:(ppm)	Total
Chromium	
Copper	
Nickel	
Lead	
Cadmium	
Zinc	

Comments :

Recommendations : McCLARY

RECEIVED
JAN 08 1990
WASTE MANAGEMENT BRANCH

#2323

RECEIVED
JAN 04 1990
Hazardous & Solid Waste Division
Department of Environmental Quality

CHEMPRO
GENERATOR'S WASTE MATERIAL PROFILE SHEET

PLEASE PRINT IN INK OR TYPE

CP# 55143
WASTE PROFILE SHEET CODE

CHEMPRO Facility: WASHOUGAL (SHADED AREAS FOR CHEMPRO USE ONLY) CP Sales Rep. R. ORR

A. GENERATOR INFORMATION

1. Generator Name: NABISCO BRANDS INC 2. Generator, USEPA/ ID:
3. Facility Address: 3322 NW 35TH
City: PORTLAND State OR Zip Code 97210
4. Generator Contact GREG SARGIS 5. Title: SUPV 6. Phone: (503) 228 - 6216

B. MAIL CHEMPRO INVOICES TO: 1. ☒ Generating Facility (A. above), or
2. Company Name: 3. Phone: ( ) -
4. Address:
City: State Zip Code
5. Atten:

C. 1. NAME OF WASTE WASTE ICE MELT - DEICER (OPENED PRODUCT)
2. PROCESS GENERATING WASTE INVENTORY CLEAN OUT
#. Is this waste a Dioxin listed waste as defined in 40 CFR 261.31 (e.g., F020, F021, F022, F023, F026, F027, or F028)?
☐ Yes ☐ No If yes, contact your CHEMPRO sales representative for assistance before completing this form.

D. PHYSICAL CHARACTERISTICS OF WASTE

1. COLOR:	2. PHYSICAL STATE @ 70°F:	3. Layers:	4. Specific Gravity:	5. Free Liquids
GREEN	☐ Solid ☐ Semi-Solid ☒ Liquid ☐ Power Other:	☐ Multilayered ☐ Bi-Layered ☒ Single Phased	Range: 1.1	☒ Yes ☐ No Volume: 100 %

6. pH: ☐ < 2 ☐ 2-4 ☐ 4-6 ☒ 6-8 ☐ 8-10 ☐ 10-12.5 ☐ > 12.5 ☐ Range ☐ NA

7. Liquid Flash Point: ☐ < 70°F ☐ 70-99°F ☐ 100-139°F ☐ 140-199°F ☒ > 200°F ☐ None ☒ Closed Cup ☐ Open Cup

E. CHEMICAL COMPOSITION

1.	RANGE MIN. - MAX.
	%
WATER	98 %
METHANOL	1.5 %
SURFACTANT(S)	.5 %
	%
	%
	%
	%
	%
	%
	%
	%
TOTAL	%

Please note: The chemical composition total in the maximum column must be greater than or equal to 100%.

2. Indicate if this waste contains any of the following:

	NONE	OR LESS THAN	OR ACTUAL
PCB's	☒	☐ < 50 ppm	ppm
Cyanides	☒	☐ < 50 ppm	ppm
Phenolics	☒	☐ < 50 ppm	ppm
Sulfides	☒	☐ < 50 ppm	ppm

F. METALS Indicate if this waste contains any of the following:
1. ☐ EP TOX/TCLP or 2. ☐ Total

METAL	LESS THAN	or (Parts Per Million)	ACTUAL
Arsenic	☒ < 5	☐ < 500	
Barium	☒ < 100		
Cadmium	☒ < 1	☐ < 100	
Chromium	☒ < 5		
Lead	☒ < 5	☐ < 500	
Mercury	☒ < 0.2	☐ < 20	
Selenium	☒ < 1	☐ < 100	
Silver	☒ < 5		
Chromium-Hex	☒ < 5	☐ < 500	
Copper	☒ < 5		
Nickel	☒ < 5	☐ < 134	
Thallium	☒ < 5	☐ < 130	
Zinc	☒ < 5		
	☐ <		
	☐ <		
	☐ <		

RECEIVED
JAN 08 1990
WASTE MANAGEMENT BRANCH
#2323

TURN PAGE AND COMPLETE OTHER SIDE

SCHN00171626

GENERATOR'S WASTE MATERIAL PROFILE SHEET (Continued)

CP# 55143
WASTE PROFILE SHEET CODE

G. OTHER HAZARDOUS CHARACTERISTICS

1. Is this waste a listed solvent waste as defined by 40 CFR 261.31 (F001, F002, F003, F004, or F005)? ☐ Yes ☒ No
2. Does this waste contain greater than 1000 ppm total halogenated organic compounds? ☐ Yes ☒ No
3. Indicate if this waste is any of the following:

☐ RCRA Reactive ☐ Shock Sensitive ☐ Ecological ☐ Other _____
☐ Water Reactive ☐ Pyrophoric ☐ Pesticide Manufacturing Waste
☐ Explosive ☐ Radioactive ☐ Flammable Solid ☒ None of the Above

H. USEPA/STATE INFORMATION

1. USEPA Hazardous Waste? ☐ Yes ☒ No 2. USEPA Hazardous Waste Number(s): _____
3. State Hazardous Waste? ☐ Yes ☒ No 4. State Hazardous Waste Number(s): _____

I. SHIPPING INFORMATION

1. Is this a DOT Hazardous Material? ☐ Yes ☒ No 2. CERCLA Reportable Quantity (RQ): _____ (lb)
3. Method of Shipment: ☐ Bulk Liquid ☐ Bulk Solid ☒ Drum (Type/Size): 55 DM Other: _____
4. Amount to ship now / units 1 5. Anticipated Annual Volume Units: 1 / YR

US DOT DESCRIPTION:

6. RQ MATERIAL NOT REGULATED BY DOT 7. PROPER SHIPPING NAME

8. HAZARD CLASS 9. DOT ID NUMBER 10. ADDITIONAL DESCRIPTION

J. SPECIAL HANDLING INFORMATION _____

☐ Additional Page(s) Attached

K. GENERATOR CERTIFICATION I hereby certify that all information submitted in this and all attached documents contains true and accurate descriptions of this waste material, and all relevant information regarding known or suspected hazards in the possession of the generator has been disclosed.

1. Laurie Roberts (for Greg Sargis) SIGNATURE 2. Supervisor TITLE
3. GREG SARGIS NAME (TYPE OR PRINT) 4. 6/15/89 DATE

SHADED AREA FOR CHEMPRO USE ONLY:

SAFETY & HEALTH SCREEN

Additional Analysis

Minimum TLV _____ STEL _____ Ceiling _____ by _____ Vapor Pressure _____
Vapor Density _____

Classification

Codes _____ Health _____ Fire _____ Reactivity _____ PPE _____ Target Organ

Primary Potential Toxic Effect

Signature: _____

H HEALTH
F FIRE
R REACTIVITY
PERSONAL PROTECTION

RECEIVED
JAN 08 1990
WASTE MANAGEMENT BRANCH

SCHN00171627

Sales Laboratory Report

Lab Number : 22006 CP Number: 55143

Generator Name : NABISCO
Sample Type : DEICER
Date of Receipt : 06/20/89 Analyst: RR

Data:

Physical Appearance	LIGHT GREEN LIQUID
pH	7
Hexavalent Chromium	NEGATIVE
Flash Point	>200 F
Chlorinated Solvents	NEGATIVE
Combustibility	POSITIVE
Phenolics	NEGATIVE
Cyanide	NEGATIVE
Sulfide	
Other	Sp. Gr. = 1.01

Metals:(ppm)	Total
Chromium	
Copper	
Nickel	
Lead	
Cadmium	
Zinc	

Comments :

Recommendations : McCLARY

RECEIVED
JAN 03 1990
WASTE MANAGEMENT BRANCH

#2323

RECEIVED
JAN 04 1993
Hazardous & Solid Waste Division
Department of Environmental Quality

CHEMPRO
GENERATOR'S WASTE MATERIAL PROFILE SHEET

PLEASE PRINT IN INK OR TYPE

CP# 55144
WASTE PROFILE SHEET CODE

CHEMPRO Facility: WASHOUGAL (SHADED AREAS FOR CHEMPRO USE ONLY) **CP Sales Rep.** R. ORR

A. GENERATOR INFORMATION

1. Generator Name: NABISCO BRANDS 2. Generator, USEPA ID:
3. Facility Address: 3322 NW 35TH
City: PORTLAND State OR Zip Code 97210
4. Generator Contact GREG P SARGIS 5. Title: SUPV 6. Phone: (503) 228 - 6216

B. MAIL CHEMPRO INVOICES TO: 1. ☒ Generating Facility (A. above), or
2. Company Name: 3. Phone: ( ) -
4. Address:
City: State Zip Code
5. Atten:

C. 1. NAME OF WASTE WASTE INDUSTRIAL CLEANER (OPEN AND SOME USED)
2. PROCESS GENERATING WASTE INVENTORY CLEANOUT
#. Is this waste a Dioxin listed waste as defined in 40 CFR 261.31 (e.g., F020, F021, F022, F023, F026, F027, or F028)?
☐ Yes ☒ No If yes, contact your CHEMPRO sales representative for assistance before completing this form.

D. PHYSICAL CHARACTERISTICS OF WASTE

1. COLOR:	2. PHYSICAL STATE @ 70°F:	3. Layers:	4. Specific Gravity:	5. Free Liquids
WATER WHITE TO PINK	☐ Solid ☐ Semi-Solid ☒ Liquid ☐ Power Other:	☐ Multilayered ☐ Bi-Layered ☒ Single Phased	Range: 1.2-1.5	☒ Yes ☐ No Volume: 100 %

6. pH: ☐ < 2 ☐ 2-4 ☐ 4-6 ☐ 6-8 ☐ 8-10 ☐ 10-12.5 ☐ > 12.5 ☒ Range ☐ NA

7. Liquid Flash Point: ☐ < 70 F ☐ 70-99 F ☐ 100-139°F ☐ 140-199°F ☐ > 200°F ☒ None ☒ Closed Cup ☐ Open Cup

E. CHEMICAL COMPOSITION

1.	RANGE MIN.	MAX.	
			%
WATER	85	95	%
ETHYLENE GLYCOL MONOBUTYL ETHER	5	10	%
SURFACTANTS	1	5	%
POTASSIUM HYDROXIDE	.5	1	%
			%
			%
			%
			%
			%
			%
			%

Please note: The chemical composition total in the maximum column must be greater than or equal to 100%. TOTAL %

2. Indicate if this waste contains any of the following:

	NONE	OR	LESS THAN	OR	ACTUAL	
PCB's	☒		☐ < 50 ppm			ppm
Cyanides	☒		☐ < 50 ppm			ppm
Phenolics	☒		☐ < 50 ppm			ppm
Sulfides	☒		☐ < 50 ppm			ppm

F. METALS Indicate if this waste contains any of the following:
1. ☐ EP TOX/TCLP or 2. ☒ Total

METAL	LESS THAN	or	ACTUAL (Parts Per Million)
Arsenic	☒ < 5	☐ < 500	
Barium	☒ < 100		
Cadmium	☒ < 1	☐ < 100	
Chromium	☒ < 5		
Lead	☒ < 5	☐ < 500	
Mercury	☒ < 0.2	☐ < 20	
Selenium	☒ < 1	☐ < 100	
Silver	☒ < 5		
Chromium-Hex	☒ < 5	☐ < 500	
Copper	☒ < 5		
Nickel	☒ < 5	☐ < 134	
Thallium	☒ < 5	☐ < 130	
Zinc	☒		
	☐		
	☐		
	☐		

RECEIVED
JAN 06 1993
WASTE MANAGEMENT BRANCH

TURN PAGE AND COMPLETE OTHER SIDE

#2323

SCHN00171629

GENERATOR'S WASTE MATERIAL PROFILE SHEET (Continued)

CP# 55144
WASTE PROFILE SHEET CODE

G. OTHER HAZARDOUS CHARACTERISTICS

1. Is this waste a listed solvent waste as defined by 40 CFR 261.31 (F001, F002, F003, F004, or F005)? ☐ Yes ☒ No
2. Does this waste contain greater than 1000 ppm total halogenated organic compounds? ☐ Yes ☒ No
3. Indicate if this waste is any of the following:

☐ RCRA Reactive ☐ Shock Sensitive ☐ Ecological ☐ Other _____
☐ Water Reactive ☐ Pyrophoric ☐ Pesticide Manufacturing Waste _____
☐ Explosive ☐ Radioactive ☐ Flammable Solid ☒ None of the Above

H. USEPA/STATE INFORMATION

1. USEPA Hazardous Waste? ☒ Yes ☐ No 2. USEPA Hazardous Waste Number(s): D002
3. State Hazardous Waste? ☒ Yes ☐ No 4. State Hazardous Waste Number(s): H40

I. SHIPPING INFORMATION

1. Is this a DOT Hazardous Material? ☒ Yes ☐ No 2. CERCLA Reportable Quantity (RQ): 100 (lb)
3. Method of Shipment: ☐ Bulk Liquid ☐ Bulk Solid ☒ Drum (Type Size): 30 & 20 DM Other: _____
4. Amount to ship now / units 2 5. Anticipated Annual Volume/Units: 1 DM / YR

US DOT DESCRIPTION:

(RQ) WASTE ALKALINE LIQUID, NOS.
6. RQ 7. PROPER SHIPPING NAME

CORROSIVE MATERIAL NA1719 (POTASSIUM HYDROXIDE)
8. HAZARD CLASS 9. DOT NUMBER 10. ADDITIONAL DESCRIPTION

J. SPECIAL HANDLING INFORMATION _____

☐ Additional Page(s) Attached

K. GENERATOR CERTIFICATION I hereby certify that all information submitted in this and all attached documents contains true and accurate descriptions of this waste material, and all relevant information regarding known or suspected hazards in the possession of the generator has been disclosed.

1. Lannie Roberts (for Greg Sargis) 2. Supervisor
SIGNATURE TITLE

3. GREG P SARGIS 4. 6/15/89
NAME (TYPE OR PRINT) DATE

SHADED AREA FOR CHEMPRO USE ONLY:

SAFETY & HEALTH SCREEN

Additional Analysis

Minimum TLV _____ STEL _____ Ceiling _____ by _____ Vapor Pressure _____

Vapor Density _____

Classification

Codes _____ Health _____ Fire _____ Reactivity _____ PPE _____ Target Organ

Primary Potential Toxic Effect _____

Signature: _____

H HEALTH ☐
F FLAMMABLE ☐
R REACTIVITY ☐
PERSONAL PROTECTION ☐

RECEIVED
JAN 08 1990
WASTE MANAGEMENT BRANCH

SCHN00171630

Sales Laboratory Report

Lab Number : 22007 CP Number: 55144

Generator Name : NABISCO
Sample Type : WASTE CLEANER
Date of Receipt : 06/20/89 Analyst: RR

Data:

Physical Appearance	PINK LIQUID
pH	14
Hexavalent Chromium	NEGATIVE
Flash Point	NONE
Chlorinated Solvents	NEGATIVE
Combustibility	NEGATIVE
Phenolics	NEGATIVE
Cyanide	NEGATIVE
Sulfide	
Other	Sp. Gr. = 1.04

Metals: (ppm)	Total
Chromium	
Copper	
Nickel	
Lead	
Cadmium	
Zinc	

Comments :

Recommendations : McCLARY

RECEIVED
JAN 08 1990
WASTE MANAGEMENT BRANCH
#2323

RECEIVED
JAN 04 1990
Hazardous & Solid Waste Division
Department of Environmental Quality

CHEMPRO
GENERATOR'S WASTE MATERIAL PROFILE SHEET

PLEASE PRINT IN INK OR TYPE

CP# 55145
WASTE PROFILE SHEET CODE

CHEMPRO Facility: WASHOUGAL (SHADED AREAS FOR CHEMPRO USE ONLY) CP Sales Rep. R. ORR

A. GENERATOR INFORMATION

1. Generator Name: NABISCO BRANDS INC 2. Generator, USEPA/ ID:
3. Facility Address: 3322 NW 35TH
City: PORTLAND State OR Zip Code 97210
4. Generator Contact GREG SARGIS 5. Title: SUPV 6. Phone: (503) 228 - 6216

B. MAIL CHEMPRO INVOICES TO: 1. ☒ Generating Facility (A. above), or
2. Company Name: 3. Phone: ( ) -
4. Address:
City: State Zip Code
5. Atten:

C. 1. NAME OF WASTE WASTE DUST CONTROL AGENT (OPENED BUT UNUSED)
2. PROCESS GENERATING WASTE INVENTORY CLEAN-OUT
#. Is this waste a Dioxin listed waste as defined in 40 CFR 261.31 (e.g., F020, F021, F022, F023, F026, F027, or F028)?
☐ Yes ☐ No If yes, contact your CHEMPRO sales representative for assistance before completing this form.

D. PHYSICAL CHARACTERISTICS OF WASTE

1. COLOR:	2. PHYSICAL STATE @ 70°F:	3. Layers:	4. Specific Gravity:	5. Free Liquids
WATER WHITE	☐ Solid ☐ Semi-Solid ☒ Liquid ☐ Power Other:	☐ Multilayered ☐ Bi-Layered ☒ Single Phased	Range: 1.02	☒ Yes ☐ No Volume: 100 %

6. pH: ☐ < 2 ☐ 2-4 ☐ 4-6 ☐ 6-8 ☐ 8-10 ☒ 10-12.5 ☐ > 12.5 ☐ Range 9.5-10 ☐ NA

7. Liquid Flash Point: ☐ < 70°F ☐ 70-99°F ☐ 100-139°F ☐ 140-199°F ☒ > 200°F ☐ None ☒ Closed Cup ☐ Open Cup

E. CHEMICAL COMPOSITION

1.	RANGE MIN. - MAX.
WATER	96 %
POLY ACRYLATE (ANIONIC CHARGE)	1.5 %
SODIUM TRIPOLY PHOSPHATE	1 %
SODA ASH	1 %
SURFACTANT	.5 %
	%
	%
	%
	%
	%
	%
	%

Please note: The chemical composition total in the maximum column must be greater than or equal to 100%. TOTAL %

2. Indicate if this waste contains any of the following:

	NONE	OR	LESS THAN	OR	ACTUAL
PCB's	☒		☐ < 50 ppm		ppm
Cyanides	☒		☐ < 50 ppm		ppm
Phenolics	☒		☐ < 50 ppm		ppm
Sulfides	☒		☐ < 50 ppm		ppm

F. METALS Indicate if this waste contains any of the following:
1. ☐ EP TOX/TCLP or 2. ☒ Total

METAL	LESS THAN	or	ACTUAL
	(Parts Per Million)		
Arsenic	☒ < 5	☐ < 500	
Barium	☒ < 100		
Cadmium	☒ < 1	☐ < 100	
Chromium	☒ < 5		
Lead	☒ < 5	☐ < 500	
Mercury	☒ < 0.2	☐ < 20	
Selenium	☒ < 1	☐ < 100	
Silver	☒ < 5		
Chromium-Hex	☒ < 5	☐ < 500	
Copper	☒ < 5		
Nickel	☒ < 5	☐ < 134	
Thallium	☒ < 5	☐ < 130	
Zinc	☒ < 6		
	☐ <		
	☐ <		
	☐ <		

RECEIVED
JAN 03 1990
WASTE MANAGEMENT BRANCH

TURN PAGE AND COMPLETE OTHER SIDE

#2323

SCHN00171632

GENERATOR'S WASTE MATERIAL PROFILE SHEET (Continued)

CP# 55145
WASTE PROFILE SHEET CODE

G. OTHER HAZARDOUS CHARACTERISTICS

1. Is this waste a listed solvent waste as defined by 40 CFR 261.31 (F001, F002, F003, F004, or F005)? ☐ Yes ☒ No
2. Does this waste contain greater than 1000 ppm total halogenated organic compounds? ☐ Yes ☒ No
3. Indicate if this waste is any of the following:

☐ RCRA Reactive ☐ Shock Sensitive ☐ Ecological ☐ Other _____
☐ Water Reactive ☐ Pyrophoric ☐ Pesticide Manufacturing Waste
☐ Explosive ☐ Radioactive ☐ Flammable Solid ☒ None of the Above

H. USEPA/STATE INFORMATION

1. USEPA Hazardous Waste? ☐ Yes ☒ No 2. USEPA Hazardous Waste Number(s): _____
3. State Hazardous Waste? ☐ Yes ☒ No 4. State Hazardous Waste Number(s): _____

I. SHIPPING INFORMATION

1. Is this a DOT Hazardous Material? ☐ Yes ☒ No 2. CERCLA Reportable Quantity (RQ): ____ (lb)
3. Method of Shipment: ☐ Bulk Liquid ☐ Bulk Solid ☒ Drum (Type/Size): SS DM Other: _____
4. Amount to ship now / units 2 5. Anticipated Annual Volume/Units: 1 / YR

US DOT DESCRIPTION:

( ) MATERIAL NOT REGULATED BY DOT
6. RQ 7. PROPER SHIPPING NAME

8. HAZARD CLASS 9. DOT ID NUMBER 10. ADDITIONAL DESCRIPTION

J. SPECIAL HANDLING INFORMATION _____

☐ Additional Page(s) Attached

K. GENERATOR CERTIFICATION I hereby certify that all information submitted in this and all attached documents contains true and accurate descriptions of this waste material, and all relevant information regarding known or suspected hazards in the possession of the generator has been disclosed.

1. SIGNATURE 2. TITLE Supervisor
3. NAME (TYPE OR PRINT) GREG STARGIS 4. DATE 6/15/89

SHADED AREA FOR CHEMPRO USE ONLY:

SAFETY & HEALTH SCREEN

Additional Analysis

Minimum TLV _____ STEL _____ Ceiling _____ by _____ Vapor Pressure _____
Vapor Density _____

Classification

Codes _____ Health _____ Fire _____ Reactivity _____ PPE _____ Target Organ _____

Primary Potential Toxic Effect _____

Signature: _____

H HEALTH ☐
F FLAMMABILITY ☐
R REACTIVITY ☐
PERSONAL PROTECTION ☐

RECEIVED
JAN 03 1990
#2323
WASTE MANAGEMENT BRANCH

SCHN00171633

Sales Laboratory Report

Lab Number : 22008 CP Number: 55145

Generator Name : NABISCO
Sample Type : DUST CONTROL AGENT
Date of Receipt : 06/20/89 Analyst: RR

Data:

Physical Appearance	CLEAR COLORLESS LIQUID
pH	11
Hexavalent Chromium	NEGATIVE
Flash Point	NONE
Chlorinated Solvents	NEGATIVE
Combustibility	NEGATIVE
Phenolics	NEGATIVE
Cyanide	NEGATIVE
Sulfide	
Other	Sp. Gr. = 1.10

Metals:(ppm)	Total
Chromium	
Copper	
Nickel	
Lead	
Cadmium	
Zinc	

Comments :

Recommendations : McCLARY

RECEIVED
JAN 08 1990
WASTE MANAGEMENT BRANCH
#2323

RECEIVED
JAN 04 1990
Hazardous & Solid Waste Division
Department of Environmental Quality

CHEMPRO
GENERATOR'S WASTE MATERIAL PROFILE SHEET

PLEASE PRINT IN INK OR TYPE

CP# 55146
WASTE PROFILE SHEET CODE

CHEMPRO Facility: WASHOUGAL (SHADED AREAS FOR CHEMPRO USE ONLY) CP Sales Rep. R. ORR

A. GENERATOR INFORMATION

1. Generator Name: Nabisco Brands 2. Generator, USEPA/ ID:
3. Facility Address: 3322 NW 35th
City: Portland State Ore Zip Code 97210
4. Generator Contact Greg Sargis 5. Title: Supervisor 6. Phone: (503) 223 - 6216

B. MAIL CHEMPRO INVOICES TO: 1. ☒ Generating Facility (A. above), or
2. Company Name: Same As Above 3. Phone: ( ) ___ - ___
4. Address:
City: State Zip Code
5. Atten:

C. 1. NAME OF WASTE WASTE DUST MOP & CLOTH TREATMENT
2. PROCESS GENERATING WASTE INVENTORY CLEANOUT
#. Is this waste a Dioxin listed waste as defined in 40 CFR 261.31 (e.g., F020, F021, F022, F023, F026, F027, or F028)?
☐ Yes ☒ No If yes, contact your CHEMPRO sales representative for assistance before completing this form.

D. PHYSICAL CHARACTERISTICS OF WASTE

1. COLOR:	2. PHYSICAL STATE @ 70°F:	3. Layers:	4. Specific Gravity:	5. Free Liquids
GREEN	☐ Solid ☐ Semi-Solid ☒ Liquid ☐ Power Other:	☐ Multilayered ☐ Bi-Layered ☒ Single Phased	Range: 0.8	☒ Yes ☐ No Volume: 100 %

6. pH: ☐ < 2 ☐ 2-4 ☐ 4-6 ☒ 6-8 ☐ 8-10 ☐ 10-12.5 ☐ > 12.5 ☐ Range ☐ NA

7. Liquid Flash Point: ☐ < 70°F ☐ 70-99°F ☒ 100-139°F ☐ 140-199°F ☐ > 200°F ☐ None 110°F ☒ Closed Cup ☐ Open Cup

E. CHEMICAL COMPOSITION

1.	RANGE MIN. - MAX.
	- %
PETROLEUM NAPTHA	- 95 %
MINERAL OIL	- 5 %
N-NONYL ACETATE (SCENT)	- T %
	- %
	- %
	- %
	- %
	- %
	- %
	- %
	- %

Please note: The chemical composition total in the maximum column must be greater than or equal to 100%. TOTAL ___ %

2. Indicate if this waste contains any of the following:

	NONE	OR	LESS THAN	OR	ACTUAL	
PCB's	☒		☐ < 50 ppm			ppm
Cyanides	☒		☐ < 50 ppm			ppm
Phenolics	☒		☐ < 50 ppm			ppm
Sulfides	☒		☐ < 50 ppm			ppm

F. METALS Indicate if this waste contains any of the following:
1. ☐ EP TOX/TCLP or 2. ☒ Total

METAL	LESS THAN	or	ACTUAL
	(Parts Per Million)		
Arsenic	☒ < 5	☐ < 500	
Barium	☒ < 100		
Cadmium	☒ < 1	☐ < 100	
Chromium	☒ < 5		
Lead	☒ < 5	☐ < 500	
Mercury	☒ < 0.2	☐ < 20	
Selenium	☒ < 1	☐ < 100	
Silver	☒ < 5		
Chromium-Hex	☒ < 5	☐ < 500	
Copper	☒ < 5		
Nickel	☒ < 5	☐ < 134	
Thallium	☒ < 5	☐ < 130	
Zinc	☒ < 5		
	☐ <		
	☐ <		
	☐ <		

RECEIVED
JAN 08 1990
WASTE MANAGEMENT BRANCH
#2323

TURN PAGE AND COMPLETE OTHER SIDE

SCHN00171635

GENERATOR'S WASTE MATERIAL PROFILE SHEET (Continued)

CP# 55146
WASTE PROFILE SHEET CODE

G. OTHER HAZARDOUS CHARACTERISTICS

1. Is this waste a listed solvent waste as defined by 40 CFR 261.31 (F001, F002, F003, F004, or F005)? ☐ Yes ☒ No
2. Does this waste contain greater than 1000 ppm total halogenated organic compounds? ☐ Yes ☒ No
3. Indicate if this waste is any of the following:

☐ RCRA Reactive ☐ Shock Sensitive ☐ Ecological ☐ Other _____
☐ Water Reactive ☐ Pyrophoric ☐ Pesticide Manufacturing Waste
☐ Explosive ☐ Radioactive ☐ Flammable Solid ☒ None of the Above

H. USEPA/STATE INFORMATION

1. USEPA Hazardous Waste? ☒ Yes ☐ No 2. USEPA Hazardous Waste Numbers: D001
3. State Hazardous Waste? ☒ Yes ☐ No 4. State Hazardous Waste Numbers: DW

I. SHIPPING INFORMATION

1. Is this a DOT Hazardous Material? ☒ Yes ☐ No 2. CERCLA Reportable Quantity (RQ): 100 (lb)
3. Method of Shipment: ☐ Bulk Liquid ☐ Bulk Solid ☒ Drum (Type/Size): 55 DM Other: _____
4. Amount to ship now, units 6 5. Anticipated Annual Volume/Units: 1 / yr.

US DOT DESCRIPTION:
(RQ) WASTE PETROLEUM NAPHTA
6. RQ 7. PROPER SHIPPING NAME
COMBUSTIBLE LIQUID UN1255
8. HAZARD CLASS 9. DOT ID NUMBER 10. ADDITIONAL DESCRIPTION

J. SPECIAL HANDLING INFORMATION _____

☐ Additional Page(s) Attached

K. GENERATOR CERTIFICATION I hereby certify that all information submitted in this and all attached documents contains true and accurate descriptions of this waste material, and all relevant information regarding known or suspected hazards in the possession of the generator has been disclosed.

1. SIGNATURE 2. TITLE Supervisor
3. NAME (TYPE OR PRINT) GREG SARGIS 4. DATE 6/15/89

SHADED AREA FOR CHEMPRO USE ONLY:

SAFETY & HEALTH SCREEN

Additional Analysis

Minimum TLV _____ STEL _____ Ceiling _____ by _____ Vapor Pressure _____
Vapor Density _____

H HEALTH
F FLAMMABILITY
R REACTIVITY
PERSONAL PROTECTION

Classification

Codes _____ Health _____ Fire _____ Reactivity _____ PPE _____ Target Organ

Primary Potential Toxic Effect _____

Signature: _____

RECEIVED
JAN 08 1990
WASTE MANAGEMENT BRANCH 3

SCHN00171636

Sales Laboratory Report

Lab Number : 22009 CP Number: 55146

Generator Name : NABISCO
Sample Type : DUST MOP & CLOTH TREATMENT
Date of Receipt : 06/20/89 Analyst: RR

Data:

Physical Appearance	GREEN LIQUID
pH	7
Hexavalent Chromium	NEGATIVE
Flash Point	100-139 F
Chlorinated Solvents	NEGATIVE
Combustibility	POSITIVE
Phenolics	NEGATIVE
Cyanide	NEGATIVE
Sulfide	
Other	Sp. Gr. = 0.82

Metals:(ppm)	Total
Chromium	
Copper	
Nickel	
Lead	
Cadmium	
Zinc	

Comments :

Recommendations : McCLARY

RECEIVED
JAN 08 1993
WASTE MANAGEMENT BRANCH

#2323

TABLE OF CONTENTS

NABISCO WAREHOUSE SITE

SOIL AND GROUND WATER SAMPLING AND ASBESTOS SURVEY

NOTE → ROUND 1

Prepared for:

Ashland Chemical, Inc.
5200 Blazer Parkway
Dublin, Ohio 43017

Prepared by:

Riedel Environmental Services, Inc.
Foot of North Portsmouth Avenue
P.O. Box 03096
Portland, Oregon 97203-0096
(503)286-4656

October 11, 1990

Nabisco.JR

SCHN00171638

SECTION 1 INTRODUCTION

On August 30, 31, and September 6, 1990 Riedel Environmental Services, Inc. (RES) conducted a limited soil and ground water investigation at the Nabisco warehouse property in Portland Oregon. This was in an effort to delineate the extent of soil and ground water contamination associated with the earlier removal of four underground storage tanks (USTs) located on the property. In addition, an asbestos survey of the warehouse and office buildings was conducted to determine if asbestos containing materials (ACM) were present. The scope of work was later increased to include sampling for solvents.

1.1 Location and Regional Hydrogeology

The site is located at 3322 N.W. 35th in Portland, Oregon approximately one-half mile south of the Willamette River, Section 54, Township 1N, Range 1E (see Figure 1).

This region was originally a low lying area adjacent to the Willamette River, until it was filled with dredged river sands in the early 1900's. Since the mid 1900's, the area surrounding the site has been used for industrial purposes and remains so today.

Depth to ground water in the silty dredge sands is generally less than 20 feet and tends to flow from the northwest to the southeast.

1.2 Review of Oregon Department of Environmental Quality (DEQ) Files

Prior to performing field activities, RES reviewed records at the Oregon Department of Environmental (DEQ) Regional Office in Portland, Oregon. In addition to the Nabisco property, information was available on the Owens/Corning Fiberglass property located approximately 100 yards northwest of the Nabisco site. Copies of excerpts from these two files are included in Appendix A. In addition, RES spoke with the case officer for the Terminal Transfer site located along the eastern boundary of the Nabisco property. The following is a brief summary of our findings:

- Nabisco Site: UST site with diesel contamination

  DEQ has requested confirmation sampling to document the cleanup effort associated with the tank removal.

SCHN00171639

- Owens/Corning: Trumbull Asphalt Fume Line, free-phase hydrocarbons currently present on the water table, possibility of more than one contaminant plume.

  DEQ has requested further delineation of the contaminant plume(s), as well as notification of off-site property owners.

- Terminal Transfer: UST site with free-phase hydrocarbons present on the water table, no indication of off-site migration at this time.

  Remediation is underway, however, DEQ has requested further delineation of the contaminant plume.

1.3 Previous Underground Storage Tank Activities

According to correspondence contained in the DEQ files, four USTs were removed from the Nabisco property by the Tom New Construction Company during November, 1989. The four tanks - one 500-gallon, one 5,000-gallon, one 10,000-gallon and one 15,000-gallon - were located in three separate areas.

Analytical results for Total Petroleum Hydrocarbons (TPH), EPA Method 418.1, indicated low levels of contamination under the 500-gallon and 10,000-gallon tanks (306 parts per million (ppm) and 4.5 ppm, respectively). Much higher levels of 29,500 and 2,860 ppm were found beneath both the 5,000-gallon and 15,000-gallon tanks. Both of these tanks were located south of the truck scale and were excavated from a single pit (see Figure 2).

Approximately 1,000 cubic yards of what was characterized as diesel contaminated soil was excavated from this pit and disposed at the Hillsboro Landfill. No records of samples taken from the pit after the removal of this soil or Quality Assurance/Quality Control (QA/QC) documentation from earlier sampling were found.

SCHN00171640

SECTION 2 FIELD ACTIVITIES

The drilling was conducted on August 30 and 31, 1990. A truck-mounted MR 24 Prospector, hollow-stem auger drilling rig was used for the work. Soil samples were collected for logging and analytical purposes utilizing a split-spoon sampler, with brass liners, driven by a 140 pound hammer using standard techniques. The borings were logged by a RES Geologist according to the Unified Soils Classification System. Copies of the logs are includes in Appendix B.

Decontamination procedures were followed during the drilling and sampling program to assure no significant cross-contamination between the borings. The augers, drill bit, and split-spoon sampler were steam cleaned prior to each boring.

After sampling, those borings not completed as monitoring wells were abandoned utilizing a bentonite grout. Abandoned borings were capped with cold patch asphalt.

2.1 Location of Soil Borings and Monitoring Wells

The boring locations are shown in Figure 2. Monitoring wells were constructed in Borings B-1 and B-2. The locations were based on historical on-site activities as well as the assumed ground water gradient.

Borings B-3, B-4, B-5, B-6 and B-7 were located along the side walls of the original tank excavation in order to identify if any residual contamination existed from the USTs excavated immediately south of the weigh scale. Based on the analytical results of samples collected by Tom New Construction Company, no sampling associated with the 500-gallon or 10,000-gallon tank excavations was conducted. Boring B-5 was drilled approximately three feet east of boring B-4 after hydrocarbon odor was detected in the cuttings from boring B-4, but not in the samples taken at five-foot intervals. This allowed for sampling the most likely zone of contamination to characterize the western wall of the original tank excavation.

Boring B-1, which was completed as monitoring well MW-1, was located in the assumed down-gradient direction from the tank excavation. This assumption was based on the water table contour map generated from the Trumbull Asphalt site (see Appendix A). Boring B-2 was completed as MW-2 located in the assumed upgradient direction from the tank excavation. In addition to serving as a control point for the excavation, MW-2 was located along the northern property boundary in an effort to document ground water quality entering the site.

SCHN00171641

SECTION 3 SAMPLE RESULTS

3.1 Results of UST Sampling

SOIL

Diesel was detected in samples from borings B-3, B-5 and B-6. Borings B-3 and B-6 contained relatively low levels of 180 ppm and 10 ppm, respectively. Sample B-5 taken from 7-8.5 feet, however, contained 19,400 ppm, which greatly exceeds the DEQ's Matrix Clean-up Guidelines of up to 1,000 ppm, depending on the Matrix Score of the site (see page 57 - Appendix D).

GROUND WATER

No petroleum hydrocarbons were detected in the ground water analyzed from MW-1 or MW-2. Ground water elevations measured in the two wells indicated that MW-1 was generally downgradient from MW-2, however, determination of the exact flow direction would require more data points.

3.2 Results of Solvent Analysis

GROUND WATER

The results of the ground water sampling summarized in Table 1 are expressed in micro grams per liter (ug/l). The certificates of analyses for the samples are included in Appendix B.

TABLE 1

Analysis	MW-1	MW-2	Detection Limit	Standard Drinking Water Limit
Cis 1,2-Dichloroethene	N/D	1,340	0.5	NE
Tetrachloroethene	N/D	35,500	0.5	NE
Trichloroethene	N/D	5,040	0.5	5.0

N/D - Below Detection Limits
NE - No Standard Set

SOIL

Analytical results from the soil sample collected from 15-16.5 feet in Boring B-2 indicate the presence of low levels of the same three solvents detected in the ground water results presented in Table 1.

SCHN00171642

SECTION 4 DISCUSSION OF RESULTS

4.1 UST Site

The UST excavation still contains diesel contaminated soils above current Oregon DEQ cleanup guidelines as established in OAR 340-122-205 to 340-122-260 included in Appendix D.

Depending on the target cleanup level established for this site, allowable Total Petroleum Hydrocarbon (TPH) levels remaining in the soil could be as high as 1,000 ppm. The TPH levels of 19,400 ppm detected in boring B-5 certainly exceeds this level. Although contamination was present in boring B-3 and B-6, levels detected are within allowable limits.

While the extent of the contamination detected in boring B-5 is not known at this time, some assumptions can be made. Due to diesel's low density compared to that of water, free product which leaked from the tank would float atop the ground water. As a result, the depth of contaminated soil should not exceed the seasonal low ground water table elevation. Although this elevation is not known, the soil sample collected from 15 to 16.5 feet in boring B-3 did not contain detectable quantities of TPH even though 180 ppm was present from 10 to 11.5 feet.

The lack of contamination in soil from borings B-1 and B-7 as well ground water in MW-1 would tend to indicate that contamination does not extend to the east or southeast.

East is toward Terminal Transition JDN

If there is any significant quantities of contaminated soil remaining from the UST site, they would most likely be located under the weight scale and garage building. Records from the initial tank excavation indicate that removal of contaminated soil under the weight scale was halted due to concerns for undermining the structure.

4.2 Solvents

Both trichloroethene and tetrachloroethene are commonly used degreasers. They are frequently introduced to the ground water via leaking waste oil tanks utilized in garages and metal shops. Cis 1,2-dichlorothene is formed as a breakdown product from the reductive dehalogenation of trichloroethene and tetrachlorothene and is typically found in increasing proportions downgradient from a source.

The high level of solvents detected in MW-1 may have migrated onto the Nabisco site from the property immediately to the north. In addition to this being the assumed upgradient direction, at least one old vent pipe indicative of an UST was noted as well a small stockpile of 55-gallon drums.

SCHN00171643

SECTION 5 RECOMMENDATIONS

The properties adjacent to the Nabisco Warehouse have been industrial sites for many years. As the cursory review conducted during this study pointed out, at least two properties within close proximity of the Nabisco site have documented ground water contamination. It is very likely that the site immediately north of the property is the source of the solvents.

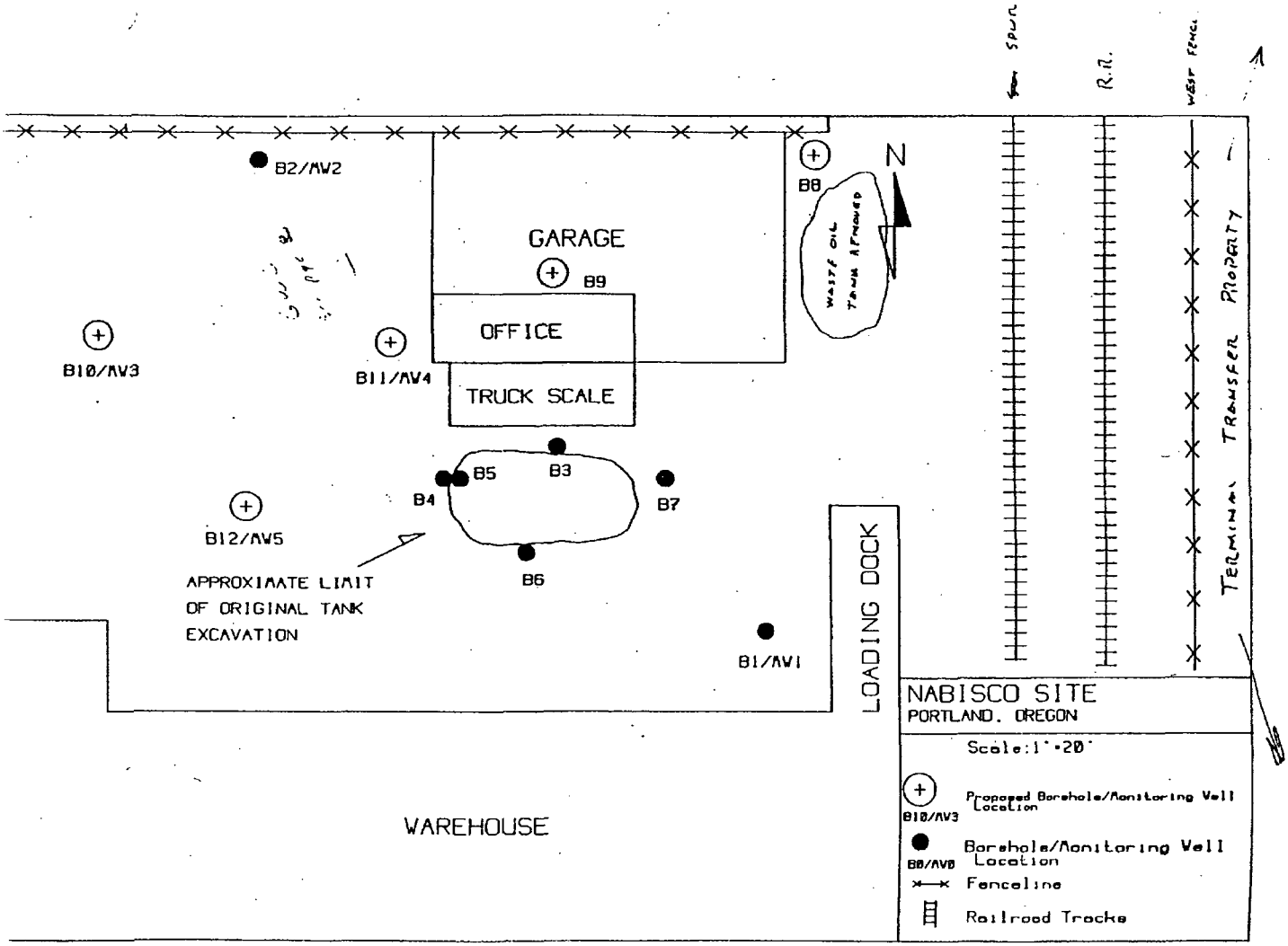
Ground water elevations taken during this investigation as well as those observed from the other properties indicate very little gradient. This makes monitoring more difficult and results in the need for more monitoring wells to ensure the quality of ground water entering the Nabisco site is well documented.

RES feels that additional characterization of this site would be advisable in order to establish what conditions currently exist on the property. If Ashland Chemical, Inc. should decide to occupy this site, RES would advise that monitoring wells be installed in order to document the possible future migration of contaminants from other properties.

The future Scope of Work for the site could include the following:

- Assess the extent of the solvent plume
- Determine if diesel contaminated soils exist under the weight scale and garage building
- Define the remaining perimeter of site with additional monitoring wells

SCHN00171644



SCHN00171645

NABISCO WAREHOUSE SITE

SOIL AND GROUND WATER SAMPLING

NOTE ROUND II

Prepared for:

Ashland Chemical, Inc.
5200 Blazer Parkway
Dublin, Ohio 43017

Prepared by:

Riedel Environmental Services, Inc.
Foot of North Portsmouth
P.O. Box 03096
Portland, Oregon 97203-0096
(503)286-4656

November 10, 1990

Nabisco2.JR

TABLE OF CONTENTS

SECTION 7

SECTION 3

SECTION 4

SECTION 5

SECTION 6

SECTION 3 SAMPLE RESULTS

3.1 Results of UST Sampling

Diesel and oil were detected in the sample from boring B-8 in concentrations of 45,100 ppm and 9,200 ppm, respectively. These levels greatly exceed the matrix clean-up level of 500 ppm established for this site. No solvents or BETX were detected. The only leachable metal detected was 2 ppm of Barium, which is well below the 100 ppm regulatory limit established in 40CFR, Part 261.

3.2 Results of Solvent Analysis

GROUND WATER

The results of the ground water sampling summarized in Table 1 are expressed in micro grams per liter (ug/l). The certificates of analyses for the samples are included in Appendix B.

TABLE 1

Analysis	MW-2*	MW-3	MW-4	MW-5	Current MCL** (ug/l)
Cis 1,2-Dichloroethene	1,340	790	3,580	42	NE
Tetrachloroethene →	35,500	5.6	420	5.0	NE
Trichloroethene →	5,040	481	1,560	18	5
Trans 1,2-Dichloroethene	ND	0.8	38	ND	NE
Vinyl Chloride	ND	45	380	47	2
Chloroethane	ND	0	3.5	0	NE

* - Results from October 11, 1990 Report
** - Maximum Contaminant Level for Drinking Water
ND - Below Detection Limits
NE - No Standard Set

SOIL

Analytical results from the soil sample collected from 15-16.5 feet in Boring B-4 indicate the presence of low levels of Trichloroethene and Cis 1,2-Dichloroethene.

SECTION 7 FIGURES SECTION 4 SECTION 5 SECTION 6

SCHN00171647

SECTION 4 DISCUSSION OF RESULTS

4.1 Underground Storage Tank Site

The former waste oil UST excavation still contains diesel and oil contaminated soils above current Oregon DEQ cleanup guidelines of 500 ppm as established in OAR 340-122-205 to 340-122-260.

While the extent of the contamination detected in boring B-8 is not known at this time, some assumptions can be made. Due to diesel's low density compared to that of water, free product which leaked from the tank would float atop the ground water. As a result, the depth of contaminated soil should not exceed the seasonal low water table.

The results from boring B-9 indicate that the diesel contamination from the 15,000 and 5,000-gallon USTs does not extend significantly north of the excavation to the soils underlying the garage building.

4.2 Hydrogeology

Depth to ground water in the silty dredge sands was found to be between 9 and 10 feet, with relatively little gradient. The gradient measured at the site on November 2, 1990 was .0009. The greatest difference between ground water elevations was .08 feet between monitoring wells MW-2 and MW-4. Ground water elevations surveyed from the five monitoring wells were used to construct a water table contour map (see Figure 3). The resulting gradient indicates that ground water flow on the site is from the north - northeast to the south - southwest as indicated by the flow direction arrow.

This direction is different than his previous assumption and also does not agree with Trumbull Oil opinion

4.3 Solvents

Both trichloroethene and tetrachloroethene are commonly used degreasers. They are frequently introduced to the ground water via leaking waste oil tanks utilized in garages and metal shops. Cis 1,2-dichloroethene and vinyl chloride are formed as breakdown products from the reductive dehalogenation of trichloroethene and tetrachlorothene and are typically found in increasing proportions downgradient from a source.

SCHN00171648

The ratio of trichloroethene/cis 1,2-dichloroethene detected in monitoring well MW-2 during the September 6, 1990 sampling was 5,040 ppb/1,340 ppb or 3.8. The same ratio found in monitoring well MW-4 was 1,560 ppb/3,580 ppb or 0.4. In addition, the presence of previously undetected vinyl chloride (308 ppb) as well as the reduction of tetrachloroethene levels from 35,500 ppb to 420 ppb strongly support the conclusion that monitoring well MW-4 lies downgradient from the solvent source.

The levels of solvents found in monitoring wells MW-3 and MW-5 indicate that while these wells are also downgradient from the solvent source, they do not appear to be located as close to the center of the plume as monitoring well MW-4. Based on trichloroethene concentrations, monitoring well MW-5 is located closer to an edge of the plume than monitoring well MW-3.

SCHN00171649

SECTION 5 CONCLUSIONS

While the full extent of the solvent plume at the Nabisco site can not be determined without additional monitoring wells, this limited investigation has certainly shown it to be of significant size. Based on the results from monitoring well MW-4, the leading edge of the solvent plume probably extends beneath the warehouse. In terms of the volume of water containing solvents above regulatory limits, it must be assumed that contamination exists to the base of the aquifer.

In terms of remediation techniques, a pump and treatment system utilizing an air stripping tower is the most common. Costs for such a system would vary considerable depending on design parameters based on information beyond the scope of this investigation. However, systems can run in excess of $100,000.00 and are often operated over several years.

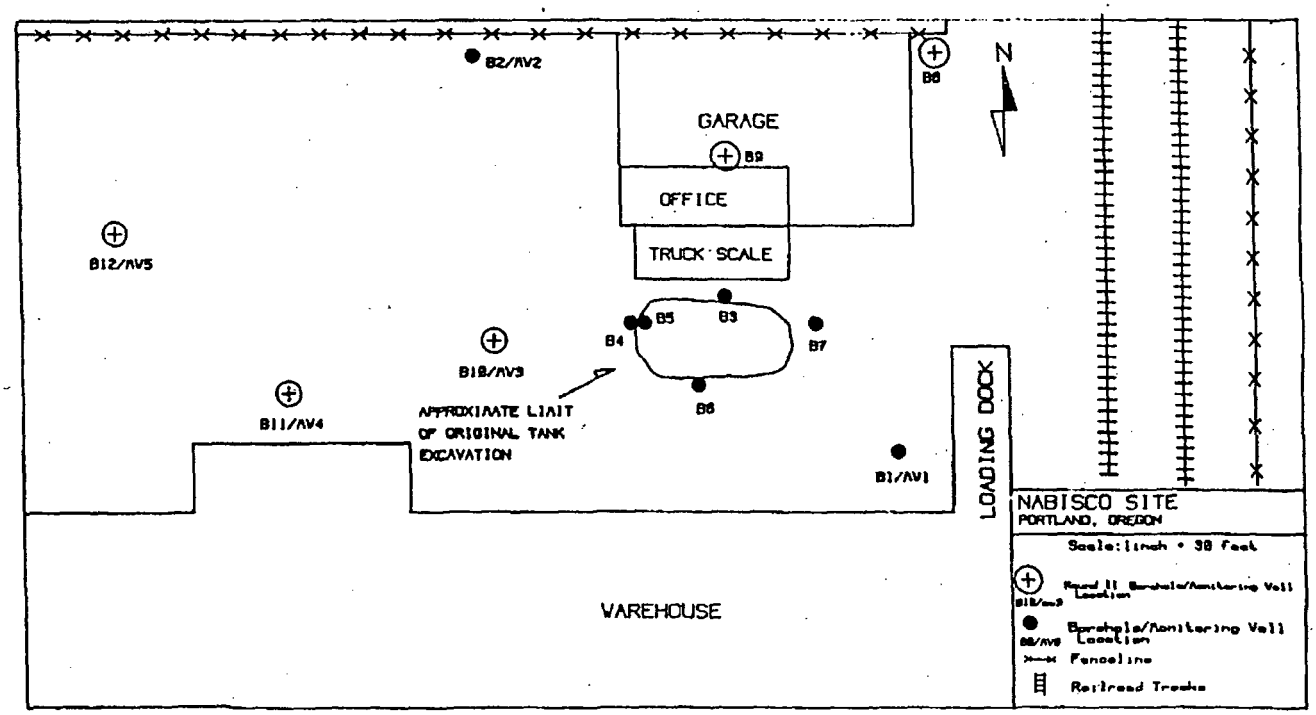
Obviously, a key element in any cleanup operation is the identification and elimination of the source. RES does not feel that the source of the solvents detected during the course of this investigation is located on the Nabisco property.

The high level of solvents detected in monitoring well MW-2 may have migrated onto the Nabisco site from the property immediately to the north. In addition to this being in the upgradient direction, at least one old vent pipe indicative of an UST was noted as well a small stockpile of 55-gallon adhesive drums.

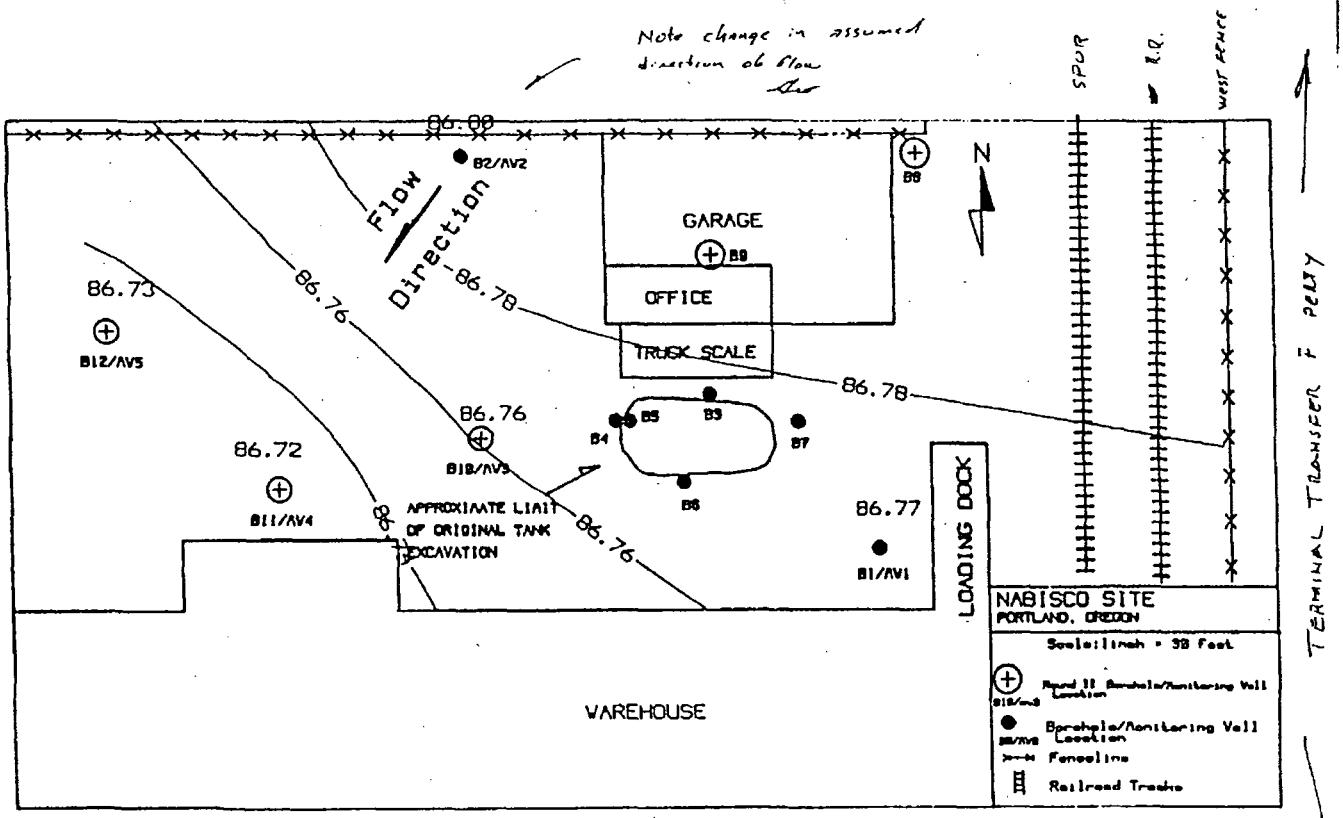
SCHN00171650

FIGURE 2

BORING/MONITORING WELL LOCATION MAP



SCHN00171651

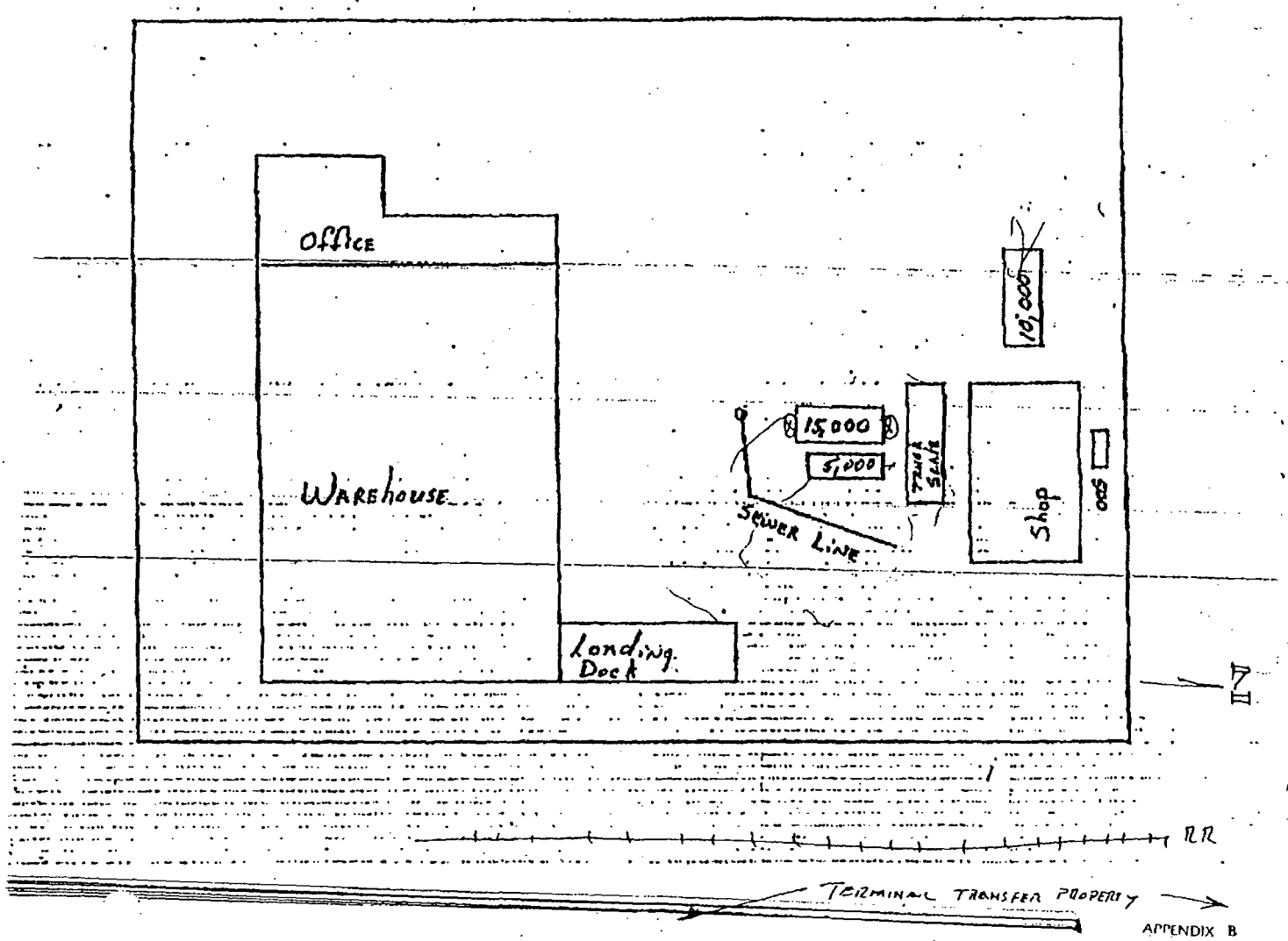


WATER TABLE CONTOUR MAP

NOVEMBER 2, 1990

APPENDIX A

SCHN00171652



APPENDIX B

SCHN00171653

Department of Environmental Quality

811 SW SIXTH AVENUE, PORTLAND, OREGON 97204-1390 PHONE (503) 22 96

December 31, 1990

Mr. Ernest Agostino
Hill Investment
10345 SW Greenleaf Terrace
Tigard, Oregon 97224

Re: UST-Multnomah County
Hill Investment-
Nabisco Warehouse
File No. 26-89-280

Dear Mr. Agostino:

We have completed our review of Tom New Construction's report, dated September 13, 1990, concerning the boreholes that were drilled on your property located at 3322 NW 35th in Portland, Oregon.

This information indicates that significant soil contamination remains at the site. Up to 34,150 parts per million total petroleum hydrocarbons remain in the soil next to the truck scale.

The soil samples, that Tom New Construction had analyzed, were provided by Riedel Environmental Services. Verbally, Riedel reported that groundwater was encountered at 9.5 feet below the ground surface in the wells that were installed in some of the borings.

Because high concentrations of diesel fuel remain in the soil under the truck scale, and because groundwater may be in contact with the contamination, additional cleanup and/or groundwater monitoring must be conducted. **Please submit a letter, by January 25, 1991, outlining your planned actions for the site.**

During a telephone conversation with Ray Agostino, on October 19, 1990, he indicated that the new tenant may want to do some construction in the vicinity of the remaining contamination. It may be possible to wait to do the cleanup until then, however, it must be determined if the remaining contamination is impacting groundwater and/or continuing to migrate.

From my conversations with Riedel and Ray Agostino, it appears that a complete site evaluation has been completed. Copies of Riedel's site assessment reports would help the Department complete its evaluation of the site. If possible, please send me a copy of the reports.

1076

STATE OF OREGON

DEPARTMENT OF ENVIRONMENTAL QUALITY **INTEROFFICE MEMORANDUM**

DATE: January 22, 1991

TO: Loretta Pickerell:ECD

FROM: Matt McClincy:NWR

SUBJECT: Site Referral for the Confirmed Release List

Halogenated Hydrocarbons were detected in the groundwater below the Nabisco Warehouse site located at 3322 NW 35th, Portland. The site is owned by Hill Investment Company. These compounds were detected in the course of an environmental audit. Nabisco previously operated the warehouse at the site. Ashland Chemical, Inc. is the pending operator who contracted for the audit. The highest concentration of halogenated hydrocarbons occur in the up gradient monitoring well on the north property boundary. This suggests that the plume may be migrating from off site.

The release should be listed as groundwater contamination occurring at the above address.

Department of Environmental Quality
RECEIVED
JAN 29 1991
Environmental Cleanup Division

NWR List 26-89-280

Listing Recommendation:
X Propose for Confirm Release List
____ Propose for Inventory
____ Propose for Inventory/Confirmed Release List

SDDB ID#:_____

FACILITY LISTING FORM
CONFIRMED RELEASE LIST/INVENTORY

Site Name: Nabisco Warehouse / Hill Investment Co.
Alias:

Site Address: 3322 N.W. 35th
City, Zip: Portland
County: Multnomah
Township: 1N Range: 1E Section: 29 Tax Lot: #137
Region: WV C E NW SW

Legal Owner: Hill Investment Company LCS/LCP
Company Name: Registered Agent Paul O'Connor
Address: 2418 SW 22nd Ave
City: Portland
State, Zip: Oregon 97219
Telephone: ( )
Ownership Period:

Legal Owner: LCS/LCP
Company Name:
Address:
City:
State, Zip:
Telephone: ( )
Ownership Period:

Current Operator:
Company Name:
Address:
City:
State, Zip:
Telephone: ( )
Period of Operation:

Current Operator:
Company Name:
Address:
City:
State, Zip:
Telephone: ( )
Period of Operation:

Owner/Operator: C/P
Company Name:
Address:
City:
State, Zip:
Telephone: ( )
O/O Period:

Owner/Operator: C/P
Company Name:
Address:
City:
State, Zip:
Telephone: ( )
O/O Period:

Facility Description: Warehouse Facility

Environmental and Public Health Threats: Chlorinated solvents present in the groundwater.

Preliminary Assessment Equiavalent (Report):

Department of Environmental Quality
RECEIVED
JAN 29 1991
Environmental Cleanup Division

Funding: X HSRAF
____ Owner, operator or other person under agreement, order or consent under ORS 465.200 to 465.420
____ Owner, operator or other person under other state or federal authority

SCHN00171656

FACILITY LISTING FORM

Site Name: Nabisco Warehouse Site SDDB No.

Hazardous Substance	Date Released	Quantity Released	Media Contaminated	Concentration	Date Source (Attach)	Evidence Type
Cis 1,2 Dichloroethene	unknown	unknown	Groundwater	3,580 ppb	11/1/90	Lab
Tetrachloroethene	unknown	unknown	Groundwater	35,500 ppb	11/1/90	Lab
Trichloroethene	unknown	unknown	Groundwater	5,040 ppb	11/1/90	Lab
Trans 1,2 Dichloroethene	unknown	unknown	Groundwater	38 ppb	11/1/90	Lab
Vinyl chloride	unknown	unknown	Groundwater	380 ppb	11/1/90	Lab

How Release Occurred: unknown

Phase Status	Date Initiated	Date Completed	Staff Initials	Lead Program	Recommendation for Further Action	Program Referral
Preliminary Assessment						
Remedial Investigation						
Feasibility Study						
Remedial Action						
Removal Action						

Preparer: Matt McClinsey Date: 1/22/91

Program/Region: NWR + ECD Phone: 229-5288

SA\SM308(/90)

SCHN00171657

NWR Inst 26-89-220

RELEASE REPORT AND EVALUATION FORM

Spill #_____

Part I. RELEASE INFORMATION

Type of Release: Chlorinated Solvents

DEQ Person Receiving Report: Andrew Ollick Phone: 6923

Date Reported: 10/19/90 Time Reported: _____ EMD #: _____

EMD Staff Contact _____

Reported By Company/Agency: _____ Phone: _____

Site Contact Company/Agency: Ray Agostino / Hill Investment Co. Phone: (602) 483-7535

Site Name: Nabisco Warehouse / Hill Investment Co

Site Address: 3322 NW 35th

City, Zip Portland County Multnomah

Location Description (if no address): _____

Name, Quantity, and Physical State (gas, liquid, solid) of Substance Released

Chlorinated Solvents.

How Release Occurred: unknown

Department of Environmental Quality
RECEIVED
JAN 29 1991
Environmental Cleanup Division

Date of Release _____ Time of Release: _____

Media Affected: Soils Yes/No/Potential Groundwater Y/N/P Air Y/N/P

Sediments Y/N/P Surface Water (Name _____) Y/N/P

Release Stopped and Contained? ? Y/N Immediate Response Needed? Y/N

Potential for Future Releases? Y/N ? Explain: _____

Responsible Party Name unknown Phone: _____

Address/City/Zip _____

Owner/Operator Notified? Y/N Assumed Responsibility? Y/N

Contractor Hired? Y/N

Contractor Name: _____ Phone: _____

Field Representative: _____ Phone: _____

Spill Report Requested? Y/N Date Required: _____ (attach)

Date Received: _____

Site Visit Conducted? Y/N Date: _____

DEQ Staff Who Inspected Site _____

List Other Federal/State/Local Agencies Notified (N) and Responding (R)

_____

DEQ Public Affairs Notified Y/N Press Release Needed? Y/N

SCHN00171658

NARRATIVE SUMMARY OF RELEASE

Provide site description, explanation of how release occurred, status of remedial action if any, and justification for recommendation that further action or no further action is necessary. Prepare site map if referring release for further action, p.4)

During removal of underground petroleum tanks solvents were identified in groundwater at the site

PART II. RELEASE POSES NO SIGNIFICANT THREAT; NO FURTHER ACTION REQUIRED

____ De minimis release

Gasoline or diesel fuel

____ <50 gallons to ground surface if no apparent threat to groundwater, surface water, humans, sensitive environments

Oil (does not include waste oil)

____ <100 gallons to ground surface if there is no apparent threat to groundwater, surface water, humans, or sensitive environments

Other hazardous substances (includes waste oil)

____ <15 gallons to ground surface if there is no apparent threat to groundwater or surface water, humans or sensitive environment

____ Release by its nature rapidly dissipates

____ Release is permitted or otherwise authorized

____ Release is a FIFRA-registered pesticide, applied appropriately for intended use

____ Release has been cleaned up to protective level

____ Release otherwise requires no additonal investigation, removal, remedial action, or long-term environmental or institutional controls

From: _____
Evaluator's Signature Date

HS Oil Sewage AQ MISC

cc: Hazardous Materials Section
Regional Operations
Public Affairs

Air Quality
Water Quality
Hazardous Waste

Time Spent _____

SCHN00171659

Site Name:
DEQ Hazardous Substance Release Report and Evaluation
Page Three

PART III. RELEASE DOES OR MAY POSE A SIGNIFICANT THREAT; FURTHER ACTION REQUIRED.

Hazardous Substance	Contmnt Unit	Quantity Released	Media Affected	Conc. (ppm)	Data Source
Cis 1,2 Dichloroethene	?	?	Groundwater	3,580 ppb	Lab Report
Tetrachloroethene			Groundwater	35,500 ppb	
Trichloroethene			Groundwater	5,040 ppb	
Vinyl chloride			Groundwater	380 ppb	

___ DEQ/other agency observation
___ Owner/operator written admission (attach or reference)
X Laboratory data (attach or reference)

X Release or potential release to soil. If so:

Describe adjacent land uses, site accessibility: Site is Industrial

Describe ground surface or predominant soil type, site topography: Soil is fill. Boring log shows material to be silty sands. Topography - Flat

Estimate areal extent or volume of soils affected: unknown

___ Release or potential release to surface water (include ditches that enter creek, stream or river). If so:

Name and estimate distance to nearest receiving body, explain use of waters:

X Release or potential release to groundwater. If so:

Estimate depth to aquifer, explain beneficial uses of groundwater: Depth to A is ≈ 9.5 feet. Uses of groundwater are unknown.

___ Release or potential release to air. If so:

Describe population density and adjacent land use:

Department of Environmental Quality
RECEIVED
JAN 29 1991
Environmental Cleanup Division

RECOMMENDATION FOR FURTHER ACTION

X Further assessment necessary
___ Removal
___ Remedial action
___ Other, explain (eg., permit enforcement or regulatory controls):

List and attach any relevant documentation:
The NWR List file # 26-89-280 contains the following reports.
Nabisco Warehouse Site Soil & Groundwater Sampling Round II 11/11/90
Nabisco Warehouse Site Soil & Groundwater Sampling and Asbestos Survey 10/11/90

From: [signature] McCluney 5288/NWR/ECO 1/22/91
Evaluator's Signature / Phone/Region/Program / Date

SCHN00171660

SITE MAP:

(Provide sketch with release location, significant site features, nearest cross streets and access instructions)

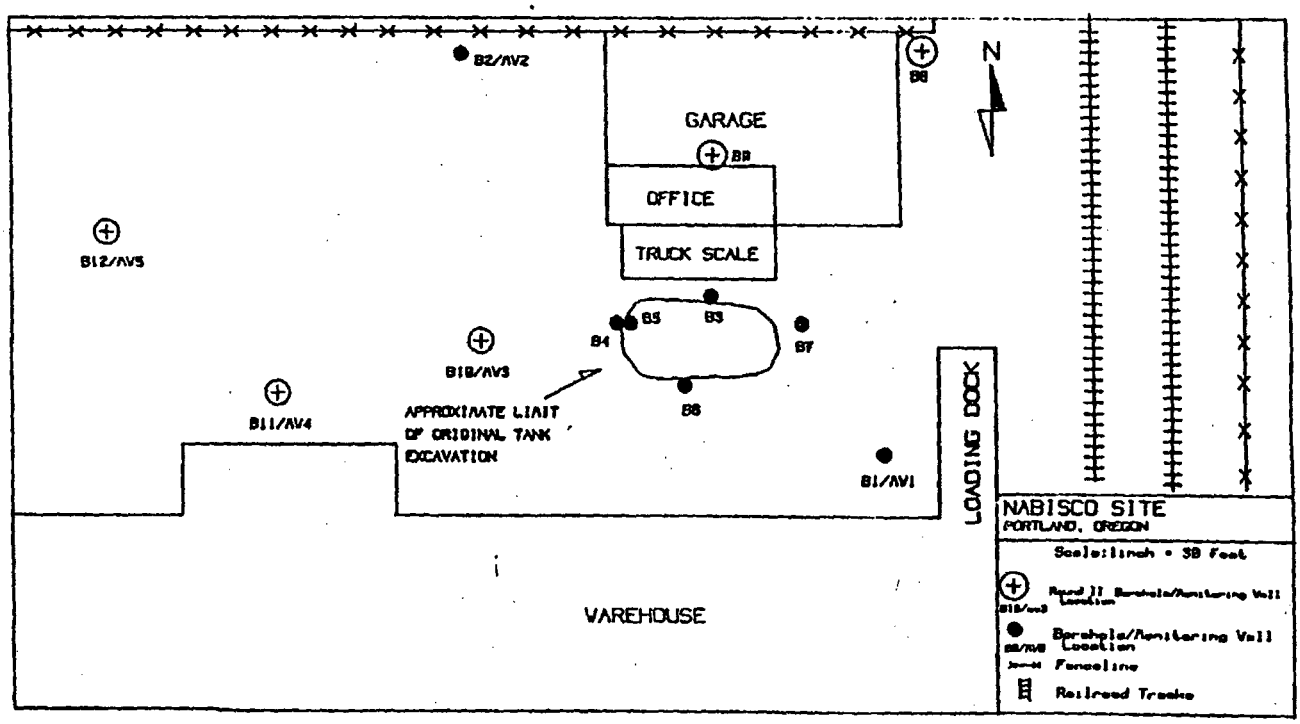
See attached site map

SA\SM3162

SCHN00171662

FIGURE 2

BORING/MONITORING WELL LOCATION MAP



RECEIVED
JAN 29 1991
Department of Environmental Quality
Environmental Cleanup Divis

SCHN00171663

SECTION 3 SAMPLE RESULTS

3.1 Results of UST Sampling

Diesel and oil were detected in the sample from boring B-8 in concentrations of 45,100 ppm and 9,200 ppm, respectively. These levels greatly exceed the matrix clean-up level of 500 ppm established for this site. No solvents or BETX were detected. The only leachable metal detected was 2 ppm of Barium, which is well below the 100 ppm regulatory limit established in 40CFR, Part 261.

3.2 Results of Solvent Analysis

GROUND WATER

The results of the ground water sampling summarized in Table 1 are expressed in micro grams per liter (ug/l). The certificates of analyses for the samples are included in Appendix B.

TABLE 1

Analysis	MW-2*	MW-3	MW-4	MW-5	Current MCL** (ug/l)
Cis 1,2-Dichloroethene	1,340	790	3,580	42	NE
Tetrachloroethene	35,500	5.6	420	5.0	NE
Trichloroethene	5,040	481	1,560	18	5
Trans 1,2-Dichloroethene	ND	0.8	38	ND	NE
Vinyl Chloride	ND	45	380	47	2
Chloroethane	ND	0	3.5	0	NE

* - Results from October 11, 1990 Report
** - Maximum Contaminant Level for Drinking Water
ND - Below Detection Limits
NE - No Standard Set

SOIL

Analytical results from the soil sample collected from 15-16.5 feet in Boring B-4 indicate the presence of low levels of Trichloroethene and Cis 1,2-Dichloroethene.

Department of Environments' Quality
RECEIVED
JAN 29 199
Environmental Clean-up Divisi

SCHN00171664

Department of Environmental Quality
RECEIVED
JAN 29 199
Environmental Cleanup Divisi

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

CLIENT: Riedel Environmental
SUBMITTED BY: Jim Romer
PROJECT: Nabisco/#2730-1717
SAMPLE DESCRIPTION: Water

DATE RECEIVED: 10/25/90
DATE ANALYZED: 10/31/90
WORK ORDER #: K904104

Volatile Organics Analysis
EPA Methods 8010/8020
µg/L (ppb)

Sample Name:		MW3	MW4	MW5
Lab Code:	MRL*	4104-1	4104-2	4104-3
Dichlorodifluoromethane	1	ND	ND	ND
Chloromethane	1	ND	ND	ND
Vinyl Chloride	0.5	45	308	47
Bromomethane	0.5	ND	ND	ND
Chloroethane	0.5	ND	3.5	ND
Trichlorofluoromethane	0.5	ND	ND	ND
1,1-Dichloroethene	0.5	0.5	ND	ND
Freon 113	0.5	ND	ND	ND
Methylene Chloride	2	ND	ND	ND
Trans 1,2-Dichloroethene	0.5	0.8	38	ND
Cis 1,2-Dichloroethene	0.5	790	3580	42
1,1-Dichloroethane	0.5	ND	ND	ND
Chloroform	0.5	ND	ND	ND
1,1,1-Trichloroethane	0.5	ND	ND	ND
Carbon Tetrachloride	0.5	ND	ND	ND
Benzene	5	ND	ND	ND
1,2-Dichloroethane	0.5	ND	ND	ND
Trichloroethene	0.5	481	1560	18
1,2-Dichloropropane	0.5	ND	ND	ND
Bromodichloromethane	0.5	ND	ND	ND
2-Chloroethylvinyl ether	5	ND	ND	ND
Trans 1,3-Dichloropropene	0.5	ND	ND	ND
Toluene	5	ND	ND	ND
Cis 1,3-Dichloropropene	0.5	ND	ND	ND
1,1,2-Trichloroethane	0.5	ND	ND	ND
Tetrachloroethene	0.5	5.6	420	5.0
Dibromochloromethane	0.5	ND	ND	ND
Chlorobenzene	0.5	ND	ND	ND
Ethylbenzene	5	ND	ND	ND
Bromoform	0.5	ND	ND	ND
1,1,2,2-Tetrachloroethane	0.5	ND	ND	ND
1,3 Dichlorobenzene	1	ND	ND	ND
1,4 Dichlorobenzene	1	ND	ND	ND
1,2 Dichlorobenzene	1	ND	ND	ND
Total Xylenes	5	ND	ND	ND

ND means None Detected at or above the MRL
MRL means Method Reporting Limit
* Elevated MRL values due to instrument problems for the BTEX parameters.

Approved by Colin Elliott Date 11/7/90

24-84-280

TOM NEW CONSTRUCTION COMPANY

An Oregon Corporation

11053 S.E. Division
Portland, Oregon 97266

(503) 257-9292

Mailing Address:
P.O. Box 16061
Portland, Oregon 97216

Dept. of Environmental Quality

RECEIVED
FEB 1 [illegible] 1991
NORTHWEST REGION

February 14, 1991

D.E.Q.
811 S.W. 6th Avenue
Portland, OR 97204-1390

Re: Nabisco Warehouse
NW 35th avenue

Attention: Andree Pollock

Dear Mr. Pollock:

Per your request on 2-12-91, Tom New Construction Company took additional soil samples at the above mentioned site. The results indicate that the contamination is confined to the soil found directly beneath the existing truck scale. The excavated hole on the East side of the Maintenance Shop also indicates that the contaminated soil has traces traveling underneath the Maintenance Shop. It is impossible to investigate further without causing undo repair to the Maintenance Shop.

Enclosed are soil sample results showing the exact location of each sample taken. Sample B-5C was retrieved from below the scale on the corner, sample B-8B was taken from the West excavated hole 10' from the N.E. corner of the Maintenance Shop 13' deep. It does not appear that contamination resulted from our removal of the 550 gallon waste oil tank. Tom New Construction Company submitted samples from 7' below grade (1' below tank) at the time of removal and lab results indicated readings that were allowable by D.E.Q.

According to a report by Riedell Environmental, they submitted samples taken at the 15' marker with results showing 45,100 ppm of diesel. Their report also states that contamination fluctuates depending on the ground water level, but doesn't go beyond level of ground water. Tom New Construction Company has come to the conclusion that the contamination is caused by another source, as the water flow direction is coming from the North-Northeast as stated in Riedells report.

Riedell sampled a total of 12 holes, with results showing allowable limits on all, with the exception of sample B-5 (19,400 ppm) and B-8 (45,000 ppm) which verifies Tom New Construction Company's conclusion that the contamination is confined to the area beneath the truck scale. We furthermore conclude that the diesel [illegible] significantly North [illegible] sample B-8.

SCHN00171666

TOM NEW
CONSTRUCTION COMPANY
An Oregon Corporation

11053 S.E. Division
Portland, Oregon 97266

(503) 257-9292

Mailing Address:
P.O. Box 16061
Portland, Oregon 97216

Tom New Construction Company advises the excavation to desist due to the extreme danger of undermining, which in turn may cause the building and railroad tracks to fall into the excavated sites. Therefore we propose both tank holes to be backfilled and compacted. When backfilling is underway, Tom New Construction Company will install a 8" perforated PVC Product Recovery Well in each tank hole, giving the property owner the ability to monitor, pump, filter and test the water when necessary.

Your immediate attention would be greatly appreciated. If you should need verification of our statements, please confirm with your copy of the report submitted by Riedell Environmental.

If we can be of further assistance regarding this matter, please contact me at: 257-9292.

Sincerely,

Dean Haworth

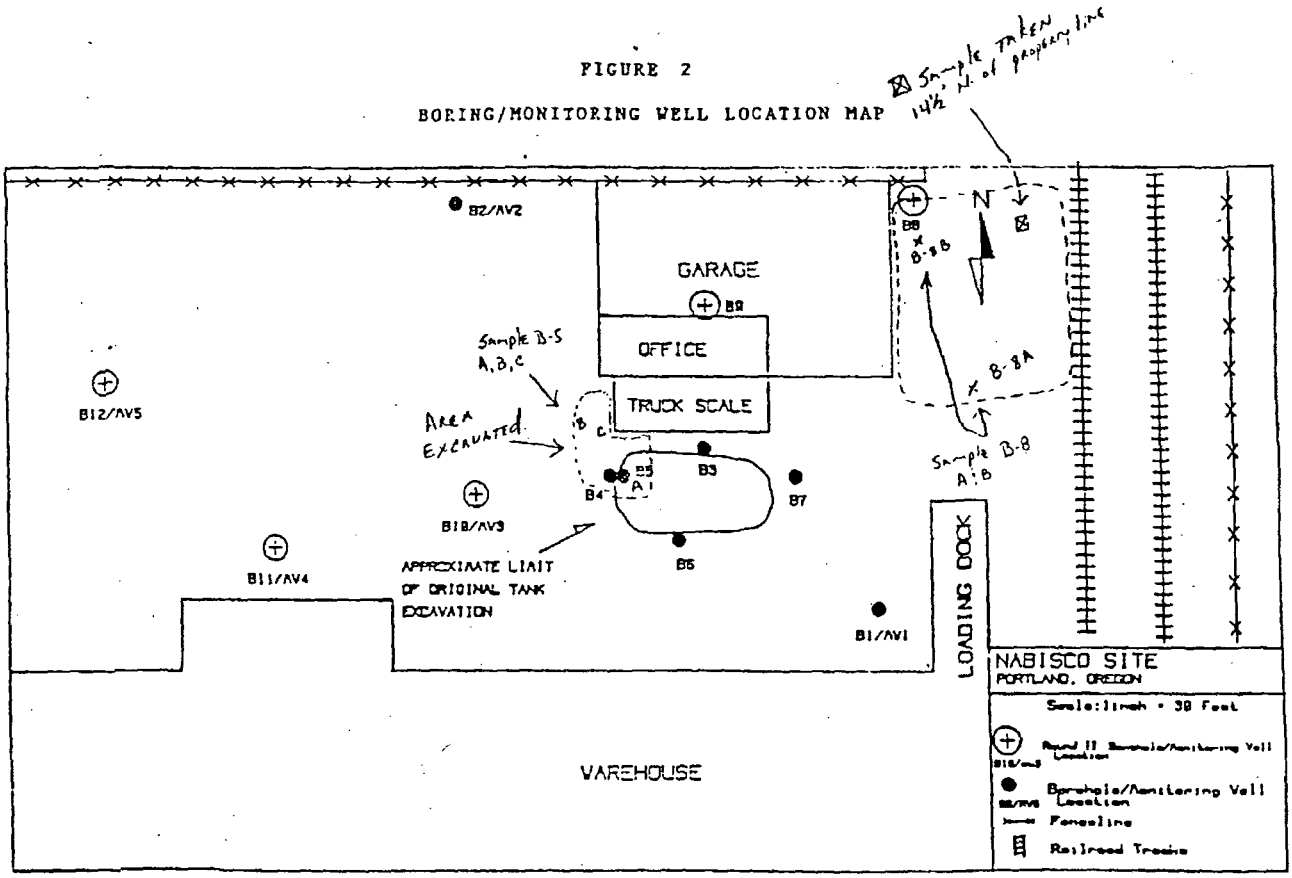
DH/dh

Enclosures

cc John Chamberlain
Nabisco Warehouse

FIGURE 2

BORING/MONITORING WELL LOCATION MAP



SCHN00171668

COFFEY LABORATORIES, INC.
12423 N.E. WHITAKER WAY
PORTLAND, OR 97230
PHONE: (503) 254-1794
FAX: (503) 254-1452

February 14, 1991
Log # A910212-AY6
PO# 1166

Attention: Dean Haworth
Tom New Construction Co.
PO Box 16061
Portland, OR 97216

PROJECT: Nabisco Warehouse PROJECT # 1166

Samples Collected: 1/28/91
Samples Received: 2/12/91

Analysis Requested: Total Petroleum Hydrocarbons in soil by modified EPA Method 418.1

SAMPLE ID	SAMPLE RESULTS
B-8-A 11' South, 1450 hrs	ND
B-5-A 13' South, 1430 hrs	ND
B-5-B 13' North, 1435 hrs	ND
B-5-C 9' Under North Scale, 1445 hrs	33,000
B-8-B 11' North, 1455 hrs	24,000
14.5' N. of property line, 13 ft. deep 1345 hrs	trace,<5

Detection Limit: 5.0 mg/kg

Results expressed as mg/kg unless otherwise noted.

ND means none detected at or above the detection limit listed.

The less than "<" symbol means none detected at or above the indicated value and represents the detection limit for the method.

Sincerely,

Victor A. Perry,
Quality Assurance

Sincerely,

Renee Chauvin,
Technical Director

RJC/mlh

This report is for the sole and exclusive use of the client. Samples are retained a maximum of 15 days from the report date, or until the maximum holding time expires.

COFFEY LABORATORIES INC.
12423 N.E. WHITAKER WAY, PORTLAND, OR 97230
(503) 254-1794 • FAX (503) 254-1452

CHAIN OF CUSTODY

COFFEY LABORATORIES - PENDLETON BRANCH
287 S.E. FIRST, PENDLETON, OR 97801
(503) 276-0385

PROJECT #:	PROJECT NAME:	P.O. #:	PAGE 1 of 1 PAGES PLEASE PRINT OR TYPE	FOR LABORATORY USE ONLY
[illegible]	Nabisco Warehouse	[illegible]		

COMPANY NAME: Tom New Construction Company
REPORT ATTENTION: Dean
JOB #: [illegible]-AY6
SAMPLES COLLECTED BY: Brian Keek
CUSTABBR: [illegible] New Cais

FIELD IDENTIFICATION: ONE LINE PER SAMPLE CONTAINER	LAB LOC	LAB ID	COLLECTION DATE	COLLECTION TIME	MEDIA	ANALYSIS REQUESTED	ANALYSIS REMARKS
B-3-A 11' South		1	1-28-91	1450	Soil	TPH	Rush
B-5-A 13' South		2	1-28-91	1430	Soil	TPH	Rush
B-5-B 13' North		3	1-28-91	1435	Soil	TPH	Rush
~~[illegible]~~			~~[illegible]~~	~~[illegible]~~		~~[illegible]~~	~~[illegible]~~
B-5-C 9' Under North Scale		4	1-28-91	1445	Soil	TPH	Rush
B-3-B 1' North		5	1-28-91	1455	Soil	TPH	Rush
4½' N. of Property Line 13' deep		6	1-28-91	1345	Soil	TPH	Rush
						[illegible]	

RELINQUISHED BY: [signature] 2-12-91 DATE/TIME	RECEIVED BY: DATE/TIME	LAB USE:
RELINQUISHED BY: [signature] 2-12-91 DATE/TIME	RECEIVED BY LAB: [signature] DATE/TIME [illegible]	

SAMPLE REMARKS: LEVEL 1 2 3 4 EXPRESS UPS MAIL CXX GREY TAXI LAB

WHITE COPY - COFFEY LABORATORIES PINK COPY - CLIENTS COPY

SHADED AREA FOR LABORATORY USE ONLY
CHAIN OF CUSTODY INSTRUCTIONS ON BACK OF PINK COPY

(7/90)

SCHN00171670

COFFEY LABORATORIES INC.
12423 N.E. WHITAKER WAY, PORTLAND, OR 97230
(503) 254-1794 • FAX (503) 254-1452

CHAIN OF CUSTODY

COFFEY LABORATORIES - PENDLETON BRANCH
287 S.E. FIRST, PENDLETON, OR 97801
(503) 276-0385

PROJECT #:	PROJECT NAME:	P.O. #:	PAGE 1 of 1 PAGES PLEASE PRINT OR TYPE	FOR LABORATORY USE ONLY
[illegible]	Nabisco Warehouse	[illegible]		

COMPANY NAME: Tom New Construction Company
REPORT ATTENTION: Dean

JOB #: [illegible] 11.221-AY6

SAMPLES COLLECTED BY: Brian Leek

CUSTABBR: [illegible] NewCais

FIELD IDENTIFICATION: ONE LINE PER SAMPLE CONTAINER	LAB LOC	LAB ID	COLLECTION DATE	COLLECTION TIME	MEDIA	ANALYSIS REQUESTED	ANALYSIS REMARKS
B-3-A 11' South		1	1-28-91	1450	Soil	TPH	Rush
B-5-A 12' South		2	1-28-91	1430	Soil	TPH	Rush
B-5-3 12' North		3	1-28-91	1435	Soil	TPH	Rush
~~[illegible]~~			~~[illegible]~~	~~[illegible]~~	~~[illegible]~~	~~[illegible]~~	~~[illegible]~~
B-5-2 2' Under North Scale		4	1-28-91	1445	Soil	TPH	Rush
B-3-2 11' North		5	1-28-91	1455	Soil	TPH	Rush
4½' No. of Property Line 13' deep		6	1-28-91	1245	Soil	TPH	Rush
						[illegible]	

RELINQUISHED BY: [signature] 2-12-91 DATE/TIME	RECEIVED BY: DATE/TIME	LAB USE:
RELINQUISHED BY: [signature] 2-12-91 DATE/TIME	RECEIVED BY LAB: [signature] DATE/TIME [illegible]	

SAMPLE REMARKS: LEVEL 1 2 3 4 EXPRESS UPS MAIL CXXI GREY TAXI LAB

WHITE COPY - COFFEY LABORATORIES PINK COPY - CLIENTS COPY

SHADED AREA F ABORATORY USE ONLY
CHAIN OF CUSTODY INST. TIONS ON BACK OF PINK COPY

12/90

SCHN00171671

Oregon

DEPARTMENT OF
ENVIRONMENTAL
QUALITY

April 3, 1991

Mr. John Chamberlain
Hill Investment Co.
PO Box 29078
Portland, OR 97229

Re: Notification of State Preliminary Assessment
Nabisco Warehouse/Hill Investment Co.
Database Site 1076

The Department of Environmental Quality (DEQ) plans to have one of its contractors conduct a preliminary assessment (PA) of the Nabisco Warehouse/Hill Investment Co. site located at 3322 NW 35th in Portland. Hill Investment Co. has been identified as an owner of the site.

PAs are conducted to profile the nature and extent of past hazardous substance handling, containment, and disposal activities at sites; identify potential public health or environmental hazards at sites; and identify sites that require emergency action. They are reports that are based on readily available information and are not full investigations or characterizations of sites.

PAs are performed under the legal authority of Oregon Revised Statute 465.245. As the owner, you may submit information to the Department that would assist in conducting a complete and accurate PA. Enclosed is a list of the categories of information the contractor will be reviewing in order to prepare the PA. If you wish to submit information relating to the PA, please contact me.

As the owner of the site, you may conduct the PA under DEQ oversight. Enclosed are copies of the Voluntary Preliminary Assessment Policy and a letter that explains the Voluntary Cleanup Program. If Hill Investment Co. decides to participate in the Voluntary Program, please call me as soon as possible.

A site visit will be performed as part of the PA to determine the impact or potential impact on the environment of any hazardous substances which may exist in an uncontrolled manner at your facility. A representative of the contractor will be contacting you or the current operator of the site to arrange for a site visit. We will be providing you with a copy of the completed PA.

If you have questions about the purpose for conducting the PA or have any other questions, please call me in Portland at 229-6832.

The Department appreciates your cooperation in this matter.

Sincerely,

John Odisio

John Odisio
Environmental Specialist
Site Assessment Section
Environmental Cleanup Division

811 SW Sixth Avenue
Portland, OR 97204-139
(503) 229-5696

JO:m
SA\SM35\SM3540
Enclosures (3)
cc: Northwest Regional Office, DEQ

DEQ-1

SCHN00171672

Dept. of Environmental Quality
RECEIVED
JUN 24 1991

HARTCROWSER

NORTHWEST REGION

Earth and Environmental Technologies

Five Centerpointe, Suite 240
Lake Oswego OR 97035

Corrective Action Plan
Hill Investment Company Warehouse
3322 N.W. 35th Avenue
Portland, Oregon

Prepared for
Hill Investment Company

J-5115-02

June 24, 1991

SCHN00171673

TABLE OF CONTENTS

PURPOSE AND SCOPE 1
SUMMARY 1
RECOMMENDATIONS 2
BACKGROUND 2
Site Description 4
Site Assessment and Characterization Activities to Date 4
Four USTs Removed in 1989 5
Site Assessment 5
Further Excavation of Former Tank Locations 5
Sampling of Soil and Groundwater in Excavations by Hart Crowser, Inc 6
Installation of Two Monitoring Wells and Groundwater Sampling by Hart Crowser, Inc 6
REGIONAL GEOLOGY AND SURFACE WATER 6
Over 200 Feet of Sedimentary Deposits overlying Basalt 6
Surface Water 7
SITE SOILS AND HYDROGEOLOGY 7
Site Soils Composed of Silty SAND 7
Groundwater Gradient to the Southwest 7
DESCRIPTION AND EXTENT OF PETROLEUM HYDROCARBONS AT PROJECT SITE 7
Petroleum Hydrocarbons in Soil 8
Soil Impacted by Diesel South and East of Garage 8
Other Chemical Analyses 9
Petroleum Hydrocarbons in Groundwater 10
CORRECTIVE ACTION OBJECTIVES 11
Summary of Corrective Action Objectives 11
Maintain Site Usability 12
Long-Term Groundwater Monitoring 12
Chemical/Physical Properties of Diesel 12
Persistence of Diesel in the Environment 13
Qualitative Assessment of Potential Exposure 13
Environmental Fate, Toxicity, and Regulation 13
Contaminant Fate and Transport 14
Contaminant Persistence 16
Qualitative Exposure Assessment 18
Rationale for Corrective Action Goals 18
Groundwater 19
Soils 19
FEASIBILITY STUDY 19
Identify and Screen Technologies 20
Soil Technology Screening 20
Soil Technology Evaluation 21
Develop and Evaluate Alternatives 21
SITE REMEDIATION SYSTEM 22
Cover the Site Utilizing the Existing Building and Paved Area 22
Monitor Groundwater Quality on A Quarterly Basis 22
CLOSING 23

Tables

Table 1 - Soil Petroleum Hydrocarbon Analysis Results
Table 2 - Well Casing and Groundwater Elevations
Table 3 - Groundwater Petroleum Hydrocarbon Analysis Results
Table 4 - Technology Screening for Soil
Table 5 - Technology Evaluation for Soil

Figures

Figure 1 - Site Location Map
Figure 2 - Site Vicinity Map
Figure 3 - Site and Exploration Plan
Figure 4 - Tank Pits and 1991 Soil Sampling Locations
Figure 5 - Groundwater Elevations and Contours (November 1990)

Appendices

Appendix A - Field and Chemical Sampling Procedures and Boring/Well Logs
Appendix B - Laboratory Testing Program and Laboratory Reports
Appendix C - Nearby Water Well Logs
Appendix D - References

CORRECTIVE ACTION PLAN
HILL INVESTMENT COMPANY WAREHOUSE
3322 N.W. 35th AVENUE
PORTLAND, OREGON

PURPOSE AND SCOPE

This report presents the corrective action plan (CAP) for soil and groundwater containing petroleum hydrocarbons at the Hill Investment Company Warehouse located at 3322 N.W. 35th Avenue in Portland, Oregon. The purpose of our work has been to develop a feasible, environmentally appropriate corrective action plan for this site that protects human health and the environment.

This CAP has been prepared in accordance with the Oregon Department of Environmental Quality (DEQ) cleanup rules for leaking petroleum underground storage tank systems (OAR 340-122-250(1)) and the guidance for corrective action plans dated January 16, 1990.

Our scope of work includes the following:

- Summarizing the site characterization work completed to date at the project site;
- Identification of additional data needs;
- Assessing the most appropriate action at this time which protects human health and the environment; and
- Preparing this Corrective Action Plan (CAP).

SUMMARY

The following presents a summary of the major information in this CAP. The balance of the CAP contains a more detailed discussion of these findings and recommendations.

- Based on information developed by others, we have concluded that in-situ soils with petroleum hydrocarbons exist on-site east of the garage. The maximum TPH concentration detected by others in the soil is 33,000 ppm. Analyses on two soil samples indicate that the petroleum hydrocarbons are characteristic of diesel. Benzene was not detected in any of the soil samples obtained from the borings accomplished on the site.
- Chlorinated solvents exist in soil and groundwater west of the garage on the site. Based on the apparent groundwater flow direction and

chemical analyses, the solvent source appears to be from the north. The contamination is probably from an off site source and is being investigated. This issue will be addressed as a seperate issue with DEQ.

- Based on two round of measurements, groundwater at the site fluctuates seasonally between 7 and 10 feet below the ground surface (bgs). The groundwater gradient is varies from 0.001 to 0.002 ft/ft with an apparent flow direction to the southwest.

- Hart Crowser, Inc. (HCI) installed two monitoring wells, MW-6 and MW-7, to further delineate the extent of petroleum hydrocarbons in soil and groundwater. Monitoring well MW-6 was installed near the warehouse about half way between MW-1 and MW-3, and MW-7 was installed in the northeast corner of the site.

- Benzene was detected at 0.0015 ppm and 0.0029 ppm in the groundwater samples from monitoring wells MW-6 and MW-7, respectively and xylene was detected at 0.0048 ppm in the groundwater sample from MW-7. Benzene, toluene, and xylene were also detected near detection limits (0.0010 ppm) in a water sample obtained from Pit 2 excavated east of the garage on-site.

RECOMMENDATIONS

- Human health and the environment are protected from exposure to contaminated soil because the existing building and pavement prevents exposure by acting as a cover in areas currently delineated with petroleum hydrocarbons in soil and in the down-gradient direction of these areas.

- Quarterly groundwater monitoring of the present monitoring wells on-site for a period of two years. Quarterly monitoring will aid in determining groundwater flow direction, delineation of any petroleum hydrocarbon plume, and to confirm that petroleum hydrocarbons are not migrating off-site.

BACKGROUND

Information presented in this CAP for this site is based on reports and letters by previous firms and limited confirmational soil sampling accomplished by Hart Crowser. Documentation by others used in the preparation of this report are listed below.

1) Nabisco Warehouse Site: Soil and Ground Water Sampling and Asbestos Survey
Riedel Environmental Services, Inc.
October 11, 1990

2) Nabisco Warehouse Site: Soil and Ground Water Sampling, Round II

SCHN00171677

Riedel Environmental Services, Inc.
November 10, 1990

3) Letter to Oregon DEQ
Tom New Construction Company
February 14, 1991

Site Description

The project site is currently owned by Hillman Investment Company and is located at 3322 N.W. 35th Avenue between N.W. Yeon Avenue and N.W. Guam Street in Multnomah County in Portland, Oregon, (Figure 1). It is located in the northwest 1/4 of Section 29 of Township 1N, Range 1E (Willamette Meridian) at an elevation of approximately 30 feet above sea level. The Willamette River is approximately a half mile to the northeast.

Property uses in the surrounding vicinity are heavy industrial with Trumbell Asphalt Fume Line (A Division of Owens-Corning Fiberglass) to the northwest, ANR Air Freight System to the west, Weyerhaeuser Paper Company to the south, Terminal Transfer and the Westwood Corporation to the east (Figure 2), and two warehouses to the north. Railroad tracks used for spur lines run across the eastern perimeter of the site property.

Figure 3 presents a detailed site plan including the following features:

- Property boundaries
- On-site structures
- Type of ground cover
- Railroad tracks
- Estimated location of former underground storage tanks (USTs)
- Locations of borings and monitoring wells

Currently, most of the site is paved or covered with a garage and warehouse. Soil is exposed in the area of the railroad tracks and where excavations for UST removals have been backfilled.

Also included on Figure 3 is the southern-most portion of the property north of the site. Features on this property include an apparent incinerator building, a rack to hold an above ground storage tank (AST), piping to a possible UST, and a railroad spur which terminates northwest of the on-site garage.

Site Assessment and Characterization Activities to Date

This section summarizes the work that has been completed at this site to date. Pertinent laboratory and field data collected on the site are summarized in Tables 1 to 3 and Appendix A.

SCHN00171678

Four USTs Removed in 1989

In November 1989, Tom New Construction Company removed four USTs around the garage: a 500-gallon waste oil tank to the east, a 10,000-gallon tank to the west, and 5,000-gallon and 15,000-gallon tanks to the south (Figure 3). Analysis of soil samples obtained from below each of the tanks indicated the presence of petroleum hydrocarbons in soil in the excavation of the 5,000-gallon and 15,000-gallon tanks (Pit 1 - 1989). It was reported that about 1,000 cubic yards of soil with petroleum hydrocarbons was disposed at the Hillsboro Landfill. Excavation pits were backfilled with clean fill after the tank removals.

Site Assessment

A new tenant retained the services of Riedel Environmental Services, Inc., (RES) to establish a baseline of existing environmental conditions prior to their occupancy of the site. The site assessment was completed in two phases.

First Investigation Finds Chlorinated Solvents and Petroleum Hydrocarbons The first investigation by RES included drilling of seven borings (B-1 to B-7) and the installation of two monitoring wells (MW-1 in boring B-1 and MW-2 in boring B-2) on August 30 and 31, 1990. Chemical analyses on soil samples obtained from the borings indicated the presence of petroleum hydrocarbons in the area south of the garage and chlorinated solvents west of the garage. Analyses on groundwater showed chlorinated hydrocarbons in MW-2; however, petroleum hydrocarbons were not detected. Groundwater sampling of the monitoring wells was accomplished on September 6, 1990. Due to these findings, a second investigation was initiated (see RES report dated October 11, 1990).

Second Investigation Initiated to Delineate Extent of Contamination The objectives of the second investigation by RES were to delineate the extent of the solvents found in MW-2 and to further assess the extent of petroleum hydrocarbons in the site soils. On October 23 and 24, 1990, five borings (B-8 to B-12) were drilled and three monitoring wells (MW-3 to MW-5) were installed in borings B-10, B-11, and B-12. Groundwater was sampled on October 27, 1990. Results confirmed petroleum hydrocarbon contamination in soil east of the garage in the area of the former waste oil tank and a plume of chlorinated solvents west of the garage (see RES report dated November 10, 1990). The wells MW-3, MW-4, and MW-5 were abandoned in May 1991.

DEQ File Review for Off-Site Sources Prior to the investigations, RES reviewed records at the DEQ offices in Portland, Oregon. In addition to the project site, information was available on the Trumbell Asphalt Fume Line to the northwest and Terminal Transfer to the east. Both have documented free-phase hydrocarbons on the water table and the DEQ has requested further delineation of the contaminant plumes.

SCHN00171679

Further Excavation of Former Tank Locations

Per request by the DEQ, further excavation and soil sampling of the areas south and east of the garage (Pit 1 - 1991 and Pit 2) was accomplished by Tom New Construction Company at the beginning of 1991. The excavation south of the garage was to the west of pit 1 - 1989 and included part of the previous tank excavation in 1989. Analyses on soil samples indicated petroleum hydrocarbons beneath the truck scale and adjacent to the east side of the garage.

Sampling of Soil and Groundwater in Excavations by Hart Crowser, Inc.

HCI was retained for environmental services by Hill Investment Company. On March 12, 1991, soil and water samples were obtained from Pit 1 - 1991 and Pit 2 before the excavations were backfilled (Figure 4). A thin layer or sheen of free-phase petroleum hydrocarbons was observed on the water in Pit 2. Chemical analyses indicated that petroleum hydrocarbons were present in soil on the east side of Pit 2 and in the water sampled from Pit 2 and that Pit 1 - 1991 was free of petroleum hydrocarbons.

Installation of Two Monitoring Wells and Groundwater Sampling by Hart Crowser, Inc.

Hart Crowser, Inc. installed two monitoring wells, MW-6 and MW-7, to further delineate petroleum hydrocarbons in the soils and groundwater. Monitoring well MW-6 was installed approximately 13 feet north of the warehouse and 66 feet west of MW-1. Monitoring well MW-7 was installed about 12 feet south and 20 feet west of the northeast property corner. Two soil samples from each boring were submitted for analysis for BTEX per EPA 8020, halogenated solvents per EPA 8010, and soil samples from MW-7 were also analyzed for TPH per EPA 418.1. Soil samples from the borings revealed 0.0033 ppm toluene in MW-6 at 10 feet below ground surface (bgs) and 0.0011 ppm xylene in MW-7 at 20 feet bgs.

Groundwater samples obtained from all monitoring wells on the site were analyzed for BTEX and halogenated solvents. BTEX was not detected in all of the groundwater samples, except from MW-6 and MW-7. Benzene at 0.0015 ppm was detected in MW-6, and benzene at 0.0029 ppm and xylene at 0.0048 ppm were detected in MW-7.

REGIONAL GEOLOGY AND SURFACE WATER

Over 200 Feet of Sedimentary Deposits overlying Basalt

The site is situated in the northwesternmost portion of the Willamette Valley just east of the Tualatin Hills. The lowermost geologic unit that has been penetrated extensively in west Portland is the Columbia River Basalt (CRB). In the site vicinity, this unit is expected to be encountered at about 250 feet bgs

SCHN00171680

(USGS Water-Supply Paper 1619-O). Overlying the CRB is a series of consolidated and partly consolidated beds of mudstone, sandstone, and shale, that comprise the Sandy River Mudstone Formation. Sandstones and conglomerates of the Troutdale Formation overlie the Sandy River mudstone.

Throughout much of west Portland, the Troutdale Formation is overlain by mantle of unconsolidated terrace deposits which consist mostly of stratified gravel and sand with lessor amounts of clay and silt. In the site area, a low lying swamp originally existed adjacent to the Willamette River until it was filled with dredged river sands in the early 1900's.

Surface Water

The closest surface water feature to the project site is the Willamette River which is approximately a half mile to the northeast. Surface run-off from the east side of the Tualatin Hills flows into storm drainage systems at the base of the Hills which conduct it to the Willamette River.

SITE SOILS AND HYDROGEOLOGY

Site Soils Composed of Silty SAND

Geologic logs from the soil borings completed on the site indicate about 9 feet of brown, silty SAND over gray, silty SAND. Gray, silty SAND was encountered to 20 feet below ground surface, the depth of the deepest borings.

Groundwater Gradient to the Southwest

Groundwater levels were measured in existing monitoring wells on November 2, 1990, by RES and on May 10, 1991 by Hart Crowser, Inc. Depth to groundwater ranged from 7 to 10 feet bgs (Table 1). Groundwater elevations were measured relative to an assumed datum of 100.00 feet, an arbitrary benchmark on the loading dock. Groundwater contours indicate no significant groundwater gradient (Figure 5). However, based on the greatest difference of groundwater elevations (MW-2 and MW-4), the gradient across the site is 0.001 to 0.002 ft/ft to the southwest.

DESCRIPTION AND EXTENT OF PETROLEUM HYDROCARBONS AT PROJECT SITE

The extent of petroleum hydrocarbons was assessed with samples from soil borings, monitoring wells, and from excavations of USTs. The locations of each of these explorations are shown on Figures 3 and 4. Appendix A presents the methods for sample collection, preservation, storage, and field testing as well as detailed boring/well logs.

SCHN00171681

Selected soil samples collected by Tom New Construction Company, RES, and HCI from the explorations were submitted for chemical analysis. Chemical analyses on soil included:

- Benzene, toluene, ethylbenzene, and xylene (BTEX) by EPA Method 8020;
- Gasoline and diesel hydrocarbons by EPA Method 8015-Modified;
- Total Petroleum Hydrocarbons (TPH) by EPA Method 418.1;
- TPH by Oregon Methods TPH-HCID and TPH-D;
- Halogenated Solvents by EPA Method 8010;
- T.C.L.P. Metals (8) by EPA Method 1311

Groundwater samples from the monitoring wells were collected by RES and Hart Crowser, Inc., and analyzed mainly for BTEX using EPA Method 8020 and halogenated solvents by EPA Method 8010. Groundwater from the UST excavations (Pit 1 - 1989 and Pit 2 of Figure 4) were sampled by Hart Crowser, Inc. and analyzed for BTEX per EPA 8020 and for halogenated solvents per EPA 8010.

Laboratory results are summarized in Tables 2 and 3. Appendix B provides complete analytical laboratory documentation for analyses accomplished on samples collected by HCI. Previous laboratory documentation can be found in the RES reports of October 11, 1990, and November 10, 1990 and Tom New Construction's report dated February 14, 1991.

Petroleum Hydrocarbons in Soil

The site has been assessed during the course of the removal of the four USTs, by the drilling and sampling of 12 soil borings (B-1 through B-12), by further excavation of Pit 1 and Pit 2, and by the drilling and sampling of MW-6 and MW-7 (Figure 4). Selected soil samples obtained during the explorations were analyzed for chlorinated solvents, petroleum hydrocarbons, and metals. The results of these analyses for petroleum hydrocarbons are shown on Table 2.

Soil Impacted by Diesel South and East of Garage

In general, soil was impacted by petroleum hydrocarbons in the area south and east of the garage. Soil samples from east of the garage analyzed by EPA Method 8015-Modified and Oregon TPH-HCID indicated the petroleum hydrocarbons present were characteristic of diesel.

Chemical analysis on soil samples obtained by Tom New Construction Company from borings west of the garage (B-2 and B-10 to B-12) and southeast of the garage (B-1) did not detect petroleum hydrocarbons by EPA Methods 8020 and 8015-Modified. Boring B-9 was completed inside the garage to assess whether petroleum hydrocarbons had extended or migrated under the garage. Boring B-9 was sampled continuously from 5 to 11 feet.

SCHN00171682

Volatile hydrocarbons were not detected using a photoionization detector (PID) in soil samples from boring B-9. None of the samples from B-9 were analyzed.

Chemical analysis on soil samples obtained by HCI from Pit 1 - 1991 did not detect petroleum hydrocarbons by Oregon Method TPH-HCID. Chemical analysis on soil samples obtained from Pit 2, west of the garage, did not detect petroleum hydrocarbons on the south and east side of the pit. Petroleum hydrocarbons were detected at 750 ppm in the soil sample obtained from the west sidewall of Pit 2

Soil with Petroleum Hydrocarbons Under Truck Scale South of Garage Soil samples obtained by Tom New Construction during the removal of the USTs south of the garage (Pit 1 -1989) indicated up to 29,500 ppm TPH by EPA Method 418.1 on the bottom of the tank pit. Borings accomplished in this area after the Pit 1 - 1989 was backfilled suggested that petroleum hydrocarbons remained near the southwest corner of the truck scale (19,400 ppm TPH by EPA Method 8015-Modified in boring B-5 at 7 to 8-1/2 feet bgs). Toluene, ethylbenzene, and xylene were detected only in boring B-5 at a total concentration of 0.98 ppm.

The area was re-excavated early in 1991 (Pit 1 - 1991) and resampled by Tom New Construction Company and HCI. Analytical results from these sampling events suggest that only a confined area under the truck scales contains petroleum hydrocarbons. Samples obtained by Tom New Construction Company suggests that remaining contaminated soil is present under the southwest corner of truck scale. Samples obtained by HCI on either side of the suspect soil under the truckscale corner indicate that these soils do not contain petroleum hydrocarbons.

Soil with Petroleum Hydrocarbons East of Garage Soil east of the garage was sampled from the waste oil tank excavation (Pit 2), boring B-8, and the re-excavation of Pit 2. Petroleum hydrocarbons from the excavation (Pit 2) were detected on the bottom and in the NW corner by EPA Method 418.1 and on the east side by Oregon Method TPH-D. The maximum observed TPH concentration was 45,100 ppm from boring B-8 at a depth of 9.5 feet. A soil sample obtained at 15-16.5 feet bgs during the drilling of monitoring well, MW-7, about 45 feet east of the garage, indicated 32 ppm TPH using EPA method 418.1.

Based on the analyses, remaining soil impacted by petroleum hydrocarbons appears to be in the proximity of the northeast corner of the garage and to the east of Pit 2.

Other Chemical Analyses

Chlorinated Solvents West of Garage Chlorinated solvents, specifically trichloroethene (TCE), tetrachloroethene (PCE), and cis 1,2-dichloroethene, were detected in soil from borings B-2 and B-12. Chlorinated solvents were not detected in soil from borings B-2 and B-8. Based on the apparent groundwater flow direction and soil data, the source of the solvents appears to be from the north.

SCHN00171683

Barium Detected at 2 ppm A soil sample obtained from boring B-8 in the area of the former waste oil tank was analyzed for T.C.L.P. metals (8) by EPA Method 1311. Only barium was detected at a concentration of 2 ppm which is well below the 100 ppm regulatory limit established in 40 CFR, Part 261.

Petroleum Hydrocarbons in Groundwater

This section addresses the extent of petroleum hydrocarbons in groundwater. The monitoring wells at this site were installed to assess the hydrogeologic conditions and groundwater quality. The monitoring wells were installed in three phases. The first to establish an environmental baseline, the second to further assess the extent of chlorinated solvents found in groundwater from MW-2, and the third to establish impact, if any, to groundwater from petroleum hydrocarbons in the soil.

Groundwater was sampled by RES from MW-1 and MW-2 on September 6, 1990, and analyzed for BTEX by EPA Method 8020, chlorinated solvents by EPA Method 8010, and diesel by EPA Method 8015-Modified. On October 16, 1990, groundwater was sampled by RES from MW-3, MW-4, and MW-5 and analyzed for BTEX and chlorinated solvents by the above methods. Groundwater in the re-excavated tank pits (Pit 1 and Pit 2) was sampled by HCI. on March 12, 1991, and analyzed for BTEX by EPA Method 8020. HCI sampled groundwater from MW-1 to MW-7 on May 9, 1991 and analyzed for BTEX by EPA Method 8020 and for halogenated solvents by EPA Method 8010..

Impact from Petroleum Hydrocarbons in Groundwater from Pit 2, MW-6, and MW-7 Chemical analysis did not detect BTEX in groundwater from monitoring wells, MW-1 to MW-5 (Table 3) or in the water sample from Pit 1. Benzene, toluene, and xylene were detected in the water sample obtained from Pit 2 at the following concentrations: 0.0029 ppm benzene, 0.0014 ppm toluene, and 0.0013 ppm xylene. Groundwater samples obtained from MW-6 and MW-7 indicated low levels of benzene and xylene. Benzene was detected at 0.0015 ppm from the groundwater sample obtained from MW-6. Benzene at 0.0029 ppm and xylene at 0.0048 ppm were detected in the groundwater sample obtained from MW-7.

Chlorinated Solvents in Groundwater from Wells West of the Garage Chlorinated solvents such as trichloroethene (TCE), tetrachloroethene (PCE), cis and trans 1,2-dichloroethene, vinyl chloride, and chloroethane, were detected in groundwater samples from MW-2 to MW-5 (Table 2). Based on chemical concentrations and the apparent groundwater gradient, the source of the chlorinated solvents is probably from the north.

SCHN00171684

CORRECTIVE ACTION OBJECTIVES

The ultimate goal of corrective action is to protect human health and the environment. This is achieved by preventing human or environmental exposure to the contaminants while natural attenuation reduces the levels of residual petroleum hydrocarbons. The objectives of corrective action at this site are based on:

- The State of Oregon Leaking Underground Storage Tank Standards;
- A qualitative assessment of the potential threat posed by the petroleum hydrocarbons;
- What is technically and economically feasible to complete; and
- The operating requirements of the existing business.

Corrective action goals may be established in one of three ways depending upon the level of complexity of a site. For very simple sites, generic standards may be used to establish a protective cleanup level. These standards are based on a quantitative assessment of what is required to be protective for a "typical" site and some general assumptions. The standards may then be applied to sites that fit these assumptions. Oregon's matrix is an example of generic standards for underground storage tanks.

For complicated sites, however, a formal, quantitative exposure assessment may be required. This uses extensive monitoring data together with sophisticated models and research data to estimate the level of risk to human health and the environment under baseline and various cleanup conditions.

Corrective action goals for sites with intermediate complexity may be established using elements of both of these methods. Although a site may not fit all of the assumptions required to use the standards, portions of the site may. Standards were developed to be protective so it is appropriate to consider them when setting goals for more complicated sites. On the other hand, a site may not be so complicated as to justify a quantitative risk analysis. For example, experience shows that a paved site with slight to moderate petroleum hydrocarbons in the soil does not typically pose a significant threat from dermal exposure to contaminated soil. Although we may not know the actual quantitative threat, we do know it is not significant. If this were the only potential pathway of exposure, then the soil cleanup limit could be set at relatively high levels and still be protective.

Summary of Corrective Action Objectives

This section summarizes the corrective action goals for this project based on media type and corrective action method. The bases for these goals are discussed in the following sections.

SCHN00171685

Maintain Site Usability

The site is currently operating as a warehouse and will continue to operate as such. The current tenants would like to use the truck scale and the rail spur under which soil with petroleum hydrocarbons has been identified. To protect human health, exposure at unacceptable levels for all potential exposure routes needs to be prevented. These exposure routes include skin contact with contaminated soil or contaminated groundwater, consumption of contaminated soil or contaminated groundwater, and inhalation of vapors or contaminated dust. Most of the site is currently covered by asphalt concrete or buildings. Due to the UST excavations and some recent remodeling, there are some unprotected areas on the site that should by recovered by asphalt concrete.

Another unprotected area is around the rail line spur. However, the petroleum hydrocarbons that were detected in this area were 15 feet bgs. Soil sample MW-7/S-1, collected at 5-7.5 feet bgs, was nondetect for petroleum hydrocarbons. Therefore, considering that the contamination is several feet bgs, that this area is a low traffic area, and since the tenants wish to use the spur line, a cover is not recommended for this area.

Long-Term Groundwater Monitoring

We will monitor groundwater for evidence of migration of contaminants from the site and to confirm if migration is from an off-site source. As groundwater monitoring data is collected, any additional corrective action that may be necessary will be evident.

Chemical/Physical Properties of Diesel

Diesel fuel may contain as many as 500 individual compounds which are less volatile, more dense, less mobile, and less water soluble than those found in gasoline. It also contains low percentages of the lighter aromatics such as BTEX and more straight chain alkanes. In older releases, degradation lowers BTEX concentrations to minimal or undetectable levels.

<u>Physical Properties</u> Diesel is lighter than water but heavier than gasoline due to the more dense hydrocarbons of which it is composed. It has a specific gravity of about 0.80 to 0.84 over the normal range of environmental temperatures. Diesel has a boiling point of 500-750 °F and a flash point of 110-190 °F. The viscosity of diesel ranges from 2.7 to 3.9 centipoise over the normal range of environmental temperatures. For equal conditions, it will flow two to four times slower than water.

<u>Chemical Properties</u> Each hydrocarbon compound in diesel has a different solubility. In addition, the solubility of a particular compound in diesel is typically much less (on the order of 100 times) than the solubility of the pure compound. The lighter, aromatic molecules such as BTEX and the ether and alcohol additives, if any, tend to be the most soluble. Because the constituents of diesel are relatively heavier than gasoline, diesel is relatively less soluble

SCHN00171686

than gasoline. Diesel, having less aromatic compounds than gasoline, is also less volatile.

Persistence of Diesel in the Environment

The persistence of diesel in the environment is longer than that of gasoline because the individual compounds of diesel are less volatile and more dense. However, releases of diesel are less mobile due to its more viscous and less soluble nature.

Qualitative Assessment of Potential Exposure

For diesel, the contaminants of concern are polycyclic aromatic hydrocarbons which are carcinogenic. However, due to the depth of petroleum hydrocarbons and the low concentration of benzene, toluene, and xylene in the groundwater at this site, it is not believed to be a threat to human health and the environment.

Environmental Fate, Toxicity, and Regulation

The BTEX compounds are all volatile organic compounds. The properties of volatile organics indicate that they are generally non-persistent, non-sorptive, and moderately to highly soluble in the aquatic environment. These properties are indicative of a high degree of mobility in the environment.

Benzene In the absence of adequate data to establish water quality criteria, EPA has set the Lowest Observable Effect Concentrations (LOEC) for benzene at 5.3 ppm for acute toxicity to freshwater organisms. No LOEC has been established for chronic effects to freshwater organisms, but the LOEC for chronic effects to marine organisms is 0.7 ppm (as compared to 5.1 ppm for acute-marine effects).

The EPA has classified benzene as a known human carcinogen via the inhalation route. They have established an inhalation potency factor of 0.029 mg/(kg-day).

The MCL (Maximum Contaminant Level) for drinking water is 0.005 ppm, but the goal is zero to reflect its status as a human carcinogen.

With regard to water quality criteria for the protection of human health, the EPA has established criteria (corresponding to a 10E-6 lifetime probability of contracting cancer) of 0.04 ppm for consumption of fish/shellfish alone, and 0.00066 ppm for the consumption of both contaminated fish/shellfish and of contaminated drinking water.

Toluene The EPA recognizes the acute LOEC for freshwater of 17.5 ppm. For chronic toxicity, the EPA does not recognize a freshwater criteria, but does recognize a marine value of 5 ppm (marine acute LOEC is 6.3 ppm).

SCHN00171687

The oral reference dose for toluene has been set at 0.3 mg/(kg-day) based on a rat inhalation study. Numerous animal studies have produced no clear evidence that toluene is carcinogenic. There are few human studies. Therefore, toluene has been designated as non-classifiable.

The EPA Office of Drinking Water has proposed for toluene an MCL goal in drinking water of 2 ppm. Ambient water quality criteria for the protection of human health from toluene toxicity have been established at 424 ppm for the consumption of fish/shellfish alone and at 14.3 ppm for the consumption of both fish/shellfish and water.

Perhaps the most likely route of exposure to toluene is via respiration, where toxic effects in humans have been observed at 1,000 ppm in air. Various symptoms of illness have been reported at airborne concentrations as low as 100 ppm.

Ethylbenzene The EPA recognizes the acute LOEC for freshwater at 32 ppm. There is no established value for chronic exposure.

The oral reference dose for ethylbenzene has been set at 0.1 mg/(kg-day) based on liver and kidney toxicity in rats. Numerous animal studies have produced no clear evidence that ethylbenzene is carcinogenic. There are few human studies. Therefore, ethylbenzene has been designated as non-classifiable.

The proposed MCL goal for ethylbenzene in drinking water is 0.7 ppm. Ambient water quality criteria for the protection of human health from ethylbenzene toxicity have been established at 3.28 ppm for the consumption of fish/shellfish alone and at 1.4 ppm for the consumption of both fish/shellfish and water.

Xylenes The EPA has established no ambient water quality criteria for the protection of aquatic life. A survey of the toxicological literature revealed the toxicity of xylenes to aquatic life to be similar to that of both toluene and ethylbenzene.

The oral reference dose for xylenes has been set at 2 mg/(kg-day) based on studies on rats. Numerous animal studies have produced no clear evidence that xylenes are carcinogenic. There are few human studies. Therefore, xylenes have been designated as non-classifiable.

The proposed MCL goal for xylenes in drinking water is 10 ppm. The EPA has established no toxicity-related data under the Clean Water Act.

Contaminant Fate and Transport

Diesel exists in the subsurface in one or more of liquid, dissolved, and vapor phases. The fate and transport of each of these phases will be discussed separately.

General Liquid Transport Liquid phase petroleum hydrocarbons may exist in soil in the following forms:

- Immobile residual liquid between soil particles in the unsaturated zone;

SCHN00171688

- Mobile liquid on the groundwater (or on soil layers with low hydraulic conductivity, but this will usually also include some perched groundwater); and
- Immobile residual liquid between soil particles in the saturated zone.

Liquid diesel tends to move downward through soil under the influence of gravity. Horizontal spreading will also occur due to surface attractive forces with soil particles. As the free liquid moves through the soil, a portion is trapped between soil particles by surface forces. The amount of this immobile residual liquid can range from about 0.01 to 0.15 gallons per cubic foot depending on soil type. As free liquid accumulates on the groundwater, it tends to spread laterally under the influence of the pressure of the overlying liquid. Underground conduits, such as buried utilities, can provide avenues for relatively rapid lateral movement of liquid gasoline because utility trench backfill is often much more permeable than the native site soils.

Once the liquid reaches groundwater, it will begin to flow in the direction of the hydraulic gradient. As the liquid moves, it will leave behind immobile residual liquid in the soil.

Fluctuating water tables also tend to spread the liquid diesel. As the water table falls, the liquid follows it down, leaving behind residual liquid. With a subsequent rise in the water table, this immobile residual liquid will be trapped within the saturated zone.

Some hydrocarbons in the product will partition into groundwater or into soil pore spaces. Lower molecular weight aromatic hydrocarbons such as BTEX compounds are relatively volatile and are fairly soluble in water. These aromatic compounds dissolve in groundwater and migrate with the flow. The dissolved hydrocarbons may interact with organic matter in the soil. The most hydrophobic or least soluble hydrocarbons adsorb to soil surfaces resulting in a retardation or slowing of their transport velocity relative to groundwater flow. The most soluble constituents are the least retarded, move more quickly, and tend to migrate farther than the less soluble hydrocarbons.

<u>Water Solubility and Migration</u> Where subsurface water contacts liquid diesel, it picks up dissolved-phase petroleum hydrocarbons. This can occur when infiltrating water contacts immobile residual liquid or free liquid, or when groundwater contacts free liquid or immobile residual liquid. Once the dissolved phase is in the groundwater, it may move by either advection (transport with groundwater movement) or dispersion (transport by other than direct movement with the groundwater).

In most cases, advection is the most significant method of movement of the dissolved phase. It is directly dependent on the hydraulic gradient and the hydraulic conductivity of the soil.

Dispersion accounts for the spread of the dissolved phase in addition to advection. Diffusion and mechanical mixing are the two processes of dispersion. Diffusion occurs as a consequence of the random thermal motion and repeated collisions and deflections of molecules in a fluid. It is generally

SCHN00171689

only important in soils with very low hydraulic conductivity. Mechanical mixing occurs due to variations in the flow velocity of the groundwater brought on by heterogeneous soil. The net effect of dispersion is to decrease the concentration of the dissolved phase by spreading it over a larger volume of groundwater.

Volatility and Vapor Transport Because diesel constituents are relatively less volatile, vapor transport is less important in diesel migration in soils.

Site Transport Model Petroleum hydrocarbons in the subsurface consists of diesel with little weathering. The following model presents a likely scenario for the release and transport of diesel at the Hill Investment Company Warehouse site.

- Free liquid was released from a source east of the site. Since the petroleum hydrocarbons detected at the east sidewall of Pit 2 were found to be in the diesel range, the release in this area was not due to the waste oil tank that removed in 1989.
- From the point source, the free liquid migrated downward to the groundwater table. Over time, the free liquid that reached the groundwater migrated downgradient to the southwest and onto the Hill Investment Company Warehouse site.
- Free liquid moving through the soil left behind residual, immobile liquid in a portion of the unsaturated zone of the soil.
- The dissolved phase moved down gradient with the groundwater. The benzene concentrations in MW-6 and MW-7 are consistent with the movement in the direction of the hydraulic gradient.
- Vapor phase hydrocarbons were released from the free liquid, immobile liquid, and the dissolved phase. This vapor fills the soil pores in the unsaturated zone. Migration of the vapors is probably in the radial direction due to diffusion. Vapors moving into areas without petroleum hydrocarbons will redissolve in soil moisture and adsorb on to soil particles. Because the site is paved, a significant amount of vapors most likely do not migrate to the surface. However, vapors that do reach the surface are anticipated to quickly dissipate into the atmosphere.

Contaminant Persistence

The fate of petroleum hydrocarbons in the subsurface is controlled by several processes including:

- Biodegradation
- Volatilization
- Sorption onto soil particles

SCHN00171690

- Chemical degradation

The relative importance of these processes vary depending upon environmental conditions. The first three are usually the most dominant, but the last, chemical degradation, is fairly constant and provides a lower bound to the natural degradation rate.

The following discussion focuses on the degradation of the contaminants of concern -- BTEX.

Biodegradation Under favorable conditions, biodegradation is the most rapid degradation process for BTEX in soil and groundwater. Naturally occurring organisms in the soil easily adapt to metabolize petroleum compounds, especially the more soluble compounds such as BTEX. The most important parameter affecting biodegradation rate is the oxygen level. When oxygen is available, biodegradation will remove over 95 percent of the BTEX within a few weeks to a few months depending upon other factors such as temperature and nutrient levels (PACE, 1986). This corresponds to a half-life of about 5 to 20 days.

For anaerobic conditions, however, laboratory tests indicate over 99 percent degradation in 120 weeks with a half-life of about 120 days (ATSDR, 1989). Extrapolating these conditions is difficult. Studies have shown that laboratory degradation rates can be as much as 10 times faster than field rates which may be attributed to a smaller population of microbes in the natural condition (ATSDR, 1989). Therefore, for anaerobic conditions, the half-life could be as long as 3 years.

Volatilization Volatilization from water can be very rapid. For example, the half-life of benzene in 3 feet of water exposed to the atmosphere is less than 5 hours (ATSDR, 1989). In groundwater, the rate is much slower because an equilibrium is quickly reached between the water and the vapor. The rate of volatilization is then controlled by the rate of vapor transport away from the contaminated groundwater.

Adsorption onto Soil Particles In this process, as contaminated groundwater moves through soil, some of the BTEX will adsorb onto soil particles. This process, however, is usually reversible. The amount that actually permanently adsorbs is difficult to assess. It is strongly related to the fraction of organic carbon (FOC) in the soil. The soils at the Hill Investment Company Warehouse site probably have a low FOC. Therefore, this process is probably not significant at this site.

Chemical Degradation This is generally not regarded as a significant mechanism of decomposition for BTEX in water (although it is the most significant in air with the half-life for benzene ranging from 2 hours to 6 days depending upon the level of air pollution). However, it may become relatively important in situations where the other mechanisms are slowed, such as in anoxic groundwater conditions. Therefore, chemical degradation gives a good indication of the limiting degradation rate for BTEX in water. A conservative estimate of the half-life of benzene in water (due to oxidation by the hydroxide radical) is 0.7 years (ATSDR, 1989).

SCHN00171691

Qualitative Exposure Assessment

This section identifies the contaminants of concern, potential receptors, potential exposure routes, and the risk of exposure in a qualitative manner.

Contaminant of Concern: Benzene Benzene is the major (and often the only) contaminant of concern of petroleum hydrocarbon contamination based on quantitative exposure assessments for petroleum sites. This has resulted from its designation as a human carcinogen and corresponding low toxicity criteria.

Potential Receptors: Humans In general, potential receptors include humans and the environment. At the site, however, there is no impact on surface water so there will be little or no impact on potential environmental receptors. Therefore, only humans are considered as potential receptors at the site.

Potential Exposure Routes Potential exposure routes for humans include inhalation of vapors, inhalation of contaminated dust, skin contact with contaminated soil or groundwater, and ingestion of contaminated soil or groundwater.

Risk of Exposure Low In general, the risk of exposure at this site is characterized as low. Vapor inhalation is unlikely because the site is paved. Paved areas also exist to the east, west, north, and south off-site. Foundation construction directly within the contaminated soils may result in long term release of petroleum hydrocarbon vapors to basements. Basement construction is not typical construction practice in the site area due to shallow groundwater. There has not been any indication or expectation that vapors have reached the surface at measurable levels.

Inhalation of contaminated dust or vapors, skin contact with contaminated soil, or consumption of contaminated soil are possible during construction activities on the site. This would be most likely during site characterization activity or tank removal activities. These operations would be, and have been, monitored for air quality and precautions taken, if necessary. In either case, these activities would be and have been of short duration and would therefore carry a negligible increase in lifetime risk.

Skin contact and consumption of contaminated water could occur if groundwater were removed from a well screened near the top of the water table. There are no water supply wells near the site that are screened in this zone. Movement of the contaminants to other areas or levels is unlikely. It is very unlikely any wells will be installed in the zone of contamination because of the low potential yield.

Rationale for Corrective Action Goals

This section presents the rationale for the corrective action goals to be achieved at the Hill Investment Company Warehouse site. Groundwater is the focus because it is the main route of transport from the site and has the highest

SCHN00171692

potential for exposure to humans. Focus on the soils also address the potential for human exposure via vapor phase inhalation.

Groundwater

Groundwater - MCL's Most cleanup goals for groundwater remediation is the respective, final or proposed, Maximum Contaminant Level (MCL) for benzene (0.005 ppm), ethylbenzene (0.7 ppm), toluene (2 ppm), and xylene (10 ppm) . The levels of benzene, toluene, and xylene detected on the site are below these standards. Therefore, no cleanup is required at this time. However, long-term groundwater monitoring is recommended to ensure that migration from an off-site source does not increase these levels.

Soils

Based on Exposure Routes Dermal contact and direct soil ingestion remain as significant exposure pathways. It has been our experience with quantitative, risk-based exposure assessments for petroleum hydrocarbon sites, that cleanup goals based solely on dermal contact, and direct soil ingestion are typically in the range of several hundred parts per million for concentration of benzene in the soil. This cleanup goal does not account for the reduced exposure potential due to the site being paved. Because the current benzene concentrations are well below this risk-based level, the exposure pathway for dermal contact and direct ingestion are not considered significant. Thus, the soil cleanup goals based on soil vapor monitoring are appropriate. Benzene concentration is anticipated to be the controlling factor in the cleanup of the soils for the same reasons discussed relative to the groundwater cleanup.

FEASIBILITY STUDY

This section presents our evaluation of corrective action options for soil at this site based on the current understanding of site hydrogeology, and areas identified as impacted by petroleum hydrocarbons. The purpose of this study was to evaluate available technologies to select protective and reasonable corrective action alternatives. We achieved this goal by evaluating and screening technologies, developing alternatives, and evaluating and screening alternatives. Alternatives were evaluated against the following criteria:

- **Effectiveness.** Does the alternative protect human health and the environment?
- **Implementability.** Can the alternative be built using currently available technologies and facilities and in compliance with current regulations without severely disrupting the existing business?
- **Cost.** Is the alternative an economical use of resources?

Based on the screening of the alternatives, the best was selected for corrective action at the site.

SCHN00171693

Identify and Screen Technologies

This process of identifying and screening technologies involved three steps. Initially, we defined general response actions for each medium. These are broad categories of remedial measures that address one or more of the remedial action objectives. Examples are containment and treatment. Secondly, we identified technologies (an example of a treatment technology is volatilization) within each of the general response actions and eliminated those that were not technically feasible or consistent with site use. Screening at this step was based on general site conditions such as soil and contaminant type. Lastly, we identified, evaluated, and selected specific process options for each technology (an example of a volatilization process option is air stripping).

Soil Technology Screening

The first three columns of Table 6 list the general response actions, technologies, and process options for soil remediation. These lists were developed from a wide range of sources including government documents, consultant reports, research literature, vendor publications and contacts, periodicals, and our experience.

The fourth column of Table 6 presents a brief description of each process option, and the fifth column summarizes our initial screening of the process options. Those process options and technologies eliminated from further consideration are indicated by shading. Screening at this stage is based on applicability -- effectiveness and implementability – but not cost. The following discussions expand upon the screening comments given on the table.

<u>Removal Technologies Not Feasible at this Site</u> Removal technologies (that is, soil excavation) are not feasible at this site for the following reasons:

- Excavation of soil would:
  - disrupt the existing business;
  - endanger the on-site building; and
  - endanger the rail line.

<u>Two Potentially Feasible Alternatives for Soil Treatment</u> Treatment technologies may be broken down into either ex situ or in situ technologies. Ex situ technologies are not feasible because they require excavation which has been shown to be not feasible. Potentially feasible in situ technologies include vapor extraction and bioremediation.

<u>In Situ Biodegradation</u> For this alternative, the soil would be treated in place by supplying oxygen and nutrients (if necessary) to the soil. Degradation would be enhanced by chemical oxidation of some of the contaminants. Water would be supplied to the source soils along with the necessary nutrients and oxygen (possibly in the form of hydrogen peroxide) from an infiltration gallery installed in the upgradient portion of the site.

SCHN00171694

This system would be effective but may take a long time to complete relative to other alternatives. A treatability test would be required to confirm that the contamination could be reduced to the treatment goals with this method. This alternative uses active treatment to permanently destroy the contaminant. The cost of this alternative is expected to be moderate relative to the other alternatives.

Vapor Extraction For this alternative, the soil would be treated in place, by withdrawing vapors from the ground by applying a vacuum to wells screened in the unsaturated zone. The vapor wells would be positioned above the saturated zone within the contaminated soils. The discharge would need treatment before the vapors reach the atmosphere.

Vapor extraction would probably not be effective due to the low volatility of diesel and because the petroleum hydrocarbons were detected at or below the water table. The cost of this alternative is expected to be moderate relative to the other alternative.

Soil Technology Evaluation

Table 7 presents the evaluation of the process options that passed the initial screening in Table 6. The first three columns include the same information as Table 6. The remaining columns present brief comments on the process options for the three basic evaluation criteria: effectiveness, implementability, and cost.

Of the original soil treatment technologies, only institutional controls restricting access to the site and an asphalt or Portland cement concrete cover passed the evaluation. The cover is very effective in preventing human contact, consumption, or inhalation of soil or vapor. Since it is already in place, it is easy to implement and low in cost. The institutional controls, such as a deed restriction, may be used to prevent current or future property owners from removing the building or pavement without at least addressing the potential future exposure.

Develop and Evaluate Alternatives

As a result of the technology screening and evaluation, only one feasible alternative remains for the site. This alternative includes the following components:

- Cover the site, with the exception of the rail line spur, with a permanent, physical barrier (such as asphalt concrete or Portland cement concrete);
- Restrict removal of the cover with a written agreement; and
- Monitor groundwater on a quarterly basis for a period of two years to monitor BTEX levels in groundwater.

SCHN00171695

This alternative is both effective and implementable as discussed below.

The Alternative Meets All of the Remedial Action Objectives This alternative meets all three of the remedial action objectives by maintaining site usability, protecting human health, and protecting the environment. A paved site is not only compatible with the existing business, but a requirement. Human health is protected because potential exposure routes either do not exist or are eliminated. Skin contact with contaminated soil, consumption of contaminated soil, and inhalation of vapors or dust are prevented by the cover. Skin contact or consumption of contaminated groundwater are not possible because no water wells are located within or near the contaminated groundwater. Finally, exposure of the environment (via movement of contaminated groundwater to surface water) should not occur because the groundwater in the on site monitorng wells do not contain harmful levels of BTEX.

Implementation Almost Complete This alternative is easily implemented because most of the cover and monitoring wells are already in place. The existing building and paved parking area will serve as the cover. These are regularly maintained and should last for many years. The monitoring well system will include four on site monitoring wells (MW-1, MW-2, MW-6, and MW-7).

SITE REMEDIATION SYSTEM

The site remediation program will generally consist of the following:

- The site will be covered utilizing the existing building and paved area; and
- Groundwater quality will be monitored on a quarterly basis for a period of two years.

Cover the Site Utilizing the Existing Building and Paved Area

About 80 percent of the site is currently paved or covered with a building which has a concrete floor. The area of the site where the UST excavations were backfilled will need to be paved. The remainder of the site, along the east edge where the rail spur is located will not be covered at this time so that the rail spur can be utilized.

Monitor Groundwater Quality on A Quarterly Basis

Groundwater samples from all of the groundwater monitoring wells (MW-1, MW-2, MW-6, and MW-7) will be collected and analyzed on a quarterly basis for a period of two years. Analyses will be for BTEX by EPA method 8020. The results will be reported to the DEQ on a quarterly basis. A summary report at the end of the two-year period will review the results and assess the need for continuing monitoring.

SCHN00171696

CLOSING

This corrective action plan presents a summary of the nature and extent of petroleum hydrocarbons in the soils and groundwater at the Hill Investment Company Warehouse site. The proposed corrective action plan and methods are anticipated to be protective of human health and the environment.

HART CROWSER, INC.

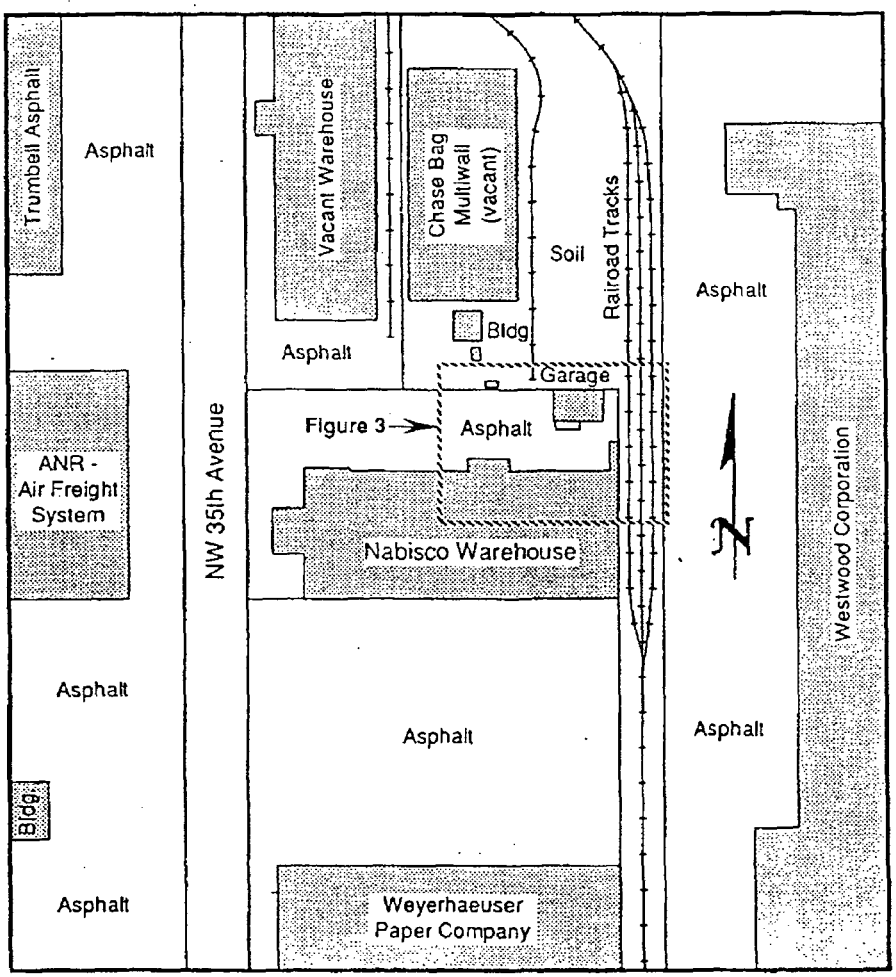
ALICE J. LARSEN
Civil Engineer

WILLIAM T. RENFROE, JR.
Project Manager

SCHN00171697

Site Vicinity Map

3322 NW 35th Avenue, Portland, Oregon



Note: Base Map prepared from visual reconnaissance of the vicinity by a Hart Crowser representative on April 9, 1991.

0 200 400

Approx. Scale in Feet

HARTCROWSER

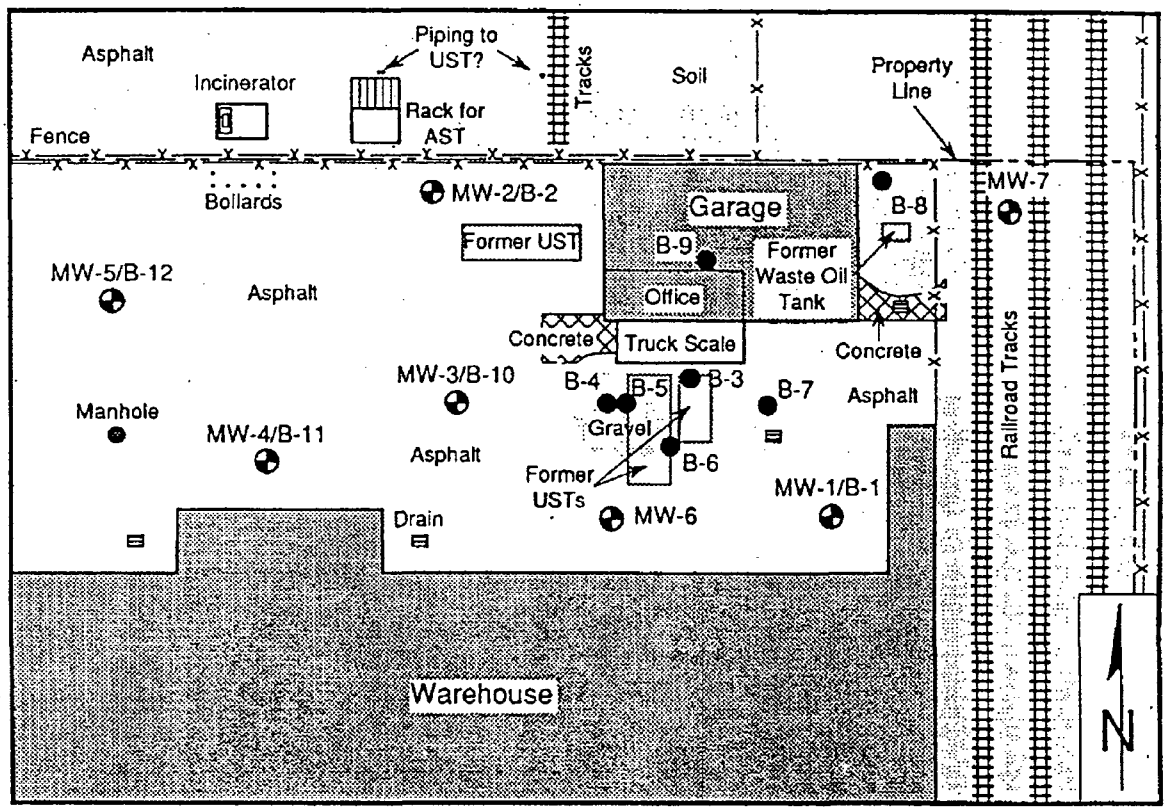
J-5115-02 *4/91*

Figure 2

SCHN00171698

Site and Exploration Plan

3322 NW 35th Avenue, Portland, Oregon



Note: Base Map prepared from Figure 2 of the November 10, 1990, report by Riedel Environmental Services, Inc., entitled "Nabisco Warehouse Site, Soil and Ground Water Sampling, Round II" and from visual reconnaissance by a representative of Hart Crowser.

0 40 80
Scale in Feet

Legend:

B-1	●	Boring Location and Number
MW-3/B-10	◕	Monitoring Well/Boring Location and Numbers
UST		Underground Storage Tank
AST		Above Ground Storage Tank
		Asphalt
		Soil or Gravel
		Concrete

HARTCROWSER

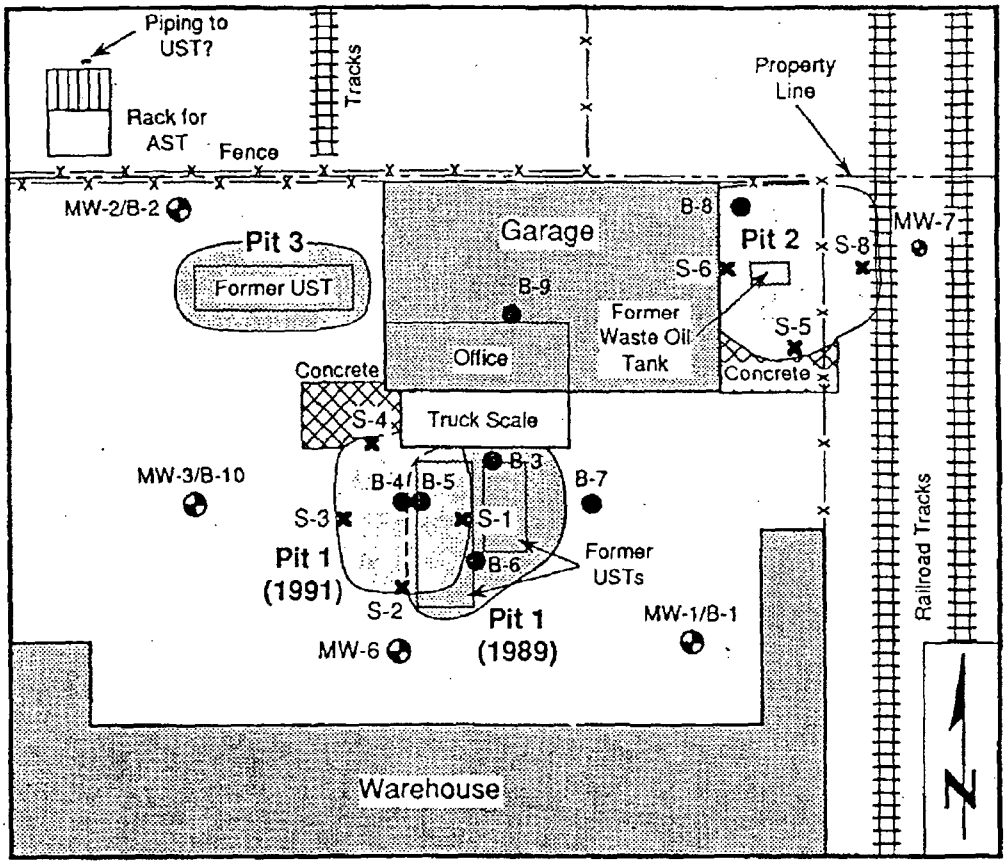
J-5115-02 *4/91*

Figure 3

SCHN00171699

Tank Pits and 1991 Soil Sampling Locations

3322 NW 35th Avenue, Portland, Oregon



Note: Base Map prepared from Figure 2 of the November 10, 1990, report by Riedel Environmental Services, Inc., entitled "Nabisco Warehouse Site, Soil and Ground Water Sampling, Round II" and from visual reconnaissance by a representative of Hart Crowser. Locations of the former USTs, the former waste oil tank, and tank pits are approximate. All excavations have been backfilled.

Legend:

S-1 ✖	Soil Sampling Location and Number, March 12, 1991
(shaded oval)	Tank Pit Excavated in November 1989
(oval)	Tank Pit Excavated in February 1991
B-1 ●	Boring Location and Number
MW-3/B-10	Monitoring Well/Boring Location and Numbers
UST	Underground Storage Tank
AST	Above Ground Storage Tank

0 30 60

Scale in Feet

HARTCROWSER

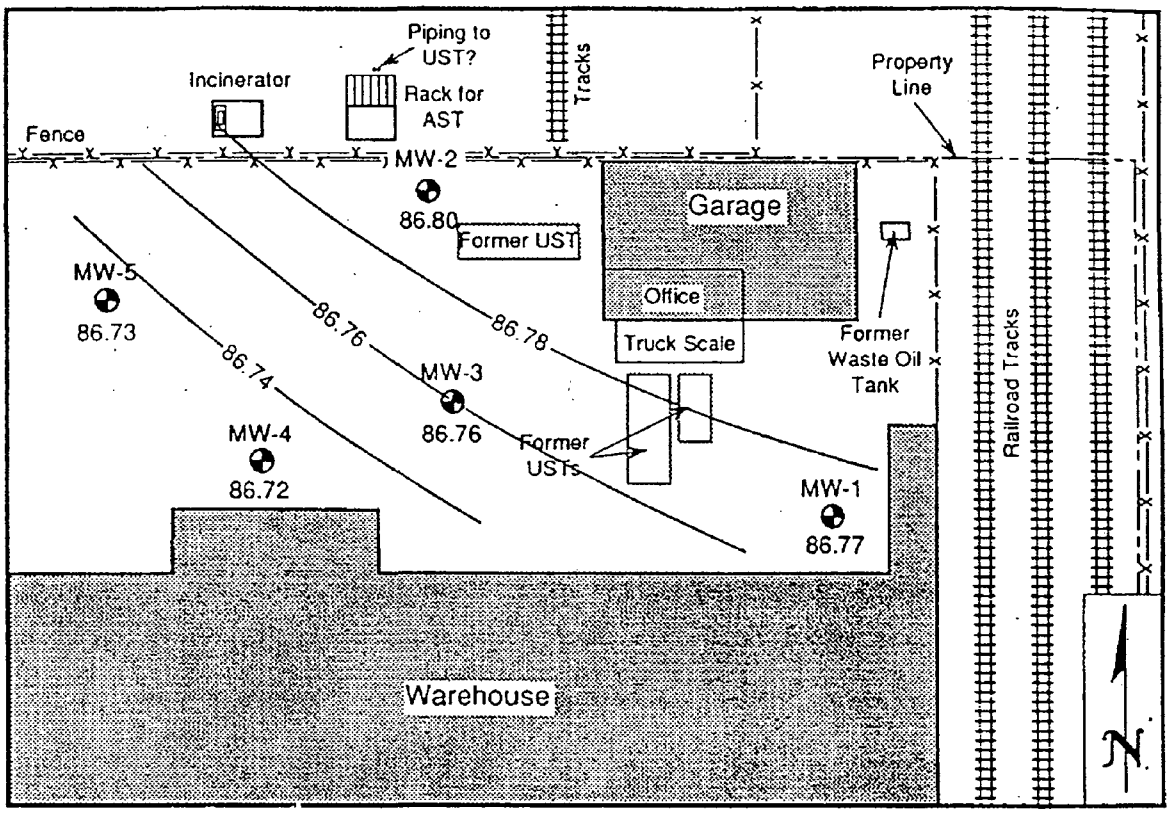
J-5115-02 *4/91*

Figure 4

SCHN00171700

Groundwater Elevations and Contours

3322 NW 35th Avenue, Portland, Oregon
November 1990



Note: Base Map prepared from Figure 2 of the November 10, 1990, report by Riedel Environmental Services, Inc., entitled "Nabisco Warehouse Site, Soil and Ground Water Sampling, Round II" and from visual reconnaissance by a representative of Hart Crowser. Groundwater elevations measured by Riedel Environmental Services, Inc. Elevations measured relative to an assumed reference datum of 100.00 feet.

0 40 80
Scale in Feet

Legend:

MW-3 ◐	Monitoring Well Location and Number
86.76	Relative Groundwater Elevation in Feet
—86.76—	Contour of Groundwater Elevation in Feet
UST	Underground Storage Tank
AST	Above Ground Storage Tank

HARTCROWSER
J-5115-02 4/91
Figure 5

SCHN00171701

APPENDIX A
FIELD AND CHEMICAL SAMPLING PROCEDURES AND WELL LOGS

Drilling and Soil Sampling

Drilling Completed with Hollow-stem Auger

Wells were drilled using a truck-mounted, 8-inch-diameter (I.D.), hollow-stem auger drill rig under subcontract to Hart Crowser, Inc.

Drilling was done under the observation of representatives of Hart Crowser. Detailed field logs were prepared for each well. They are presented in this appendix on Figures A-2 and A-3. Soil samples were described using the soil classification system presented on Figure A-1.

Soil samples were obtained on 2-1/2 or 5-foot-depth intervals. The sampling procedure involved driving a standard 2-inch-diameter, split-spoon sampler into the soil a distance of 18 inches using a 140-pound hammer with a free-fall height of 30 inches (ASTM D-1587). The number of blows to drive the sampler the final 12 inches is recorded at the respective depths on the boring logs. This resistance, or blow count, provides a measure of the relative density of granular soils and consistency of cohesive soils.

Drilling and sampling equipment were cleaned after the completion of each boring or sampling event to minimize the potential for cross contamination between soil borings or sample intervals. The augers were steam-cleaned after each boring. Split-spoon samplers were cleaned with a biodegradable detergent (Alconox®) solution and rinsed with distilled water between each sample run. Soil cuttings from the borings were placed on-site in 55-gallon drums.

Handling of Soil Samples

Soil samples from the split spoon sampler were handled in accordance with the procedure outlined below:

- Place in laboratory-supplied glass jars with Teflon®-lined lids labelled with the following information:
  - boring and sample identification number
  - date
  - project number
  - depth
  - sampler's initials
- Minimize void space in sample jars to the extent possible by compacting and filling the entire jar with soil.

- Screen for hydrocarbons using a photoionization detector (PID) following the procedure outlined below.
- Place each jar in an insulated container cooled with ice.
- Dispose of excess soil in accordance with the procedures outlined above for drill cuttings.
- Complete a chain-of-custody form to accompany the samples.

PID Measurements

Sample jar headspace vapor measurements were made using an H-Nu® photoionization detector (PID) to assess the possible presence of petroleum hydrocarbons in the soil samples. Soil samples from the split-spoon sampler were collected in glass jars (filled less than half full), covered with aluminum foil prior to capping, and then allowed to warm to room temperature (60 to 70°). PID measurements were made by pushing the probe through the foil cover after uncapping. The PID measurements were made using a 10.3 eV probe, within 12 hours of collection. The PID was calibrated prior to use using a manufacturer supplied standard gas.

Monitoring Well Installation and Sampling

Descriptions of the monitoring well installations are presented on the logs. In general, a 15-foot-long 10-slot PVC well screen was installed at the bottom of the well. The monitoring wells installed by Hart Crowser have an outside diameter of 4 inches. Sand (10-20 Colorado) was placed to about 2 feet above the screened portion of the wells. Holeplug bentonite was placed above the sand to within 1-2 feet of the groundsurface. Concrete and a locking monument completed the surface seal. A water-tight cap was inserted in the top of the PVC casing.

The monitoring wells were developed by bailing about 3 casing volumes of groundwater using a stainless-steel bailer. Between each well, the bailer was washed in a detergent solution and rinsed with deionized water. The rope used on the bailer was dedicated to each well. Each of the wells were surveyed to an arbitrary datum to the nearest 0.01 foot using the loading dock as an assumed elevation of 100.00 feet.

The wells were sampled using a stainless-steel bailer. Prior to sampling the wells, about three casing volumes of water were bailed from the wells (or the wells were bailed dry). To reduce the potential for loss of volatiles, care was taken not to agitate the samples. Sample containers consisted of laboratory-supplied 40-ml glass vials with Teflon®-lined septums. The glass vials were filled such that no air bubbles existed. All samples were immediately placed in cooled ice chests for transport to the analytical laboratory. Chain-of-custody documentation was maintained at all times. The bailer was decontaminated as for developing.

SCHN00171703

Key to Exploration Logs

Sample Descriptions

Classification of soils in this report is based on visual field and laboratory observations which include density/consistency, moisture condition, grain size, and plasticity estimates and should not be construed to imply field nor laboratory testing unless presented herein. Visual-manual classification methods of ASTM D 2488 were used as an identification guide.

Soil descriptions consist of the following:
Density/consistency, moisture, color, minor constituents, MAJOR CONSTITUENT, additional remarks.

Density/Consistency

Soil density/consistency in borings is related primarily to the Standard Penetration Resistance. Soil density/consistency in test pits is estimated based on visual observation and is presented parenthetically on the test pit logs.

SAND or GRAVEL Density	Standard Penetration Resistance in Blows/Foot	SILT or CLAY Consistency	Standard Penetration Resistance in Blows/Foot	Approximate Shear Strength in TSF
Very loose	0 - 4	Very soft	0 - 2	<0.125
Loose	4 - 10	Soft	2 - 4	0.125 - 0.25
Medium dense	10 - 30	Medium stiff	4 - 8	0.25 - 0.5
Dense	30 - 50	Stiff	8 - 15	0.5 - 1.0
Very dense	>50	Very stiff	15 - 30	1.0 - 2.0
		Hard	>30	>2.0

Moisture

Dry	Little perceptible moisture
Damp	Some perceptible moisture, probably below optimum
Moist	Probably near optimum moisture content
Wet	Much perceptible moisture, probably above optimum

Minor Constituents

	Estimated Percentage
Not identified in description	0 - 5
Slightly (clayey, silty, etc.)	5 - 12
Clayey, silty, sandy, gravelly	12 - 30
Very (clayey, silty, etc.)	30 - 50

Legends

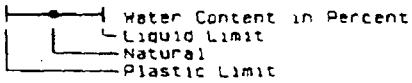
Sampling

BORING SAMPLES

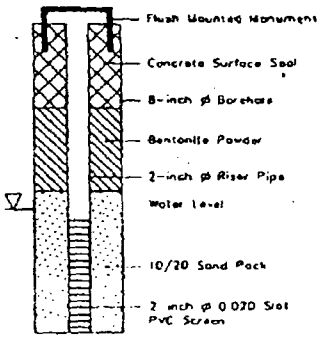
- ⊠ Split Spoon
- ⊘ Shelby Tube
- ▤ Cuttings
- ⊡ Core Run
- * No Sample Recovery
- P Tube Pushed, Not Driven

Test Symbols

GS	Grain Size Classification
CN	Consolidation
TUU	Triaxial Unconsolidated Undrained
TCU	Triaxial Consolidated Undrained
TCD	Triaxial Consolidated Drained
QU	Unconfined Compression
DS	Direct Shear
K	Permeability
PP	Pocket Penetrometer Approximate Compressive Strength in TSF
TV	Torvane Approximate Shear Strength in TSF
CBR	California Bearing Ratio
MD	Moisture Density Relationship
AL	Atterberg Limits



Ground Water Observations



HARTCROWSER

Figure A-1

SCHN00171704

Boring Log and Construction Data for Monitoring Well MW-6

Geologic Log

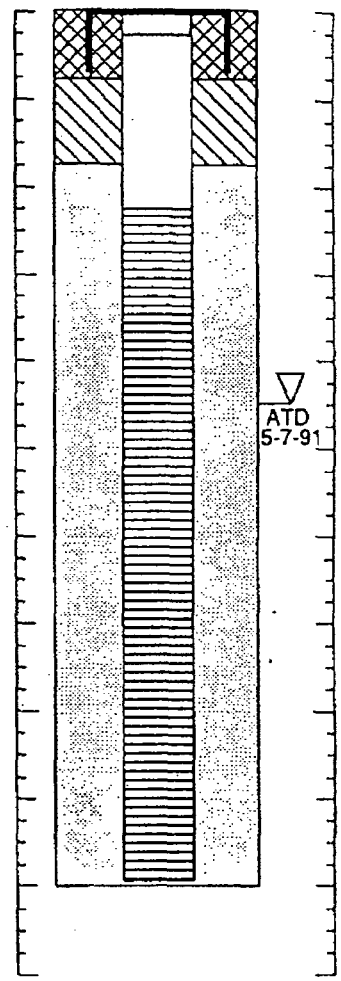
Monitoring Well Design

Casing Stickup in Feet -0.3
Top of PVC in Feet: 95.48

Depth in feet

Approx. Ground Surface Elevation in Feet: 95.51

Depth	Description	Sample	N	PID
0	3 inches asphalt.			
	Moist, loose, brown SAND.	S-1	5	<5
	Wet, loose, gray SAND.	S-2	8	<5
10		S-3	3	<5
	Wet, very loose, black SAND.	S-4	4	<5
20		S-5	6	<5
	Bottom of boring at 21.5 feet. Completed May 7, 1991.			



1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Soil descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Ground water level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.
4. Elevations arbitrarily referenced to the loading dock as 100.00 feet.

HARTCROWSER

J-5115-02 *5/91*

Figure A-2

Boring Log and Construction Data for Monitoring Well MW-7

Geologic Log

Monitoring Well Design

Casing Stickup in Feet -0.3
Top of PVC in Feet: 96.56

Depth in feet

Approx. Ground Surface Elevation in Feet: 96.59

0

Moist, loose, brown SAND.

Moist, black, loose SAND.

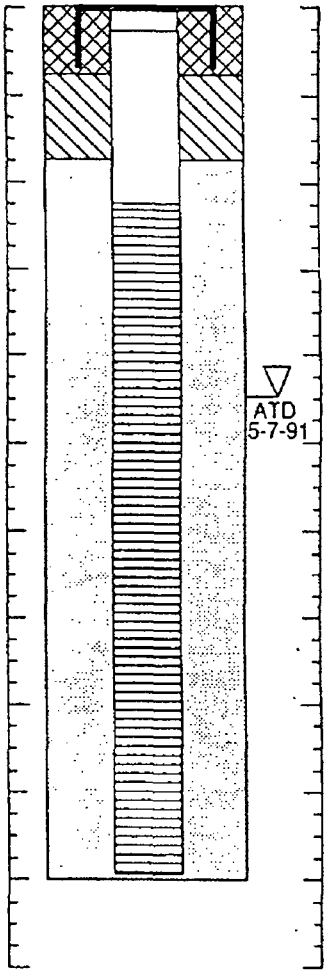
10

Wet, loose, black SAND.

20

Bottom of boring at 21.5 feet.
Completed May 7, 1991.

Sample	N	PID
S-1	8	<5
S-2	8	NA
S-3	8	<5
S-4	8	15
S-5	4	<5



1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Soil descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Ground water level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.
4. Elevations arbitrarily referenced to the loading dock as 100.00 feet.

HARTCROWSER

J-5115-02 *5/91*
Figure A-3

CLEARANCE		
TO	INITIAL	DATE
J Pickerell	[illegible]	6/21/91
M Downs	[illegible]	6/21/91
F Hussey	[illegible]	6/26

June 26, 1991

CERTIFIED MAIL NO. P-915-447-263
RETURN RECEIPT REQUESTED

HILL INVESTMENT COMPANY
8418 SW 22ND AVENUE
PORTLAND, OR 97219

NOTICE TO OWNERS AND OPERATORS OF
PROPOSAL TO LIST CONTAMINATED PROPERTY
Nabisco Warehouse/Hill Investment Co.
3322 NW 35th
SDDB ID NO. # 1076

Dear Property Owner or Operator:

One of the environmental goals of the State of Oregon is to clean up sites throughout the state which are contaminated with hazardous wastes, petroleum products, or other hazardous substances. A key step in this process is to identify the contaminated sites. The Oregon Legislature has directed the Department of Environmental Quality (DEQ) to implement a comprehensive site discovery program to accomplish this.

To date, by reviewing complaints, spill reports, and Department records, DEQ has identified approximately 900 sites suspected to be contaminated with hazardous substances. Many of these sites have been contaminated through past disposal and management practices considered appropriate when they occurred. For example, gasoline storage tanks were buried to minimize fire and explosion hazards without serious consideration of the resulting threats to groundwater. We are now finding drinking water supplies contaminated by leaking underground storage tanks.

The DEQ is now ready to begin identifying those "suspect" sites where contamination has been "confirmed". Contamination is "confirmed" when the Department documents a release of a hazardous substance that may pose a significant threat to public health, safety, welfare, or the environment. The Department will identify sites with confirmed releases on two site lists having different listing criteria. The first, the "Confirmed Release List",

will include all sites where releases of hazardous substances have been confirmed. The second list, the "Inventory", will include those sites with confirmed releases which, in addition, based on a site assessment, the Department has found to require further investigation or cleanup.

Both the Legislature and the Department recognize the Department's information regarding these sites may be outdated or incomplete. For example, contamination may have already been cleaned up, owners or operators may have changed, or the report of the release may include inaccuracies. Therefore, before listing sites the Department is notifying the owners and operators of proposed listings and requesting their comments. The fact sheet enclosed explains this listing process.

This letter is to notify you that the DEQ is proposing to include the property identified above on the "Confirmed Release List" and to give you an opportunity to comment on this proposed listing. The enclosed Facility Report identifies the hazardous contamination at this property as well as other information we plan to include on the list. You may provide any comments you believe will correct or supplement this listing information or demonstrate this property should not be listed.

Listing your property does not necessarily mean that you are responsible for the contamination, investigation or cleanup. Responsibility for these costs is prescribed by various and complex provisions in state and federal laws. If you want more information regarding these laws, you may want to contact your attorney. You may also contact this office, as described below.

As for the proposed listing, you have as an owner or operator of the facility forty-five (45) days from receiving this notice to provide written comments to the Department. You may request an extension of up to another forty-five (45) days (for a total of no more than ninety (90) days) if for special reasons you cannot respond within the initial forty-five (45) day period.

Comments and requests for extensions should be sent to:

Site Assessment Section
Oregon Department of Environmental Quality
Environmental Cleanup Division
811 SW 6th Avenue, 9th Floor
Portland, OR 97204

Your comments are critical to us in determining whether to add the property to the Confirmed Release List.

This facility/property will also be added to the "Inventory" if, after further assessment, DEQ determines that additional investigation or cleanup is necessary. This assessment may involve activities such as soil sampling, water sampling or researching the history of the site.

The property/facility can be removed from these lists after all necessary cleanup, including continuing environmental controls such as groundwater monitoring or special land use restrictions, is completed. If you are not already working with DEQ but plan to investigate or clean up the site, please contact us. We want to work together to eliminate threats to Oregon from hazardous materials. In any event, we will notify you before initiating any new action at the above-named facility.

For your information, the Confirmed Release List and Inventory will be updated quarterly and made available to any member of the public who requests it. The Inventory will also be published quarterly.

If you have specific questions about the Confirmed Release List or Inventory, the proposed listing or site activities, or want copies of the Oregon Environmental Cleanup Law (beginning at ORS 465.200) or related rules governing the listing process (beginning at OAR 340-122-410), please contact the Site Assessment Section of the Environmental Cleanup Division at (503) 229-6170 or at the address shown above.

Sincerely,

Fred Hansen
Director

DC:m
SA\SM35\SM3705A
Enclosures: Facility Report
cc: Northwest Region, DEQ

OBTAINED FROM HILL INVESTMENT FILE THROUGH CEA 5/11/91 JEW

Oregon

DEPARTMENT OF ENVIRONMENTAL QUALITY

July 17, 1991

MR JOHN CHAMBERLAIN
HILL INVESTMENT
3322 NW 35TH
PORTLAND OREGON 97210

Re: UST-Multnomah County
Hill Investment
File No. 26-89-280

Dear Mr. Chamberlain:

We have completed our review of Hart-Crowser's corrective action plan (CAP), dated June 24, 1991. The CAP details your plans for groundwater monitoring at 3322 NW 35th in Portland, Oregon. The monitoring is proposed in order to determine if the remaining diesel contamination is adversely impacting the groundwater quality at the site.

The groundwater monitoring is approved as it conforms with the current Department rules and guidelines requiring the elimination of contamination sources and prevention of groundwater degradation. Please remember that this approval is only for the diesel contamination and not the halogenated hydrocarbon contamination also identified at the site. Also, this approval in no way transfers any liability to the State of Oregon.

In addition to the specific information outlined in the CAP, the following are required:

1. If the groundwater flow direction should change so that MW-3 is directly down gradient, this well will have to be included in the sampling program.

2. As required by current Department policy, groundwater samples must be collected and analyzed for polynuclear aromatic hydrocarbons (PAHs) by EPA Method 8310. Also, the presence of any sheen or free product on the groundwater must be reported.

811 SW Sixth Avenue
Portland, OR 97204-1390
(503) 229-5696

3. Four quarters of sampling must be conducted as a minimum. If the concentrations of BETX and PAHs remain below the levels of concern for four consecutive quarters, monitoring can be discontinued and no further actions required for the site. The levels of concern for these substances are as follow:

Volatile Aromatic Hydrocarbons

Benzene	5 ppb
Ethylbenzene	700 ppb
Toluene	2000 ppb
Total Xylenes	10,000 ppb

Polynuclear Aromatic Hydrocarbons

Carcinogenic PAHs	
Benzo(a)pyrene	0.2 ppb
Benz(a)anthracene	0.1 ppb
Benzo(b)fluoranthene	0.2 ppb
Benzo(k)fluoranthene	0.2 ppb
Chrysene	0.2 ppb
Dibenz(a,h)anthracene	0.3 ppb
Indenopyrene	0.4 ppb
Non-carcinogenic PAHs	
Acenaphthene	420 ppb
Anthracene	2100 ppb
Fluoranthene	280 ppb
Fluorene	280 ppb
Naphthalene	28 ppb
Pyrene	210 ppb

Once groundwater monitoring is thought to be complete, a final report must be submitted that summarizes the project. The report must provide a technical evaluation of the effectiveness of the cleanup and propose closure of the site. The Department will evaluate the report and decide whether closure is appropriate.

Please submit a letter by July 31, 1991, detailing the schedule for the groundwater monitoring. Include in the letter a detailed description of what happened to the soil removed during the second phase of excavation as well as any receipts for soil disposal.

We are looking forward to a successful resolution of this problem. If you have any questions regarding the CAP approval, please contact me at (503) 229-6923.

Sincerely,

Andree Pollock

Andree Pollock
UST Cleanup Specialist
Northwest Region

cc: UST Cleanup Section, ECD
William Renfroe, Jr.
Hart-Crowser
Five Centerpointe Drive, Suite 240
Lake Oswego, Oregon 97035
Richard Glick
Davis Wright Tremaine
2300 First Interstate Tower
1300 SW Fifth Avenue
Portland, Oregon 97201-5682

CORRECTIVE ACTION PLAN REVIEW REPORT

Hill Investment-Nabisco Warehouse
3322 NW 35th
Portland, Oregon
File Number 26-89-280

Prepared by: Andree Pollock, Northwest Region
July 18, 1991

Introduction:

A diesel release was discovered at 3322 NW 35th in Portland, Oregon on November 17, 1989. The release was discovered during underground storage tank decommissioning. Initial abatement measures involved the removal of approximately 1000 cubic yards of contaminated soil.

Additional soil sample analyses were requested after the initial soil removal was completed. Soil and groundwater samples were obtained during two phases of investigation at the site by Riedel Environmental Services. Riedel performed the assessment for a potential tenant.

The results of the additional sampling indicated that significant concentrations of diesel remained in the soil in the vicinity of the former waste oil tank and next to the truck scales. In addition, halogenated solvent contamination of the groundwater was identified at the site.

The halogenated solvent contamination is not associated with the diesel contamination and is not part of the proposed corrective action plan (CAP). The site has been referred to the Environmental Cleanup Division for its evaluation of the solvent contamination and for any additional work necessary in order to resolve the solvent problem.

Additional contaminated soil was removed from the tank excavations until additional removal could not be conducted due to the proximity of structures and railroad lines.

Two additional monitoring wells were installed at the site by Hart-Crowser, the firm chosen to prepare the CAP. Minor soil and groundwater contamination were detected in borings.

Proposed Corrective Action:

Quarterly groundwater monitoring is proposed to determine if groundwater impacts are occurring. Sampling for benzene, ethylbenzene, toluene, and xylenes is proposed. Two years of monitoring is proposed.

NOTE

Closure:

Primary drinking water standards are proposed as groundwater cleanup levels. No soil cleanup levels are proposed. No specific closure plan is proposed.

GRI report of Oct 4, 91 now says the flow is from the northwest toward the southeast

Modifications/Additions:

1. Monitoring of four wells is proposed (MW-1, 2, 6 and 7). Based upon the last reported groundwater flow direction (to the southwest) this appears to be appropriate. However, if the groundwater flow direction should change so that MW-3 is directly down gradient, this well will have to be included in the sampling program.

2. As required by current Department policy, groundwater samples must be collected and analyzed for polynuclear aromatic hydrocarbons (PAHs) by EPA Method 8310. Also, the presence of any sheen or free product must be reported.

3. A minimum of four quarters of sampling must be conducted. If the concentrations of BETX and PAHs remain below the levels of concern for four consecutive quarters, monitoring can be discontinued and no further actions required for the site.

Recommendation:

Approval of groundwater monitoring, with the above modifications, is recommended for the following reasons:

1. While up to 33,000 parts per million (ppm) total petroleum hydrocarbons (TPH) were detected in the soils remaining in the excavations, the contamination appears to be limited in extent.

2. A maximum of 0.0029 ppm benzene and 0.0048 ppm xylenes were detected in the groundwater at the site. No ethylbenzene or toluene were detected. This indicates that groundwater impacts from the remaining contamination are minimal.

3. The groundwater gradient is insignificant (0.001 to 0.002 ft/ft). This suggests that contaminant migration will be slow or nonexistent.

4. Natural degradation will likely reduce the concentrations of contamination further.

STATE OF OREGON

DEPARTMENT OF ENVIRONMENTAL QUALITY INTEROFFICE MEMORANDUM

DATE: February 7, 1992

TO: File

FROM: Rebecca Paul

SUBJECT: Ashland Chemical Inspection Report

On February 7, 1992, Chuck Clinton and I performed an inspection at Ashland Chemical Company located at 3322 NW 35th Avenue in Portland. During this inspection we were escorted by Mr. David M de Fiebre, the facility's Service Center Manager. This inspection was performed to determine the facility's compliance to the Department's hazardous waste regulations and was in response to a complaint that the Department received.

Process:

Ashland Chemical is a chemical supplier and receives various chemicals via bulk tanker truck. This material is off loaded into 55 gallon drums for shipment to customers. The facility specializes in solvents such as paint thinners and alcohols. The solvents are off-loaded using separate lines. According to David de Fiebre the lines are cleaned a using high pressure washer. The resulting material is collected and either set aside until the next shipment of the same material arrives or it is mixed with another solvent that is compatible and sold as an off-spec solvent.

Ashland Chemical sells a wide range of chemicals. Some of the chemicals are very specialized for specific industries and therefore, have a limited market. During the inspection there were some excess custom order chemicals on the site awaiting sale to a viable customer. There were several drums of ammonia persulfate that we were informed by Mr. de Fiebre had been there for six years.

Manifests and Quarterly Reports:

According to the Department's hazardous waste program files, quarterly reports were not submitted for this generator.

Manifests were reviewed for the year 1991, there were only two manifests on file for that year. One manifest listed the material being shipped as NON RCRA Hazardous waste and was

being shipped to Utah. The state waste code was not listed on the manifest. The other manifest was for a Pentachlorophenol waste that was shipped to Clean Harbors in Massachusetts, because there are no facilities permitted to accept this waste in this country. The ultimate facility was located in Finland. The required international documentation would be the responsibility of the TSDF facility and not Ashland Chemicals.

The generator believed that their status was a Small Quantity Generator.

Contingency Plan:

The contingency plan met all the requirements.

Personnel Training Records:

This would not be required for a small generator.

Preparedness and Prevention Program:

There was no emergency coordinator information posted in the waste storage area.

Container Storage Area:

At the time of the inspection there was one drum of hazardous waste stored on site. The start date listed on the drum was 11/20/91. Next to the drum were four open five gallon buckets of various solvents. The manager was not clear as to whether or not this solvent was going to be placed in the waste drum. This drum was not labeled with the words, " Hazardous Waste", however, this drum was labeled with an accumulation date.

I requested some additional information regarding several drums of material located at the facility. There were about approximately three drums of drill cuttings on the property. I requested that they provide me with some analytical data on those drums. According to Mr. David de Fiebre he believed that those drums did not contain hazardous waste. He stated that the data was located in their corporate office and it would take him some time to acquire that information.

On April 6, 1992, I had a conversation Mr. David de Fiebre. He said that the drum of hazardous waste was not hazardous waste and was a product. I requested that he supply me with a bill of sale for this product.

At that time we also discussed the analytical data that the company supplied to me. In his cover letter he stated that

this waste was not a hazardous waste. The analytical data showed that this waste contained Chlordane exceeding the limits for TCLP. I explained to him that he would need to handle this material as a hazardous waste, because his waste determination was not correct.

Satellite Accumulation:

If the solvent material discussed above is a hazardous waste. It appeared that the five gallon buckets accumulated near a 55 gallon drum were in the process of being added to the drum. If these five gallon containers contained a hazardous waste then, Ashland chemical would be violating the satellite accumulation regulations, which requires that the material being under operator supervision.

In this particular storage area the satellite accumulation area was not under operator supervision. There should be no open containers and the waste should be properly labeled.

Additional Areas of Concern:

According to the complaint, wastes that were generated as a result of spillage of chemicals were placed into the dumpster instead of being disposed of at a permitted facility. This issue was discussed with Mr. de Fiebre, he said that he did not know the past practices of the facility, and was not clear as to how this material was being handled. He had been transferred to the Portland office about three months ago.

The manifests for 1991 were reviewed and there was no indication that a waste of this type was disposed of. Furthermore, at the time of inspection there was a spill that occurred the day before, as indicated by adsorbent material on the floor to soak up this material. Mr. de Fiebre said that the material that spilled was a nonhazardous waste, therefore, they were going to dispose of this material into the dumpster.

There were additional drums at the facility that were leaking. These drums contained solvent materials that would be regulated as U and P listed wastes. I asked Mr. de Fiebre how those spills were handled and he said that the materials were transferred to new drums and that no significant amounts of material were released, therefore, there was no waste. The majority of the material evaporated into the air. These observations seemed to indicate that wastes generated as a result of a releases were not being handled properly.

Dept. of Environmental Quality
RECEIVED
MAR 17 1992
NORTHWEST REGION

CONTINGENCY PLAN AND EMERGENCY PROCEDURES

SCOPE AND APPLICABILITY

The following contingency plan describes the facility's response to a fire, explosion, or release of hazardous waste.

The intent of the contingency plan is to satisfy the requirements of the U.S. EPA Resource Conservation & Recovery Act, the U.S. EPA Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), the Federal Water Pollution Control Act, and the State of Oregon Department of Environmental Quality, Northwest Region regulations.

In addition to compliance with these regulations, Ashland Chemical Inc. facilities are required to address certain other regulations originating from other agencies such as the Occupational Safety and Health Administrations (OSHA). All pertinent OSHA requirements of Part 1910 and Part 1926 of Title 29 of the Code of Federal Regulations apply to Ashland facilities. This contingency plan has been updated to satisfy the pertinent OSHA requirements newly promulgated in 29 CFR 1910.120, FR Vol. 54, No. 42, March 6, 1989, titled Hazardous Waste Operations and Emergency Response.

This plan is kept on file at the plant site. The plan has been submitted to local police and fire departments, hospitals and state and local emergency response teams that may be called upon to provide emergency services.

This plan is amended whenever:

(1) The facility permit is revised.

(2) A past emergency critique indicates that procedures should be modified.

(3) The facility changes in design, construction, operation, maintenance or in any way that increases the potential for fire, explosions or release of hazardous wastes or changes the response necessary in an emergency.

(4) The list of emergency coordinators changes.

(5) The list of emergency equipment changes.

This contingency plan is always available for inspection by an The EPA.

Facility Name: Ashland Chemical Inc.
Distribution Services Group

Location: 3322 Northwest 35th Avenue
Portland, OR 97210

Operator/Owner: Ashland Chemical Inc., Subsidiary of Ashland Oil, Inc.

FACILITY AND OPERATIONS

The plant facility is located at 3322 NW 35st Avenue, Portland, Oregon. The plant site is located in the Guild Lake Industrial area on the south side of the Williamette River and south of Highway 30 and west of the Highway 30 and 5 intersection.

The property is in an industrial/commercial area and is serviced by rail along the east side of the property. The main entrance is off NW 35st Avenue located parallel to the west property line. The plant site is 2.2 acres and is shown on drawing no. 7943-AD-1001.

This facility is a wholesale distributor of chemicals, thermoplastics, thermoset resins, solvents, and petroleum products. Thermoplastic resins, chemicals and solvents are purchased and repackaged for distribution in bulk and less than truckload quantities to industrial commercial users in the Washington, Oregon, Idaho, and Montana.

Bulk solvents are received at the plant by tank truck and thermoplastic resins by rail car. Solvents are drummed and resold in bulk or less than truckload quantity. No manufacturing is done at this site.

Plant operations result in the accumulation of various amounts of mixed solvents. Solvents are recovered from such operations as drumming and the loading and unloading of tank trucks. These residual products are recovered from transfer hoses and pumps when switching between products. The recovered solvents are placed in 55-gallon drums.

Recovered solvents are segregated in general into two classes. These are non-halogenated light products and non-halogenated heavy products. Examples of non-halogenated light products are light aliphatics and aromatics, alcohols, ketones and esters. Heavy products would include heavy aliphatics and aromatics, glycols and glycol ethers.

The segregation of recovered products as described above is generally followed. A regularly scheduled sampling and analysis of each class of recovered solvents is done in order to verify the identity and salability of the material. The results of analyses serve as the basis for the proper labeling and disposition of the material. Recovered solvents are either sold for beneficial use or shipped off-site to a solvent reclaimer or a waste disposal firm.

Product drumming is done intwo rooms on the north side of the building.

Drum cleansing and neutralizing are done under a canopy section of the plant along the north side of the building.

The office is a wood frame addition attached to the main plant building on the west side.

The main plant/warehouse is divided in eight sections by interior concrete walls and fire door. Two eastern sections house flamable product. The northeastern sectio house oxidizers and corrosive products. All other sections house non-flamable products.

The main warehouse is a tilt-up concrete structure with wood beam and roof with asphalt sheeting.

The property is enclosed by a 6 foot chain link fence except those portions which are office and warehouse loading doc areas. There is a truck gate off of NW 35st Avenue at the NW corner of the property which remains closed except when accessed by product transfers.

TABLE 2

Hazards Associated With Stored Waste

1. Maximum Inventory:

   a. 2 - 55-gallon drums, or
   b. 110 gallons

2. Stored outside the north wall of warehouse.

3. Hazardous characteristics of stored (non-flammable) wastes:

Hazardous Waste EPA No.	Type	Inventory (Gallons)
D001	Ignitable Waste	0-110
F001	Spent halogenated solvents used in degreasing	0-110
F002	Spent halogenated solvents	0-110
F003	Spent non-halogenated solvents	0-110
F004	Spent non-halogenated solvents	0-110

All wastestreams generated at the facility and waste received at TSD's have Waste Profile Sheets (WPS) associated with them. The WPS lists the chemical components of the waste. In an emergency situation the Emergency Coordinator will refer to the WPS for the chemical components of the waste. He will then consult the MSDS for each specific chemical listed on the WPS in order to ascertain the possible exposure effects associated with the waste.

Containerized waste may explode during a fire. Refer to Section 4-d.

List of 312 Companies
(302 Companies = ASHLAND CHEMICAL CO/ 313 Companies = HERCULES INC & MT HOOD CHEMICAL CORP)

CompanyName	LocAddress	ChemTradeName	MaxQtyDesc
ACME TRADING & SUPPLY CO	4927 NW FRONT AVE	NITROGEN	20 - 49
ACME TRADING & SUPPLY CO	4927 NW FRONT AVE	LOW LEVEL RADIOACTIVE SOURCE	50 - 199
ACME TRADING & SUPPLY CO	4927 NW FRONT AVE	PROPANE	500 - 999
ACME TRADING & SUPPLY CO	4927 NW FRONT AVE	LUBRICATING OIL	200 - 499
ACME TRADING & SUPPLY CO	4927 NW FRONT AVE	DIESEL FUEL	200 - 499
ACME TRADING & SUPPLY CO	4927 NW FRONT AVE	ALKALINE CLEANING LIQUID	50 - 199
ASHLAND CHEMICAL CO	3322 NW 35TH RD	SULFURIC ACID 1400 SP GR (50% 414)	500 - 999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	SORBITOL NF/FCC CRYST COARSE POWDER	100,000 - 249,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	CATALYZED SULFITE CORROSION INHIBITOR	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	VE REICHOLD 33-250-01 HYDREX RESIN	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	VE DOW 510N DERAKANE RESIN	50,000 - 99,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	TRISODIUM PHOSPHATE ANHYDROUS	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	SULFURIC ACID 93%	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	SODIUM XYLENE SULFONATE 40%	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	SE 4002 REPLACEMENT	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	SB 310 PHOSPHATE BLEND	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	RESIN REICHOLD 33-540-05 RESIN	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	POLYURETHANE DOW 2102-90 A NAT	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	POLYPROPYLENE MNT 8623 NAT	5,000,000 - 7,499,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	POLYPROPYLENE MNT SB 751 NATURAL	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	NYLON DUP ZYR 101 L BKB 009 BLK	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	MIXED SOLVENTS LGT 108-032295	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	ISO REICHOLD 33-433-01 RESIN	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	HEXANE ISOMER MIXTURE	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	GP REICHOLD 33-266 POLYLITE RESIN	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	DREWPLUS L-474	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	CHELATING LIQUID 80	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	CATALYST REICHOLD 46-702	50 - 199
ASHLAND CHEMICAL CO	3322 NW 35TH RD	CALCIUM STEARATE FCC POWDER	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	CALCIUM STEARATE KOSHER POWDER	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	BENZYLDIMETHYL AMMONIUM CHLORIDE 50	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	ACETAMINOPHEN USP 90% COARSE	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	TRISODIUM PHOSPHATE ANHYDROUS	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	SULFURIC ACID 66 BE	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	SODIUM TRIPOLYPHOSPHATE TECH LIGHT	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	RHODAFAC RA-600	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	PROPYLENE GLYCOL USP	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	LACQUER THINNER 10-SEATTLE	100,000 - 249,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	ISOBUTANOL	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	GLYCERINE NATURAL 99.5%	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	FUMARIC ACID FCC, NF	10,000 - 49,999

ASHLAND CHEMICAL CO	3322 NW 35TH RD	FERROUS SULFATE	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	DREWPLUS L464 FOAM CONTROL	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	DICALCIUM PHOSPHATE DIHYDRATE	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	DIAMMONIUM PHOSPHATE	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	DIACETONE ALCOHOL	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	CALCIUM CHLORIDE 94-97% PELLETS	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	BUTANOL	50,000 - 99,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	ARROW 11889	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	WOODKOTE 468A	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	DEVELOPER GC-2	1,000 - 4,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	POTASSIUM HYDROXIDE 10% SOLN	1,000 - 4,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	HYDROFLUORIC ACID 50%	1,000 - 4,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	LCP OXIDE ETCH	1,000 - 4,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	E G CLEAN	200 - 499
ASHLAND CHEMICAL CO	3322 NW 35TH RD	PHOSPHORIC ACID 85%	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	VE REICHHOLD 31-353-00 9300 NP RESIN	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	UREA PRILL	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	TRIAX MON 2253-40811 BLACK	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	TOLUENE RECYCLED	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	SULFURIC ACID LOW PARTICULATE GRADE	1,000 - 4,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	SOLVENT 529-66	50,000 - 99,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	SODIUM 2-ETHYLHEXYL SULFATE 40%	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	SODIUM SULFITE ANHYD FG PWD	50,000 - 99,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	SODIUM ISODECYL SULFATE 40% SOLN	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	SODIUM GLUCONATE FCC FINE GRAN	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	SODIUM FLUORIDE GRAN/CRYST	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	RODDA 461 LACQUER THINNER	50,000 - 99,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	PROPYLENE GLYCOL MONOBUTYL ETHER	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	POLYURETHANE DOW 2102-90 A NATURAL	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	POLYSTYRENE HUN 333 A2Y 9100 NATURAL	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	POLYSTYRENE DOW 6087 SFW1-27 NATURAL	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	POLYPROPYLENE DSM 62/EC NATURAL	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	PBR I	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	MIXED SOLVENTS LIGHT 108-071993	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	MINERAL SPIRITS 4% AROMATICS	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	MAGNESIUM SULFATE HEPTAHYDRATE TECH	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	MAGNESIUM SULFATE HEPTAHYDRATE USP	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	DIOCTYL PHTHALATE	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	HETRON D 1619	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	ISOSET WD 3A 312	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	HETRON 980	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	GP REICHHOLD 33-133-00 RESIN	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	GLYCOL ETHER DM FUEL ADDITIVE GRADE	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	FORMIC ACID 95% TECH	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	ETHYLENE GLYCOL MONOBUTYL ETHER ACETATE	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	ETHYLENE GLYCOL ELECTRONIC GRADE	10,000 - 49,999

ASHLAND CHEMICAL CO	3322 NW 35TH RD	ETHANOL SPEC IND 190P 4085	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	ETHANOL SPEC IND 190P 4081	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	DODECYLBENZENE SODIUM SULFONATE	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	DIETHYLENE GLYCOL 99%	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	DIBUTYL AMINE	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	DIALLYL PHTHALATE MONOMER	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	CHELATE CRYSTAL 220	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	CALCIUM CHLORIDE FCC GD ANHYDROUS	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	BUTYL ACETATE NORMAL 98%	50,000 - 99,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	BOEING LACQUER THINNER	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	AMINO-2 METHYL-2 PROPANOL-1 95%	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	ALUMINUM SULFATE	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	ACETIC ANHYDRIDE	50,000 - 99,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	ABS MON 456-1002 NATURAL	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	ARGON	0 - 4
ASHLAND CHEMICAL CO	3322 NW 35TH RD	NITROGEN	0 - 4
ASHLAND CHEMICAL CO	3322 NW 35TH RD	REFRIGERANT 134 A	10 - 19
ASHLAND CHEMICAL CO	3322 NW 35TH RD	REFRIGERANT 22	20 - 49
ASHLAND CHEMICAL CO	3322 NW 35TH RD	REFRIGERANT 12	20 - 49
ASHLAND CHEMICAL CO	3322 NW 35TH RD	ACETYLENE	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	OXYGEN	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	TETRAMETHYLAMMONIUM HYDROXIDE	5,000 - 9,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	PRS 3000	1,000 - 4,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	NITRIC ACID	1,000 - 4,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	HYDROGEN PEROXIDE 35% FG	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	HYDROFLUORIC ACID 49%	1,000 - 4,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	ACETIC ACID GLACIAL	500 - 999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	PHOSPHORUS OXYCHLORIDE	10 - 19
ASHLAND CHEMICAL CO	3322 NW 35TH RD	ALUMINUM ETCH	1,000 - 4,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	THINNER 51L	50,000 - 99,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	1,1,1-TRICHLOROETHANE	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	SODIUM SULFATE ANHYDROUS TECH	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	SODIUM HEXAMETAPHOSPHATE	50,000 - 99,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	POTASSIUM SORBATE FCC POWDER	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	PAD ETCH	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	MIRANOL FBS	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	LACTIC ACID 88%	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	ISOPHORONE	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	ISOBUTYL ISOBUTYRATE	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	HYDROGEN PEROXIDE 30%	1,000 - 4,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	HYDROGEN PEROXIDE 50% FCC GRADE	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	GLYCOL ETHER PM ACETATE	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	GLYCERINE 99.7%	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	FERRIC CHLORIDE SOLN	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	ETHYLENE GLYCOL MONOPROPYL ETHER	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	EG 3	50,000 - 99,999

ASHLAND CHEMICAL CO	3322 NW 35TH RD	DIPROPYLENE GYLCOL MONOMETHYL ETHER	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	DIOCTYL ADIPATE	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	BORAX 5 MOL GRANULAR TECH	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	ISO REICHHOLD 33-410 RESIN	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	SODIUM SILICOFLUORIDE	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	SODIUM SILICATE 41 DEGREE	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	SODIUM NITRATE INDUSTRIAL GD 99.5%	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	SODIUM BISULFITE FG OR USP ANHYD GRAN	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	SALT GRAN FOOD GRADE	50,000 - 99,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	POTASSIUM CARBONATE DENSE GRAN GLASS	50,000 - 99,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	POLYPROPYLENE HIM 65 F 4-2 NATURAL	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	POLYPROPYLENE HIM 7823 NATURAL	100,000 - 249,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	NITRILOTRIS 50%	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	MSR BLEND 1 A	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	MODAR 824 LTS	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	ISOSET WD3-A322	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	ISO REIHHOLD 33-451-00 6060-5 RESIN	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	ISO REICHHOLD 33-409 NO WAX RESIN	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	HETRON 922 L 25	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	HETRON 922	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	HETRON 435P	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	HETRON Q 6964	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	HETRON FR992	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	HETRON D 1623	50,000 - 99,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	HETRON D 1218	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	GUN ROVING OC 357B-AA-162 CRPK	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	FERROUS SULFATE WITH ANTI-CAKING AGENT	50,000 - 99,99
ASHLAND CHEMICAL CO	3322 NW 35TH RD	ETHYLENE GLYCOL MONOBUTYL ETHER	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	ETHANOL SPEC IND ANHY 4082	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	ETHANOL SDA 3C 190 PROOF	50,000 - 99,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	CRYOTECH CMA DEICER	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	CHOP MAT OC 1 1/2 OZ-50"	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	CHELATING LIQUID 1500/2010	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	ASCORBIC ACID USP/FCC FINE	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	ACETAL POLYMER HIVAL 1607 5-9	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	ABS MON 633-4000 BLACK	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	BIOSPERSE 250	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	AMERCOR 8750	1,000 - 4,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	VM&P NAPHTHA	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	TRIETHANOLAMINE 85% LOW FREEZE GRADE	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	SORBITOL NF/FCC CRYSTALLINE GR	50,000 - 99,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	SOLVENT 140-66	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	PROPANOL	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	NONYLPHENOL +9 EO POLYETHOXYLATE	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	MURIATIC ACID 20 DEGREE BAUME	100,000 - 249,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	MONOETHANOLAMINE	10,000 - 49,999

ASHLAND CHEMICAL CO	3322 NW 35TH RD	HYDROXYACETIC ACID 70%	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	HYDROGEN PEROXIDE 30%	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	GENAPOL 26L60	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	ETHYLENE GLYCOL MONOMETHYL ETHER	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	ETHANOL - 190 PROOF	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	EG CLEAN	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	DREWSPERSE 747 DEPOSIT CONTROL AGENT	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	CETYL/STEARYL ALCOHOL NF FLAKED	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	BUFFERED OXIDE ETCH	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	BORAX 10 MOL	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	POTASSIUM ACETATE	250,000 - 499,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	DIETHYLENE GLYCOL MONOETHYL ETHER ACETAT	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	ANTIFREEZE PERMANENT	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	AMERCOR 6510	200 - 499
ASHLAND CHEMICAL CO	3322 NW 35TH RD	STEAMAX 1848 CORROSION INHIBITOR	500 - 999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	UREA, PRILLED OR SHOT	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	PROPYLENE OXIDE	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	POLYISOCYANATE TYPE I	50,000 - 99,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	DOWFROST	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	DREW PLUS 913 BL FOAM CONTROL AGENT	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	WHITE MINERAL OIL 205 USP	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	WHITE MINERAL OIL 85 NF	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	VINYL TOLUENE 50 T	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	TRIMETHYLPENTANEDIOL MONOISOBUTYRATE	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	TRIETHANOLAMINE 85%	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	SULFAMIC ACID CRYSTALS	100,000 - 249,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	STYRENE MONOMER 50 PPM INHIBITOR	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	SORBITOL 70% SOLUTION USP	100,000 - 249,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	SOLVENT 529-66 LOW ODOR	50,000 - 99,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	SODIUM THIOSULFATE PENTAHYDRATE	50,000 - 99,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	SODIUM METASILICATE, ANHYDROUS	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	SODIUM HYPOCHLORITE 12.5%	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	SODIUM CITRATE DIHYD USP/FCC FINE	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	SODIUM BICARBONITE USP POWDER	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	SODIUM BENZOATE NF/FCC EDF	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	SODIUM ACID PYROPHOSPHATE FG	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	SODA ASH DENSE	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	PROPYLENE GLYCOL INDUSTRIAL	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	POTASSIUM SORBATE FCC GRANULAR	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	MINERAL SPIRITS 66 1% AROMATICS	50,000 - 99,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	MINERAL SPIRITS 66	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	METHYLENE CHLORIDE	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	METHANOL	50,000 - 99,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	MALIC ACID FCC FINE GRAIN	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	MAGNESIUM OXIDE MAGCHEM 30	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	LIME HYDRATED	10,000 - 49,999

ASHLAND CHEMICAL CO	3322 NW 35TH RD	KEROSENE	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	HYDROGEN PEROXIDE 50%	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	HS 2615 A	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	HEXYLENE GLYCOL	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	GP REICHOLD 51-119 (1063-3) RESIN	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	GLYCERINE NATURAL 99.5%	50,000 - 99,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	ETHYLENE GLYCOL	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	DODECYLBENZENE SULFONIC ACID	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	D-LIMONENE	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	CITRIC ACID ANHYD FCC GRANULAR	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	CITRIC ACID ANHYD FCC FINE GRAN	100,000 - 249,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	CHELATING LIQUID 100	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	CALCIUM CHLORIDE 94% BRINING	50,000 - 99,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	CALCIUM PROPIONATE FCC CRYSTALS	50,000 - 99,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	BORIC ACID TECH GRANULAR	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	BORIC ACID TECH POWDERED	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	ASCORBIC ACID/FCC EXTRA FINE GRANULAR	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	AMMONIUM SULFATE FOOD GRADE	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	POLYPROPYLENE HIM 8623	250,000 - 499,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	XYLENE	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	TOLUENE	50,000 - 99,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	SULFURIC ACID 66 BE	50,000 - 99,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	SODIUM CHLORITE 80% TECH	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	PROPYL ACETATE NORMAL	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	PHOSPHORIC ACID 75%	50,000 - 99,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	MORPHOLINE	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	MINERAL SPIRITS ODORLESS	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	METHYL ISOBUTYL KETONE	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	METHYL ETHYL KETONE	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	KWIK DRI	100,000 - 249,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	ISOPROPANOL 99%	50,000 - 99,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	HYDROGEN PEROXIDE 35% TECH	5,000 - 9,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	HI SOL 15	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	HI SOL 10	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	HEXANE	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	FORMIC ACID 85%	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	ETHYL ACETATE 99%	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	CYCLOHEXYLAMINE TECH	5,000 - 9,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	CAUSTIC SODA LIQUID 50%	100,000 - 249,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	CAUSTIC SODA BEADS	100,000 - 249,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	CAUSTIC POTASH SOLUTION 45%	50,000 - 99,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	AQUA AMMONIA 26BE	10,000 - 49,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	ACETONE	50,000 - 99,999
ASHLAND CHEMICAL CO	3322 NW 35TH RD	ACETIC ACID	1,000 - 4,999
COLOR MAGIC INC	4488 NW YEON	WASTE INK	200 - 499
COLOR MAGIC INC	4488 NW YEON	INK	200 - 499

SCHN00171727

Oregon

DEPARTMENT OF
ENVIRONMENTAL
QUALITY

NORTHWEST REGION

May 21, 1992

KRISTINA M. WOODS
ASHLAND CHEMICAL COMPANY
P.O. BOX 2219
COLUMBUS, OHIO 43216

Re: RESPONSE TO THE
VIOLATION NOTICE OF
NWR-HW-92-156

Dear Ms. Woods:

I would like to respond to the letter you sent addressing the violations the Department cited at your Facility located at 3322 NW 35th Street in Portland, Oregon. There are some issues that appear be unresolved at this time and I would like to give you an opportunity to address these issues prior to referring this case to the enforcement section.

In your letter you addressed the issue of the drums of waste containing chlordane and you stated that Ashland Chemical Corporation considers these drums to be non-hazardous because of the nature in which the waste was generated. With respect to TCLP waste the process generating the waste would not be of concern because this is a characteristic waste, not an F-listed or K-Listed waste. Therefore, a waste determination is based on analytical data. The results that were submitted to me demonstrate that this waste would be a hazardous waste based on TCLP for Chlordane, (D020). In order to accurately make a claim that this waste is non-hazardous you must do one of the following. You could collect a representative samples from the drums and have them tested for TCLP chlordane, or perform a statistical analysis on the data that you have already collected in order to determine if this is a hazardous waste.

1500 SW First Avenue
Suite 750
Portland, OR 97201-5884
(503) 229-5263
DEQ-1

I would like to briefly address the issue of the leaking drums. At the time of the inspection one of the leaking drums contained paint thinners. In your response you said that the leaking material was all a non-hazardous compound. Paint thinners do volatilize and could pose a problem from a health and safety standpoint. I feel comfortable with your response and I trust that Ashland Chemical will implement the procedures that you discussed in your letter once a release has occurred, and dispose of the resulting waste appropriately.

The next issue is speculative accumulation documentation for drums stored at the site. The Department is requesting that Ashland Chemical supply the documentation that is required to substantiate the claim that the material "stored " at your site would still be considered a usable product. We are requesting this information for two reasons:

1. Ammonium Persulfate has a limited market in the Portland area, and there are safety concerns involved in the storage of that product. Specifically, at the time of the inspection the Ammonium Persulfate drums were being stored about 20' from the leaking drums containing the flammable solvent. Ammonium Persulfate is an oxidizer which would cause significant problems in a fire situation.

2. According to the Merck Index this chemical is only stable for several months. According to Mr. de Feibre the chemical has been stored at the facility for six years. This waste should be tested to determine if this is a hazardous waste. Currently, Ammonium Persulfate is a D003 because it is listed as an oxidizer by 49 CFR 172.101.

In 40 CFR 261.(2)(f) it states that it is the generator's responsibility to demonstrate that the material is not a solid waste or conditionally exempt from regulations. Ashland Chemical has not supplied the Department with an adequate demonstration that the Ammonium Persulfate is still a usable chemical after six years of storage.

Finally, I reviewed the Environmental Cleanup Division files for your site and this site is already on the EDC list. It is listed because of high levels of chlorinated solvents in monitoring wells at the Ashland facility located at 3322 NW 35th Street in Portland.

Please supply the Department with a written response to this letter by June 25, 1992. If you have any additional questions or concerns regarding this matter please feel free to call me at (503) 229-6385 ext. 236.

Sincerely,

Rebecca Paul

Rebecca Paul
Environmental Specialist
Northwest Region

cc: Hazardous Waste Program
Environmental Cleanup Devision
Enforcement Section

INVESTIGATION DETAILS: Note: If you have prepared and attached an inspection report or memo that details any of the following questions, you do not have to repeat the information below. However, you do need to specify under each question, by reference, exactly where the information is located in the attachments (e.g. See 3rd paragraph of page 4 of the 6/21/92 inspection report.)]

1. **Who is the responsible party?** (Call the Corporation Commission at 1-378-4166 or access the Corporation Commission through State Systems Access on your PC.) **If the violator is a corporation list the registered agent's name and address. If the violator is an assumed business name list all parties of interest and their addresses. If the violator is an individual give complete name and address.**

   Ashland Chemical Company
   3322 NW 35th Avenue
   Portland, Oregon 97210

2. **In general, what are the violations?**

   OAR 340 -102-011:Failure to perform a hazardous waste determination.

   40 CFR 262.34(a)(3):Failure to label drums with the words, "hazardous waste".

   40 CFR 262.34(a)(2):Failure to date hazardous waste drums with accumulation start dates.

   40 CFR 262.34(a)(4):Failure to maintain Land Disposal Restriction Forms as required by 40 CFR 268.7

   40 CFR 262.20(a):Failure to properly fill out a hazardous waste manifest. No manifest Document Number was assigned to a manifest.

   40 CFR 262. 34(a)(4): Failure to update the SPPC and to notify emergency authorities as required in 40 CFR subpart C 265.37

2.a. **NOTE: If the violation(s) referred include failure to make a hazardous waste determination, the Regional Hazardous Waste Manager must complete the following:**

   (_) The violator is a large company with a dedicated environmental staff.

   (_) The violator is not a large company with dedicated environmental staff but the violation is being referred because:
   - (_) A sample was taken by DEQ and the waste was determined to be hazardous; or
   - (_) No sample was taken by DEQ but the waste is a listed hazardous waste; or
   - (_) No sample was taken by DEQ but I am 98% confident that the waste

would test hazardous; or

( ) No sample was taken by DEQ but pursuant to a request made in the NON, the violator tested the waste and it was determined to be hazardous; or

( ) No sample was taken by DEQ and the violator did not perform a hazardous waste determination as requested in the NON.

_____

/s/ Regional Manager

3. **When did the violation(s) occur?**

The violations were observed and documented during several inspections to the facility these inspection dates were October 10, 11, and 18. One violation is for the drum of chlordane stored in excess of the 90 days storage limit. This drum of waste was observed during the 1992 inspection. This waste stream was generated as a result of a one time site investigation. The drums observed during that inspection (1992) were shipped off-site as hazardous waste. All the drums that were observed at that time were accounted for on the manifest. This one drum was likely stored at an out of site location and was not included in the shipment.

4. **Where did the violation(s) occur?** (Street address or tax lot, section, township and range. Please identify property owner if the violation involves the illegal disposal of hazardous waste.)

The violations occurred at the Ashland facility located at 3322 NW 16th Street in Portland, Oregon.

5. **Where did the violation(s) occur on the property?**
(Attach a diagram if it would help in describing this.)

The labeling, dating, and storage (over 90 days) violations occurred in the flammable storage area located on the outside of the building.

The violation for failure to perform the hazardous waste determination occurred in the inside flammable storage area. Several boxes containing small containers of chemicals were stored there. There was also a box containing small containers stored by the flammable storage closet in the entry way to the warehouse.

6. **List the statutes, 40 CFRs and OARs that were violated.**

Those violations are listed above.

7. **List and briefly describe the evidence in support of the above violations.** [samples, observations, site diagrams, statements made by the violator, witness statement(s) (give name, address and phone number of all non-DEQ witnesses) and photographs (attach

original photos with the date and description written on the back of each photo, and your initials; or do a photo log)]

I have taken photographs of the drums that were not labeled and I have interviewed some of the employees. I requested to see a list of the drums that were numbered in the flammable storage area. During the first two inspections, the managers maintained that these drums were products and were not considered to be hazardous wastes. The drum list included waste profile numbers. During the last inspection, I was frustrated by the lack of cooperation and the answers I received regarding the status of the drums. The last site visit was to collect evidence to prepare an enforcement case for failure to perform a hazardous waste determination on all the drums located in the flammable storage area.

I requested to speak to the consultant working on the list to determine the status of the drums. During my last inspection of the facility, I spoke with the consultant and the facility's new general manager. The cooperation level was greatly improved by both the consultant and the new manager. They were honest about answering my questions. All but two of the containers were considered wastes. Many of the drums that were on the list had been disposed of as wastes. I interviewed the consultant. Waste codes were assigned to all the drums on the list. We also did an inventory of the containers to document what was remaining on site at the time of the inspection. This list is included with this referral.

The inspection report details the various conversations I had with the personnel at the facility regarding the violations.

8. **What were the impacts of the violation(s) on people, the environment, property, or wildlife. (If the violator is not the property owner and the violation impacted the property, describe the impacts and give the name and address of the property owner.) Describe the amounts of the materials involved, toxicity of the materials, duration of the violation(s), etc.**

The violations do not appear to have any impact that can be documented at this time. I have some concern about a violation that I was unable to provide documentation for and cite. During the first site visit, there was a spill of some kind of material onto the floor of the corrosives storage area. I was not prepared to take a sample, because this is not what is typically done on inspections. I did measure the pH of the material and it was 10. I asked the manager what the material was and I was told that it was rain water. Rainwater has a pH of around 6.5. A pH of 10 for rainwater is not normal and would indicate that something had been spilled in the corrosives room, and either this was the actual spilled material or it was a past spill that had mixed with rainwater. There were other chemicals in the flammable storage area and the corrosives room that were leaking. Food grade materials stored are stored in another area of the facility. The forklift drove between the two storage areas though the spilled material. If I were Ashland, I would be concerned with potential contact between the spilled chemicals that are not being cleaned up and the food grade products. I did mention these concerns to the new

manager.

This situation has been mentioned to Ashland in prior inspections. I recommend the inspector be prepared to sample on the next inspection.

The spill was cleaned up as I requested; however, I question what the response would have been if I did not bring the situation to their attention.

9. **Did you interview the violator?** (You should always try to talk with the violator.) **Describe your interview and the violators statements. Did the violator admit to the violations?**

I interviewed three facility managers and the facility's consultant. I got different answers from the first two managers than I did from the last manager and the consultant. I felt that the first two managers were giving me answers to attempt to avoid violations. During the last inspection, I felt I was getting honest answers from the new facility manager and the consultant. Those discussions are in the report. The new manager there are going to be changes in the management. I think this will be an improvement.

10. **Was the violator cooperative in correcting or trying to correct the violation(s)? Explain.**

Cooperation was an issue in the prior enforcement action and was an issue during the inspection. Some of the personnel at the facility were argumentive instead of admitting to the violations and correcting the problems. It was difficult to get straight answers from the first two managers. The answers that were given were an attempt to avoid violations and created a situation where I needed to do more work to document those violations. That is why the facility was visited three times. This is not typical.

11. **Have the violation(s) been corrected?**
(Explain which violations have and which have not been corrected.)

The Notice of Noncompliance has just been sent out. Ashland has corrected some of the violations but some are still outstanding, because of the time frame requested for the corrections.

12. **Did the violator gain an economic benefit as a result of the violation(s)? If yes, state how much and show in detail how you determined that amount.** (Only answer this question if the recommended action includes a civil penalty)

No not really.

13. **Do you have any information concerning the economic condition (hardship) of the violator?** (Only answer this question if the recommended action includes a civil penalty)

The company appears to be in good economic condition.

14. **List what you want ordered in the CO or CPCO and give the time frames within which you would like submissions and/or compliance from the date of the Order is issued:**

All of the violations that are listed in the notice of noncompliance with the same compliance dates.

15. **Has there been any previous civil penalties or orders issued to the violator?**

Yes, the facility was inspected in 1992. There was an enforcement case and they were penalized.

16. **Comments or additional information which you believe will help us in reviewing this case:**

One other thing to note is that the facility has now started to offer new services to customers who purchase their chemicals. Ashland assists their customers with waste disposal and offers broker services. In general, I have a problem with this when they are doing such a bad job managing their own waste at their facility. It would be frustrating from a inspection perspective if the generators referred to their waste as products and that they were only wastes once they decided to ship them off-site. This is the argument that Ashland was making. To prove otherwise is very time consuming and expensive.

I do not believe that Ashland would illegally dispose of their waste and that eventually the waste will get managed correctly. It's just that their approach, on-site management and time frames are different than the Large Quantity Generator compliance standards.

U:\ENF\RPT\ENF-HWV.REF (5/3/94)

Oregon

DEPARTMENT OF
ENVIRONMENTAL
QUALITY

NORTHWEST REGION

June 13, 1995

Mr. Ray Agostino
Hill Investment Co.
7582 Via de la Siesta
Scottsdale, AZ 85258

Re: **Site Assessment Information Request**
Hill Investment Co.
Portland, Oregon
Multnomah County
ECSI #1076

Dear Mr. Agostino:

The Oregon Department of Environmental Quality (DEQ) is requesting information from you, as the owner of the Hill Investment Co. site located at 3322 NW 35th Ave., in Portland. The information we need is listed below, and has to do with the discovery several years ago of very high levels of chlorinated solvents in groundwater. The site is included in DEQ's Environmental Cleanup Site Information (ECSI) database, which contains information on over 1,450 Oregon facilities where hazardous substances are suspected or known to have been released to the environment.

DEQ will use the information you provide, in conjunction with existing site data, to assess whether actual or potential releases of chlorinated solvents at your facility require further assessment to protect human health and the environment. This investigation is being performed under the legal authority of Oregon's Environmental Cleanup Law (ORS 465.245), and is separate from the ongoing hydrocarbon investigation being carried out by DEQ's Underground Tank Section (file #26-89-280).

Provision of this information will help to ensure an accurate and thorough evaluation of the site and the need for further action. Please address each of the following issues, to the best of your knowledge, for the site at 3322 NW 35th Ave.:

1. In an April 1991 letter sent to Hill Investment Co., DEQ communicated its intent to initiate a preliminary assessment (PA) at the site. Hill Investment subsequently notified DEQ that it would instead complete its own, independent PA. However, there is no such document in our files. Please send a copy of the PA to me. What further work does Hill Investment plan to undertake regarding chlorinated solvent contamination at the site?

2020 SW Fourth Avenue
Suite 400
Portland, OR 97201-4987
(503) 229-5263 Voice/TDD
DEQ-1

SCHN00171736

2. Several 1990 reports from Riedel Environmental Services suggest that chlorinated solvents migrated onto the Hill Investment property from an unidentified off-site location. What evidence was used to make this determination?

3. Has any recent data been collected on the chlorinated solvent plume? What are the current levels of dissolved solvents in groundwater beneath the site? How deep have these solvents migrated?

4. According to HartCrowser's interpretation of quarterly data from four monitoring wells, the groundwater flow direction varies from east to west-southwest across the site. What could cause such a variable flow pattern over a relatively short distance, especially since one would expect regional flow towards the Willamette River to the northeast? Given the flat gradient and unusual flow directions, as currently interpreted, more data points may be needed to obtain an accurate picture of local groundwater flow patterns. In a related matter, what happened to monitoring wells 3, 4, & 5?

We ask that you respond to these questions by **June 30, 1995**, and send the information to me at the address on the letterhead. If you have any questions about this letter or are unable to complete the request by the specified date, please contact me at (503) 229-5512.

We appreciate your cooperation in this matter.

Sincerely,

Gilbert M. Wistar

Gil Wistar, Site Assessment Specialist
DEQ Northwest Region

cc: Greg Kupillas, HartCrowser (5 Centerpointe Dr., Suite 240, Lake Oswego, OR 97035)
Heather Schijf, Coordinator, Site Assessment Program
Don Pettit, UST/NWR
ECSI file #1076

HARTCROWSER

Earth and Environmental Technologies

Hart Crowser, Inc.
Five Centerpointe Dr., Suite 240
Lake Oswego, Oregon 97035
FAX 503.620.6918
503.620.7284

DEPT OF ENVIRONMENTAL QUALITY
RECEIVED

JUL 3 1995

NORTHWEST REGION

J-5115-05

Friday, June 30, 1995

Mr. Gil Wistar
Oregon Department of Environmental Quality
Northwest Region
2020 SW Fourth Avenue, Suite 400
Portland, Oregon 97201-4987

Re: Response to Site Assessment Information Request
Hill Investment Co. Property
Portland, Oregon 97210
ECSI #1076

Dear Mr. Wistar:

The purpose of this letter is to respond to your Site Assessment Information Request dated June 13, 1995. Our responses to each of the four numbered items listed in your letter are provided below:

1. Hill Investment has not conducted a Preliminary Assessment (PA). Hart Crowser reviewed its files and inquired with Davis Wright Tremaine, the attorneys for Hill Investment Co., and Hill Investment (Ray Agostino and John Chamberlain) regarding the PA. We are not aware of an agreement by Hill Investment to conduct a PA.

2. We have reviewed two Riedel reports (dated October 11 and November 10, 1990) documenting the results of soil and groundwater sampling conducted at the Hill Investment site. The data provided in the two reports are consistent with migration of a perchloroethylene (PCE) plume from an offsite source located to the north of the Hill Investment property. Specifically, the data include:

   - Water levels indicating a southwest groundwater gradient in the area of the chlorinated solvent plume;
   - Field measurements that suggest volatile organic compounds are not present in soil above the water table; and
   - A distribution of various chlorinated compounds in groundwater consistent with successive degradation of a PCE plume originating north of the site and migrating to the southwest.

3. Groundwater samples collected at the Hill Investment Co. site were last analyzed for chlorinated solvents in April 1991. The results of the analyses are included in the Corrective Action Plan prepared by Hart Crowser for the site (June 24, 1991).

4. The flow pattern shown in Hart Crowser's quarterly report represents one interpretation of the water level data collected from the four existing monitoring wells on the site. These wells include MW-1 and MW-2 installed by Riedel, and MW-6 and MW-7 installed by Hart Crowser. Monitoring wells MW-3, MW-4, and MW-5, which were installed by Riedel, were later abandoned by Riedel sometime in 1992.

   While the water levels do appear to be variable across the site, the quarterly data indicate that the pattern remains consistent throughout the year. The local variations may be caused by a cut-off wall installed in early 1991 at the adjacent Terminal Transfer property.

We trust that this letter is sufficient for your needs. If you have any questions or require additional data, please call.

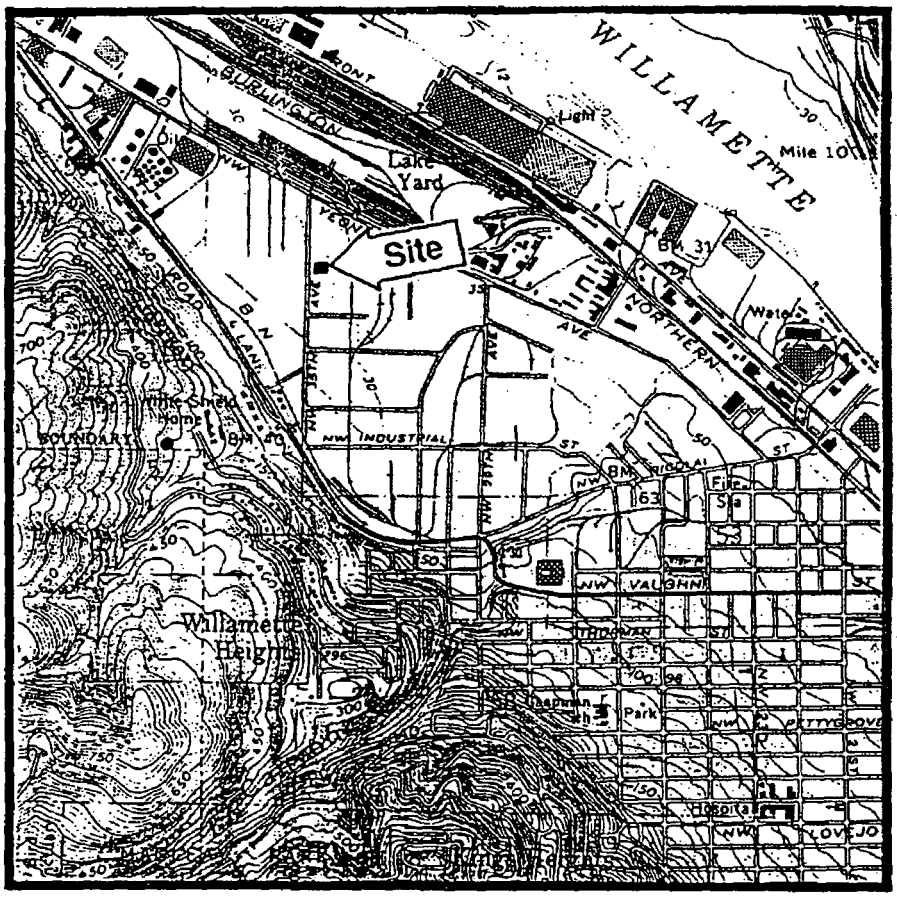
Sincerely,

HART CROWSER, INC.

GREGORY E. KUPILLAS, R.G.
Project Manager

c: Mr. Ray Agostino, Hill Investment Co.

Site Location Map



Base map prepared from the USGS 7.5-minute quadrangle of Portland, Oregon, photorevised in 1970 and 1977.

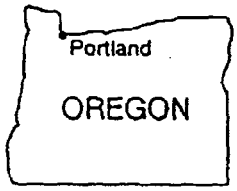
SCALE 1 : 24 000

1 ½ 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

CONTOUR INTERVAL 10 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

N

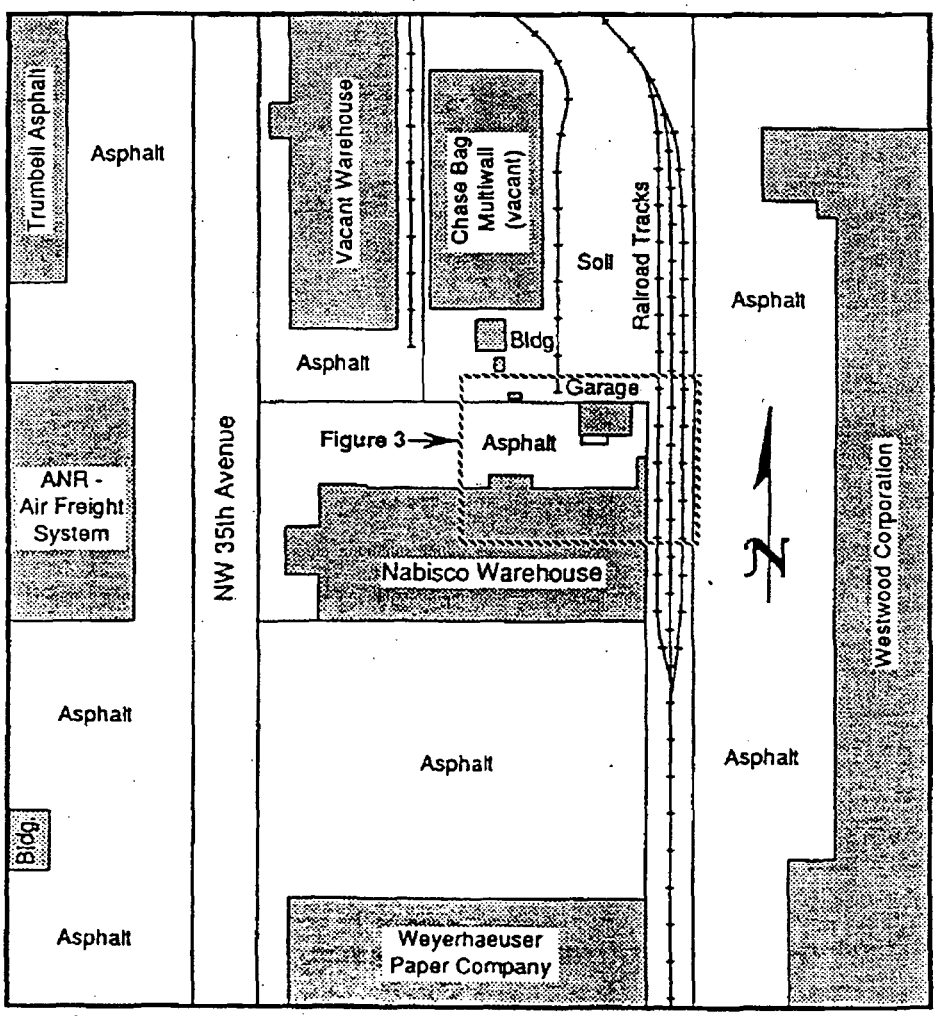


HARTCROWSER
J-5115-02 4/91
Figure 1

SCHN00171740

Site Vicinity Map

3322 NW 35th Avenue, Portland, Oregon



Note: Base Map prepared from visual reconnaissance of the vicinity by a Hart Crowser representative on April 9, 1991.

0 200 400

Approx. Scale in Feet

HARTCROWSER

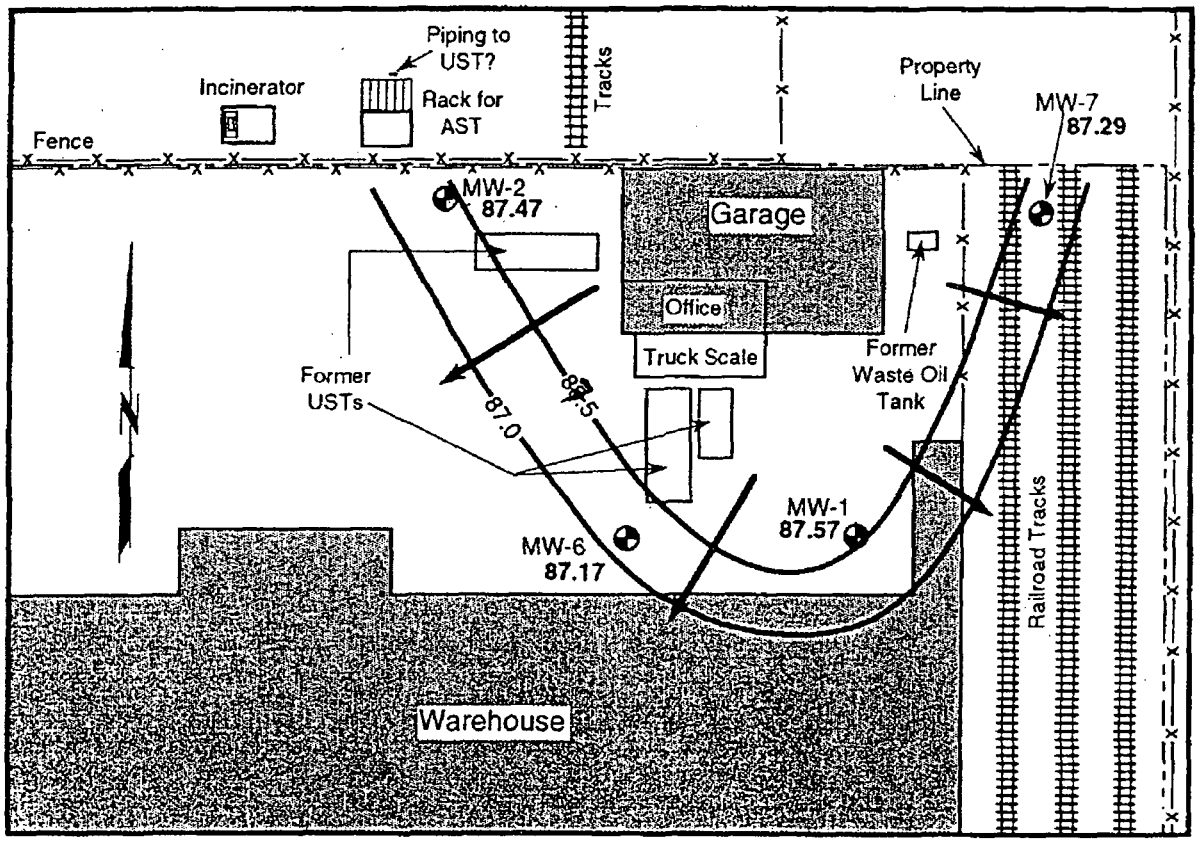
J-5115-02 *4/91*

Figure 2

SCHN00171741

Groundwater Elevations

Hill Investment Company
3322 NW 35th Avenue, Portland, Oregon
February 23, 1994



Note: Base Map prepared from Figure 2 of the November 10, 1990, report by Riedel Environmental Services, Inc., entitled "Nabisco Warehouse Site, Soil and Ground Water Sampling, Round II" and from visual reconnaissance by a representative of Hart Crowser. Groundwater elevations measured relative to an assumed reference datum of 100.00 feet.

Legend

MW-2 87.31	Monitoring Well Location and Number Relative Groundwater Elevation
UST	Underground Storage Tank
AST	Above Ground Storage Tank
87.5	Estimated Groundwater Elevation Contour
	Estimated Direction of Groundwater Flow

0 40 80
Scale in Feet

HARTCROWSER

J-5115-05 *3/94*
Figure 3

SCHN00171742

Oregon

DEPARTMENT OF
ENVIRONMENTAL
QUALITY

NORTHWEST REGION

July 20, 1995

Mr. Ray Agostino
Hill Investment Co.
7582 Via de la Siesta
Scottsdale, AZ 85258

Re: **Hill Investment Co.**
Portland, Oregon
Multnomah County
ECSI #1076

Dear Mr. Agostino:

The Site Assessment Program of the Oregon Department of Environmental Quality (DEQ) has completed its file evaluation of the Hill Investment Co. site at 3322 NW 35th Ave., Portland. Sampling data from 1990 show high concentrations of chlorinated solvents in groundwater, which is why DEQ added the site to the Confirmed Release List in 1992. This groundwater contamination requires further investigation. DEQ believes there is insufficient data to enable a conclusion to be drawn about the source of this contamination. This information will be added to DEQ's Environmental Cleanup Site Information (ECSI) database.

Site Assessment assigns high, medium, or low priorities to properties based on the potential threat(s) they pose to human health and the environment. How soon DEQ addresses your site will depend on the total number of sites currently under evaluation, and on the priority assigned to your site.

Hill Investment Co. has the following options for further action within DEQ's Cleanup program:

1) Assess and/or clean up the site under DEQ's Voluntary Cleanup Program (VCP). In the VCP, you pay an initial deposit to cover DEQ's anticipated oversight costs. At project completion, you will be invoiced if total costs exceed the initial deposit, or reimbursed if total costs are less than the deposit. With this option, owners and operators obtain DEQ oversight quickly and may continue without delay through site characterization or cleanup, as needed.

2) Assess and/or clean up the site independently. DEQ recommends keeping detailed records of your activities and submitting those records to DEQ. Then, in accordance with its priorities, DEQ will determine whether further action is needed. DEQ will track its costs in reviewing your records

John A. Kitzhaber
Governor

2020 SW Fourth Avenue
Suite 400
Portland, OR 97201-4987
(503) 229-5263 Voice
TTY (503) 229-5471

DEQ-1

SCHN00171743

and will recover those costs if DEQ determines that further action is needed to protect public health or the environment from on-site releases of hazardous substances. Costs will be recovered from persons liable under Oregon Revised Statutes (ORS) 465.255.

3) Wait for DEQ to evaluate the potential for your site to affect public health or the environment. DEQ will track its costs for any time spent on such an evaluation, and will recover these costs if remedial action is needed or if any remedial action has already occurred.

If you wish DEQ oversight on the assessment/cleanup of your site, the Voluntary Cleanup Program may be your most expedient choice. New Voluntary Cleanup projects are initiated as soon as resources become available.

Please contact me at (503) 229-5512, if you have any questions about this letter. Inquiries about the Voluntary Cleanup Program may be directed to (503) 229-6361.

Sincerely,

Gilbert M. Wistar

Gil Wistar, Site Assessment Specialist
DEQ Northwest Region

cc: Heather Schijf, Coordinator, Site Assessment Program
Don Pettit, UST/NWR
Voluntary Cleanup Program Representative
ECSI file #1076

Hill Investment Co. (#1076) 7/95

SITE ASSESSMENT PRIORITIZATION SYSTEM CRITERIA

The following guidance is intended for prioritizing continued investigation of hazardous substance release sites, or sites having significant potential for release. An actual release at the site is not necessary: sites posing a substantial threat to health, safety, or the environment should also be evaluated. Once a reasonable effort has been made to collect all necessary information regarding a release or potential release, individual criteria will be reviewed, and priority values assigned according to this guidance and best professional judgement. Record all values on a site priority evaluation worksheet. Once all criteria are ranked, the evaluator will assign an overall site priority based on the weight of the rankings and best professional judgement. A copy of the completed Site Prioritization Worksheet should be affixed to the Site Report as part of a formal screening. A completed Site Prioritization Worksheet should include narrative support ("Comments" section of the worksheet) for the overall priority assigned; address any inconsistencies between individual concerns and overall site priority in the "Comments" section.

Sites with multiple pathways of concern may require a separate worksheet for each pathway.

1. Substance Characteristics

A. Toxicity/Persistence

Based upon State Reportable Quantities (RQs) listed in Appendix I of OAR 340-108. If more than one substance is involved, reference the component having the lowest State RQ. Pesticide products not listed in Appendix I are considered to have a State RQ of 1 pound. Petroleum product releases are considered MEDIUM priority.

PCE = 1 lb

HIGH: State RQ of 1-100 pounds

MEDIUM: State RQ of 100-500 pounds

LOW: State RQ of 500 pounds

NO ACTION: Substances generally recognized as safe (GRAS) or non-hazardous, or that dissipate rapidly.

B. Mobility

Depends upon the transport medium of greatest concern, or transport medium that allows greatest mobility. Petroleum product releases are considered MEDIUM priority.

HIGH: For groundwater concerns, substances with a water solubility greater than 100 ppm, or detected soil leachate concentrations exceeding those listed in Oregon's Soil Cleanup Standards (OAR 340-122-045/046), or capable of unaided diffusion into shallow aquifers;

PCE solubility -> 100 ppm at 20°C

for surface water concerns, substances with a water solubility greater than 100 ppm, or with particle size and density that approximate the surface waterborne transport qualities of sands, silts, clays, or colloids;

for air quality concerns, substances having vapor pressures greater than 100 mm Hg at 20° C, or with particle size and density that approximate the airborne transport of sands, silts, clays, or finer particles;

for soil concerns, substances capable of diffusing off-site.

MEDIUM: For groundwater concerns, substances with a water solubility of 10-100 ppm, or detected soil leachate concentrations between 10% and 100% Oregon Soil Cleanup standards.

for surface water concerns, substances with a water solubility of 10-100 ppm, or with particle size and density that approximate the surface waterborne transport qualities of sand;

for air quality concerns, substances having vapor pressures between 25-100 mm Hg at 20° C, or with particle size and density that approximate the airborne transport of sand;

for soil concerns, substances capable of substantial diffusion, but unlikely to diffuse off-site.

LOW: For groundwater concerns, substances with a water solubility of less than 10 ppm, or detected soil leachate concentrations less than 1/10 Oregon Soil Cleanup Standards.

for surface water concerns, substances with a water solubility of less than 10 ppm, or with particle size and density greater than the surface waterborne transport qualities of sand;

for air quality concerns, substances having vapor pressures less than 25 mm Hg at 20° C, or with particle size and density greater than the airborne transport qualities of sand;

for soil concerns, substances capable only of slow diffusion within local soil types.

NO ACTION: For groundwater concerns, substances that are essentially insoluble in water (solubility of less than 0.1 ppm), or produced no detectable soil leachates;

for surface water concerns, substances that are both essentially insoluble in water, and have a particle size and density too great to be affected by rapid surface runoff; immobile in streams under ambient conditions;

SCHN00171746

for air quality concerns, substances having vapor pressures of less than 5 mm Hg at 20° C, or with particle size and density unlikely to be affected by brisk winds.

for soil concerns, substances incapable of significant diffusion in local soil types.

2. <u>Contamination Route</u>

Depends upon the transport medium of greatest concern, or that allows greatest mobility.

HIGH:

Groundwater found at a depth of about 10 feet.

For groundwater concerns, an unconfined or semi-confined aquifer at less than 25 feet bgs; a known release to an on-site drywell or other similar surface disruption;

for surface water concerns, surface water within a linear downslope distance of 250 feet;

for soil concerns, released substance migrates rapidly in soils; soil contamination extends, or is likely to extend, beyond site boundary, impairing beneficial use of soils on adjacent properties;

for air quality concerns, release produces a substantial, prolonged plume that extends at detectable levels beyond the site boundary, exceeding PELs or IDLH levels.

MEDIUM:

For groundwater concerns, an unconfined or semi-confined aquifer at 25-150 feet bgs; on-site drywells or other similar surface disruption that might facilitate the spread of contaminants;

for surface water concerns, surface water at a linear downslope distance of 250 feet-0.5 mile;

for soil concerns, release migrates in soils and impairs their on-site beneficial uses;

for air quality concerns, release produces a sustained on-site plume that exceeds PELs, or sustained or periodic off-site plumes that do not exceed PELs or IDLH levels.

LOW:

For groundwater concerns, an unconfined or semi-confined aquifer at greater than 150 feet bgs;

for surface water concerns, surface water at a linear downslope distance of 0.5 - 2 miles;

for soil concerns, release is likely only to migrate slowly and not extend

SCHN00171747

beyond site boundary; beneficial use of on-site soils is not significantly impacted;

for air quality concerns, release may result in periodic on-site plumes, but at concentrations below PELs or IDLH levels.

NO ACTION: For groundwater concerns, no unconfined or semi-confined groundwater (a permanent barrier prevents migration of contaminants into groundwater);

for surface water concerns, no surface waters or discharge routes within a linear downslope distance of 2 miles;

for soil concerns, released substance dissipates rapidly to undetectable or insignificant levels; substance unlikely to migrate beyond release point;

for air quality concerns, future impact on air quality is not anticipated.

3. Vulnerable Targets

A. Population Affected

HIGH: For groundwater concerns, one municipal well, one community well, one well used for food processing, or greater than 10 domestic wells located, or likely to be located, within an area 1 mile downgradient, 0.5 mile laterally, and 0.25 mile upgradient of a release site or plume;

for surface water concerns, a drinking water intake located, or likely to be located, within 2 miles downstream of the furthest known extent of the release plume;

for soil or air quality concerns, release is within 0.25 mile of schools, parks, residential or high-density commercial area.

MEDIUM: For groundwater concerns, one municipal well, one community well, one well used for food processing, or greater than 10 domestic wells located, or likely to be located, within an area 1-2 miles downgradient, 0.5 - 1 mile laterally, and 0.25 - 0.5 mile upgradient of a release site or plume; one food crop irrigation well or 1 to 10 domestic wells located, or likely to be located, within an area 1 mile downgradient, 0.5 mile laterally, and 0.25 mile upgradient of a release site or plume;

for surface water concerns, significant fishing, food crop irrigation intakes, or contact recreational use within, or likely to be within, 2 miles downstream of the furthest known extent of the release plume;

SCHN00171748

for soil concerns, a release within 0.25 - 0.5 mile of a school, park, residential, or high density commercial areas; a release within an industrial or low-density commercial area, or on agricultural land used to raise food crops.

for air quality concerns, a release within 0.25 - 0.5 mile of a school, park, residential or high-density commercial areas; a release within an industrial or low-density commercial area.

LOW: For groundwater concerns, one or more industrial or non-food crop irrigation wells located, **or likely to be located**, within an area 1 mile downgradient, 0.5 mile laterally, and 0.25 mile upgradient of a release site or plume; 1 to 10 domestic wells within, **or likely to be within**, an area 1 - 2 miles downgradient, 0.5 - 1.0 mile laterally, and 0.25 - 0.5 mile upgradient of a release site or plume;

The only wells likely to be downgradient of site are industrial supply and monitoring wells.

for surface water concerns, non-food crop irrigation withdrawals, industrial withdrawals, or non-contact recreation within, or likely to be within, 2 miles downstream of the furthest known extent of the release plume;

for soil or air quality concerns, a release on non-food-crop agricultural or forested lands.

NO ACTION: Lack of substantial exposure to humans, biological, or environmental receptors:

1). Shallow groundwater is unsuitable for use because of naturally poor quality (brackish, or high levels of naturally occurring contaminants such as arsenic, fluorides, boron, etc.);

2). surface water within 2 miles downgradient has no practical uses because of poor natural quality (e.g., brackish);

3). for soil/air quality concerns, lands within 0.5 mile are unused, unproductive, and uninhabited.

B. Sensitive Environments/Species

HIGH: Federal or state-designated sensitive or protected ecosystems, or threatened or endangered species habitat, located within a 1-mile radius, or within 2 miles downstream or downgradient or release site. This includes fish, wildlife, or game management areas, spawning, migratory, or feeding areas.

MEDIUM: Sensitive natural resources within a 1-mile radius, or within 2 miles downstream or downgradient.

SCHN00171749

Industrial area, with the Willamette River being the main potential receptor

LOW: Environmental resources of lesser importance within a 1-mile radius, or sensitive or protected ecosystems or resources between 1 - 2 miles of release site, or within 3 miles downstream or downgradient of the release site.

NO ACTION: Lack of exposure, or potential exposure, to sensitive environments or species; no sensitive environments or species within a 6-mile radius.

4. Verification of Release or Significant Threat of Release

Some of the factors to be considered in evaluating the significance of a release, or significant threat of release, include:

A. on-site drywells or sumps,

B. actual observation of leaking containers (drums, tanks, piping, etc), container seals, or poor container condition,

C. evidence of leaking berms, dikes, lagoon or pit liners, or lack of properly engineered liners,

D. inappropriate or incompatible containment materials.

on-site MW data

HIGH: Actual release, **or evidence of release threat**, observed and documented by qualified government inspector or agent; written statement by owner/operator or representative that a release has occurred; reliable laboratory data indicating that a release has occurred;

MEDIUM: Release reported, but documentation is weak or incomplete; insufficient release details reported; laboratory data weak, questionable, or non-existent;

LOW: Unverified complaint or undocumented release; no confirming laboratory data;

NO ACTION: Release, because of the substance's characteristic nature, has already dissipated; future significant exposure to humans, biological, or environmental receptors, is deemed unlikely; an authorized or permitted release.

SCHN00171750

5. <u>Quantity or Concentration of Substance</u>

Contaminant concentrations are based upon Lifetime Health Advisories (LTHAs), Maximum (or Proposed Maximum) Contaminant Levels (MCLs), Lower Explosive Limits (LELs), and Soil Cleanup Levels, Groundwater Reference Concentrations, Leachate Reference Concentrations, or Oregon Soil Cleanup Standards.

HIGH: Any release or potential release known to involve at least three times the relevant Oregon Reportable Quantity (RQ) of a hazardous substance, or

35.5 ppm dissolved PCE

1). for groundwater or surface water concerns, any substance detected in the site's groundwater or surface waters that exceeds 10 times the LTHA or MCL; contaminants detected downgradient off-site above the relevant LTHA or MCL; on-site soils exceeding 10 times the relevant Oregon Soil Cleanup leachate standards;

2). for soil concerns, any substance exceeding 100 times the relevant Oregon Soil Cleanup standards; off-site soil contamination that, due to migration, exceeds Oregon Soil Cleanup standards;

3). for air quality concerns, sustained or intermittent concentrations of released substances exceeding relevant IDLH, PEL, or 20 percent of LEL values beyond the site boundary;

MEDIUM: Any release or potential release known to involve at least twice the relevant Oregon RQ of a hazardous substance, or

1). for groundwater or surface water concerns, any substance detected in groundwater or surface waters on-site in concentrations above the relevant LTHA or MCL, or on-site soil leachates detected above Oregon Soil Cleanup standards; off-site downgradient groundwater or surface water contaminant detected at concentrations above 1/10 the relevant LTHAs or MCLs;

2). for soil concerns, any substance exceeding 10 times the relevant Oregon Soil Cleanup standards when soil contamination has not been demonstrated to extend beyond the site boundary;

3). for air quality concerns, sustained or periodic on-site release concentrations exceeding relevant IDLH or PEL values, or 20 percent of LEL values, with no known off-site exceedences;

LOW: Any release or potential release known to involve one or more hazardous substances above the relevant Oregon RQ, or

1). for groundwater or surface water concerns, any substance detected in groundwater or surface waters at the site that exceeds 1/10 the LTHA or MCL, but not detected off-site; on-site soil leachates exceeding 1/10 the

SCHN00171751

relevant leachate standards specified in Oregon's Soil Cleanup standards;

2). for soil concerns, soil contamination has been confined to the site, but on-site soils exceed the relevant Oregon Soil Cleanup standards;

3). for air quality concerns, periodic or sustained on-site release concentrations that do not exceed relevant IDLH or PEL values, or 20 percent of LEL, with no known off-site plume;

NO ACTION: Quantity of substance released insubstantial; released substance quickly disperses or is readily biodegradable; a de minimis release.

6. **Environmental Effects on Release Control**

Environmental factors that may affect the extent or migration of released substances.

HIGH: For groundwater concerns, local average precipitation exceeds 45 inches per year; release site lies within an area that floods annually; soils are highly permeable to the contaminant or to water solutions of the contaminant;

for surface water concerns, local average precipitation exceeds 45 inches per year; release site lies within an area that floods annually;

for soil or air quality concerns, release site is at least periodically exposed to winds capable of carrying contaminant off-site.

MEDIUM: For groundwater concerns, local average precipitation ranges from 20 - 45 inches per year; release site lies within a 10-, 20-, or 50-year floodplain; soils have low to moderate permeability for the contaminant or to water solutions of the contaminant;

for surface water concerns, local average precipitation ranges from 20 - 45 inches per year; release site lies within a 10-, 20-, or 50-year floodplain;

for soils or air quality concerns, release site is at least periodically exposed to winds capable of spreading contaminant across wide areas of the site.

LOW: For groundwater concerns, local average precipitation is less than 20 inches per year; release site lies within a 100-year floodplain; soils have low permeability for the contaminant or to water solutions of the contaminant;

SCHN00171752

for surface water concerns, local average precipitation is less than 20 inches per year; release site lies within a 100-year or 500-year floodplain;

for soil or air quality concerns, release site is at least periodically exposed to winds capable of transporting the contaminant beyond the original point of release.

NO ACTION: Released substance is adequately confined or isolated in a manner that prevents further impact to human, biological, or environmental receptors.

SMF (3/9/93)

SCHN00171753

SITE PRIORITIZATION WORKSHEET

Site Name: Hill Investment Co.

Medium of Concern: groundwater

	H	M	L	NA
1. Substance Characteristics:				
A. Toxicity/Persistence:	X			
B. Mobility:	X			
2. Contamination Route:	X			
3. Vulnerable Targets:				
A. Population Affected:			X	
B. Sensitive Environments/Species:			X	
4. Verification of Release/Threatened Release:	X			
5. Quantity/Concentration of Substance:	X			
6. Environmental Effects on Release Control:		X		
Overall Site Priority:		X		

Comments: Potential receptors are limited, but concentrations of chlorinated solvents are high enough to suggest the possibility of free product; and as a result the site is a medium priority.

Evaluator: Gilbert M. Wolter Date: 7/20/95

NOTE: Under no circumstances can a documented release above action levels be given an NFA without additional assessment and/or sufficient supporting documentation.

State of Oregon
Department of Environmental Quality Memorandum

Date: October 17, 1995

To: File

From: Rebecca Paul

Subject: HW- Ashland Chemical Company, Multnomah County, ORD115485989

On October 11, 12, and 18, 1995, I inspected Ashland Chemical located at 3322 NW 35th Street in Portland, Oregon. This facility is registered as a Large Quantity Generator (LQG) and this inspection was done as one of the Northwest Region's LQG inspection commitments. At the time of the inspection, the facility was operating as an LQG.

During the site inspection on October 11th, I was escorted through the facility by Mr. Bob Morgan, plant manager. On the 12th I visited with Mr. Bob Morgan and Mr. David de Fiebre, service center manager. During the last visit I also meet with Ms. Bonnie Olson, of Globe Consulting, and Mr. Robert Scott of Ashland Chemical. I inspected the following areas: chemical storage areas both flammable and corrosive, bulk repacking area, wastewater treatment area, and flammable truck rack.

There were two areas where wastes were collected: (1) flammable storage inside the building, and (2) flammable truck rack. There was a pallet of boxes holding small containers of chemicals and a another small box of containers stored inside the building. (This will be here after referred to in this report as the "lab pack waste". In the flammable truck rack, there were approximately fifty to sixty numbered drums. According to Mr. Dave de Fiebre and Mr. Bob Morgan, none of the drums or lab pack chemicals were considered to be wastes. Mr. Morgan said that all the materials were considered to be products. I requested a list of the containers because they appeared to be numbered even-though most of them were not labeled. Numbering drums is typically done when wastes are being characterized. He provided me with a list of 135 drums he believed were in the flammable truck rack storage area. The list consisted of over 50 different chemicals (waste streams). These wastes appeared to be both hazardous waste and non-hazardous wastes. No list of the lab pack waste was supplied to me. During that point in the inspection, I disagreed that the drums contained products and I continued to attempt to get additional information regarding the drummed waste and lab pack waste stored at the facility.

On October 18, 1995, I revisited the facility after attempting to work with both of the managers to obtain information regarding drummed waste. I came prepared to take samples of some of the drummed material on site and to more extensively prepare the case for the enforcement action. During the third site visit I met with Robert Scott and his consultant who worked on the original list of wastes and products. Mr. Robert Scott will be the facility's new plant manager as of November 1, 1995. He currently works for Ashland Chemical at their Florida facility. I discussed the purpose of my visit with both the new manager and the consultant. I informed them that a failure to perform and hazardous waste determination was a more serious violation than a dating and labeling violation. Also, given that there were numerous waste streams it would increase the magnitude of the violations from an enforcement standpoint. The additional documentation would require more of my time to prepare for that type of an enforcement case. I informed them that regardless of the situation the case would be referred to the enforcement section because of prior enforcement actions taken at that same facility. I then requested information regarding a hazardous waste determination on the drums stored at the facility. I informed Mr. Scott that I had originally requested this information during the two prior inspections, and I was told that all the drums contained products. Based on my experience these drums were being handled as if they contained waste. Mr. Scott said that the majority of the material in the drums were in fact wastes.

Ms. Olson started working on the drum inventory about the second week in August. More than half of the drums listed were shipped off-site for waste disposal. Approximately half of the wastes were disposed of as hazardous wastes and were no longer onsite. The majority of the remaining drums were profiled into hazardous waste facilities; however, about half the wastes were non-hazardous wastes.

Two of the drums could be reused in the facility as neutralization chemicals , and two other drums could feasibly be used if a purchaser were found. Mr. Scott stated that he set a deadline of two days to find a purchaser or the material would be disposed of as waste. There were 14 drums of Hi-Sol mixed with xylene which he believed had been tested; however no one had evaluated the data to determine if the material was useable or a waste. He said he would get that data to me be before I left the site. The consultant said that she had not done any work on the lab pack waste until today and had only recently been made aware of its existence. I informed Mr. Robert Scott that I would be issuing them a Notice of Noncompliance for failure to perform a hazardous waste determination on the lab pack. The remaining waste would

be dealt with as a label and dating violation. I also expressed my concern regarding the chlordane and soil waste. That waste was required to be disposed of three years ago when the first Notice of Noncompliance was issued; therefore, it was over the 90 day storage requirement.

The last issue that was discussed was the overall management of containers in the warehouse. This was an issue that was discussed and written about in the last Notice of Noncompliance. There were containers of hazardous chemicals leaking observed during the inspection in 1991. As part of the response to that Notice of Noncompliance, Mr. David de Fiebre outlined how containers of hazardous chemical would be managed in the future. Leaking containers were to be immediately transferred into good containers. After inspection of the facility, it was obvious that those practices had not been implemented.

During the site visit on October 11, 1995, I observed a puddle on the floor in the corrosives storage area. This liquid had a pH 10 as read from a piece of pH paper. The forklift had been driving thought the puddle and it appeared that the material was corroding the rubber from the tires of the forklift. The response from the manager, Mr. Bob Morgan, was that material was rainwater that had leaked in from the roof. I requested that the material be cleaned up and it was. My concern is: what action would have been taken if I had not inspected the facility? Located in the same area near the spilled material was a plastic container storing hydrofluoric acid. This container was also showed signs of leakage. A piece of pH paper was placed at the bottom of the container and it read an acidic pH of 2.0. In the flammable area there were also damaged containers. There was one small container of lacquer thinner with an absorbent pad underneath it. This container may or may not have been leaking. There was no odor present; however, the material was not in a shippable container and should have been repackaged. Damage was also evident in the area where the food grade material was stored. Eventhough the DEQ does not regulate food grade products general housekeeping practices should be a concern of Ashland Chemical.

In general it appeared that the practices outlined in Ashland's original response to the first Notice of Noncompliance were not being followed. Instead of dealing with the problem Mr. de Fiebre questioned my authority to enforce the state of Oregon spill rules. I explained that I did have authority to enforce the Department's spill rules and that spillers of hazardous chemicals are required to cleanup spills immediately regardless of the amount and regardless of where the spill occurred.

I also reviewed the spill contingency plan, employee training program, waste analyses for waste determinations, Hazardous Waste Manifests and Land Disposal Restriction Forms (LDR), and annual reports.

The following violations were observed:

1. The facility failed to perform a hazardous waste determination on small containers of chemicals located in the flammable storage area of the facility.

2. Drums of hazardous waste were not labeled with the words, "Hazardous Waste".

3. The drums accumulated did not have accumulation start dates on them.

4. At least one drum of hazardous waste was stored in excess of the 90-day storage requirement. This drum contained chlordane soil and was at the facility during the first site inspection in 1991.

5. There was no documentation on file that emergency authorities, such as fire and police, had been properly notified.. On Manifest Document Number 00004, the applicable treatment standard was not marked off on the Land Disposal Restriction Form (LDR).

6. There were several manifests missing copies of LDR forms; they were as follows: shipment 7/12/94, 1/25/94, 11/17/93, 1/27/93, 10/13/92, 8/26/92.

missing not at corporate

7. The facility did not reference manifest document numbers on some of the LDR Forms. Those manifest document numbers are 10811 and 72793.

8. The facility did not assign a manifest document number on the manifest for waste that was shipped on 10/13/92.

Assigned 92207

Additional issues at the facility:

There is a strong likelihood that the facility had a spill that they was not cleaned up. The spill was only cleaned up after I took a pH of the material on the floor. Also there were leaky containers observed at the facility. A sample

was not taken of the spilled material; therefore, I don't feel that there is not sufficient evidence to document the violation. Next time the facility is be inspected, the inspector should be prepared to sample any material that appears to have been spilled.

Conclusion:

A Notice of Noncompliance will be sent to Ashland Chemical due to the above listed violations. This case will also be referred to the Enforcement Section because of prior noncompliance and enforcement actions taken against the facility.

The facility was also visited because of a complaint that the Department received. The complaint alleged that Ashland Chemical was releasing acid waste into the storm drain system. The area of concern was the bulk loading area. Acids and bases were transferred by truck in this area, it was not covered. According to Mr. Morgan the pH of the water is measured and if the water is neutral then it is skimmed off into the storm drain. If the water is acidic or basic it is transferred to the neutralization unit. The neutralized water is then discharged to the city under a permit. The situation appears to be a design problem and an appearance problem. The transfer lines marked as acids and bases and are very visible from the street and the neighboring businesses. This containment is not covered; therefore it collects rainwater. Ashland Chemical should consider covering the area. The DEQ regulates storm water discharges. A copy of this report will be sent to that section for their review; however, I did not see any evidence that Ashland was releasing acid water into the storm water system.

Waste Streams Generated in 1994:

During the inspection in 1991 the facility was a Small Quantity Generator; however, the facility for the past two years has been a Large Quantity Generator. Approximately half of the waste that is shipped off-site is non-hazardous waste, food-grade additives. According to Ashland Chemical Municipal landfills will not accept this material; therefore, they have no option but to ship it to a hazardous waste landfill. The other waste that is shipped off site is off-spec, outdated chemicals, or incorrectly mixed chemicals that cannot be sold. Some of the off-spec chemicals can and are legitimately sold as products. The Department would prefer that the chemicals be used as opposed to being disposed of; however, long term storage of useless chemicals is a concern. It is Ashland's responsibility to correctly manage the material that

cannot be used as hazardous waste.

WASTE CODES	DESCRIPTION
D001	This waste code accounts for the majority of the hazardous waste that the facility generates. Most of this waste is off-spec or out-dated chemicals. Many of these chemicals also had the applicable U-listed waste codes listed on the manifest as well.
D002	The facility generates some corrosive wastes. Containers of straight waste acids or bases to be the elementary neutralization unit These drums must be labeled, dated, and managed as hazardous waste to the point when the waste actually enters the system. The remaining waste is spill material with adsorbent or neutralizers added. This waste can be managed as a non-hazardous waste because the waste no longer exhibits the characteristic because it is solid. However if the chemical has additives or is used in a process underlying constituents would not be a concern given the fact the facility is a chemical supplier and the chemicals should be relatively pure.
F-listed	Looking the facility's annual report there were several F-listed waste codes referenced on the report. Based on the inspection this facility should not be using these waste codes on the waste that they generated. The F-listed waste codes apply to the specific process such as decreasing. In the case of a chemical supplier the codes used should be the U- listed waste codes because they are off-spec products. Most of the waste that are F-listed have corresponding U-listing. The treatment standards for the U-listed waste in some cases will be less stringent because it is unlikely that they have become contaminated with other compounds such as metals.
U-Listed	There are some manifests that reference U-listed codes, and corresponding characteristic codes like D001. These wastes are coded correctly.

Non haz Waste: There is a large quantity of non-hazardous waste generated. Much of this waste is generated in the food grade section of the facility. This waste is disposed of at hazardous waste facilities because the company said that this waste is not accepted by solid waste facilities.

Waste Minimization: Based on observations made at the facility, Ashland Chemical should be a Small Quantity Generator. Much of the waste that is generated is the result of overall facility management, not just waste management. The facility should make sure that containers regardless of what they contain are labeled. This would minimize the problem of mixing chemicals that render the mixture useless thus creating waste. The facility should manage spilled acid and base waste so that the neutralization unit could be used instead of shipping the waste out as absorbent and acid or base. This could possibly be done using a pump. The facility should track chemical inventory to ensure that the oldest chemicals are shipped out first. This would limit the out-date chemicals. The facility should also maintain an inventory that corresponds with the local market, and ship other materials to other Ashland facilities where those markets exist before the chemicals become out-dated. Lastly the facility must maintain better housekeeping practices, the result of bad house keeping is that waste spreads contamination to otherwise uncontaminated areas.

Oregon

DEPARTMENT OF
ENVIRONMENTAL
QUALITY

NORTHWEST REGION

November 1, 1995

MR ROBERT GLOBE
ASHLAND CHEMICAL COMPANY
3322 NW 35TH STREET
PORTLAND OREGON 97210

Re: HW- Multnomah County
Ashland Chemical Company:
ORD 115485989
NWR-HW-95-84
NOTICE OF NONCOMPLIANCE

Dear Mr. Globe:

On several occasions during the month of October, the Department of Environmental Quality performed an inspection of your facility located at 3322 NW 35th Street in Portland, Oregon. This inspection was performed to determine your facility's compliance with the Department's hazardous waste regulations. As a result of that inspection, the following violations were found:

VIOLATION 1: Ashland Chemical violated OAR 340-102-011 by failing to perform a hazardous waste determination on several small containers of lab pack chemicals.

These containers were stored in boxes in the flammable storage area, and near a flammable storage closet. During the several visits to the facility I requested information concerning the management of the containers. There was no evidence that these containers were being managed as products or as wastes. The condition of some of the containers would have inevitably required that the containers be managed as hazardous waste.

VIOLATION 2: Ashland Chemical violated 40 CFR 262.34 (a)(2) by failing to label numerous drums containing hazardous waste with accumulation start dates.

John A. Kitzhaber
Governor

2020 SW Fourth Avenue
Suite 400
Portland, OR 97201-4987
(503) 229-5263 Voice
TTY (503) 229-5471
DEQ-1

SCHN00171762

VIOLATION 3: Ashland Chemical violated 40 CFR 262.34 (a) (3) by failing to labeled the above containers with the words, "hazardous waste".

These drums were located in the outside flammable storage area. Some of the drums indicated the contents and other drums did not. All of these containers were numbered indicating that a hazardous waste determination was done and the majority of the waste had been profiled into a hazardous waste facility. Drums containing hazardous waste must labeled, dated, and correctly managed while being stored at your facility.

VIOLATION 4: Ashland Chemical violated ORS 466.095 (1) by storing hazardous waste in excess of the 90 day storage requirement for Large Quantity Generators. ORS 466.095(1) requires that facilities have permits to store waste in excess of the 90 days generator requirement. Ashland Chemical does not have a hazardous waste facility permit.

There was one drum containing Chlordane and soil waste. This waste stream was documented to have been generated during an inspection done in 1992. This container must not have been stored with the other waste containers that were shipped off in 1992.

VIOLATION 5: Ashland Chemical violated 40 CFR 262.34 (a),(4) by failing to comply with the requirements of 40 CFR Subpart C, 265.37 by failing to document that emergency authorities have been notified.

I attempted to contact the Fire Department to determine if the copy of the plan had been submitted to them. I used the Fire Department normal number listed in Ashland Chemical's Spill Contingency Plan; this number was no longer in service. Ashland should up-date this plan to reflect correct phone numbers and to reflect Ashland's change in management.

VIOLATION 6: Ashland Chemical violated 40 CFR 262.34 (a) (4) by failing to comply with the requirements of 40 CFR 268. 7 which requires that generators retain copies of Land Disposal Restriction forms.

The files were reviewed during the inspection. As a result of that inspection, there were several LDR forms missing from the files.

VIOLATION 7: Ashland Chemical violated 40 CFR 262.20 (a) by not properly filling out the hazardous waste manifest. It is required that generators assign a Manifest Document Number to each waste shipment. This number is assigned to ensure proper tracking and management of the waste and the number is required to be on the LDR forms.

This waste F003, F005 was shipped on 10/13/92 to Romic Chemical. There also was no corresponding LDR Form for this waste shipment.

VIOLATION 8: Ashland Chemical violated 40 CFR 262.34(a)(4) by not providing for adequate aisle space in the drum storage area, to allow for weekly drum inspections to be performed correctly. This is a Large Quantity generator requirement reference in 40 CFR Subpart C 265.35.

Violations 1, 2, and 4 are considered to be Class I violations and are considered to be serious violations of Oregon environmental law. Ashland Chemical was also inspected in February 1992 and the violations cited resulted in an enforcement action; some of the violations were repeated. Therefore, we are referring these violations to the Department's Enforcement Section with a recommendation to initiate a more formal enforcement action. A formal enforcement action may include a civil penalty assessment for each day of violation.

In order to correct these violations the following must be done by the dates listed below:

Violation 1: Please submit a hazardous waste determination for the lab pack chemicals to the Department within 15 days of this Notice.

Violation 2, 3 and 8: Please submit photo documentation that drums have been correctly labeled and dated and are currently being managed properly. Include a drum inspection log with this submittal. If inspections were not being done submit procedures for performing weekly inspections and a checklist for the start up of the inspection program. Submit this information to the Department within 20 days of this Notice.
Friday

Violation 4: Please submit copies of the hazardous waste manifests for all the waste that is currently stored at the Ashland facility within 90 days of the inspection date (10/12/95).

Violation 5: Please submit copies of letters, with the updated information to the emergency authorities such as the local fire, police and hospitals. Also include copies of the certified mail receipts to demonstrate that the proper notifications have been sent. Submit this information to the Department within 30 days of this Notice.
Friday

Violation 6: There is a list of Land Disposal Restriction (LDR) forms problems attached to this Notice. Ashland should contact the facilities where the waste was shipped to get these copies. If the problem listed needs to be corrected please notify the hazardous waste facility, in writing, of the correction. Please submit copies of the LDR forms and the letters to the facilities to the Department within 30 days of this Notice. Friday

Violation 7: Please sent a letter to Romic Chemical correcting the manifest that was shipped on 10/13/95. A manifest document number must be assigned, and an LDR form must be completed. Please send the Department a copy of this letter within ten days of this Notice. Friday

Lastly, the violation regarding the spilled material during the site visit on 10/12/95, was not cited because of the lack of a sample for evidence; however, the Department has documented these management concerns during the past Inspection in 1992. It is strongly recommended that Ashland chemical address these concerns regardless if the violation is formally cited or not. This incident is documented in more detail in the attached inspection report.

Should you have any questions or concerns regarding this Notice please feel free to contact me at (503) 229-5543. All of the requested information should be sent to my attention.

Sincerely,

Rebecca Paul

Rebecca Paul
Environmental Specialist
Northwest Region

cc: Mr. Bob Morgan: Ashland Chemical
Enforcement Section:DEQ
Mr. Jim Vilendre: Hazardous Program:DEQ

ENVIRONMENTAL CLEANUP SITE INFORMATION
SITE SUMMARY REPORT

July 24, 1996 03:32 pm

SITE ID: 1076 SITE NAME: Hill Investment Co. CERCLIS NO:

ALIASES: Ashland Chemical Co.
Nabisco Warehouse

ADDRESS: 3322 NW 35th AVE Portland 97210

COUNTY: MULTNOMAH REGION: NWR

INVG STATUS: LIS NPL SITE: N ORPHAN SITE: N STUDY AREA: N

PROPERTY: TWNSHP/RANGE/SECT: 1N,1E,29 TAX LOTS: 137

LATITUDE: 45 deg.32'51" LONGITUDE: 122 deg.43'3" SITE SIZE: unknown

STUDY AREAS:

STUDY ID	STUDY NAME	INVG STATUS
1544	Lower Willamette River Basin Study Area (LWRBSA)	XCN

FACILITIES:

NAME: Ashland Chemical co.
COMMENTS: warehouse facility
YEARS OF OPERATION:
SIC CODES: 4225, OPERATING STATUS: Active

HAZARDOUS SUBSTANCES/WASTE TYPES:

Cis-1,2-dichloroethene, perchloroethylene, trichloroethylene, vinyl chloride, trans-1,2-dichloroethene

CONTAMINATION INFORMATION:

During a 1990 site assessment, chorinated solvents were detected at very high levels (e.g., PCE at 35.5 ppm) in groundwater at the site. Nabisco formerly occupied the site, and Ashland Chemical Co. is the current operator. At the time, the highest concentration of solvents was found in a monitoring well considered by the contractor to be upgradient, suggesting an off-site source. Since the discovery of chlorinated solvents, DEQ's oversight has been limited to underground storage tank issues and petroleum contamination (see UST file #26-89-280). No groundwater sampling for chlorinated solvents has occurred since 1990.

PATHWAYS:

SCHN00171766

Site is in the Guilds Lake industrial area. Topography is flat; soil is fill (boring log shows material to be silty sands). Depth to groundwater is about 9.5 feet and its uses are unknown.

HAZARDOUS SUBSTANCES

SUBSTANCE	RELEASE AREAS	COMMENTS
DICHLOROETHYLENE,1,2-CIS- ( )		Date released: unknown Quantity Released: unknown Data Source: Nabisco Warehouse Site Soil & Groundwater Sampling reports
TETRACHLOROETHANE,1,1,1,2- ( )		Date released: unknown Quantity Released: unknown Data Source: Nabisco Warehouse Site Soil & Groundwater Sampling reports
TRICHLOROETHYLENE ( )		Date released: unknown Quantity Released: unknown Data Source: Nabisco Warehouse Site Soil & Groundwater Sampling reports
VINYL CHLORIDE ( )		Date released: unknown Quantity Released: unknown Data Source: Nabisco Warehouse Site Soil & Groundwater Sampling reports

SUBSTANCE CONTAMINATION

SUBSTANCE	MEDIA CONTAMINATED	CONCENTRATION LEVEL	EVIDENCE	OBSERV. DATE
DICHLOROETHYLENE,1,2-CIS-	Groundwater	3,580 ppb	Laboratory Data	25-OCT-90
TETRACHLOROETHANE,1,1,1,2-	Groundwater	35,500 ppb	Laboratory Data	07-SEP-90
TRICHLOROETHYLENE	Groundwater	5,040 ppb	Laboratory Data	07-SEP-90
VINYL CHLORIDE	Groundwater	308 ppb	Laboratory Data	25-OCT-90

ENVIRONMENTAL/HEALTH THREATS:

Chlorinated solvents present in the groundwater.

STATUS OF INVESTIGATIVE OR REMEDIAL ACTION:

Hill Investment Co. indicated to DEQ in April 1991 that it would conduct its own preliminary assessment. However, as of July 1995, no PA has been performed at the site, and Hill Investment disagrees that it ever consented to conduct its own PA. In view of the very high levels of chlorinated solvents found in groundwater, Site Assessment recommends that the RP initiate further groundwater investigation as soon as possible. Otherwise, DEQ should perform a PA, under medium priority. Despite the RP's claim that chlorinated solvents migrated from off-site, Site Assessment believes more data is needed to determine their origin.

REMEDIAL ACTION FUNDING:

Owner, operator or other party under state or federal authority

INVESTIGATIVE, REMEDIAL, AND ADMINISTRATIVE ACTIONS

ACTION	START DATE	COMPL. DATE	RESP. STAFF	AGENCY CODE	REGION	LEAD PROGRAM
Site added to database	24-JAN-91		Aaron Bodor	DEQ		SAS
Proposal for Confirmed Release List recommended	24-JAN-91	24-JAN-91	Aaron Bodor	DEQ		SAS
Listing Review completed	24-JAN-91	24-JAN-91	Aaron Bodor	DEQ		SAS
SITE EVALUATION	24-JAN-91	24-JAN-91	Aaron Bodor	DEQ		SAS
BASIC PRELIMINARY ASSESSMENT COMMENTS: DEQ PA never completed.	03-APR-91		John Odisio	DEQ		SAS
Facility proposed for Confirmed Release List	26-JUN-91	26-JUN-91	Aaron Bodor	DEQ		SAS
Listing on Confirmed Release List	18-SEP-92	18-SEP-92	Loretta Pickerell	DEQ		SAS

recommended						
Review for final listing	18-SEP-92	18-SEP-92	Loretta Pickerell	DEQ		SAS
Facility placed on Confirmed Release List	23-OCT-92	23-OCT-92	Loretta Pickerell	DEQ		SAS
SITE PRIORITY EVALUATION FOR FURTHER ACTION	12-JUN-95	20-JUL-95	Gil Wistar	DEQ	NW	SAS
State Basic Preliminary Assessment recommended (PA) Priority for Further Action: MED	20-JUL-95	20-JUL-95	Gil Wistar	DEQ	NW	SAS
Other remedial or investigative action recommended COMMENTS: Further groundwater investigation for VOCs by RP.	20-JUL-95	20-JUL-95	Gil Wistar	DEQ	NW	SAS

PARTY INFORMATION

SITE CONTACT:

ASSOCIATED PARTIES NAME AND ADDRESS	AFFILIATION	AFFILIATION STATUS	INFORMATION AS OF DATE
Ray Agostino Hill Investment Company 7582 Via de la Siesta Scottsdale, AZ 85258 ( )	Legal Owner		12-JUN-95

COMMENTS:

DATA SOURCES: NWR Lust file #26-89-280 containing the following: Nabisco Site Soil & GW Sampling Round II 11/11/90 Nabisco Site Soil & GW Sampling & Asbestos Survey 10/11/90

LAST UPDATED BY: dmc DATE: 13-SEP-95

(site_report.rpt)