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RCAP RECEIVED
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Transmittal

To: Ms. Christine Jump
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901 North Fifth Street
Mail Code: AWMDRCAP
Kansas City, KS 66101

Date: August 4, 2009

Project No.: 113201

Project: Sigma-Aldrich Dekalb Facility

We have enclosed 1 copy(s) of:

☐ B/W Prints ☐ Reproducible ☒ Reports ☐ Letter
☐ Specifications ☐ Memorandum ☐ [Other]

Description:	Rev. #	Date
SWMU/AOC Management Report Addendum	**1**	**July 2009**

Attached please find one CD containing the SWMU/AOC Management Report Addendum. Please let me know if you would prefer a hardcopy of the report.

Sent Via:

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Very truly yours,
TRC

Richard Wetherbee
Project Manager

RCRA
519411

Excerpt from CD

4.2.1 Non-Residential Ingestion, Inhalation and Dermal Contact Exposure

The exposure assumptions used in the U.S. EPA SSLs and MRBCA process for potential exposure of a site worker based on ingestion, inhalation and dermal contact are similar and include 25 years of exposure, 250 days of exposure per year, and a soil ingestion rate of 100 mg/day. The Dekalb facility is largely covered by buildings and pavement, and there is not a reasonable probability of this degree of worker exposure via ingestion, inhalation or dermal contact; thus this non-residential pathway is not considered complete.

Therefore, while exceedances of the U.S. EPA SSLs for industrial soil were indentified in Section 4.1, these exceedances are not indicative of an unacceptable risk, since the exposure assumptions embedded in the SSLs are not valid for the site.

4.2.2 Groundwater Use

Current Conditions

Groundwater is not used at the site for any purpose. To assess whether a potential exposure route exists with respect to off-site groundwater use, an assessment was conducted pursuant to the methodology documented in the *Missouri Risk-Based Corrective Action (MRBCA) Departmental Technical Guidance* (February 2005). MRBCA requires the identification of all public water supply wells within a one-mile radius of the site and all private water supply wells within a one-quarter mile radius of the site. This was accomplished in part through review of information presented in the Missouri Environmental Geology Atlas (MEGA)[2]. MEGA resources that were consulted included the following:

- The "Public Well" data layer;
- The "Well Logs" data layer, which documents results from Missouri Department of Geology and Land Survey (DGLS) logging of samples voluntarily provided by well drillers; and
- The "Certified Well" data layer, which presents data from the Wellhead Information Management System (WIMS) database, which resulted from the Water Well Drillers Law of 1986.

Printouts of key MEGA output are provided in Appendix H.

The well search revealed no public water supply wells within one mile of the site and no private water supply wells within one-quarter mile of the site. The review of the MEGA "Well Logs" data indicated that well logs exist for two private wells within one mile of the site. Even though these wells are outside the search radius required by the MRBCA process, these wells

[2] MEGA is a product of the Missouri DNR Geologic Survey and Resources Assessment Division (GSRAD). The most current version of MEGA (Version 2007) was used.

Tables presenting a comparison to the MRCBA DTLs are presented in Appendix C, and tables presenting a comparison of the data to the U.S. EPA SSLs are included in Appendix D. Exceedances of the MRBCA DTLs, U.S. EPA SSLs for Industrial Soil, and U.S. EPA SSLs for Groundwater Protection are summarized in Tables 4, 5 and 6, respectively.

Chloroform was detected in concentrations that exceeded the U.S. EPA SSL for Industrial Soil, SSL for the Protection of Groundwater, and the MRBCA DTL. The highest chloroform concentrations were detected in SWMU 1, where there was a possible chloroform release from chloroform distillation/recycling activities conducted in the 1975-1985 era. This area is outside the footprint of the facility building and underwent closure in 1995.

Elevated methylene chloride concentrations were detected in samples collected from SWMUs 1, 5, 10, AOC C, and AOC D. Elevated tetrachloroethene and naphthalene concentrations were detected in samples collected from SWMU 10 and AOC C. An elevated trichloroethene concentration was detected in a sample collected from AOC C.

Fill material consisting of foundry sand, boiler slag and combustion by-product substances was historically placed at the Site at depths ranging between 7 and 16 feet below ground surface (bgs). Based on the widespread distribution of the elevated SVOC and metals concentrations that exceed the SSLs and DTLs, these results are not likely associated with former site operations, but reflect the properties of the material historically used to grade the site. so?

4.2 EXPOSURE PATHWAY ANALYSIS

The various exposure pathways that are required to be examined in the MRBCA process are systematically assessed in Appendix G. The exposure pathways for the residential, non-residential and construction worker populations considered include:

- Inhalation of vapors and particulate matter, ingestion, and dermal contact with surficial soil or soil to depth of construction (construction worker only)
- Inhalation of vapors and particulate matter, ingestion, and dermal contact with surficial soil
- Indoor inhalation of vapors from subsurface soil
- Indoor inhalation of vapors from groundwater
- Dermal contact with water
- Current drinking water well

Key exposure pathway considerations and conclusions are discussed below.

were considered to provide insight into the probability of groundwater use nearer the site. These wells were 1) an industrial high capacity well owned by the Industrial Sugar Corporation and 2) a sewer test hole installed by the City of St. Louis.

The industrial well was reportedly installed in 1959 at a property located south of the site. The Industrial Sugar Corporation was found to no longer be present and the well's reported location was cross-referenced with property records maintained by the City of St. Louis Assessor's Office to determine the present-day owner of the property. Based on a review of the Assessor's records, it was determined that the well was located on property presently owned by the American River Transportation Company. A telephone conversation with a representative of the American River Transportation Company confirmed that the industrial well was not operational and is not a potential source of exposure. The sewer test hole is not used to produce water and is not a potential source of exposure.

The review of MEGA "Certified Well" data indicated that multiple test borings and monitoring wells were installed within one mile of the site; however, none of them are used as supply wells and they do not represent potential sources of exposure. Based on this assessment, the "current domestic use of groundwater" pathway is not complete.

Future Conditions

Future use of groundwater in the vicinity of the site for purposes of water supply is judged as being improbable and the "future domestic use of groundwater pathway" is considered incomplete, given the following considerations:

- Alternative sources of water supply exist in the area – the area is served by a municipal water supply, which uses surface water and well fields far from the site.
- On August 1, 2005, the City of St. Louis approved Ordinance 66777. The Ordinance prohibits the use or attempted use of groundwater as a potable water supply and the drilling or installation of wells to be used for a potable water supply within the corporate limits of the City of St. Louis. On October 25, 2006, the City of St. Louis and DNR entered into the Memorandum of Understanding (MOU). The MOU ensures that both DNR and the City track remediated sites and that the City notifies DNR of changes to, and violations of, the Ordinance.

Therefore, while exceedances of the U.S. EPA SSLs for groundwater protection were indentified in Section 4.1, these exceedances are not indicative of an unacceptable risk, since the exposure assumptions embedded in the SSLs (domestic use of groundwater) are not valid for the site.

4.3 ASSESSMENT OF COMPLETE AND POTENTIALLY COMPLETE EXPOSURE PATHWAYS

This Section presents an evaluation of the potential exposure from contaminants detected at concentrations exceeding the SSLs and RBTLs through the pathways determined to be complete or potentially complete. Based on the information presented in Appendix G and in Section 4.2, the following are the complete and potentially complete exposure pathways that should be considered further.

- Protection of the non-residential site worker from indoor inhalation of vapors emitted from subsurface soils.
- Protection of the non-residential site worker from indoor inhalation of vapors emitted from groundwater.
- Protection of off-site non-residential workers from indoor inhalation of vapors emitted from groundwater.
- Protection of off-site residents from indoor inhalation of vapors emitted from groundwater.
- Protection of the on-site construction worker considering ingestion, inhalation, and dermal contact with impacted soils.
- Protection of the off-site construction worker from dermal contact with impacted groundwater.

Each of these pathways is addressed in the following text.

4.3.1 Onsite Non-Residential Exposure to Indoor Vapors from Subsurface Soils

To assess the potential site worker exposure of contaminants as a result of soil vapor intrusion from contamination in subsurface soils, the soil data were compared to the corresponding MRBCA non-residential RBTLs.

Sample Results Compared to MRBCA RBTLs		
Analyte	**Number of Samples Analyzed**	**Number of Samples Containing Detectable Concentration Greater Than Non-Res Inhalation of Vapor RBTL**
VOCs		
Chloroform	86	13
Inorganics		
Lead	69	3

The results of the comparison indicated that chloroform and lead were present in concentrations that exceed the non-residential exposure to indoor vapors RBTL. Although MRBCA Departmental Technical Guidance includes a RBTL for lead, it is based on direct contact with soil and is not relevant to the potential worker exposures at the site since the site is paved. Based on the comparison, the exposure pathway for site workers via indoor inhalation of chloroform vapor emitted from subsurface soils is considered further.

At the Dekalb facility, a case can be made that chloroform in indoor air is an issue that is more appropriately governed by Occupation Safety and Health Administration (OSHA) regulations than by the MRBCA process. There are general requirements under OSHA to protect the working population from exposure to chemicals in concentrations which exceed Permissible Exposure Levels (i.e., Threshold Limit Values – Time Weighted Average [TLV-TWA]). Sigma has an Industrial Hygiene program which is tasked with monitoring possible exposures and documenting compliance with OSHA standards. However, to provide insight into the significance of the chloroform concentrations that have been measured in site soils, further assessment pursuant to the MRBCA process was performed.

The representative concentration of chloroform was calculated by computing the average of the chloroform data. For samples in which chloroform was not detected, one-half the detection limit was used in the calculation. These data are presented in Appendix I. The site wide average concentration for chloroform is 0.401 mg/kg, versus an RBTL of 0.402 mg/kg.

The highest chloroform concentrations were detected in SWMU 1, where there was a possible chloroform release from former chloroform distillation/recycling activities. This area is outside the footprint of the facility building; thus, including these samples in the calculation of the representative concentration for vapor intrusion into the building would tend to over-state the vapor intrusion potential (relative to soil sampled collected inside the building footprint).

Based on the information presented above, it is concluded that chloroform does not pose an unacceptable risk via the non-residential vapor intrusion pathway.

4.3.2 Onsite Non-Residential Exposure to Indoor Vapors from Groundwater

Under this scenario, VOCs present in on-site soil could potentially leach into groundwater and then volatilize into soil vapor. In this case, the concentration of constituents-of-concern in soil vapor would be controlled by partitioning between the source soils and soil vapor, and it is unlikely partitioning between groundwater and soil vapor would be a significant risk factor. However, to confirm this assumption, further assessment was performed as summarized below.

To assess whether the contaminant concentrations present at the site have the potential to impact indoor air at off-site non-residential facilities, the MRBCA model was run in backwards mode to determine the highest allowable on-site concentration that would not results in an

unacceptable risk of vapor intrusion to on-site non-residential workers. For this exposure pathway, RBTLs for Type 1 soils (i.e., sandy soils) were used. The actual soil type at the Dekalb facility is more likely Type 2 (silt) or Type 3 (clay). Since the RBTL's for Type 1 soil are more stringent (i.e., lower) than RBTL's for the other soil types, use of RBTL's for Type 1 soils is conservative.

Chloroform was the only VOC with a detected concentration that exceeded the RBTL for non-residential soil vapor intrusion and only one of the 86 samples analyzed contained a detectable concentration of chloroform (18 mg/kg) that exceeded the RBTL (11.5 mg/kg). Appendix J presents the MRBCA model calculations. Based on this calculation, chloroform does not present an unacceptable risk via this pathway. This conclusion is further supported by the analysis presented in Section 4.3.1, which indicates that subsurface soil contamination does not present an unacceptable risk via the non-residential vapor intrusion pathway.

4.3.3 Off-site Non-Residential Exposure to Indoor Vapors from Groundwater

As demonstrated in Section 4.3.2, none of the analytes detected were present in concentrations that would represent an unacceptable exposure risk to non-residential site workers; therefore, it is concluded that this pathway does not pose an unacceptable risk.

Moreover, based on a review of surrounding property usage, it was determined that the closest non-residential property is located approximately 450 feet southeast of the SWMU 1 soil sample locations. The MRBCA software was run in backwards mode to determine the highest allowable on-site concentration at SWMU 1 that would not result in an unacceptable risk to off-site non-residential workers. Appendix J presents the MRBCA model calculations. Based on the MRBCA calculation, the allowable soil concentration would be 59.4 mg/kg, which is greater than the maximum chloroform detection at the site (18 mg/kg). Based on this calculation, it is concluded that chloroform does not pose an unacceptable risk via leaching to groundwater and associated vapor intrusion into nearby commercial/industrial facilities.

4.3.4 Off-site Residential Exposure from Vapor Intrusion

Similar to the protection of off-site non-residential workers from indoor inhalation of vapors emitted from groundwater (refer to Section 4.3.3), VOCs present in on-site soil could potentially leach into groundwater, be transported off-site and then volatilize into soil vapor. The MRBCA model was run in backwards mode to determine the highest allowable on-site concentration that would not result in an unacceptable risk of vapor intrusion to off-site residents. To generate a conservative RBTL for initial screening the data, it was assumed that the lateral distance from the impacted soils to the off-site residence was zero. This assumption was used since it would tend to over-estimate risks and the absence of a potential exposure would indicate that no further assessment is required. For this exposure pathway, RBTLs for Type 1 soils (i.e., sandy soils) were used. The actual soil type at the Dekalb facility is more

likely Type 2 (silt) or Type 3 (clay). Since the RBTL's for Type 1 soil are more stringent (i.e., lower) than RBTL's for the other soil types, use of RBTL's for Type 1 soils is conservative. Appendix J presents the MRBCA model calculations.

As shown below, chloroform was the only VOC with detected concentrations that exceed the RBTL for residential soil vapor intrusion, and only two soil samples contained chloroform at concentrations exceeding the conservative RBTL described above.

Sample Results Compared to MRBCA RBTL		
Analyte	**Number of Samples Analyzed**	**Number of Samples Containing Detectable Concentration Greater Than Res. Soil Vapor Intrusion RBTL**
VOCs		
Chloroform	86	2

To further assess whether soil vapor intrusion presents an exposure pathway to nearby residences, a survey of surrounding properties was made to determine the closest residential property. Based on the survey, the closest residential property is an apartment building located at 3620 to 3624 Kosciusko Street. The property boundary of this is address is approximately 40 feet southwest of the site's fence line (across President Street) and 125 feet from the SWMU 1 soil sample locations containing of the chloroform concentrations that exceeded the RBTL.

The MRBCA software was run in backwards mode to determine the highest allowable on-site concentration at SWMU 1 that would not result in an unacceptable risk to the off-site residences. The RBTL for Type 2 soils (silt) were used since they more accurately reflect the soil type at the Dekalb facility. Appendix J presents the MRBCA model calculations. Based on the MRBCA calculation, the allowable soil concentration would be 20.4 mg/kg, which is greater than the maximum chloroform detection at the site (18 mg/kg). Based on this calculation, and the fact that only two (2) of eighty-six (86) soil samples exceeded the conservative RBTL based on on-site residential exposure, it is concluded that chloroform does not pose an unacceptable risk via leaching to groundwater and associated vapor intrusion into off-site residences.

4.3.5 On-Site Construction Worker Exposure

At the Dekalb facility, the most likely potential source to soil via ingestion, inhalation, or dermal contact is through excavation performed during construction activities. The MRBCA construction worker exposure assumptions include 1 year of exposure, 90 days of exposure per year, and a soil ingestion rate of 100 mg/day. These construction worker exposure assumptions are considered a "reasonable worst case" scenario of direct contact exposure to impacted soils at the Dekalb facility.

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July 28, 2009

VIA FEDEX

Mr. Steve Jaques, P.E.
Environmental Engineer
Permits Section
Missouri Department of Natural Resources
Hazardous Waste Program
P.O. Box 176
1738 East Elm Street (Lower Level)
Jefferson City, Missouri 65101

RE: SWMU/AOC Management Report Addendum
Sigma-Aldrich Manufacturing LLC, Dekalb Facility, St. Louis, Missouri
EPA ID# MOD006273726

Dear Mr. Jaques:

Transmitted herewith are two (2) copies of the above-referenced report, which has been revised in response to the Missouri Department of Natural Resource's (DNR's) technical comments, dated May 28, 2009, which were received by Sigma-Aldrich Manufacturing, L.L.C. on June 3, 2009. Responses to each of the DNR's technical comments are provided below:

1. With regard to the soil sample collected on March 20, 2000 in the vicinity of AOC D please provide: 1) a drawing or figure that shows the location of the sample relative to the historic distillate bottoms release point and the downhill storm sewer grate inlet, 2) an indication of the sample depth below grade, and 3) copies of any field notes describing the physical characteristics of the sample.

   Response: The SWMU/QOC Management Report Addendum has been revised to include additional information on the sample (see Section 3.2). No documentation describing the physical characteristics of the sample was available.

2. Please amend the narrative in Sections 3 and 4 and the tables in Appendices B through D to include a comparison to the U.S. Environmental Protection Agency (EPA) Region VI soil screening levels (see http://www.epa.gov/Region6/6pd/rcra_c/pd-n/screen.html).

   Response: The narrative in Sections 3 and 4, and the tables in the Appendices of SWMU/AOC Management Report Addendum have been revised to include a comparison to the U.S. EPA Region VI soil screening levels.

3. Please supplement the soil sample analytical results presented in Appendices B through D by providing sample date and location. Where applicable, figures showing sample location may be obtained from previously submitted documents.

   Response: The soil sample analytical results tables presented in the Appendices have been revised to include sample dates. Figures 4 through 7, which illustrate the sample locations, have been included in the revised SWMU/AOC Management Report Addendum.

4. Please supplement the soil sample analytical results in Appendix B to include the results from the August 1995 sampling that was completed in conjunction with closure of the hazardous waste storage area.

   Response: The soil sample analytical results tables presented in the Appendices have been revised to include the August 1995 sampling that was completed in conjunction with closure of the hazardous waste storage area.

5. Please add footnotes to the Appendix D table to indicate that the average concentration of chloroform is used in comparison to the vapor intrusion risk based target limit only. The potential human health impacts associated with chloroform contamination in soil should be evaluated based on exposure scenarios. For instance, the higher concentrations of chloroform in the vicinity of SWMU #1, rather than a property-wide average, should be utilized when considering construction worker exposure for any subsurface work conducted in the vicinity of SWMU #1.

   Response: The average was selected as the appropriate methodology for calculation of a representative concentration for the vapor intrusion pathway. As presented in Section 4.3.5, there were no chloroform concentrations that exceed the construction worker RBTL. Therefore, it was not necessary to develop a representative concentration for construction worker exposure. (Also, it should be noted that there is not an U.S. EPA screening level for construction worker exposure.)

6. The analytical method for the Coldroom A-B sample was a toxicity characteristic leaching procedure (TCLP) method rather than SW-846 8260 and 8270; therefore the results cannot be compared directly to risk-based soil screening levels. Please revise the Addendum to remove this comparison of TCLP results to soil screening levels.

   Response: The comparison was eliminated in the revised Addendum.

7. There is a typographical error on Page 3-4, please replace Benzo(a)fluoranthene with Benzo(b)fluoranthene.

   Response: The typographical error was corrected in the revised Addendum.

8. Attached is model language for an Environmental Covenant. Please use this document as a starting template and propose language that is acceptable to Sigma-Aldrich. The Department will work with you to establish a legally-binding Environmental Covenant for this property. At a minimum, the activity and use limitations should include: restricted access, non-residential use only, protective cap (e.g., concrete) over contaminated areas, prohibition of groundwater use and a soil management plan. Please clearly delineate areas that you feel should be subject to the protective cap requirement and specifications for the protective cap. These areas should correspond to areas where soil contamination has been detected at levels above the EPA Region VI soil screening levels for industrial sites.

   Response: The proposed Environmental Covenant language is being reviewed and will be submitted under separate cover.

9. Upon review of Hazardous Waste Program files, I did not find any submittal pertaining to a groundwater investigation for this property. Based on my file review, it seems that there is moderate potential for groundwater contamination at the property. The level of chloroform in soil revealed by the 1994 and 1995 sampling events is indicative of a past release of chloroform and some of the soil samples taken around and below the former hazardous waste storage area contained chloroform above soil screening levels that are considered to be protective of groundwater. For instance, soil boring 14C, 15-17 ft. depth, 10- 15 ft. northeast of the former location of the chloroform Tank T223 contained 0.345 mg/kg chloroform. The EPA Region VI soil screening level for chloroform that is considered protective of groundwater is 0.000055 mg/kg. This screening level is applicable unless a case is made to eliminate the drinking water ingestion pathway through a risk assessment process. The soil borings extended as deep as 17 feet, but I saw no indication of the presence of significant groundwater in the bore holes. The concentration of chloroform in soil appears to decrease with depth

based on the soil borings conducted to date, but the depth to groundwater and representative soil concentration at the area of possible groundwater impact is unknown. Please provide further justification to justify the lack of a groundwater investigation and/or deeper soil borings at the property, or submit a Resource Conservation and Recovery Act Facility Investigation Work Plan meeting the specification of Item G. of the September 2007 LOA for additional site characterization.

Response: The report has been revised to include an assessment of the drinking water ingestion pathway (see Section 4.2.2). This assessment establishes there is not a reasonable probability of use of groundwater for drinking water purposes under current or future conditions. A systematic evaluation of potential exposure pathways has been performed. For the exposure pathways that are complete or potentially complete, sufficient data exists to conclude site conditions do not pose an unacceptable risk. Therefore, no additional investigation is warranted.

Should you have any questions or comments regarding this report, do not hesitate to contact me at (636) 398-3907 ext. 11

Sincerely,

TRC

Keith Piontek

Keith Piontek, P.E.
Program Manager

Attachments

cc: Ms. Cheryl Stipsits, Sigma-Aldrich

SWMU/AOC Management Report Addendum

Sigma-Aldrich Manufacturing, L.L.C.
Dekalb Facility
St. Louis, Missouri

July 2009

Prepared by:

TRC

St. Louis, Missouri

SWMU/AOC Management Report Addendum

Prepared by:

13 East Second Street
Eureka, MO 63025

TRC Project No. 113201.000001.000001

July 2009

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1.0 INTRODUCTION

The Missouri Department of Natural Resources (DNR) and Sigma-Aldrich Manufacturing, LLC (Sigma-Aldrich) entered into a Letter of Agreement (LOA) for the purpose of implementing an Expedited Corrective Action Program (ECAP) at the Sigma-Aldrich DeKalb facility in St. Louis, Missouri. Pursuant to the LOA, the first step in the ECAP process for the DeKalb facility is the submittal of a report providing an update on the Solid Waste Management Units (SWMUs) and Area of Concern (AOCs) at the facility. This document constitutes the required SWMU/AOC Management Report Addendum.

1.1 Background Information

1.1.1 Facility Description

The DeKalb facility is located at 3500 Dekalb Street, St. Louis, Missouri (see Figure 1). The facility is located on a 7-acre site that includes parking lots on the south and west sides of the facility. The operating portion of the facility is estimated to be approximately 3 acres in size. The facility produces approximately 6,000 different biochemical compounds. An additional 14,000 products are packaged, warehoused or quality controlled at this facility.

Surrounding land use to the south, southwest and west is largely residential and light manufacturing. Interstate 55 borders the facility on the northeast and east side of the facility. The Dekalb facility currently consists of one main building, one security guard building, and one New Solvent/Waste Solvent Storage Area.

1.1.2 Facility Regulatory Status and History

Pursuant to Resource Conservation and Recovery Act (RCRA) regulations, Sigma-Aldrich submitted a general information form to the U.S. Environmental Protection Agency (EPA) indicating the facility was a Treatment, Storage and Disposal (TSD) facility on November 14, 1980. The DNR issued a hazardous waste storage permit for the facility on September 14, 1984. The RCRA-permitted TSD units at the facility were closed pursuant to RCRA protocol in 1996. Through this series of events, the facility is not subject to issuance or re-issuance of a Missouri Hazardous Waste Management Facility Permit, but is currently subject to RCRA corrective action requirements.

The initial component of the RCRA Corrective Action process is the RCRA Facility Assessment (RFA). The overall objective of the RFA is to compile existing information on environmental conditions at a given facility, including information on actual or potential releases. An RFA was conducted at the facility under the direction of the U.S. EPA (Region VII) and the DNR. A final RFA Report as completed in 1996.[1] The RFA Report identified and

[1] *Final RCRA Facility Assessment Report*, Science Applications International Corporation, April 5, 1996.

evaluated the SWMUs and the AOCs at the facility for releases or potential releases of hazardous wastes or hazardous constituents. The following SWMUs and AOCs were identified:

SWMUs

1. Hazardous Waste Storage Building
2. Aboveground Storage Tanks & Drum Storage Area
3. Hazardous Waste Satellite Accumulation Areas
4. Waste Staging Area
5. Laboratory Sumps
6. Spent Solvent Distillation Units, Filtration Devices & Centrifuges
7. M-Pad Storage Area
8. Three Former Underground Storage Tanks
9. Special Waste Handling Area
10. Metropolitan St. Louis Sewer District (MSD) Sanitary Sewer System

AOCs

A. Glycerol Phosphorylcholine Release to Sanitary Sewer System
B. Release of Pentafluorobenzylbromide at Packaging Department
C. Tank Farm Loading/Unloading Area
D. Distillate Bottoms Release Behind Warehouse
E. Area of Stressed Vegetation

Appendix A presents photographs of SWMUs 2, 3, 4, 5, 9 and AOC D.

The DNR concluded there were several SWMUs and AOCs that required additional research and/or investigation. In response to the RFA, Sigma-Aldrich submitted a letter, dated April 16, 1997, to the DNR containing clarifying information.

Also in response to the issues identified in the RFA, Sigma-Aldrich collected additional data for certain SWMUs and/or AOCs, performed a risk assessment of the available data, assessed the need for future evaluation and/or investigation, and developed recommendations for actions to protect human health and the environment. The results of this work were presented to the DNR in a report entitled *SWMU/AOC Management Report, RCRA Facility Investigation and Corrective Measures* (June 4, 1999). The report included a Soil Management Plan (SMP) that specified proper handling and disposal procedures for soils encountered during on-site below-grade construction activities at or near SWMUs and/or AOCs at the DeKalb facility, to help ensure protection of on-site workers and the environment. It was Sigma-Aldrich's intent that the SWMU/AOC Management Report would fulfill the requirements for a RCRA Facility

Investigation (RFI) and Corrective Measures Study (CMS) under the RCRA Corrective Action process.

Based on an October 13, 1999 meeting between Sigma-Aldrich and the DNR, Sigma-Aldrich submitted a revised SMP (October 21, 1999) and a revised *SWMU/AOC Management Report* (June 28, 2000). The SMP was approved by the DNR in a letter dated November 2, 1999. The department has not performed a formal review of the remaining elements of the SWMU/AOC Management Report.

Sigma-Aldrich has managed the site consistent with the SMP and other recommendations presented in the SWMU/AOC Management Report. Sigma-Aldrich has collected certain additional soil data as the opportunity has been presented during the course of site maintenance and construction. Prior to the submittal of this document, these additional data had not yet been submitted to the DNR.

1.2 Purpose and Organization of the SWMU/AOC Management Report Addendum

The DNR and Sigma-Aldrich entered into an ECAP LOA in September 2007. The LOA specified that a SMWU/AOC Management Report Addendum should be prepared and submitted. This report is intended to fulfill that requirement. The report is organized as follows:

- Update on waste management activities at the DeKalb facility (Section 2)
- Discussion of the previous risk assessment and additional soil data collected since the risk assessment (Section 3)
- Screening and assessment of data (Section 4)
- SWMU/AOC management recommendations (Section 5)

2.0 UPDATE ON WASTE MANAGEMENT ACTIVITIES

This section provides an update on waste management activities at the DeKalb facility since the submittal of the *SWMU/AOC Management Report* (Sigma-Aldrich, 2000).

2.1 Chronology and Update on SWMU/AOC Current Conditions

A chronology of RCRA corrective action events at the facility, including soil sampling activities conducted pursuant to the SMP is presented in Table 1. A description of the current condition at each SWMU and AOC identified in the RFA is presented in Table 2.

2.2 New Waste Generation and TSD Areas/Activities

Since the decision to close the RCRA-permitted waste storage building (see discussion below), the facility no longer stores any RCRA waste for longer than 90 days. Sigma-Aldrich maintains its classification as a large quantity generator. The major changes in waste management that have been implemented at the facility since the RFA have been the closure/elimination of the following SWMUs:

- SWMU 1 (Hazardous Waste Storage Building) underwent closure in 1995.
- SWMU 6 (Spent Solvent Distillation Units, Filtration Devices, and Centrifuges), which was located within SWMU 1, was eliminated through closure of SWMU 1.

Upgrades and modifications since the RFA have included the following:

- Installation of new solvent tanks in SWMU 2 (Above Ground Storage Tanks and Drum Storage Area) as part of a Tank Farm Renovation project in 2000.
- Installation of improved containment at AOC C (Tank Farm Loading/Unloading Area) in 1999.

Sigma-Aldrich has not constructed or used any new solid and hazardous waste generation or TSD areas, and has not engaged in any new hazardous waste generation or TSD activities at the Dekalb facility since the RFA. The list of SWMUs and AOCs in Table 2 remains a complete inventory of pertinent waste management areas at the facility.

2.3 Spills or Releases to the Environment

All product and/or waste spills that have occurred at the facility since the RFA and SWMU/AOC Management Report are summarized in Table 3. Table 3 identifies the date of releases, the material released, the estimated quantity of material released, and the response action conducted by Sigma-Aldrich. The location of these spill events is illustrated in Figure 2. Each of the releases listed in Table 3 occurred inside the production building at the facility; thus, the potential for release to the environment associated with these incidents was limited.

2.4 Soil Management Plan

The existing SMP was approved by the DNR in a letter dated November 2, 1999. Sigma-Aldrich has managed the site consistent with the SMP since that time.

3.0 PREVIOUS RISK ASSESSMENT AND SUPPLEMENTAL SOIL CHARACTERIZATION

3.1 Prior Risk Assessment

The *SWMU/AOC Management Report* (Sigma-Aldrich, 2000) included a risk assessment to provide an analysis of risks based on site sampling results and to provide a basis for evaluating potential corrective action and/or site management requirements. Soil data that was incorporated into the risk assessment were collected by Sigma-Aldrich and the U.S. EPA during the following events:

- RFA, December 1994 (AOC C, AOC E and SWMU 1)
- RFA, February 1995 (SWMU 5, SWMU 7 and SWMU 10)
- Supplemental sampling by Sigma-Aldrich:
    - August 1995 (SWMU 1)
    - July 1997 (SWMU #10)
    - November 1997 (AOC C).

The soils samples were analyzed for volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs) and inorganics. The data generated from these events are incorporated into the data tables presented in Appendices C and D.

The risk assessment evaluated potential receptor populations and concluded on-site below-grade construction workers were the only receptor population that would potentially be exposed to impacted site soils. Risks to the on-site below-grade construction worker were assessed using the U.S. EPA and DNR risk assessment methods and practices that were approved at that time. The risk assessment considered both U.S. EPA default values for exposure frequency and exposure duration, and alternative values of exposure frequency and exposure duration that were considered more representatives of actual site conditions and worker exposure potential. Results are summarized below.

Non-Carcinogenic		
Exposure Pathway	**Hazard Index**	
	U.S. EPA Default Values	Actual Site Conditions
Current On-Site Below-Grade Worker – Ingestion	0.131	0.00315
Current On-Site Below-Grade Worker – Dermal Contact	0.116	0.00279
Carcinogenic		
Exposure Pathway	**Individual Excess Lifetime Cancer Risk**	
	U.S. EPA Default Values	Actual Site Conditions
Current On-Site Below-Grade Worker – Ingestion	1.62×10^{-5}	3.90×10^{-7}
Current On-Site Below-Grade Worker – Dermal Contact	3.25×10^{-5}	$7.81\ 10^{-7}$

According to U.S. EPA Office of Solid Waste and Emergency Response (OSWER) Directive 9355.0-30, *Role of the Baseline Risk Assessment*, sites which present risks between $1x10^{-4}$ and $1x10^{-6}$ and hazard indices of less than 1.0 are recommended for no further action.

3.2 AOC D Soil Data

There was a release of 150 gallons of distillate bottoms in 1982. The single soil sample collected during the RFA did not indicate significant impacts to soil. However, Sigma-Aldrich recommended the collection of an additional soil sample should future construction allow, and management of the area pursuant to the SMP. An additional sample was collected in March 2000. The location of AOC D is illustrated in Figure 3, and the location of the March 2000 soil sample can be seen in Appendix A, Photograph No. 8. In this photograph, the historic release location is the upper left, and the storm sewer inlet is in the lower right. The sample was collected during the construction of a trench; the trench location is marked by the newer concrete that transects the photo. The grab sample was collected from an approximately two foot length of the middle portion of the trench from a depth of approximately two (2) to four (4) feet below grade. The laboratory report for this sample is presented in Appendix E. The data for this sample is incorporated into the data tables presented in Appendices C and D.

The detected concentrations of chloroform and methylene chloride exceeded the SSL for Protection of Groundwater, but were below the SSL for Industrial Soil. The detected methylene chloride concentration also exceeded the DTL; however, it should be noted that methylene chloride was detected in the method blank. The concentrations of several polyaromatic hydrocarbons (PAHs) exceeded screening levels, but did not exceed the risk-based target levels (RBTLs) for applicable exposure pathways (see Section 4 for more details). It is concluded the

1982 release of distillate bottoms did not result in a significant impact to site soils at the release location.

3.3 Supplemental Soil Sampling

In order to further evaluate the potential for historic releases from certain SWMUs and to provide additional characterization of constituent concentrations in soil, soil samples were collected during subsurface construction work conducted at or near the SWMUs and AOCs identified in the RFA. Soil sampling was conducted as summarized in the following table.

Area	Date	Number of Soil Samples
K-7 Sewer Area	10/19/04	Two (2)
Coldroom A-B Area	6/17/05	One (1)
M-Pad Sewer Project Area	2/28/06	One (1)
Bucket Wash Sewer	6/15/06	Two (2)

Soil sample locations are illustrated in Figure 3. Laboratory reports for these additional samples are presented in Appendix F. Resulting data were incorporated into the data tables presented in Appendices C and D.

Methylene chloride was detected in sample M-Pad Sewer Project Area at a concentration that exceeded the SSL for Protection of Groundwater and the DTL, but did not exceed the RBTLs for applicable exposure pathways (see Section 4 for more details). The results of the supplemental soil sampling indicate that historical releases did not result in significant impacts to site soils at these locations.

4.0 SUPPLEMENTAL DATA ASSESSMENT

The risk assessment discussed in Section 3.1 was never formally reviewed by the DNR. Since the *SWMU/AOC Management Report* was submitted in 2000, there have been a number of changes to the DNR-approved risk assessment process and assumptions. In particular, the Missouri Risk-Based Corrective Action (MRBCA) process has been implemented by the DNR. To provide an updated assessment of potential risks posed by impacted soils at the Dekalb facility, and to stream-line DNR's review of the risk assessment, all soil data collected to date have been assessed relative to current risk-based criteria, using the process summarized below:

Step 1. Data comparison to screening values (Section 4.1),

Step 2. An exposure pathway analysis (Section 4.2),

Step 3. For complete and potentially complete exposure pathways, data comparison to risk-based target levels application to the complete and potentially complete exposure pathways (Section 4.3).

4.1 Data Comparison to Screening Values

Soil analytical data were compared to the following screening values:

- MRBCA Default Target Levels (DTLs),
- U.S. EPA SSLs for Industrial Soil, and
- U.S. EPA SSLs for Protection of Groundwater.

Data were compared to the MRBCA DTLs, which are a compilation of the lowest risk-based screening values used to evaluate all soil types and all pathways that allow unrestricted land and groundwater use. In the MRBCA process, if constituent concentrations do not exceed the DTLs, no additional risk assessment is warranted.

Data were also compared to soil screening levels (SSLs) jointly developed by U.S. EPA Regions III, VI and IX. Data were compared to the U.S. EPA SSLs for industrial sites and the protection of groundwater. These SSLs were developed by the U.S. EPA to be used for chemical screening during a baseline risk assessment. The SSLs are intended to help identify areas, contaminants, and conditions that require further assessment attention at a particular site. Generally, at sites where contaminant concentrations fall below the generic SSLs, no further action is required. Chemical concentrations above the SSL do not automatically indicate that there has been a release requiring remediation or some other action; however, exceeding a SSL suggests that further evaluation of the potential risks by site contaminants is appropriate.

Tables presenting a comparison to the MRCBA DTLs are presented in Appendix C, and tables presenting a comparison of the data to the U.S. EPA SSLs are included in Appendix D. Exceedances of the MRBCA DTLs, U.S. EPA SSLs for Industrial Soil, and U.S. EPA SSLs for Groundwater Protection are summarized in Tables 4, 5 and 6, respectively.

Chloroform was detected in concentrations that exceeded the U.S. EPA SSL for Industrial Soil, SSL for the Protection of Groundwater, and the MRBCA DTL. The highest chloroform concentrations were detected in SWMU 1, where there was a possible chloroform release from chloroform distillation/recycling activities conducted in the 1975-1985 era. This area is outside the footprint of the facility building and underwent closure in 1995.

Elevated methylene chloride concentrations were detected in samples collected from SWMUs 1, 5, 10, AOC C, and AOC D. Elevated tetrachloroethene and naphthalene concentrations were detected in samples collected from SWMU 10 and AOC C. An elevated trichloroethene concentration was detected in a sample collected from AOC C.

Fill material consisting of foundry sand, boiler slag and combustion by-product substances was historically placed at the Site at depths ranging between 7 and 16 feet below ground surface (bgs). Based on the widespread distribution of the elevated SVOC and metals concentrations that exceed the SSLs and DTLs, these results are not likely associated with former site operations, but reflect the properties of the material historically used to grade the site.

4.2 EXPOSURE PATHWAY ANALYSIS

The various exposure pathways that are required to be examined in the MRBCA process are systematically assessed in Appendix G. The exposure pathways for the residential, non-residential and construction worker populations considered include:

- Inhalation of vapors and particulate matter, ingestion, and dermal contact with surficial soil or soil to depth of construction (construction worker only)
- Inhalation of vapors and particulate matter, ingestion, and dermal contact with surficial soil
- Indoor inhalation of vapors from subsurface soil
- Indoor inhalation of vapors from groundwater
- Dermal contact with water
- Current drinking water well

Key exposure pathway considerations and conclusions are discussed below.

4.2.1 Non-Residential Ingestion, Inhalation and Dermal Contact Exposure

The exposure assumptions used in the U.S. EPA SSLs and MRBCA process for potential exposure of a site worker based on ingestion, inhalation and dermal contact are similar and include 25 years of exposure, 250 days of exposure per year, and a soil ingestion rate of 100 mg/day. The Dekalb facility is largely covered by buildings and pavement, and there is not a reasonable probability of this degree of worker exposure via ingestion, inhalation or dermal contact; thus this non-residential pathway is not considered complete.

Therefore, while exceedances of the U.S. EPA SSLs for industrial soil were indentified in Section 4.1, these exceedances are not indicative of an unacceptable risk, since the exposure assumptions embedded in the SSLs are not valid for the site.

4.2.2 Groundwater Use

Current Conditions

Groundwater is not used at the site for any purpose. To assess whether a potential exposure route exists with respect to off-site groundwater use, an assessment was conducted pursuant to the methodology documented in the *Missouri Risk-Based Corrective Action (MRBCA) Departmental Technical Guidance* (February 2005). MRBCA requires the identification of all public water supply wells within a one-mile radius of the site and all private water supply wells within a one-quarter mile radius of the site. This was accomplished in part through review of information presented in the Missouri Environmental Geology Atlas (MEGA)[2]. MEGA resources that were consulted included the following:

- The “Public Well” data layer;
- The “Well Logs” data layer, which documents results from Missouri Department of Geology and Land Survey (DGLS) logging of samples voluntarily provided by well drillers; and
- The “Certified Well” data layer, which presents data from the Wellhead Information Management System (WIMS) database, which resulted from the Water Well Drillers Law of 1986.

Printouts of key MEGA output are provided in Appendix H.

The well search revealed no public water supply wells within one mile of the site and no private water supply wells within one-quarter mile of the site. The review of the MEGA “Well Logs” data indicated that well logs exist for two private wells within one mile of the site. Even though these wells are outside the search radius required by the MRBCA process, these wells

[2] MEGA is a product of the Missouri DNR Geologic Survey and Resources Assessment Division (GSRAD). The most current version of MEGA (Version 2007) was used.

were considered to provide insight into the probability of groundwater use nearer the site. These wells were 1) an industrial high capacity well owned by the Industrial Sugar Corporation and 2) a sewer test hole installed by the City of St. Louis.

The industrial well was reportedly installed in 1959 at a property located south of the site. The Industrial Sugar Corporation was found to no longer be present and the well's reported location was cross-referenced with property records maintained by the City of St. Louis Assessor's Office to determine the present-day owner of the property. Based on a review of the Assessor's records, it was determined that the well was located on property presently owned by the American River Transportation Company. A telephone conversation with a representative of the American River Transportation Company confirmed that the industrial well was not operational and is not a potential source of exposure. The sewer test hole is not used to produce water and is not a potential source of exposure.

The review of MEGA "Certified Well" data indicated that multiple test borings and monitoring wells were installed within one mile of the site; however, none of them are used as supply wells and they do not represent potential sources of exposure. Based on this assessment, the "current domestic use of groundwater" pathway is not complete.

Future Conditions

Future use of groundwater in the vicinity of the site for purposes of water supply is judged as being improbable and the "future domestic use of groundwater pathway" is considered incomplete, given the following considerations:

- Alternative sources of water supply exist in the area – the area is served by a municipal water supply, which uses surface water and well fields far from the site.
- On August 1, 2005, the City of St. Louis approved Ordinance 66777. The Ordinance prohibits the use or attempted use of groundwater as a potable water supply and the drilling or installation of wells to be used for a potable water supply within the corporate limits of the City of St. Louis. On October 25, 2006, the City of St. Louis and DNR entered into the Memorandum of Understanding (MOU). The MOU ensures that both DNR and the City track remediated sites and that the City notifies DNR of changes to, and violations of, the Ordinance.

Therefore, while exceedances of the U.S. EPA SSLs for groundwater protection were indentified in Section 4.1, these exceedances are not indicative of an unacceptable risk, since the exposure assumptions embedded in the SSLs (domestic use of groundwater) are not valid for the site.

4.3 ASSESSMENT OF COMPLETE AND POTENTIALLY COMPLETE EXPOSURE PATHWAYS

This Section presents an evaluation of the potential exposure from contaminants detected at concentrations exceeding the SSLs and RBTLs through the pathways determined to be complete or potentially complete. Based on the information presented in Appendix G and in Section 4.2, the following are the complete and potentially complete exposure pathways that should be considered further.

- Protection of the non-residential site worker from indoor inhalation of vapors emitted from subsurface soils.
- Protection of the non-residential site worker from indoor inhalation of vapors emitted from groundwater.
- Protection of off-site non-residential workers from indoor inhalation of vapors emitted from groundwater.
- Protection of off-site residents from indoor inhalation of vapors emitted from groundwater.
- Protection of the on-site construction worker considering ingestion, inhalation, and dermal contact with impacted soils.
- Protection of the off-site construction worker from dermal contact with impacted groundwater.

Each of these pathways is addressed in the following text.

4.3.1 Onsite Non-Residential Exposure to Indoor Vapors from Subsurface Soils

To assess the potential site worker exposure of contaminants as a result of soil vapor intrusion from contamination in subsurface soils, the soil data were compared to the corresponding MRBCA non-residential RBTLs.

Sample Results Compared to MRBCA RBTLs		
Analyte	**Number of Samples Analyzed**	**Number of Samples Containing Detectable Concentration Greater Than Non-Res Inhalation of Vapor RBTL**
VOCs		
Chloroform	86	13
Inorganics		
Lead	69	3

The results of the comparison indicated that chloroform and lead were present in concentrations that exceed the non-residential exposure to indoor vapors RBTL. Although MRBCA Departmental Technical Guidance includes a RBTL for lead, it is based on direct contact with soil and is not relevant to the potential worker exposures at the site since the site is paved. Based on the comparison, the exposure pathway for site workers via indoor inhalation of chloroform vapor emitted from subsurface soils is considered further.

At the Dekalb facility, a case can be made that chloroform in indoor air is an issue that is more appropriately governed by Occupation Safety and Health Administration (OSHA) regulations than by the MRBCA process. There are general requirements under OSHA to protect the working population from exposure to chemicals in concentrations which exceed Permissible Exposure Levels (i.e., Threshold Limit Values – Time Weighted Average [TLV-TWA]). Sigma has an Industrial Hygiene program which is tasked with monitoring possible exposures and documenting compliance with OSHA standards. However, to provide insight into the significance of the chloroform concentrations that have been measured in site soils, further assessment pursuant to the MRBCA process was performed.

The representative concentration of chloroform was calculated by computing the average of the chloroform data. For samples in which chloroform was not detected, one-half the detection limit was used in the calculation. These data are presented in Appendix I. The site wide average concentration for chloroform is 0.401 mg/kg, versus an RBTL of 0.402 mg/kg.

The highest chloroform concentrations were detected in SWMU 1, where there was a possible chloroform release from former chloroform distillation/recycling activities. This area is outside the footprint of the facility building; thus, including these samples in the calculation of the representative concentration for vapor intrusion into the building would tend to over-state the vapor intrusion potential (relative to soil sampled collected inside the building footprint).

Based on the information presented above, it is concluded that chloroform does not pose an unacceptable risk via the non-residential vapor intrusion pathway.

4.3.2 Onsite Non-Residential Exposure to Indoor Vapors from Groundwater

Under this scenario, VOCs present in on-site soil could potentially leach into groundwater and then volatilize into soil vapor. In this case, the concentration of constituents-of-concern in soil vapor would be controlled by partitioning between the source soils and soil vapor, and it is unlikely partitioning between groundwater and soil vapor would be a significant risk factor. However, to confirm this assumption, further assessment was performed as summarized below.

To assess whether the contaminant concentrations present at the site have the potential to impact indoor air at off-site non-residential facilities, the MRBCA model was run in backwards mode to determine the highest allowable on-site concentration that would not results in an

unacceptable risk of vapor intrusion to on-site non-residential workers. For this exposure pathway, RBTLs for Type 1 soils (i.e., sandy soils) were used. The actual soil type at the Dekalb facility is more likely Type 2 (silt) or Type 3 (clay). Since the RBTL's for Type 1 soil are more stringent (i.e., lower) than RBTL's for the other soil types, use of RBTL's for Type 1 soils is conservative.

Chloroform was the only VOC with a detected concentration that exceeded the RBTL for non-residential soil vapor intrusion and only one of the 86 samples analyzed contained a detectable concentration of chloroform (18 mg/kg) that exceeded the RBTL (11.5 mg/kg). Appendix J presents the MRBCA model calculations. Based on this calculation, chloroform does not present an unacceptable risk via this pathway. This conclusion is further supported by the analysis presented in Section 4.3.1, which indicates that subsurface soil contamination does not present an unacceptable risk via the non-residential vapor intrusion pathway.

4.3.3 Off-site Non-Residential Exposure to Indoor Vapors from Groundwater

As demonstrated in Section 4.3.2, none of the analytes detected were present in concentrations that would represent an unacceptable exposure risk to non-residential site workers; therefore, it is concluded that this pathway does not pose an unacceptable risk.

Moreover, based on a review of surrounding property usage, it was determined that the closest non-residential property is located approximately 450 feet southeast of the SWMU 1 soil sample locations. The MRBCA software was run in backwards mode to determine the highest allowable on-site concentration at SWMU 1 that would not result in an unacceptable risk to off-site non-residential workers. Appendix J presents the MRBCA model calculations. Based on the MRBCA calculation, the allowable soil concentration would be 59.4 mg/kg, which is greater than the maximum chloroform detection at the site (18 mg/kg). Based on this calculation, it is concluded that chloroform does not pose an unacceptable risk via leaching to groundwater and associated vapor intrusion into nearby commercial/industrial facilities.

4.3.4 Off-site Residential Exposure from Vapor Intrusion

Similar to the protection of off-site non-residential workers from indoor inhalation of vapors emitted from groundwater (refer to Section 4.3.3), VOCs present in on-site soil could potentially leach into groundwater, be transported off-site and then volatilize into soil vapor. The MRBCA model was run in backwards mode to determine the highest allowable on-site concentration that would not result in an unacceptable risk of vapor intrusion to off-site residents. To generate a conservative RBTL for initial screening the data, it was assumed that the lateral distance from the impacted soils to the off-site residence was zero. This assumption was used since it would tend to over-estimate risks and the absence of a potential exposure would indicate that no further assessment is required. For this exposure pathway, RBTLs for Type 1 soils (i.e., sandy soils) were used. The actual soil type at the Dekalb facility is more

likely Type 2 (silt) or Type 3 (clay). Since the RBTL's for Type 1 soil are more stringent (i.e., lower) than RBTL's for the other soil types, use of RBTL's for Type 1 soils is conservative. Appendix J presents the MRBCA model calculations.

As shown below, chloroform was the only VOC with detected concentrations that exceed the RBTL for residential soil vapor intrusion, and only two soil samples contained chloroform at concentrations exceeding the conservative RBTL described above.

Sample Results Compared to MRBCA RBTL		
Analyte	**Number of Samples Analyzed**	**Number of Samples Containing Detectable Concentration Greater Than Res. Soil Vapor Intrusion RBTL**
VOCs		
Chloroform	86	2

To further assess whether soil vapor intrusion presents an exposure pathway to nearby residences, a survey of surrounding properties was made to determine the closest residential property. Based on the survey, the closest residential property is an apartment building located at 3620 to 3624 Kosciusko Street. The property boundary of this is address is approximately 40 feet southwest of the site's fence line (across President Street) and 125 feet from the SWMU 1 soil sample locations containing of the chloroform concentrations that exceeded the RBTL.

The MRBCA software was run in backwards mode to determine the highest allowable on-site concentration at SWMU 1 that would not result in an unacceptable risk to the off-site residences. The RBTL for Type 2 soils (silt) were used since they more accurately reflect the soil type at the Dekalb facility. Appendix J presents the MRBCA model calculations. Based on the MRBCA calculation, the allowable soil concentration would be 20.4 mg/kg, which is greater than the maximum chloroform detection at the site (18 mg/kg). Based on this calculation, and the fact that only two (2) of eighty-six (86) soil samples exceeded the conservative RBTL based on on-site residential exposure, it is concluded that chloroform does not pose an unacceptable risk via leaching to groundwater and associated vapor intrusion into off-site residences.

4.3.5 On-Site Construction Worker Exposure

At the Dekalb facility, the most likely potential source to soil via ingestion, inhalation, or dermal contact is through excavation performed during construction activities. The MRBCA construction worker exposure assumptions include 1 year of exposure, 90 days of exposure per year, and a soil ingestion rate of 100 mg/day. These construction worker exposure assumptions are considered a "reasonable worst case" scenario of direct contact exposure to impacted soils at the Dekalb facility.

The detected concentrations of VOCs and SVOCs did not exceed the construction worker RBTL. Of the inorganic analytes analyzed, only arsenic was detected at a concentration that exceeds the construction worker RBTL.

Sample Results Compared to MRBCA RBTL		
Analyte	**Number of Samples Analyzed**	**Number of Samples Containing Detectable Concentration Greater Than Construction Worker RBTL**
Inorganics		
Arsenic	60	1

The one arsenic concentration that exceeded the construction worker MRBCA RBTL exceeded the RBTL by less than 10 percent. Thus, it is concluded there is no unacceptable risk to the on-site construction worker.

4.3.6 Off-Site Construction Worker – Dermal Contact with Impacted Groundwater.

As demonstrated in the previous section, there is not an unacceptable risk posed by construction worker exposure to impacted site soils. Thus, it is not plausible that construction worker exposure to groundwater impacted by site soils (a less direct exposure pathway with less exposure potential) would generate an unacceptable risk. Furthermore, the maximum detected concentration of chloroform in site soil (18 mg/kg) is insufficient to generate a groundwater concentration that exceeds the Construction Worker RBTL for protection from dermal contact to groundwater (64.9 milligrams per liter).

4.3.7 Conclusions

Potential exposure pathways were systematically evaluated. For the pathways judged to be complete or potentially complete under both current and future conditions, contaminant concentration data was evaluated versus risk-based target levels appropriate for the specific pathways. These comparisons establish that site soils do not pose an unacceptable risk to on-site or off-site receptors.

5.0 SWMU/AOC MANAGEMENT RECOMMENDATIONS

Sigma-Aldrich has been managing the facility pursuant to recommendations presented in the *SWMU/AOC Management Report* (Sigma-Aldrich, 2000). Actions implemented by Sigma-Aldrich have included maintenance of site perimeter fencing and access limitations, and compliance with a DNR-approved SMP that governs on-site, below-grade construction activities in or near SWMUs and AOCs identified in the RFA. Site use continues to be manufacturing/industrial use, and is expected to remain so for the foreseeable future.

The RFA had established the possible release of chloroform to site soils from historic chloroform distillation/recycling operations conducted at the former Hazardous Waste Storage Building (SWMU 1), which underwent RCRA closure in 1995. As established herein, residual chloroform impacts in this area do not pose unacceptable risk to construction workers, non-residential site workers, or off-site residences through exposure to groundwater or vapor intrusion.

The RFA identified the potential for releases from the facility sewer system (SWMU 10). Soil samples were collected from the sewer system during the RFA in 1994, in subsequent sampling performed by Sigma-Aldrich in 1997, and in the more recent soil sampling conducted pursuant to the SMP. None of these samples have been indicative of a significant release from the facility sewer system.

Certain SWMUs with higher release potential (relative to other facility SWMUs) have been upgraded to reduce the release potential. The tank farm loading/unloading area was upgraded with improved containment in 1999. New solvent tanks were installed in SWMU 2 in 2000, and the secondary containment floor was upgraded from limestone gravel to epoxy-coated concrete.

Other actual releases identified in the RFA (at AOC A and AOC B) were one-time releases with minimal potential for chemical release to site soil or groundwater. Approximately 150 gallons of distillate bottoms were released at AOC D in 1982. Soil sampling conducted in the RFA did not indicate significant soil impacts at AOC D, and this was confirmed through analysis of another soil sample collected in March 2000.

Since the issuance of the *SWMU/AOC Management Report* in 2000, no new solid waste management areas have been established at the facility, and there have not been any chemical spills or releases to site soil or groundwater.

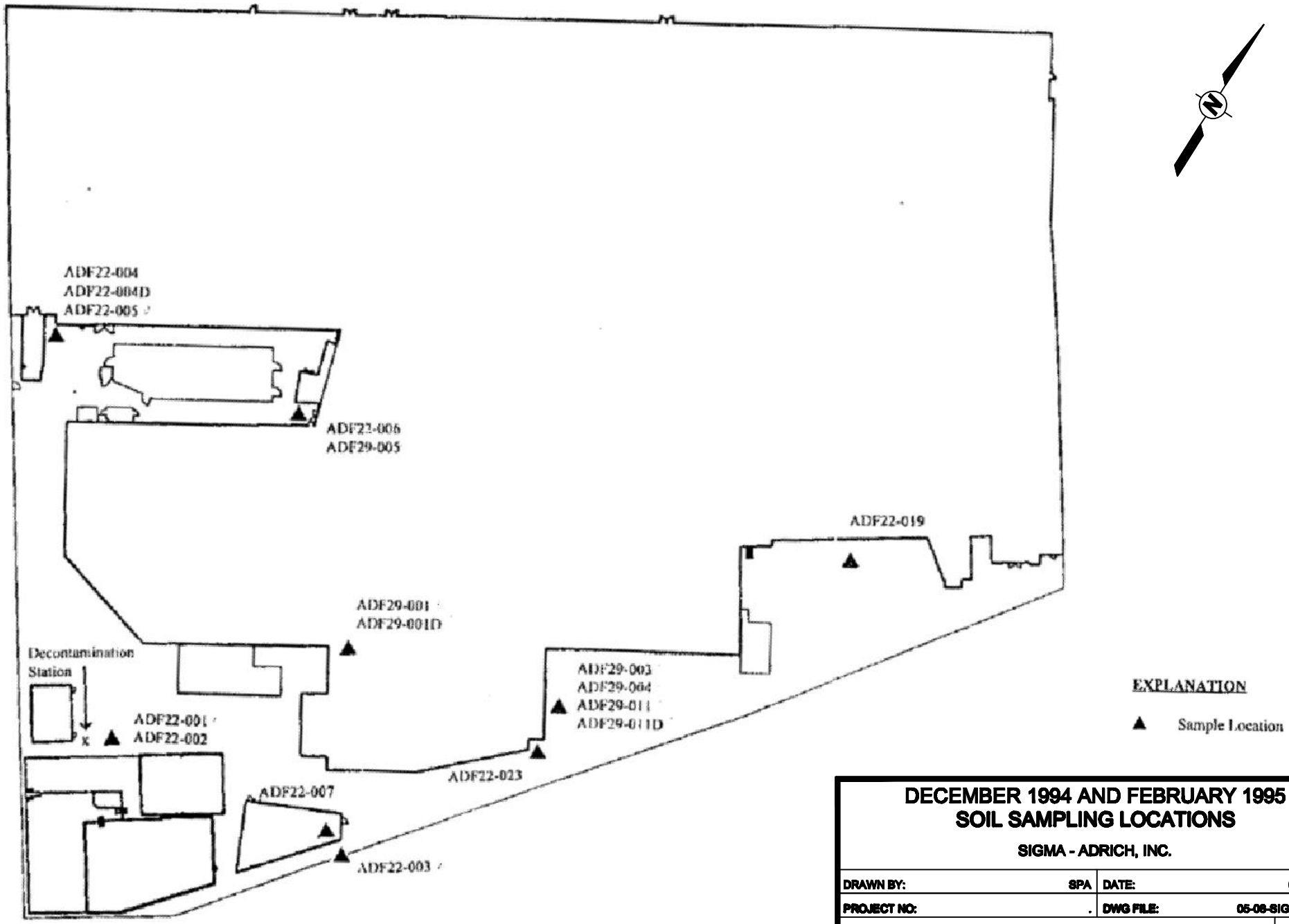
Based on these considerations, the ongoing waste management operations at the facility have only a very limited potential of chemical release to site soil or groundwater, and

there are not any known conditions at the facility resulting from historic chemical handling and/or waste management activities that warrant further investigation or active remediation.

Sigma-Aldrich plans to continue current site access and use restrictions. Sigma-Aldrich anticipates that these restrictions will be incorporated into an Environmental Covenant as part of the ECAP process.

Sigma-Aldrich will continue to manage subsurface soil impacts at the site in accordance with the SMP. The SMP has been revised to reflect the current site understanding and waste characterization requirements for soil disposal. The site characterization activities described here have included extensive collection and analysis of soil samples. As discussed in Section 4.3.4, these data demonstrate there is no unacceptable risk to the site construction worker. Therefore, no measures beyond standard industry practice are required for construction worker protection. The SMP has been revised accordingly. The revised SMP is presented in Appendix B.

FIGURES



SOURCE: SCIENCE APPLICATIONS INTERNATIONAL CORPORATION. FINAL RCRA FACILITY ASSESSMENT REPORT: SIGMA CHEMICAL COMPANY, DEKALB FACILITY. MAY 1996

DECEMBER 1994 AND FEBRUARY 1995 SOIL SAMPLING LOCATIONS

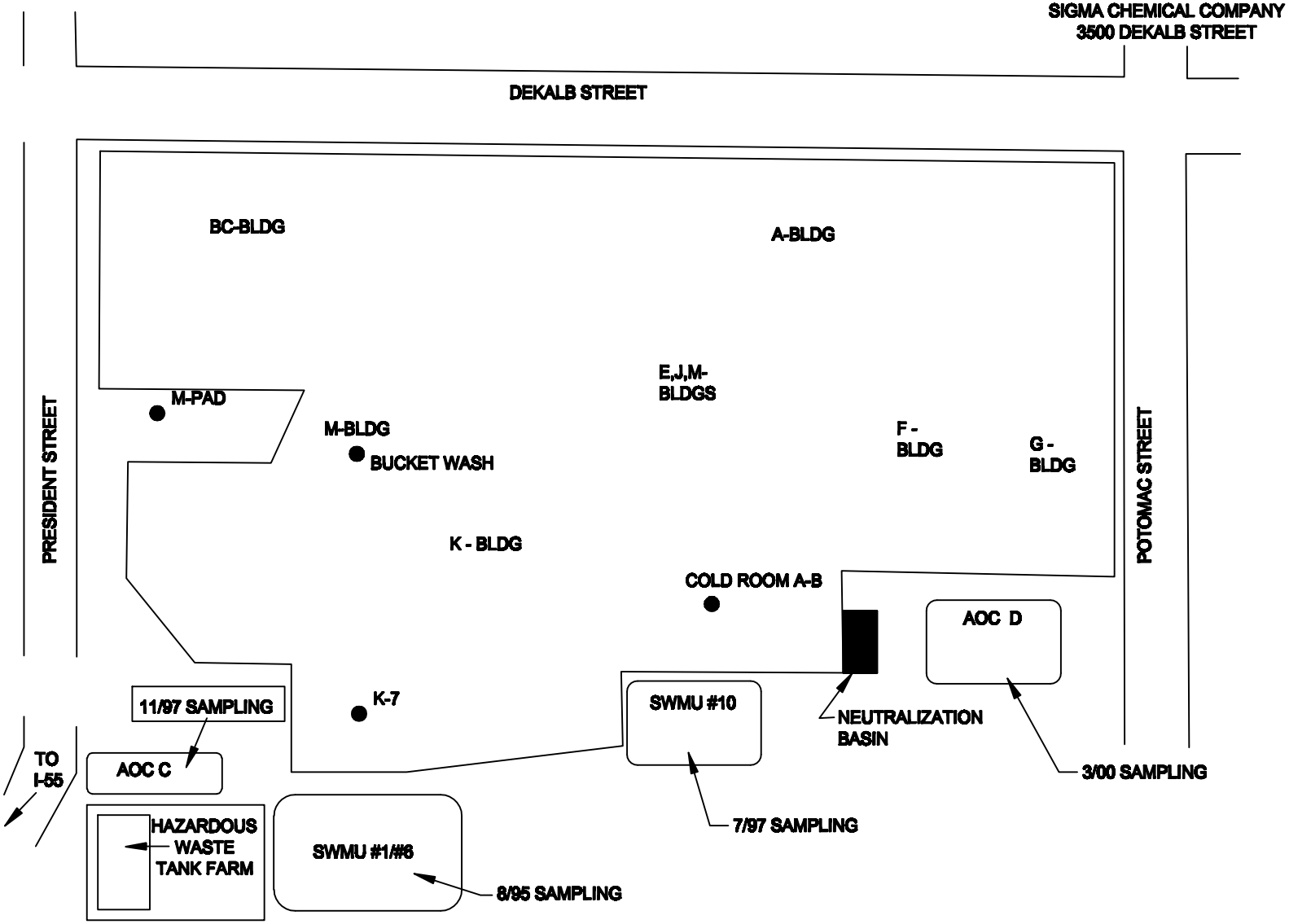
SIGMA - ADRICH, INC.

DRAWN BY:	SPA	DATE:	07-1-2008
PROJECT NO:	.	DWG FILE:	05-08-SIGMA-ADRICH

TRC
230 WEST MONROE STREET
SUITE 510
CHICAGO, ILLINOIS 60606
312-578-0870

FIGURE 7

S:\CAD FILES\YEAR 2008 DRAWINGS\SIGMA - ADRICH INC\05-08-SIGMA-ADRICH.DWG



LEGEND:

● SAMPLE LOCATION

N

NOT TO SCALE

SUPPLEMENTAL SOIL SAMPLE LOCATION MAP

SIGMA - ADRICH, INC.

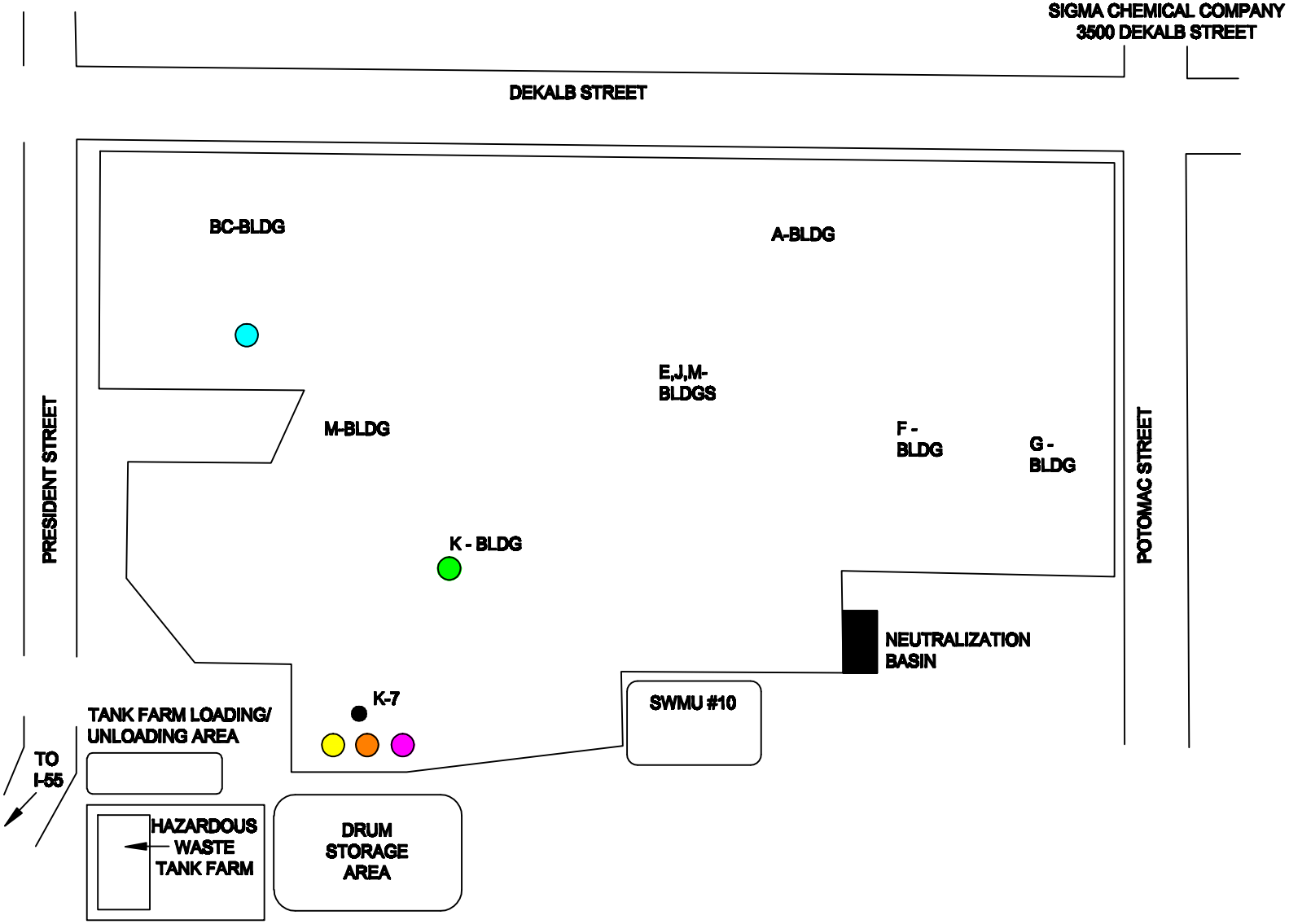
DRAWN BY:	SPA	DATE:	07-1-2008
PROJECT NO:	.	DWG FILE:	04-08-SIGMA-ADRICH

TRC

230 WEST MONROE STREET
SUITE 510
CHICAGO, ILLINOIS 60606
312-578-0870

FIGURE
3

S:\CAD FILES\YEAR 2008 DRAWINGS\SIGMA - ADRICH INC\04-08-SIGMA-ADRICH.DWG



- OCTOBER 6, 2000 ETHYLENE GLYCOL RELEASE
- AUGUST 20, 2001 ETHYLENE GLYCOL RELEASE
- NOVEMBER 16, 2001 ETHYLENE GLYCOL RELEASE
- MARCH 10, 2005 ETHYLENE GLYCOL RELEASE
- AUGUST 20, 2007 ACETONE RELEASE

N

NOT TO SCALE

RECENT RELEASE LOCATION MAP

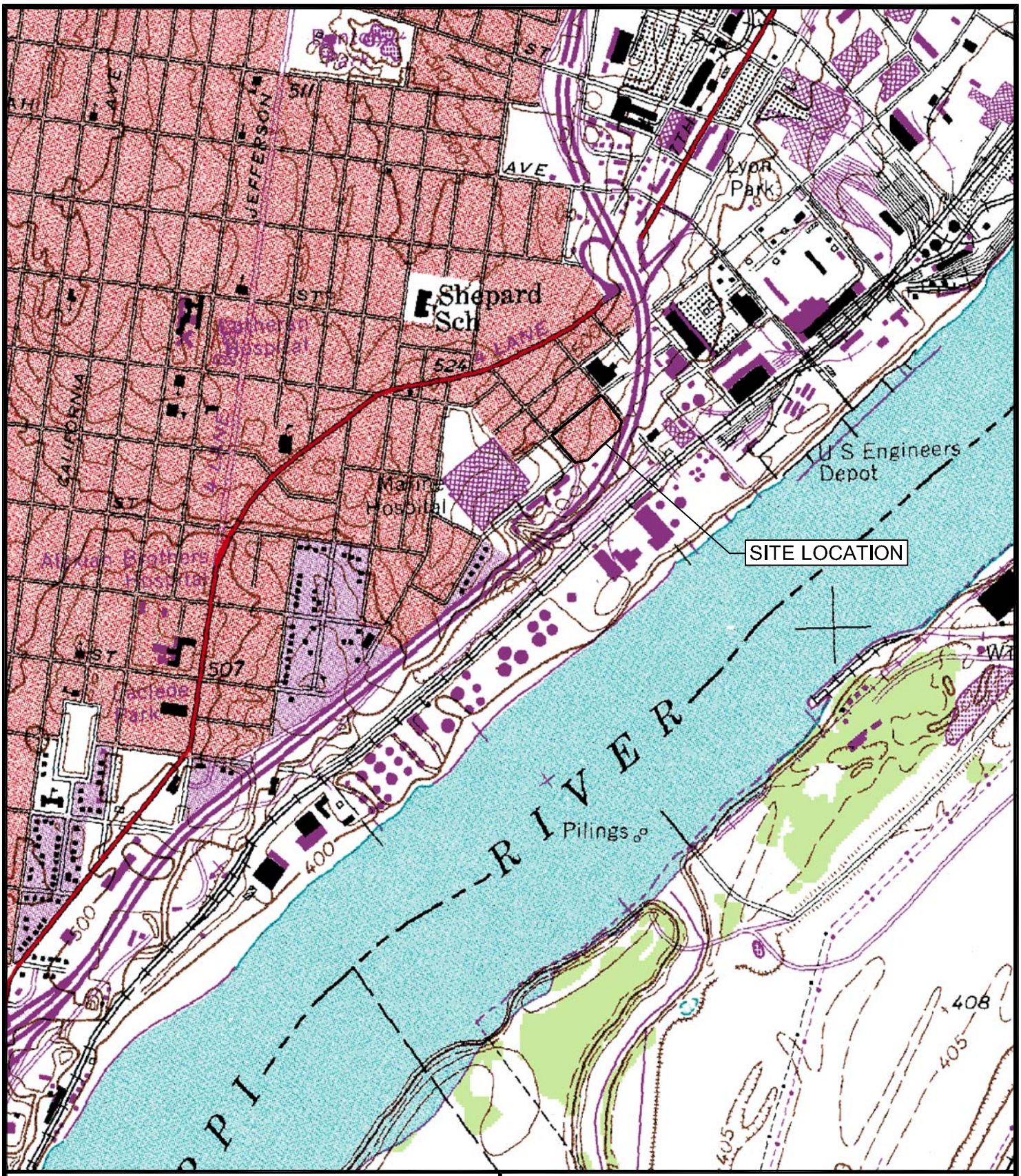
SIGMA - ADRICH, INC.

DRAWN BY:	SPA	DATE:	07-1-2008
PROJECT NO:	113201	DWG FILE:	03-08-SIGMA-ADRICH

TRC
230 WEST MONROE STREET
SUITE 510
CHICAGO, ILLINOIS 60606
312-578-0870

FIGURE
2

S:\CAD FILES\YEAR 2008 DRAWINGS\SIGMA - ADRICH INC\03-08-SIGMA-ADRICH.DWG



0 600 1,200 2,400

SCALE IN FEET
1" = 1,200'

N

SITE LOCATION MAP

SIGMA - ADRICH, INC.

DRAWN BY:	SPA	DATE:	07-1-2008
PROJECT NO:	.	DWG FILE:	01-08-SIGMA-ADRICH

TRC

230 WEST MONROE STREET
SUITE 2300
CHICAGO, ILLINOIS 60606
312-578-0870

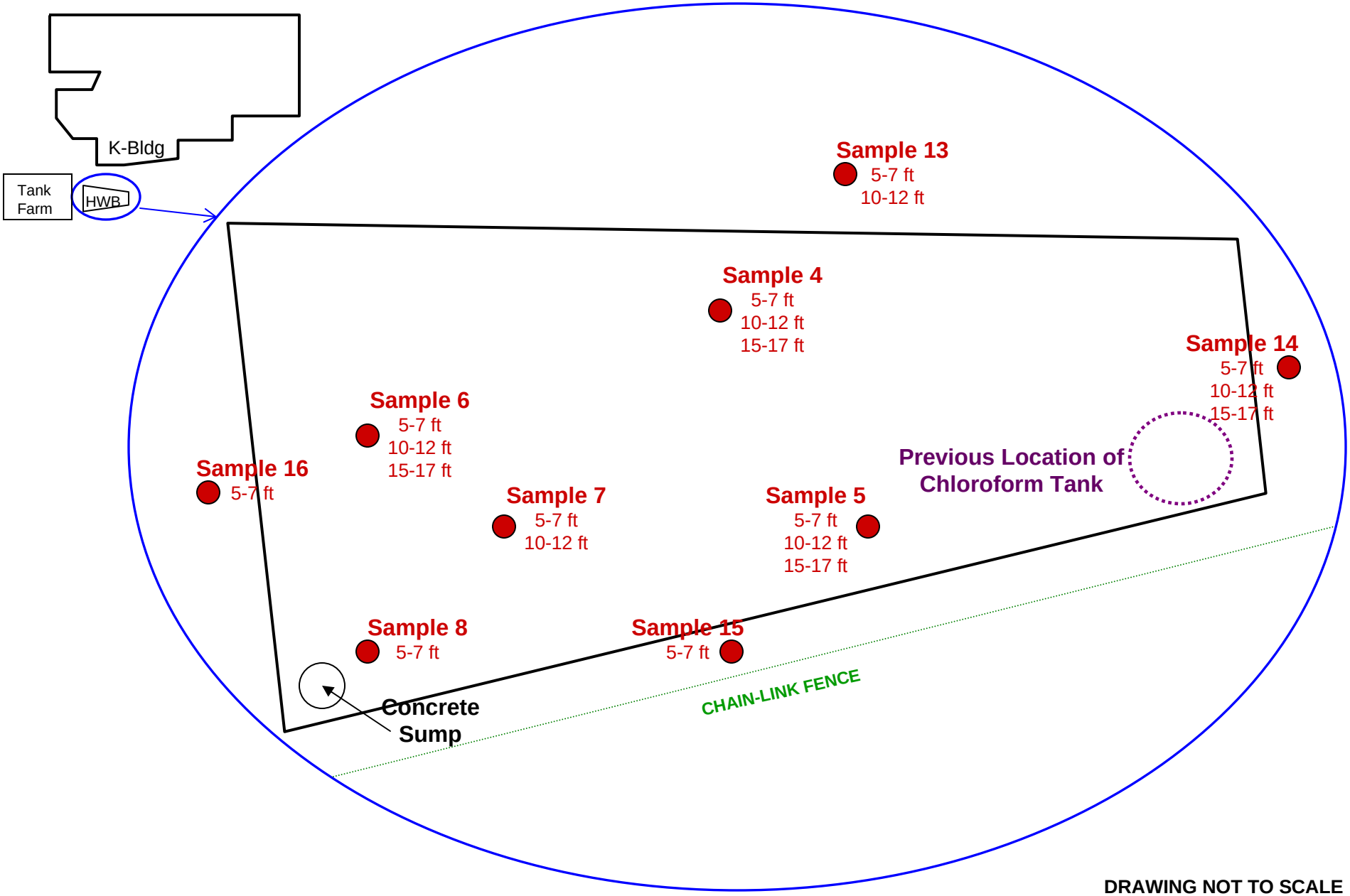
FIGURE
1

S:\CAD FILES\YEAR 2008 DRAWINGS\SIGMA - ADRICH INC\01-08-SIGMA-ADRICH.DWG

SIGMA CHEMICAL COMPANY
3500 Dekalb Street

Figure 4

August 1995 Soil Sampling - HW Storage Building (SWMU #1)

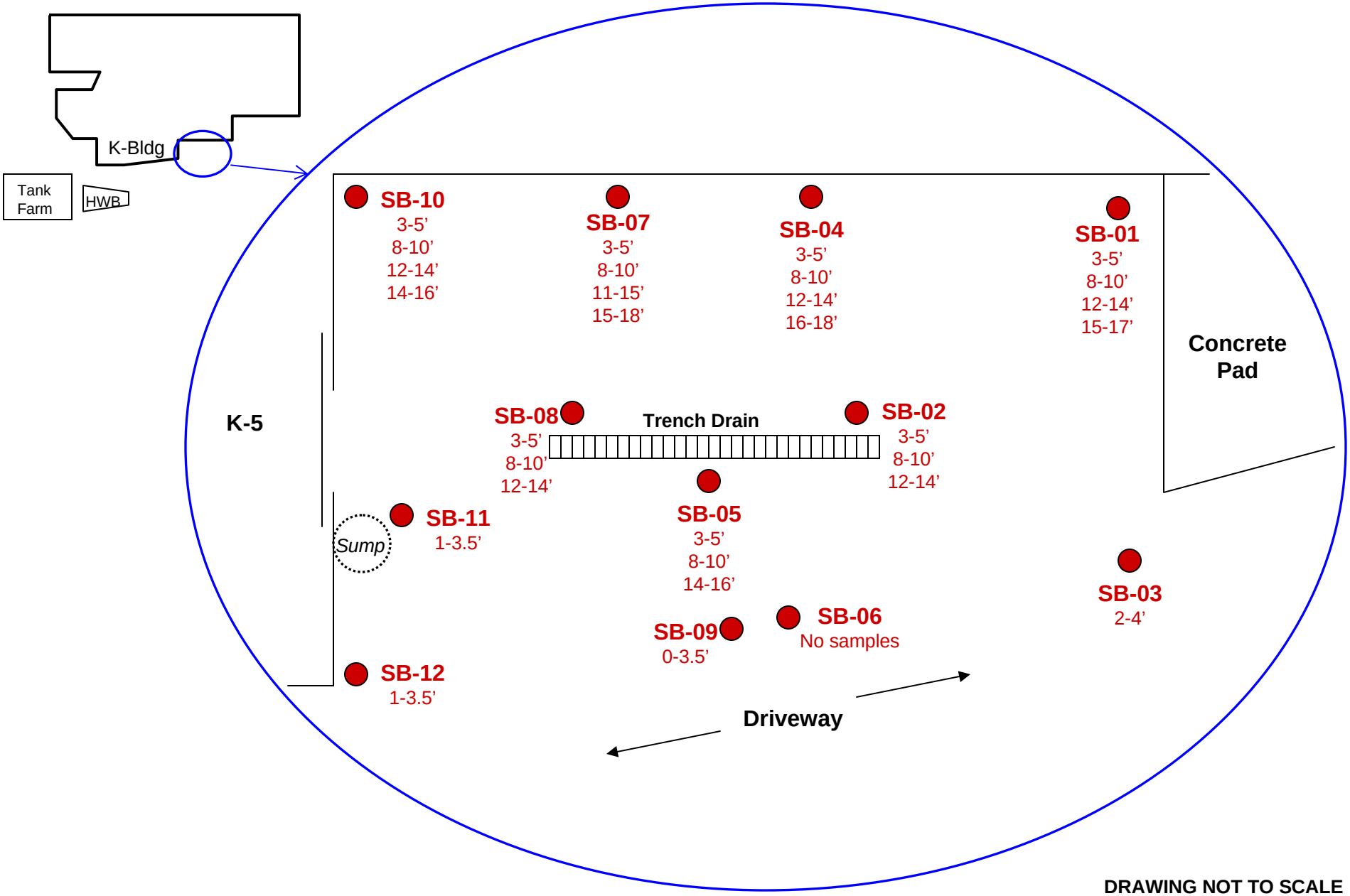


DRAWING NOT TO SCALE

Figure 5

July 1997 Soil Sampling - K-North Pad (SWMU #10)

SIGMA CHEMICAL COMPANY
3500 Dekalb Street

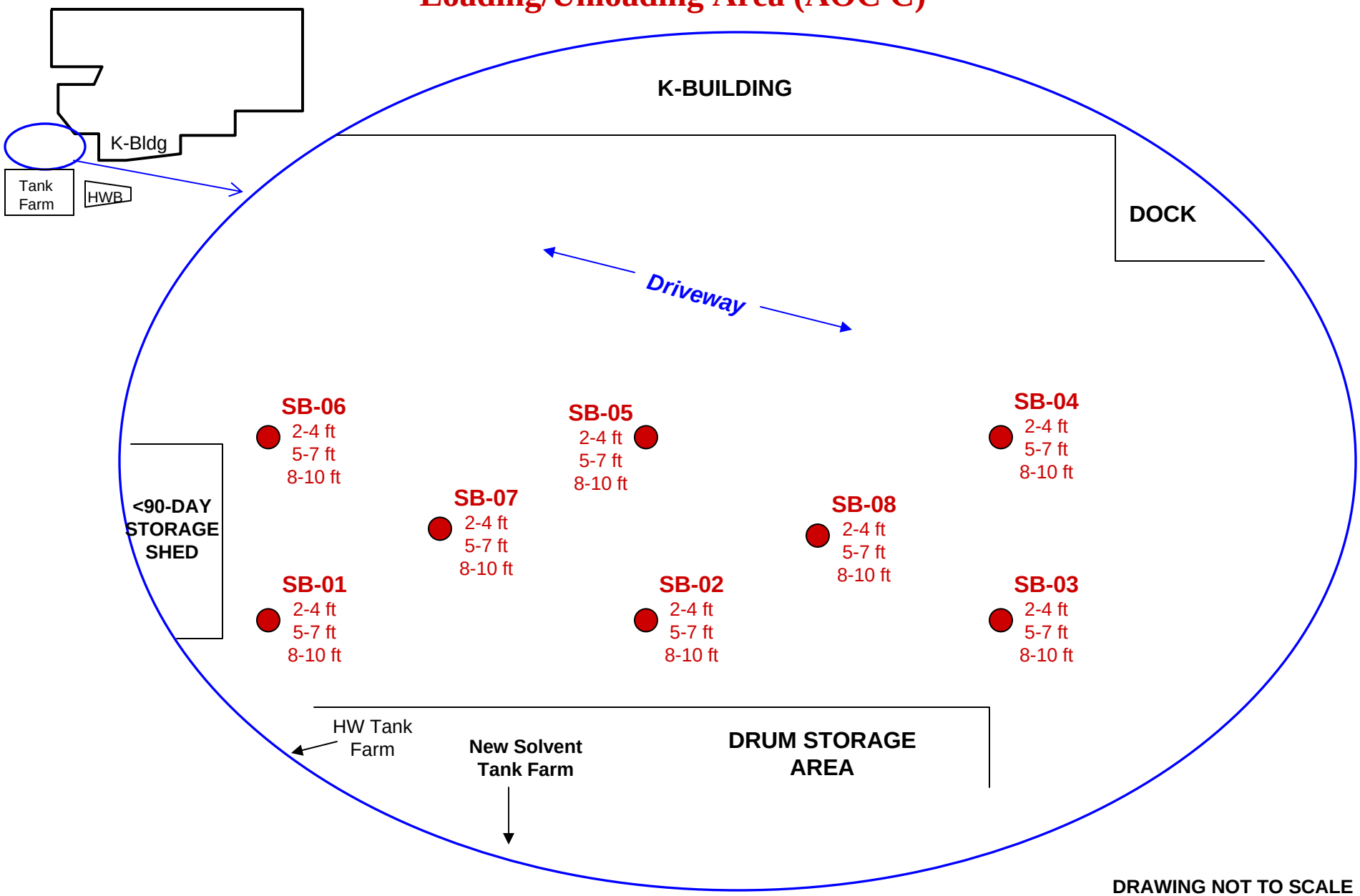


DRAWING NOT TO SCALE

Figure 6

November 1997 Soil Sampling - Tank Farm Loading/Unloading Area (AOC C)

SIGMA CHEMICAL COMPANY
3500 Dekalb Street



DRAWING NOT TO SCALE

TABLES

Table 5.

Sample Results Compared to U.S. EPA SSLs for Industrial Soil		
Analyte	**Number of Samples Analyzed**	**Number of Samples Containing Detectable Concentration Greater Than SSL**
VOCs		
Chloroform	86	4
SVOCs		
Benzo(a)anthracene	60	6
Benzo(a)pyrene	60	38
Benzo(b)fluoranthene	60	11
Dibenzo(a,h)anthracene	60	23
Indeno(1,2,3-cd)pyrene	60	4
Inorganics		
Arsenic	60	60
Lead	69	2

Table 4.

Sample Results Compared to MRBCA DTLs		
Analyte	**Number of Samples Analyzed**	**Number of Samples Containing Detectable Concentration Greater Than DTL**
VOCs		
Chloroform	86	25
Methylene Chloride	76	43
SVOCs		
2-Nitroaniline	4	1
Benzo(a)pyrene	60	28
Benzo(b)fluoranthene	60	1
Dibenzo(a,h)anthracene	60	15
Inorganics		
Antimony	7	6
Arsenic	60	55
Beryllium	7	3
Cadmium	69	1
Lead	69	68

Table 3. Product/Waste Releases to Environment Since the SWMU/AOC Management Report (6/28/2000)

Date	Material	Quantity	Env Media	Event Description	Response
10/6/00	Ethylene glycol	715 gallons	MSD sewer system	Condensate valve was left open prior to running glycol through reactor jacket. Ethylene glycol was discharged at a low rate over an extended period of time directly to the on-site MSD sewer system.	Reportable quantity release. National Response Center, MERC and MSD were contacted. No on-site response was necessary due to the nature of the release. Manufacturing procedures were modified to require a 2nd person check all jacketed reactors before operations can begin.
8/20/01	Ethylene glycol	250 gallons	MSD sewer system	Ethylene glycol leaked through reactor jacket valve handles.	Valve handles were replaced.
11/16/01	Ethylene glycol	300 gallons	MSD sewer system	Ethylene glycol was released from a reactor jacket valve which was not closed following use of steam in the jacket.	Departmental employees were retrained on operating procedures.
3/10/05	Ethylene glycol	416 gallons	MSD sewer system	Ethylene glycol was discharged at a low rate over an extended period through tubing which became disconnected due to back-pressure in the system (valve was left open).	Manufacturing procedures were modified to require disconnection of the tubing from the glycol system in-between processing steps.
8/20/07	Acetone	610 gallons	Air & MSD sewer system	Acetone released from malfunctioning air-actuated bottom outlet valve on 1500 gallon reactor.	Much of the acetone was contained on-site via closing sewer inlet valve to neutralization pit. Quantity released off-site via the MSD sewer system was determined to be of low concentration due to high standard flowrate in sewer system, and therefore no emergency response authorities were deemed necessary.

Table 2. Status of SWMUs and AOCs - Dekalb Facility

Designation	Description	SWMU/AOC Management Report Findings and Recommendations	Additional Work Performed and Current Status
SWMU 1	Hazardous Waste Storage Building	A soil sample collected during the RFA indicated a possible- release of chloroform from historic chloroform recycling operations. Additional soil samples were collected during closure; the subsequent risk assessment indicated there was no unacceptable risk. The recommendation was to manage SWMU pursuant to the Soil Management Plan (SMP).	This SWMU underwent RCRA closure. No new developments.
SWMU 2	Aboveground Storage Tanks & Drum Storage Area	The RFA indicated a very limited release potential; risk assessment of soils from nearby areas indicated no unacceptable risk. The recommendation was to manage the SWMU pursuant to the SMP.	New solvent tanks were installed as part of the 2000 Tank Farm Renovation Project.
SWMU 3	Hazardous Waste Satellite Accumulation Areas	Based on secondary containment and limited release potential, the recommendation was that no further action was required.	No new developments.
SWMU 4	Waste Staging Area	Based on limited release potential, the recommendation was that no further action was required.	No new developments.
SWMU 5	Laboratory Sumps	Soil samples were collected during RFA and later by Sigma-Aldrich; the risk assessment indicated no unacceptable risk. The recommendation was to manage the SWMU pursuant to the SMP.	No new developments.

SWMU 6	Spent Solvent Distillation Units, Filtration Devices and Centrifuges	Located in the same area as SWMU 1. See SWMU 1.	This SWMU was located inside SWMU 1, which underwent RCRA closure. These specific units were removed during SWMU 1 closure.
SWMU 7	M-Pad Storage Area	Based on the RFA, it was concluded this SWMU had a very limited release potential. The SWMU 7 assessment was incorporated into assessment of SWMU 10. See discussion of SWMU 10.	Pursuant to the SMP, soil sampling was performed at the M-Pad area in 2006. Less than 90 day hazardous waste storage activities have ceased in this area.
SWMU 8	Three Former Underground Storage Tanks	The tanks were removed in the early 1970s. Soil sampling indicated no impact. The recommendation was that no further action was required.	No new developments.
SWMU 9	Special Waste Handling Area	The U.S. EPA RFA concluded this SWMU had a low release potential. Furthermore, no significant impacts were found in the investigation of adjacent SWMU 10. Therefore, it was concluded that no further action was warranted at this SWMU.	No new developments.
SWMU 10	MSD Sanitary Sewer System	Soil samples were collected during RFA; the risk assessment indicated no unacceptable risk. The recommendation was to manage this SWMU pursuant to the SMP. For this SWMU, the plan was to assess the conditions of the sewers and collect soil samples as opportunities arise during future construction projects.	Pursuant to the SMP, additional soil sampling was conducted during construction activities at: • K-7 Sewer in 2004 • Coldroom A-B in 2005 • M-Pad in 2006 • Bucket wash area in 2006
AOC A	Glycerol Phosphorylcholine Release to Sanitary Sewer System	The release was a one time event, with release to the sewer system. Based on the limited release potential, the recommendation was that no further action was warranted.	No new developments.

AOC B	Release of Pentafluorobenzoyl-bromide at Packaging Department	The release was a one-time event comprised of a release to air from a small amount of residue on a lab utensil. Based on the limited release potential, the recommendation was that no further action warranted.	No new developments.
AOC C	Tank Farm Loading/Unloading Area	Soil samples were collected during RFA and later by Sigma-Aldrich; the risk assessment indicated no unacceptable risk. The recommendation was to manage this SWMU pursuant to the SMP.	The area was upgraded with improved containment (e.g., new curbs, grading, sump) in 1999. No new developments since that time.
AOC D	Distillate Bottoms Release Behind Warehouse	There was a release of 150 gallons of distillate bottoms in 1982. The single soil sample collected during the RFA did not indicate significant impacts to soil. However, Sigma-Aldrich recommended the collection of an additional soil sample should future construction allow, and management of the area pursuant to the SMP.	An additional sample was collected in March 2000. There have been no other new developments.
AOC E	Area of Stressed Vegetation	A soil sample was collected during the RFA; the risk assessment indicated no unacceptable risk. The recommendation was to manage the AOC pursuant to the SMP.	Since installation of curb to prevent excess runoff down the slope, the vegetation has recovered. This observation, in conjunction with the results of the RFA soil sampling, indicate the stressed vegetation was not caused by a chemical release.
All SWMUs and AOCs		A generic recommendation made in the SWMU/AOC Management Report was to maintain site perimeter fencing, access limitations, and manufacturing/industrial site use.	Implementation of these measures has been maintained.

Table 1. RCRA Corrective Action – Dekalb Facility

Date	Event
August 1980	Sigma-Aldrich submits Hazardous Waste Generator 1A Part I and II forms to MDNR.
November 1980	Sigma-Aldrich submits a form to the U.S. EPA indicating the facility is a TSD facility.
9/14/84	RCRA permit MOD0063273726 issued for a hazardous waste drum storage building and an aboveground storage tank.
12/28/93	RFA Visual Site Inspection
9/189/94	Sigma-Aldrich submits to DNR a plan for clean closure of the RCRA-permitted storage units.
12/20-21/94	RFA Sampling Visit conducted.
1/23/95	DNR approves the closure plan.
2/16/95	Second RFA Sampling Visit conducted.
7/5/95	DNR approves a revised closure plan.
12/8/95	Sigma-Aldrich submits to DNR a document entitled "Closure Activities Report and Closure Certification"
4/5/96	RCRA Facility Assessment (RFA) Report (prepared for MDNR by SAIC)
7/12/96	DNR acceptance of closure certification for the permitted container storage area
4/16/97	Sigma-Aldrich submits comments on the RFA Report to DNR
6/4/99	Sigma-Aldrich submits SWMU/AOC Management Report, RCRA Facility Investigation and Corrective Measures (Original)
10/13/99	Meeting between MDNR and Sigma-Aldrich to discuss the SWMU/AOC Management Report. MDNR requested that a number of issues be addressed, including the preparation of a soil management plan (SMP).
10/21/99	Sigma-Aldrich submits a revised SMP.
11/2/99	DNR approves the SMP.
6/28/00	Sigma-Aldrich submits SWMU/AOC Management Report, RCRA Facility Investigation and Corrective Measures (Revised)
10/19/04	Pursuant to the recommendations and the Soil Management Plan presented in the SWMU Management Report, soils at the K-7 sewer area were screened and two soil samples were collected and analyzed.
6/17/05	Pursuant to the recommendations and the Soil Management Plan presented in the SWMU Management Report, soils at the Coldroom A-B area were screened and one soil sample was collected and analyzed.
2/28/06	Pursuant to the recommendations and the Soil Management Plan presented in the SWMU Management Report, soils at the M-Pad sewer project area were screened and one soil sample was collected and analyzed.
6/15/06	Pursuant to the recommendations and the Soil Management Plan presented in the SWMU Management Report, two soil samples at the Bucket Wash Sewer were collected and analyzed.
9/6/07	The Expedited Corrective Action Program Letter of Agreement (LOA) between DNR and Sigma-Aldrich is executed.

Table 6.

Sample Results Compared to U.S. EPA SSLs for Protection of Groundwater		
Analyte	**Number of Samples Analyzed**	**Number of Samples Containing Detectable Concentration Greater Than SSL**
VOCs		
Chloroform	86	55
Methylene Chloride	76	55
Naphthalene	31	3
Tetrachloroethene	66	6
Trichloroethene	42	1
SVOCs		
2-Nitroaniline	4	1
2-Methylnaphthalene	25	1
Benzo(a)anthracene	60	38
Benzo(a)pyrene	60	48
Benzo(b)fluoranthene	60	41
Benzo(k)fluoranthene	60	32
Chrysene	60	16
Dibenzo(a,h)anthracene	60	3
Indeno(1,2,3-cd)pyrene	60	32
Inorganics		
Antimony	7	7
Arsenic	60	60
Barium	69	26
Cadmium	69	17
Cobalt	7	6
Mercury	62	5
Molybdenum	7	1
Selenium	60	6
Silver	31	1
Thallium	7	3
Zinc	7	1

APPENDIX A

PHOTOGRAPHS

Project Name: SIGMA	**Date:** August 2008

SWMU 2 - Tank Farm

PHOTO #1

SWMU 2 - Tanker Loading Area

PHOTO #2

Project Name: SIGMA	**Date:** August 2008

SWMU 3 - Satellite Accumulation Drum

PHOTO #3

SWMU 4 - Waste Staging Area

PHOTO #4

Project Name: SIGMA	**Date:** August 2008

SWMU 5 - Walk-in Hood Sump

PHOTO #5

SWMU 9 - Special Waste Handling Area

PHOTO #6

Project Name: SIGMA	**Date:** August 2008

AOCD - Area of Stressed Vegetation

PHOTO #7

AOCD - Distillate Bottoms Release Behind Warehouse

PHOTO #8

APPENDIX B

SOIL MANAGEMENT PLAN

APPENDIX B

Soil Management Plan

1.0 Introduction

This Soil Management Plan (SMP) outlines the measures taken by Sigma Chemical Company employees or contractors to ensure proper handling of soils at the 3500 Dekalb Street facility and proper disposal of soils off-site. The intent of such measures is to help ensure the protection of on-site workers and the environment.

2.0 Procedures

The following procedures will be followed during on-site below-grade construction activities at or near solid waste management units (SWMUs) or areas of concern (AOCs), identified in the 1995 RCRA Facility Assessment Report. Before initiation of a below-grade construction activity, the SMP will be reviewed and revised as necessary to relate to the specific project.

1) All contractors scheduled for below-grade work will be required to review the Risk Assessment and this SMP.
2) Soil to be removed from the site will be sampled and analyzed for the parameters necessary to met all applicable local, state and federal environmental laws. Current (July 2009) parameters that must be analyzed for disposal at the Waste Management, Inc. landfill in Milam, Illinois, are:
    - Paint Filter
    - Open Cup Flashpoint
    - pH (10% solution)
    - Reactive Sulfide
    - Reactive Cyanide
    - Total Phenol
    - TCLP Herbicides/Pesticides (or complete the Generator's Certification)
    - TCLP Metals
    - TCLP Organics
    - F-Listed Solvent Scan (if suspected)
    - PCBs (if suspected)
3) Soils removed from the site will be properly hauled and disposed off-site.
4) When necessary, measures will be taken to control the generation of fugitive dusts from the soil during the below-grade construction work (i.e., wetting dry soil with a water mist).
5) At a minimum, Level D protection will be worn for all below-grade workers.
6) In the event that excavated soils need to be further characterized in order to determine proper disposal, the soils will be removed and temporarily staged in a secure area. The equipment removing and transporting soils for further characterization will be properly decontaminated in an acceptable manner protective of human health and the environment. The soils will then be appropriately sampled to quantify the presence of constituents and to determine the proper off-site disposal method. Soils will be staged on top of plastic to

help prevent stormwater runoff. Additional steps may include installing temporary barriers, covering nearby accesses to the Metropolitan St. Louis sanitary sewer system, or securing a chain-link fence.

APPENDIX C

TABULARIZED SOIL SAMPLE RESULTS COMPARED TO MRBCA DTLS AND RBTLS

Analyte	MRBCA DTL mg/kg	MRBCA Tier 1 RBTL Non-Residential	MRBCA Tier 1 RBTL Construction Worker	MRBCA Tier 1 RBTL Residential Soil Vapor Intrusion	SADF22001 (0-2') AOC C - DECEMBER 1994 DET. LIMIT mg/kg	SADF22001 (0-2') AOC C - DECEMBER 1994 CONC. DET. mg/kg	SADF22002 (2-4') AOC C - DECEMBER 1994 DET. LIMIT mg/kg	SADF22002 (2-4') AOC C - DECEMBER 1994 CONC. DET. mg/kg	SB01,2-4 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB01,2-4 AOC C - NOVEMBER 1997 CONC. DET. mg/kg	SB01,5-7 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB01,5-7 AOC C - NOVEMBER 1997 CONC. DET. mg/kg	SB01,8-10 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB01,8-10 AOC C - NOVEMBER 1997 CONC. DET. mg/kg	SB02,2-4 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB02,2-4 AOC C - NOVEMBER 1997 CONC. DET. mg/kg	SB02,5-7 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB02,5-7 AOC C - NOVEMBER 1997 CONC. DET. mg/kg	SB02,8-10 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB02,8-10 AOC C - NOVEMBER 1997 CONC. DET. mg/kg	SB03,2-4 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB03,2-4 AOC C - NOVEMBER 1997 CONC. DET. mg/kg	SB03,5-7 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB03,5-7 AOC C - NOVEMBER 1997 CONC. DET. mg/kg	SB03,8-10 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB03,8-10 AOC C - NOVEMBER 1997 CONC. DET. mg/kg	SB04,2-4 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB04,2-4 AOC C - NOVEMBER 1997 CONC. DET. mg/kg	SB04,5-7 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB04,5-7 AOC C - NOVEMBER 1997 CONC. DET. mg/kg	SB04,8-10 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB04,8-10 AOC C - NOVEMBER 1997 CONC. DET. mg/kg	SB05,2-4 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB05,2-4 AOC C - NOVEMBER 1997 CONC. DET. mg/kg	SB05,5-7 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB05,5-7 AOC C - NOVEMBER 1997 CONC. DET. mg/kg	SB05,8-10 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB05,8-10 AOC C - NOVEMBER 1997 CONC. DET. mg/kg	SB06,2-4 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB06,2-4 AOC C - NOVEMBER 1997 CONC. DET. mg/kg	SB06,5-7 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB06,5-7 AOC C - NOVEMBER 1997 CONC. DET. mg/kg
1,1,1-Trichloroethane	4.24E+00																																											
1,1,1,2-Tetrachloroethane	7.15E-02																																											
1,1,2-2-Tetrachloroethane	1.05E-02																																											
1,1,2-Trichloro-1,2,2-Trifluoroethane	6.41E+02																																											
1,1,2-Trichloroethane	4.48E-02																																											
1,1-Dichloroethane	1.80E-01																																											
1,1-Dichloroethene	1.08E-01																																											
1,1-Dichloropropane	Not Listed																																											
1,2,3-Trichlorobenzene	Not Listed																																											
1,2,3-Trichloropropane	6.23E-04																																											
1,2,4-Trichlorobenzene	1.87E+01																																											
1,2,4-Trimethylbenzene	3.93E+00								0.01	U	0.01	U	0.01	U	0.01	U	0.01	U					0.01	U	0.01	U	0.01	U	0.01	U			0.01	U	0.01	U			0.01	U	0.01	U
1,2-Dibromo-3-chloropropane	1.10E-03																																											
1,2-Dibromoethane	Not Listed																																											
1,2-Dichlorobenzene	5.61E+01																																											
1,2-Dichloroethane	2.06E-02																																											
1,2-Dichloroethene (total)	1.10E+00								0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
1,2-Dichloropropane	4.20E-02																																											
1,3,5-Trimethylbenzene	8.82E-01																																											
1,3-Dichlorobenzene	8.39E+00																																											
1,4-Dichlorobenzene	7.02E+00																																											
2,2-Dichloropropane	Not Listed																																											
2-Butanone	7.30E+00								0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	0.01	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
2-Chlorotoluene	3.88E+00																																											
2-Hexanone	1.90E-02																																											
4-Chlorotoluene	2.35E-02																																											
4-Methyl-2-Pentanone	1.95E+01																																											
Acetone	4.20E+00				0.01	U	0.01	U	0.01	0.018	0.01	0.063	0.01	0.01	0.01	0.025	0.01	U	0.01	U	0.01	0.051	0.01	0.017	0.01	U	0.01	0.04	0.01	0.025	0.01	0.016	0.01	0.056	0.01	U	0.01	0.016	0.01	0.014	0.01	0.037
Acrolein	1.06E-01																																											
Acrylonitrile	6.92E-01																																											
Benzene	5.61E-02																																											
Bromobenzene	Not Listed																																											
Bromochloromethane	3.05E-01																																											
Bromodichloromethane	4.72E-01																																											
Bromoform	1.15E+00																																											
Bromomethane	1.85E-02																																											
Carbon Disulfide	6.26E+00																																											
Carbon Tetrachloride	7.96E-02																																											
Chlorinated Fluorocarbons	Not Listed																																											
Chlorobenzene	1.94E+00																																											
Chloroethane	2.81E-01																																											
Chloroform	**7.66E-02**	***4.00E-01***	2.12E+03	***2.24E+00***	0.005	0.018	0.005	0.021	0.005	0.031	0.005	0.009	0.005	U	0.005	U	0.005	U	0.005	U	0.005	0.021	0.005	U	0.005	U	0.005	0.008	0.005	U	0.005	U	0.005	0.018	0.005	0.008	0.005	U	0.005	**0.15**	0.005	U
Chloromethane	2.04E-01																																											
cis-1,2-Dichloroethene	5.21E-01								0.005	U	0.005	U	0.005	U	0.005	U	0.005	U					0.005	U	0.005	U	0.005	U	0.005	U			0.005	U	0.005	U			0.005	0.008	0.005	U
Cis-1,3-Dichloropropene	5.06E-02																																											
Dibromochloromethane	8.70E-01																																											
Dibromomethane	Not Listed																																											
Dichlorodifluoromethane	1.49E+00																																											
Ethyl Acetate	Not Listed																																											
Ethylbenzene	3.99E+01																																											
Ethyl Ether	Not Listed																																											
Hexachlorobutadiene	1.60E+01																																											
Iodomethane	Not Listed																																											
Isobutanol	Not Listed																																											
Isopropylbenzene (Cumene)	1.05E+01																																											
Methanol	2.08E+01																																											
Methyl Isobutyl Ketone	1.95E+01																																											
Methyl tert-butyl ether (MTBE)	3.98E-01																																											
Methylene Chloride	**1.76E-02**	1.50E+01	2.46E+04	7.97E+01	0.005	**0.04**	0.005	U	0.005	0.009	0.005	0.01	0.005	**0.011**	0.005	**0.018**	0.005	**0.026**	0.005	0.015	0.005	**0.038**	0.005	**0.029**	0.005	**0.024**	0.005	**0.044**	0.005	0.012	0.005	0.007	0.005	**0.03**	0.005	0.012	0.005	**0.022**	0.005	0.017	0.005	0.013
Napthalene	3.25E-01								0.01	U	0.01	U	0.01	U	0.01	U	0.01	U					0.01	U	0.01	U	0.01	U	0.01	U			0.01	0.034	0.01	0.016			0.01	U	0.01	U
n-Butyl Alcohol	Not Listed																																											
n-Butylbenzene	4.16E+01																																											
n-Propylbenzene	1.30E+01																																											
p-Isopropyltoluene	Not Listed																																											
sec-Butylbenzene	3.52E+01																																											
Styrene	1.17E+01																																											
tert-Butylbenzene	3.41E+01																																											
Tetrachloroethene	1.41E-01								0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	0.016	0.005	U	0.005	U	0.005	0.012	0.005	0.015	0.005	U
Toluene	2.98E+01				0.005	0.016	0.005	0.023	0.005	U	0.005	U	0.005	U	0.005	U	0.005	0.007	0.005	U	0.005	0.006	0.005	0.006	0.005	0.006	0.005	U	0.005	0.005	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
trans-1,2 dichloroethene	1.10E+00																																											
Trans-1,3-Dichloropropene	5.06E-02																																											
Trichloroethene	1.41E-01				0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U					0.005	U	0.005	U	0.005	U	0.005	U			0.005	U	0.005	U			0.005	U	0.005	U
Trichlorofluoromethane	7.35E+00																																											
Vinyl Acetate	Not Listed																																											
Vinyl Chloride	1.69E-01																																											
Xylene	2.47E+01								0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	0.006	0.005	U	0.005	0.005	0.005	U	0.005	U	0.005	U	0.005	U

Notes:
Bold - Detected concentration exceeds DTL
Bold - Detected concentration exceeds RBTL

Analyte	MRBCA DTL mg/kg	MRBCA Tier 1 RBTL Non-Residential	MRBCA Tier 1 RBTL Construction Worker	MRBCA Tier 1 RBTL Residential Soil Vapor Intrusion	SB06,8-10 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB06,8-10 CONC. DET. mg/kg	SB07,2-4 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB07,2-4 CONC. DET. mg/kg	SB07,5-7 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB07,5-7 CONC. DET. mg/kg	SB07,8-10 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB07,8-10 CONC. DET. mg/kg	SB08,2-4 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB08,2-4 CONC. DET. mg/kg	SB08,5-7 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB08,5-7 CONC. DET. mg/kg	SB08,8-10 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB08,8-10 CONC. DET. mg/kg	SADF22003 (0-2') AOC E - DECEMBER 1994 DET. LIMIT mg/kg	SADF22003 (0-2') CONC. DET. mg/kg	SADF22007 (0-1') SWMU #1 / SWMU # 6 - DECEMBER 1994 DET. LIMIT mg/kg	SADF22007 (0-1') CONC. DET. mg/kg	A4-A (5-7') SWMU #1 - AUGUST 1995 DET. LIMIT mg/kg	A4-A (5-7') CONC. DET. mg/kg	A4-B (10-12') SWMU #1 - AUGUST 1995 DET. LIMIT mg/kg	A4-B (10-12') CONC. DET. mg/kg	A4-C (15-17') SWMU #1 - AUGUST 1995 DET. LIMIT mg/kg	A4-C (15-17') CONC. DET. mg/kg	A5-A (5-7') SWMU #1 - AUGUST 1995 DET. LIMIT mg/kg	A5-A (5-7') CONC. DET. mg/kg	A5-B (10-12') SWMU #1 - AUGUST 1995 DET. LIMIT mg/kg	A5-B (10-12') CONC. DET. mg/kg	A5-C (15-17') SWMU #1 - AUGUST 1995 DET. LIMIT mg/kg	A5-C (15-17') CONC. DET. mg/kg	A6-A (5-7') SWMU #1 - AUGUST 1995 DET. LIMIT mg/kg	A6-A (5-7') CONC. DET. mg/kg	A6-B (10-12') SWMU #1 - AUGUST 1995 DET. LIMIT mg/kg	A6-B (10-12') CONC. DET. mg/kg	A-6C (15-17') SWMU #1 - AUGUST 1995 DET. LIMIT mg/kg	A-6C (15-17') CONC. DET. mg/kg	A7-A (5-7') SWMU #1 - AUGUST 1995 DET. LIMIT mg/kg	A7-A (5-7') CONC. DET. mg/kg
1,1,1-Trichloroethane	4.24E+00																										0.005	U					0.005	U					0.005	U		
1,1,1,2-Tetrachloroethane	7.15E-02																																									
1,1,2-2-Tetrachloroethane	1.05E-02																																									
1,1,2-Trichloro-1,2,2-Trifluoroethane	6.41E+02																										1.0	U					1.0	U					1.0	U		
1,1,2-Trichloroethane	4.48E-02																										0.005	U					0.005	U					0.005	U		
1,1-Dichloroethane	1.80E-01																																									
1,1-Dichloroethene	1.08E-01																																									
1,1-Dichloropropane	Not Listed																																									
1,2,3-Trichlorobenzene	Not Listed																																									
1,2,3-Trichloropropane	6.23E-04																																									
1,2,4-Trichlorobenzene	1.87E+01																																									
1,2,4-Trimethylbenzene	3.93E+00				0.01	U	0.01	0.011	0.01	U			0.01	U	0.01	U																										
1,2-Dibromo-3-chloropropane	1.10E-03																																									
1,2-Dibromoethane	Not Listed																																									
1,2-Dichlorobenzene	5.61E+01																																									
1,2-Dichloroethane	2.06E-02																																									
1,2-Dichloroethene (total)	1.10E+00				0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U																								
1,2-Dichloropropane	4.20E-02																																									
1,3,5-Trimethylbenzene	8.82E-01																																									
1,3-Dichlorobenzene	8.39E+00																																									
1,4-Dichlorobenzene	7.02E+00																																									
2,2-Dichloropropane	Not Listed																																									
2-Butanone	7.30E+00				0.01	U	0.01	0.011	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U									0.01	U					0.01	U					0.01	U		
2-Chlorotoluene	3.88E+00																																									
2-Hexanone	1.90E-02																																									
4-Chlorotoluene	2.35E-02																																									
4-Methyl-2-Pentanone	1.95E+01																																									
Acetone	4.20E+00				0.01	U	0.01	0.048	0.01	U	0.01	U	0.01	0.02	0.01	0.012	0.01	U	0.01	U							0.01	UB					0.01	UB					0.01	UB		
Acrolein	1.06E-01																																									
Acrylonitrile	6.92E-01																																									
Benzene	5.61E-02																																									
Bromobenzene	Not Listed																																									
Bromochloromethane	3.05E-01																																									
Bromodichloromethane	4.72E-01																																									
Bromoform	1.15E+00																																									
Bromomethane	1.85E-02																																									
Carbon Disulfide	6.26E+00																										0.005	U					0.005	U					0.005	U		
Carbon Tetrachloride	7.96E-02																										0.005	U					0.005	U					0.005	U		
Chlorinated Fluorocarbons	Not Listed																										1.0	U					1.0	U					1.0	U		
Chlorobenzene	1.94E+00																										0.005	U					0.005	U					0.005	U		
Chloroethane	2.81E-01																																									
Chloroform	**7.66E-02**	***4.00E-01***	2.12E+03	***2.24E+00***	0.005	U	0.005	**0.083**	0.005	U	0.005	U	0.005	U	0.005	0.013	0.005	U	0.005	0.008	0.005	***18***	0.005	***2.08***	0.005	***2.2***	0.005	**0.101**	0.005	***2.38***	0.005	***1.19***	0.005	**0.12**	0.005	***1.02***	0.005	***1.172***	0.005	0.006	0.005	***0.606***
Chloromethane	2.04E-01																																									
cis-1,2-Dichloroethene	5.21E-01				0.005	U	0.005	U	0.005	U			0.005	U	0.005	U																										
Cis-1,3-Dichloropropene	5.06E-02																																									
Dibromochloromethane	8.70E-01																																									
Dibromomethane	Not Listed																																									
Dichlorodifluoromethane	1.49E+00																																									
Ethyl Acetate	Not Listed																																									
Ethylbenzene	3.99E+01																										0.005	U					0.005	U					0.005	U		
Ethyl Ether	Not Listed																										1.0	U					1.0	U					1.0	U		
Hexachlorobutadiene	1.60E+01																																									
Iodomethane	Not Listed																																									
Isobutanol	Not Listed																										1.0	U					1.0	U					1.0	U		
Isopropylbenzene (Cumene)	1.05E+01																																									
Methanol	2.08E+01																										0.001	U					0.001	U					0.001	U		
Methyl Isobutyl Ketone	1.95E+01																										0.01	U					0.01	U					0.01	U		
Methyl tert-butyl ether (MTBE)	3.98E-01																																									
Methylene Choride	**1.76E-02**	1.50E+01	2.46E+04	7.97E+01	0.005	**0.021**	0.005	**0.039**	0.005	**0.03**	0.005	**0.022**	0.005	**0.02**	0.005	**0.029**	0.005	**0.02**	0.005	U	0.005	U					0.005	UB					0.005	UB					0.005	UB		
Napthalene	3.25E-01				0.01	U	0.01	U	0.01	U			0.01	U	0.01	U																										
n-Butyl Alcohol	Not Listed																										0.001	U					0.001	U					0.001	U		
n-Butylbenzene	4.16E+01																																									
n-Propylbenzene	1.30E+01																																									
p-Isopropyltoluene	Not Listed																																									
sec-Butylbenzene	3.52E+01																																									
Styrene	1.17E+01																																									
tert-Butylbenzene	3.41E+01																																									
Tetrachloroethene	1.41E-01				0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U									0.005	U					0.005	U					0.005	U		
Toluene	2.98E+01				0.005	U	0.005	0.007	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	0.056							0.005	U					0.005	U					0.005	U		
trans-1,2 dichloroethene	1.10E+00																																									
Trans-1,3-Dichloropropene	5.06E-02																																									
Trichloroethene	1.41E-01				0.005	U	0.005	0.006	0.005	U			0.005	U	0.005	U			0.005	U							0.005	U					0.005	U					0.005	U		
Trichlorofluoromethane	7.35E+00																																									
Vinyl Acetate	Not Listed																																									
Vinyl Chloride	1.69E-01																																									
Xylene	2.47E+01				0.005	U	0.005	0.01	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U									0.005	U					0.005	U					0.005	U		

Notes:
Bold - Detected concentration exceeds DTL
Bold - Detected concentration exceeds RBTL

Analyte	MRBCA DTL mg/kg	MRBCA Tier 1 RBTL Non-Residential	MRBCA Tier 1 RBTL Construction Worker	MRBCA Tier 1 RBTL Residential Soil Vapor Intrusion	A7-B (10-12') SWMU #1 - AUGUST 1995 DET. LIMIT mg/kg	A7-B (10-12') CONC. DET. mg/kg	A7-C (15-17') SWMU #1 - AUGUST 1995 DET. LIMIT mg/kg	A7-C (15-17') CONC. DET. mg/kg	A8-A (5-7') SWMU #1 - AUGUST 1995 DET. LIMIT mg/kg	A8-A (5-7') CONC. DET. mg/kg	A8-B (15-17') SWMU #1 - AUGUST 1995 DET. LIMIT mg/kg	A8-B (15-17') CONC. DET. mg/kg	A13-A (5-7') SWMU #1 - AUGUST 1995 DET. LIMIT mg/kg	A13-A (5-7') CONC. DET. mg/kg	A13-B (10-12') SWMU #1 - AUGUST 1995 DET. LIMIT mg/kg	A13-B (10-12') CONC. DET. mg/kg	A14-A (5-7') SWMU #1 - AUGUST 1995 DET. LIMIT mg/kg	A14-A (5-7') CONC. DET. mg/kg	A14-B (10-12') SWMU #1 - AUGUST 1995 DET. LIMIT mg/kg	A14-B (10-12') CONC. DET. mg/kg	A14-C (15-17') SWMU #1 - AUGUST 1995 DET. LIMIT mg/kg	A14-C (15-17') CONC. DET. mg/kg	A15-A (5-7') SWMU #1 - AUGUST 1995 DET. LIMIT mg/kg	A15-A (5-7') CONC. DET. mg/kg	A16-A (5-7') SWMU #1 - AUGUST 1995 DET. LIMIT mg/kg	A16-A (5-7') CONC. DET. mg/kg	SADF29001 SWMU #5 - FEBRUARY 1995 DET. LIMIT mg/kg	SADF29001 CONC. DET. mg/kg	SADF22006 (0-2') SWMU #7 - FEBRUARY 1995 DET. LIMIT mg/kg	SADF22006 (0-2') CONC. DET. mg/kg	SADF29003 (0-2') SWMU #10 - FEBRUARY 1995 DET. LIMIT mg/kg	SADF29003 (0-2') CONC. DET. mg/kg	SADF29004 (5.5') SWMU #10 - FEBRUARY 1995 DET. LIMIT mg/kg	SADF29004 (5.5') CONC. DET. mg/kg	SB01,3-5 SWMU #10 - JULY 1997 DET. LIMIT mg/kg	SB01,3-5 CONC. DET. mg/kg	SB01,8-10 SWMU #10 - JULY 1997 DET. LIMIT mg/kg	SB01,8-10 CONC. DET. mg/kg	SB01,12-14 SWMU #10 - JULY 1997 DET. LIMIT mg/kg	SB01,12-14 CONC. DET. mg/kg	SB01,15-17 SWMU #10 - JULY 1997 DET. LIMIT mg/kg	SB01,15-17 CONC. DET. mg/kg
1,1,1-Trichloroethane	4.24E+00						0.005	U			0.005	U	0.005	U			0.005	U					0.005	U	0.005	U									0.005	U	0.005	U	0.005	U	0.005	U
1,1,1,2-Tetrachloroethane	7.15E-02																																											
1,1,2-2-Tetrachloroethane	1.05E-02																																		0.005	U	0.005	U	0.005	U	0.005	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	6.41E+02						1.0	U			1.0	U	1.0	U			1.0	U					1.0	U	1.0	U																	
1,1,2-Trichloroethane	4.48E-02						0.005	U			0.005	U	0.005	U			0.005	U					0.005	U	0.005	U									0.005	U	0.005	U	0.005	U	0.005	U
1,1-Dichloroethane	1.80E-01																																		0.005	U	0.005	U	0.005	U	0.005	U
1,1-Dichloroethene	1.08E-01																																		0.005	U	0.005	U	0.005	U	0.005	U
1,1-Dichloropropane	Not Listed																																											
1,2,3-Trichlorobenzene	Not Listed																																											
1,2,3-Trichloropropane	6.23E-04																																											
1,2,4-Trichlorobenzene	1.87E+01																																											
1,2,4-Trimethylbenzene	3.93E+00																																											
1,2-Dibromo-3-chloropropane	1.10E-03																																											
1,2-Dibromoethane	Not Listed																																											
1,2-Dichlorobenzene	5.61E+01																																											
1,2-Dichloroethane	2.06E-02																																		0.005	U	0.005	U	0.005	U	0.005	U
1,2-Dichloroethene (total)	1.10E+00																																		0.005	U	0.005	U	0.005	U	0.005	U
1,2-Dichloropropane	4.20E-02																																		0.005	U	0.005	U	0.005	U	0.005	U
1,3,5-Trimethylbenzene	8.82E-01																																											
1,3-Dichlorobenzene	8.39E+00																																											
1,4-Dichlorobenzene	7.02E+00																																											
2,2-Dichloropropane	Not Listed																																											
2-Butanone	7.30E+00						0.01	U			0.01	U	0.01	U			0.01	U					0.01	U	0.01	U									0.01	U	0.01	U	0.01	U	0.01	0.026
2-Chlorotoluene	3.88E+00																																											
2-Hexanone	1.90E-02																																		0.01	U	0.01	U	0.01	U	0.01	U
4-Chlorotoluene	2.35E-02																																											
4-Methyl-2-Pentanone	1.95E+01																										0.01	U			0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
Acetone	4.20E+00						0.01	UB			0.01	0.094 B	0.01	UB			0.01	UB					0.01	UB	0.01	UB	0.01	0.032	0.01	0.053	0.01	0.026	0.01	0.024	0.01	0.01	0.01	U	0.01	U	0.01	0.086
Acrolein	1.06E-01																																											
Acrylonitrile	6.92E-01																																											
Benzene	5.61E-02																																		0.01	U	0.01	U	0.01	U	0.01	U
Bromobenzene	Not Listed																																											
Bromochloromethane	3.05E-01																																											
Bromodichloromethane	4.72E-01																																		0.01	U	0.01	U	0.01	U	0.01	U
Bromoform	1.15E+00																																		0.01	U	0.01	U	0.01	U	0.01	U
Bromomethane	1.85E-02																																		0.01	U	0.01	U	0.01	U	0.01	U
Carbon Disulfide	6.26E+00						0.005	U			0.005	U	0.005	U			0.005	U					0.005	U	0.005	U									0.005	U	0.005	U	0.005	U	0.005	U
Carbon Tetrachloride	7.96E-02						0.005	U			0.005	U	0.005	U			0.005	U					0.005	U	0.005	U									0.005	U	0.005	U	0.005	U	0.005	U
Chlorinated Fluorocarbons	Not Listed						1.0	U			1.0	U	1.0	U			1.0	U					1.0	U	1.0	U																
Chlorobenzene	1.94E+00						0.005	U			0.005	U	0.005	U			0.005	U					0.005	U	0.005	U									0.005	U	0.005	U	0.005	U	0.005	U
Chloroethane	2.81E-01																																		0.01	U	0.01	U	0.01	U	0.01	U
Chloroform	**7.66E-02**	***4.00E-01***	2.12E+03	***2.24E+00***	0.005	***0.642***			0.005	***0.487***			0.005	***1.14***	0.005	***0.59***	0.005	**0.0907**	0.005	***0.53***	0.005	**0.345**	0.005	**0.283**	0.005	**0.163**	0.005	U	0.005	U	0.005	0.06	0.005	0.015	0.005	0.033	0.005	0.008	0.005	U	0.005	U
Chloromethane	2.04E-01																																		0.01	U	0.01	U	0.01	U	0.01	U
cis-1,2-Dichloroethene	5.21E-01																																											
Cis-1,3-Dichloropropene	5.06E-02																																		0.005	U	0.005	U	0.005	U	0.005	U
Dibromochloromethane	8.70E-01																																		0.01	U	0.01	U	0.01	U	0.01	U
Dibromomethane	Not Listed																																											
Dichlorodifluoromethane	1.49E+00																																											
Ethyl Acetate	Not Listed						1.0	U			1.0	U																																
Ethylbenzene	3.99E+01						0.005	U			0.005	U	0.005	U			0.005	U					0.005	U	0.005	U									0.005	U	0.005	U	0.005	U	0.005	U
Ethyl Ether	Not Listed						1.0	U			1.0	U	1.0	U			1.0	U					1.0	U	1.0	U																
Hexachlorobutadiene	1.60E+01																																											
Iodomethane	Not Listed																																											
Isobutanol	Not Listed						1.0	U			1.0	U	1.0	U			1.0	U					1.0	U	1.0	U																
Isopropylbenzene (Cumene)	1.05E+01																																											
Methanol	2.08E+01						0.001	U			0.001	U	0.001	U			0.001	U					0.001	U	0.001	U																
Methyl Isobutyl Ketone	1.95E+01						0.01	U			0.01	U	0.01	U			0.01	U					0.01	U	0.01	U																
Methyl tert-butyl ether (MTBE)	3.98E-01																																											
Methylene Chloride	**1.76E-02**	1.50E+01	2.46E+04	7.97E+01			0.005	UB			0.005	UB	0.005	0.008 B			0.005	0.006 B					0.005	UB	0.005	UB	0.005	**0.023**	0.005	U	0.005	U	0.005	**0.024**	0.005	**0.018**	0.005	0.035	0.005	**0.024**	0.005	U
Napthalene	3.25E-01																																											
n-Butyl Alcohol	Not Listed						0.001	U			0.001	U	0.001	U			0.001	U					0.001	U	0.001	U																
n-Butylbenzene	4.16E+01																																											
n-Propylbenzene	1.30E+01																																											
p-Isopropyltoluene	Not Listed																																											
sec-Butylbenzene	3.52E+01																																											
Styrene	1.17E+01																																		0.005	U	0.005	U	0.005	U	0.005	U
tert-Butylbenzene	3.41E+01																																											
Tetrachloroethene	1.41E-01						0.005	U			0.005	U	0.005	U			0.005	U					0.005	U	0.005	U									0.005	0.024	0.005	U	0.005	U	0.005	U
Toluene	2.98E+01						0.005	U			0.005	U	0.005	U			0.005	U					0.005	U	0.005	U	0.005	0.015							0.005	0.008	0.005	U	0.005	U	0.005	0.009
trans-1,2 dichloroethene	1.10E+00																																											
Trans-1,3-Dichloropropene	5.06E-02																																		0.005	U	0.005	U	0.005	U	0.005	U
Trichloroethene	1.41E-01						0.005	U			0.005	U	0.005	U			0.005	U					0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U									
Trichlorofluoromethane	7.35E+00																																											
Vinyl Acetate	Not Listed																																		0.01	U	0.01	U	0.01	U	0.01	U
Vinyl Chloride	1.69E-01																																		0.01	U	0.01	U	0.01	U	0.01	U
Xylene	2.47E+01						0.005	U			0.005	U	0.005	U			0.005	U					0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U

Notes:
Bold - Detected concentration exceeds DTL
Bold - Detected concentration exceeds RBTL

Analyte	MRBCA DTL mg/kg	MRBCA Tier 1 RBTL Non-Residential	MRBCA Tier 1 RBTL Construction Worker	MRBCA Tier 1 RBTL Residential Soil Vapor Intrusion	SB02,3-5 SWMU #10 - JULY 1997 DET. LIMIT mg/kg	SB02,3-5 CONC. DET. mg/kg	SB02,8-10 SWMU #10 - JULY 1997 DET. LIMIT mg/kg	SB02,8-10 CONC. DET. mg/kg	SB02,12-14 SWMU #10 - JULY 1997 DET. LIMIT mg/kg	SB02,12-14 CONC. DET. mg/kg	SB03,2-4 SWMU #10 - JULY 1997 DET. LIMIT mg/kg	SB03,2-4 CONC. DET. mg/kg	SB04,3-5 SWMU #10 - JULY 1997 DET. LIMIT mg/kg	SB04,3-5 CONC. DET. mg/kg	SB04,8-10 SWMU #10 - JULY 1997 DET. LIMIT mg/kg	SB04,8-10 CONC. DET. mg/kg	SB04,12-14 SWMU #10 - JULY 1997 DET. LIMIT mg/kg	SB04,12-14 CONC. DET. mg/kg	SB04,16-18 SWMU #10 - JULY 1997 DET. LIMIT mg/kg	SB04,16-18 CONC. DET. mg/kg	SB05,3-5 SWMU #10 - JULY 1997 DET. LIMIT mg/kg	SB05,3-5 CONC. DET. mg/kg	SB05,8-10 SWMU #10 - JULY 1997 DET. LIMIT mg/kg	SB05,8-10 CONC. DET. mg/kg	SB05,14-16 SWMU #10 - JULY 1997 DET. LIMIT mg/kg	SB05,14-16 CONC. DET. mg/kg	SB07,3-5 SWMU #10 - JULY 1997 DET. LIMIT mg/kg	SB07,3-5 CONC. DET. mg/kg	SB07,8-10 SWMU #10 - JULY 1997 DET. LIMIT mg/kg	SB07,8-10 CONC. DET. mg/kg	SB07,11-15 SWMU #10 - JULY 1997 DET. LIMIT mg/kg	SB07,11-15 CONC. DET. mg/kg	SB07,15-18 SWMU #10 - JULY 1997 DET. LIMIT mg/kg	SB07,15-18 CONC. DET. mg/kg	SB08,3-5 SWMU #10 - JULY 1997 DET. LIMIT mg/kg	SB08,3-5 CONC. DET. mg/kg	SB08,8-10 SWMU #10 - JULY 1997 DET. LIMIT mg/kg	SB08,8-10 CONC. DET. mg/kg	SB08,12-14 SWMU #10 - JULY 1997 DET. LIMIT mg/kg	SB08,12-14 CONC. DET. mg/kg	SB09,0-3.5 SWMU #10 - JULY 1997 DET. LIMIT mg/kg	SB09,0-3.5 CONC. DET. mg/kg
1,1,1-Trichloroethane	4.24E+00				0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
1,1,1,2-Tetrachloroethane	7.15E-02																																											
1,1,2-2-Tetrachloroethane	1.05E-02				0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	6.41E+02																																											
1,1,2-Trichloroethane	4.48E-02				0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
1,1-Dichloroethane	1.80E-01				0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
1,1-Dichloroethene	1.08E-01				0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
1,1-Dichloropropane	Not Listed																																											
1,2,3-Trichlorobenzene	Not Listed																																											
1,2,3-Trichloropropane	6.23E-04																																											
1,2,4-Trichlorobenzene	1.87E+01																																											
1,2,4-Trimethylbenzene	3.93E+00						0.01	U			0.01	U			0.01	U							0.01	U					0.01	U							0.01	U	0.01	U		
1,2-Dibromo-3-chloropropane	1.10E-03																																											
1,2-Dibromoethane	Not Listed																																											
1,2-Dichlorobenzene	5.61E+01																																											
1,2-Dichloroethane	2.06E-02				0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
1,2-Dichloroethene (total)	1.10E+00				0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
1,2-Dichloropropane	4.20E-02				0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
1,3,5-Trimethylbenzene	8.82E-01																																											
1,3-Dichlorobenzene	8.39E+00																																											
1,4-Dichlorobenzene	7.02E+00																																											
2,2-Dichloropropane	Not Listed																																											
2-Butanone	7.30E+00				0.01	U	0.01	U	0.01	0.036	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	0.017	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
2-Chlorotoluene	3.88E+00																																											
2-Hexanone	1.90E-02				0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
4-Chlorotoluene	2.35E-02																																											
4-Methyl-2-Pentanone	1.95E+01				0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
Acetone	4.20E+00				0.01	U	0.01	0.054	0.01	0.13	0.01	U	0.01	U	0.01	0.01	0.01	0.016	0.01	U	0.01	U	0.01	0.049	0.01	0.062	0.01	U	0.01	U	0.01	0.019	0.01	U	0.01	U	0.01	0.047	0.01	0.05	0.01	U
Acrolein	1.06E-01																																											
Acrylonitrile	6.92E-01																																											
Benzene	5.61E-02				0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
Bromobenzene	Not Listed																																											
Bromochloromethane	3.05E-01																																											
Bromodichloromethane	4.72E-01				0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
Bromoform	1.15E+00				0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
Bromomethane	1.85E-02				0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
Carbon Disulfide	6.26E+00				0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	0.028	0.005	U	0.005	U	0.005	0.006	0.005	0.015	0.005	U
Carbon Tetrachloride	7.96E-02				0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
Chlorinated Fluorocarbons	Not Listed																																											
Chlorobenzene	1.94E+00				0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
Chloroethane	2.81E-01				0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
Chloroform	***7.66E-02***	***4.00E-01***	2.12E+03	***2.24E+00***	0.005	0.034	0.005	0.017	0.005	0.018	0.005	0.013	0.005	0.009	0.005	**0.096**	0.005	0.02	0.005	U	0.005	**0.078**	0.005	**0.08**	0.005	0.06	0.005	0.006	0.005	U	0.005	U	0.005	U	0.005	U	0.005	0.034	0.005	0.023	0.005	U	0.005	U
Chloromethane	2.04E-01				0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
cis-1,2-Dichloroethene	5.21E-01						0.005	U	0.005	U	0.005	U			0.005	U							0.005	U															0.005	U	0.005	U		
Cis-1,3-Dichloropropene	5.06E-02				0.005	U	0.005	U			0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
Dibromochloromethane	8.70E-01				0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
Dibromomethane	Not Listed																																											
Dichlorodifluoromethane	1.49E+00																																											
Ethyl Acetate	Not Listed																																											
Ethylbenzene	3.99E+01				0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
Ethyl Ether	Not Listed																																											
Hexachlorobutadiene	1.60E+01																																											
Iodomethane	Not Listed																																											
Isobutanol	Not Listed																																											
Isopropylbenzene (Cumene)	1.05E+01																																											
Methanol	2.08E+01																																											
Methyl Isobutyl Ketone	1.95E+01																																											
Methyl tert-butyl ether (MTBE)	3.98E-01																																											
Methylene Chloride	**1.76E-02**	1.50E+01	2.46E+04	7.97E+01	0.005	**0.074**	0.005	**0.018**	0.005	**0.021**	0.005	**0.062**	0.005	**0.032**	0.005	**0.049**	0.005	**0.032**	0.005	**0.024**	0.005	**0.019**	0.005	**0.032**	0.005	**0.027**	0.005	0.016	0.005	**0.023**	0.005	**0.03**	0.005	0.013	0.005	**0.026**	0.005	**0.02**	0.005	**0.035**	0.005	**0.053**
Napthalene	3.25E-01						0.01	U			0.01	U			0.01	0.2							0.01	U					0.01	U							0.01	0.015	0.01	U		
n-Butyl Alcohol	Not Listed																																											
n-Butylbenzene	4.16E+01																																											
n-Propylbenzene	1.30E+01																																											
p-Isopropyltoluene	Not Listed																																											
sec-Butylbenzene	3.52E+01																																											
Styrene	1.17E+01				0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
tert-Butylbenzene	3.41E+01																																											
Tetrachloroethene	1.41E-01				0.005	U	0.005	U	0.005	U	0.005	0.006	0.005	U	0.005	U	0.005	U	0.005	U	0.005	0.008	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
Toluene	2.98E+01				0.005	0.006	0.005	U	0.005	0.006	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	0.02	0.005	0.006	0.005	0.009	0.005	U
trans-1,2 dichloroethene	1.10E+00																																											
Trans-1,3-Dichloropropene	5.06E-02				0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
Trichloroethene	1.41E-01						0.005	U			0.005	U			0.005	U							0.005	U					0.005	U							0.005	U	0.005	U		
Trichlorofluoromethane	7.35E+00																																											
Vinyl Acetate	Not Listed				0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
Vinyl Chloride	1.69E-01				0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
Xylene	2.47E+01				0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U

Notes:
Bold - Detected concentration exceeds DTL
Bold - Detected concentration exceeds RBTL

Analyte	MRBCA DTL mg/kg	MRBCA Tier 1 RBTL Non-Residential	MRBCA Tier 1 RBTL Construction Worker	MRBCA Tier 1 RBTL Residential Soil Vapor Intrusion	SB10,3-5 SWMU #10 - JULY 1997 DET. LIMIT mg/kg	SB10,3-5 CONC. DET. mg/kg	SB10,8-10 SWMU #10 - JULY 1997 DET. LIMIT mg/kg	SB10,8-10 CONC. DET. mg/kg	SB10,12-14 SWMU #10 - JULY 1997 DET. LIMIT mg/kg	SB10,12-14 CONC. DET. mg/kg	SB10,14.5-16 SWMU #10 - JULY 1997 DET. LIMIT mg/kg	SB10,14.5-16 CONC. DET. mg/kg	SB11,1-3.5 SWMU #10 - JULY 1997 DET. LIMIT mg/kg	SB11,1-3.5 CONC. DET. mg/kg	SB12,1-3.5 SWMU #10 - JULY 1997 DET. LIMIT mg/kg	SB12,1-3.5 CONC. DET. mg/kg	WAREHOUSE PAD AOC D - 3/23/00 DET. LIMIT mg/kg	WAREHOUSE PAD AOC D - 3/23/00 CONC. DET. mg/kg	Sample 1 M-PAD SEWER PROJECT AREA - 2/17/06 DET. LIMIT mg/kg	Sample 1 CONC. DET. mg/kg	1BW BUCKET WASH SEWER AREA - 6/15/06 DET. LIMIT mg/kg	1BW CONC. DET. mg/kg	2BW BUCKET WASH SEWER AREA - 6/15/06 DET. LIMIT mg/kg	2BW CONC. DET. mg/kg	Composite 1 (2-4') K-7 SEWER AREA - 10/19/04 DET. LIMIT mg/kg	Composite 1 (2-4') CONC. DET. mg/kg	Composite 2 (2-4') K-7 SEWER AREA - 10/19/04 DET. LIMIT mg/kg	Composite 2 (2-4') CONC. DET. mg/kg
1,1,1-Trichloroethane	4.24E+00				0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.0317	U	0.0061	U	0.0056	U	0.0058	U	0.0058	U
1,1,1,2-Tetrachloroethane	7.15E-02																0.005	U	0.0317	U	0.0061	U	0.0056	U	0.0058	U	0.0058	U
1,1,2-2-Tetrachloroethane	1.05E-02				0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.0317	U	0.0061	U	0.0056	U	0.0058	U	0.0058	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	6.41E+02																											
1,1,2-Trichloroethane	4.48E-02				0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.0317	U	0.0061	U	0.0056	U				
1,1-Dichloroethane	1.80E-01				0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.0317	U	0.0061	U	0.0056	U	0.0058	U	0.0058	U
1,1-Dichloroethene	1.08E-01				0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U			0.0061	U						
1,1-Dichloropropane	Not Listed																0.005	U										
1,2,3-Trichlorobenzene	Not Listed																0.005	U			0.0061	U						
1,2,3-Trichloropropane	6.23E-04																0.005	U	0.0317	U	0.0061	U	0.0056	U	0.0058	U	0.0058	U
1,2,4-Trichlorobenzene	1.87E+01																0.005	U	0.0317	U	0.0061	U	0.0056	U				
1,2,4-Trimethylbenzene	3.93E+00																0.005	U	0.0317	U	0.0061	0.0067	0.0056	U	0.0058	U	0.0058	U
1,2-Dibromo-3-chloropropane	1.10E-03																0.005	U	0.0317	U	0.0061	U	0.0056	U	0.012	U	0.011	U
1,2-Dibromoethane	Not Listed																0.005	U			0.0061	U						
1,2-Dichlorobenzene	5.61E+01																0.005	U	0.0317	U	0.0061	U	0.0056	U	0.0058	U	0.0058	U
1,2-Dichloroethane	2.06E-02				0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U			0.0061	U						
1,2-Dichloroethene (total)	1.10E+00				0.005	U	0.005	U	0.005	U	0.005	U	0.005	U							0.0061	U						
1,2-Dichloropropane	4.20E-02				0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.0317	U	0.0061	U	0.0056	U	0.0058	U	0.0058	U
1,3,5-Trimethylbenzene	8.82E-01																0.005	U	0.0317	U	0.0061	U	0.0056	U	0.0058	U	0.0058	U
1,3-Dichlorobenzene	8.39E+00																0.005	U	0.0317	U	0.0061	U	0.0056	U	0.0058	U	0.0058	U
1,4-Dichlorobenzene	7.02E+00																0.005	U	0.0317	U	0.0061	U	0.0056	U	0.0058	U	0.0058	U
2,2-Dichloropropane	Not Listed																0.005	U			0.0061	U						
2-Butanone	7.30E+00				0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.0634	U	0.0122	U			0.058	U	0.057	U
2-Chlorotoluene	3.88E+00																0.005	U	0.0317	U	0.0061	U	0.0056	U	0.0058	U	0.0058	U
2-Hexanone	1.90E-02				0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U			0.0243	U						
4-Chlorotoluene	2.35E-02																0.005	U	0.0317	U	0.0061	U	0.0056	U	0.0058	U	0.0058	U
4-Methyl-2-Pentanone	1.95E+01				0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U			0.0122	U						
Acetone	4.20E+00				0.01	U	0.01	0.044	0.01	0.019	0.01	0.021	0.01	U	0.01	0.076	0.01	U	0.127	1.36	0.0243	U	0.0056	0.0224	0.14	1.7	0.14	2.1
Acrolein	1.06E-01																								0.29	U	0.29	U
Acrylonitrile	6.92E-01																								0.058	U	0.058	U
Benzene	5.61E-02				0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.005	U	0.0317	U	0.0061	U	0.0056	U	0.0058	U	0.0058	U
Bromobenzene	Not Listed																0.005	U			0.0061	U						
Bromochloromethane	3.05E-01																0.005	U	0.0317	U	0.0061	U	0.0056	U	0.0058	U	0.0058	U
Bromodichloromethane	4.72E-01				0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.005	U	0.0317	U	0.0061	U	0.0056	U				
Bromoform	1.15E+00				0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.005	U	0.0317	U	0.0061	U	0.0056	U	0.0058	U	0.0058	U
Bromomethane	1.85E-02				0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.0317	U	0.0061	U	0.0056	U	0.0058	U	0.0058	U
Carbon Disulfide	6.26E+00				0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.0317	U	0.0061	U	0.0056	U				
Carbon Tetrachloride	7.96E-02				0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.0317	U	0.0061	U	0.0056	U	0.0058	U	0.0058	U
Chlorinated Fluorocarbons	Not Listed																											
Chlorobenzene	1.94E+00				0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.0317	U	0.0061	U	0.0056	U	0.0058	U	0.0058	U
Chloroethane	2.81E-01				0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.0317	U	0.0061	U	0.0056	U	0.0058	U	0.0058	U
Chloroform	**7.66E-02**	***4.00E-01***	2.12E+03	***2.24E+00***	0.005	0.032	0.005	0.026	0.005	0.007	0.005	U	0.005	**0.081**	0.005	0.038	0.005	**0.022**	0.0317	U	0.0061	U	0.0056	U	0.029	U	0.029	U
Chloromethane	2.04E-01				0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.0317	U	0.0061	U	0.0056	U	0.0058	U	0.0058	U
cis-1,2-Dichloroethene	5.21E-01																0.005	U			0.0061	U						
Cis-1,3-Dichloropropene	5.06E-02				0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U			0.0061	U						
Dibromochloromethane	8.70E-01				0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.005	U	0.0317	U	0.0061	U	0.0056	U				
Dibromomethane	Not Listed																0.005	U	0.0317	U	0.0061	U	0.0056	U				
Dichlorodifluoromethane	1.49E+00																0.01	U										
Ethyl Acetate	Not Listed																											
Ethylbenzene	3.99E+01				0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.0317	U	0.0061	U	0.0056	U	0.0058	U	0.0058	U
Ethyl Ether	Not Listed																											
Hexachlorobutadiene	1.60E+01																0.005	U									0.0058	U
Iodomethane	Not Listed																0.01	U										
Isobutanol	Not Listed																											
Isopropylbenzene (Cumene)	1.05E+01																0.005	U	0.0317	U	0.0061	U	0.0056	U	0.0058	U	0.0058	U
Methanol	2.08E+01																											
Methyl Isobutyl Ketone	1.95E+01																											
Methyl tert-butyl ether (MTBE)	3.98E-01																0.01	U	0.0317	U	0.0061	U	0.0056	U	0.0058	U	0.0058	U
Methylene Choride	**1.76E-02**	1.50E+01	2.46E+04	7.97E+01	0.005	U	0.005	U	0.005	**0.033**	0.005	0.012	0.005	**0.033**	0.005	**0.056**	0.005	**0.025 B**	0.0317	**0.198**	0.0061	U	0.0056	U	0.029	U	0.029	U
Napthalene	3.25E-01																0.005	U	0.0634	U	0.0122	U	0.0112	U	0.029	U	0.029	U
n-Butyl Alcohol	Not Listed																											
n-Butylbenzene	4.16E+01																0.005	U	0.0317	U	0.0061	U	0.0056	U	0.0058	U	0.0058	U
n-Propylbenzene	1.30E+01																0.005	U	0.0317	U	0.0061	U	0.0056	U	0.0058	U	0.0058	U
p-Isopropyltoluene	Not Listed																0.005	U			0.0061	U						
sec-Butylbenzene	3.52E+01																0.005	U	0.0317	U	0.0061	U	0.0056	U	0.0058	U	0.0058	U
Styrene	1.17E+01				0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.0317	U	0.0061	U	0.0056	U	0.0058	U	0.0058	U
tert-Butylbenzene	3.41E+01																0.005	U	0.0317	U	0.0061	U	0.0056	U	0.0058	U	0.0058	U
Tetrachloroethene	1.41E-01				0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.0317	U	0.0061	U	0.0056	U				
Toluene	2.98E+01				0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.0317	U	0.0061	0.0083	0.0056	0.0072	0.029	U	0.029	U
trans-1,2 dichloroethene	1.10E+00																0.005	U			0.0061	U						
Trans-1,3-Dichloropropene	5.06E-02				0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U			0.0061	U						
Trichloroethene	1.41E-01																0.005	U			0.0061	U						
Trichlorofluoromethane	7.35E+00																0.01	U	0.0317	U	0.0061	U	0.0056	U	0.0058	U	0.0058	U
Vinyl Acetate	Not Listed				0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U										
Vinyl Chloride	1.69E-01				0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.0317	U	0.0061	U	0.0056	U	0.0058	U	0.0058	U
Xylene	2.47E+01				0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.0317	U	0.0061	0.0162	0.0056	U	0.017	U	0.017	U

Notes:
Bold - Detected concentration exceeds DTL
Bold - Detected concentration exceeds RBTL

Analyte	MRBCA DTL mg/kg	MRBCA Tier 1 RBTL Non-Residential	MRBCA Tier 1 RBTL Construction Worker	SADF22001,0-2 AOC C - DECEMBER 1994 DET. LIMIT mg/kg	SADF22001,0-2 CONC. DET. mg/kg	SADF22002,2-4 AOC C - DECEMBER 1994 DET. LIMIT mg/kg	SADF22002,2-4 CONC. DET. mg/kg	SB01,2-4 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB01,2-4 CONC. DET. mg/kg	SB01,5-7 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB01,5-7 CONC. DET. mg/kg	SB01,8-10 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB01,8-10 CONC. DET. mg/kg	SB02,2-4 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB02,2-4 CONC. DET. mg/kg	SB02,5-7 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB02,5-7 CONC. DET. mg/kg	SB02,8-10 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB02,8-10 CONC. DET. mg/kg	SB03,2-4 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB03,2-4 CONC. DET. mg/kg	SB03,5-7 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB03,5-7 CONC. DET. mg/kg	SB03,8-10 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB03,8-10 CONC. DET. mg/kg	SB04,2-4 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB04,2-4 CONC. DET. mg/kg	SB04,5-7 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB04,5-7 CONC. DET. mg/kg	SB04,8-10 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB04,8-10 CONC. DET. mg/kg	SB05,2-4 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB05,2-4 CONC. DET. mg/kg	SB05,5-7 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB05,5-7 CONC. DET. mg/kg	SB05,8-10 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB05,8-10 CONC. DET. mg/kg	SB06,2-4 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB06,2-4 CONC. DET. mg/kg
1,2,4-Trichlorobenzene	1.87E+01																																							
2,4,5 -Trichlorophenol	2.93E+02			0.33	U	0.33	U																																	
2,4,6-Trichlorophenol	6.36E-02																																							
2,4-Dichlorophenol	9.03E-01																																							
2,4-Dimethylphenol	9.37E+00																																							
2,4-Dinitrophenol	4.08E-02																																							
2,4-Dinitrotoluene	3.25E-02																																							
2,6-Dinitrotoluene	1.12E-02																																							
2-Chloronaphthalene	5.58E+01																																							
2-Chlorophenol	9.63E-01																																							
2-Methylphenol	1.11E+01																																							
2-Nitroaniline	**2.39E-01**	2.73E+02	1.97E+01	0.33	**2.04**	0.33	U																																	
2-Methylnaphthalene	7.55E+00							0.33	0.38	0.33	U			0.33	U	0.33	U					0.33	U	0.33	U	0.33	U	0.33	U			0.33	U	0.33	U			0.33	U
2-Nitrophenol	1.34E-01																																							
3,3-Dichlorobenzidine	1.30E-01																																							
3-Methylphenol	4.81E+00																																							
3-Nitroaniline	3.29E-02																																							
4,6-Dinitro-2-Methylphenol	Not Listed																																							
4-Bromophenyl-phenylether	2.72E-02																																							
4-Chloro-3-Methylphenol	Not Listed																																							
4-Chloroaniline	Not Listed																																							
4-Chlorophenyl-phenyl ether	2.06E-02																																							
4-Methylphenol	6.40E-01																																							
4-Nitroaniline	9.46E-02																																							
4-Nitrophenol	5.39E-02																																							
Acenaphthene (PAH)	1.74E+02			0.33	U	0.33	U	0.33	0.36	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	0.46	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U
Acenaphthylene (PAH)	1.75E+02																																							
Anthracene (PAH)	3.06E+03			0.33	U	0.33	U	0.33	1.1	0.33	U	0.33	U	0.33	U	0.33	0.7	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	1.9	0.33	0.68	0.33	U	0.33	U	0.33	U	0.33	U
Benzo(a)anthracene (PAH)	6.12E+00			0.33	1.1	0.33	U	0.33	2.9	0.33	1	0.33	U	0.33	1.6	0.33	1.4	0.33	U	0.33	3	0.33	0.48	0.33	U	0.33	0.89	0.33	3.2	0.33	U	0.33	U	0.33	U	0.33	0.48	0.33	0.42
Benzo(a)pyrene (PAH)	**6.20E-01**	1.18E+06	1.19E+02	0.33	**1.5**	0.33	U	0.33	**2.6**	0.33	**1.1**	0.33	U	0.33	**2.3**	0.33	**1.2**	0.33	U	0.33	**3.5**	0.33	0.4	0.33	U	0.33	**0.9**	0.33	**2.9**	0.33	U	0.33	U	0.33	U	0.33	0.42	0.33	0.48
Benzo(b)fluoranthene (PAH)	**6.19E+00**	2.91E+05	1.14E+03	0.33	1.74	0.33	U	0.33	3.3	0.33	0.98	0.33	U	0.33	3	0.33	1.1	0.33	U	0.33	3.5	0.33	0.44	0.33	U	0.33	1	0.33	1.9	0.33	U	0.33	U	0.33	U	0.33	0.58	0.33	0.64
Benzo(g,h,I)perylene(PAH)	1.72E+03			0.33	1.7	0.33	U	0.33	0.93	0.33	0.4	0.33	U	0.33	0.56	0.33	U	0.33	U	0.33	1	0.33	U	0.33	U	0.33	0.36	0.33	0.6	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U
Benzo(k)fluoranthene(PAH)	6.20E+01			0.33	1.2	0.33	U	0.33	2.4	0.33	1.1	0.33	U	0.33	1.9	0.33	1.2	0.33	U	0.33	3.3	0.33	0.44	0.33	U	0.33	1	0.33	2.5	0.33	U	0.33	U	0.33	U	0.33	0.43	0.33	0.6
Benzoic Acid	8.48E+01			0.33	U	0.33	U																																	
Benzyl Alcohol	1.44E+01																																							
Bis (2-Chloroetheyl) Ether	4.49E-04																																							
Bis (2-Chloroethoxy) Methane	Not Listed																																							
Bis (2-Chloroisopropyl) Ether	3.18E-02																																							
Bis (2-Ethylhexyl) Phthalate	3.47E+02																																							
Butylbenzylphthalate	1.22E+04																																							
Carbazole	1.33E+01			0.33	U	0.33	U																																	
Chrysene (PAH)	5.99E+02			0.33	1.4	0.33	U	0.33	3.5	0.33	1.5	0.33	U	0.33	2	0.33	1.4	0.33	U	0.33	3.3	0.33	0.48	0.33	U	0.33	1	0.33	2.9	0.33	U	0.33	U	0.33	0.34	0.33	0.54	0.33	0.59
Cresol	Not Listed																																							
Cyclohexane	Not Listed																																							
Dibenzo(a,h)anthracene(PAH)	**6.20E-01**	1.16E+08	1.19E+02	0.33	0.62	0.33	U	0.33	**1.2**	0.33	0.35	0.33	U	0.33	**0.83**	0.33	0.37	0.33	U	0.33	**1.4**	0.33	U	0.33	U	0.33	0.37	0.33	**0.83**	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U
Dibenzofuran (PAH)	6.56E+00			0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	0.34	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U
o-Dichlorobenzene	5.61E+01																																							
Diethyl phthalate	5.24E+02																																							
Dimethylphthalate	1.12E+03																																							
Di-n-Butylphthalate	Not Listed																																							
Di-n-octylphthalate	7.58E+01																																							
Fluoranthene (PAH)	2.28E+03			0.33	1.8	0.33	U	0.33	5.8	0.33	3	0.33	U	0.33	1.9	0.33	2.9	0.33	U	0.33	3.1	0.33	1.1	0.33	U	0.33	1.9	0.33	7.2	0.33	U	0.33	0.56	0.33	0.47	0.33	0.89	0.33	0.63
Fluorene (PAH)	2.11E+02			0.33	U	0.33	U	0.33	0.36	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	0.58	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U
Hexachlorobenzene	2.91E+00																																							
Hexachlorobutadiene	1.60E+01																																							
Hexachlorocyclopentadiene	2.43E+01																																							
Hexachloroethane	2.84E+00																																							
Indeno(1,2,3-cd)pyrene(PAH)	3.77E+00			0.33	1.7	0.33	U	0.33	2.4	0.33	0.68	0.33	U	0.33	1.7	0.33	0.73	0.33	U	0.33	2.7	0.33	U	0.33	U	0.33	0.78	0.33	1.6	0.33	U	0.33	U	0.33	U	0.33	U	0.33	0.36
Isophorone	5.69E+00																																							
Nitrobenzene	1.98E-02																																							
n-Nitroso-Di-n Propylamine	4.04E-04																																							
n-Nitrosodiphenylamine	2.20E+01																																							
Pentachlorophenol	8.94E-02			0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U
Phenanthrene(PAH)	1.58E+02			0.33	0.786	0.33	U	0.33	4	0.33	2	0.33	U	0.33	1.3	0.33	2.7	0.33	U	0.33	1.2	0.33	0.76	0.33	U	0.33	1.3	0.33	6.1	0.33	0.72	0.33	0.44	0.33	U	0.33	0.67	0.33	0.54
Phenol	2.56E+01			0.33	U	0.33	U																																	
Pyrene(PAH)	1.50E+03			0.33	1.7	0.33	U	0.33	5.6	0.33	2.6	0.33	U	0.33	2.1	0.33	2.7	0.33	U	0.33	3.1	0.33	0.9	0.33	U	0.33	1.6	0.33	6.8	0.33	0.54	0.33	0.43	0.33	0.39	0.33	1	0.33	0.76
Pyridine	Not Listed																																							
Trichlorofluoromethane	7.35E+00																																							

Notes:
Bold - Detected concentration exceeds DTL
Bold - Detected concentration exceeds RBTL

Analyte	MRBCA DTL mg/kg	MRBCA Tier 1 RBTL Non-Residential	MRBCA Tier 1 RBTL Construction Worker	SB06,5-7 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB06,5-7 CONC. DET. mg/kg	SB06,8-10 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB06,8-10 CONC. DET. mg/kg	SB07,2-4 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB07,2-4 CONC. DET. mg/kg	SB07,5-7 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB07,5-7 CONC. DET. mg/kg	SB07,8-10 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB07,8-10 CONC. DET. mg/kg	SB08,2-4 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB08,2-4 CONC. DET. mg/kg	SB08,5-7 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB08,5-7 CONC. DET. mg/kg	SB08,8-10 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB08,8-10 CONC. DET. mg/kg	SADF22003,0-2 AOC E - DECEMBER 1994 DET. LIMIT mg/kg	SADF22003,0-2 CONC. DET. mg/kg	A4-C,15-17 SWMU #1 - 8/23/1995 DET. LIMIT mg/kg	A4-C,15-17 CONC. DET. mg/kg	A5-C,15-17 SWMU #1 - 8/23/1995 DET. LIMIT mg/kg	A5-C,15-17 CONC. DET. mg/kg	A6-C,15-17 SWMU #1 - 8/23/1995 DET. LIMIT mg/kg	A6-C,15-17 CONC. DET. mg/kg	A7-C,15-17 SWMU #1 - 8/24/1995 DET. LIMIT mg/kg	A7-C,15-17 CONC. DET. mg/kg	A8-B,15-17 SWMU #1 - 8/24/1995 DET. LIMIT mg/kg	A8-B,15-17 CONC. DET. mg/kg	A13-A,5-7 SWMU #1 - 8/23/1995 DET. LIMIT mg/kg	A13-A,5-7 CONC. DET. mg/kg	A14-A,5-7 SWMU #1 - 8/23/1995 DET. LIMIT mg/kg	A14-A,5-7 CONC. DET. mg/kg	A15-A,5-7 SWMU #1 - 8/23/1995 DET. LIMIT mg/kg	A15-A,5-7 CONC. DET. mg/kg	A16-A,5-7 SWMU #1 - 8/24/1995 DET. LIMIT mg/kg	A16-A,5-7 CONC. DET. mg/kg
1,2,4-Trichlorobenzene	1.87E+01																																							
2,4,5 -Trichlorophenol	2.93E+02																			0.33	U																			
2,4,6-Trichlorophenol	6.36E-02																																							
2,4-Dichlorophenol	9.03E-01																																							
2,4-Dimethylphenol	9.37E+00																																							
2,4-Dinitrophenol	4.08E-02																																							
2,4-Dinitrotoluene	3.25E-02																																							
2,6-Dinitrotoluene	1.12E-02																																							
2-Chloronaphthalene	5.58E+01																																							
2-Chlorophenol	9.63E-01																																							
2-Methylphenol	1.11E+01																																							
2-Nitroaniline	**2.39E-01**	2.73E+02	1.97E+01																	0.33	U																			
2-Methylnaphthalene	7.55E+00			0.33	U	0.33	U	0.33	U	0.33	U			0.33	U	0.33	U	0.33	1.9																					
2-Nitrophenol	1.34E-01																																							
3,3-Dichlorobenzidine	1.30E-01																																							
3-Methylphenol	4.81E+00																																							
3-Nitroaniline	3.29E-02																																							
4,6-Dinitro-2-Methylphenol	Not Listed																																							
4-Bromophenyl-phenylether	2.72E-02																																							
4-Chloro-3-Methylphenol	Not Listed																																							
4-Chloroaniline	Not Listed																																							
4-Chlorophenyl-phenyl ether	2.06E-02																																							
4-Methylphenol	6.40E-01																																							
4-Nitroaniline	9.46E-02																																							
4-Nitrophenol	5.39E-02																																							
Acenaphthene (PAH)	1.74E+02			0.33	U	0.33	U	0.33	0.33	0.33	U	0.33	U	0.33	U	0.33	U	0.33	4.4	0.33	U																			
Acenaphthylene (PAH)	1.75E+02																																							
Anthracene (PAH)	3.06E+03			0.33	U	0.33	U	0.33	0.79	0.33	U	0.33	U	0.33	U	0.33	U	0.33	12	0.33	U																			
Benzo(a)anthracene (PAH)	6.12E+00			0.33	0.37	0.33	U	0.33	1.7	0.33	U	0.33	U	0.33	1.8	0.33	0.42	0.33	12	0.33	1.4																			
Benzo(a)pyrene (PAH)	**6.20E-01**	1.18E+06	1.19E+02	0.33	U	0.33	U	0.33	**1.6**	0.33	U	0.33	U	0.33	**2.5**	0.33	0.4	0.33	**9**	0.33	**1.99**																			
Benzo(b)fluoranthene (PAH)	**6.19E+00**	2.91E+05	1.14E+03	0.33	0.51	0.33	U	0.33	2	0.33	U	0.33	U	0.33	2.6	0.33	1.1	0.33	**8.6**	0.33	3.94																			
Benzo(g,h,I)perylene(PAH)	1.72E+03			0.33	U	0.33	U	0.33	0.4	0.33	U	0.33	U	0.33	0.74	0.33	U	0.33	1.2	0.33	3.74																			
Benzo(k)fluoranthene(PAH)	6.20E+01			0.33	U	0.33	U	0.33	1.4	0.33	U	0.33	U	0.33	2.5	0.33	0.49	0.33	8.3	0.33	2.81																			
Benzoic Acid	8.48E+01																			0.33	U																			
Benzyl Alcohol	1.44E+01																																							
Bis (2-Chloroetheyl) Ether	4.49E-04																																							
Bis (2-Chloroethoxy) Methane	Not Listed																																							
Bis (2-Chloroisopropyl) Ether	3.18E-02																																							
Bis (2-Ethylhexyl) Phthalate	3.47E+02																																							
Butylbenzylphthalate	1.22E+04																																							
Carbazole	1.33E+01																			0.33	U																			
Chrysene (PAH)	5.99E+02			0.33	0.42	0.33	U	0.33	1.9	0.33	U	0.33	U	0.33	2.3	0.33	0.76	0.33	12	0.33	2.13																			
Cresol	Not Listed																																							
Cyclohexane	Not Listed																					0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U
Dibenzo(a,h)anthracene(PAH)	**6.20E-01**	1.16E+08	1.19E+02	0.33	U	0.33	U	0.33	0.44	0.33	U	0.33	U	0.33	**0.77**	0.33	U	0.33	**1.9**	0.33	**0.97**																			
Dibenzofuran (PAH)	6.56E+00			0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	0.48	0.33	U																			
o-Dichlorobenzene	5.61E+01																					0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
Diethyl phthalate	5.24E+02																																							
Dimethylphthalate	1.12E+03																																							
Di-n-Butylphthalate	Not Listed																																							
Di-n-octylphthalate	7.58E+01																																							
Fluoranthene (PAH)	2.28E+03			0.33	0.71	0.33	U	0.33	3	0.33	U	0.33	U	0.33	2.6	0.33	0.72	0.33	27	0.33	1.3																			
Fluorene (PAH)	2.11E+02			0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	6	0.33	U																			
Hexachlorobenzene	2.91E+00																																							
Hexachlorobutadiene	1.60E+01																																							
Hexachlorocyclopentadiene	2.43E+01																																							
Hexachloroethane	2.84E+00																																							
Indeno(1,2,3-cd)pyrene(PAH)	3.77E+00			0.33	U	0.33	U	0.33	0.97	0.33	U	0.33	U	0.33	1.8	0.33	0.34	0.33	3.7	0.33	3.2																			
Isophorone	5.69E+00																																							
Nitrobenzene	1.98E-02																					1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
n-Nitroso-Di-n Propylamine	4.04E-04																																							
n-Nitrosodiphenylamine	2.20E+01																																							
Pentachlorophenol	8.94E-02			0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U																			
Phenanthrene(PAH)	1.58E+02			0.33	0.61	0.33	U	0.33	2.6	0.33	U	0.33	U	0.33	1.4	0.33	U	0.33	32	0.33	0.92																			
Phenol	2.56E+01																			0.33	U																			
Pyrene(PAH)	1.50E+03			0.33	0.74	0.33	U	0.33	3.9	0.33	U	0.33	U	0.33	2.8	0.33	0.8	0.33	30	0.33	2.05																			
Pyridine	Not Listed																					0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U
Trichlorofluoromethane	7.35E+00																					1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U

Notes:
Bold - Detected concentration exceeds DTL
Bold - Detected concentration exceeds RBTL

Analyte	MRBCA DTL mg/kg	MRBCA Tier 1 RBTL Non-Residential	MRBCA Tier 1 RBTL Construction Worker	SADF22006,0-6 SWMU #7 - FEBRUARY 1995 DET. LIMIT mg/kg	SADF22006,0-6 CONC. DET. mg/kg	SADF29003,0-2 SWMU #10 - FEBRUARY 1995 DET. LIMIT mg/kg	SADF29003,0-2 CONC. DET. mg/kg	SADF29004,5.5 SWMU #10 - FEBRUARY 1995 DET. LIMIT mg/kg	SADF29004,5.5 CONC. DET. mg/kg	SB01,3-5 SWMU #10 - JULY 1997 DET. LIMIT mg/kg	SB01,3-5 CONC. DET. mg/kg	SB01,8-10 SWMU #10 - JULY 1997 DET. LIMIT mg/kg	SB01,8-10 CONC. DET. mg/kg	SB01,12-14 SWMU #10 - JULY 1997 DET. LIMIT mg/kg	SB01,12-14 CONC. DET. mg/kg	SB01,15-17 SWMU #10 - JULY 1997 DET. LIMIT mg/kg	SB01,15-17 CONC. DET. mg/kg	SB02,3-5 SWMU #10 - JULY 1997 DET. LIMIT mg/kg	SB02,3-5 CONC. DET. mg/kg	SB02,8-10 SWMU #10 - JULY 1997 DET. LIMIT mg/kg	SB02,8-10 CONC. DET. mg/kg	SB02,12-14 SWMU #10 - JULY 1997 DET. LIMIT mg/kg	SB02,12-14 CONC. DET. mg/kg	SB03,2-4 SWMU #10 - JULY 1997 DET. LIMIT mg/kg	SB03,2-4 CONC. DET. mg/kg	SB04,3-5 SWMU #10 - JULY 1997 DET. LIMIT mg/kg	SB04,3-5 CONC. DET. mg/kg	SB04,8-10 SWMU #10 - JULY 1997 DET. LIMIT mg/kg	SB04,8-10 CONC. DET. mg/kg	SB04,12-14 SWMU #10 - JULY 1997 DET. LIMIT mg/kg	SB04,12-14 CONC. DET. mg/kg	SB04,16-18 SWMU #10 - JULY 1997 DET. LIMIT mg/kg	SB04,16-18 CONC. DET. mg/kg	SB05,3-5 SWMU #10 - JULY 1997 DET. LIMIT mg/kg	SB05,3-5 CONC. DET. mg/kg	SB05,8-10 SWMU #10 - JULY 1997 DET. LIMIT mg/kg	SB05,8-10 CONC. DET. mg/kg	SB05,14-16 SWMU #10 - JULY 1997 DET. LIMIT mg/kg	SB05,14-16 CONC. DET. mg/kg
1,2,4-Trichlorobenzene	1.87E+01																																							
2,4,5 -Trichlorophenol	2.93E+02			0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U
2,4,6-Trichlorophenol	6.36E-02																																							
2,4-Dichlorophenol	9.03E-01																																							
2,4-Dimethylphenol	9.37E+00																																							
2,4-Dinitrophenol	4.08E-02																																							
2,4-Dinitrotoluene	3.25E-02																																							
2,6-Dinitrotoluene	1.12E-02																																							
2-Chloronaphthalene	5.58E+01																																							
2-Chlorophenol	9.63E-01																																							
2-Methylphenol	1.11E+01																																							
2-Nitroaniline	**2.39E-01**	2.73E+02	1.97E+01																																					
2-Methylnaphthalene	7.55E+00											0.33	U							0.33	U			0.33	U			0.33	U					0.33	U					
2-Nitrophenol	1.34E-01																																							
3,3-Dichlorobenzidine	1.30E-01																																							
3-Methylphenol	4.81E+00																																							
3-Nitroaniline	3.29E-02																																							
4,6-Dinitro-2-Methylphenol	Not Listed																																							
4-Bromophenyl-phenylether	2.72E-02																																							
4-Chloro-3-Methylphenol	Not Listed																																							
4-Chloroaniline	Not Listed																																							
4-Chlorophenyl-phenyl ether	2.06E-02																																							
4-Methylphenol	6.40E-01			0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U
4-Nitroaniline	9.46E-02																																							
4-Nitrophenol	5.39E-02																																							
Acenaphthene (PAH)	1.74E+02			0.33	U	0.01	U	0.01	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U
Acenaphthylene (PAH)	1.75E+02																																							
Anthracene (PAH)	3.06E+03			0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U
Benzo(a)anthracene (PAH)	6.12E+00			0.33	U	0.33	0.78	0.33	0.78	0.33	0.7	0.33	0.6	0.33	U	0.33	U	0.33	0.62	0.33	0.73	0.33	0.39	0.33	0.53	0.33	0.34	0.33	1.4	0.33	U	0.33	U	0.33	0.51	0.33	0.58	0.33	0.4
Benzo(a)pyrene (PAH)	**6.20E-01**	1.18E+06	1.19E+02	0.33	U	0.33	**1**	0.33	**1.1**	0.33	**0.85**	0.33	**0.81**	0.33	U	0.33	U	0.33	**0.67**	0.33	**0.66**	0.33	0.56	0.33	**0.68**	0.33	0.4	0.33	**1.9**	0.33	U	0.33	U	0.33	0.43	0.33	**0.64**	0.33	0.37
Benzo(b)fluoranthene (PAH)	**6.19E+00**	2.91E+05	1.14E+03	0.33	U	0.33	2.8	0.33	1.5	0.33	1.4	0.33	1.4	0.33	U	0.33	0.36	0.33	2	0.33	1.2	0.33	1.1	0.33	1.2	0.33	0.77	0.33	2.7	0.33	0.47	0.33	U	0.33	1.3	0.33	0.86	0.33	0.72
Benzo(g,h,I)perylene(PAH)	1.72E+03			0.33	U	0.33	0.978	0.33	1.3	0.33	0.41	0.33	0.38	0.33	U	0.33	U	0.33	0.51	0.33	0.34	0.33	0.39	0.33	0.34	0.33	U	0.33	0.83	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U
Benzo(k)fluoranthene(PAH)	6.20E+01			0.33	U	0.33	0.83	0.33	1	0.33	0.73	0.33	0.57	0.33	U	0.33	U	0.33	0.65	0.33	0.58	0.33	0.53	0.33	0.55	0.33	0.36	0.33	1.8	0.33	U	0.33	U	0.33	0.56	0.33	0.75	0.33	0.36
Benzoic Acid	8.48E+01																																							
Benzyl Alcohol	1.44E+01			0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U
Bis (2-Chloroetheyl) Ether	4.49E-04																																							
Bis (2-Chloroethoxy) Methane	Not Listed																																							
Bis (2-Chloroisopropyl) Ether	3.18E-02																																							
Bis (2-Ethylhexyl) Phthalate	3.47E+02																																							
Butylbenzylphthalate	1.22E+04																																							
Carbazole	1.33E+01			0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U
Chrysene (PAH)	5.99E+02			0.33	U	0.33	1.4	0.33	1.1	0.33	1	0.33	0.88	0.33	U	0.33	U	0.33	1.1	0.33	0.92	0.33	0.71	0.33	0.67	0.33	0.48	0.33	2	0.33	U	0.33	U	0.33	0.76	0.33	0.75	0.33	0.54
Cresol	Not Listed			0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U
Cyclohexane	Not Listed																																							
Dibenzo(a,h)anthracene(PAH)	**6.20E-01**	1.16E+08	1.19E+02	0.33	U	0.33	**0.67**	0.33	0.51	0.33	0.38	0.33	U	0.33	U	0.33	U	0.33	0.52	0.33	U	0.33	U	0.33	U	0.33	U	0.33	**0.72**	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U
Dibenzofuran (PAH)	6.56E+00			0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U
o-Dichlorobenzene	5.61E+01																																							
Diethyl phthalate	5.24E+02																																							
Dimethylphthalate	1.12E+03																																							
Di-n-Butylphthalate	Not Listed																																							
Di-n-octylphthalate	7.58E+01																																							
Fluoranthene (PAH)	2.28E+03			0.33	0.725	0.33	0.78	0.33	U	0.33	0.87	0.33	0.62	0.33	U	0.33	0.49	0.33	0.93	0.33	1.5	0.33	0.58	0.33	0.96	0.33	0.68	0.33	1.4	0.33	U	0.33	U	0.33	0.84	0.33	0.94	0.33	0.75
Fluorene (PAH)	2.11E+02			0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U
Hexachlorobenzene	2.91E+00																																							
Hexachlorobutadiene	1.60E+01																																							
Hexachlorocyclopentadiene	2.43E+01																																							
Hexachloroethane	2.84E+00																																							
Indeno(1,2,3-cd)pyrene(PAH)	3.77E+00			0.33	U	0.33	1.4	0.33	1.2	0.33	0.7	0.33	0.64	0.33	U	0.33	U	0.33	0.93	0.33	0.61	0.33	0.62	0.33	0.64	0.33	0.38	0.33	1.6	0.33	U	0.33	U	0.33	0.69	0.33	0.53	0.33	0.34
Isophorone	5.69E+00																																							
Nitrobenzene	1.98E-02																																							
n-Nitroso-Di-n Propylamine	4.04E-04																																							
n-Nitrosodiphenylamine	2.20E+01																																							
Pentachlorophenol	8.94E-02			0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U
Phenanthrene(PAH)	1.58E+02			0.33	0.619	0.33	0.64	0.33	U	0.33	0.53	0.33	U	0.33	U	0.33	U	0.33	0.69	0.33	1.1	0.33	U	0.33	0.51	0.33	U	0.33	0.52	0.33	U	0.33	U	0.33	U	0.33	0.5	0.33	0.42
Phenol	2.56E+01			0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U
Pyrene(PAH)	1.50E+03			0.33	0.543	0.33	1.1	0.33	0.82	0.33	1.5	0.33	1.6	0.33	U	0.33	0.38	0.33	1.4	0.33	1.8	0.33	0.84	0.33	1.3	0.33	0.89	0.33	2.9	0.33	0.46	0.33	U	0.33	0.56	0.33	0.96	0.33	0.62
Pyridine	Not Listed																																							
Trichlorofluoromethane	7.35E+00																																							

Notes:
Bold - Detected concentration exceeds DTL
Bold - Detected concentration exceeds RBTL

Analyte	MRBCA DTL mg/kg	MRBCA Tier 1 RBTL Non-Residential	MRBCA Tier 1 RBTL Construction Worker	SB07,3-5 SWMU #10 - JULY 1997 DET. LIMIT mg/kg	SB07,3-5 CONC. DET. mg/kg	SB07,8-10 SWMU #10 - JULY 1997 DET. LIMIT mg/kg	SB07,8-10 CONC. DET. mg/kg	SB07,11-15 SWMU #10 - JULY 1997 DET. LIMIT mg/kg	SB07,11-15 CONC. DET. mg/kg	SB07,15-18 SWMU #10 - JULY 1997 DET. LIMIT mg/kg	SB07,15-18 CONC. DET. mg/kg	SB08,3-5 SWMU #10 - JULY 1997 DET. LIMIT mg/kg	SB08,3-5 CONC. DET. mg/kg	SB08,8-10 SWMU #10 - JULY 1997 DET. LIMIT mg/kg	SB08,8-10 CONC. DET. mg/kg	SB08,12-14 SWMU #10 - JULY 1997 DET. LIMIT mg/kg	SB08,12-14 CONC. DET. mg/kg	SB09,0-3.5 SWMU #10 - JULY 1997 DET. LIMIT mg/kg	SB09,0-3.5 CONC. DET. mg/kg	SB10,3-5 SWMU #10 - JULY 1997 DET. LIMIT mg/kg	SB10,3-5 CONC. DET. mg/kg	SB10,8-10 SWMU #10 - JULY 1997 DET. LIMIT mg/kg	SB10,8-10 CONC. DET. mg/kg	SB10,12-14 SWMU #10 - JULY 1997 DET. LIMIT mg/kg	SB10,12-14 CONC. DET. mg/kg	SB10,14.5-16 SWMU #10 - JULY 1997 DET. LIMIT mg/kg	SB10,14.5-16 CONC. DET. mg/kg	SB11,1-3.5 SWMU #10 - JULY 1997 DET. LIMIT mg/kg	SB11,1-3.5 CONC. DET. mg/kg	SB12,1-3.5 SWMU #10 - JULY 1997 DET. LIMIT mg/kg	SB12,1-3.5 CONC. DET. mg/kg	WAREHOUSE PAD AOC D - 3/23/00 DET. LIMIT mg/kg	WAREHOUSE PAD AOC D - 3/23/00 CONC. DET. mg/kg
1,2,4-Trichlorobenzene	1.87E+01																																1.65	U
2,4,5 -Trichlorophenol	2.93E+02			0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	1.65	U
2,4,6-Trichlorophenol	6.36E-02																																1.65	U
2,4-Dichlorophenol	9.03E-01																																1.65	U
2,4-Dimethylphenol	9.37E+00																																1.65	U
2,4-Dinitrophenol	4.08E-02																																4.15	U
2,4-Dinitrotoluene	3.25E-02																																1.65	U
2,6-Dinitrotoluene	1.12E-02																																1.65	U
2-Chloronaphthalene	5.58E+01																																1.65	U
2-Chlorophenol	9.63E-01																																1.65	U
2-Methylphenol	1.11E+01																																1.65	U
2-Nitroaniline	**2.39E-01**	2.73E+02	1.97E+01																														4.15	U
2-Methylnaphthalene	7.55E+00					0.33	U																										1.65	U
2-Nitrophenol	1.34E-01																																1.65	U
3,3-Dichlorobenzidine	1.30E-01																																1.65	U
3-Methylphenol	4.81E+00																																1.65	U
3-Nitroaniline	3.29E-02																																4.15	U
4,6-Dinitro-2-Methylphenol	Not Listed																																4.15	U
4-Bromophenyl-phenylether	2.72E-02																																1.65	U
4-Chloro-3-Methylphenol	Not Listed																																1.65	U
4-Chloroaniline	Not Listed																																1.65	U
4-Chlorophenyl-phenyl ether	2.06E-02																																1.65	U
4-Methylphenol	6.40E-01			0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	1.65	U
4-Nitroaniline	9.46E-02																																4.15	U
4-Nitrophenol	5.39E-02																																4.15	U
Acenaphthene (PAH)	1.74E+02			0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	1.65	0.610 J
Acenaphthylene (PAH)	1.75E+02																																1.65	U
Anthracene (PAH)	3.06E+03			0.33	0.58	0.33	U	0.33	U	0.33	U	0.33	0.37	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	1.65	1.2
Benzo(a)anthracene (PAH)	6.12E+00			0.33	2.2	0.33	0.87	0.33	0.33	0.33	U	0.33	2	0.33	U	0.33	U	0.33	1.3	0.33	U	0.33	U	0.33	U	0.33	U	0.33	1.6	0.33	1.4	1.65	3.4
Benzo(a)pyrene (PAH)	**6.20E-01**	1.18E+06	1.19E+02	0.33	**2.2**	0.33	**0.94**	0.33	0.34	0.33	U	0.33	**2.1**	0.33	0.34	0.33	U	0.33	**1.6**	0.33	U	0.33	U	0.33	U	0.33	U	0.33	**2.1**	0.33	**1.6**	1.65	**2.2**
Benzo(b)fluoranthene (PAH)	**6.19E+00**	2.91E+05	1.14E+03	0.33	2.8	0.33	1.4	0.33	0.48	0.33	U	0.33	2.1	0.33	0.52	0.33	U	0.33	2.7	0.33	U	0.33	U	0.33	U	0.33	U	0.33	1.6	0.33	1.6	1.65	3
Benzo(g,h,I)perylene(PAH)	1.72E+03			0.33	0.81	0.33	0.49	0.33	U	0.33	U	0.33	0.98	0.33	U	0.33	U	0.33	0.72	0.33	U	0.33	U	0.33	U	0.33	U	0.33	0.9	0.33	0.82	1.65	0.41
Benzo(k)fluoranthene(PAH)	6.20E+01			0.33	2.1	0.33	0.84	0.33	U	0.33	U	0.33	1.6	0.33	0.34	0.33	U	0.33	1.2	0.33	U	0.33	U	0.33	U	0.33	U	0.33	1.9	0.33	1.1	1.65	**2.6**
Benzoic Acid	8.48E+01																																4.15	U
Benzyl Alcohol	1.44E+01			0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	1.65	U
Bis (2-Chloroetheyl) Ether	4.49E-04																																1.65	U
Bis (2-Chloroethoxy) Methane	Not Listed																																1.65	U
Bis (2-Chloroisopropyl) Ether	3.18E-02																																1.65	U
Bis (2-Ethylhexyl) Phthalate	3.47E+02																																1.65	U
Butylbenzylphthalate	1.22E+04																																1.65	U
Carbazole	1.33E+01			0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U		
Chrysene (PAH)	5.99E+02			0.33	2.3	0.33	1	0.33	0.38	0.33	U	0.33	2.3	0.33	0.4	0.33	U	0.33	1.8	0.33	U	0.33	U	0.33	U	0.33	U	0.33	2.1	0.33	1.8	1.65	**3.5**
Cresol	Not Listed			0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U		
Cyclohexane	Not Listed																																	
Dibenzo(a,h)anthracene(PAH)	**6.20E-01**	1.16E+08	1.19E+02	0.33	**0.86**	0.33	0.43	0.33	U	0.33	U	0.33	**1**	0.33	U	0.33	U	0.33	**0.67**	0.33	U	0.33	U	0.33	U	0.33	U	0.33	**0.86**	0.33	**0.68**	1.65	**0.68**
Dibenzofuran (PAH)	6.56E+00			0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	1.65	0.39
o-Dichlorobenzene	5.61E+01																																	
Diethyl phthalate	5.24E+02																																1.65	U
Dimethylphthalate	1.12E+03																																1.65	U
Di-n-Butylphthalate	Not Listed																																1.65	U
Di-n-octylphthalate	7.58E+01																																1.65	U
Fluoranthene (PAH)	2.28E+03			0.33	2.5	0.33	1.5	0.33	0.64	0.33	U	0.33	2.7	0.33	0.66	0.33	U	0.33	1.6	0.33	U	0.33	U	0.33	U	0.33	U	0.33	1.9	0.33	1.8	1.65	6.7
Fluorene (PAH)	2.11E+02			0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	1.65	0.480 J
Hexachlorobenzene	2.91E+00																																1.65	U
Hexachlorobutadiene	1.60E+01																																1.65	U
Hexachlorocyclopentadiene	2.43E+01																																1.65	U
Hexachloroethane	2.84E+00																																1.65	U
Indeno(1,2,3-cd)pyrene(PAH)	3.77E+00			0.33	1.6	0.33	0.9	0.33	U	0.33	U	0.33	1.8	0.33	U	0.33	U	0.33	1.4	0.33	U	0.33	U	0.33	U	0.33	U	0.33	1.8	0.33	1.6	1.65	**1.3 J**
Isophorone	5.69E+00																																1.65	U
Nitrobenzene	1.98E-02																																1.65	U
n-Nitroso-Di-n Propylamine	4.04E-04																																1.65	U
n-Nitrosodiphenylamine	2.20E+01																																1.65	U
Pentachlorophenol	8.94E-02			0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	4.15	U
Phenanthrene(PAH)	1.58E+02			0.33	2.1	0.33	0.91	0.33	0.36	0.33	U	0.33	1.6	0.33	U	0.33	U	0.33	0.77	0.33	U	0.33	U	0.33	U	0.33	U	0.33	1.4	0.33	1.2	1.65	5.1
Phenol	2.56E+01			0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	1.65	U
Pyrene(PAH)	1.50E+03			0.33	2.5	0.33	1.3	0.33	0.52	0.33	U	0.33	2.4	0.33	0.4	0.33	U	0.33	2.4	0.33	U	0.33	U	0.33	U	0.33	U	0.33	1.7	0.33	2.7	1.65	5.4
Pyridine	Not Listed																																	
Trichlorofluoromethane	7.35E+00																																	

Notes:
Bold - Detected concentration exceeds DTL
Bold - Detected concentration exceeds RBTL

				SADF22001,0-2		SADF22002,2-4		SB01,2-4		SB01,5-7		SB01,8-10		SB02,2-4		SB02,5-7		SB02,8-10		SB03,2-4	
		MRBCA Tier 1 RBTL		AOC C - DECEMBER 1994		AOC C - DECEMBER 1994		AOC C - NOVEMBER 1997		AOC C - NOVEMBER 1997		AOC C - NOVEMBER 1997		AOC C - NOVEMBER 1997		AOC C - NOVEMBER 1997		AOC C - NOVEMBER 1997		AOC C - NOVEMBER 1997	
Analyte	MRBCA DTL mg/kg	Non-Residential Inhalation of Vapor	Construction Worker	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg
Aluminum	75500.00			1	7200	1	5370														
Antimony	**6.66**	NA	1030.00	1.2	**9.04**	1.2	**9.88**														
Arsenic	**3.89**	NA	***654.00***	1	**53.4**	1	**38.6**	1	**54**	1	**10.4**	1	3.26	1	**42.5**	1	**7.51**	1	**4.34**	1	**21.5**
Barium	2040.00			0.4	**113**	0.4	43.8	0.4	118	0.4	70.9	0.4	74.5	0.4	96.1	0.4	74.1	0.4	63.6	0.4	43.7
Beryllium	**0.74**	NA	215.00	0.1	**1.06**	0.1	0.714														
Cadmium	**9.31**	NA	2810.00	0.1	1.2	0.1	0.627	0.1	1.98	0.1	6.06	0.1	0.304	0.1	0.05	0.1	0.231	0.1	0.185	0.1	0.05
Calcium	Not Listed			10	25600	10	3220														
Chromium	74600.00			0.2	23.1	0.2	10.8	3.2	159	0.2	12.3	0.2	12.1	0.2	43.6	0.2	10.3	0.2	11	0.2	14.2
Cobalt	Not Listed			0.2	8.68	0.2	6.47														
Copper	617.00			0.2	111	0.2	44.4														
Iron	Not Listed			1	27200	1	40000														
Lead	**3.74**	***660.00***	NA	1	**156**	1	**29.9**	1	**159**	1	**130**	1	**5.99**	1	**42.2**	1	**158**	1	**6.7**	1	**27.5**
Magnesium	Not Listed			10	3480	10	1030														
Manganese	2720.00			0.4	375	0.4	350														
Mercury	2.19							0.2	0.277	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Molybdenum	38.70			1	3.8	1	3.3														
Nickel	505.00			0.2	19.5	0.2	13.5														
Potassium	Not Listed			40	1050	40	617														
Selenium	6.27			2	0.94	2	1.3	2	U	2	U	2	U	2	U	2	U	2	U	2	U
Silver	16.20			0.2	0.17	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Sodium	Not Listed			10	301	10	206														
Thallium	Not Listed			2	U	2	0.48														
Titanium	Not Listed																				
Vanadium	530.00			1	30.7	1	38.9														
Zinc	7220.00			0.3	166	0.3	18.8														

Notes:
Bold - Detected concentration exceeds DTL
Bold - Detected concentration exceeds RBTL

Analyte	MRBCA DTL mg/kg	MRBCA Tier 1 RBTL Non-Residential Inhalation of Vapor	MRBCA Tier 1 RBTL Construction Worker	SB03,5-7 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB03,5-7 CONC. DET. mg/kg	SB03,8-10 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB03,8-10 CONC. DET. mg/kg	SB04,2-4 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB04,2-4 CONC. DET. mg/kg	SB04,5-7 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB04,5-7 CONC. DET. mg/kg	SB04,8-10 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB04,8-10 CONC. DET. mg/kg	SB05,2-4 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB05,2-4 CONC. DET. mg/kg	SB05,5-7 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB05,5-7 CONC. DET. mg/kg	SB05,8-10 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB05,8-10 CONC. DET. mg/kg	SB06,2-4 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB06,2-4 CONC. DET. mg/kg
Aluminum	75500.00																				
Antimony	**6.66**	NA	1030.00																		
Arsenic	**3.89**	NA	***654.00***	1	**7.38**	1	**5.34**	1	**9.46**	1	**10.3**	1	**4.62**	1	**43.4**	1	**14**	1	**9.17**	1	**16.4**
Barium	2040.00			0.4	50.4	0.4	104	0.4	41.9	0.4	73.5	0.4	83.6	0.4	57.9	0.4	233	0.4	126	0.4	129
Beryllium	**0.74**	NA	215.00																		
Cadmium	**9.31**	NA	2810.00	0.1	0.132	0.1	0.191	0.1	0.192	0.1	0.2	0.1	0.134	0.1	0.05	0.1	0.255	0.1	0.276	0.1	1.29
Calcium	Not Listed																				
Chromium	74600.00			0.2	9.26	0.2	11	0.2	13.7	0.2	15.8	0.2	10.4	0.2	19.4	0.2	21.7	0.2	8.68	0.2	15.8
Cobalt	Not Listed																				
Copper	617.00																				
Iron	Not Listed																				
Lead	**3.74**	***660.00***	NA	1	**56.1**	1	**20**	1	**22.6**	1	**34.5**	1	**9.85**	1	**39.3**	1	***798***	1	**390**	1	**149**
Magnesium	Not Listed																				
Manganese	2720.00																				
Mercury	2.19			0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	0.359	0.2	U
Molybdenum	38.70																				
Nickel	505.00																				
Potassium	Not Listed																				
Selenium	6.27			2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
Silver	16.20			0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Sodium	Not Listed																				
Thallium	Not Listed																				
Titanium	Not Listed																				
Vanadium	530.00																				
Zinc	7220.00																				

Notes:
Bold - Detected concentration exceeds DTL
Bold - Detected concentration exceeds RBTL

Analyte	MRBCA DTL mg/kg	MRBCA Tier 1 RBTL Non-Residential Inhalation of Vapor	MRBCA Tier 1 RBTL Construction Worker	SB06,5-7 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB06,5-7 CONC. DET. mg/kg	SB06,8-10 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB06,8-10 CONC. DET. mg/kg	SB07,2-4 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB07,2-4 CONC. DET. mg/kg	SB07,5-7 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB07,5-7 CONC. DET. mg/kg	SB07,8-10 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB07,8-10 CONC. DET. mg/kg	SB08,2-4 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB08,2-4 CONC. DET. mg/kg	SB08,5-7 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB08,5-7 CONC. DET. mg/kg	SB08,8-10 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB08,8-10 CONC. DET. mg/kg	SADF22003,0-2 AOC E - DECEMBER 1994 DET. LIMIT mg/kg	SADF22003,0-2 CONC. DET. mg/kg
Aluminum	75500.00																			1	6190
Antimony	**6.66**	NA	1030.00																	1.2	**31.5**
Arsenic	**3.89**	NA	***654.00***	1	**8.56**	1	**3.94**	1	**35.5**	1	**8.58**	1	**4.48**	1	**6.88**	1	**15.3**	1	**6.78**	1	***705***
Barium	2040.00			0.4	116	0.4	79.4	0.4	87.3	0.4	108	0.4	89.1	0.4	43.9	0.4	143	0.4	119	0.4	**145**
Beryllium	**0.74**	NA	215.00																	0.1	**1.05**
Cadmium	**9.31**	NA	2810.00	0.1	0.542	0.1	0.19	0.1	0.05	0.1	0.174	0.1	0.17	0.1	0.175	0.1	0.137	0.1	0.201	0.1	**12.9**
Calcium	Not Listed																			10	**15500**
Chromium	74600.00			0.2	12.3	0.2	9.97	0.2	12.9	0.2	12.6	0.2	11.9	0.2	12	0.2	21.2	0.2	14.7	0.2	**48.7**
Cobalt	Not Listed																			0.2	**9.44**
Copper	617.00																				
Iron	Not Listed																			1	**76500**
Lead	**3.74**	***660.00***	NA	1	**65.2**	1	**6.84**	1	**51.1**	1	**33.8**	1	**6.51**	1	**23.5**	1	***2160***	1	**39.4**	1	***862***
Magnesium	Not Listed																			10	1420
Manganese	2720.00																			0.4	647
Mercury	2.19			0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U		
Molybdenum	38.70																			1	3
Nickel	505.00																			0.2	47.9
Potassium	Not Listed																			40	634
Selenium	6.27			2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	2.9
Silver	16.20			0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	1.7
Sodium	Not Listed																			10	598
Thallium	Not Listed																			2	0.94
Titanium	Not Listed																				
Vanadium	530.00																			1	46.2
Zinc	7220.00																			0.3	1430

Notes:
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Bold - Detected concentration exceeds RBTL

Analyte	MRBCA DTL mg/kg	MRBCA Tier 1 RBTL Non-Residential Inhalation of Vapor	MRBCA Tier 1 RBTL Construction Worker	A4-C,15-17 SWMU #1 - 8/23/1995 DET. LIMIT mg/kg	A4-C,15-17 CONC. DET. mg/kg	A5-C,15-17 SWMU #1 - 8/23/1995 DET. LIMIT mg/kg	A5-C,15-17 CONC. DET. mg/kg	A6-C,15-17 SWMU #1 - 8/23/1995 DET. LIMIT mg/kg	A6-C,15-17 CONC. DET. mg/kg	A7-C,15-17) SWMU #1 - 8/23/1995 DET. LIMIT mg/kg	A7-C,15-17) CONC. DET. mg/kg	A8-B,15-17 SWMU #1 - 8/23/1995 DET. LIMIT mg/kg	A8-B,15-17 CONC. DET. mg/kg	A13-A,5-7 SWMU #1 - 8/23/1995 DET. LIMIT mg/kg	A13-A,5-7 CONC. DET. mg/kg	A14-A,5-7 SWMU #1 - 8/23/1995 DET. LIMIT mg/kg	A14-A,5-7 CONC. DET. mg/kg	A15-A,5-7 SWMU #1 - 8/24/1995 DET. LIMIT mg/kg	A15-A,5-7 CONC. DET. mg/kg	A16-A,5-7 SWMU #1 - 8/24/1995 DET. LIMIT mg/kg	A16-A,5-7 CONC. DET. mg/kg
Aluminum	75500.00																				
Antimony	**6.66**	NA	1030.00																		
Arsenic	**3.89**	NA	***654.00***																		
Barium	2040.00			2.0	103	2.0	111	2.0	114	2.0	82.9	2.0	99.0	2.0	50.2	2.0	58.6	2.0	94.7	2.0	46.3
Beryllium	**0.74**	NA	215.00																		
Cadmium	**9.31**	NA	2810.00	0.25	0.424	0.25	0.414	0.25	0.731	0.25	0.342	0.25	0.480	0.25	0.243	0.25	1.10	0.25	1.47	0.25	0.216
Calcium	Not Listed																				
Chromium	74600.00																				
Cobalt	Not Listed																				
Copper	617.00																				
Iron	Not Listed																				
Lead	**3.74**	***660.00***	NA	5.0	**11.8**	5.0	**11.9**	5.0	**11.4**	5.0	**9.16**	5.0	**11.2**	5.0	**19.3**	5.0	**404**	5.0	**98.4**	5.0	**23.4**
Magnesium	Not Listed																				
Manganese	2720.00																				
Mercury	2.19			0.04	U	0.04	U	0.04	U	0.04	U	0.04	U	0.04	U	0.04	U	0.04	U	0.04	U
Molybdenum	38.70																				
Nickel	505.00																				
Potassium	Not Listed																				
Selenium	6.27																				
Silver	16.20																				
Sodium	Not Listed																				
Thallium	Not Listed																				
Titanium	Not Listed																				
Vanadium	530.00																				
Zinc	7220.00																				

Notes:
Bold - Detected concentration exceeds DTL
Bold - Detected concentration exceeds RBTL

Analyte	MRBCA DTL mg/kg	MRBCA Tier 1 RBTL Non-Residential Inhalation of Vapor	MRBCA Tier 1 RBTL Construction Worker	SADF29001 SWMU #5 - FEBRUARY 1995 DET. LIMIT mg/kg	SADF29001 SWMU #5 - FEBRUARY 1995 CONC. DET. mg/kg	SADF22006,0-2 SWMU #7 - FEBRUARY 1995 DET. LIMIT mg/kg	SADF22006,0-2 SWMU #7 - FEBRUARY 1995 CONC. DET. mg/kg	SADF29003,0-2 SWMU #10 - FEBRUARY 1995 DET. LIMIT mg/kg	SADF29003,0-2 SWMU #10 - FEBRUARY 1995 CONC. DET. mg/kg	SADF29004,5.5 SWMU #10 - FEBRUARY 1995 DET. LIMIT mg/kg	SADF29004,5.5 SWMU #10 - FEBRUARY 1995 CONC. DET. mg/kg	SB01,3-5 SWMU #10 - JULY 1997 DET. LIMIT mg/kg	SB01,3-5 SWMU #10 - JULY 1997 CONC. DET. mg/kg	SB01,8-10 SWMU #10 - JULY 1997 DET. LIMIT mg/kg	SB01,8-10 SWMU #10 - JULY 1997 CONC. DET. mg/kg	SB01,12-14 SWMU #10 - JULY 1997 DET. LIMIT mg/kg	SB01,12-14 SWMU #10 - JULY 1997 CONC. DET. mg/kg	SB01,15-17 SWMU #10 - JULY 1997 DET. LIMIT mg/kg	SB01,15-17 SWMU #10 - JULY 1997 CONC. DET. mg/kg	SB02,3-5 SWMU #10 - JULY 1997 DET. LIMIT mg/kg	SB02,3-5 SWMU #10 - JULY 1997 CONC. DET. mg/kg
Aluminum	75500.00			1	5000	1	1140	1	3890	1	5630										
Antimony	**6.66**	NA	1030.00	1.2	**9.38**	1.2	0.755	1.2	**8.19**	1.2	**6.92**										
Arsenic	**3.89**	NA	***654.00***	1	**10.9**	1	3.17	1	**23.3**	1	**19.4**	1	**45.3**	1	**31.4**	1	**25.6**	1	**17.7**	1	**26.9**
Barium	2040.00			0.4	66.2	0.4	7.26	0.4	58.2	0.4	**62.5**	0.4	102	0.4	62.7	0.4	123	0.4	47.9	0.4	49.4
Beryllium	**0.74**	NA	215.00	0.1	0.66	0.1	0.25	0.1	0.46	0.1	**0.78**										
Cadmium	**9.31**	NA	2810.00	0.1	4.15	0.1	1.3	0.1	0.89	0.1	0	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
Calcium	Not Listed			10	36700	10	329000	10	223000	10	2750										
Chromium	74600.00			0.2	24.4	0.2	3.9	1.2	11.9	2.2	12.4	0.2	25.9	0.2	22.5	0.2	31.5	0.2	19.3	0.2	17.2
Cobalt	Not Listed			0.2	20.7	0.2	U	0.2	6.31	0.2	19										
Copper	617.00			0.2	345	0.2	4.4	0.2	63.3	0.2	23.4										
Iron	Not Listed			1	37100	1	2090	1	18600	1	27000										
Lead	**3.74**	***660.00***	NA	1	**95**	1	**5.7**	1	**250**	1	**56.9**	1	**64.9**	1	**31.1**	1	**24.7**	1	**16.2**	1	**23.4**
Magnesium	Not Listed			10	1110	10	24800	10	1980	10	774										
Manganese	2720.00			0.4	1090	0.4	78	0.4	695	0.4	345										
Mercury	2.19											0.2	U	0.2	U	0.2	U	0.2	0.203	0.2	U
Molybdenum	38.70			1	2.31	1	0.7	1	0.89	1	1.42										
Nickel	505.00			0.2	22.8	0.2	5.6	0.2	14.5	0.2	18.3										
Potassium	Not Listed			40	1050	40	475	40	802	40	404										
Selenium	6.27			2	1.4	2	1.7	2	1.1	2	U	2	U	2	U	2	U	2	U	2	U
Silver	16.20			0.2	0.64	0.2	0.854	0.2	U	0.2	0.25										
Sodium	Not Listed			10	544	10	227	10	153	10	180										
Thallium	Not Listed			2	U	2	0.33	2	U	2	U										
Titanium	Not Listed			2	217			2	124	2	153										
Vanadium	530.00			1	27.2	1	1.9	1	18.7	1	30.1										
Zinc	7220.00			0.3	91.9	0.3	22.8	0.3	77.2	0.3	50.2										

Notes:
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Bold - Detected concentration exceeds RBTL

Analyte	MRBCA DTL mg/kg	MRBCA Tier 1 RBTL Non-Residential Inhalation of Vapor	MRBCA Tier 1 RBTL Construction Worker	SB02,8-10 SWMU #10 - JULY 1997 DET. LIMIT mg/kg	SB02,8-10 CONC. DET. mg/kg	SB02,12-14 SWMU #10 - JULY 1997 DET. LIMIT mg/kg	SB02,12-14 CONC. DET. mg/kg	SB03,2-4 SWMU #10 - JULY 1997 DET. LIMIT mg/kg	SB03,2-4 CONC. DET. mg/kg	SB04,3-5 SWMU #10 - JULY 1997 DET. LIMIT mg/kg	SB04,3-5 CONC. DET. mg/kg	SB04,8-10 SWMU #10 - JULY 1997 DET. LIMIT mg/kg	SB04,8-10 CONC. DET. mg/kg	SB04,12-14 SWMU #10 - JULY 1997 DET. LIMIT mg/kg	SB04,12-14 CONC. DET. mg/kg	SB04,16-18 SWMU #10 - JULY 1997 DET. LIMIT mg/kg	SB04,16-18 CONC. DET. mg/kg	SB05,3-5 SWMU #10 - JULY 1997 DET. LIMIT mg/kg	SB05,3-5 CONC. DET. mg/kg	SB05,8-10 SWMU #10 - JULY 1997 DET. LIMIT mg/kg	SB05,8-10 CONC. DET. mg/kg
Aluminum	75500.00																				
Antimony	**6.66**	NA	1030.00																		
Arsenic	**3.89**	NA	***654.00***	1	**30.8**	1	**24.4**	1	**9.02**	1	**9.74**	1	**15.2**	1	**17.2**	1	2.14	1	**54.3**	1	**21.5**
Barium	2040.00			0.4	52.2	0.4	59.3	0.4	33.2	0.4	49.5	0.4	49.3	0.4	49.2	0.4	120	0.4	33.9	0.4	70.6
Beryllium	**0.74**	NA	215.00																		
Cadmium	**9.31**	NA	2810.00	0.1	U	0.1	U	0.1	U	0.1	U	0.1	0.151	0.1	0.242	0.1	0.175	0.1	U	0.1	U
Calcium	Not Listed																				
Chromium	74600.00			0.2	28.3	0.2	25.1	0.2	5.25	0.2	11.7	0.2	18.5	0.2	16.2	0.2	13.6	0.2	17.6	0.2	20.8
Cobalt	Not Listed																				
Copper	617.00																				
Iron	Not Listed																				
Lead	**3.74**	***660.00***	NA	1	**57**	1	**23.5**	1	**14.7**	1	**17.4**	1	**30.4**	1	**17.2**	1	**7.12**	1	**34.6**	1	**59.3**
Magnesium	Not Listed																				
Manganese	2720.00																				
Mercury	2.19			0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	0.259
Molybdenum	38.70																				
Nickel	505.00																				
Potassium	Not Listed																				
Selenium	6.27			2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
Silver	16.20																				
Sodium	Not Listed																				
Thallium	Not Listed																				
Titanium	Not Listed																				
Vanadium	530.00																				
Zinc	7220.00																				

Notes:
Bold - Detected concentration exceeds DTL
Bold - Detected concentration exceeds RBTL

Analyte	MRBCA DTL mg/kg	MRBCA Tier 1 RBTL Non-Residential Inhalation of Vapor	MRBCA Tier 1 RBTL Construction Worker	SB05,14-16 SWMU #10 - JULY 1997 DET. LIMIT mg/kg	SB05,14-16 CONC. DET. mg/kg	SB07,3-5 SWMU #10 - JULY 1997 DET. LIMIT mg/kg	SB07,3-5 CONC. DET. mg/kg	SB07,8-10 SWMU #10 - JULY 1997 DET. LIMIT mg/kg	SB07,8-10 CONC. DET. mg/kg	SB07,11-15 SWMU #10 - JULY 1997 DET. LIMIT mg/kg	SB07,11-15 CONC. DET. mg/kg	SB07,15-18 SWMU #10 - JULY 1997 DET. LIMIT mg/kg	SB07,15-18 CONC. DET. mg/kg	SB08,3-5 SWMU #10 - JULY 1997 DET. LIMIT mg/kg	SB08,3-5 CONC. DET. mg/kg	SB08,8-10 SWMU #10 - JULY 1997 DET. LIMIT mg/kg	SB08,8-10 CONC. DET. mg/kg	SB08,12-14 SWMU #10 - JULY 1997 DET. LIMIT mg/kg	SB08,12-14 CONC. DET. mg/kg	SB09,0-3.5 SWMU #10 - JULY 1997 DET. LIMIT mg/kg	SB09,0-3.5 CONC. DET. mg/kg
Aluminum	75500.00																				
Antimony	**6.66**	NA	1030.00																		
Arsenic	**3.89**	NA	***654.00***	1	**23.7**	1	**25.5**	1	**56.6**	1	**38.7**	1	1.16	1	**39.6**	1	**34.1**	1	**17.6**	1	**35.6**
Barium	2040.00			0.4	57.1	0.4	60.2	0.4	48.2	0.4	50	0.4	62.2	0.4	51.3	0.4	60.4	0.4	21.4	0.4	73.7
Beryllium	**0.74**	NA	215.00																		
Cadmium	**9.31**	NA	2810.00	0.1	U	0.1	U	0.1	U	0.1	U	0.1	0.18	0.1	U	0.1	U	0.1	0.954	0.1	U
Calcium	Not Listed																				
Chromium	74600.00			0.2	20.9	0.2	23.3	0.2	17.7	0.2	35.1	0.2	11.4	0.2	22.8	0.2	18.2	0.2	76.8	0.2	14.5
Cobalt	Not Listed																				
Copper	617.00																				
Iron	Not Listed																				
Lead	**3.74**	***660.00***	NA	1	**48.1**	1	**50.7**	1	**47.7**	1	**26.4**	1	**6.84**	1	**62**	1	**32.8**	1	**19.8**	1	**31.9**
Magnesium	Not Listed																				
Manganese	2720.00																				
Mercury	2.19			0.2	U	0.2	U	0.2	U	0.2	0.253	0.2	U	0.2	U	0.2	0.254	0.2	U	0.2	U
Molybdenum	38.70																				
Nickel	505.00																				
Potassium	Not Listed																				
Selenium	6.27			2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
Silver	16.20																				
Sodium	Not Listed																				
Thallium	Not Listed																				
Titanium	Not Listed																				
Vanadium	530.00																				
Zinc	7220.00																				

Notes:
Bold - Detected concentration exceeds DTL
Bold - Detected concentration exceeds RBTL

Analyte	MRBCA DTL mg/kg	MRBCA Tier 1 RBTL Non-Residential Inhalation of Vapor	MRBCA Tier 1 RBTL Construction Worker	SB10,3-5 SWMU #10 - JULY 1997 DET. LIMIT mg/kg	SB10,3-5 SWMU #10 - JULY 1997 CONC. DET. mg/kg	SB10,8-10 SWMU #10 - JULY 1997 DET. LIMIT mg/kg	SB10,8-10 SWMU #10 - JULY 1997 CONC. DET. mg/kg	SB10,12-14 SWMU #10 - JULY 1997 DET. LIMIT mg/kg	SB10,12-14 SWMU #10 - JULY 1997 CONC. DET. mg/kg	SB10,14.5-16 SWMU #10 - JULY 1997 DET. LIMIT mg/kg	SB10,14.5-16 SWMU #10 - JULY 1997 CONC. DET. mg/kg	SB11,1-3.5 SWMU #10 - JULY 1997 DET. LIMIT mg/kg	SB11,1-3.5 SWMU #10 - JULY 1997 CONC. DET. mg/kg	SB12,1-3.5 SWMU #10 - JULY 1997 DET. LIMIT mg/kg	SB12,1-3.5 SWMU #10 - JULY 1997 CONC. DET. mg/kg
Aluminum	75500.00														
Antimony	**6.66**	NA	1030.00												
Arsenic	**3.89**	NA	***654.00***	1	**26.7**	1	**66.5**	1	**50.3**	1	1.86	1	**30.7**	1	**16.6**
Barium	2040.00			0.4	21.3	0.4	83	0.4	20.7	0.4	103	0.4	50	0.4	51.6
Beryllium	**0.74**	NA	215.00												
Cadmium	**9.31**	NA	2810.00	0.1	U	0.1	U	0.1	U	0.1	0.23	0.1	U	0.1	U
Calcium	Not Listed														
Chromium	74600.00			0.2	12.8	0.2	26.8	0.2	108	0.2	10.3	0.2	16.9	0.2	13.7
Cobalt	Not Listed														
Copper	617.00														
Iron	Not Listed														
Lead	**3.74**	***660.00***	NA	1	**10.2**	1	U	1	**32.2**	1	**7.12**	1	**68.2**	1	**91**
Magnesium	Not Listed														
Manganese	2720.00														
Mercury	2.19			0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Molybdenum	38.70														
Nickel	505.00														
Potassium	Not Listed														
Selenium	6.27			2	U	2	U	2	U	2	U	2	U	2	U
Silver	16.20														
Sodium	Not Listed														
Thallium	Not Listed														
Titanium	Not Listed														
Vanadium	530.00														
Zinc	7220.00														

Notes:
Bold - Detected concentration exceeds DTL
Bold - Detected concentration exceeds RBTL

APPENDIX D

TABULARIZED SOIL SAMPLE RESULTS COMPARED TO U.S. EPA SSLS

Analyte	USEPA SSL IND. SOIL mg/kg	USEPA SSL Protection of GW mg/kg	SADF22001 (0-2') AOC C - DECEMBER 1994 DET. LIMIT mg/kg	SADF22001 (0-2') AOC C - DECEMBER 1994 CONC. DET. mg/kg	SADF22002 (2-4') AOC C - DECEMBER 1994 DET. LIMIT mg/kg	SADF22002 (2-4') AOC C - DECEMBER 1994 CONC. DET. mg/kg	SB01,2-4 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB01,2-4 AOC C - NOVEMBER 1997 CONC. DET. mg/kg	SB01,5-7 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB01,5-7 AOC C - NOVEMBER 1997 CONC. DET. mg/kg	SB01,8-10 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB01,8-10 AOC C - NOVEMBER 1997 CONC. DET. mg/kg	SB02,2-4 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB02,2-4 AOC C - NOVEMBER 1997 CONC. DET. mg/kg	SB02,5-7 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB02,5-7 AOC C - NOVEMBER 1997 CONC. DET. mg/kg	SB02,8-10 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB02,8-10 AOC C - NOVEMBER 1997 CONC. DET. mg/kg	SB03,2-4 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB03,2-4 AOC C - NOVEMBER 1997 CONC. DET. mg/kg	SB03,5-7 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB03,5-7 AOC C - NOVEMBER 1997 CONC. DET. mg/kg	SB03,8-10 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB03,8-10 AOC C - NOVEMBER 1997 CONC. DET. mg/kg	SB04,2-4 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB04,2-4 AOC C - NOVEMBER 1997 CONC. DET. mg/kg	SB04,5-7 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB04,5-7 AOC C - NOVEMBER 1997 CONC. DET. mg/kg	SB04,8-10 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB04,8-10 AOC C - NOVEMBER 1997 CONC. DET. mg/kg	SB05,2-4 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB05,2-4 AOC C - NOVEMBER 1997 CONC. DET. mg/kg	SB05,5-7 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB05,5-7 AOC C - NOVEMBER 1997 CONC. DET. mg/kg	SB05,8-10 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB05,8-10 AOC C - NOVEMBER 1997 CONC. DET. mg/kg	SB06,2-4 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB06,2-4 AOC C - NOVEMBER 1997 CONC. DET. mg/kg	SB06,5-7 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB06,5-7 AOC C - NOVEMBER 1997 CONC. DET. mg/kg
1,1,1-Trichloroethane	3.90E+04	7.20E-02																																								
1,1,1,2-Tetrachloroethane	9.8E+00	2.1E-04																																								
1,1,2-2-Tetrachloroethane	2.90E+00	2.80E-05																																								
1,1,2-Trichloro-1,2,2-Trifluoroethane	1.80E+05	1.50E+02																																								
1,1,2-Trichloroethane	5.50E+00	1.70E-03																																								
1,1-Dichloroethane	1.70E+01	7.00E-04																																								
1,1-Dichloroethene	1.10E+03	2.60E-03																																								
1,1-Dichloropropane	Not Listed	Not Listed																																								
1,2,3-Trichlorobenzene	Not Listed	Not Listed																																								
1,2,3-Trichloropropane	4.1E-01	4.4E-06																																								
1,2,4-Trichlorobenzene	4.0E+02	1.1E-01																																								
1,2,4-Trimethylbenzene	2.80E+02	2.40E-02					0.01	U	0.01	U	0.01	U	0.01	U	0.01	U					0.01	U	0.01	U	0.01	U	0.01	U			0.01	U	0.01	U			0.01	U	0.01	U		
1,2-Dibromo-3-chloropropane	7.3E-02	9.2E-05																																								
1,2-Dibromoethane	1.7E-01	1.5E-05																																								
1,2-Dichlorobenzene	1.0E+04	6.6E-01																																								
1,2-Dichloroethane	2.20E+00	1.50E-03																																								
1,2-Dichloroethene (total)	9.20E+03	9.90E-02					0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	0.008	0.005	U
1,2-Dichloropropane	4.70E+00	1.70E-03																																								
1,3,5-Trimethylbenzene	2.0E+02	2.0E-02																																								
1,3-Dichlorobenzene	Not Listed	Not Listed																																								
1,4-Dichlorobenzene	1.3E+01	8.1E-02																																								
2,2-Dichloropropane	Not Listed	Not Listed																																								
2-Butanone	1.90E+05	1.50E+00					0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	0.01	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
2-Chlorotoluene	2.0E+04	8.0E-01																																								
2-Hexanone	Not Listed	Not Listed																																								
4-Chlorotoluene	7.2E+04	2.8E+00																																								
4-Methyl-2-Pentanone	5.20E+04	4.40E-01																																								
Acetone	6.10E+05	4.40E+00	0.01	U	0.01	U	0.01	0.018	0.01	0.063	0.01	0.01	0.01	0.025	0.01	U	0.01	U	0.01	0.051	0.01	0.017	0.01	U	0.01	0.04	0.01	0.025	0.01	0.016	0.01	0.056	0.01	U	0.01	0.016	0.01	0.014	0.01	0.037
Acrolein	6.8E-01	8.6E-06																																								
Acrylonitrile	3.7E+03	2.6E-02																																								
Benzene	5.60E+00	2.80E-03																																								
Bromobenzene	4.1E+02	1.5E-02																																								
Bromochloromethane	Not Listed	Not Listed																																								
Bromodichloromethane	1.40E+00	3.30E-05																																								
Bromoform	2.20E+02	2.30E-03																																								
Bromomethane	3.50E+01	2.20E-03																																								
Carbon Disulfide	3.00E+03	2.70E-01																																								
Carbon Tetrachloride	1.30E+00	7.90E-05																																								
Chlorinated Fluorocarbons	Not Listed	Not Listed																																								
Chlorobenzene	1.50E+03	7.50E-02																																								
Chloroethane	6.20E+04	6.00E+00																																								
Chloroform	***1.50E+00***	**5.50E-05**	0.005	**0.018**	0.005	**0.021**	0.005	**0.031**	0.005	**0.009**	0.005	U	0.005	U	0.005	U	0.005	U	0.005	**0.021**	0.005	U	0.005	U	0.005	**0.008**	0.005	U	0.005	U	0.005	**0.018**	0.005	**0.008**	0.005	U	0.005	**0.15**	0.005	U
Chloromethane	5.10E+02	4.90E-02																																								
cis-1,2-Dichloroethene	1.00E+04	2.10E-02					0.005	U	0.005	U	0.005	U	0.005	U	0.005	U					0.005	U	0.005	U	0.005	U	0.005	U			0.005	U	0.005	U			0.005	0.008	0.005	U
Cis-1,3-Dichloropropene*	8.40E+00	1.60E-04																																								
Dibromochloromethane	3.40E+00	4.00E-05																																								
Dibromomethane	1.0E+04	9.1E-02																																								
Dichlorodifluoromethane	7.8E+02	6.1E-01																																								
Ethyl Acetate	9.20E+05	7.00E+00																																								
Ethylbenzene	2.90E+01	8.90E-01																																								
Ethyl Ether	2.00E+05	1.60E+00																																								
Hexachlorobutadiene	2.2E+01	1.9E-03																																								
Iodomethane	Not Listed	Not Listed																																								
Isobutanol	3.10E+05	2.20E+00																																								
Isopropylbenzene (Cumene)	1.1E+04	1.3E+00																																								
Methanol	3.10E+05	3.70E+00																																								
Methyl Isobutyl Ketone	5.20E+04	4.40E-01																																								
Methyl tert-butyl ether (MTBE)	1.9E+02	2.7E-03																																								
Methylene Choride	5.40E+01	**1.30E-03**	0.005	**0.04**	0.005	U	0.005	**0.009**	0.005	**0.01**	0.005	**0.011**	0.005	**0.018**	0.005	**0.026**	0.005	**0.015**	0.005	**0.038**	0.005	**0.029**	0.005	**0.024**	0.005	**0.044**	0.005	**0.012**	0.005	**0.007**	0.005	**0.03**	0.005	**0.012**	0.005	**0.022**	0.005	**0.017**	0.005	**0.013**
Napthalene	2.00E+01	**5.50E-04**					0.01	U	0.01	U	0.01	U	0.01	U	0.01	U					0.01	U	0.01	U	0.01	U	0.01	U			0.01	**0.034**	0.01	**0.016**			0.01	U	0.01	U
n-Butyl Alcohol	6.20E+04	7.50E-01																																								
n-Butylbenzene	Not Listed	Not Listed																																								
n-Propylbenzene	Not Listed	Not Listed																																								
p-Isopropyltoluene	Not Listed	Not Listed																																								
sec-Butylbenzene	Not Listed	Not Listed																																								
Styrene	3.80E+04	1.20E-01																																								
tert-Butylbenzene	Not Listed	Not Listed																																								
Tetrachloroethene	2.70E+00	**2.40E-03**					0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	**0.016**	0.005	U	0.005	U	0.005	**0.012**	0.005	**0.015**	0.005	U
Toluene	4.60E+04	7.60E-01	0.005	0.016	0.005	0.023	0.005	U	0.005	U	0.005	U	0.005	U	0.005	0.007	0.005	U	0.005	0.006	0.005	0.006	0.005	0.006	0.005	U	0.005	0.005	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
trans-1,2 dichloroethene	8.40E+00	1.60E-04																																								
Trans-1,3-Dichloropropene	8.4E+00	1.6E-04																																								
Trichloroethene	1.40E+01	**1.90E-03**	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U					0.005	U	0.005	U	0.005	U	0.005	U			0.005	U	0.005	U			0.005	U	0.005	U
Trichlorofluoromethane	3.4E+03	8.4E-01																																								
Vinyl Acetate	4.20E+03	8.80E-02																																								
Vinyl Chloride	1.70E+00	7.00E-04																																								
Xylene	2.60E+03	1.10E+01					0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	0.006	0.005	U	0.005	0.005	0.005	U	0.005	U	0.005	U	0.005	U

Notes:
Bold - Detected concentration exceeds Industrial Soil SSL
Bold - Detected concentration exceeds Protection of GW SSL

Analyte	USEPA SSL IND. SOIL mg/kg	USEPA SSL Protection of GW mg/kg	SB06,8-10 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB06,8-10 CONC. DET. mg/kg	SB07,2-4 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB07,2-4 CONC. DET. mg/kg	SB07,5-7 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB07,5-7 CONC. DET. mg/kg	SB07,8-10 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB07,8-10 CONC. DET. mg/kg	SB08,2-4 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB08,2-4 CONC. DET. mg/kg	SB08,5-7 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB08,5-7 CONC. DET. mg/kg	SB08,8-10 AOC C - NOVEMBER 1997 DET. LIMIT mg/kg	SB08,8-10 CONC. DET. mg/kg	SADF22003 (0-2') AOC E - DECEMBER 1994 DET. LIMIT mg/kg	SADF22003 (0-2') CONC. DET. mg/kg	SADF22007 (0-1') SWMU #1 / SWMU # 6 DECEMBER 1994 DET. LIMIT mg/kg	SADF22007 (0-1') CONC. DET. mg/kg	A4-A (5-7') SWMU #1 - AUGUST 1995 DET. LIMIT mg/kg	A4-A (5-7') CONC. DET. mg/kg	A4-B (10-12') SWMU #1 - AUGUST 1995 DET. LIMIT mg/kg	A4-B (10-12') CONC. DET. mg/kg	A4-C (15-17') SWMU #1 - AUGUST 1995 DET. LIMIT mg/kg	A4-C (15-17') CONC. DET. mg/kg	A5-A (5-7') SWMU #1 - AUGUST 1995 DET. LIMIT mg/kg	A5-A (5-7') CONC. DET. mg/kg	A5-B (10-12') SWMU #1 - AUGUST 1995 DET. LIMIT mg/kg	A5-B (10-12') CONC. DET. mg/kg	A5-C (15-17') SWMU #1 - AUGUST 1995 DET. LIMIT mg/kg	A5-C (15-17') CONC. DET. mg/kg	A6-A (5-7') SWMU #1 - AUGUST 1995 DET. LIMIT mg/kg	A6-A (5-7') CONC. DET. mg/kg	A6-B (10-12') SWMU #1 - AUGUST 1995 DET. LIMIT mg/kg	A6-B (10-12') CONC. DET. mg/kg	A-6C (15-17') SWMU #1 - AUGUST 1995 DET. LIMIT mg/kg	A-6C (15-17') CONC. DET. mg/kg	A7-A (5-7') SWMU #1 - AUGUST 1995 DET. LIMIT mg/kg	A7-A (5-7') CONC. DET. mg/kg	A7-B (10-12') SWMU #1 - AUGUST 1995 DET. LIMIT mg/kg	A7-B (10-12') CONC. DET. mg/kg	A7-C (15-17') SWMU #1 - AUGUST 1995 DET. LIMIT mg/kg	A7-C (15-17') CONC. DET. mg/kg	A8-A (5-7') SWMU #1 - AUGUST 1995 DET. LIMIT mg/kg	A8-A (5-7') CONC. DET. mg/kg
1,1,1-Trichloroethane	3.90E+04	7.20E-02																									0.005	U					0.005	U					0.005	U					0.005	U		
1,1,1,2-Tetrachloroethane	9.8E+00	2.1E-04																																												
1,1,2-2-Tetrachloroethane	2.90E+00	2.80E-05																																												
1,1,2-Trichloro-1,2,2-Trifluoroethane	1.80E+05	1.50E+02																							1.0	U							1.0	U					1.0	U					1.0	U		
1,1,2-Trichloroethane	5.50E+00	1.70E-03																							0.005	U							0.005	U					0.005	U					0.005	U		
1,1-Dichloroethane	1.70E+01	7.00E-04																																												
1,1-Dichloroethene	1.10E+03	2.60E-03																																												
1,1-Dichloropropane	Not Listed	Not Listed																																												
1,2,3-Trichlorobenzene	Not Listed	Not Listed																																												
1,2,3-Trichloropropane	4.1E-01	4.4E-06																																												
1,2,4-Trichlorobenzene	4.0E+02	1.1E-01																																												
1,2,4-Trimethylbenzene	2.80E+02	2.40E-02	0.01	U	0.01	0.011	0.01	U			0.01	U	0.01	U																																
1,2-Dibromo-3-chloropropane	7.3E-02	9.2E-05																																												
1,2-Dibromoethane	1.7E-01	1.5E-05																																												
1,2-Dichlorobenzene	1.0E+04	6.6E-01																																												
1,2-Dichloroethane	2.20E+00	1.50E-03																																												
1,2-Dichloroethene (total)	9.20E+03	9.90E-02	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U																														
1,2-Dichloropropane	4.70E+00	1.70E-03																																												
1,3,5-Trimethylbenzene	2.0E+02	2.0E-02																																												
1,3-Dichlorobenzene	Not Listed	Not Listed																																												
1,4-Dichlorobenzene	1.3E+01	8.1E-02																																												
2,2-Dichloropropane	Not Listed	Not Listed																																												
2-Butanone	1.90E+05	1.50E+00	0.01	U	0.01	0.011	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U											0.01	U					0.01	U					0.01	U					0.01	U		
2-Chlorotoluene	2.0E+04	8.0E-01																																												
2-Hexanone	Not Listed	Not Listed																																												
4-Chlorotoluene	7.2E+04	2.8E+00																																												
4-Methyl-2-Pentanone	5.20E+04	4.40E-01																																												
Acetone	6.10E+05	4.40E+00	0.01	U	0.01	0.048	0.01	U	0.01	U	0.01	0.02	0.01	0.012	0.01	U	0.01	U									0.01	UB					0.01	UB					0.01	UB					0.01	UB		
Acrolein	6.8E-01	8.6E-06																																												
Acrylonitrile	3.7E+03	2.6E-02																																												
Benzene	5.60E+00	2.80E-03																																												
Bromobenzene	4.1E+02	1.5E-02																																												
Bromochloromethane	Not Listed	Not Listed																																												
Bromodichloromethane	1.40E+00	3.30E-05																																												
Bromoform	2.20E+02	2.30E-03																																												
Bromomethane	3.50E+01	2.20E-03																																												
Carbon Disulfide	3.00E+03	2.70E-01																							0.005	U							0.005	U					0.005	U					0.005	U		
Carbon Tetrachloride	1.30E+00	7.90E-05																							0.005	U							0.005	U					0.005	U					0.005	U		
Chlorinated Fluorocarbons	Not Listed	Not Listed																							1.0	U							1.0	U					1.0	U					1.0	U		
Chlorobenzene	1.50E+03	7.50E-02																							0.005	U							0.005	U					0.005	U					0.005	U		
Chloroethane	6.20E+04	6.00E+00																																												
Chloroform	***1.50E+00***	**5.50E-05**	0.005	U	0.005	**0.083**	0.005	U	0.005	U	0.005	U	0.005	**0.013**	0.005	U	0.005	**0.008**	0.005	***18***	0.005	***2.08***	0.005	***2.2***	0.005	**0.101**	0.005	***2.38***	0.005	**1.19**	0.005	**0.12**	0.005	**1.02**	0.005	**1.172**	0.005	**0.006**	0.005	**0.606**	0.005	**0.642**			0.005	**0.487**
Chloromethane	5.10E+02	4.90E-02																																												
cis-1,2-Dichloroethene	1.00E+04	2.10E-02	0.005	U	0.005	U	0.005	U			0.005	U	0.005	U																																
Cis-1,3-Dichloropropene*	8.40E+00	1.60E-04																																												
Dibromochloromethane	3.40E+00	4.00E-05																																												
Dibromomethane	1.0E+04	9.1E-02																																												
Dichlorodifluoromethane	7.8E+02	6.1E-01																																												
Ethyl Acetate	9.20E+05	7.00E+00																																									1.0	U		
Ethylbenzene	2.90E+01	8.90E-01																							0.005	U							0.005	U					0.005	U					0.005	U		
Ethyl Ether	2.00E+05	1.60E+00																							1.0	U							1.0	U					1.0	U					1.0	U		
Hexachlorobutadiene	2.2E+01	1.9E-03																																												
Iodomethane	Not Listed	Not Listed																																												
Isobutanol	3.10E+05	2.20E+00																							1.0	U							1.0	U					1.0	U					1.0	U		
Isopropylbenzene (Cumene)	1.1E+04	1.3E+00																																												
Methanol	3.10E+05	3.70E+00																							0.001	U							0.001	U					0.001	U					0.001	U		
Methyl Isobutyl Ketone	5.20E+04	4.40E-01																							0.01	U							0.01	U					0.01	U					0.01	U		
Methyl tert-butyl ether (MTBE)	1.9E+02	2.7E-03																																												
Methylene Choride	5.40E+01	**1.30E-03**	0.005	**0.021**	0.005	**0.039**	0.005	**0.03**	0.005	**0.022**	0.005	**0.02**	0.005	**0.029**	0.005	**0.02**	0.005	U	0.005	U					0.005	UB							0.005	UB					0.005	UB					0.005	UB		
Napthalene	2.00E+01	**5.50E-04**	0.01	U	0.01	U	0.01	U			0.01	U	0.01	U																																
n-Butyl Alcohol	6.20E+04	7.50E-01																							0.001	U							0.001	U					0.001	U					0.001	U		
n-Butylbenzene	Not Listed	Not Listed																																												
n-Propylbenzene	Not Listed	Not Listed																																												
p-Isopropyltoluene	Not Listed	Not Listed																																												
sec-Butylbenzene	Not Listed	Not Listed																																												
Styrene	3.80E+04	1.20E-01																																												
tert-Butylbenzene	Not Listed	Not Listed																																												
Tetrachloroethene	2.70E+00	**2.40E-03**	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U									0.005	U							0.005	U					0.005	U					0.005	U		
Toluene	4.60E+04	7.60E-01	0.005	U	0.005	0.007	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	0.056							0.005	U							0.005	U					0.005	U					0.005	U		
trans-1,2 dichloroethene	8.40E+00	1.60E-04																																												
Trans-1,3-Dichloropropene	8.4E+00	1.6E-04																																												
Trichloroethene	1.40E+01	**1.90E-03**	0.005	U	0.005	**0.006**	0.005	U			0.005	U	0.005	U			0.005	U							0.005	U							0.005	U					0.005	U					0.005	U		
Trichlorofluoromethane	3.4E+03	8.4E-01																																												
Vinyl Acetate	4.20E+03	8.80E-02																																												
Vinyl Chloride	1.70E+00	7.00E-04																																												
Xylene	2.60E+03	1.10E+01	0.005	U	0.005	0.01	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U									0.005	U							0.005	U					0.005	U					0.005	U		

Notes:
Bold - Detected concentration exceeds Industrial Soil SSL
Bold - Detected concentration exceeds Protection of GW SSL

Analyte	USEPA SSL IND. SOIL mg/kg	USEPA SSL Protection of GW mg/kg	A8-B (15-17') SWMU #1 - AUGUST 1995		A13-A (5-7') SWMU #1 - AUGUST 1995		A13-B (10-12') SWMU #1 - AUGUST 1995		A14-A (5-7') SWMU #1 - AUGUST 1995		A14-B (10-12') SWMU #1 - AUGUST 1995		A14-C (15-17') SWMU #1 - AUGUST 1995		A15-A (5-7') SWMU #1 - AUGUST 1995		A16-A (5-7') SWMU #1 - AUGUST 1995		SADF29001 SWMU #5 - FEBRUARY 1995		SADF22006 (0-2') SWMU #7 - FEBRUARY 1995		SADF29003 (0-2') SWMU #10 - FEBRUARY 1995		SADF29004 (5.5') SWMU #10 - FEBRUARY 1995		SB01,3-5 SWMU #10 - JULY 1997		SB01,8-10 SWMU #10 - JULY 1997		SB01,12-14 SWMU #10 - JULY 1997		SB01,15-17 SWMU #10 - JULY 1997		SB02,3-5 SWMU #10 - JULY 1997		SB02,8-10 SWMU #10 - JULY 1997		SB02,12-14 SWMU #10 - JULY 1997		SB03,2-4 SWMU #10 - JULY 1997		SB04,3-5 SWMU #10 - JULY 1997		SB04,8-10 SWMU #10 - JULY 1997	
			DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg
1,1,1-Trichloroethane	3.90E+04	7.20E-02	0.005	U	0.005	U			0.005	U					0.005	U	0.005	U									0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
1,1,1,2-Tetrachloroethane	9.8E+00	2.1E-04																																														
1,1,2-2-Tetrachloroethane	2.90E+00	2.80E-05																									0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	1.80E+05	1.50E+02	1.0	U	1.0	U			1.0	U					1.0	U	1.0	U																														
1,1,2-Trichloroethane	5.50E+00	1.70E-03	0.005	U	0.005	U			0.005	U					0.005	U	0.005	U									0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
1,1-Dichloroethane	1.70E+01	7.00E-04																									0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
1,1-Dichloroethene	1.10E+03	2.60E-03																									0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
1,1-Dichloropropane	Not Listed	Not Listed																																														
1,2,3-Trichlorobenzene	Not Listed	Not Listed																																														
1,2,3-Trichloropropane	4.1E-01	4.4E-06																																														
1,2,4-Trichlorobenzene	4.0E+02	1.1E-01																																														
1,2,4-Trimethylbenzene	2.80E+02	2.40E-02																																	0.01	U			0.01	U					0.01	U
1,2-Dibromo-3-chloropropane	7.3E-02	9.2E-05																																														
1,2-Dibromoethane	1.7E-01	1.5E-05																																														
1,2-Dichlorobenzene	1.0E+04	6.6E-01																																														
1,2-Dichloroethane	2.20E+00	1.50E-03																									0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
1,2-Dichloroethene (total)	9.20E+03	9.90E-02																									0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
1,2-Dichloropropane	4.70E+00	1.70E-03																									0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
1,3,5-Trimethylbenzene	2.0E+02	2.0E-02																																														
1,3-Dichlorobenzene	Not Listed	Not Listed																																														
1,4-Dichlorobenzene	1.3E+01	8.1E-02																																														
2,2-Dichloropropane	Not Listed	Not Listed																																														
2-Butanone	1.90E+05	1.50E+00	0.01	U	0.01	U			0.01	U					0.01	U	0.01	U									0.01	U	0.01	U	0.01	U	0.01	0.026	0.01	U	0.01	U	0.01	0.036	0.01	U	0.01	U	0.01	U
2-Chlorotoluene	2.0E+04	8.0E-01																																														
2-Hexanone	Not Listed	Not Listed																									0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
4-Chlorotoluene	7.2E+04	2.8E+00																																														
4-Methyl-2-Pentanone	5.20E+04	4.40E-01																	0.01	U			0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
Acetone	6.10E+05	4.40E+00	0.01	0.094 B	0.01	UB			0.01	UB					0.01	UB	0.01	UB	0.01	0.032	0.01	0.053	0.01	0.026	0.01	0.024	0.01	0.01	0.01	U	0.01	U	0.01	0.086	0.01	U	0.01	0.054	0.01	0.13	0.01	U	0.01	U	0.01	0.01
Acrolein	6.8E-01	8.6E-06																																														
Acrylonitrile	3.7E+03	2.6E-02																																														
Benzene	5.60E+00	2.80E-03																									0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
Bromobenzene	4.1E+02	1.5E-02																																														
Bromochloromethane	Not Listed	Not Listed																																														
Bromodichloromethane	1.40E+00	3.30E-05																									0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
Bromoform	2.20E+02	2.30E-03																									0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
Bromomethane	3.50E+01	2.20E-03																									0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
Carbon Disulfide	3.00E+03	2.70E-01	0.005	U	0.005	U			0.005	U					0.005	U	0.005	U									0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
Carbon Tetrachloride	1.30E+00	7.90E-05	0.005	U	0.005	U			0.005	U					0.005	U	0.005	U									0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
Chlorinated Fluorocarbons	Not Listed	Not Listed	1.0	U	1.0	U			1.0	U					1.0	U	1.0	U																														
Chlorobenzene	1.50E+03	7.50E-02	0.005	U	0.005	U			0.005	U					0.005	U	0.005	U									0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
Chloroethane	6.20E+04	6.00E+00																									0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
Chloroform	***1.50E+00***	**5.50E-05**			0.005	**1.14**	0.005	**0.59**	0.005	**0.0907**	0.005	**0.53**	0.005	**0.345**	0.005	**0.283**	0.005	**0.163**	0.005	U	0.005	U	0.005	**0.06**	0.005	**0.015**	0.005	**0.033**	0.005	**0.008**	0.005	U	0.005	U	0.005	**0.034**	0.005	**0.017**	0.005	**0.018**	0.005	**0.013**	0.005	**0.009**	0.005	**0.096**
Chloromethane	5.10E+02	4.90E-02																									0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
cis-1,2-Dichloroethene	1.00E+04	2.10E-02																																	0.005	U	0.005	U	0.005	U					0.005	U
Cis-1,3-Dichloropropene*	8.40E+00	1.60E-04																									0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U			0.005	U	0.005	U	0.005	U
Dibromochloromethane	3.40E+00	4.00E-05																									0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
Dibromomethane	1.0E+04	9.1E-02																																														
Dichlorodifluoromethane	7.8E+02	6.1E-01																																														
Ethyl Acetate	9.20E+05	7.00E+00	1.0	U																																												
Ethylbenzene	2.90E+01	8.90E-01	0.005	U	0.005	U			0.005	U					0.005	U	0.005	U									0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
Ethyl Ether	2.00E+05	1.60E+00	1.0	U	1.0	U			1.0	U					1.0	U	1.0	U																														
Hexachlorobutadiene	2.2E+01	1.9E-03																																														
Iodomethane	Not Listed	Not Listed																																														
Isobutanol	3.10E+05	2.20E+00	1.0	U	1.0	U			1.0	U					1.0	U	1.0	U																														
Isopropylbenzene (Cumene)	1.1E+04	1.3E+00																																														
Methanol	3.10E+05	3.70E+00	0.001	U	0.001	U			0.001	U					0.001	U	0.001	U																														
Methyl Isobutyl Ketone	5.20E+04	4.40E-01	0.01	U	0.01	U			0.01	U					0.01	U	0.01	U																														
Methyl tert-butyl ether (MTBE)	1.9E+02	2.7E-03																																														
Methylene Choride	5.40E+01	**1.30E-03**	0.005	UB	0.005	0.008 B			0.005	0.006 B					0.005	UB	0.005	UB	0.005	**0.023**	0.005	U	0.005	U	0.005	**0.024**	0.005	**0.018**	0.005	**0.035**	0.005	**0.024**	0.005	U	0.005	**0.074**	0.005	**0.018**	0.005	**0.021**	0.005	**0.062**	0.005	**0.032**	0.005	**0.049**
Napthalene	2.00E+01	**5.50E-04**																																	0.01	U			0.01	U			0.01	**0.2**
n-Butyl Alcohol	6.20E+04	7.50E-01	0.001	U	0.001	U			0.001	U					0.001	U	0.001	U																														
n-Butylbenzene	Not Listed	Not Listed																																														
n-Propylbenzene	Not Listed	Not Listed																																														
p-Isopropyltoluene	Not Listed	Not Listed																																														
sec-Butylbenzene	Not Listed	Not Listed																																														
Styrene	3.80E+04	1.20E-01																									0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
tert-Butylbenzene	Not Listed	Not Listed																																														
Tetrachloroethene	2.70E+00	**2.40E-03**	0.005	U	0.005	U			0.005	U					0.005	U	0.005	U									0.005	**0.024**	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	**0.006**	0.005	U	0.005	U
Toluene	4.60E+04	7.60E-01	0.005	U	0.005	U			0.005	U					0.005	U	0.005	U	0.005	0.015							0.005	0.008	0.005	U	0.005	U	0.005	0.009	0.005	0.006	0.005	U	0.005	0.006	0.005	U	0.005	U	0.005	U
trans-1,2 dichloroethene	8.40E+00	1.60E-04																									0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
Trans-1,3-Dichloropropene	8.4E+00	1.6E-04																																														
Trichloroethene	1.40E+01	**1.90E-03**	0.005	U	0.005	U			0.005	U					0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U											0.005	U			0.005	U			0.005	U
Trichlorofluoromethane	3.4E+03	8.4E-01																																														
Vinyl Acetate	4.20E+03	8.80E-02																									0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
Vinyl Chloride	1.70E+00	7.00E-04																									0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
Xylene	2.60E+03	1.10E+01	0.005	U	0.005	U			0.005	U					0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U

Notes:
Bold - Detected concentration exceeds Industrial Soil SSL
Bold - Detected concentration exceeds Protection of GW SSL

Analyte	USEPA SSL IND. SOIL mg/kg	USEPA SSL Protection of GW mg/kg	SB04,12-14 SWMU #10 - JULY 1997		SB04,16-18 SWMU #10 - JULY 1997		SB05,3-5 SWMU #10 - JULY 1997		SB05,8-10 SWMU #10 - JULY 1997		SB05,14-16 SWMU #10 - JULY 1997		SB07,3-5 SWMU #10 - JULY 1997		SB07,8-10 SWMU #10 - JULY 1997		SB07,11-15 SWMU #10 - JULY 1997		SB07,15-18 SWMU #10 - JULY 1997		SB08,3-5 SWMU #10 - JULY 1997		SB08,8-10 SWMU #10 - JULY 1997		SB08,12-14 SWMU #10 - JULY 1997		SB09,0-3.5 SWMU #10 - JULY 1997		SB10,3-5 SWMU #10 - JULY 1997		SB10,8-10 SWMU #10 - JULY 1997		SB10,12-14 SWMU #10 - JULY 1997		SB10,14.5-16 SWMU #10 - JULY 1997		SB11,1-3.5 SWMU #10 - JULY 1997		SB12,1-3.5 SWMU #10 - JULY 1997		Warehouse Pad AOC D - MARCH 23, 2000		Sample 1 [illegible] PROJECT AREA - 2/17/06		1BW BUCKET WASH SEWER AREA - 6/15/06	
			DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg
1,1,1-Trichloroethane	3.90E+04	7.20E-02	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.0317	U	0.0061	U
1,1,1,2-Tetrachloroethane	9.8E+00	2.1E-04																																							0.005	U	0.0317	U	0.0061	U
1,1,2-2-Tetrachloroethane	2.90E+00	2.80E-05	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.0317	U	0.0061	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	1.80E+05	1.50E+02																																										
1,1,2-Trichloroethane	5.50E+00	1.70E-03	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.0317	U	0.0061	U
1,1-Dichloroethane	1.70E+01	7.00E-04	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.0317	U	0.0061	U
1,1-Dichloroethene	1.10E+03	2.60E-03	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U			0.0061	U
1,1-Dichloropropane	Not Listed	Not Listed																																							0.005	U				
1,2,3-Trichlorobenzene	Not Listed	Not Listed																																							0.005	U			0.0061	U
1,2,3-Trichloropropane	4.1E-01	4.4E-06																																							0.005	U	0.0317	U	0.0061	U
1,2,4-Trichlorobenzene	4.0E+02	1.1E-01																																							0.005	U	0.0317	U	0.0061	U
1,2,4-Trimethylbenzene	2.80E+02	2.40E-02							0.01	U					0.01	U							0.01	U	0.01	U															0.005	U	0.0317	U	0.0061	0.0067
1,2-Dibromo-3-chloropropane	7.3E-02	9.2E-05																																							0.005	U	0.0317	U	0.0061	U
1,2-Dibromoethane	1.7E-01	1.5E-05																																							0.005	U			0.0061	U
1,2-Dichlorobenzene	1.0E+04	6.6E-01																																							0.005	U	0.0317	U	0.0061	U
1,2-Dichloroethane	2.20E+00	1.50E-03	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U			0.0061	U
1,2-Dichloroethene (total)	9.20E+03	9.90E-02	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U			0.0061	U
1,2-Dichloropropane	4.70E+00	1.70E-03	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.0317	U	0.0061	U
1,3,5-Trimethylbenzene	2.0E+02	2.0E-02																																							0.005	U	0.0317	U	0.0061	U
1,3-Dichlorobenzene	Not Listed	Not Listed																																							0.005	U	0.0317	U	0.0061	U
1,4-Dichlorobenzene	1.3E+01	8.1E-02																																							0.005	U	0.0317	U	0.0061	U
2,2-Dichloropropane	Not Listed	Not Listed																																							0.005	U			0.0061	U
2-Butanone	1.90E+05	1.50E+00	0.01	U	0.01	U	0.01	U	0.01	U	0.01	0.017	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.0634	U	0.0122	U
2-Chlorotoluene	2.0E+04	8.0E-01																																							0.005	U	0.0317	U	0.0061	U
2-Hexanone	Not Listed	Not Listed	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U			0.0243	U
4-Chlorotoluene	7.2E+04	2.8E+00																																							0.005	U	0.0317	U	0.0061	U
4-Methyl-2-Pentanone	5.20E+04	4.40E-01	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U			0.0122	U
Acetone	6.10E+05	4.40E+00	0.01	0.016	0.01	U	0.01	U	0.01	0.049	0.01	0.062	0.01	U	0.01	U	0.01	0.019	0.01	U	0.01	U	0.01	0.047	0.01	0.05	0.01	U	0.01	U	0.01	0.044	0.01	0.019	0.01	0.021	0.01	U	0.01	0.076	0.01	U	0.127	1.36	0.0243	U
Acrolein	6.8E-01	8.6E-06																																										
Acrylonitrile	3.7E+03	2.6E-02																																										
Benzene	5.60E+00	2.80E-03	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.0317	U	0.0061	U
Bromobenzene	4.1E+02	1.5E-02																																							0.005	U			0.0061	U
Bromochloromethane	Not Listed	Not Listed																																							0.005	U	0.0317	U	0.0061	U
Bromodichloromethane	1.40E+00	3.30E-05	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.0317	U	0.0061	U
Bromoform	2.20E+01	2.30E-03	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.0317	U	0.0061	U
Bromomethane	3.50E+01	2.20E-03	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.0317	U	0.0061	U
Carbon Disulfide	3.00E+03	2.70E-01	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	0.028	0.005	U	0.005	U	0.005	0.006	0.005	0.015	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.0317	U	0.0061	U
Carbon Tetrachloride	1.30E+00	7.90E-05	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.0317	U	0.0061	U
Chlorinated Fluorocarbons	Not Listed	Not Listed																																										
Chlorobenzene	1.50E+03	7.50E-02	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.0317	U	0.0061	U
Chloroethane	6.20E+04	6.00E+00	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.0317	U	0.0061	U
Chloroform	***1.50E+00***	**5.50E-05**	0.005	**0.02**	0.005	U	0.005	**0.078**	0.005	**0.08**	0.005	**0.06**	0.005	**0.006**	0.005	U	0.005	U	0.005	U	0.005	**0.034**	0.005	**0.023**	0.005	U	0.005	U	0.005	**0.032**	0.005	**0.026**	0.005	**0.007**	0.005	U	0.005	**0.081**	0.005	**0.038**	0.005	**0.022**	0.0317	U	0.0061	U
Chloromethane	5.10E+02	4.90E-02	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.0317	U	0.0061	U
cis-1,2-Dichloroethene	1.00E+04	2.10E-02							0.005	U					0.005	U							0.005	U	0.005	U																			0.0061	U
Cis-1,3-Dichloropropene*	8.40E+00	1.60E-04	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U			0.0061	U
Dibromochloromethane	3.40E+00	4.00E-05	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.0317	U	0.0061	U
Dibromomethane	1.0E+04	9.1E-02																																							0.005	U	0.0317	U	0.0061	U
Dichlorodifluoromethane	7.8E+02	6.1E-01																																							0.01	U				
Ethyl Acetate	9.20E+05	7.00E+00																																										
Ethylbenzene	2.90E+01	8.90E-01	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.0317	U	0.0061	U
Ethyl Ether	2.00E+05	1.60E+00																																										
Hexachlorobutadiene	2.2E+01	1.9E-03																																							0.005	U				
Iodomethane	Not Listed	Not Listed																																							0.01	U				
Isobutanol	3.10E+05	2.20E+00																																										
Isopropylbenzene (Cumene)	1.1E+04	1.3E+00																																							0.005	U	0.0317	U	0.0061	U
Methanol	3.10E+05	3.70E+00																																										
Methyl Isobutyl Ketone	5.20E+04	4.40E-01																																										
Methyl tert-butyl ether (MTBE)	1.9E+02	2.7E-03																																							0.01	U	0.0317	U	0.0061	U
Methylene Choride	5.40E+01	**1.30E-03**	0.005	**0.032**	0.005	**0.024**	0.005	**0.019**	0.005	**0.032**	0.005	**0.027**	0.005	**0.016**	0.005	**0.023**	0.005	**0.03**	0.005	**0.013**	0.005	**0.026**	0.005	**0.02**	0.005	**0.035**	0.005	**0.053**	0.005	U	0.005	U	0.005	**0.033**	0.005	**0.012**	0.005	**0.033**	0.005	**0.056**	0.005	**0.025 B**	0.0317	**0.198**	0.0061	U
Napthalene	2.00E+01	**5.50E-04**							0.01	U					0.01	U							0.01	0.015	0.01	U															0.005	U	0.0634	U	0.0122	U
n-Butyl Alcohol	6.20E+04	7.50E-01																																										
n-Butylbenzene	Not Listed	Not Listed																																							0.005	U	0.0317	U	0.0061	U
n-Propylbenzene	Not Listed	Not Listed																																							0.005	U	0.0317	U	0.0061	U
p-Isopropyltoluene	Not Listed	Not Listed																																							0.005	U			0.0061	U
sec-Butylbenzene	Not Listed	Not Listed																																							0.005	U	0.0317	U	0.0061	U
Styrene	3.80E+04	1.20E-01	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.0317	U	0.0061	U
tert-Butylbenzene	Not Listed	Not Listed																																							0.005	U	0.0317	U	0.0061	U
Tetrachloroethene	2.70E+00	**2.40E-03**	0.005	U	0.005	U	0.005	**0.008**	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.0317	U	0.0061	U
Toluene	4.60E+04	7.60E-01	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	0.02	0.005	0.006	0.005	0.009	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.0317	U	0.0061	0.0083
trans-1,2 dichloroethene	8.40E+00	1.60E-04	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U			0.0061	U
Trans-1,3-Dichloropropene	8.4E+00	1.6E-04																																							0.005	U			0.0061	U
Trichloroethene	1.40E+01	**1.90E-03**							0.005	U					0.005	U							0.005	U	0.005	U															0.005	U			0.0061	U
Trichlorofluoromethane	3.4E+03	8.4E-01																																							0.01	U	0.0317	U	0.0061	U
Vinyl Acetate	4.20E+03	8.80E-02	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U				
Vinyl Chloride	1.70E+00	7.00E-04	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.0317	U	0.0061	U
Xylene	2.60E+03	1.10E+01	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.0317	U	0.0061	0.0162

Notes:
Bold - Detected concentration exceeds Industrial Soil SSL
Bold - Detected concentration exceeds Protection of GW SSL

Analyte	USEPA SSL IND. SOIL mg/kg	USEPA SSL Protection of GW mg/kg	2BW BUCKET WASH SEWER AREA - 6/15/06		Composite 1 (2-4') K-7 SEWER AREA - 10/19/04		Composite 2 (2-4') K-7 SEWER AREA - 10/19/04	
			DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg
1,1,1-Trichloroethane	3.90E+04	7.20E-02	0.0056	U	0.0058	U	0.0058	U
1,1,1,2-Tetrachloroethane	9.8E+00	2.1E-04	0.0056	U	0.0058	U	0.0058	U
1,1,2-2-Tetrachloroethane	2.90E+00	2.80E-05	0.0056	U	0.0058	U	0.0058	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	1.80E+05	1.50E+02						
1,1,2-Trichloroethane	5.50E+00	1.70E-03	0.0056	U				
1,1-Dichloroethane	1.70E+01	7.00E-04	0.0056	U	0.0058	U	0.0058	U
1,1-Dichloroethene	1.10E+03	2.60E-03						
1,1-Dichloropropane	Not Listed	Not Listed						
1,2,3-Trichlorobenzene	Not Listed	Not Listed						
1,2,3-Trichloropropane	4.1E-01	4.4E-06	0.0056	U	0.0058	U	0.0058	U
1,2,4-Trichlorobenzene	4.0E+02	1.1E-01	0.0056	U				
1,2,4-Trimethylbenzene	2.80E+02	2.40E-02	0.0056	U	0.0058	U	0.0058	U
1,2-Dibromo-3-chloropropane	7.3E-02	9.2E-05	0.0056	U	0.012	U	0.011	U
1,2-Dibromoethane	1.7E-01	1.5E-05						
1,2-Dichlorobenzene	1.0E+04	6.6E-01	0.0056	U	0.0058	U	0.0058	U
1,2-Dichloroethane	2.20E+00	1.50E-03						
1,2-Dichloroethene (total)	9.20E+03	9.90E-02						
1,2-Dichloropropane	4.70E+00	1.70E-03	0.0056	U	0.0058	U	0.0058	U
1,3,5-Trimethylbenzene	2.0E+02	2.0E-02	0.0056	U	0.0058	U	0.0058	U
1,3-Dichlorobenzene	Not Listed	Not Listed	0.0056	U	0.0058	U	0.0058	U
1,4-Dichlorobenzene	1.3E+01	8.1E-02	0.0056	U	0.0058	U	0.0058	U
2,2-Dichloropropane	Not Listed	Not Listed						
2-Butanone	1.90E+05	1.50E+00			0.058	U	0.057	U
2-Chlorotoluene	2.0E+04	8.0E-01	0.0056	U	0.0058	U	0.0058	U
2-Hexanone	Not Listed	Not Listed						
4-Chlorotoluene	7.2E+04	2.8E+00	0.0056	U	0.0058	U	0.0058	U
4-Methyl-2-Pentanone	5.20E+04	4.40E-01						
Acetone	6.10E+05	4.40E+00	0.0056	0.0224	0.14	1.7	0.14	2.1
Acrolein	6.8E-01	8.6E-06			0.29	U	0.29	U
Acrylonitrile	3.7E+03	2.6E-02			0.058	U	0.058	U
Benzene	5.60E+00	2.80E-03	0.0056	U	0.0058	U	0.0058	U
Bromobenzene	4.1E+02	1.5E-02						
Bromochloromethane	Not Listed	Not Listed	0.0056	U	0.0058	U	0.0058	U
Bromodichloromethane	1.40E+00	3.30E-05	0.0056	U				
Bromoform	2.20E+02	2.30E-03	0.0056	U	0.0058	U	0.0058	U
Bromomethane	3.50E+01	2.20E-03	0.0056	U	0.0058	U	0.0058	U
Carbon Disulfide	3.00E+03	2.70E-01	0.0056	U				
Carbon Tetrachloride	1.30E+00	7.90E-05	0.0056	U	0.0058	U	0.0058	U
Chlorinated Fluorocarbons	Not Listed	Not Listed						
Chlorobenzene	1.50E+03	7.50E-02	0.0056	U	0.0058	U	0.0058	U
Chloroethane	6.20E+04	6.00E+00	0.0056	U	0.0058	U	0.0058	U
Chloroform	***1.50E+00***	**5.50E-05**	0.0056	U	0.029	U	0.029	U
Chloromethane	5.10E+02	4.90E-02	0.0056	U	0.0058	U	0.0058	U
cis-1,2-Dichloroethene	1.00E+04	2.10E-02						
Cis-1,3-Dichloropropene*	8.40E+00	1.60E-04						
Dibromochloromethane	3.40E+00	4.00E-05	0.0056	U				
Dibromomethane	1.0E+04	9.1E-02	0.0056	U				
Dichlorodifluoromethane	7.8E+02	6.1E-01						
Ethyl Acetate	9.20E+05	7.00E+00						
Ethylbenzene	2.90E+01	8.90E-01	0.0056	U	0.0058	U	0.0058	U
Ethyl Ether	2.00E+05	1.60E+00						
Hexachlorobutadiene	2.2E+01	1.9E-03					0.0058	U
Iodomethane	Not Listed	Not Listed						
Isobutanol	3.10E+05	2.20E+00						
Isopropylbenzene (Cumene)	1.1E+04	1.3E+00	0.0056	U	0.0058	U	0.0058	U
Methanol	3.10E+05	3.70E+00						
Methyl Isobutyl Ketone	5.20E+04	4.40E-01						
Methyl tert-butyl ether (MTBE)	1.9E+02	2.7E-03	0.0056	U	0.0058	U	0.0058	U
Methylene Choride	5.40E+01	**1.30E-03**	0.0056	U	0.029	U	0.029	U
Napthalene	2.00E+01	**5.50E-04**	0.0112	U	0.029	U	0.029	U
n-Butyl Alcohol	6.20E+04	7.50E-01						
n-Butylbenzene	Not Listed	Not Listed	0.0056	U	0.0058	U	0.0058	U
n-Propylbenzene	Not Listed	Not Listed	0.0056	U	0.0058	U	0.0058	U
p-Isopropyltoluene	Not Listed	Not Listed						
sec-Butylbenzene	Not Listed	Not Listed	0.0056	U	0.0058	U	0.0058	U
Styrene	3.80E+04	1.20E-01	0.0056	U	0.0058	U	0.0058	U
tert-Butylbenzene	Not Listed	Not Listed	0.0056	U	0.0058	U	0.0058	U
Tetrachloroethene	2.70E+00	**2.40E-03**	0.0056	U				
Toluene	4.60E+04	7.60E-01	0.0056	0.0072	0.029	U	0.029	U
trans-1,2 dichloroethene	8.40E+00	1.60E-04						
Trans-1,3-Dichloropropene	8.4E+00	1.6E-04						
Trichloroethene	1.40E+01	**1.90E-03**						
Trichlorofluoromethane	3.4E+03	8.4E-01	0.0056	U	0.0058	U	0.0058	U
Vinyl Acetate	4.20E+03	8.80E-02						
Vinyl Chloride	1.70E+00	7.00E-04	0.0056	U	0.0058	U	0.0058	U
Xylene	2.60E+03	1.10E+01	0.0056	U	0.017	U	0.017	U

Notes:
Bold - Detected concentration exceeds Industrial Soil SSL
Bold - Detected concentration exceeds Protection of GW SSL

Analyte	USEPA SSL Industrial Soil mg/kg	USEPA SSL Protection of GW mg/kg	SADF22001,0-2		SADF22002,2-4		SB01,2-4		SB01,5-7		SB01,8-10		SB02,2-4		SB02,5-7		SB02,8-10		SB03,2-4		SB03,5-7		SB03,8-10		SB04,2-4		SB04,5-7		SB04,8-10	
			AOC C - DECEMBER 1994		AOC C - DECEMBER 1994		AOC C - NOVEMBER 1997		AOC C - NOVEMBER 1997		AOC C - NOVEMBER 1997		AOC C - NOVEMBER 1997		AOC C - NOVEMBER 1997		AOC C - NOVEMBER 1997		AOC C - NOVEMBER 1997		AOC C - NOVEMBER 1997		AOC C - NOVEMBER 1997		AOC C - NOVEMBER 1997		AOC C - NOVEMBER 1997		AOC C - NOVEMBER 1997	
			DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg
1,2,4-Trichlorobenzene	Not Listed	Not Listed																												
2,4,5 -Trichlorophenol	6.20E+04	9.40E+00	0.33	U	0.33	U																								
2,4,6-Trichlorophenol	1.60E+02	1.60E-02																												
2,4-Dichlorophenol	1.80E+03	1.80E-01																												
2,4-Dimethylphenol	1.20E+04	1.20E+00																												
2,4-Dinitrophenol	1.20E+03	6.80E-02																												
2,4-Dinitrotoluene	5.50E+00	2.00E-04																												
2,6-Dinitrotoluene	6.20E+02	3.40E-02																												
2-Chloronaphthalene	8.20E+04	1.80E+01																												
2-Chlorophenol	5.10E+03	2.00E-01																												
2-Methylphenol	3.10E+04	2.00E+00																												
2-Nitroaniline	1.80E+03	**3.30E-02**	0.33	**2.04**	0.33	U																								
2-Methylnaphthalene	4.10E+03	**9.00E-01**					0.33	0.38	0.33	U			0.33	U	0.33	U					0.33	U	0.33	U	0.33	U	0.33	U		
2-Nitrophenol	Not Listed	Not Listed																												
3,3-Dichlorobenzidine	3.80E+00	2.30E-03																												
3-Methylphenol	3.10E+04	1.90E+00																												
3-Nitroaniline	Not Listed	Not Listed																												
4,6-Dinitro-2-Methylphenol	6.20E+01	5.10E-03																												
4-Bromophenyl-phenylether	Not Listed	Not Listed																												
4-Chloro-3-Methylphenol	Not Listed	Not Listed																												
4-Chloroaniline	8.60E+00	1.20E-04																												
4-Chlorophenyl-phenyl ether	Not Listed	Not Listed																												
4-Methylphenol	3.10E+03	1.90E-01																												
4-Nitroaniline	8.60E+01	1.00E-03																												
4-Nitrophenol	Not Listed	Not Listed																												
Acenaphthene (PAH)	3.30E+04	2.70E+01	0.33	U	0.33	U	0.33	0.36	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	0.46	0.33	U
Acenaphtylene	Not Listed	Not Listed																												
Anthracene (PAH)	1.70E+05	4.50E+02	0.33	U	0.33	U	0.33	1.1	0.33	U	0.33	U	0.33	U	0.33	0.7	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	1.9	0.33	0.68
Benzo(a)anthracene (PAH)	***2.10E+00***	**1.40E-02**	0.33	**1.1**	0.33	U	0.33	***2.9***	0.33	**1**	0.33	U	0.33	**1.6**	0.33	**1.4**	0.33	U	0.33	***3***	0.33	**0.48**	0.33	U	0.33	**0.89**	0.33	***3.2***	0.33	U
Benzo(a)pyrene (PAH)	***2.10E-01***	**3.10E-01**	0.33	***1.5***	0.33	U	0.33	***2.6***	0.33	***1.1***	0.33	U	0.33	***2.3***	0.33	***1.2***	0.33	U	0.33	***3.5***	0.33	***0.4***	0.33	U	0.33	***0.9***	0.33	***2.9***	0.33	U
Benzo(b)fluoranthene (PAH)	***2.10E+00***	**4.70E-02**	0.33	**1.74**	0.33	U	0.33	***3.3***	0.33	**0.98**	0.33	U	0.33	***3***	0.33	**1.1**	0.33	U	0.33	***3.5***	0.33	**0.44**	0.33	U	0.33	**1**	0.33	**1.9**	0.33	U
Benzo(g,h,I)perylene(PAH)	Not Listed	Not Listed	0.33	1.7	0.33	U	0.33	0.93	0.33	0.4	0.33	U	0.33	0.56	0.33	U	0.33	U	0.33	1	0.33	U	0.33	U	0.33	0.36	0.33	0.6	0.33	U
Benzo(k)fluoranthene(PAH)	2.10E+01	**4.60E-01**	0.33	**1.2**	0.33	U	0.33	**2.4**	0.33	**1.1**	0.33	U	0.33	**1.9**	0.33	**1.2**	0.33	U	0.33	**3.3**	0.33	0.44	0.33	U	0.33	**1**	0.33	**2.5**	0.33	U
Benzoic Acid	2.50E+06	3.30E+01	0.33	U	0.33	U																								
Benzyl Alcohol	3.10E+05	4.20E+00																												
Bis (2-Chloroetheyl) Ether	9.00E-01	2.70E-06																												
Bis (2-Chloroethoxy) Methane	1.80E+03	2.30E-02																												
Bis (2-Chloroisopropyl) Ether	1.70E+01	9.00E-05																												
Bis (2-Ethylhexyl) Phthalate	1.20E+02	2.00E+00																												
Butylbenzylphthalate	9.10E+02	6.70E-01																												
Carbazole	Not Listed	Not Listed	0.33	U	0.33	U																								
Chrysene (PAH)	2.10E+02	**1.40E+00**	0.33	1.4	0.33	U	0.33	**3.5**	0.33	**1.5**	0.33	U	0.33	**2**	0.33	1.4	0.33	U	0.33	**3.3**	0.33	0.48	0.33	U	0.33	1	0.33	**2.9**	0.33	U
Cresol	9.30E+04	1.00E+00																												
Cyclohexane	3.00E+04	1.30E+01																												
Dibenzo(a,h)anthracene(PAH)	***2.10E-01***	**1.00E+00**	0.33	0.62	0.33	U	0.33	***1.2***	0.33	***0.35***	0.33	U	0.33	***0.83***	0.33	***0.37***	0.33	U	0.33	***1.4***	0.33	U	0.33	U	0.33	***0.37***	0.33	***0.83***	0.33	U
Dibenzofuran (PAH)	Not Listed	Not Listed	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	0.34	0.33	U
o-Dichlorobenzene	1.00E+04	6.60E-01																												
Diethyl phthalate	4.90E+05	1.30E+01																												
Dimethylphthalate	Not Listed	Not Listed																												
Di-n-Butylphthalate	6.20E+04	1.10E+01																												
Di-n-octylphthalate	Not Listed	Not Listed																												
Fluoranthene (PAH)	2.20E+04	2.10E+02	0.33	1.8	0.33	U	0.33	5.8	0.33	3	0.33	U	0.33	1.9	0.33	2.9	0.33	U	0.33	3.1	0.33	1.1	0.33	U	0.33	1.9	0.33	7.2	0.33	U
Fluorene (PAH)	2.20E+04	3.30E+01	0.33	U	0.33	U	0.33	0.36	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	0.58	0.33	U
Hexachlorobenzene	1.10E+00	7.00E-03																												
Hexachlorobutadiene	2.20E+01	1.90E-03																												
Hexachlorocyclopentadiene	3.70E+03	1.80E-01																												
Hexachloroethane	1.20E+02	3.20E-03																												
Indeno(1,2,3-cd)pyrene(PAH)	***2.10E+00***	**1.60E-01**	0.33	**1.7**	0.33	U	0.33	***2.4***	0.33	**0.68**	0.33	U	0.33	**1.7**	0.33	**0.73**	0.33	U	0.33	***2.7***	0.33	U	0.33	U	0.33	**0.78**	0.33	**1.6**	0.33	U
Isophorone	1.80E+03	2.20E-02																												
Nitrobenzene	2.20E+01	7.10E-05																												
n-Nitroso-Di-n Propylamine	2.50E-01	1.10E-05																												
n-Nitrosodiphenylamine	3.50E+02	1.70E-01																												
Pentachlorophenol	9.00E+00	7.00E-03	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U
Phenanthrene(PAH)	Not Listed	Not Listed	0.33	0.786	0.33	U	0.33	4	0.33	2	0.33	U	0.33	1.3	0.33	2.7	0.33	U	0.33	1.2	0.33	0.76	0.33	U	0.33	1.3	0.33	6.1	0.33	0.72
Phenol	1.80E+05	8.10E+00	0.33	U	0.33	U																								
Pyrene(PAH)	Not Listed	Not Listed	0.33	1.7	0.33	U	0.33	5.6	0.33	2.6	0.33	U	0.33	2.1	0.33	2.7	0.33	U	0.33	3.1	0.33	0.9	0.33	U	0.33	1.6	0.33	6.8	0.33	0.54
Pyridine	1.00E+03	9.70E-03																												
Trichlorofluoromethane	3.40E+03	8.40E-01																												

Notes:
Bold - Detected concentration exceeds Industrial Soil SSL
Bold - Detected concentration exceeds Protection of GW SSL

Analyte	USEPA SSL Industrial Soil mg/kg	USEPA SSL Protection of GW mg/kg	SB05,2-4		SB05,5-7		SB05,8-10		SB06,2-4		SB06,5-7		SB06,8-10		SB07,2-4		SB07,5-7		SB07,8-10		SB08,2-4		SB08,5-7		SB08,8-10		SADF22003,0-2		A4-C,15-17	
			AOC C - NOVEMBER 1997		AOC C - NOVEMBER 1997		AOC C - NOVEMBER 1997		AOC C - NOVEMBER 1997		AOC C - NOVEMBER 1997		AOC C - NOVEMBER 1997		AOC C - NOVEMBER 1997		AOC C - NOVEMBER 1997		AOC C - NOVEMBER 1997		AOC C - NOVEMBER 1997		AOC C - NOVEMBER 1997		AOC C - NOVEMBER 1997		AOC E - DECEMBER 1994		SWMU #1 - 8/23/1995	
			DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg
1,2,4-Trichlorobenzene	Not Listed	Not Listed																												
2,4,5 -Trichlorophenol	6.20E+04	9.40E+00																									0.33	U		
2,4,6-Trichlorophenol	1.60E+02	1.60E-02																												
2,4-Dichlorophenol	1.80E+03	1.80E-01																												
2,4-Dimethylphenol	1.20E+04	1.20E+00																												
2,4-Dinitrophenol	1.20E+03	6.80E-02																												
2,4-Dinitrotoluene	5.50E+00	2.00E-04																												
2,6-Dinitrotoluene	6.20E+02	3.40E-02																												
2-Chloronaphthalene	8.20E+04	1.80E+01																												
2-Chlorophenol	5.10E+03	2.00E-01																												
2-Methylphenol	3.10E+04	2.00E+00																												
2-Nitroaniline	1.80E+03	**3.30E-02**																									0.33	U		
2-Methylnaphthalene	4.10E+03	**9.00E-01**	0.33	U	0.33	U			0.33	U	0.33	U	0.33	U	0.33	U	0.33	U			0.33	U	0.33	U	0.33	**1.9**				
2-Nitrophenol	Not Listed	Not Listed																												
3,3-Dichlorobenzidine	3.80E+00	2.30E-03																												
3-Methylphenol	3.10E+04	1.90E+00																												
3-Nitroaniline	Not Listed	Not Listed																												
4,6-Dinitro-2-Methylphenol	6.20E+01	5.10E-03																												
4-Bromophenyl-phenylether	Not Listed	Not Listed																												
4-Chloro-3-Methylphenol	Not Listed	Not Listed																												
4-Chloroaniline	8.60E+00	1.20E-04																												
4-Chlorophenyl-phenyl ether	Not Listed	Not Listed																												
4-Methylphenol	3.10E+03	1.90E-01																												
4-Nitroaniline	8.60E+01	1.00E-03																												
4-Nitrophenol	Not Listed	Not Listed																												
Acenaphthene (PAH)	3.30E+04	2.70E+01	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	0.33	0.33	U	0.33	U	0.33	U	0.33	U	0.33	4.4	0.33	U		
Acenaphtylene	Not Listed	Not Listed																												
Anthracene (PAH)	1.70E+05	4.50E+02	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	0.79	0.33	U	0.33	U	0.33	U	0.33	U	0.33	12	0.33	U		
Benzo(a)anthracene (PAH)	***2.10E+00***	**1.40E-02**	0.33	U	0.33	U	0.33	**0.48**	0.33	**0.42**	0.33	**0.37**	0.33	U	0.33	**1.7**	0.33	U	0.33	U	0.33	**1.8**	0.33	**0.42**	0.33	***12***	0.33	**1.4**		
Benzo(a)pyrene (PAH)	***2.10E-01***	**3.10E-01**	0.33	U	0.33	U	0.33	***0.42***	0.33	***0.48***	0.33	U	0.33	U	0.33	**1.6**	0.33	U	0.33	U	0.33	***2.5***	0.33	***0.4***	0.33	***9***	0.33	***1.99***		
Benzo(b)fluoranthene (PAH)	***2.10E+00***	**4.70E-02**	0.33	U	0.33	U	0.33	**0.58**	0.33	**0.64**	0.33	**0.51**	0.33	U	0.33	**2**	0.33	U	0.33	U	0.33	***2.6***	0.33	**1.1**	0.33	***8.6***	0.33	***3.94***		
Benzo(g,h,I)perylene(PAH)	Not Listed	Not Listed	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	0.4	0.33	U	0.33	U	0.33	0.74	0.33	U	0.33	1.2	0.33	3.74		
Benzo(k)fluoranthene(PAH)	2.10E+01	**4.60E-01**	0.33	U	0.33	U	0.33	0.43	0.33	**0.6**	0.33	U	0.33	U	0.33	**1.4**	0.33	U	0.33	U	0.33	**2.5**	0.33	**0.49**	0.33	**8.3**	0.33	**2.81**		
Benzoic Acid	2.50E+06	3.30E+01																									0.33	U		
Benzyl Alcohol	3.10E+05	4.20E+00																												
Bis (2-Chloroetheyl) Ether	9.00E-01	2.70E-06																												
Bis (2-Chloroethoxy) Methane	1.80E+03	2.30E-02																												
Bis (2-Chloroisopropyl) Ether	1.70E+01	9.00E-05																												
Bis (2-Ethylhexyl) Phthalate	1.20E+02	2.00E+00																												
Butylbenzylphthalate	9.10E+02	6.70E-01																												
Carbazole	Not Listed	Not Listed																									0.33	U		
Chrysene (PAH)	2.10E+02	**1.40E+00**	0.33	U	0.33	0.34	0.33	0.54	0.33	0.59	0.33	0.42	0.33	U	0.33	**1.9**	0.33	U	0.33	U	0.33	**2.3**	0.33	0.76	0.33	**12**	0.33	**2.13**		
Cresol	9.30E+04	1.00E+00																												
Cyclohexane	3.00E+04	1.30E+01																											0.33	U
Dibenzo(a,h)anthracene(PAH)	***2.10E-01***	**1.00E+00**	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	***0.44***	0.33	U	0.33	U	0.33	***0.77***	0.33	U	0.33	***1.9***	0.33	***0.97***		
Dibenzofuran (PAH)	Not Listed	Not Listed	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	0.48	0.33	U		
o-Dichlorobenzene	1.00E+04	6.60E-01																											0.005	U
Diethyl phthalate	4.90E+05	1.30E+01																												
Dimethylphthalate	Not Listed	Not Listed																												
Di-n-Butylphthalate	6.20E+04	1.10E+01																												
Di-n-octylphthalate	Not Listed	Not Listed																												
Fluoranthene (PAH)	2.20E+04	2.10E+02	0.33	0.56	0.33	0.47	0.33	0.89	0.33	0.63	0.33	0.71	0.33	U	0.33	3	0.33	U	0.33	U	0.33	2.6	0.33	0.72	0.33	27	0.33	1.3		
Fluorene (PAH)	2.20E+04	3.30E+01	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	6	0.33	U		
Hexachlorobenzene	1.10E+00	7.00E-03																												
Hexachlorobutadiene	2.20E+01	1.90E-03																												
Hexachlorocyclopentadiene	3.70E+03	1.80E-01																												
Hexachloroethane	1.20E+02	3.20E-03																												
Indeno(1,2,3-cd)pyrene(PAH)	***2.10E+00***	**1.60E-01**	0.33	U	0.33	U	0.33	U	0.33	**0.36**	0.33	U	0.33	U	0.33	**0.97**	0.33	U	0.33	U	0.33	**1.8**	0.33	**0.34**	0.33	***3.7***	0.33	***3.2***		
Isophorone	1.80E+03	2.20E-02																												
Nitrobenzene	2.20E+01	7.10E-05																											1.0	U
n-Nitroso-Di-n Propylamine	2.50E-01	1.10E-05																												
n-Nitrosodiphenylamine	3.50E+02	1.70E-01																												
Pentachlorophenol	9.00E+00	7.00E-03	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U		
Phenanthrene(PAH)	Not Listed	Not Listed	0.33	0.44	0.33	U	0.33	0.67	0.33	0.54	0.33	0.61	0.33	U	0.33	2.6	0.33	U	0.33	U	0.33	1.4	0.33	U	0.33	32	0.33	0.92		
Phenol	1.80E+05	8.10E+00																									0.33	U		
Pyrene(PAH)	Not Listed	Not Listed	0.33	0.43	0.33	0.39	0.33	1	0.33	0.76	0.33	0.74	0.33	U	0.33	3.9	0.33	U	0.33	U	0.33	2.8	0.33	0.8	0.33	30	0.33	2.05		
Pyridine	1.00E+03	9.70E-03																											0.33	U
Trichlorofluoromethane	3.40E+03	8.40E-01																											1	U

Notes:
Bold - Detected concentration exceeds Industrial Soil SSL
Bold - Detected concentration exceeds Protection of GW SSL

Analyte	USEPA SSL Industrial Soil mg/kg	USEPA SSL Protection of GW mg/kg	A5-C,15-17		A6-C,15-17		A7-C,15-17		A8-B,15-17		A13-A,5-7		A14-A,5-7		A15-A,5-7		A16-A,5-7		SADF22006,0-6		SADF29003,0-2		SADF29004,5.5		SB01,3-5		SB01,8-10		SB01,12-14		SB01,15-17	
			SWMU #1 - 8/23/1995		SWMU #1 - 8/23/1995		SWMU #1 - 8/24/1995		SWMU #1 - 8/24/1995		SWMU #1 - 8/23/1995		SWMU #1 - 8/23/1995		SWMU #1 - 8/23/1995		SWMU #1 - 8/24/1995		SWMU #7 - FEBRUARY 1995		SWMU #10 - FEBRUARY 1995		SWMU #10 - FEBRUARY 1995		SWMU #10 - JULY 1997		SWMU #10 - JULY 1997		SWMU #10 - JULY 1997		SWMU #10 - JULY 1997	
			DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg
1,2,4-Trichlorobenzene	Not Listed	Not Listed																														
2,4,5 -Trichlorophenol	6.20E+04	9.40E+00																	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U
2,4,6-Trichlorophenol	1.60E+02	1.60E-02																														
2,4-Dichlorophenol	1.80E+03	1.80E-01																														
2,4-Dimethylphenol	1.20E+04	1.20E+00																														
2,4-Dinitrophenol	1.20E+03	6.80E-02																														
2,4-Dinitrotoluene	5.50E+00	2.00E-04																														
2,6-Dinitrotoluene	6.20E+02	3.40E-02																														
2-Chloronaphthalene	8.20E+04	1.80E+01																														
2-Chlorophenol	5.10E+03	2.00E-01																														
2-Methylphenol	3.10E+04	2.00E+00																														
2-Nitroaniline	1.80E+03	**3.30E-02**																														
2-Methylnaphthalene	4.10E+03	**9.00E-01**																									0.33	U				
2-Nitrophenol	Not Listed	Not Listed																														
3,3-Dichlorobenzidine	3.80E+00	2.30E-03																														
3-Methylphenol	3.10E+04	1.90E+00																														
3-Nitroaniline	Not Listed	Not Listed																														
4,6-Dinitro-2-Methylphenol	6.20E+01	5.10E-03																														
4-Bromophenyl-phenylether	Not Listed	Not Listed																														
4-Chloro-3-Methylphenol	Not Listed	Not Listed																														
4-Chloroaniline	8.60E+00	1.20E-04																														
4-Chlorophenyl-phenyl ether	Not Listed	Not Listed																														
4-Methylphenol	3.10E+03	1.90E-01																	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U
4-Nitroaniline	8.60E+01	1.00E-03																														
4-Nitrophenol	Not Listed	Not Listed																														
Acenaphthene (PAH)	3.30E+04	2.70E+01																	0.33	U	0.01	U	0.01	U	0.33	U	0.33	U	0.33	U	0.33	U
Acenaphtylene	Not Listed	Not Listed																														
Anthracene (PAH)	1.70E+05	4.50E+02																	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U
Benzo(a)anthracene (PAH)	***2.10E+00***	**1.40E-02**																	0.33	U	0.33	**0.78**	0.33	**0.78**	0.33	**0.7**	0.33	**0.6**	0.33	U	0.33	U
Benzo(a)pyrene (PAH)	***2.10E-01***	**3.10E-01**																	0.33	U	0.33	***1***	0.33	***1.1***	0.33	***0.85***	0.33	***0.81***	0.33	U	0.33	U
Benzo(b)fluoranthene (PAH)	***2.10E+00***	**4.70E-02**																	0.33	U	0.33	***2.8***	0.33	**1.5**	0.33	**1.4**	0.33	**1.4**	0.33	U	0.33	**0.36**
Benzo(g,h,I)perylene(PAH)	Not Listed	Not Listed																	0.33	U	0.33	0.978	0.33	1.3	0.33	0.41	0.33	0.38	0.33	U	0.33	U
Benzo(k)fluoranthene(PAH)	2.10E+01	**4.60E-01**																	0.33	U	0.33	**0.83**	0.33	**1**	0.33	**0.73**	0.33	**0.57**	0.33	U	0.33	U
Benzoic Acid	2.50E+06	3.30E+01																														
Benzyl Alcohol	3.10E+05	4.20E+00																	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U
Bis (2-Chloroetheyl) Ether	9.00E-01	2.70E-06																														
Bis (2-Chloroethoxy) Methane	1.80E+03	2.30E-02																														
Bis (2-Chloroisopropyl) Ether	1.70E+01	9.00E-05																														
Bis (2-Ethylhexyl) Phthalate	1.20E+02	2.00E+00																														
Butylbenzylphthalate	9.10E+02	6.70E-01																														
Carbazole	Not Listed	Not Listed																	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U
Chrysene (PAH)	2.10E+02	**1.40E+00**																	0.33	U	0.33	1.4	0.33	1.1	0.33	1	0.33	0.88	0.33	U	0.33	U
Cresol	9.30E+04	1.00E+00																	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U
Cyclohexane	3.00E+04	1.30E+01	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U														
Dibenzo(a,h)anthracene(PAH)	***2.10E-01***	**1.00E+00**																	0.33	U	0.33	***0.67***	0.33	***0.51***	0.33	***0.38***	0.33	U	0.33	U	0.33	U
Dibenzofuran (PAH)	Not Listed	Not Listed																	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U
o-Dichlorobenzene	1.00E+04	6.60E-01	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U														
Diethyl phthalate	4.90E+05	1.30E+01																														
Dimethylphthalate	Not Listed	Not Listed																														
Di-n-Butylphthalate	6.20E+04	1.10E+01																														
Di-n-octylphthalate	Not Listed	Not Listed																														
Fluoranthene (PAH)	2.20E+04	2.10E+02																	0.33	0.725	0.33	0.78	0.33	U	0.33	0.87	0.33	0.62	0.33	U	0.33	0.49
Fluorene (PAH)	2.20E+04	3.30E+01																	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U
Hexachlorobenzene	1.10E+00	7.00E-03																														
Hexachlorobutadiene	2.20E+01	1.90E-03																														
Hexachlorocyclopentadiene	3.70E+03	1.80E-01																														
Hexachloroethane	1.20E+02	3.20E-03																														
Indeno(1,2,3-cd)pyrene(PAH)	***2.10E+00***	**1.60E-01**																	0.33	U	0.33	**1.4**	0.33	**1.2**	0.33	**0.7**	0.33	**0.64**	0.33	U	0.33	U
Isophorone	1.80E+03	2.20E-02																														
Nitrobenzene	2.20E+01	7.10E-05	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U														
n-Nitroso-Di-n Propylamine	2.50E-01	1.10E-05																														
n-Nitrosodiphenylamine	3.50E+02	1.70E-01																														
Pentachlorophenol	9.00E+00	7.00E-03																	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U
Phenanthrene(PAH)	Not Listed	Not Listed																	0.33	0.619	0.33	0.64	0.33	U	0.33	0.53	0.33	U	0.33	U	0.33	U
Phenol	1.80E+05	8.10E+00																	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U
Pyrene(PAH)	Not Listed	Not Listed																	0.33	0.543	0.33	1.1	0.33	0.82	0.33	1.5	0.33	1.6	0.33	U	0.33	0.38
Pyridine	1.00E+03	9.70E-03	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U														
Trichlorofluoromethane	3.40E+03	8.40E-01	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U														

Notes:
Bold - Detected concentration exceeds Industrial Soil SSL
Bold - Detected concentration exceeds Protection of GW SSL

Analyte	USEPA SSL Industrial Soil mg/kg	USEPA SSL Protection of GW mg/kg	SB02,3-5		SB02,8-10		SB02,12-14		SB03,2-4		SB04,3-5		SB04,8-10		SB04,12-14		SB04,16-18		SB05,3-5		SB05,8-10		SB05,14-16		SB07,3-5		SB07,8-10		SB07,11-15		SB07,15-18	
			SWMU #10 - JULY 1997		SWMU #10 - JULY 1997		SWMU #10 - JULY 1997		SWMU #10 - JULY 1997		SWMU #10 - JULY 1997		SWMU #10 - JULY 1997		SWMU #10 - JULY 1997		SWMU #10 - JULY 1997		SWMU #10 - JULY 1997		SWMU #10 - JULY 1997		SWMU #10 - JULY 1997		SWMU #10 - JULY 1997		SWMU #10 - JULY 1997		SWMU #10 - JULY 1997		SWMU #10 - JULY 1997	
			DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg
1,2,4-Trichlorobenzene	Not Listed	Not Listed																														
2,4,5 -Trichlorophenol	6.20E+04	9.40E+00	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U
2,4,6-Trichlorophenol	1.60E+02	1.60E-02																														
2,4-Dichlorophenol	1.80E+03	1.80E-01																														
2,4-Dimethylphenol	1.20E+04	1.20E+00																														
2,4-Dinitrophenol	1.20E+03	6.80E-02																														
2,4-Dinitrotoluene	5.50E+00	2.00E-04																														
2,6-Dinitrotoluene	6.20E+02	3.40E-02																														
2-Chloronaphthalene	8.20E+04	1.80E+01																														
2-Chlorophenol	5.10E+03	2.00E-01																														
2-Methylphenol	3.10E+04	2.00E+00																														
2-Nitroaniline	1.80E+03	**3.30E-02**																														
2-Methylnaphthalene	4.10E+03	**9.00E-01**			0.33	U			0.33	U			0.33	U							0.33	U					0.33	U				
2-Nitrophenol	Not Listed	Not Listed																														
3,3-Dichlorobenzidine	3.80E+00	2.30E-03																														
3-Methylphenol	3.10E+04	1.90E+00																														
3-Nitroaniline	Not Listed	Not Listed																														
4,6-Dinitro-2-Methylphenol	6.20E+01	5.10E-03																														
4-Bromophenyl-phenylether	Not Listed	Not Listed																														
4-Chloro-3-Methylphenol	Not Listed	Not Listed																														
4-Chloroaniline	8.60E+00	1.20E-04																														
4-Chlorophenyl-phenyl ether	Not Listed	Not Listed																														
4-Methylphenol	3.10E+03	1.90E-01	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U
4-Nitroaniline	8.60E+01	1.00E-03																														
4-Nitrophenol	Not Listed	Not Listed																														
Acenaphthene (PAH)	3.30E+04	2.70E+01	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U
Acenaphtylene	Not Listed	Not Listed																														
Anthracene (PAH)	1.70E+05	4.50E+02	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	0.58	0.33	U	0.33	U	0.33	U
Benzo(a)anthracene (PAH)	***2.10E+00***	**1.40E-02**	0.33	**0.62**	0.33	**0.73**	0.33	**0.39**	0.33	**0.53**	0.33	**0.34**	0.33	**1.4**	0.33	U	0.33	U	0.33	**0.51**	0.33	**0.58**	0.33	**0.4**	0.33	***2.2***	0.33	**0.87**	0.33	**0.33**	0.33	U
Benzo(a)pyrene (PAH)	***2.10E-01***	**3.10E-01**	0.33	***0.67***	0.33	***0.66***	0.33	***0.56***	0.33	***0.68***	0.33	***0.4***	0.33	***1.9***	0.33	U	0.33	U	0.33	***0.43***	0.33	***0.64***	0.33	***0.37***	0.33	***2.2***	0.33	***0.94***	0.33	***0.34***	0.33	U
Benzo(b)fluoranthene (PAH)	***2.10E+00***	**4.70E-02**	0.33	**2**	0.33	**1.2**	0.33	**1.1**	0.33	**1.2**	0.33	**0.77**	0.33	***2.7***	0.33	**0.47**	0.33	U	0.33	**1.3**	0.33	**0.86**	0.33	**0.72**	0.33	***2.8***	0.33	**1.4**	0.33	**0.48**	0.33	U
Benzo(g,h,I)perylene(PAH)	Not Listed	Not Listed	0.33	0.51	0.33	0.34	0.33	0.39	0.33	0.34	0.33	U	0.33	0.83	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	0.81	0.33	0.49	0.33	U	0.33	U
Benzo(k)fluoranthene(PAH)	2.10E+01	**4.60E-01**	0.33	**0.65**	0.33	**0.58**	0.33	**0.53**	0.33	**0.55**	0.33	0.36	0.33	**1.8**	0.33	U	0.33	U	0.33	**0.56**	0.33	**0.75**	0.33	0.36	0.33	**2.1**	0.33	**0.84**	0.33	U	0.33	U
Benzoic Acid	2.50E+06	3.30E+01																														
Benzyl Alcohol	3.10E+05	4.20E+00	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U
Bis (2-Chloroetheyl) Ether	9.00E-01	2.70E-06																														
Bis (2-Chloroethoxy) Methane	1.80E+03	2.30E-02																														
Bis (2-Chloroisopropyl) Ether	1.70E+01	9.00E-05																														
Bis (2-Ethylhexyl) Phthalate	1.20E+02	2.00E+00																														
Butylbenzylphthalate	9.10E+02	6.70E-01																														
Carbazole	Not Listed	Not Listed	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U
Chrysene (PAH)	2.10E+02	**1.40E+00**	0.33	1.1	0.33	0.92	0.33	0.71	0.33	0.67	0.33	0.48	0.33	**2**	0.33	U	0.33	U	0.33	0.76	0.33	0.75	0.33	0.54	0.33	**2.3**	0.33	1	0.33	0.38	0.33	U
Cresol	9.30E+04	1.00E+00	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U
Cyclohexane	3.00E+04	1.30E+01																														
Dibenzo(a,h)anthracene(PAH)	***2.10E-01***	**1.00E+00**	0.33	***0.52***	0.33	U	0.33	U	0.33	U	0.33	U	0.33	***0.72***	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	***0.86***	0.33	***0.43***	0.33	U	0.33	U
Dibenzofuran (PAH)	Not Listed	Not Listed	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U
o-Dichlorobenzene	1.00E+04	6.60E-01																														
Diethyl phthalate	4.90E+05	1.30E+01																														
Dimethylphthalate	Not Listed	Not Listed																														
Di-n-Butylphthalate	6.20E+04	1.10E+01																														
Di-n-octylphthalate	Not Listed	Not Listed																														
Fluoranthene (PAH)	2.20E+04	2.10E+02	0.33	0.93	0.33	1.5	0.33	0.58	0.33	0.96	0.33	0.68	0.33	1.4	0.33	U	0.33	U	0.33	0.84	0.33	0.94	0.33	0.75	0.33	2.5	0.33	1.5	0.33	0.64	0.33	U
Fluorene (PAH)	2.20E+04	3.30E+01	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U
Hexachlorobenzene	1.10E+00	7.00E-03																														
Hexachlorobutadiene	2.20E+01	1.90E-03																														
Hexachlorocyclopentadiene	3.70E+03	1.80E-01																														
Hexachloroethane	1.20E+02	3.20E-03																														
Indeno(1,2,3-cd)pyrene(PAH)	***2.10E+00***	**1.60E-01**	0.33	**0.93**	0.33	**0.61**	0.33	**0.62**	0.33	**0.64**	0.33	**0.38**	0.33	**1.6**	0.33	U	0.33	U	0.33	**0.69**	0.33	**0.53**	0.33	**0.34**	0.33	**1.6**	0.33	**0.9**	0.33	U	0.33	U
Isophorone	1.80E+03	2.20E-02																														
Nitrobenzene	2.20E+01	7.10E-05																														
n-Nitroso-Di-n Propylamine	2.50E-01	1.10E-05																														
n-Nitrosodiphenylamine	3.50E+02	1.70E-01																														
Pentachlorophenol	9.00E+00	7.00E-03	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U
Phenanthrene(PAH)	Not Listed	Not Listed	0.33	0.69	0.33	1.1	0.33	U	0.33	0.51	0.33	U	0.33	0.52	0.33	U	0.33	U	0.33	U	0.33	0.5	0.33	0.42	0.33	2.1	0.33	0.91	0.33	0.36	0.33	U
Phenol	1.80E+05	8.10E+00	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U
Pyrene(PAH)	Not Listed	Not Listed	0.33	1.4	0.33	1.8	0.33	0.84	0.33	1.3	0.33	0.89	0.33	2.9	0.33	0.46	0.33	U	0.33	0.56	0.33	0.96	0.33	0.62	0.33	2.5	0.33	1.3	0.33	0.52	0.33	U
Pyridine	1.00E+03	9.70E-03																														
Trichlorofluoromethane	3.40E+03	8.40E-01																														

Notes:
Bold - Detected concentration exceeds Industrial Soil SSL
Bold - Detected concentration exceeds Protection of GW SSL

Analyte	USEPA SSL Industrial Soil mg/kg	USEPA SSL Protection of GW mg/kg	SB08,3-5		SB08,8-10		SB08,12-14		SB09,0-3.5		SB10,3-5		SB10,8-10		SB10,12-14		SB10,14.5-16		SB11,1-3.5		SB12,1-3.5		Warehouse Pad	
			SWMU #10 - JULY 1997		SWMU #10 - JULY 1997		SWMU #10 - JULY 1997		SWMU #10 - JULY 1997		SWMU #10 - JULY 1997		SWMU #10 - JULY 1997		SWMU #10 - JULY 1997		SWMU #10 - JULY 1997		SWMU #10 - JULY 1997		SWMU #10 - JULY 1997		AOC D - March 23, 2000	
			DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg	DET. LIMIT mg/kg	CONC. DET. mg/kg
1,2,4-Trichlorobenzene	Not Listed	Not Listed																					1.65	U
2,4,5 -Trichlorophenol	6.20E+04	9.40E+00	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	1.65	U
2,4,6-Trichlorophenol	1.60E+02	1.60E-02																					1.65	U
2,4-Dichlorophenol	1.80E+03	1.80E-01																					1.65	U
2,4-Dimethylphenol	1.20E+04	1.20E+00																					1.65	U
2,4-Dinitrophenol	1.20E+03	6.80E-02																					4.15	U
2,4-Dinitrotoluene	5.50E+00	2.00E-04																					1.65	U
2,6-Dinitrotoluene	6.20E+02	3.40E-02																					1.65	U
2-Chloronaphthalene	8.20E+04	1.80E+01																					1.65	U
2-Chlorophenol	5.10E+03	2.00E-01																					1.65	U
2-Methylphenol	3.10E+04	2.00E+00																					1.65	U
2-Nitroaniline	1.80E+03	**3.30E-02**																					4.15	U
2-Methylnaphthalene	4.10E+03	**9.00E-01**																					1.65	U
2-Nitrophenol	Not Listed	Not Listed																					1.65	U
3,3-Dichlorobenzidine	3.80E+00	2.30E-03																					1.65	U
3-Methylphenol	3.10E+04	1.90E+00																					1.65	U
3-Nitroaniline	Not Listed	Not Listed																					4.15	U
4,6-Dinitro-2-Methylphenol	6.20E+01	5.10E-03																					4.15	U
4-Bromophenyl-phenylether	Not Listed	Not Listed																					1.65	U
4-Chloro-3-Methylphenol	Not Listed	Not Listed																					1.65	U
4-Chloroaniline	8.60E+00	1.20E-04																					1.65	U
4-Chlorophenyl-phenyl ether	Not Listed	Not Listed																					1.65	U
4-Methylphenol	3.10E+03	1.90E-01	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	1.65	U
4-Nitroaniline	8.60E+01	1.00E-03																					4.15	U
4-Nitrophenol	Not Listed	Not Listed																					4.15	U
Acenaphthene (PAH)	3.30E+04	2.70E+01	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	1.65	0.610 J
Acenaphtylene	Not Listed	Not Listed																					1.65	U
Anthracene (PAH)	1.70E+05	4.50E+02	0.33	0.37	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	1.65	1.2
Benzo(a)anthracene (PAH)	***2.10E+00***	**1.40E-02**	0.33	**2**	0.33	U	0.33	U	0.33	**1.3**	0.33	U	0.33	U	0.33	U	0.33	U	0.33	**1.6**	0.33	**1.4**	1.65	***3.4***
Benzo(a)pyrene (PAH)	***2.10E-01***	**3.10E-01**	0.33	***2.1***	0.33	***0.34***	0.33	U	0.33	***1.6***	0.33	U	0.33	U	0.33	U	0.33	U	0.33	***2.1***	0.33	***1.6***	1.65	***2.2***
Benzo(b)fluoranthene (PAH)	***2.10E+00***	**4.70E-02**	0.33	**2.1**	0.33	**0.52**	0.33	U	0.33	***2.7***	0.33	U	0.33	U	0.33	U	0.33	U	0.33	**1.6**	0.33	**1.6**	1.65	***3***
Benzo(g,h,I)perylene(PAH)	Not Listed	Not Listed	0.33	0.98	0.33	U	0.33	U	0.33	0.72	0.33	U	0.33	U	0.33	U	0.33	U	0.33	0.9	0.33	0.82	1.65	0.41
Benzo(k)fluoranthene(PAH)	2.10E+01	**4.60E-01**	0.33	**1.6**	0.33	0.34	0.33	U	0.33	**1.2**	0.33	U	0.33	U	0.33	U	0.33	U	0.33	**1.9**	0.33	**1.1**	1.65	**2.6**
Benzoic Acid	2.50E+06	3.30E+01																					4.15	U
Benzyl Alcohol	3.10E+05	4.20E+00	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	1.65	U
Bis (2-Chloroetheyl) Ether	9.00E-01	2.70E-06																					1.65	U
Bis (2-Chloroethoxy) Methane	1.80E+03	2.30E-02																					1.65	U
Bis (2-Chloroisopropyl) Ether	1.70E+01	9.00E-05																					1.65	U
Bis (2-Ethylhexyl) Phthalate	1.20E+02	2.00E+00																					1.65	U
Butylbenzylphthalate	9.10E+02	6.70E-01																					1.65	U
Carbazole	Not Listed	Not Listed	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U		
Chrysene (PAH)	2.10E+02	**1.40E+00**	0.33	**2.3**	0.33	0.4	0.33	U	0.33	**1.8**	0.33	U	0.33	U	0.33	U	0.33	U	0.33	**2.1**	0.33	**1.8**	1.65	**3.5**
Cresol	9.30E+04	1.00E+00	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U		
Cyclohexane	3.00E+04	1.30E+01																						
Dibenzo(a,h)anthracene(PAH)	***2.10E-01***	**1.00E+00**	0.33	***1***	0.33	U	0.33	U	0.33	***0.67***	0.33	U	0.33	U	0.33	U	0.33	U	0.33	***0.86***	0.33	***0.68***	1.65	***0.68***
Dibenzofuran (PAH)	Not Listed	Not Listed	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	1.65	0.39
o-Dichlorobenzene	1.00E+04	6.60E-01																						
Diethyl phthalate	4.90E+05	1.30E+01																					1.65	U
Dimethylphthalate	Not Listed	Not Listed																					1.65	U
Di-n-Butylphthalate	6.20E+04	1.10E+01																					1.65	U
Di-n-octylphthalate	Not Listed	Not Listed																					1.65	U
Fluoranthene (PAH)	2.20E+04	2.10E+02	0.33	2.7	0.33	0.66	0.33	U	0.33	1.6	0.33	U	0.33	U	0.33	U	0.33	U	0.33	1.9	0.33	1.8	1.65	6.7
Fluorene (PAH)	2.20E+04	3.30E+01	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	1.65	0.480 J
Hexachlorobenzene	1.10E+00	7.00E-03																					1.65	U
Hexachlorobutadiene	2.20E+01	1.90E-03																					1.65	U
Hexachlorocyclopentadiene	3.70E+03	1.80E-01																					1.65	U
Hexachloroethane	1.20E+02	3.20E-03																					1.65	U
Indeno(1,2,3-cd)pyrene(PAH)	***2.10E+00***	**1.60E-01**	0.33	**1.8**	0.33	U	0.33	U	0.33	**1.4**	0.33	U	0.33	U	0.33	U	0.33	U	0.33	**1.8**	0.33	**1.6**	1.65	**1.3 J**
Isophorone	1.80E+03	2.20E-02																					1.65	U
Nitrobenzene	2.20E+01	7.10E-05																					1.65	U
n-Nitroso-Di-n Propylamine	2.50E-01	1.10E-05																					1.65	U
n-Nitrosodiphenylamine	3.50E+02	1.70E-01																					1.65	U
Pentachlorophenol	9.00E+00	7.00E-03	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	4.15	U
Phenanthrene(PAH)	Not Listed	Not Listed	0.33	1.6	0.33	U	0.33	U	0.33	0.77	0.33	U	0.33	U	0.33	U	0.33	U	0.33	1.4	0.33	1.2	1.65	5.1
Phenol	1.80E+05	8.10E+00	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	1.65	U
Pyrene(PAH)	Not Listed	Not Listed	0.33	2.4	0.33	0.4	0.33	U	0.33	2.4	0.33	U	0.33	U	0.33	U	0.33	U	0.33	1.7	0.33	2.7	1.65	5.4
Pyridine	1.00E+03	9.70E-03																						
Trichlorofluoromethane	3.40E+03	8.40E-01																						

Notes:
Bold - Detected concentration exceeds Industrial Soil SSL
Bold - Detected concentration exceeds Protection of GW SSL

Analyte	USEPA SSL Industrial Soil	USEPA SSL Protection of GW	SADF22001,0-2		SADF22002,2-4		SB01,2-4		SB01,5-7		SB01,8-10		SB02,2-4		SB02,5-7		SB02,8-10		SB03,2-4		SB03,5-7		SB03,8-10		SB04,2-4	
			AOC C - DECEMBER 1994		AOC C - DECEMBER 1994		AOC C - NOVEMBER 1997		AOC C - NOVEMBER 1997		AOC C - NOVEMBER 1997		AOC C - NOVEMBER 1997		AOC C - NOVEMBER 1997		AOC C - NOVEMBER 1997		AOC C - NOVEMBER 1997		AOC C - NOVEMBER 1997		AOC C - NOVEMBER 1997		AOC C - NOVEMBER 1997	
			DET. LIMIT	CONC. DET.	DET. LIMIT	CONC. DET.	DET. LIMIT	CONC. DET.	DET. LIMIT	CONC. DET.	DET. LIMIT	CONC. DET.	DET. LIMIT	CONC. DET.	DET. LIMIT	CONC. DET.	DET. LIMIT	CONC. DET.	DET. LIMIT	CONC. DET.	DET. LIMIT	CONC. DET.	DET. LIMIT	CONC. DET.	DET. LIMIT	CONC. DET.
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Aluminum	9.90E+05	5.50E+04	1	7200	1	5370																				
Antimony	4.10E+02	**2.70E-01**	1.2	**9.04**	1.2	**9.88**																				
Arsenic	***1.60E+00***	**2.90E-01**	1	***53.4***	1	***38.6***	1	***54***	1	***10.4***	1	***3.26***	1	***42.5***	1	***7.51***	1	***4.34***	1	***21.5***	1	***7.38***	1	***5.34***	1	***9.46***
Barium	1.90E+05	**8.20E+01**	0.4	**113**	0.4	43.8	0.4	**118**	0.4	70.9	0.4	74.5	0.4	**96.1**	0.4	74.1	0.4	63.6	0.4	43.7	0.4	50.4	0.4	**104**	0.4	41.9
Beryllium	2.00E+03	3.20E+00	0.1	1.06	0.1	0.714																				
Cadmium	8.00E+02	**3.80E-01**	0.1	**1.2**	0.1	**0.627**	0.1	**1.98**	0.1	**6.06**	0.1	0.304	0.1	0.05	0.1	0.231	0.1	0.185	0.1	0.05	0.1	0.132	0.1	0.191	0.1	0.192
Calcium	Not Listed	Not Listed	10	25600	10	3220																				
Chromium	1.50E+06	1.80E+05	0.2	23.1	0.2	10.8	3.2	159	0.2	12.3	0.2	12.1	0.2	43.6	0.2	10.3	0.2	11	0.2	14.2	0.2	9.26	0.2	11	0.2	13.7
Cobalt	3.00E+02	**4.90E-01**	0.2	**8.68**	0.2	**6.47**																				
Copper	Not Listed	Not Listed	0.2	111	0.2	44.4																				
Iron	7.20E+05	Not Listed	1	27200	1	40000																				
Lead	***8.00E+02***	Not Listed	1	156	1	29.9	1	159	1	130	1	5.99	1	42.2	1	158	1	6.7	1	27.5	1	56.1	1	20	1	22.6
Magnesium	Not Listed	Not Listed	10	3480	10	1030																				
Manganese	Not Listed	Not Listed	0.4	375	0.4	350																				
Mercury	2.40E+01	**1.00E-01**					0.2	**0.277**	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Molybdenum	5.10E+03	**3.70E+00**	1	**3.8**	1	3.3																				
Nickel	2.00E+04	4.80E+01	0.2	19.5	0.2	13.5																				
Potassium	Not Listed	Not Listed	40	1050	40	617																				
Selenium	5.10E+03	**2.60E-01**	2	**0.94**	2	**1.3**	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
Silver	5.10E+03	**1.60E+00**	0.2	0.17	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Sodium	Not Listed	Not Listed	10	301	10	206																				
Thallium	6.60E+01	**1.40E-01**	2	U	2	**0.48**																				
Titanium	Not Listed	Not Listed																								
Vanadium	7.20E+03	2.60E+02	1	30.7	1	38.9																				
Zinc	3.10E+05	**6.80E+02**	0.3	166	0.3	18.8																				

Notes:
Bold - Detected concentration exceeds Industrial Soil SSL
Bold - Detected concentration exceeds Protection of GW SSL

Analyte	USEPA SSL Industrial Soil	USEPA SSL Protection of GW	SB04,5-7		SB04,8-10		SB05,2-4		SB05,5-7		SB05,8-10		SB06,2-4		SB06,5-7		SB06,8-10		SB07,2-4		SB07,5-7		SB07,8-10		SB08,2-4	
			AOC C - NOVEMBER 1997		AOC C - NOVEMBER 1997		AOC C - NOVEMBER 1997		AOC C - NOVEMBER 1997		AOC C - NOVEMBER 1997		AOC C - NOVEMBER 1997		AOC C - NOVEMBER 1997		AOC C - NOVEMBER 1997		AOC C - NOVEMBER 1997		AOC C - NOVEMBER 1997		AOC C - NOVEMBER 1997		AOC C - NOVEMBER 1997	
			DET. LIMIT	CONC. DET.	DET. LIMIT	CONC. DET.	DET. LIMIT	CONC. DET.	DET. LIMIT	CONC. DET.	DET. LIMIT	CONC. DET.	DET. LIMIT	CONC. DET.	DET. LIMIT	CONC. DET.	DET. LIMIT	CONC. DET.	DET. LIMIT	CONC. DET.	DET. LIMIT	CONC. DET.	DET. LIMIT	CONC. DET.	DET. LIMIT	CONC. DET.
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Aluminum	9.90E+05	5.50E+04																								
Antimony	4.10E+02	**2.70E-01**																								
Arsenic	***1.60E+00***	**2.90E-01**	1	***10.3***	1	***4.62***	1	***43.4***	1	***14***	1	***9.17***	1	***16.4***	1	***8.56***	1	***3.94***	1	***35.5***	1	***8.58***	1	***4.48***	1	***6.88***
Barium	1.90E+05	**8.20E+01**	0.4	73.5	0.4	**83.6**	0.4	57.9	0.4	**233**	0.4	**126**	0.4	**129**	0.4	**116**	0.4	79.4	0.4	**87.3**	0.4	**108**	0.4	**89.1**	0.4	43.9
Beryllium	2.00E+03	3.20E+00																								
Cadmium	8.00E+02	**3.80E-01**	0.1	0.2	0.1	0.134	0.1	0.05	0.1	0.255	0.1	0.276	0.1	**1.29**	0.1	**0.542**	0.1	0.19	0.1	0.05	0.1	0.174	0.1	0.17	0.1	0.175
Calcium	Not Listed	Not Listed																								
Chromium	1.50E+06	1.80E+05	0.2	15.8	0.2	10.4	0.2	19.4	0.2	21.7	0.2	8.68	0.2	15.8	0.2	12.3	0.2	9.97	0.2	12.9	0.2	12.6	0.2	11.9	0.2	12
Cobalt	3.00E+02	**4.90E-01**																								
Copper	Not Listed	Not Listed																								
Iron	7.20E+05	Not Listed																								
Lead	***8.00E+02***	Not Listed	1	34.5	1	9.85	1	39.3	1	798	1	390	1	149	1	65.2	1	6.84	1	51.1	1	33.8	1	6.51	1	23.5
Magnesium	Not Listed	Not Listed																								
Manganese	Not Listed	Not Listed																								
Mercury	2.40E+01	**1.00E-01**	0.2	U	0.2	U	0.2	U	0.2	U	0.2	**0.359**	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Molybdenum	5.10E+03	**3.70E+00**																								
Nickel	2.00E+04	4.80E+01																								
Potassium	Not Listed	Not Listed																								
Selenium	5.10E+03	**2.60E-01**	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
Silver	5.10E+03	**1.60E+00**	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Sodium	Not Listed	Not Listed																								
Thallium	6.60E+01	**1.40E-01**																								
Titanium	Not Listed	Not Listed																								
Vanadium	7.20E+03	2.60E+02																								
Zinc	3.10E+05	**6.80E+02**																								

Notes:
Bold - Detected concentration exceeds Industrial Soil SSL
Bold - Detected concentration exceeds Protection of GW SSL

Analyte	USEPA SSL Industrial Soil	USEPA SSL Protection of GW	SB08,5-7		SB08,8-10		SADF22003,0-2		A4-C,15-17		A5-C,15-17		A6-C,15-17		A7-C,15-17)		A8-B,15-17		A13-A,5-7		A14-A,5-7		A15-A,5-7		A16-A,5-7	
			AOC C - NOVEMBER 1997		AOC C - NOVEMBER 1997		AOC E - DECEMBER 1994		SWMU #1 - 8/23/1995		SWMU #1 - 8/23/1995		SWMU #1 - 8/23/1995		SWMU #1 - 8/23/1995		SWMU #1 - 8/23/1995		SWMU #1 - 8/23/1995		SWMU #1 - 8/23/1995		SWMU #1 - 8/24/1995		SWMU #1 - 8/24/1995	
			DET. LIMIT	CONC. DET.	DET. LIMIT	CONC. DET.	DET. LIMIT	CONC. DET.	DET. LIMIT	CONC. DET.	DET. LIMIT	CONC. DET.	DET. LIMIT	CONC. DET.	DET. LIMIT	CONC. DET.	DET. LIMIT	CONC. DET.	DET. LIMIT	CONC. DET.	DET. LIMIT	CONC. DET.	DET. LIMIT	CONC. DET.	DET. LIMIT	CONC. DET.
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Aluminum	9.90E+05	5.50E+04					1	6190																		
Antimony	4.10E+02	**2.70E-01**					1.2	**31.5**																		
Arsenic	***1.60E+00***	**2.90E-01**	1	***15.3***	1	***6.78***	1	***705***																		
Barium	1.90E+05	**8.20E+01**	0.4	**143**	0.4	**119**	0.4	**145**	2.0	**103**	2.0	**111**	2.0	**114**	2.0	**82.9**	2.0	**99.0**	2.0	50.2	2.0	58.6	2.0	**94.7**	2.0	46.3
Beryllium	2.00E+03	3.20E+00					0.1	1.05																		
Cadmium	8.00E+02	**3.80E-01**	0.1	0.137	0.1	0.201	0.1	**12.9**	0.25	**0.424**	0.25	**0.414**	0.25	**0.731**	0.25	0.342	0.25	**0.480**	0.25	0.243	0.25	**1.10**	0.25	**1.47**	0.25	0.216
Calcium	Not Listed	Not Listed					10	15500																		
Chromium	1.50E+06	1.80E+05	0.2	21.2	0.2	14.7	0.2	48.7																		
Cobalt	3.00E+02	**4.90E-01**					0.2	**9.44**																		
Copper	Not Listed	Not Listed																								
Iron	7.20E+05	Not Listed					1	76500																		
Lead	***8.00E+02***	Not Listed	1	***2160***	1	39.4	1	***862***	5.0	11.8	5.0	11.9	5.0	11.4	5.0	9.16	5.0	11.2	5.0	19.3	5.0	404	5.0	98.4	5.0	23.4
Magnesium	Not Listed	Not Listed					10	1420																		
Manganese	Not Listed	Not Listed					0.4	647																		
Mercury	2.40E+01	**1.00E-01**	0.2	U	0.2	U			0.04	U	0.04	U	0.04	U	0.04	U	0.04	U	0.04	U	0.04	U	0.04	U	0.04	U
Molybdenum	5.10E+03	**3.70E+00**					1	3																		
Nickel	2.00E+04	4.80E+01					0.2	47.9																		
Potassium	Not Listed	Not Listed					40	634																		
Selenium	5.10E+03	**2.60E-01**	2	U	2	U	2	**2.9**																		
Silver	5.10E+03	**1.60E+00**	0.2	U	0.2	U	0.2	**1.7**																		
Sodium	Not Listed	Not Listed					10	598																		
Thallium	6.60E+01	**1.40E-01**					2	**0.94**																		
Titanium	Not Listed	Not Listed																								
Vanadium	7.20E+03	2.60E+02					1	46.2																		
Zinc	3.10E+05	**6.80E+02**					0.3	**1430**																		

Notes:
Bold - Detected concentration exceeds Industrial Soil SSL
Bold - Detected concentration exceeds Protection of GW SSL

Analyte	USEPA SSL Industrial Soil	USEPA SSL Protection of GW	SADF29001		SADF22006,0-2		SADF29003,0-2		SADF29004,5.5		SB01,3-5		SB01,8-10		SB01,12-14		SB01,15-17		SB02,3-5		SB02,8-10		SB02,12-14		SB03,2-4	
			SWMU #5 - FEBRUARY 1995		SWMU #7 - FEBRUARY 1995		SWMU #10 - FEBRUARY 1995		SWMU #10 - FEBRUARY 1995		SWMU #10 - JULY 1997		SWMU #10 - JULY 1997		SWMU #10 - JULY 1997		SWMU #10 - JULY 1997		SWMU #10 - JULY 1997		SWMU #10 - JULY 1997		SWMU #10 - JULY 1997		SWMU #10 - JULY 1997	
			DET. LIMIT	CONC. DET.	DET. LIMIT	CONC. DET.	DET. LIMIT	CONC. DET.	DET. LIMIT	CONC. DET.	DET. LIMIT	CONC. DET.	DET. LIMIT	CONC. DET.	DET. LIMIT	CONC. DET.	DET. LIMIT	CONC. DET.	DET. LIMIT	CONC. DET.	DET. LIMIT	CONC. DET.	DET. LIMIT	CONC. DET.	DET. LIMIT	CONC. DET.
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Aluminum	9.90E+05	5.50E+04	1	5000	1	1140	1	3890	1	5630																
Antimony	4.10E+02	**2.70E-01**	1.2	**9.38**	1.2	**0.755**	1.2	**8.19**	1.2	**6.92**																
Arsenic	***1.60E+00***	**2.90E-01**	1	***10.9***	1	***3.17***	1	***23.3***	1	***19.4***	1	***45.3***	1	***31.4***	1	***25.6***	1	***17.7***	1	***26.9***	1	***30.8***	1	***24.4***	1	***9.02***
Barium	1.90E+05	**8.20E+01**	0.4	66.2	0.4	7.26	0.4	58.2	0.4	62.5	0.4	**102**	0.4	62.7	0.4	**123**	0.4	47.9	0.4	49.4	0.4	52.2	0.4	59.3	0.4	33.2
Beryllium	2.00E+03	3.20E+00	0.1	0.66	0.1	0.25	0.1	0.46	0.1	0.78																
Cadmium	8.00E+02	**3.80E-01**	0.1	**4.15**	0.1	**1.3**	0.1	**0.89**	0.1	0	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
Calcium	Not Listed	Not Listed	10	36700	10	329000	10	223000	10	2750																
Chromium	1.50E+06	1.80E+05	0.2	24.4	0.2	3.9	1.2	11.9	2.2	12.4	0.2	25.9	0.2	22.5	0.2	31.5	0.2	19.3	0.2	17.2	0.2	28.3	0.2	25.1	0.2	5.25
Cobalt	3.00E+02	**4.90E-01**	0.2	**20.7**	0.2	U	0.2	**6.31**	0.2	**19**																
Copper	Not Listed	Not Listed	0.2	345	0.2	4.4	0.2	**63.3**	0.2	23.4																
Iron	7.20E+05	Not Listed	1	37100	1	2090	1	18600	1	27000																
Lead	***8.00E+02***	Not Listed	1	95	1	5.7	1	250	1	56.9	1	64.9	1	31.1	1	24.7	1	16.2	1	23.4	1	57	1	23.5	1	14.7
Magnesium	Not Listed	Not Listed	10	1110	10	24800	10	1980	10	774																
Manganese	Not Listed	Not Listed	0.4	1090	0.4	78	0.4	695	0.4	345																
Mercury	2.40E+01	**1.00E-01**									0.2	U	0.2	U	0.2	U	0.2	0.203	0.2	U	0.2	U	0.2	U	0.2	U
Molybdenum	5.10E+03	**3.70E+00**	1	2.31	1	0.7	1	0.89	1	1.42																
Nickel	2.00E+04	4.80E+01	0.2	22.8	0.2	5.6	0.2	14.5	0.2	18.3																
Potassium	Not Listed	Not Listed	40	1050	40	475	40	802	40	404																
Selenium	5.10E+03	**2.60E-01**	2	**1.4**	2	**1.7**	2	**1.1**	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
Silver	5.10E+03	**1.60E+00**	0.2	0.64	0.2	0.854	0.2	U	0.2	0.25																
Sodium	Not Listed	Not Listed	10	544	10	227	10	153	10	180																
Thallium	6.60E+01	**1.40E-01**	2	U	2	**0.33**	2	U	2	U																
Titanium	Not Listed	Not Listed	2	217			2	124	2	153																
Vanadium	7.20E+03	2.60E+02	1	27.2	1	1.9	1	18.7	1	30.1																
Zinc	3.10E+05	**6.80E+02**	0.3	91.9	0.3	22.8	0.3	77.2	0.3	50.2																

Notes:
Bold - Detected concentration exceeds Industrial Soil SSL
Bold - Detected concentration exceeds Protection of GW SSL

Analyte	USEPA SSL Industrial Soil	USEPA SSL Protection of GW	SB04,3-5		SB04,8-10		SB04,12-14		SB04,16-18		SB05,3-5		SB05,8-10		SB05,14-16		SB07,3-5		SB07,8-10		SB07,11-15		SB07,15-18		SB08,3-5	
			SWMU #10 - JULY 1997		SWMU #10 - JULY 1997		SWMU #10 - JULY 1997		SWMU #10 - JULY 1997		SWMU #10 - JULY 1997		SWMU #10 - JULY 1997		SWMU #10 - JULY 1997		SWMU #10 - JULY 1997		SWMU #10 - JULY 1997		SWMU #10 - JULY 1997		SWMU #10 - JULY 1997		SWMU #10 - JULY 1997	
			DET. LIMIT	CONC. DET.	DET. LIMIT	CONC. DET.	DET. LIMIT	CONC. DET.	DET. LIMIT	CONC. DET.	DET. LIMIT	CONC. DET.	DET. LIMIT	CONC. DET.	DET. LIMIT	CONC. DET.	DET. LIMIT	CONC. DET.	DET. LIMIT	CONC. DET.	DET. LIMIT	CONC. DET.	DET. LIMIT	CONC. DET.	DET. LIMIT	CONC. DET.
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Aluminum	9.90E+05	5.50E+04																								
Antimony	4.10E+02	**2.70E-01**																								
Arsenic	***1.60E+00***	**2.90E-01**	1	***9.74***	1	***15.2***	1	***17.2***	1	***2.14***	1	***54.3***	1	***21.5***	1	***23.7***	1	***25.5***	1	***56.6***	1	***38.7***	1	**1.16**	1	***39.6***
Barium	1.90E+05	**8.20E+01**	0.4	49.5	0.4	49.3	0.4	49.2	0.4	**120**	0.4	33.9	0.4	70.6	0.4	57.1	0.4	60.2	0.4	48.2	0.4	50	0.4	62.2	0.4	51.3
Beryllium	2.00E+03	3.20E+00																								
Cadmium	8.00E+02	**3.80E-01**	0.1	U	0.1	0.151	0.1	0.242	0.1	0.175	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	0.18	0.1	U
Calcium	Not Listed	Not Listed																								
Chromium	1.50E+06	1.80E+05	0.2	11.7	0.2	18.5	0.2	16.2	0.2	13.6	0.2	17.6	0.2	20.8	0.2	20.9	0.2	23.3	0.2	17.7	0.2	35.1	0.2	11.4	0.2	22.8
Cobalt	3.00E+02	**4.90E-01**																								
Copper	Not Listed	Not Listed																								
Iron	7.20E+05	Not Listed																								
Lead	***8.00E+02***	Not Listed	1	17.4	1	30.4	1	17.2	1	7.12	1	34.6	1	59.3	1	48.1	1	50.7	1	47.7	1	26.4	1	6.84	1	62
Magnesium	Not Listed	Not Listed																								
Manganese	Not Listed	Not Listed																								
Mercury	2.40E+01	**1.00E-01**	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	**0.259**	0.2	U	0.2	U	0.2	U	0.2	**0.253**	0.2	U	0.2	U
Molybdenum	5.10E+03	**3.70E+00**																								
Nickel	2.00E+04	4.80E+01																								
Potassium	Not Listed	Not Listed																								
Selenium	5.10E+03	**2.60E-01**	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
Silver	5.10E+03	**1.60E+00**																								
Sodium	Not Listed	Not Listed																								
Thallium	6.60E+01	**1.40E-01**																								
Titanium	Not Listed	Not Listed																								
Vanadium	7.20E+03	2.60E+02																								
Zinc	3.10E+05	**6.80E+02**																								

Notes:
Bold - Detected concentration exceeds Industrial Soil SSL
Bold - Detected concentration exceeds Protection of GW SSL

Analyte	USEPA SSL Industrial Soil	USEPA SSL Protection of GW	SB08,8-10		SB08,12-14		SB09,0-3.5		SB10,3-5		SB10,8-10		SB10,12-14		SB10,14.5-16		SB11,1-3.5		SB12,1-3.5	
			SWMU #10 - JULY 1997		SWMU #10 - JULY 1997		SWMU #10 - JULY 1997		SWMU #10 - JULY 1997		SWMU #10 - JULY 1997		SWMU #10 - JULY 1997		SWMU #10 - JULY 1997		SWMU #10 - JULY 1997		SWMU #10 - JULY 1997	
			DET. LIMIT	CONC. DET.	DET. LIMIT	CONC. DET.	DET. LIMIT	CONC. DET.	DET. LIMIT	CONC. DET.	DET. LIMIT	CONC. DET.	DET. LIMIT	CONC. DET.	DET. LIMIT	CONC. DET.	DET. LIMIT	CONC. DET.	DET. LIMIT	CONC. DET.
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Aluminum	9.90E+05	5.50E+04																		
Antimony	4.10E+02	**2.70E-01**																		
Arsenic	***1.60E+00***	**2.90E-01**	1	***34.1***	1	***17.6***	1	***35.6***	1	***26.7***	1	***66.5***	1	***50.3***	1	***1.86***	1	***30.7***	1	***16.6***
Barium	1.90E+05	**8.20E+01**	0.4	60.4	0.4	21.4	0.4	73.7	0.4	21.3	0.4	**83**	0.4	20.7	0.4	**103**	0.4	50	0.4	51.6
Beryllium	2.00E+03	3.20E+00																		
Cadmium	8.00E+02	**3.80E-01**	0.1	U	0.1	**0.954**	0.1	U	0.1	U	0.1	U	0.1	U	0.1	0.23	0.1	U	0.1	U
Calcium	Not Listed	Not Listed																		
Chromium	1.50E+06	1.80E+05	0.2	18.2	0.2	76.8	0.2	14.5	0.2	12.8	0.2	26.8	0.2	108	0.2	10.3	0.2	16.9	0.2	13.7
Cobalt	3.00E+02	**4.90E-01**																		
Copper	Not Listed	Not Listed																		
Iron	7.20E+05	Not Listed																		
Lead	***8.00E+02***	Not Listed	1	32.8	1	19.8	1	31.9	1	10.2	1	U	1	32.2	1	7.12	1	68.2	1	91
Magnesium	Not Listed	Not Listed																		
Manganese	Not Listed	Not Listed																		
Mercury	2.40E+01	**1.00E-01**	0.2	**0.254**	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Molybdenum	5.10E+03	**3.70E+00**																		
Nickel	2.00E+04	4.80E+01																		
Potassium	Not Listed	Not Listed																		
Selenium	5.10E+03	**2.60E-01**	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
Silver	5.10E+03	**1.60E+00**																		
Sodium	Not Listed	Not Listed																		
Thallium	6.60E+01	**1.40E-01**																		
Titanium	Not Listed	Not Listed																		
Vanadium	7.20E+03	2.60E+02																		
Zinc	3.10E+05	**6.80E+02**																		

Notes:
Bold - Detected concentration exceeds Industrial Soil SSL
Bold - Detected concentration exceeds Protection of GW SSL

APPENDIX E

AOC D SAMPLE DATA

AMERICAN TECHNICAL & ANALYTICAL SERVICES, INC.

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 • FAX (314) 434-0080

RECEIVED
APR 04 2000
BY C. Stipsits

March 31, 2000

Cheryl Stipsits
Sigma Chemical Company
3500 Dekalb Street
St. Louis, MO 63118

RE: ATAS #29244.01
Dekalb RFA

Dear Ms. Stipsits:

Enclosed is the analytical report for the sample received in our laboratory on March 20, 2000.

If, in your review, you should have any questions or require additional information, please call.

Thank you for choosing ATAS for your analytical needs.

Sincerely,

Jeffrey A. Carr
Project Manager

Enclosures

JAC/jp

ATAS 875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

CLIENT: SIGMA CHEMICAL COMPANY
3500 DEKALB STREET
ST. LOUIS, MO 63118
ATTN: CHERYL STIPSITS

REPORT: 2924401VO(723)

DATE : 03-31-00

SAMPLE MATRIX : SOIL
ATAS # : 29244.01
DATE SUBMITTED: 03-20-00
DATE ANALYZED : 03-30-00

METHOD REF.: SW846-8260B, EPA METHODOLOGY
PROJECT : DEKALB RFA
SAMPLE ID : WAREHOUSE PAD

RESULTS REPORTED IN ug/Kg OR Parts Per Billion (PPB)

VOLATILES	R.L.	RESULTS	VOLATILES	R.L.	RESULTS
XYLENE (TOTAL)	5	ND	TOLUENE	5	ND
DICHLORODIFLUOROMETHANE	10	ND	trans-1,3-DICHLOROPROPENE	5	ND
CHLOROMETHANE	10	ND	1,1,2-TRICHLOROETHANE	5	ND
VINYL CHLORIDE	10	ND	TETRACHLOROETHENE	5	ND
BROMOMETHANE	10	ND	1,3-DICHLOROPROPANE	5	ND
CHLOROETHANE	10	ND	2-HEXANONE	10	ND
TRICHLOROFLUOROMETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
1,1-DICHLOROETHENE	5	ND	1,2-DIBROMOETHANE	5	ND
ACETONE	10	ND	CHLOROBENZENE	5	ND
IODOMETHANE	10	ND	1,1,1,2-TETRACHLOROETHANE	5	ND
CARBON DISULFIDE	5	ND	ETHYLBENZENE	5	ND
METHYLENE CHLORIDE	5	25 B	STYRENE	5	ND
trans-1,2-DICHLOROETHENE	5	ND	BROMOFORM	5	ND
METHYL TERT-BUTYL ETHER	10	ND	ISOPROPYLBENZENE	5	ND
1,1-DICHLOROETHANE	5	ND	1,1,2,2-TETRACHLOROETHANE	5	ND
VINYL ACETATE	10	ND	BROMOBENZENE	5	ND
2,2-DICHLOROPROPANE	5	ND	1,2,3-TRICHLOROPROPANE	5	ND
cis-1,2-DICHLOROETHENE	5	ND	n-PROPYLBENZENE	5	ND
2-BUTANONE	10	ND	2-CHLOROTOLUENE	5	ND
BROMOCHLOROMETHANE	5	ND	1,3,5-TRIMETHYLBENZENE	5	ND
CHLOROFORM	5	22	4-CHLOROTOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND	TERT-BUTYLBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND	1,2,4-TRIMETHYLBENZENE	5	ND
1,1-DICHLOROPROPENE	5	ND	sec-BUTYLBENZENE	5	ND
BENZENE	5	ND	1,3-DICHLOROBENZENE	5	ND
1,2-DICHLOROETHANE	5	ND	p-ISOPROPYLTOLUENE	5	ND
TRICHLOROETHENE	5	ND	1,4-DICHLOROBENZENE	5	ND
1,2-DICHLOROPROPANE	5	ND	n-BUTYLBENZENE	5	ND
DIBROMOMETHANE	5	ND	1,2-DICHLOROBENZENE	5	ND
BROMODICHLOROMETHANE	5	ND	1,2-DIBROMO-3-CHLOROPROPANE	5	ND
cis-1,3-DICHLOROPROPENE	5	ND	1,2,4-TRICHLOROBENZENE	5	ND
4-METHYL-2-PENTANONE	10	ND	HEXACHLOROBUTADIENE	5	ND
1,2,3-TRICHLOROBENZENE	5	ND	NAPHTHALENE	5	ND

QA/QC SURROGATE RECOVERIES

TOLUENE-d8(81-117) 91% BROMOFLUOROBENZENE(74-121) 76%
1,2-DICHLOROETHANE-D4(70-121) 124% *

* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS ON BOTH ORIGINAL AND RERUN
B = ANALYTE DETECTED IN METHOD BLANK, POSSIBLY BELOW THE REPORTING LIMIT.
ND = NOT DETECTED ABOVE REPORTING LIMIT
RL = REPORTING LIMIT; DEFINED AS THE PRACTICAL QUANTITATION LIMIT PLUS ANY DILUTION, POSITIVE

ATAS 875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

CLIENT: SIGMA CHEMICAL COMPANY
3500 DEKALB STREET
ST. LOUIS, MO 63118
ATTN: CHERYL STIPSITS

REPORT: 2924401VO(723)

DATE : 03-31-00

SAMPLE MATRIX : SOIL
ATAS # : METHOD BLANK
DATE SUBMITTED: 03-20-00
DATE ANALYZED : 03-29-00

METHOD REF.: SW846-8260B, EPA METHODOLOGY
PROJECT : DEKALB RFA
SAMPLE ID : METHOD BLANK

RESULTS REPORTED IN ug/Kg OR Parts Per Billion (PPB)

VOLATILES	R.L.	RESULTS	VOLATILES	R.L.	RESULTS
XYLENE (TOTAL)	5	ND	TOLUENE	5	ND
DICHLORODIFLUOROMETHANE	10	ND	trans-1,3-DICHLOROPROPENE	5	ND
CHLOROMETHANE	10	ND	1,1,2-TRICHLOROETHANE	5	ND
VINYL CHLORIDE	10	ND	TETRACHLOROETHENE	5	ND
BROMOMETHANE	10	ND	1,3-DICHLOROPROPANE	5	ND
CHLOROETHANE	10	ND	2-HEXANONE	10	ND
TRICHLOROFLUOROMETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
1,1-DICHLOROETHENE	5	ND	1,2-DIBROMOETHANE	5	ND
ACETONE	10	ND	CHLOROBENZENE	5	ND
IODOMETHANE	10	ND	1,1,1,2-TETRACHLOROETHANE	5	ND
CARBON DISULFIDE	5	ND	ETHYLBENZENE	5	ND
METHYLENE CHLORIDE	5	6	STYRENE	5	ND
trans-1,2-DICHLOROETHENE	5	ND	BROMOFORM	5	ND
METHYL TERT-BUTYL ETHER	10	ND	ISOPROPYLBENZENE	5	ND
1,1-DICHLOROETHANE	5	ND	1,1,2,2-TETRACHLOROETHANE	5	ND
VINYL ACETATE	10	ND	BROMOBENZENE	5	ND
2,2-DICHLOROPROPANE	5	ND	1,2,3-TRICHLOROPROPANE	5	ND
cis-1,2-DICHLOROETHENE	5	ND	n-PROPYLBENZENE	5	ND
2-BUTANONE	10	ND	2-CHLOROTOLUENE	5	ND
BROMOCHLOROMETHANE	5	ND	1,3,5-TRIMETHYLBENZENE	5	ND
CHLOROFORM	5	ND	4-CHLOROTOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND	TERT-BUTYLBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND	1,2,4-TRIMETHYLBENZENE	5	ND
1,1-DICHLOROPROPENE	5	ND	sec-BUTYLBENZENE	5	ND
BENZENE	5	ND	1,3-DICHLOROBENZENE	5	ND
1,2-DICHLOROETHANE	5	ND	p-ISOPROPYLTOLUENE	5	ND
TRICHLOROETHENE	5	ND	1,4-DICHLOROBENZENE	5	ND
1,2-DICHLOROPROPANE	5	ND	n-BUTYLBENZENE	5	ND
DIBROMOMETHANE	5	ND	1,2-DICHLOROBENZENE	5	ND
BROMODICHLOROMETHANE	5	ND	1,2-DIBROMO-3-CHLOROPROPANE	5	ND
cis-1,3-DICHLOROPROPENE	5	ND	1,2,4-TRICHLOROBENZENE	5	ND
4-METHYL-2-PENTANONE	10	ND	HEXACHLOROBUTADIENE	5	ND
1,2,3-TRICHLOROBENZENE	5	ND	NAPHTHALENE	5	ND

QA/QC SURROGATE RECOVERIES

TOLUENE-d8(81-117) 97% BROMOFLUOROBENZENE(74-121) 99%
1,2-DICHLOROETHANE-D4(70-121) 86%

ND = NOT DETECTED ABOVE REPORTING LIMIT
RL = REPORTING LIMIT; DEFINED AS THE PRACTICAL QUANTITATION LIMIT PLUS ANY DILUTION, POSITIVE VALUES BELOW THIS LIMIT WERE NOT REPORTED.

ATAS 875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

LABORATORY QUALITY CONTROL SEQUENCE

SAMPLE MATRIX: SOIL
DATE ANALYZED: 03-30-00
METHOD REF. : SW846-8260B, EPA METHODOLOGY

REPORT DATE: 03-31-00

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

COMPOUND	29244.01 MS % REC.	29244.01 MSD % REC.	RPD	QC RPD	ADVISORY LIMITS
1,1-DICHLOROETHENE	121	123	2	28	43-151
TRICHLOROETHENE	100	98	2	7	45-137
BENZENE	121	116	4	12	57-143
TOLUENE	96	94	2	16	42-147
CHLOROBENZENE	93	93	0	7	58-133

ATAS 875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

CLIENT: SIGMA CHEMICAL COMPANY
3500 DEKALB STREET
ST. LOUIS, MO 63118
ATTN: CHERYL STIPSITS

REPORT: 2924401SV(723)

DATE : 03-31-00

SAMPLE MATRIX : SOIL
ATAS # : 29244.01
DATE SUBMITTED: 03-20-00
SAMPLE ID : WAREHOUSE PAD

DATE EXTRACTED: 03-23-00
DATE ANALYZED : 03-27-00
PROJECT : DEKALB RFA
METHOD REF. : SW846-8270C

RESULTS REPORTED IN ug/Kg OR PARTS PER BILLION(PPB)

SEMIVOLATILES	RL	RESULTS (ug/Kg)	SEMIVOLATILE	RL	RESULTS (ug/Kg)
PHENOL	1650	ND	3-NITROANILINE	4150	ND
BIS(2-CHLOROETHYL)ETHER	1650	ND	ACENAPHTHENE	1650	610 J
2-CHLOROPHENOL	1650	ND	2,4-DINITROPHENOL	4150	ND
1,3-DICHLOROBENZENE	1650	ND	4-NITROPHENOL	4150	ND
1,4-DICHLOROBENZENE	1650	ND	2,4-DINITROTOLUENE	1650	ND
BENZYL ALCOHOL	1650	ND	DIBENZOFURAN	1650	390 J
1,2-DICHLOROBENZENE	1650	ND	DIETHYLPHTHALATE	1650	ND
2-METHYLPHENOL	1650	ND	4-CHLOROPHENYL-PHENYLETHER	1650	ND
BIS(2-CHLOROISOPROPYL)ETHER	1650	ND	FLUORENE	1650	480 J
3/4-METHYLPHENOL	1650	ND	4-NITROANILINE	4150	ND
N-NITROSO-DI-n-PROPYLAMINE	1650	ND	4,6-DINITRO-2-METHYLPHENOL	4150	ND
HEXACHLOROETHANE	1650	ND	N-NITROSODIPHENYLAMINE	1650	ND
NITROBENZENE	1650	ND	4-BROMOPHENYL-PHENYLETHER	1650	ND
ISOPHORONE	1650	ND	HEXACHLOROBENZENE	1650	ND
2,4-DIMETHYLPHENOL	1650	ND	PENTACHLOROPHENOL	4150	ND
2-NITROPHENOL	1650	ND	PHENANTHRENE	1650	5100
BENZOIC ACID	4150	ND	ANTHRACENE	1650	1200 J
BIS(2-CHLOROETHOXY)METHANE	1650	ND	DI-N-BUTYLPHTHALATE	1650	ND
2,4-DICHLOROPHENOL	1650	ND	FLUORANTHENE	1650	6700
1,2,4-TRICHLOROBENZENE	1650	ND	PYRENE	1650	5400
NAPHTHALENE	1650	ND	BUTYLBENZYLPHTHALATE	1650	ND
4-CHLOROANILINE	1650	ND	BIS(2-ETHYLHEXYL)PHTHALATE	1650	ND
HEXACHLOROBUTADIENE	1650	ND	3,3'-DICHLOROBENZIDINE	1650	ND
4-CHLORO-3-METHYLPHENOL	1650	ND	BENZO(A)ANTHRACENE	1650	3400
2-METHYLNAPHTHALENE	1650	ND	CHRYSENE	1650	3500
HEXACHLOROCYCLOPENTADIENE	1650	ND	DI-N-OCTYLPHTHALATE	1650	ND
2,4,6-TRICHLOROPHENOL	1650	ND	BENZO(b)FLUORANTHENE	1650	3000
2,4,5-TRICHLOROPHENOL	4150	ND	BENZO(k)FLUORANTHENE	1650	2600
2-CHLORONAPHTHALENE	1650	ND	BENZO(a)PYRENE	1650	2200
2-NITROANILINE	4150	ND	DIBENZO(A,H)ANTHRACENE	1650	680 J
DIMETHYLPHTHALATE	1650	ND	INDENO(1,2,3-CD)PYRENE	1650	1300 J
2,6-DINITROTOLUENE	1650	ND	BENZO(G,H,I)PERYLENE	1650	410 J
ACENAPHTHYLENE	1650	ND			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-d5(23-120)	95 %	2-FLUOROBIPHENYL(30-115)	112 %
TERPHENYL-d14(18-137)	127 %	PHENOL-d5(24-113)	92 %
2-FLUOROPHENOL(25-121)	97 %	2,4,6-TRIBROMOPHENOL(19-122)	100 %

J = ESTIMATED VALUE; BELOW REPORTING LIMIT
ND = NOT DETECTED ABOVE REPORTING LIMIT
RL = REPORTING LIMIT

ATAS 875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

CLIENT: SIGMA CHEMICAL COMPANY
3500 DEKALB STREET
ST. LOUIS, MO 63118
ATTN: CHERYL STIPSITS

REPORT: 2924401SV(723)

DATE : 03-31-00

SAMPLE MATRIX : SOIL
ATAS # : METHOD BLANK
DATE SUBMITTED: 03-20-00
SAMPLE ID : METHOD BLANK

DATE EXTRACTED: 03-23-00
DATE ANALYZED : 03-24-00
PROJECT : DEKALB RFA
METHOD REF. : SW846-8270C

RESULTS REPORTED IN ug/Kg OR PARTS PER BILLION(PPB)

SEMIVOLATILES	RL	RESULTS (ug/Kg)	SEMIVOLATILE	RL	RESULTS (ug/Kg)
PHENOL	330	ND	3-NITROANILINE	830	ND
BIS(2-CHLOROETHYL)ETHER	330	ND	ACENAPHTHENE	330	ND
2-CHLOROPHENOL	330	ND	2,4-DINITROPHENOL	830	ND
1,3-DICHLOROBENZENE	330	ND	4-NITROPHENOL	830	ND
1,4-DICHLOROBENZENE	330	ND	2,4-DINITROTOLUENE	330	ND
BENZYL ALCOHOL	330	ND	DIBENZOFURAN	330	ND
1,2-DICHLOROBENZENE	330	ND	DIETHYLPHTHALATE	330	ND
2-METHYLPHENOL	330	ND	4-CHLOROPHENYL-PHENYLETHER	330	ND
BIS(2-CHLOROISOPROPYL)ETHER	330	ND	FLUORENE	330	ND
3/4-METHYLPHENOL	330	ND	4-NITROANILINE	830	ND
N-NITROSO-DI-n-PROPYLAMINE	330	ND	4,6-DINITRO-2-METHYLPHENOL	830	ND
HEXACHLOROETHANE	330	ND	N-NITROSODIPHENYLAMINE	330	ND
NITROBENZENE	330	ND	4-BROMOPHENYL-PHENYLETHER	330	ND
ISOPHORONE	330	ND	HEXACHLOROBENZENE	330	ND
2,4-DIMETHYLPHENOL	330	ND	PENTACHLOROPHENOL	830	ND
2-NITROPHENOL	330	ND	PHENANTHRENE	330	ND
BENZOIC ACID	830	ND	ANTHRACENE	330	ND
BIS(2-CHLOROETHOXY)METHANE	330	ND	DI-N-BUTYLPHTHALATE	330	ND
2,4-DICHLOROPHENOL	330	ND	FLUORANTHENE	330	ND
1,2,4-TRICHLOROBENZENE	330	ND	PYRENE	330	ND
NAPHTHALENE	330	ND	BUTYLBENZYLPHTHALATE	330	ND
4-CHLOROANILINE	330	ND	BIS(2-ETHYLHEXYL)PHTHALATE	330	ND
HEXACHLOROBUTADIENE	330	ND	3,3'-DICHLOROBENZIDINE	330	ND
4-CHLORO-3-METHYLPHENOL	330	ND	BENZO(A)ANTHRACENE	330	ND
2-METHYLNAPHTHALENE	330	ND	CHRYSENE	330	ND
HEXACHLOROCYCLOPENTADIENE	330	ND	DI-N-OCTYLPHTHALATE	330	ND
2,4,6-TRICHLOROPHENOL	330	ND	BENZO(b)FLUORANTHENE	330	ND
2,4,5-TRICHLOROPHENOL	830	ND	BENZO(k)FLUORANTHENE	330	ND
2-CHLORONAPHTHALENE	330	ND	BENZO(a)PYRENE	330	ND
2-NITROANILINE	830	ND	DIBENZO(A,H)ANTHRACENE	330	ND
DIMETHYLPHTHALATE	330	ND	INDENO(1,2,3-CD)PYRENE	330	ND
2,6-DINITROTOLUENE	330	ND	BENZO(G,H,I)PERYLENE	330	ND
ACENAPHTHYLENE	330	ND			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-d5(23-120)	87 %	2-FLUOROBIPHENYL(30-115)	114 %
TERPHENYL-d14(18-137)	74 %	PHENOL-d5(24-113)	74 %
2-FLUOROPHENOL(25-121)	62 %	2,4,6-TRIBROMOPHENOL(19-122)	112 %

ND = NOT DETECTED ABOVE REPORTING LIMIT
RL = REPORTING LIMIT

ATAS 875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

LABORATORY QUALITY CONTROL SEQUENCE

SAMPLE MATRIX : SOIL
DATE EXTRACTED: 03-23-00
DATE ANALYZED : 03-24-00
METHOD REF. : SW846-8270C, EPA METHODOLOGY

REPORT DATE: 03-31-00

LABORATORY CONTROL SAMPLE RECOVERY

COMPOUND	LCS % REC.
PHENOL	69
2-CHLOROPHENOL	75
1,4-DICHLOROBENZENE	89
N-NITROSO-DI-n-PROPYLAMINE	96
1,2,4-TRICHLOROBENZENE	98
4-CHLORO-3-METHYLPHENOL	76
ACENAPHTHENE	85
4-NITROPHENOL	63
2,4-DINITROTOLUENE	101
PENTACHLOROPHENOL	107
PYRENE	64

* = VALUES OUTSIDE OF ADVISORY LIMITS

APPENDIX F

SUPPLEMENTAL SOIL SAMPLE DATA

ENVIRONMENTAL
SCIENCE CORP.

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Cheryl Stipsits
Sigma Chemical
3500 DeKalb
St. Louis, MO 63118

November 08,2004

Date Received : October 28, 2004
Description : K-7 Sewer Dekalb

ESC Sample # : L175351-01

Sample ID : COMPOSITE 1 2-4 FT

Site ID :

Collected By : Cheryl Stipsits
Collection Date : 10/19/04 13:00

Project # :

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
Total Solids	86.7		%	2540G	11/06/04	1
Volatile Organics						
Acetone	1.7	0.14	mg/kg	8260B	10/30/04	5
Acrolein	BDL	0.29	mg/kg	8260B	10/30/04	5
Acrylonitrile	BDL	0.058	mg/kg	8260B	10/30/04	5
Benzene	BDL	0.0058	mg/kg	8260B	10/30/04	5
Bromobenzene	BDL	0.0058	mg/kg	8260B	10/30/04	5
Bromodichloromethane	BDL	0.0058	mg/kg	8260B	10/30/04	5
Bromoform	BDL	0.0058	mg/kg	8260B	10/30/04	5
Bromomethane	BDL	0.0058	mg/kg	8260B	10/30/04	5
n-Butylbenzene	BDL	0.0058	mg/kg	8260B	10/30/04	5
sec-Butylbenzene	BDL	0.0058	mg/kg	8260B	10/30/04	5
tert-Butylbenzene	BDL	0.0058	mg/kg	8260B	10/30/04	5
Carbon tetrachloride	BDL	0.0058	mg/kg	8260B	10/30/04	5
Chlorobenzene	BDL	0.0058	mg/kg	8260B	10/30/04	5
Chlorodibromomethane	BDL	0.0058	mg/kg	8260B	10/30/04	5
Chloroethane	BDL	0.0058	mg/kg	8260B	10/30/04	5
2-Chloroethyl vinyl ether	BDL	0.29	mg/kg	8260B	10/30/04	5
Chloroform	BDL	0.029	mg/kg	8260B	10/30/04	5
Chloromethane	BDL	0.0058	mg/kg	8260B	10/30/04	5
2-Chlorotoluene	BDL	0.0058	mg/kg	8260B	10/30/04	5
4-Chlorotoluene	BDL	0.0058	mg/kg	8260B	10/30/04	5
1,2-Dibromo-3-Chloropropane	BDL	0.012	mg/kg	8260B	10/30/04	5
1,2-Dibromoethane	BDL	0.0058	mg/kg	8260B	10/30/04	5
Dibromomethane	BDL	0.0058	mg/kg	8260B	10/30/04	5
1,2-Dichlorobenzene	BDL	0.0058	mg/kg	8260B	10/30/04	5
1,3-Dichlorobenzene	BDL	0.0058	mg/kg	8260B	10/30/04	5
1,4-Dichlorobenzene	BDL	0.0058	mg/kg	8260B	10/30/04	5
Dichlorodifluoromethane	BDL	0.0058	mg/kg	8260B	10/30/04	5
1,1-Dichloroethane	BDL	0.0058	mg/kg	8260B	10/30/04	5
1,2-Dichloroethane	BDL	0.0058	mg/kg	8260B	10/30/04	5
1,1-Dichloroethene	BDL	0.0058	mg/kg	8260B	10/30/04	5
cis-1,2-Dichloroethene	BDL	0.0058	mg/kg	8260B	10/30/04	5
trans-1,2-Dichloroethene	BDL	0.0058	mg/kg	8260B	10/30/04	5
1,2-Dichloropropane	BDL	0.0058	mg/kg	8260B	10/30/04	5
1,1-Dichloropropene	BDL	0.0058	mg/kg	8260B	10/30/04	5
1,3-Dichloropropane	BDL	0.0058	mg/kg	8260B	10/30/04	5

Results listed are dry weight basis.
BDL - Below Detection Limit
Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:
AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01
KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233
MN - 047-999-395, NY - 11742

Note:
This report shall not be reproduced, except in full, without the written approval from ESC.
The reported analytical results relate only to the sample submitted

ENVIRONMENTAL
SCIENCE CORP.

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

November 08,2004

Cheryl Stipsits
Sigma Chemical
3500 DeKalb
St. Louis, MO 63118

ESC Sample # : L175351-01

Date Received : October 28, 2004
Description : K-7 Sewer Dekalb

Site ID :

Sample ID : COMPOSITE 1 2-4 FT

Project # :

Collected By : Cheryl Stipsits
Collection Date : 10/19/04 13:00

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
cis-1,3-Dichloropropene	BDL	0.0058	mg/kg	8260B	10/30/04	5
trans-1,3-Dichloropropene	BDL	0.0058	mg/kg	8260B	10/30/04	5
2,2-Dichloropropane	BDL	0.0058	mg/kg	8260B	10/30/04	5
Di-isopropyl ether	BDL	0.0058	mg/kg	8260B	10/30/04	5
Ethylbenzene	BDL	0.0058	mg/kg	8260B	10/30/04	5
Hexachlorobutadiene	BDL	0.0058	mg/kg	8260B	10/30/04	5
Isopropylbenzene	BDL	0.0058	mg/kg	8260B	10/30/04	5
p-Isopropyltoluene	BDL	0.0058	mg/kg	8260B	10/30/04	5
2-Butanone (MEK)	BDL	0.058	mg/kg	8260B	10/30/04	5
Methylene Chloride	BDL	0.029	mg/kg	8260B	10/30/04	5
4-Methyl-2-pentanone (MIBK)	BDL	0.058	mg/kg	8260B	10/30/04	5
Methyl tert-butyl ether	BDL	0.0058	mg/kg	8260B	10/30/04	5
Naphthalene	BDL	0.029	mg/kg	8260B	10/30/04	5
n-Propylbenzene	BDL	0.0058	mg/kg	8260B	10/30/04	5
Styrene	BDL	0.0058	mg/kg	8260B	10/30/04	5
1,1,1,2-Tetrachloroethane	BDL	0.0058	mg/kg	8260B	10/30/04	5
1,1,2,2-Tetrachloroethane	BDL	0.0058	mg/kg	8260B	10/30/04	5
Tetrachloroethene	BDL	0.0058	mg/kg	8260B	10/30/04	5
Toluene	BDL	0.029	mg/kg	8260B	10/30/04	5
1,2,3-Trichlorobenzene	BDL	0.0058	mg/kg	8260B	10/30/04	5
1,2,4-Trichlorobenzene	BDL	0.0058	mg/kg	8260B	10/30/04	5
1,1,1-Trichloroethane	BDL	0.0058	mg/kg	8260B	10/30/04	5
1,1,2-Trichloroethane	BDL	0.0058	mg/kg	8260B	10/30/04	5
1,1,2-Trichloro-1,2,2-trifluoro	BDL	0.0058	mg/kg	8260B	10/30/04	5
Trichloroethene	BDL	0.0058	mg/kg	8260B	10/30/04	5
Trichlorofluoromethane	BDL	0.0058	mg/kg	8260B	10/30/04	5
1,2,3-Trichloropropane	BDL	0.0058	mg/kg	8260B	10/30/04	5
1,2,4-Trimethylbenzene	BDL	0.0058	mg/kg	8260B	10/30/04	5
1,3,5-Trimethylbenzene	BDL	0.0058	mg/kg	8260B	10/30/04	5
Vinyl chloride	BDL	0.0058	mg/kg	8260B	10/30/04	5
Xylenes, Total	BDL	0.017	mg/kg	8260B	10/30/04	5
Surrogate Recovery						
Toluene-d8	96.		% Rec.	8260B	10/30/04	5
Dibromofluoromethane	96.		% Rec.	8260B	10/30/04	5
4-Bromofluorobenzene	91.		% Rec.	8260B	10/30/04	5

Jeff Carr, ESC Representative

Results listed are dry weight basis.
BDL - Below Detection Limit
Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:
AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01
KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233
MN - 047-999-395, NY - 11742

Note:
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The reported analytical results relate only to the sample submitted
Reported: 11/08/04 09:35 Printed: 11/08/04 10:54

ENVIRONMENTAL
SCIENCE CORP.

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

November 08,2004

Cheryl Stipsits
Sigma Chemical
3500 DeKalb
St. Louis, MO 63118

ESC Sample # : L175351-02

Date Received : October 28, 2004
Description : K-7 Sewer Dekalb

Site ID :

Sample ID : COMPOSITE 2 2-4 FT

Project # :

Collected By : Cheryl Stipsits
Collection Date : 10/19/04 13:00

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
Total Solids	87.0		%	2540G	11/06/04	1
Volatile Organics						
Acetone	2.1	0.14	mg/kg	8260B	11/01/04	5
Acrolein	BDL	0.29	mg/kg	8260B	11/01/04	5
Acrylonitrile	BDL	0.057	mg/kg	8260B	11/01/04	5
Benzene	BDL	0.0057	mg/kg	8260B	11/01/04	5
Bromobenzene	BDL	0.0057	mg/kg	8260B	11/01/04	5
Bromodichloromethane	BDL	0.0057	mg/kg	8260B	11/01/04	5
Bromoform	BDL	0.0057	mg/kg	8260B	11/01/04	5
Bromomethane	BDL	0.0057	mg/kg	8260B	11/01/04	5
n-Butylbenzene	BDL	0.0057	mg/kg	8260B	11/01/04	5
sec-Butylbenzene	BDL	0.0057	mg/kg	8260B	11/01/04	5
tert-Butylbenzene	BDL	0.0057	mg/kg	8260B	11/01/04	5
Carbon tetrachloride	BDL	0.0057	mg/kg	8260B	11/01/04	5
Chlorobenzene	BDL	0.0057	mg/kg	8260B	11/01/04	5
Chlorodibromomethane	BDL	0.0057	mg/kg	8260B	11/01/04	5
Chloroethane	BDL	0.0057	mg/kg	8260B	11/01/04	5
2-Chloroethyl vinyl ether	BDL	0.29	mg/kg	8260B	11/01/04	5
Chloroform	BDL	0.029	mg/kg	8260B	11/01/04	5
Chloromethane	BDL	0.0057	mg/kg	8260B	11/01/04	5
2-Chlorotoluene	BDL	0.0057	mg/kg	8260B	11/01/04	5
4-Chlorotoluene	BDL	0.0057	mg/kg	8260B	11/01/04	5
1,2-Dibromo-3-Chloropropane	BDL	0.011	mg/kg	8260B	11/01/04	5
1,2-Dibromoethane	BDL	0.0057	mg/kg	8260B	11/01/04	5
Dibromomethane	BDL	0.0057	mg/kg	8260B	11/01/04	5
1,2-Dichlorobenzene	BDL	0.0057	mg/kg	8260B	11/01/04	5
1,3-Dichlorobenzene	BDL	0.0057	mg/kg	8260B	11/01/04	5
1,4-Dichlorobenzene	BDL	0.0057	mg/kg	8260B	11/01/04	5
Dichlorodifluoromethane	BDL	0.0057	mg/kg	8260B	11/01/04	5
1,1-Dichloroethane	BDL	0.0057	mg/kg	8260B	11/01/04	5
1,2-Dichloroethane	BDL	0.0057	mg/kg	8260B	11/01/04	5
1,1-Dichloroethene	BDL	0.0057	mg/kg	8260B	11/01/04	5
cis-1,2-Dichloroethene	BDL	0.0057	mg/kg	8260B	11/01/04	5
trans-1,2-Dichloroethene	BDL	0.0057	mg/kg	8260B	11/01/04	5
1,2-Dichloropropane	BDL	0.0057	mg/kg	8260B	11/01/04	5
1,1-Dichloropropene	BDL	0.0057	mg/kg	8260B	11/01/04	5
1,3-Dichloropropane	BDL	0.0057	mg/kg	8260B	11/01/04	5

Results listed are dry weight basis.
BDL - Below Detection Limit
Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:
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Cheryl Stipsits
Sigma Chemical
3500 DeKalb
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ESC Sample # : L175351-02

Date Received : October 28, 2004
Description : K-7 Sewer Dekalb

Site ID :

Sample ID : COMPOSITE 2 2-4 FT

Project # :

Collected By : Cheryl Stipsits
Collection Date : 10/19/04 13:00

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
cis-1,3-Dichloropropene	BDL	0.0057	mg/kg	8260B	11/01/04	5
trans-1,3-Dichloropropene	BDL	0.0057	mg/kg	8260B	11/01/04	5
2,2-Dichloropropane	BDL	0.0057	mg/kg	8260B	11/01/04	5
Di-isopropyl ether	BDL	0.0057	mg/kg	8260B	11/01/04	5
Ethylbenzene	BDL	0.0057	mg/kg	8260B	11/01/04	5
Hexachlorobutadiene	BDL	0.0057	mg/kg	8260B	11/01/04	5
Isopropylbenzene	BDL	0.0057	mg/kg	8260B	11/01/04	5
p-Isopropyltoluene	BDL	0.0057	mg/kg	8260B	11/01/04	5
2-Butanone (MEK)	BDL	0.057	mg/kg	8260B	11/01/04	5
Methylene Chloride	BDL	0.029	mg/kg	8260B	11/01/04	5
4-Methyl-2-pentanone (MIBK)	BDL	0.057	mg/kg	8260B	11/01/04	5
Methyl tert-butyl ether	BDL	0.0057	mg/kg	8260B	11/01/04	5
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n-Propylbenzene	BDL	0.0057	mg/kg	8260B	11/01/04	5
Styrene	BDL	0.0057	mg/kg	8260B	11/01/04	5
1,1,1,2-Tetrachloroethane	BDL	0.0057	mg/kg	8260B	11/01/04	5
1,1,2,2-Tetrachloroethane	BDL	0.0057	mg/kg	8260B	11/01/04	5
Tetrachloroethene	BDL	0.0057	mg/kg	8260B	11/01/04	5
Toluene	BDL	0.029	mg/kg	8260B	11/01/04	5
1,2,3-Trichlorobenzene	BDL	0.0057	mg/kg	8260B	11/01/04	5
1,2,4-Trichlorobenzene	BDL	0.0057	mg/kg	8260B	11/01/04	5
1,1,1-Trichloroethane	BDL	0.0057	mg/kg	8260B	11/01/04	5
1,1,2-Trichloroethane	BDL	0.0057	mg/kg	8260B	11/01/04	5
1,1,2-Trichloro-1,2,2-trifluoro	BDL	0.0057	mg/kg	8260B	11/01/04	5
Trichloroethene	BDL	0.0057	mg/kg	8260B	11/01/04	5
Trichlorofluoromethane	BDL	0.0057	mg/kg	8260B	11/01/04	5
1,2,3-Trichloropropane	BDL	0.0057	mg/kg	8260B	11/01/04	5
1,2,4-Trimethylbenzene	BDL	0.0057	mg/kg	8260B	11/01/04	5
1,3,5-Trimethylbenzene	BDL	0.0057	mg/kg	8260B	11/01/04	5
Vinyl chloride	BDL	0.0057	mg/kg	8260B	11/01/04	5
Xylenes, Total	BDL	0.017	mg/kg	8260B	11/01/04	5
Surrogate Recovery						
Toluene-d8	97.		% Rec.	8260B	11/01/04	5
Dibromofluoromethane	97.		% Rec.	8260B	11/01/04	5
4-Bromofluorobenzene	92.		% Rec.	8260B	11/01/04	5

Jeff Carr, ESC Representative

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CERTIFIED MAIL: Z 514 038 357
Return Receipt Requested

June 4, 1999

Ms. Natalie Roark
Missouri Department of Natural Resources
Hazardous Waste Program
P.O. Box 176
Jefferson City, MO 65102

RE: Sigma Chemical Company
3500 Dekalb Street
SWMU/AOC Management Report (RCRA Facility Investigation/Corrective Measures)

Dear Ms. Roark:

Enclosed, please find the DRAFT Sigma Chemical Company SWMU/AOC Management Report ("Report") for your review and approval. The Report evaluates ten Solid Waste Management Units (SWMUs) and five Areas of Concern (AOCs) that were identified in the RCRA Facility Assessment (RFA) conducted in 1994-1995. As previously discussed with you, Sigma believes that some of the areas identified in the RFA should not have been designated as a SWMU or AOC. However, for clarity we have addressed and accounted for each SWMU and AOC found in the RFA. Further, Sigma is taking this proactive approach to address the issues raised in the RCRA Facility Assessment (RFA) in order to fulfill the requirements of 40 CFR §264 Subpart S.

Sigma has received guidance from Schreiber, Yonley, and Associates and Intertox, Inc., and we believe the Report addresses the issues contained in the RFA. Sigma understands that MDNR may have questions regarding the Report and we are looking forward to working with your office. For your convenience, a complete copy of the Report has been forwarded to Ms. Deborah Kennedy at the U.S. EPA Region VII Office in Kansas City, Kansas.

Please do not hesitate to contact me at (314) 286-7931, or Tim Venverloh at (314) 286-7990, if you have any comments or questions.

Sincerely,

SIGMA CHEMICAL COMPANY

Cheryl Stipsits
Environmental Engineer

cc: Deborah Kennedy, USEPA Region VII

Enclosure

SEVERN TRENT STL

STL St. Louis
13715 Rider Trail North
Earth City, MO 63045

Tel: 314 298 8566 Fax: 314 298 8757
www.stl-inc.com

ANALYTICAL REPORT

Coldroom A-B

Lot #: F5F170342

Cheryl Stipsits

Sigma Chemical Company
P.O. Box 14508
St. Louis, MO 63103

SEVERN TRENT LABORATORIES, INC.

David Rekosh
Project Manager

June 21, 2005

SIGMA CHEMICAL COMPANY

Client Sample ID: SOIL SAMPLE A-B

TCLP GC/MS Volatiles

Lot-Sample #...:	F5F170342-001	Work Order #...:	HDWC41AL	Matrix.....:	SOLID
Date Sampled...:	06/17/05 15:00	Date Received..:	06/17/05		
Leach Date.....:	06/17/05	Prep Date.....:	06/20/05	Analysis Date..:	06/20/05
Leach Batch #..:	P516815	Prep Batch #...:	5171229	Analysis Time..:	15:42
Dilution Factor:	1				
% Moisture.....:	8.0	Method.....:	SW846 8260B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Vinyl chloride	ND	100	ug/L
1,1-Dichloroethene	ND	50	ug/L
2-Butanone	ND	50	ug/L
6000 **Chloroform**	**14 J**	**50**	**ug/L**
Carbon tetrachloride	ND	50	ug/L
1,2-Dichloroethane	ND	50	ug/L
Benzene	ND	50	ug/L
Trichloroethene	ND	50	ug/L
Tetrachloroethene	ND	50	ug/L
Chlorobenzene	ND	50	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	108	(71 - 138)
Toluene-d8	110	(81 - 121)
4-Bromofluorobenzene	102	(82 - 123)
1,2-Dichloroethane-d4	101	(83 - 126)

NOTE(S):

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching Procedure Method 1311

J Estimated result. Result is less than RL.

SIGMA CHEMICAL COMPANY

Client Sample ID: SOIL SAMPLE A-B

TCLP GC/MS Semivolatiles

Lot-Sample #...:	F5F170342-001	Work Order #...:	HDWC41AA	Matrix.....:	SOLID
Date Sampled...:	06/17/05 15:00	Date Received..:	06/17/05		
Leach Date.....:	06/17/05	Prep Date.....:	06/19/05	Analysis Date..:	06/19/05
Leach Batch #..:	P516814	Prep Batch #...:	5170018	Analysis Time..:	20:16
Dilution Factor:	1				
% Moisture.....:	8.0	Method.....:	SW846 8270C		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Pyridine	ND	100	ug/L
1,4-Dichlorobenzene	ND	50	ug/L
2-Methylphenol	ND	50	ug/L
3-Methylphenol & 4-Methylphenol	ND	100	ug/L
Hexachloroethane	ND	50	ug/L
Nitrobenzene	ND	50	ug/L
Hexachlorobutadiene	ND	50	ug/L
2,4,6-Trichloro-phenol	ND	50	ug/L
2,4,5-Trichloro-phenol	ND	50	ug/L
2,4-Dinitrotoluene	ND	50	ug/L
Hexachlorobenzene	ND	50	ug/L
Pentachlorophenol	ND	250	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	37	(10 - 86)
Phenol-d5	26	(10 - 95)
Nitrobenzene-d5	65	(50 - 104)
2-Fluorobiphenyl	59	(41 - 111)
Terphenyl-d14	77	(19 - 119)
2,4,6-Tribromophenol	69	(17 - 121)

NOTE(S):

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching Procedure Method 1311

SIGMA CHEMICAL COMPANY

Client Sample ID: SOIL SAMPLE A-B

GC Semivolatiles

Lot-Sample #...: F5F170342-001 Work Order #...: HDWC41AU Matrix.....: SOLID
Date Sampled...: 06/17/05 15:00 Date Received..: 06/17/05
Prep Date.....: 06/20/05 Analysis Date..: 06/20/05
Prep Batch #...: 5171150 Analysis Time..: 17:04
Dilution Factor: 1
% Moisture.....: 8.0 Method.....: SW846 8082

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Aroclor 1016	ND	36	ug/kg
Aroclor 1221	ND	36	ug/kg
Aroclor 1232	ND	36	ug/kg
Aroclor 1242	ND	36	ug/kg
Aroclor 1248	ND	36	ug/kg
Aroclor 1254	ND	36	ug/kg
Aroclor 1260	ND	36	ug/kg
Aroclor 1262	ND	36	ug/kg
Aroclor 1268	ND	36	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	154 *	(30 - 150)

NOTE(S):

* Surrogate recovery is outside stated control limits.

Results and reporting limits have been adjusted for dry weight.

SIGMA CHEMICAL COMPANY

Client Sample ID: SOIL SAMPLE A-B

TCLP Metals

Lot-Sample #...: F5F170342-001 Matrix.....: SOLID
Date Sampled...: 06/17/05 15:00 Date Received..: 06/17/05
Leach Date.....: 06/17/05 Leach Batch #..: P516814

	PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
	Prep Batch #...: 5171056						
200	Mercury	0.27 B	10.0	ug/L	SW846 7470A	06/20/05	HDWC41AW
			Dilution Factor: 5		Analysis Time..: 15:14		
	Prep Batch #...: 5171141						
	Arsenic	ND	500	ug/L	SW846 6010B	06/20-06/21/05	HDWC41AD
			Dilution Factor: 1		Analysis Time..: 09:17		
	Barium	352 B,J	500	ug/L	SW846 6010B	06/20-06/21/05	HDWC41AE
			Dilution Factor: 1		Analysis Time..: 09:17		
1000	Cadmium	2.7 B	15.0	ug/L	SW846 6010B	06/20-06/21/05	HDWC41AF
			Dilution Factor: 1		Analysis Time..: 09:17		
	Chromium	ND	25.0	ug/L	SW846 6010B	06/20-06/21/05	HDWC41AG
			Dilution Factor: 1		Analysis Time..: 09:17		
5000	Lead	48.7 B	250	ug/L	SW846 6010B	06/20-06/21/05	HDWC41AH
			Dilution Factor: 1		Analysis Time..: 09:17		
	Silver	ND	25.0	ug/L	SW846 6010B	06/20-06/21/05	HDWC41AJ
			Dilution Factor: 1		Analysis Time..: 09:17		
	Selenium	ND	500	ug/L	SW846 6010B	06/20-06/21/05	HDWC41AK
			Dilution Factor: 1		Analysis Time..: 09:17		

NOTE(S):

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching Procedure Method 1311

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

SIGMA CHEMICAL COMPANY

Client Sample ID: SOIL SAMPLE A-B

General Chemistry

Lot-Sample #...: F5F170342-001 Work Order #...: HDWC4 Matrix.....: SOLID
Date Sampled...: 06/17/05 15:00 Date Received..: 06/17/05
% Moisture.....: 8.0

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH (solid)	11.0	0.10	No Units	SW846 9045C	06/21/05	5172178
		Dilution Factor: 1		Analysis Time..: 00:00		
Flashpoint	>60.0	25.0	deg C	ASTM D 92-90	06/21/05	5172255
		Dilution Factor: 1		Analysis Time..: 00:00		
Paint Filter Test	PAS,S		No Units	SW846 9095	06/20/05	5171185
		Dilution Factor: 1		Analysis Time..: 00:00		
Percent Moisture	8.0	0.10	%	MCAWW 160.3 MOD	06/18-06/19/05	5169018
		Dilution Factor: 1		Analysis Time..: 00:00		
Phenol	ND	5.4	mg/kg	MCAWW 420.2	06/21/05	5172477
		Dilution Factor: 1		Analysis Time..: 00:00		
Reactive Cyanide	ND	0.27	mg/kg	SW846 7.3.3	06/21/05	5172322
		Dilution Factor: 1		Analysis Time..: 00:00		
Reactive Sulfide	ND	24.1	mg/kg	SW846 7.3.4	06/21/05	5172422
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Extractable Organic Halogens	ND	54.4	mg/kg	SW846 9023	06/21/05	5172427
		Dilution Factor: 1		Analysis Time..: 00:00		

NOTE(S):

RL Reporting Limit

S The result was determined using the Method of Standard Additions (MSA).

Results and reporting limits have been adjusted for dry weight.

LOT#: F5F170342

COC 1103

[redacted]

Chain of Custody Record

SEVERN TRENT **STL**

Severn Trent Laboratories, Inc.

L-4124 (0901)

Client	Sigma-Aldrich
Address	3500 DeKalb St.
City / State / Zip Code	St. Louis / MO / 63118
Project Name and Location (State)	Coldroom A-B
Contract/Purchase Order/Quote No.	
Project Manager	
Telephone Number (Area Code)/Fax Number	(314) 286-7931
Site Contact	
Lab Contact	
Carrier/Waybill Number	
Date	6/17/05
Lab Number	
Chain of Custody Number	225056
Page	1 of 1

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil		Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH		Paint Filter	FP (open-cup)	pH	TCLP Metals	TCLP Org.	Reactive Cyan	Reactive Sulfide	F-Code Solvents	PCBs				Special Instructions/ Conditions of Receipt
SOIL SAMPLE A-B	6/17/05	3pm				X		X						3	X	X	X	X	X	X	X	X	X				

Analysis (Attach list if more space is needed)

Possible Hazard Identification: ☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required: ☐ 24 Hours ☒ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other _____

QC Requirements (Specify):

	Date	Time
Relinquished By: Cheryl Siggatz	6/17/05	3pm
Relinquished By: [signature]	6-17-05	1537
Relinquished By:		
1. Received By: [signature]	6-17-05	1500
2. Received By:	6/17/05	1537
3. Received By:		

Comments:

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

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June 27, 2006

R. Wolf
Sigma - Aldrich Corp.
3500 DeKalb
Saint Louis, MO 63118

RE: Project: BUCKET WASH SEWER
Pace Project No.: 609815

Dear R. Wolf:

Enclosed are the analytical results for sample(s) received by the laboratory on June 16, 2006. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Derek Varney

derek.varney@pacelabs.com
Project Manager

Arkansas Certification Number: 05-008-0
California Certification Number: 02109CA
Illinois Certification Number: 001191
Iowa Certification Number: 118
Kansas/NELAP Certification Number: E-10116
Louisiana Certification Number: 03055
Minnesota Certification Number: 020-999-394
Oklahoma Certification Number: 9205/9935
Utah Certification Number: 9135995665

Enclosures

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SAMPLE SUMMARY

Project: BUCKET WASH SEWER
Pace Project No.: 609815

Lab ID	Sample ID	Matrix	Date Collected	Date Received
609815001	**SAMPLE1BW**	Solid	06/15/06 10:15	06/16/06 11:50
609815002	**SAMPLE2BW**	Solid	06/15/06 10:15	06/16/06 11:50

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SAMPLE ANALYTE COUNT

Project: BUCKET WASH SEWER
Pace Project No.: 609815

Lab ID	Sample ID	Method	Analytes Reported
609815001	**SAMPLE1BW**	ASTM D2974-87	1
		EPA 8260	69
609815002	**SAMPLE2BW**	ASTM D2974-87	1
		EPA 8260	69

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ANALYTICAL RESULTS

Project: BUCKET WASH SEWER
Pace Project No.: 609815

Sample: SAMPLE1BW **Lab ID: 609815001** Collected: 06/15/06 10:15 Received: 06/16/06 11:50 Matrix: Solid

Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260/5035A Volatile Organics	Analytical Method: EPA 8260							
Acetone	ND	ug/kg	24.3	1		06/20/06 15:46	67-64-1	
Benzene	ND	ug/kg	6.1	1		06/20/06 15:46	71-43-2	
Bromobenzene	ND	ug/kg	6.1	1		06/20/06 15:46	108-86-1	
Bromochloromethane	ND	ug/kg	6.1	1		06/20/06 15:46	74-97-5	
Bromodichloromethane	ND	ug/kg	6.1	1		06/20/06 15:46	75-27-4	
Bromoform	ND	ug/kg	6.1	1		06/20/06 15:46	75-25-2	
Bromomethane	ND	ug/kg	6.1	1		06/20/06 15:46	74-83-9	
2-Butanone (MEK)	ND	ug/kg	12.2	1		06/20/06 15:46	78-93-3	
n-Butylbenzene	ND	ug/kg	6.1	1		06/20/06 15:46	104-51-8	
sec-Butylbenzene	ND	ug/kg	6.1	1		06/20/06 15:46	135-98-8	
tert-Butylbenzene	ND	ug/kg	6.1	1		06/20/06 15:46	98-06-6	
Carbon disulfide	ND	ug/kg	6.1	1		06/20/06 15:46	75-15-0	
Carbon tetrachloride	ND	ug/kg	6.1	1		06/20/06 15:46	56-23-5	
Chlorobenzene	ND	ug/kg	6.1	1		06/20/06 15:46	108-90-7	
Chloroethane	ND	ug/kg	6.1	1		06/20/06 15:46	75-00-3	
Chloroform	ND	ug/kg	6.1	1		06/20/06 15:46	67-66-3	
Chloromethane	ND	ug/kg	6.1	1		06/20/06 15:46	74-87-3	
2-Chlorotoluene	ND	ug/kg	6.1	1		06/20/06 15:46	95-49-8	
4-Chlorotoluene	ND	ug/kg	6.1	1		06/20/06 15:46	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/kg	6.1	1		06/20/06 15:46	96-12-8	
Dibromochloromethane	ND	ug/kg	6.1	1		06/20/06 15:46	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/kg	6.1	1		06/20/06 15:46	106-93-4	
Dibromomethane	ND	ug/kg	6.1	1		06/20/06 15:46	74-95-3	
1,2-Dichlorobenzene	ND	ug/kg	6.1	1		06/20/06 15:46	95-50-1	
1,3-Dichlorobenzene	ND	ug/kg	6.1	1		06/20/06 15:46	541-73-1	
1,4-Dichlorobenzene	ND	ug/kg	6.1	1		06/20/06 15:46	106-46-7	
Dichlorodifluoromethane	ND	ug/kg	6.1	1		06/20/06 15:46	75-71-8	
1,1-Dichloroethane	ND	ug/kg	6.1	1		06/20/06 15:46	75-34-3	
1,2-Dichloroethane	ND	ug/kg	6.1	1		06/20/06 15:46	107-06-2	
1,2-Dichloroethene (Total)	ND	ug/kg	6.1	1		06/20/06 15:46	540-59-0	
1,1-Dichloroethene	ND	ug/kg	6.1	1		06/20/06 15:46	75-35-4	
cis-1,2-Dichloroethene	ND	ug/kg	6.1	1		06/20/06 15:46	156-59-2	
trans-1,2-Dichloroethene	ND	ug/kg	6.1	1		06/20/06 15:46	156-60-5	
1,2-Dichloropropane	ND	ug/kg	6.1	1		06/20/06 15:46	78-87-5	
1,3-Dichloropropane	ND	ug/kg	6.1	1		06/20/06 15:46	142-28-9	
2,2-Dichloropropane	ND	ug/kg	6.1	1		06/20/06 15:46	594-20-7	
1,1-Dichloropropene	ND	ug/kg	6.1	1		06/20/06 15:46	563-58-6	
cis-1,3-Dichloropropene	ND	ug/kg	6.1	1		06/20/06 15:46	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/kg	6.1	1		06/20/06 15:46	10061-02-6	
Ethylbenzene	ND	ug/kg	6.1	1		06/20/06 15:46	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/kg	6.1	1		06/20/06 15:46	87-68-3	
2-Hexanone	ND	ug/kg	24.3	1		06/20/06 15:46	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/kg	6.1	1		06/20/06 15:46	98-82-8	
p-Isopropyltoluene	ND	ug/kg	6.1	1		06/20/06 15:46	99-87-6	
Methylene chloride	ND	ug/kg	6.1	1		06/20/06 15:46	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	12.2	1		06/20/06 15:46	108-10-1	

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ANALYTICAL RESULTS

Project: BUCKET WASH SEWER
Pace Project No.: 609815

Sample: SAMPLE1BW **Lab ID: 609815001** Collected: 06/15/06 10:15 Received: 06/16/06 11:50 Matrix: Solid

Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260/5035A Volatile Organics	Analytical Method: EPA 8260							
Methyl-tert-butyl ether	ND	ug/kg	6.1	1		06/20/06 15:46	1634-04-4	
Naphthalene	ND	ug/kg	12.2	1		06/20/06 15:46	91-20-3	
n-Propylbenzene	ND	ug/kg	6.1	1		06/20/06 15:46	103-65-1	
Styrene	ND	ug/kg	6.1	1		06/20/06 15:46	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/kg	6.1	1		06/20/06 15:46	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/kg	6.1	1		06/20/06 15:46	79-34-5	
Tetrachloroethene	ND	ug/kg	6.1	1		06/20/06 15:46	127-18-4	
Toluene	**8.3**	ug/kg	6.1	1		06/20/06 15:46	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/kg	6.1	1		06/20/06 15:46	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/kg	6.1	1		06/20/06 15:46	120-82-1	
1,1,1-Trichloroethane	ND	ug/kg	6.1	1		06/20/06 15:46	71-55-6	
1,1,2-Trichloroethane	ND	ug/kg	6.1	1		06/20/06 15:46	79-00-5	
Trichloroethene	ND	ug/kg	6.1	1		06/20/06 15:46	79-01-6	
Trichlorofluoromethane	ND	ug/kg	6.1	1		06/20/06 15:46	75-69-4	
1,2,3-Trichloropropane	ND	ug/kg	6.1	1		06/20/06 15:46	96-18-4	
1,2,4-Trimethylbenzene	**6.7**	ug/kg	6.1	1		06/20/06 15:46	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/kg	6.1	1		06/20/06 15:46	108-67-8	
Vinyl chloride	ND	ug/kg	6.1	1		06/20/06 15:46	75-01-4	
Xylene (Total)	**16.2**	ug/kg	6.1	1		06/20/06 15:46	1330-20-7	
Dibromofluoromethane (S)	105	%	82-118	1		06/20/06 15:46	1868-53-7	
Toluene-d8 (S)	100	%	88-114	1		06/20/06 15:46	2037-26-5	
4-Bromofluorobenzene (S)	93	%	78-117	1		06/20/06 15:46	460-00-4	
1,2-Dichloroethane-d4 (S)	105	%	79-129	1		06/20/06 15:46	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974-87							
Percent Moisture	**16.9**	%	0.10	1		06/22/06 00:00		

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ANALYTICAL RESULTS

Project: BUCKET WASH SEWER
Pace Project No.: 609815

Sample: SAMPLE2BW **Lab ID: 609815002** Collected: 06/15/06 10:15 Received: 06/16/06 11:50 Matrix: Solid

Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260/5035A Volatile Organics	Analytical Method: EPA 8260							
Acetone	ND	ug/kg	22.4	1		06/20/06 16:03	67-64-1	
Benzene	ND	ug/kg	5.6	1		06/20/06 16:03	71-43-2	
Bromobenzene	ND	ug/kg	5.6	1		06/20/06 16:03	108-86-1	
Bromochloromethane	ND	ug/kg	5.6	1		06/20/06 16:03	74-97-5	
Bromodichloromethane	ND	ug/kg	5.6	1		06/20/06 16:03	75-27-4	
Bromoform	ND	ug/kg	5.6	1		06/20/06 16:03	75-25-2	
Bromomethane	ND	ug/kg	5.6	1		06/20/06 16:03	74-83-9	
2-Butanone (MEK)	ND	ug/kg	11.2	1		06/20/06 16:03	78-93-3	
n-Butylbenzene	ND	ug/kg	5.6	1		06/20/06 16:03	104-51-8	
sec-Butylbenzene	ND	ug/kg	5.6	1		06/20/06 16:03	135-98-8	
tert-Butylbenzene	ND	ug/kg	5.6	1		06/20/06 16:03	98-06-6	
Carbon disulfide	ND	ug/kg	5.6	1		06/20/06 16:03	75-15-0	
Carbon tetrachloride	ND	ug/kg	5.6	1		06/20/06 16:03	56-23-5	
Chlorobenzene	ND	ug/kg	5.6	1		06/20/06 16:03	108-90-7	
Chloroethane	ND	ug/kg	5.6	1		06/20/06 16:03	75-00-3	
Chloroform	ND	ug/kg	5.6	1		06/20/06 16:03	67-66-3	
Chloromethane	ND	ug/kg	5.6	1		06/20/06 16:03	74-87-3	
2-Chlorotoluene	ND	ug/kg	5.6	1		06/20/06 16:03	95-49-8	
4-Chlorotoluene	ND	ug/kg	5.6	1		06/20/06 16:03	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/kg	5.6	1		06/20/06 16:03	96-12-8	
Dibromochloromethane	ND	ug/kg	5.6	1		06/20/06 16:03	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/kg	5.6	1		06/20/06 16:03	106-93-4	
Dibromomethane	ND	ug/kg	5.6	1		06/20/06 16:03	74-95-3	
1,2-Dichlorobenzene	ND	ug/kg	5.6	1		06/20/06 16:03	95-50-1	
1,3-Dichlorobenzene	ND	ug/kg	5.6	1		06/20/06 16:03	541-73-1	
1,4-Dichlorobenzene	ND	ug/kg	5.6	1		06/20/06 16:03	106-46-7	
Dichlorodifluoromethane	ND	ug/kg	5.6	1		06/20/06 16:03	75-71-8	
1,1-Dichloroethane	ND	ug/kg	5.6	1		06/20/06 16:03	75-34-3	
1,2-Dichloroethane	ND	ug/kg	5.6	1		06/20/06 16:03	107-06-2	
1,2-Dichloroethene (Total)	ND	ug/kg	5.6	1		06/20/06 16:03	540-59-0	
1,1-Dichloroethene	ND	ug/kg	5.6	1		06/20/06 16:03	75-35-4	
cis-1,2-Dichloroethene	ND	ug/kg	5.6	1		06/20/06 16:03	156-59-2	
trans-1,2-Dichloroethene	ND	ug/kg	5.6	1		06/20/06 16:03	156-60-5	
1,2-Dichloropropane	ND	ug/kg	5.6	1		06/20/06 16:03	78-87-5	
1,3-Dichloropropane	ND	ug/kg	5.6	1		06/20/06 16:03	142-28-9	
2,2-Dichloropropane	ND	ug/kg	5.6	1		06/20/06 16:03	594-20-7	
1,1-Dichloropropene	ND	ug/kg	5.6	1		06/20/06 16:03	563-58-6	
cis-1,3-Dichloropropene	ND	ug/kg	5.6	1		06/20/06 16:03	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/kg	5.6	1		06/20/06 16:03	10061-02-6	
Ethylbenzene	ND	ug/kg	5.6	1		06/20/06 16:03	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/kg	5.6	1		06/20/06 16:03	87-68-3	
2-Hexanone	ND	ug/kg	22.4	1		06/20/06 16:03	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/kg	5.6	1		06/20/06 16:03	98-82-8	
p-Isopropyltoluene	ND	ug/kg	5.6	1		06/20/06 16:03	99-87-6	
Methylene chloride	ND	ug/kg	5.6	1		06/20/06 16:03	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	11.2	1		06/20/06 16:03	108-10-1	

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ANALYTICAL RESULTS

Project: BUCKET WASH SEWER
Pace Project No.: 609815

Sample: SAMPLE2BW **Lab ID: 609815002** Collected: 06/15/06 10:15 Received: 06/16/06 11:50 Matrix: Solid

Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260/5035A Volatile Organics	Analytical Method: EPA 8260							
Methyl-tert-butyl ether	ND	ug/kg	5.6	1		06/20/06 16:03	1634-04-4	
Naphthalene	ND	ug/kg	11.2	1		06/20/06 16:03	91-20-3	
n-Propylbenzene	ND	ug/kg	5.6	1		06/20/06 16:03	103-65-1	
Styrene	ND	ug/kg	5.6	1		06/20/06 16:03	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/kg	5.6	1		06/20/06 16:03	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/kg	5.6	1		06/20/06 16:03	79-34-5	
Tetrachloroethene	ND	ug/kg	5.6	1		06/20/06 16:03	127-18-4	
Toluene	**7.2**	ug/kg	5.6	1		06/20/06 16:03	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/kg	5.6	1		06/20/06 16:03	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/kg	5.6	1		06/20/06 16:03	120-82-1	
1,1,1-Trichloroethane	ND	ug/kg	5.6	1		06/20/06 16:03	71-55-6	
1,1,2-Trichloroethane	ND	ug/kg	5.6	1		06/20/06 16:03	79-00-5	
Trichloroethene	ND	ug/kg	5.6	1		06/20/06 16:03	79-01-6	
Trichlorofluoromethane	ND	ug/kg	5.6	1		06/20/06 16:03	75-69-4	
1,2,3-Trichloropropane	ND	ug/kg	5.6	1		06/20/06 16:03	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/kg	5.6	1		06/20/06 16:03	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/kg	5.6	1		06/20/06 16:03	108-67-8	
Vinyl chloride	ND	ug/kg	5.6	1		06/20/06 16:03	75-01-4	
Xylene (Total)	ND	ug/kg	5.6	1		06/20/06 16:03	1330-20-7	
Dibromofluoromethane (S)	102	%	82-118	1		06/20/06 16:03	1868-53-7	
Toluene-d8 (S)	93	%	88-114	1		06/20/06 16:03	2037-26-5	
4-Bromofluorobenzene (S)	95	%	78-117	1		06/20/06 16:03	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	79-129	1		06/20/06 16:03	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974-87							
Percent Moisture	**10.1**	%	0.10	1		06/22/06 00:00		

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QUALITY CONTROL DATA

Project: BUCKET WASH SEWER
Pace Project No.: 609815

QC Batch: MSV/4014
Analysis Method: EPA 8260
QC Batch Method: EPA 8260
Analysis Description: 8260 MSV 5035A Volatile Organics
Associated Lab Samples: 609815001, 609815002

METHOD BLANK: 78063
Associated Lab Samples: 609815001, 609815002

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
1,1-Dichloroethane	ug/kg	ND	5.0	
1,1-Dichloroethene	ug/kg	ND	5.0	
1,1-Dichloropropene	ug/kg	ND	5.0	
1,1,1-Trichloroethane	ug/kg	ND	5.0	
1,1,2-Trichloroethane	ug/kg	ND	5.0	
1,1,1,2-Tetrachloroethane	ug/kg	ND	5.0	
1,1,2,2-Tetrachloroethane	ug/kg	ND	5.0	
1,2,4-Trichlorobenzene	ug/kg	ND	5.0	
1,2-Dichlorobenzene	ug/kg	ND	5.0	
1,2-Dibromo-3-chloropropane	ug/kg	ND	5.0	
1,2-Dichloroethane	ug/kg	ND	5.0	
1,2-Dibromoethane (EDB)	ug/kg	ND	5.0	
1,2-Dichloropropane	ug/kg	ND	5.0	
1,2-Dichloroethene (Total)	ug/kg	ND	5.0	
1,2,4-Trimethylbenzene	ug/kg	ND	5.0	
1,2,3-Trichlorobenzene	ug/kg	ND	5.0	
1,2,3-Trichloropropane	ug/kg	ND	5.0	
1,3-Dichlorobenzene	ug/kg	ND	5.0	
1,3-Dichloropropane	ug/kg	ND	5.0	
1,3,5-Trimethylbenzene	ug/kg	ND	5.0	
1,4-Dichlorobenzene	ug/kg	ND	5.0	
2,2-Dichloropropane	ug/kg	ND	5.0	
2-Butanone (MEK)	ug/kg	ND	10.0	
2-Chlorotoluene	ug/kg	ND	5.0	
2-Hexanone	ug/kg	ND	20.0	
4-Chlorotoluene	ug/kg	ND	5.0	
Carbon disulfide	ug/kg	ND	5.0	
Acetone	ug/kg	ND	20.0	
Bromochloromethane	ug/kg	ND	5.0	
Benzene	ug/kg	ND	5.0	
Bromobenzene	ug/kg	ND	5.0	
Bromodichloromethane	ug/kg	ND	5.0	
Bromomethane	ug/kg	ND	5.0	
Bromoform	ug/kg	ND	5.0	
cis-1,2-Dichloroethene	ug/kg	ND	5.0	
cis-1,3-Dichloropropene	ug/kg	ND	5.0	
Carbon tetrachloride	ug/kg	ND	5.0	
Chlorobenzene	ug/kg	ND	5.0	
Chloroethane	ug/kg	ND	5.0	
Chloroform	ug/kg	ND	5.0	
Chloromethane	ug/kg	ND	5.0	
Dibromochloromethane	ug/kg	ND	5.0	
Dichlorodifluoromethane	ug/kg	ND	5.0	

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QUALITY CONTROL DATA

Project: BUCKET WASH SEWER
Pace Project No.: 609815

METHOD BLANK: 78063

Associated Lab Samples: 609815001, 609815002

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
Dibromomethane	ug/kg	ND	5.0	
Ethylbenzene	ug/kg	ND	5.0	
Hexachloro-1,3-butadiene	ug/kg	ND	5.0	
Isopropylbenzene (Cumene)	ug/kg	ND	5.0	
Methylene chloride	ug/kg	ND	5.0	
Methyl-tert-butyl ether	ug/kg	ND	5.0	
4-Methyl-2-pentanone (MIBK)	ug/kg	ND	10.0	
Naphthalene	ug/kg	ND	10.0	
n-Butylbenzene	ug/kg	ND	5.0	
n-Propylbenzene	ug/kg	ND	5.0	
p-Isopropyltoluene	ug/kg	ND	5.0	
sec-Butylbenzene	ug/kg	ND	5.0	
Styrene	ug/kg	ND	5.0	
trans-1,2-Dichloroethene	ug/kg	ND	5.0	
trans-1,3-Dichloropropene	ug/kg	ND	5.0	
Tetrachloroethene	ug/kg	ND	5.0	
Toluene	ug/kg	ND	5.0	
Trichloroethene	ug/kg	ND	5.0	
Trichlorofluoromethane	ug/kg	ND	5.0	
tert-Butylbenzene	ug/kg	ND	5.0	
Xylene (Total)	ug/kg	ND	5.0	
Vinyl chloride	ug/kg	ND	5.0	
Dibromofluoromethane (S)	%	102	82-118	
Toluene-d8 (S)	%	102	88-114	
4-Bromofluorobenzene (S)	%	97	78-117	
1,2-Dichloroethane-d4 (S)	%	105	79-129	

LABORATORY CONTROL SAMPLE: 78064

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1-Dichloroethane	ug/kg	50	47.1	94	78-127	
1,1-Dichloroethene	ug/kg	50	55.1	110	65-144	
1,1-Dichloropropene	ug/kg	50	50.3	101	82-128	
1,1,1-Trichloroethane	ug/kg	50	50.7	101	80-131	
1,1,2-Trichloroethane	ug/kg	50	48.6	97	82-126	
1,1,1,2-Tetrachloroethane	ug/kg	50	51.4	103	89-122	
1,1,2,2-Tetrachloroethane	ug/kg	50	49.3	99	66-128	
1,2,4-Trichlorobenzene	ug/kg	50	47.1	94	68-135	
1,2-Dichlorobenzene	ug/kg	50	49.6	99	82-122	
1,2-Dibromo-3-chloropropane	ug/kg	50	43.2	86	71-131	
1,2-Dichloroethane	ug/kg	50	49.2	98	86-120	
1,2-Dibromoethane (EDB)	ug/kg	50	51.8	104	88-119	
1,2-Dichloropropane	ug/kg	50	50.2	100	78-124	
1,2-Dichloroethene (Total)	ug/kg	100	105	105	82-125	
1,2,4-Trimethylbenzene	ug/kg	50	48.2	96	70-127	

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QUALITY CONTROL DATA

Project: BUCKET WASH SEWER
Pace Project No.: 609815

LABORATORY CONTROL SAMPLE: 78064

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,3-Trichlorobenzene	ug/kg	50	50.8	102	73-135	
1,2,3-Trichloropropane	ug/kg	50	46.6	93	72-121	
1,3-Dichlorobenzene	ug/kg	50	48.3	97	76-122	
1,3-Dichloropropane	ug/kg	50	48.9	98	81-125	
1,3,5-Trimethylbenzene	ug/kg	50	49.7	99	74-125	
1,4-Dichlorobenzene	ug/kg	50	47.8	96	77-120	
2,2-Dichloropropane	ug/kg	50	50.2	100	76-129	
2-Butanone (MEK)	ug/kg	100	84.8	85	68-135	
2-Chlorotoluene	ug/kg	50	52.2	104	81-125	
2-Hexanone	ug/kg	100	97.8	98	64-138	
4-Chlorotoluene	ug/kg	50	50.2	100	72-125	
Carbon disulfide	ug/kg	100	94.4	94	49-140	
Acetone	ug/kg	100	76.9	77	65-119	
Bromochloromethane	ug/kg	50	48.1	96	86-122	
Benzene	ug/kg	50	48.5	97	81-124	
Bromobenzene	ug/kg	50	50.2	100	82-130	
Bromodichloromethane	ug/kg	50	50.7	101	88-126	
Bromomethane	ug/kg	50	50.2	100	62-137	
Bromoform	ug/kg	50	47.4	95	76-122	
cis-1,2-Dichloroethene	ug/kg	50	51.7	103	84-120	
cis-1,3-Dichloropropene	ug/kg	50	50.6	101	85-123	
Carbon tetrachloride	ug/kg	50	50.8	102	77-132	
Chlorobenzene	ug/kg	50	50.2	100	86-120	
Chloroethane	ug/kg	50	41.2	82	67-126	
Chloroform	ug/kg	50	46.5	93	84-116	
Chloromethane	ug/kg	50	39.9	80	41-127	
Dibromochloromethane	ug/kg	50	49.6	99	86-127	
Dichlorodifluoromethane	ug/kg	50	39.3	79	14-129	
Dibromomethane	ug/kg	50	51.6	103	89-121	
Ethylbenzene	ug/kg	50	52.6	105	85-122	
Hexachloro-1,3-butadiene	ug/kg	50	48.3	97	78-133	
Isopropylbenzene (Cumene)	ug/kg	50	46.7	93	76-117	
Methylene chloride	ug/kg	50	42.8	86	70-120	
Methyl-tert-butyl ether	ug/kg	50	48.2	96	73-110	
4-Methyl-2-pentanone (MIBK)	ug/kg	100	98.7	99	74-132	
Naphthalene	ug/kg	50	48.3	97	59-146	
n-Butylbenzene	ug/kg	50	51.5	103	70-132	
n-Propylbenzene	ug/kg	50	52.3	105	76-125	
p-Isopropyltoluene	ug/kg	50	48.7	97	73-123	
sec-Butylbenzene	ug/kg	50	49.7	99	77-127	
Styrene	ug/kg	50	52.5	105	84-125	
trans-1,2-Dichloroethene	ug/kg	50	53.5	107	73-136	
trans-1,3-Dichloropropene	ug/kg	50	49.2	98	81-125	
Tetrachloroethene	ug/kg	50	48.7	97	79-133	
Toluene	ug/kg	50	51.0	102	83-120	
Trichloroethene	ug/kg	50	50.6	101	90-124	
Trichlorofluoromethane	ug/kg	50	47.7	95	60-147	
tert-Butylbenzene	ug/kg	50	53.3	107	71-130	

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QUALITY CONTROL DATA

Project: BUCKET WASH SEWER
Pace Project No.: 609815

LABORATORY CONTROL SAMPLE: 78064

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Xylene (Total)	ug/kg	150	153	102	85-119	
Vinyl chloride	ug/kg	50	44.3	89	48-137	
Dibromofluoromethane (S)	%			98	82-118	
Toluene-d8 (S)	%			102	88-114	
4-Bromofluorobenzene (S)	%			102	78-117	
1,2-Dichloroethane-d4 (S)	%			95	79-129	

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QUALITY CONTROL DATA

Project: BUCKET WASH SEWER
Pace Project No.: 609815

QC Batch: PMST/1492
Analysis Method: ASTM D2974-87
QC Batch Method: ASTM D2974-87
Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 609815001, 609815002

METHOD BLANK: 79221
Associated Lab Samples: 609815001, 609815002

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
Percent Moisture	%	ND	0.10	

SAMPLE DUPLICATE: 79222

Parameter	Units	609767001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	22.9	18.7	20	20	

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QUALIFIERS

Project: BUCKET WASH SEWER
Pace Project No.: 609815

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BUCKET WASH SEWER
Pace Project No.: 609815

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
609815001	**SAMPLE1BW**	EPA 8260	MSV/4014		
609815002	**SAMPLE2BW**	EPA 8260	MSV/4014		
609815001	**SAMPLE1BW**	ASTM D2974-87	PMST/1492		
609815002	**SAMPLE2BW**	ASTM D2974-87	PMST/1492		

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June 26, 2006

Mr. Derek Varney
Pace Analytical Services, Inc.
9608 Loiret Blvd.
Lenexa, Kansas 66219

Fax # (913) 599-1759 **(4 Pages)**

Pace Project #609815; (A-OG Project #6-489T)

Dear Mr. Varney:

We have completed our laboratory testing services for your above-referenced project.

The detailed results of these tests are enclosed. As you directed, these testing services were provided in accordance with test methods that you specified.

If you have any questions regarding this information or require any further testing, please contact me at your convenience. We enjoy doing business with you.

Sincerely,
ALPHA-OMEGA GEOTECH, INC.

Thomas J. Burdick
Laboratory Manager

AO GEOTECH

Summary of Laboratory Testing

SLT 22205

Alpha-Omega Geotech, Inc.
1701 State Avenue
Kansas City, KS 66102
Office: (913) 371-0000 Fax: (913) 371-6710
Website: www.aogeotech.com

AO GEOTECH

PROJECT NAME: Pace Analytical Project #609815
PROJECT LOCATION:

PROJECT NUMBER: 6-489T
DATE: 6/22/2006

Boring No.	Sample Number	Depth or Elevation	Description	ASTM (D2216) Gravimetric Moisture (%)	ASTM (D2937) Dry Unit Weight (pcf)	Dry Unit Weight (g/cc)	Volumetric Moisture (cc/cc)	USCS	% Passing No. 200	ASTM (D2974) Ash Content (%)	ASTM (D2974) Organic Matter (%)	F.O.C. (g-C/g-soil)	Porosity	Gs	Remarks
	001-Sample 1BW		Brown, mottled gray, speckled red sandy LEAN CLAY	14.3						97.6	2.4	0.014			% Fraction Organic Carbon Content = 1.4
	002-Sample 2 BW		Brown, mottled gray, speckled red LEAN CLAY	19.6						96.5	3.5	0.020			% Fraction Organic Carbon Content = 2.0

6-489T S

Ash Content ASTM D 2974

AG 22305

Alpha-Omega Geotech, Inc.
1701 State Avenue
Kansas City, KS 66102
Office: (913) 371-0000 Fax: (913) 371-6710
Website: www.aogeotech.com

Project Name: Pace Analytical Project #609815 **Project No.:** 6-489T
Date: Jun 22, 2006
Boring No.: **Sample No.:** 001-Sample 1BW **Depth:**
Description: Brown, mottled gray, speckled red sandy LEAN CLAY

Method Used: C

Ash Content

Oven-dried test specimen	32.7	grams
Ash Wt.	31.9	grams
Ash Content	97.6	%
Organic Matter	2.4	%
Percent Fraction Organic Carbon Content	1.4	%
Fraction Organic Carbon Content	0.014	g-C / g-soil

Ash Content ASTM D 2974

AC 22303

Alpha-Omega Geotech, Inc.
1701 State Avenue
Kansas City, KS 66102
Office: (913) 371-0000 Fax: (913) 371-6710
Website: www.aogeotech.com

Project Name: Pace Analytical Project #609815 **Project No.:** 6-489T
Date: Jun 22, 2006
Boring No.: **Sample No.:** 002-Sample 2BW **Depth:**
Description: Brown, mottled gray, speckled red LEAN CLAY

Method Used: C

Ash Content

Oven-dried test specimen	31.3	grams
Ash Wt.	30.2	grams
Ash Content	96.5	%
Organic Matter	3.5	%
Percent Fraction Organic Carbon Content	2.0	%
Fraction Organic Carbon Content	0.020	g-C / g-soil

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: of 0994210

Section A Required Client Information:

Company	Sigma-Aldrich
Address	3500 Dekalb St. St. Louis, MO 63118
Email To:	RWULF@SIAL.COM
Phone	314-771-5765
Fax	
Requested Due Date/TAT:	

Section B Required Project Information:

Report To:	RWULF
Copy To:	T VENVERLOH
Purchase Order No.:	
Project Name:	Bucket Wash Sewer
Project Number:	

Section C Invoice Information:

Attention:	Same
Company Name:	Same
Address:	
Pace Quote Reference:	
Pace Project Manager:	
Pace Profile #:	

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ Other

SITE LOCATION ☐GA ☐IL ☐IN ☐MI ☐MN ☐NC ☐OH ☐SC ☐WI ☒OTHER MO

Section D Required Client Information

SAMPLE ID

One Character per box. (A-Z, 0-9 / .-) Samples IDs MUST BE UNIQUE

Valid Matrix Codes: MATRIX / CODE — DRINKING WATER DW, WATER WT, WASTE WATER WW, PRODUCT P, SOIL/SOLID SL, OIL OL, WIPE WP, AIR AR, OTHER OT, TISSUE TS

Filtered (Y/N)

Requested Analysis: ASTM D2974-87 NA; EPA 8260

ITEM #	SAMPLE ID	MATRIX CODE	SAMPLE TYPE G=GRAB C=COMP	COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	ASTM D2974-87 NA	EPA 8260	Residual Chlorine (Y/N)	Pace Project Number / Lab I.D
1	SAMPLE1BW Other	SL	G			6-15-06	10:15am	80°F	1	X								X	X		001
2	SAMPLE2BW Other	SL	G			6-15-06	10:15am	80°F	1	X								X	X		002
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					
11																					
12																					

Additional Comments:

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
RWULF-SIAL	6/15/06	4:00	[illegible] / PACE	6/15/06	1610
[illegible] / PACE	6/15/06	1800	Hilary Cook-Borg	6-16-06	1150

SAMPLE CONDITION

Temp in °C	Received on Ice	Custody Sealed Cooler	Samples Intact
	Y/N	Y/N	Y/N
25	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: ROBERT WULF

SIGNATURE of SAMPLER: [signature]

DATE Signed (MM / DD / YY)

SEE REVERSE SIDE FOR INSTRUCTIONS

ORIGINAL

ALLQ020rev.3,31M

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March 06, 2006

M-Pad Sewers Proj -

Cheryl Stipsits
Sigma - Aldrich Corp.
3500 DeKalb
Saint Louis, MO 63118

RE: Project: MSD Sewer Proj.-Dekalb
Pace Project No.: 605523

Dear Cheryl Stipsits:
Enclosed are the analytical results for sample(s) received by the laboratory on February 28, 2006. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Derek Varney

derek.varney@pacelabs.com
Project Manager

Arkansas Certification Number: 05-008-0
California Certification Number: 02109CA
Illinois Certification Number: 001191
Iowa Certification Number: 118
Kansas/NELAP Certification Number: E-10116
Louisiana Certification Number: 03055
Minnesota Certification Number: 020-999-394
Oklahoma Certification Number: 9205/9935
Utah Certification Number: 9135995665

Enclosures

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ANALYTICAL RESULTS

Project: MSD Sewer Proj.-Dekalb
Pace Project No.: 605523

Sample: SAMPLE 1 **Lab ID: 605523001** Collected: 02/17/06 11:45 Received: 02/28/06 11:45 Matrix: Solid
Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260/5035A Volatile Organics	Analytical Method: EPA 8260							
Acetone	**1360**	ug/kg	127	1		03/03/06 05:28	67-64-1	
Benzene	ND	ug/kg	31.7	1		03/03/06 05:28	71-43-2	
Bromobenzene	ND	ug/kg	31.7	1		03/03/06 05:28	108-86-1	
Bromochloromethane	ND	ug/kg	31.7	1		03/03/06 05:28	74-97-5	
Bromodichloromethane	ND	ug/kg	31.7	1		03/03/06 05:28	75-27-4	
Bromoform	ND	ug/kg	31.7	1		03/03/06 05:28	75-25-2	
Bromomethane	ND	ug/kg	31.7	1		03/03/06 05:28	74-83-9	
2-Butanone (MEK)	ND	ug/kg	63.4	1		03/03/06 05:28	78-93-3	
n-Butylbenzene	ND	ug/kg	31.7	1		03/03/06 05:28	104-51-8	
sec-Butylbenzene	ND	ug/kg	31.7	1		03/03/06 05:28	135-98-8	
tert-Butylbenzene	ND	ug/kg	31.7	1		03/03/06 05:28	98-06-6	
Carbon disulfide	ND	ug/kg	31.7	1		03/03/06 05:28	75-15-0	
Carbon tetrachloride	ND	ug/kg	31.7	1		03/03/06 05:28	56-23-5	
Chlorobenzene	ND	ug/kg	31.7	1		03/03/06 05:28	108-90-7	
Chloroethane	ND	ug/kg	31.7	1		03/03/06 05:28	75-00-3	
Chloroform	ND	ug/kg	31.7	1		03/03/06 05:28	67-66-3	
Chloromethane	ND	ug/kg	31.7	1		03/03/06 05:28	74-87-3	
2-Chlorotoluene	ND	ug/kg	31.7	1		03/03/06 05:28	95-49-8	
4-Chlorotoluene	ND	ug/kg	31.7	1		03/03/06 05:28	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/kg	31.7	1		03/03/06 05:28	96-12-8	
Dibromochloromethane	ND	ug/kg	31.7	1		03/03/06 05:28	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/kg	31.7	1		03/03/06 05:28	106-93-4	
Dibromomethane	ND	ug/kg	31.7	1		03/03/06 05:28	74-95-3	
1,2-Dichlorobenzene	ND	ug/kg	31.7	1		03/03/06 05:28	95-50-1	
1,3-Dichlorobenzene	ND	ug/kg	31.7	1		03/03/06 05:28	541-73-1	
1,4-Dichlorobenzene	ND	ug/kg	31.7	1		03/03/06 05:28	106-46-7	
Dichlorodifluoromethane	ND	ug/kg	31.7	1		03/03/06 05:28	75-71-8	
1,1-Dichloroethane	ND	ug/kg	31.7	1		03/03/06 05:28	75-34-3	
1,2-Dichloroethane	ND	ug/kg	31.7	1		03/03/06 05:28	107-06-2	
1,2-Dichloroethene (Total)	ND	ug/kg	31.7	1		03/03/06 05:28	540-59-0	
1,1-Dichloroethene	ND	ug/kg	31.7	1		03/03/06 05:28	75-35-4	
cis-1,2-Dichloroethene	ND	ug/kg	31.7	1		03/03/06 05:28	156-59-2	
trans-1,2-Dichloroethene	ND	ug/kg	31.7	1		03/03/06 05:28	156-60-5	
1,2-Dichloropropane	ND	ug/kg	31.7	1		03/03/06 05:28	78-87-5	
1,3-Dichloropropane	ND	ug/kg	31.7	1		03/03/06 05:28	142-28-9	
2,2-Dichloropropane	ND	ug/kg	31.7	1		03/03/06 05:28	594-20-7	
1,1-Dichloropropene	ND	ug/kg	31.7	1		03/03/06 05:28	563-58-6	
cis-1,3-Dichloropropene	ND	ug/kg	31.7	1		03/03/06 05:28	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/kg	31.7	1		03/03/06 05:28	10061-02-6	
Ethylbenzene	ND	ug/kg	31.7	1		03/03/06 05:28	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/kg	31.7	1		03/03/06 05:28	87-68-3	
2-Hexanone	ND	ug/kg	127	1		03/03/06 05:28	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/kg	31.7	1		03/03/06 05:28	98-82-8	
p-Isopropyltoluene	ND	ug/kg	31.7	1		03/03/06 05:28	99-87-6	
Methylene chloride	**198**	ug/kg	31.7	1		03/03/06 05:28	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	63.4	1		03/03/06 05:28	108-10-1	

REPORT OF LABORATORY ANALYSIS

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www.pacelabs.com

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Lenexa, KS 66219
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ANALYTICAL RESULTS

Project: MSD Sewer Proj.-Dekalb
Pace Project No.: 605523

Sample: SAMPLE 1 **Lab ID: 605523001** Collected: 02/17/06 11:45 Received: 02/28/06 11:45 Matrix: Solid
Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260/5035A Volatile Organics	Analytical Method: EPA 8260							
Methyl-tert-butyl ether	ND	ug/kg	31.7	1		03/03/06 05:28	1634-04-4	
Naphthalene	ND	ug/kg	63.4	1		03/03/06 05:28	91-20-3	
n-Propylbenzene	ND	ug/kg	31.7	1		03/03/06 05:28	103-65-1	
Styrene	ND	ug/kg	31.7	1		03/03/06 05:28	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/kg	31.7	1		03/03/06 05:28	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/kg	31.7	1		03/03/06 05:28	79-34-5	
Tetrachloroethene	ND	ug/kg	31.7	1		03/03/06 05:28	127-18-4	
Toluene	ND	ug/kg	31.7	1		03/03/06 05:28	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/kg	31.7	1		03/03/06 05:28	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/kg	31.7	1		03/03/06 05:28	120-82-1	
1,1,1-Trichloroethane	ND	ug/kg	31.7	1		03/03/06 05:28	71-55-6	
1,1,2-Trichloroethane	ND	ug/kg	31.7	1		03/03/06 05:28	79-00-5	
Trichloroethene	ND	ug/kg	31.7	1		03/03/06 05:28	79-01-6	
Trichlorofluoromethane	ND	ug/kg	31.7	1		03/03/06 05:28	75-69-4	
1,2,3-Trichloropropane	ND	ug/kg	31.7	1		03/03/06 05:28	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/kg	31.7	1		03/03/06 05:28	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/kg	31.7	1		03/03/06 05:28	108-67-8	
Vinyl chloride	ND	ug/kg	31.7	1		03/03/06 05:28	75-01-4	
Xylene (Total)	ND	ug/kg	31.7	1		03/03/06 05:28	1330-20-7	
Dibromofluoromethane (S)	99	%	82-118	1		03/03/06 05:28	1868-53-7	
Toluene-d8 (S)	99	%	88-114	1		03/03/06 05:28	2037-26-5	
4-Bromofluorobenzene (S)	95	%	78-117	1		03/03/06 05:28	460-00-4	
1,2-Dichloroethane-d4 (S)	104	%	79-129	1		03/03/06 05:28	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974-87							
Percent Moisture	**27.6**	%	0.10	1		03/01/06 00:00		

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ACCREDITED IN ACCORDANCE WITH nelac

Section A
Required Client Information:

Company	Sigma Ulrich
Address	3500 Dekalb St.
	St. Louis, MO 63118
Email To:	cstipsits@sial.com
Phone	(314) 286-7931
Fax	(314) 286-7857
Requested Due Date/TAT:	

Section B
Required Project Information:

Report To:	Cheryl Stipsits
Copy To:	
Purchase Order No.:	
Project Name:	MSD Sewer Proj. - Dekalb
Project Number:	

Section C
Invoice Information:

Attention:	
Company Name:	
Address:	
Pace Quote Reference:	
Pace Project Manager:	
Pace Profile #:	

Page: 913006

REGULATORY AGENCY
☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ Other

SITE LOCATION ☐GA ☐IL ☐IN ☐MI ☐MN ☐NC ☐OH ☐SC ☐WI ☒OTHER MO

Section D Required Client Information

SAMPLE ID
One Character per box.
(A-Z, 0-9 / .-)
Samples IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

ITEM #	SAMPLE ID	MATRIX CODE	SAMPLE TYPE G=GRAB C=COMP	COLLECTED COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Filtered (Y/N)	Residual Chlorine (Y/N)	Pace Project Number / Lab I.D
1	SAMPLE 1 IWGFU	SL	G	~~#~~		2/17/06	11:45A	4°C	1	X								X		[illegible]
2																				
3																				
4																				
5																				
6																				
7																				
8																				
9																				
10																				
11																				
12																				

Requested Analysis: Validity Inc.

Additional Comments:
Note sample date!

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
[illegible] S-A	2/27/06	[illegible]	[illegible] S/PACE	2/27/06	[illegible]
[illegible] /PACE	2/27/06	[illegible]	[illegible]	[illegible]	[illegible]

SAMPLE CONDITION

Temp in °C	Received on Ice	Custody Sealed Cooler	Samples Intact
	Y/N	Y/N	Y/N
3.2	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N

SAMPLER NAME AND SIGNATURE
PRINT Name of SAMPLER: Cheryl Stipsits
SIGNATURE of SAMPLER: [illegible]
DATE Signed (MM / DD / YY): [illegible]

REVERSE SIDE FOR INSTRUCTIONS

ALLQ020rev.3,31Mar05

APPENDIX G
EXPOSURE PATHWAY ANALYSIS

Risk-Based Corrective Action For Petroleum Releases At Petroleum Storage Tank Sites

(MRBCA TIER 1 REPORT FORMS)

SITE:	*Sigma Aldrich DeKalb Facility*
ADDRESS:	*3500 Dekalb Street*
	St. Louis, MO 63118
SITE NO.:	*MOD006273726*
RELEASE NO.:	
SUBMITTAL DATE:	*July 28, 2009*
PREPARED BY:	*Rich Wetherbee/TRC*
REVIEWED BY:	*Keith Piontek/TRC*

EXPOSURE MODEL - ON-SITE RESIDENT (CHILD, ADULT AND AGE-ADJUSTED INDIVIDUAL)						Tier 1-11 (1)
SITE NO.: MOD006273726		SUBMITTAL DATE: 28-Jul-09		PREPARED BY: Rich Wetherbee/TRC		
ROUTES OF EXPOSURE	CURRENT CONDITIONS			FUTURE CONDITIONS		
	*C/NC**	JUSTIFICATION FOR C/NC (MANDATORY)	REPRESENTATIVE CONCENTRATION BASED ON (List borings/ wells)	*C/NC**	JUSTIFICATION FOR C/NC (MANDATORY)	REPRESENTATIVE CONCENTRATION BASED ON (List borings/ wells)
SURFICIAL SOIL						
Outdoor inhalation of vapors and particulate matter, ingestion, and dermal contact with surficial soil	*NC*	*Current use is non-residential.*		*NC*	*The reasonably anticipated future use is non-residential.*	
SUBSURFACE SOIL						
Indoor inhalation of vapors	*NC*	*Current use is non-residential.*		*NC*	*The reasonably anticipated future use is non-residential.*	
GROUNDWATER						
Indoor inhalation of vapors	*NC*	*Current use is non-residential.*		*NC*	*The reasonably anticipated future use is non-residential.*	
Dermal Contact with water	*NC*	*Current use is non-residential.*		*NC*	*The reasonably anticipated future use is non-residential.*	
Current Drinking Water Well	*NC*	*Current use is non-residential.*		*NC*	*The reasonably anticipated future use is non-residential.*	

NOTE:

*** C** : Complete Pathway; **NC** : Not Complete

EXPOSURE MODEL - OFF-SITE RESIDENT (CHILD, ADULT AND AGE-ADJUSTED INDIVIDUAL)						Tier 1-11 (2)
SITE NO.: MOD006273726		SUBMITTAL DATE: 28-Jul-09		PREPARED BY: Rich Wetherbee/TRC		
ROUTES OF EXPOSURE	CURRENT CONDITIONS			FUTURE CONDITIONS		
	*C/NC**	JUSTIFICATION FOR C/NC (MANDATORY)	REPRESENTATIVE CONCENTRATION BASED ON (List borings/ wells)	*C/NC**	JUSTIFICATION FOR C/NC (MANDATORY)	REPRESENTATIVE CONCENTRATION BASED ON (List borings/ wells)
SURFICIAL SOIL						
Outdoor inhalation of vapors and particulate matter, ingestion, and dermal contact with surficial soil	*NC*	*There is not a reasonable probability of ingestion and dermal contact with impacted surface soils.*		*NC*	*There is not a reasonable probability of ingestion and dermal contact with impacted surface soils.*	
SUBSURFACE SOIL						
Indoor inhalation of vapors	*NC*	*There is not a reasonable probability of Sigma impact to off-site subsurface soils, with the potential exception of soils in contact with impacted groundwater, which is evaluated below.*		*NC*	*There is not a reasonable probability of Sigma impact to off-site subsurface soils, with the potential exception of soils in contact with impacted groundwater, which is evaluated below.*	
GROUNDWATER						
Indoor inhalation of vapors	*C*	*There is residential land use near the Sigma facility. Impacted groundwater could potentially migrate off-site, releasing vapor.*		*C*	*Future residential land use in the vicinity of the site is possible.*	
Dermal Contact with water	*NC*	*There is no plausible pathway for residential dermal contact with groundwater.*		*NC*	*There is no plausible pathway for residential dermal contact with groundwater.*	
Current Drinking Water Well	*NC*	*The groundwater use pathway in incomplete. See Section 4.2.2.*		*NC*	*The groundwater use pathway in incomplete under both current and future conditions. See Section 4.2.2.*	

NOTE:
*** C** : Complete Pathway; **NC** : Not Complete

EXPOSURE MODEL - ON-SITE NON-RESIDENT							Tier 1-11 (3)
SITE NO.: MOD006273726		SUBMITTAL DATE: 28-Jul-09				PREPARED BY: Rich Wetherbee/TRC	
ROUTES OF EXPOSURE	CURRENT CONDITIONS			FUTURE CONDITIONS			
	*C/NC**	JUSTIFICATION FOR C/NC (MANDATORY)	REPRESENTATIVE CONCENTRATION BASED ON (List borings/ wells)	*C/NC**	JUSTIFICATION FOR C/NC (MANDATORY)	REPRESENTATIVE CONCENTRATION BASED ON (List borings/ wells)	
SURFICIAL SOIL							
Outdoor inhalation of vapors and particulate matter, ingestion, and dermal contact with surficial soil	*NC*	*Considering the exposure assumptions inherent in the non-residential expsoure model, there is not a reasonable probability of exposure. See Section 4.2.1.*		*NC*	*Considering the exposure assumptions inherent in the non-residential expsoure model, there is not a reasonable probability of exposure. See Section 4.2.1.*		
SUBSURFACE SOIL							
Indoor inhalation of vapors	*C*	*Volatiles are present in site soils.*		*C*	*Volatiles are present in site soils.*		
GROUNDWATER							
Indoor inhalation of vapors	*C*	*Volatiles are present in site soils, and could potentially impact on-site groundwater.*		*C*	*Volatiles are present in site soils, and could potentially impact on-site groundwater.*		
Dermal Contact with water	*NC*	*Given the depth to the saturated zone, there is no plausible scenario of non-residential direct contact with groundwater.*		*NC*	*Given the depth to the saturated zone, there is no plausible scenario of non-residential direct contact with groundwater.*		
Current Drinking Water Well	*NC*	*There is no water supply well on the site.*		*NC*	*The groundwater use pathway in incomplete under both current and future conditions. See Section 4.2.2.*		

NOTE:
*** C** : Complete Pathway; **NC** : Not Complete

EXPOSURE MODEL - OFF-SITE NON-RESIDENT						Tier 1-11 (4)
SITE NO.: MOD006273726	SUBMITTAL DATE: 28-Jul-09			PREPARED BY: Rich Wetherbee/TRC		

ROUTES OF EXPOSURE	CURRENT CONDITIONS			FUTURE CONDITIONS		
	*C/NC**	JUSTIFICATION FOR C/NC (MANDATORY)	REPRESENTATIVE CONCENTRATION BASED ON (List borings/ wells)	*C/NC**	JUSTIFICATION FOR C/NC (MANDATORY)	REPRESENTATIVE CONCENTRATION BASED ON (List borings/ wells)
SURFICIAL SOIL						
Outdoor inhalation of vapors and particulate matter, ingestion, and dermal contact with surficial soil	*NC*	*There is not a reasonable probability of Sigma impact to off-site surface soils.*		*NC*	*There is not a reasonable probability of Sigma impact to off-site surface soils.*	
SUBSURFACE SOIL						
Indoor inhalation of vapors	*C*	*There is not a reasonable probability of Sigma impact to off-site subsurface soils, with the potential exception of soils in contact with impacted groundwater, which is evaluated below.*		*C*	*There is not a reasonable probability of Sigma impact to off-site subsurface soils, with the potential exception of soils in contact with impacted groundwater, which is evaluated below.*	
GROUNDWATER						
Indoor inhalation of vapors	*C*	*Impacted groundwater could potentially migrate off-site, releasing vapor.*		*C*	*Impacted groundwater could potentially migrate off-site, releasing vapor.*	
Dermal Contact with water	*NC*	*There is no plausible pathway for non-residential dermal contact with groundwater.*		*NC*	*There is no plausible pathway for non-residential dermal contact with groundwater.*	
Ingestion at POE	*NC*	*This pathway is not complete. See Section 4.2.2.*		*NC*	*This pathway is not complete. See Section 4.2.2.*	

NOTE:
*** C** : Complete Pathway; **NC** : Not Complete

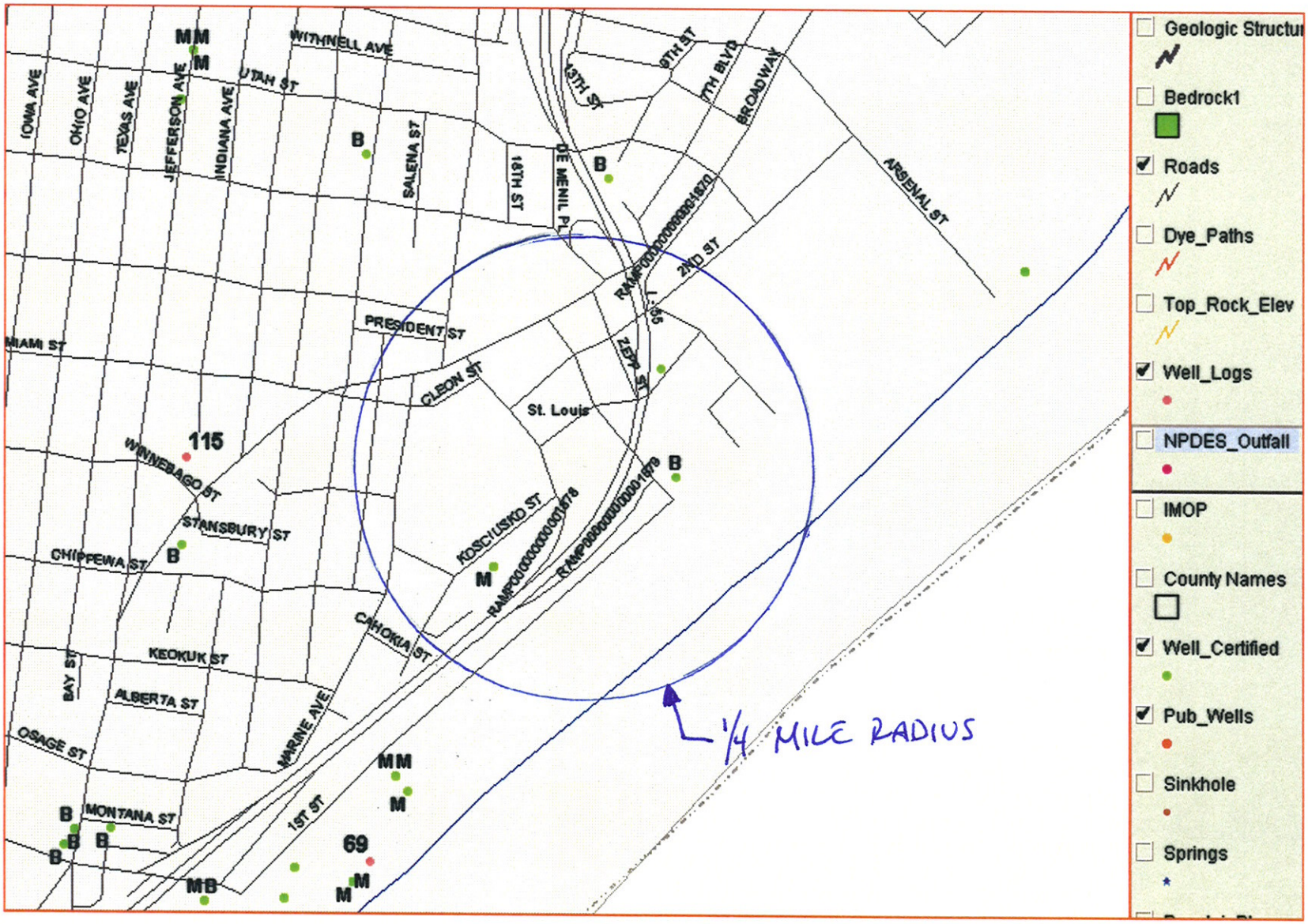
EXPOSURE MODEL - ON-SITE CONSTRUCTION WORKER			Tier 1-11 (5)
SITE NO.: MOD006273726	SUBMITTAL DATE: 28-Jul-09	PREPARED BY: Rich Wetherbee/TRC	
ROUTES OF EXPOSURE	***C/NC****	**JUSTIFICATION FOR C/NC (MANDATORY)**	**REPRESENTATIVE CONCENTRATION BASED ON (List borings/ wells)**
SOIL TO DEPTH OF CONSTRUCTION			
Outdoor inhalation of vapors and particulate matter, ingestion, and dermal contact with soil	***C***	***Impact to subsurface soils exists at the site. Construction worker exposure to subsurface soils is possible.***	
GROUNDWATER			
Dermal Contact with water	***NC***	***In past construction events, groundwater has not entered excavations. Construction worker exposure to groundwater is not plausible.***	

NOTE:
*** C** : Complete Pathway; **NC** : Not Complete

EXPOSURE MODEL - OFF-SITE CONSTRUCTION WORKER			Tier 1-11 (6)
SITE NO.: MOD006273726	**SUBMITTAL DATE: 28-Jul-09 PREPARED BY: Rich Wetherbee/TRC**		
ROUTES OF EXPOSURE	***C/NC****	**JUSTIFICATION FOR C/NC (MANDATORY)**	**REPRESENTATIVE CONCENTRATION BASED ON (List borings/ wells)**
SOIL TO DEPTH OF CONSTRUCTION			
Outdoor inhalation of vapors and particulate matter, ingestion, and dermal contact with soil	***NC***	***There is not a reasonable probability of Sigma impact to off-site soils.***	
GROUNDWATER			
Dermal Contact with water	***C***	***Off-site construction worker exposure to impacted groundwater emanating from the Sigma site is possible, but unlikely.***	

NOTE:
*** C** : Complete Pathway; **NC** : Not Complete

APPENDIX H
MEGA DATA



MEGA DATA RESULTS

AERIAL PHOTO OF SITE AND SURROUNDING AREA

ArcExplorer 9.1.0 - C:/MEGA2007/MEGA 2007.axl

File Edit View Layer Tools Help

Geologic Structures

Bedrock1

Identify Results

1 feature

018470

Field	Value
ID	018470
WELL_TYPE	Industrial High Capacity Well
OWNER	Industrial Sugar Corporation
DRLDATE	1959/06/23
DRILLDEPTH	69
DEPTHTOBED	-9999
SWLA	43
SWLB	
TNSP	0
TNSPDIR	
RNG	0
RNGDIR	
S_OR_LG	LG10028
SCALE	24K
LOC_SOURCE	MAP INTERPOLATION
ELEVATION	419
ELEV_SCALE	40
ELEV_COMME	RECORD
UNIT_1	0000/0020 NO SAMPLES [] {}
UNIT_2	0045/0069 DRIFT [SAND; GRAVEL; CLAY] {}
UNIT_3	
UNIT_4	
UNIT_5	
UNIT_6	
UNIT_7	
UNIT_8	
UNIT_9	
UNIT_10	
UNIT_11	
UNIT_12	
UNIT_13	
UNIT_14	
UNIT_15	
UNIT_16	
UNIT_17	
UNIT_18	
UNIT_19	
UNIT_20	
UNIT_21	
UNIT_22	
UNIT_23	

Layer: Well_Logs

Gaining

Losing

X: 743,473.993

One Inch = 1,032 Feet

ArcExplorer 9.1.0 - C:/MEGA2007/MEGA 2007.axl

File Edit View Layer Tools Help

Geologic Structures
Bedrock1
Roads
Dye_P
Top_R
Well_L
NPDE
IMOP
County
Well_C
Pub_W
Sinkhc
Spring
Dye_Ir
Dye_R
GW_D
GW_E
Dye Pa

Identify Results

1 feature

004060

Field	Value
ID	004060
WELL_TYPE	Sewer test hole
OWNER	City of St. Louis Well #1
DRLDATE	1937/01/
DRILLDEPTH	115
DEPTHTOBED	35
SWLA	
SWLB	
TNSP	0
TNSPDIR	
RNG	0
RNGDIR	
S_OR_LG	LG3125
SCALE	24K
LOC_SOURCE	MAP INTERPOLATION
ELEVATION	524
ELEV_SCALE	40
ELEV_COMME	RECORD
UNIT_1	0000/0035 NO SAMPLES [] {}
UNIT_2	0035/0115 MISSISSIPPIAN SYSTEM [] {}
UNIT_3	0035/0115 MERAMECIAN SERIES [] {}
UNIT_4	0035/0050 ST. LOUIS LIMESTONE [LS; ; CH] {}
UNIT_5	0050/0115 SALEM FORMATION [LS; CH;] {} < "ENDOTHYRA" >
UNIT_6	0050/0115 SALEM FORMATION [LS; CH;] {} < "ENDOTHYRA" >
UNIT_7	
UNIT_8	
UNIT_9	
UNIT_10	
UNIT_11	
UNIT_12	
UNIT_13	
UNIT_14	
UNIT_15	
UNIT_16	
UNIT_17	
UNIT_18	
UNIT_19	

APPENDIX I

CALCULATION OF REPRESENTATIVE CONCENTRATION FOR CHLOROFORM

Sample ID	Sample Location	Sample Date	Analyte	Det. Limit	Conc. Det	RA Conc	Units
SADF22001	AOC C	Dec-94	Chloroform	0.005	0.018	0.018	mg/kg
SADF22002	AOC C	Dec-94	Chloroform	0.005	0.021	0.021	mg/kg
SADF22003	AOC E	Dec-94	Chloroform	0.005	0.008	0.008	mg/kg
SADF22006	SWMU #10	Feb-95	Chloroform	0.005	U	0.0025	mg/kg
SADF22007	SWMU #1	Dec-94	Chloroform	0.005	18	18	mg/kg
SADF29001	SWMU #5	Feb-95	Chloroform	0.005	U	0.0025	mg/kg
SADF29003	SWMU #10	Feb-95	Chloroform	0.005	0.06	0.06	mg/kg
SADF29004	SWMU #10	Feb-95	Chloroform	0.005	0.015	0.015	mg/kg
4A, 5-7	SWMU #1	Aug-95	Chloroform	0.005	2.08	2.08	mg/kg
4B, 10-12	SWMU #1	Aug-95	Chloroform	0.005	2.2	2.2	mg/kg
4C,15-17	SWMU #1	Aug-95	Chloroform	0.005	0.101	0.101	mg/kg
5A,5-7	SWMU #1	Aug-95	Chloroform	0.005	2.38	2.38	mg/kg
5B,10-12	SWMU #1	Aug-95	Chloroform	0.005	1.19	1.19	mg/kg
5C,15-17	SWMU #1	Aug-95	Chloroform	0.005	0.12	0.12	mg/kg
6A,5-7	SWMU #1	Aug-95	Chloroform	0.005	1.02	1.02	mg/kg
6B,10-12	SWMU #1	Aug-95	Chloroform	0.005	1.172	1.172	mg/kg
6C,15-17	SWMU #1	Aug-95	Chloroform	0.005	0.006	0.006	mg/kg
7A,5-7	SWMU #1	Aug-95	Chloroform	0.005	0.606	0.606	mg/kg
7B,10-12	SWMU #1	Aug-95	Chloroform	0.005	0.642	0.642	mg/kg
8A,5-7	SWMU #1	Aug-95	Chloroform	0.005	0.487	0.487	mg/kg
13A,5-7	SWMU #1	Aug-95	Chloroform	0.005	1.14	1.14	mg/kg
13B,10-12	SWMU #1	Aug-95	Chloroform	0.005	0.59	0.59	mg/kg
14A,5-7	SWMU #1	Aug-95	Chloroform	0.005	0.0907	0.0907	mg/kg
14B,10-12	SWMU #1	Aug-95	Chloroform	0.005	0.53	0.53	mg/kg
14C,15-17	SWMU #1	Aug-95	Chloroform	0.005	0.345	0.345	mg/kg
15A,5-7	SWMU #1	Aug-95	Chloroform	0.005	0.283	0.283	mg/kg
16A,5-7	SWMU #1	Aug-95	Chloroform	0.005	0.163	0.163	mg/kg
SB01,2-4	AOC C	Nov-97	Chloroform	0.005	0.031	0.031	mg/kg
SB01,5-7	AOC C	Nov-97	Chloroform	0.005	0.009	0.009	mg/kg
SB01,8-10	AOC C	Nov-97	Chloroform	0.005	U	0.0025	mg/kg
SB02,2-4	AOC C	Nov-97	Chloroform	0.005	U	0.0025	mg/kg
SB02,5-7	AOC C	Nov-97	Chloroform	0.005	U	0.0025	mg/kg
SB02,8-10	AOC C	Nov-97	Chloroform	0.005	U	0.0025	mg/kg
SB03,2-4	AOC C	Nov-97	Chloroform	0.005	0.021	0.021	mg/kg
SB03,5-7	AOC C	Nov-97	Chloroform	0.005	U	0.0025	mg/kg
SB03,8-10	AOC C	Nov-97	Chloroform	0.005	U	0.0025	mg/kg
SB04,2-4	AOC C	Nov-97	Chloroform	0.005	0.008	0.008	mg/kg
SB04,5-7	AOC C	Nov-97	Chloroform	0.005	U	0.0025	mg/kg
SB04,8-10	AOC C	Nov-97	Chloroform	0.005	U	0.0025	mg/kg
SB05,2-4	AOC C	Nov-97	Chloroform	0.005	0.018	0.018	mg/kg
SB05,5-7	AOC C	Nov-97	Chloroform	0.005	0.008	0.008	mg/kg
SB05,8-10	AOC C	Nov-97	Chloroform	0.005	U	0.0025	mg/kg
SB06,2-4	AOC C	Nov-97	Chloroform	0.005	0.15	0.15	mg/kg
SB06,5-7	AOC C	Nov-97	Chloroform	0.005	U	0.0025	mg/kg
SB06,8-10	AOC C	Nov-97	Chloroform	0.005	U	0.0025	mg/kg
SB07,2-4	AOC C	Nov-97	Chloroform	0.005	0.083	0.083	mg/kg
SB07,5-7	AOC C	Nov-97	Chloroform	0.005	U	0.0025	mg/kg
SB07,8-10	AOC C	Nov-97	Chloroform	0.005	U	0.0025	mg/kg
SB08,2-4	AOC C	Nov-97	Chloroform	0.005	U	0.0025	mg/kg
SB08,5-7	AOC C	Nov-97	Chloroform	0.005	0.013	0.013	mg/kg

Sample ID	Sample Location	Sample Date	Analyte	Det. Limit	Conc. Det	RA Conc	Units
SB08,8-10	AOC C	Nov-97	Chloroform	0.005	U	0.0025	mg/kg
SB01,3-5	SWMU #10	Jul-97	Chloroform	0.005	0.033	0.033	mg/kg
SB01,8-10	SWMU #10	Jul-97	Chloroform	0.005	0.008	0.008	mg/kg
SB01,12-14	SWMU #10	Jul-97	Chloroform	0.005	U	0.0025	mg/kg
SB01,15-17	SWMU #10	Jul-97	Chloroform	0.005	U	0.0025	mg/kg
SB02,3-5	SWMU #10	Jul-97	Chloroform	0.005	0.034	0.034	mg/kg
SB02,8-10	SWMU #10	Jul-97	Chloroform	0.005	0.017	0.017	mg/kg
SB02,12-14	SWMU #10	Jul-97	Chloroform	0.005	0.018	0.018	mg/kg
SB03,2-4	SWMU #10	Jul-97	Chloroform	0.005	0.013	0.013	mg/kg
SB04,3-5	SWMU #10	Jul-97	Chloroform	0.005	0.009	0.009	mg/kg
SB04,8-10	SWMU #10	Jul-97	Chloroform	0.005	0.096	0.096	mg/kg
SB04,12-14	SWMU #10	Jul-97	Chloroform	0.005	0.02	0.02	mg/kg
SB04,16-18	SWMU #10	Jul-97	Chloroform	0.005	U	0.0025	mg/kg
SB05,3-5	SWMU #10	Jul-97	Chloroform	0.005	0.078	0.078	mg/kg
SB05,8-10	SWMU #10	Jul-97	Chloroform	0.005	0.08	0.08	mg/kg
SB05,14-16	SWMU #10	Jul-97	Chloroform	0.005	0.06	0.06	mg/kg
SB07,3-5	SWMU #10	Jul-97	Chloroform	0.005	0.006	0.006	mg/kg
SB07,8-10	SWMU #10	Jul-97	Chloroform	0.005	U	0.0025	mg/kg
SB07,11-15	SWMU #10	Jul-97	Chloroform	0.005	U	0.0025	mg/kg
SB07,15-18	SWMU #10	Jul-97	Chloroform	0.005	U	0.0025	mg/kg
SB08,3-5	SWMU #10	Jul-97	Chloroform	0.005	0.034	0.034	mg/kg
SB08,8-10	SWMU #10	Jul-97	Chloroform	0.005	0.023	0.023	mg/kg
SB08,12-14	SWMU #10	Jul-97	Chloroform	0.005	U	0.0025	mg/kg
SB09,0-3.5	SWMU #10	Jul-97	Chloroform	0.005	U	0.0025	mg/kg
SB10,3-5	SWMU #10	Jul-97	Chloroform	0.005	0.032	0.032	mg/kg
SB10,8-10	SWMU #10	Jul-97	Chloroform	0.005	0.026	0.026	mg/kg
SB10,12-14	SWMU #10	Jul-97	Chloroform	0.005	0.007	0.007	mg/kg
SB10,14.5-16	SWMU #10	Jul-97	Chloroform	0.005	U	0.0025	mg/kg
SB11,1-3.5	SWMU #10	Jul-97	Chloroform	0.005	0.081	0.081	mg/kg
SB12,1-3.5	SWMU #10	Jul-97	Chloroform	0.005	0.038	0.038	mg/kg
Warehouse Pad	AOC D	3/23/2000	Chloroform	0.005	0.022	0.022	mg/kg
M-PAD Sample 1 (2/17/06)	M-PAD	2/17/2006	Chloroform	0.0317	U	0.0159	mg/kg
1BW (6/15/06)	Bucket Wash	6/15/2006	Chloroform	0.0061	U	0.0031	mg/kg
2BW (6/15/06)	Bucket Wash	6/15/2006	Chloroform	0.05	U	0.025	mg/kg
Composite 1 2-4 (K-7 Sewer)	K-7 Sewer	10/19/2004	Chloroform	0.029	U	0.0145	mg/kg
Composite 2 2-4 (K-7 Sewer)	K-7 Sewer	10/19/2004	Chloroform	0.029	U	0.0145	mg/kg
Site Average			**Chloroform**			**0.401**	

APPENDIX J
MRBCA MODEL CALCULATIONS

Appendix J – MRBCA Model Calculations

General

Exposure Model

Target Risk

Physical and Chemical Properties of Chemicals of Concern

Exposure Factors

EXPOSURE MODEL

SITE:

Source and Route of Exposure	Resident*	Non-Residential Worker	Construction Worker **
Surficial Soil (0 to 3 ft.)			
Outdoor Inhalation (vapors and particulates), Ingestion, and Dermal Contact	☐	☑	☑
Subsurface Soil (> 3 ft. to watertable)			
Indoor Inhalation of Vapor Emissions	☐	☑	N/A
Groundwater (First Zone)			
Indoor Inhalation of Vapor Emissions	☑	☑	N/A
Outdoor Inhalation of Vapor Emissions	N/A	N/A	☐
Dermal Contact with Groundwater	☐	☐	☑
Domestic Water Use	☑	N/A	N/A
Indoor Air	☑	☑	N/A
Outdoor Air	N/A	N/A	☑

Other Routes of Exposure

Protection of Groundwater Use (to evaluate this pathway, the "Domestic Water Use" from groundwater for resident must be selected)

Protection of Surface Water

Soil & Groundwater Protective of Indoor Inhalation

Resident (to evaluate this pathway, the "Indoor Inhalation of Vapor Emissions" from groundwater for resident must be selected)

Non-Residential Worker (to evaluate this pathway, the "Indoor Inhalation of Vapor Emissions" from groundwater for non-residential worker must be selected)

* Includes calculations for child, adult, and age-adjusted individual.

** For construction worker, thickness of surficial soil is from ground surface to depth of construction.

N/A Not Applicable

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SITE:

TARGET RISK

Parameter	Symbol	Default Value	Value Used	Comment
Potential Carcinogenic Health Effects				
Individual Excessive Lifetime Cancer Risk for individual chemical and each exposure pathway	TR_{ind}	1.00E-05	1.00E-05	Default Value
Individual Excessive Lifetime Cancer Risk for individual chemical and all exposure pathways	TRcoc	1.00E-05	1.00E-05	Default Value
Individual Excessive Lifetime Cancer Risk for all chemicals and all exposure pathways	TR_{cum}	1.00E-04	1.00E-04	Default Value
Potential Non-Carcinogenic Health Effects				
Hazard Quotient for individual chemical and each exposure pathway	HQ_{ind}	1.0	1.0	Default Value
Hazard Quotient for individual chemical and all exposure pathways	HI_{coc}	1.0	1.0	Default Value
Hazard Index for all chemicals and all exposure pathways	HI	1.0	1.0	Default Value

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SITE:

PHYSICAL AND CHEMICAL PROPERTIES OF CHEMICALS OF CONCERN

Chemicals of Concern	Water Solubility (S) [mg/L]	Henry's Law Constant (H) [L-water/L-air]	Org. Carbon Adsorption Coeff. (K_{oc}) [cm^3/g]	Soil-Water Sorption Coeff. Vadose Zone (K_{vz}) [cm^3-water /g-soil]	Soil-Water Sorption Coeff. Saturated zone (K_{SS}) [cm^3 /g]	Molecular Diffusion Coefficient in air (D^a) [cm^2/s]	Molecular Diffusion Coefficient in water (D^w) [cm^2/s]	Saturated Vapor Pressure (P) [mm Hg]	Molecular Weight (MW) [g/g-mol]	Saturated Soil Concentration [mg/kg]
Chloroform	7.92E+03	1.52E-01	3.98E+01	2.39E-01	2.39E-01	1.04E-01	1.00E-05	1.98E+02	1.19E+02	2.55E+03

NA: Not Available

The values in red are calculated.

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SITE:

TOXICOLOGICAL PROPERTIES OF CHEMICALS OF CONCERN

Chemicals of Concern	Slope Factor			Reference Dose			Absorbtion Factor		Parameters for Dermal Contact Pathway				
	Oral (SF_o)	Inh. (SF_i)	Dermal (SF_d)	Oral (RfD_o)	Inh. (RfD_i)	Dermal (RfD_d)	Oral (RAF_o)	Dermal (RAF_d)	Dermal Permeability Constant (Kp)	Relative Contribution of Permeability Coefficient (B)	Lag Time (τ_{event})	Time to Reach Steady-State (t^*)	Fraction Absorbed (FA)
	[kg-day/mg]	[kg-day/mg]	[kg-day/mg]	[mg/kg-day]	[mg/kg-day]	[mg/kg-day]	[--]	[--]	[cm/hr]	[--]	[hr]	[hr]	[--]
Chloroform	3.10E-02	8.05E-02	3.10E-02	1.00E-02	1.40E-02	1.00E-02	1	N/A	6.80E-03	0.029	0.498	1.194	1.000

N/A: Not Applicable

NA: Not Available

SITE:

EXPOSURE FACTORS

(Page 1 of 2)

Parameter	Symbol	Unit	Default Value	Value Used	Comment
Averaging Time for Carcinogen	AT_c	year	70	70	Default Value
Averaging Time for Non-Carcinogen	AT_{nc}	year	=ED	=ED	Default Value
Body Weight:					
Resident Child	BW	kg	15	15	Default Value
Resident Adult	BW	kg	70	70	Default Value
Non-Residential Worker	BW	kg	70	70	Default Value
Construction Worker	BW	kg	70	70	Default Value
Exposure Duration:					
Resident Child	ED	year	6	6	Default Value
Resident Adult	ED	year	24	24	Default Value
Non-Residential Worker	ED	year	25	25	Default Value
Construction Worker	ED	year	1	1	Default Value
Exposure Frequency:					
Resident Child	EF	day/year	350	350	Default Value
Resident Adult	EF	day/year	350	350	Default Value
Non-Residential Worker	EF	day/year	250	250	Default Value
Construction Worker	EF	day/year	90	90	Default Value
Soil Ingestion Rate:					
Resident Child	IR_{soil}	mg/day	200	200	Default Value
Resident Adult	IR_{soil}	mg/day	100	100	Default Value
Non-Residential Worker	IR_{soil}	mg/day	100	100	Default Value
Construction Worker	IR_{soil}	mg/day	100	100	Default Value
Groundwater Ingestion Rate:					
Resident Child	IR_w	L/day	1	1	Default Value
Resident Adult	IR_w	L/day	2	2	Default Value
Non-Residential Worker	IR_w	L/day	2	2	Default Value
Indoor Inhalation Rate (hourly):					
Resident Child	IR_{ai}	m^3/hr	0.416	0.416	Default Value
Resident Adult	IR_{ai}	m^3/hr	0.833	0.833	Default Value
Non-Residential Worker	IR_{ai}	m^3/hr	0.833	0.833	Default Value
Exposure Time for Indoor Inhalation:					
Resident Child	ET_{in}	hr/day	18	18	Default Value
Resident Adult	ET_{in}	hr/day	18	18	Default Value
Non-Residential Worker	ET_{in}	hr/day	18	18	Default Value
Indoor Inhalation Rate (daily):					
Resident Child	IRa	m^3/day	7.5	7.5	Calculated
Resident Adult	IRa	m^3/day	15.0	15.0	Calculated
Non-Residential Worker	IRa	m^3/day	15.0	15.0	Calculated
Outdoor Inhalation Rate (hourly):					
Resident Child	IR_{ao}	m^3/hr	0.416	0.416	Default Value
Resident Adult	IR_{ao}	m^3/hr	0.833	0.833	Default Value
Non-Residential Worker	IR_{ao}	m^3/hr	0.833	0.833	Default Value
Construction Worker	IR_{ao}	m^3/hr	0.833	1.800	Site-Specific Value
Exposure Time for Outdoor Inhalation:					
Resident Child	ET_{out}	hr/day	6	6	Default Value
Resident Adult	ET_{out}	hr/day	6	6	Default Value
Non-Residential Worker	ET_{out}	hr/day	6	6	Default Value
Construction Worker	ET_{out}	hr/day	12	10	Site-Specific Value

The values in red are calculated.

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SITE:

EXPOSURE FACTORS

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Parameter	Symbol	Unit	Default Value	Value Used	Comment
Outdoor Inhalation Rate (daily):					
Resident Child	IRa	m^3/day	2.5	2.5	Calculated
Resident Adult	IRa	m^3/day	5.0	5.0	Calculated
Non-Residential Worker	IRa	m^3/day	5.0	5.0	Calculated
Construction Worker	IRa	m^3/day	10.0	18.0	Calculated
Skin Surface Area for Dermal Contact with Soil:					
Resident Child	SA	cm^2/day	4236	2800	Site-Specific Value
Resident Adult	SA	cm^2/day	4714	5700	Site-Specific Value
Non-Residential Worker	SA	cm^2/day	4714	3300	Site-Specific Value
Construction Worker	SA	cm^2/day	4714	3300	Site-Specific Value
Skin Surface Area for Dermal Contact with Groundwater:					
Resident Child	SA_{gw}	cm^2/day	4236	2800	Site-Specific Value
Resident Adult	SA_{gw}	cm^2/day	4714	5700	Site-Specific Value
Non-Residential Worker	SA_{gw}	cm^2/day	4714	3300	Site-Specific Value
Construction Worker	SA_{gw}	cm^2/day	4714	3300	Site-Specific Value
Skin Surface Area for Dermal Whole-Body Contact with Groundwater:					
Resident Child	SA_{wb}	cm^2/day	4236	6600	Site-Specific Value
Resident Adult	SA_{wb}	cm^2/day	4714	18000	Site-Specific Value
Soil to Skin Adherence Factor:					
Resident Child	M	mg/cm^2	1	0.2	Site-Specific Value
Resident Adult	M	mg/cm^2	1	0.07	Site-Specific Value
Non-Residential Worker	M	mg/cm^3	1	0.2	Site-Specific Value
Construction Worker	M	mg/cm^2	1	0.3	Site-Specific Value
Event Frequency for Dermal Contact with Soil					
Resident Child	EV_{soil}	event/day	1	1	Default Value
Resident Adult	EV_{soil}	event/day	1	1	Default Value
Non-Residential Worker	EV_{soil}	event/day	1	1	Default Value
Construction Worker	EV_{soil}	event/day	1	1	Default Value
Event Frequency for Dermal Contact with Groundwater					
Resident Child	EV_{gw}	event/day	1	1	Default Value
Resident Adult	EV_{gw}	event/day	1	1	Default Value
Non-Residential Worker	EV_{gw}	event/day	1	1	Default Value
Construction Worker	EV_{gw}	event/day	1	1	Default Value
Event Frequency for Dermal Whole-Body Contact with Groundwater					
Resident Child	EV_{wb}	event/day	1	1	Default Value
Resident Adult	EV_{wb}	event/day	1	1	Default Value
Event Duration for Dermal Contact with Groundwater					
Resident Child	t_{event}	hr/event	1	1	Default Value
Resident Adult	t_{event}	hr/event	1	1	Default Value
Non-Residential Worker	t_{event}	hr/event	1	1	Default Value
Construction Worker	t_{event}	hr/event	1	1	Default Value
Event Duration for Dermal Whole-Body Contact with Groundwater					
Resident Child	$t_{wb\text{-}event}$	hr/event	1	0.33	Site-Specific Value
Resident Adult	$t_{wb\text{-}event}$	hr/event	1	0.25	Site-Specific Value

The values in red are calculated.

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Appendix J – MRBCA Model Calculations

Section 4.3.2 – Onsite Non-Residential Exposure to Indoor Vapors from Groundwater

Fate and Transport Parameters

Protection of Groundwater Use and Soil & Groundwater Protective of Indoor Inhalation

Tier 2 Target Levels for a Non-Residential Worker

Soil & Groundwater Protective of Indoor Inhalation for a Non-Residential Worker – Without Biodegradation

SITE:

FATE AND TRANSPORT PARAMETERS

Parameter	Symbol	Unit	Soil Type 1 Default	Soil Type 2 Default	Soil Type 3 Default	Value Used	Comment
SOIL PARAMETERS:							
Soil Source Dimension Parallel to Wind Direction	W_a	cm	1500	1500	1500	1500	Default Value
Depth to Subsurface Soil Sources	d_{ss}	cm	91.44	91.44	91.44	91.44	Default Value
Depth of Surficial Soil Zone	d_s	cm	91.44	91.44	91.44	91.44	Default Value
Depth to Soil Vapor Measurement	d_{sv}	cm	91.44	91.44	91.44	91.44	Default Value
VADOSE ZONE:							
Total Soil Porosity	θ_T	cm^3/cm^3-soil	0.38	0.44	0.44	0.38	Soil Type 1
Volumetric Water Content	θ_{ws}	cm^3/cm^3	0.08	0.17	0.21	0.08	Soil Type 1
Volumetric Air Content	θ_{as}	cm^3/cm^3	0.30	0.27	0.23	0.30	Calculated
Thickness	h_v	cm	295	295	295	5	Calculated
Dry Soil Bulk Density	ρ_s	g/cm^3	1.5	1.5	1.5	1.5	Default Value
Fractional Organic Carbon Content	f_{ocv}	g-C/g-soil	0.006	0.006	0.006	0.006	Default Value
SOIL IN CRACKS:							
Total Soil Porosity	θ_{Tcrack}	cm^3/cm^3-soil	0.38	0.44	0.44	0.38	Soil Type 1
Volumetric Water Content	θ_{wcrack}	cm^3/cm^3	0.08	0.17	0.21	0.08	Soil Type 1
Volumetric Air Content	θ_{acrack}	cm^3/cm^3	0.30	0.27	0.23	0.30	Calculated
CAPILLARY FRINGE:							
Total Soil Porosity	θ_{Tcap}	cm^3/cm^3-soil	0.38	0.44	0.44	0.38	Soil Type 1
Volumetric Water Content	θ_{wcap}	cm^3/cm^3	0.34	0.40	0.40	0.34	Calculated
Volumetric Air Content	θ_{acap}	cm^3/cm^3	0.04	0.04	0.04	0.04	Calculated
Thickness	h_c	cm	5	5	5	5	Default Value
GROUNDWATER PARAMETERS:							
Depth to Groundwater	L_{GW}	cm	300	300	300	10	Site-Specific Value
GW Source Dimension Parallel to GW Flow Direction	W_{gs}	cm	1500	1500	1500	1500	Default Value
GW Source Dimension Perpendicular to GW Flow Direction	Y	cm	1500	1500	1500	1500	Default Value
Total Porosity in the Saturated Zone	θ_{TS}	cm^3/cm^3	N/A	N/A	N/A	0.38	Site-Specific Value
Dry Soil Bulk Density (Saturated Zone)	ρ_{ss}	g/cm^3	N/A	N/A	N/A	1.5	Site-Specific Value
Fractional Organic Carbon Content in the Saturated Zone	f_{ocs}	g-C/g-soil	N/A	N/A	N/A	0.006	Site-Specific Value
Groundwater Mixing Zone Thickness	δ_{gw}	cm	200	200	200	200	Default Value
Hydraulic Conductivity in the Saturated Zone	K	cm/year	625000	625000	625000	625000	Default Value
Hydraulic Gradient in the Saturated Zone	i	cm/cm	0.004	0.004	0.004	0.004	Default Value
Groundwater Darcy Velocity	U_{gw}	cm/year	2500	2500	2500	2500	Calculated
Infiltration Rate of Water Through Vadose Zone	I	cm/year	14	14	14	14	Default Value
AMBIENT AIR PARAMETERS:							
Breathing Zone Height	δ_a	cm	200	200	200	200	Default Value
Inverse of Mean Concentration at Center of Square Source	Q/C	$(g/m^2\text{-}s)/(kg/m^3)$	81.64	81.64	81.64	81.64	Default Value
Fraction of Vegetative Cover	V	m^2/m^2	0.5	0.5	0.5	0.50	Default Value
Mean Annual Wind Speed	U_m	m/s	4.69	4.69	4.69	4.69	Default Value
Equivalent Threshold Value of Windspeed	U_t	m/s	11.32	11.32	11.32	11.32	Default Value
Windspeed Distribution Function from Cowherd et. al, 1985	F(x)	unitless	0.194	0.194	0.194	0.194	Default Value
ENCLOSED SPACE PARAMETERS:							
Enclosed Space Air Exchange Rate:							
Residential Structure	ER	1/24 hrs	12.096	12.096	12.096	12.096	Default Value
Non-Residential Structure	ER	1/24hrs	19.872	19.872	19.872	19.872	Default Value
Enclosed Space Volume/Infiltration Area:							
Residential Structure	L_B	cm	200	200	200	200	Default Value
Non-Residential Structure	L_B	cm	300	300	300	300	Default Value
Volatalization Factor for Domestic Water Use	K_f	L/m^3	0.5	0.5	0.5	0.5	Default Value
Enclosed Space Foundation or Wall Thickness:							
Residential Structure	L_{crack}	cm	15	15	15	15	Default Value
Non-Residential Structure	L_{crack}	cm	15	15	15	15	Default Value
Area Fraction of Cracks in Foundation/Walls:							
Residential Structure	η	cm^2/cm^2	0.001	0.001	0.001	0.001	Default Value
Non-Residential Structure	η	cm^2/cm^2	0.001	0.001	0.001	0.001	Default Value

The values in red are calculated.

N/A: Not Applicable

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SITE:

PROTECTION OF GROUNDWATER USE AND SOIL & GROUNDWATER PROTECTIVE OF INDOOR INHALATION

Parameter	Symbol	Unit	Default Value	Value Used	Comment
Distance from the Downgradient Edge of the Groundwater Source to the Point of Exposure	X_{poe}	ft	variable	0	Site-specific
Longitudinal Dispersivity	α_x	ft	variable	0.000	Calculated
Transverse Dispersivity	α_y	ft	variable	0.000	Calculated
Vertical Dispersivity	α_z	ft	variable	0.000	Calculated
Distance from the Downgradient Edge of the Groundwater Source to the Point of Demonstration	X_{pod}	ft	variable	0	Site-specific
Longitudinal Dispersivity	α_x	ft	variable	0.000	Calculated
Transverse Dispersivity	α_y	ft	variable	0.000	Calculated
Vertical Dispersivity	α_z	ft	variable	0.000	Calculated
Distance from the Downgradient Edge of the Groundwater Source to the On/Off-site Building	X_{bld}	ft	variable	0	Site-specific
Longitudinal Dispersivity	α_x	ft	variable	0.000	Calculated
Transverse Dispersivity	α_y	ft	variable	0.000	Calculated
Vertical Dispersivity	α_z	ft	variable	0.000	Calculated

Enter additional chemical-specific values on the "Chemical-Specific Inputs for Other Routes of Exposure" table.

The values in red are calculated.

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SITE:

TIER 2 TARGET LEVELS FOR A NON-RESIDENTIAL WORKER

CHEMICALS OF CONCERN	AIR	SURFICIAL SOIL				SUBSURFACE SOIL	SOIL VAPOR	GROUNDWATER	
	Indoor [mg/m^3-air]	Dermal Contact [mg/kg]	Ingestion [mg/kg]	Inhalation [mg/kg]	Ingestion, Inhalation (Vapor Emissions and Particulates), and [mg/kg]	Indoor Inhalation of Vapor Emissions [mg/kg]	Indoor Inhalation of Vapor Emissions [mg/m^3-air]	Dermal contact [mg/L]	Indoor Inhalation of Vapor Emissions [mg/L]
Chloroform	2.37E-03	NA	9.23E+02	2.56E+03 *	6.78E+02	4.02E-01	1.89E+02	NC	1.44E+00

NC: Pathway is not complete

NA: Not Available

*: Calculated Target Level exceeded saturated soil concentration. Calculated value is shown.

#: Calculated Target Level exceeded solubility. Calculated value is shown.

+: Calculated Target Level exceeded saturated vapor concentration. Calculated value is shown.

Soil concentrations are presented on a dry weight basis.

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SITE:

SOIL & GROUNDWATER PROTECTIVE OF INDOOR INHALATION FOR A NON-RESIDENTIAL WORKER - WITHOUT BIODEGRADATION

CHEMICALS OF CONCERN	DILUTION ATTENTUATION FACTORS			ALLOWABLE CONCENTRATION AT			
	Unsaturated Zone [--]	Point of Demonstration [--]	On/Off-site Building [--]	Soil Source [mg/kg]	Groundwater Source [mg/L]	Point of Demonstration [mg/L]	On/Off-site Building [mg/L]
Chloroform	1	1.00E+00	1.00E+00	1.15E+01	1.44E+00	1.44E+00	1.44E+00

*: Calculated Target Level exceeded saturated soil concentration. Calculated value is shown.

#: Calculated Target Level exceeded solubility. Calculated value is shown.

NA: Not available

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Appendix J – MRBCA Model Calculations

Section 4.3.3 – Off-site Non-Residential Exposure to Indoor Vapors from Groundwater

Fate and Transport Parameters

Protection of Groundwater Use and Soil & Groundwater Protective of Indoor Inhalation

Soil & Groundwater Protective of Indoor Inhalation for a Non-Residential Worker – Without Biodegradation

SITE:

FATE AND TRANSPORT PARAMETERS

Parameter	Symbol	Unit	Soil Type 1 Default	Soil Type 2 Default	Soil Type 3 Default	Value Used	Comment
SOIL PARAMETERS:							
Soil Source Dimension Parallel to Wind Direction	W_a	cm	1500	1500	1500	1500	Default Value
Depth to Subsurface Soil Sources	d_{ts}	cm	91.44	91.44	91.44	91.44	Default Value
Depth of Surficial Soil Zone	d_s	cm	91.44	91.44	91.44	91.44	Default Value
Depth to Soil Vapor Measurement	d_{sv}	cm	91.44	91.44	91.44	91.44	Default Value
VADOSE ZONE:							
Total Soil Porosity	θ_T	cm^3/cm^3-soil	0.38	0.44	0.44	0.38	Soil Type 1
Volumetric Water Content	θ_{ws}	cm^3/cm^3	0.08	0.17	0.21	0.08	Soil Type 1
Volumetric Air Content	θ_{as}	cm^3/cm^3	0.30	0.27	0.23	0.30	Calculated
Thickness	h_v	cm	295	295	295	5	Calculated
Dry Soil Bulk Density	ρ_s	g/cm^3	1.5	1.5	1.5	1.5	Default Value
Fractional Organic Carbon Content	f_{ocv}	g-C/g-soil	0.006	0.006	0.006	0.006	Default Value
SOIL IN CRACKS:							
Total Soil Porosity	θ_{Tcrack}	cm^3/cm^3-soil	0.38	0.44	0.44	0.38	Soil Type 1
Volumetric Water Content	θ_{wcrack}	cm^3/cm^3	0.08	0.17	0.21	0.08	Soil Type 1
Volumetric Air Content	θ_{acrack}	cm^3/cm^3	0.30	0.27	0.23	0.30	Calculated
CAPILLARY FRINGE:							
Total Soil Porosity	θ_{Tcap}	cm^3/cm^3-soil	0.38	0.44	0.44	0.38	Soil Type 1
Volumetric Water Content	θ_{wcap}	cm^3/cm^3	0.34	0.40	0.40	0.34	Calculated
Volumetric Air Content	θ_{acap}	cm^3/cm^3	0.04	0.04	0.04	0.04	Calculated
Thickness	h_c	cm	5	5	5	5	Default Value
GROUNDWATER PARAMETERS:							
Depth to Groundwater	L_{GW}	cm	300	300	300	10	Site-Specific Value
GW Source Dimension Parallel to GW Flow Direction	W_{ga}	cm	1500	1500	1500	1500	Default Value
GW Source Dimension Perpendicular to GW Flow Direction	Y	cm	1500	1500	1500	1500	Default Value
Total Porosity in the Saturated Zone	θ_{TS}	cm^3/cm^3	N/A	N/A	N/A	0.38	Site-Specific Value
Dry Soil Bulk Density (Saturated Zone)	ρ_{ss}	g/cm^3	N/A	N/A	N/A	1.5	Site-Specific Value
Fractional Organic Carbon Content in the Saturated Zone	f_{ocs}	g-C/g-soil	N/A	N/A	N/A	0.006	Site-Specific Value
Groundwater Mixing Zone Thickness	δ_{gw}	cm	200	200	200	200	Default Value
Hydraulic Conductivity in the Saturated Zone	K	cm/year	625000	625000	625000	625000	Default Value
Hydraulic Gradient in the Saturated Zone	i	cm/cm	0.004	0.004	0.004	0.004	Default Value
Groundwater Darcy Velocity	U_{gw}	cm/year	2500	2500	2500	2500	Calculated
Infiltration Rate of Water Through Vadose Zone	I	cm/year	14	14	14	14	Default Value
AMBIENT AIR PARAMETERS:							
Breathing Zone Height	δ_a	cm	200	200	200	200	Default Value
Inverse of Mean Concentration at Center of Square Source	Q/C	$(g/m^2\text{-}s)/(kg/m^3)$	81.64	81.64	81.64	81.64	Default Value
Fraction of Vegetative Cover	V	m^2/m^2	0.5	0.5	0.5	0.50	Default Value
Mean Annual Wind Speed	U_m	m/s	4.69	4.69	4.69	4.69	Default Value
Equivalent Threshold Value of Windspeed	U_t	m/s	11.32	11.32	11.32	11.32	Default Value
Windspeed Distribution Function from Cowherd et. al, 1985	F(x)	unitless	0.194	0.194	0.194	0.194	Default Value
ENCLOSED SPACE PARAMETERS:							
Enclosed Space Air Exchange Rate:							
Residential Structure	ER	1/24 hrs	12.096	12.096	12.096	12.096	Default Value
Non-Residential Structure	ER	1/24hrs	19.872	19.872	19.872	19.872	Default Value
Enclosed Space Volume/Infiltration Area:							
Residential Structure	L_B	cm	200	200	200	200	Default Value
Non-Residential Structure	L_B	cm	300	300	300	300	Default Value
Volatalization Factor for Domestic Water Use	K_f	L/m^3	0.5	0.5	0.5	0.5	Default Value
Enclosed Space Foundation or Wall Thickness:							
Residential Structure	L_{crack}	cm	15	15	15	15	Default Value
Non-Residential Structure	L_{crack}	cm	15	15	15	15	Default Value
Area Fraction of Cracks in Foundation/Walls:							
Residential Structure	η	cm^2/cm^2	0.001	0.001	0.001	0.001	Default Value
Non-Residential Structure	η	cm^2/cm^2	0.001	0.001	0.001	0.001	Default Value

The values in red are calculated.

N/A: Not Applicable

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SITE:

PROTECTION OF GROUNDWATER USE AND SOIL & GROUNDWATER PROTECTIVE OF INDOOR INHALATION

Parameter	Symbol	Unit	Default Value	Value Used	Comment
Distance from the Downgradient Edge of the Groundwater Source to the Point of Exposure	X_{poe}	ft	variable	450	Site-specific
Longitudinal Dispersivity	α_x	ft	variable	45.000	Calculated
Transverse Dispersivity	α_y	ft	variable	15.000	Calculated
Vertical Dispersivity	α_z	ft	variable	2.250	Calculated
Distance from the Downgradient Edge of the Groundwater Source to the Point of Demonstration	X_{pod}	ft	variable	450	Site-specific
Longitudinal Dispersivity	α_x	ft	variable	45.000	Calculated
Transverse Dispersivity	α_y	ft	variable	15.000	Calculated
Vertical Dispersivity	α_z	ft	variable	2.250	Calculated
Distance from the Downgradient Edge of the Groundwater Source to the On/Off-site Building	X_{bld}	ft	variable	450	Site-specific
Longitudinal Dispersivity	α_x	ft	variable	45.000	Calculated
Transverse Dispersivity	α_y	ft	variable	15.000	Calculated
Vertical Dispersivity	α_z	ft	variable	2.250	Calculated

Enter additional chemical-specific values on the "Chemical-Specific Inputs for Other Routes of Exposure" table.

The values in red are calculated.

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SITE:

SOIL & GROUNDWATER PROTECTIVE OF INDOOR INHALATION FOR A NON-RESIDENTIAL WORKER - WITHOUT BIODEGRADATION

CHEMICALS OF CONCERN	DILUTION ATTENTUATION FACTORS			ALLOWABLE CONCENTRATION AT			
	Unsaturated Zone [--]	Point of Demonstration [--]	On/Off-site Building [--]	Soil Source [mg/kg]	Groundwater Source [mg/L]	Point of Demonstration [mg/L]	On/Off-site Building [mg/L]
Chloroform	1	5.14E+01	5.14E+01	5.94E+02	7.42E+01	1.44E+00	1.44E+00

*: Calculated Target Level exceeded saturated soil concentration. Calculated value is shown.

#: Calculated Target Level exceeded solubility. Calculated value is shown.

NA: Not available

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Appendix J – MRBCA Model Calculations

Section 4.3.4 – Off-site Residential Exposure from Vapor Intrusion

On-Site and Soil Type 1

Fate and Transport Parameters

Protection of Groundwater Use and Soil & Groundwater Protective of Indoor Inhalation

Soil & Groundwater Protective of Indoor Inhalation for a Non-Residential Worker – Without Biodegradation

Off-Site and Soil Type 2

Fate and Transport Parameters

Protection of Groundwater Use and Soil & Groundwater Protective of Indoor Inhalation

Soil & Groundwater Protective of Indoor Inhalation for a Non-Residential Worker – Without Biodegradation

SITE:

FATE AND TRANSPORT PARAMETERS

Parameter	Symbol	Unit	Soil Type 1 Default	Soil Type 2 Default	Soil Type 3 Default	Value Used	Comment
SOIL PARAMETERS:							
Soil Source Dimension Parallel to Wind Direction	W_a	cm	1500	1500	1500	1500	Default Value
Depth to Subsurface Soil Sources	d_{ts}	cm	91.44	91.44	91.44	91.44	Default Value
Depth of Surficial Soil Zone	d_s	cm	91.44	91.44	91.44	91.44	Default Value
Depth to Soil Vapor Measurement	d_{sv}	cm	91.44	91.44	91.44	91.44	Default Value
VADOSE ZONE:							
Total Soil Porosity	θ_T	cm^3/cm^3-soil	0.38	0.44	0.44	0.38	Soil Type 1
Volumetric Water Content	θ_{ws}	cm^3/cm^3	0.08	0.17	0.21	0.08	Soil Type 1
Volumetric Air Content	θ_{as}	cm^3/cm^3	0.30	0.27	0.23	0.30	Calculated
Thickness	h_v	cm	295	295	295	5	Calculated
Dry Soil Bulk Density	ρ_s	g/cm^3	1.5	1.5	1.5	1.5	Default Value
Fractional Organic Carbon Content	f_{ocv}	g-C/g-soil	0.006	0.006	0.006	0.006	Default Value
SOIL IN CRACKS:							
Total Soil Porosity	θ_{Tcrack}	cm^3/cm^3-soil	0.38	0.44	0.44	0.38	Soil Type 1
Volumetric Water Content	θ_{wcrack}	cm^3/cm^3	0.08	0.17	0.21	0.08	Soil Type 1
Volumetric Air Content	θ_{acrack}	cm^3/cm^3	0.30	0.27	0.23	0.30	Calculated
CAPILLARY FRINGE:							
Total Soil Porosity	θ_{Tcap}	cm^3/cm^3-soil	0.38	0.44	0.44	0.38	Soil Type 1
Volumetric Water Content	θ_{wcap}	cm^3/cm^3	0.34	0.40	0.40	0.34	Calculated
Volumetric Air Content	θ_{acap}	cm^3/cm^3	0.04	0.04	0.04	0.04	Calculated
Thickness	h_c	cm	5	5	5	5	Default Value
GROUNDWATER PARAMETERS:							
Depth to Groundwater	L_{GW}	cm	300	300	300	10	Site-Specific Value
GW Source Dimension Parallel to GW Flow Direction	W_{ga}	cm	1500	1500	1500	1500	Default Value
GW Source Dimension Perpendicular to GW Flow Direction	Y	cm	1500	1500	1500	1500	Default Value
Total Porosity in the Saturated Zone	θ_{TS}	cm^3/cm^3	N/A	N/A	N/A	0.38	Site-Specific Value
Dry Soil Bulk Density (Saturated Zone)	ρ_{ss}	g/cm^3	N/A	N/A	N/A	1.5	Site-Specific Value
Fractional Organic Carbon Content in the Saturated Zone	f_{ocs}	g-C/g-soil	N/A	N/A	N/A	0.006	Site-Specific Value
Groundwater Mixing Zone Thickness	δ_{gw}	cm	200	200	200	200	Default Value
Hydraulic Conductivity in the Saturated Zone	K	cm/year	625000	625000	625000	625000	Default Value
Hydraulic Gradient in the Saturated Zone	i	cm/cm	0.004	0.004	0.004	0.004	Default Value
Groundwater Darcy Velocity	U_{gw}	cm/year	2500	2500	2500	2500	Calculated
Infiltration Rate of Water Through Vadose Zone	I	cm/year	14	14	14	14	Default Value
AMBIENT AIR PARAMETERS:							
Breathing Zone Height	δ_a	cm	200	200	200	200	Default Value
Inverse of Mean Concentration at Center of Square Source	Q/C	$(g/m^2\text{-}s)/(kg/m^3)$	81.64	81.64	81.64	81.64	Default Value
Fraction of Vegetative Cover	V	m^2/m^2	0.5	0.5	0.5	0.50	Default Value
Mean Annual Wind Speed	U_m	m/s	4.69	4.69	4.69	4.69	Default Value
Equivalent Threshold Value of Windspeed	U_t	m/s	11.32	11.32	11.32	11.32	Default Value
Windspeed Distribution Function from Cowherd et. al, 1985	F(x)	unitless	0.194	0.194	0.194	0.194	Default Value
ENCLOSED SPACE PARAMETERS:							
Enclosed Space Air Exchange Rate:							
Residential Structure	ER	1/24 hrs	12.096	12.096	12.096	12.096	Default Value
Non-Residential Structure	ER	1/24hrs	19.872	19.872	19.872	19.872	Default Value
Enclosed Space Volume/Infiltration Area:							
Residential Structure	L_B	cm	200	200	200	200	Default Value
Non-Residential Structure	L_B	cm	300	300	300	300	Default Value
Volatalization Factor for Domestic Water Use	K_f	L/m^3	0.5	0.5	0.5	0.5	Default Value
Enclosed Space Foundation or Wall Thickness:							
Residential Structure	L_{crack}	cm	15	15	15	15	Default Value
Non-Residential Structure	L_{crack}	cm	15	15	15	15	Default Value
Area Fraction of Cracks in Foundation/Walls:							
Residential Structure	η	cm^2/cm^2	0.001	0.001	0.001	0.001	Default Value
Non-Residential Structure	η	cm^2/cm^2	0.001	0.001	0.001	0.001	Default Value

The values in red are calculated.

N/A: Not Applicable

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SITE:

PROTECTION OF GROUNDWATER USE AND SOIL & GROUNDWATER PROTECTIVE OF INDOOR INHALATION

Parameter	Symbol	Unit	Default Value	Value Used	Comment
Distance from the Downgradient Edge of the Groundwater Source to the Point of Exposure	X_{poe}	ft	variable	0	Site-specific
Longitudinal Dispersivity	α_x	ft	variable	0.000	Calculated
Transverse Dispersivity	α_y	ft	variable	0.000	Calculated
Vertical Dispersivity	α_z	ft	variable	0.000	Calculated
Distance from the Downgradient Edge of the Groundwater Source to the Point of Demonstration	X_{pod}	ft	variable	0	Site-specific
Longitudinal Dispersivity	α_x	ft	variable	0.000	Calculated
Transverse Dispersivity	α_y	ft	variable	0.000	Calculated
Vertical Dispersivity	α_z	ft	variable	0.000	Calculated
Distance from the Downgradient Edge of the Groundwater Source to the On/Off-site Building	X_{bld}	ft	variable	0	Site-specific
Longitudinal Dispersivity	α_x	ft	variable	0.000	Calculated
Transverse Dispersivity	α_y	ft	variable	0.000	Calculated
Vertical Dispersivity	α_z	ft	variable	0.000	Calculated

Enter additional chemical-specific values on the "Chemical-Specific Inputs for Other Routes of Exposure" table.

The values in red are calculated.

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SITE:

SOIL & GROUNDWATER PROTECTIVE OF INDOOR INHALATION FOR A RESIDENT - WITHOUT BIODEGRADATION

CHEMICALS OF CONCERN	DILUTION ATTENTUATION FACTORS			ALLOWABLE CONCENTRATION AT			
	Unsaturated Zone [--]	Point of Demonstration [--]	On/Off-site Building [--]	Soil Source [mg/kg]	Groundwater Source [mg/L]	Point of Demonstration [mg/L]	On/Off-site Building [mg/L]
Chloroform	1	1.00E+00	1.00E+00	2.20E+00	2.75E-01	2.75E-01	2.75E-01

*: Calculated Target Level exceeded saturated soil concentration. Calculated value is shown.

#: Calculated Target Level exceeded solubility. Calculated value is shown.

NA: Not available

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SITE:

FATE AND TRANSPORT PARAMETERS

Parameter	Symbol	Unit	Soil Type 1 Default	Soil Type 2 Default	Soil Type 3 Default	Value Used	Comment
SOIL PARAMETERS:							
Soil Source Dimension Parallel to Wind Direction	W_a	cm	1500	1500	1500	1500	Default Value
Depth to Subsurface Soil Sources	d_{ss}	cm	91.44	91.44	91.44	91.44	Default Value
Depth of Surficial Soil Zone	d_s	cm	91.44	91.44	91.44	91.44	Default Value
Depth to Soil Vapor Measurement	d_{sv}	cm	91.44	91.44	91.44	91.44	Default Value
VADOSE ZONE:							
Total Soil Porosity	θ_T	cm^3/cm^3-soil	0.38	0.44	0.44	0.44	Soil Type 2 or 3
Volumetric Water Content	θ_{ws}	cm^3/cm^3	0.08	0.17	0.21	0.17	Soil Type 2
Volumetric Air Content	θ_{as}	cm^3/cm^3	0.30	0.27	0.23	0.27	Calculated
Thickness	h_v	cm	295	295	295	5	Calculated
Dry Soil Bulk Density	ρ_s	g/cm^3	1.5	1.5	1.5	1.5	Default Value
Fractional Organic Carbon Content	f_{ocv}	g-C/g-soil	0.006	0.006	0.006	0.006	Default Value
SOIL IN CRACKS:							
Total Soil Porosity	θ_{Tcrack}	cm^3/cm^3-soil	0.38	0.44	0.44	0.44	Soil Type 2 or 3
Volumetric Water Content	θ_{wcrack}	cm^3/cm^3	0.08	0.17	0.21	0.17	Soil Type 2
Volumetric Air Content	θ_{acrack}	cm^3/cm^3	0.30	0.27	0.23	0.27	Calculated
CAPILLARY FRINGE:							
Total Soil Porosity	θ_{Tcap}	cm^3/cm^3-soil	0.38	0.44	0.44	0.44	Soil Type 2 or 3
Volumetric Water Content	θ_{wcap}	cm^3/cm^3	0.34	0.40	0.40	0.40	Calculated
Volumetric Air Content	θ_{acap}	cm^3/cm^3	0.04	0.04	0.04	0.04	Calculated
Thickness	h_c	cm	5	5	5	5	Default Value
GROUNDWATER PARAMETERS:							
Depth to Groundwater	L_{GW}	cm	300	300	300	10	Site-Specific Value
GW Source Dimension Parallel to GW Flow Direction	W_{ga}	cm	1500	1500	1500	1500	Default Value
GW Source Dimension Perpendicular to GW Flow Direction	Y	cm	1500	1500	1500	1500	Default Value
Total Porosity in the Saturated Zone	θ_{TS}	cm^3/cm^3	N/A	N/A	N/A	0.38	Site-Specific Value
Dry Soil Bulk Density (Saturated Zone)	ρ_{ss}	g/cm^3	N/A	N/A	N/A	1.5	Site-Specific Value
Fractional Organic Carbon Content in the Saturated Zone	f_{ocs}	g-C/g-soil	N/A	N/A	N/A	0.006	Site-Specific Value
Groundwater Mixing Zone Thickness	δ_{gw}	cm	200	200	200	200	Default Value
Hydraulic Conductivity in the Saturated Zone	K	cm/year	625000	625000	625000	625000	Default Value
Hydraulic Gradient in the Saturated Zone	i	cm/cm	0.004	0.004	0.004	0.004	Default Value
Groundwater Darcy Velocity	U_{gw}	cm/year	2500	2500	2500	2500	Calculated
Infiltration Rate of Water Through Vadose Zone	I	cm/year	14	14	14	14	Default Value
AMBIENT AIR PARAMETERS:							
Breathing Zone Height	δ_a	cm	200	200	200	200	Default Value
Inverse of Mean Concentration at Center of Square Source	Q/C	$(g/m^2\text{-}s)/(kg/m^3)$	81.64	81.64	81.64	81.64	Default Value
Fraction of Vegetative Cover	V	m^2/m^2	0.5	0.5	0.5	0.50	Default Value
Mean Annual Wind Speed	U_{a1}	m/s	4.69	4.69	4.69	4.69	Default Value
Equivalent Threshold Value of Windspeed	U_t	m/s	11.32	11.32	11.32	11.32	Default Value
Windspeed Distribution Function from Cowherd et. al, 1985	F(x)	unitless	0.194	0.194	0.194	0.194	Default Value
ENCLOSED SPACE PARAMETERS:							
Enclosed Space Air Exchange Rate:							
Residential Structure	ER	1/24 hrs	12.096	12.096	12.096	12.096	Default Value
Non-Residential Structure	ER	1/24hrs	19.872	19.872	19.872	19.872	Default Value
Enclosed Space Volume/Infiltration Area:							
Residential Structure	L_B	cm	200	200	200	200	Default Value
Non-Residential Structure	L_B	cm	300	300	300	300	Default Value
Volatalization Factor for Domestic Water Use	K_f	L/m^3	0.5	0.5	0.5	0.5	Default Value
Enclosed Space Foundation or Wall Thickness:							
Residential Structure	L_{crack}	cm	15	15	15	15	Default Value
Non-Residential Structure	L_{crack}	cm	15	15	15	15	Default Value
Area Fraction of Cracks in Foundation/Walls:							
Residential Structure	η	cm^2/cm^2	0.001	0.001	0.001	0.001	Default Value
Non-Residential Structure	η	cm^2/cm^2	0.001	0.001	0.001	0.001	Default Value

The values in red are calculated.

N/A: Not Applicable

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SITE:

PROTECTION OF GROUNDWATER USE AND SOIL & GROUNDWATER PROTECTIVE OF INDOOR INHALATION

Parameter	Symbol	Unit	Default Value	Value Used	Comment
Distance from the Downgradient Edge of the Groundwater Source to the Point of Exposure	X_{poe}	ft	variable	125	Site-specific
Longitudinal Dispersivity	α_x	ft	variable	12.500	Calculated
Transverse Dispersivity	α_y	ft	variable	4.167	Calculated
Vertical Dispersivity	α_z	ft	variable	0.625	Calculated
Distance from the Downgradient Edge of the Groundwater Source to the Point of Demonstration	X_{pod}	ft	variable	125	Site-specific
Longitudinal Dispersivity	α_x	ft	variable	12.500	Calculated
Transverse Dispersivity	α_y	ft	variable	4.167	Calculated
Vertical Dispersivity	α_z	ft	variable	0.625	Calculated
Distance from the Downgradient Edge of the Groundwater Source to the On/Off-site Building	X_{bld}	ft	variable	125	Site-specific
Longitudinal Dispersivity	α_x	ft	variable	12.500	Calculated
Transverse Dispersivity	α_y	ft	variable	4.167	Calculated
Vertical Dispersivity	α_z	ft	variable	0.625	Calculated

Enter additional chemical-specific values on the "Chemical-Specific Inputs for Other Routes of Exposure" table.

The values in red are calculated.

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SOIL & GROUNDWATER PROTECTIVE OF INDOOR INHALATION FOR A RESIDENT - WITHOUT BIODEGRADATION

CHEMICALS OF CONCERN	DILUTION ATTENTUATION FACTORS			ALLOWABLE CONCENTRATION AT			
	Unsaturated Zone [--]	Point of Demonstration [--]	On/Off-site Building [--]	Soil Source [mg/kg]	Groundwater Source [mg/L]	Point of Demonstration [mg/L]	On/Off-site Building [mg/L]
Chloroform	1	4.51E+00	4.51E+00	2.04E+01	2.17E+00	4.82E-01	4.82E-01

*: Calculated Target Level exceeded saturated soil concentration. Calculated value is shown.

#: Calculated Target Level exceeded solubility. Calculated value is shown.

NA: Not available

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