INTERIM REMOVAL AND CLOSURE REPORT BUILDING 4, BUILDING 41, BUILDING 51 AND HISTORIC WASTEWATER CONVEYANCE AREAS FORMER YORK NAVAL ORDNANCE PLANT

SAIC Project 2603100069

Prepared for:

Harley-Davidson Motor Company Operations, Inc. York, PA

June 2012



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LIST OF ACRONYMS

A/A acid/alkaline

AMF American Machine and Foundry

bgs below ground surface cis-1,2-DCE cis-1,2-dichloroethene

CY cubic yard DCA dichloroethane DCE dichloroethene

EI environmental inspector

EPA United States Environmental Protection Agency

fYNOP former York Naval Ordnance Plant GWTS Groundwater Treatment System

Harley-Davidson Harley-Davidson Motor Company Operations, Inc.

HASP Health and Safety Plan

IWTP Industrial Wastewater Treatment Plant

MEK Methyl Ethyl Ketone mg/kg milligrams per kilogram mg/L milligrams per liter

MSC Medium Specific Concentrations

NPA North Plant Area

OWCA Old Waste Containment Area

PADEP Pennsylvania Department of Environmental Protection PADER Pennsylvania Department of Environmental Resources

PAHs polycyclic aromatic hydrocarbons

PCBs polychlorinated biphenyls PCE tetrachloroethylene PID photoionization detector

POTW Publicly Owned Treatment Works

ppm parts per million psi pounds per square inch PVC polyvinyl chloride

QAPP Quality Assurance Project Plan

RAA Remedial Action Area

RCRA Resource Conservation Recovery Act

REWAI R. E. Wright Associates, Inc.
REWEI R. E. Wright Environmental, Inc.
RFA RCRA Facility Assessment
RI Remedial Investigation
RSL Regional Screening Level

SAIC Energy, Environment & Infrastructure, LLC

SVOCs semi-volatile organic compounds

SVE soil vapor extraction

SWMU Solid Waste Management Unit

TCA 1,1,1-trichloroethane TCE trichloroethylene

TSCA Toxic Substances Control Act VOCs volatile organic compounds

WP Work Plan

WWTP wastewater treatment plant

1.0 INTRODUCTION

This report discusses the interim remedial actions that were completed at select locations within the Harley-Davidson Motor Company Operations, Inc. (Harley-Davidson) facility in York, Pennsylvania (see **Figure 1**) as part of the ongoing characterization and remediation of the former York Naval Ordnance Plant (fYNOP) being performed under the One Cleanup Program. The interim remedial actions were coordinated with the York Campus Restructuring Project, which provided access to previously inaccessible subsurface source and suspected source areas. The York Campus Restructuring Project included demolition of selected buildings and other features, expansion of the former Softail plant (Building 3), and various improvements, including a new stormwater basin in the North Plant Area (NPA) and reworked roadways and parking areas. Much of the demolition work was conducted within a portion of the facility known as the West Campus, which is under contract to be sold as part of the York Campus Restructuring Project.

The following areas were the subject of the interim remedial actions discussed in this report (refer to **Figure 2** for locations):

- 1. A series of unused underground wastewater conveyance pipes that historically were used to transfer wastewater containing oil, metals, cyanide, and other industrial rinse waters from operations in Building 2 and Building 4 to Building 41 (the Industrial Wastewater Treatment Plant [IWTP]) for treatment. The condition of these pipes was unknown, and therefore, they were planned to be cleaned and properly removed or abandoned.
- 2. The former hazardous waste storage facility at Building 51.
- 3. Eighteen specific areas of concern within the former IWTP in Building 41.
- 4. The former northern vapor degreaser area and the former American Machine and Foundry (AMF) degreaser vault area at the north end of Building 4.

Harley-Davidson contracted SAIC Energy, Environment & Infrastructure, LLC (SAIC) to perform the interim remediation activities associated with the fYNOP. SAIC was also contracted to perform environmental monitoring, inspection, and sampling tasks when potential environmental concerns were identified during excavation activities or as a result of demolition or construction work associated with the York Campus Restructuring project.

Previously, several significant environmental concerns (i.e., areas of contamination) were documented to be present beneath certain buildings in the West Campus that were planned to be demolished (SAIC, 2009). Some of these environmental concerns were also considered ongoing sources of groundwater contamination. Demolition of the buildings provided access to known and suspected source areas that previously were inaccessible. The benefits of remediating those areas of contamination, particularly prior to sale of the West Campus, include reduced environmental risks and the elimination of potential future access concerns that could arise after the sale of the West Campus.

The interim remedial actions discussed in this report were conducted in coordination with site demolition activities performed by Harley-Davidson as part of the York Campus Restructuring Project. Thus, some of the activities discussed in this report were performed before demolition occurred, while other activities occurred after demolition. **Figure 3** provides an illustration of the buildings that were planned to be demolished or retained, as well as a schedule for each of the buildings to be vacated and demolished during 2011. Because most of the proposed interim remedial actions involved removal of soil and subgrade structures, it was necessary that the above-grade structures be removed prior to beginning the identified remedial activity to allow access for the necessary excavation equipment.

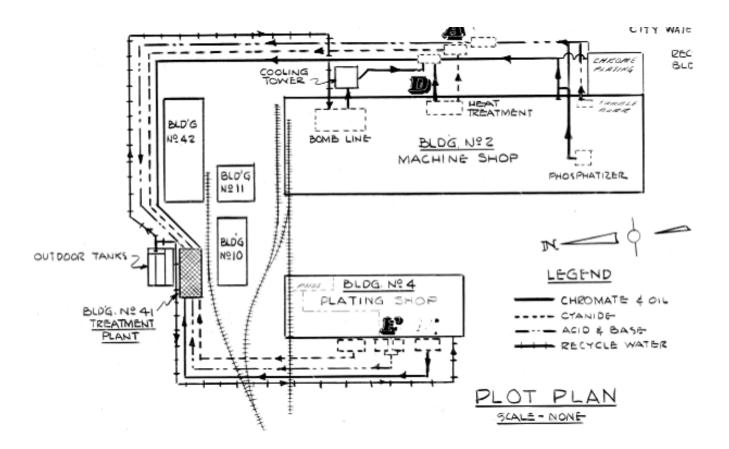
Background information on the four areas where interim remedial activities were performed is provided in Section 2.0. Interim remedial activities performed at each location are discussed in Section 3.0. Remaining environmental conditions are discussed in Section 4.0. Soil handling and waste disposal are discussed in Section 5.0. References are provided in Section 6.0.

2.0 BACKGROUND

Background information for each of the four areas at which interim remedial activities were performed is provided in this section. Included in this section is information about the known preexisting environmental condition of each area prior to the start of the interim remedial activities. Additional information about the planned interim actions was provided in the *Building 4 | Building 41 IWTP | Building 51 | Conveyance Lines, Soil Removal Work Plan Scoping Document* (SAIC, 2011a).

2.1 Historic Wastewater Conveyance Piping

The approximate locations of the historic conveyance lines from Building 2 and Building 4 to the IWTP (Building 41) are shown on **Figure 2**. A historical sketch of the conveyance lines, prepared by AMF in the late 1960's or early 1970's, is provided below:



The conveyance lines (a.k.a., piping, pipes, pipelines) were installed during the start-up of the IWTP, which occurred approximately in 1969. The original four wastewater conveyance lines were used for chromate and oil, cyanide, acid and base, and recycle water. The wastewaters were from cyanide, chromium, nickel, and zinc plating operations, along with acid/alkaline (A/A) wastewaters. While most of these lines are currently four inches in diameter, it was reported that the original lines may have been smaller diameter. The cyanide line was reported to be smaller in diameter and was constructed of stainless steel. Upgrades were made to the IWTP in the 1970's, during which time some conveyance lines may have been changed to or replaced with larger diameter lines, and other lines were disconnected or closed. The exact details for these changes/upgrades were not available. The Building 2 area conveyance lines were last used in 1995. Since 1995, only two conveyance lines remained active, transferring A/A wastewater from the Building 4, 91, and 92 process areas to Building 41. The remaining transfer and IWTP operations from Buildings 4, 91, and 92 to Building 41 were shut down at the end of June 2011.

2.2 Building 51, Former Hazardous Waste Storage Facility

Building 51 was a former less than (<) 90-day hazardous waste storage area and was located in the NPA of the Harley-Davidson facility, just north of Buildings 57 and 42. The building was a former military-style metal Quonset hut, measuring approximately 100 feet by 40 feet, and had a bituminous concrete floor with an approximately 6-inch-perimeter berm. The location of the former hazardous waste storage facility (Building 51) is shown on **Figure 2**.

A Resource Conservation and Recovery Act (RCRA) Facility Assessment (RFA) was conducted by the Unites States Environmental Protection Agency (EPA) of the fYNOP facility in 1988. According to the RFA (Kearney, 1989), waste paint sludge was bulked in dumpsters located within Building 51 prior to off-site disposal. The paint sludge contained hexavalent chromium, in addition to other paint constituents. Other hazardous waste liquids from various plant processes, as well as paint and metal plating-related filters, were also handled and stored in this building until the facility was relocated to Building 70 in early 2011.

An investigation and RCRA closure of the former Drum Storage Area (including Building 51) occurred between 1990 and 1992 and included the collection and analysis of soil from one soil boring beneath the building. The closure document for the Drum Storage Area was issued to the Pennsylvania Department of Environmental Resources (PADER) (currently known as the Pennsylvania Department of Environmental Protection [PADEP]) on July 24, 1992 (R. E. Wright Associates, Inc. [REWAI], 1992). The EPA identified a RCRA Part B closure letter for the Building 51 Storage Area, which was submitted to PADER on July 24, 1992, and requested that acknowledgment from PADER be forwarded to EPA.

Closure of Building 51 was subsequently discussed with PADEP in 2006. At that time, there were plans to relocate the <90-day hazardous waste storage operations from Building 51 to Building 57. Representatives from the PADEP Southcentral Region, Waste Management Program (Don Hagerich, Pam Trowbridge, Sheryl Martin, and Linda Houseal) visited the site on March 28, 2006. At the time of their visit, the PADEP reviewed and approved a closure plan for Building 51, as described in the report titled Final Building 51 Hazardous Waste Storage Area Closure Work Plan (WP) Scoping Document (SAIC, 2006). However, the plans to relocate the <90-day hazardous waste storage operations in Building 51 to Building 57 never materialized for reasons unrelated to environmental conditions. The closure plan was implemented as part of the interim remedial actions discussed in this report.

Three concrete pits at the southern end of Building 51 were investigated and filled in as part of a previous interim remedial action performed by SAIC in late 2008/early 2009. In addition, a new concrete entrance ramp was installed as part of this work. These interim remedial activities at Building 51 are discussed in a separate report titled Building 51 Pit Closure Report, Former York Naval Ordnance Plant (SAIC, 2009f).

In early 2011, as part of the closure, Harley-Davidson relocated the <90-day hazardous waste storage operations in Building 51 to Building 70, located near Gate 1. Equipment needed for the current operations in Building 70 was transferred to the new location, and all remaining wastes were removed from the site or transferred to the new location. The demolition plans were

reviewed during a site visit (July 9, 2010) by PADEP Southcentral Regional office, Waste Management Program (Mark Houser and Lisa Wilt). A follow-up inspection was conducted by PADEP (Lisa Wilt, David Richard, and Lucas Swanger) on November 23, 2010, to inspect Building 51 before the building was demolished. PADEP (Lisa Wilt) issued a letter dated December 2, 2010, acknowledging the visit and confirmed acceptance of the work plan modifications that were discussed, including gravel backfilling following removal of the flooring and soil testing. The PADEP indicated the building did not need to be inspected after it was empty.

The above-grade structure of Building 51 was demolished by Harley-Davidson in May 2011. Only the building slab (see photos A-14 and A-15, **Appendix A**) remained following demolition. The building footprint measured approximately 100 feet by 40 feet wide.

2.3 Building 41, Industrial Wastewater Treatment Plant (IWTP)

Operations at the IWTP began in 1968/1969, with discharges going to surface water. Major modifications occurred in 1971, 1972, and most recently in 1994, when the discharge was diverted to the publicly owned treatment works (POTW) in Springettsbury Township. Since 1971, the IWTP has included a series of subsurface tanks for equalization, settling, pH adjustment, and sludge removal. Operations at the IWTP ceased in May 2011.

According to the RFA report (Kearney, 1989), the solid waste management units (or SWMUs) identified at Building 41 include a cyanide oxidation tank (SWMU 30), an equalization/chrome reduction tank (SWMU 31), a pH adjustment tank (SWMU 32), two chemical precipitation tanks (SWMUs 33 and 34), a flocculation tank (SWMU 35), two settling tanks (SWMUs 36 and 37), a sludge tank (SWMU 38), a plate and frame filter press (SWMU 39), a neutralization tank (SWMU 40), and an oxidation tank (SWMU 41) and subgrade piping.

A total of 18 remedial action areas (RAA) were identified by SAIC during preparation of the remedial work plan, within the footprint of the IWTP. The RAAs include the SWMUs listed above and other areas of concern that were identified based on previous sampling, historical

operations, or suspect conditions. A schematic of the RAAs and layout of the IWTP are shown on Figure 3 of the *Building 4 / Building 41 IWTP / Building 51 / Conveyance Lines, Soil Removal Work Plan Scoping Document* (SAIC, 2011a). A reference RAA list is provided below:

RAA Ref.	SWMU or Description
1.	SWMU 30 (CN Tank)
2.	Sump #1 (CN Tank)
3.	SWMU 31 (Cr/EQ Tank)
4.	Sump #2 (Cr Tank)
5.	SWMU 32 (pH adjust. Tank)
6.	SWMU 33 (Chemical Precipitation Tank No. 1)
7.	SWMU 34 (Chemical Precipitation Tank No. 2)
8.	SWMU 35 (Flocculation Tank)
9.	SWMU 36 (Settling Tank No. 1)
10.	SWMU 37 (Settling Tank No. 2)
11.	SWMU 38 (Sludge Tank)
12.	SWMU 39 (Filter Press)
13.	SWMU 40 (Neutralization Tank)
14.	SWMU 41 (Oxidation Tank)
15.	Interior Subgrade Pipe Trench
16.	Exterior Subgrade Pipe Trench
17.	East Remediation Sump
18.	Lab/Wash drain sump

Three separate interim remedial activities were previously conducted at the IWTP. These activities include the subsurface investigation and closure of the north settling basin and the adjacent oxidation tank known as SWMUs 36 and SWMU 41, the subsurface investigation of the south and east settling basins known as SWMU 37 and SWMU 40, and the removal of a former pipe trench and installation of a sump pit along the eastern side of Building 41. The latter activity included the removal of a former vault at the northeast exterior corner of Building 41 associated with the former Old Waste Containment Area (OWCA), located immediately north of Building 41. Each of these previous interim activities is documented in the reports listed below:

- Building 41 North Settling Basin Closure Report (SAIC, 2009c)
- Building 41 South Settling Basin Closure Report (SAIC, 2009d)
- Building 41 East Pipe Trench Interim Remediation Report (SAIC, 2009e)

Brief descriptions of these areas and the remedial actions taken are provided below. Additional details and results are provided in the referenced reports.

Historically, the north settling basin (SWMU 36) was used for sludge settling. Its use was discontinued in May 2007 to install two new Lamella clarifiers and a final pH adjust tank. The north settling basin was drained and cleaned, after which SAIC investigated the subsurface soils that occurred in July and August of 2007. Soil borings were drilled through the bottom of the basin to determine if any impacted soil was present, but none was found, and SWMU 36 was considered closed.

When the Lamella clarifiers became operational, the south settling basin and eastern basins were no longer needed. Use of the south settling and eastern basins was discontinued in December 2007, at which time they were drained and cleaned. SAIC investigated the soils under each of these basins in February 2008. The soils beneath the former clarified water basin (SWMU 41) were not impacted and were considered closed.

Borings conducted under the southern settling basin (SWMU 37) in 2008 encountered some impacted soils containing various regulated compounds including tetrachloroethene (PCE), trichloroethene (TCE), cis-1,2-dichloroethene (DCE), methyl ethyl ketone (MEK), toluene, xylene, and several polycyclic aromatic hydrocarbons (PAHs). A layer of perched black liquid was observed in the aggregate layer under the south (SWMU 37) and east (SWMU 40) basins. The black liquid was sampled and determined to contain various constituents including volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs) (including chlorinated solvents and phenol), and metals (including cadmium, chromium, copper, nickel, lead, and zinc). This project then led to the need to construct a sump adjacent to the eastern basins to drain and recover the perched black liquid.

During January and February of 2009, a new sump and automated pump were installed within the former eastern pipe trench to remove the perched black water (beneath the east and south settling basins). In addition, pipes and underlying soil in the pipe trench along the eastern side of the basins were removed, and a pit connected to the northern end of the pipe chase was removed. The pit and pipe chase were historically used as a conduit for a waste fuel line (waste solvents including xylenes) and other steam/electrical pipes going from the OWCA to the boilers in Building 10. This pipe chase was also the subject of a reported release of that fuel several years ago. Elevated concentrations of some organic compounds were detected in the soil beneath the pipe chase and sump pit.

Impacted liquids in the new sump were removed with a pump (generally during precipitation events). During 2009 and early 2010, approximately 1,000 gallons of liquid were pumped from the sump and disposed of off-site as hazardous waste. Because of changes in its appearance, the liquid was re-characterized in April 2010 and found to be nonhazardous. Approximately 1,850 gallons of nonhazardous liquid were subsequently removed from this sump from April 2010 until July 2011.

Other interim remediation activities were planned, in addition to the interim actions previously performed at the IWTP; however, they could not be implemented because of ongoing, active IWTP operations. Thus, most of the RAAs identified at the IWTP could not be investigated until the IWTP was shut down and demolished in August 2011.

The above-grade structure of the IWTP was demolished by Harley-Davidson's demolition contractor in August 2011. Prior to demolition, all process equipment was removed from the pits, and they were emptied and cleaned. Following the above-grade demolition at Building 41, the steel liner from the former equalization subgrade tank (SWMU 31) was removed for salvage, leaving an exposed building slab, concrete pits, and pipe trenches (with former process piping).

2.4 North Building 4 Area

Several vapor degreasers were operated in the north end of Building 4, beginning in the early 1940s and extending through 1994. According to previous interviews with former plant employees (SAIC, 2009b), the original degreaser used TCE as the solvent and then switched to PCE for a period of 1 to 1.5 years. In the early 1970s, the solvent was switched to

1,1,1-trichloroethane (TCA). The solvents for this degreaser were stored in an aboveground tank located along the exterior northwest corner of the building. After flood damage in 1972, AMF replaced the north vapor degreaser with a new smaller unit at the same location, which remained until 1994, when it was decommissioned and replaced with an aqueous parts washer. Prior to installing the smaller degreaser in 1972, AMF reportedly backfilled the base with metal plating sludge containing cyanide and sealed the vault with concrete (Kearney, 1989). In January 1984, Harley-Davidson exhumed and removed approximately 60 to 80 tons of the plating sludge, soil, and debris, which was disposed at an off-site hazardous waste facility in Alabama (Kearney, 1989). Post-excavation sampling was reportedly conducted, but that documentation could not be found.

In 1993, R. E. Wright Environmental, Inc. (REWEI) (formerly REWAI) performed a visual inspection of the secondary containment pit of the smaller vapor degreaser. The inspection revealed no visible cracks or seams in the concrete floor or sidewalls of the containment pit. However, six 2-inch-diameter vertical support pipes from the previous degreaser vault extended through the concrete floor and were cut flush. Liquid was discovered to be two to three feet deep within these support pipes. Over 8,200 gallons of contaminated water were removed and transferred to the groundwater treatment system (GWTS) for treatment. Because of the volume of contaminated liquid pumped from the vault, it was considered a continuing source of chlorinated solvents to groundwater.

A soil vapor extraction (SVE) system, including four multilevel vapor monitoring points and four multilevel vapor extraction wells, was subsequently tested and installed inside the building around the former northern degreaser in 1994. Between 1994 and 2011, over 35,000 pounds of VOCs were removed with the SVE system from the subsurface around the former degreasing vaults. While most of those VOCs were removed in the initial years, smaller amounts of VOCs continued to be removed until shutdown. In late 2010, the SVE system was shut down and the vapor extraction/monitoring points grouted shut, in anticipation of building demolition and remediation efforts.

As discussed in Supplemental Remedial Investigation (RI) Building 4 North Vapor Degreaser Area Soil Investigations (SAIC, 2009b), soils surrounding the former north vapor degreaser have been investigated since 1993. Elevated concentrations of several chlorinated solvents—including TCE, PCE, TCA, and 1,4-dioxane—have been documented in the soil. The data indicate the concentrations of chlorinated solvents in impacted soils surrounding the former north vapor degreaser area where the SVE system operated have decreased over time. Soil results from areas to the west near the former outside solvent storage tank/containment area exceeded PADEP Medium Specific Concentrations (MSCs) for TCA, TCE, PCE, and 1,4-dioxane. Groundwater results for samples collected immediately beneath the north vapor degreaser area contained elevated (approximately 19 milligrams per liter [mg/L) concentrations of chlorinated compounds.

Based on available data, the soils in the immediate vicinity of the northern end of Building 4 were considered to be impacted around the former vapor degreaser vault at the north end of Building 4 (North Vapor Degreaser), in spite of over 15 years of SVE operation. Plating-related waste and impacted soil were also identified in the vicinity of a former AMF degreaser vault and plating operation (Former AMF Degreaser Area) located further south in Building 4. Interim remediation activities started after the building was demolished, which was completed by Harley-Davidson in late August 2011.

3.0 INTERIM REMEDIATION ACTIVITIES

Interim remediation activities were scheduled following completion of demolition work, and in coordination with the ongoing plant restructuring work. Bids were solicited for the excavation, removal, backfilling and off-site transportation and disposal activities. Several qualified contractors were contacted, and bids were awarded by SAIC to BrightFields, Inc. (Wilmington, Delaware, for excavation and backfill activities) and to EQ Environmental, Inc. (waste transportation and disposal activities). BrightFields subcontracted the wastewater pipe cleaning services to Mobile Dredging and Pumping Co. (Chester, Pennsylvania). All removal and closure activities were conducted in accordance with PADEP Act 2 requirements and approved work plans (SAIC, 2011a), and sampling activities were conducted in accordance with the project quality assurance project plan (QAPP, SAIC 2009a).

3.1 Preliminary Activities

The following environmental actions and planning activities were conducted prior to demolition and the planned interim remedial actions:

- Developed an "Environmental Demolition Work Plan" (Harley-Davidson, 2011) to assist
 demolition contractors during handling of potentially contaminated materials and to
 identify specific environmental concerns and sensitive areas. This plan also identified the
 role of the environmental inspector (EI) who was present to monitor soil and other
 materials encountered during the demolition and related excavation activities.
- Prepared a health and safety plan (HASP) to address the potential for worker exposure to hazardous chemicals during demolition, remediation, and construction.
- Completed utility location, shutoffs, and abandonment work (for the historic wastewater conveyance lines and other site utilities to be abandoned).

Photographs taken before and during demolition activities associated with the target remediation areas are provided in **Appendix A** (Photos A-1 through A-9, A-14, A-15, and A-18 through A-25).

Preliminary activities were also needed prior to initiating interim remediation activities at the IWTP. After the IWTP was demolished, heavy rains in early September 2011 caused the former sludge pit to become filled with run-in water (see photo A-26, **Appendix A**). Thus, before interim remediation activities could start, approximately 14,000 gallons of wastewater were removed and properly disposed of off-site.

3.2 Historical Wastewater Piping

A series of four conveyance pipes ran from the east side of Building 2 north to Building 41, and another series of conveyance pipes ran from the west side of Building 4 north to Building 41. As previously described, these pipes historically were used to convey A/A wastewaters, cyanide-bearing wastewaters, oily wastewater, and metal plating rinse water from operations in Building 2 and Building 4. Historical conveyance piping drawings were reviewed to determine the location of the conveyance lines from Building 41 to Building 2 and Building 4.

Conveyance Lines Locating

The planned interim remedial actions for the historical conveyance piping included inductive and geophysical mapping or locating of the pipelines prior to cleaning and abandonment of the pipelines in place. SAIC conducted a multiphase subsurface utility investigation of the anticipated historic pipeline to reduce the likelihood of missing a utility. The locations of these utilities are shown on **Figure 4**.

Conveyance Lines Cleaning and Video Inspection

Due to the length of the pipelines and limited reach with cleaning tools, several excavations were planned at strategic locations to access, expose, and complete the pipeline cleaning. The pipeline cleaning and abandonment activities included cutting/draining all pipes from one end, flushing all pipes with water, containerizing all fluids, and permanently capping abandoned pipes with concrete plugs. Following cleaning, video documentation of the pipeline condition was also completed.

Seven initial test pit locations were identified. The locations of the excavations, numbered Test Pit 1 through 7, are shown on **Figure 4**. The surface (if asphalt or concrete) was saw-cut to prepare each pipeline access pit. The asphalt/concrete was segregated from the soil as construction/demolition debris, and soil was excavated and stockpiled as needed to expose a short section of all of the pipes. The excavated soil was scanned with a photoionization detector (PID) and visually inspected for impacted soil. Excavated soil was placed on plastic and covered with plastic until it could be used to backfill the excavation. None of the excavated soil exhibited elevated PID readings except for soil excavated from Location 6. Soil samples were collected from the excavated soil, and the sampling results were below PADEP Act 2 MSCs. The soil was then used as backfill on-site.

Once the piping was exposed, the bottom of the excavation was lined with plastic, and a short section of the piping was cut and removed. Any liquid in the pipes that drained onto the plastic was vacuumed out of the excavation and containerized. The conveyance lines were cleaned by high-pressure (2,000 pounds per square inch [psi]) clean water jetting of the lines and using a vacuum truck to remove the returned cleaning water from each pipe (see photos A-10 through A-12, **Appendix A**).

The A/A and chromate conveyance line cleaning water was containerized in a large frac tank, separately from possible cyanide-bearing cleaning water, which was transferred to a 5,000-gallon poly tank. All cleaning water was characterized and properly disposed of off-site. After the lines were cleaned, they were televised with a video camera that was fed through the pipes to verify their condition. A copy of the contractor's video report is provided in **Appendix B**. Additional cleaning was conducted, if needed. Following verification, the ends of the pipes in the excavations were capped with concrete and the excavations were backfilled (see photo A-13, **Appendix A**).

Historical piping could not be found beneath the roadway between Buildings 2 and 42 (see **Figure 4**). The camera showed the pipes to be broken or blocked with soil at both locations. Excavations were begun at both sides of the roadway where the pipes were blocked. Excavations demonstrated that the historical piping had been removed previously in this area. Two soil samples (sample ID HD-B41CONV-EX-001 and -002, see **Figure 4**) were collected on the north and south side of the roadway (where wastewater treatment plant [WWTP] piping was removed to install a newer stormwater pipe) at the approximate depth of the former WWTP piping.

3.3 Building 51 Hazardous Waste Storage Area

Interim remedial actions began at the former Building 51 hazardous waste storage pad in August 2011. Approximately one foot of bituminous concrete, concrete pads, and underlying gravel was removed and staged on and covered with plastic (see photos A-16, **Appendix A**). The bituminous concrete, gravel, soil, and concrete were sampled for off-site disposal.

The soil below the bituminous concrete and concrete pads was scanned with a PID and visually inspected. No additional soil was removed since there were no elevated PID readings above background, and no staining or unusual odors were observed.

Systematic random soil sampling was conducted across the excavated building pad area at 12 locations (0 to 2 feet deep) for characterization purposes (see **Figure 5**). A series of 10-foot-by-10-foot grids (100-square-foot areas) were established across the floor of the building (except the south door area, where sampled in 2009). Twelve of these grids were preselected for the collection of soil samples based on the PADEP random grid selection tool. Soil was collected using a two-inch-diameter bucket auger and placed into glassware for shipment to the laboratory (TestAmerica, Inc.).

Each soil sample was analyzed for priority pollutant VOCs, priority pollutant metals, hexavalent chromium, and cyanide (total and free). A summary of the laboratory testing results and

applicable regulatory MSCs is shown on **Table 1**. Although arsenic was found in concentrations above the EPA industrial soil Regional Screening Level (RSL) in several of the confirmation samples, it is considered within typical background levels for this site, and no soil sample results were above the PADEP Act 2 MSCs.

Following confirmation results, the building pad was backfilled with stone to the original floor grade (see photo A-17, **Appendix A**). Later, the restructuring team completed restoration across this area with approximately six inches of additional topsoil and grass seed. A gravel driveway and walking path were also installed nearby (see photos, A-55 and A-56, **Appendix A**).

3.4 Building 41 Industrial Wastewater Treatment Plant (IWTP)

Remedial actions for the former IWTP began in mid September 2011 with the removal of old wastewater conveyance and process piping that remained within the former building pipe trenches (see photo A-27, **Appendix A**). The piping was placed into roll-off containers for off-site disposal. Because previous investigation activities had confirmed that SWMU 36 (former [North] Settling Tank No. 1) and SWMU 41 (former Oxidation Tank) were closed (SAIC, 2009c and 2009e), the pit bottoms of these tanks were penetrated to allow drainage and backfilled with crushed stone.

Former Subgrade Pipe Trenches and East Remediation Sump

Following the removal of former piping in the subgrade trenches (RAA-15 and RAA-16), the underlying solids, sludge, and gravel from the former interior and exterior trenches were removed and placed into containers for off-site disposal. With the exception of the west end of the interior subgrade pipe trench (RAA-15), there was no concrete or containment found beneath the gravel layer in any of the pipe trenches. The underlying soil material was then scanned with a PID, visually inspected, and excavated where staining, odors, or elevated PID readings were observed (there was no previous sampling beneath these trenches).

Within the former exterior pipe trench (RAA-16), approximately four to five feet of soil material was removed along the entire trench and placed into containers for off-site disposal (see photo A-30, **Appendix A**). Some of the soil encountered at the depth of excavation also exhibited slightly elevated PID readings.

Ten confirmatory soil samples (B41RAA16-CS-001 through -010, see Figure 6) were collected from the bottom of the excavated soil with a two-inch-diameter bucket auger at depths ranging from four to six feet along the length of the exterior subgrade trench (RAA-16). Each soil sample was analyzed for priority pollutant VOCs, SVOCs, priority pollutant metals, hexavalent chromium, and cyanide (total and free). A summary of the laboratory testing results and applicable regulatory MSCs is shown on Table 2. Elevated concentrations of chlorinated solvents—including TCE, PCE, cis-1,2-dichloroethene (cis-1,2-DCE), and vinyl chloride—were detected above the Act 2 soil-to-groundwater MSC at 4 of the 10 locations (B41RAA16-CS-001, -007, -009, and -010), located at the northeast corner and the center of the east-west section of trench. No other analytes were detected at concentrations greater than the PADEP Act 2 MSCs. Additional excavation was then conducted at the locations where MSCs were exceeded, and another set of confirmatory samples was collected (B41RAA16-CS-011 through -014) from depths of approximately 6 to 7 feet below ground surface (bgs) (see **Figure 6**). Each of these soil samples was also analyzed for priority pollutant VOCs and SVOCs (see Table 2). Elevated concentrations of vinyl chloride were detected above the Act 2 soil-to-groundwater MSC at only one of these locations (B41RAA16-CS-014), and no other compounds were detected at concentrations greater than the PADEP Act 2 MSCs. Since groundwater was encountered at the depth of excavation, no further removal was attempted.

Within the former interior pipe trench area (RAA-15), up to nine feet of soil material was removed beneath the interior trench section where elevated PID readings were observed and placed into containers for off-site disposal. In addition, the concrete floor and former pipe vaults were also excavated, and soil samples were collected from beneath these structures at depths of approximately 3 feet bgs. Five confirmatory soil samples (B41RAA15-CS-001 through -005) were collected with the assistance of the excavator (see **Figure 6**). Each soil sample was analyzed for priority pollutant VOCs, SVOCs, priority pollutant metals, hexavalent chromium,

and cyanide (total and free). A summary of the laboratory testing results and applicable regulatory MSCs is shown on **Table 2**. No compounds were detected at concentrations greater than the PADEP Act 2 MSCs from any of the confirmatory samples collected at RAA-15.

Over 11 feet of soil was removed along the exterior east side of Building 41 in an attempt to investigate beneath the former remediation sump (RAA-17) where previously collected samples had concentrations greater than the PADEP Act 2 MSCs. One confirmatory soil sample (B41RAA17-CS-001) was collected from the bottom of the excavation at a depth of 11.5 to 12.5 feet bgs, with the assistance of the excavator (see **Figure 6**). Noting no elevated PID readings or evidence of impacts, the excavated soil was returned to the excavation following sample collection. The confirmatory soil sample was analyzed for priority pollutant VOCs, SVOCs, priority pollutant metals, hexavalent chromium, and cyanide (total and free). A summary of the laboratory testing results and applicable regulatory MSCs is shown on **Table 2**. No compounds were detected at concentrations greater than the PADEP Act 2 MSCs in the confirmatory soil sample collected at RAA-17.

SWMU 37 (Former [South] Settling Tank No. 2)

The concrete bottom of the former subgrade south settling basin (SWMU 37) was removed and placed into containers for off-site disposal. The underlying soil material was then excavated within areas where previously collected samples had concentrations greater than the MSCs and where staining or odors was observed. Approximately three to four feet of wet gravel and soil material were removed beneath the center and eastern portions of the basin and placed in containers for off-site disposal. The soil encountered at the depth of excavation also exhibited elevated PID readings. Excavation was halted after significant groundwater was encountered. Attempts were made to remove the infiltrating water and continue excavating, but the water could not be removed fast enough.

Confirmatory samples were collected (11 to 12 feet bgs) with the aid of the excavator (see photo A-28, **Appendix A**). Four soil samples (IWTP037-CS-001 through -004) were collected

from the bottom of the excavation in SWMU 37 for characterization purposes (see **Figure 6**) and placed into glassware for shipment to the laboratory (TestAmerica, Inc.).

Each soil sample was analyzed for priority pollutant VOCs, SVOCs, priority pollutant metals, hexavalent chromium, and cyanide (total and free). A summary of the laboratory testing results and applicable regulatory MSCs is shown on **Table 2**. No analytes were detected at concentrations greater than the PADEP Act 2 MSCs in any of the confirmatory soil samples collected at SWMU 37.

SWMU 40 (Former Neutralization Tank)

The concrete bottom of the former subgrade neutralization tank (SWMU 40) was removed and placed into containers for off-site disposal. The underlying soil material was then scanned with a PID, visually inspected, and excavated where staining odors or previous sampling was above MSCs. Approximately three to four feet of wet gravel and soil material were removed beneath the entire basin and placed in containers for off-site disposal. The soil encountered at the depth of excavation also exhibited elevated PID readings. Excavation was halted when groundwater was encountered.

Confirmatory samples were collected at the bottom of the excavation (11 to 12 feet bgs) with the aid of the excavator. Two soil samples (IWTP040-CS-001 through -002, see **Figure 6**) were collected from the bottom of the excavation in SWMU 40 for characterization purposes and placed into glassware for shipment to the laboratory (TestAmerica, Inc.).

Each soil sample was analyzed for priority pollutant VOCs, SVOCs, priority pollutant metals, hexavalent chromium, and cyanide (total and free). A summary of the laboratory testing results and applicable regulatory MSCs is shown on **Table 2**. Elevated concentrations of TCE and PCE were detected above the Act 2 soil-to-groundwater MSC at location IWTP040-CS-001. No other analytes were detected at concentrations greater than the PADEP Act 2 MSCs.

SWMU 31 (Former Equalization Tank)

A layer of black sandy material (between the steel tank insert and bottom of the former basin) and the concrete bottom of the former subgrade equalization basin (SWMU 31) was removed and placed into containers for off-site disposal. The underlying soil and sand material was then scanned with a PID, visually inspected, and excavated where staining, odors, or elevated PID readings were observed (there was no previous sampling beneath this unit). Approximately three to four feet of wet gravel and soil material were removed beneath the basin and placed in containers for off-site disposal. The soil encountered at the depth of excavation also exhibited elevated PID readings. Excavation was halted when groundwater was encountered, and confirmatory samples were collected (11 to 12 feet bgs) with the aid of the excavator (see photo A-29, **Appendix A**).

Six soil samples (IWTP031-CS-001 through -006, see **Figure 6**) were collected from the bottom of the excavation with the aid of the excavator in SWMU 31 for characterization purposes and placed into glassware for shipment to the laboratory (TestAmerica, Inc.). Each soil sample was analyzed for priority pollutant VOCs, SVOCs, priority pollutant metals, hexavalent chromium, and cyanide (total and free). A summary of the laboratory testing results and applicable regulatory MSCs is shown on **Table 2**. Elevated concentrations of chlorinated solvents, including TCE, PCE, and cis-1,2-DCE were detected above the Act 2 soil-to-groundwater MSC at all locations except IWTP031-CS-003 (southeast corner of former tank). No other analytes were detected at concentrations greater than the PADEP Act 2 MSCs.

SWMU 33 (Former Chemical Precipitation Tank No. 1)

The concrete bottom of the former subgrade precipitation tank (SWMU 33) was removed and placed into containers for off-site disposal. The underlying soil material was then scanned with a PID, visually inspected, and excavated where staining, odors, or elevated PID readings were observed (there was no previous sampling beneath this unit). Approximately three to four feet of wet gravel and soil material were removed beneath the basin and placed in containers for off-site disposal. The soil encountered at the depth of excavation exhibited some elevated PID readings.

Excavation was halted when groundwater was encountered, and confirmatory samples were collected (13 to 14 feet bgs) with the aid of the excavator.

Two soil samples (IWTP033-CS-001 through -002, see **Figure 6**) were collected from the bottom of the excavation in SWMU 33 for characterization purposes and placed into glassware for shipment to the laboratory (TestAmerica, Inc.).

Each soil sample was analyzed for priority pollutant VOCs, SVOCs, priority pollutant metals, hexavalent chromium, and cyanide (total and free). A summary of the laboratory testing results and applicable regulatory MSCs is shown on **Table 2**. No analytes were detected at concentrations greater than the PADEP Act 2 MSCs in any of the confirmatory soil samples collected at SWMU 33.

SWMU 34 (Former Chemical Precipitation Tank No. 2)

The concrete bottom of the former subgrade precipitation tank (SWMU 34) was removed and placed into containers for off-site disposal. The underlying soil material was then scanned with a PID, visually inspected, and excavated where staining, odors, or elevated PID readings were observed (there was no previous sampling beneath this unit). Approximately one to two feet of gravel and soil material were removed beneath the basin and placed in containers for off-site disposal. The soil encountered at the depth of excavation did not exhibit elevated PID readings, excavation was halted, and confirmatory samples were collected (9.5 to 10.5 feet bgs) with the aid of the excavator.

Two soil samples (IWTP034-CS-001 through -002, see **Figure 6**) were collected from the bottom of the excavation in SWMU 34 for characterization purposes and placed into clean glassware for shipment to the laboratory (TestAmerica, Inc.).

Each soil sample was analyzed for priority pollutant VOCs, SVOCs, priority pollutant metals, hexavalent chromium, and cyanide (total and free). A summary of the laboratory testing results and applicable regulatory MSCs is shown on **Table 2**. No analytes were detected at

concentrations greater than the PADEP Act 2 MSCs in any of the confirmatory soil samples collected at SWMU 34.

SWMU 35 (Former Flocculation Tank)

The concrete bottom of the former subgrade flocculation tank basin (SWMU 35) was removed and placed into containers for off-site disposal. The underlying soil material was then scanned with a PID, visually inspected, and excavated where staining, odors, or elevated PID readings were observed (there was no previous sampling beneath this unit). Approximately one foot of soil material was removed beneath the basin and placed in containers for off-site disposal. The soil encountered at the depth of excavation did not exhibit elevated PID readings, excavation was halted, and confirmatory samples were collected (9 to 10 feet bgs) with the aid of the excavator.

Four soil samples (IWTP035-CS-001 through -004, see **Figure 6**) were collected from the bottom of the excavation in SWMU 35 for characterization purposes and placed into glassware for shipment to the laboratory (TestAmerica, Inc.).

Each soil sample was analyzed for priority pollutant VOCs, SVOCs, priority pollutant metals, hexavalent chromium, and cyanide (total and free). A summary of the laboratory testing results and applicable regulatory MSCs is shown on **Table 2**. No analytes were detected at concentrations greater than the PADEP Act 2 MSCs in any of the confirmatory soil samples collected at SWMU 35.

Former Chromium Reduction Tank

The concrete floor in the vicinity of the former above-grade chromium reduction tank (RAA-3) was removed and placed into containers for off-site disposal. The underlying soil material was then scanned with a PID, visually inspected, and excavated where staining, odors, or elevated PID readings were observed (there was no previous sampling beneath this unit). Approximately two feet of soil material was removed beneath the floor and placed in containers for off-site disposal. The soil encountered at the depth of the excavations did not exhibit elevated PID

readings, excavation was halted, and confirmatory samples were collected (2 to 3 feet bgs) with the aid of the excavator.

Two soil samples (B41RAA3-CS-001 and B41RAA3-CS-002, see **Figure 6**) were collected from the bottom of the excavation for characterization purposes and placed into glassware for shipment to the laboratory (TestAmerica, Inc.).

Each soil sample was analyzed for priority pollutant VOCs, SVOCs, priority pollutant metals, hexavalent chromium, and cyanide (total and free). A summary of the laboratory testing results and applicable regulatory MSCs is shown on **Table 2**. No analytes were detected at concentrations greater than the PADEP Act 2 MSCs in any of the confirmatory soil samples collected at RAA-3.

SWMU 32 (Former pH Adjustment Tank)

The concrete floor, and former subgrade pH adjustment tank area (approximately 10 feet by 6 feet by 5 feet deep) was removed and placed into containers for off-site disposal. The underlying gravel and soil material were then scanned with a PID, visually inspected, and excavated where staining, odors, or elevated PID readings were observed (there was no previous sampling beneath this unit). Approximately two feet of soil was removed in the vicinity of the former subgrade tank and placed in containers for off-site disposal. The soil encountered at the depth of most of the excavation did not exhibit elevated PID readings, and confirmatory samples were collected (6 to 7 feet bgs) with the aid of the excavator. Soil from the southwest corner of the excavation exhibited elevated PID readings, and additional soil was removed until a depth of approximately 9 feet bgs, where the final confirmatory sample (IWTP032-CS-003) was collected.

Four soil samples (IWTP032-CS-001 through -004, see **Figure 6**) were collected from the bottom of the excavation in SWMU 32 for characterization purposes and placed into glassware for shipment to the laboratory (TestAmerica, Inc.).

Each soil sample was analyzed for priority pollutant VOCs, SVOCs, priority pollutant metals, hexavalent chromium, and cyanide (total and free). A summary of the laboratory testing results and applicable regulatory MSCs is shown on **Table 2**. No analytes were detected at concentrations greater than the PADEP Act 2 MSCs in any of the confirmatory soil samples collected at SWMU 32.

SWMU 30 (Former Cyanide Tank)

The concrete floor in the vicinity of the former above-grade cyanide tank (SWMU 30 area) was removed and placed into containers for off-site disposal. The underlying soil material was then scanned with a PID, visually inspected, and excavated where staining, odors, or elevated PID readings were observed (there was no previous sampling beneath this unit). Approximately two feet of soil material was removed beneath the floor and placed in containers for off-site disposal. The soil encountered at the depth of the excavations did not exhibit elevated PID readings, excavation was halted, and confirmatory samples were collected (2 to 3 feet bgs) with the aid of the excavator.

Four soil samples (IWTP030-CS-001 through -004, see **Figure 6**) were collected from the bottom of the excavation in SWMU 30 for characterization purposes and placed into glassware for shipment to the laboratory (TestAmerica, Inc.).

Each soil sample was analyzed for priority pollutant VOCs, SVOCs, priority pollutant metals, hexavalent chromium, and cyanide (total and free). A summary of the laboratory testing results and applicable regulatory MSCs is shown on **Table 2**. No analytes were detected at concentrations greater than the PADEP Act 2 MSCs in any of the confirmatory soil samples collected at SWMU 30.

Former Cyanide and Chromium Tank Sumps (#1 and #2)

The former two-foot-square by four-foot-deep concrete sumps (bottoms were not concrete) were removed and placed into containers for off-site disposal. The underlying soil material was then

scanned with a PID, visually inspected, and excavated where staining, odors, or elevated PID readings were observed (there was no previous sampling beneath these sumps). Approximately five feet of soil exhibiting elevated PID readings were removed beneath the bottom of the sumps and placed in containers for off-site disposal. The soil encountered at the depth of excavation also exhibited slightly elevated PID readings. Confirmatory samples were collected (9 to 10 feet bgs) with the aid of the excavator.

One confirmatory soil sample was collected from beneath each of the two sumps (B41RAA2-CS-001 and B41RAA4-CS-001, see **Figure 6**) at the bottom of the excavation for characterization purposes and placed into glassware for shipment to the laboratory (TestAmerica, Inc.).

Each soil sample was analyzed for priority pollutant VOCs, SVOCs, priority pollutant metals, hexavalent chromium, and cyanide (total and free). A summary of the laboratory testing results and applicable regulatory MSCs is shown on **Table 2**. No analytes were detected at concentrations greater than the PADEP Act 2 MSCs in either of the confirmatory soil samples collected at former sumps (RAA-2 and RAA-4).

SWMU 38 (Former Sludge Tank)

The concrete bottom of the former subgrade sludge tank (SWMU 38) was removed and placed into containers for off-site disposal. The underlying soil material was then scanned with a PID, visually inspected, and excavated where staining, odors, or elevated PID readings were observed (there was no previous sampling beneath this unit). Approximately one foot of soil material was removed beneath the tank and placed in containers for off-site disposal. The soil encountered at the depth of excavation did not exhibit elevated PID readings, excavation was halted, and confirmatory samples were collected (6 to 7 feet bgs) with the aid of the excavator.

Five soil samples (IWTP038-CS-001 through -005, see **Figure 6**) were collected from the bottom of the excavation in SWMU 38 for characterization purposes and placed into glassware for shipment to the laboratory (TestAmerica, Inc.).

Each soil sample was analyzed for priority pollutant VOCs, SVOCs, priority pollutant metals, hexavalent chromium, and cyanide (total and free). A summary of the laboratory testing results and applicable regulatory MSCs is shown on **Table 2**. No analytes were detected at concentrations greater than the PADEP Act 2 MSCs in any of the confirmatory soil samples collected at SWMU 38.

SWMU 39 (Former Filter Press area)

The concrete floor in the vicinity of the former filter press area (approximately 26 feet by 18 feet wide) was removed and placed into containers for off-site disposal. The underlying soil material was then scanned with a PID, visually inspected, and excavated where staining, odors, or elevated PID readings were observed (there was no previous sampling beneath this unit). Approximately three to four feet of soil material was removed beneath the floor and placed in containers for off-site disposal. A secondary concrete base was encountered (approximately 12 feet by 12 feet) at a depth of approximately 4.5 feet bgs. This base, believed to have been for a former sludge tank, was also removed, and another one to two feet of soil was removed. The soil encountered at the depth of the excavations did not exhibit elevated PID readings, excavation was halted, and confirmatory samples were collected (3 to 4 feet bgs) with the aid of the excavator.

Six soil samples (IWTP039-CS-001 through -006, see **Figure 6**) were collected from the bottom of the excavations in SWMU 39 for characterization purposes and placed into clean glassware for shipment to the laboratory (TestAmerica, Inc.).

Each soil sample was analyzed for priority pollutant VOCs, SVOCs, priority pollutant metals, hexavalent chromium, and cyanide (total and free). A summary of the laboratory testing results and applicable regulatory MSCs is shown on **Table 2**. No analytes were detected at concentrations greater than the PADEP Act 2 MSCs in any of the confirmatory soil samples collected at SWMU 39.

Former Laboratory/Wash Sump

The former sump was pumped out, and all solids were removed and placed into a container for off-site disposal. Following cleaning, the sump pit was filled with concrete to the original surface elevation. No confirmation samples were collected.

Backfill and Restoration

Following completion of excavations and receipt of confirmation results, the excavation areas of former Building 41 were backfilled with stone and leveled to the top of the basin and original floor grade (see photo A-30 and A-31, **Appendix A**). Later, the restructuring team installed a security fence along the new East-West Campus boundary, which crosses the former Building 41 footprint (see photos, A-57 and A-58, **Appendix A**).

3.5 Building 4 North Vapor Degreaser Area

The former subgrade degreaser vault was demolished (using a wrecking ball) after the concrete building floor was removed (see photo A-32, **Appendix A**). All contents were removed prior to demolition. The vault had contained fairly clean gravel, liquid, and some soil/sediment near the bottom of the vault (measuring approximately 20 feet by 30 feet by 11 feet deep). The gravel was removed and stockpiled for reuse during backfill; the liquid was pumped into a container for off-site disposal; and the remainder of the solids within the vault was placed into lined roll-off containers for characterization and off-site disposal. The concrete floor and vault walls were removed and placed into containers for off-site disposal.

Approximately 400 cubic yards (CY) of un-impacted soil was removed (as guided by an EI, and excluding soil exhibiting elevated PID readings, odors or staining) and stockpiled separately for characterization. A bucket auger was used to collect a soil sample from each of four "clean" soil stockpiles (sample IDs B4ND-WS-003-Soil Pile-0 through B4ND-WS-006-Soil Pile-0) for characterization purposes. Each sample was placed into glassware for shipment to the laboratory (TestAmerica, Inc.), and was analyzed for priority pollutant VOCs, priority pollutant metals,

hexavalent chromium, cyanide (total and free), and total polychlorinated biphenyls (PCBs). A summary of the laboratory testing results and applicable regulatory MSCs is shown on **Table 3**. No analytes were detected at concentrations greater than the PADEP Act 2 MSCs, and the soils were reused on-site. Prior to reuse, the stockpiles were covered with plastic and protected during the remainder of the removal operations.

Impacted soil surrounding the former north vapor degreaser was removed by BrightFields, under the guidance of an SAIC EI. Soils exhibiting elevated PID readings or odors were stockpiled separately for later characterization and off-site disposal. A tracked excavator was used to ramp into the excavation from the east side to remove the vault remnants and impacted soil (see photos A-33 through A-36, **Appendix A**). Excavation ceased when groundwater was encountered at a depth of approximately 26 feet bgs and when plant utilities (active fire protection pipe, active collection well CW-8 and CW-15a conveyance piping, power and communication utilities) were encountered along the west exterior side of Building 4. Figure 7 shows the excavation limits that were obtained. Approximately 1,000 CY of impacted soil was removed from the former degreaser area within two excavation benches. The final shallow excavation limits (including eastern ramp) measured approximately 45 feet by 55 feet by 14 feet deep, and the deepest excavation bench measured approximately 20 feet by 22 feet wide and extended to approximately 26 feet bgs. PID readings taken during impacted soil removal ranged up to 12,704 parts per million (ppm) (west wall area). The other sidewall PID readings (at approximately 20 feet bgs) were 58 ppm (south wall); 117 ppm (north wall); and 87 ppm (east wall).

Eleven soil samples (B4ND-CS-001 through -011, see **Figure 7**) were collected from the sidewalls and bottom of the excavations at the former northern vapor degreaser area for confirmation purposes and placed into glassware for shipment to the laboratory (TestAmerica, Inc.).

Each soil sample was analyzed for priority pollutant VOCs, priority pollutant metals, hexavalent chromium, cyanide (total and free), and total PCBs. PCBs were added to the confirmation testing parameters, in addition to those identified in the work plan, due to the presence of PCBs

in the vault waste characterization sample. A summary of the laboratory testing results of the confirmation soil samples and applicable regulatory MSCs is shown on **Table 4**. Elevated concentrations of chlorinated solvents, including TCE, TCA, PCE, 1,1-DCE, and 1,2-dichloroethane (DCA) were detected above the Act 2 soil-to-groundwater MSC at all but three of the confirmation sampling locations (B4ND-CS-005, -006, and -009). An elevated concentration of 1,4-dioxane (13 milligrams per kilogram [mg/kg]) and an elevated concentration of available cyanide (480 mg/kg) were also detected at location B4ND-CS-010 at 20 to 21 feet bgs, along the north sidewall. One confirmation soil sample (B4ND-CS-004) contained a detectable concentration of Arochlor-1254 (0.75 mg/kg) above the EPA RSL, but it did not exceed the PADEP Act 2 MSCs. No other analytes were detected at concentrations greater than the PADEP Act 2 MSCs from the confirmation soil samples collected from the north vapor degreaser excavation.

Due to the elevated concentrations of VOCs at depth, an infiltration gallery was installed pursuant to an available option in the work plan. **Figure 7** illustrates the location where the infiltration gallery was installed. Photographs A-41 through A-43 (**Appendix A**) illustrates how the gallery was installed. The gallery is constructed of 4-inch polyvinyl chloride (PVC) pipe and was placed at a bottom depth of approximately 21 feet bgs within a gravel pack.

Following completion of excavations and infiltration construction, the excavation area was backfilled with clean soil in lifts. A vibratory roller was used to compact each backfill lift to within approximately one to two feet of the original floor grade (see photos A-44 and A-45, **Appendix A**). A gravel bed and 4-inch reinforced concrete cap were then replaced at the former Building 4 floor elevation, extending approximately 10 feet west of the former west building wall in the vicinity of the former degreaser vault. The concrete cap installation is illustrated on photos A-46 through A-49 (**Appendix A**), and the limits of concrete are also shown on **Figure 7**. Later, following stockpile removal, the building pad was cleaned (see photos, A-52 through A-54, **Appendix A**).

Building 4, Former AMF Degreaser Area

BrightFields began excavating at the former AMF degreaser area in early November 2011. The former AMF degreaser vault was located and excavated, and the dimensions were approximately 12½ feet (E-W) by 20½ feet (N-S) by 3 feet 2 inches deep. The degreaser was located near columns A8 and A9 of Building 4 (see **Figure 8**, and photos A-37 through A-40, **Appendix A**). Prior to the interim remedial measures described in this report, the northern five feet of the degreaser was filled with soil and debris such as old concrete blocks, bricks, a long piece of bent angle metal, wood, rags, etc. This was the area of former investigation soil boring SB-006, which exhibited elevated cyanide concentrations. The southern part of the AMF degreaser was filled with stone. The vault contents were placed in a roll-off container for off-site disposal.

The concrete vault floor was removed, and the underlying soil was excavated and staged on and under plastic to the west of the AMF degreaser. Impacted soil beneath the former AMF vault was removed by BrightFields, under the guidance of an SAIC EI. Soils exhibiting elevated PID readings or odors were stockpiled separately for later characterization and off-site disposal. Excavation continued beyond the planned excavation limits to a depth of 6 to 8 feet bgs.

Four soil samples (B4AMF-CS-001 through -004, see **Figure 8**) were collected from the bottom of the excavation at the former AMF degreaser vault for confirmation purposes and placed into glassware for shipment to the laboratory (TestAmerica, Inc.).

Each soil sample was analyzed for priority pollutant VOCs, priority pollutant metals, hexavalent chromium, cyanide (total and free), and total PCBs. PCBs were added to the confirmation testing parameters, in addition to those identified in the work plan, due to the presence of PCBs in the vault waste characterization sample. A summary of the laboratory testing results of the confirmation soil samples and applicable regulatory MSCs are shown on **Table 4**. Elevated concentrations of PCE were detected above the Act 2 soil-to-groundwater MSC in three of the four confirmation sampling locations (B4AMF-CS-002, -003, and -004). Elevated concentrations of arsenic were also found in confirmation samples B4AMF-CS-002 and B4AMF-003. Finally, one confirmation soil sample (B4AMF-CS-004) contained a detectable concentration of

Arochlor-1254 (2.3 mg/kg) above the EPA RSL, but it did not exceed the PADEP Act 2 MSCs. No other analytes were detected at concentrations greater than the PADEP Act 2 MSCs from the confirmatory soil samples collected from the former AMF degreaser vault excavation.

Although the Act 2 MSCs were not met at the excavation limits for three of the confirmation samples, a decision was made not to excavate any additional soil, and proceed to backfill, as the removal objectives had been met. Accordingly, attainment in this area will be demonstrated under a Site Specific Standard.

The excavation area was backfilled with clean soil in lifts. A vibratory roller was used to compact each backfill lift to within one foot of the original floor grade. A gravel bed and four-inch reinforced concrete cap were then replaced at the former Building 4 floor elevation in the vicinity of the former degreaser vault.

4.0 WASTE DISPOSAL AND CONTAMINANT REMOVAL

All wastes that were generated during remedial activity work were characterized, transported, and disposed of in accordance with the PADEP and EPA requirements, including the PADEP-approved 'Contained-In' Waste Determination for Environmental Media (SAIC, 2011a, 2011b, and 2011c). Harley-Davidson maintains records of proper transportation and disposal and will produce or file copies in accordance with applicable regulatory requirements. If PADEP or EPA requires additional information regarding disposal of remediation wastes, Harley-Davidson will make such records available upon request.

A detailed list of the off-site waste shipments that were managed as part of the interim remedial actions is provided in **Table 5**. Below is an abbreviated summary of the wastes that were processed off-site during remediation at the Building 4, 41, and 51 and historic wastewater conveyance line areas. Waste facility processing was conducted to obtain facility approvals for each of the waste streams identified below:

- 1. **Wastewater Conveyance Line Cleaning** Approximately 19,000 gallons of nonhazardous wastewater were generated from the historic pipeline cleaning tasks. This waste was shipped off-site for disposal at Envirite of PA.
- 2. **Former Building 51 Remediation** Approximately 230 tons of nonhazardous debris (asphalt and gravel subbase) were generated and shipped off-site to Modern Landfill from the removal of the former hazardous waste storage pad/floor.
- 3. Former IWTP Remediation at Building 41 Approximately 14,000 gallons of unexpected nonhazardous run-in wastewater were generated during Tropical Storm Lee and was shipped off-site to Envirite of PA for treatment/disposal. Approximately 95 tons of nonhazardous concrete debris were generated and shipped to Modern Landfill from the pit removal activities; and approximately 250 tons of nonhazardous soil were removed from beneath the former IWTP structures and shipped off-site to Modern Landfill for disposal.

4. North Building 4 Remediation – Approximately 600 tons of un-impacted soil were excavated, characterized, and reused as backfill on-site from around the impacted soil areas of the northern vapor degreaser excavation. Approximately 11,000 gallons of characteristic (D040) and listed (F001, F002, F006, F007, F008, F009, F010, and F012) hazardous waste liquid were generated during the removal actions from the degreaser vault and excavation dewatering activities and shipped off-site to the Michigan Wastewater Treatment Plant and Envirite of PA facilities for treatment/disposal. Approximately 350 tons of nonhazardous concrete debris were generated from removal of the concrete floor and degreaser vaults and shipped off-site to Modern Landfill for disposal. Approximately 30 tons of listed (F001, F002, F006, F007, F008, F009, F010, and F012) and Toxic Substances Control Act (TSCA) hazardous soil/debris were removed from the former north vapor degreaser vault and shipped off-site to Model City Landfill for disposal. Approximately 30 tons of listed (F001, F002, F006, F007, F008, F009, F010, and F012) hazardous soil/debris were removed from the former AMF vapor degreaser vault and shipped off-site to Michigan Wastewater Treatment Plant for treatment/disposal; and approximately 670 tons of characteristic (D039 and D040, meeting land ban standards) and listed (F001 and F002) hazardous soil were removed from around the former vapor degreasers and shipped to Model City Landfill for disposal.

The interim remedial actions identified above resulted in the removal of a significant mass of chemicals from the fYNOP facility. As summarized in **Table 6**, more than 2,800 pounds of chemicals were estimated to be removed from the site. The mass of the primary contaminants that were removed in soil and waste materials was calculated using the net waste shipment volumes and waste characterization analytical results. The primary waste contaminants found in these wastes included cyanide; metals (cadmium, chromium, lead, nickel, and zinc); PCBs; several SVOCs; and VOCs. An estimate of the mass of contaminant removed for each remediation area is as follows:

1. **Wastewater Conveyance Line Cleaning** – Less than one pound of contaminants was removed as a result of the historic pipeline cleaning tasks.

- 2. **Former Building 51 Remediation** Approximately 260 pounds of contaminants, consisting primarily of the metals nickel and zinc, were removed as a result of demolition of the former hazardous waste storage pad/floor.
- 3. **Former IWTP Remediation at Building 41** Approximately 380 pounds of contaminants, consisting primarily of the metals nickel, chromium, and zinc, as well as lesser amounts of cyanide, bis(2-ethylhexyl) phthalate, and PCE, were removed along with the soil from beneath the former IWTP structures.
- 4. North Building 4 Remediation Over 2,000 pounds (one ton) of contaminants were removed from the north end of former Building 4 during the remediation efforts. Approximately half of these contaminants consisted of VOCs (TCE, PCE, and TCA); with the remainder consisting primarily of the metals zinc, nickel, and chromium; cyanide; and PCBs. Most of the VOCs (approximately 1,000 pounds) were removed along with the impacted soil, which was excavated surrounding the former vapor degreaser areas. This VOC mass is approximately equivalent to the annual mass of VOCs removed site-wide by the GWTS; approximately 10 years of groundwater extraction by CW-15A (collection well near the northern end of former Building 4); or approximately 25 years worth of SVE from this area (based on 2010 removal rates).

5.0 REMAINING ENVIRONMENTAL CONDITIONS

This section identifies the type and extent of environmental impacts to soil or groundwater remaining in each of the study areas following the interim remedial activities described in the preceding chapters. This section also summarizes those study areas where no residual impacts to soil or groundwater remain.

5.1 Historical Wastewater Piping

There are no known environmental impacts to soil or groundwater remaining from the cleaning and in-place closure of the historical wastewater conveyance lines. This includes the historical conveyance lines from former Building 2 to Building 41 and the conveyance lines from Building 4 to Building 41. All wastes were removed from the pipes, the pipes were cleaned, the wastes were taken off-site for disposal, and the pipes were capped and closed in place. The concentrations of regulated substances detected in two confirmation soil samples collected from beneath a formerly removed section of the historical conveyance lines were less than the PADEP Act 2 MSCs (see **Table 2**).

5.2 Building 51 Hazardous Waste Storage Area

There are no known environmental impacts to soil or groundwater remaining from the removal and off-site disposal of the floor/subfloor at Building 51. Photos of the completed remedial work at Building 51 can be seen in **Appendix A** (photos A-55 and A-56). The concentrations of regulated substances detected in the confirmation soil samples collected from beneath the excavation area were less than the PADEP Act 2 MSCs. Although arsenic was detected at concentrations greater than the EPA industrial soil RSL in several of the confirmation samples, it is considered within typical background levels for this site. In addition, hexavalent chromium was detected at concentrations greater than the EPA industrial soil RSL in two of the confirmation samples (B51H-CS-008 and -009), but hexavalent chromium was not detected at concentrations greater than the PADEP direct contact or soil-to-groundwater MSCs in these samples.

Clean compacted stone backfill has been placed over the excavation area, and Harley-Davidson has installed additional topsoil (and seeded) over the backfill material. The residual contaminant levels in the remaining soil, along with the backfill and site restoration conditions, ensure that human exposure hazards and threats to groundwater at this area are limited only to any future excavation.

5.3 Building 41 Industrial Wastewater Treatment Plant (IWTP)

All impacted soils and concrete were removed and disposed off-site. The former laboratory sump was cleaned and filled with concrete. Photos of the completed work can be seen in **Appendix A** (photos A-57 and A-58).

In all, 63 confirmation soil samples were collected from 15 RAAs within former Building 41. Of the 63 samples, regulated substances were detected at concentrations greater than the PADEP Act 2 MSCs in 10 confirmation soil samples. Seven confirmation soil samples collected from below the groundwater table had analytes that were detected at concentrations greater than the PADEP Act 2 soil-to-groundwater MSCs. These exceedances exist below the apparent groundwater table and were located at three RAAs: SWMU 31, SWMU 40, and from along the former south pipe trench. The analytes exceeding the Act 2 MSCs in these areas were TCE, PCE, methylene chloride, cis-1,2-DCE, and vinyl chloride. Although arsenic was detected at concentrations greater than the EPA industrial soil RSL in several of the confirmation samples, it is considered within typical background levels for this site. In addition, hexavalent chromium was detected at concentrations greater than the EPA industrial soil RSL in two of the confirmation samples (B41RAA16-CS-013 and IWTP030-CS-004), but it was not detected at concentrations greater than the PADEP Act 2 direct contact or soil-to-groundwater MSCs.

Following the excavation of impacted materials and the collection of the confirmation soil samples, the Building 41 area was backfilled and compacted with clean stone fill to grade. The remaining contaminant levels will be evaluated as part of the ongoing site-wide groundwater RI. The depth of remaining contaminants, along with the backfill conditions and fencing, will ensure

that there are no future direct contact exposures at this area. Deed restrictions will be formalized, as necessary, as part of the ongoing site-wide remedial program.

5.4 Building 4 Former Vapor Degreaser Areas

All wastes and vaults were removed and disposed off-site from both the northern vapor degreaser and the former AMF degreaser areas. Impacted soils and concrete were also removed and disposed off-site. Photos of the completed work at these two locations can be seen in **Appendix A** (photos A-52 through A-54).

A total of 11 confirmation soil samples were collected from beneath the northern vapor degreaser area. The PADEP Act 2 soil-to-groundwater MSCs were exceeded in 8 of the 11 confirmation soil samples at the excavation limits of the northern vapor degreaser. The analytes that were detected at concentrations greater than the PADEP Act 2 MSCs included TCE, TCA, PCE, 1,1-DCE, 1,2-DCA, 1,4-dioxane, and free cyanide (location B4ND-CS-10, see **Figure 7**). Although arsenic was detected at concentrations greater than the EPA industrial soil RSL in most of the confirmation samples, it is considered within typical background levels for this site. Similarly, Arochlor-1254 was detected at concentrations greater than the EPA industrial soil RSL in one of the confirmation samples (B4ND-CS-004) but was not detected at concentrations greater than the PADEP direct contact or soil-to-groundwater MSCs.

For potential future remedial action purposes, an infiltration gallery was installed within the excavation area (just above the water table elevation) at the northern vapor degreaser area where the confirmation soil samples exceeded the MSCs. Following the installation of the infiltration gallery, this area was backfilled with un-impacted soil and stone, compacted, and then a concrete cover was installed over the area to minimize further migration of any of the remaining constituents. With the installation of the concrete cap, there are also no further contact hazards to site workers in this area. Deed restrictions will be formalized, as necessary, as part of the ongoing site-wide remedial program.

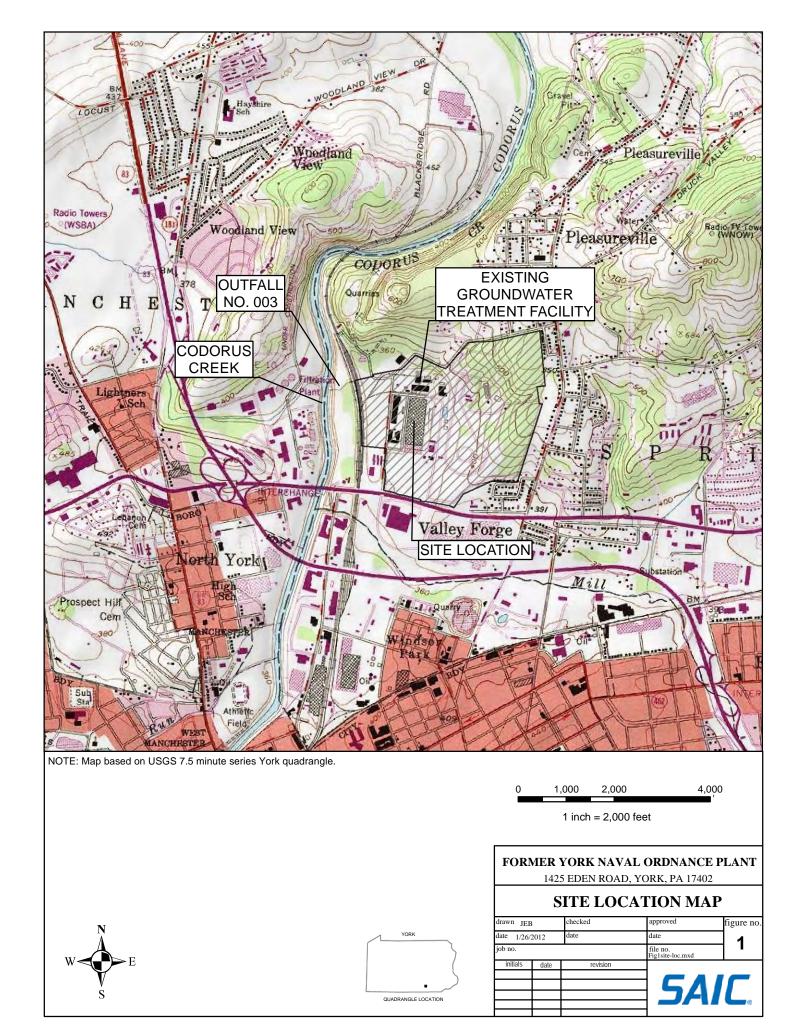
Four confirmation soil samples were collected from beneath the former AMF degreaser vault. The Act 2 soil-to-groundwater MSCs were exceeded in three of the four confirmation soil samples at the excavation limits. The analytes detected at concentrations greater than the PADEP Act 2 MSCs included PCE and arsenic (locations B4AMF-CS-002 and -003). Although arsenic was detected at concentrations greater than the EPA industrial soil RSL in two of the confirmation samples (B4AMF-CS-001 and -004), it is considered within typical background levels for this site. Similarly, Arochlor-1254 was detected at concentrations greater than the EPA industrial soil RSL in one of the confirmation samples (B4AMF-CS-004) but was not detected at concentrations greater than the PADEP direct contact or soil-to-groundwater MSCs. This area was backfilled with clean stone, compacted, and then a concrete cover was installed over the area to minimize further migration of any of the remaining constituents. With the installation of the concrete cap, there are no further contact hazards to site workers in this area. Deed restrictions will be formalized, as necessary, as part of the ongoing site-wide remedial program.

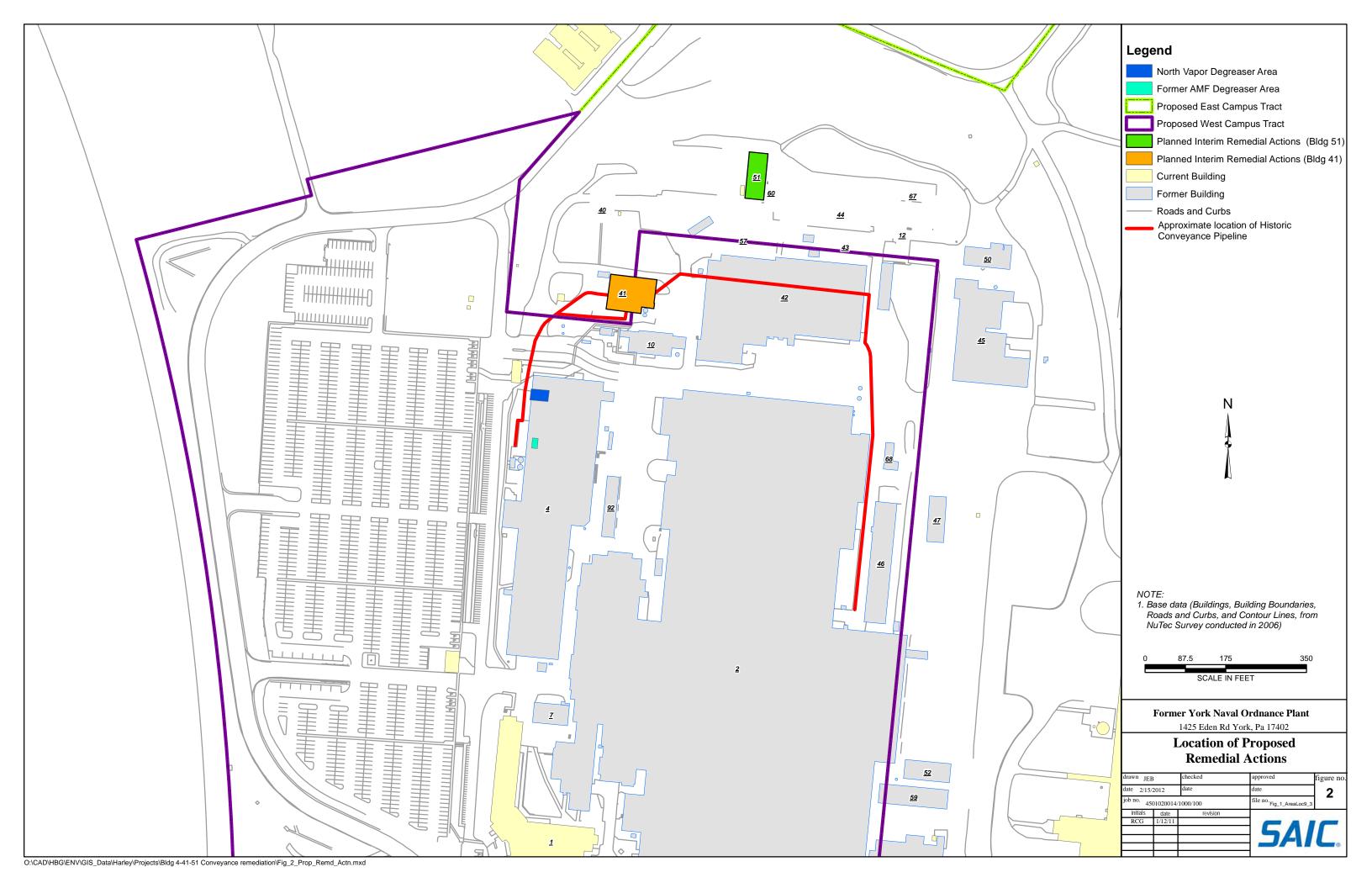
Any risks to groundwater posed by elevated concentrations of certain remaining constituents in the soil beneath the northern vapor degreaser and beneath the former AMF area are being addressed as part of the site-wide groundwater remediation. Elevated PCE and arsenic detected at concentrations greater than the soil-to-groundwater MSC are a concern for the former AMF area; and elevated VOCs (TCE, TCA, PCE, 1,1-DCE, 1,2-DCA, and 1,4-dioxane) and cyanide are a concern for the former north vapor degreaser area. These areas and constituents will be evaluated as part of the ongoing site-wide groundwater RI investigation and remediation.

6.0 REFERENCES

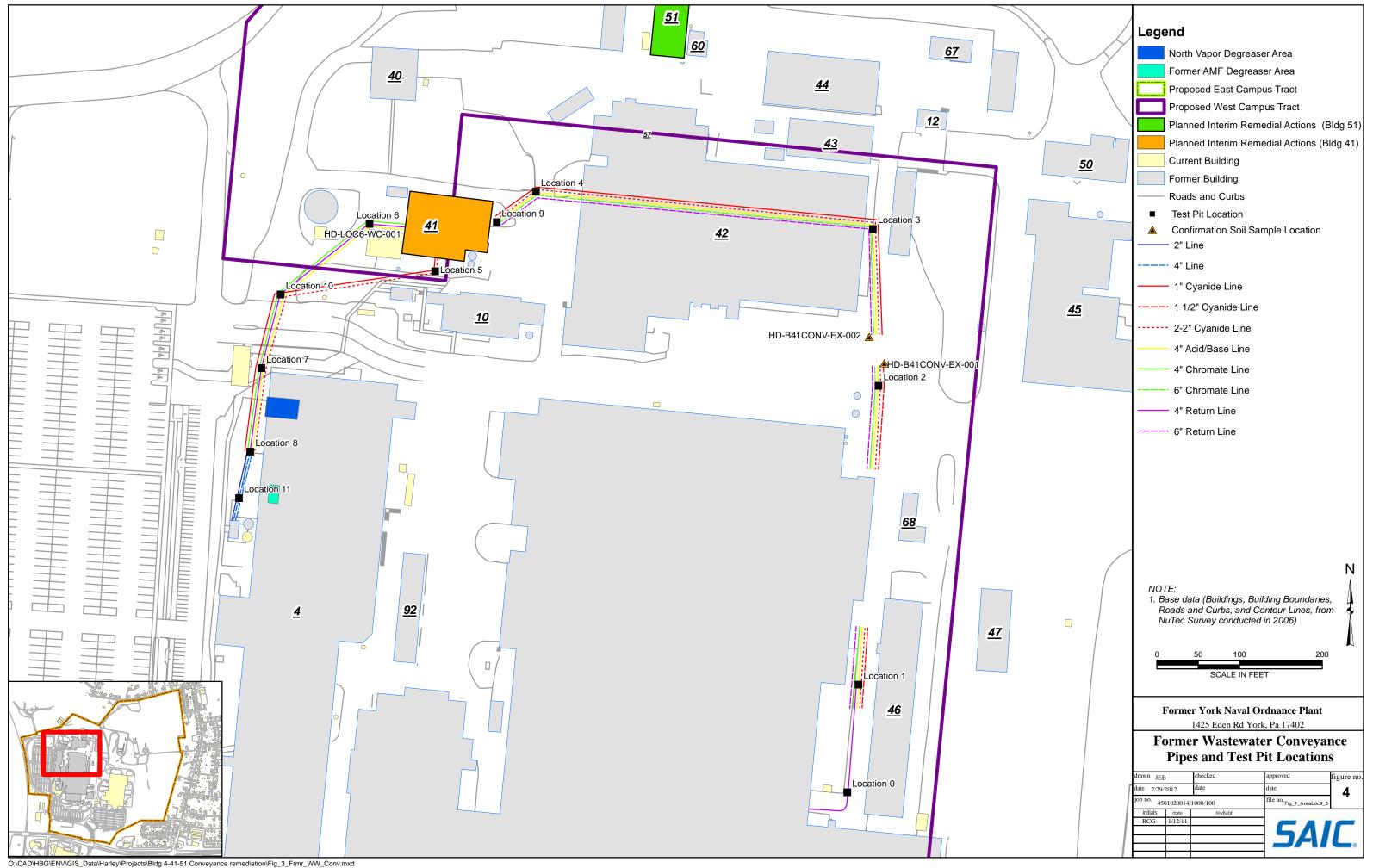
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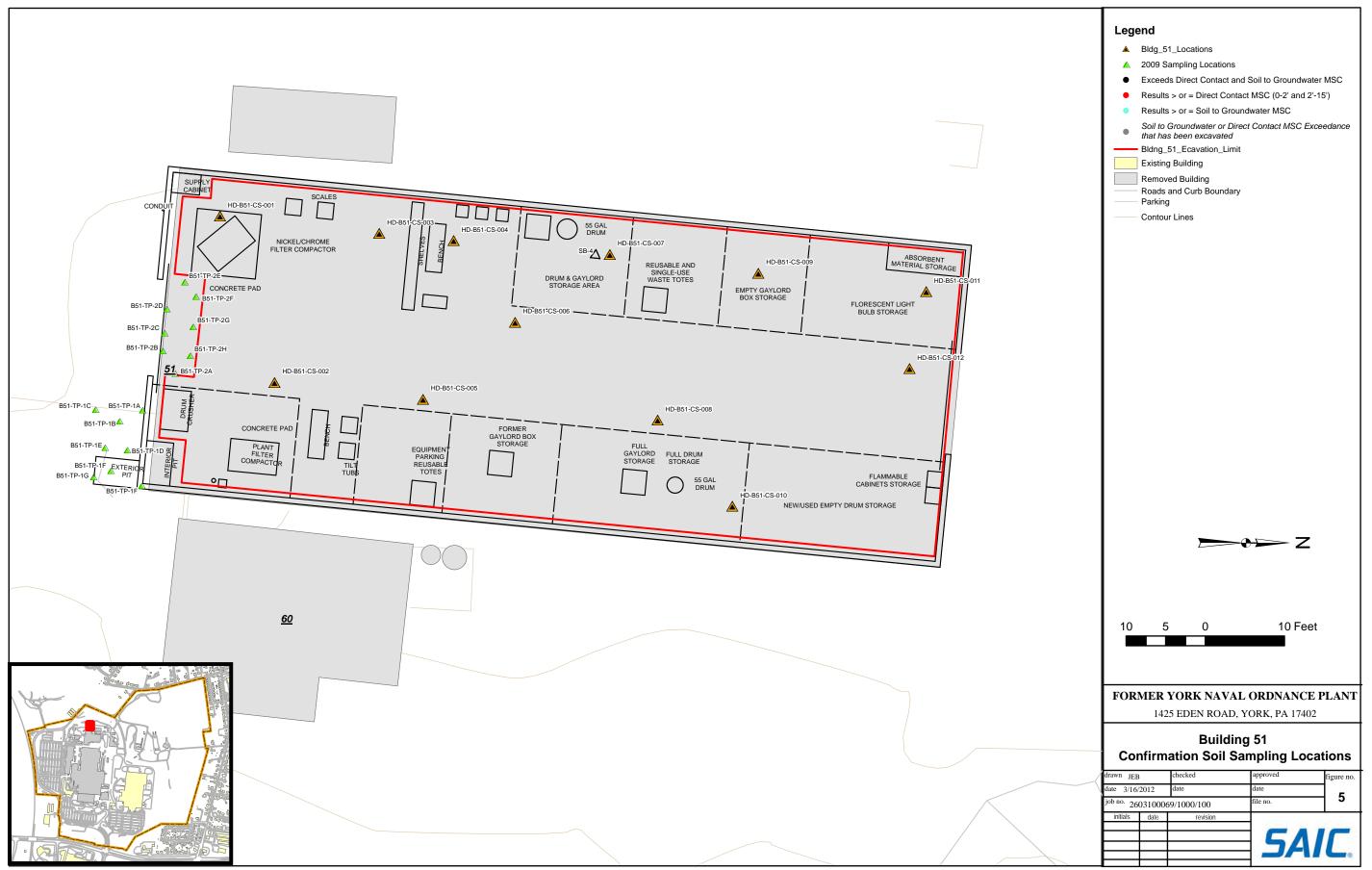
FIGURES

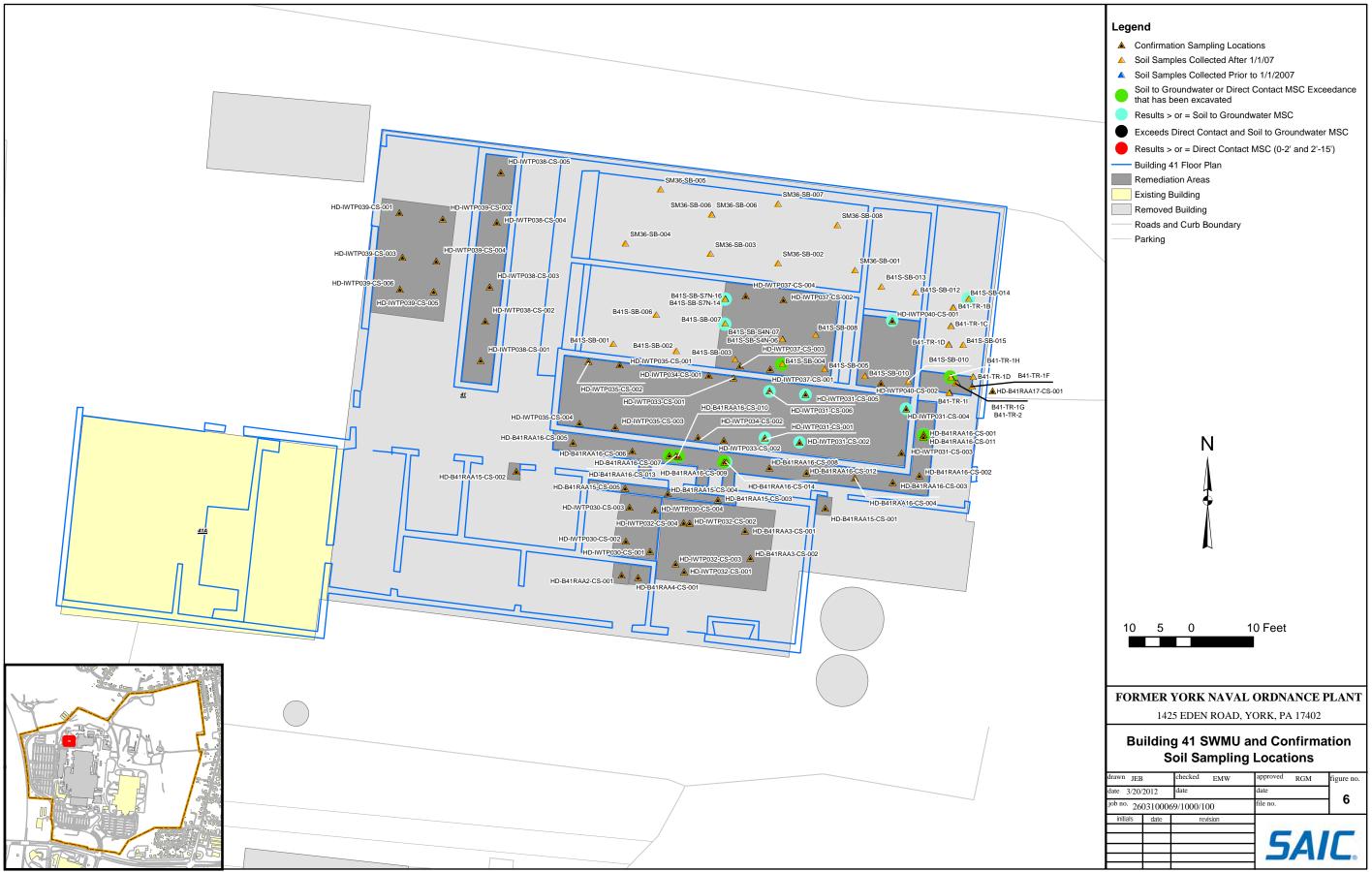


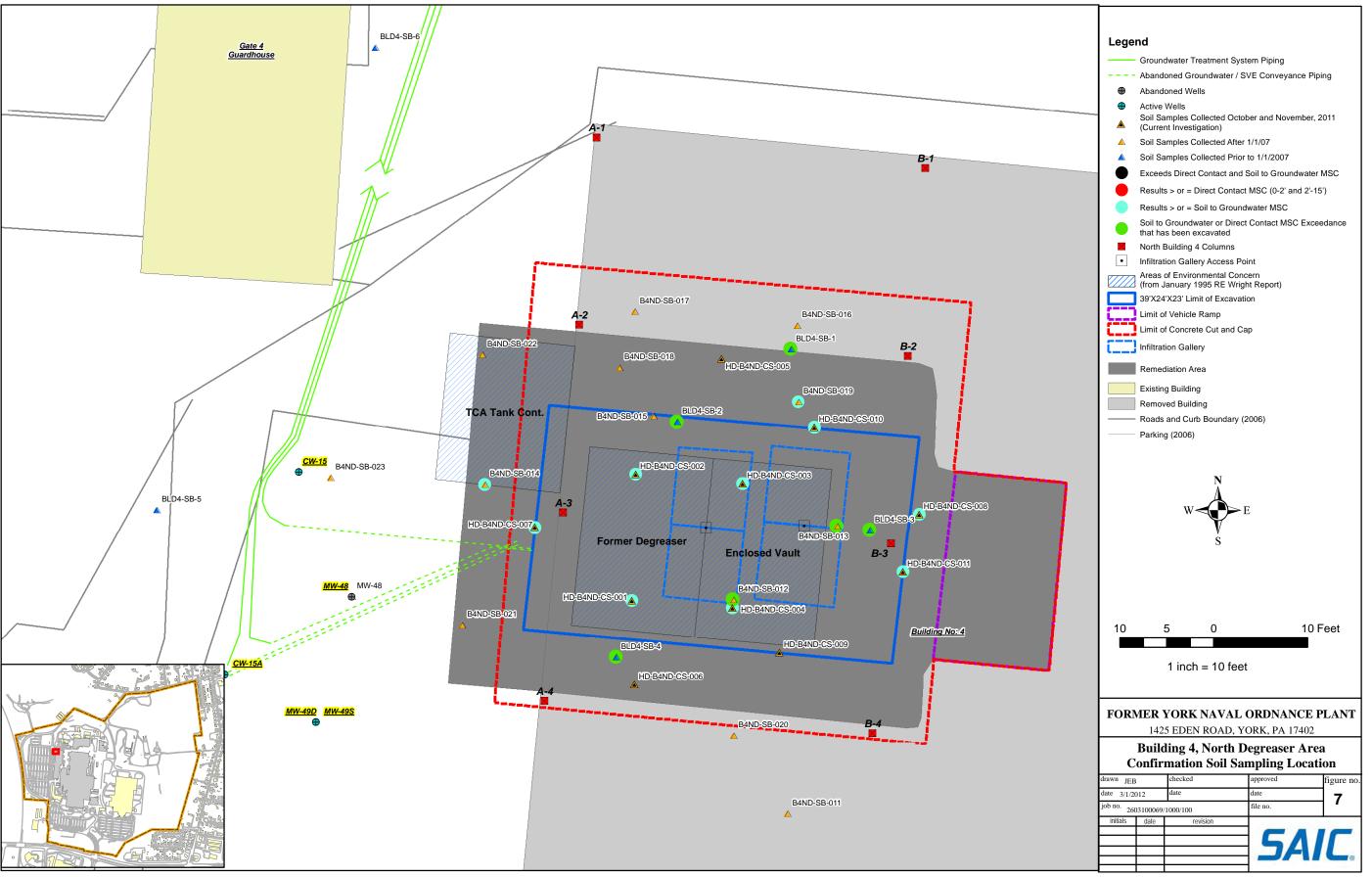


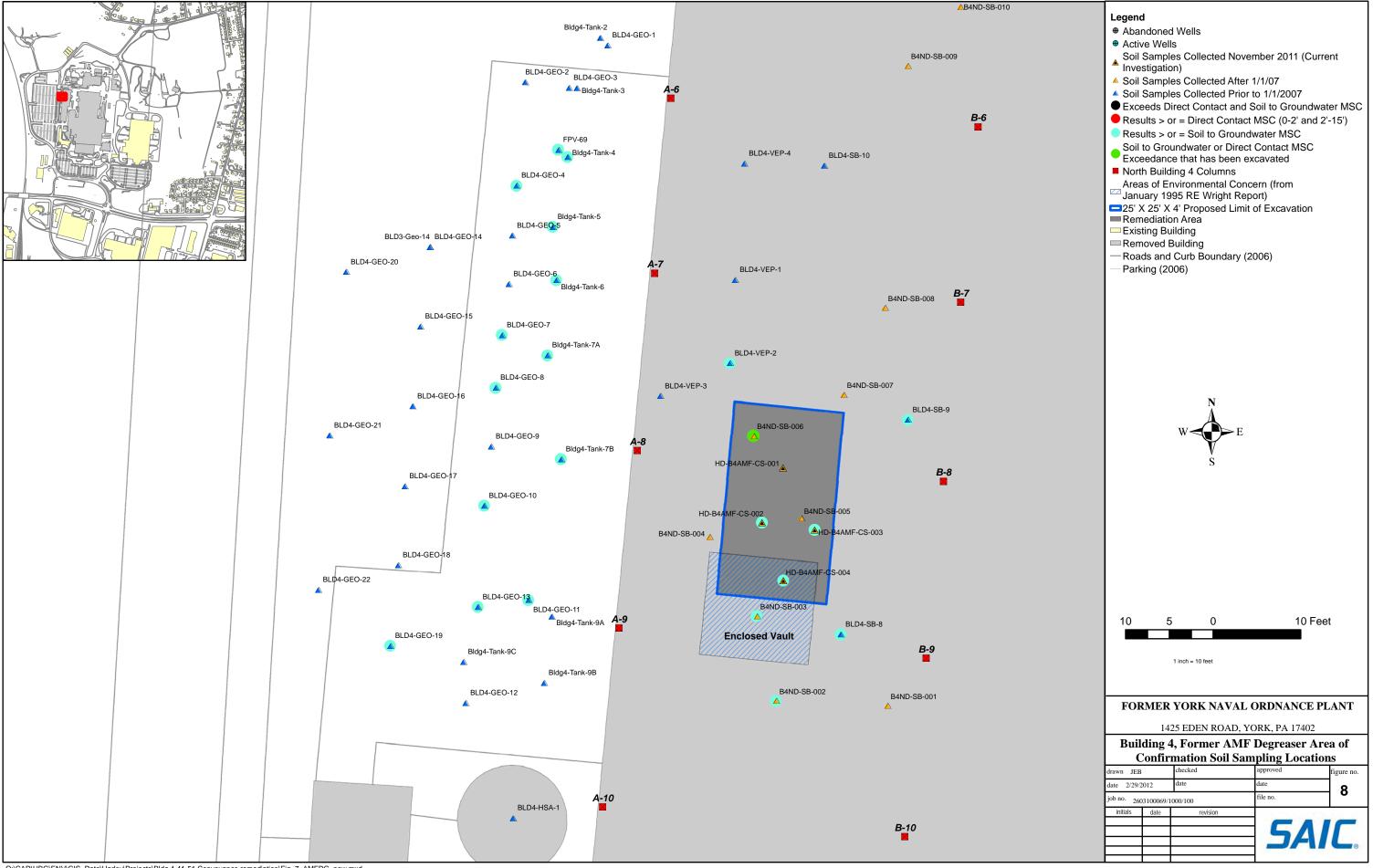












TABLES

Table 1.

Soils Data Summary - Building 51 Area Remediation Confirmation Sampling
Former York Naval Ordnance Plant - York, PA

Locatio	n/ID MSC	MSC	MSC	EPA RSL	B51H-CS-001	B51H-CS-002	B51H-CS-003	B51H-CS-004	B51H-CS-005	B51H-CS-006	B51H-CS-007	B51H-CS-008
Depti	(ft.) Soil to G\	/ Direct Contact	Direct Contact	Industrial	1 - 1.5	1 - 1.5	1 - 1.5	1 - 1.5	1 - 1.5	1 - 1.5	1 - 1.5	1 - 1.5
Sample	Date Used Aqui	er 0 - 2 ft	2 - 15 ft	Soil	8/24/2011	8/24/2011	8/24/2011	8/24/2011	8/24/2011	8/24/2011	8/24/2011	8/24/2011
Parameter	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)								
Cyanide, Free						•				•		
Cyanide, Free	200	56000	190000	610	0.048 U	0.045 U	0.046 U	0.046 U	0.046 U	0.043 U	0.045 U	0.069 B
Cyanide, Total			•									
Cyanide, Total	NA	NA	NA	NA	0.6 U	0.56 U	0.57 U	0.57 U	0.58 U	0.54 U	0.56 U	0.57 U
Hexavalent Chromium		•										
Hexavalent Chromium	190	8400	20000	5.6	0.38 J	1.2	0.25 J	0.6	0.55	0.43 U	0.48	6.2
Mercury												
Mercury	10	450	190000	43	0.039 U	0.059	0.015 J	0.019 J	0.015 J	0.035 U	0.02 J	0.018 J
Metal												
Antimony	27	1,100	190,000	410	0.16 J	0.1 J	0.044 J	0.076 J	0.082 J	0.023 J	0.044 J	0.036 J
Arsenic	29	53	190000	1.6	1.5	3	6.7	3.9	2.1	1.6	1.4	1.5
Barium	8200	190000	190000	190000	140 B	58 B	70 B	89 B	89 B	68 B	88 B	97 B
Beryllium	320	5600	190000	2000	0.54	0.41	0.71	0.59	0.48	0.4	0.39	0.52
Cadmium	38	1400	190000	800	0.074 J	0.052 J	0.065 J	0.11	0.095 J	0.051 J	0.061 J	0.053 J
Chromium (Total)	190,000	190,000	190,000	1,500,000	13 B	12 B	12 B	12 B	12 B	14 B	9.9 B	33 B
Copper	43000	100000	190000	41000	7.7	7.7	3.9	8	8	3.3	5	3.9
Lead	450	1000	190000	800	9.4	8.3	12	17	12	6.5	10	12
Nickel	650	56000	190000	20000	9.1	4.1	4.9	8.9	13	8.6	13	9.8
Selenium	26	14000	190000	5100	0.7	0.4 J	0.77	0.47 J	0.54 J	0.28 J	0.37 J	0.4 J
Silver	84	14000	190000	5100	0.11 U	0.1 U	0.11 U	0.097 U	0.11 U	0.097 U	0.1 U	0.1 U
Thallium	14	200	190000	10	0.18	0.11	0.11	0.13	0.16	0.08 J	0.11	0.094 J
Vanadium	72000	20000	190000	5,200	15	16	14	15	18	6.7	12	7.5
Zinc	12000	190000	190000	310000	19 B	13 B	15 B	25 B	21 B	12 B	17 B	11 B

Table 1.

Soils Data Summary - Building 51 Area Remediation Confirmation Sampling
Former York Naval Ordnance Plant - York, PA

Location/ID	MSC	MSC	MSC	EPA RSL	B51H-CS-001	B51H-CS-002	B51H-CS-003	B51H-CS-004	B51H-CS-005	B51H-CS-006	B51H-CS-007	B51H-CS-008
Depth (ft.)	Soil to GW	Direct Contact	Direct Contact	Industrial	1 - 1.5	1 - 1.5	1 - 1.5	1 - 1.5	1 - 1.5	1 - 1.5	1 - 1.5	1 - 1.5
Sample Date		0 - 2 ft	2 - 15 ft	Soil	8/24/2011	8/24/2011	8/24/2011	8/24/2011	8/24/2011	8/24/2011	8/24/2011	8/24/2011
Parameter	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)		, ,	-, ,	., ,	., ,		., ,	
Volatile Organic Compound	(0, 0,	\ 0, 0,	\ 0, 0,	(0, 0,						l .		
1,1,1,2-Tetrachloroethane	18	300	340	9.3	0.0055 U	0.0047 U	0.0052 U	0.005 U	0.0048 U	0.0046 U	0.0053 U	0.0052 U
1,1,1-Trichloroethane	20	10000	10000	38000	0.0055 U	0.0047 U	0.0052 U	0.005 U	0.0048 U	0.0046 U	0.0053 U	0.0052 U
1,1,2,2-Tetrachloroethane	0.43	38	44	2.8	0.0055 U	0.0047 U	0.0052 U	0.005 U	0.0048 U	0.0046 U	0.0053 U	0.0052 U
1,1,2-Trichloroethane	0.5	140	160	5.3	0.0055 U	0.0047 U	0.0052 U	0.005 U	0.0048 U	0.0046 U	0.0053 U	0.0052 U
1,1-Dichloroethane	16	1400	1600	17	0.0055 U	0.0047 U	0.0052 U	0.005 U	0.0048 U	0.0046 U	0.0053 U	0.0052 U
1,1-Dichloroethene	0.7	10000	10000	1100	0.0055 U	0.0047 U	0.0052 U	0.005 U	0.0048 U	0.0046 U	0.0053 U	0.0052 U
1,2-Dibromoethane	0.005	3.7	4.3	0.17	0.0055 U	0.0047 U	0.0052 U	0.005 U	0.0048 U	0.0046 U	0.0053 U	0.0052 U
1,2-Dichloroethane	0.5	86	98	2.2	0.0055 U	0.0047 U	0.0052 U	0.005 U	0.0048 U	0.0046 U	0.0053 U	0.0052 U
1,2-Dichloropropane	0.5	220	260	4.7	0.0055 U	0.0047 U	0.0052 U	0.005 U	0.0048 U	0.0046 U	0.0053 U	0.0052 U
1,4-Dioxane	3.2	290	330	17	1.1 U	0.94 U	1 U	1 U	0.95 U	0.93 U	1.1 U	1 U
2-Butanone	400	10000	10000	200000	0.0055 U	0.0047 U	0.0052 U	0.005 U	0.0048 U	0.0046 U	0.0053 U	0.0052 U
2-Hexanone	4.4	400	460	1400	0.0055 U	0.0047 U	0.0052 U	0.005 U	0.0048 U	0.0046 U	0.0053 U	0.0052 U
4-Methyl-2-Pentanone	820	10000	10000	53000	0.0055 U	0.0047 U	0.0052 U	0.005 U	0.0048 U	0.0046 U	0.0053 U	0.0052 U
Acetone	9200	10,000	10,000	630000	0.022 U	0.0076 J	0.01 J	0.013 J	0.019 U	0.019 U	0.014 J	0.011 J
Acrylonitrile	0.37	33	38	1.2	0.11 U	0.094 U	0.1 U	0.1 U	0.095 U	0.093 U	0.11 U	0.1 U
Benzene	0.5	290	330	5.4	0.0055 U	0.0047 U	0.0052 U	0.005 U	0.0048 U	0.0046 U	0.0053 U	0.0052 U
Bromochloromethane	9	10000	10000	680	0.0055 U	0.0047 U	0.0052 U	0.005 U	0.0048 U	0.0046 U	0.0053 U	0.0052 U
Bromodichloromethane	8	60	69	1.4	0.0055 U	0.0047 U	0.0052 U	0.005 U	0.0048 U	0.0046 U	0.0053 U	0.0052 U
Bromoform	8	2000	2300	220	0.0055 U	0.0047 U	0.0052 U	0.005 U	0.0048 U	0.0046 U	0.0053 U	0.0052 U
Bromomethane	1	400	460	32	0.0055 U	0.0047 U	0.0052 U	0.005 U	0.0048 U	0.0046 U	0.0053 U	0.0052 U
Carbon Disulfide	620	10000	10000	3700	0.0055 U	0.0047 U	0.0052 U	0.005 U	0.0048 U	0.0046 U	0.0053 U	0.0052 U
Carbon Tetrachloride	0.5	150	170	3	0.0055 U	0.0047 U	0.0052 U	0.005 U	0.0048 U	0.0046 U	0.0053 U	0.0052 U
Chlorobenzene	10	4000	4600	1400	0.0055 U	0.0047 U	0.0052 U	0.005 U	0.0048 U	0.0046 U	0.0053 U	0.0052 U
Chlorodibromomethane	8	82	95	3.3	0.0055 U	0.0047 U	0.0052 U	0.005 U	0.0048 U	0.0046 U	0.0053 U	0.0052 U
Chloroethane	90	10000	10000	61000	0.0055 U	0.0047 U	0.0052 U	0.005 U	0.0048 U	0.0046 U	0.0053 U	0.0052 U
Chloroform	8	97	110	1.5	0.0055 U	0.0047 U	0.0052 U	0.005 U	0.0048 U	0.0046 U	0.0053 U	0.0052 U
Chloromethane	3	1200	1400	500	0.0055 U	0.0047 U	0.0052 U	0.005 U	0.0048 U	0.0046 U	0.0053 U	0.0052 U
cis-1,2-Dichloroethene	7	10000	10000	2000	0.0055 U	0.0047 U	0.0052 U	0.005 U	0.0048 U	0.0046 U	0.0053 U	0.0052 U
cis-1,3-Dichloropropene	2.6	560	640	8.3	0.0055 U	0.0047 U	0.0052 U	0.005 U	0.0048 U	0.0046 U	0.0053 U	0.0052 U
Ethylbenzene	70	10000	10000	27	0.0055 U	0.0047 U	0.0052 U	0.005 U	0.0048 U	0.0046 U	0.0053 U	0.0052 U
Methyl tert-butyl ether	2	8600	9900	220	0.0055 U	0.0047 U	0.0052 U	0.005 U	0.0048 U	0.0046 U	0.0053 U	0.0052 U
Methylene chloride	0.5	4700	5400	960	0.0015 J	0.0014 J	0.0013 J	0.00087 J	0.0013 J	0.0012 J	0.0014 J	0.0028 J
Styrene	24	10000	10000	36000	0.0055 U	0.0047 U	0.0052 U	0.005 U	0.0048 U	0.0046 U	0.0053 U	0.0052 U
Tetrachloroethene	0.5	1500	4400	110	0.0055 U	0.0047 U	0.0052 U	0.005 U	0.0048 U	0.0046 U	0.0053 U	0.0052 U
Toluene	100	10000	10000	45000	0.0055 U	0.0047 U	0.0052 U	0.005 U	0.0048 U	0.0046 U	0.0053 U	0.0052 U
trans-1,2-Dichloroethene	10	4800	5500	690	0.0055 U	0.0047 U	0.0052 U	0.005 U	0.0048 U	0.0046 U	0.0053 U	0.0052 U
trans-1,3-Dichloropropene	2.6	560	640	8.3	0.0055 U	0.0047 U	0.0052 U	0.005 U	0.0048 U	0.0046 U	0.0053 U	0.0052 U
Trichloroethene	0.5	1300	1500	6.4	0.0055 U	0.0047 U	0.0052 U	0.005 U	0.0048 U	0.0046 U	0.0053 U	0.0052 U
Vinyl Chloride	0.2	110	580	1.7	0.0055 U	0.0047 U	0.0052 U	0.005 U	0.0048 U	0.0046 U	0.0053 U	0.0052 U
Xylenes (Total)	1000	8000	9100	2700	0.016 U	0.014 U	0.015 U	0.015 U	0.014 U	0.014 U	0.016 U	0.015 U

Table 1.
Soils Data Summary - Building 51 Area Remediation Confirmation Sampling
Former York Naval Ordnance Plant - York, PA

Location/ID	MSC	MSC	MSC	EPA RSL	B51H-CS-009	B51H-CS-010	B51H-CS-011	B51H-CS-012	B51H-CS-012 Dup
Depth (ft.)		Direct Contact	Direct Contact	Industrial	1 - 1.5	1 - 1.5	1 - 1.5	1 - 1.5	1 - 1.5
Sample Date		0 - 2 ft	2 - 15 ft	Soil	8/24/2011	8/24/2011	8/24/2011	8/24/2011	8/24/2011
Parameter	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)					
Cyanide, Free	, 5, 6,	, 5, 5,	, , ,	1 0. 0.				I.	
Cyanide, Free	200	56000	190000	610	0.044 U	0.043 U	0.044 U	0.045 U	0.045 U
Cyanide, Total									
Cyanide, Total	NA	NA	NA	NA	0.56 U	0.54 U	0.56 U	0.57 U	0.56 U
Hexavalent Chromium									
Hexavalent Chromium	190	8400	20000	5.6	7.7	1.2	0.36 J	0.36 J	0.25 J
Mercury									
Mercury	10	450	190000	43	0.025 J	0.015 J	0.02 J	0.03 J	0.032 J
Metal									
Antimony	27	1,100	190,000	410	0.1 J	0.1 J	0.14 J	0.12 J	0.11 J
Arsenic	29	53	190000	1.6	3.9	0.79	22	9.1	8.7
Barium	8200	190000	190000	190000	87 B	62 B	72 B	68 B	60 B
Beryllium	320	5600	190000	2000	0.38	0.29	0.72	0.52	0.54
Cadmium	38	1400	190000	800	0.08 J	0.039 J	0.091 J	0.081 J	0.059 J
Chromium (Total)	190,000	190,000	190,000	1,500,000	130 B	9.4 B	16 B	11 B	13 B
Copper	43000	100000	190000	41000	8.5	1.7	11	6.8	8.3
Lead	450	1000	190000	800	9.4	7.8	11	10	9.7
Nickel	650	56000	190000	20000	18	2.5	6.3	3.4	3.8
Selenium	26	14000	190000	5100	0.4 J	0.23 J	0.45 J	0.48 J	0.41 J
Silver	84	14000	190000	5100	0.1 U	0.1 U	0.11 U	0.1 U	0.1 U
Thallium	14	200	190000	10	0.11	0.064 J	0.11	0.098 J	0.088 J
Vanadium	72000	20000	190000	5,200	15	5.5	14	16	14
Zinc	12000	190000	190000	310000	18 B	7.2 B	15 B	9.8 B	9.2 B

Table 1.

Soils Data Summary - Building 51 Area Remediation Confirmation Sampling
Former York Naval Ordnance Plant - York, PA

Location/ID	MSC	MSC	MSC	EPA RSL	B51H-CS-009	B51H-CS-010	B51H-CS-011	B51H-CS-012	B51H-CS-012 Dup
Depth (ft.)	Soil to GW	Direct Contact	Direct Contact	Industrial	1 - 1.5	1 - 1.5	1 - 1.5	1 - 1.5	1 - 1.5
Sample Date	Used Aquifer	0 - 2 ft	2 - 15 ft	Soil	8/24/2011	8/24/2011	8/24/2011	8/24/2011	8/24/2011
Parameter	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	., ,	', ', '			., ,
Volatile Organic Compound	(8/8/	(8/8/	(8/8/	(6/6/		1		I	
1,1,1,2-Tetrachloroethane	18	300	340	9.3	0.005 U	0.0046 U	0.0047 U	0.0047 U	0.0053 U
1,1,1-Trichloroethane	20	10000	10000	38000	0.005 U	0.0046 U	0.0047 U	0.0047 U	0.0053 U
1,1,2,2-Tetrachloroethane	0.43	38	44	2.8	0.005 U	0.0046 U	0.0047 U	0.0047 U	0.0053 U
1,1,2-Trichloroethane	0.5	140	160	5.3	0.005 U	0.0046 U	0.0047 U	0.0047 U	0.0053 U
1,1-Dichloroethane	16	1400	1600	17	0.005 U	0.0046 U	0.0047 U	0.0047 U	0.0053 U
1,1-Dichloroethene	0.7	10000	10000	1100	0.005 U	0.0046 U	0.0047 U	0.0047 U	0.0053 U
1,2-Dibromoethane	0.005	3.7	4.3	0.17	0.005 U	0.0046 U	0.0047 U	0.0047 U	0.0053 U
1,2-Dichloroethane	0.5	86	98	2.2	0.005 U	0.0046 U	0.0047 U	0.0047 U	0.0053 U
1,2-Dichloropropane	0.5	220	260	4.7	0.005 U	0.0046 U	0.0047 U	0.0047 U	0.0053 U
1,4-Dioxane	3.2	290	330	17	1 U	0.93 U	0.94 U	0.94 U	1.1 U
2-Butanone	400	10000	10000	200000	0.005 U	0.0046 U	0.0047 U	0.0047 U	0.0053 U
2-Hexanone	4.4	400	460	1400	0.005 U	0.0046 U	0.0047 U	0.0047 U	0.0053 U
4-Methyl-2-Pentanone	820	10000	10000	53000	0.005 U	0.0046 U	0.0047 U	0.0047 U	0.0053 U
Acetone	9200	10,000	10,000	630000	0.012 J	0.019 U	0.019 U	0.019 U	0.021 U
Acrylonitrile	0.37	33	38	1.2	0.1 U	0.093 U	0.094 U	0.094 U	0.11 U
Benzene	0.5	290	330	5.4	0.005 U	0.0046 U	0.0047 U	0.0047 U	0.0053 U
Bromochloromethane	9	10000	10000	680	0.005 U	0.0046 U	0.0047 U	0.0047 U	0.0053 U
Bromodichloromethane	8	60	69	1.4	0.005 U	0.0046 U	0.0047 U	0.0047 U	0.0053 U
Bromoform	8	2000	2300	220	0.005 U	0.0046 U	0.0047 U	0.0047 U	0.0053 U
Bromomethane	1	400	460	32	0.005 U	0.0046 U	0.0047 U	0.0047 U	0.0053 U
Carbon Disulfide	620	10000	10000	3700	0.005 U	0.0046 U	0.0047 U	0.0047 U	0.0053 U
Carbon Tetrachloride	0.5	150	170	3	0.005 U	0.0046 U	0.0047 U	0.0047 U	0.0053 U
Chlorobenzene	10	4000	4600	1400	0.005 U	0.0046 U	0.0047 U	0.0047 U	0.0053 U
Chlorodibromomethane	8	82	95	3.3	0.005 U	0.0046 U	0.0047 U	0.0047 U	0.0053 U
Chloroethane	90	10000	10000	61000	0.005 U	0.0046 U	0.0047 U	0.0047 U	0.0053 U
Chloroform	8	97	110	1.5	0.005 U	0.0046 U	0.0047 U	0.0047 U	0.0053 U
Chloromethane	3	1200	1400	500	0.005 U	0.0046 U	0.0047 U	0.0047 U	0.0053 U
cis-1,2-Dichloroethene	7	10000	10000	2000	0.005 U	0.0046 U	0.0047 U	0.0047 U	0.0053 U
cis-1,3-Dichloropropene	2.6	560	640	8.3	0.005 U	0.0046 U	0.0047 U	0.0047 U	0.0053 U
Ethylbenzene	70	10000	10000	27	0.005 U	0.0046 U	0.0047 U	0.0047 U	0.0053 U
Methyl tert-butyl ether	2	8600	9900	220	0.005 U	0.0046 U	0.0047 U	0.0047 U	0.0053 U
Methylene chloride	0.5	4700	5400	960	0.001 J	0.00095 J	0.0015 J	0.0012 J	0.0011 J
Styrene	24	10000	10000	36000	0.005 U	0.0046 U	0.0047 U	0.0047 U	0.0053 U
Tetrachloroethene	0.5	1500	4400	110	0.005 U	0.0046 U	0.0047 U	0.0047 U	0.0053 U
Toluene	100	10000	10000	45000	0.005 U	0.0046 U	0.0047 U	0.0047 U	0.0053 U
trans-1,2-Dichloroethene	10	4800	5500	690	0.005 U	0.0046 U	0.0047 U	0.0047 U	0.0053 U
trans-1,3-Dichloropropene	2.6	560	640	8.3	0.005 U	0.0046 U	0.0047 U	0.0047 U	0.0053 U
Trichloroethene	0.5	1300	1500	6.4	0.005 U	0.0046 U	0.0047 U	0.0047 U	0.0053 U
Vinyl Chloride	0.2	110	580	1.7	0.005 U	0.0046 U	0.0047 U	0.0047 U	0.0053 U
Xylenes (Total)	1000	8000	9100	2700	0.015 U	0.014 U	0.014 U	0.014 U	0.016 U

Location/ID	MSC	MSC	MSC	EPA RSL	B41CONV-EX-001	B41CONV-EX-002	R/1PAA15_CS_001	B41RAA15-CS-002	B41RAA15-CS-003	B41RAA15-CS-004	B41RAA15-CS-005	B41RAA16-CS-001	B41B4416-C5-002	B41RAA16-CS-003	B41B4416-C5-004	B41RAA16-CS-005	B/1DAA16-CS-006
Depth (ft.)	Soil to GW	Direct Contact	Direct Contact	Industrial	4 - 5	4 - 5	3 - 4	3 - 4	9 - 10	9 - 10	5 - 6	5 - 6	5.5 - 6.5	5 - 6	5 - 5.5	4 - 5	4 - 5
Sample Date		0 - 2 ft	2 - 15 ft	Soil	9/26/2011	10/6/2011	10/12/2011	10/13/2011	10/17/2011	10/17/2011	10/17/2011	9/22/2011	9/22/2011	9/22/2011	9/22/2011	9/28/2011	9/28/2011
Parameter	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)													
Cyanide, Free																	
Cyanide, Free	200	56000	190000	610	0.049 U	0.053 U	0.048 U	0.045 U	0.045 U	0.048 U	0.048 U	0.05 U	0.049 U	0.051 U	0.051 U	0.05 U	0.051 U
Cyanide, Total	1	I	ı			I	I	T .		T	I		I	T	I		I
Cyanide, Total	NA	NA	NA	NA	0.13 J	0.66 U	0.55 J	0.83	0.13 J	0.12 J	2.1	0.16 J	0.23 J	0.65	0.75	0.4 J	1.3
Hexavalent Chromium Hexavalent Chromium	190	8400	20000	5.6	0.88	0.69	0.45 J	0.78	1.2	1.6	3.1	3.9	0.35 J	0.16 J	1.4	1.9	3.4
Mercury	190	8400	20000	5.0	0.88	0.09	U.45 J	0.78	1.2	1.0	5.1	3.9	0.35 J	0.10 J	1.4	1.9	5.4
Mercury	10	450	190000	43	0.1	0.038	0.038 U	0.036 U	0.041	0.042	0.043	0.018 J	0.043	0.051	0.025 J	0.055	0.059
Metal	10	430	130000	43	0.1	0.030	0.038 0	0.030 0	0.041	0.042	0.043	0.0101	0.043	0.031	0.0253	0.055	0.033
Antimony	27	1,100	190,000	410	0.079 J	0.33 B	0.22 J B	0.1 J	0.069 J B	0.04 J B	0.087 J B	0.31 B	0.15 J B	0.23 B	0.22 B	0.15 J	0.16 J
Arsenic	29	53	190000	1.6	0.77	7.6	3.8	12	2.4	3.9	3	4.4	8.7	6.8	7.1	6.1	6.3
Barium	8200	190000	190000	190000	58	33 B	71 B	84 B	26	98	47	100 B	46 B	53 B	52 B	75	75
Beryllium	320	5600	190000	2000	0.25	1.5	0.52	0.45	0.26	0.38	0.33	0.58	0.42	0.67	0.79	0.56	0.64
Cadmium	38	1400	190000	800	0.09 J	0.33	1.4 B	0.056 J	0.068 J	0.28	0.17	23	0.14	1.8	1	0.18	0.31
Chromium (Total)	190,000	190,000	190,000	1,500,000	15 B	17 B	14 B	9.5 B	7.7 B	12 B	19 B	210 B	14 B	21 B	19 B	18 B	23 B
Copper	43000	100000	190000	41,000	5.4	23 B	8.7 B	7.5 B	5.4	6.9	8.9	12	4.1	9.9	13	9.9	10
Lead Nickel	450 650	1000 56000	190000 190000	800 20000	12 4.5	24 B 21	8.7 6.5	8 B 4.1	8.2 B 4.1	10 B	9.6 B 17	33 28 B	10 3.5 B	14 14 B	16 16 B	11 9	12
Selenium	26	14000	190000	5100	4.5 0.26 J B	0.81	0.51 J	4.1 0.54 U	4.1 0.32 J	0.47 J	0.3 J	0.55 J	0.36 J	0.56	0.66	0.47 J	16 0.77
Silver	84	14000	190000	5100	0.26 J B	0.051 J	0.51 J	0.54 U	0.026 J	0.47 J	0.027 J	0.55 J	0.024 J B	0.044 J B	0.05 J B	0.47 J	0.036 J
Thallium	14	200	190000	10	0.0113	0.0313	0.011 J	0.099 J	0.020 J	0.14	0.027 J	0.099 J	0.024 J B	0.044 1 B	0.0316	0.14	0.0363
Vanadium	72000	20000	190000	5,200	31 B	27 B	20 B	12 B	11	12	19	24 B	26 B	21 B	20 B	27	27
Zinc	12000	190000	190000	310000	9.9	35	16 B	8.7 B	7.9	38	19	85	9.3	24	57	23	24
Volatile Organic Compound			•													•	
1,1,1,2-Tetrachloroethane	18	300	340	9.3	0.0053 U	0.0065 U	0.0053 U	0.0049 U	0.0052 U	0.0054 U	0.0057 U	1.4 U	0.0051 U	0.0061 U	0.0058 U	0.0051 U	0.0054 U
1,1,1-Trichloroethane	20	10000	10000	38000	0.0053 U	0.0065 U	0.0053 U	0.0049 U	0.0052 U	0.0054 U	0.0057 U	1.4 U	0.0051 U	0.0061 U	0.0058 U	0.0051 U	0.0054 U
1,1,2,2-Tetrachloroethane	0.43	38	44	2.8	0.0053 U	0.0065 U	0.0053 U	0.0049 U	0.0052 U	0.0054 U	0.0057 U	1.4 U	0.0051 U	0.0061 U	0.0058 U	0.0051 U	0.0054 U
1,1,2-Trichloroethane	0.5	140	160	5.3	0.0053 U	0.0065 U	0.0053 U	0.0049 U	0.0052 U	0.0054 U	0.0057 U	1.4 U	0.0051 U	0.0061 U	0.0058 U	0.0051 U	0.0054 U
1,1-Dichloroethane 1,1-Dichloroethene	16 0.7	1400 10000	1600 10000	17 1100	0.0053 U 0.0053 U	0.0065 U 0.0065 U	0.0053 U 0.0053 U	0.0049 U 0.0049 U	0.0052 U 0.0052 U	0.0054 U 0.0054 U	0.0057 U 0.0057 U	1.4 U 1.4 U	0.0051 U 0.0051 U	0.0015 J 0.0061 U	0.0058 U 0.0058 U	0.0011 J 0.0051 U	0.0054 U 0.0054 U
1,1-Dichloroethene 1,2-Dibromoethane	0.005	3.7	4.3	0.17	0.0053 U	0.0065 U	0.0053 U	0.0049 U	0.0052 U	0.0054 U	0.0057 U	1.4 U	0.0051 U	0.0061 U	0.0058 U	0.0051 U	0.0054 U
1,2-Dichloroethane	0.5	86	98	2.2	0.0053 U	0.0065 U	0.0053 U	0.0049 U	0.0052 U	0.0054 U	0.0057 U	1.4 U	0.0051 U	0.0061 U	0.0058 U	0.0051 U	0.0054 U
1,2-Dichloropropane	0.5	220	260	4.7	0.0053 U	0.0065 U	0.0053 U	0.0049 U	0.0052 U	0.0054 U	0.0057 U	1.4 U	0.0051 U	0.0061 U	0.0058 U	0.0051 U	0.0054 U
1,4-Dioxane	3.2	290	330	17	1.1 U	1.3 U	1.1 U	0.98 U	1 U	1.1 U	1.1 U	280 U	1 U	1.2 U	1.2 U	1 U	1.1 U
2-Butanone	400	10000	10000	200000	0.0053 U	0.0065 U	0.0053 U	0.0049 U	0.0052 U	0.0054 U	0.0057 U	1.4 U	0.0051 U	0.0061 U	0.0058 U	0.0051 U	0.0054 U
2-Hexanone	4.4	400	460	1400	0.0053 U	0.0065 U	0.0053 U	0.0049 U	0.0052 U	0.0054 U	0.0057 U	1.4 U	0.0051 U	0.0061 U	0.0058 U	0.0051 U	0.0054 U
4-Methyl-2-Pentanone	820	10000	10000	53000	0.0053 U	0.0065 U	0.0053 U	0.0049 U	0.0052 U	0.0054 U	0.0057 U	1.4 U	0.0051 U	0.0061 U	0.0058 U	0.0051 U	0.0054 U
Acetone	9200	10,000	10,000	630000	0.013 J	0.026 U	0.021 U	0.02 U	0.021 U	0.022 U	0.009 J	5.5 U	0.02 U	0.024 U	0.023 U	0.02 U	0.022 U
Acrylonitrile	0.37	33	38	1.2	0.11 U	0.13 U	0.11 U	0.098 U	0.1 U	0.11 U	0.11 U	28 U	0.1 U	0.12 U	0.12 U	0.1 U	0.11 U
Benzene	0.5	290	330	5.4	0.0064	0.0065 U	0.0053 U	0.0049 U	0.0052 U	0.0054 U	0.0057 U	1.4 U	0.0051 U	0.0061 U	0.0058 U	0.0051 U	0.0054 U
Bromochloromethane Bromodichloromethane	9 8	10000	10000	680 1.4	0.0053 U 0.0053 U	0.0065 U 0.0065 U	0.0053 U 0.0053 U	0.0049 U 0.0049 U	0.0052 U 0.0052 U	0.0054 U 0.0054 U	0.0057 U 0.0057 U	1.4 U 1.4 U	0.0051 U 0.0051 U	0.0061 U 0.0061 U	0.0058 U 0.0058 U	0.0051 U 0.0051 U	0.0054 U 0.0054 U
Bromodichioromethane	8	2000	2300	220	0.0053 U	0.0065 U	0.0053 U	0.0049 U	0.0052 U	0.0054 U	0.0057 U	1.4 U	0.0051 U 0.0051 U	0.0061 U	0.0058 U	0.0051 U	0.0054 U
Bromomethane	1	400	460	32	0.0053 U	0.0065 U	0.0053 U	0.0049 U	0.0052 U	0.0054 U	0.0057 U	1.4 U	0.0051 U	0.0061 U	0.0058 U	0.0051 U	0.0054 U
Carbon Disulfide	620	10000	10000	3700	0.0053 U	0.0065 U	0.0053 U	0.0049 U	0.0052 U	0.0054 U	0.0057 U	1.4 U	0.0051 U	0.0061 U	0.0058 U	0.0051 U	0.0054 U
Carbon Tetrachloride	0.5	150	170	3	0.0053 U	0.0065 U	0.0053 U	0.0049 U	0.0052 U	0.0054 U	0.0057 U	1.4 U	0.0051 U	0.0061 U	0.0058 U	0.0051 U	0.0054 U
Chlorobenzene	10	4000	4600	1400	0.0053 U	0.0065 U	0.0053 U	0.0049 U	0.0052 U	0.0054 U	0.0057 U	1.4 U	0.0051 U	0.0061 U	0.0058 U	0.0051 U	0.0054 U
Chlorodibromomethane	8	82	95	3.3	0.0053 U	0.0065 U	0.0053 U	0.0049 U	0.0052 U	0.0054 U	0.0057 U	1.4 U	0.0051 U	0.0061 U	0.0058 U	0.0051 U	0.0054 U
Chloroethane	90	10000	10000	61000	0.0053 U	0.0065 U	0.0053 U	0.0049 U	0.0052 U	0.0054 U	0.0057 U	1.4 U	0.0051 U	0.0061 U	0.0058 U	0.0051 U	0.0054 U
Chloroform	8	97	110	1.5	0.0053 U	0.0065 U	0.0053 U	0.00065 J	0.0052 U	0.00069 J	0.00068 J	1.4 U	0.00062 J	0.0061 U	0.0058 U	0.0051 U	0.0054 U
Chloromethane	3	1200	1400	500	0.0053 U	0.0065 U	0.0053 U	0.0049 U	0.0052 U	0.0054 U	0.0057 U	1.4 U	0.0051 U	0.0061 U	0.0058 U	0.0051 U	0.0054 U
cis-1,2-Dichloroethene	7	10000 560	10000	2000 8.3	0.0053 U	0.0065 U	0.0053 U	0.0011 J	0.024	0.0084 0.0054 U	0.0057 U 0.0057 U	37	0.0087	0.056 0.0061 U	0.0077 0.0058 U	0.0011 J	0.0054 U 0.0054 U
cis-1,3-Dichloropropene	2.6 70	10000	10000	8.3 27	0.0053 U 0.0053 U	0.0065 U 0.0065 U	0.0053 U 0.0053 U	0.0049 U 0.0049 U	0.0052 U 0.0052 U	0.0054 U 0.0054 U	0.0057 U 0.0057 U	1.4 U 1.4 U	0.0051 U 0.0051 U	0.0061 U 0.0019 J	0.0058 U 0.0058 U	0.0051 U 0.0051 U	0.0054 U 0.0054 U
Ethylbenzene Methyl tert-butyl ether	70	8600	9900	220	0.0053 U	0.0065 U	0.0053 U	0.0049 U	0.0052 U	0.0054 U	0.0057 U	1.4 U	0.0051 U	0.0019 J 0.0061 U	0.0058 U	0.0051 U	0.0054 U
Methylene chloride	0.5	4700	5400	960	0.0053 U	0.0065 U	0.0053 U	0.0049 U	0.0052 U	0.0054 U	0.0057 U	1.4 U	0.0051 U	0.0081 J	0.0058 0	0.0051 U	0.0054 U
Styrene	24	10000	10000	36000	0.0053 U	0.0017 J	0.0053 U	0.0049 U	0.0052 U	0.0054 U	0.0057 U	1.4 U	0.0013 J	0.0051 J	0.0077 0.0058 U	0.0051 U	0.0054 U
Tetrachloroethene	0.5	1500	4400	110	0.0053 U	0.0065 U	0.0053 U	0.0011 J	0.034	0.022	0.0037 U	1.4 U	0.00071 J	0.019	0.0047 J	0.0051 U	0.0054 U
Toluene	100	10000	10000	45000	0.0053 U	0.0065 U	0.0053 U	0.0049 U	0.0052 U	0.0054 U	0.0057 U	0.73 J	0.0051 U	0.012	0.0058 U	0.0051 U	0.0054 U
trans-1,2-Dichloroethene	10	4800	5500	690	0.0053 U	0.0065 U	0.0053 U	0.0049 U	0.00075 J	0.0054 U	0.0057 U	5.1	0.0014 J	0.028	0.0026 J	0.0017 J	0.0054 U
trans-1,3-Dichloropropene	2.6	560	640	8.3	0.0053 U	0.0065 U	0.0053 U	0.0049 U	0.0052 U	0.0054 U	0.0057 U	1.4 U	0.0051 U	0.0061 U	0.0058 U	0.0051 U	0.0054 U
Trichloroethene	0.5	1300	1500	6.4	0.003 J	0.0033 J	0.0053 U	0.0024 J	0.046	0.022	0.00099 J	1.4	0.0051 U	0.014	0.01	0.00088 J	0.0054 U
Vinvl Chloride	0.2	110	580	1.7	0.0053 U	0.0065 U	0.0053 U 0.016 U	0.0049 U 0.015 U	0.0052 U 0.016 U	0.0054 U 0.016 U	0.0057 U 0.017 U	16 4.2 U	0.0051 U 0.015 U	0.022 0.018 U	0.0058 U 0.017 U	0.0051 U 0.015 U	0.0054 U 0.016 U
Xylenes (Total)	1000	8000	9100	2700	0.016 U	0.019 U											

Location/ID	MSC	MSC	MSC	EPA RSL	B41CONV-EX-001	B41CONV-EX-002	R41PAA15-CS-001	B41RAA15-CS-002	B/1DAA15-CS-003	B41RAA15-CS-004	B/1B/A15-CS-005	R/1PAA16-CS-001	B/1BVV16-C2-003	B41RAA16-CS-003	B41B4416-CS-004	B/1DAA16-CS-005	B41RAA16-CS-006
Depth (ft.)		Direct Contact	Direct Contact	Industrial	4 - 5	4 - 5	3 - 4	3 - 4	9 - 10	9 - 10	5 - 6	5 - 6	5.5 - 6.5	5 - 6	5 - 5.5	4 - 5	4 - 5
Sample Date		0 - 2 ft	2 - 15 ft	Soil	9/26/2011	10/6/2011	10/12/2011	10/13/2011	10/17/2011	10/17/2011	10/17/2011	9/22/2011	9/22/2011	9/22/2011	9/22/2011	9/28/2011	9/28/2011
Parameter	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)										l			
Semi Volatile Organic Compound 1,2,4-Trichlorobenzene	27	10000	10000	99	0.4 U	0.44 U	0.39 U	0.36 U	0.37 U	0.39 U	0.39 U	0.41 U	0.4 U	0.42 U	0.42 U	0.41 U	0.42 U
1,2-Dichlorobenzene	60	10000	10000	9800	0.4 U	0.44 U	0.39 U	0.36 U	0.37 U	0.39 U	0.39 U	0.41 U	0.4 U	0.42 U	0.42 U	0.41 U	0.42 U
1,3-Dichlorobenzene	61	8400	10000	NA	0.4 U	0.44 U	0.39 U	0.36 U	0.37 U	0.39 U	0.39 U	0.41 U	0.4 U	0.42 U	0.42 U	0.41 U	0.42 U
1,4-Dichlorobenzene	10	200	230	12	0.4 U	0.44 U	0.39 U	0.36 U	0.37 U	0.39 U	0.39 U	0.41 U	0.4 U	0.42 U	0.42 U	0.41 U	0.42 U
2,4,5-Trichlorophenol 2,4,6-Trichlorophenol	6100 29	190000 2800	190000 190000	62000 160	0.4 U 0.4 U	0.44 U 0.44 U	0.39 U 0.39 U	0.36 U 0.36 U	0.37 U 0.37 U	0.39 U 0.39 U	0.39 U 0.39 U	0.41 U 0.41 U	0.4 U 0.4 U	0.42 U 0.42 U	0.42 U 0.42 U	0.41 U 0.41 U	0.42 U 0.42 U
2.4-Dichlorophenol	29	8400	190000	1800	0.4 U	0.44 U	0.39 U	0.36 U	0.075 U	0.39 U	0.39 U	0.41 U	0.4 U	0.42 U	0.42 U	0.41 U	0.42 U
2,4-Dimethylphenol	200	10000	10000	12000	0.4 U	0.44 U	0.39 U	0.36 U	0.37 U	0.39 U	0.39 U	0.41 U	0.4 U	0.42 U	0.42 U	0.41 U	0.42 U
2,4-Dinitrophenol	20	5600	190000	1200	2.1 U	2.2 U	2 U	1.9 U	1.9 U	2 U	2 U	2.1 U	2.1 U	2.1 U	2.2 U	2.1 U	2.1 U
2,4-Dinitrotoluene	0.84	260	190000	5.5	0.4 U	0.44 U	0.39 U	0.36 U	0.37 U	0.39 U	0.39 U	0.41 U	0.4 U	0.42 U	0.42 U	0.41 U	0.42 U
2,6-Dinitrotoluene	10 18000	2800 190000	190000 190000	620 82000	0.4 U 0.082 U	0.44 U 0.088 U	0.39 U 0.08 U	0.36 U 0.074 U	0.37 U 0.075 U	0.39 U 0.079 U	0.39 U 0.08 U	0.41 U 0.082 U	0.4 U 0.082 U	0.42 U 0.085 U	0.42 U 0.085 U	0.41 U 0.083 U	0.42 U 0.085 U
2-Chloronaphthalene 2-Chlorophenol	4.4	10000	10000	5100	0.082 U	0.088 U	0.08 U	0.074 U 0.36 U	0.075 U	0.079 U	0.08 U	0.082 U 0.41 U	0.082 U	0.085 U	0.085 U 0.42 U	0.083 U 0.41 U	0.085 U 0.42 U
2-Methylnaphthalene	1600	11000	190000	4100	0.082 U	0.088 U	0.059 J	0.074 U	0.075 U	0.079 U	0.08 U	0.082 U	0.082 U	0.056 J	0.023 J	0.081 J	0.049 J
2-Methylphenol	510	140000	190000	31000	0.4 U	0.44 U	0.39 U	0.36 U	0.37 U	0.39 U	0.39 U	0.41 U	0.4 U	0.42 U	0.42 U	0.41 U	0.42 U
2-Nitroaniline	31	8400	190000	6000	2.1 U	2.2 U	2 U	1.9 U	1.9 U	2 U	2 U	2.1 U	2.1 U	2.1 U	2.2 U	2.1 U	2.1 U
2-Nitrophenol	82	22000	190000	NA 2.0	0.4 U	0.44 U	0.39 U	0.36 U	0.37 U	0.39 U	0.39 U	0.41 U	0.4 U	0.42 U	0.42 U	0.41 U	0.42 U
3,3'-Dichlorobenzidine 3/4-Methylphenol	32 12	180 10,000	190000 10,000	3.8 31,000	0.4 U 0.4 U	0.44 U 0.44 U	0.39 U 0.39 U	0.36 U 0.36 U	0.37 U 0.37 U	0.39 U 0.39 U	0.39 U 0.39 U	0.41 U 0.41 U	0.4 U 0.4 U	0.42 U 0.42 U	0.42 U 0.42 U	0.41 U 0.41 U *	0.42 U 0.42 U *
3-Nitroaniline	3.1	840	190000	NA	0.4 U	2.2 U	0.39 U	1.9 U	1.9 U	2 U	2 U	2.1 U	2.1 U	2.1 U	2.2 U	2.1 U	2.1 U
4,6-Dinitro-2-Methylphenol	1	280	190000	49	2.1 U	2.2 U	2 U	1.9 U	1.9 U	2 U	2 U	2.1 U	2.1 U	2.1 U	2.2 U	2.1 U	2.1 U
4-Bromophenyl phenyl ether	NA	NA	NA	NA	0.4 U	0.44 U	0.39 U	0.36 U	0.37 U	0.39 U	0.39 U	0.41 U	0.4 U	0.42 U	0.42 U	0.41 U	0.42 U
4-Chloro-3-Methyl-Phenol	110	14000	190000	62000	0.4 U	0.44 U	0.39 U	0.36 U	0.37 U	0.39 U	0.39 U	0.41 U	0.4 U	0.42 U	0.42 U	0.41 U	0.42 U
4-Chloroaniline 4-Chlorodiphenyl Ether	1.6 NA	400 NA	190000 NA	8.6 NA	0.4 U 0.4 U	0.44 U 0.44 U	0.39 U 0.39 U	0.36 U 0.36 U	0.37 U 0.37 U	0.39 U 0.39 U	0.39 U 0.39 U	0.41 U 0.41 U	0.4 U 0.4 U	0.42 U 0.42 U	0.42 U 0.42 U	0.41 U 0.41 U	0.42 U 0.42 U
4-Chlorodiphenyl Ether 4-Nitroaniline	13	4000	190000	NA 86	0.4 U	2.2 U	0.39 U	1.9 U	1.9 U	0.39 U	2 U	2.1 U	2.1 U	0.42 U	0.42 U	2.1 U	2.1 U
4-Nitrophenol	6	22000	190000	NA	2.1 U	2.2 U	2 U	1.9 U	1.9 U	2 U	2 U	2.1 U	2.1 U	2.1 U	2.2 U	2.1 U	2.1 U
Acenaphthene	4700	170,000	190000	33000	0.082 U	0.088 U	0.08 U	0.074 U	0.075 U	0.079 U	0.08 U	0.082 U	0.082 U	0.55	0.011 J	0.083 U	0.085 U
Acenaphthylene	6900	170,000	190000	33000	0.082 U	0.088 U	0.08 U	0.074 U	0.075 U	0.079 U	0.08 U	0.082 U	0.082 U	0.085 U	0.085 U	0.083 U	0.085 U
Anthracene	350	190,000	190000	170000 2.1	0.082 U	0.088 U	0.08 U	0.074 U	0.075 U	0.079 U	0.08 U	0.082 U	0.082 U	0.11	0.024 J	0.083 U	0.085 U
Benzo (A) Anthracene Benzo (a) Pyrene	320 46	110 11	190000 190000	0.21	0.082 U 0.082 U	0.088 U 0.088 U	0.08 U 0.08 U	0.074 U 0.074 U	0.075 U 0.075 U	0.079 U 0.079 U	0.08 U 0.08 U	0.082 U 0.082 U	0.082 U 0.082 U	0.028 J 0.085 U	0.039 J 0.036 J	0.016 J 0.014 J	0.011 J 0.085 U
Benzo (b) Fluoranthene	170	110	190000	2.1	0.082 U	0.088 U	0.08 U	0.074 U	0.075 U	0.079 U	0.08 U	0.082 U	0.082 U	0.033 J	0.038 J	0.023 J	0.085 U
Benzo (g,h,i) Perylene	180	170,000	190000	NA	0.082 U	0.088 U	0.08 U	0.074 U	0.075 U	0.079 U	0.08 U	0.082 U	0.082 U	0.085 U	0.024 J	0.083 U	0.085 U
Benzo (k) Fluoranthene	610	1,100	190000	21	0.082 U	0.088 U	0.08 U	0.074 U	0.075 U	0.079 U	0.08 U	0.082 U	0.082 U	0.085 U	0.018 J	0.083 U	0.085 U
Bis(2-Chloroethoxy) Methane	31	8,400	10,000	1800	0.4 U	0.44 U	0.39 U	0.36 U	0.37 U	0.39 U	0.39 U	0.41 U	0.4 U	0.42 U	0.42 U	0.41 U	0.42 U
Bis(2-Chloroethyl) Ether Bis(2-Chloroisopropyl) Ether	0.076	6.7 220	7.7 250	1 22	0.082 U 0.082 U	0.088 U 0.088 U	0.08 U 0.08 U	0.074 U 0.074 U	0.075 U	0.079 U 0.079 U	0.08 U 0.08 U	0.082 U 0.082 U	0.082 U 0.082 U	0.085 U 0.085 U	0.085 U 0.085 U	0.083 U 0.083 U	0.085 U 0.085 U
Bis(2-Ethylhexyl) Phthalate	130	5,700	10.000	120	0.82 U	0.88 U	0.8 U	0.74 U	0.075 U	0.79 U	0.8 U	0.82 U	0.82 U	0.85 U	0.85 U	0.83 U	0.85 U
Butylbenzylphthalate	10000	10000	10000	910	0.4 U	0.44 U	0.39 U	0.36 U	0.37 U	0.39 U	0.39 U	0.41 U	0.4 U	0.42 U	0.42 U	0.41 U	0.42 U
Carbazole	83	4000	190000	NA	0.082 U	0.088 U	0.08 U	0.074 U	0.075 U	0.079 U	0.08 U	0.082 U	0.082 U	0.12	0.085 U	0.083 U	0.085 U
Chrysene	230	11000	190000	210	0.082 U	0.088 U	0.08 U	0.074 U	0.075 U	0.079 U	0.08 U	0.082 U	0.082 U	0.037 J	0.037 J	0.024 J	0.015 J
Dibenzo (a,h) Anthracene Dibenzofuran	160 260	11 2800	190000 190000	0.21 1000	0.082 U	0.088 U 0.44 U	0.08 U 0.39 U	0.074 U 0.36 U	0.075 U 0.37 U	0.079 U 0.39 U	0.08 U 0.39 U	0.082 U 0.41 U	0.082 U 0.4 U	0.085 U 0.27 J	0.085 U 0.42 U	0.083 U 0.41 U	0.085 U 0.42 U
Diethylphthalate	8200	10000	10000	490000	0.4 U	0.44 U	0.39 U	0.36 U	0.37 U	0.39 U	0.39 U	0.41 U	0.4 U	0.42 U	0.42 U	0.41 U	0.42 U
Dimethylphthalate	100	100	100	NA	0.4 U	0.44 U	0.39 U	0.36 U	0.37 U	0.39 U	0.39 U	0.41 U	0.4 U	0.42 U	0.42 U	0.41 U	0.42 U
Di-n-Butylphthalate	4100	10000	10000	62000	0.4 U	0.44 U	0.39 U	0.36 U	0.37 U	0.39 U	0.39 U	0.41 U	0.4 U	0.42 U	0.42 U	0.41 U	0.42 U
Di-n-octylphthalate	10000	10000	10000	NA	0.4 U	0.44 U	0.39 U	0.36 U	0.37 U	0.39 U	0.39 U	0.41 U	0.4 U	0.42 U	0.42 U	0.41 U	0.42 U
Fluoranthene	3200 3800	110000 110000	190000 190000	22000 22000	0.082 U 0.082 U	0.012 J 0.088 U	0.014 J 0.08 U	0.074 U 0.074 U	0.075 U 0.075 U	0.079 U 0.079 U	0.08 U 0.08 U	0.0094 J 0.082 U	0.082 U 0.082 U	0.13 0.056 J	0.08 J 0.085 U	0.023 J 0.083 U	0.0094 J 0.085 U
Fluorene Hexachlorobenzene	0.96	50	190000	1.1	0.082 U	0.088 U	0.08 U	0.074 U	0.075 U	0.079 U	0.08 U	0.082 U	0.082 U	0.056 J 0.085 U	0.085 U	0.083 U	0.085 U
Hexachlorobutadiene	39	1000	10000	22	0.082 U	0.088 U	0.08 U	0.074 U	0.075 U	0.079 U	0.08 U	0.082 U	0.082 U	0.085 U	0.085 U	0.083 U	0.085 U
Hexachlorocyclopentadiene	91	10000	10000	3700	0.4 U	0.44 U	0.39 U	0.36 U	0.37 U	0.39 U	0.39 U	0.41 U	0.4 U	0.42 U	0.42 U	0.41 U	0.42 U
Hexachloroethane	0.56	550	640	43	0.4 U	0.44 U	0.39 U	0.36 U	0.37 U	0.39 U	0.39 U	0.41 U	0.4 U	0.42 U	0.42 U	0.41 U	0.42 U
Indeno (1,2,3-cd) Pyrene	28000	110	190000	2.1	0.082 U	0.088 U	0.08 U	0.074 U	0.075 U	0.079 U	0.08 U	0.082 U	0.082 U	0.085 U	0.16	0.083 U	0.085 U
Isophorone Naphthalene	10 25	10000 56000	10000 190000	1800 18	0.4 U 0.082 U	0.44 U 0.088 U	0.39 U 0.038 J	0.36 U 0.074 U	0.37 U 0.075 U	0.39 U 0.079 U	0.39 U 0.08 U	0.41 U 0.082 U	0.4 U 0.082 U	0.42 U 0.37	0.42 U 0.048 J	0.41 U 0.049 J	0.42 U 0.03 J
Nitrobenzene	20	5600	10000	24	0.082 U	0.88 U	0.8 U	0.074 U	0.075 U	0.079 U	0.08 U	0.82 U	0.82 U	0.85 U	0.048 J 0.85 U	0.049 J	0.85 U
N-Nitrosodi-N-Propylamine	0.037	11	10000	0.25	0.082 U	0.088 U	0.08 U	0.074 U	0.075 U	0.079 U	0.08 U	0.082 U	0.082 U	0.085 U	0.085 U	0.083 U	0.085 U
N-Nitrosodiphenylamine	83	16000	190000	350	0.4 U	0.44 U	0.39 U	0.36 U	0.37 U	0.39 U	0.39 U	0.41 U	0.4 U	0.42 U	0.42 U	0.41 U	0.42 U
Pentachlorophenol	5	660	190000	2.7	0.4 U	0.44 U	0.39 U	0.36 U	0.37 U	0.39 U	0.39 U	0.41 U	0.4 U	0.42 U	0.42 U	0.41 U	0.42 U
Phenanthrene	10000 200	190000 190000	190000 190000	NA 180000	0.082 U 0.082 U	0.088 U	0.035 J 0.08 U	0.074 U 0.074 U	0.075 U 0.075 U	0.079 U 0.079 U	0.08 U 0.08 U	0.014 J 0.082 U	0.082 U 0.082 U	0.16 0.085 U	0.072 J 0.085 U	0.042 J 0.083 U	0.025 J 0.085 U
Phenol Pyrene	200	190000 84000	190000	180000	0.082 U 0.082 U	0.088 U 0.013 J	0.08 U 0.015 J	0.074 U 0.074 U	0.075 U	0.079 U 0.079 U	0.08 U	0.082 U 0.0097 J	0.082 U 0.082 U	0.085 U 0.12	0.085 U 0.066 J	0.083 U 0.022 J	0.085 U 0.013 J
ryrene	2200	04000	150000	17000	U.U02 U	0.013 J	0.0131	0.074 0	0.073 0	0.075 0	0.00 0	0.0057 3	U.U02 U	U.12	0.000 J	U.U22 J	0.013 1

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Location/II Depth (ft.		MSC Direct Contact	MSC Direct Contact	EPA RSL Industrial	841RAA16-CS-007 4 - 5	B41RAA16-CS-008 4.5 - 5	4.5 - 5	4.5 - 5	4.5 - 5	6 - 7	6 - 7	6 - 7	B41RAA16-CS-013 6 - 7	6 - 7	11.5 - 12.5	9 - 10	B41RAA3-CS-001 2 - 3
Sample Dat		0 - 2 ft	2 - 15 ft	Soil	9/28/2011	9/28/2011	9/28/2011	9/28/2011	9/28/2011	10/19/2011	10/19/2011	10/19/2011	10/19/2011	10/19/2011	10/5/2011	10/17/2011	10/12/2011
Parameter	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	., .,												
Cyanide, Free																	
Cyanide, Free	200	56000	190000	610	0.052 U	0.052 U	0.05 U	0.051 U	0.05 U	0.025 J	0.049 U	0.051 U	0.051 U	0.05 U	0.05 U	0.046 U	0.046 U
Cyanide, Total Cyanide. Total	NA	NA	NA	NA	0.47 J	1	0.43 J	1.7	1.1	0.62 U	0.59 U	0.22 J	7.9	0.12 J	0.63 U	0.59 U	0.12 J
Hexavalent Chromium	INA	INA	IVA	INA	0.47 J		0.431	1.7	1.1	0.02 0	0.35 0	0.223	7.5	0.123	0.03 0	0.35 0	0.123
Hexavalent Chromium	190	8400	20000	5.6	1.4	1.6	0.87	3.1	3.7	0.29 J	1.4	1.1	11	2.2	0.5 U	2	0.68
Mercury																	
Mercury	10	450	190000	43	0.091	0.048	0.11	0.056	0.093	0.048	0.035 J	0.036 J	0.055	0.12	0.1	0.03 J	0.038 U
Metal Antimony	27	1.100	190.000	410	0.44	0.19 J	0.12 J	0.15 J	0.5	0.41	0.087 J	0.09 J	0.67	0.23 J	0.32 B	0.066 J B	0.048 J B
Arsenic	29	53	190,000	1.6	8.5	7.5	5.7	6.3	0.5 5.2	8.5	2.3	3.2	4.1	5.5	7.8	1.1	1.7
Barium	8200	190000	190000	190000	61	82	89	84	81	160	43	33	74	80	55 B	29	69 B
Beryllium	320	5600	190000	2000	1.3	0.69	0.42	0.63	0.53	0.74	0.28	0.39	0.57	0.57	2.3	0.12	0.33
Cadmium	38	1400	190000	800	0.77	0.5	9	4.8	9.9	4	0.21	0.14	12	14	0.53	0.025 J	0.093 J B
Chromium (Total)	190,000	190,000	190,000	1,500,000	42 B	16 B	24 B	30 B	32 B	93 B	14 B	16 B	190 B	54 B	10 B	5.1 B	9.8 B
Copper Lead	43000 450	100000 1000	190000 190000	41,000 800	23 34	8.7 13	8.8 12	11 12	11 20	16 20	6.8	8.3 9.3	37 38	15 15	17 44	3.8 3.9 B	2.9 B 6.9
Nickel	650	56000	190000	20000	28	11	7.7	21	13	180	7.3	7.9	400	90	37 B	3.6	3
Selenium	26	14000	190000	5100	1.1	0.49 J	0.48 J	0.47 J	0.76	0.66	0.27 J	0.34 J	0.45 J	0.65	1.6	0.11 J	0.25 J
Silver	84	14000	190000	5100	0.068 J	0.027 J	0.041 J	0.043 J	0.046 J	0.064 J	0.018 J	0.024 J	0.23	0.062 J	0.091 J	0.016 J	0.018 J
Thallium	14	200	190000	10	0.28	0.15	0.15	0.15	0.14	0.087 J	0.13	0.13	0.12	0.13	0.16 B	0.037 J	0.096 J
Vanadium	72000 12000	20000 190000	190000 190000	5,200 310000	22 91	20	17 33	21 58	22 73	18 110	18 15	21 15	19 330	20	20 B 59 B	7.5 8.9	13 B 19 B
Zinc Volatile Organic Compound	12000	190000	190000	310000	91	31	33	58	73	110	15	15	330	120	59 B	8.9	19 B
1,1,1,2-Tetrachloroethane	18	300	340	9.3	0.29 U	0.0054 U	1.2 U	0.92 U	2.7 U	0.0057 U	0.0057 U	0.0055 U	0.0061 U	0.0057 U	0.29 U	0.0066 U	0.005 U
1,1,1-Trichloroethane	20	10000	10000	38000	0.29 U	0.0054 U	1.2 U	0.92 U	2.7 U	0.0057 U	0.0057 U	0.0055 U	0.0061 U	0.0057 U	0.29 U	0.0066 U	0.005 U
1,1,2,2-Tetrachloroethane	0.43	38	44	2.8	0.29 U	0.0054 U	1.2 U	0.92 U	2.7 U	0.0057 U	0.0057 U	0.0055 U	0.0061 U	0.0057 U	0.29 U	0.0066 U	0.005 U
1,1,2-Trichloroethane	0.5	140	160	5.3	0.29 U	0.0054 U	1.2 U	0.92 U	2.7 U	0.0057 U	0.0057 U	0.0055 U	0.0061 U	0.0057 U	0.29 U	0.0066 U	0.005 U
1,1-Dichloroethane	16	1400	1600	17	0.29 U	0.0054 U	1.2 U	0.92 U	2.7 U	0.0057 U	0.0057 U	0.0055 U	0.0061 U	0.0057 U	0.29 U	0.0066 U	0.005 U
1,1-Dichloroethene 1,2-Dibromoethane	0.7	10000 3.7	10000	1100 0.17	0.29 U 0.29 U	0.0054 U 0.0054 U	1.2 U 1.2 U	0.92 U 0.92 U	2.7 U 2.7 U	0.0057 U 0.0057 U	0.0057 U 0.0057 U	0.0055 U 0.0055 U	0.0061 U 0.0061 U	0.0057 U 0.0057 U	0.29 U 0.29 U	0.0066 U 0.0066 U	0.005 U 0.005 U
1,2-Dichloroethane	0.5	86	98	2.2	0.29 U	0.0054 U	1.2 U	0.92 U	2.7 U	0.0057 U	0.0057 U	0.0055 U	0.0061 U	0.0057 U	0.29 U	0.0066 U	0.005 U
1,2-Dichloropropane	0.5	220	260	4.7	0.29 U	0.0054 U	1.2 U	0.92 U	2.7 U	0.0057 U	0.0057 U	0.0055 U	0.0061 U	0.0057 U	0.29 U	0.0066 U	0.005 U
1,4-Dioxane	3.2	290	330	17	58 U	1.1 U	250 U	180 U	540 U	1.1 U	1.1 U	1.1 U	1.2 U	1.1 U	57 U	1.3 U	1 U
2-Butanone	400	10000	10000	200000	0.29 U	0.0054 U	1.2 U	0.92 U	2.7 U	0.0057 U	0.0057 U	0.0055 U	0.0061 U	0.0057 U	0.29 U	0.0066 U	0.005 U
2-Hexanone	4.4 820	400 10000	460 10000	1400 53000	0.29 U 0.29 U	0.0054 U 0.0054 U	1.2 U 1.2 U	0.92 U 0.92 U	2.7 U 2.7 U	0.0057 U 0.0057 U	0.0057 U 0.0057 U	0.0055 U 0.0055 U	0.0061 U 0.0061 U	0.0057 U 0.0057 U	0.29 U 0.29 U	0.0066 U 0.0066 U	0.005 U 0.005 U
4-Methyl-2-Pentanone Acetone	9200	10,000	10,000	630000	0.29 U 1.2 U	0.0054 U 0.022 U	1.2 U	0.92 U 3.7 U	2.7 U	0.0057 U	0.0057 U 0.023 U	0.0055 U 0.022 U	0.0061 U 0.024 U	0.0057 U 0.011 J	0.29 U 1.1 U *	0.0066 U	0.005 U
Acrylonitrile	0.37	33	38	1.2	5.8 U	0.11 U	25 U	18 U	54 U	0.11 U	0.11 U	0.11 U	0.12 U	0.11 U	5.7 U	0.13 U	0.1 U
Benzene	0.5	290	330	5.4	0.29 U	0.0054 U	1.2 U	0.92 U	2.7 U	0.0057 U	0.0057 U	0.0055 U	0.0061 U	0.0057 U	0.29 U	0.0066 U	0.005 U
Bromochloromethane	9	10000	10000	680	0.29 U	0.0054 U	1.2 U	0.92 U	2.7 U	0.0057 U	0.0057 U	0.0055 U	0.0061 U	0.0057 U	0.29 U	0.0066 U	0.005 U
Bromodichloromethane	8	60	69	1.4	0.29 U	0.0054 U	1.2 U	0.92 U	2.7 U	0.0057 U	0.0057 U	0.0055 U	0.0061 U	0.0057 U	0.29 U	0.0066 U	0.005 U
Bromoform Bromomethane	8	2000 400	2300 460	220 32	0.29 U 0.29 U	0.0054 U 0.0054 U	1.2 U 1.2 U	0.92 U 0.92 U	2.7 U 2.7 U	0.0057 U 0.0057 U	0.0057 U 0.0057 U	0.0055 U 0.0055 U	0.0061 U 0.0061 U	0.0057 U 0.0057 U	0.29 U 0.29 U	0.0066 U 0.0066 U	0.005 U 0.005 U
Carbon Disulfide	620	10000	10000	3700	0.29 U	0.0054 U	1.2 U	0.92 U	2.7 U	0.0037 U	0.0057 U	0.0055 U	0.0061 U	0.0057 U	0.29 U	0.0066 U	0.005 U
Carbon Tetrachloride	0.5	150	170	3	0.29 U	0.0054 U	1.2 U	0.92 U	2.7 U	0.0057 U	0.0057 U	0.0055 U	0.0061 U	0.0057 U	0.29 U	0.0066 U	0.005 U
Chlorobenzene	10	4000	4600	1400	0.29 U	0.0054 U	1.2 U	0.92 U	2.7 U	0.0057 U	0.0057 U	0.0055 U	0.0061 U	0.0057 U	0.29 U	0.0066 U	0.005 U
Chlorodibromomethane	8	82	95	3.3	0.29 U	0.0054 U	1.2 U	0.92 U	2.7 U	0.0057 U	0.0057 U	0.0055 U	0.0061 U	0.0057 U	0.29 U	0.0066 U	0.005 U
Chloroethane	90	10000	10000	61000	0.29 U 0.29 U	0.0054 U 0.0054 U	1.2 U 1.2 U	0.92 U 0.92 U	2.7 U 2.7 U	0.0057 U 0.0057 U	0.0057 U 0.0057 U	0.0055 U 0.0055 U	0.0061 U 0.0061 U	0.0057 U 0.0057 U	0.29 U 0.29 U	0.0066 U 0.0066 U	0.005 U 0.005 U
Chloroform Chloromethane	3	97 1200	110 1400	1.5 500	0.29 U 0.29 U	0.0054 U 0.0054 U	1.2 U 1.2 U	0.92 U	2.7 U 2.7 U	0.0057 U 0.0057 U	0.0057 U 0.0057 U	0.0055 U 0.0055 U	0.0061 U 0.0061 U	0.0057 U 0.0057 U	0.29 U 0.29 U	0.0066 U	0.005 U
cis-1,2-Dichloroethene	7	10000	10000	2000	4.1	0.0054 0	24	18	63	0.0057 0	0.0037 U	0.0055 U	0.0061 0	0.0057 0	0.29 U	0.006 U	0.005 U
cis-1,3-Dichloropropene	2.6	560	640	8.3	0.29 U	0.0054 U	1.2 U	0.92 U	2.7 U	0.0057 U	0.0057 U	0.0055 U	0.0061 U	0.0057 U	0.29 U	0.0066 U	0.005 U
Ethylbenzene	70	10000	10000	27	0.29 U	0.0054 U	1.2 U	0.92 U	2.7 U	0.0057 U	0.0057 U	0.0055 U	0.0061 U	0.0057 U	0.29 U	0.0066 U	0.005 U
Methyl tert-butyl ether	2	8600	9900	220	0.29 U	0.0054 U	1.2 U	0.92 U	2.7 U	0.0057 U	0.0057 U	0.0055 U	0.0061 U	0.0057 U	0.29 U	0.0066 U	0.005 U
Methylene chloride	0.5 24	4700	5400	960	0.29 U 0.29 U	0.0013 J 0.0054 U	0.65 J 1.2 U	0.92 U	2.7 U	0.0057 U	0.0057 U 0.0057 U	0.0055 U	0.0061 U 0.0061 U	0.0057 U 0.0057 U	0.12 J	0.0066 U 0.0066 U	0.005 U 0.005 U
Styrene Tetrachloroethene	0.5	10000 1500	10000 4400	36000 110	0.29 U 1.3	0.0054 U 0.0019 J	1.2 U 0.23 J	0.92 U 0.58 J	2.7 U 2.7 U	0.0057 U 0.046	0.0057 U 0.0013 J	0.0055 U 0.0031 J	0.0061 U 0.0057 J	0.0057 U 0.0057 U	0.29 U 0.32	0.0066 U	0.005 0
Toluene	100	10000	10000	45000	0.29 U	0.0019 J	1.2 U	0.92 U	2.7 U	0.00083 J	0.0013 J	0.0051 J	0.0057 J	0.0057 U	0.32 0.29 U	0.0066 U	0.005 U
trans-1,2-Dichloroethene	10	4800	5500	690	0.46	0.032	3.5	0.92 U	7.9	0.025	0.0057 U	0.0055 U	0.0028 J	0.015	0.29 U	0.0066 U	0.005 U
trans-1,3-Dichloropropene	2.6	560	640	8.3	0.29 U	0.0054 U	1.2 U	0.92 U	2.7 U	0.0057 U	0.0057 U	0.0055 U	0.0061 U	0.0057 U	0.29 U	0.0066 U	0.005 U
Trichloroethene	0.5	1300	1500	6.4	1.2	0.017	4.6	6.6	2.1 J	0.016	0.0057 U	0.0017 J	0.014	0.0057 U	0.29 U	0.001 J	0.0026 J
Vinyl Chloride	0.2	110	580	1.7	1.3	0.0054 U	0.33 J	0.76 J	1.5 J	0.015	0.0057 U	0.0055 U	0.0061 U	0.56	0.29 U	0.0066 U	0.005 U
Xylenes (Total)	1000	8000	9100	2700	0.87 U	0.016 U	3.7 U	2.7 U	8.1 U	0.017 U	0.017 U	0.017 U	0.018 U	0.017 U	0.86 U	0.02 U	0.015 U

	MSC	MSC		504 DSI		B41RAA16-CS-008	D44D4446 06 000						B41RAA16-CS-013		B41RAA17-CS-001	B41RAA2-CS-001	B41RAA3-CS-001
Location/ID Depth (ft.)	Soil to GW	Direct Contact	MSC Direct Contact	EPA RSL Industrial	4 - 5	4.5 - 5	4.5 - 5	4.5 - 5	4.5 - 5	6 - 7	6 - 7	6 - 7	6 - 7	6 - 7	11.5 - 12.5	9 - 10	2 - 3
Sample Date	Used Aquifer	0 - 2 ft	2 - 15 ft	Soil	9/28/2011	9/28/2011	9/28/2011	9/28/2011	9/28/2011	10/19/2011	10/19/2011	10/19/2011	10/19/2011	10/19/2011	10/5/2011	10/17/2011	10/12/2011
Parameter	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)													
Semi Volatile Organic Compound			ı		1		1					I	ı		I	1	I
1,2,4-Trichlorobenzene 1,2-Dichlorobenzene	27 60	10000 10000	10000 10000	99 9800	0.42 U 0.42 U	0.42 U 0.42 U	0.4 U 0.4 U	0.42 U 0.42 U	0.41 U 0.41 U	0.42 U 0.42 U	0.41 U 0.41 U	0.42 U 0.42 U	0.42 U 0.42 U	0.41 U 0.41 U	0.41 U 0.41 U	0.38 U 0.38 U	0.37 U 0.37 U
1,3-Dichlorobenzene	61	8400	10000	9800 NA	0.42 U	0.42 U	0.4 U	0.42 U	0.41 U	0.42 U	0.41 U	0.42 U	0.42 U	0.41 U	0.41 U	0.38 U	0.37 U
1.4-Dichlorobenzene	10	200	230	12	0.42 U	0.42 U	0.4 U	0.42 U	0.41 U	0.42 U	0.41 U	0.42 U	0.42 U	0.41 U	0.41 U	0.38 U	0.37 U
2,4,5-Trichlorophenol	6100	190000	190000	62000	0.42 U	0.42 U	0.4 U	0.42 U	0.41 U	0.42 U	0.41 U	0.42 U	0.42 U	0.41 U	0.41 U	0.38 U	0.37 U
2,4,6-Trichlorophenol	29	2800	190000	160	0.42 U	0.42 U	0.4 U	0.42 U	0.41 U	0.42 U	0.41 U	0.42 U	0.42 U	0.41 U	0.41 U	0.38 U	0.37 U
2,4-Dichlorophenol	2	8400	190000	1800	0.086 U	0.086 U	0.082 U	0.085 U	0.084 U	0.085 U	0.083 U	0.085 U	0.084 U	0.083 U	0.084 U	0.076 U	0.076 U
2,4-Dimethylphenol	200	10000	10000	12000	0.42 U	0.42 U	0.4 U	0.42 U	0.41 U	0.42 U	0.41 U	0.42 U	0.42 U	0.41 U	0.41 U	0.38 U	0.37 U
2,4-Dinitrophenol 2,4-Dinitrotoluene	0.84	5600 260	190000 190000	1200 5.5	2.2 U 0.42 U	2.2 U 0.42 U	2.1 U 0.4 U	2.2 U 0.42 U	2.1 U 0.41 U	2.1 U 0.42 U	2.1 U 0.41 U	2.2 U 0.42 U	2.1 U 0.42 U	2.1 U 0.41 U	2.1 U 0.41 U	1.9 U 0.38 U	1.9 U 0.37 U
2,6-Dinitrotoluene	10	2800	190000	620	0.42 U	0.42 U	0.4 U	0.42 U	0.41 U	0.42 U	0.41 U	0.42 U	0.42 U	0.41 U	0.41 U	0.38 U	0.37 U
2-Chloronaphthalene	18000	190000	190000	82000	0.086 U	0.086 U	0.082 U	0.085 U	0.084 U	0.085 U	0.083 U	0.085 U	0.084 U	0.083 U	0.084 U	0.076 U	0.076 U
2-Chlorophenol	4.4	10000	10000	5100	0.42 U	0.42 U	0.4 U	0.42 U	0.41 U	0.42 U	0.41 U	0.42 U	0.42 U	0.41 U	0.41 U	0.38 U	0.37 U
2-Methylnaphthalene	1600	11000	190000	4100	0.086 U	0.086 U	0.033 J	0.045 J	0.045 J	0.072 J	0.083 U	0.085 U	0.23	0.11	0.084 U	0.076 U	0.076 U
2-Methylphenol	510	140000	190000	31000	0.42 U	0.42 U	0.4 U	0.42 U	0.41 U	0.42 U	0.41 U	0.42 U	0.42 U	0.41 U	0.41 U	0.38 U	0.37 U
2-Nitroaniline	31	8400	190000	6000	2.2 U	2.2 U	2.1 U	2.2 U	2.1 U	2.1 U	2.1 U	2.2 U	2.1 U 0.42 U	2.1 U 0.41 U	2.1 U	1.9 U	1.9 U 0.37 U
2-Nitrophenol 3,3'-Dichlorobenzidine	82 32	22000 180	190000 190000	NA 3.8	0.42 U 0.42 U	0.42 U 0.42 U	0.4 U 0.4 U	0.42 U 0.42 U	0.41 U 0.41 U	0.42 U 0.42 U	0.41 U 0.41 U	0.42 U 0.42 U	0.42 U 0.42 U	0.41 U 0.41 U	0.41 U 0.41 U	0.38 U 0.38 U	0.37 U
3/4-Methylphenol	12	10,000	10,000	31,000	0.42 U *	0.42 U *	0.4 U *	0.42 U *	0.41 U *	0.42 U *	0.41 U *	0.42 U *	0.42 U *	0.41 U *	0.41 U	0.38 U	0.37 U
3-Nitroaniline	3.1	840	190000	NA NA	2.2 U	2.2 U	2.1 U	2.2 U	2.1 U	2.1 U	2.1 U	2.2 U	2.1 U	2.1 U	2.1 U	1.9 U	1.9 U
4,6-Dinitro-2-Methylphenol	1	280	190000	49	2.2 U	2.2 U	2.1 U	2.2 U	2.1 U	2.1 U	2.1 U	2.2 U	2.1 U	2.1 U	2.1 U	1.9 U	1.9 U
4-Bromophenyl phenyl ether	NA	NA	NA	NA	0.42 U	0.42 U	0.4 U	0.42 U	0.41 U	0.42 U	0.41 U	0.42 U	0.42 U	0.41 U	0.41 U	0.38 U	0.37 U
4-Chloro-3-Methyl-Phenol	110	14000	190000	62000	0.42 U	0.42 U	0.4 U	0.42 U	0.41 U	0.42 U	0.41 U	0.42 U	0.42 U	0.41 U	0.41 U	0.38 U	0.37 U
4-Chloroaniline 4-Chlorodiphenyl Ether	1.6 NA	400 NA	190000 NA	8.6 NA	0.42 U 0.42 U	0.42 U 0.42 U	0.4 U 0.4 U	0.42 U 0.42 U	0.41 U 0.41 U	0.42 U 0.42 U	0.41 U 0.41 U	0.42 U 0.42 U	0.42 U 0.42 U	0.41 U 0.41 U	0.41 U 0.41 U	0.38 U 0.38 U	0.37 U 0.37 U
4-Nitroaniline	13	4000	190000	86	2.2 U	2.2 U	2.1 U	2.2 U	2.1 U	2.1 U	2.1 U	2.2 U	2.1 U	2.1 U	2.1 U	1.9 U	1.9 U
4-Nitrophenol	6	22000	190000	NA	2.2 U	2.2 U	2.1 U	2.2 U	2.1 U	2.1 U	2.1 U	2.2 U	2.1 U	2.1 U	2.1 U	1.9 U	1.9 U
Acenaphthene	4700	170,000	190000	33000	0.086 U	0.086 U	0.082 U	0.085 U	0.084 U	0.019 J	0.083 U	0.085 U	0.015 J	0.039 J	0.084 U	0.076 U	0.076 U
Acenaphthylene	6900	170,000	190000	33000	0.086 U	0.086 U	0.082 U	0.085 U	0.084 U	0.085 U	0.083 U	0.085 U	0.013 J	0.083 U	0.084 U	0.076 U	0.076 U
Anthracene	350	190,000	190000	170000	0.086 U	0.086 U	0.082 U	0.085 U	0.084 U	0.025 J	0.083 U	0.085 U	0.019 J	0.014 J	0.084 U	0.076 U	0.076 U
Benzo (A) Anthracene Benzo (a) Pyrene	320 46	110 11	190000 190000	2.1 0.21	0.086 U 0.086 U	0.012 J 0.0088 J	0.082 U 0.082 U	0.014 J 0.085 U	0.016 J 0.084 U	0.038 J 0.029 J	0.083 U 0.083 U	0.085 U 0.085 U	0.05 J 0.057 J	0.013 J 0.024 J	0.084 U 0.084 U	0.076 U 0.076 U	0.076 U 0.076 U
Benzo (b) Fluoranthene	170	110	190000	2.1	0.086 U	0.015 J	0.082 U	0.021 J	0.084 U	0.045 J	0.083 U	0.085 U	0.086	0.024 J	0.084 U	0.076 U	0.076 U
Benzo (g,h,i) Perylene	180	170,000	190000	NA	0.086 U	0.086 U	0.082 U	0.085 U	0.084 U	0.085 U	0.083 U	0.085 U	0.068 J	0.083 U	0.084 U	0.076 U	0.076 U
Benzo (k) Fluoranthene	610	1,100	190000	21	0.086 U	0.086 U	0.082 U	0.085 U	0.084 U	0.085 U	0.083 U	0.085 U	0.084 U	0.083 U	0.084 U	0.076 U	0.076 U
Bis(2-Chloroethoxy) Methane	31	8,400	10,000	1800	0.42 U	0.42 U	0.4 U	0.42 U	0.41 U	0.42 U	0.41 U	0.42 U	0.42 U	0.41 U	0.41 U	0.38 U	0.37 U
Bis(2-Chloroethyl) Ether	0.076	6.7	7.7	1	0.086 U	0.086 U	0.082 U	0.085 U	0.084 U	0.085 U	0.083 U	0.085 U	0.084 U	0.083 U	0.084 U	0.076 U	0.076 U
Bis(2-Chloroisopropyl) Ether Bis(2-Ethylhexyl) Phthalate	30 130	220 5,700	250 10,000	22 120	0.086 U 0.86 U	0.086 U	0.082 U 0.076 J	0.085 U 0.85 U	0.084 U 0.84 U	0.085 U 0.21 J	0.083 U 0.83 U	0.085 U 0.85 U	0.084 U 0.26 J	0.083 U 0.83 U	0.084 U * 0.84 U	0.076 U 0.76 U	0.076 U 0.76 U
Butylbenzylphthalate	10000	10000	10000	910	0.42 U	0.42 U	0.4 U	0.42 U	0.41 U	0.42 U	0.41 U	0.42 U	0.42 U	0.41 U	0.41 U	0.38 U	0.37 U
Carbazole	83	4000	190000	NA NA	0.086 U	0.086 U	0.082 U	0.085 U	0.032 J	0.085 U	0.083 U	0.085 U	0.014 J	0.083 U	0.084 U	0.076 U	0.076 U
Chrysene	230	11000	190000	210	0.086 U	0.012 J	0.082 U	0.019 J	0.021 J	0.047 J	0.083 U	0.085 U	0.064 J	0.035 J	0.084 U	0.076 U	0.076 U
Dibenzo (a,h) Anthracene	160	11	190000	0.21	0.086 U	0.086 U	0.082 U	0.085 U	0.084 U	0.085 U	0.083 U	0.085 U	0.17	0.083 U	0.084 U	0.076 U	0.076 U
Dibenzofuran	260	2800	190000	1000	0.42 U	0.42 U	0.4 U	0.42 U	0.41 U	0.42 U	0.41 U	0.42 U	0.061 J	0.042 J	0.41 U	0.38 U	0.37 U
Diethylphthalate Dimethylphthalate	8200 100	10000	10000	490000 NA	0.42 U 0.42 U	0.42 U 0.42 U	0.4 U 0.4 U	0.42 U 0.42 U	0.41 U 0.41 U	0.42 U 0.42 U	0.41 U 0.41 U	0.42 U 0.42 U	0.42 U 0.42 U	0.41 U 0.41 U	0.41 U 0.41 U	0.38 U 0.38 U	0.37 U 0.37 U
Di-n-Butylphthalate	4100	10000	10000	62000	0.42 U	0.42 U	0.4 U	0.42 U	0.41 U	0.42 U 0.054 J	0.41 U	0.42 U	0.42 U 0.066 J	0.41 U	0.41 U	0.38 U	0.37 U
Di-n-octylphthalate	10000	10000	10000	NA	0.42 U	0.42 U	0.4 U	0.42 U	0.41 U	0.42 U	0.41 U	0.42 U	0.42 U	0.41 U	0.41 U	0.38 U	0.37 U
Fluoranthene	3200	110000	190000	22000	0.017 J	0.018 J	0.022 J	0.024 J	0.027 J	0.1	0.083 U	0.085 U	0.063 J	0.053 J	0.084 U	0.076 U	0.076 U
Fluorene	3800	110000	190000	22000	0.086 U	0.086 U	0.082 U	0.085 U	0.084 U	0.013 J	0.083 U	0.085 U	0.084 U	0.031 J	0.084 U	0.076 U	0.076 U
Hexachlorobenzene	0.96	50	190000	1.1	0.086 U	0.086 U	0.082 U	0.085 U	0.084 U	0.085 U	0.083 U	0.085 U	0.084 U	0.083 U	0.084 U	0.076 U	0.076 U
Hexachlorobutadiene	39 91	1000 10000	10000 10000	22 3700	0.086 U 0.42 U	0.086 U 0.42 U	0.082 U 0.4 U	0.085 U 0.42 U	0.084 U 0.41 U	0.085 U 0.42 U	0.083 U 0.41 U	0.085 U 0.42 U	0.084 U 0.42 U	0.083 U 0.41 U	0.084 U 0.41 U	0.076 U 0.38 U	0.076 U 0.37 U
Hexachlorocyclopentadiene Hexachloroethane	0.56	550	640	43	0.42 U	0.42 U	0.4 U	0.42 U	0.41 U	0.42 U	0.41 U 0.41 U	0.42 U	0.42 U	0.41 U	0.41 U	0.38 U	0.37 U
Indeno (1,2,3-cd) Pyrene	28000	110	190000	2.1	0.086 U	0.086 U	0.082 U	0.085 U	0.084 U	0.42 0	0.083 U	0.42 U	0.42 0	0.083 U	0.41 U	0.076 U	0.076 U
Isophorone	10	10000	10000	1800	0.42 U	0.42 U	0.4 U	0.42 U	0.41 U	0.42 U	0.41 U	0.42 U	0.42 U	0.41 U	0.41 U	0.38 U	0.37 U
Naphthalene	25	56000	190000	18	0.086 U	0.086 U	0.02 J	0.027 J	0.055 J	0.053 J	0.083 U	0.085 U	0.14	0.1	0.084 U	0.076 U	0.076 U
Nitrobenzene	20	5600	10000	24	0.86 U	0.86 U	0.82 U	0.85 U	0.84 U	0.85 U	0.83 U	0.85 U	0.84 U	0.83 U	0.84 U	0.76 U	0.76 U
N-Nitrosodi-N-Propylamine	0.037	11	10000	0.25	0.086 U	0.086 U	0.082 U	0.085 U	0.084 U	0.085 U	0.083 U	0.085 U	0.084 U	0.083 U	0.084 U	0.076 U	0.076 U
N-Nitrosodiphenylamine Pentachlorophenol	83 5	16000 660	190000 190000	350 2.7	0.42 U 0.42 U	0.42 U 0.42 U	0.4 U 0.4 U	0.42 U 0.42 U	0.41 U 0.41 U	0.42 U 0.42 U	0.41 U 0.41 U	0.42 U 0.42 U	0.42 U 0.42 U	0.41 U 0.41 U	0.41 U 0.41 U	0.38 U 0.38 U	0.37 U 0.37 U
Phenanthrene	10000	190000	190000	NA	0.42 U	0.42 U	0.4 U	0.42 U	0.41 U	0.42 U	0.41 U	0.42 U	0.42 0	0.41 U	0.41 U	0.38 U	0.37 U
	200	190000	190000	180000	0.086 U	0.086 U	0.082 U	0.085 U	0.043 J	0.085 U	0.083 U	0.085 U	0.084 U	0.083 U	0.084 U	0.076 U	0.076 U
Phenol	200								U.U04 U								

Location/ID	MSC	MSC	MSC	EPA RSL	D41D442 CC 002	D41D444 CC 001	114/TD020 CC 001	IWTP030-CS-002	U4/T0020 CC 002	IWTP030-CS-004	BA/TD021 CC 001	IWTP031-CS-002	IWTP031-CS-003	IWTP031-CS-004	IWTP031-CS-005	DATE: 000	IWTP032-CS-001	IIALEDO33 CC 003
Depth (ft.)	Soil to GW	Direct Contact			2 - 3	9 - 10	2 - 3	2 - 3	2 - 3	2 - 3	11 - 12	11 - 12	11 - 12	11 - 12	11 - 12	11 - 12	6 - 7	6 - 7
Sample Date	Used Aquifer	0 - 2 ft	2 - 15 ft	Soil	10/12/2011	10/17/2011	10/13/2011	10/13/2011	10/13/2011	10/13/2011	10/5/2011	10/5/2011	10/5/2011	10/5/2011	10/5/2011	10/5/2011	10/13/2011	10/13/2011
Parameter	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)														
Cyanide, Free Cyanide, Free	200	56000	190000	610	0.047 U	0.046 U	0.046 U	0.048 U	0.049 U	0.049 U	0.049 U	0.049 U	0.05 U	0.05 U	0.051 U	0.05 U	0.05 U	0.051 U
Cyanide, Total	200	30000	130000	010	0.047 0	0.040 0	0.040 0	0.040 0	0.043 0	0.043 0	0.045 0	0.045 0	0.05 0	0.03 0	0.031 0	0.05 0	0.05 0	0.031 0
Cyanide, Total	NA	NA	NA	NA	0.15 J	0.55 U	0.25 J	0.52 J	3.5	3.4	0.13 J	0.47 J	0.38 J	0.15 J	0.39 J	0.63 U	0.21 J	0.24 J
Hexavalent Chromium	400	0400	20000		0.25				4.5	43	0.22.1	0.50	0.5.11	0.55	0.54	0.22.1	4.5	4.5
Hexavalent Chromium Mercury	190	8400	20000	5.6	0.25 J	2.5	1.1	1.3	1.2	12	0.22 J	0.69	0.5 U	0.56	0.51	0.23 J	1.5	1.5
Mercury	10	450	190000	43	0.032 J	0.025 J	0.017 J	0.065	0.083	0.056	0.014 J	0.018 J	0.03 J	0.02 J	0.035 J	0.043	0.068	0.045
Metal																		
Antimony Arsenic	27 29	1,100 53	190,000 190000	410 1.6	0.024 J B 0.82	0.11 J B 5.2	0.11 J 9.1	0.085 J 4	0.11 J 7.2	0.1 J 5.5	0.11 J B 4.1	0.19 J B 2.7	0.31 B 6.6	0.093 J B 3.1	0.16 J B 4.7	0.2 J B 3.8	0.068 J 3.3	0.067 J 3.1
Barium	8200	190000	190000	190000	65 B	66	85 B	77 B	84 B	50 B	40 B	93 B	23 B	58 B	4.7 47 B	39 B	72 B	64 B
Beryllium	320	5600	190000	2000	0.4	0.29	0.73	0.68	0.96	0.44	0.66	0.5	0.86	0.3	0.59	0.88	0.7	0.7
Cadmium	38	1400	190000	800	0.1 J B	3.8	0.6	0.61	6.1	7.6	0.3	1	0.32	0.74	3.1	1.7	0.18	0.23
Chromium (Total) Copper	190,000 43000	190,000	190,000 190000	1,500,000 41,000	9.9 B 2.9 B	75 B 13	16 B 11 B	18 B 11 B	39 B	150 B 12 B	17 B	18 B	14 B 19	17 B 4.9	32 B 5.8	18 B 11	24 B 11 B	23 B 14 B
Lead	450	10000	190000	800	8.4	10 B	8.7 B	11 B	15 B	8.7 B	15	13	17	9.1	11	22	12 B	12 B
Nickel	650	56000	190000	20000	3.9	49	6.7	9.3	56	130	8.3 B	5.1 B	14 B	5 B	9.7 B	12 B	9.8	9.2
Selenium Silver	26 84	14000 14000	190000 190000	5100 5100	0.21 J 0.018 J	0.76 0.04 J	0.57 0.023 J	0.42 J 0.034 J	0.83 0.068 J	0.26 J 0.059 J	0.12 J 0.02 J	0.17 J 0.027 J	0.28 J 0.026 J	0.18 J 0.021 J	0.22 J 0.028 J	0.12 J 0.046 J	0.4 J 0.038 J	0.43 J 0.036 J
Thallium	14	200	190000	10	0.018 J	0.04 J 0.06 J	0.023 J	0.034 J 0.17	0.068 J	0.059 J 0.081 J	0.02 J 0.092 J B	0.027 J 0.11 J B	0.026 J 0.069 J B	0.021 J 0.14 B	0.028 J 0.11 J B	0.046 J 0.11 J B	0.038 J	0.036 J 0.12 J
Vanadium	72000	20000	190000	5,200	13 B	31	22 B	24 B	26 B	19 B	22 B	18 B	12 B	20 B	25 B	20 B	28 B	33 B
Zinc	12000	190000	190000	310000	52 B	38	24 B	30 B	100 B	43 B	14 B	16 B	26 B	9.3 B	18 B	26 B	22 B	22 B
Volatile Organic Compound 1,1,1,2-Tetrachloroethane	18	300	340	9.3	0.0047 U	0.0064 U	0.0051 U	0.0049 U	0.0049 U	0.0056 U	7.5 U	0.38 U	0.0057 U	140 U	1.4 U	14 U	0.0052 U	0.0059 U
1,1,1-Trichloroethane	20	10000	10000	38000	0.0047 U	0.0064 U	0.0051 U	0.0049 U	0.0049 U	0.0056 U	7.5 U	0.38 U	0.0057 U	140 U	1.4 U	14 U	0.0052 U	0.0059 U
1,1,2,2-Tetrachloroethane	0.43	38	44	2.8	0.0047 U	0.0064 U	0.0051 U	0.0049 U	0.0049 U	0.0056 U	7.5 U	0.38 U	0.0057 U	140 U	1.4 U	14 U	0.0052 U	0.0059 U
1,1,2-Trichloroethane	0.5	140	160	5.3	0.0047 U	0.0064 U	0.0051 U	0.0049 U	0.0049 U	0.0056 U	7.5 U	0.38 U	0.0057 U	140 U	1.4 U	14 U	0.0052 U	0.0059 U
1,1-Dichloroethane 1,1-Dichloroethene	16 0.7	1400 10000	1600 10000	17 1100	0.0047 U 0.0047 U	0.0064 U 0.0064 U	0.0051 U 0.0051 U	0.0049 U 0.0049 U	0.0049 U 0.0049 U	0.0056 U 0.0056 U	7.5 U 7.5 U	0.38 U 0.38 U	0.0057 U 0.0057 U	140 U 140 U	1.4 U 1.4 U	14 U	0.0052 U 0.0052 U	0.0059 U 0.0059 U
1,2-Dibromoethane	0.005	3.7	4.3	0.17	0.0047 U	0.0064 U	0.0051 U	0.0049 U	0.0049 U	0.0056 U	7.5 U	0.38 U	0.0057 U	140 U	1.4 U	14 U	0.0052 U	0.0059 U
1,2-Dichloroethane	0.5	86	98	2.2	0.0047 U	0.0064 U	0.0051 U	0.0049 U	0.0049 U	0.0056 U	7.5 U	0.38 U	0.0057 U	140 U	1.4 U	14 U	0.0052 U	0.0059 U
1,2-Dichloropropane 1.4-Dioxane	0.5 3.2	220 290	260 330	4.7 17	0.0047 U 0.95 U	0.0064 U 1.3 U	0.0051 U 1 U	0.0049 U 0.97 U	0.0049 U 0.99 U	0.0056 U 1.1 U	7.5 U 1500 U	0.38 U 76 U	0.0057 U 1.1 U	140 U 28000 U	1.4 U 280 U	14 U 2700 U	0.0052 U 1 U	0.0059 U 1.2 U
2-Butanone	400	10000	10000	200000	0.95 U 0.0047 U	0.0064 U	0.0051 U	0.97 U 0.0049 U	0.99 U 0.0049 U	0.0056 U	7.5 U	0.38 U	0.0057 U	28000 U	1.4 U	14 U	0.0052 U	0.0059 U
2-Hexanone	4.4	400	460	1400	0.0047 U	0.0064 U	0.0051 U	0.0049 U	0.0049 U	0.0056 U	7.5 U	0.38 U	0.0057 U	140 U	1.4 U	14 U	0.0052 U	0.0059 U
4-Methyl-2-Pentanone	820	10000	10000	53000	0.0047 U	0.0064 U	0.0051 U	0.0049 U	0.0049 U	0.0056 U	7.5 U	0.38 U	0.0057 U	140 U	1.4 U	14 U	0.0052 U	0.0059 U
Acetone Acrylonitrile	9200 0.37	10,000	10,000	630000 1.2	0.019 U 0.095 U	0.011 J 0.13 U	0.02 U 0.1 U	0.019 U 0.097 U	0.02 U 0.099 U	0.023 U 0.11 U	30 U * 150 U	1.5 U * 7.6 U	0.014 J 0.11 U	550 U * 2800 U	5.6 U * 28 U	54 U * 270 U	0.021 U 0.1 U	0.023 U 0.12 U
Benzene	0.5	290	330	5.4	0.0047 U	0.0064 U	0.00068 J	0.0049 U	0.0049 U	0.0056 U	7.5 U	0.38 U	0.0057 U	140 U	1.4 U	14 U	0.0052 U	0.0059 U
Bromochloromethane	9	10000	10000	680	0.0047 U	0.0064 U	0.0051 U	0.0049 U	0.0049 U	0.0056 U	7.5 U	0.38 U	0.0057 U	140 U	1.4 U	14 U	0.0052 U	0.0059 U
Bromodichloromethane Bromoform	8	60 2000	69 2300	1.4 220	0.0047 U 0.0047 U	0.0064 U 0.0064 U	0.0051 U 0.0051 U	0.0049 U 0.0049 U	0.0049 U 0.0049 U	0.0056 U 0.0056 U	7.5 U 7.5 U	0.38 U 0.38 U	0.0057 U 0.0057 U	140 U	1.4 U 1.4 U	14 U	0.0052 U 0.0052 U	0.0059 U 0.0059 U
Bromomethane	1	400	460	32	0.0047 U	0.0064 U	0.0051 U	0.0049 U	0.0049 U	0.0056 U	7.5 U	0.38 U	0.0057 U	140 U	1.4 U	14 U	0.0052 U	0.0059 U
Carbon Disulfide	620	10000	10000	3700	0.0047 U	0.0064 U	0.0051 U	0.0049 U	0.0049 U	0.0056 U	7.5 U	0.38 U	0.0057 U	140 U	1.4 U	14 U	0.0052 U	0.0059 U
Carbon Tetrachloride	0.5	150	170	3	0.0047 U	0.0064 U	0.0051 U	0.0049 U	0.0049 U	0.0056 U	7.5 U	0.38 U	0.0057 U	140 U	1.4 U	14 U	0.0052 U	0.0059 U
Chlorobenzene Chlorodibromomethane	10	4000 82	4600 95	1400 3.3	0.0047 U 0.0047 U	0.0064 U 0.0064 U	0.0051 U 0.0051 U	0.0049 U 0.0049 U	0.0049 U 0.0049 U	0.0056 U 0.0056 U	7.5 U 7.5 U	0.38 U 0.38 U	0.0057 U 0.0057 U	140 U	1.4 U 1.4 U	14 U	0.0052 U 0.0052 U	0.0059 U 0.0059 U
Chloroethane	90	10000	10000	61000	0.0047 U	0.0064 U	0.0051 U	0.0049 U	0.0049 U	0.0056 U	7.5 U	0.38 U	0.0057 U	140 U	1.4 U	14 U	0.0052 U	0.0059 U
Chloroform	8	97	110	1.5	0.0047 U	0.0064 U	0.0011 J	0.0007 J	0.00081 J	0.00067 J	7.5 U	0.38 U	0.0057 U	140 U	1.4 U	14 U	0.00073 J	0.00069 J
Chloromethane	3	1200	1400	500	0.0047 U	0.0064 U	0.0051 U	0.0049 U	0.0049 U	0.0056 U	7.5 U	0.38 U	0.0057 U	140 U	1.4 U	14 U	0.0052 U	0.0059 U
cis-1,2-Dichloroethene cis-1,3-Dichloropropene	2.6	10000 560	10000	2000 8.3	0.0021 J 0.0047 U	0.0025 J 0.0064 U	0.0051 U 0.0051 U	0.0049 U 0.0049 U	0.0049 U 0.0049 U	0.0056 U 0.0056 U	7.5 U 7.5 U	0.53 0.38 U	0.026 0.0057 U	28 J 140 U	13 1.4 U	14 U	0.029 0.0052 U	0.016 0.0059 U
Ethylbenzene	70	10000	10000	27	0.0047 U	0.0064 U	0.0051 U	0.0049 U	0.0049 U	0.0056 U	7.5 U	0.38 U	0.0057 U	140 U	1.4 U	2.9 J	0.0052 U	0.0059 U
Methyl tert-butyl ether	2	8600	9900	220	0.0047 U	0.0064 U	0.0051 U	0.0049 U	0.0049 U	0.0056 U	7.5 U	0.38 U	0.0057 U	140 U	1.4 U	14 U	0.0052 U	0.0059 U
Methylene chloride	0.5	4700	5400	960	0.0047 U	0.0064 U	0.0051 U	0.0049 U	0.0049 U	0.0056 U	7.5 U	0.17 J	0.0057 U	140 U	1.4 U	14 U	0.0052 U	0.0012 J
Styrene Tetrachloroethene	0.5	10000 1500	10000 4400	36000 110	0.0047 U 0.012	0.0064 U 0.0064 U	0.0051 U 0.00076 J	0.0049 U 0.0013 J	0.0049 U 0.0011 J	0.0056 U 0.0056 U	7.5 U	0.38 U	0.0057 U 0.00085 J	140 U 2100	1.4 U 25	14 U 310	0.0052 U 0.026	0.0059 U 0.016
Toluene	100	10000	10000	45000	0.0047 U	0.0064 U	0.00078 J	0.0013 J	0.00111 0.0049 U	0.0056 U	7.5 U	0.38 U	0.0057 U	140 U	1.4 U	14 U	0.0052 U	0.0059 U
trans-1,2-Dichloroethene	10	4800	5500	690	0.0047 U	0.0064 U	0.0051 U	0.0049 U	0.0049 U	0.0056 U	7.5 U	0.38 U	0.0057 U	140 U	1.4 U	14 U	0.0052 U	0.0059 U
trans-1,3-Dichloropropene	2.6	560	640	8.3	0.0047 U	0.0064 U	0.0051 U	0.0049 U	0.0049 U	0.0056 U	7.5 U	0.38 U	0.0057 U	140 U	1.4 U	14 U	0.0052 U	0.0059 U
Trichloroethene Vinyl Chloride	0.5	1300 110	1500 580	6.4 1.7	0.0082 0.0047 U	0.0064 U 0.0064 U	0.00073 J 0.0051 U	0.00073 J 0.0049 U	0.0049 U 0.0049 U	0.0011 J 0.0056 U	3.7 J 7.5 U	0.38 U 0.38 U	0.0057 U 0.0014 J	97 J 140 U	4.5 1.4 U	19 14 U	0.029 0.0018 J	0.016 0.0059 U
Xylenes (Total)	1000	8000	9100	2700	0.014 U	0.019 U	0.015 U	0.015 U	0.015 U	0.017 U	22 U	1.1 U	0.0014 J	410 U	4.2 U	41 U	0.016 U	0.018 U

Location/ID	MSC	MSC	MSC	EPA RSL	P41P442 CS 002	B41RAA4-CS-001	IMTDOZO CE OO1	IWTP030-CS-002	INTROSO CS 003	IMTDO30 CS 004	IM/TD021 CS 001	IWTP031-CS-002	IM/TD021 CS 002	IWTP031-CS-004	IWTP031-CS-005	IN/TD021 CS 006	IWTP032-CS-001	IMTD022 CS 002
Depth (ft.)		Direct Contact	Direct Contact	Industrial	2 - 3	9 - 10	2 - 3	2 - 3	2 - 3	2 - 3	11 - 12	11 - 12	11 - 12	11 - 12	11 - 12	11 - 12	6 - 7	6 - 7
Sample Date	Used Aquifer	0 - 2 ft	2 - 15 ft	Soil	10/12/2011	10/17/2011	10/13/2011	10/13/2011	10/13/2011	10/13/2011	10/5/2011	10/5/2011	10/5/2011	10/5/2011	10/5/2011	10/5/2011	10/13/2011	10/13/2011
Parameter	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)														
Semi Volatile Organic Compound 1.2.4-Trichlorobenzene	27	10000	10000	99	0.38 U	0.38 U	0.38 U	0.39 U	0.4 U	0.4 U	0.17 J	0.41 U	0.41 U	0.13 J	0.42 U	0.099 J	0.41 U	0.42 U
1,2,4-Trichlorobenzene	60	10000	10000	9800	0.38 U	0.38 U	0.38 U	0.39 U	0.4 U	0.4 U	0.173	0.41 U	0.41 U	0.13 3	0.42 U	0.099 1	0.41 U	0.42 U
1,3-Dichlorobenzene	61	8400	10000	NA	0.38 U	0.38 U	0.38 U	0.39 U	0.4 U	0.4 U	0.4 U	0.41 U	0.41 U	0.41 U	0.42 U	0.41 U	0.41 U	0.42 U
1,4-Dichlorobenzene	10	200	230	12	0.38 U	0.38 U	0.38 U	0.39 U	0.4 U	0.4 U	0.099 J	0.41 U	0.41 U	0.11 J	0.42 U	0.07 J	0.41 U	0.42 U
2,4,5-Trichlorophenol	6100	190000	190000	62000	0.38 U	0.38 U	0.38 U	0.39 U	0.4 U	0.4 U	0.4 U	0.41 U	0.41 U	0.41 U	0.42 U	0.41 U	0.41 U	0.42 U
2,4,6-Trichlorophenol	29	2800	190000	160	0.38 U	0.38 U	0.38 U	0.39 U	0.4 U	0.4 U	0.4 U	0.41 U	0.41 U	0.41 U	0.42 U	0.41 U	0.41 U	0.42 U
2,4-Dichlorophenol 2,4-Dimethylphenol	200	8400 10000	190000 10000	1800 12000	0.078 U 0.38 U	0.076 U 0.38 U	0.077 U 0.38 U	0.079 U 0.39 U	0.082 U 0.4 U	0.081 U 0.4 U	0.081 U 0.4 U	0.083 U 0.41 U	0.083 U 0.41 U	0.083 U 0.41 U	0.085 U 0.42 U	0.084 U 0.41 U	0.083 U 0.41 U	0.085 U 0.42 U
2,4-Dinitrophenol	20	5600	190000	1200	2 U	1.9 U	1.9 U	2 U	2.1 U	2.1 U	2 U	2.1 U	2.1 U	2.1 U	2.2 U	2.1 U	2.1 U	2.2 U
2,4-Dinitrotoluene	0.84	260	190000	5.5	0.38 U	0.38 U	0.38 U	0.39 U	0.4 U	0.4 U	0.4 U	0.41 U	0.41 U	0.41 U	0.42 U	0.41 U	0.41 U	0.42 U
2,6-Dinitrotoluene	10	2800	190000	620	0.38 U	0.38 U	0.38 U	0.39 U	0.4 U	0.4 U	0.4 U	0.41 U	0.41 U	0.41 U	0.42 U	0.41 U	0.41 U	0.42 U
2-Chloronaphthalene	18000	190000	190000	82000	0.078 U	0.076 U	0.077 U	0.079 U	0.082 U	0.081 U	0.081 U	0.083 U	0.083 U	0.083 U	0.085 U	0.084 U	0.083 U	0.085 U
2-Chlorophenol	4.4	10000	10000	5100	0.38 U	0.38 U	0.38 U	0.39 U	0.4 U	0.4 U	0.4 U	0.41 U	0.41 U	0.41 U	0.42 U	0.41 U	0.41 U	0.42 U
2-Methylnaphthalene 2-Methylphenol	1600 510	11000 140000	190000 190000	4100 31000	0.078 U 0.38 U	0.076 U 0.38 U	0.12 0.38 U	0.009 J 0.39 U	0.0095 J 0.4 U	0.026 J 0.4 U	0.6 0.4 U	0.083 U 0.41 U	0.083 U 0.41 U	1.6 0.41 U	0.045 J 0.42 U	0.34 0.41 U	0.083 U 0.41 U	0.085 U 0.42 U
2-Nitroaniline	31	8400	190000	6000	2 U	1.9 U	1.9 U	2 U	2.1 U	2.1 U	2 U	2.1 U	2.1 U	2.1 U	2.2 U	2.1 U	2.1 U	2.2 U
2-Nitrophenol	82	22000	190000	NA	0.38 U	0.38 U	0.38 U	0.39 U	0.4 U	0.4 U	0.4 U	0.41 U	0.41 U	0.41 U	0.42 U	0.41 U	0.41 U	0.42 U
3,3'-Dichlorobenzidine	32	180	190000	3.8	0.38 U	0.38 U	0.38 U	0.39 U	0.4 U	0.4 U	0.4 U	0.41 U	0.41 U	0.41 U	0.42 U	0.41 U	0.41 U	0.42 U
3/4-Methylphenol	12	10,000	10,000	31,000	0.38 U	0.38 U	0.38 U	0.39 U	0.4 U	0.4 U	0.4 U	0.41 U	0.41 U	0.41 U	0.42 U	0.41 U	0.41 U	0.42 U
3-Nitroaniline	3.1	840 280	190000 190000	NA 49	2 U	1.9 U	1.9 U 1.9 U	2 U	2.1 U	2.1 U	2 U	2.1 U 2.1 U	2.1 U	2.1 U	2.2 U	2.1 U	2.1 U	2.2 U 2.2 U
4,6-Dinitro-2-Methylphenol 4-Bromophenyl phenyl ether	1 NA	280 NA	190000 NA	NA	2 U 0.38 U	1.9 U 0.38 U	1.9 U 0.38 U	2 U 0.39 U	2.1 U 0.4 U	2.1 U 0.4 U	2 U 0.4 U	0.41 U	2.1 U 0.41 U	2.1 U 0.41 U	2.2 U 0.42 U	2.1 U 0.41 U	2.1 U 0.41 U	0.42 U
4-Chloro-3-Methyl-Phenol	110	14000	190000	62000	0.38 U	0.38 U	0.38 U	0.39 U	0.4 U	0.4 U	0.4 U	0.41 U	0.41 U	0.41 U	0.42 U	0.41 U	0.41 U	0.42 U
4-Chloroaniline	1.6	400	190000	8.6	0.38 U	0.38 U	0.38 U	0.39 U	0.4 U	0.4 U	0.4 U	0.41 U	0.41 U	0.41 U	0.42 U	0.41 U	0.41 U	0.42 U
4-Chlorodiphenyl Ether	NA	NA	NA	NA	0.38 U	0.38 U	0.38 U	0.39 U	0.4 U	0.4 U	0.4 U	0.41 U	0.41 U	0.41 U	0.42 U	0.41 U	0.41 U	0.42 U
4-Nitroaniline	13	4000	190000	86	2 U	1.9 U	1.9 U	2 U	2.1 U	2.1 U	2 U	2.1 U	2.1 U	2.1 U	2.2 U	2.1 U	2.1 U	2.2 U
4-Nitrophenol	6	22000	190000	NA	2 U	1.9 U	1.9 U	2 U	2.1 U	2.1 U	2 U	2.1 U	2.1 U	2.1 U	2.2 U	2.1 U	2.1 U	2.2 U
Acenaphthene Acenaphthylene	4700 6900	170,000 170,000	190000 190000	33000 33000	0.078 U 0.078 U	0.076 U 0.076 U	0.077 U 0.077 U	0.079 U 0.079 U	0.082 U 0.082 U	0.081 U 0.081 U	0.081 U 0.081 U	0.083 U 0.083 U	0.083 U 0.083 U	0.04 J 0.083 U	0.085 U 0.085 U	0.084 U 0.084 U	0.083 U 0.083 U	0.085 U 0.085 U
Anthracene	350	190,000	190000	170000	0.078 U	0.076 U	0.077 U	0.079 U	0.082 U	0.081 U	0.081 U	0.083 U	0.083 U	0.083 U	0.085 U	0.084 U	0.083 U	0.085 U
Benzo (A) Anthracene	320	110	190000	2.1	0.078 U	0.076 U	0.017 J	0.079 U	0.082 U	0.081 U	0.081 U	0.083 U	0.083 U	0.079 J	0.085 U	0.084 U	0.083 U	0.085 U
Benzo (a) Pyrene	46	11	190000	0.21	0.078 U	0.076 U	0.077 U	0.079 U	0.082 U	0.081 U	0.081 U	0.083 U	0.083 U	0.083 U	0.085 U	0.084 U	0.083 U	0.085 U
Benzo (b) Fluoranthene	170	110	190000	2.1	0.078 U	0.076 U	0.077 U	0.079 U	0.082 U	0.081 U	0.081 U	0.083 U	0.083 U	0.083 U	0.085 U	0.084 U	0.083 U	0.085 U
Benzo (g,h,i) Perylene	180	170,000	190000	NA	0.078 U	0.076 U	0.077 U	0.079 U	0.082 U	0.081 U	0.081 U	0.083 U	0.083 U	0.083 U	0.085 U	0.084 U	0.083 U	0.085 U
Benzo (k) Fluoranthene Bis(2-Chloroethoxy) Methane	610 31	1,100 8,400	190000 10,000	21 1800	0.078 U 0.38 U	0.076 U 0.38 U	0.077 U 0.38 U	0.079 U 0.39 U	0.082 U 0.4 U	0.081 U 0.4 U	0.081 U 0.4 U	0.083 U 0.41 U	0.083 U 0.41 U	0.083 U 0.41 U	0.085 U 0.42 U	0.084 U 0.41 U	0.083 U 0.41 U	0.085 U 0.42 U
Bis(2-Chloroethyl) Ether	0.076	6.7	7.7	1800	0.38 U	0.38 U	0.38 U	0.39 U	0.4 U	0.4 U	0.4 U	0.41 U	0.41 U	0.41 U	0.42 U	0.41 U	0.41 U	0.42 U
Bis(2-Chloroisopropyl) Ether	30	220	250	22	0.078 U	0.076 U	0.077 U	0.079 U	0.082 U	0.081 U	0.081 U *	0.083 U *	0.083 U *	0.083 U *	0.085 U *	0.084 U *	0.083 U	0.085 U
Bis(2-Ethylhexyl) Phthalate	130	5,700	10,000	120	0.78 U	0.76 U	0.77 U	0.79 U	0.82 U	0.81 U	3.1	0.27 J	0.83 U	3.4	0.52 J	2.3	0.83 U	0.85 U
Butylbenzylphthalate	10000	10000	10000	910	0.38 U	0.38 U	0.38 U	0.39 U	0.4 U	0.4 U	0.36 J	0.41 U	0.41 U	0.38 J	0.42 U	0.19 J	0.41 U	0.42 U
Carbazole	83	4000	190000	NA	0.078 U	0.076 U	0.077 U	0.079 U	0.082 U	0.081 U	0.081 U	0.083 U	0.083 U	0.083 U	0.085 U	0.084 U	0.083 U	0.085 U
Chrysene Dibenzo (a,h) Anthracene	230 160	11000 11	190000 190000	210 0.21	0.078 U 0.078 U	0.076 U 0.076 U	0.019 J 0.077 U	0.079 U 0.079 U	0.082 U 0.082 U	0.081 U 0.081 U	0.081 U 0.081 U	0.083 U 0.083 U	0.083 U 0.083 U	0.09 0.083 U	0.085 U 0.085 U	0.084 U 0.084 U	0.083 U 0.083 U	0.085 U 0.085 U
Dibenzo (a,n) Antirracene Dibenzofuran	260	2800	190000	1000	0.38 U	0.076 U	0.38 U	0.079 U	0.082 U	0.4 U	0.081 U	0.41 U	0.41 U	0.083 U	0.085 U	0.084 U	0.083 U	0.42 U
Diethylphthalate	8200	10000	10000	490000	0.38 U	0.38 U	0.38 U	0.39 U	0.4 U	0.4 U	0.4 U	0.41 U	0.41 U	0.41 U	0.42 U	0.41 U	0.066 J	0.058 J
Dimethylphthalate	100	100	100	NA	0.38 U	0.38 U	0.38 U	0.39 U	0.4 U	0.4 U	0.4 U	0.41 U	0.41 U	0.41 U	0.42 U	0.41 U	0.41 U	0.42 U
Di-n-Butylphthalate	4100	10000	10000	62000	0.38 U	0.38 U	0.38 U	0.39 U	0.4 U	0.4 U	0.33 J	0.41 U	0.41 U	2.3	0.42 U	0.23 J	0.41 U	0.42 U
Di-n-octylphthalate	10000 3200	10000	10000	NA 22000	0.38 U 0.078 U	0.38 U 0.076 U	0.38 U 0.0098 J	0.39 U 0.079 U	0.4 U 0.082 U	0.4 U 0.081 U	0.4 U	0.41 U 0.083 U	0.41 U 0.083 U	0.41 U	0.42 U 0.085 U	0.41 U 0.021 J	0.41 U 0.083 U	0.42 U 0.085 U
Fluoranthene Fluorene	3200 3800	110000 110000	190000 190000	22000	0.078 U 0.078 U	0.076 U 0.076 U	0.0098 J 0.077 U	0.079 U 0.079 U	0.082 U 0.082 U	0.081 U 0.081 U	0.061 J 0.054 J	0.083 U 0.083 U	0.083 U 0.083 U	0.15 0.075 J	0.085 U 0.085 U	0.021 J 0.084 U	0.083 U 0.083 U	0.085 U 0.085 U
Hexachlorobenzene	0.96	50	190000	1.1	0.078 U	0.076 U	0.077 U	0.079 U	0.082 U	0.081 U	0.081 U	0.083 U	0.083 U	0.075 J	0.085 U	0.084 U	0.083 U	0.085 U
Hexachlorobutadiene	39	1000	10000	22	0.078 U	0.076 U	0.077 U	0.079 U	0.082 U	0.081 U	0.081 U	0.083 U	0.083 U	0.083 U	0.085 U	0.084 U	0.083 U	0.085 U
Hexachlorocyclopentadiene	91	10000	10000	3700	0.38 U	0.38 U	0.38 U	0.39 U	0.4 U	0.4 U	0.4 U	0.41 U	0.41 U	0.41 U	0.42 U	0.41 U	0.41 U	0.42 U
Hexachloroethane	0.56	550	640	43	0.38 U	0.38 U	0.38 U	0.39 U	0.4 U	0.4 U	0.4 U	0.41 U	0.41 U	0.41 U	0.42 U	0.41 U	0.41 U	0.42 U
Indeno (1,2,3-cd) Pyrene	28000	110	190000	2.1	0.078 U	0.076 U	0.077 U	0.079 U	0.082 U	0.081 U	0.081 U	0.083 U	0.083 U	0.083 U	0.085 U	0.084 U	0.083 U	0.085 U
Isophorone Naphthalene	10 25	10000 56000	10000 190000	1800 18	0.38 U 0.078 U	0.38 U 0.076 U	0.38 U 0.086	0.39 U 0.079 U	0.4 U 0.082 U	0.4 U 0.021 J	0.4 U 0.37	0.41 U 0.083 U	0.41 U 0.083 U	0.41 U 0.98	0.42 U 0.029 J	0.41 U 0.19	0.41 U 0.083 U	0.42 U 0.085 U
Naphthalene Nitrobenzene	25	56000	190000	18 24	0.078 U 0.78 U	0.076 U 0.76 U	0.086 0.77 U	0.079 U 0.79 U	0.082 U 0.82 U	0.021 J 0.81 U	0.37 0.81 U	0.083 U 0.83 U	0.083 U 0.83 U	0.98 0.83 U	0.029 J 0.85 U	0.19 0.84 U	0.083 U 0.83 U	0.085 U 0.85 U
N-Nitrosodi-N-Propylamine	0.037	11	10000	0.25	0.078 U	0.076 U	0.077 U	0.079 U	0.082 U	0.081 U	0.081 U	0.083 U	0.083 U	0.083 U	0.085 U	0.084 U	0.083 U	0.085 U
N-Nitrosodiphenylamine	83	16000	190000	350	0.38 U	0.38 U	0.38 U	0.39 U	0.4 U	0.4 U	0.4 U	0.41 U	0.41 U	0.41 U	0.42 U	0.41 U	0.41 U	0.42 U
Pentachlorophenol	5	660	190000	2.7	0.38 U	0.38 U	0.38 U	0.39 U	0.4 U	0.4 U	0.4 U	0.41 U	0.41 U	0.41 U	0.42 U	0.41 U	0.41 U	0.42 U
Phenanthrene	10000	190000	190000	NA	0.078 U	0.076 U	0.071 J	0.079 U	0.082 U	0.081 U	0.21	0.083 U	0.083 U	0.32	0.023 J	0.11	0.083 U	0.085 U
Phenol	200	190000	190000	180000	0.078 U	0.076 U	0.077 U	0.079 U	0.082 U	0.081 U	0.081 U	0.083 U	0.083 U	0.083 U	0.085 U	0.084 U	0.083 U	0.085 U
Pyrene	2200	84000	190000	17000	0.078 U	0.076 U	0.018 J	0.079 U	0.082 U	0.081 U	0.063 J	0.083 U	0.083 U	0.21	0.085 U	0.084 U	0.083 U	0.085 U

	Location/ID	MSC	MSC	MSC	EPA RSL	BA/TD022 CS 002	NATD022 CS 004	IWTP033-CS-001	IWTP033-CS-002	IMTD024 CS 001	IWTP034-CS-002	IM/TD02E CS 001	IWTP035-CS-002	IWTP035-CS-003	IWTP035-CS-004	IWTP037-CS-001	IWTP037-CS-002	IWTP037-CS-003	IWTP037-CS-004
		oil to GW	Direct Contact	Direct Contact		9 - 10	6 - 7	13 - 14	13 - 14	9.5 - 10.5	9.5 - 10.5	9 - 10	9 - 10	9 - 10	9 - 10	11 - 12	11 - 12	11 - 12	11 - 12
Sa	ample Date Use	ed Aquifer	0 - 2 ft	2 - 15 ft	Soil	10/13/2011	10/13/2011	10/11/2011	10/11/2011	10/11/2011	10/11/2011	10/11/2011	10/11/2011	10/11/2011	10/11/2011	10/4/2011	10/4/2011	10/4/2011	10/4/2011
Parameter	((mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)														
Cyanide, Free		200	55000	400000	540	0.045.11	0.047.11	0.044.11	0.05411	0.05.11	0.047.11	0.040.11	0.045.11	0.047.11	0.045.11	0.040.11	0.045.11	0.05411	0.053.11
Cyanide, Free Cyanide, Total		200	56000	190000	610	0.045 U	0.047 U	0.044 U	0.054 U	0.05 U	0.047 U	0.049 U	0.045 U	0.047 U	0.046 U	0.049 U	0.046 U	0.054 U	0.053 U
Cvanide, Total		NA	NA	NA	NA	0.1 J	3	0.76	1.9	0.56 J	0.59 U	0.61 U	0.56 U	0.59 U	0.58 U	0.18 J	1.6	0.38 J	0.15 J
Hexavalent Chromium		101	707	101	1471	0.13		0.70	1.5	0.503	0.55 0	0.01 0	0.50 0	0.33 0	0.50 0	0.103	2.0	0.503	0.133
Hexavalent Chromium		190	8400	20000	5.6	0.77	1.3	2.2	0.29 J	0.5 U	0.49	0.51	0.35 J	0.19 J	0.18 J	0.22 J	0.27 J	1.6	0.51 J
Mercury													,						
Mercury		10	450	190000	43	0.03 J	0.045	0.018 J	0.047	0.014 J	0.028 J	0.024 J	0.022 J	0.039	0.023 J	0.03 J	0.037	0.043 U	0.053
Metal Antimony		27	1.100	190.000	410	0.034 J	0.061 J	0.058 J B	0.64 B	0.081 J B	0.025 J B	0.051 J B	0.034 J B	0.23 U	0.021 J B	0.084 I B	0.059 J B	0.27 B	0.22 J B
Arsenic		29	53	190000	1.6	1.8	3.5	1.3	5.7	5.3	1.1	3.4	2.9	1.8	2.1	3.5	4.5	6.1	7.7
Barium		8200	190000	190000	190000	36 B	60 B	27 B	47 B	48 B	32 B	49 B	42 B	20 B	50 B	48 B	66 B	45 B	45 B
Beryllium		320	5600	190000	2000	0.26	0.44	0.31	1.6	0.42	0.2	0.53	0.58	0.23	0.45	0.37	0.35	1	1.1
Cadmium		38	1400	190000	800	0.094 J	0.15	14 B	25 B	9.3 B	0.32 B	1.2 B	0.24 B	0.14 B	0.17 B	0.11 J	0.12	24	1.1
Chromium (Total)		190,000	190,000	190,000	1,500,000	9.5 B	15 B	49 B	290 B	42 B	9 B	20 B	22 B	9.9 B	16 B	15 B	13 B	66 B	17 B
Copper		43000 450	100000	190000 190000	41,000 800	5.4 B 6 B	7 B 11 B	10 B 14	39 B 35	11 B 9.1	6.3 B 6.2	11 B 9.1	8.4 B 9.7	5.2 B 4.1	6.8 B 7.2	5.9 B 10 B	4.2 B 9.4 B	33 B 33 B	11 B 20 B
Nickel		650	56000	190000	20000	5.9	6.1	41	120	23	5.8	17	6.9	4.6	6.1	5.7	4.8	32	15
Selenium		26	14000	190000	5100	0.13 J	0.17 J	0.33 J	1.1	0.51 J	0.14 J	0.47 J	0.31 J	0.21 J	0.34 J	0.39 J	0.44 J	1.7	0.63
Silver		84	14000	190000	5100	0.015 J	0.022 J	0.038 J	0.11 J	0.037 J	0.018 J	0.043 J	0.024 J	0.017 J	0.032 J	0.029 J	0.024 J	0.045 J	0.036 J
Thallium		14	200	190000	10	0.084 J	0.088 J	0.065 J	0.15	0.075 J	0.045 J	0.077 J	0.081 J	0.04 J	0.069 J	0.15	0.15	0.12	0.13
Vanadium		72000 12000	20000 190000	190000 190000	5,200 310000	12 B 11 B	23 B 11 B	5.6 B 34 B	65 B 67 B	19 B 34 B	9.6 B 11 B	20 B 24 B	25 B 18 B	9.1 B 8.7 B	15 B 14 B	21 B 12	21 B 12	13 B 65	18 B 23
Zinc Volatile Organic Compoun		12000	190000	190000	310000	11 B	11 B	34 B	6/B	34 B	11 B	24 B	18 B	8.7 B	14 B	12	12	65	23
1,1,1,2-Tetrachloroethane		18	300	340	9.3	0.0049 U	0.0052 U	0.0048 U	0.0061 U	0.0054 U	0.0056 U	0.0052 U	0.0049 U	0.0055 U	0.0052 U	0.31 U	0.29 U	0.006 U	0.31 U
1,1,1-Trichloroethane		20	10000	10000	38000	0.0049 U	0.0052 U	0.0048 U	0.0061 U	0.0054 U	0.0056 U	0.0052 U	0.0049 U	0.0055 U	0.0052 U	0.31 U	0.29 U	0.006 U	0.31 U
1,1,2,2-Tetrachloroethane	!	0.43	38	44	2.8	0.0049 U	0.0052 U	0.0048 U	0.0061 U	0.0054 U	0.0056 U	0.0052 U	0.0049 U	0.0055 U	0.0052 U	0.31 U	0.29 U	0.006 U	0.31 U
1,1,2-Trichloroethane		0.5	140	160	5.3	0.0049 U	0.0052 U	0.0048 U	0.0061 U	0.0054 U	0.0056 U	0.0052 U	0.0049 U	0.0055 U	0.0052 U	0.31 U	0.29 U	0.006 U	0.31 U
1,1-Dichloroethane		16	1400	1600	17	0.0049 U	0.0052 U	0.0048 U 0.0048 U	0.0061 U	0.0054 U	0.0056 U	0.0023 J	0.0049 U	0.0055 U	0.0052 U	0.31 U	0.29 U	0.006 U	0.31 U
1,1-Dichloroethene 1,2-Dibromoethane		0.7	10000 3.7	10000 4.3	0.17	0.0049 U 0.0049 U	0.0052 U 0.0052 U	0.0048 U	0.0015 J 0.0061 U	0.0054 U 0.0054 U	0.0056 U 0.0056 U	0.0052 U 0.0052 U	0.0049 U 0.0049 U	0.0055 U 0.0055 U	0.0052 U 0.0052 U	0.31 U 0.31 U	0.29 U 0.29 U	0.006 U 0.006 U	0.31 U 0.31 U
1,2-Dichloroethane		0.5	86	98	2.2	0.0049 U	0.0052 U	0.0048 U	0.0061 U	0.0054 U	0.0056 U	0.0052 U	0.0049 U	0.0055 U	0.0052 U	0.31 U	0.29 U	0.006 U	0.31 U
1,2-Dichloropropane		0.5	220	260	4.7	0.0049 U	0.0052 U	0.0048 U	0.0061 U	0.0054 U	0.0056 U	0.0052 U	0.0049 U	0.0055 U	0.0052 U	0.31 U	0.29 U	0.006 U	0.31 U
1,4-Dioxane		3.2	290	330	17	0.99 U	1 U	0.95 U	1.2 U	1.1 U	1.1 U	1 U	0.98 U	1.1 U	1 U	61 U	58 U	1.2 U	62 U
2-Butanone		400	10000	10000	200000	0.0049 U	0.0052 U	0.0048 U	0.0061 U	0.0054 U	0.0056 U	0.0052 U	0.0049 U	0.0055 U	0.0052 U	0.31 U	0.29 U	0.006 U	0.31 U
2-Hexanone 4-Methyl-2-Pentanone		4.4 820	400 10000	460 10000	1400 53000	0.0049 U 0.0049 U	0.0052 U 0.0052 U	0.0048 U 0.0048 U	0.0061 U 0.0061 U	0.0054 U 0.0054 U	0.0056 U 0.0056 U	0.0052 U 0.0052 U	0.0049 U 0.0049 U	0.0055 U 0.0055 U	0.0052 U 0.0052 U	0.31 U 0.31 U	0.29 U 0.29 U	0.006 U 0.006 U	0.31 U 0.31 U
Acetone		9200	10,000	10,000	630000	0.0049 U	0.0032 U	0.019 U	0.0051 U	0.0034 U	0.022 U	0.012 J	0.0049 U	0.0033 U	0.0032 U	1.2 U	1.2 U	0.000 U	1.2 U
Acrylonitrile		0.37	33	38	1.2	0.099 U	0.1 U	0.095 U	0.12 U	0.11 U	0.11 U	0.1 U	0.098 U	0.11 U	0.1 U	6.1 U	5.8 U	0.12 U	6.2 U
Benzene		0.5	290	330	5.4	0.0049 U	0.0052 U	0.0048 U	0.0061 U	0.0054 U	0.0056 U	0.0052 U	0.0049 U	0.0055 U	0.0052 U	0.31 U	0.29 U	0.006 U	0.31 U
Bromochloromethane		9	10000	10000	680	0.0049 U	0.0052 U	0.0048 U	0.0061 U	0.0054 U	0.0056 U	0.0052 U	0.0049 U	0.0055 U	0.0052 U	0.31 U	0.29 U	0.006 U	0.31 U
Bromodichloromethane		8	60	69	1.4	0.0049 U	0.0052 U	0.0048 U	0.0061 U	0.0054 U	0.0056 U	0.0052 U	0.0049 U	0.0055 U	0.0052 U	0.31 U	0.29 U	0.006 U	0.31 U
Bromoform Bromomethane		8	2000 400	2300 460	220 32	0.0049 U 0.0049 U	0.0052 U 0.0052 U	0.0048 U 0.0048 U	0.0061 U 0.0061 U	0.0054 U 0.0054 U	0.0056 U 0.0056 U	0.0052 U 0.0052 U	0.0049 U 0.0049 U	0.0055 U 0.0055 U	0.0052 U 0.0052 U	0.31 U 0.31 U	0.29 U 0.29 U	0.006 U 0.006 U	0.31 U 0.31 U
Carbon Disulfide		620	10000	10000	3700	0.0049 U	0.0052 U	0.0048 U	0.0061 U	0.0054 U	0.0056 U	0.0052 U	0.0049 U	0.0055 U	0.0052 U	0.31 U	0.29 U	0.006 U	0.31 U
Carbon Tetrachloride		0.5	150	170	3	0.0049 U	0.0052 U	0.0048 U	0.0061 U	0.0054 U	0.0056 U	0.0052 U	0.0049 U	0.0055 U	0.0052 U	0.31 U	0.29 U	0.006 U	0.31 U
Chlorobenzene		10	4000	4600	1400	0.0049 U	0.0052 U	0.0048 U	0.0061 U	0.0054 U	0.0056 U	0.0052 U	0.0049 U	0.0055 U	0.0052 U	0.31 U	0.29 U	0.006 U	0.31 U
Chlorodibromomethane		8	82	95	3.3	0.0049 U	0.0052 U	0.0048 U	0.0061 U	0.0054 U	0.0056 U	0.0052 U	0.0049 U	0.0055 U	0.0052 U	0.31 U	0.29 U	0.006 U	0.31 U
Chloroethane		90	10000	10000	61000	0.0049 U	0.0052 U	0.0048 U	0.0061 U	0.0054 U	0.0056 U	0.0052 U	0.0049 U	0.0055 U	0.0052 U	0.31 U	0.29 U	0.006 U	0.31 U
Chloroform Chloromethane		8	97 1200	110 1400	1.5 500	0.0049 U 0.0049 U	0.0052 U 0.0052 U	0.0048 U 0.0048 U	0.0061 U 0.0061 U	0.0054 U 0.0054 U	0.0056 U 0.0056 U	0.0052 U 0.0052 U	0.0049 U 0.0049 U	0.0055 U 0.0055 U	0.0052 U 0.0052 U	0.31 U 0.31 U	0.29 U 0.29 U	0.006 U 0.006 U	0.31 U 0.31 U
cis-1,2-Dichloroethene		7	10000	10000	2000	0.0049 0	0.0052 0	0.0048 0	0.0061 0	0.0054 0	0.0056 0	0.0052 U 0.00094 J	0.0049 U	0.0055 U 0.0024 J	0.0052 U	0.31 0	0.29 U	0.006 0	0.31 0
cis-1,3-Dichloropropene		2.6	560	640	8.3	0.0013 0.0049 U	0.0052 U	0.0048 U	0.0061 U	0.0054 U	0.0056 U	0.0052 U	0.0049 U	0.0055 U	0.0052 U	0.31 U	0.29 U	0.006 U	0.31 U
Ethylbenzene		70	10000	10000	27	0.0049 U	0.0052 U	0.002 J	0.0037 J	0.0054 U	0.0056 U	0.0052 U	0.0049 U	0.0055 U	0.0052 U	0.31 U	0.29 U	0.0014 J	0.31 U
Methyl tert-butyl ether		2	8600	9900	220	0.0049 U	0.0052 U	0.0048 U	0.0061 U	0.0054 U	0.0056 U	0.0052 U	0.0049 U	0.0055 U	0.0052 U	0.31 U	0.29 U	0.006 U	0.31 U
Methylene chloride		0.5	4700	5400	960	0.0049 U	0.0052 U	0.0048 U	0.0061 U	0.0054 U	0.0056 U	0.00089 J	0.0049 U	0.0055 U	0.00098 J	0.086 J	0.12 J	0.006 U	0.16 J
Styrene		24	10000	10000	36000	0.0049 U	0.0052 U	0.0048 U	0.0061 U	0.0054 U	0.0056 U	0.0052 U	0.0049 U	0.0055 U	0.0052 U	0.31 U	0.29 U	0.006 U	0.31 U
Tetrachloroethene Toluene		0.5 100	1500 10000	4400 10000	110 45000	0.015 0.0049 U	0.023 0.0052 U	0.099 0.0009 J	0.075 0.00097 J	0.0019 J 0.0054 U	0.0042 J 0.0056 U	0.0052 U 0.0052 U	0.0049 U 0.0049 U	0.0019 J 0.0055 U	0.0052 U 0.0052 U	0.34 0.31 U	0.26 J 0.29 U	0.12 0.006 U	0.28 J 0.31 U
trans-1,2-Dichloroethene		100	4800	5500	690	0.0049 U	0.0052 U	0.0009 J 0.0025 J	0.000971	0.0054 U	0.0056 U	0.0052 U	0.0049 U	0.0055 U	0.0052 U	0.31 U	0.29 U	0.006 U	0.31 U
trans-1,3-Dichloropropene		2.6	560	640	8.3	0.0049 U	0.0052 U	0.00233 0.0048 U	0.0061 U	0.0054 U	0.0056 U	0.0052 U	0.0049 U	0.0055 U	0.0052 U	0.31 U	0.29 U	0.00082 J	0.31 U
		0.5	1300	1500	6.4	0.021	0.033	0.015	0.051	0.0023 J	0.00074 J	0.0052 U	0.0049 U	0.0019 J	0.0052 U	0.2 J	0.29 U	0.052	0.15 J
Trichloroethene																			
Vinyl Chloride		0.2 1000	110 8000	580 9100	1.7 2700	0.0049 U 0.015 U	0.0052 U 0.015 U	0.052 0.014 U	0.023 0.018 U	0.0054 U 0.016 U	0.0022 J 0.017 U	0.0046 J 0.016 U	0.0049 U 0.015 U	0.0055 U 0.016 U	0.0052 U 0.016 U	0.31 U 0.92 U	0.29 U 0.88 U	0.015 0.018 U	0.31 U 0.93 U

Location/ID	MSC	MSC	MSC	EPA RSL	IWTD032-CS-003	IWTP032-CS-004	IW/TD022_CS_001	IWTP033-CS-002	IWTP034-CS-001	IWTP034-CS-002	IWTP035-CS-001	IWTP035-CS-002	IWTP035-CS-003	IWTP035-CS-004	IWTP037-CS-001	IWTP037-CS-002	IWTP037-CS-003	IW/TD027-CS-004
Depth (ft.)		Direct Contact	Direct Contact	Industrial	9 - 10	6 - 7	13 - 14	13 - 14	9.5 - 10.5	9.5 - 10.5	9 - 10	9 - 10	9 - 10	9 - 10	11 - 12	11 - 12	11 - 12	11 - 12
Sample Date	Used Aquifer	0 - 2 ft	2 - 15 ft	Soil	10/13/2011	10/13/2011	10/11/2011	10/11/2011	10/11/2011	10/11/2011	10/11/2011	10/11/2011	10/11/2011	10/11/2011	10/4/2011	10/4/2011	10/4/2011	10/4/2011
Parameter	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)														
Semi Volatile Organic Compound 1,2,4-Trichlorobenzene	27	10000	10000	99	0.37 U	0.38 U	0.36 U	0.066 J	0.41 U	0.38 U	0.39 U	0.37 U	0.38 U	0.37 U	0.4 U	0.38 U	0.44 U	0.43 U
1.2-Dichlorobenzene	60	10000	10000	9800	0.37 U	0.38 U	0.36 U	0.066 J	0.41 U	0.38 U	0.39 U	0.37 U	0.38 U	0.37 U	0.4 U	0.38 U	0.44 U	0.43 U
1,3-Dichlorobenzene	61	8400	10000	NA	0.37 U	0.38 U	0.36 U	0.44 U	0.41 U	0.38 U	0.39 U	0.37 U	0.38 U	0.37 U	0.4 U	0.38 U	0.44 U	0.43 U
1,4-Dichlorobenzene	10	200	230	12	0.37 U	0.38 U	0.36 U	0.061 J	0.41 U	0.38 U	0.39 U	0.37 U	0.38 U	0.37 U	0.4 U	0.38 U	0.44 U	0.43 U
2,4,5-Trichlorophenol	6100	190000	190000	62000	0.37 U	0.38 U	0.36 U	0.44 U	0.41 U	0.38 U	0.39 U	0.37 U	0.38 U	0.37 U	0.4 U	0.38 U	0.44 U	0.43 U
2,4,6-Trichlorophenol	29	2800	190000	160	0.37 U	0.38 U	0.36 U	0.44 U	0.41 U	0.38 U	0.39 U	0.37 U	0.38 U	0.37 U	0.4 U	0.38 U	0.44 U	0.43 U
2,4-Dichlorophenol 2,4-Dimethylphenol	200	8400 10000	190000 10000	1800 12000	0.074 U 0.37 U	0.078 U 0.38 U	0.074 U 0.36 U	0.09 U 0.44 U	0.084 U 0.41 U	0.078 U 0.38 U	0.08 U 0.39 U	0.074 U 0.37 U	0.078 U 0.38 U	0.076 U 0.37 U	0.082 U 0.4 U	0.078 U 0.38 U	0.09 U 0.44 U	0.088 U 0.43 U
2,4-Dinitrophenol	200	5600	190000	1200	1.9 U	2 U	1.9 U	2.3 U	2.1 U	2 U	2 U	1.9 U	2 U	1.9 U	2.1 U	2 U	2.3 U	2.2 U
2,4-Dinitrotoluene	0.84	260	190000	5.5	0.37 U	0.38 U	0.36 U	0.44 U	0.41 U	0.38 U	0.39 U	0.37 U	0.38 U	0.37 U	0.4 U	0.38 U	0.44 U	0.43 U
2,6-Dinitrotoluene	10	2800	190000	620	0.37 U	0.38 U	0.36 U	0.44 U	0.41 U	0.38 U	0.39 U	0.37 U	0.38 U	0.37 U	0.4 U	0.38 U	0.44 U	0.43 U
2-Chloronaphthalene	18000	190000	190000	82000	0.074 U	0.078 U	0.074 U	0.09 U	0.084 U	0.078 U	0.08 U	0.074 U	0.078 U	0.076 U	0.082 U	0.078 U	0.09 U	0.088 U
2-Chlorophenol	4.4	10000	10000	5100	0.37 U	0.38 U	0.36 U	0.44 U	0.41 U	0.38 U	0.39 U	0.37 U	0.38 U	0.37 U	0.4 U	0.38 U	0.44 U	0.43 U
2-Methylnaphthalene 2-Methylphenol	1600 510	11000 140000	190000 190000	4100 31000	0.074 U 0.37 U	0.078 U 0.38 U	0.074 U 0.36 U	0.07 J 0.44 U	0.0098 J 0.41 U	0.078 U 0.38 U	0.08 U 0.39 U	0.074 U 0.37 U	0.078 U 0.38 U	0.076 U 0.37 U	0.082 U 0.4 U	0.078 U 0.38 U	0.09 U 0.44 U	0.088 U 0.43 U
2-Nitroaniline	31	8400	190000	6000	1.9 U	2 U	1.9 U	2.3 U	2.1 U	2 U	2 U	1.9 U	2 U	1.9 U	2.1 U	2 U	2.3 U	2.2 U
2-Nitrophenol	82	22000	190000	NA	0.37 U	0.38 U	0.36 U	0.44 U	0.41 U	0.38 U	0.39 U	0.37 U	0.38 U	0.37 U	0.4 U	0.38 U	0.44 U	0.43 U
3,3'-Dichlorobenzidine	32	180	190000	3.8	0.37 U	0.38 U	0.36 U	0.44 U	0.41 U	0.38 U	0.39 U	0.37 U	0.38 U	0.37 U	0.4 U	0.38 U	0.44 U	0.43 U
3/4-Methylphenol	12	10,000	10,000	31,000	0.37 U	0.38 U	0.36 U	0.44 U	0.41 U	0.38 U	0.39 U	0.37 U	0.38 U	0.37 U	0.4 U	0.38 U	0.44 U	0.43 U
3-Nitroaniline	3.1	840	190000	NA 40	1.9 U	2 U	1.9 U	2.3 U	2.1 U	2 U	2 U	1.9 U	2 U	1.9 U	2.1 U	2 U	2.3 U	2.2 U
4,6-Dinitro-2-Methylphenol 4-Bromophenyl phenyl ether	1 NA	280 NA	190000 NA	49 NA	1.9 U 0.37 U	2 U 0.38 U	1.9 U 0.36 U	2.3 U 0.44 U	2.1 U 0.41 U	2 U 0.38 U	2 U 0.39 U	1.9 U 0.37 U	2 U 0.38 U	1.9 U 0.37 U	2.1 U 0.4 U	2 U 0.38 U	2.3 U 0.44 U	2.2 U 0.43 U
4-Chloro-3-Methyl-Phenol	110	14000	190000	62000	0.37 U	0.38 U	0.36 U	0.44 U	0.41 U	0.38 U	0.39 U	0.37 U	0.38 U	0.37 U	0.4 U	0.38 U	0.44 U	0.43 U
4-Chloroaniline	1.6	400	190000	8.6	0.37 U	0.38 U	0.36 U	0.44 U	0.41 U	0.38 U	0.39 U	0.37 U	0.38 U	0.37 U	0.4 U	0.38 U	0.44 U	0.43 U
4-Chlorodiphenyl Ether	NA	NA	NA	NA	0.37 U	0.38 U	0.36 U	0.44 U	0.41 U	0.38 U	0.39 U	0.37 U	0.38 U	0.37 U	0.4 U	0.38 U	0.44 U	0.43 U
4-Nitroaniline	13	4000	190000	86	1.9 U	2 U	1.9 U	2.3 U	2.1 U	2 U	2 U	1.9 U	2 U	1.9 U	2.1 U	2 U	2.3 U	2.2 U
4-Nitrophenol	6	22000	190000	NA	1.9 U	2 U	1.9 U	2.3 U	2.1 U	2 U	2 U	1.9 U	2 U	1.9 U	2.1 U	2 U	2.3 U	2.2 U
Acenaphthene Acenaphthylene	4700 6900	170,000 170,000	190000 190000	33000 33000	0.074 U 0.074 U	0.078 U 0.078 U	0.074 U 0.074 U	0.021 J 0.09 U	0.084 U 0.084 U	0.078 U 0.078 U	0.08 U 0.08 U	0.074 U 0.074 U	0.078 U 0.078 U	0.076 U 0.076 U	0.082 U 0.082 U	0.078 U 0.078 U	0.09 U 0.09 U	0.088 U 0.088 U
Anthracene	350	190,000	190000	170000	0.074 U	0.078 U	0.074 U	0.09 U	0.084 U	0.078 U	0.08 U	0.074 U	0.078 U	0.076 U	0.082 U	0.078 U	0.09 U	0.088 U
Benzo (A) Anthracene	320	110	190000	2.1	0.074 U	0.078 U	0.074 U	0.09 U	0.084 U	0.078 U	0.08 U	0.074 U	0.078 U	0.076 U	0.082 U	0.078 U	0.09 U	0.088 U
Benzo (a) Pyrene	46	11	190000	0.21	0.074 U	0.078 U	0.074 U	0.09 U	0.084 U	0.078 U	0.08 U	0.074 U	0.078 U	0.076 U	0.082 U	0.078 U	0.09 U	0.088 U
Benzo (b) Fluoranthene	170	110	190000	2.1	0.074 U	0.078 U	0.074 U	0.09 U	0.084 U	0.078 U	0.08 U	0.074 U	0.078 U	0.076 U	0.082 U	0.078 U	0.09 U	0.088 U
Benzo (g,h,i) Perylene	180	170,000	190000	NA	0.074 U	0.078 U	0.074 U	0.09 U	0.084 U	0.078 U	0.08 U	0.074 U	0.078 U	0.076 U	0.082 U	0.078 U	0.09 U	0.088 U
Benzo (k) Fluoranthene Bis(2-Chloroethoxy) Methane	610 31	1,100 8,400	190000 10,000	21 1800	0.074 U 0.37 U	0.078 U 0.38 U	0.074 U 0.36 U	0.09 U 0.44 U	0.084 U 0.41 U	0.078 U 0.38 U	0.08 U 0.39 U	0.074 U 0.37 U	0.078 U 0.38 U	0.076 U 0.37 U	0.082 U 0.4 U	0.078 U 0.38 U	0.09 U 0.44 U	0.088 U 0.43 U
Bis(2-Chloroethyl) Ether	0.076	6.7	7.7	1800	0.37 U	0.38 U	0.074 U	0.44 U	0.41 U	0.38 U	0.39 U	0.37 U	0.38 U	0.37 U	0.4 U	0.38 U	0.44 U	0.43 U
Bis(2-Chloroisopropyl) Ether	30	220	250	22	0.074 U	0.078 U	0.074 U	0.09 U	0.084 U	0.078 U	0.08 U	0.074 U	0.078 U	0.076 U	0.082 U *	0.078 U *	0.09 U *	0.088 U *
Bis(2-Ethylhexyl) Phthalate	130	5,700	10,000	120	0.74 U	0.78 U	0.46 J	1.3	0.19 J	0.78 U	0.8 U	0.74 U	0.78 U	0.76 U	0.82 U	0.78 U	0.11 J	0.88 U
Butylbenzylphthalate	10000	10000	10000	910	0.37 U	0.38 U	0.36 U	0.44 U	0.41 U	0.38 U	0.39 U	0.37 U	0.38 U	0.37 U	0.4 U	0.38 U	0.44 U	0.43 U
Carbazole	83	4000	190000	NA	0.074 U	0.078 U	0.074 U	0.09 U	0.084 U	0.078 U	0.08 U	0.074 U	0.078 U	0.076 U	0.082 U	0.078 U	0.09 U	0.088 U
Chrysene Dibenzo (a,h) Anthracene	230 160	11000 11	190000 190000	210 0.21	0.074 U 0.074 U	0.078 U 0.078 U	0.074 U 0.074 U	0.09 U 0.09 U	0.084 U 0.084 U	0.078 U 0.078 U	0.08 U 0.08 U	0.074 U 0.074 U	0.078 U 0.078 U	0.076 U 0.076 U	0.082 U 0.082 U	0.078 U 0.078 U	0.09 U 0.09 U	0.088 U 0.088 U
Dibenzofuran	260	2800	190000	1000	0.074 U	0.078 U	0.36 U	0.09 U	0.41 U	0.38 U	0.08 U	0.37 U	0.38 U	0.076 U	0.082 U	0.38 U	0.09 U	0.43 U
Diethylphthalate	8200	10000	10000	490000	0.37 U	0.38 U	0.36 U	0.44 U	0.41 U	0.38 U	0.39 U	0.37 U	0.38 U	0.37 U	0.4 U	0.38 U	0.44 U	0.43 U
Dimethylphthalate	100	100	100	NA	0.37 U	0.38 U	0.36 U	0.44 U	0.41 U	0.38 U	0.39 U	0.37 U	0.38 U	0.37 U	0.4 U	0.38 U	0.44 U	0.43 U
Di-n-Butylphthalate	4100	10000	10000	62000	0.37 U	0.38 U	0.36 U	0.44 U	0.41 U	0.38 U	0.39 U	0.37 U	0.38 U	0.37 U	0.4 U	0.38 U	0.44 U	0.43 U
Di-n-octylphthalate Fluoranthene	10000 3200	10000	10000	NA 22000	0.37 U 0.074 U	0.38 U 0.078 U	0.36 U 0.013 J	0.44 U 0.045 J	0.41 U 0.025 J	0.38 U 0.078 U	0.39 U 0.08 U	0.37 U 0.074 U	0.38 U 0.078 U	0.37 U 0.076 U	0.4 U 0.082 U	0.38 U 0.078 U	0.44 U 0.09 U	0.43 U 0.088 U
Fluoranthene Fluorene	3200	110000	190000	22000	0.074 U 0.074 U	0.078 U 0.078 U	0.013 J 0.074 U	0.045 J 0.029 J	0.025 J 0.084 U	0.078 U 0.078 U	0.08 U	0.074 U 0.074 U	0.078 U 0.078 U	0.076 U 0.076 U	0.082 U 0.082 U	0.078 U 0.078 U	0.09 U 0.09 U	0.088 U
Hexachlorobenzene	0.96	50	190000	1.1	0.074 U	0.078 U	0.074 U	0.029 J	0.084 U	0.078 U	0.08 U	0.074 U	0.078 U	0.076 U	0.082 U	0.078 U	0.09 U	0.088 U
Hexachlorobutadiene	39	1000	10000	22	0.074 U	0.078 U	0.074 U	0.09 U	0.084 U	0.078 U	0.08 U	0.074 U	0.078 U	0.076 U	0.082 U	0.078 U	0.09 U	0.088 U
Hexachlorocyclopentadiene	91	10000	10000	3700	0.37 U	0.38 U	0.36 U	0.44 U	0.41 U	0.38 U	0.39 U	0.37 U	0.38 U	0.37 U	0.4 U	0.38 U	0.44 U	0.43 U
Hexachloroethane	0.56	550	640	43	0.37 U	0.38 U	0.36 U	0.44 U	0.41 U	0.38 U	0.39 U	0.37 U	0.38 U	0.37 U	0.4 U	0.38 U	0.44 U	0.43 U
Indeno (1,2,3-cd) Pyrene	28000	110	190000	2.1	0.074 U	0.078 U	0.074 U	0.09 U	0.084 U	0.078 U	0.08 U	0.074 U	0.078 U	0.076 U	0.082 U	0.078 U	0.09 U	0.088 U
Isophorone Naphthalene	10 25	10000 56000	10000 190000	1800 18	0.37 U 0.074 U	0.38 U 0.078 U	0.36 U 0.074 U	0.44 U 0.058 J	0.41 U 0.084 U	0.38 U 0.078 U	0.39 U 0.08 U	0.37 U 0.074 U	0.38 U 0.078 U	0.37 U 0.076 U	0.4 U 0.082 U	0.38 U 0.078 U	0.44 U 0.09 U	0.43 U 0.088 U
Nitrobenzene	25	5600	190000	24	0.074 U	0.078 U	0.074 U	0.058 J 0.9 U	0.084 U	0.078 U	0.08 U	0.074 U	0.078 U	0.076 U	0.082 U	0.078 U	0.09 U	0.088 U
N-Nitrosodi-N-Propylamine	0.037	11	10000	0.25	0.074 U	0.078 U	0.074 U	0.09 U	0.084 U	0.078 U	0.08 U	0.074 U	0.078 U	0.076 U	0.082 U	0.078 U	0.09 U	0.088 U
N-Nitrosodiphenylamine	83	16000	190000	350	0.37 U	0.38 U	0.36 U	0.44 U	0.41 U	0.38 U	0.39 U	0.37 U	0.38 U	0.37 U	0.4 U	0.38 U	0.44 U	0.43 U
Pentachlorophenol	5	660	190000	2.7	0.37 U	0.38 U	0.36 U	0.44 U	0.41 U	0.38 U	0.39 U	0.37 U	0.38 U	0.37 U	0.4 U	0.38 U	0.44 U	0.43 U
Phenanthrene	10000	190000	190000	NA	0.074 U	0.078 U	0.074 U	0.04 J	0.014 J	0.078 U	0.08 U	0.074 U	0.078 U	0.076 U	0.082 U	0.078 U	0.09 U	0.088 U
Phenol	200	190000	190000	180000	0.074 U	0.078 U	0.074 U	0.09 U	0.084 U	0.078 U	0.08 U	0.074 U	0.078 U	0.076 U	0.082 U	0.078 U	0.09 U	0.088 U
Pyrene	2200	84000	190000	17000	0.074 U	0.078 U	0.018 J	0.042 J	0.023 J	0.078 U	0.08 U	0.074 U	0.078 U	0.076 U	0.082 U	0.078 U	0.09 U	0.088 U

Supplicity Sup	Location/ID	MSC	MSC	MSC	EPA RSL	BAITD030 CC 001	INTERNAL CE 003	DATEDO20 CC 002	IWTP038-CS-004	IMPROSE CC OOF	NATTRO20 CC 001	IWTP039-CS-001	IWTP039-CS-002	IWTP039-CS-003	IWTP039-CS-004	INTERNAL CC OOF	NATTROZO CE OOC	IWTP040-CS-001	IWTP040-CS-002
Second Force Second Personal Person																			11 - 12
Parente Impril														10/13/2011					10/4/2011
Front, Name	Parameter	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)														1
Control Cont																		1	
Section Mo		200	56000	190000	610	0.046 U	0.045 U	0.049 U	0.047 U	0.046 U	0.045 U	0.047 U	0.048 U	0.047 U	0.046 U	0.045 U	0.046 U	0.048 U	0.048 U
The content content 19		NΛ	NΛ	NΛ	NΛ	0.5811	0.56.11	0.61 II	0.5811	0.44.1	0.5711	0.5011	0.611	0.10 I	0.11.1	0.5711	0.56.11	0.6111	0.6 U
Month Mont		INA	NA.	IVA	IVA	0.38 0	0.30 0	0.010	0.38 0	0.44 3	0.37 0	0.35 0	0.00	0.151	0.113	0.37 0	0.30 0	0.01 0	0.00
Second S		190	8400	20000	5.6	0.61	0.29 J	0.39 J	1	0.79	0.3 J	0.43 J	0.5	0.68	1.2	0.3 J	0.18 J	0.41 J	0.72
Mart	Mercury																		
Marting 77 150 1500 1500 1500 141 151		10	450	190000	43	0.18	0.013 J	0.047	0.025 J	0.015 J	0.012 J	0.012 J	0.038 U	0.038 U	0.037 U	0.013 J	0.037 U	0.052	0.037 U
Process 19		27	4 400	400.000	440	0.44.10	0.025.10	0.05410	0.05.10	0.042.10	0.0004.10	0.043.10	0.000 LD	0.0451	0.40.1	0.0541	0.022.1	0.000.10	0.40.10
Description 1,000								0.054 J B						0.016 J			0.022 J		0.18 J B 4.8
Explain 326 5660 19000 3000 620 6.11 6.12 6.14 6.15								75 B						76 B			84 B		78 B
Decompose 150,000 150,000 150,000 150,000 150,000 151 648 9.38 118 118 118 4.39 1.88 1.78				190000	2000		0.24	0.43	0.62	0.54		0.72	0.6		0.21	0.31	0.52	0.44	0.48
Compare 4000 10000 10000 10000 1100 111 111 111 112 113 118	Cadmium																	1.0	0.7
Index																			18 B
March						0.00								0.0 -					5.5 B 12 B
Settlemen																			9.6
September 46										,									0.52 J
Vanderium 7000 20000 190000 1500000 1500000 150000 150000 150000 150000 150000 150000 1500000 150000 150000 150000 150000 150000 150000 1500000 150000 150000 150000 150000 1500000 150000 150000 150000 150000 150000 150000 150000 150000 15000																			0.031 J
Dec						0.2.0													0.16
Valente Composed 18 300 340 9.3 0.0055 U 0.0055 U 0.0055 U 0.0055 U 0.0055 U 0.0057 U 0.0055 U 0.0057 U																			24 B
11.1.7 friedhoeethane		12000	190000	190000	310000	18 B	14 B	22 B	16 B	8.8 B	17 B	18 B	17 B	12 B	9.6 B	20 B	10 B	22	23
1.1.1-Trichroenthame		18	300	340	9.3	0.0055.11	0.005.11	0.005611	0.005311	0.005711	0.005411	0.005711	0.005511	0.004711	0.004711	0.004411	0.004711	3.11	0.29 U
1,1,2-freinforrethame				10000															0.29 U
1.1 Delichrorethmee				44										0.0047 U	0.0047 U			3 U	0.29 U
1.5 Delichrometheme	,,																		0.29 U
12-Demomentame																			0.29 U
12-Delinforrepance 0.5 86 98 2.2 0.0055 U 0.0055 U 0.0056 U 0.0057 U 0.0057 U 0.0057 U 0.0057 U 0.0057 U 0.0057 U 0.0047 U 0.0047 U 0.0047 U 0.0047 U 0.0047 U 0.0047 U 0.0057 U																			0.29 U 0.29 U
1.2-Dichiopropreame 1.5-2 Dichiopropreame 1.																			0.29 U
14-Discare 3.2 290 330 17 11U 1U 1.U 1.U 1.U 1.U 1.U 1.U 1.U 1.U																			0.29 U
2-Hearmone																			58 U
Methyl-Pentanone																			0.29 U
Rection 9200 10,000 10,000 530000 0.022 U 0.022 U 0.022 U 0.023 U 0.023 U 0.023 U 0.022 U 0.019 U 0.017 U 0.019 U 12 U Arylontrille 0.37 33 38 1.2 0.11 U 0.005 U																			0.29 U
Aprilontifie 0.37 33 38 1.2 0.11 U 0.094 U 0.095 U 0.095 U 0.005 U 0.00																			0.29 U 1.2 U
Entering 1.5 290 330 5.4 0.005 U																			5.8 U
Formodichromethane																			0.29 U
Bromofern 8	Bromochloromethane	9	10000	10000	680			0.0056 U		0.0057 U			0.0055 U	0.0047 U	0.0047 U	0.0044 U	0.0047 U	3 U	0.29 U
Remomethane 1		8																	0.29 U
Carbon Disulfide 620 10000 10000 3700 0.0055 U 0.0055 U 0.0055 U 0.0056 U 0.0057 U 0.0054 U 0.0057 U 0.0055 U 0.0057 U 0.0055 U 0.0047 U 0.0047 U 0.0047 U 0.0047 U 3 U 0.0057 U 0.0058 U 0.0057 U 0.0058 U 0.0057 U 0.0055 U 0.0057 U 0.0055 U 0.0057 U 0.0055 U 0.0057 U 0.0055 U 0.0047 U																			0.29 U
Carbon Tetrachloride		-																	0.29 U
Chloroehzene 10																			0.29 U 0.29 U
Chlorodibromomethane 8					-														0.29 U
Chlorosethane 90 10000 10000 61000 0.0055 U 0.0055 U 0.0056 U 0.0056 U 0.0057 U 0.0054 U 0.0057 U 0.0055 U 0.0055 U 0.0047 U	Chlorodibromomethane	8		95	3.3				0.0053 U				0.0055 U	0.0047 U	0.0047 U				0.29 U
Chioromethane 3 1200 1400 500 0.0055 U 0.0055 U 0.0056 U 0.0056 U 0.0057 U 0.0057 U 0.0057 U 0.0057 U 0.0057 U 0.0047 U 0.	Chloroethane			10000					0.0053 U			0.0057 U							0.29 U
cis-12-Dichloroethene 7 10000 10000 2000 0.0055 U 0.0051 U 0.0054 U 0.0057 U 0.0055 U 0.0047 U 0.0057 U 0.0055 U 0.0055 U 0.0057 U 0.0055 U 0.0055 U 0.0047 U 0.0044 U 0.0047 U 0.0047 U 0.0047 U 0.0044 U 0.0047 U 0.0047 U 0.0047 U 0.0044 U 0.0047 U 0.0044 U <th< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>0.29 U</td></th<>																			0.29 U
Gis-1,3-bichloropropene 2.6 560 640 8.3 0.0055 U 0.0056 U 0.0057 U 0.0057 U 0.0057 U 0.0055 U 0.0047 U 0.0041 U 0.0047 U		3																	0.29 U
Ethylbenzee 70 10000 10000 27 0.0055 U 0.0055 U 0.0055 U 0.0055 U 0.0055 U 0.0057 U 0.0057 U 0.0057 U 0.0057 U 0.0057 U 0.0047 U 0.0047 U 0.0047 U 0.0047 U 3 U		2.6																	1.9 0.29 U
Methyl tert-butyl ether 2 8600 9900 220 0.0055 U 0.0056 U 0.0057 U 0.0057 U 0.0057 U 0.0057 U 0.0057 U 0.0047 U 0.0044 U 0.0047 U 3 U Styrene 24 10000 10000 3600 0 0.0055 U 0.0056 U 0.0057 U 0.0057 U 0.0055 U 0.0047 U 0.0044 U 0.0047 U 0.0047 U 0.0044 U 0.0047 U 0																			0.29 U
Methylene chloride 0.5 4700 5400 960 0.0055 U 0.00082 J 0.00087 J 0.00087 J 0.0057 U 0.0047 U 0.0047 U 0.0044 U 0.0047 U																			0.29 U
Tetrachloroethene 0.5 1500 4400 110 0.0017 0.005 U 0.0056 U 0.0053 U 0.0014 J 0.0054 U 0.0057 U 0.0055 U 0.0047 U 0.0047 U 0.0047 U 0.0047 U 0.0047 U 33 Toluene 100 1000 10000 45000 0.0055 U 0.005 U 0.005 U 0.0056 U 0.0053 U 0.0057 U 0.0054 U 0.0057 U 0.0055 U 0.0047 U 0.0047 U 0.0047 U 0.0047 U 0.0047 U 31 Trans-1,2-Dichloroethene 10 4800 5500 690 0.0055 U 0.005 U 0.0056 U 0.0053 U 0.0059 U 0.0057 U 0.0057 U 0.0057 U 0.0057 U 0.0057 U 0.0057 U 0.0047 U 0.0057 U 0.0058 U 0.0057 U 0.0055 U 0.0057 U 0.0055 U 0.0047 U 0.			4700									0.0057 U	0.0055 U						0.16 J
Toluene 100 10000 10000 45000 0.0055 U 0.0055 U 0.0055 U 0.0055 U 0.0055 U 0.0055 U 0.0057 U 0.0057 U 0.0057 U 0.0057 U 0.0057 U 0.0057 U 0.0047 U 0.0047 U 0.0047 U 0.0047 U 3 U 17ans-1,2-Dichloropropene 2.6 560 640 8.3 0.0055 U 0.0055 U 0.0055 U 0.0056 U 0.0053 U 0.0056 U 0.0053 U 0.0057 U 0.0055 U 0.0057 U 0.0055 U 0.0047 U 0.0057 U 0.0055 U 0.0057 U																			0.29 U
trans-1,2-Dichloroethene 10 4800 5500 690 0.0055 U 0.005 U 0.0056 U 0.0056 U 0.0057 U 0.0057 U 0.0057 U 0.0057 U 0.0057 U 0.0057 U 0.0047																			0.35
trans-1,3-0ichloropropene 2.6 560 640 8.3 0.0055 U 0.005 U 0.0056 U 0.0057 U 0.0047 U 0.0057																			0.29 U
																			0.29 U 0.29 U
	Trichloroethene	0.5	1300	1500	6.4	0.00075 J	0.005 U	0.0056 U	0.0053 U	0.0057 U	0.0054 U	0.0057 U	0.0055 U	0.0047 U	0.0047 U	0.0044 U	0.0047 U	1.7 J	0.19 J
Virgi Chloride 0.2 110 580 1.7 0.0055 U 0.005 U 0.004 U 0.005																			0.29 U
Xylenes (Total) 1000 8000 9100 2700 0.017 U 0.015 U 0.017 U 0.016 U 0.017 U 0.016 U 0.017 U 0.016 U 0.017 U 0.016 U 0.014 U 0.014 U 0.014 U 0.014 U 0.014 U 8.9 U		1000	8000	9100	2700						0.016 U		0.016 U	0.014 U	0.014 U	0.013 U		8.9 U	0.87 U

Location/ID	MSC	MSC	MSC	EPA RSL	IWTP038-CS-001	IWTP038-CS-002	IWTP038-CS-003	IWTP038-CS-004	IWTP038-CS-005	IWTP039-CS-001	IWTP039-CS-001	IWTP039-CS-002	IWTP039-CS-003	IWTP039-CS-004	IWTP039-CS-005	IWTP039-CS-006	IWTP040-CS-001	IWTP040-CS-002
Depth (ft.)		Direct Contact	Direct Contact	Industrial	6 - 7	6 - 7	6 - 7	6 - 7	6 - 7	3 - 4	3 - 4	3 - 4	3 - 4	3 - 4	3 - 4	3 - 4	11 - 12	11 - 12
Sample Date		0 - 2 ft	2 - 15 ft	Soil	10/11/2011	10/11/2011	10/11/2011	10/11/2011	10/11/2011	10/11/2011	10/11/2011	10/11/2011	10/13/2011	10/13/2011	10/13/2011	10/13/2011	10/4/2011	10/4/2011
Parameter Semi Volatile Organic Compound	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)														
1,2,4-Trichlorobenzene	27	10000	10000	99	0.38 U	0.36 U	0.4 U	0.38 U	0.37 U	0.37 U	0.39 U	0.39 U	0.38 U	0.38 U	0.37 U	0.037 U	0.39 U	0.39 U
1,2-Dichlorobenzene	60	10000	10000	9800	0.38 U	0.36 U	0.4 U	0.38 U	0.37 U	0.37 U	0.39 U	0.39 U	0.38 U	0.38 U	0.37 U	0.037 U	0.39 U	0.39 U
1,3-Dichlorobenzene	61	8400	10000	NA	0.38 U	0.36 U	0.4 U	0.38 U	0.37 U	0.37 U	0.39 U	0.39 U	0.38 U	0.38 U	0.37 U	0.037 U	0.39 U	0.39 U
1,4-Dichlorobenzene 2,4,5-Trichlorophenol	10 6100	200 190000	230 190000	12 62000	0.38 U	0.36 U 0.36 U	0.4 U 0.4 U	0.38 U 0.38 U	0.37 U	0.37 U 0.37 U	0.39 U 0.39 U	0.39 U 0.39 U	0.38 U 0.38 U	0.38 U 0.38 U	0.37 U 0.37 U	0.037 U 0.037 U	0.39 U 0.39 U	0.39 U 0.39 U
2,4,6-Trichlorophenol	29	2800	190000	160	0.38 U	0.36 U	0.4 U	0.38 U	0.37 U	0.37 U	0.39 U	0.39 U	0.38 U	0.38 U	0.37 U	0.037 U	0.39 U	0.39 U
2,4-Dichlorophenol	2	8400	190000	1800	0.077 U	0.074 U	0.081 U	0.077 U	0.076 U	0.076 U	0.079 U	0.079 U	0.078 U	0.078 U	0.076 U	0.0076 U	0.08 U	0.08 U
2,4-Dimethylphenol	200	10000	10000	12000	0.38 U	0.36 U	0.4 U	0.38 U	0.37 U	0.37 U	0.39 U	0.39 U	0.38 U	0.38 U	0.37 U	0.037 U	0.39 U	0.39 U
2,4-Dinitrophenol	20	5600	190000	1200	1.9 U	1.9 U	2.1 U	2 U	1.9 U	1.9 U	2 U	2 U	2 U	2 U	1.9 U	0.19 U	2 U	2 U
2,4-Dinitrotoluene 2.6-Dinitrotoluene	0.84	260 2800	190000 190000	5.5 620	0.38 U 0.38 U	0.36 U 0.36 U	0.4 U 0.4 U	0.38 U 0.38 U	0.37 U 0.37 U	0.37 U 0.37 U	0.39 U 0.39 U	0.39 U 0.39 U	0.38 U 0.38 U	0.38 U 0.38 U	0.37 U 0.37 U	0.037 U 0.037 U	0.39 U 0.39 U	0.39 U 0.39 U
2-Chloronaphthalene	18000	190000	190000	82000	0.38 U 0.077 U	0.36 U 0.074 U	0.4 U 0.081 U	0.38 U	0.37 U 0.076 U	0.37 U	0.39 U	0.39 U	0.38 U	0.38 U	0.37 U 0.076 U	0.037 U 0.0076 U	0.39 U	0.39 U
2-Chlorophenol	4.4	10000	10000	5100	0.38 U	0.36 U	0.4 U	0.38 U	0.37 U	0.37 U	0.39 U	0.39 U	0.38 U	0.38 U	0.37 U	0.037 U	0.39 U	0.39 U
2-Methylnaphthalene	1600	11000	190000	4100	0.077 U	0.074 U	0.081 U	0.077 U	0.076 U	0.076 U	0.079 U	0.079 U	0.078 U	0.078 U	0.076 U	0.0037 J	0.07 J	0.08 U
2-Methylphenol	510	140000	190000	31000	0.38 U	0.36 U	0.4 U	0.38 U	0.37 U	0.37 U	0.39 U	0.39 U	0.38 U	0.38 U	0.37 U	0.037 U	0.39 U	0.39 U
2-Nitroaniline	31	8400	190000	6000	1.9 U	1.9 U	2.1 U	2 U	1.9 U	1.9 U	2 U	2 U	2 U	2 U	1.9 U	0.19 U	2 U	2 U
2-Nitrophenol	82 32	22000	190000	NA 2.0	0.38 U	0.36 U	0.4 U	0.38 U	0.37 U	0.37 U	0.39 U	0.39 U	0.38 U	0.38 U	0.37 U	0.037 U	0.39 U	0.39 U
3,3'-Dichlorobenzidine 3/4-Methylphenol	12	180 10,000	190000 10,000	3.8 31,000	0.38 U 0.38 U	0.36 U 0.36 U	0.4 U 0.4 U	0.38 U 0.38 U	0.37 U 0.37 U	0.37 U 0.37 U	0.39 U 0.39 U	0.39 U 0.39 U	0.38 U 0.38 U	0.38 U	0.37 U 0.37 U	0.037 U 0.037 U	0.39 U 0.39 U	0.39 U 0.39 U
3-Nitroaniline	3.1	840	190000	31,000 NA	1.9 U	1.9 U	2.1 U	0.38 U	1.9 U	1.9 U	2 U	2 U	0.38 U	2 U	1.9 U	0.037 U	0.39 U	0.39 U
4,6-Dinitro-2-Methylphenol	1	280	190000	49	1.9 U	1.9 U	2.1 U	2 U	1.9 U	1.9 U	2 U	2 U	2 U	2 U	1.9 U	0.19 U	2 U	2 U
4-Bromophenyl phenyl ether	NA	NA	NA	NA	0.38 U	0.36 U	0.4 U	0.38 U	0.37 U	0.37 U	0.39 U	0.39 U	0.38 U	0.38 U	0.37 U	0.037 U	0.39 U	0.39 U
4-Chloro-3-Methyl-Phenol	110	14000	190000	62000	0.38 U	0.36 U	0.4 U	0.38 U	0.37 U	0.37 U	0.39 U	0.39 U	0.38 U	0.38 U	0.37 U	0.037 U	0.39 U	0.39 U
4-Chloroaniline	1.6	400	190000	8.6	0.38 U	0.36 U	0.4 U	0.38 U	0.37 U	0.37 U	0.39 U	0.39 U	0.38 U	0.38 U	0.37 U	0.037 U	0.39 U	0.39 U
4-Chlorodiphenyl Ether	NA 13	NA 4000	NA 190000	NA 86	0.38 U 1.9 U	0.36 U 1.9 U	0.4 U 2.1 U	0.38 U 2 U	0.37 U 1.9 U	0.37 U 1.9 U	0.39 U 2 U	0.39 U 2 U	0.38 U 2 U	0.38 U 2 U	0.37 U 1.9 U	0.037 U 0.19 U	0.39 U 2 U	0.39 U 2 U
4-Nitroaniline 4-Nitrophenol	6	22000	190000	NA	1.9 U	1.9 U	2.1 U	2 U	1.9 U	1.9 U	2 U	2 U	2 U	2 U	1.9 U	0.19 U	2 U	2 U
Acenaphthene	4700	170,000	190000	33000	0.077 U	0.074 U	0.081 U	0.077 U	0.076 U	0.076 U	0.079 U	0.079 U	0.078 U	0.078 U	0.076 U	0.0076 U	0.08 U	0.08 U
Acenaphthylene	6900	170,000	190000	33000	0.077 U	0.074 U	0.081 U	0.077 U	0.076 U	0.076 U	0.079 U	0.079 U	0.078 U	0.078 U	0.076 U	0.0076 U	0.08 U	0.08 U
Anthracene	350	190,000	190000	170000	0.077 U	0.074 U	0.081 U	0.077 U	0.076 U	0.076 U	0.079 U	0.079 U	0.078 U	0.078 U	0.076 U	0.0076 U	0.08 U	0.08 U
Benzo (A) Anthracene	320	110	190000	2.1	0.077 U	0.074 U	0.081 U	0.077 U	0.076 U	0.076 U	0.079 U	0.079 U	0.078 U	0.078 U	0.076 U	0.0015 J	0.08 U	0.08 U
Benzo (a) Pyrene Benzo (b) Fluoranthene	46 170	11 110	190000 190000	0.21 2.1	0.077 U 0.077 U	0.074 U 0.074 U	0.081 U 0.081 U	0.077 U 0.077 U	0.076 U 0.076 U	0.076 U 0.076 U	0.079 U 0.079 U	0.079 U 0.079 U	0.078 U 0.078 U	0.078 U 0.078 U	0.076 U 0.076 U	0.001 J 0.0016 J	0.08 U 0.08 U	0.08 U 0.08 U
Benzo (g,h,i) Perylene	180	170,000	190000	NA	0.077 U	0.074 U	0.081 U	0.077 U	0.076 U	0.076 U	0.079 U	0.079 U	0.078 U	0.078 U	0.076 U	0.0016 J 0.0076 U	0.08 U	0.08 U
Benzo (k) Fluoranthene	610	1,100	190000	21	0.077 U	0.074 U	0.081 U	0.077 U	0.076 U	0.076 U	0.079 U	0.079 U	0.078 U	0.078 U	0.076 U	0.0076 U	0.08 U	0.08 U
Bis(2-Chloroethoxy) Methane	31	8,400	10,000	1800	0.38 U	0.36 U	0.4 U	0.38 U	0.37 U	0.37 U	0.39 U	0.39 U	0.38 U	0.38 U	0.37 U	0.037 U	0.39 U	0.39 U
Bis(2-Chloroethyl) Ether	0.076	6.7	7.7	1	0.077 U	0.074 U	0.081 U	0.077 U	0.076 U	0.076 U	0.079 U	0.079 U	0.078 U	0.078 U	0.076 U	0.0076 U	0.08 U	0.08 U
Bis(2-Chloroisopropyl) Ether	30	220	250	22	0.077 U	0.074 U	0.081 U	0.077 U	0.076 U	0.076 U	0.079 U	0.079 U	0.078 U	0.078 U	0.076 U	0.0076 U	0.08 U *	0.08 U *
Bis(2-Ethylhexyl) Phthalate	130	5,700	10,000	120	0.77 U	0.74 U	0.81 U	0.77 U	0.76 U	0.76 U	0.79 U	0.79 U	0.78 U	0.78 U	0.76 U	0.076 U	0.63 J	0.8 U
Butylbenzylphthalate Carbazole	10000 83	10000 4000	10000 190000	910 NA	0.38 U 0.077 U	0.36 U 0.074 U	0.4 U 0.081 U	0.38 U 0.077 U	0.37 U 0.076 U	0.37 U 0.076 U	0.39 U 0.079 U	0.39 U 0.079 U	0.38 U 0.078 U	0.38 U 0.078 U	0.37 U 0.076 U	0.037 U 0.0076 U	0.097 J 0.08 U	0.39 U 0.08 U
Chrysene	230	11000	190000	210	0.077 U	0.074 U	0.081 U	0.077 U	0.076 U	0.076 U	0.079 U	0.079 U	0.078 U	0.078 U	0.076 U	0.0070 U	0.08 U	0.08 U
Dibenzo (a,h) Anthracene	160	11	190000	0.21	0.077 U	0.074 U	0.081 U	0.077 U	0.076 U	0.076 U	0.079 U	0.079 U	0.078 U	0.078 U	0.076 U	0.0076 U	0.08 U	0.08 U
Dibenzofuran	260	2800	190000	1000	0.38 U	0.36 U	0.4 U	0.38 U	0.37 U	0.37 U	0.39 U	0.39 U	0.38 U	0.38 U	0.37 U	0.037 U	0.39 U	0.39 U
Diethylphthalate	8200	10000	10000	490000	0.38 U	0.36 U	0.4 U	0.38 U	0.37 U	0.37 U	0.39 U	0.39 U	0.38 U	0.38 U	0.37 U	0.037 U	0.39 U	0.39 U
Dimethylphthalate	100	100	100	NA	0.38 U	0.36 U	0.4 U	0.38 U	0.37 U	0.37 U	0.39 U	0.39 U	0.38 U	0.38 U	0.37 U	0.037 U	0.39 U	0.39 U
Di-n-Butylphthalate	4100 10000	10000 10000	10000	62000 NA	0.38 U 0.38 U	0.36 U 0.36 U	0.4 U 0.4 U	0.38 U 0.38 U	0.37 U 0.37 U	0.37 U 0.37 U	0.39 U 0.39 U	0.39 U 0.39 U	0.38 U 0.38 U	0.38 U 0.38 U	0.37 U 0.37 U	0.037 U 0.037 U	0.059 J 0.39 U	0.39 U 0.39 U
Di-n-octylphthalate Fluoranthene	3200	110000	190000	22000	0.38 U	0.36 U	0.4 U	0.38 U	0.37 U	0.076 U	0.079 U	0.079 U	0.38 U	0.38 U	0.37 U	0.0025 J	0.0093 J	0.39 U
Fluorene	3800	110000	190000	22000	0.077 U	0.074 U	0.081 U	0.077 U	0.076 U	0.076 U	0.079 U	0.079 U	0.078 U	0.078 U	0.076 U	0.0025 J	0.08 U	0.08 U
Hexachlorobenzene	0.96	50	190000	1.1	0.077 U	0.074 U	0.081 U	0.077 U	0.076 U	0.076 U	0.079 U	0.079 U	0.078 U	0.078 U	0.076 U	0.0076 U	0.08 U	0.08 U
Hexachlorobutadiene	39	1000	10000	22	0.077 U	0.074 U	0.081 U	0.077 U	0.076 U	0.076 U	0.079 U	0.079 U	0.078 U	0.078 U	0.076 U	0.0076 U	0.08 U	0.08 U
Hexachlorocyclopentadiene	91	10000	10000	3700	0.38 U	0.36 U	0.4 U	0.38 U	0.37 U	0.37 U	0.39 U	0.39 U	0.38 U	0.38 U	0.37 U	0.037 U	0.39 U	0.39 U
Hexachloroethane	0.56	550	640	43	0.38 U	0.36 U	0.4 U	0.38 U	0.37 U	0.37 U	0.39 U	0.39 U	0.38 U	0.38 U	0.37 U	0.037 U	0.39 U	0.39 U
Indeno (1,2,3-cd) Pyrene	28000 10	110 10000	190000 10000	2.1 1800	0.077 U 0.38 U	0.074 U 0.36 U	0.081 U 0.4 U	0.077 U 0.38 U	0.076 U 0.37 U	0.076 U 0.37 U	0.079 U 0.39 U	0.079 U 0.39 U	0.078 U 0.38 U	0.078 U 0.38 U	0.076 U 0.37 U	0.0076 U 0.037 U	0.08 U 0.39 U	0.08 U 0.39 U
Isophorone Naphthalene	25	10000 56000	10000	1800	0.38 U 0.077 U	0.36 U 0.074 U	0.4 U 0.081 U	0.38 U 0.077 U	0.37 U 0.076 U	0.37 U 0.076 U	0.39 U 0.079 U	0.39 U 0.079 U	0.38 U 0.078 U	0.38 U 0.078 U	0.37 U 0.076 U	0.037 U 0.0028 J	0.39 U 0.032 J	0.39 U 0.08 U
Nitrobenzene	20	5600	10000	24	0.077 U	0.74 U	0.81 U	0.077 U	0.76 U	0.76 U	0.079 U	0.079 U	0.078 U	0.78 U	0.76 U	0.0028 J	0.032 J	0.08 U
N-Nitrosodi-N-Propylamine	0.037	11	10000	0.25	0.077 U	0.074 U	0.081 U	0.077 U	0.076 U	0.076 U	0.079 U	0.079 U	0.078 U	0.078 U	0.076 U	0.0076 U	0.08 U	0.08 U
N-Nitrosodiphenylamine	83	16000	190000	350	0.38 U	0.36 U	0.4 U	0.38 U	0.37 U	0.37 U	0.39 U	0.39 U	0.38 U	0.38 U	0.37 U	0.037 U	0.39 U	0.39 U
Pentachlorophenol	5	660	190000	2.7	0.38 U	0.36 U	0.4 U	0.38 U	0.37 U	0.37 U	0.39 U	0.39 U	0.38 U	0.38 U	0.37 U	0.037 U	0.39 U	0.39 U
Phenanthrene	10000	190000	190000	NA	0.077 U	0.074 U	0.081 U	0.077 U	0.076 U	0.076 U	0.079 U	0.079 U	0.078 U	0.078 U	0.076 U	0.0033 J	0.035 J	0.08 U
Phenol	200	190000	190000	180000	0.077 U	0.074 U	0.081 U	0.077 U	0.076 U	0.076 U	0.079 U	0.079 U	0.078 U	0.078 U	0.076 U	0.0076 U	0.08 U	0.08 U
Pyrene	2200	84000	190000	17000	0.077 U	0.074 U	0.081 U	0.077 U	0.076 U	0.076 U	0.079 U	0.079 U	0.078 U	0.078 U	0.076 U	0.0025 J	0.017 J	0.08 U

Blank results = analyte not analyzed. U = Not detected. J = Organics; estimated. Inorganics; blank contamination. B = Organics; blank contamination. Inorganics; estimated. E = Inorganics: matrix interference. NA = Not Available. * = Laboratory Control Sample or duplicate exceeds control limits.

Table 3. Waste Characterization Summary for Solids Handled During Remediation Activities Former York Naval Ordnance Plant - York, PA

	Clean Fill Limits	Regulated Fill Limits	PADEP MSC	PADEP MSC	PADEP MSC		B4ND-WS-003- Soil Pile-0	B4ND-WS-004- Soil Pile-0	B4ND-WS-005- Soil Pile-0	B4ND-WS-006- Soil Pile-0
			Soil to GW	Direct Contact, Non- Residential	Direct Contact, Non- Residential	fYNOP Remediation Contained-In	Soil	Soil	Soil	Soil
Parameter			Used Aquifer	0 - 2 ft	2 - 15 ft	Thresholds *	Sampled 10-26- 11	Sampled 10-26- 11	Sampled 10-26- 11	Sampled 10-26- 11
Cyanide, Total (mg/kg)	NA	NA	NA	NA	NA	56,000	0.52 J	0.58 U	0.21 J	2.2
Cyanide, Free (mg/kg)	200	200	200	56000	190000	56,000	0.14	0.047 U	0.043 U	0.045
Metals, mg/kg					100000	00,000	****			
Antimony	27	27	27	1100	190000		0.31 B	0.28 B	0.16 JB	0.16 JB
Arsenic	12	53	29	53	190000		4.7	4.7	5.1	4.3
Barium	8200	8200	8200	190000	190000		59 B	59 B	42 B	47 B
Beryllium	320	320	320	5600	190000		0.52	0.52	0.51	0.51
Cadmium	38	38	38	1400	190000	1,400	0.29	0.13	0.081 J	0.2
Chromium (total)	190000	190000	190000	190000	190000	190,000	17 B	18 B	14 B	15 B
Chromium (hexavalent)	94 8200	190 36000	190 43000	8400 100000	20000 190000	8,400	0.95 11	1.3 11	0.43 U 9.4	1.8 13
Copper Lead	450	450	45000	10000	190000	1.000	19 B	19	9.4 9.0 B	11 B
Mercury	10	10	10	450	190000	1,000	0.075	0.08	0.063	0.049
Nickel	650	650	650	56000	190000	56,000	14	8.8	7.4	13
Selenium	26	26	26	14000	190000	- 00,000	0.28 J	0.47 J	0.31 J	0.28 J
Silver	84	84	84	14000	190000		0.026 J	0.024 J	0.015 J	0.024 J
Thallium	14	14	14	200	190000		0.12	0.19	0.11	0.10 J
Vanadium	1500	72000	72000	20000	190000		23	28	22	18
Zinc	12000	12000	12000	190000	190000		38	24	20	39
Polychlorinated Biphenyls (PCBs), n	ng/kg									
Arochlor-1016	15	200	200	200	10000		ND	ND	ND	ND
Arochlor-1221	0.63	2.5	0.63	40	10000		ND	ND	ND	ND
Arochlor-1232	0.5	2	0.5	40	10000		ND	ND	ND	ND
Arochlor-1242	16	62	16	40	10000		ND	ND	ND	ND
Arochlor-1248	9.9	44	62	40	10000		ND	ND	ND	ND
Arochlor-1254	4.4	44	260	40	10000		1.7	0.37	0.037	0.096
Arochlor-1260	30	130	590	40	190000		ND	ND	ND	ND
Volatile Organic Compound (VOCs), 1,1,1,2-Tetrachloroethane	11g/ kg	18	18	300	340		ND	ND	ND	ND
1,1,1-Trichloroethane	7.2	7.2	20	10000	10000	10,000	ND ND	ND ND	ND ND	ND ND
1,1,2,2-Tetrachloroethane	0.0093	0.0093	0.43	38	44	10,000	ND ND	ND ND	ND	ND
1,1,2-Trichloroethane	0.15	0.15	0.5	140	160	100	ND ND	ND	ND	ND
1,1-Dichloroethane	0.65	2.7	16	1400	1600		ND	ND	ND	ND
1,1-Dichloroethene	0.19	0.19	0.7	10000	10000		ND	ND	ND	ND
1,2-Dibromoethane	0.0012	0.0012	0.005	3.7	4.3		ND	ND	ND	ND
1,2-Dichloroethane	0.1	0.1	0.5	86	98		ND	ND	ND	ND
1,2-Dichloropropane	0.11	0.11	0.5	220	260		ND	ND	ND	ND
1,4-Dioxane	0.073	0.31	3.2	290	330		ND	0.310 J	ND	ND
2-Butanone (MEK)	54	110	580	10000	10000		ND	ND	ND	ND
2-Hexanone (methyl n-butyl ketone)	NE	NE	0.5	400	460		ND	ND	ND	ND
4-Methyl-2-Pentanone (MIBK)	2.9	6.3	41	10000	10000		ND	ND	ND	ND
Acetone	41	110	9200	10000	10000		ND	ND	ND	ND
Acrylonitrile	0.0087	0.037	0.37	33	38	222	ND	ND	ND	ND
Benzene Bromochloromethane	0.13 1.6	0.13 1.6	0.5 9	290 10000	330 10000	290	ND ND	ND ND	ND ND	ND ND
Bromodichloromethane	3.4	3.4	8	60	69		ND ND	ND ND	ND ND	ND ND
Bromoform (Tribromomethane)	4.4	4.4	8	2000	2300		ND ND	ND ND	ND ND	ND ND
Bromomethane	0.54	0.54	1	400	460		ND	ND	ND	ND
Carbon Disulfide	160	350	620	10000	10000		ND	ND	ND	ND
Carbon Tetrachloride	0.26	0.26	0.5	150	170		ND	ND	ND	ND
Chlorobenzene	6.1	6.1	10	4000	4600	4,000	ND	ND	ND	ND
Chlorodibromomethane	3.2	3.2	8	82	95		ND	ND	ND	ND
Chloroethane	5	19	90	10000	10000		ND	ND	ND	ND
Chloroform	2.5	2.5	8	97	110		ND	ND	ND	ND
Chloromethane (methyl chloride)	0.038	0.038	3	1200	1400		ND	ND	ND	ND
cis-1,2-Dichloroethene	1.6	1.6	7	10000	10000		ND	ND	ND	ND
cis-1,3-Dichloropropene	0.12	0.46	2.6	560	640		ND	ND	ND	ND
Ethylbenzene	46	46	70	10000	10000	10,000	ND	ND	ND	ND
Methyl tert-butyl ether	0.28	0.28	2	8600	9900		ND	ND	ND	ND
Methylene chloride	0.076	0.076	0.5	4700	5400	4,700	ND	ND	ND	ND
Styrene	24	24	24	10000	10000	4.500	ND	ND	ND	ND
Tetrachloroethene	0.43	0.43	0.5	1500	4400	1,500	0.0043 J	ND	ND	0.0016 J
Toluene	44	44	100 10	10000	10000	10,000	ND ND	ND ND	ND ND	ND ND
trans-1,2-Dichloroethene	2.3	2.3 0.11	0.5	4800 220	5500 260		ND ND	ND ND	ND ND	ND ND
1,2-Dichloropropane Trichloroethene	0.11 0.17	0.11	0.5	1300	1500	1,300	0.0037 J	ND ND	ND ND	0.0017 J
Vinyl Chloride	0.03	0.17	0.3	110	580	1,300	0.0037 3 ND	ND ND	ND ND	0.0017 3 ND
Xylenes (Total)	990	990	1000	8000	9100	8,000	ND ND	ND ND	ND ND	ND ND
J = Estimated value for organics, blank			.500	5500	0.00	5,300				

MSC = Medium Specific Concentration

J = Estimated value for organics, blank contamination for inorganics
B = Blank contamination for organics, estimated concentration for inorganics
U = Not detected

ND = Not Detected; NA = Not Available

^{**}Contained-In criteria derived only for specific parameters.

PADEP = Pennsylvania Department of Environmental Protection

Table 4.

Soils Data Summary - Building 4 Remediation Area Confirmation Sampling
Former York Naval Ordnance Plant - York, PA

	Location/ID	MSC	MSC	MSC	EPA RSL	B4ND-CS-001	B4ND-CS-002	B4ND-CS-003	B4ND-CS-004	B4ND-CS-005	B4ND-CS-006	B4ND-CS-007	B4ND-CS-008	B4ND-CS-009	B4ND-CS-010	B4ND-CS-011
	Depth (ft.)	Soil to GW	Direct Contact	Direct Contact	Industrial	25 - 26	25 - 26	25 - 26	25 - 26	11 - 12	13 - 14	12 - 13	12 - 13	20 - 21	20 - 21	20 - 21
	Sample Date	Used Aquifer	0 - 2 ft	2 - 15 ft	Soil	10/26/2011	10/26/2011	10/26/2011	10/26/2011	10/26/2011	10/26/2011	10/26/2011	10/26/2011	11/8/2011	11/8/2011	11/8/2011
Parameter	Sample Bate	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	10,20,2011	10/20/2011	10,20,2011	10,20,2011	10,20,2011	10,20,2011	10,20,2011	10, 20, 2011	11,0,2011	11,0,2011	11,0,2011
Cyanide, Free	·	(8/8/	(8/8/	(6/6/	(6/6/							!				I
Cyanide, Free		200	56000	190000	610	0.045 U	0.046 U	0.55	1	0.047 U	0.022 J	0.045 U	0.21	1.4	480	0.048 U
Cyanide, Total														<u> </u>		
Cyanide, Total		NA	NA	NA	NA	0.54 U	0.56 U	0.69	9.3	0.58 U	2.2	0.55 U	0.22 J	26	110	0.57 U
Hexavalent Chro	mium		•	•						•		•				
Hexavalent Chron	mium	190	8400	20000	5.6	1	1.4	0.11 J	1.2	1.1	0.17 J	0.66	0.57	0.51 U	0.31 J	0.37 J
Mercury			•	•								•				
Mercury		10	450	190000	43	0.036 U	0.018 J	0.035 U	0.02 J	0.028 J	0.024 J	0.072	0.06	0.022 J	0.04 U	0.035 J
Metal																
Antimony		27	1,100	190,000	410	0.12 J B	0.1 J B	0.22 B	0.18 J B	0.12 J B	0.12 J B	0.27 B	0.26 B	0.54 B	0.86 B	0.19 J B
Arsenic		29	53	190000	1.6	4	0.72	2.8	5.2	1.4	2.8	3.4	6	16	4.4	5.4
Barium		8200	190000	190000	190000	100 B	19 B	19 B	21 B	32 B	14 B	21 B	42 B	36	34	70
Beryllium		320	5600	190000	2000	0.8	0.51	0.51	0.8	0.43	0.44	0.55	0.79	1.7	0.55	1.9
Cadmium		38	1400	190000	800	0.52	0.15	0.18	0.25	0.13	0.089 J	0.16	0.26	0.67	1.8	0.72
Chromium (Tota	il)	190,000	190,000	190,000	1,500,000	13 B	7.7 B	9.6 B	8.5 B	8.9 B	5.3 B	16 B	16 B	20 B	24 B	9.5 B
Copper		43000	100000	190000	41000	20	10	13	16	11	9	18	20	22	36	23
Lead		450	1000	190000	800	11 B	12 B	7.4 B	10 B	9 B	5.5 B	13 B	16 B	24 B	41 B	15 B
Nickel		650	56000	190000	20000	30	26	35	38	9.3	8.5	18	43	120	180	27
Selenium		26	14000	190000	5100	0.65	0.4 J	0.26 J	0.37 J	0.45 J	0.18 J	0.39 J	0.52 J	0.44 J	0.23 J	0.53
Silver		84	14000	190000	5100	0.018 J	0.0052 J	0.052 J	0.052 J	0.024 J	0.0082 J	0.017 J	0.029 J	0.02 J	0.034 J	0.021 J
Thallium		14	200	190000	10	0.15	0.082 J	0.051 J	0.096 J	0.16	0.051 J	0.081 J	0.15	0.13	0.13	0.19
Vanadium		72000	20000	190000	5,200	17	9.8	13	13	18	8.3	15	27	24 B	16 B	15 B
Zinc		12000	190000	190000	310000	80	43	37	65	29	30	60	54	130	74	91
Polychlorinated I	Biphenols									1		1				
Arochlor-1016		200	200	10000	21	0.019 U	0.019 U	0.018 U	0.019 U	0.019 U	0.018 U	0.019 U	0.019 U	0.021 U	0.02 U	0.02 U
Arochlor-1221		0.63	40	10000	0.54	0.019 U	0.019 U	0.018 U	0.019 U	0.019 U	0.018 U	0.019 U	0.019 U	0.021 U	0.02 U	0.02 U
Arochlor-1232		0.5	40	10000	0.54	0.019 U	0.019 U	0.018 U	0.019 U	0.019 U	0.018 U	0.019 U	0.019 U	0.021 U	0.02 U	0.02 U
Arochlor-1242		16	40	10000	0.74	0.019 U	0.019 U	0.018 U	0.019 U	0.019 U	0.018 U	0.019 U	0.019 U	0.021 U	0.02 U	0.02 U
Arochlor-1248		62	40	10000	0.74	0.019 U	0.019 U	0.018 U	0.019 U	0.019 U	0.018 U	0.019 U	0.019 U	0.021 U	0.02 U	0.02 U
Arochlor-1254		260	40	10000	0.74	0.016 J	0.37	0.053	0.75	0.019 U	0.018 U	0.019 U	0.035	0.17	0.44	0.011 J
Arochlor-1260		590	40	190000	0.74	0.019 U	0.019 U	0.018 U	0.019 U	0.019 U	0.018 U	0.019 U	0.019 U	0.021 U	0.02 U	0.02 U

Table 4.

Soils Data Summary - Building 4 Remediation Area Confirmation Sampling
Former York Naval Ordnance Plant - York, PA

Location/ID	MSC	MSC	MSC	EPA RSL	B4ND-CS-001	B4ND-CS-002	B4ND-CS-003	B4ND-CS-004	B4ND-CS-005	B4ND-CS-006	B4ND-CS-007	B4ND-CS-008	B4ND-CS-009	B4ND-CS-010	B4ND-CS-011
Depth (ft.)	Soil to GW	Direct Contact	Direct Contact	Industrial	25 - 26	25 - 26	25 - 26	25 - 26	11 - 12	13 - 14	12 - 13	12 - 13	20 - 21	20 - 21	20 - 21
Sample Date	Used Aquifer	0 - 2 ft	2 - 15 ft	Soil	10/26/2011	10/26/2011	10/26/2011	10/26/2011	10/26/2011	10/26/2011	10/26/2011	10/26/2011	11/8/2011	11/8/2011	11/8/2011
Parameter	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)		., .,				., .,				,	, , , ,
Volatile Organic Compound			. 6, 6,	. 0. 0.					Į.				Į.		
1,1,1,2-Tetrachloroethane	18	300	340	9.3	1.3 U	1.5 U	2.8 U	21 U	0.0051 U	0.27 U	49 U	0.26 U	0.31 U	0.31 U	0.55 U
1,1,1-Trichloroethane	20	10000	10000	38000	12	18	38	580	0.0033 J	0.45	120	0.6	0.31	4.9	1.2
1,1,2,2-Tetrachloroethane	0.43	38	44	2.8	1.3 U	1.5 U	2.8 U	21 U	0.0051 U	0.27 U	49 U	0.26 U	0.31 U	0.31 U	0.55 U
1,1,2-Trichloroethane	0.5	140	160	5.3	1.3 U	1.5 U	2.8 U	21 U	0.0051 U	0.27 U	49 U	0.26 U	0.31 U	0.31 U	0.55 U
1,1-Dichloroethane	16	1400	1600	17	0.5 J	1.6	1.7 J	13 J	0.0051 U	0.27 U	49 U	0.26 U	0.31 U	0.17 J	0.55 U
1,1-Dichloroethene	0.7	10000	10000	1100	2.4	6	3.7	43	0.0051 U	0.27 U	49 U	0.26 U	0.31 U	0.41	0.18 J
1,2-Dibromoethane	0.005	3.7	4.3	0.17	1.3 U	1.5 U	2.8 U	21 U	0.0051 U	0.27 U	49 U	0.26 U	0.31 U	0.31 U	0.55 U
1,2-Dichloroethane	0.5	86	98	2.2	0.59 J	0.36 J	1.1 J	4.4 J	0.0051 U	0.27 U	49 U	0.26 U	0.31 U	0.12 J	0.55 U
1,2-Dichloropropane	0.5	220	260	4.7	1.3 U	1.5 U	2.8 U	21 U	0.0051 U	0.27 U	49 U	0.26 U	0.31 U	0.31 U	0.55 U
1,4-Dioxane	3.2	290	330	17	270 U	290 U	550 U	4200 U	1 U	53 U	9800 U	52 U	63 U	13 J	110 U
2-Butanone	400	10000	10000	200000	2.2	1.5 U	2.8 U	21 U	0.0051 U	0.27 U	49 U	0.26 U	0.31 U	1.1	0.55 U
2-Hexanone	4.4	400	460	1400	1.3 U	1.5 U	2.8 U	21 U	0.0051 U	0.27 U	49 U	0.26 U	0.31 U	0.31 U	0.55 U
4-Methyl-2-Pentanone	820	10000	10000	53000	1.3 U	1.5 U	2.8 U	21 U	0.0051 U	0.27 U	49 U	0.26 U	0.31 U	0.31 U	0.55 U
Acetone	9200	10,000	10,000	630000	2.3 J B	5.8 U	4.6 J B	31 J B	0.02 U	0.4 J B	200 U	1 U	1.3 U	0.4 J	2.2 U
Acrylonitrile	0.37	33	38	1.2	27 U	29 U	55 U	420 U	0.1 U	5.3 U	980 U	5.2 U	6.3 U	6.1 U	11 U
Benzene	0.5	290	330	5.4	1.3 U	1.5 U	2.8 U	21 U	0.0051 U	0.27 U	49 U	0.26 U	0.31 U	0.31 U	0.55 U
Bromochloromethane	9	10000	10000	680	1.3 U	1.5 U	2.8 U	21 U	0.0051 U	0.27 U	49 U	0.26 U	0.31 U	0.31 U	0.55 U
Bromodichloromethane	8	60	69	1.4	1.3 U	1.5 U	2.8 U	21 U	0.0051 U *	0.27 U	49 U	0.26 U	0.31 U	0.31 U	0.55 U
Bromoform	8	2000	2300	220	1.3 U	1.5 U	2.8 U	21 U	0.0051 U	0.27 U	49 U	0.26 U	0.31 U	0.31 U	0.55 U
Bromomethane	1	400	460	32	1.3 U	1.5 U	2.8 U	21 U	0.0051 U	0.27 U	49 U	0.26 U	0.31 U *	0.31 U *	0.55 U *
Carbon Disulfide	620	10000	10000	3700	1.3 U	1.5 U	2.8 U	21 U	0.0051 U	0.27 U	49 U	0.26 U	0.31 U	0.31 U	0.55 U
Carbon Tetrachloride	0.5	150	170	3	1.3 U	1.5 U	2.8 U	21 U	0.0051 U	0.27 U	49 U	0.26 U	0.31 U	0.31 U	0.55 U
Chlorobenzene	10	4000	4600	1400	1.3 U	1.5 U	2.8 U	21 U	0.0051 U	0.27 U	49 U	0.26 U	0.31 U	0.31 U	0.55 U
Chlorodibromomethane	8	82	95	3.3	1.3 U	1.5 U	2.8 U	21 U	0.0051 U	0.27 U	49 U	0.26 U	0.31 U	0.31 U	0.55 U
Chloroethane	90	10000	10000	61000	1.3 U	1.5 U	2.8 U	21 U	0.0051 U	0.27 U	49 U	0.26 U	0.31 U *	0.31 U *	0.55 U *
Chloroform	8	97	110	1.5	1.3 U	1.5 U	2.8 U	21 U	0.0051 U	0.27 U	49 U	0.26 U	0.31 U	0.31 U	0.55 U
Chloromethane	3	1200	1400	500	1.3 U	1.5 U	2.8 U	21 U	0.0051 U	0.27 U	49 U	0.26 U	0.31 U *	0.31 U *	0.55 U *
cis-1,2-Dichloroethene	7	10000	10000	2000	0.45 J	1.5 U	2.8 U	21 U	0.0051 U	0.27 U	49 U	0.26 U	0.31 U	0.31 U	0.55 U
cis-1,3-Dichloropropene	2.6	560	640	8.3	1.3 U	1.5 U	2.8 U	21 U	0.0051 U *	0.27 U	49 U	0.26 U	0.31 U	0.31 U	0.55 U
Ethylbenzene	70	10000	10000	27	1.3 U	1.5 U	2.8 U	21 U	0.0051 U	0.27 U	49 U	0.26 U	0.31 U	0.31 U	0.55 U
Methyl tert-butyl ether	2	8600	9900	220	1.3 U	1.5 U	2.8 U	21 U	0.0051 U	0.27 U	49 U	0.26 U	0.31 U	0.31 U	0.55 U
Methylene chloride	0.5	4700	5400	960	1.3 U	1.5 U	2.8 U	21 U	0.0051 U	0.27 U	49 U	0.26 U	0.099 J	0.11 J	0.55 U
Styrene	24	10000	10000	36000	1.3 U	1.5 U	2.8 U	21 U	0.0051 U	0.27 U	49 U	0.26 U	0.31 U	0.31 U	0.55 U
Tetrachloroethene	0.5	1500	4400	110	1.3 U	1.5 U	0.77 J	21 U	0.0012 J	0.28	420	2.4	0.29 J	0.82	2.7
Toluene	100	10000	10000	45000	1.3 U	1.5 U	2.8 U	21 U	0.0051 U	0.27 U	49 U	0.26 U	0.31 U	0.31 U	0.55 U
trans-1,2-Dichloroethene	10	4800	5500	690	1.3 U	1.5 U	2.8 U	21 U	0.0051 U	0.27 U	49 U	0.26 U	0.31 U	0.31 U	0.55 U
trans-1,3-Dichloropropene	2.6	560	640	8.3	1.3 U	1.5 U	2.8 U	21 U	0.0051 U *	0.27 U	49 U	0.26 U	0.31 U	0.31 U	0.55 U
Trichloroethene	0.5	1300	1500	6.4	14	15	29	99	0.0081	0.32	940	4.1	0.36	7.5	12
Vinyl Chloride	0.2	110	580	1.7	1.3 U	1.5 U	2.8 U	21 U	0.0051 U	0.27 U	49 U	0.26 U	0.31 U *	0.31 U *	0.55 U *
Xylenes (Total)	1000	8000	9100	2700	4 U	4.4 U	8.3 U	64 U	0.015 U	0.8 U	150 U	0.78 U	0.94 U	0.92 U	1.6 U

Blank results = analyte not analyzed. U = Not detected. J = Organics; estimated. Inorganics; blank contamination. B = Organics; blank contamination. Inorganics; estimated. E = Inorganics: matrix interference. NA = Not Available. * = Laboratory Control Sample or duplicate exceeds control limits.

Table 4.

Soils Data Summary - Building 4 Remediation Area Confirmation Sampling
Former York Naval Ordnance Plant - York, PA

Location/ID		MSC	MSC	EPA RSL	B4AMF-CS-001	B4AMF-CS-002	B4AMF-CS-003	B4AMF-CS-004
Depth (ft.)		Direct Contact	Direct Contact	Industrial	6 - 7	8 - 9	8 - 9	8 - 9
Sample Date	•	0 - 2 ft	2 - 15 ft	Soil	11/7/2011	11/7/2011	11/7/2011	11/7/2011
Parameter	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)				
Cyanide, Free					1		1	•
Cyanide, Free	200	56000	190000	610	6.6	0.03 J	0.054	9.8
Cyanide, Total					1		1	1
Cyanide, Total	NA	NA	NA	NA	7.4	0.66 J	1.5	22
Hexavalent Chromium								
Hexavalent Chromium	190	8400	20000	5.6	1.2	0.55 J	0.28 J	0.48 U
Mercury								
Mercury	10	450	190000	43	0.061	0.11	0.08	0.08
Metal								
Antimony	27	1,100	190,000	410	0.31 B	0.73 B	0.42 B	0.19 J B
Arsenic	29	53	190000	1.6	11	68	33	19
Barium	8200	190000	190000	190000	47 B	90 B	42 B	66 B
Beryllium	320	5600	190000	2000	0.66	2.5	1.6	0.74
Cadmium	38	1400	190000	800	0.16	0.99	0.52	0.47
Chromium (Total)	190,000	190,000	190,000	1,500,000	19 B	31 B	12 B	10 B
Copper	43000	100000	190000	41000	10	12	26	15
Lead	450	1000	190000	800	16 B	11 B	18 B	17 B
Nickel	650	56000	190000	20000	220	55	39	84
Selenium	26	14000	190000	5100	0.22 J	0.24 J	0.15 J	0.17 J
Silver	84	14000	190000	5100	0.031 J	0.14	0.035 J	0.038 J
Thallium	14	200	190000	10	0.18	0.15	0.13	0.14
Vanadium	72000	20000	190000	5,200	27	49	26	18
Zinc	12000	190000	190000	310000	36 B	110 B	96 B	67 B
Polychlorinated Biphenols								
Arochlor-1016	200	200	10000	21	0.021 U	0.025 U	0.022 U	0.02 U
Arochlor-1221	0.63	40	10000	0.54	0.021 U	0.025 U	0.022 U	0.02 U
Arochlor-1232	0.5	40	10000	0.54	0.021 U	0.025 U	0.022 U	0.02 U
Arochlor-1242	16	40	10000	0.74	0.021 U	0.025 U	0.022 U	0.02 U
Arochlor-1248	62	40	10000	0.74	0.021 U	0.025 U	0.022 U	0.02 U
Arochlor-1254	260	40	10000	0.74	0.38	0.11	0.022 U	2.3
Arochlor-1260	590	40	190000	0.74	0.021 U	0.025 U	0.022 U	0.02 U

Table 4.

Soils Data Summary - Building 4 Remediation Area Confirmation Sampling
Former York Naval Ordnance Plant - York, PA

Location/ID	MSC	MSC	MSC	EPA RSL	B4AMF-CS-001	B4AMF-CS-002	B4AMF-CS-003	B4AMF-CS-004		
Depth (ft.)	Soil to GW	Direct Contact	Direct Contact	Industrial	6 - 7	8 - 9	8 - 9	8 - 9		
Sample Date	Used Aquifer	0 - 2 ft	2 - 15 ft	Soil	11/7/2011	11/7/2011	11/7/2011	11/7/2011		
Parameter	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)		,,,	''			
Volatile Organic Compound										
1,1,1,2-Tetrachloroethane	18	300	340	9.3	0.29 U	35 U	0.33 U	0.29 U		
1,1,1-Trichloroethane	20	10000	10000	38000	0.29 U	35 U	0.33 U	0.29 U		
1,1,2,2-Tetrachloroethane	0.43	38	44	2.8	0.29 U	35 U	0.33 U	0.29 U		
1,1,2-Trichloroethane	0.5	140	160	5.3	0.29 U	35 U	0.33 U	0.29 U		
1,1-Dichloroethane	16	1400	1600	17	0.29 U	35 U	0.33 U	0.29 U		
1,1-Dichloroethene	0.7	10000	10000	1100	0.29 U	35 U	0.33 U	0.29 U		
1,2-Dibromoethane	0.005	3.7	4.3	0.17	0.29 U	35 U	0.33 U	0.29 U		
1,2-Dichloroethane	0.5	86	98	2.2	0.29 U	35 U	0.33 U	0.29 U		
1,2-Dichloropropane	0.5	220	260	4.7	0.29 U	35 U	0.33 U	0.29 U		
1,4-Dioxane	3.2	290	330	17	58 U	7000 U	65 U	58 U		
2-Butanone	400	10000	10000	200000	0.29 U	35 U	0.33 U	0.29 U		
2-Hexanone	4.4	400	460	1400	0.29 U	35 U	0.33 U	0.29 U		
4-Methyl-2-Pentanone	820	10000	10000	53000	0.29 U	35 U	0.33 U	0.29 U		
Acetone	9200	10,000	10,000	630000	0.31 J B	77 J B	0.35 J B	0.35 J B		
Acrylonitrile	0.37	33	38	1.2	5.8 U	700 U	6.5 U	5.8 U		
Benzene	0.5	290	330	5.4	0.29 U	35 U	0.33 U	0.29 U		
Bromochloromethane	9	10000	10000	680	0.29 U	35 U	0.33 U	0.29 U		
Bromodichloromethane	8	60	69	1.4	0.29 U	35 U	0.33 U	0.29 U		
Bromoform	8	2000	2300	220	0.29 U	35 U	0.33 U	0.29 U		
Bromomethane	1	400	460	32	0.29 U	35 U	0.33 U	0.29 U		
Carbon Disulfide	620	10000	10000	3700	0.29 U	35 U	0.33 U	0.29 U		
Carbon Tetrachloride	0.5	150	170	3	0.29 U	35 U	0.33 U	0.29 U		
Chlorobenzene	10	4000	4600	1400	0.29 U	35 U	0.33 U	0.29 U		
Chlorodibromomethane	8	82	95	3.3	0.29 U	35 U	0.33 U	0.29 U		
Chloroethane	90	10000	10000	61000	0.29 U	35 U	0.33 U	0.29 U		
Chloroform	8	97	110	1.5	0.29 U	35 U	0.33 U	0.29 U		
Chloromethane	3	1200	1400	500	0.29 U	35 U	0.33 U	0.29 U		
cis-1,2-Dichloroethene	7	10000	10000	2000	0.29 U	35 U	0.33 U	0.29 U		
cis-1,3-Dichloropropene	2.6	560	640	8.3	0.29 U	35 U	0.33 U	0.29 U		
Ethylbenzene	70	10000	10000	27	0.29 U	35 U	0.33 U	0.29 U		
Methyl tert-butyl ether	2	8600	9900	220	0.29 U	35 U	0.33 U	0.29 U		
Methylene chloride	0.5	4700	5400	960	0.29 U	35 U	0.33 U	0.29 U		
Styrene	24	10000	10000	36000	0.29 U	35 U	0.33 U	0.29 U		
Tetrachloroethene	0.5	1500	4400	110	0.39	1400	1	0.59		
Toluene	100	10000	10000	45000	0.29 U	38	0.33 U	0.29 U		
trans-1,2-Dichloroethene	10	4800	5500	690	0.29 U	35 U	0.33 U	0.29 U		
trans-1,3-Dichloropropene	2.6	560	640	8.3	0.29 U	35 U	0.33 U	0.29 U		
Trichloroethene	0.5	1300	1500	6.4	0.29 U	35 U	0.33 U	0.29 U		
Vinyl Chloride	0.2	110	580	1.7	0.29 U	35 U	0.33 U	0.29 U		
Xylenes (Total)	1000	8000	9100	2700	0.87 U	110 U	0.98 U	0.87 U		

Blank results = analyte not analyzed. U = Not detected. J = Organics; estimated. Inorganics; blank contamination. B = Organics; blank contamination. Inorganics; estimated. E = Inorganics: matrix interference. NA = Not Available. * = Laboratory Control Sample or duplicate exceeds control limits.

Table 5. Waste Shipment and Disposal Summary Interim Remedial Actions

Bldg 4, 41, 51 and Wastewater Conveyance Piping Areas Former York Naval Ordnance Plant

Remediation Area	Waste Type/Description	Date shipped	Destination	Transporter	Transport Type	Transport Size	Manifest Ref.	Net Wt. (Tons)	Net Wt. (Gallons)	Net Quantity
Bldg 41 Sludge pit	Non-Hazardous - rain run-in water	9/8/2011	EQ Pennsylvania, York PA	Envirite of PA	Vac tanker	5,000 gal.	9811-1	21.92	5,263	
Bldg 41 Sludge pit	Non-Hazardous - rain run-in water	9/8/2011	EQ Pennsylvania, York PA	Envirite of PA	Vac tanker	5,000 gal.	9811-2	21.02	5,047	
Bldg 41 Sludge pit	Non-Hazardous - rain run-in water	9/12/2011	EQ Pennsylvania, York PA	Envirite of PA	Vac tanker	5,000 gal.	51110-4	18.12	4,351	14,661
Bldg 51	Non-Hazardous soil/debris	10/4/2011	Modern Landfill, York PA	KBS Inc.	DT - triaxle	22 CY	09-03078	19.46	T	
Bldg 51	Non-Hazardous soil/debris	10/4/2011	Modern Landfill, York PA	KBS Inc.	DT - triaxle	22 CY	09-03079	19.02	1	
Bldg 51	Non-Hazardous soil/debris	10/4/2011	Modern Landfill, York PA	KBS Inc.	DT - triaxle	22 CY	09-03083	24.31	†	
Bldg 51	Non-Hazardous soil/debris	10/4/2011	Modern Landfill, York PA	KBS Inc.	DT - triaxle	22 CY	09-03084	20.81	1	
Bldg 51	Non-Hazardous soil/debris	10/4/2011	Modern Landfill, York PA	KBS Inc.	DT - triaxle	22 CY	09-03085	20.29	1	
Bldg 51	Non-Hazardous soil/debris	10/4/2011	Modern Landfill, York PA	KBS Inc.	DT - triaxle	22 CY	09-03087	19.62	1	
Bldg 51	Non-Hazardous soil/debris	10/4/2011	Modern Landfill, York PA	KBS Inc.	DT - triaxle	22 CY	09-03088	22.51	†	
Bldg 51	Non-Hazardous soil/debris	10/4/2011	Modern Landfill, York PA	KBS Inc.	DT - triaxle	22 CY	09-03090	20.31		
Bldg 51	Non-Hazardous soil/debris	10/4/2011	Modern Landfill, York PA	KBS Inc.	DT - triaxle	22 CY	09-03091	20.65		
Bldg 51	Non-Hazardous soil/debris	10/4/2011	Modern Landfill, York PA	KBS Inc.	DT - triaxle	22 CY	09-03092	21.74		
Bldg 51	Non-Hazardous soil/debris	10/4/2011	Modern Landfill, York PA	KBS Inc.	DT - triaxle	22 CY	09-03093	21.24		229.96
	1		T===	T==.	Trans.	I	1			
Historic WWTP conveyance piping	NH wastewater from cleaning/remediation	10/10/2011	EQ Pennsylvania, York PA		Vac tanker	5,000 gal.	073107-7	15.60	3,745	
	NH wastewater from cleaning/remediation	10/10/2011	EQ Pennsylvania, York PA		Vac tanker		0731-09-8	18.79	4,511	
	NH wastewater from cleaning/remediation	10/11/2011	EQ Pennsylvania, York PA		Vac tanker	5,500 gal.		21.26	5,054	
	NH wastewater from cleaning/remediation	10/11/2011	EQ Pennsylvania, York PA		Vac tanker	5,500 gal.		21.55	5,123	
Historic WWTP conveyance piping	NH wastewater from cleaning/remediation	10/21/2011	EQ Pennsylvania, York PA	Envirite of PA	Vac tanker	5,000 gal.	102011-1		701	19,134
Bldg 41 - pit 10	Non-Hazardous debris (concrete)	10/4/2011	Modern Landfill, York PA	KBS Inc.	DT - triaxle	22 CY	09-03080	18.95	T	
Bldg 41	Non-Hazardous debris (concrete)	10/5/2011	Modern Landfill, York PA	York Waste	Roll-off	20 CY	07-083951	6.85	+	
Bldg 41	Non-Hazardous debris (concrete)	10/7/2011	Modern Landfill, York PA	York Waste	Roll-off	20 CY	09-03097	17.13	+	
Bldg 41	Non-Hazardous debris (concrete)	10/7/2011	Modern Landfill, York PA	York Waste	Roll-off	30 CY	09-03098	14.90	1	
Bldg 41	Non-Hazardous debris (concrete)	10/7/2011	Modern Landfill, York PA	York Waste	Roll-off	30 CY	09-03099	10.44	+	
Bldg 41/4	Non-Hazardous debris (concrete)	10/12/2011	Modern Landfill, York PA	York Waste	Roll-off	20 CY	07-083952	6.61	1	
Bldg 41	Non-Hazardous debris (concrete)	10/24/2011	Modern Landfill, York PA	York Waste	Roll-off	20 CY	07-42367	8.55	+	
Bldg 41	Non-Hazardous debris (concrete)	10/24/2011	Modern Landfill, York PA	York Waste	Roll-off	20 CY	07-083955	11.25		94.68
			1			,				
Bldg 41 - Pipe trench/pit 3	Non-Hazardous Debris (piping)	10/10/2011	Modern Landfill, York PA	Envirite of PA	Roll-off	30 CY	09-03059	12.35	4	
Bldg 41 - trench 15/16	Non-Hazardous Soil/debris	10/10/2011	Modern Landfill, York PA	Envirite of PA	Roll-off	20 CY	04-55246	12.14		
Bldg 41 - trench 15/16	Non-Hazardous Soil/debris	10/10/2011	Modern Landfill, York PA	Envirite of PA	Roll-off	20 CY	09-03057	17.03		
Bldg 41 - pits 11/12	Non-Hazardous Soil/debris	10/12/2011	Modern Landfill, York PA	Envirite of PA	Roll-off	20 CY	07-083965	16.66		
Bldg 41 - pits 11/12	Non-Hazardous Soil/debris	10/13/2011	Modern Landfill, York PA	Envirite of PA	Roll-off	20 CY	07-083967	12.29	4	
Bldg 41 - pits 3/5/11/12	Non-Hazardous Soil/debris	10/13/2011	Modern Landfill, York PA	Envirite of PA	Roll-off	20 CY	07-083968	11.17		
Bldg 41 - pits 11/12	Non-Hazardous Soil/debris	10/13/2011	Modern Landfill, York PA	Envirite of PA	Roll-off	30 CY	07-083966	18.45		
Bldg 41 - pits 3/5	Non-Hazardous Soil/debris	10/13/2011	Modern Landfill, York PA	Envirite of PA	Roll-off	20 CY	07-083969	14.44	4	
Bldg 41 - pits 3/5	Non-Hazardous Soil/debris	10/13/2011	Modern Landfill, York PA	Envirite of PA	Roll-off	20 CY	07-083971	13.17	4	
Bldg 41 - pits 2/4/15	Non-Hazardous Soil/debris	10/21/2011	Modern Landfill, York PA	Envirite of PA	Roll-off	20 CY	07-083972	12.97		
Bldg 41 - pits 12/5	Non-Hazardous Soil/debris	10/21/2011	Modern Landfill, York PA	Envirite of PA	Roll-off	30 CY	07-083973	16.93	4	
Bldg 41 - pits 10/13	Non-Hazardous Soil/debris	10/26/2011	Modern Landfill, York PA	Envirite of PA	Roll-off	25 CY	07-083976	17.09	+	
Bldg 41 - pit 3	Non-Hazardous Soil/debris	10/26/2011	Modern Landfill, York PA	Envirite of PA	Roll-off	30 CY	07-083974	22.56	+	
Bldg 41 - pits 10/13	Non-Hazardous Soil/debris	10/26/2011	Modern Landfill, York PA Modern Landfill, York PA	Envirite of PA	Roll-off	30 CY	07-083975 07-083978	26.74 17.58	+	
Bldg 41 - pits 17/3 Bldg 41 - pit 15	Non-Hazardous Soil/debris Non-Hazardous Soil/debris	10/26/2011 10/26/2011	Modern Landfill, York PA	Envirite of PA Envirite of PA	Roll-off Roll-off	30 CY 20 CY	07-083978	14.66	+	256.23
			,			1				
Bldg 4	Non-Hazardous debris (concrete)	10/12/2011	Modern Landfill, York PA	York Waste	Roll-off	30 CY	07-083953	12.45		
Bldg 4	Non-Hazardous debris (concrete)	10/12/2011	Modern Landfill, York PA	York Waste	Roll-off	30 CY	07-083954	16.89		
Bldg 4	Non-Hazardous debris (concrete)	10/12/2011	Modern Landfill, York PA	York Waste	Roll-off	20 CY	07-083956	16.29		
Bldg 4	Non-Hazardous debris (concrete)	10/25/2011	Modern Landfill, York PA	York Waste	Roll-off	30 CY	07-083957	14.14		
Bldg 4	Non-Hazardous debris (concrete)		Modern Landfill, York PA		Roll-off	20 CY	07-083959	17.87		
Bldg 4	Non-Hazardous debris (concrete)		Modern Landfill, York PA		Roll-off	30 CY	07-083961	15.98		
Bldg 4	Non-Hazardous debris (concrete)	10/25/2011	Modern Landfill, York PA		Roll-off	20 CY	07-083962	13.61		
Bldg 4	Non-Hazardous debris (concrete)	10/26/2011	Modern Landfill, York PA		Roll-off	30 CY	07-083964	11.21		
Bldg 4		/ /	Madara Landfill Vark DA	York Waste	Roll-off	20 CY	07-083981	14.54		
	Non-Hazardous debris (concrete)	10/26/2011	Modern Landfill, York PA							
Bldg 4	Non-Hazardous debris (concrete)	10/26/2011	Modern Landfill, York PA	York Waste	Roll-off	30 CY	07-083982	18.00		
Bldg 4 Bldg 4	Non-Hazardous debris (concrete) Non-Hazardous debris (concrete)	10/26/2011 10/26/2011	Modern Landfill, York PA Modern Landfill, York PA	York Waste York Waste	Roll-off	20 CY	07-083983	9.00		
Bldg 4 Bldg 4 Bldg 4	Non-Hazardous debris (concrete) Non-Hazardous debris (concrete) Non-Hazardous debris (concrete)	10/26/2011 10/26/2011 10/26/2011	Modern Landfill, York PA Modern Landfill, York PA Modern Landfill, York PA	York Waste York Waste York Waste		20 CY 30 CY	07-083983 07-083984	9.00 20.47		
Bidg 4 Bidg 4 Bidg 4 Bidg 4	Non-Hazardous debris (concrete) Non-Hazardous debris (concrete) Non-Hazardous debris (concrete) Non-Hazardous debris (concrete)	10/26/2011 10/26/2011 10/26/2011 10/26/2011	Modern Landfill, York PA Modern Landfill, York PA Modern Landfill, York PA Modern Landfill, York PA	York Waste York Waste York Waste York Waste	Roll-off Roll-off Roll-off	20 CY 30 CY 20 CY	07-083983 07-083984 07-083985	9.00 20.47 11.17		
Bldg 4 Bldg 4 Bldg 4	Non-Hazardous debris (concrete) Non-Hazardous debris (concrete) Non-Hazardous debris (concrete)	10/26/2011 10/26/2011 10/26/2011 10/26/2011 10/26/2011	Modern Landfill, York PA Modern Landfill, York PA Modern Landfill, York PA	York Waste York Waste York Waste York Waste York Waste York Waste	Roll-off Roll-off	20 CY 30 CY	07-083983 07-083984	9.00 20.47		

Table 5. Waste Shipment and Disposal Summary Interim Remedial Actions

Bldg 4, 41, 51 and Wastewater Conveyance Piping Areas Former York Naval Ordnance Plant

Damadiation Assa	Waste Time/Description	Date	Destination	T	Transport	Transport		Net Wt.	Net Wt.	Net
Remediation Area	Waste Type/Description	shipped	Destination	Transporter	Туре	Size	Manifest Ref.	(Tons)	(Gallons)	Quantity
Bldg 4	Non-Hazardous debris (concrete)	10/27/2011	Modern Landfill, York PA	York Waste	Roll-off	30 CY	07-083988	11.07		
Bldg 4	Non-Hazardous debris (concrete)	10/29/2011	Modern Landfill, York PA	York Waste	Roll-off	20 CY	07-083990	14.64		
Bldg 4	Non-Hazardous debris (concrete)	10/29/2011	Modern Landfill, York PA	York Waste	Roll-off	30 CY	07-083991	15.76		
Bldg 4	Non-Hazardous debris (concrete)	10/29/2011	Modern Landfill, York PA	York Waste	Roll-off	20 CY	07-083992	15.16		
Bldg 4	Non-Hazardous debris (concrete)	11/9/2011	Modern Landfill, York PA	York Waste	Roll-off	20 CY	07-083997	7.20		
Bldg 4	Non-Hazardous debris (concrete)	11/9/2011	Modern Landfill, York PA	York Waste	Roll-off	30 CY	07-083995	8.18		
Bldg 4	Non-Hazardous debris (concrete)	11/9/2011	Modern Landfill, York PA	York Waste	Roll-off	20 CY	07-083996	9.02		
Bldg 4	Non-Hazardous debris (concrete)	11/29/1930	Modern Landfill, York PA	York Waste	Roll-off	20 CY	07-084000	15.34		
Bldg 4	Non-Hazardous debris (concrete)	11/30/2011	Modern Landfill, York PA	York Waste	Roll-off	20 CY	07-083993	17.29		
Bldg 4	Non-Hazardous debris (concrete)	12/1/2011	Modern Landfill, York PA	York Waste	Roll-off	20 CY	07-083998	16.74		
Bldg 4	Non-Hazardous debris (concrete)	2/3/2012	Modern Landfill, York PA	York Waste	Roll-off	20 CY	07-083980	11.37		354.61
Bldg 4, pit water removal	Hazardous Wastewater from Remediation	1/23/2012	MDWTP. Belleville.MI	Envirite of PA	Vac tanker	5,500 gal.	7538950 JJK	20.74	5,400	1
Bldg 4, pit water removal	Hazardous Wastewater from Remediation	1/24/2012	MDWTP, Belleville,MI	Envirite of PA	Vac tanker	5,500 gal.	7538951 JJK	21.31	5,091	
Frac tank clean-out	Hazardous Wastewater from Remediation	1/25/2012	EQ Pennsylvania, York PA		330 gal. Totes		7538952 JJK	2.64	525	11,016
	-					•	•			
Bldg 4 - AMF Degreaser Vault	Hazardous Soil/debris - AMF pit	1/26/2012	MDWTP, Belleville,MI	Envirite of PA	Roll-off	30 CY	7538947 JJK	13.07]
Bldg 4 - AMF Degreaser Vault	Hazardous Soil/debris - AMF pit	1/26/2012	MDWTP, Belleville,MI	Envirite of PA	Roll-off	20 CY	7538949 JJK	13.09		
Bldg 4 - AMF Degreaser Vault	Hazardous Soil/debris - AMF pit	1/26/2012	MDWTP, Belleville,MI	Envirite of PA	Roll-off	30 CY	7539000 JJK	7.49		33.65
Bldg 4 - North Degreaser Vault	TSCA/Haz. Soil/debris - degreaser pit	1/31/2012	CWM, Model City NY	Envirite of PA	Roll-off	20 CY	7538953 JJK	17.48	1	l
Bldg 4 - North Degreaser Vault	TSCA/Haz. Soil/debris - degreaser pit	1/31/2012	CWM, Model City NY	Envirite of PA	Roll-off	20 CY	7538954 JJK	14.49		31.97
Diag 4 North Degreaser Vault	TOOMTIAL. CONTACTION degreeser pit	1/31/2012	OVVIVI, IVIOGEI OILY IVI	LIVING OFF A	Tron on	20 01	7 330334 3310	14.45	I	31.37
Bldg 4	Hazardous Soil from Remediation	1/30/2012	CWM, Model City NY	Horwith Trucks, Inc.	DT - semi	22 CY	7538958 JJK	25.39		
Bldg 4	Hazardous Soil from Remediation	1/30/2012	CWM, Model City NY	Horwith Trucks, Inc.	DT - semi	22 CY	7538959 JJK	24.29		
Bldg 4	Hazardous Soil from Remediation	1/30/2012	CWM, Model City NY	Horwith Trucks, Inc.	DT - semi	22 CY	7538960 JJK	24.31		
Bldg 4	Hazardous Soil from Remediation	1/30/2012	CWM, Model City NY	Horwith Trucks, Inc.	DT - semi	22 CY	7538961 JJK	23.78		
Bldg 4	Hazardous Soil from Remediation	1/30/2012	CWM, Model City NY	Horwith Trucks, Inc.	DT - semi	22 CY	7538963 JJK	23.09		
Bldg 4	Hazardous Soil from Remediation	1/30/2012	CWM, Model City NY	Horwith Trucks, Inc.	DT - semi	22 CY	7538964 JJK	25.17		
Bldg 4	Hazardous Soil from Remediation	1/30/2012	CWM, Model City NY	Horwith Trucks, Inc.	DT - semi	22 CY	7538965 JJK	24.51		
Bldg 4	Hazardous Soil from Remediation	1/30/2012	CWM, Model City NY	Horwith Trucks, Inc.	DT - semi	22 CY	7537501 JJK	23.16		
Bldg 4	Hazardous Soil from Remediation	1/30/2012	CWM, Model City NY	Horwith Trucks, Inc.	DT - semi	22 CY	7537503 JJK	25.53		
Bldg 4	Hazardous Soil from Remediation	1/30/2012	CWM, Model City NY	Horwith Trucks, Inc.	DT - semi	22 CY	7537504 JJK	24.53		
Bldg 4	Hazardous Soil from Remediation	1/30/2012	CWM, Model City NY	Horwith Trucks, Inc.	DT - semi	22 CY	7537505 JJK	24.75		
Bldg 4	Hazardous Soil from Remediation	1/30/2012	CWM, Model City NY	Horwith Trucks, Inc.	DT - semi	22 CY	7537507 JJK	21.99		
Bldg 4	Hazardous Soil from Remediation	1/30/2012	CWM, Model City NY	Horwith Trucks, Inc.	DT - semi	22 CY	7537508 JJK	23.56		
Bldg 4	Hazardous Soil from Remediation	1/30/2012	CWM, Model City NY	Horwith Trucks, Inc.	DT - semi	22 CY	7537509 JJK	24.08		
Bldg 4	Hazardous Soil from Remediation	1/30/2012	CWM, Model City NY	Horwith Trucks, Inc.	DT - semi	22 CY	7537510 JJK	26.66		
Bldg 4	Hazardous Soil from Remediation	1/31/2012	CWM, Model City NY	Horwith Trucks, Inc.	DT - semi	22 CY	7537511 JJK	24.49		
Bldg 4	Hazardous Soil from Remediation	1/31/2012	CWM, Model City NY	Horwith Trucks, Inc.	DT - semi	22 CY	7537512 JJK	24.98		
Bldg 4	Hazardous Soil from Remediation	1/31/2012	CWM, Model City NY	Horwith Trucks, Inc.	DT - semi	22 CY	7537513 JJK	25.77		1
Bldg 4	Hazardous Soil from Remediation	1/31/2012	CWM, Model City NY	Horwith Trucks, Inc.	DT - semi	22 CY	7537514 JJK	24.45		
Bldg 4	Hazardous Soil from Remediation	1/31/2012	CWM, Model City NY	Horwith Trucks, Inc.	DT - semi	22 CY	7537515 JJK	23.65		1
Bldg 4	Hazardous Soil from Remediation	1/31/2012	CWM, Model City NY	Horwith Trucks, Inc.	DT - semi	22 CY	7537516 JJK	24.66		
Bldg 4	Hazardous Soil from Remediation	1/31/2012	CWM, Model City NY	Horwith Trucks, Inc.	DT - semi	22 CY	7537517 JJK	26.57		1
Bldg 4	Hazardous Soil from Remediation	1/31/2012	CWM, Model City NY	Horwith Trucks, Inc.	DT - semi	22 CY	7537518 JJK	23.15		1
Bldg 4	Hazardous Soil from Remediation	1/31/2012	CWM, Model City NY	Horwith Trucks, Inc.	DT - semi	22 CY	7537520 JJK	24.83		1
Bldg 4	Hazardous Soil from Remediation	1/31/2012	CWM, Model City NY	Horwith Trucks, Inc.	DT - semi	22 CY	7537522 JJK	25.25		1
Bldg 4	Hazardous Soil from Remediation	2/1/2012	CWM, Model City NY	Horwith Trucks, Inc.	DT - semi	22 CY	7537523 JJK	26.34		1
Bldg 4	Hazardous Soil from Remediation	2/1/2012	CWM, Model City NY	Horwith Trucks, Inc.	DT - semi	22 CY	7537524 JJK	22.32		1
Bldg 4	Hazardous Soil from Remediation	2/1/2012	CWM, Model City NY	Horwith Trucks, Inc.	DT - semi	22 CY	7537525 JJK	10.36		671.62

Abbreviations: WWTP = Wastewater Treatment Plant; NH = Non-Hazardous; DT = Dump Truck; CY = Cubic Yard; MDWTP = Michigan Disposal Wastwater Treatment Plant TSCA = Toxic Substances Control Act; PCB = polycyclic biphenyls; CWM = Chemical Waste Management;

1,392.77 44,811

Table 6.
Estimate of Chemical Mass Removal from 2011/2012 Interim Remedial Activities
Former York Naval Ordnance Plant - York, PA

	Historic IWTP Conveyance Line Cleaning	Building 51 Remediation	Former IWTP, Bldg 41	Former IWTP, Bldg 41	Former North Building 4	Former North Building 4 (N. Degreaser)	Former North Building 4 (AMF Degreaser)	Former North Building 4	
	Wastewater	Soil/Concrete Removal	Wastewater	Soil Removal	Wastewater / Liquids	Vault Waste	Vault Waste	Soil Removal	
Significant Contaminant	2011	2011	2011	2011	2011/2012	2011/2012	2011/2012	2011/2012	TOTAL CONTAMINANT REMOVAL (Ibs)
Cyanida Total /lha)	0.013			2.52	0.506	3.77	249.01	1.24	257
Cyanide, Total (lbs)	0.013			2.52	0.506	3.77	249.01	1.24	231
Metals (lbs)									
Cadmium	0.001	0.132		24.44	0.0005	1.6	3.43	0.846	30
Chromium, total	0.008	8.61	0.001	100.51	0.067	9.59	41.73	30.89	191
Lead	0.005	4.55		14.04	0.008	14.71	80.76	28.21	142
Nickel	0.014	204.96	0.002	147.27	0.368	14.71	154.79	26.86	549
Zinc	0.024	46.09	0.002	87.96	0.12	41.56	383.61	85.97	645
SUBTOTAL Metals (lbs)	NS	264	NS	374	NS	82	664	173	1,558
Polychlorinated Biphenyls (PCBs, Ibs) Arochlor-1254 Semi Volatile Organic Compounds (SVOCs, Ibs)	s)				NS	4.92	5.86	NS	11
Bis(2-Ethylhexyl) Phthalate	0.004			2.78		0.077	0.094		3
Fluoranthene		0.005		0.154		0.109	0.067		NS
Pentachlorophenol		0.000			0.01	01100	0.195		NS
Phenanthrene				0.189	0.0001	0.035	0.048		NS
Pyrene		0.025		0.104		0.121	0.062		NS
SUBTOTAL SVOCs (lbs)		NS		3	NS	NS	NS	!	3
Volatile Organic Compound (VOCs, Ibs)		-		1			-	70.50	
1,1,1-Trichloroethane					0.193	0.767		76.56	78 NC
1,1-Dichloroethane					0.017	0.023			NS
1,1-Dichloroethene	0.04			0.405	0.012	0.013			NS
cis-1,2-Dichloroethene	0.01			0.165					NS
Ethylbenzene	0.004			0.173	0.000	4.454	0.000	200.00	NS 224
Tetrachloroethene	0.0001			0.866	0.026	1.151	0.006	322.38	324 605
Trichloroethene	0.0001 0.026	0.002		0.112 0.078	0.06	0.588	0.0001 0.0005	604.46	NS NS
Xylenes (Total) SUBTOTAL VOCs (Ibs)	0.026 NS	0.002 NS	NS	0.078	NS	3	0.0005 NS	1,003	1,007
SUBTUTAL VUCS (IDS)	INO	IVO	IVO	I	IVO	<u> </u>	IVO	1,003	1,007
TOTAL CONTAMINANT REMOVAL (lbs)	NS	264	NS	381	1	94	920	1,178	2,838

All Values reported in pounds (lbs)

Blank cells indicate parameter was not present in the waste.

NS = Not Significant, total is less than 1 pound.

APPENDIX A Interim Remediation Photographs



A1: View looking north along exterior NW corner of Bldg 4. Former AMF degreaser area is located immediately inside double doors. Gate 4 and north fire tank visible at upper left



A2: View from Gate 4 of NW corner of Bldg 4, looking east. Scar from former solvent containment for N degreaser was located immediately along bldg windows.



A3: View looking south of NW exterior corner of Building 4 and Gate 4 (right). Note green markings on pavement from historic wastewater piping locating.



A4: View inside NW corner of Bldg 4 at location of former northern degreaser area.



A5: View looking north inside NW corner of Bldg 4 - block wall area surrounds former northern degreaser area.



A6: View looking north inside NW corner of Bldg 4 - block wall area surrounds former northern degreaser area. Note faint floor marks of former degreaser vault.



A7: View looking south west inside NW corner of Bldg 4 - Note block wall area surrounding former northern degreaser area.



A8: View of former AMF degreaser area in N end of Bldg 4. Cyanide waste found beneath floor (under maintenance storage cabinets).

Interim Remediation Photos – Bldg 4, 41, & 51 Areas



A9: View looking north into WWTP (Bldg 41), former CN neutralization pit area; floor trenches; and EQ tank area (through door).



A10: Former wastewater conveyance pipe cleaning photos. Note condition of pipe interior, (photo A11, below).



A11: Close-up of former 4-inch diameter Chromate wastewater conveyance pipe – cut open for inspection/cleaning.



A12: Photo of underground pipe cleaning technique – high pressure wash while vacuum removal and onsite containment.



A13: Photo of one pipe cleaning excavation following cleaning and capping of pipe [prior to backfill].



A14: Photo of Bldg 51 (view looking west) during initial demolition. (May 2011).



A15: View looking north of demolition of former Bldg 51 (May 2011)



A16: View looking north at Bldg 51 following demolition and removal of former hazardous waste storage pad and underlying gravel, and prior to confirmation sampling.



A17: View looking north at backfilled excavation of former Bldg 51 area.



A18: View looking southeast at Bldg 41 (wastewater treatment building) prior to demolition. Note GW treatment facility (on right) and Bldg 10 smoke stack in background.



A19: View looking south at north side of Building 41 (wastewater treatment building) prior to demolition. Note Building 10 and smoke stack on left.



A20: View looking northeast at the Groundwater Treatment facility and Building 41 (wastewater treatment building, on right) prior to demolition.



A21: View looking north at south side of Building 41 (wastewater treatment building) prior to demolition.



A22: View looking southeast at Bldg 41 (wastewater treatment building) during demolition. Note groundwater treatment facility (on right) and Bldg 10 smoke stack in background.



A23: View looking west at Bldg 41 (wastewater treatment building) during demolition. Note groundwater treatment facility and fire protection tank (in background).



A24: View looking west at Building 41 (wastewater treatment building) during demolition. Note EQ tank and green marks on asphalt (fmr underground ww piping).



A25: View looking northeast at Bldg 41 during demo. Note green markings on asphalt showing the location of former underground cyanide wastewater piping (from Bldg 4).

Interim Remediation Photos – Bldg 4, 41, & 51 Areas



A26: View looking north of former sludge pit filling with rainwater following demolition of building 41 above-ground structure. Note sand bags lined on ground in attempts to slow run-in.



A27: View looking east along exposed pipe trench (RAA-16) at Bldg 41 (Bldg 42 in background). Photo is after building demolition and prior to pipe removal and remediation.



A28: Photo – view looking southeast of soil removal beneath SWMU 37 (fmr South Settling Basin) at Bldg 41



A29: Photo of excavation beneath SWMU 31 (fmr EQ tank/pit) – looking west.



A30: View looking northeast of partial remediation and backfill of the former wastewater treatment facility at Building 41 (Building 42/57 is in the background).



A31: View looking northeast at the former wastewater treatment facility at Building 41 – Post-remediation backfilling – photo Nov. 9, 2011



A32: View (looking north) of former below grade degreaser vault at the northwest corner of former Building 4. Note Gate 4 and north fire protection pump house in background.



A33: View (looking northeast) of soil removal surrounding the former below grade degreaser vault at the north west corner of former Bldg 4. Note remnant of former southeast corner base of vault below trackhoe. Total depth at bottom is approx. 23' bgs.



A34: View (looking north) of soil removal surrounding the former below grade degreaser vault at the north west corner of former Building 4. Note Gate 4 and north fire protection pump house in background.



A35: View of two pieces of weathered limestone rock removed from the bottom of the vapor degreaser excavation at approximately 23' bgs.



A36: View (looking northeast) of excavation with groundwater surrounding the former below grade degreaser vault at the north west corner of former Building 4.



A37: View of excavation of former AMF degreaser vault (looking north).



A38: View of excavation of former AMF degreaser vault (looking south). Dimensions are approximately 12' (E-W) by 20' (N-S), and 3' deep.



A39: View of excavation of former AMF degreaser vault (looking north). Note change

in color of liquid.



A40: View of excavation of soil beneath former AMF degreaser vault (looking south).



A41: View (looking northeast) of infiltration gallery installation in excavation at the northwest corner of former Building 4. [Nov. 9, 2011] Note gravel layer (approx 2' thick) placed beneath gallery.



A42: View (looking east) of infiltration gallery installation in excavation at the northwest corner of former Building 4. [Nov. 9, 2011]



A43: View (looking northeast) of infiltration gallery installation in excavation at the northwest corner of former Building 4. [Nov. 9, 2011]



A44: View (looking northeast) of infiltration gallery installation in excavation at the northwest corner of former Bldg 4. [Nov. 9, 2011]. Stone backfilled to approx. 16' bgs.



A45: View (looking west) of partially backfilled excavation and infiltration gallery (PVC uprights) at the northwest corner of former Building 4.



A46: View (looking west) of surface completions preparations for infiltration gallery access in excavation at the northwest corner of former Building 4.



A47: View (looking northwest) of infiltration gallery surface completion access vaults prior to installation at the northwest corner of former Building 4.



A48: View (looking east) of concrete pad installation over excavation and infiltration gallery at the northwest corner of former Building 4.



A49: View (looking west) of concrete pad completion over excavation and infiltration gallery at the northwest corner of former Building 4.



A50: View looking northwest at soil pile characterization sampling conducted with trackhoe.



A51: View looking south from north end of former Bldg 4 – of stockpiled hazardous soil and blue frac tank with hazardous remediation liquid.



A52: View looking north from former Bldg 4 pad following removal of hazardous soil stockpile, and remediation liquids/frac tank. Note Gate 4, north fire protection tank and groundwater treatment building in background.



A53: View looking south from north end of former Building 4 pad area – sweep cleaning pad following removal of all wastes and soil.



A54: View of Northwest corner of Building 4 and Gate 4 (right) looking South following completion of remediation and restoration activities.



A55: View looking north across restored area of former Bldg 51.



A56: View looking west across restored area of former Bldg 51 (note walking path, gravel drive and topsoil/seeded restorations).



A57: View looking northeast across the former wastewater treatment facility at Building 41. Note new fenceline installed along East/West Campus boundary.



A58: View looking East across the former wastewater treatment facility at Building 41 (demolished Building 42/57 is in the background).

APPENDIX B Pipe Cleaning Services Report



VIDEO PIPE SERVICES, INC. 1566 Harding Highway Newfield, NJ 08344

A Carylon Company

MOBILE DREDGING & PUMPING

Harley Davidson York, PA

> CCTV Report

Prepared September 8, 2011

MOBILE DREDGING & PUMPING - HARLEY DAVIDSON - CCTV VIDEO PIPE SERVICES, INC., NEWFIELD, NJ., Tel: 8006346014, Fax: // MOBIL-169.mdb

_	_	_	Τ.				_	_	_	-	Т
tot. Length	133.5	416.4	416.3	65.8	90.4	15.3	15	81.6	26.8	8.48	64.2
Stop MH	LINE B	BLDG. 42	BLDG. 42	LINE A	LINE B	LINE A	LINE B	LINEB	LINEB	LINEA	LINE B
Start MH	PIT 1	LINE A	LINE B	PIT 2	PIT 2	PIT 2 TO 1	PIT 2 TO 1	PIT 3 TO 2	PIT3TOS	PIT 4 TO 5	PIT 4 TO 5
Purpose	A Maintenance Related										
	A Ma										
Section No.	-	2	8	4	22	ဖ	7	80	6	10	=
Road	NOSON	NOSON	NOSON	NOS	NOSON	NOSON	NOS	NOS	NOS	NOS	NOS
1		HARLEY DAVIDSON									
1				1			┙				08/31/2011
ľ	(7	2	\$ L	P	0 1	7	80 (6	9	-



Inspection report

Date: 08/09/2011	P.O.#: MOBILE-169	Weather: 1 Dry	Surveyed By: M.CLEMENT	section number:	PSR:	
Total Pipe Length:	Survey Customer: BRIGHTFIELDS	System Owner: HARLEY DAVIDSON	Clean Date: 08/09/2011	Pre-Cleaned: J Jetting	rate:	

Street: HARLEY DAVIDSON Flow Control: Start MH: PIT 1 YORK, PA City: Year Renewed End MH: LINE B Location Code: G Parking Lot Tape/Media #: HD-1 Total length surveyed: 133.5 ft

Purpose: A Maintenance Related Dia/Height: C Circular 6"

Material: L Liner Pipe Joint length: Use: ZZ Other Lining:

Drain. Area: Category:

Comment: Location details:

0000

5111

0

1:350

position observation code counter photo grade

0.00 End of Pipe 00:00:40 PIT 1 85.60 Alignment Down, 10 * 00:06:39 LD M 1 133,50 OBR Obstacles Rocks, 100 $\,\%$ of cross sectional area, from 12 to 12 o'clock 00:10:35 M 5 133.50 MSA Survey Abandoned, Remark: CANNOT PASS 00:10:52 QMR QSR SPR OPR SPRI MPRI OPRI MPR

0



00:33:53

Inspection report

Date: 08/09/2011	P.O.#: MOBILE-169	Weather: 1 Dry	Surveyed By: M.CLEMENT	section number: 2	PSR:	
Total Pipe Length:	Survey Customer: BRIGHTFIELDS	System Owner: HARLEY DAVIDSON	Clean Date: 08/09/2011	Pre-Cleaned: J Jetting	rate:	

Street: HARLEY DAVIDSON Flow Control: Start MH: LINE A
City: YORK, PA Year Renewed End MH: BLDG. 42
Location Code: G Parking Lot Tape/Media #: HD-1 Total length surveyed: 416.4 ft

Purpose: A Maintenance Related Dia/Height: C Circular 6"

Use: ZZ Other Material: DIP Ductile Iron Pipe Pipe Joint length: Lining:

Drain. Area: Category:

Comment:
Location details:

416.40

1:1025 position code observation counter photo grade

0.00 **AEP** End of Pipe, Remark: SURVEY BEGINS 00:12:00 LINE A 25.60 General Observation, within 8 inch: NO, Remark: WATER IN LINE 00:15:32 293.60 MWLS Water Level, Sag in pipe, 5 % of cross sectional area 00:27:10 M 2 389.70 MWLS Water Level, Sag in pipe, 5 % of cross sectional area 00:31:10 M2

 QSR
 QMR
 SPR
 MPR
 OPR
 SPRI
 MPRI
 OPRI

 0000
 2200
 0
 4
 4
 0
 2
 2

MSA Survey Abandoned, Remark: CRAWLER STOPPED - CANNOT PASS



Inspection report

Date: 08/09/2011	P.O.#: MOBILE-169	Weather: 1 Dry	Surveyed By: M.CLEMENT	section number:	PSR		
Total Pipe Length:	Survey Customer: BRIGHTFIELDS	System Owner: HARLEY DAVIDSON	Clean Date: 08/09/2011	Pre-Cleaned; J Jetting	rate:		

Street: HARLEY DAVIDSON Flow Control: Start MH; LINE B YORK, PA Year Renewed End MH: **BLDG. 42** Location Code: G Parking Lot Tape/Media #: HD-1 Total length surveyed: 416.3 ft Purpose: A Maintenance Related Dia/Height: C Circular 6" Material: L Liner Pipe Joint length: Use: ZZ Other Lining:

Drain. Area: Com

Loca

photo gr								
photo gi								n details:
	counter			on	observation	code	position	1:1025
	00:35:03		REGINS	e, Remark: SURVEY	End of Pine	AEP	0.00	
	00:36:20			el, 50 % of cross sec		MWL	11.70	INE B
12_3a N	00:36:39	ıa		el, Sag in pipe, 25 %			11.70	
A.	00:37:58	-			Camera Ur	MCU	19.60	
, N	00:44:32	a	of cross sectional are	el, Sag in pipe, 25 %	Water Leve	MWLS	183.80	
	00:52:40	CANNOT PASS	AWLER STOPPED	indoned, Remark: CF	Survey Aba	MSA	416.30	
00:52:40		CANNOT PASS	AWLER STOPPED	indoned, Remark: CF	Survey Aba	MSA	416.30	
-	MPRI 2.5	SPRI 0	OPR 10	MPR 10	SPR 0		QMR 4123	



City:	Street:	Date:	section number:	PSR:			
YORK, PA	HARLEY DAVIDSON	08/09/2011	3				

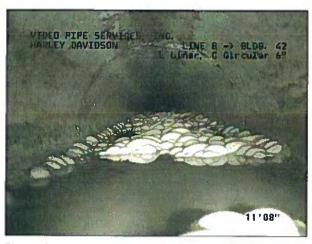


Photo: 12_3a, Tape/Media No.: HD-1, 00:36:39 11.7FT, Water Level, Sag in pipe, 25 % of cross sectional area



Inspection report

Date: 08/09/2011	P.O.#: MOBILE-169	Weather: 1 Dry	Surveyed By: M.CLEMENT	section number:	PSR:	
Total Pipe Length:	Survey Customer: BRIGHTFIELDS	System Owner: HARLEY DAVIDSON	Clean Date: 08/09/2011	Pre-Cleaned: J Jetting	rate:	

Street: HARLEY DAVIDSON Flow Control: Start MH: PIT 2 YORK, PA Year Renewed End MH: LINE A Location Code: G Parking Lot Tape/Media #: HD-1 Total length surveyed: 65.8 ft

Purpose: A Maintenance Related Dia/Height: C Circular 6"

Material: SP Steel Pipe Pipe Joint length: Use: ZZ Other Lining:

Drain. Area: Category:

Comment:

Location details:

QSR

0000

QMR

1100

SPR

0

1:175 position grade code observation counter photo

0.00 AEP End of Pipe, Remark: SURVEY BEGINS 00:53:54 PIT 2 65.80 LRU Alignment Right Up, 45/90 00:58:41 M 1 65.80 Survey Abandoned, Remark: CANNOT CONTINUE MSA 00:59:05

OPR

SPRI

MPRI

OPRI

MPR



Inspection report

Date: 08/09/2011	P.O.#: MOBILE-169	Weather: 1 Dry	Surveyed By: M.CLEMENT	section number:	PSR:	
Total Pipe Length:	Survey Customer: BRIGHTFIELDS	System Owner: HARLEY DAVIDSON	Clean Date: 08/09/2011	Pre-Cleaned: J Jetting	rate:	

Street: HARLEY DAVIDSON Flow Control: Start MH: PIT 2
City: YORK, PA Year Renewed End MH: LINE B
Location Code: G Parking Lot Tape/Media #: HD-1 Total length surveyed: 90.4 ft

Purpose: A Maintenance Related Dia/Height: C Circular 6"

Use: ZZ Other Material: L Liner Pipe Joint length: Lining:

Drain. Area: Category:

Comment:

Location details:

1:225 position code observation counter photo grade

0.10 End of Pipe, Remark: SURVEY BEGINS 01:00:15 PIT 2 75.60 01:04:41 M 4 MCU Camera Underwater 90.40 **AEP** End of Pipe, Remark: LINE CAPPED 01:06:54 90.40 Survey Abandoned, Remark: LINE CAPPED 01:07:17 MSA QSR QMR SPR MPR OPR SPRI MPRI OPRI 0000 4100



01:09.37

24_2a

M 5

Inspection report

Date: 08/09/2011	P.O.#: MOBILE-169	Weather: 1 Dry	Surveyed By: M.CLEMENT	section number: 6	PSR:	
Total Pipe Length:	Survey Customer: BRIGHTFIELDS	System Owner: HARLEY DAVIDSON	Clean Date: 08/09/2011	Pre-Cleaned: J Jetting	rate:	

Street: HARLEY DAVIDSON Flow Control: Start MH: PIT 2 TO 1
City: YORK, PA Year Renewed End MH: LINE A
Location Code: G Parking Lot Tape/Media #: HD-1 Total length surveyed: 15.3 ft

Purpose: A Maintenance Related Dia/Height: C Circular 6"

Use: ZZ Other Material: SP Steel Pipe Pipe Joint length:

Drain. Area: Lining: Category:

15.30

OBR

Comment:

Location details:

1:50 position code observation counter photo grade

P(T 2 TO 1) AEP End of Pipe, Remark: SURVEY BEGINS 01:08:12

15.30 MSA Survey Abandoned, Remark: ROCKS 01:10:07

Obstacles Rocks, 100 % of cross sectional area, from 12 to 12 o'clock



		-		
City:	Street:	Date:	section number:	PSR
YORK, PA	HARLEY DAVIDSON	08/09/2011	6	



Photo: 24_2a, Tape/Media No.: HD-1, 01:09:37 15.3FT, Obstacles Rocks, 100 % of cross sectional area, from 12 to 12 o'clock



Inspection report

Date: 08/09/2011	P.O.#: MOBILE-169	Weather: 1 Dry	Surveyed By: M.CLEMENT	section number:	PSR:
Total Pipe Length:	Survey Customer: BRIGHTFIELDS	System Owner: HARLEY DAVIDSON	Clean Date: 08/09/2011	Pre-Cleaned: J Jetting	rate:

Street: HARLEY DAVIDSON Start MH: Flow Control: PIT 2 TO 1 City: YORK, PA Year Renewed End MH: LINE B Location Code: G Parking Lot Tape/Media #: HD-1 Total length surveyed: 15 ft Purpose: A Maintenance Related C Circular 6"

Dia/Height;

Material: L Liner Pipe Joint length: Use: ZZ Other

Lining: Drain. Area: Category:

Comment:

Location details:

1:50 position code observation photo grade counter



QSR QMR SPR MPR OPR SPRI MPRI OPRI 5100 0000



City:	Street:	Date:	section number.	P\$R:			
YORK, PA	HARLEY DAVIDSON	08/09/2011	7				

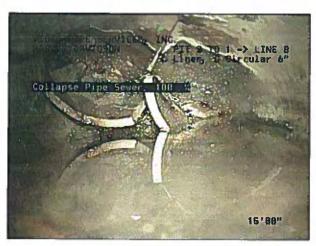


Photo: 28_3a, Tape/Media No.: HD-1, 01:12:57 15FT, Collapse Pipe Sewer, 100 %



Inspection report

Date: 08/10/2011	P.O.#: MOBILE-169	Weather: 1 Dry	Surveyed By: M.CLEMENT	section number: 8	PSR:
Total Pipe Length:	Survey Customer: BRIGHTFIELDS	System Owner: HARLEY DAVIDSON	Clean Date: 08/09/2011	Pre-Cleaned: J Jetting	rate:

Street: HARLEY DAVIDSON Flow Control: Start MH: PIT 3 TO 2 City: YORK, PA Year Renewed End MH: LINE B Location Code: G Parking Lot Tape/Media #: HD-1 Total length surveyed; 81.6 ft Purpose: A Maintenance Related Dia/Height: C Circular 6"

Material: L Liner Pipe Joint length: Use: ZZ Other Lining:

Drain Area: Category:

Comment:

Location details:

QSR

0000

QMR

4121

SPR

0

1:200 grade position code observation counter photo

0.00 **AEP** End of Pipe, Remark: SURVEY BEGINS 01:14:31 PIT 3 TO 2 45.10 MWL Water Level, 50 % of cross sectional area 01:17:31 M 2 62.30 Camera Underwater 01:19:02 M4 MCU 81.60 Survey Abandoned, Remark: CANNOT PASS 01:21:08 MSA

OPR

SPRI

0

MPRI

3

OPRI

3

MPR



Inspection report

Date: 08/10/2011	P.O.#: MOBILE-169	Weather: 1 Dry	Surveyed By: M.CLEMENT	section number: 9	PSR:								
Total Pipe Length:	Survey Customer: BRIGHTFIELDS	System Owner: HARLEY DAVIDSON	Clean Date: 08/09/2011	Pre-Cleaned: J Jetting	rate:								

Street: HARLEY DAVIDSON Flow Control: Start MH: PIT 3 TO S City: YORK, PA Year Renewed End MH: LINE B Location Code: G Parking Lot Tape/Media #: HD-1 Total length surveyed: 26.8 ft Purpose: A Maintenance Related Dia/Height: C Circular 6"

Material: L Liner Pipe Joint length: Use: ZZ Other Lining:

Drain. Area: Category:

26.80

26.80

MSA

Comment:

Location details:

1:75 position code observation counter photo grade

0.00 End of Pipe, Remark; SURVEY BEGINS 01:22:07 PIT 3 TO S

> 7.70 Deposits Attached Encrustation, 1 % of cross sectional area, from 11 to 02 01:23:04 o'clock, within 8 inch. YES

M 2

01:24:21

01:24:51

\$5

36_3a

QSR QMR SPR MPR OPR SPRI MPRI OPRI 5100 2100 5 3.5

Collapse Pipe Sewer, 100 %

Survey Abandoned, Remark: COLLAPSED

City:	Street:	Date:	section number:	PSR.
YORK, PA	HARLEY DAVIDSON	08/10/2011	9	



Photo: 36_3a, Tape/Media No.: HD-1, 01:24:21 26.8FT, Collapse Pipe Sewer, 100 %



Inspection report

Date: 08/31/2011	P.O.#: MOBILE-169	Weather: 1 Dry	Surveyed By: M.CLEMENT	section number: 10	PSR:							
Total Pipe Length:	Survey Customer: BRIGHTFIELDS	System Owner: HARLEY DAVIDSON	Clean Date: 08/31/2011	Pre-Cleaned: J Jetting	rate:							

Street: HARLEY DAVIDSON Flow Control: Start MH: PIT 4 TO 5
City: YORK, PA Year Renewed End MH: LINE A

Location Code: G Parking Lot Tape/Media #: HD-1 Total length surveyed: 54.8 ft

Purpose: A Maintenance Related Dia/Height: C Circular 6"

Use: ZZ Other Material: SP Steel Pipe Pipe Joint length: Lining:

Drain Area: Category:

Comment:

Location details:

1:150 position code observation counter photo grade

P(T 4 TO 5 0.00 AEP End of Pipe, Remark: SURVEY BEGINS 01:25:58

LRD Alignment Right Down, 45/45

54.80

54.80

MSA Survey Abandoned, Remark: CANNOT PASS

01:28:54

M 1



Inspection report

Date: 08/31/2011	P.O.#: MOBILE-169	Weather: 1 Dry	Surveyed By: M.CLEMENT	section number:	PSR:
Total Pipe Length:	Survey Customer: BRIGHTFIELDS	System Owner: HARLEY DAVIDSON	Clean Date: 08/31/2011	Pre-Cleaned: J Jetting	rate:

Street: HARLEY DAVIDSON Flow Control: YORK, PA Year Renewed Start MH:

PIT 4 TO 5

Location Code: G Parking Lot

Tape/Media #: HD-1 End MH:

L Liner Pipe Joint length:

LINE B

Purpose:

A Maintenance Related

Dia/Height:

Total length surveyed: 61.2 ft

Material:

C Circular 6"

Use:

ZZ Other

Lining:

Category:

Drain. Area:

Comment:

Location details:

1:150 position

code observation counter

grade

photo

0.00 PIT 4 TO 5

End of Pipe, Remark: SURVEY BEGINS AEP

01:30:19

61.20

LL. Alignment Left, 45 *

01:34:07

M 4

OPRI

4

61.20

AEP End of Pipe, Remark: CAPPED 01:34:38

43_3a

61,20

MSA Survey Abandoned, Remark: CAPPED 01:34:50

QSR QMR SPR MPR OPR ŞPRI MPRI 0000 4100 0

MOBIL-169.mdb // page: 15

City:	Street:	Date:	section number:	PSR:
YORK, PA	HARLEY DAVIDSON	08/31/2011	11	



Photo: 43_3a, Tape/Media No.: HD-1, 01:34:38 61.2FT, End of Pipe, Remark: CAPPED

VIDEO PIPE SERVICES, INC.



Specializing in today's needs for environmental protection.
1566 Harding Highway ■ Newfield, NJ 08344-5220 ■ Tel (856) 697-1900 ■ Fax (856) 697-0757
11420 Old Baltimore Pike ■ Beltsville, MD 20705 ■ Tel (301) 931-0707 ■ Fax (301) 931-0990

Dear Customer:

As part of our deliverable's package, we have included a defect summary sheet of this project. These defects (in PACP format) were observed by our CCTV operator during the inspection of the pipe sections. The report is color coded to be consistent with PACP standards.

- 1: Excellent Condition

 Minor defects, failure is unlikely in the foreseeable future.
- 2: Good
 Defects that have not begun to deteriorate, pipe is unlikely to fail for at least 20 years.
- 3: Fair
 Moderate defects that will continue to deteriorate, pipe may fail in 10-20 years.
- 4: Poor
 Severe defects that will become Grade 5 within the foreseeable future, pipe will probably fail in 5-10 years.
- 5: Immediate Attention
 Defects requiring immediate attention, pipe has failed or will likely fail within the next 5 years.

For purposes of this report, we recorded "level 2" cracks and all other defects at level 3 and above.

The report is broken down by pipe segment (manhole-to-manhole) in descending order of QSR (Quick Structural Rating) number. This number is the overall rating of the pipe based on the number of defects in the pipe segment and their severity. The highest numbered pipe is the most structurally deficient pipe in the report. QSR numbers of 5000 and above should require your immediate attention.

⊢∢凸 \circ **~00⊢** ∞ OBR OBR O B O F A O J H - z **-** z の Defects HO H WinCan V7 Defect Report sorted by QSR FRASTURE DAE MOBIL-169.mdb OmrOKSMOORAOXоотчке ош 🚰 ω κ O \times m zPosition in Feet 7.7 26.8 133.5 15.3 15.0 Quick Structural Rating 5100 5100 0000 Segment WinCan ₽ တ ဖြ Manhole PIT 1 LINE B PIT 2 TO 1 LINE B PIT 3 TO S LINE B From Manhole

Video Pipe Services, Inc.

WinCan Defect Report Legend	SAP Aggregate Projecting				SAMZ Aggregate Missing - Not Evident		SRVM Reinforcement Visible - Mechanical	SRVC Reinforcement Visible - Chemical Attack	SRVZ Reinforcement Visible - Not Evident	SRP ReinforcementProjecting	SRPM ReinforcementProjecting - Mechanical	SRPC ReinforcementProjecting - Chemical Attack		SRC Reinforcement Corroded	SRCM Reinforcement Corroded - Mechanical		SMW Missing Wall		SMWC Missing Wall - Chemical Attack	SMWZ Missing Wall - Not Evident				N	Other SZ Other	SZM Other - Mechanical	SZC Other - Chemical Attack	SZZ Other - Not Evident	SCP Corrosion (metal pipe)	TAP TFD Factory Made - Defective		TSD Saddle - Defective	
WinCan	DNGV Ingress - Gravel DNZ Ingress - Other		FC Circumferential				HVV Void Visible Beyond Defect						_			 _	_					╛			_			_		_			OBZ Other
	<u> </u>	FRACTURE		 	HOLE	I :	┥	INFILTRATION			_	4	LINING FAILURE 1			 <u>"</u>		<u> </u>	<u>.</u>	<u>"</u>	<u> </u>	\dashv	OBSTACLES C	0	<u> </u>	<u> </u>	<u> </u>	0	<u> </u>	0	<u> </u>	0	0