National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
White Sands Test Facility
P.O. Box 20
Las Cruces, NM 88004-0020

August 1, 2013

RE-13-086

New Mexico Environment Department
Attn: Mr. John Kieling, Chief
Hazardous Waste Bureau
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87505-6303

Subject: Transmittal of the National Aeronautics and Space Administration (NASA) White Sands Test Facility (WSTF) Certification of Closure Report for the Evaporation Treatment Unit (ETU)

The Evaporation Tank Unit (ETU) Closure Plan requirements have been completed. Enclosed for your review is the NASA WSTF Closure Certification Report. The closure activities performed at the ETU were completed in accordance with the ETU Closure Plan submitted to the New Mexico Environment Department Hazardous Waste Bureau on March 9, 2012.

As required by the Hazardous Waste Permit (No. NM8800019434) Attachment 11-Closure Plans, Section 11.8- Certification of Closure, the Permittee shall submit all analytical data with the Closure Report for NMED review and concurrence. The report shall be submitted within 60 days of closure completion and shall include a certification by an independent, registered, New Mexico professional engineer stating the unit has been closed in accordance with the ETU Closure Plan. Enclosure 1 provides a bound hard copy of the report. Enclosure 2 provides a CD-ROM with the entire report in an Adobe PDF format.

I certify under penalty of law that this document and attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for known violations.

If you have any questions or comments concerning this submittal, please contact Tim Davis of my staff at 575-524-5024.

Radel Bunker-Farrah
Chief, Environmental Office

2 Enclosures

cc:
Mr. Dan Comeau
New Mexico Environment Department
Hazardous Waste Bureau
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87505

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National Aeronautics and
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Closure Certification Report

200 Area Evaporation Treatment Unit

August 2013

NM8800019434
NASA Johnson Space Center White Sands Test Facility
12600 NASA Road Las Cruces, New Mexico 88012

Closure Certification Report

200 Area Evaporation Treatment Unit

August 2013

I certify under penalty of law that this document and all appendices were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

_____ _____

Radel Bunker-Farrah
Chief, Environmental Office

Date

Independent Engineering Certification-Closure of the NASA/JSC WSTF 200 Area Evaporation Treatment Unit

With the signature and seal below, I find that, except for the deviations presented in Section 4.0 of the attached closure certification report, the closure of the **NASA/JSC WSTF 200 Area Evaporation Treatment Unit** was conducted in accordance with the ETU Closure Plan submitted to the NMED in June 2012. The information presented in this report is, to the best of my knowledge and belief, true, accurate, and complete. No warranty is either expressed or implied.

Respectfully,

Jacobs Technology, Inc.

James Frank Mathis, PE
New Mexico Registered Professional Engineer No.: 7908
Expires: 12/31/2014

Executive Summary

This Closure Certification Report describes the activities implemented to clean-close the 200 Area Evaporation Treatment Unit (ETU) at the NASA White Sands Test Facility. Closure activities were implemented in accordance with the procedures outlined in the ETU Closure Plan (NASA, 2012[a]). The closure activities specified in section 2.1 of the ETU Closure Plan are as follows:

- All waste in the ETU has been characterized, removed, and disposed in accordance with the closure performance standards in Sections 6 and 7 of the ETU Closure Plan.
- The ETU primary tank liners (liners in direct contact with the waste) have been removed, characterized, and disposed in accordance with the closure performance standards in Sections 6 and 7 of the ETU Closure Plan.
- All ancillary equipment has been decontaminated and/or removed. Removed ancillary equipment has been properly characterized and disposed in accordance with the closure performance standards in sections 6 and 7 of this closure plan. All ancillary equipment left in place will be re-used for future waste disposal to the sanitary sewer system.
- A demonstration that soil contamination is not present as a result of ETU operations.
- The ETU closure has been certified by an independent, professional engineer licensed in the state of New Mexico.
- The closure certification has been submitted and approved by the New Mexico Environment Department (NMED) Hazardous Waste Bureau (HWB).

NASA has provided NMED HWB with analytical data, waste determinations, and disposal pathways for the ETU waste, ETU primary liners, and any waste generated during the closure process. NASA received no longer contained-in determination for these waste streams which allowed for management and disposal as non-hazardous waste.

NASA successfully decontaminated all ancillary equipment and has provided NMED HWB with analytical data, waste determinations, and disposal pathways for these wastes. NASA received a no longer contained-in determination for the ancillary equipment which allowed for management and disposal as non-hazardous waste. Analytical data supporting this demonstration is provided in Appendix D of this report. A portion of the ancillary equipment remained in place for future use.

A soil investigation was conducted and demonstrated that soil contamination was not present as a result of ETU operations. Soil analytical data provided no detection of hydrazines, volatile organic constituents, semi-volatile constituents, or cyanides. There were detections of metals, however, the detections were well below the NMED Soil Screening Levels (SSL) (NASA, 2012[a]). Arsenic was the sole metal analyte above SSL. The arsenic concentrations measured in the soil samples reflect natural background concentrations and are not from ETU operations. Analytical data supporting this demonstration is provided in Appendix I of this report.

Based upon the demonstrations provided and the results of the soil investigation, NASA has detemined that the ETU is clean closed in accordance with the Closure Plan.

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List of Acronyms and Abbreviations

amsl	Above Mean Sea Level
API	American Petroleum Institute
ASTM	American Society for Testing and Materials
AWS	American Welding Society
bgs	Below Ground Surface
BLM	Bureau of Land Management
CAS	Chemical Abstract Service
CFR	Code of Federal Regulations
cfs	Cubic Feet per Second
CMS	Corrective Measures Study
CoC	Chain-of-custody
COC	Contaminant of Concern
CWI	Certified Welding Inspector
DMN	N-nitrodimethylamine
DP	Discharge Plan
DQO	Data Quality Objectives
EPA	U. S. Environmental Protection Agency
ETU	Evaporation Treatment Unit
ETU CP	ETU Closure Plan
ft	Feet
gpm	Gallons per Minute
GPS	Global Positioning System
GWQB	Ground Water Quality Bureau
HASP	Health and Safety Plan
HAZWOPER	Hazardous Waste Operation and Emergency Response
HSA	Hollow Stem Auger
HWB	Hazardous Waste Bureau
HWMU	Hazardous Waste Management Unit
HWTL	Hazardous Waste Transmission Line
IDW	Investigation Derived Waste
JDMB	Jornada del Muerto Basin
JSC	Johnson Space Center
kg	Kilogram
L	Liter
LDR	Land Disposal Restrictions
MCL	Maximum Contaminant Level
MDL	Method Detection Limit
mg	Milligram
mm	Millimeter
MPITS	Mid-Plume Interception and Treatment System
NASA	National Aeronautics and Space Administration
ND	Not Detected
NDMA	N-nitrosodimethylamine
NFA	No Further Action
NIOSH	National Institute for Occupational Safety and Health
NLCID	No Longer Contained-In Determination
NMAC	New Mexico Administrative Code
NMED	New Mexico Environment Department
NOD	Notice of Disapproval

NOI	Notice of Intent to Discharge
OSHA	Occupational Safety and Health Act
PCC	Post Closure Care
PCE	Tetrachloroethene
PFTS	Plume Front Treatment System
PID	Photo Ionization Detector
ppb	Parts per Billion
ppbv	Parts per Billion by Volume
PPE	Personal Protective Equipment
ppm	Parts per Million
PVC	Polyvinyl Chloride
QA	Quality Assurance
QC	Quality Control
RCRA	Resource Conservation and Recovery Act
RFI	RCRA Facility Investigation
RSL	Regional Screening Level
SAM	San Andres Mountains
SAP	Sampling and Analysis Plan
SCB	Soil Core Boring
SCS	Soil Conservation Service
SDL	Sample Detection Limit
SOP	Standard Operation Procedure
SSL	Soil Screening Level
SVOC	Semi-volatile Organic Compound
SWMU	Solid Waste Management Unit
TCA	1,1,1-Trichloroethane
TCE	Trichloroethene
TCLP	Toxicity Characteristic Leaching Procedure
TDS	Total Dissolved Solids
TPS	Test Preparation Sheet
VOC	Volatile Organic Compounds
WBFZ	Western Boundary Fault Zone
WQCC	Water Quality Control Commission
WSI	WSTF Standard Instruction
WSTF	White Sands Test Facility

1.0 Introduction

The information contained in this Closure Certification Report is submitted to describe the activities implemented to close the 200 Area Evaporation Treatment Unit (ETU) at the National Aeronautics and Space Administration (NASA) Johnson Space Center (JSC) White Sands Test Facility (WSTF). The ETU was a hazardous waste treatment unit that was permitted under the NASA/WSTF Resource Conservation and Recovery Act (RCRA) Hazardous Waste Permit (No. NM8800019434). These closure activities will minimize the need for further maintenance, eliminate the potential for a release of hazardous constituents to the environment, and be protective of human health in accordance with Title 40-Code of Federal Regulations (CFR) Parts 264 and 265 (Interim Status Facilities), Subpart G, Closure and Post-Closure, §264.111 and §265.111.

1.1 Facility Location and Description

The NASA JSC White Sands Test Facility (WSTF) is located in Dona Ana County, 18 miles northeast of Las Cruces, New Mexico and 65 miles north of El Paso, Texas. Access to the site is provided by a paved road, which intersects U.S. Highway 70, one mile west of Organ, New Mexico. The installation occupies over 60,000 acres along the western flank of the southern San Andres Mountains (SAM).

1.2 ETU Location and Description

The WSTF location and a site map showing the location of the ETU and other facility areas is presented in Attachment 3 of the ETU Closure Plan. The 200 Area ETU is a tank system that was used to treat and store hazardous and non-hazardous (non-RCRA regulated) aqueous waste from on-site operations. The unit consisted of two identical, above-ground, open-top, steel-frame tanks and ancillary equipment (a drain-line system and sump to transport waste from the 200 and 800 Areas to the tanks). The ETU tank system consisted of associated equipment such as the unloading pad and the ETU unloading pad sump, as well as support structures such as the ETU steel work platform and drain-line support I-beams. Drawings of the ETU tank system, ancillary equipment, associated equipment, and support structures are provided in Attachment 4 of the ETU Closure Plan. A more detailed description of the ETU, drain-line system, and sump is provided in the following subsections.

1.2.1 Background

The ETU waste treatment process was volume reduction by evaporation. Historically, the unit received aggregated or comingled aqueous hazardous wastes that, at the point of generation existed as pure compounds, and aqueous mixtures of aerospace propellants, solvents, chemicals or metal solutions. During the life of the unit, about 275,000 gallons of waste were treated per year. This figure was calculated based on an annual evaporation rate of 60 in. per year, which was estimated from ETU precipitation records. During the period from 1988 through 2012, approximately 6,600,000 gallons of waste was treated at the unit. Under extreme circumstances, the maximum waste inventory in the tanks would be 300,800 gallons.

1.2.2 ETU Tanks

Between mid-1987 and early 1988, the tanks were constructed with 0.25 inch-thick carbon steel plates which were welded together to form two round, flat-bottomed tanks. The design of the tanks was based on the American Petroleum Institute's (API) Standard 650 for "Welded Steel Tanks for Oil Storage". The tanks stood 6 feet in height and had a diameter of 79 feet, which provided a maximum capacity of 147,000 gallons (with 2 feet of freeboard to prevent overtopping from wave or wind action). Selective discharge to either tank was controlled by manually operated valves that were located at the ETU steel

work platform. The tanks were equipped with a high level alarm and an automatic telephone dialing system, in case the design capacity of the tanks was reached. The steel tank bottoms rested in direct contact with the soil foundation. As part of the 1991 part B submittal, an engineering assessment by a corrosion expert was performed. Based on the soil conditions, soil moisture, soil pH, sulfide levels, structure-to-soil potentials and other corrosion related parameters, the assessment indicated that the sacrificial anode system was not adequate to prevent long term corrosion of the uncoated tank bottoms. Using a conservative estimate, the tanks were recommended for a useful life of 10 years, after which time additional protection would be provided. As required per Attachment IV-5 of the hazardous waste permit (dated February 1993), an updated assessment report certified by an independent registered engineer was performed by the Corrosion Engineering Division of International Lubrication and Fuel Consultants, Inc. (August 13, 1997) to determine the measures necessary to extend the useful life of the steel tanks. Based on the recommendations of the assessment and with New Mexico Environment Department (NMED) approval, an impressed current cathodic protection system was installed in 1998. In response to an NMED Hazardous Waste Bureau (HWB) Notice of Deficiency (NOD), dated October 19, 2004, an in-service condition assessment was performed on June 23, 2005, by Crown Tech, Incorporated (NMED, 2004). The results of the assessment concluded that the ETU corrosion protection system was verified to provide effective protection from soil side corrosion.

The ETU tanks consisted of three containment components: a self-supporting, quarter-inch carbon steel tank and two inner 30-mil XR-5 brand plastic membrane liners manufactured by Seaman Corporation. The interior surface of the carbon steel tanks was covered with a coal epoxy (two 6-mil coats). A drainage netting and protective fabric liner material was placed between the primary liner and secondary liners as well as between the secondary liners and the steel tanks. Leak detection sight glasses that were inspected daily, provided leak detection between the primary and secondary liners, and between the secondary liner and the steel tank. A nitrogen purge was maintained between the primary and secondary liners as well as between the secondary liners and steel tanks to minimize condensation and false positives in the sight glasses.

1.2.3 ETU Hazardous Waste Drain Lines (HWDL) and Sump

The HWDL was initially installed during fiscal year 1990 and was brought on-line during fiscal year 1991. The ETU HWDL are a gravity flow piping system designed to convey liquid waste from the 200 and 800 Areas to the ETU. The HWDL consisted of the HWDL sump and four main pipe sections:

Description	Length	Purpose
800 Area HWDL	Approximately 881 linear feet	HWDL section that serviced(s) the 800 Area to the HWDL sump
Building 803 HWDL	Approximately 257 linear feet	HWDL section that serviced(s) building 803 to the HWDL sump
200 Area HWDL	Approximately 934 linear feet	HWDL section that serviced(s) the 200 Area to the HWDL sump
ETU HWDL	Approximately 755 linear feet	HWDL sump branch to the ETU

These four main pipe sections consisted of a primary drain line surrounded by a secondary containment line. Waste from the 200 and 800 Areas was discharged to the HWDL from a number of locations.

Smaller diameter above-ground sections of HWDL piping (primarily in buildings and above ground sections in the 800 Area) connected sinks, decon stations, safety showers, cleaning tanks, etc. to the 200 Area, 800 Area, and 803 HWDL sections.

The HWDL sump was located approximately midway along the drain line system where the 200 Area, 800 Area, and 803 HWDL sections intersect. The HWDL sump was a cylindrical, 370-gallon capacity, fiberglass, vertically-placed tank with double-wall construction to provide secondary containment. Interior dimensions of the inner wall were 48 in. across (horizontal diameter) by 51 in. in height. Leak detection was provided by an electronic optical liquid sensor that was located in the bottom of the annular space between the two tank walls (between the primary tank and secondary containment) in the sump. The tank was positioned approximately 42 inches below a finished grade and within a square-walled, vertically lined concrete pit. Construction of the tank was rigid double-walled reinforced resin plastic. Outer wall dimensions were 72 in. inside diameter by 62 in. in height. Interior and exterior wall thicknesses were ¼–inch. Six-inch bond pipe legs were installed at the base of the inner tank in order to separate and support the inner tank from collapsing onto the outer tank.

Drawings of the ETU HWDL identifying the locations of the four main HWDL sections are presented in Attachment 4 of the ETU Closure Plan.

1.3 Purpose and Method of Closure (Closure Standard)

The purpose of this Closure Certification Report is to document the implementation of closure activities of the 200 Area ETU as described in the ETU Closure Plan. Additionally, this report provides a demonstration that the following criteria were met for complete closure of the ETU:

- All waste in the ETU has been characterized, removed, and disposed in accordance with the closure performance standards in Sections 6 and 7 of the ETU Closure Plan.
- The ETU primary tank liners (liners in direct contact with the waste) have been removed, characterized, and disposed in accordance with the closure performance standards in Sections 6 and 7 of the ETU Closure Plan.
- All ancillary equipment has been decontaminated and/or removed. Removed ancillary equipment has been properly characterized and disposed in accordance with the closure performance standards in sections 6 and 7 of this closure plan. All ancillary equipment left in place will be re-used for future waste disposal to the sanitary sewer system.
- A demonstration that soil contamination is not present as a result of ETU operations.
- The ETU closure has been certified by an independent, professional engineer licensed in the state of New Mexico.
- The closure certification has been submitted and approved by NMED HWB.

Per the ETU Closure Plan, limited amounts of hazardous constituents may remain in media after clean closure provided the constituents are below concentration levels that may pose a risk to human health and the environment.

2.0 Performance of Closure Activities

Closure activities at the ETU consisted of ETU waste phase separation, characterization and disposal; HWDL decontamination and verification; ETU primary and secondary liner inspection, ETU tank structural assessment and deconstruction; soil sampling and verification; as well as waste management and disposal. The following sections provide a detailed description of the steps taken to complete each

activity listed above to verify closure as described in Section 6.0 of the ETU Closure Plan. The management, storage, characterization, and disposal of wastes generated during the closure activities are discussed in Section 3.0, *Waste Management*, of this report. Any deviations from the ETU Closure Plan during the closure activities are discussed in Section 4.0, *Deviations from the ETU Closure Plan*, of this report. All operations per this section were performed in accordance with NASA WSTF Standard Instruction (WSI) document 09-SW-0002 "Process Control Utilizing Work Instructions and Work Authorizing Documents" and WSI 09-SW-0001 "Test Preparation Sheet (TPS)". Completed TPS documents can be found in Appendix A.

2.1 ETU Waste Phase Separation

As described in Section 6.1 of the ETU Closure Plan, the ETU Waste consisted of two phases, an upper (less dense/aqueous) phase and a lower (more dense/solid) phase. In order to meet disposal criteria for both phases, the waste was separated into two matrices; liquid and solid. NASA employed two liquid/solid phase separation techniques; filter bag separation and centrifuge separation. The phase separation process started with using filter bags in 15 cubic yard capacity roll-off tanks. The filter bags were staged in sequence by larger micron-size (150 micron) to the smallest micron-size (10 micron). However, this technology proved to be inefficient and time-consuming. In order to meet closure deadlines, NASA opted to utilize a different liquid/solid phase separation technology such as centrifuge separation. This technology proved to be efficient and less time-consuming in achieving liquid/solid separation of the ETU waste. The following sections describe how the ETU waste was characterized, managed, and disposed.

2.1.1 ETU Solid Phase Characterization, Management, and Disposal

After separation, the solid material was managed in accordance with 40 CFR 262.34 and was stored in containers in accordance with 40 CFR 262.34(a)(1)(i) whereas the liquid was placed back into the opposite ETU tank. During the phase separation activity, the solids were sampled and characterized. On October 5, 2012, using historical and recent sampling data as well as acceptable knowledge, NASA requested a no longer contains-in determination (NLCID) from NMED HWB for the solid material (NASA, 2012[b]). On October 16, 2012, NMED HWB approved the no longer contains-in determination to manage the ETU solid material as a non-hazardous waste. On October 18, 2012, NASA requested permission to dispose of solid material at Camino Real Landfill in Sunland Park, New Mexico. On October 23, 2012, Camino Real Landfill approved NASA's request to receive the ETU solid material. A total of 330 cubic yards of solid material was removed from the ETU liquid/solid phase separation activity. All solid material was manifested and dispositioned at the Camino Real Landfill (Appendix B).

2.1.2 ETU Liquid Phase Characterization, Management, and Disposal

Per the ETU Closure Plan, NASA considered disposal of the liquid hazardous waste at a deep well injection facility. However, after an extensive review of past sampling data and discussions with NMED HWB, NASA deferred to seek a NLCID for the liquid waste. On November 6, 2012, NASA collected samples of the ETU liquid waste. After review of the analytical data, NASA determined that the ETU liquid waste "no longer contained" regulated hazardous constituents meeting the description of a listed hazardous waste per 40 CFR Part 261 Subpart D nor did it exhibit the characteristics of a hazardous waste per 40 CFR Part 261 Subpart C. On December 13, 2012, NASA requested a NLCID for the ETU liquid waste from NMED HWB (NASA, 2012[d]). On December 21, 2012, NMED HWB approved the NLCID to manage the ETU liquid waste as a non-hazardous waste and to move the waste to the 400 Area Small Altitude Simulation System (SASS) lagoons. On January 2, 2013, NASA submitted a Notice of Intent to Discharge (NOI) under Discharge Permit 1170 to the New Mexico Environment Department Ground Water Quality Bureau (GWQB) to discharge approximately 92,500 gallons of ETU liquid waste to the

400 Area SASS lagoons (NASA, 2013[a]). On February 4, 2013, the NMED GWQB approved the NOI (no permit required) to discharge the 92,500 gallons of ETU liquid waste to the 400 Area SASS lagoons. NASA completed the transfer of all ETU liquid waste to the 400 Area SASS lagoons on February 8, 2013.

2.2 HWDL and Primary Sump Decontamination, Sampling and Verification

The HWDL decontamination process consisted of decontaminating all primary HWDL in all four main pipe sections as described in Section 1.2.3 of this report. The process started with the upstream portions of the HWDL to allow the rinsate to be discharged and collected downstream at the ETU. This activity started August 7, 2012, and continued until December 6, 2012, prior to the final receipt of hazardous waste into the ETU deadline of December 9, 2012. Some sections of the HWDL were decontaminated and left in-place with the intention of re-use and to be connected to the sanitary sewer system for future waste disposal. The other sections were removed and were decontaminated at the ETU unloading pad where the rinsate was pumped from containers into the ETU. All work areas with the potential for contamination due to spills during the decontamination process were underlain with polyethylene sheeting (6 mil minimum). When the decontamination process was complete, the polyethylene sheeting and all other debris generated during this process were managed as hazardous waste pending analytical verification. Waste management for HWDL decontamination wastes is further discussed in Section 3.1 of this report. All field notes pertaining to the HWDL Decontamination process are provided in Appendix C. Approximately 3,000 linear feet of primary HWDL were decontaminated using the following procedures:

Step 1: Pressure rinsed with site tap water using a 360° spray nozzle. In some locations, 5-20 gallons of water were discharged into the HWDL using a water hose.

Step 2: Cleaned with detergent (Alconox or equivalent). Depending on the length of segment of pipe, it was cleaned with either a scrub brush, using a 360° spray nozzle, or flushed with approximately 5-15 gallons of detergent water.

Step 3: Pressure rinsed a third time with site tap water using a 360° spray nozzle. In some locations, 5-20 gallons of water were discharged into the HWDL using a water hose.

Step 4: Sampled on fourth rinse and analyzed to verify that the decontamination process was completed in accordance with section 6.2.1 of the ETU Closure Plan.

NASA encountered minimal difficulties in pressure washing portions of the underground HWDL in the 200 and 800 Areas. Difficulties such as: the pressure hose length was inadequate in reaching the full length of the underground HWDL; or there was more than one 90° elbow or joint in the drain segment which prohibited the hose from moving further down the line. In these cases, NASA deviated from the ETU Closure Plan and utilized a different set of procedures for decontamination of the HWDL. These deviations are discussed in Section 4.2 of this report.

The following tables provide the decontamination metrics of the 800 and 200 Area HWDL:

Area	Location	Diameter (inches)	Approximate Length (Linear Ft)	Action	Action Status	Date Sampled
800	Hazardous Fluid Testing Area (HFTA) - Decontamination Station #3	2	10.0	Removed & Triple Rinsed	Completed 8/7/2012	9/6/2012
800	HFTA - 90 Degree Elbows at Expansion Joint #1	2	10.0	Removed & Triple Rinsed	Completed 8/8/2012	9/6/2012
800	HFTA - Expansion Joint #2 to Decon. Station #2	2	50.0	Removed & Triple Rinsed	Completed 8/9/2012	9/6/2012
800	HFTA - Expansion Joint #1 to Expansion Joint #2	2	140.0	Removed & Triple Rinsed	Completed 8/10/2012	9/6/2012
800	HFTA - Decon. Station #2 to Decon. Station #1	2	100.0	Removed & Triple Rinsed	Completed 8/27/2012	9/6/2012
800	Decon. Station #1 to Clean Out (CO) 1B and CO 1B to CO 1	4	104.0	Triple Rinsed "In Place"	Completed 8/29/2012	11/27/2012
800	CO 1 to CO 2/3	4	247.0	Triple Rinsed "In Place"	Completed 8/30/2012	
800	CO 2/3 to Sump	4	220.0	Triple Rinsed "In Place"	Completed 9/17/2012	
803	Laboratory Fume Hoods 5 and 27	2	15.0	Triple Rinsed "In Place"	Completed 9/19/2012	11/27/2012
803	Laboratory Fume Hoods 6 and 28	2	15.0	Triple Rinsed "In Place"	Completed 9/20/2012	
803	803 Floor Drain to CO 1	4	17.0	Triple Rinsed "In Place"	Completed 9/20/2012	
803	803 CO 1 to Sump	4	210.5	Triple Rinsed "In Place"	Completed 9/21/2012	
	TOTAL		**1138.5**			

Area	Location	Diameter (inches)	Approximate Length (Linear Ft)	Action	Action Status	Date Sampled
200	Environmental Chemistry Lab	2	50.1	Removed & Triple Rinsed	Completed 10/12/12	10/17/2012
200	Metallurgy Lab	2	45.0	Removed & Triple Rinsed	Completed 10/12/12	10/18/2012
200	Wet Chemistry Lab (Part I)	2	46.0	Removed & Triple Rinsed	Completed 10/13/12	10/17/2012
200	Propellant Vapor Lab	2	23.6	Removed & Triple Rinsed	Completed 10/13/12	10/17/2012
200	Fuel Lab	2	52.0	Triple Rinsed "In Place"	Completed 11/02/12	11/2/2012
200	Oxidizer Lab	2	57.5	Triple Rinsed "In Place"	Completed 11/02/12	11/2/2012
200	Clean Room	2	26.0	Triple Rinsed "In Place"	Completed 10/26/12	10/30/12
200	Component Services Section (CSS) High Bay Lift Station & Piping	4	48.0	Removed & Triple Rinsed	Completed 10/26/12	10/30/12
200	Process Equipment Room	4	68.0	Removed & Triple Rinsed	Completed 10/26/12	10/30/12
200	Wet Chemistry Lab (Part II)	4	25.0	Triple Rinsed "In Place"	Completed 10/13/12	11/28/2012
200	CSS Floor Drains	4	60.0	Triple Rinsed "In Place"	Completed 10/26/12	
200	West Side Exterior	4	185.0	Triple Rinsed "In Place"	Completed 10/31/12	
200	East Side Exterior Breezeway to Sump	4	335.0	Triple Rinsed "In Place"	Completed 11/16/12	
200	Sump	72	5.2	Triple Rinsed "In Place"	Completed 11/16/12	11/27/2012
200	Sump to ETU	4	755.0	Removed & Triple Rinsed	Completed 12/4/12	12/5/2012
	TOTAL		**1781.4**			

NASA removed approximately 1,351 linear feet of HWDL as well as the HWDL Primary and Secondary Sump from the 200 and 800 Areas. Figure 1, Figure 2, and Figure 3 provide visual representations of all the HWDL that was removed or left in-place. All removed HWDL segments were managed in accordance with 40 CFR 262.34 and were stored in containers in accordance with 40 CFR 262.34(a)(1)(i). The HWDL and bulk debris were managed as hazardous waste pending analytical results.

2.2.1 HWDL and Primary Sump Sampling and Verification

Verification sampling occurred on the fourth rinse of the HWDL and primary sump. The rinsate was sampled and analyzed to ensure successful decontamination of the HWDL. Rinsate was collected in

stainless steel buckets to prevent external phthalate contamination from plastic buckets. All sampling protocols followed Section 7.0 *Sampling and Analysis Plan* of the ETU Closure Plan. Sample parameters and analytical methods for the HWDL decontamination sampling were provided in Section 7.5.1 of the ETU Closure Plan.

A review of the initial set of analytical data received from HWDL decontamination concluded that the HWDL was successfully decontaminated. Based on this review, on October 25, 2012, NASA submitted a no longer contains-in determination to the NMED HWB for the HWDL Bulk Debris (NASA, 2012 [c]). On November 2, 2012, NMED HWB approved the no longer contains-in determination to manage the HWDL Bulk Debris as a non-hazardous waste. NASA determined that HWDL material, including the HWDL Primary Sump, which was removed and decontaminated subsequent to the NLCID approval from NMED, could also be managed as a non-hazardous waste when analytical data met the criteria established in the ETU Closure Plan. Analytical summary tables of HWDL bulk debris meeting the set criteria are provided in Appendix D.

2.3 ETU Primary Liner Cleaning, Inspection, and Management

After all ETU waste liquids were removed from the ETU tanks, the primary liners were decontaminated using the following procedure:

Step 1: Rinsed with a fire hose and rinsate removed and containerized.

Step 2: Scrubbed with soft bristle brooms and detergent (Alconox or equivalent).

Step 3: Liners received a final rinse with a fire hose, rinsate was removed and containerized.

All rinsate was managed in accordance with 40 CFR Part 262.34. Less than 100 gallons of water was used to minimize the amount of waste generated during this process.

2.3.1 Primary Liner Inspection

The purpose of the primary liner inspection was twofold: to inspect all seams and the general condition of the liner material to fulfill the requirements of Section 4.4 of the ETU Closure Plan; and to provide characterization verification for the secondary liners. Each primary liner was visually inspected by a qualified liner inspector (an independent professional engineer). The qualified liner inspector inspected all seams and the general condition of the primary liner for holes, tears, or seam integrity issues that may cause the secondary liner to be exposed to hazardous waste. All observations and details of the inspection were documented and photographed, and are provided in Appendix E. Per Section 6.4.1 of the ETU Closure Plan, the primary liners of both tanks were initially managed as hazardous wastes in accordance with 40 CFR Part 262.34, pending final disposition determination. The disposal of the primary liners is discussed in Section 3.3 of this report.

2.3.1.1 ETU West Tank Inspection

Based on the results of the west tank inspection, there were no observable tears or holes in the primary liner. Also, there were no identified integrity issues with the seams. All patch work was inspected and no issues with the patchwork were identified. Based on the results of this inspection, it was determined that no hazardous waste passed through the primary liner contaminating the secondary liner and therefore the secondary liner was managed and disposed of as a non-hazardous solid waste.

2.3.1.2 ETU East Tank Inspection

The primary liner of the east tank was inspected after all the ETU liquid waste was removed and the primary liner was cleaned using the procedure described above. Based on the results of the east tank inspection, there were no integrity issues with the seams. There were no observable tears or holes in the primary liner. All patch work of the primary liner was inspected and no issues with the patchwork were identified. Based on the results of the primary liner, it was determined that no hazardous waste passed through the primary liner contaminating the secondary liner and therefore the secondary liner was managed and disposed of as a non-hazardous solid waste.

2.4 ETU Unloading Pad and Steel Support Structures Management

2.4.1 ETU Unloading Pad Management and Disposal

The ETU Unloading Pad was a concrete structure located directly between the east and west tanks. Per Section 6.5 *ETU Unloading Pad Decontamination* of the ETU Closure Plan, it was rinsed and decontaminated using a pressure washer and detergent. Rinsate was collected and managed in the East ETU Tank, prior to the last receipt of hazardous waste deadline of December 9, 2012. NASA determined that the ETU Unloading Pad could be managed as a non-hazardous waste because of the NLCID that was received for the ETU liquid waste and ETU solid waste. To facilitate disposal of the concrete pad, it was broken into smaller pieces using a back hoe. All concrete that was removed from the ETU was disposed of at the White Sands Missile Range Landfill.

2.4.2 Steel Support Structures Management and Final Disposition

The steel support structures of the ETU (i.e. sampling platform) were rinsed using a fire hose during the ETU waste phase separation activity. Rinsate was collected in the unloading pad sump and discharged into the ETU, prior to the last receipt of hazardous waste deadline of December 9, 2012. Prior to the tank deconstruction, the platforms were disassembled and salvaged for reuse on-site.

2.5 Steel Tank Inspection, Removal, and Disposal

After the removal of the primary liners, secondary liners, and felt material between the liners, the steel tanks were inspected. The purpose of the steel tank inspection is to verify that the steel tank shell maintained its integrity throughout the life of the tanks. This would further verify that no hazardous waste was leaked from the tanks to the environment. The steel tank inspection was conducted by a certified welding inspector (CWI) in accordance with American Welding Society (AWS) Code D.1.1 and D.1.1 M: 2010 Structural Welding Code-Steel, Section 6.9. The CWI inspected the interior of the steel tanks after the removal of the secondary liner and felt material. Items that the CWI inspected were existing weld joints, plate to plate and sides to plate, as well as random areas of the tanks. All observations and photographs taken during the inspection are provided in a report located in Appendix F.

2.5.1 ETU East Tank Inspection Results

After an inspection of 17 welds, there were two areas of concern, welds 7 and 10. There was a defect in each weld but the defects warranted no concern since there was no indication that the defect penetrated the wall in either weld. All other welds observed showed no other indications and the welds appeared to be satisfactory.

2.5.2 ETU West Tank Inspection Results

After an inspection of 15 welds there were no defects observed and the welds appeared to be satisfactory.

2.5.3 Steel Tank Disposal

NASA chose to manage the tanks as scrap metal under the scrap metal exclusion 40 CFR 261.4(13). Per Section 6.7 *ETU Steel Tank Decontamination or Removal* of the ETU Closure Plan, no decontamination or verification sampling and analysis was required if NASA were to remove and recycle the steel tanks. The results of the primary and secondary liner inspections determined that no hazardous waste leaked from the primary liner to the secondary liner, nor did the hazardous waste leak from the secondary liner to the steel tanks of either tank. The tanks were cut into sections as required to support handling, transportation, and management as scrap metal.

2.6 Soil Investigation

Soil sampling was performed to confirm that a release to the environment from the ETU tanks and ancillary equipment had not occurred during the operating lifetime of the unit. Based on historical records, there have been no releases (leaks) from the ETU tanks and ancillary equipment to the environment. The soil, as a solid matrix, was sampled and analyzed against criteria established in the ETU Closure Plan, Section 7.7 *Soil Sampling*, and in accordance with NASA Sampling and Analysis Plan (SAP) 2013-006- *ETU Closure Soil Investigation Samples*. The NASA Soil Sampling SAP provides all sampling locations and depths, data quality objectives, analytical methods, field sampling methods, and quality control requirements (Appendix G).

2.6.1 Scope

The scope of the soil investigation included the following:

- 10 soil borings located underneath the HWDL in the 800 Area at a depth of 0-6 inches and 1-2 feet.
- 19 soil borings located underneath the HWDL in the 200 Area at a depth of 0-6 inches and 1-2 feet.
- 2 soil borings in the HWDL sump vault (at center and 2-feet horizontally from the center at a depth of 2 feet).
- 10 soil borings underneath the ETU Tanks at a depth of 2 feet below ground surface (bgs).
- 3 soil borings underneath the ETU Tanks at the low end of the sloped bottom and one below the unloading pad sump location (10 feet bgs).
- Collection of Quality Assurance/Quality Control (QA/QC) samples (field duplicates, equipment blanks).
- Collection of waste characterization samples (decontamination wash water).

2.6.2 Field notes

As part of the soil sampling activities, NASA maintained a field notebook where a recording engineer documented all pertinent field data relative to the soil investigation. Every sampling event was recorded and included a description of the soil, a visual inspection of the HWDL, and any sampling interferences. All soil samples taken were visually inspected and information such as soil staining, soil odors, and soil

moisture content were recorded. All HWDL that was exposed for sampling was visually inspected by the recording engineer for possible structural issues at connection points, cracks, holes, or breaks in the drain lines. All inspections were documented in the field notebook and photographed. Field notes are provided in Appendix H.

2.6.3 Analyte Concentrations in Soil Samples by Areas

Analytical summary tables for all 200 Area, 800 Area, and beneath ETU Tanks soil sampling events are provided in Appendix I. For all analyte classes, measured concentrations are below applicable evaluation criteria for all analytes. The analyte arsenic was the only compound that exceeded the residential SSL.

2.6.3.1 800 Area HWDL

There were 22 sampling events (10 boreholes) that include a sample duplicate every 10 samples. A total of 17 Arsenic detections occurred above the NMED Residential Soil Screening Level of 3.9 mg/Kg. The average of those detections was 6.1 mg/Kg, which is a magnitude of 1.56 times the SSL. Other metals detected were Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Nickel, Thallium, Vanadium, and Zinc. These were all detected well below their respective SSL.

No detections of hydrazines, semi-volatile organic constituents, or volatile organics constituents were observed in the 800 Area.

2.6.3.2 200 Area HWDL

There were 46 sampling events (21 boreholes) that include a sample duplicate every 10 samples. A total of 26 Arsenic detections occurred above the NMED Residential Soil Screening Level of 3.9 mg/Kg. The average of those detections was 6.2 mg/Kg, which is a magnitude of 1.56 times the SSL. Other metals detected were Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Mercury, Nickel, Thallium, Vanadium, and Zinc. These were all detected well below their respective SSL.

There were detections of volatile organic constituents. Of those there were 3 detections of 2-butanone (MEK) 0.0026 mg/Kg, 0.002 mg/Kg, and 1.002 mg/Kg, however they were all well below the SSL of 36 mg/Kg. There was a single detection of toluene at 0.0015 mg/Kg but this is well below the SSL for toluene of 10 mg/Kg. There was a detection of acetone at 0.044 mg/Kg but is also below the 140 mg/Kg SSL for acetone. There was a single detection of TCE at 0.003 mg/Kg but is well below the SSL of TCE at 6 mg/Kg.

No detections of hydrazines or semi-volatile organic constituents were observed in the 200 Area sampling data.

2.6.3.3 ETU Tanks

There were 15 sampling events (13 boreholes) that include a sample duplicate every 10 samples and single 10 foot depth boreholes. A total of 8 Arsenic detections occurred above the NMED Residential Soil Screening Level of 3.9 mg/Kg. The average of those detections was 5.47 mg/Kg, which is a magnitude of 1.4 times the SSL. Other metals detected were Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Mercury, Nickel, Thallium, Vanadium, and Zinc. These were all detected well below their respective SSL.

No detections of hydrazines, semi-volatile organic constituents, or volatile organics constituents were observed beneath the ETU Tanks.

2.6.4 Analyte Concentrations in soils

The arsenic concentrations measured in the soil samples reflect natural background concentrations and are not from ETU operations. The majority of metal-bearing waste streams generated at NASA contain more than one metal analyte, for example chromium and cadmium. Assuming the arsenic was present due to ETU operations, there would be evidence of other metals in the soil as well. The relevance of a single metal analyte above SSL's is consistent with historical knowledge of the site's soil studies. Several soil borings have been installed at WSTF within areas unaffected by site operations. These were installed during the Phase I (1987) and Phase II (1994) soil boring background investigations performed at WSTF. The results of the 1987 WSTF Phase I soil background borings ranged from 28-31 mg/Kg whereas the results of the 1994 WSTF Phase II soil background borings ranged from 5-14 mg/Kg. The results for naturally occurring metals are also summarized within the Draft RFI (NASA, 1996; Volume Four Chapter One, and Volume 8). Background concentrations for RCRA metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver) were interpreted to be naturally occurring and indigenous to local soils, being derived from precious metal ore minerals located within the southern San Andreas Mountains. Several mines which formed part of the Organ Mining District are located proximally and up-gradient to WSTF (within two miles of the industrial areas) and host base metal deposits containing copper, zinc, lead, iron, gold, and silver (NASA, 1996; Volume Four Chapter One).

3.0 Waste Management and Disposal

This section describes the management, storage, characterization, and disposal of wastes generated during the closure activities. Throughout the closure process, waste minimization was NASA's goal. All waste management followed the ETU Closure Plan as well as NASA internal waste management policies. Each sub-section provides waste management, storage, characterization, and disposal information pertaining to wastes generated for each activity.

3.1 HWDL Decontamination Wastes

Debris that was generated during the HWDL decontamination consisted of disposable PPE (splash-protection gear such as chemical-resistant Tychem suits, nitrile and latex gloves) chem-wipes, plastic sheeting, segments of HWDL primary and secondary pipe in various lengths, and decontamination rinsewater. Decontamination rinsewater from the Fuel, Oxidizer, and Metallurgy laboratories were containerized due to the potential to contain hazardous constituents and waste codes that are not permitted to be discharged into the ETU, in accordance with NASA's Hazardous Waste Permit. All PPE debris was collected in zip-lock or plastic bags and pig-tied closed. The debris was stored and accumulated in containers in accordance with 40 CFR 262.34. The HWDL primary and secondary piping (bulk debris) was stored in a closed-top roll-off. The decontamination rinsewater was collected in bung-style, poly containers. All containers were managed as hazardous waste in accordance with 40 CFR 262.34, pending analytical verification. All inspection records and waste profile sheets for the wastes are kept in the NASA facility operating record.

3.1.1 HWDL Decontamination Characterization and Disposal

The analytical received from the decontamination operation was used to characterize the debris generated during the actual decontamination process. Using the analytical data, on October 25, 2012, NASA submitted a NLCID to the NMED HWB for the HWDL Bulk Debris (NASA, 2012 [c]), which incorporated any debris that was generated during this process. On November 2, 2012, NMED HWB approved the no longer contains-in determination to manage the HWDL Bulk Debris as a non-hazardous waste. The HWDL bulk debris was down-graded from a hazardous waste to a non-hazardous waste and was disposed of as a solid waste at Camino Real Landfill in Sunland Park, New Mexico. The rinsate was

down-graded from a hazardous waste to a non-hazardous waste and was discharged at the ETU, prior to the last receipt of hazardous waste deadline of December 9, 2012.

3.2 ETU Phase Separation Wastes

Debris that came in contact with the ETU waste during the ETU phase separation operations consisted of disposable PPE (splash-protection gear such as chemical-resistant Tychem suits, nitrile and latex gloves) chem-wipes, and plastic sheeting. All debris that was generated was collected in plastic bags and pig-tied closed when it was placed into containers. The debris was managed in accordance with 40 CFR 262.34, pending analytical verification. All inspection records and waste profile sheets for the wastes are kept in the NASA facility operating record.

3.2.1 ETU Phase Separation Wastes Characterization and Disposal

NASA utilized the results of the ETU waste sampling (solid phase) to determine the characterization of the debris that came in contact with the waste. On October 5, 2012, NASA requested a no longer contains-in determination from NMED HWB for the solid material (NASA, 2012 [b]). On October 16, 2012, NMED HWB approved the no longer contains-in determination to manage the ETU solid material as a non-hazardous waste. NASA made the determination that any debris that came in contact with the non-hazardous ETU waste was also a non-hazardous waste and did not meet the definition of a hazardous waste per 40 CFR 261. Therefore the debris could be managed and disposed as a non-hazardous, solid waste. NASA down-graded the hazardous waste debris to non-hazardous waste debris and dispositioned the waste at Camino Real Landfill.

3.3 ETU Primary Liner Wastes

Personnel donned PPE appropriate for the hazards associated with the primary liner removal. PPE such as dust masks, nitrile gloves under leather work gloves, rubber boots, and re-usable aprons. Debris generated during this process consisted mainly of gloves that came in contact with the liners. The primary liners and associated debris were accumulated and managed in accordance with 40 CFR 262.34, pending analytical verification. The liners and associated debris were placed in 1 cubic yard super sacks that met the 40 CFR 262.34 (a)(1)(i) requirement. All inspection records and waste profile sheets for the wastes are kept in the NASA facility operating record.

3.3.1 ETU Primary Liner Waste Characterization and Disposal

After cleaning and inspection of the primary liner of the western-most tank, the primary liner was sampled and analyzed for final characterization and disposal. Since both tanks received the same waste stream, a sample from one tank primary liner was used to represent both primary liners. On April 2, 2013, using recent sampling data as well as acceptable knowledge, NASA requested a no longer contains-in determination from NMED HWB for the ETU Primary Liners (NASA, 2013 [b]). On April 11, 2013, NMED HWB approved the no longer contains-in determination to manage the ETU Primary Liners as non-hazardous waste. After receiving the NLCID from NMED, NASA dispositioned the primary liners and associated debris at Camino Real Landfill.

3.4 Soil Investigation Wastes

Investigation-derived wastes (IDW) that were generated during this activity consisted of disposable sampling equipment (terra core samplers and wipes), PPE (latex and vinyl gloves), and sample equipment decontamination water. NASA identified five borehole locations in the 200 Area where potential contamination may exist due to the 200 Area West Closure PCC Unit (Figure 4). The IDW generated

from these sample locations were managed as hazardous waste in accordance with 40 CFR 262.34, pending analytical verification. IDW generated from all other borehole locations were managed as non-hazardous, solid waste but as a best management practice were accumulated and containerized until final characterization.

3.4.1 Soil Investigation Wastes Characterization and Disposal

NASA utilized the soil sampling analytical data to characterize the IDW that was generated during the soil investigation. Analytical data received for the 200 Area boreholes 1-5, was used to characterize the IDW managed as a hazardous waste. The final determination was that there were no detections of hazardous constituents above regulatory levels from the soil. Therefore the waste that came in contact with the soil also did not contain hazardous constituents above regulatory levels and did not meet the definition of a hazardous waste per 40 CFR 261. NASA determined that the waste could be managed and disposed as a non-hazardous, solid waste. IDW debris was dispositioned via the solid waste stream. IDW decontamination water will be dispositioned via sanitary sewer.

4.0 Deviations from the ETU Closure Plan

There were no closure plan modifications or amendments as described in New Mexico Administrative Code, Title 20, Chapter 4, Part 1 (20.4.1.500 NMAC) (incorporating 40 CFR §264.112(c)). However, due to changes in site conditions deviations to the ETU Closure Plan occurred. This section describes the deviations and alternative engineering approaches that were taken for each closure activity.

4.1 ETU Phase Separation- Liquid Waste Disposal

Per the ETU Closure Plan, Section 6.1 *ETU Treatment Residue Phases Separation, Characterization and Disposal*, NASA considered disposing of the ETU liquid waste at a deep well injection facility. However, after an extensive review of past sampling data and discussions with NMED HWB, NASA deferred to seek a NLCID for the liquid waste. On December 13, 2012, NASA requested a NLCID for the ETU liquid waste (NASA, 2012 [d]). On December 21, 2012, NMED HWB approved the NLCID to manage the ETU liquid waste as a non-hazardous waste and to move the waste to the 400 Area Small Altitude Simulation System (SASS) lagoons .

4.2 HWDL and Primary Sump Decontamination

As mentioned in Section 2.2 *HWDL and Primary Sump Decontamination, Sampling and Verification* of this report, all primary HWDL was to be rinsed with hot water. After reviewing the logistics of supplying a hot water supply, NASA decided it was impractical and unsafe to personnel to supply a water heating device to the various locations of the HWDL.

The ETU Closure Plan also stated that pull through pipe pigs or other mechanical-type cleaning equipment would be used during this process. While in the field, NASA encountered difficulties with moving the pipe pigs through the drain line without making unnecessary cuts to the line. Unnecessary cuts to the drain line would create integrity issues with the line when used in the future. NASA chose to use a 360° turn pressure nozzle head with a 200 foot extension hose. For pipe that was removed, NASA used scrub brushes with extension wands to mechanically clean the interior of the pipeline. Where the extension hose could not reach (either the drain line was too long or there were less than 90° connection joints in the line) NASA poured anywhere between 5-20 gallons of water to ensure adequate decontamination. This occurred in two locations along the HWDL: 800 Area underground segment and in the 200 Area Component Services Section (CSS), Building 200. Figure 5 and Figure 6 provide a visual of the locations discussed.

4.3 ETU Unloading Pad

When NASA received the NLCID for both the ETU waste solids and liquid, NASA determined that the ETU unloading pad determination was based on the NLCID received from NMED for the ETU Solids and Liquid Waste. It was determined that the unloading pad would have the same waste classification as the ETU waste since the unloading pad was exposed to the same waste streams. Through this determination, NASA characterized the unloading pad as non-hazardous waste.

4.4 Soil Investigation

The ETU Closure Plan designated that 12 soil borings in the 800 Area, 20 Soil borings in the 200 Area, 2 Soil borings in the sump vault, 10 soil borings (at two foot depths) and 2 soil borings (at 10 foot depths) would be taken. NASA deviated from the Closure Plan by changing the amount of soil samples taken as was dictated by field conditions. The deviations are noted below.

4.4.1 800 Area HWDL

The boreholes 800-HWDL-04 (Decon. Station #1- Inlet to underground) and 800-HWDL-03 (Decon. Station #1- 90 Elbow) were removed from the sampling plan due to their close proximity with boreholes 800-HWDL-05 (Decon. Station #1- Underground Tee) and 800-HWDL-06 (Clean Out 1A). It was determined that boreholes 800-HWDL-05 and 800-HWDL-06 were representative of any potential soil contamination from the above ground HWDL where boreholes 800-HWDL-04 and 800-HWDL-03 were located. Figure 7 demonstrates this deviation.

4.4.2 200 Area HWDL

Borehole 200-HWDL-13 (Env/Met Lab Tee to Ground) was removed due to the location of the borehole. The borehole was located close to a structural support beam for building 203. It was determined that moving excavation equipment near the support beam was unsafe. NASA determined that since the HWDL flowed downstream from 200-HWDL-13 to borehole 200-HWDL-14 (45 Elbow from Env/Met Lab), any potential leaks would be detected in the results of 200-HWDL-14. Figure 8 demonstrates this deviation.

Borehole 200-HWDL-16 (45 Elbow Breezeway) was sampled from the same borehole as 200-HWDL-15 (pipe transition). NASA encountered difficulties locating the HWDL in that particular sample location. It was also discovered that a high pressured nitrogen supply line was located near the borehole 200-HWDL-16. To prevent any damage to the high pressure line, it was determined that 200-HWDL-16 would be sampled from the same borehole as 200-HWDL-15. Figure 9 demonstrates this deviation.

4.4.3 Underneath ETU Tanks

NASA collected an additional sample (200-ETU-13) where the existing sump was located. The additional borehole reached a depth of 10 feet. Figure 10 demonstrates this deviation.

5.0 Conclusions

5.1.1 Analyte Concentrations in Soil Samples

The arsenic concentrations measured in the soil samples reflect natural background concentrations and not from ETU operations. The majority of metal-bearing waste streams generated at NASA contain more than one metal analyte, for example chromium and cadmium. Assuming the arsenic was present due to

ETU operations, there would be evidence of other metals in the soil as well. The relevance of a single metal analyte above SSL's is consistent historical knowledge of the site's soil studies. Several soil borings have been installed at WSTF within areas unaffected by site operations. These were installed during the Phase I (1987) and Phase II (1994) soil boring background investigations performed at WSTF. The results of the 1987 WSTF Phase I soil background borings ranged from 28-31 mg/Kg whereas the results of the 1994 WSTF Phase II soil background borings ranged from 5-14 mg/Kg. The results for naturally occurring metals are also summarized within the Draft RFI (NASA, 1996; Volume Four Chapter One, and Volume 8). Background concentrations for RCRA metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver) were interpreted to be naturally occurring and indigenous to local soils, being derived from precious metal ore minerals located within the southern San Andreas Mountains. Several mines which formed part of the Organ Mining District are located proximally and up-gradient to WSTF (within two miles of the industrial areas) and host base metal deposits containing copper, zinc, lead, iron, gold, and silver (NASA, 1996; Volume Four Chapter One).

5.1.2 Overall

NASA has ensured that all waste in the ETU has been characterized, removed, and disposed in accordance with the closure performance standards in Sections 6 and 7 of the ETU Closure Plan. The ETU primary tank liners (liners in direct contact with the waste) have been removed, characterized, and disposed in accordance with the closure performance standards in Sections 6 and 7 of the ETU Closure Plan. All ancillary equipment has been successfully decontaminated. Appendix E provides analytical summary tables that demonstrate successful decontamination. Removed ancillary equipment has been properly characterized and disposed in accordance with the closure performance standards in sections 6 and 7 of this closure plan. All ancillary equipment that has been successfully decontaminated may either be reused or left in-place. Appendix I provides analytical summary tables that demonstrate soil contamination is not present as a result of ETU operations along the HWDL and below the ETU Tanks. All work within this project has been certified by an independent, professional engineer licensed in the state of New Mexico. Based upon the demonstrations provided and the results of the soil investigation, the ETU is clean closed in accordance with the Closure Plan.

6.0 References

Note that, were applicable, NASA citations include the original submittal and date, as well as the date of the NMED response. The date cited is the date of final NMED approval. Citations for individual NMED approvals (or other NMED responses) are not included.

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NASA. Request for a "Contained-In Determination" for the Hazardous Waste Drainline (HWDL) Bulk Debris Waste Stream. NASA Johnson Space Center White Sands Test Facility, Las Cruces, New Mexico. Submitted to NMED October 25, 2012. Approved November 2, 2012(c).

NASA. Request for a "Contained-In Determination" for ETU Treatment Liquid Waste. NASA Johnson Space Center White Sands Test Facility, Las Cruces, New Mexico. Submitted to NMED December13, 2012. Approved December 21, 2012(d).

NASA. NASA White Sands Test Facility (WSTF) Notice of Intent to discharge Evaporation Treatment Unit (ETU) Liquid Waste into the 400 Area Small Altitude System Simulation (SASS) Lagoons. NASA Johnson Space Center White Sands Test Facility, Las Cruces, New Mexico. Submitted to NMED January 2, 2013. Approved February 4, 2013(a).

NASA. Request for a "Contained-In Determination" for the ETU Primary Liners. NASA Johnson Space Center White Sands Test Facility, Las Cruces, New Mexico. Submitted to NMED April 2, 2013. Approved April 11, 2013(b).

NMED. Notice of Deficiency, Part 2, RCRA Permit Renewal Application. NASA Johnson Space Center White Sands Test Facility, Las Cruces, New Mexico. HWB-NASA-02-008. October 19, 2004.

NMED. Hazardous Waste Permit. NM8800019434, to United States National Aeronautics and Space Administration for the White Sands Test Facility Located in Doña Ana County, New Mexico, Prepared by the New Mexico Environment Department Hazardous Waste Bureau, November 2009.

Figures

This section provides all figures referenced in preceding sections of this document.

Figure 1 200 and 800 Areas: Removed and Remaining HWDL

(SEE NEXT PAGE)

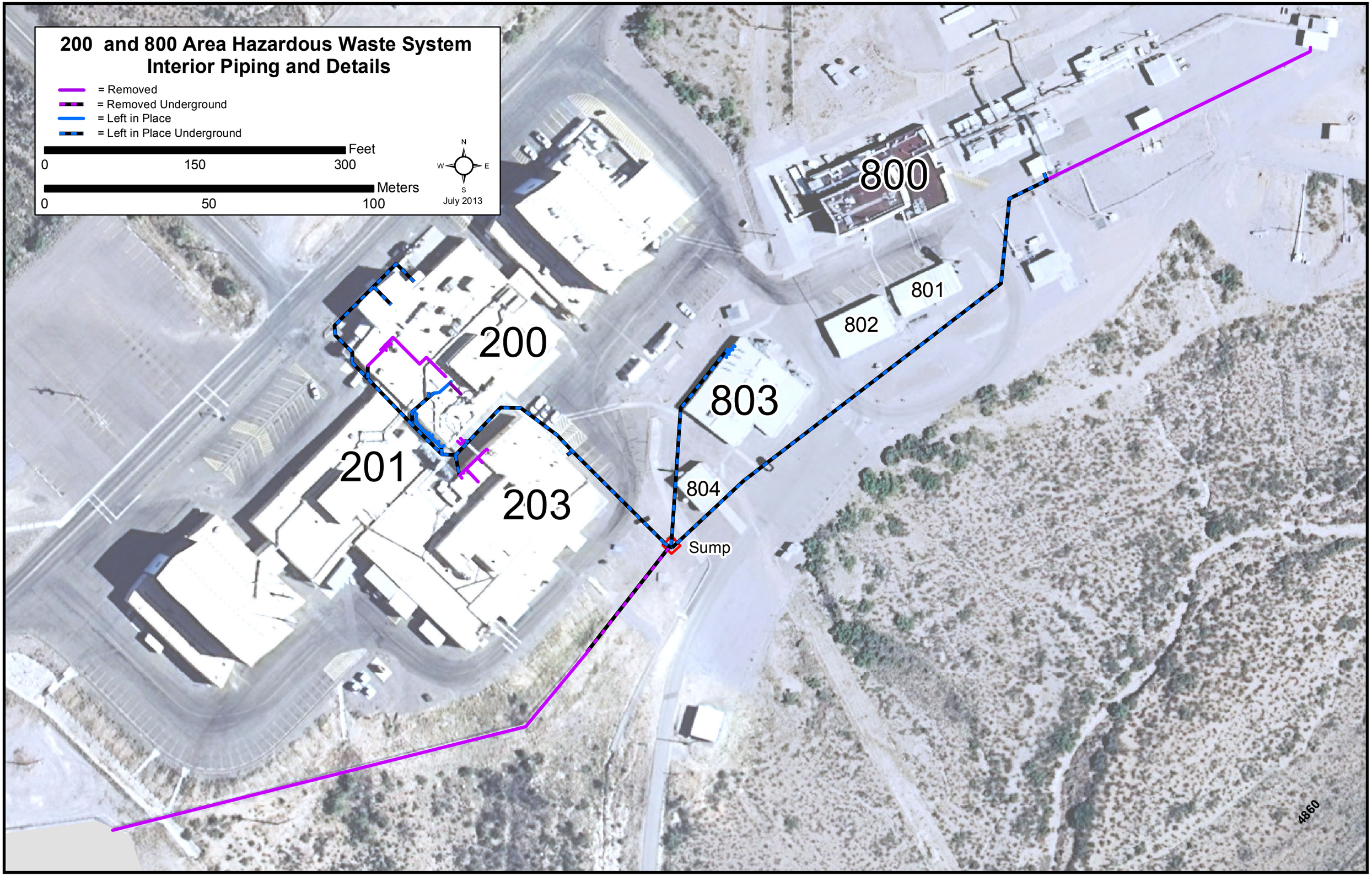

200 and 800 Area Hazardous Waste System
Interior Piping and Details
= Removed
= Removed Underground
= Left in Place
= Left in Place Underground
Feet
0
150
300
Meters
0
50
100
N
W
E
S
July 2013
800
801
802
803
804
200
201
203
Sump
4860

Figure 2 200 Area: Removed and Remaining HWDL

(SEE NEXT PAGE)

200 Area Hazardous Waste System
Interior Piping and Details
= Removed
= Left in Place
= Left in Place Underground
Feet
0
50
100
Meters
0
15
30
N
W
E
S
July 2013
200
201
203
Sump

Figure 3 800 Area: Removed and Remaining HWDL

(SEE NEXT PAGE)

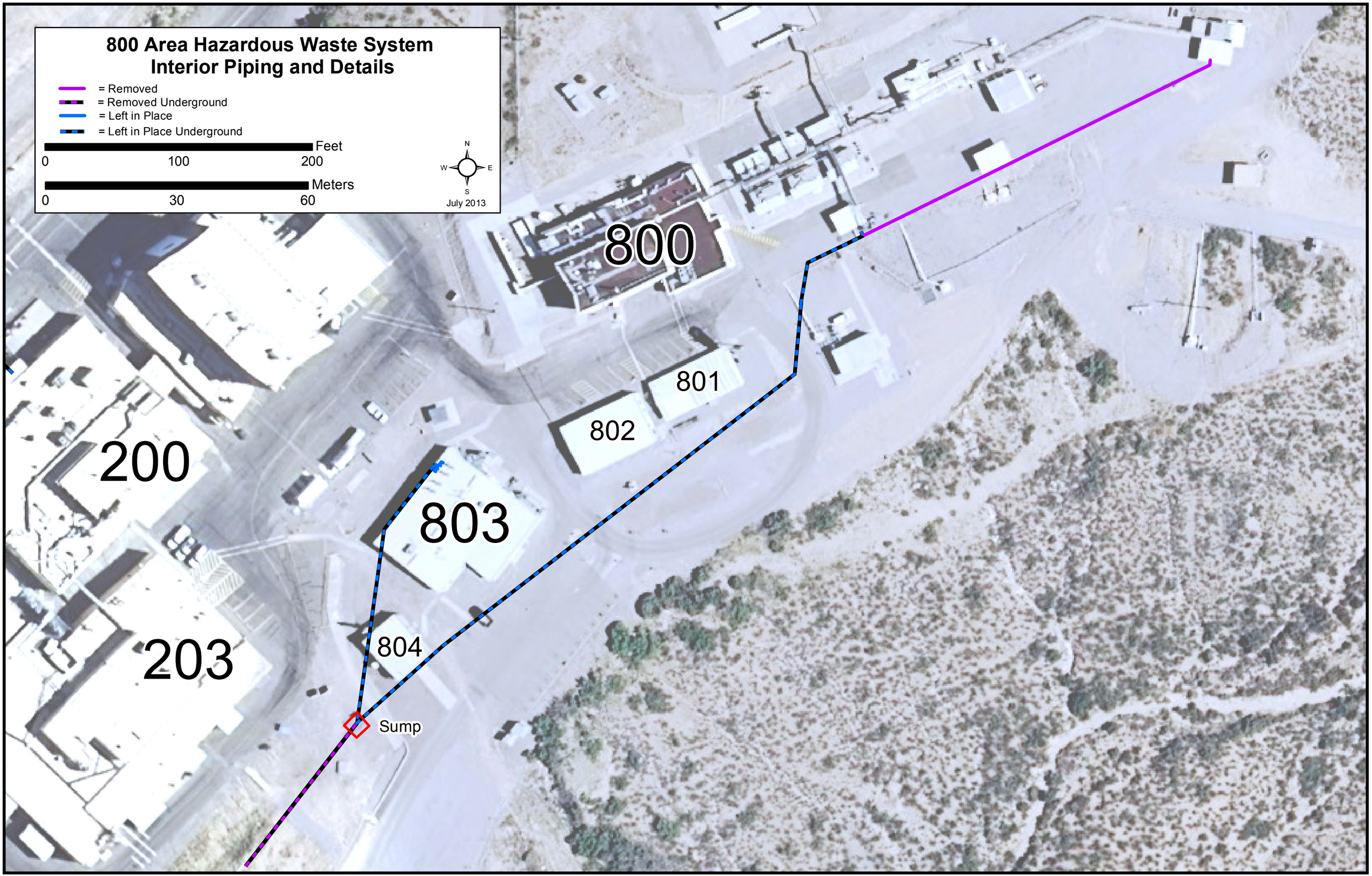

800 Area Hazardous Waste System
Interior Piping and Details
= Removed
= Removed Underground
= Left in Place
= Left in Place Underground
Feet
0
100
200
Meters
0
30
60
N
W
E
S
July 2013
800
801
802
803
804
200
203
Sump

Figure 4 200 and 800 Area Soil Sample Locations

(SEE NEXT PAGE)

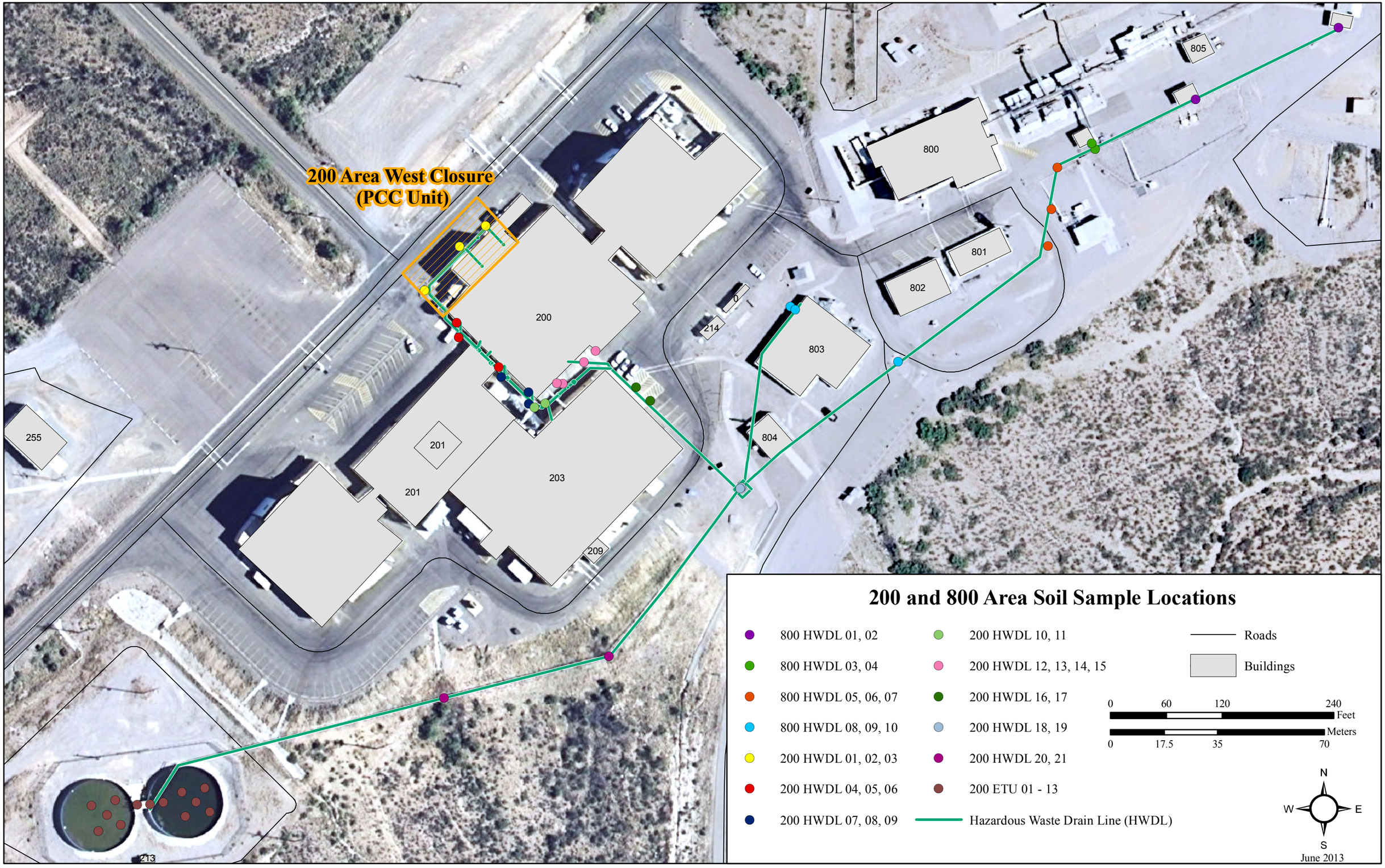
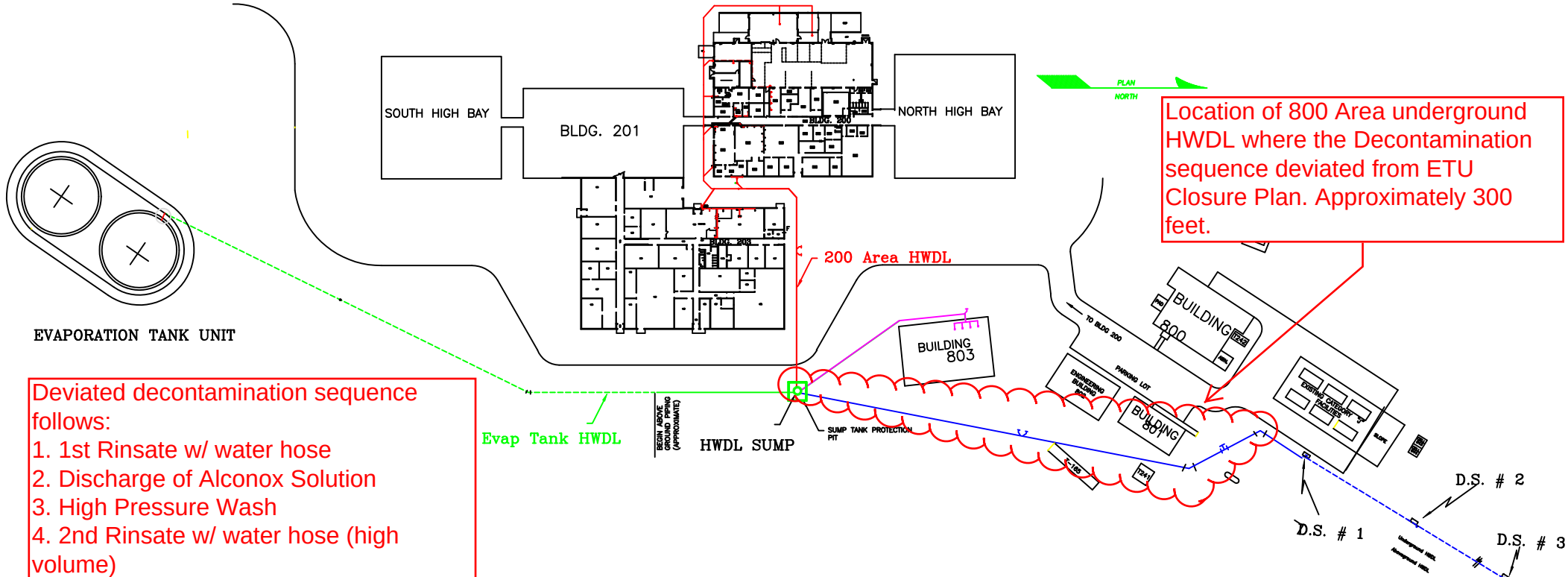

200 Area West Closure
(PCC Unit)
200
201
201
203
209
214
255
213
800
801
802
803
804
805
200 and 800 Area Soil Sample Locations
800 HWDL 01, 02
800 HWDL 03, 04
800 HWDL 05, 06, 07
800 HWDL 08, 09, 10
200 HWDL 01, 02, 03
200 HWDL 04, 05, 06
200 HWDL 07, 08, 09
200 HWDL 10, 11
200 HWDL 12, 13, 14, 15
200 HWDL 16, 17
200 HWDL 18, 19
200 HWDL 20, 21
200 ETU 01 - 13
Hazardous Waste Drain Line (HWDL)
Roads
Buildings
0 60 120 240 Feet
0 17.5 35 70 Meters
N
W
E
S
June 2013

Figure 5 800 Area HWDL Decontamination Deviation

(SEE NEXT PAGE)



Deviated decontamination sequence follows:

1. 1st Rinsate w/ water hose
2. Discharge of Alconox Solution
3. High Pressure Wash
4. 2nd Rinsate w/ water hose (high volume)

Figure 6 200 Area CSS HWDL Decontamination Deviation

(SEE NEXT PAGE)

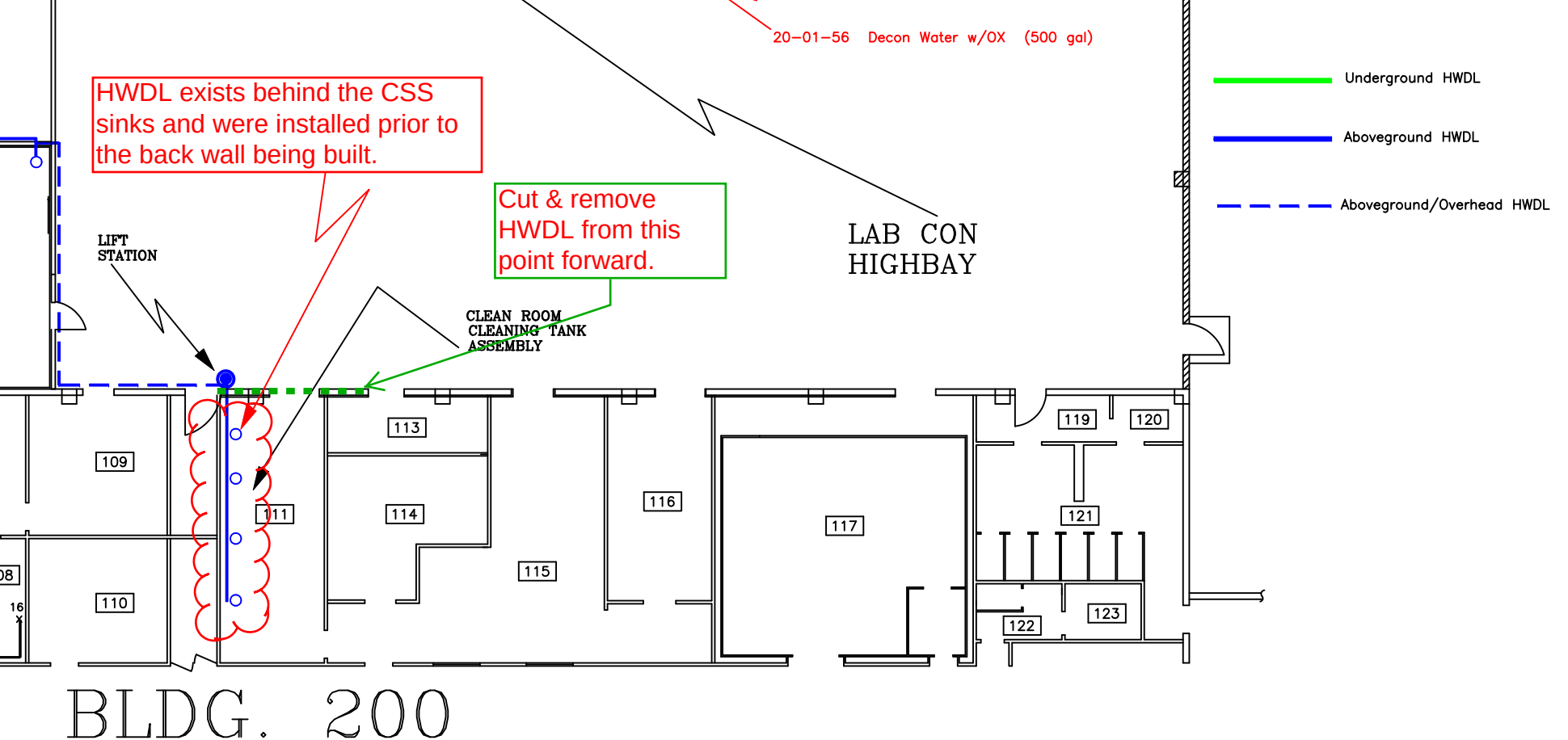

20-01-56 Decon Water w/OX (500 gal)
Underground HWDL
Aboveground HWDL
Aboveground/Overhead HWDL
HWDL exists behind the CSS sinks and were installed prior to the back wall being built.
Cut & remove HWDL from this point forward.
LIFT STATION
CLEAN ROOM CLEANING TANK ASSEMBLY
LAB CON HIGHBAY
109
110
111
113
114
115
116
117
119
120
121
122
123
BLDG. 200

Figure 7 800 Area Soil Sampling Deviation (800-HWDL-03 and 800-HWDL-04)

(SEE NEXT PAGE)

Figure 3

Soil Sample Locations – 800 HFTA Decon Station 1 to Clean Out 2/3

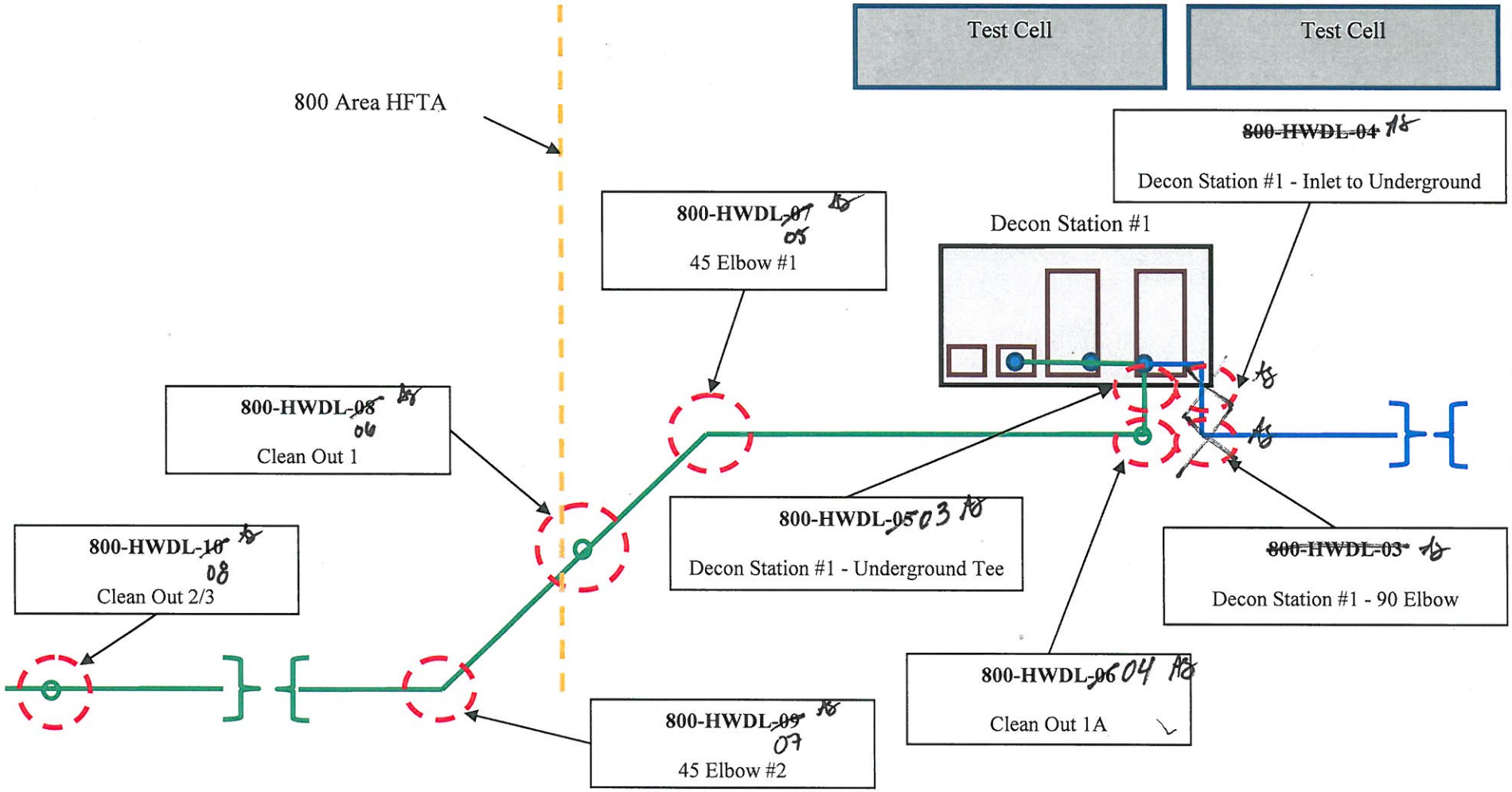


Figure 8 200 Area Soil Sampling Deviation (200-HWDL-13 and 200-HWDL-14)

(SEE NEXT PAGE)

Figure 6

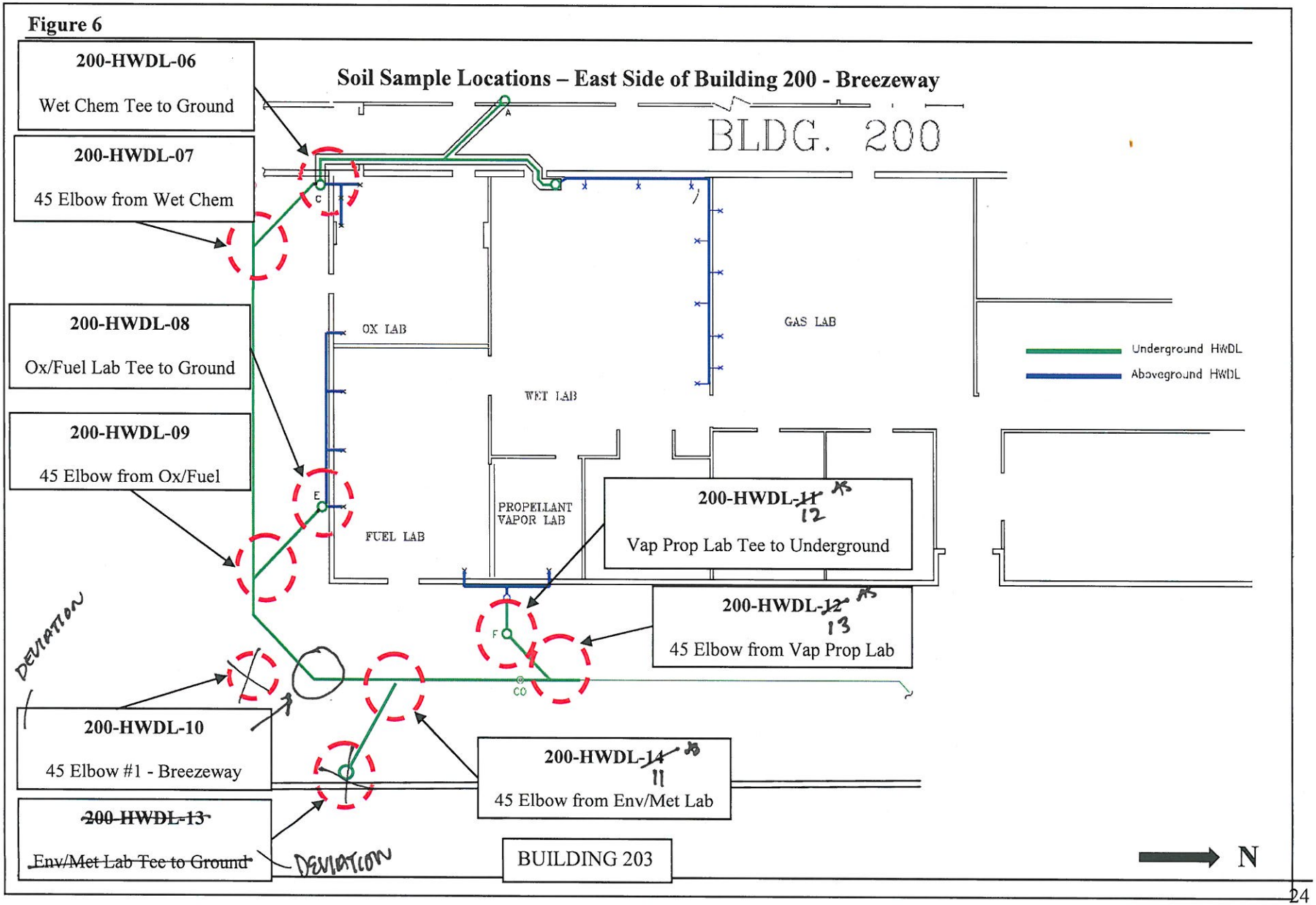

Soil Sample Locations – East Side of Building 200 - Breezeway
200-HWDL-06
Wet Chem Tee to Ground
200-HWDL-07
45 Elbow from Wet Chem
200-HWDL-08
Ox/Fuel Lab Tee to Ground
200-HWDL-09
45 Elbow from Ox/Fuel
200-HWDL-~~11~~ 12 AS
Vap Prop Lab Tee to Underground
200-HWDL-~~12~~ 13 AS
45 Elbow from Vap Prop Lab
200-HWDL-10
45 Elbow #1 - Breezeway
200-HWDL-~~14~~ 11 AS
45 Elbow from Env/Met Lab
~~200-HWDL-13~~
~~Env/Met Lab Tee to Ground~~
DEVIATION
DEVIATION
BUILDING 203
BLDG. 200
OX LAB
GAS LAB
WET LAB
FUEL LAB
PROPELLANT VAPOR LAB
Underground HWDL
Aboveground HWDL
N

Figure 9 200 Area Soil Sampling Deviation (200-HWDL-15 and 200-HWDL-16)

(SEE NEXT PAGE)

Figure 7

Soil Sample Locations – Breezeway and North of Building 203

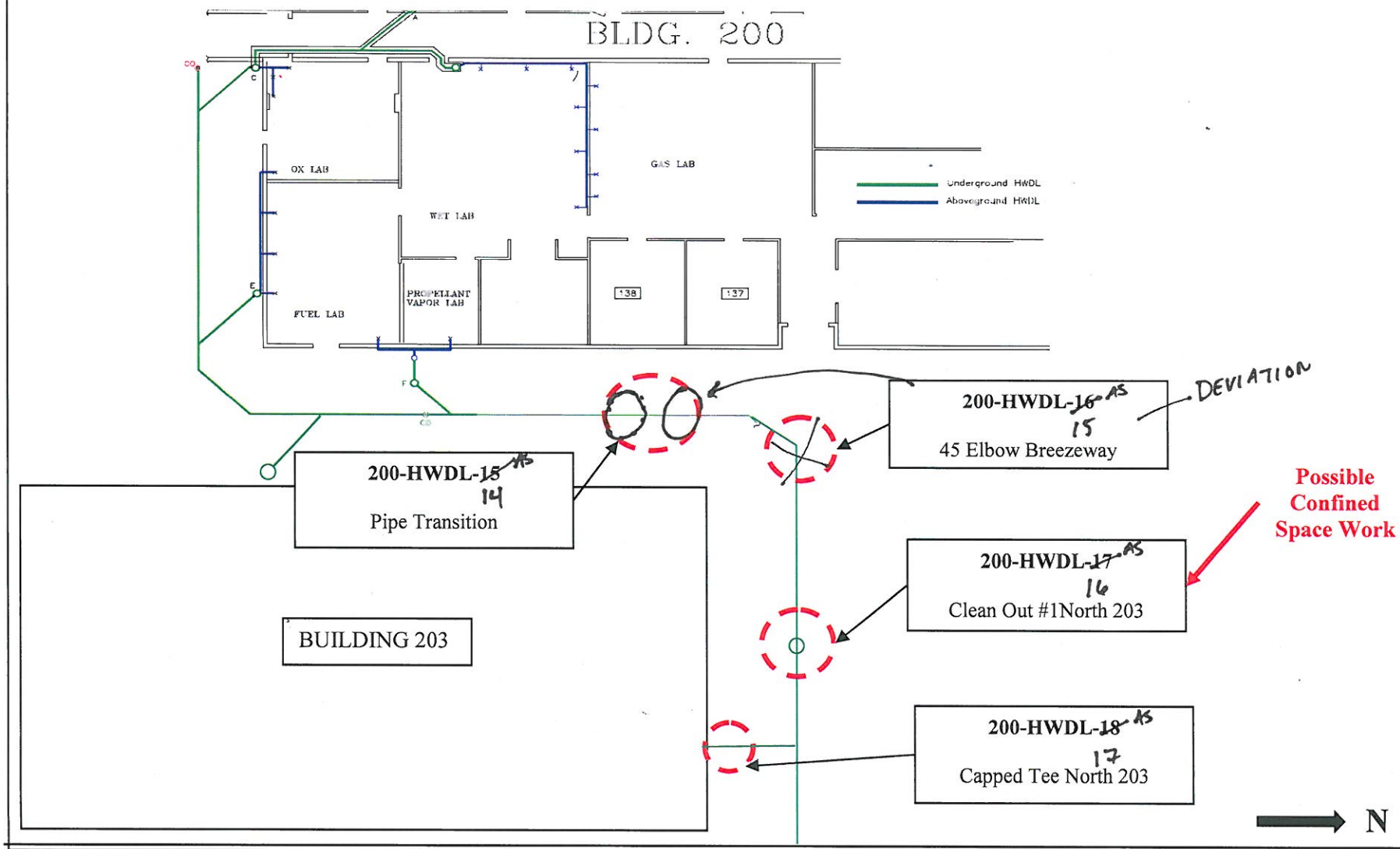
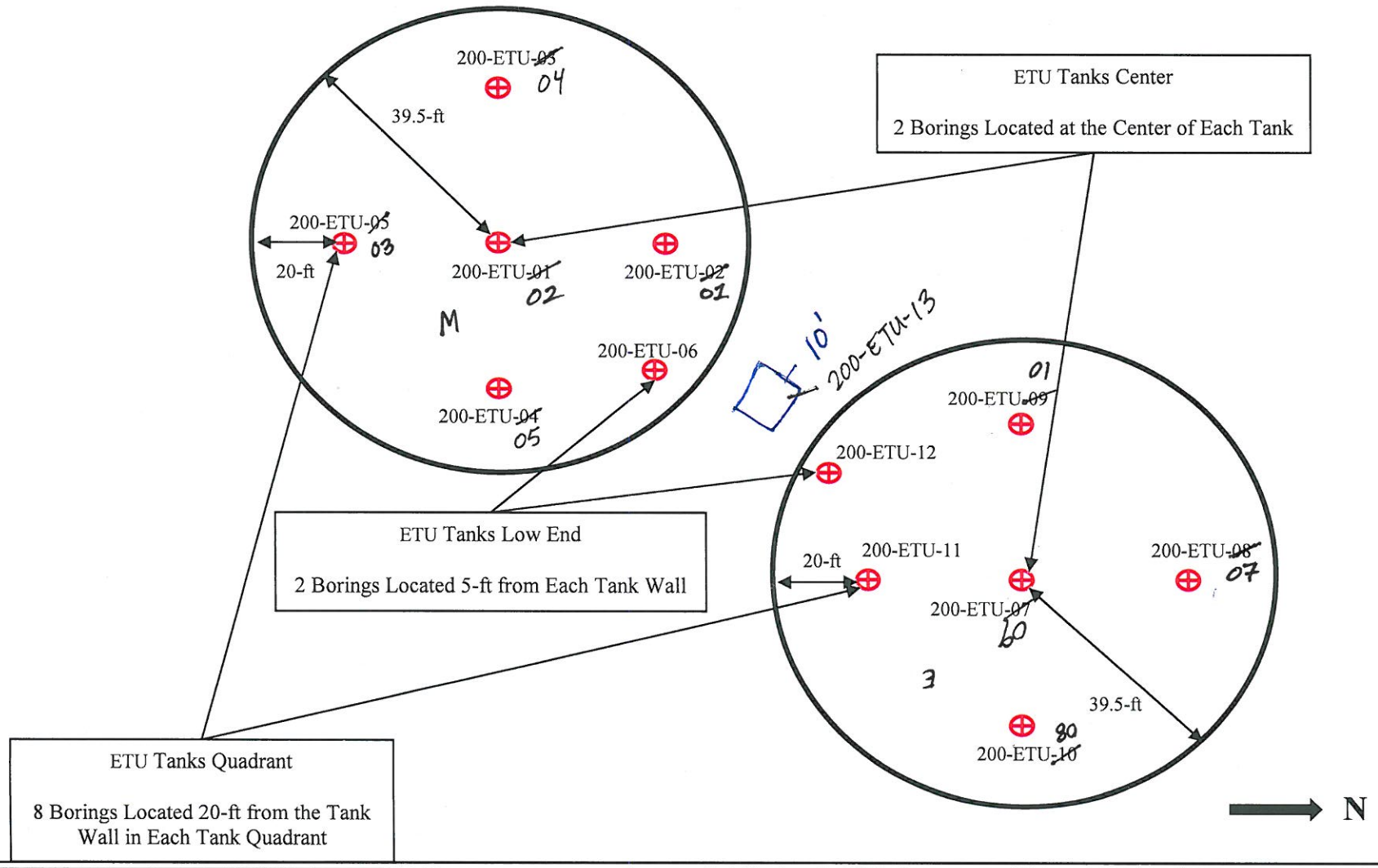


Figure 10 ETU Soil Sampling Deviation (200-ETU-13)

(SEE NEXT PAGE)

Figure 10

Soil Sample Locations – Underneath ETU Tanks



Appendix A
Completed Test Preparations Sheets

NASA JSC WSTF Test Preparation Sheet

(1) PAGE 1 OF

(2) STAMP AREA (BY CLERK)

CONTROL COPY IF IN RED

(3) TPS NUMBER

Area	Category	Yr.	Track No. (BY CLERK)	Type	Mod.
2	2HWM	12	0402	A	BASIC

(4) QA COORDINATION
Carl Swopes
Carl Swopes
C25
QA 17
JUL 30 2012

(5) SYSTEM/TEST STAND
200 Area Evaporation Treatment Unit (ETU)

QA 17 JUL 30 '12

(6) Quality Designated Inspection Points (BY QA/QE)

X	NONE		STEPS		ALL

(7) TITLE
ETU Closure Phase Separation

(8) DWG(S) & DCN(S), WJI(S), OTHER DOC(S)
DWG's 019-13972, ~~204-14482~~, WJI ENV-0021.B, NMED Approved ETU Closure Plan
REV F, DCN's-Ø QA 17 JUL 30 '12 DEVS. 1-16 QA JUL 30 '12

(9) TASK ORDER NUMBER QA 17 JUL 30 '12 2 PLACES
ETUC 8625-012

(10) PREPARED BY EXT.
Tanaka/A. Sanchez 5497

(12) CLOSED BY (Initial & Date)
6/17/13

(11) CONSTRAINTS
None

(13) QA CLOSURE (Stamp & Date)

(14) PPE HAZARD ASSESSMENT CERTIFICATION
DOCUMENT # WJI ENV-0021.B

THIS TPS ☐

(15) SUMMARY/INSTRUCTIONS

This Draft - TPS is included in Attachment 23, Section 6.1 of the ETU Closure Plan. Per the ETU Closure Plan, the ETU liquid waste will require phase separation or filtering prior to disposal by deep well injection. The filtering or phase separation process may be performed either on-site or off-site at the disposal facility. This repetitive TPS provides the procedures for on-site phase separation of the ETU waste. The sludge will be transferred to containers (roll-off boxes or equivalent) and shipped off-site disposal. The following repetitive

The ETU phase separation process involves the handling of large quantities of waste. The ETU evaporation tanks are identified as a confined space. All operations per this TPS shall be performed by personnel stationed outside the tanks. Under no circumstance is entry into the tanks authorized per this TPS. All PPE and other safety requirements shall be in accordance with JHA# HW-024.

Authorization for performance of this repetitive TPS shall be per responsible Environmental Department personnel signature on the TPS authorization signoff sheet. Authorization is required for each container shipment (roll-off shipment). Additional copies of the authorization sheet may be copied and attached as continuation sheets to this TPS.

No DCN Required.
QA 17 JUL 30 '12

(16) CONTRACTOR AUTHORIZED SIGNATURES	(17) NASA AUTHORIZED SIGNATURES
Sign, Initial, Date: 7/27/12	Sign, Initial, Date: TJD 7/30/12
Print: Antonette L. Sanchez	Print: Timothy J. Davis
Sign, Initial, Date:	Sign, Initial, Date:
Print:	Print:

WSTF-392 (09/11)

NASA JSC WSTF Test Preparation Sheet

(1) PAGE 2

(2) STAMP AREA (BY CLERK)

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(3) TPS NUMBER

Area	Category	Yr.	Track No. (BY CLERK)	Type	Mod.
2	2HWM	12	0402	A	BASIC

QA 17 JUL 30 '12

(4) QA COORDINATION

QA 17 JUL 30 2012

(18) INSPECTION POINT	(19) ITEM NUMBER	(20) DESCRIPTION	(21) PERFORMED BY	(22) INSPECTED BY
		Scheduling and Coordination: 1) Coordinate disposal of ETU waste with the WSTF Hazardous Waste Shipping Coordinator. The evaporation tank waste is known to contain significant concentrations of sodium and calcium salts and other non hazardous constituents that could significantly impact off-site disposal. Ensure a review of the waste characteristics by the WSTF Hazardous Waste Shipping Coordinator and disposal facility has been performed. 2) Review the list of equipment. Procure or contact responsible site personnel and schedule use of the equipment as required. 3) Review the list of personnel training requirements. Schedule personnel training as required. **Equipment:** 2 - Three inch gas powered trash pumps with quick-disconnect couplings. 1 - Two inch gas powered trash pump with quick-disconnect couplings 1 - Two inch gas powered diaphragm pump with quick-disconnect couplings. 1 - One hundred feet section of two inch PVC hose with quick-disconnect couplings. 2 - One hundred feet section of three inch PVC hose with quick-disconnect couplings 2-Three inch PVC hoses with quick disconnect couplings approximately fifty feet in length. 4 - Three inch PVC hoses with quick-disconnect couplings approximately twenty-five feet in length.		

(16) CONTRACTOR AUTHORIZED SIGNATURES	(17) NASA AUTHORIZED SIGNATURES
Sign or Initial:	Sign or Initial:
Sign or Initial:	Sign or Initial:

NASA JSC WSTF Test Preparation Sheet

(1) PAGE 3

(2) STAMP AREA (BY CLERK)
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(3) TPS NUMBER

Area	Category	Yr.	Track No. (BY CLERK)	Type	Mod.
2	2HWM	12	0402	A	BASIC

(4) QA COORDINATION
QA 17
JUL 30 2012

QA 17
JUL 30 '12

(18) INSPECTION POINT	(19) ITEM NUMBER	(20) DESCRIPTION	(21) PERFORMED BY	(22) INSPECTED BY
		Three hundred feet of one and one-half inch firehose.		
		Two hundred feet of two and one-half inch firehose.		
		Containment trays, stock tanks, etc.		
		6-mil plastic sheet		
		Roll-off or self dumping container filter (or equivalent)		
		Filter vacuum unit (Flo-vac Pump or equivalent)		
		Personnel Requirements and Qualifications:		
		1) A minimum of two Hazardous Waste Handlers with the following qualifications are required.		
		2) All personnel actively involved in the operation will be qualified Hazardous Waste Handlers (per the WSTF Training Database).		
		3) All personnel operating specialized equipment (condor manliest, forklift, etc.) will be qualified (per the WSTF Training Database).		
		4) All personnel are required to have completed PPE Training (per the WSTF Training Database).		
		5) All personnel are required to have completed 29 CFR 1910.120 PSHA HAZWOPER Training and 8-hour Refresher training.		
		ETU Tank System and Equipment Setup:		
	1.	If waste will be removed from the East Tank, VERIFY that MV-		

(16) CONTRACTOR AUTHORIZED SIGNATURES	(17) NASA AUTHORIZED SIGNATURES
Sign or Initial: AB	Sign or Initial: TJO
Sign or Initial:	Sign or Initial:

NASA JSC WSTF Test Preparation Sheet

(1) PAGE 4

(2) STAMP AREA (BY CLERK)
CONTROL COPY
IF IN RED

(3) TPS NUMBER

Area	Category	Yr.	Track No. (BY CLERK)	Type	Mod.
2	~~2H~~WM	12	0402	A	BASIC

(4) QA COORDINATION
QA 17
JUL 30 2012

QA 17
JUL 30 '12

(18) INSPECTION POINT	(19) ITEM NUMBER	(20) DESCRIPTION	(21) PERFORMED BY	(22) INSPECTED BY
		2HZ-BL50 is CLOSED.		
	2.	If waste will be removed from the West Tank, VERIFY that MV-2HZ-BL49 is CLOSED.		
	3.	Install "DO NOT OPERATE" tags on MV-2HZ-BL49 and MV-2HZ-BL50.		
	4.	Update the record of the evaporation tank operation that is maintained in the 200 Area Evaporation Tank System Log Book to identify any valve position changes.		
	5.	Ensure the safety shower/eye wash and water supply is operational.		
	6.	Set up the filtration equipment pumps, circulation and transfer hoses , and valve line-up as directed by responsible Environmental Department personnel. Waste will be transferred to a container (tank trailer) with pumps or the tank trailer's vacuum system. Perform the following:		
		a) Install containment pans or plastic sheet as required under hose connections that are not over concrete.		
		b) Ensure all transfer/circulations hoses are secured.		
		c) Visually inspect all equipment to be used inside the tanks. Wrap/pad equipment as required to protect the liner from damage.		
		d) All equipment that is not on concrete shall be place on two 6-mil polyethylene sheets as required to contain any spills.		
		e) VERIFY MV-14 is OPEN and MV-13 is CLOSED to recirculate filtrate or MV-14 is CLOSED and MV-13 is OPEN to direct waste to the other tank.		

(16) CONTRACTOR AUTHORIZED SIGNATURES	(17) NASA AUTHORIZED SIGNATURES
Sign or Initial:	Sign or Initial:
Sign or Initial:	Sign or Initial:

NASA JSC WSTF Test Preparation Sheet	(1) PAGE 5

(2) STAMP AREA (BY CLERK)	(3) TPS NUMBER						(4) QA COORDINATION
CONTROL COPY IF IN RED	Area	Category	Yr.	Track No. (BY CLERK)	Type	Mod.	QA 17 JUL 30 2012
	2	2HWM QA 17 JUL 30 '12	12	0402	A	BASIC	

(18) INSPECTION POINT	(19) ITEM NUMBER	(20) DESCRIPTION	(21) PERFORMED BY	(22) INSPECTED BY
		System Start-up and Operation **SAFETY NOTES:** **The ETU sludge removal operation involves the handling of large quantities of waste. The ETU evaporation tanks are identified as a confined space. All operations per this TPS shall be performed by personnel stationed outside the tanks. Under no circumstance is entry into the tanks authorized per this TPS.** **VERIFY that all PPE and other safety requirements are in accordance with JHA# HW-024.** **The following minimum PPE is required for steps 9 - 12:** **1) Eye protection – Face Shield and Splash Goggles (incompliance with ANSI-Z87.1-1989)** **2) Chemical Resistant Gloves (Nitrile, Nytex, Butyl Rubber, etc)** **3) Rubber Boots** **4) Tyvex Suits, Splash Suits, chemical apron as directed by the contractor Environmental Department manager or WSTF Safety** **NOTE:** **During the filtration process, sludge samples may be collected as directed by responsible Environmental Department personnel. All sampling and analysis will be performed per a separate work authorizing document.**		

(16) CONTRACTOR AUTHORIZED SIGNATURES	(17) NASA AUTHORIZED SIGNATURES
Sign or Initial:	Sign or Initial:
Sign or Initial:	Sign or Initial:

NASA JSC WSTF Test Preparation Sheet

(1) PAGE 6

(2) STAMP AREA (BY CLERK)	(3) TPS NUMBER						(4) QA COORDINATION
CONTROL COPY IF IN RED	Area	Category	Yr.	Track No. (BY CLERK)	Type	Mod.	QA 17 JUL 30 2012
	2	~~2~~HWM QA 17 JUL 30 '12	12	0402	A	BASIC	

(18) INSPECTION POINT	(19) ITEM NUMBER	(20) DESCRIPTION	(21) PERFORMED BY	(22) INSPECTED BY
	7.	VERIFY that all hoses and connections are secured as directed by responsible Environmental Department personnel.		
	8.	VERIFY that MV-8 is CLOSED and MV-7 is OPEN.		
	9.	START the circulation pump(s) (PU-1 and/or PU-2) as directed by responsible Environmental Department personnel.		
	10.	START the filter vacuum (ASP-10).		
	11.	START the transfer pump (PU-6).		
	12.	OPEN MV-8 and CLOSE MV-7 and start the filtration process. Adjust partially open/close MV-8/MV-7 as required to adjust the flow.		
	13.	Continue operation of the circulation/filtration operation. Monitor the circulation discharge at the high end of the tanks. Adjust circulation discharge as required to push the sludge towards the low end of the tanks.		
	14.	Direct the filtered liquid to high end of the tank or to the other evaporation tank as directed by the responsible Environmental Department personnel,		
	15.	Periodically check all hoses and connections. ENSURE all hoses and connections are secured. ENSURE all connections are over containment.		
	16.	Monitor the container filter unit. Adjust flow as required per step 12. When the filter unit is full OPEN MV-7 and CLOSE MV-8 to by-pass the filter unit.		
	17.	Continue operation of the filter vacuum unit (ASP-10) for several minutes as directed by responsible Environmental Department personnel. When all free liquids have been removed, STOP the filter vacuum unit (ASP-10).		
	18.	Disconnect and remove the filter unit inlet and outlet hoses.		

(16) CONTRACTOR AUTHORIZED SIGNATURES	(17) NASA AUTHORIZED SIGNATURES
Sign or Initial: AS	Sign or Initial: TJO
Sign or Initial:	Sign or Initial:

NASA JSC WSTF Test Preparation Sheet

(1) PAGE 7

(2) STAMP AREA (BY CLERK)	(3) TPS NUMBER						(4) QA COORDINATION
CONTROL COPY IF IN RED	Area	Category	Yr.	Track No. (BY CLERK)	Type	Mod.	JUL 30 2012 QA 17
	2	2HWM	12	0402	A	BASIC	

JUL 30 '12 QA 17

(18) INSPECTION POINT	(19) ITEM NUMBER	(20) DESCRIPTION	(21) PERFORMED BY	(22) INSPECTED BY
		ENSURE that all hoses are secured. ENSURE all liquids are contained.		
	19.	Perform the following if a self dumping container filter is used: a) With a forklift, move and empty the filtered sludge in a less than 90 day storage container (roll-off box). b) Make entries in the associated waste logbook. c) Reposition and reconnect the filter unit (F-9) to the transfer pump (PU-6) and filter vacuum unit (ASP-10) as directed by responsible Environmental Department personnel.		
	20.	Perform the following if a roll-off container filter is used. a) Schedule moving and replacement of the container filter unit (F-1) with Facilities Engineering Heavy Equipment. b) Manage the filter unit as a less than 90 day container. c) Reposition and reconnect the replacement filter unit (F-9) to the transfer pump (PU-6) and filter vacuum unit (ASP-10) as directed by responsible Environment Department personnel.		
	21.	Repeat or VERIFY the system startup sequence per steps 7 through 12.		
	22.	Continue the filtration process as directed by responsible Environmental Department personnel.		
	23.	As directed by the responsible Environmental Department set up the filtration operation at the other evaporation tank and perform phase separation/filtration operations per the above steps.		
		System Shutdown		
	24.	STOP the circulation pump(s) (PU-1 and/or PU-2) as directed by responsible Environmental Department personnel.		

(16) CONTRACTOR AUTHORIZED SIGNATURES	(17) NASA AUTHORIZED SIGNATURES
Sign or Initial: AS	Sign or Initial: JG
Sign or Initial:	Sign or Initial:

NASA JSC WSTF Test Preparation Sheet

(1) PAGE 8

(2) STAMP AREA (BY CLERK)	(3) TPS NUMBER						(4) QA COORDINATION
CONTROL COPY IF IN RED	Area	Category	Yr.	Track No. (BY CLERK)	Type	Mod.	QA 17 JUL 30 2012
	2	2HWM	12	0402	A	BASIC	

QA 17 JUL 30 12

(18) INSPECTION POINT	(19) ITEM NUMBER	(20) DESCRIPTION	(21) PERFORMED BY	(22) INSPECTED BY
	25.	STOP the transfer pump (PU-6).		
	26.	STOP the filter vacuum (ASP-10).		
	27.	All hoses shall be lifted and secured above the tank liquid level or removed from the tanks to prevent potential siphoning of liquid from the tanks. Drain all hoses. Collect all liquids and transfer the liquids back to the ETU tanks.		
	28.	As directed by the responsible Environmental Department set up the filtration operation at the other evaporation tank and perform phase separation/filtration operations per the above steps.		
	29.	Upon closeout of this TPS, assemble all documentation (a copy of the CLOSED TPS and copies of all other documentation, field/sample notes, photographs, WIWPS, manifests, certificates of disposal, work orders, etc.) as a readily accessible ETU Closure file and maintain as part of the ETU Operating Record		

ETU CLOSURE – EVAPORATION TANK WASTE REMOVAL/TRANSFER AUTHORIZATION SIGNOFF SHEET.

ED Authorization Signature/Date_____

Tank (East or West)_____

Quantity Removed (estimate of tanker load)

_____

Completion Signature/Date_____

(16) CONTRACTOR AUTHORIZED SIGNATURES	(17) NASA AUTHORIZED SIGNATURES
Sign or Initial:	Sign or Initial:
Sign or Initial:	Sign or Initial:

NASA JSC WSTF Test Preparation Sheet

(1) PAGE 9

(2) STAMP AREA (BY CLERK)

CONTROL COPY IF IN RED

(3) TPS NUMBER

Area	Category	Yr.	Track No. (BY CLERK)	Type	Mod.
2	2HWM	12	0402	A	BASIC

(4) QA COORDINATION

QA 17 JUL 30 2012

QA 17 JUL 30 '12

(18) INSPECTION POINT	(19) ITEM NUMBER	(20) DESCRIPTION	(21) PERFORMED BY	(22) INSPECTED BY
		ED Authorization Signature/Date_____ _ **Tank (East or West)**_____ **Quantity Removed (estimate of tanker load)** _____ _ **Completion Signature/Date**_____ _ **ED Authorization Signature/Date**_____ _ **Tank (East or West)**_____ **Quantity Removed (estimate of tanker load)** _____ _ **Completion Signature/Date**_____ _ **ETU CLOSURE – EVAPORATION TANK WASTE REMOVAL/TRANSFER AUTHORIZATION SIGNOFF SHEET.** **ED Authorization Signature/Date**_____ _ **Tank (East or**		

(16) CONTRACTOR AUTHORIZED SIGNATURES	(17) NASA AUTHORIZED SIGNATURES
Sign or Initial: AS	Sign or Initial: TJ
Sign or Initial:	Sign or Initial:

NASA JSC WSTF Test Preparation Sheet

(1) PAGE 10

(2) STAMP AREA (BY CLERK)
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IF IN RED

(3) TPS NUMBER

Area	Category	Yr.	Track No. (BY CLERK)	Type	Mod.
2	2HWM	12	0402	A	BASIC

(4) QA COORDINATION
QA 17
JUL 30 2012

QA 17 JUL 30 '12

(18) INSPECTION POINT	(19) ITEM NUMBER	(20) DESCRIPTION	(21) PERFORMED BY	(22) INSPECTED BY
		West)_____ **Quantity Removed** (estimate of tanker load) _____ _ **Completion Signature/Date**_____ __ **ED Authorization Signature/Date**_____ _ **Tank** (East or West)_____ **Quantity Removed** (estimate of tanker load) _____ _ **Completion Signature/Date**_____ __ **ED Authorization Signature/Date**_____ _ **Tank** (East or West)_____ **Quantity Removed** (estimate of tanker load) _____ _ **Completion Signature/Date**_____ __		

(16) CONTRACTOR AUTHORIZED SIGNATURES	(17) NASA AUTHORIZED SIGNATURES
Sign or Initial:	Sign or Initial:
Sign or Initial:	Sign or Initial:

NASA JSC WSTF Test Preparation Sheet

(1) PAGE 11

(2) STAMP AREA (BY CLERK)
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IF IN RED

(3) TPS NUMBER

Area	Category	Yr.	Track No. (BY CLERK)	Type	Mod.
2	~~2~~ HWM	12	0402	A	BASIC

(4) QA COORDINATION
QA 17
JUL 30 2012

QA 17
JUL 30 '12

(18) INSPECTION POINT	(19) ITEM NUMBER	(20) DESCRIPTION	(21) PERFORMED BY	(22) INSPECTED BY
		ETU CLOSURE – EVAPORATION TANK WASTE REMOVAL/TRANSFER AUTHORIZATION SIGNOFF SHEET. **ED Authorization Signature/Date**_____ _ **Tank** (East or West)_____ **Quantity Removed** (estimate of tanker load) _____ _ **Completion Signature/Date**_____ _ **ED Authorization Signature/Date**_____ _ **Tank** (East or West)_____ **Quantity Removed** (estimate of tanker load) _____ _ **Completion Signature/Date**_____ _ **ED Authorization Signature/Date**_____ _ **Tank** (East or West)_____		

(16) CONTRACTOR AUTHORIZED SIGNATURES	(17) NASA AUTHORIZED SIGNATURES
Sign or Initial:	Sign or Initial:
Sign or Initial:	Sign or Initial:

NASA JSC WSTF Test Preparation Sheet

(1) PAGE 12

(2) STAMP AREA (BY CLERK)

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(3) TPS NUMBER

Area	Category	Yr.	Track No. (BY CLERK)	Type	Mod.
2	ZHWM	12	0402	A	BASIC

(4) QA COORDINATION

QA 17
JUL 30 2012

QA 17
JUL 30 2012

(18) INSPECTION POINT	(19) ITEM NUMBER	(20) DESCRIPTION	(21) PERFORMED BY	(22) INSPECTED BY
		Quantity Removed (estimate of tanker load) _____ **Completion Signature/Date** _____		

(16) CONTRACTOR AUTHORIZED SIGNATURES	(17) NASA AUTHORIZED SIGNATURES
Sign or Initial:	Sign or Initial:
Sign or Initial:	Sign or Initial:

WSTF-392 (09/11)

NASA JSC WSTF Test Preparation Sheet

(1) PAGE 1 OF 11

(2) STAMP AREA (BY CLERK)

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(3) TPS NUMBER

Area	Category	Yr.	Track No. (BY CLERK)	Type	Mod.
2	2HWM	12	0403	A	BASIC

QA 17 JUL 30 '12

(4) QA COORDINATION

CARL SWOPES
Carl Swopes
C2S
QA 17 JUL 30 2012

(101459)

(5) SYSTEM/TEST STAND

200 Area Evaporation Treatment Unit (ETU)

(6) Quality Designated Inspection Points (BY QA/QE)

X	NONE		STEPS		ALL

(7) TITLE

ETU Closure: Decontamination Verification Sampling and Analysis

(8) DWG(S) & DCN(S), WJI(S), OTHER DOC(S)

DWG's 019-13972, ~~284-14482~~ REV. F, DCN-Ø, WJI ENV-0021.B, NMED Approved ETU CLOSURE PLAN DEVS. 1-16

QA 17 JUL 30 '12

(9) TASK ORDER NUMBER

ETUC 8625-012

QA 17 JUL 30 '12

(10) PREPARED BY

Tanaka/A. Sanchez

EXT. 5497

(12) CLOSED BY (Initial & Date)

~~QA 17 JUN 24 2013~~ 6/24/13

(11) CONSTRAINTS

None

(13) QA CLOSURE (Stamp & Date)

QA 17 JUN 24 2013

MTL 6-24-2013

(14) PPE HAZARD ASSESSMENT CERTIFICATION

THIS TPS ☐

DOCUMENT # WJI ENV-0021.B

(15) SUMMARY/INSTRUCTIONS

This Draft TPS is included in Attachment 23, Section 6.2 and 6.3 of the ETU Closure Plan. Per the Closure Plan, WSTF can either decontaminate the sections of the HWDL and leave the HWDL sections in-place or remove the HWDL. This TPS provides instructions for the decontamination and decontamination verification of underground ETU HWDL sections and Primary Sump as required to support closure of the ETU.

This repetitive TPS is limited to the HWDL sections as identified in the body of the TPS. Authorization for performance of this repetitive TPS shall be per responsible Environmental Department personnel signature on the TPS authorization signoff sheet. The decontamination and decontamination verification of HWDL sections not specifically identified per this TPS shall be performed per a separate work authorizing document or TPS modification/redline modification to this TPS in accordance with WSI 09-SW-0001, "Test Preparation Sheet (TPS)". Additional copies of the authorization signoff sheet may be copied and attached as continuation sheets to this TPS.

No DCN REQUIRED QA 17 JUL 30 '12

(16) CONTRACTOR AUTHORIZED SIGNATURES	(17) NASA AUTHORIZED SIGNATURES
Sign, Initial, Date: 7/27/12	Sign, Initial, Date: 7/30/12
Print: Antonette L. Sanchez	Print: Timothy J. Davis
Sign, Initial, Date:	Sign, Initial, Date:
Print:	Print:

NASA JSC WSTF Test Preparation Sheet	(1) PAGE 2

(2) STAMP AREA (BY CLERK)	(3) TPS NUMBER						(4) QA COORDINATION
CONTROL COPY IF IN RED	Area	Category	Yr.	Track No. (BY CLERK)	Type	Mod.	QA 17 JUL 30 2012
	2	2HWM QA 17 JUL 30 '12	12	0403	A	BASIC	

(18) INSPECTION POINT	(19) ITEM NUMBER	(20) DESCRIPTION	(21) PERFORMED BY	(22) INSPECTED BY
		NOTES:		
		Decontamination verification sampling and analysis will be performed in conjunction with the decontamination procedures per Attachment 23, Sections 7.5.1, 7.5.2, 7.5.3, 7.5.4 of the ETU Closure Plan. These procedures contain the work authorizing documents (TPS's) that drives or directs sampling and analysis per this TPS.		
		Decontamination verification may include:		
		(a) the 200 Area HWDL Section, **(b) 800 Area HWDL Section, Bldg.** **(c) 803 HWDL Section** **(d) ~~ETU steel tanks:~~** 200 AREA HWDL SUMP TO ETU **~~(e) ETU unloading pad~~**	TJO 6/5/13	
		QA 17 JUN 17 '13 9/6/12		
		Decontamination Verification Sampling Scheduling and Coordination		
		(a) Coordinate area access with responsible section supervisor (or designated alternate) as required.	JENNIFER GRIFFIN 9/6/12	
		Decontamination Verification Sampling Equipment:		
		(a) One coliwasa or other EPA-approved sampling devices.	9/6/12	
		(b) Stainless steel or plastic containers.		
		(c) Sample bottles (per requirements of the analytical laboratory, refer to the attached table).		
		(d) Preservatives (per requirements of the analytical laboratory).		
		(e) Sample labels and seals.		
		(f) Chain of Custody records.		

(16) CONTRACTOR AUTHORIZED SIGNATURES	(17) NASA AUTHORIZED SIGNATURES
Sign or Initial:	Sign or Initial: TJO
Sign or Initial:	Sign or Initial:

NASA JSC WSTF Test Preparation Sheet

(1) PAGE 3

(2) STAMP AREA (BY CLERK)

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(3) TPS NUMBER

Area	Category	Yr.	Track No. (BY CLERK)	Type	Mod.
2	~~2~~HWM	12	0403	A	BASIC

QA 17 JUL 30 '12

(4) QA COORDINATION

QA 17 JUL 30 2012

(18) INSPECTION POINT	(19) ITEM NUMBER	(20) DESCRIPTION	(21) PERFORMED BY	(22) INSPECTED BY
		(g) ~~Environmental Department Sampling~~ log book. ETN CLOSURE AS 8/1/12 TJO 6/3/13		
		(h) Shipping coolers (off-site analyses). QA 17 JUN 17 '13		
		(i) Ice		
		(j) Deionized water		
		Decontamination Verification Sampling Manpower Requirements:		
		Two Hazardous Waste Samplers with the following qualifications are required:		
		(a) All sampling personnel actively involved in the operation (waste samplers) will be qualified Hazardous Waste Samplers (per the WSTF Training Database).	9/6/12	
		(b) All personnel are required to have completed PPE Training (per the WSTF Training Database	9/6/12	
		Decontamination Verification Sampling Work Station and Equipment Set-Up:		
	1.	Perform the following:	9/6/12	
		(a) Set up a work station as directed by responsible Environmental Department personnel. ENSURE the safety shower and eye wash are operational.	10/17/12 10/30/12 11/2/12	
		(b) Select the filling sequence for the sample containers as directed by responsible Environmental Department personnel.	11/27/12 11/28/12	
		The sample sequence will be based on volatility, starting with samples for the analytical method for the most volatile constituents first.	12/5/12	
		(c) Triple rinse the sampling equipment with deionized water.		
		(d) During this step and the performance of this TPS collect and dispose of liquid waste and PPE, contaminated softgoods		

(16) CONTRACTOR AUTHORIZED SIGNATURES	(17) NASA AUTHORIZED SIGNATURES
Sign or Initial:	Sign or Initial: TJO
Sign or Initial:	Sign or Initial:

NASA JSC WSTF Test Preparation Sheet	(1) PAGE 4

(2) STAMP AREA (BY CLERK)	(3) TPS NUMBER						(4) QA COORDINATION
CONTROL COPY IF IN RED	Area	Category	Yr.	Track No. (BY CLERK)	Type	Mod.	QA 17 JUL 30 2012
	2	2HWM QA 17 JUL 30 '12	12	0403	A	BASIC	

(18) INSPECTION POINT	(19) ITEM NUMBER	(20) DESCRIPTION	(21) PERFORMED BY	(22) INSPECTED BY
		materials as directed per appropriate WIWPS.		
		SAFETY NOTES:		
		VERIFY that all PPE and other safety requirements are in accordance with JHA# HW-024. The following minimum safety requirements are required for the performance of steps 2 through 5:		
		(1) Hand protection – chemical resistant gloves (nitrile/nytex or equivalent) when touching potentially contaminated materials.	9/6/12	
		(2) Face Shield and Splash Goggles (in compliance with ANSI-Z87.1-1989)	9/6/12	
		~~(3) Chemical apron~~ TJO 6/3/13 QA 17 JUN 17 '13		
		(~~4~~ 3) Eye wash or portable eye wash TJO 6/3/13 QA 17 JUN 17 '13	9/6/12	
		NOTES:		
		Take the following samples as directed by TPS and/or the responsible Environmental Department personnel.		
		The sample medial includes:		
		~~(a) Baseline water supply~~		
		~~(b) Cleaning solution~~		
		(~~c~~ a) Decontamination ~~3rd~~ 4th rinsate AZ 8/1/12 TJO 6/3/13 QA 17 JUN 17 '13		
	2.	**Decontamination Verification Sampling Volatile Organics**		

(16) CONTRACTOR AUTHORIZED SIGNATURES	(17) NASA AUTHORIZED SIGNATURES
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NASA JSC WSTF Test Preparation Sheet

(1) PAGE 5

(2) STAMP AREA (BY CLERK): CONTROL COPY IF IN RED

(3) TPS NUMBER

Area	Category	Yr.	Track No. (BY CLERK)	Type	Mod.
2	2HWM	12	0403	A	BASIC

(4) QA COORDINATION: QA 17 JUL 30 2012

QA 17 JUL 30 '12

(18) INSPECTION POINT	(19) ITEM NUMBER	(20) DESCRIPTION	(21) PERFORMED BY	(22) INSPECTED BY
		Perform the following: ~~three~~ 40mL CLEAR [9/6/12] TJO 6/3/13 QA 17 JUN 17 '13 (a) Take ~~eight 42 ml VOA~~ vials of sample media (or as specified by the analytical laboratory) for analyses by EPA Method 8260B as directed by the contractor environmental organization. ~~(One set of vials for the sample; one set of vials for the sample replicate; one set of vials for the matrix spike; and one set of vials for the matrix spike duplicate.)~~ ENSURE the absence of headspace. Delete step AG 8/1/12 QA 17 JUN 17 '13 TJO 6/3/13 (b) Preserve with 0.5 ml of 50% HCl (or as specified by the analytical laboratory). Annotate the use of this preservative on the Chain of Custody and in the sampling log book. (c) Label the samples and store on ice.	9/6/12 10/17/12 10/30/12 11/2/12 11/27/12 11/28/12 12/5/12	
	3.	**Decontamination Verification Sampling** **Hydrazines** Perform the following: one 40mL Amber [8/6/12] TJO 6/3/13 QA 17 JUN 17 '13 (a) Take ~~four 42 ml VOA~~ vials of sample media (or as specified by the analytical laboratory) for analysis for hydrazines by HPLC as directed by the contractor environmental organization. ~~(One vial or set of vials for the sample; one vial or set of vials for the sample replicate; one vial or set of vials for the matrix spike; and one vial or set of vials for the matrix spike duplicate.)~~ ~~(b) Preserve on ice~~ [9/6/12] Deleted steps TJO 6/3/13 ~~(b) Preserve with 0.5 ml of 50% HCl (or as specified by the analytical laboratory), annotate the use of this preservative on the Chain of Custody.~~ QA 17 JUN 17 '13	9/6/2 10/17/2 10/30/12 11/2/12 11/27/12 11/28/12 12/5/12	

(16) CONTRACTOR AUTHORIZED SIGNATURES	(17) NASA AUTHORIZED SIGNATURES
Sign or Initial: AG	Sign or Initial: TJO
Sign or Initial:	Sign or Initial:

NASA JSC WSTF Test Preparation Sheet

(1) PAGE 6

(2) STAMP AREA (BY CLERK)	(3) TPS NUMBER						(4) QA COORDINATION
CONTROL COPY IF IN RED	Area	Category	Yr.	Track No. (BY CLERK)	Type	Mod.	QA 17 JUL 30 2012
	2	2HWM	12	0403	A	BASIC	

QA 17 JUL 30 '12

(18) INSPECTION POINT	(19) ITEM NUMBER	(20) DESCRIPTION	(21) PERFORMED BY	(22) INSPECTED BY
		~~(c)~~ Label the samples and store on ice b TJO 6/3/13 **Decontamination Verification Sampling** **Semivolatile Organics**		
QA 17 JUN 17 '13	4.	Perform the following: two TJO 6/3/13 (a) Take ~~eight~~ one-liter amber glass bottles of sample media (or as directed by the analytical laboratory) for analyses of semivolatile organics by EPA Method 8270 as directed by the contractor environmental organization. ~~(Two bottles or one set of bottles for the sample; two bottles or one set of bottles for the sample replicate; two bottles or one set of bottles for the matrix spike; and two bottles or one set of bottles for the matrix spike duplicate.)~~ TAKE 3 40mL CLEAR for 8015B. TAKE 2 1-L Amber for 8081A. 9/6/12 ~~(b) Preserve as directed by the analytical laboratory, minimize headspace, label and store on ice. Annotate method of preservation on the Chain of Custody and in the contractor environmental organization's field log book.~~ TJO 6/3/13 b ~~(c)~~ Label the samples and store on ice. ~~(d)~~ Additional SVOA Methods used: EPA Method 8015B and 8081A based on recommendations from Analytical Laboratory (Vendor). c **Decontamination Verification Sampling** [8/1/12] for Changed Steps TJO 6/3/13	9/6/12 10/17/12 10/30/12 11/2/12 11/27/12 11/28/12 12/5/12	
		TCLP Metals		
	5.	Perform the following: two 500mL TJO 6/3/13 (a) Take ~~four one-liter~~ poly bottles ~~bottles~~ of sample media (or ~~as directed~~ by the analytical laboratory) for analyses of ~~TCLP~~ RCRA metals as directed by the contractor environmental organization. ~~(One bottle or set of bottles for the sample; one bottle or set of bottles for the sample replicate; one bottle or set of bottles for the matrix spike; and one bottle or set of bottles for the matrix spike duplicate.)~~ TJO 6/3/13 total and Cyanide 9/6/12 QA 17 JUN 17 '13	9/6/12 10/17/12 10/30/12 11/2/12 11/27/12 11/28/12	

(16) CONTRACTOR AUTHORIZED SIGNATURES	(17) NASA AUTHORIZED SIGNATURES
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(1) PAGE 7

(2) STAMP AREA (BY CLERK)

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(3) TPS NUMBER

Area	Category	Yr.	Track No. (BY CLERK)	Type	Mod.
2	2HWM	12	0403	A	BASIC

QA 17 JUL 30 '12

(4) QA COORDINATION

QA 17 JUL 30 2012

(18) INSPECTION POINT	(19) ITEM NUMBER	(20) DESCRIPTION	(21) PERFORMED BY	(22) INSPECTED BY
		(b) Preserve as directed by the analytical laboratory, label and store on ice. Annotate method of preservation on the Chain of Custody and in the contractor environmental organization's field log book.	12/5/12	
		(c) Label the samples and store on ice		
	6.	Upon completion of the sampling operation collect and dispose of liquid waste and PPE, contaminated softgoods materials as directed per appropriate WIWPS.	9/6/12 10/17/12 10/30/12 11/2/12 11/27/12 11/28/12 12/5/12	
		Decontamination Verification Sampling Sample Documentation		
	7.	The responsible Environmental Department personnel shall VERIFY that the following are noted in the contractor environmental organization's field log book:		
		(a) A brief description of the sampling operation which includes the type of sampling, work document #'s (TPS and "Drive TPS"), date, methods of sampling, and personnel present during the sampling event.	9/6/12	
		(b) Sample parameter.	10/17/12	
		(c) Sample preservation.	10/30/12	
		(d) WSTF sample I.D. number.	11/2/12	
		(e) Sample location	11/27/12	
		(f) Lab performing analyses.	11/28/12	
		~~(g) Laboratory Work Order number or reference for the report~~	12/5/12	
		~~(j) Laboratory Work Order number or Purchase Order number (off-site analyses) for each parameter.~~ QA 17 Delete g-j ts 8/1/12	TJO 6/3/13	

JUN 17 '13

(16) CONTRACTOR AUTHORIZED SIGNATURES	(17) NASA AUTHORIZED SIGNATURES
Sign or Initial:	Sign or Initial: TJO
Sign or Initial:	Sign or Initial:

NASA JSC WSTF Test Preparation Sheet

(1) PAGE 8

(2) STAMP AREA (BY CLERK)	(3) TPS NUMBER						(4) QA COORDINATION
CONTROL COPY IF IN RED	Area	Category	Yr.	Track No. (BY CLERK)	Type	Mod.	QA 17 JUL 30 2012
	2	2HWM	12	0403	A	BASIC	

QA 17 JUL 30 '12

(18) INSPECTION POINT	(19) ITEM NUMBER	(20) DESCRIPTION	(21) PERFORMED BY	(22) INSPECTED BY
		Decontamination Verification Sampling		
		Chain Of Custody Record		
	8.	Complete the Chain of Custody record. The responsible Environmental Department personnel shall VERIFY the Chain of Custody identifies the following: (a) WSTF sample number. (b) Location. (c) Sample matrix. (d) Sampler's signature. (e) Sample parameters/analyses requirements. (f) Comments (sample description).	9/6/12 10/17/12 10/30/12 11/2/12 11/27/12 11/28/12 12/5/12	
		Decontamination Verification Sampling		
		Sample and Data Processing		
	9.	For off-site analysis, perform the following. (a) All samples shall be placed in a cooler and maintained at approximately 4° C. (b) The Chain of Custody shall be place in a plastic bag and attached to the inside of the cooler lid. (c) Attach two Chain of Custody seals (front and back of container) so that the seals must be broken if the cooler is opened.	9/10/12 10/18/12 10/31/12 11/5/12 11/28/12 12/6/12	
	10.	For on-site analyses, deliver samples and the corresponding Chain of Custody documentation to the WSTF sample custodian	9/6/12 10/17/12 10/30/12 11/2/12 11/27/12 11/28/12 12/5/12	

(16) CONTRACTOR AUTHORIZED SIGNATURES	(17) NASA AUTHORIZED SIGNATURES
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Sign or Initial:	Sign or Initial:

NASA JSC WSTF Test Preparation Sheet	(1) PAGE 9

(2) STAMP AREA (BY CLERK)	(3) TPS NUMBER						(4) QA COORDINATION
CONTROL COPY IF IN RED	Area	Category	Yr.	Track No. (BY CLERK)	Type	Mod.	QA 17 JUL 30 2012
	2	2HWM QA 17	12	0403	A	BASIC	

JUL 30 '12

(18) INSPECTION POINT	(19) ITEM NUMBER	(20) DESCRIPTION	(21) PERFORMED BY	(22) INSPECTED BY
		for sample processing and analyses.		
	11.	Upon completion, the responsible Environmental Department personnel shall review the analytical results and organize the analytical results in the form of a report.	11/24/13	
	12.	File the final analytical report as part of ETU Closure Documentation and as part of the ETU Operating Record.	11/24/13	
		ETU CLOSURE – DECONTAMINATION VERIFICATION SAMPLING AUTHORIZATION SIGNOFF SHEET.		
		HWDL SECTION OR LOCATION		
		800 HFTA		
		TO 6/3/13		
		ED Authorization		
		Signature/Date 11/27/12		
		Completion of Sampling Event (steps 1 through 5)		
		Signature/Date 11/27/12 Jennifer Griffin		
		ETU CLOSURE – DECONTAMINATION VERIFICATION SAMPLING AUTHORIZATION SIGNOFF SHEET.		
		HWDL SECTION OR LOCATION		

(16) CONTRACTOR AUTHORIZED SIGNATURES	(17) NASA AUTHORIZED SIGNATURES
Sign or Initial:	Sign or Initial:
Sign or Initial:	Sign or Initial:

NASA JSC WSTF Test Preparation Sheet

(1) PAGE 10

(2) STAMP AREA (BY CLERK)	(3) TPS NUMBER						(4) QA COORDINATION
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	2	2HWM	12	0403	A	BASIC	

QA 17 JUL 30 '12

(18) INSPECTION POINT	(19) ITEM NUMBER	(20) DESCRIPTION	(21) PERFORMED BY	(22) INSPECTED BY
		803 LABS TD 6/3/13 **ED Authorization** **Signature/Date** 11/27/12 **Completion of Sampling Event (steps 1through 5)** **Signature/Date** 11/27/12 **ETU CLOSURE – DECONTAMINATION VERIFICATION SAMPLING AUTHORIZATION SIGNOFF SHEET.** **HWDL SECTION OR LOCATION** 200 Area ·LABCON HIGH BAY ·Fuel/OX LABS ·CHEM LAB ·ENV/MET LABS ·UNDERGROUND TO SUMP TD 6/3/13 **ED Authorization** **Signature/Date** 11/28/12 **Completion of Sampling Event (steps 1 through 5)** **Signature/Date** 11/28/12		

(16) CONTRACTOR AUTHORIZED SIGNATURES	(17) NASA AUTHORIZED SIGNATURES
Sign or Initial:	Sign or Initial:
Sign or Initial:	Sign or Initial:

NASA JSC WSTF Test Preparation Sheet

(1) PAGE 11

(2) STAMP AREA (BY CLERK)	(3) TPS NUMBER						(4) QA COORDINATION
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	2	2HWM QA 17	12	0403	A	BASIC	

(18) INSPECTION POINT	(19) ITEM NUMBER	JUL 30 '12 (20) DESCRIPTION	(21) PERFORMED BY	(22) INSPECTED BY
		ETU CLOSURE – DECONTAMINATION VERIFICATION SAMPLING AUTHORIZATION SIGNOFF SHEET. **HWDL SECTION OR LOCATION** 200 AREA HWDL SUMP HWDL SUMP TO ETU 6/3/13 **ED Authorization** **Signature/Date** 12/5/12 **Completion of Sampling Event (steps 1through 5)** **Signature/Date** 12/5/12		

(16) CONTRACTOR AUTHORIZED SIGNATURES	(17) NASA AUTHORIZED SIGNATURES
Sign or Initial:	Sign or Initial:
Sign or Initial:	Sign or Initial:

Record #:101459

QA 17 JUN 24 2013

Work Steps

INSPECTION POINT	ITEM NUMBER	DESCRIPTION	PERFORMED BY	INSPECTED BY
	1	**ETU Unloading Pad Decontamination** Ensure safety shower/eye wash and water supply is operational.	AS 12/6/12	
	2	Remove or pump any liquid or accumulated precipitation in the unloading pad. Manage and dispose of all accumulated precipitation as hazardous waste as directed by responsible Environmental Department personnel.	AS 12/6/12	
	3	With brooms, plastic shovels, etc. remove all solid material from the unloading pad and unloading pad sump as directed by responsible Environmental Department personnel. Manage solid material as non-hazardous waste as per appropriate WIWPS.	AS 12/6/12	
	4	Pressure wash the interior surfaces of the unloading pad.	AS 12/6/12	
	5	Collect, manage and dispose of all wash water as hazardous waste and as directed per appropriate WIWPS. In accordance with WJI ENV-0038, "Waste Moves", pump liquid into ETU Tanks using ETU diaphragm pump as directed per WIWPS and responsible Environmental Department personnel.	AS 12/6/12	
	6	As directed by responsible Environmental Department personnel, setup water pressure washer with detergent (Alconox or equivalent). Pressure wash the interior of the pad with detergent (Alconox or equivalent).	AS 12/6/12	
	7	As directed by responsible Environmental Department personnel, setup water pressure washer with detergent (Alconox or equivalent). Pressure wash the interior of the pad with detergent (Alconox or equivalent).	AS 12/6/12	
	8	Pressure rinse the interior of the tank a 3rd time as directed by responsible Environmental Department personnel.	AS 12/6/12	
	9	Perform or VERIFY that the visual inspection and structural assessment of the ETU unloading pad per Section 4.4 of the ETU Closure Plan has been performed.	AS 12/6/12	

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(1) PAGE 1 OF 7

(2) STAMP AREA (BY CLERK)

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2	2HWM	12	0405	BR	BASIC

(4) QA COORDINATION

CARL SWOPES
Carl Swopes
CES
QA 17
DEC 0 5 2012

(5) SYSTEM/TEST STAND

200 Area Evaporation Treatment Unit (ETU)

(6) Quality Designated Inspection Points (BY QA/QE)

X	NONE		STEPS		ALL

(7) TITLE

ETU Closure Residual Solids Removal & Primary Liner Final Cleaning

(8) DWG(S) & DCN(S), WJI(S), OTHER DOC(S)

DWG 019-13972_F; WJI ENV-0021.B; WSI 25-SW-0003.D;NMED Approved ETU Closure Plan

(9) TASK ORDER NUMBER	(10) PREPARED BY	EXT.	(12) CLOSED BY (Initial & Date)
ETUC 8725-012	Tanaka/A. Sanchez	5497	6/19/13

(11) CONSTRAINTS

None

(13) QA CLOSURE (Stamp & Date)

QA 17 JUN 2 4 2013

(14) PPE HAZARD ASSESSMENT CERTIFICATION

THIS TPS ☐

DOCUMENT # JHA HW # 052; WJI ENV-0021.B QA 17 DEC 5 '12

(15) SUMMARY/INSTRUCTIONS

This TPS is included in Attachment 23, Section 6.4 of the ETU Closure Plan. This repetitive TPS provides instructions for the residual solids removal and final cleaning of the East and West evaporation tanks in preparation for internal inspection of the liners and interior of the steel tanks.

The evaporation tanks are identified as a confined space. In accordance with WSI 25-SW-0003, "Confined Space Entry Program", personnel will enter the tanks as required to perform the above procedures.

The above procedures will be performed once for the East Tank and once for the West Tank. Authorization for performance of this repetitive TPS shall be per responsible Environmental Department personnel signature on the TPS authorization signoff sheet.

(16) CONTRACTOR AUTHORIZED SIGNATURES	(17) NASA AUTHORIZED SIGNATURES
Sign, Initial, Date: 12/5/12	Sign, Initial, Date: 12/5/12
Print: Antonette L. Sanchez	Print: Timothy J. Davis
Sign, Initial, Date:	Sign, Initial, Date:
Print:	Print:

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MF 6-24-2013

NASA JSC WSTF Test Preparation Sheet

(1) PAGE 2

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2	2HWM	12	0405	BR	BASIC

(4) QA COORDINATION
QA 17
DEC 0 5 2012

(18) INSPECTION POINT	(19) ITEM NUMBER	(20) DESCRIPTION	(21) PERFORMED BY	(22) INSPECTED BY
		Scheduling and Coordination: (a) Review the personnel qualifications. VERIFY personnel have the required training/qualifications. Schedule/update training as required. (b) Review the list of equipment. Contact responsible contractor personnel and schedule use of the equipment as required. (c) This TPS contains procedures that require a confined space entry into the evaporation tanks. All personnel entering the tanks shall have confined space training. Coordinate confined space entry into the evaporation tanks in accordance with WSI-25-0003, "CONFINED SPACE ENTRY PROGRAM".		
	QA 17 DEC 5 '12	**Residual Solid Material Removal and Primary Liner Cleaning Equipment:** 2 inch PVC hose with quick-disconnect couplings and misc. pvc extensions or similar. Gas powered diaphragm pump or similar. Sandbags (as required). Ladders. Plastic shovels (as required). Soft-bristle brooms. Buckets (as required). DOT approved containers and other shipping materials (55 gallon open top drums, etc.) (as required). MSA Altair 5 gas meter (as required) **Residual Solid Material Removal and Primary Liner Cleaning**		

(16) CONTRACTOR AUTHORIZED SIGNATURES	(17) NASA AUTHORIZED SIGNATURES
Sign or Initial: AS 12/5/12	Sign or Initial: TJD 12/5/12
Sign or Initial:	Sign or Initial:

NASA JSC WSTF Test Preparation Sheet

(1) PAGE 3

(2) STAMP AREA (BY CLERK)

CONTROL COPY IF IN RED

(3) TPS NUMBER

Area	Category	Yr.	Track No. (BY CLERK)	Type	Mod.
2	2HWM	12	0405	BR	BASIC

(4) QA COORDINATION

QA 17

DEC 0 5 2012

(18) INSPECTION POINT	(19) ITEM NUMBER	(20) DESCRIPTION	(21) PERFORMED BY	(22) INSPECTED BY
		Manpower Requirements: A minimum of two Hazardous Waste Handlers with the following qualifications: (a) All WSTF personnel actively involved in the operation will be qualified Hazardous Waste Handlers (per the WSTF Training Database). (b) All WSTF personnel are required to have completed PPE Training (per the WSTF Training Database). (d) All personnel involved in the operation are required to have completed Confined Space Entry Training (per the WSTF Training Database). **Residual Solid Material Removal and Primary Liner Cleaning ETU Tank System and Equipment Set-Up** At least 48 hours prior to the performance of the operation, VERIFY that the nitrogen purge for the tank to be cleaned has been physically disconnected. Ensure safety shower/eye wash and water supply is operational. Transport DOT approved containers, shipping materials and equipment to the general work area and set up work station. **NOTE** **Visually inspect all equipment to be used for removal of any residual solid material. Wrap/pad all equipment as required to protect the liner from damage.** **SAFETY NOTES:** **VERIFY that all PPE and other safety requirements are in**		

(16) CONTRACTOR AUTHORIZED SIGNATURES	(17) NASA AUTHORIZED SIGNATURES
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Sign or Initial:	Sign or Initial:

NASA JSC WSTF Test Preparation Sheet

(1) PAGE 4

(2) STAMP AREA (BY CLERK)
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(3) TPS NUMBER

Area	Category	Yr.	Track No. (BY CLERK)	Type	Mod.
2	2HWM	12	0405	BR	BASIC

(4) QA COORDINATION
QA 17
DEC 0 5 2012

(18) INSPECTION POINT	(19) ITEM NUMBER	(20) DESCRIPTION	(21) PERFORMED BY	(22) INSPECTED BY
		accordance with JHA# HW-052. The following minimum safety requirements are required for the performance of steps 7 through 8:		
		Eye protection – face shield and splash goggles (in compliance with ANSI-Z87.1-1989).		
		Hand protection – chemical resistant gloves (nitrile/nytex or equivalent).		
		Body protection – Rubber boots and Tychem F suits or splash suits as directed by the contractor Environmental Department manager or WSTF Safety.		
	QA 17 DEC 5 12	**Air monitoring – Air monitoring in accordance with WSI 25-SW-0003, "Confined Space Entry Program".**		
		Safety shower and eye wash in compliance with ansi-Z358.1-1990.		
		Access to phone or radio communication with emergency services (5111).		
		Residual Solid Material Removal and Primary Liner Cleaning Work Steps:		
	QA 17 DEC 5 12	Perform confined space entry in accordance with WSI 25-SW-0003, "Confined Space Entry Program".		
	1.	Enter the tank as directed by responsible Environmental Department personnel (Entry Supervisor/Attendant). With brooms, buckets, etc. remove and transfer the residual solid material to DOT approved containers for off-site disposal. Manage containers as directed per appropriate WIWPS.	AS 2/15/13	
	2.	As directed by responsible Environmental Department personnel, clean/scrub the primary liner with detergent (Alconox or equivalent) and soft bristle brooms. Rinse the liner with water.	AS 2/15/13	

(16) CONTRACTOR AUTHORIZED SIGNATURES	(17) NASA AUTHORIZED SIGNATURES
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Sign or Initial:	Sign or Initial:

NASA JSC WSTF Test Preparation Sheet

(1) PAGE 5

(2) STAMP AREA (BY CLERK)

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(3) TPS NUMBER

Area	Category	Yr.	Track No. (BY CLERK)	Type	Mod.
2	2HWM	12	0405	BR	BASIC

(4) QA COORDINATION

QA 17 DEC 05 2012

(18) INSPECTION POINT	(19) ITEM NUMBER	(20) DESCRIPTION	(21) PERFORMED BY	(22) INSPECTED BY
	3.	Collect, manage and dispose of all rinsate/wash water as hazardous waste.	AS 2/15/13	
	4.	Dispose of all PPE, other contaminated materials, and liquid waste as directed per WIWPS and responsible Environmental Department personnel.	AS 2/15/13	
		NOTE TJO 6/19/13 QA 17 JUN 24 '13 AS 6/17/13 **A closed copy of this ~~TPD~~ TPS will be included in the final documentation.**		
		ETU CLOSURE – EAST TANK RESIDUAL SOLIDS REMOVAL AND FINAL CLEANING AUTHORIZATION SIGNOFF SHEET.		
		ED Authorization **Signature/Date** 2/15/13		
		TPS Completed **Signature/Date** 2/18/13		

(16) CONTRACTOR AUTHORIZED SIGNATURES	(17) NASA AUTHORIZED SIGNATURES
Sign or Initial: AS 12/5/12	Sign or Initial: TJO 12/5/12
Sign or Initial:	Sign or Initial:

WSTF-392 (09/11)

NASA JSC WSTF Test Preparation Sheet

(1) PAGE 6

(2) STAMP AREA (BY CLERK)

CONTROL COPY
IF IN RED

(3) TPS NUMBER

Area	Category	Yr.	Track No. (BY CLERK)	Type	Mod.
2	2HWM	12	0405	BR	BASIC

(4) QA COORDINATION

QA 17

DEC 0 5 2012

(18) INSPECTION POINT	(19) ITEM NUMBER	(20) DESCRIPTION	(21) PERFORMED BY	(22) INSPECTED BY
		ETU CLOSURE – WEST TANK RESIDUAL SOLIDS REMOVAL AND FINAL CLEANING AUTHORIZATION SIGNOFF SHEET. **ED Authorization** **Signature/Date** [illegible] 12/6/12 **TPS Completed** **Signature/Date** [illegible] 12/6/12 **ETU CLOSURE –FINAL CLEANING AUTHORIZATION SIGNOFF SHEET.** **ED Authorization** **Signature/Date** [illegible] 2/18/13 **TPS Completed** **Signature/Date** [illegible] 2/18/13		

(16) CONTRACTOR AUTHORIZED SIGNATURES	(17) NASA AUTHORIZED SIGNATURES
Sign or Initial: AS 12/5/12	Sign or Initial: TJO 12/5/12
Sign or Initial:	Sign or Initial:

NASA JSC WSTF Test Preparation Sheet

(1) PAGE 7

(2) STAMP AREA (BY CLERK)
CONTROL COPY
IF IN RED

(3) TPS NUMBER

Area	Category	Yr.	Track No. (BY CLERK)	Type	Mod.
2	2HWM	12	0405	BR	BASIC

(4) QA COORDINATION
QA 17
DEC 0 5 2012

(18) INSPECTION POINT	(19) ITEM NUMBER	(20) DESCRIPTION	(21) PERFORMED BY	(22) INSPECTED BY
		ETU CLOSURE –FINAL CLEANING AUTHORIZATION SIGNOFF SHEET. **ED Authorization** **Signature/Date** [signature] 2/18/13 **TPS Completed** **Signature/Date** [signature] 2/18/13 ~~**TPS Closed Effective Date**~~ ~~**Contractor/Date**~~ ~~**NASA/Date**~~ QA 17 JUN 24 '13	TJ 6/19/13 AC 6/17/13	

(16) CONTRACTOR AUTHORIZED SIGNATURES	(17) NASA AUTHORIZED SIGNATURES
Sign or Initial: [signature] 12/5/12	Sign or Initial: TJ 12/5/12
Sign or Initial:	Sign or Initial:

WSTF-392 (09/11)

NASA JSC WSTF Test Preparation Sheet

(1) PAGE 1 OF 8

(2) STAMP AREA (BY CLERK)
CONTROL COPY IF IN RED

(3) TPS NUMBER

Area	Category	Yr.	Track No. (BY CLERK)	Type	Mod.
2	2HWM	13	102391	A	BASIC

(4) QA COORDINATION
Carl Swopes
Carl Swopes
C2S QA 17
JAN 04 2013

Record 102391

(5) SYSTEM/TEST STAND
200 Area Evaporation Tank Unit (ETU

(6) Quality Designated Inspection Points (BY QA/QE)
X NONE | STEPS | ALL

(7) TITLE
Draft TPS - ETU Closure: ETU Steel Tank Inspection QA 17 JUN 24 '13

(8) DWG(S) & DCN(S), WJI(S), OTHER DOC(S) Remove AS 1/22/13 TJD 6/3/13
DWG 019-13972_F; WJI ENV-0021.B; ~~WSI 25-SW-003.D~~; NMED Approved Closure Plan

(9) TASK ORDER NUMBER
ETUC 8725-012

(10) PREPARED BY
Tanaka/A.Sanchez EXT. 5497

(12) CLOSED BY (Initial & Date)
AS 6/9/13

(11) CONSTRAINTS

(13) QA CLOSURE (Stamp & Date)
QA 17 JUN 24 2013

(14) PPE HAZARD ASSESSMENT CERTIFICATION
DOCUMENT # WJI ENV-0021.B; JHA HW-024

THIS TPS ☐

(15) SUMMARY/INSTRUCTIONS

This TPS is included in Attachment 23, Section 4.4 of the ETU Closure Plan. Per the ETU Closure Plan, a structural assessment and visual inspection of the ETU is required. This repetitive TPS provides instructions for the internal inspection of the ETU steel tanks and inspection of the soil side of the ETU tank bottoms.

~~The evaporation tanks are identified as a confined space. In accordance with WSI 25-SW-0003.D, "Confined Space Entry Program", personnel may be required to enter the tanks to perform the above procedures.~~

Remove Requirement AS 1/29/13 TJD 6/3/13 QA 17 JUN 24 '13

The procedures will be performed once for the East Tank and once for the West Tank. Authorization for performance of this TPS shall be per responsible Environmental Department personnel signature on the TPS authorization signoff sheet.

NO DCN REQUIRED QA 17 JAN 14 '13

(16) CONTRACTOR AUTHORIZED SIGNATURES	(17) NASA AUTHORIZED SIGNATURES
Sign, Initial, Date: AS 1/10/13	Sign, Initial, Date: TJD 1/14/13
Print: Antonette L. Sanchez	Print: Timothy J Davis
Sign, Initial, Date:	Sign, Initial, Date:
Print:	Print:

NASA JSC WSTF Test Preparation Sheet	(1) PAGE 3

(2) STAMP AREA (BY CLERK)	(3) TPS NUMBER						(4) QA COORDINATION
CONTROL COPY IF IN RED	Area	Category	Yr.	Track No. (BY CLERK)	Type	Mod.	QA 17 JAN 04 2013
	2	2HWM	13 ~~14~~ QA 17 JAN 14 '13	102391	A	BASIC	

(18) INSPECTION POINT	(19) ITEM NUMBER	(20) DESCRIPTION	(21) PERFORMED BY	(22) INSPECTED BY
		Steel Tank Inspection **Equipment:** PVC hose with quick-disconnect couplings and misc. Diaphragm pump. Ladders. Additional equipment may be required depending on the site working conditions. **Steel Tank Inspection:** **Manpower Requirements:** A minimum of one Hazardous Waste Handler with the following qualifications: (a) All WSTF personnel actively involved in the operation will be qualified Hazardous Waste Handlers (per the WSTF Training Database). (b) All WSTF personnel actively involved in the operation are required to have completed PPE Training (per the WSTF Training Database). ~~(c) All personnel involved in the operation are required to have completed Confined Space Entry Training (per the WSTF Training Database).~~ Remove Requirement 1/29/13 QA 17 JUN 24 '13 6/3/13 All personnel that are not qualified Hazardous Waste Handlers shall be escorted by a qualified Hazardous Waste Handler. One WSTF welding technicians with applicable qualifications as documented per the WSTF Training Data Base (training in accordance with WSI 25-SW-0013.F, "Hot Work Permit for Welding, Cutting, Open Flame or Spark Producing Operations")		

(16) CONTRACTOR AUTHORIZED SIGNATURES	(17) NASA AUTHORIZED SIGNATURES
Sign or Initial:	Sign or Initial: 1/14/13
Sign or Initial:	Sign or Initial:

NASA JSC WSTF Test Preparation Sheet

(1) PAGE 2

(2) STAMP AREA (BY CLERK)
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(3) TPS NUMBER

Area	Category	Yr.	Track No. (BY CLERK)	Type	Mod.
2	2HWM	13	102391	A	BASIC

(4) QA COORDINATION
QA 17
JAN 04 2013

(18) INSPECTION POINT	(19) ITEM NUMBER	(20) DESCRIPTION	(21) PERFORMED BY	(22) INSPECTED BY
		Steel Tank Inspection **Scheduling and Coordination:** (a) Review the personnel qualifications. VERIFY personnel have the required training/qualifications. Schedule/update training as required. (b) Review the list of equipment. Contact responsible contractor personnel and schedule use of the equipment as required. (c) This TPS contains procedures that require a confined space entry into the evaporation tanks. All personnel entering the tanks shall have confined space training. Contact WSTF safety and review training records of off-site personnel entering the tanks. Schedule confined space training as required. Coordinate confined space entry into the evaporation tanks in accordance with WSI-25-0003.D, "CONFINED SPACE ENTRY PROGRAM". QA 17 JUN 24 '13 C 1/29/13 (d) Months prior to the start of the operation, identify qualified WSTF personnel or initiate procurement of qualified personnel to perform an internal inspection of the interior of the ETU tanks and the soil side of the tank bottoms. Qualified personnel may include: API certified tank inspector, AWS weld inspector, or independent registered professional engineer. Verify personnel has confined space training (e) If required, visitor processing and control procedures per WSP-24-0003 and WSI-24-SW-0002 for off-site personnel. (f) Schedule safety training as required per WSI-SW-0002 for all off-site personnel. (g) Schedule/coordinate WSTF photographer as required to document inspections. Verify personnel has confined space training.	Remove step 1/29/13 6/3/13 QA 17 JUN 24 '13	

(16) CONTRACTOR AUTHORIZED SIGNATURES	(17) NASA AUTHORIZED SIGNATURES
Sign or Initial:	Sign or Initial: 1/14/13
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NASA JSC WSTF Test Preparation Sheet	(1) PAGE 3

(2) STAMP AREA (BY CLERK)	(3) TPS NUMBER						(4) QA COORDINATION
CONTROL COPY IF IN RED	Area	Category	Yr.	Track No. (BY CLERK)	Type	Mod.	QA 17 JAN 0 4 2013
	2	2HWM	13	102391	A	BASIC	

(18) INSPECTION POINT	(19) ITEM NUMBER	(20) DESCRIPTION	(21) PERFORMED BY	(22) INSPECTED BY
		Steel Tank Inspection **Equipment:** PVC hose with quick-disconnect couplings and misc. Diaphragm pump. Ladders. Additional equipment may be required depending on the site working conditions. **Steel Tank Inspection:** **Manpower Requirements:** A minimum of one Hazardous Waste Handler with the following qualifications: (a) All WSTF personnel actively involved in the operation will be qualified Hazardous Waste Handlers (per the WSTF Training Database). (b) All WSTF personnel actively involved in the operation are required to have completed PPE Training (per the WSTF Training Database). [(c) All personnel involved in the operation are required to have completed Confined Space Entry Training (per the WSTF Training Database).] Remove Requirement AS 1/29/13 All personnel that are not qualified Hazardous Waste Handlers shall be escorted by a qualified Hazardous Waste Handler. One WSTF welding technicians with applicable qualifications as documented per the WSTF Training Data Base (training in accordance with WSI 25-SW-0013.F, "Hot Work Permit for Welding, Cutting, Open Flame or Spark Producing Operations")	TD 6/3/13 QA 17 JUN 24 '13	

(16) CONTRACTOR AUTHORIZED SIGNATURES	(17) NASA AUTHORIZED SIGNATURES
Sign or Initial:	Sign or Initial: TD 1/19/13
Sign or Initial:	Sign or Initial:

NASA JSC WSTF Test Preparation Sheet

(1) PAGE 4

(2) STAMP AREA (BY CLERK)

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(3) TPS NUMBER

Area	Category	Yr.	Track No. (BY CLERK)	Type	Mod.
2	2HWM	13	102391	A	BASIC

(4) QA COORDINATION

QA 17 JAN 8 4 2013

(18) INSPECTION POINT	(19) ITEM NUMBER	(20) DESCRIPTION	(21) PERFORMED BY	(22) INSPECTED BY
		Steel Tank Inspection **ETU Tank System and Equipment Set-Up**		
	1.	Ensure safety shower/eye wash and water supply is operational.	AS 2/1/13 AS 2/18/13	
	2.	Remove or pump any liquid or accumulated precipitation in the tank. Manage and dispose of all accumulate precipitation as solid waste as directed by responsible Environmental Department personnel.	AS 2/1/13 AS 2/18/13	
		SAFETY NOTES: **VERIFY that all PPE and other safety requirements are in accordance with JHA# HW-024. The following minimum safety requirements are required for the performance of steps 4 through 11:** **(1) Hand protection – chemical resistant gloves (nitrile/nytex or equivalent).** **(2) Confined space entry in accordance with WSI 25-SW-0003, "Confined Space Entry Program".** .D QA 17 JAN 14 '13 **(3) Access to phone or radio communication with emergency services (5111).**		
	3.	Prior to entry into the tank, responsible Environmental Department personnel shall review the inspection requirements with the qualified inspector.	AS 1/8/13	
		Steel Tank Inspection **Steel Tank Internal Inspection:**		
	4.	~~Perform confined space entry in accordance with WSI 25-SW-0003.D, "Confined Space Entry Program".~~ Remove Step QA 17 JUN 24 '13	AS TJO 6/3/13 1/29/13	
	5.	Enter the tank as directed by responsible Environmental Department personnel (or entry supervisor). The qualified inspector shall visually inspect all seams and the general condition	AS 2/1/13 AS 2/18/13	

(16) CONTRACTOR AUTHORIZED SIGNATURES	(17) NASA AUTHORIZED SIGNATURES
Sign or Initial:	Sign or Initial: TJO 1/14/13
Sign or Initial:	Sign or Initial:

(2) STAMP AREA (BY CLERK)	(3) TPS NUMBER						(4) QA COORDINATION
CONTROL COPY IF IN RED	Area	Category	Yr.	Track No. (BY CLERK)	Type	Mod.	QA 17 JAN 04 2013
	2	2HWM	13	102391	A	BASIC	

(18) INSPECTION POINT	(19) ITEM NUMBER	(20) DESCRIPTION	(21) PERFORMED BY	(22) INSPECTED BY
		of the interior of the tank. At the inspector's discretion, non-destructive testing may be performed in accordance with recognized industry standards.		
	6.	Responsible Environmental Department personnel shall thoroughly document all elements of the inspection, observations and other details of the inspection per field notes. Mark the location of all defects and photograph as required and photograph representative areas or sections of the interior of the tanks.	AS 2/1/13 AS 2/18/13	
	7.	Upon completion of the inspection, dispose of all PPE, other contaminated materials, and liquid waste as directed per WIWPS and responsible Environmental Department personnel.	AS 2/1/13 AS 2/18/13	
		NOTE: **If the ETU tanks are scheduled to be removed and managed as scrap metal, the inspection of the soil side of the ETU tank bottoms will be during removal of the tanks per Attachment 30, Section 7.0 of the ETU Closure Plan. The inspection procedure does not involve confined space entry.**		
		Steel Tank Inspection **Soil Side Inspection**		
	10.	If the ETU tanks are scheduled to be removed and managed as scrap metal, perform the following: (a) Coordinate the inspection with the removal of the steel tank bottoms per Attachment 23, Section 6.0 of the ETU Closure Plan. (b) After the tank bottoms are removed and relocated for inspection, the qualified installation inspector shall visually inspect the general condition of the soil side of the tank bottoms. At the inspector's discretion, non-destructive testing (ultrasonic testing, mag particle testing, etc.) may be performed in accordance with recognized industry standards.	AS 2/7/13 AS 3/5/13	

(16) CONTRACTOR AUTHORIZED SIGNATURES	(17) NASA AUTHORIZED SIGNATURES
Sign or Initial: [signature]	Sign or Initial: TJO 1/14/13
Sign or Initial:	Sign or Initial:

NASA JSC WSTF Test Preparation Sheet	(1) PAGE 6

(2) STAMP AREA (BY CLERK)	(3) TPS NUMBER						(4) QA COORDINATION
CONTROL COPY IF IN RED	Area	Category	Yr.	Track No. (BY CLERK)	Type	Mod.	QA 17
	2	2HWM	13	102391	A	BASIC	JAN 0 4 2013

(18) INSPECTION POINT	(19) ITEM NUMBER	(20) DESCRIPTION	(21) PERFORMED BY	(22) INSPECTED BY
		(c) Responsible Environmental Department personnel shall thoroughly document all elements of the inspection, observations and other details of the inspection per field notes. Mark the location of all defects and photograph as required and photograph representative areas or sections of the interior of the tanks.		
		Inspection Documentation		
	11.	The qualified inspector shall provide a written statement attesting to the results of the inspection and the condition of the tanks. Upon receipt, responsible contractor personnel shall review all inspection documentation and summarize the results of the ETU steel tank inspection for review by NASA.	TS 3/1/13	
		NOTES		
		Responsible Environmental Department personnel shall ensure that a CLOSED copy of this TPS and all documentation (all inspection records, photographs, field notes, observations, etc.) is assembled as a single file and maintained as part of the ETU Operating Record.		
		ETU CLOSURE – EAST TANK INTERNAL INSPECTION AUTHORIZATION SIGNOFF SHEET.		
		ED Authorization		
		Signature/Date [signature] 2/18/13		
		Completion of Internal Inspection Steps 6 and 7.		

(16) CONTRACTOR AUTHORIZED SIGNATURES	(17) NASA AUTHORIZED SIGNATURES
Sign or Initial: [signature]	Sign or Initial: TJO 1/14/13
Sign or Initial:	Sign or Initial:

NASA JSC WSTF Test Preparation Sheet

(1) PAGE 7

(2) STAMP AREA (BY CLERK)
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(3) TPS NUMBER

Area	Category	Yr.	Track No. (BY CLERK)	Type	Mod.
2	2HWM	13	102391	A	BASIC

(4) QA COORDINATION
QA 17
JAN 0 4 2013

(18) INSPECTION POINT	(19) ITEM NUMBER	(20) DESCRIPTION	(21) PERFORMED BY	(22) INSPECTED BY
		ETU CLOSURE – WEST TANK INTERNAL INSPECTION AUTHORIZATION SIGNOFF SHEET. **ED Authorization** 2/01/13 **Signature/Date** 2/18/13 **Completion of Internal Inspection Steps 6 and 7**		

(16) CONTRACTOR AUTHORIZED SIGNATURES	(17) NASA AUTHORIZED SIGNATURES
Sign or Initial:	Sign or Initial: 1/14/13
Sign or Initial:	Sign or Initial:

WSTF-392 (09/11)

Record #: 102391

QA 17
JUN 24 2013

8

Work Steps

INSPECTION POINT	ITEM NUMBER	DESCRIPTION	PERFORMED BY	INSPECTED BY
	1	**ETU Steel Tanks Removal** At least one week prior to the start of the operation, the responsible Environmental Department personnel shall review the ETU Closure Plan and closure plan documentation and VERIFY that all ETU evaporation tank internal inspection requirements (except for visual inspection of the soil side of the tank bottoms) per Section 4.4 of the ETU SAP have been completed.	2/15/13	
	2	Remove or pump any liquid or accumulated precipitation in the tank. Manage and dispose of all accumulate precipitation as hazardous waste as directed by responsible Environmental Department personnel.	2/19/13	
	3	With a plasma/cutting torch or other metal cutting equipment, cut the tank walls /sides of the ETU tanks into sections as directed to support handling, transportation and management as scrap metal.	2/19/13 through 2/22/13	
	4	Load the sections on a flat bed tractor trailer or other hauling equipment and transport the material to the 150 yard for storage prior to off-site shipment as scrap metal.	2/22/13	
	5	Perform visual inspection of the soil side of the tank bottoms per Attachment 23, Section 4.4 of the ETU Closure Plan.	2/7/13 (W) 3/5/13 (E)	
	6	The responsible Environmental Department personnel shall include and file the results, (field notes, photographs, etc.) as part of the ETU structural assessment per Section 4.4 of the ETU Closure Plan.	4/15/13	

NASA JSC WSTF Test Preparation Sheet

(1) PAGE 1 OF 8

(2) STAMP AREA (BY CLERK)

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(3) TPS NUMBER

Area	Category	Yr.	Track No. (BY CLERK)	Type	Mod.
2	2HWM	13	102392	A	BASIC

(4) QA COORDINATION

Carl Swopes
Carl Swopes
C&S
QA 17
JAN 14 2013

(5) SYSTEM/TEST STAND

200 Area Evaporation Treatment Unit (ETU)

(6) Quality Designated Inspection Points (BY QA/QE)

X	NONE		STEPS		ALL

(7) TITLE

ETU Liner Inspection and Removal

(8) DWG(S) & DCN(S), WJI(S), OTHER DOC(S)

DWG 019-13972_F; WJI ENV-0021.B; WSI 25-SW-0003.D;NMED Approved Closure Plan

(9) TASK ORDER NUMBER

ETUC 8725-012

(10) PREPARED BY

Tanaka/A.Sanchez EXT. 5497

(12) CLOSED BY (Initial & Date)

6/18/13

(11) CONSTRAINTS

None

(13) QA CLOSURE (Stamp & Date)

QA 17 JUN 24 2013

(14) PPE HAZARD ASSESSMENT CERTIFICATION

THIS TPS ☐

DOCUMENT # WJI ENV-0021.B; JHA# HW-024

(15) SUMMARY/INSTRUCTIONS

This Draft TPS is included in Attachment 23 and referenced in Section 4.4 of the ETU Closure Plan. This repetitive TPS provides instructions for the inspection of the tank liners, and liner removal as described per Sections 4.4 and 6.4 of the Closure Plan.

The evaporation tanks are identified as a confined space. In accordance with WSI 25-SW-0003, "Confined Space Entry Program", personnel will enter the tanks as required to perform the above procedures.

The procedures will be performed twice for the East Tank and twice for the West Tank. Authorization for performance of this repetitive TPS shall be per responsible Environmental Department personnel signature on the TPS authorization signoff sheet.

NO DCN REQUIRED 1-14-2013

(16) CONTRACTOR AUTHORIZED SIGNATURES	(17) NASA AUTHORIZED SIGNATURES
Sign, Initial, Date: 1/10/13	Sign, Initial, Date: TJD 1/14/13
Print: Antonette L. Sanchez	Print: Timothy S Davis
Sign, Initial, Date:	Sign, Initial, Date:
Print:	Print:

NASA JSC WSTF Test Preparation Sheet	(1) PAGE 2

(2) STAMP AREA (BY CLERK)	(3) TPS NUMBER						(4) QA COORDINATION
CONTROL COPY IF IN RED	Area	Category	Yr.	Track No. (BY CLERK)	Type	Mod.	QA 17 JAN 04 2013
	2	2HWM	13	102392	A	BASIC	

(18) INSPECTION POINT	(19) ITEM NUMBER	(20) DESCRIPTION	(21) PERFORMED BY	(22) INSPECTED BY
		Scheduling and Coordination: (a) Review the personnel qualifications. VERIFY personnel have the required training/qualifications. Schedule/update training as required. (b) Review the list of equipment. Contact responsible contractor personnel and schedule use of the equipment as required. (c) This TPS contains procedures that require a confined space entry into the evaporation tanks. All personnel entering the tanks shall have confined space training. Contact WSTF safety and review training records of off-site personnel entering the tanks. Schedule confined space training as required. Coordinate confined space entry into the evaporation tanks in accordance with WSI-25-0003, "CONFINED SPACE ENTRY PROGRAM". (d) Months prior to the start of the operation, initiate procurement of a qualified installation contractor to inspect the tank primary and secondary liners. (e) Schedule safety training as required per WSI-SW-0002 for all off-site personnel. (f) Schedule/coordinate WSTF photographer as required to document inspections. Verify personnel has confined space training. (g) Review the operation with the WSTF Hazardous Waste Shipping Coordinator. Ensure packaging as required to support transportation and disposal are readily available to support the operation. **Equipment:** PVC hose with quick-disconnect couplings and misc. PVC		

(16) CONTRACTOR AUTHORIZED SIGNATURES	(17) NASA AUTHORIZED SIGNATURES
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(18) INSPECTION POINT	(19) ITEM NUMBER	(20) DESCRIPTION	(21) PERFORMED BY	(22) INSPECTED BY
		extensions Diaphragm pump or similar. Sandbags (as required). Ladders. DOT approved containers and other shipping materials (as provided by the WSTF Hazardous Waste Shipping Coordinator). Hand tools (shears, scissors, utility knife, chalk line, etc.) **NOTES** **Additional equipment may be required depending on work-site conditions** **Liner Inspection and Removal** **All hazardous operations will be supervised by a trained WSTF employee with 29 CFR 1910.120 OSHA HAZWOPER Supervisor training.** **Manpower Requirements:** A minimum of one Hazardous Waste Handler with the following qualifications as required to support removal of ETU liner material: (a) All WSTF personnel actively involved in the liner removal operation will be qualified Hazardous Waste Handlers (per the WSTF Training Database). (b) All WSTF personnel actively involved in the liner removal operation are required to have completed PPE Training (per the WSTF Training Database). (c) All personnel involved in the operation are required to have		

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(18) INSPECTION POINT	(19) ITEM NUMBER	(20) DESCRIPTION	(21) PERFORMED BY	(22) INSPECTED BY
		completed Confined Space Entry Training (per the WSTF Training Database) or the equivalence of WSTF Confined Space Entry training provided certificates of said training are furnished and current prior to starting work.		
		ETU Tank System and Equipment Set-Up		
	1.	Prior to the performance of the operation, VERIFY that the nitrogen purge has been physically turned-off.	AS 1/16/13	
	2.	Ensure safety shower/eye wash and water supply is operational.	(PER TPS 2-2HWM-12-0467) AS 1/17/13	
	3.	Transport DOT approved packaging, shipping materials and equipment to the general work area and set up work station.	AS 1/17/13	
	4.	Remove or pump any liquid or accumulated precipitation in the tank. Manage, containerize and dispose of all accumulate precipitation as solid waste as directed by responsible Environmental Department personnel.	AS 1/17/13	
	5.	Visually inspect all equipment to be used in support of the operation. Wrap/pad all equipment as required to protect the liner from damage	AS 1/17/13	
		NOTES		
		Visually inspect all equipment to be used for removal of any residual solid material. Wrap/pad all equipment as required to protect the liner from damage.		
		SAFETY NOTES:		
		VERIFY that all PPE and other safety requirements are in accordance with JHA# HW-024. The following minimum safety requirements are required for the performance of steps 8 through 11:		

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(4) QA COORDINATION

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(18) INSPECTION POINT	(19) ITEM NUMBER	(20) DESCRIPTION	(21) PERFORMED BY	(22) INSPECTED BY
		(1) Hand protection – chemical resistant gloves (nitrile/nytex or equivalent).		
		(2) Body protection – Tyvex suits with boot or shoe covers.		
		(3) Confined Space entry in accordance with WSI 25-SW-0003.D, "Confined Space Entry Program" or the equivalence of WSTF Confined Space Entry training provided certificates of said training are furnished and current prior to starting work.		
		(4) Safety shower and eye wash in compliance with ANSI-Z358.1-1990.		
		(5) Access to phone or radio communication with emergency services (5111).		
	6.	Prior to entry into the tank, responsible Environmental Department personnel shall review the inspection requirements per the "Scope of Work" with the qualified inspection inspector.	AG 1/8/13	
		Primary Liner Inspection and Removal Work Steps:		
	7.	Perform confined space entry in accordance with WSI 25-SW-0003.D, "Confined Space Entry Program" or the equivalence of WSTF Confined Space Entry training provided certificates of said training are furnished and current prior to starting work.	AG 1/17/13	
	8.	Enter the tank as directed by responsible Environmental Department personnel. The qualified liner inspector shall visually inspect all seams and the general condition of the primary liner. Responsible Environmental Department personnel shall document observations and details of the inspection per field notes. Mark the location of all defects and photograph as required. Photograph representative areas or sections of the primary liner.	AG 1/17/13	

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(4) QA COORDINATION

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(18) INSPECTION POINT	(19) ITEM NUMBER	(20) DESCRIPTION	(21) PERFORMED BY	(22) INSPECTED BY
	9.	Remove the primary liner, fabric material and drainage netting as directed by the qualified liner inspector and responsible Environmental Department personnel. Package removed liner as required to support transportation and disposal.	AS 1/23/13	
		Secondary Liner Inspection and Removal Work Steps:		
	10.	Enter the tank as directed by responsible Environmental Department personnel. The qualified liner inspector shall visually inspect all seams and the general condition of the secondary liner. Responsible Environmental Department personnel shall document observations and details of the inspection per field notes. Mark the location of all defects and photograph as required. Photograph representative areas or sections of the secondary liner.	AS 1/23/13 AS 1/24/13	
	11.	Remove the secondary liner, fabric material and drainage netting as directed by the qualified liner inspector and responsible Environmental Department personnel. Package removed liner as required to support transportation and disposal.	AS 2/6/13	
	12.	DEVS - NONE QA 17 JAN 14 '13 In accordance with WJI ENV-0038.F, "Waste Movement Transfer", transport residual solid material and liquid waste to a less than 90 day area for storage prior to off-site shipment as directed per WIWPS and responsible Environmental Department personnel.	AS 2/6/13	
	13.	Dispose of all PPE, other contaminated materials, and liquid waste as directed per WIWPS and responsible Environmental Department personnel.	AS 2/6/13	
		Inspection Documentation		
	14.	Upon receipt of liner inspector written statement, responsible Environmental Department personnel shall review all	AS 5/1/13	

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(18) INSPECTION POINT	(19) ITEM NUMBER	(20) DESCRIPTION	(21) PERFORMED BY	(22) INSPECTED BY
		inspection documentation and summarize the results of the ETU liner inspection for review by NASA.		

NOTES

Responsible Environmental Department personnel shall ensure that a CLOSED copy of this TPS and all documentation (all inspection records, photographs, field notes, observations, etc.) is assembled as a single file and maintained as part of the ETU Operating Record.

ETU CLOSURE – EAST TANK PRIMARY LINER INSPECTION AND REMOVAL AUTHORIZATION SIGNOFF SHEET.

ED Authorization 2/11/13 ~~1/17/13~~ AS 2 PLACES QA 17

Signature/Date ~~2/12/13~~ AS JUN 24 '13

Completion of Steps 8 – 11 of TPS 2/11/13 ~~1/17/13~~ AS 2 PLACES QA 17

Signature/Date ~~2/12/13~~ AS JUN 24 '13

ETU CLOSURE – WEST TANK PRIMARY LINER INSPECTION AND REMOVAL AUTHORIZATION SIGNOFF SHEET.

ED Authorization 1/17/13

Signature/Date ~~2/7/13~~ AS 2 PLACES QA 17

Completion of Steps 8 – 11 of TPS 1/17/13 JUN 24 '13

Signature/Date ~~2/7/13~~ AS

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(18) INSPECTION POINT	(19) ITEM NUMBER	(20) DESCRIPTION	(21) PERFORMED BY	(22) INSPECTED BY
		ETU CLOSURE – EAST TANK SECONDARY LINER INSPECTION AND REMOVAL AUTHORIZATION SIGNOFF SHEET. **ED Authorization** **Signature/Date** 2/12/13 **Completion of Steps 8 – 11 of TPS** **Signature/Date** 2/12/13 **ETU CLOSURE – WEST TANK SECONDARY LINER INSPECTION AND REMOVAL AUTHORIZATION SIGNOFF SHEET.** **ED Authorization** **Signature/Date** 2/7/13 **Completion of Steps 8 – 11 of TPS** **Signature/Date** 2/7/13		

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(2) STAMP AREA (BY CLERK)	(3) TPS NUMBER						(4) QA COORDINATION
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(18) INSPECTION POINT	(19) ITEM NUMBER	(20) DESCRIPTION	(21) PERFORMED BY	(22) INSPECTED BY
QA NOTES: RECORD 102488 WAS ORIGINATED DURING THE EARLY TRANSITIONAL PERIOD TO WEBPAPER. THE WSTF FORM 392 WAS USED TO "RECORD WORK STEPS" UNTIL THE "RECORD WORK STEPS". DOC WAS CREATED. COMPLETING THE HEADER AND FOOTER OF WSTF FORM 392 WAS NOT REQUIRED. AT THAT TIME, THE "RECORD WORK STEPS" DOC IS TO BE REPLACED BY WSTF FORM 675. THE WEBPAPER DOC. REPRESENTS THE 1st PAGE OF FORM 392. JUN 25 '13		**NOTES:** **Soil sampling will be performed will be performed in conjunction with activities per Section 7.7 of the ETU Closure Plan. The procedures per this Section contain the work authorizing documents (TPS's) that drives or directs soil investigation sampling per this TPS. The sampling will be performed under the HWDL, sump, and tanks in the following general areas:** **(a) 800 Area HFTA (aboveground HWDL)** **(b) 803 Laboratory (belowground HWDL)** **(c) West Side of Building 200 (belowground HWDL)** **(d) Breezeway/Corridor Between Building 201, 200 and 203 (belowground HWDL)** **(e) North Side of Building 203 (belowground HWDL)** **(f) Sump Vault** **(g) East of Building 203 (aboveground HWDL)** **(h) ETU** **Soil Sampling - Scheduling and Coordination** Coordinate 200 and 800 Area access with responsible section supervisor (or designated alternate) as required. **Additional Scheduling and Coordination Requirements – Underground HWDL** (a) Prior to the start of the operation contact Facilities Engineering and review the facility drawings along with the sample locations per Figures 1, 2, and 3, Sections 7.7.1, 7.7.2, and 7.7.3 of the ETU Closure Plan. Facilities Engineering and the responsible Environmental Department personnel will determine the support requirements to provide access to the underground HWDL.	AS 2/1/13 for (a-e)	

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(18) INSPECTION POINT	(19) ITEM NUMBER	(20) DESCRIPTION	(21) PERFORMED BY	(22) INSPECTED BY
		(b) Access to the underground HWDL will be provided per a separate Facilities Engineering work authorizing document (a work ticket/ Facilities Engineering TPS). (c) Prior to start of the operation coordinate subcontractor support for Analytical Services. (d) Prior to start of the operation coordinate subcontractor support for Drilling Services. (e) Prior to start of the operation submit Excavation Permit for review and approval. **Equipment:** (a) Spade, scoop, auger, trowel or other EPA-approved sampling devices. (b) Steel Bowl and Buckets (c) Sample bottles and preservatives (per requirements of the analytical laboratory). (d) Sample labels and seals. (e) Chain of Custody forms. (f) ETU Closure Log Book. (g) Shipping coolers and Ice. (h) Deionized water		
	1.	**Soil Sampling - Manpower Requirements:** Two Hazardous Waste Samplers with the following qualifications are required: (a) All sampling personnel actively involved in the	AS 2/19/13 (See Repetitive tracking Log)	

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(18) INSPECTION POINT	(19) ITEM NUMBER	(20) DESCRIPTION	(21) PERFORMED BY	(22) INSPECTED BY
		operation (waste samplers) will be qualified Hazardous Waste Samplers (per the WSTF Training Database). (b) All personnel are required to have completed PPE Training (per the WSTF Training Database). (c) Workers who enter a confined space will be appropriately trained per WSI-25-SW-003, Confined Space Entry Program. For underground HWDL, initiate procedures (Facilities Work Ticket, etc.) to provide access to the underground HWDL sample locations. Otherwise proceed to the following step.		
	2.	**Soil Sampling - Work Station and Equipment Set-Up** Perform the following: (a) Set up a work station as directed by responsible Environmental Department personnel. ENSURE the safety shower and eye wash are available and operational. (b) Select the filling sequence for the sample containers as directed by responsible Environmental Department personnel. The sample sequence will be based on volatility, starting with samples for the analytical method for the most volatile constituents first. (c) Triple rinse the sampling equipment with deionized water. (d) During the above step and the performance of this TPS, collect and dispose of excess soil cuttings, liquid waste, and PPE as directed per appropriate WIWPS.	AS 2/19/13 (See Repetitive tracking log)	

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(18) INSPECTION POINT	(19) ITEM NUMBER	(20) DESCRIPTION	(21) PERFORMED BY	(22) INSPECTED BY
		SAFETY NOTES: **VERIFY that all PPE and other safety requirements are in accordance with job specific JHA. The following minimum safety requirements are required for the performance of steps 3 through 7:** **(1) PPE = Modified Level D** **- Work Clothing (shirts with sleeves, long pants)** **- Safety Shoes/Boots (steel-toed boots)** **- Hard Hat** **- Safety Vest** **- Safety Glasses (w/UV if desired)** **- Gloves (e.g., nitrile or equivalent)** **(2) A utilities locate and Form 289, *Permit to Excavate* must be prepared in accordance with the guidelines provide in WSP-24-005, *Excavation* before the HWDL is excavated and/or borings are performed.** **(3) A Form 503, *Confined Space Entry Permit* must be prepared for all borings that will be performed in an excavation, vault, manhole, and/or valve pit to determine the Confined Space entry requirements, if necessary.** **NOTES:** **Take the following samples as directed by TPS and/or the responsible Environmental Department personnel.** **The sample media is soil collected from a boring at one of four intervals (0-6 in, 0-1ft, 1-2 ft, or 9-10 ft). The intervals vary from one borehole to another per Section 7.7 of the ETU Closure Plan.** **Sample locations are provided by Figures 1, 2, and 3, Sections 7.7.1, 7.7.2, and 7.7.3 of the ETU Closure Plan (attached per this TPS)**		

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(2) STAMP AREA (BY CLERK)	(3) TPS NUMBER						(4) QA COORDINATION
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(18) INSPECTION POINT	(19) ITEM NUMBER	(20) DESCRIPTION	(21) PERFORMED BY	(22) INSPECTED BY
	3.	**HWDL Mechanical Excavation and Borehole Drilling** The responsible Environmental Department personnel will VERIFY that the Facilities Engineering/Construction group has excavated the section(s) of buried HWDL where the borehole will be performed. Hazardous Waste Samplers will perform the following: (a) Enter the excavation. (b) Confirm the boring location (e.g., 90 Degree Elbow) with the responsible Environmental Department personnel. (c) Use a hand auger to collect soil from the required sample interval (0-6 in, 0-1 ft, 0-2 ft, or 9-10 ft). (d) Composite the soil in a steel bowl (do not mix). (e) Collect soil sample suite in the following order (per TPS procedures below): AS - ~~VOC~~ Hydrazines QA 17 JUN 17 '13 2/19/13 - ~~Hydrazines~~ VOC TO 6/3/13 - SVOC - Total Metals and Mercury - Cyanide ~~(f) Place residual soil (cuttings), if any, into a 5-gallon waste bag.~~ Delete step (f) AS 2/19/13 AS 2/19/13 ~~(g)~~ f Repeat for required additional sample intervals. TO 6/3/13 QA 17 JUN 17 '13 ~~(h)~~ g Exit the excavation. The responsible Environmental Department personnel will VERIFY that the Facilities Engineering/Construction group backfills the excavated section(s) of buried HWDL and returns the site to an as found condition.	AS 2/19/13 (see repetitive tracking log)	

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(18) INSPECTION POINT	(19) ITEM NUMBER	(20) DESCRIPTION	(21) PERFORMED BY	(22) INSPECTED BY
	4.	**Hand Excavation and Borehole Drilling** Hazardous Waste Samplers will perform the following: (a) Confirm the boring location (e.g., 90 Degree Elbow) with the responsible Environmental Department personnel. (b) Prepare the boring location by removing gravel and rock to reveal the soil. (c) If required, hand excavate to the HWDL. (d) Use a hand auger to collect soil from the required sample interval (0-6 in, 0-1 ft, 0-2 ft, or 9-10 ft). (e) Composite the soil in a steel bowl (do not mix). (f) Collect soil sample suite in the following order (per TPS procedures below): - ~~VOC~~ Hydrazines - ~~Hydrazines~~ VOC - SVOC - Total Metals and Mercury - Cyanide ~~(g) Place residual soil (cuttings), if any, into a 5-gallon waste bag.~~ Delete step (g) (~~h~~) Repeat for required additional sample intervals.	AJ 2/19/13 (See Repetitive tracking log) AJ 2/19/13 TJ 6/3/13 QA 17 JUN 17 '13 AJ 2/19/13 QA 17 JUN 17 '13 AJ 2/19/13 G TJ 6/3/13	
	5.	**Borehole Drilling Using a Geo-Probe** The responsible Environmental Department personnel will VERIFY that the Geo-Probe Subcontractor drills the borehole at the correct location. Hazardous Waste Samplers will perform the following: (a) Composite the soil from the boring interval provided by	AJ 3/18/13 (See Repetitive tracking log)	

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(18) INSPECTION POINT	(19) ITEM NUMBER	(20) DESCRIPTION	(21) PERFORMED BY	(22) INSPECTED BY
		the Geo-Probe Subcontractor in a steel bowl (do not mix). (b) Collect soil sample suite in the following order (per TPS procedures below): - ~~VOC~~ Hydrazines TJ - ~~Hydrazines~~ VOC TJ 6/3/13 QA 17 JUN 17 '13 AG 3/18/13 - SVOC - Total Metals and Mercury - Cyanide ~~(c) Place residual soil (cuttings), if any, into a 5-gallon waste bag.~~ Delete (c) AG 3/18/13 TJ 6/3/13 QA 17 JUN 17 '13 ~~(d)~~ c Repeat for required additional sample intervals. AG 3/18/13		
	6.	**Soil Sampling - Volatile Organics** Hazardous Waste Samplers perform the following: (a) Collect 2, 40 ml glass jars of sample media (or as specified by the analytical laboratory) for analyses by EPA Method 8260B as directed by the contractor environmental organization. (b) Label the sample jar, attach a chain of custody seal, and store it on ice. (c) Record the sample ID; location and interval; type of analysis; preservative; container type, volume, and lot number, and destination laboratory in the ETU Closure Log Book. (d) Complete Chain of Custody Record for the sample.	AG 2/19/13 (see repetitive Tracking log)	

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(2) STAMP AREA (BY CLERK)	(3) TPS NUMBER						(4) QA COORDINATION
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(18) INSPECTION POINT	(19) ITEM NUMBER	(20) DESCRIPTION	(21) PERFORMED BY	(22) INSPECTED BY
	7.	**Soil Sampling -Hydrazines** Hazardous Waste Samplers perform the following: (a) Collect 1, 500 mL glass jar of sample media (or as specified by the analytical laboratory) to be analyzed for Hydrazines by HPLC as directed by the contractor environmental organization. (b) Label the sample jar, attach a chain of custody seal, and store it on ice. (c) Record the sample ID; location and interval; type of analysis; preservative; container type, volume, and lot number, and destination laboratory in the ETU Closure Log Book. (d) Complete Chain of Custody Record for the sample.	AS 2/19/13 (see repetitive Tracking log)	
	8.	**Soil Sampling - Semi-Volatile Organics** Hazardous Waste Samplers perform the following: (a) Collect 1, 8 oz clear glass jar of sample media (or as directed by the analytical laboratory) to be analyzed for semi-volatile organics (SVOC) by EPA Method 8270D as directed by the contractor environmental organization. (b) Label the sample jar, attach a chain of custody seal, and store it on ice. (c) Record the sample ID; location and interval; type of analysis; preservative; container type, volume, and lot number, and destination laboratory in the ETU Closure	AS 2/19/13 (see repetitive tracking log)	

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(18) INSPECTION POINT	(19) ITEM NUMBER	(20) DESCRIPTION	(21) PERFORMED BY	(22) INSPECTED BY
		Log Book. (d) Complete Chain of Custody Record for the sample.		
	9.	**Soil Sampling - TCLP Metals** Hazardous Waste Samplers perform the following: (a) Collect 1, 4 oz Amber Glass Jar of sample media (or as directed by the analytical laboratory) per phase for analyses of Total Metals and Mercury per EPA Method 6020A and 7471B, respectively, as directed by the contractor environmental organization. (b) Label the sample jar, attach a chain of custody seal, and store it on ice. (c) Record the sample ID; location and interval; type of analysis; preservative; container type, volume, and lot number, and destination laboratory in the ETU Closure Log Book. (d) Complete Chain of Custody Record for the sample.	AS 2/19/13 (see repetitive tracking log)	
	10.	**Soil Sampling – Cyanide** Hazardous Waste Samplers perform the following: (a) Collect 1, 4 oz Amber Glass Jar of sample media (or as directed by the analytical laboratory) per phase for analyses of Cyanide per EPA Method 9012B as directed by the contractor environmental organization. (b) Label the sample jar, attach a chain of custody seal, and	AS 2/19/13 (see repetitive tracking log)	

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(18) INSPECTION POINT	(19) ITEM NUMBER	(20) DESCRIPTION	(21) PERFORMED BY	(22) INSPECTED BY
		store it on ice. (c) Record the sample ID; location and interval; type of analysis; preservative; container type, volume, and lot number, and destination laboratory in the ETU Closure Log Book. (d) Complete Chain of Custody Record for the sample.		
	11.	**Soil Sampling - Demobilization and On-Site Sample Transportation** Hazardous Waste Samplers perform the following: (a) Upon completion of the sampling operation package and dispose of excess soil cuttings, liquid wastewater, and PPE as directed per appropriate WIWPS. (b) Transport all of the samples collected for that day to Building 637 and place them in the locked sample refrigerator (for a minimum of overnight) so that the samples reach the proper temperature for preservation prior to shipment. (c) Place the Chain of Custody Form into the folder on the outside door of the sample fridge.	AS 2/19/13 (see Repetitive tracking log)	
	12.	**Soil Sampling - Sample Documentation** The responsible Environmental Department personnel shall VERIFY that the following are noted in the ETU Closure Log Book: (a) A brief description of the sampling operation which	AS 2/19/13 (see Repetitive tracking log)	

(16) CONTRACTOR AUTHORIZED SIGNATURES	(17) NASA AUTHORIZED SIGNATURES
Sign or Initial:	Sign or Initial:
Sign or Initial:	Sign or Initial:

(2) STAMP AREA (BY CLERK)	(3) TPS NUMBER						(4) QA COORDINATION
	Area	Category	Yr.	Track No. (BY CLERK)	Type	Mod.	
	200	2HWM	13	102488	A	BASIC	

(18) INSPECTION POINT	(19) ITEM NUMBER	(20) DESCRIPTION	(21) PERFORMED BY	(22) INSPECTED BY
		includes the type of sampling, work document #'s (TPS and "Drive TPS"), date, methods of sampling, and personnel present during the sampling event. (b) Sample parameter. (c) Sample preservation. (d) WSTF sample I.D. number. (e) Specific Sample location (f) Lab performing analyses.		
	13.	**Soil Sampling - Chain of Custody Record** The responsible Environmental Department personnel shall VERIFY the Chain of Custody identifies the following: (a) WSTF sample number. (b) Location. (c) Sample matrix. (d) Sampler's signature. (e) Sample parameters/analyses requirements. (f) Comments (sample description).	AD 2/19/13 (see repetitive tracking log)	
	14.	**Soil Sampling - Sample Shipping** Hazardous Waste Samplers perform the following: (a) At Building 637, package the samples to be shipped in a cooler with ice and ice gel bags so that they are maintained at approximately 4° C. (b) Transport the packaged cooler(s) and the associated	AD 2/19/13 (see repetive tracking logs)	

(16) CONTRACTOR AUTHORIZED SIGNATURES	(17) NASA AUTHORIZED SIGNATURES
Sign or Initial:	Sign or Initial:
Sign or Initial:	Sign or Initial:

(2) STAMP AREA (BY CLERK)	(3) TPS NUMBER						(4) QA COORDINATION
	Area	Category	Yr.	Track No. (BY CLERK)	Type	Mod.	
	200	2HWM	13	102488	A	BASIC	

(18) INSPECTION POINT	(19) ITEM NUMBER	(20) DESCRIPTION	(21) PERFORMED BY	(22) INSPECTED BY
		Chain of Custody Form (s) to the WSTF warehouse. (c) Complete sample packaging by filling the void space with packing peanuts. (d) Make a photocopy of the Chain of Custody Form(s). (e) Place the original Chain of Custody in a plastic bag and attached to the inside of the cooler lid. (f) Attach two Chain of Custody seals (front and back of container) to each cooler so that the seals must be broken if the cooler is opened. (g) Provide a shipping document and the coolers to the WSTF warehouse and arrange for overnight shipment of the samples to the analytical laboratory. (h) File the copy of the Chain of Custody Form as part of the ETU Closure Documentation.		
	15.	**Soil Sampling - Analytical Data Processing** Upon receipt of the analytical data from the Laboratory. The responsible Environmental Department personnel will perform the following: (a) Review the analytical results and organize for inclusion in the ETU Closure Report. (b) File the final analytical report as part of the ETU Closure Documentation.	AO 5/15/13	

(16) CONTRACTOR AUTHORIZED SIGNATURES	(17) NASA AUTHORIZED SIGNATURES
Sign or Initial:	Sign or Initial:
Sign or Initial:	Sign or Initial:

NASA JSC WSTF Test Preparation Sheet	(1) PAGE 14

(2) STAMP AREA (BY CLERK)	(3) TPS NUMBER						(4) QA COORDINATION
	Area	Category	Yr.	Track No. (BY CLERK)	Type	Mod.	
	200	2HWM	13	102488	A	BASIC	

(18) INSPECTION POINT	(19) ITEM NUMBER	(20) DESCRIPTION	(21) PERFORMED BY	(22) INSPECTED BY
		ETU CLOSURE – SOIL SAMPLING AUTHORIZATION SIGNOFF SHEET.		

HWDL Section Or Location per Figures 1, 2, and 3 of the ETU Closure Plan: 800 Area HFTA Borehole Nos.:

800-HWDL-01 (0-1 ft; 1-2 ft)	800-HWDL-06 (0-6 in; 1-2 ft)
800-HWDL-02 (0-1 ft; 1-2 ft)	800-HWDL-07 (0-6 in; 1-2 ft)
800-HWDL-03 (0-1 ft; 1-2 ft)	800-HWDL-08 (0-6 in; 1-2 ft)
800-HWDL-04 (0-1 ft; 1-2 ft)	800-HWDL-09 (0-6 in; 1-2 ft)
800-HWDL-05 (0-6 in; 1-2 ft)	800-HWDL-10 (0-6 in; 1-2 ft)

ED Authorization

Signature/Date [signature] 2/19/13

Completion of Sampling

Signature/Date [signature] 2/25/13

ETU CLOSURE – SOIL SAMPLING AUTHORIZATION SIGNOFF SHEET.

HWDL Section Or Location per Figures 1, 2, and 3 of the ETU Closure Plan: 803 Laboratory HFTA Borehole Nos.:

800-HWDL-11 (0-6 in; 1-2 ft)	800-HWDL-12 (0-6 in; 1-2 ft)

ED Authorization

Signature/Date [signature] 2/19/13

Completion of Sampling

Signature/Date [signature] 2/25/13

(16) CONTRACTOR AUTHORIZED SIGNATURES	(17) NASA AUTHORIZED SIGNATURES
Sign or Initial:	Sign or Initial:
Sign or Initial:	Sign or Initial:

(2) STAMP AREA (BY CLERK)	(3) TPS NUMBER						(4) QA COORDINATION
	Area	Category	Yr.	Track No. (BY CLERK)	Type	Mod.	
	200	2HWM	13	102488	A	BASIC	

(18) INSPECTION POINT	(19) ITEM NUMBER	(20) DESCRIPTION	(21) PERFORMED BY	(22) INSPECTED BY
		ETU CLOSURE – SOIL SAMPLING AUTHORIZATION SIGNOFF SHEET.		

HWDL Section Or Location per Figures 1, 2, and 3 of the ETU Closure Plan: West Side of Building 200 Borehole Nos.:

200-HWDL-01 (0-6 in; 1-2 ft)	200-HWDL-04 (0-6 in; 1-2 ft)
200-HWDL-02 (0-6 in; 1-2 ft)	200-HWDL-05 (0-6 in; 1-2 ft)
200-HWDL-03 (0-6 in; 1-2 ft)	

ED Authorization

Signature/Date [signature] 2/26/13

Completion of Sampling

Signature/Date [signature] 2/28/13

ETU CLOSURE – SOIL SAMPLING AUTHORIZATION SIGNOFF SHEET.

HWDL Section Or Location per Figures 1, 2, and 3 of the ETU Closure Plan: Breezeway/Corridor Between Building 201, 200 and 203 Borehole Nos.:

200-HWDL-06 (0-6 in; 1-2 ft)	200-HWDL-11 (0-6 in; 1-2 ft)
200-HWDL-07 (0-6 in; 1-2 ft)	200-HWDL-12 (0-6 in; 1-2 ft)
200-HWDL-08 (0-6 in; 1-2 ft)	200-HWDL-13 (0-6 in; 1-2 ft)
200-HWDL-09 (0-6 in; 1-2 ft)	200-HWDL-14 (0-6 in; 1-2 ft)
200-HWDL-10 (0-6 in; 1-2 ft)	

ED Authorization

Signature/Date [signature] 3/4/13

Completion of Sampling

Signature/Date [signature] 3/12/13

(16) CONTRACTOR AUTHORIZED SIGNATURES	(17) NASA AUTHORIZED SIGNATURES
Sign or Initial:	Sign or Initial:
Sign or Initial:	Sign or Initial:

NASA JSC WSTF Test Preparation Sheet	(1) PAGE 16

(2) STAMP AREA (BY CLERK)	(3) TPS NUMBER						(4) QA COORDINATION
	Area	Category	Yr.	Track No. (BY CLERK)	Type	Mod.	
	200	2HWM	13	102488	A	BASIC	

(18) INSPECTION POINT	(19) ITEM NUMBER	(20) DESCRIPTION	(21) PERFORMED BY	(22) INSPECTED BY
		ETU CLOSURE – SOIL SAMPLING AUTHORIZATION SIGNOFF SHEET. **HWDL Section Or Location per Figures 1, 2, and 3 of the ETU Closure Plan:** North Side of Building 203 Borehole Nos.: 200-HWDL-15 (0-6 in; 1-2 ft) | 200-HWDL-17 (0-6 in; 1-2 ft) 200-HWDL-16 (0-6 in; 1-2 ft) | 200-HWDL-18 (0-6 in; 1-2 ft) **ED Authorization** **Signature/Date** 3/8/13 **Completion of Sampling** **Signature/Date** 3/13/13 **ETU CLOSURE – SOIL SAMPLING AUTHORIZATION SIGNOFF SHEET.** **HWDL Section Or Location per Figures 1, 2, and 3 of the ETU Closure Plan:** Sump Vault Borehole Nos.: 200-HWDL-19 (0-6 in; 1-2 ft) | 200-HWDL-20 (0-6 in; 1-2 ft) **ED Authorization** **Signature/Date** 3/13/12 **Completion of Sampling** **Signature/Date** 3/14/12		

(16) CONTRACTOR AUTHORIZED SIGNATURES	(17) NASA AUTHORIZED SIGNATURES
Sign or Initial:	Sign or Initial:
Sign or Initial:	Sign or Initial:

NASA JSC WSTF Test Preparation Sheet	(1) PAGE 17

(2) STAMP AREA (BY CLERK)	(3) TPS NUMBER						(4) QA COORDINATION
	Area	Category	Yr.	Track No. (BY CLERK)	Type	Mod.	
	200	2HWM	13	102488	A	BASIC	

(18) INSPECTION POINT	(19) ITEM NUMBER	(20) DESCRIPTION	(21) PERFORMED BY	(22) INSPECTED BY
		ETU CLOSURE – SOIL SAMPLING AUTHORIZATION SIGNOFF SHEET.		

HWDL Section Or Location per Figures 1, 2, and 3 of the ETU Closure Plan: East of Building 203 Borehole Nos.:

QA 17 JUN 25 '13 Delete Borehole 3/14/13

200-HWDL-21 (0-6 in; 1-2 ft)	~~200-HWDL-22 (0-6 in; 1-2 ft)~~

6/25/13

ED Authorization

Signature/Date 3/14/13

Completion of Sampling

Signature/Date 3/15/13

ETU CLOSURE – SOIL SAMPLING AUTHORIZATION SIGNOFF SHEET.

HWDL Section Or Location per Figures 1, 2, and 3 of the ETU Closure Plan: West ETU Tank Borehole Nos.:

200-ETU-01 (0-1 ft; 1-2 ft)	200-ETU-04 (0-1 ft; 1-2 ft)
200-ETU-02 (0-1 ft; 1-2 ft)	200-ETU-05 (0-1 ft; 1-2 ft)
200-ETU-03 (0-1 ft; 1-2 ft)	200-ETU-06 (0-1 ft; 1-2 ft, 9-10 ft)

ED Authorization

Signature/Date 3/18/13

Completion of Sampling

Signature/Date 3/19/13

(16) CONTRACTOR AUTHORIZED SIGNATURES	(17) NASA AUTHORIZED SIGNATURES
Sign or Initial:	Sign or Initial:
Sign or Initial:	Sign or Initial:

NASA JSC WSTF Test Preparation Sheet	(1) PAGE 18

(2) STAMP AREA (BY CLERK)	(3) TPS NUMBER						(4) QA COORDINATION
	Area	Category	Yr.	Track No. (BY CLERK)	Type	Mod.	
	200	2HWM	13	102488	A	BASIC	

(18) INSPECTION POINT	(19) ITEM NUMBER	(20) DESCRIPTION	(21) PERFORMED BY	(22) INSPECTED BY
	TD 6/25/13	**ETU CLOSURE – SOIL SAMPLING AUTHORIZATION SIGNOFF SHEET.** **HWDL Section Or Location per Figures 1, 2, and 3 of the ETU Closure Plan:** East ETU Tank Borehole Nos.: 200-ETU-07 (0-1 ft; 1-2 ft) | 200-ETU-10 (0-1 ft; 1-2 ft) 200-ETU-08 (0-1 ft; 1-2 ft) | 200-ETU-11 (0-1 ft; 1-2 ft) 200-ETU-09 (0-1 ft; 1-2 ft) | 200-ETU-12 (0-1 ft; 1-2 ft, 9-10 ft) * ADD 200-ETU-13 (9-10 ft) AS 3/19/13 **ED Authorization** **Signature/Date** [signature] 3/19/13 **Completion of Sampling** **Signature/Date** [signature] 3/21/13		

QA 17 JUN 25 '13

(16) CONTRACTOR AUTHORIZED SIGNATURES	(17) NASA AUTHORIZED SIGNATURES
Sign or Initial:	Sign or Initial:
Sign or Initial:	Sign or Initial:

Appendix B
ETU Waste Solids Disposal
Camino Real Landfill Manifests

Camino Real
ENVIRONMENTAL CENTER, INC.

SPECIAL WASTE PERMIT APPLICATION

Approval No. _____
Facility _____

Generator: name NASA White Sands Test Facility
address 12600 NASA Rd., Las Cruces, NM 88012
Waste description: Waste consists of Windborne particulate (sand and soil)

Quantity: 60 yd^3 > Frequency of disposal: ☒ One-time ☐ Monthly ☐ Other: _____
Process generating waste: Solids are a result of a liquid/solids separation activity.
Point of waste generation *(include zip code)*: Waste was generated on-site at the NASA White Sands Test Facility in Las Cruces, New Mexico, 88012.
Generator Representative/Contact: Timothy J. Davis Company Name: NASA
Phone: 575 / 524-5024 Fax: 575 / 524-5768
Transporter: Clean Harbors Environmental Services Phone: 480 / 545-2777 Fax: 602 / 462-2391

PHYSICAL CHARACTERISTICS AND DOCUMENTATION

Physical state: ☒ Solid ☐ Semi-solid ☐ Dusty ☐ Sludge ☐ Color: Black

Analytical results: ☐ TPH (PCS) ☒ Volatiles ☐ TOX ☒ TCLP: Metals
☐ BTEX ☐ Pesticides ☐ PCB ☒ Other: pH, Semi-volatile

Sample source: ☐ Pile ☐ In-ground ☐ Pit bottom ☒ Other: 1 sample/100 yd^3

Additional information: ☐ MSDS ☒ Process knowledge ☒ Other: Analytical Summary Tables

NON-HAZARDOUS DETERMINATION

Under 40 CFR Part 261, is this a Listed or Characteristic waste? ☐ Yes ☒ No
Is waste classified as a state-only or provincial hazardous waste? ☐ Yes ☒ No
Is waste covered or restricted from landfilling by any permit? ☐ Yes ☒ No
Basis for non-hazardous determination: NMED Approval of No-longer Contained-in Determination

WASTE CERTIFICATION STATEMENT

I hereby certify that all information contained herein is true and correct, and the material described is properly identified, classified, packaged, labeled, and prepared as indicated. I certify this waste is not hazardous as defined by the U.S. EPA or the state or province of origin. I certify this waste does not contain any regulated radioactive materials. I certify that all samples used for this analysis are representative of the materials described herein. I will notify the company if there is a change in the composition of, or process generating this waste stream.

Timothy J Davis
Name (print)

NASA, Env. Scientist
Title / Company

CAMINO REAL LANDFILL #1 IN NORTH AMERICA

Authorized representative's signature

10/18/12
Date

P. O.Box 580 ▪ Sunland Park, New Mexico 88063
Tel: 505 589-9440 ▪ Fax: 589-2427 ▪ www.creci.com

Printed on recycled paper

Camino Real
ENVIRONMENTAL CENTER, INC.

To: Timothy J. Davis Fax: 575-524-5768
Company: NASA White Sands Test Facility Date: 10-23-12
CC: Company:
RE: Total pages: 1
From: Juan Carlos Tomás

SPECIAL WASTE APPROVAL

Generator: NASA Disposal Facility: CRECI
Customer: NASA Approval Number: CRE-1211
Approval Date: 10-23-12
Expiration Date: 12-23-12
Previous Approval #:

Waste Types: waste consists of windborne particulate (sand + soil) from liquid/solid separation activity

Instructions: Landfill

Approval By: Juan Carlos Tomás

Review and approval of waste is based upon submitted documentation from generator/customer

This approval is granted subject to the enforcement of the following conditions:

1. Loads may be randomly inspected upon receipt at the landfill to conform with Special Waste Profile.
2. This material must be properly contained, bagged, or tarped prior to and during shipment and disposal.
3. A completed non-hazardous shipping manifest must accompany each load received at the landfill.
4. The customer must contact the respective landfill to schedule the waste shipment prior to disposal.

CAMINO REAL LANDFILL #1 IN NORTH AMERICA

P.O.Box 580 • Sunland Park, New Mexico 88063
Tel: 505 589-9440 • Fax: 589-2427 • www.creci.com

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CAMINO REAL LANDFILL

P.O. Box 580 Sunland Park, N.M. 88063 (575) 589-9440

№ 91007

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

NON HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: NM 8800019434
MANIFEST DOCUMENT NO.: 91007
2. Page 1 of 1

3. Generator's Name and Mailing Address
NASA White Sands Test Facility
14mi E. 6mi N. of Las Cruces
Attn: Antonette Sanchez
575-524-5497
4. Generator's Phone ( ) Las Cruces, NM 88004

A. State Manifest Document Number
B. State Generator's ID

5. Transporter 1 Company Name: Southwest Disposal
6. Address: 2485 W. Amador Las Cruces, NM 88004
C. State Transporter's ID
D. Transporter's Phone: 575-524-8482

7. Transporter 2 Company Name
8. Address
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address
Camino Real Environmental Services, Inc.
1000 Camino Real Blvd.
Sunland Park, NM 88063
10. US EPA ID Number
G. State Facility's ID: SWM-030738
H. Facility's Phone: 575-589-9440

11A HM	11. US DOT Description (including Proper Shipping Name, Non Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol.	I. Waste No.
	a. NON-RCRA/DOT REGULATED SOLID WASTE	1				
	b.					
	c.					
	d.					

J. Additional Descriptions for Materials Listed Above
K. Handling codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information
CRE APPROVAL #: 1211
CUSTOMER ID: PATRICIA MELENDREZ NAVARRO RESEARCH

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations, including applicable state regulations.
If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: Timothy J Davis
Signature:
Month 11 Day 29 Year 12

GENERATOR

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: OSCAR GIKON
Signature:
Date: Month 11 Day 29 Year 12

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name
Signature
Date: Month Day Year

TRANSPORTER

19. Discrepancy Indication Space
#514767 25 yds

20. Facility Owner or Operator: Certification of receipt of non-hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Juan Cordova
Signature:
Date: Month 11 Day 29 Year 12

FACILITY

White - Original Green - TSD Facility Canary - Transporter II Pink - Transporter I Gold-Rod - Generator's first copy

CAMINO REAL LANDFILL

P.O. Box 580 Sunland Park, N.M. 88063 (575) 589-9440

№ 91008

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

NON HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: NM 8800019434
MANIFEST DOCUMENT NO.: 91008
2. Page 1 of 1

3. Generator's Name and Mailing Address
NASA White Sands Test Facility
14 mi. E. 6 mi N. of Las Cruces
Las Cruces, NM 88004
Attn: Antonette Sanchez
4. Generator's Phone (575) 524-5763

A. State Manifest Document Number
B. State Generator's ID

5. Transporter 1 Company Name: Southwest Disposal
6. Address: 2485 W. Amador Las Cruces, NM 88005
C. State Transporter's ID
D. Transporter's Phone

7. Transporter 2 Company Name
8. Address
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address
Camino Real Environmental Services, Inc
1000 Camino Real Blvd.
Sunland Park, NM 88063
10. US EPA ID Number
G. State Facility's ID: SWM-030738
H. Facility's Phone: 575-589-9440

11A HM	11. US DOT Description (including Proper Shipping Name, Non Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol.	I. Waste No.
	a. NON RCRA/DOT REGULATED SOLID WASTE	1		25 cu yd		
	b.					
	c.					
	d.					

J. Additional Descriptions for Materials Listed Above

K. Handling codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information
CRE Approval #: 1211

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations, including applicable state regulations.
If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: Timothy J Davis
Signature
Month 12 Day 04 Year 12

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Oscar Giron
Signature: Oscar Giron
Date: Month 12 Day 04 Year 12

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name
Signature
Date: Month Day Year

FACILITY

19. Discrepancy Indication Space
#515831 25 yds

20. Facility Owner or Operator: Certification of receipt of non-hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Juan Cordova
Signature
Date: Month 12 Day 5 Year 12

White - Original Green - TSD Facility Canary - Transporter II Pink - Transporter I Gold-Rod - Generator's first copy

CAMINO REAL LANDFILL

P.O. Box 580 Sunland Park, N.M. 88063 (575) 589-9440

NO 91011

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

GENERATOR

NON HAZARDOUS WASTE MANIFEST	1. Generator's US EPA ID No. NM 5 [illegible]	MANIFEST DOCUMENT NO. [illegible]	2. Page 1 of 1

3. Generator's Name and Mailing Address [illegible]	A. State Manifest Document Number
4. Generator's Phone ( ) [illegible]	B. State Generator's ID
5. Transporter 1 Company Name [illegible]	6. Address [illegible] — C. State Transporter's ID / D. Transporter's Phone
7. Transporter 2 Company Name	8. Address — E. State Transporter's ID / F. Transporter's Phone
9. Designated Facility Name and Site Address Camino Real Environmental Services Inc 1000 Camino Real Blvd Sunland Park, NM 88063	10. US EPA ID Number — G. State Facility's ID [illegible] / H. Facility's Phone [illegible]

11A HM	11. US DOT Description (including Proper Shipping Name, Non Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol.	I. Waste No.
	a. NON RCRA/DOT REGULATED SOLID WASTE	1		1 cu. yd		
	b.					
	c.					
	d.					

J. Additional Descriptions for Materials Listed Above	K. Handling codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

CRE Approval #: 1211

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations, including applicable state regulations.
If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name	Signature	Month	Day	Year
Timothy J. Davis	[signature]	12	06	12

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials		Date		
Printed/Typed Name: Gene Chavez	Signature: [signature]	Month: 12	Day: 06	Year: 12
18. Transporter 2 Acknowledgement of Receipt of Materials		Date		
Printed/Typed Name	Signature	Month	Day	Year

FACILITY

19. Discrepancy Indication Space				
20. Facility Owner or Operator: Certification of receipt of non-hazardous materials covered by this manifest except as noted in Item 19.		Date		
Printed/Typed Name	Signature	Month	Day	Year

White - Original Green - TSD Facility Canary - Transporter II Pink - Transporter I Gold-Rod - Generator's first copy

CAMINO REAL LANDFILL

P.O. Box 580 Sunland Park, N.M. 88063 (575) 589-9440

№ 91012

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

NON HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: NM8800019434
MANIFEST DOCUMENT NO.: 91012
2. Page 1 of 1

3. Generator's Name and Mailing Address
NASA White Sands Test Facility Attn: Antonette Sanchez
14mi. E. 6mi. N. of Las Cruces
Las Cruces, NM 88004
4. Generator's Phone (575) 524-5763

A. State Manifest Document Number
B. State Generator's ID

5. Transporter 1 Company Name: Southwest Disposal
6. Address: 2485 W. Armador Las Cruces, NM 88004
C. State Transporter's ID
D. Transporter's Phone: 575-524-8482

7. Transporter 2 Company Name
8. Address
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address
Camino Real Environmental Services
1000 Camino Real Blvd.
Sunland Park, NM 88063
10. US EPA ID Number
G. State Facility's ID: SWM-030738
H. Facility's Phone: 575-589-9440

GENERATOR

11A HM	11. US DOT Description (including Proper Shipping Name, Non Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol.	I. Waste No.
	a. Non-RCRA/DOT Regulated Solid Waste	1		25 cuyd		
	b.					
	c.					
	d.					

J. Additional Descriptions for Materials Listed Above

K. Handling codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information
CRE Approval #: 1211
Customer ID: Patricia Melendrez / Navarro Research

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations, including applicable state regulations.
If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: Timothy J Davis
Signature
Date: Month 12 Day 5 Year 12

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Oscar Gomez
Signature
Date: Month 12 Day 5 Year 12

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name
Signature
Date: Month Day Year

FACILITY

19. Discrepancy Indication Space
#516144 25 yds

20. Facility Owner or Operator: Certification of receipt of non-hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name: Juan Cordova
Signature
Date: Month 12 Day 5 Year 12

White - Original Green - TSD Facility Canary - Transporter II Pink - Transporter I Gold-Rod - Generator's first copy

CAMINO REAL LANDFILL

P.O. Box 580 Sunland Park, N.M. 88063 (575) 589-9440

№ 91004

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

NON HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: NM 8800019434
MANIFEST DOCUMENT NO.: 91004
2. Page 1 of 1

3. Generator's Name and Mailing Address
NASA WHITE SANDS TEST FACILITY
14 Mi. E. 6mi N. OF LAS CRUCES
LAS CRUCES, NM 88004
ATTN: ANTONETTE SANCHEZ

4. Generator's Phone (575) 524-5763

A. State Manifest Document Number
B. State Generator's ID

5. Transporter 1 Company Name: CLEAN HARBORS ENVIRONMENTAL
6. Address: MAD 039322250
C. State Transporter's ID
D. Transporter's Phone: 701-772-5000

7. Transporter 2 Company Name
8. Address
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address
CAMINO REAL ENVIRONMENTAL SERVICES
1000 CAMINO REAL BLVD.
SUNLAND PARK, NM 88063
10. US EPA ID Number
G. State Facility's ID: SWM-030738
H. Facility's Phone: 575-589-9440

11A HM	11. US DOT Description (including Proper Shipping Name, Non Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol.	I. Waste No.
	a. NON-RCRA/DOT REGULATED MATERIAL/SOLID WASTE	1		25 CY	K	
	b.					
	c.					
	d.					

J. Additional Descriptions for Materials Listed Above
WASTE CONSISTS OF BLACK PARTICULATE (SAND/SOIL)

K. Handling codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information
CAMINO REAL APPROVAL #: CRE-1211 BIN#:

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations, including applicable state regulations.
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Printed/Typed Name: Timothy J. Davis
Signature
Month 11 Day 13 Year 12

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: DAMIAN POPOWYCH
Signature
Date: Month 11 Day 13 Year 12

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name
Signature
Date: Month Day Year

FACILITY

19. Discrepancy Indication Space
CREDIT CARD
511129
25 CY

20. Facility Owner or Operator: Certification of receipt of non-hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: FRANCISCO CELIS
Signature
Date: Month 11 Day 13 Year 12

White - Original Green - TSD Facility Canary - Transporter II Pink - Transporter I Gold-Rod - Generator's first copy

CAMINO REAL LANDFILL

P.O. Box 580 Sunland Park, N.M. 88063 (575) 589-9440

№ 91002

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

NON HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: NM8800019434
MANIFEST DOCUMENT NO.: 91002
2. Page 1 of 1

3. Generator's Name and Mailing Address: NASA White Sands Test Facility, 14 mi E. 6 mi N. of Las Cruces, Las Cruces, NM. 88004 ATTN: Sioux-Lynn Shutt
4. Generator's Phone ( ): (575) 524-5763

A. State Manifest Document Number
B. State Generator's ID

5. Transporter 1 Company Name: Clean Harbors Environmental
6. Address: MAD 039322250
C. State Transporter's ID
D. Transporter's Phone: 701-792-5000

7. Transporter 2 Company Name
8. Address
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address: Camino Real Environmental Services Inc., 1000 Camino Real Blvd., Sunland Park, NM. 88063
10. US EPA ID Number
G. State Facility's ID: SWM-030738
H. Facility's Phone: 505-589-9440

11A HM	11. US DOT Description (including Proper Shipping Name, Non Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol.	I. Waste No.
	a. NON RCRA/DOT Regulated Material/Solid Waste (Waste Consists of windborn particulate sand/soil)	1	CM ~~DM~~	SN 1462	K	
	b.					
	c.					
	d.			25	yds	

J. Additional Descriptions for Materials Listed Above: Waste Consists of black Particulate (Sand/Soil) That was mixed with liquid hazardous waste. Material is contained in Nylon Filter Bags.

K. Handling codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information: CRE-1211 - Camino Real Approval #
Bin # 279000

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations, including applicable state regulations.
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Printed/Typed Name: AS AGENT FOR NAVARRO: Stacie Wood
Signature: Stacie Wood
Month 11 Day 6 Year 12

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Stacie Wood
Signature: Stacie Wood
Date: Month 11 Day 6 Year 12

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name
Signature
Date: Month Day Year

FACILITY

19. Discrepancy Indication Space
H 25 y

20. Facility Owner or Operator: Certification of receipt of non-hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: FRANCISCO CELIS
Signature: Francisco Celis
Date: Month 11 Day 7 Year 12

White - Original Green - TSD Facility Canary - Transporter II Pink - Transporter I Gold-Rod - Generator's first copy

CAMINO REAL LANDFILL

P.O. Box 580 Sunland Park, N.M. 88063 (575) 589-9440

№ 91005

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

NON HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: NM 880001 9434
MANIFEST DOCUMENT NO.: 91005
2. Page 1 of 1

3. Generator's Name and Mailing Address
NASA WHITE SANDS TEST FACILITY
14 mi E. 6 mi N. OF LAS CRUCES
LAS CRUCES, NM 88004
ATTN: ANTOINETTE SANCHEZ
4. Generator's Phone (575) 524-5763

A. State Manifest Document Number
B. State Generator's ID

5. Transporter 1 Company Name: CLEAN HARBORS ENVIRONMENTAL
6. Address: MAD 039322250
C. State Transporter's ID
D. Transporter's Phone: 701-792-5000

7. Transporter 2 Company Name
8. Address
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address
CAMINO REAL ENVIRONMENTAL SERVICES
1000 CAMINO REAL BLVD
SUNLAND PARK, NM 88063
10. US EPA ID Number
G. State Facility's ID: SWM-030738
H. Facility's Phone: 575-589-9440

11A HM	11. US DOT Description (including Proper Shipping Name, Non Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol.	I. Waste No.
	a. NON-RCRA/DOT REGULATED MATERIAL/SOLID WASTE	1		25	K CY	
	b.					
	c.					
	d.					

J. Additional Descriptions for Materials Listed Above
WASTE CONSISTS OF BLACK PARTICULATE (SAND/SOIL)

K. Handling codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information
CAMINO REAL APPROVAL #: CRE-1211 BIN #:

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations, including applicable state regulations.
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Printed/Typed Name: Timothy J Davis
Signature
Month 11 Day 14 Year 12

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: DAMIAN POPOWYCH
Signature
Date: Month 11 Day 14 Year 12

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name
Signature
Date: Month Day Year

FACILITY

19. Discrepancy Indication Space
CREDIT CARD
511400
25 CY

20. Facility Owner or Operator: Certification of receipt of non-hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: FRANCISCO CELIS
Signature: Francisco Celis
Date: Month 11 Day 14 Year 12

White - Original Green - TSD Facility Canary - Transporter II Pink - Transporter I Gold-Rod - Generator's first copy

CAMINO REAL LANDFILL

P.O. Box 580 Sunland Park, N.M. 88063 (575) 589-9440

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

NO. 91006

NON HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: NM 88000 19434
MANIFEST DOCUMENT NO.: 91006
2. Page 1 of 1

3. Generator's Name and Mailing Address
NASA WHITE SANDS TEST FACILITY
14mi E. 6mi N. OF LASCRUCES
LAS CRUCES, NM 88004
ATTN: ANTOINETTE SANCHEZ
4. Generator's Phone (575) 524-5763

A. State Manifest Document Number
B. State Generator's ID

5. Transporter 1 Company Name: CLEAN HARBOR ENVIRONMENTAL
6. Address: MAD 039322250
C. State Transporter's ID
D. Transporter's Phone: 701-792-5000

7. Transporter 2 Company Name
8. Address
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address
CAMINO REAL ENVIRONMENTAL SERVICES
1000 CAMINO REAL BLVD
SUNLAND PARK, NM 88063
10. US EPA ID Number
G. State Facility's ID: SWM-030738
H. Facility's Phone: 575-589-9440

11A HM	11. US DOT Description (including Proper Shipping Name, Non Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol.	I. Waste No.
	a. NON-RCRA/DOT REGULATED MATERIAL/SOLID WASTE	1			K	
	b.					
	c.					
	d.					

J. Additional Descriptions for Materials Listed Above
WASTE CONSISTS OF BLACK PARTICULATE (SAND/SOIL)

K. Handling codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information
CAMINO REAL APPROVAL #: CRE-1211 BIN #: 279050

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations, including applicable state regulations.
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Printed/Typed Name: Timothy J Davis
Signature
Date: Month 11 Day 14 Year 12

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name
Signature
Date: Month Day Year

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name: DAMIAN POPOWYCH
Signature
Date: Month 11 Day 14 Year 12

19. Discrepancy Indication Space
TICKET 511206
25 CY

20. Facility Owner or Operator: Certification of receipt of non-hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Site Manager
Signature
Date: Month 11 Day 14 Year 12

GENERATOR — TRANSPORTER — FACILITY

White - Original Green - TSD Facility Canary - Transporter II Pink - Transporter I Gold-Rod - Generator's first copy

CAMINO REAL LANDFILL

P.O. Box 580 Sunland Park, N.M. 88063 (575) 589-9440

№ 91003

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

NON HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: NM 8800019434
MANIFEST DOCUMENT NO.: 91003
2. Page 1 of 1

3. Generator's Name and Mailing Address
NASA WHITE SANDS TEST FACILITY
14 MI. E. 6 MI N. OF LAS CRUCES
LAS CRUCES, NM 88004
ATTN: ANTOINETTE SANCHEZ
4. Generator's Phone (575) 524-5763

A. State Manifest Document Number
B. State Generator's ID

5. Transporter 1 Company Name: CLEAN HARBORS ENVIRONMENTAL
6. Address: MAD 039322250
C. State Transporter's ID
D. Transporter's Phone: 701-792-5000

7. Transporter 2 Company Name
8. Address
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address
CAMINO REAL ENVIRONMENTAL SERVICES
1000 CAMINO REAL BLVD.
SUNLAND PARK, NM 88063
10. US EPA ID Number
G. State Facility's ID: SWM-030738
H. Facility's Phone: 575-589-9440

11A HM	11. US DOT Description (including Proper Shipping Name, Non Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol.	I. Waste No.
	a. NON-RCRA/DOT REGULATED MATERIAL/SOLID WASTE (WASTE CONSISTS OF WINDBORNE SAND/SOIL)	1			K	
	b.					
	c.					
	d.					

J. Additional Descriptions for Materials Listed Above
WASTE CONSISTS OF BLACK PARTICULATE (SAND/SOIL)

K. Handling codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information
CRE-1211 - CAMINO REAL APPROVAL #
BIN #: 279015

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations, including applicable state regulations.
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Printed/Typed Name: Timothy J Davis
Signature: [signature]
Month 11 Day 13 Year 12

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: DAMIAN POPOWYCH
Signature: [signature]
Date: Month 11 Day 13 Year 12

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name
Signature
Date: Month Day Year

FACILITY

19. Discrepancy Indication Space
TICK
25 cy

20. Facility Owner or Operator: Certification of receipt of non-hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name
Signature
Date: Month Day Year

White - Original Green - TSD Facility Canary - Transporter II Pink - Transporter I Gold-Rod - Generator's first copy

Appendix C
HWDL Decontamination Fieldnotes

Hazardous Waste Drain Line Decontamination Images

Decontamination of 800 Area HWDL

Collecting Decon. Rinsewater

800 Area HWDL Decontamination Site

Decontaminating clean out with pressure hose

Rinsing HWDL with water in lieu of pressure washer

Collection of decontamination samples

200 Area HWDL Sump

Disconnecting 800 Area HWDL

200 Area HWDL Sump Decontamination

200 Area Primary Sump removal

200 Area Primary Sump Inspection

200 Area Secondary Sump Interior with decontamination residual and lost badge

200 Area Secondary Sump Removal/Inspection

Remaining 200 Area HWDL Sump Pit

800 AREA HWDL D&D RCRA CLOSURE

DATE/TIME: 8/7/12 @ 0700
LOCATION: 800 AREA - DECON STATION 3
PERSONS IN ATTENDANCE: J. GRIFFIN, M. ENGLERT, R. GALAZ, F. GALLEGOS, B. MADRID

0700: TAILGATE SAFETY BRIEFING
0715: STARTED FINAL MOBILIZATION EFFORT (GET COOLING VESTS FROM FD)
0745: SITE ENTRY AT 800 AREA
0750: SITE SAFETY INSPECTION ~~OXDRAGER 45300~~ 8/7/12
- NO SNAKES OR ANIMAL ISSUES
- TRAILER IS ATTACHED TO TRUCK HITCH BUT THE WHEELS WERE NOT CHOCKED. THIS WAS FIXED AT TIME OF INSPECTION
0755: DAILY RCRA INSPECTION
- PASSED WITH NO ISSUES
- WASTECONTAINERS ONSITE ARE EMPTY
  - 4 55 POLY
  - 1 TANKER TRAILER
0804 STARTED TO SET UP EXCLUSION ZONE & EQ
0800 SAFETY CHECK IN WITH FD DISPATCH
0834 DRAGER CHECK
- OX 4530011-ER2C-0118 10/30/12 CAL DATE
- FUEL 4530011-ERTK-0306 9/23/12 CAL DATE
0900 PAR TO FD DISPATCH
0905 DRESS OUT TO START WORK
0913 OPENED PIPE
- WATER WAS FOUND IN LINE AND CAPTURED IN DECON POOL
- DRAGER READING ZERO AT PIPE AND AT SINK
0924 STARTED FIRST DECON RINSE FROM OX SINK TO THE FIRST TEE
0929 STARTED FIRST DECON RINSE FROM FUEL SINK TO TEE
→ NOZZLE ON PRESSURE WASHER IS NOT WORKING THROUGH 90° BENDS IT WILL DO A COUPLE BUT THEN IT

Continued on Page 2

Read and Understood By

Signed 8/7/12 Date Signed 8/7/12 Date

Project ETU CLOSURE Notebook No. 1

Continues from Page

0940 FIRST BREAK DUE TO HEAT
01000 PAR TO FD DISPATCH
01015 DISCONNECTED OX SINK
01018 2.5 GAL OF ALCONOX/WATER MIX DOWN OX SINK AND SCRUB WITH BRUSH TO TEE. BRUSH IS DIFFICULT TO MANUVER THROUGH 90° ANGLES. DECIDED TO CUT THE PIPE AT THE 90° ANGLES AND DECON IN A POOL UNTIL ETU DECON PAD IS AVAILABLE
01032 STARTED FIRST WASH OF PIPE FROM SHOWER TO TEE WITH PRESSURE WASHER
01041 SECOND BREAK DUE TO HEAT ← 0100 PAR WITH FD DISPATC
01115 ENTERED EXCLUSION ZONE
01122 STARTED DECON WASH OF CUT PIPE WITH PRESSURE WASHER. FIRST CUT PIPE INTO 3FT SECTIONS. THEN PRESSURE WASHED EACH SECTION
01136 BEGAN 2ND WASH WITH ALCONOX SOLUTION AND A BRUSH.
01141 2ND MAN BEGAN 3RD RINSE ON ALCONOX BRUSHED PIPE TO EXPEDITE THE PROCESS
01147 COMPLETED TRIPLE RINSE
01149 THIRD BREAK DUE TO HEAT
01200 PAR TO FD DISPATCH
01219 ENTERED EXCLUSION ZONE TO PUMP OUT DECON POOLS
01222 BEGAN PUMPING OUT DECON POOLS
01231 DOWNGRADE PPE TO LEVEL D NO HAZARD PRESENT AFTER REMOVAL OF DECON WATER FROM POOL. ALL OPEN PIPE HAS BEEN TRIPLE RINSED
01248 END OF HAZWASTE JOB
- WASTE IS PACKAGED AND DATED
- MINOR CLEAN UP NEEDS TO BE COMPLETED BEFORE TOMORROWS MOVE TO NEW LOCATION
- GENERATED 6 GALLONS OF CONTAM DEBRI
35 GALLONS TRIPLE RINSED PIPE
8 GALLONS DECON WATER

Continued on Page

Read and Understood By

Signed 8/17/12 Date Signed 8/17/12 Date

800 AREA HWDL P&D RCRA CLOSURE

DATE/TIME: 8/8/12 @ 0650
LOCATION: 800 AREA EXPANSION JOINT #1 to #2
PERSONS IN ATTENDANCE: J. GRIFFIN; M. ENGLERT; R. GALAZ, F. GALLEGOS
WORK AUTHORIZATION DOCS: JHA-044
TPS-401
TPS-403
ETU CLOSURE PLAN
WEATHER: CLOUDY SKIES WITH RAIN IN DISTANCE
76° TEMP

0700 TAIL GATE SAFETY BRIEFING
0730 PAR. TO FD DISPATCH
0741 SITE SAFETY INSPECTION
- NO SNAKES
- WEATHER IS AN ISSUE WITH RAIN IN THE DISTANCE
0800 RCRA DAILY INSPECTION
- PASSED WITH FLYING COLORS
0801 DRAGER CHECK
- OX 4530011 - ER2C-0118 10/30/12 CAL DATE
- FUEL 4530011 - ERTK-0306 9/23/12 CAL DATE
0813 DRESS OUT AND ENTER INTO THE EXCLUSION ZONE
0817 OPENED UP PIPE END (LIVE PIPE CONNECTED TO SUMP + ETU - DRAGER READINGS = 0)

0818 CUTTING OFF THE 90° EXPANSION JOINTS
0819 BEGAN TRIPLE RINSE OF 90° EXPANSION JOINT INSIDE A DECON POOL
0820 ALCONOX RINSE of 90° EXPANSION JOINT WITH
~~0821 TH~~ BRUSH SCRUBING
0821 THIRD RINSE
0822 BEGAN RINSE OF STRAIGHT PIPE
- HIGH PRESSURE HOSE IS FEEDING THROUGH WITH A BIT OF EFFORT

Continued on Page 4

Read and Understood By

Signed 8/8/12 Date Signed 8/8/12 Date

Project ETU CLOSURE Notebook No. 1

Continues from Page 3

-- THE HOSE WILL ONLY GO SO FAR INTO THE PIPE BEFORE IT GETS STUCK
- MARK HOSE AND NOW PULLING OUT. WILL MEASURE TO DETERMINE HOW FAR
-

0835 AS THE HOSE WAS BACKED OUT WATER CAME WITH IT. A FEW DROPS GOT ON THE ROCKS. ROCKS WERE PICKED UP AND PUT IN DECON POOL. ADDED PLASTIC UNDER IT AND A 5-GAL BUCKET. --SOFT

0837 FIRST BREAK

0856 DONNED PPE AND ENTERED EXCLUSION ZONE

0900 PAR TO FD DISPATCH

0901 STARTED ALCONOX/WATER RINSE OF HWDL SECTION USING A FUNNEL TO TRY AND LOOSEN UP OR LUBRICATE PIPE FOR PRESSURE WASHER

0905 STARTED PRESSURE WASHER AGAIN LINE IS EITHER OBSTRUCTED OR HOSE IS BINDING

0910 STOPPED WORK TO DISCUSS & PLAN SOLUTION

0930 EXPANDED EXCLUSION ZONE TO 75FT SO WE CAN CUT THE PIPE AND DETERMINE IF THERE IS AN OBSTRUCTION

0953 DONNED PPE AND ENTERED NEW EXCLUSION

0956 CUT THE PIPE
-- DRAGER READING WAS ZERO FOR OX & FUEL

0100 PAR TO FD DISPATCH

0105 STARTED TO DRY RUN THE HOSE DOWN THE PIPE. THERE IS NOT AN OBSTRUCTION. IT APPEARS THAT THE HOSE IS BINDING UP IN THE LINE

0110 TRIED TO PRESSURE WASH THE NEXT 50FT OF PIPE FROM THE CUT TOWARD THE 2ND EXPANSION JOINT. HOSE WILL ONLY GO ABOUT 50FT BEFORE IT BINDS UP.

0117 HAVING BETTER SUCCESS THIS ROUND GETTING THE HOSE DOWN THE PIPE. GOT IT TO THE 90° ON THE 2ND EXPANSION LOOP.

Continued on Page 5

Read and Understood By

Signed 8/8/12 Date Signed 8/8/12 Date

01019 GOT THE PRESSURE WASHER PAST THE FIRST 90° ANGLE ON THE EXPANSION LOOP. WENT ABOUT
01020 ~~85~~ 90 FT AND THEN WENT THROUGH FIRST 90° ~~85~~ BUT GOT STUCK AT 2ND 90°
01030 STARTED TO SHUT DOWN THE SITE DUE TO BUILDING THUNDERSTORM
- PACKAGED WASTE 5 GAL DECON WATER
5 GAL (2 BAGS) PPE CONTAM
~~85 GAL~~ DEBRIS
5 GAL BULK DEBRIS
→ TRIPLE RINSED PIPE
- SECURED SITE
- WRAPPED PIPE ENDS WITH PLASTIC AND TAPE
- DEMOB OF GEAR
01100 BRANDON MADRID VISITED SITE TO INFORM US OF A ~~TEST~~ TEST TOMMOROW IN 836. WE ARE NOW PLANNING TO START AT 2ND EXPANSION JOINT DUE TO RESTRICTED ACCESS.

8/8/12

Continued on Page

Read and Understood By

Signed 8/8/12 Date Signed 8/8/12 Date

Project ETU CLOSURE Notebook No. 1

Continues from Page

800 AREA HWDL D&D RCRA CLOSURE

DATE/TIME: 8/9/12 @ 0710
LOCATION: 800 AREA EXPANSION JOINT #2 TO DECON STATION #2
PERSONS IN ATTENDANCE: J. GRIFFIN, R. GALAZ, F. GALLEGOS, M. ENGLERT
WORK AUTHORIZATION DOCUMENTS: JHA-044, TPS-401, TPS-403, ETU CLOSURE PLAN
WEATHER: SKY IS CLEAR ~80°F

0710 TAILGATE SAFETY BRIEFING
0730 SAFETY WALKDOWN
— NO SNAKES
- SLOPE DROP ON EAST SIDE OF PIPE IS MORE SEVERE. VERY SEVERE NEAR DECON STATION #2.
0815 PAR TO FD DISPATCH
0816 SET UP EXCLUSION ZONE
0840 SUITED UP AND STARTED WORK
0842 CUT EXPANSION JOINT #2. DRAGER READING WAS ZERO
0848 FIRST BREAK — 82°F
0900 DONNED PPE AND ENTERED EXCLUSION ZONE
~~0904~~ CUT LINE JUST PAST DECON STATION #2
0904 HAD A LOT OF WATER IN IT. CAUGHT WATER IN A 5-GAL BUCKET. DRAGER WAS ZERO SEALED OFF PIPE END WITH PLASTIC.
0908 STARTED TO DISCONNECT SINKS. STARTED AT OX SINK. THE SLOPE IS TO DANGEROUS SO WE ARE REMOVING THE PIPE FOR DECON AT A SAFER LOCATION
0922 2ND BREAK — 84°F
0936 DONNED PPE AND ENTERED EXCLUSION ZONE 86°F
0940 SET UP TO DECON PIPE THAT WAS REMOVED

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0945 STARTED HAVING ISSUES WITH PRESSURE WASHER. SPENT SOME TIME TROUBLESHOOTING AND GOT IT WORKING

0952 STARTED 1ST DECON RINSE OF REMOVED PIPE USING PRESSURE WASHER

- ONE MAN IS PRESSURE WASHING WHILE OTHER DOES ALCONOX RINSE & BRUSHES THE PIPE
- CLEAN PIPE IS TRANSFERED TO A 2ND DECON POOL FOR WASTE PACKAGING
- DECON IS BEING DONE IN A DECON POOL SO THE WATER CAN BE COLLECTED

01000 PAR TO FD DISPATCH

01015 3RD BREAK 87°F

01033 DONNED PPE TO PUMP OUT DECON WATER 89°F

01047 HAZ SITE SECURED. PERSONNEL REMOVED PPE AND BEGAN TO SHUT DOWN PROJECT SITE FOR THE DAY. TEMP IS 89°F

- WASTE GENERATED
  - 12 GALLONS DECON WATER ADDED TO THE TANKER
  - 6 GALLONS PPE CONTAM DEBRIS
  - TRIPLE RINSED PIPE (~50-60 FT of PIPE)

STORED IN ROLL OFF AT ETU

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800 AREA HWDL ~~DAD~~ RCRA CLOSURE

DATE/TIME: 8/10/12, 0700
LOCATION: 800 AREA - PIPING REMOVAL AND DECON FROM 1ST EXPANSION JOINT TO 2ND EXPANSION JOINT
PERSONS IN ATTENDANCE: J. GRIFFIN, M. ENGLERT, R. GALAZ, F. GALLEGOS, D. SHARP

WORK AUTHORIZATION: JHA-044, TPS-0401, TPS-0403, ETU CLOSURE PLAN
WEATHER: CLEAR SKIES, 71°F

0700 TAILGATE SAFETY BRIEFING
0735 ENTERED 800 AREA
0745 PAR TO FD DISPATCH
0750 SITE SAFETY INSPECTION
RCRA INSPECTION — NO ISSUES
- ALSO NO ISSUES AT ROCK OFF LOCATED AT ETU
0800 SITE SET UP
- STALL TO TRACK DOWN REVISED PPE FROM YESTERDAY
0840 PPE ISSUES RESOLVED ~~STARTED TO~~ COMPLETED
SITE SET UP.
0843 DRAGER CHECK
- OX 4530011 - ER2C-0118 10/30/12 CAL DATE
- FUEL 4530011 - ER1K-0306 9/23/12 CAL DATE
0906 82°F, DRESS OUT IN REVISE PPE
- RUBBER BOOTS
- GLOVES
- TYVEK LAB COAT
0910 OPENED PIPE END DRAGER READING ZERO
0915 CUT THE PIPE INTO 10FT SECTIONS FOR DECON
0917 STARTED DECON WASH~~OFF~~ OF PIPE

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- HIGH PRESSURE WASH, RINSE AND SCRUB OF PIPE WITH BRUSH AND ~~ALONOX~~ ALCONOX SOLUTION, FINAL RINSE WITH PRESSURE WASHER
- TRIPLE RINSED PIPE IS PLACED ON PLASTIC TO BE WRAPPED FOR WASTE MANAGEMENT

0935 SMALL SPILL AT 800 AREA - RINSATE TO GROUND
- PICKED UP SPILL WITH A SHOVEL AND CONTAINED IN 5 GAL BUCKET

0941 ~~0849~~ NOTIFIED ANTONETTE
0943 ~~0848~~ NOTIFIED AMANDA
0946 ~~0946~~ LEFT MESSAGE WITH TIM DAVIS ON OFFICE AND CELL PHONE

0952 SENT EMAIL TO PATRICK TO GET A CONTAINER AND LABEL
0958 RETURNED TO WORK DOING DECON OF PIPE
01000 PAR TO FD DISPATCH
01013 COMPLETED TRIPLE RINSE OF ~ 140 FT OF HWDL PIPE
01015 STARTED TO PUMP OUT DECON RINSE WATER FROM THE DECON POOL TO THE ~~TANKER~~ ~~TRAILER~~ TRAILER ~ 15 GAL
01022 HAZ SITE SECURE. STARTING TO CLOSE DOWN PROJECT SITE FOR WEEKEND.
- WASTE GENERATED
  - 1 GAL CONTAMINATED SOIL
  - 15 GAL DECON WATER
  - 140 FT TRIPLE RINSED PIPE
  - 1 GAL CONTAMINATED DEBRIS (PPE)
- SECURED OPEN PIPE END WITH CAP AND DOUBLE BAG WITH TAPE.
- TRANSFERED PIPE TO ROLL OFF AT ETU

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800 AREA HWDU CLOSURE

DATE/TIME: 8/27/12

LOCATION: 800 AREA → PIPING FROM DECON STATION #2 to DECON STATION #1

PERSONS IN ATTENDANCE: B. GAUZ, M. ENGLERT, J. GRIFFIN, M. DUNFORD

WORK AUTHORIZATION: JHA-044, TPS-0401, TPS-0403, ETU CLOSURE PLAN

WEATHER: 72°F, PARTLY CLOUDY SKIES, SLIGHT BREEZE

0800 TAILGATE SAFETY BRIEFING

0820 ENTERED 800 AREA AND STARTED SITE SET UP

0822 PAR TO FD DISPATCH

0846 DRAGER CHECK
- OX 4530011, ERZC-0118 10/30/12 CAL DATE
- FUEL 4530011, ERTK-0306 9/23/12 CAL DATE

0858 WATER SPIGOT ~~TO~~ THAT WILL PROVIDE WATER FOR DECON TODAY HAS A RUST ISSUE OR POSSIBLY A SILT ISSUE. A PHOTO WAS TAKEN FOR THE RECORD SHOWING THE DISCOLORED WATER.

0905 DRESSED OUT IN PPE TO START WORK

0911 STARTED CUTTING PIPE INTO 10 FT SECTIONS FOR DECON. DRAGER READINGS WERE ZERO. THERE IS MOISTURE IN THE PIPE. PIPE END ARE BEING TAPED OFF WITH PLASTIC TO PREVENT A SPILL WHILE THE PIPE SECTIONS ARE MOVED TO DECON PAD

0926 GASSED UP THE PRESSURE WASHER. PUT THE PRESSURE WASHER ON PLASTIC TO PREVENT A SPILL TO GROUND.

0935 RCRA INSPECTION OF 90 DAY STORAGE AREA

0937 STARTED 1ST DECON RINSE OF CUT PIPE. CUT APPROXIMATELY 80 FT OF PIPE.
- PRESSURE WASH
- RINSE WITH ALCONOX SOLUTION

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- BRUSH PIPE
- RINSE WITH ALCONOX
- PRESSURE WASH

0957 COMPLETED DECON OF FIRST 80FT OF PIPE REMOVED
0958 FIRST BREAK (82°F)
01025 REMOVE DECON WATER FROM POOL AND PUMP INTO TANKER - WORKING TO SECURE SITE FOR A LUNCH BREAK. THIS INCLUDES WRAPPING UP PIPE ALREADY DECONTAMINATED THIS MORNING
- PUMPING 12 GAL OF WATER INTO THE TANK; 2 GAL PPE
- WRAPPED 80FT OF PIPE IN PLASTIC, PUT A TRIPLE RINSED STICKER ON IT AND TRANSFERRED TO ROLL OFF

01040 SECURED SITE FOR A LUNCH BREAK
01250 PAR TO FD DISPATCH
- RESET SITE TO ALLOW FOR REMOVAL OF THE PIPE FROM 3RD EXPANSION LOOP TO THE SINKS IN DECON STATION #1

0109 DRAGER CHECK
WEATHER - 89°F, CLOUDS BUILDING OVER MOUNTAINS
0120 STARTED TO REMOVE PIPE IN 10-FT SECTIONS
0125 CUT PIPE AT LOCATION WHERE IT GOES UNDERGROUND. DRAGER READINGS WERE ZERO. TAPED OFF THE STUB OUTS WITH PLASTIC
0130 (1330) NASA PHOTOGRAPHER ARRIVED ONSITE
0151 (1351) STARTED DECON OF PIPE
0210 (1410) FINISHED DECON OF PIPE
0220 (1420) STARTED TO SHUT DOWN SITE FOR THE DAY
- PUMPED ANOTHER 12 GAL OF DECON WATER TO TANKER
- WRAPPED 30FT OF DECONNED PIPE FOR TRANSFER TO ROLL OFF BIN
- 5 GAL PPE ADDED TO DRUM

TOTAL
- 110 Ft PIPE
- 24 GALLONS DECON WATER
- 7 GALLONS PPE

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800 AREA HWDL CLOSURE

DATE/TIME: 8/28/12, 7:30 AM
LOCATION: 800 AREA - PIPING FROM DECON STATION #1 TO FIRST CLEAN OUT
PERSONS IN ATTENDANCE - J. GRIFFIN, M. ENGLERT, B. GALAZ, M. DUNFORD
WORK AUTHORIZATION: JHA-044, TPS-401, TPS-403, ETU CLOSURE PLAN
WEATHER: SUNNY, PARTLY CLOUDY

0730 TAILGATE BRIEFING
- NEW HAZARDS DUE TO CHANGES IN EQUIPMENT - UNDERGROUND / HANDTOOL
- USE DRAGERS TO MONITOR OPEN PIPE CLEAN OUT FOR UNDERGROUND PIPING

0815 COLLECTING NEWLY IDENTIFIED EQUIPMENT
- FLASH LIGHT
- BAILING WIRE
- BRUSHES

0820 DRAGER CHECK
- OX 4530011, ER2C-0118 10/30/12 CAL
- FUEL 4530011, ERTK-0306 9/23/12 CAL

0910 ENTERED LOCATION. FIRST JOB IS TO ~~DISCONNECT~~ ~~AND~~ OPEN THE PIPE CLEAN OUT BY REMOVING THE FLANGE.
- THE FLANGE IS ~~CAULKED~~ CAULKED WITH RUBBER/SILICON. THIS IS MAKING REMOVAL OF THE FLANGE DIFFICULT
- USED A SCREW DRIVER AND A HAMMER TO DISLODGE THE FLANGE FROM THE SILICON
- ONCE REMOVED + MONITORED WITH DRAGER READINGS WERE ZERO
- CLEAN OUT IS 4" INNER DIAMETER

0920 IDENTIFIED ANOTHER CLEAN OUT IN 800 AREA NEAR DECON STATION ~~#2~~ #1. PIPING IS ROUTED A BIT DIFFERENT THEN

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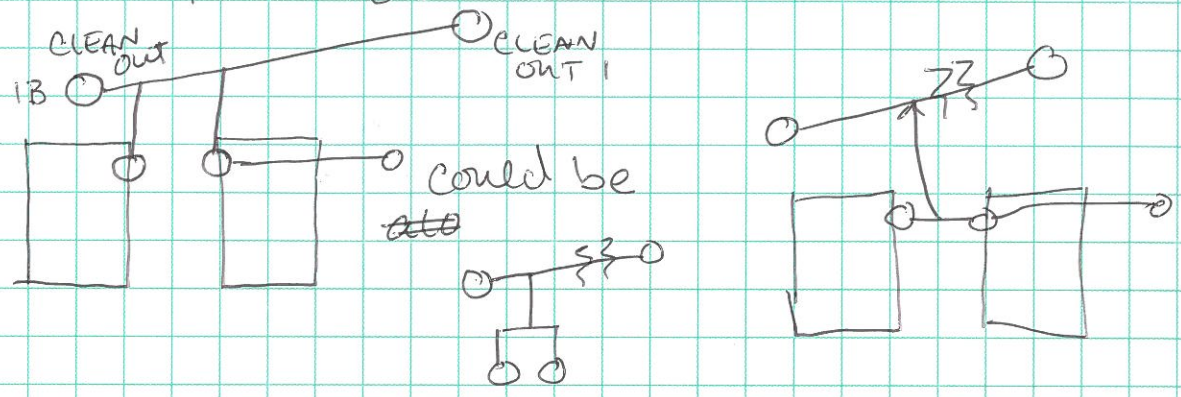
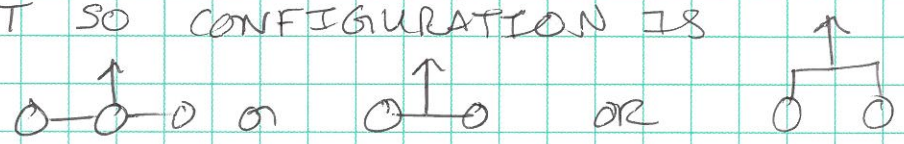
PREVIOUSLY THOUGHT, SEE PHOTOS AND THE DIAGRAM PROVIDED BELOW.



- OPENED NEWLY ID'd CLEAN OUT AND GET DRAGER MONITOR IT. READINGS WERE ZERO.

0940 - STARTED TO DRY RUN FISH TAPE FROM SINK AT DECON STATION #1
  - OX SINK DRAIN WAS MANUVERABLE
  - ~~FU~~ - FUEL SINK DRAIN (FORMER) WAS NOT SO CONFIGURATION IS



- DRY RUN FISH TAPE - GOT 49-FT AND THEN GOT STUCK
  - TECHS THINK THE FISH TAPE IS COILING BACK ON ITSELF DUE TO THE LARGE DIAMETER OF PIPE
- DRY RUN FROM SINKS TO CLEAN OUT WITH THE PRESSURE HOSE.
  - BOTH DRAINS WERE MANUVERABLE
- DRY RUN WITH PRESSURE WASHER HOSE FROM CLEANOUT 1B TO CLEANOUT #1. - NO LUCK
- DRY RUN WITH ~~FISH TAPE/HOSE FROM CLEANO~~ THE FISH TAPE AND HOSE IN THE REVERSE FROM ~~SE~~ CLEANOUT #1 TO 1B - SUCCESS THE FISH TAPE SHOWED UP AT CLEANOUT 1B.

0100D - NOW SEAL UP OPEN DRAINS AND

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LOOK AT NEXT SECTION OF UNDERGROUND.

01010 PAR TO FD DISPATCH.

01015 DRY RUN WITH FISH TAPE FROM CLEAN OUT #1 TO CLEAN OUT #2.

- 151 FT AND GOT STUCK
- CLEAN OUT IS ~~4FT~~ 6FT DEEP FROM TOP TO BOTTOM OF TEE.
- CO#1 TO TEE 45° (39FT)] MEASURED
- 141 FT YELLOW POLE TO YELLOW POLE]

01031 OPENED 2ND CLEANOUT AND MONITORED WITH DRAGER

- ZERO READINGS
- DEPTH TO TEE 4FT
- ~~140 FT HIT STOP~~
- ~140 FT TOWARD ~~CO#4~~ SUMP & STUCK

01045 OPENED 3RD CLEAN OUT

- DRAGER MONITORING ZEROS
- DRY RUN WITH FISH TAPE
- THIS CLEAN OUT RUNS TOWARD CO#1
- 150 FT IN DISTANCE BEFORE TAPE BINDS UP AND GETS STUCK

01056 COMPLETED WORK FOR THE DAY TO EVALUATE DATA AN DETERMINE PATH FORWARD.

- NO WASTE GENERATED
- NO PIPE REMOVED OR DECONTAMINATED
- * FIELD ENGINEER RECOMMENDS DEVIATION FROM THE CLOSURE PLAN THAT REMOVES REQUIREMENT TO BRUSH THE PIPE. REVISE TO SIMPLE TRIPLE RINSE
  1. WATER (USING PRESSURE WASHER)
  2. ALCONOX SOLUTION
  3. WATER (USING PRESSURE WASHER)

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800 AREA HWDL CLOSURE

DATE TIME: 8/29/12, 9:30AM

NOTE: AREA WAS CLOSED TO FIELD TEAM THIS MORNING DUE TO AN ALL HANDS MEETING. THE SITE RE-OPENED AT 9:00 AM

LOCATION: 800 AREA HFTA - DECON STATION #1 UNDER-GROUND PIPING TO CO#1 - #1B

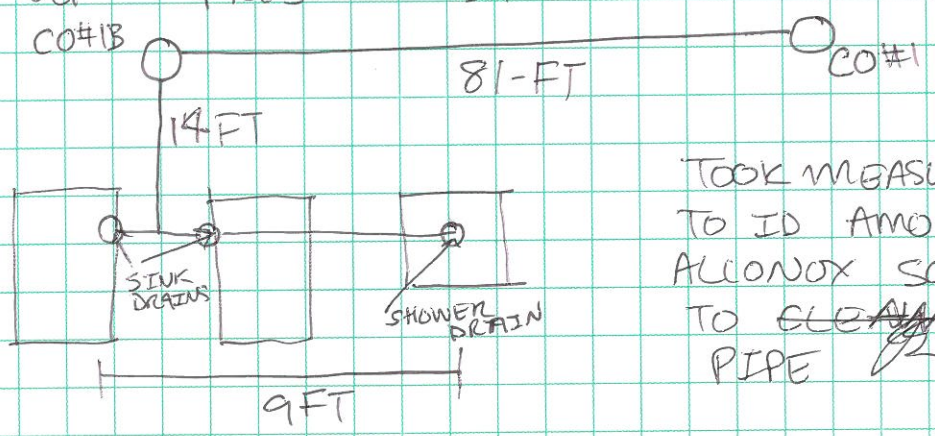
PERSONS IN ATTENDANCE: J. GRIFFIN, M ENGLERT, B. GALAZ, M. DUNFORD

WORK AUTHORIZATION: JHA-044, TPS-401, TPS-403, ETU CLOSURE PLAN

WEATHER: CLEAR SKIES, SUNNY, 80°F

0930 TAILGATE MEETING

0945 SET UP PROJECT SITE FOR WORK



TOOK MEASUREMENTS TO ID AMOUNT OF ALCONOX SOLUTION TO ~~CLEAN~~ CLEAN PIPE

NOTE: PL, NASA PM, AND PE WHO WILL CERTIFY CLOSURE HAVE APPROVED A DEVIATION TO THE CLOSURE PLAN. THE DEVIATION WILL BE AS FOLLOWS:

~~0945~~

1. PRESSURE WASH
2. 10 GALS OF ALCONOX SOLUTION FOR EVERY 100-FT OF PIPE
3. PRESSURE WASH

0956 PAR TO FD DISPATCH

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0958 DRAGER CHECK
- OX 4530011 ERZC-0118 10/30/12 CAL
- FUEL 4530011 ERTK-0306 9/23/12 CAL

01010 OPENED THE TWO PIPE STUB OUTS AND THE TWO DRAINS
- READINGS ARE ZERO AT BOTH CO#1 + CO1B
- READINGS ARE ZERO, AT THE DRAINS

01016 STARTED DECON SEQUENCE AT SINK AND SHOWER DRAINS (2 SINK, 1 SHOWER)
- EQUIPMENT PROBLEM WITH THE PRESSURE WASHER. STOPPED WORK TO REPAIR. - CLOGGED NOZZLE

01028 RESTARTED DECON SEQUENCE WITH PRESSURE WASHER FROM THE TWO SINK DRAINS

01046 STARTED ALCONOX SOLUTION RINSE FROM SHOWER DRAIN + TWO SINK DRAINS - 5 GALS

01047 STARTED PRESSURE WASH ON PIPE FROM DRAINS TO CO#1B

01054 COMPLETED TRIPLE RINSE OF PIPE FROM DRAINS TO CO#1B

01055 STARTED TRIPLE RINSE WITH PRESSURE WASH FROM CO#1B TO CO#1.

01059 PAR TO FD DISPATCH

01105 BREAK 85°F

01115 SENDING FISH TAPE UP PIPE FROM CO#1 TO CO#1B. THE PURPOSE IS TO ATTACH THE TAPE TO THE PRESSURE WASHER HOSE AND PULL IT THROUGH THE LINE. THEN WE WILL POUR 10 GAL OF ALCONOX SOLUTION DOWN THE LINE AND PULL THE PRESSURE WASHER HOSE BACK UP ~~THRU~~ THE LINE.

01150 STARTED TO PULL PRESSURE WASHER HOSE THROUGH THE HWDL AND ~~PERFORM~~ ~~PEFORM~~ FIRST RINSE OF LINE FROM CO#1B TO CO#1

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01201 POURED ALCONOX SOLUTION DOWN THE PIPE
01203 STARTED THIRD RINSE BY PULLING THE PRESSURE WASHER HOSE BACK ~~THOUG~~ THROUGH THE LINE.
01204 COMPLETED TRIPLE RINSE OF LINE
01205 STARTED TO SHUT DOWN SITE FOR THE DAY
- 2 GALLONS OF PPE WASTE GENERATED
- ~105 FT HWDL DECONTAMINATED BY TRIPLE RINSE

NOTE: NEED TO FIND WATER SOURCES FOR NEXT FEW DAYS OF DECON WORK ON THE UNDER GROUND PIPE.

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800 AREA HNDL CLOSURE

DATE/TIME: 8/30/12
LOCATION: 800 AREA - UNDERGROUND PIPING FROM CO#1 TO CO#2/3 AND THEN TO SUMP [BETWEEN BLDG 801 AND 803/4]
PERSONS IN ATTENDANCE: J. GRIFFIN, B. GALAZ, M. ENGLERT, M. DUNFORD
WORK AUTHORIZATION: JHA-044, TPS-0401, TPS-0403, ETU CLOSURE PLAN
WEATHER: CLEAR SKIES, 78°F

0730 TAILGATE SAFETY BRIEFING
0800 PICK UP EXTRA EQUIPMENT FOR TRAFFIC SAFETY NOW THAT WE ARE WORKING NEAR THE ROAD.
0830 STARTED SITE SET UP.
0910 DRAGER CHECK
- OX 453001 ERZC-0118 10/30/12 CAL
- FUEL 453001 ERTK-0306 9/23/12 CAL
0919 OPENED UP CO#1 AND MONITORED WITH DRAGER - READINGS WERE ZERO.
0923 STARTED 1ST DECON RINSE OF HNDL PIPE FROM CO#1
- HOSE IS NOT RIGID ENOUGH TO MOVE DOWN THE PIPE BY ITSELF.
- CONNECTING THE HOSE TO THE FISH TAPE AND WILL TRY AGAIN.
0929 STARTED 1ST DECON RINSE AGAIN. THIS TIME CONNECTED TO FISH TAPE. IT WORKED
- LINE KEEPS GETTING STUCK AT ABOUT 39FT ~~39-FT~~ (7-FT DROP FROM CLEAN OUT TO TEE). WE BELIEVE THAT THE LINE KEEPS GETTING STUCK AT THE 45° ANGLE IN THE PIPE.
0945 BREAK
0956 PAR TO FD DISPATCH

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01010 RECONFIGURED. HOOKED THE PRESSURE HOSE TO THE FISH TAPE ABOUT 6-8 INCHES FROM THE END. THE IDEA IS TO SEE IF THE FISH TAPE WILL MANUVER THE 45° FIRST THEN THE HOSE

01016 3RD ATTEMPT TO PRESSURE WASH HWDL FROM CO#1

- STUCK AGAIN
- TRYING TO SEND ALCONOX SOLUTION DOWN WITH IT TO HELP PASS 45°
  - WORKED.
- STUCK AGAIN AT 64-FT
- ADDED A GARDEN HOSE SO WATER CAN BE FLUSHED DOWN THE LINE TO AID THE HOSE
  - SEEMS TO HELPING/WORKING
- ~~148 FT OF PIPE~~
- 143 FT OF HOSE DOWN THE PIPE
  - NO MORE HOSE AVAILABLE

247 FROM CO#1 TO CO#213

01034 STARTED ALCONOX RINSE. 20 GAL OF ALCONOX SOLUTION POURED DOWN THE PIPE

01038 STARTED 3RD RINSE BY PULLING PRESSURE HOSE BACK OUT PIPE AND PRESSURE WASHING.

01042 COMPLETED TRIPLE RINSE OF TOP 147 FEET OF PIPE FROM CO#1 TO CO#2/3.

- PLAN TO PRESSURE WASH THE BOTTOM HALF FROM ~~THE~~ CO#2/3 UP THE PIPE

01047 CLOSED CO#1

01048 BEGAN TO CLOSE DOWN AND SECURE SITE FOR THE WEEKEND

- 1 GAL OF PPE WASTE
- PUT A TRIPLE RINSED STICKER ON CO#1

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800 AREA HWDC CLOSURE

DATE/TIME: 9/6/12, ~~10~~ 01000
LOCATION: ETU DECON PAD - RINSATE SAMPLING
PERSONS IN ATTENDANCE: J. GRIFFIN, A. SANCHEZ, B. GALAZ, F. GALLEGOS
WORK AUTHORIZATION: JHA-044, JHA-043, WII-ENV-0039
WII-ENV-0084, SAP 2012-012
WEATHER: SUNNY, PARTLY CLOUDY

01000 TAILGATE SAFETY BRIEFING
01005 OPENED ROLLOFF BIN AND REMOVED PIPE TO BE RINSATE SAMPLED.
01012 UNLOADED PIPE AT THE ETU DECON PAD
- NOTE: PIPE IS PACKAGED IN PLASTIC AND MARKED WITH A TRIPLE RINSE STICKER THAT HAS THE DATE THE PIPE WAS REMOVED AND DECONTAMINATED.
01031 STARTED TO COLLECT FINAL RINSATE ~~SAMPLES~~ FROM PIPE REMOVED BETWEEN 8/7 - 8/9
- NOTED THAT THE RINSATE WATER IS STILL CLOUDY AND HAS SMALL BLACK PARTICULATE (TOOK A PHOTOGRAPH)
01047 COMPLETED RINSATE ~~SAMPLES~~ COLLECTION FROM PIPE REMOVED 8/7 - 8/9
01050 COLLECTED SAMPLES ~~HYDRAZINES~~ FOR PIPE 8/7 - 8/9

~~120906058~~

NA	120906 1050	HYDRAZINE	ICE	40ML AMBER GLASS	WSTF
2-059-001	120906 1055	VOC	HCL	3, 40ML Clear GLASS	ALS ~~LOC AS~~
2-059-003	120906 1057	GLYCOL	ICE	3, 40ML CLEAR GLASS	ALS ~~LOC AS~~
052812-21	120906 1059	METALS	HNO3	1, 8oz PLASTIC ~~GLA~~	ALS ~~LOC AS~~
052812-21	120906 1100	FREE CYANIDE	NaOH	1, 8 oz PLASTIC	ALS ~~LOC AS~~
LOT	SAMP ID	ANALYSIS	PRES	CONT	LAB

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LOT	SAMP ID	ANAL	PRES	CONT	LAB
042312-1Q	1209061102	SVOC	ICE	4, 1-L Amber GLASS	COL

01024 → SECURED SITE AND BROKE FOR LUNCH
~~01018~~ RESUMED FIELD WORK AND PREPARED TO
1301 DO THE NEXT SECTION OF PIPE
~~01062~~ BEGAN TO COLLECT FINAL RINSATE FROM
1306 PIPE REMOVED 8/10/12.
- WATER FROM THIS SECTION IS CLEANER
- PIPE IS ROLLED WHILE WATER IS RINSED THRU IT
1319 ~~01119~~ COLLECTING SAMPLES FROM PIPE REMOVED 8/10/12

SAMP ID	LOT	ANAL	PRES	CON	LAB
1209061319 ~~1209011~~	NA	HYDRAZINE	ICE	1, 40mL AMBER GLASS	WSTF
1209061320 ~~1209012~~	2-059-001	VOC	HCl	3, 40mL CLEAR GLASS	ALS ~~COL~~
1209061323 ~~1209013~~	2-059-003	GLYCOL	ICE	3, 40mL CLEAR GLASS	ALS ~~COL~~
1209061325 ~~1209015~~	052812-2V	METALS	HNO_3	1, 8oz PLASTIC	ALS ~~COL~~
1209061326 ~~1209016~~	052812-2V	FREE CYANIDE	NaOH	1, 8oz PLASTIC	ALS ~~COL~~
1209061327 ~~1209017~~	042312-1Q	SVOCs	ICE	4, 1-L AMBER GLASS	ALS ~~COL~~

1340 ~~01409~~ COLLECTING DUPLICATE SAMPLES FROM PIPE REMOVED 8/10/12.

SAMP ID	LOT	ANAL	PRES	CON	LAB
1209061343	NA	HYDRAZINE	ICE	1, 40mL AMBER GLASS	WSTF
1209061346	2-059-001	VOC	HCL	3, 40mL CLEAR GLASS	ALS ~~COL~~
1209061348	2-059-003	GLYCOL	ICE	3, 40mL CLEAR GLASS	ALS ~~COL~~
1209061349	052812-2V	METALS	HNO3	1, 8oz PLASTIC	ALS ~~COL~~

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SAMP ID	LOT	ANAL	PRES	CONT	LAB ~~COC~~
1209061350	052812-2V	FREE CYANIDE	NaOH	1, 8oz PLASTIC	ALS ~~COC~~
1209061351	042312-1Q	SVOC	ICE	4, 1L AMBER	ALS ~~COC~~

NOTE: ALL RINSATE SAMPLED WAS COLLECTED IN 5-GAL PLASTIC BUCKETS, ONE BUCKET FOR EACH SECTION OF PIPE REMOVED.

~~0208~~ 0906

0906 BEGAN TO COLLECT RINSATE FROM LAST SECTION OF PIPE REMOVED 8/27/12.

1417 COLLECTING SAMPLES FROM PIPE REMOVED 8/27/12

SAMP ID	LOT	ANAL	PRES	CONT	LAB ~~COC~~
1209061417	NA	HYDRAZINE	ICE	1, 40mL AMBER GLASS	WSTF
1209061418	2-059-001	VOC	HCL	3, 40mL CLEAR GLASS	ALS ~~COC~~
1209061420	2-059-003	GLYCOL	ICE	3, 40mL CLEAR GLASS	ALS ~~COC~~
1209061422	052812-2V	METALS	HNO_3	1, 8oz PLASTIC	ALS ~~COC~~
1209061423	052812-2V	FREE CYANIDE	NaOH	1, 8oz PLASTIC	ALS ~~COC~~
1209061424	042312-1Q	SVOC	ICE	4, 1-L AMBER GLASS	ALS ~~COC~~

1433 COMPLETED SAMPLING FOR THE DAY.
- REWRAPPED PIPE AND PUT BACK ~~INTO~~ INTO STORAGE IN THE ROLL OFF
- GENERATED 1.5 GAL PPE AND PAPER WASTE
- DELIVERED HYDRAZINE SAMPLES TO THE WSTF LAB.

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Signed 9/6/12 Date

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800 AREA HWDL CLOSURE

DATE/TIME: 9/10/12
LOCATION: 1637

0930 PACKAGED AND SHIPPED SAMPLES COLLECTED ON 9/6/12 IN TWO COOLERS TO COLUMBIA LABORATORIES. → TO WAREHOUSE 0100

CONFIRMED WITH WSTF LAB THAT HYDRAZINE SAMPLES HAVE BEEN ANALYZED.

9/10/12

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800 AREA HNDL CLOSURE

DATE/TIME: 9/17/12 ; 8:00 AM
LOCATION: 800 AREA BEHIND 803 AT CO#2/3
PERSONS IN ATTENDANCE: B. GALAZ, M. ENGLERT, J. GRIFFIN
(1) TRAINED TWO NEW TECHS TO ~~SSHAP~~ SSHASP + JHA-044
- C. DEL FERRARO
- R. TUFTS

WORK AUTHORIZATION: JHA-044, TPS-401, TPS-403, ETU CLOSURE PLAN
WEATHER: SUNNY, CLEAR SKIES, 68°F
NEW HAZARD: TRAFFIC CONTROL IN BACK PARKING LOT. SEWER LINE PROJECT HAS EXTRA HEAVY EQUIPMENT TRAFFIC IN THE AREA
- PLAN TO USE CAUTION TAPE AND TRAFFIC STANTIONS TO ISOLATE PART OF THE AREA. M. ENGLERT AND EXTRA TECH WILL PROVIDE TRAFFIC MONITORING AND CONTROL.

0800 TAILGATE
0815 • BRIEFED TWO NEW TECHS TO SSHASP AND JHA-044
• STARTED SITE SET UP.
• 220 FT FROM CO#2/3 TO SUMP
0900 CALIBRATION CHECK DRAGER
- OX 4530011 ERZC-0118 10/30/12
- FUEL 4530011 ERTK-0306 9/23/12
0903 PAR TO FD DISPATCH
0905 STARTED FIELD WORK
- PREPARED ALCONOX SOLUTION (5-5GAL BUCKETS).
0913 REMOVED FLANGE LID FROM CO#2
0915 REMOVED FLANGE LID FROM CO#3
→ DRAGER READING = 0 FOR OX + FUEL
→ DRAGER READING = 0 FOR OX + FUEL

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0920 WATER BREAK
0936 RESUMED WORK
0941 STARTED FINAL PRESSURE WASHER RINSE OF PIPE FROM CO#2/3 UP TOWARD CO#1
(#1) FIRST ATTEMPT WAS WITH PRESSURE WASHER HOSE ALONE. ONLY WAS ABLE TO GET ABOUT 10-FT UP THE PIPE
(#2) SECOND ATTEMPT WAS WITH HOSE ATTACHED TO A ELECTRICAL FISH TAPE.
0952 → FISH TAPE HAS RUSTED OR BINDED UP DUE TO PREVIOUS USE
→ WAS ABLE TO UNBIND THE FISH TAPE BY TYING OFF AND PULLING IT APART
0956 PAR TO FD DISPATCH
01002 RESUMED 2ND ATTEMPT TO PRESSURE WASH HWDL PIPE FROM CO#2/3 UP TOWARD CO#1
→ PRESSURE WASHER HOSE WAS PUSHED UP PIPE 103-FT COMPLETING THE TRIPLE RINSE OF THIS SECTION OF PIPE
→ PULLED ~~HOS~~ HOSE OUT OF PIPE WHILE RUNNING PRESSURE WASHER NOZZLE TO CLEAN LINE
01015 COMPLETED TRIPLE RINSE OF HWDL FROM CO#1 to CO#2/3
01017 STARTED 1ST RINSE OF HWDL PIPE GOING TOWARD THE SUMP FROM CO#2/3.
(#1) USE PRESSURE WASHER HOSE & NOZZLE TO WASH/RINSE LINE FROM CO#2/3
- GOT STUCK AT ABOUT 68-FT. TRIED POURING DOWN ALCONOX SOLUTION TO FLOAT IT FREE
01028 STOPPED 1ST RINSE TO PLAN AN ALTERNATIVE(S)
- PLAN IS TO OPEN CO#1 AND RUN WATER DOWN THE LINE TO FLOAT THE PRESSURE WASHER HOSE DOWN THE LINE. THIS WORKED PREVIOUSLY AT CO#1.

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01038 OPENED CO#1 - DRAGER READINGS =0 FOR OX AND FOR FUEL

PLACED A WATER HOSE IN CO#1 AND TURNED IT ON.

01041 RESUMED 1ST RINSE OF HWDL USING JUST THE HOSE W/O THE FISH TAPE

01045 COMPLETED 1ST RINSE

01051 TURNED OFF WATER AT CO#1 AND REINSTALLED THE FLANGE

01052 STARTED 2ND RINSE WITH ALCONOX SOLUTION. 25 GALLONS OF SOLUTION FOR 220 FT OF PIPE.

→ NOTED SUDS COMING OUT OF CO#3 WHEN ALCONOX SOLUTION WAS POURED DOWN CO#2.

01054 COMPLETED 2ND RINSE

01055 STARTED 3RD RINSE. SLOWLY PULLING OUT THE PRESSURE WASHER HOSE WHILE OPERATING THE NOZZLE.

01057 COMPLETED 3RD RINSE.

01100 STARTED TO SHUT DOWN JOB SITE. THIS SEC OF HWDL IS ~~COMPLETE~~ COMPLETE UNTIL CONFINED SPACE WORK IS PERFORMED AT THE SUMP.

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800 AREA HWDL - DECON WATER SAMPLING

SAMPLE: TRAILER #1452 LOCATED AT ETU / HWDL DECON H_2O

WEATHER: SUNNY, WIND-N @ 5-10 MPH, 65°F

PERSONNEL: JENNIFER GRIFFIN
DAN WILLIAMS
BRIAN GALAZ
DAN HALVESON

SAMPLED PER WII-ENV-0039.B AND SAP 2012-12

SAMPLE ID	ANALYSIS	PRESERVATIVE	SAMPLE CONTAINER	LAB	CONTAINER SAMPLED
1209180924	H2's by HPLC	ICE	40ml I-CHEM	WSTF	1452
1209180927 (DUPLICATE)	"	"	"	"	"

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800 AREA - 803 HWDL CLOSURE

DATE/TIME: 9/19/12, 7:30 AM
LOCATION: 803 ANALYTICAL LABORATORY FUME HOODS 5 & 22
PERSONNEL: J. GRIFFIN, M. ENGLERT, B. GAGAZ, D. HALVOSEN

WORK AUTHORIZATION: JHA-044, TPS-0401, TPS-0403, ETU CLOSURE PLAN
WEATHER: NA (WORK INDOORS)

NEW HAZARDS:
1. POTENTIAL MERCURY CONTAMINATION IN CUP SINK TRAPS
2. ACTIVE CHEM LAB WITH ONGOING WORK SO KEEP AN EYE ON SURROUNDINGS
3. CHEM RESIDUE IN PIPE, IN FUME HOOD, UNDER FUME HOOD IN THE CABINET
4. POTENTIAL FOR BROKEN GLASSWARE & CHEM EXPOSURE DUE TO STORAGE IN HOOD — LAB HAS BEEN ASKED TO MOVE GLASSWARE AND CHEM STORAGE FROM HOODS WHILE WE WORK ON THEM

SCOPE: TRIPLE RINSE HWDL FROM 803 FUME HOODS TO THE EXTERIOR LINE.

0730: TAILGATE MEETING
0800: MOBILIZE EQUIPMENT TO LAB
0853: ENTERED 803 LAB TO SET UP
- FUME HOODS HAVE BEEN CLEANED OUT AND ALL CHEMICALS & GLASSWARE HAVE BEEN REMOVED.
- CABINETS UNDER THE FUME HOODS HAVE BEEN CLEANED OUT
- IDENTIFIED A NEW EQUIPMENT NEED — AN ADAPTER FOR THE HOSE TO ALLOW A MALE TO MALE CONNECTION.

0931 PAR TO FD DISPATCH

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0937 SAFETY RINSE OF FUME HOOD PIPING FOR 5 MIN OR MORE WITH WATER VIA DRAIN
- FUME HOOD 27

0942 SAFETY RINSE OF FUME HOOD PIPING FOR 5 MIN OR MORE WITH WATER VIA DRAIN
- FUME HOOD 5

0947 DRAGER CHECK
- OX 4530011 ERZC-0118 10/30/12
- FUEL 4530011 ERTK-0306 9/23/12

0949 TOOK DRAGER READINGS AT DRAIN IN CUP SINK - OX=0, FUEL=0

*0953 DEVIATION FROM ORDER OF THE TRIPLE RINSE.
- THE ALCONOX SOLUTION MUST BE POURED DOWN THE DRAIN, SO THIS WILL BE THE 1ST RINSE.
- 2ND RINSE WILL BE PUSHING THE PRESSURE HOSE THROUGH THE PIPE
- 3RD RINSE WILL BE PULLING THE PRESSURE HOSE BACK OUT OF THE PIPE

0958 STARTED 1ST RINSE WITH ALCONOX SOLUTION 5 GAL OF SOLUTION PER FUME HOOD CUP SINKS
↳ FUME HOOD 27

01000 PAR TO FD DISPATCH

01007 COMPLETED 1ST RINSE OF HWDL FROM CUP SINK IN FUME HOOD 27

01011 STARTED 1ST RINSE OF HWDL FROM FUME HOOD 5 CUP SINK WITH ALCONOX SOLUTION - 5 GAL OF SOLUTION

01012 COMPLETED 1ST RINSE OF HWDL FROM CUP SINK IN FUME HOOD 5

01014 OPENING UP HWDL BY REMOVING CUP SINK TRAP OF FUME HOOD 27
- DRAGER READING - OX=0 FUEL=0

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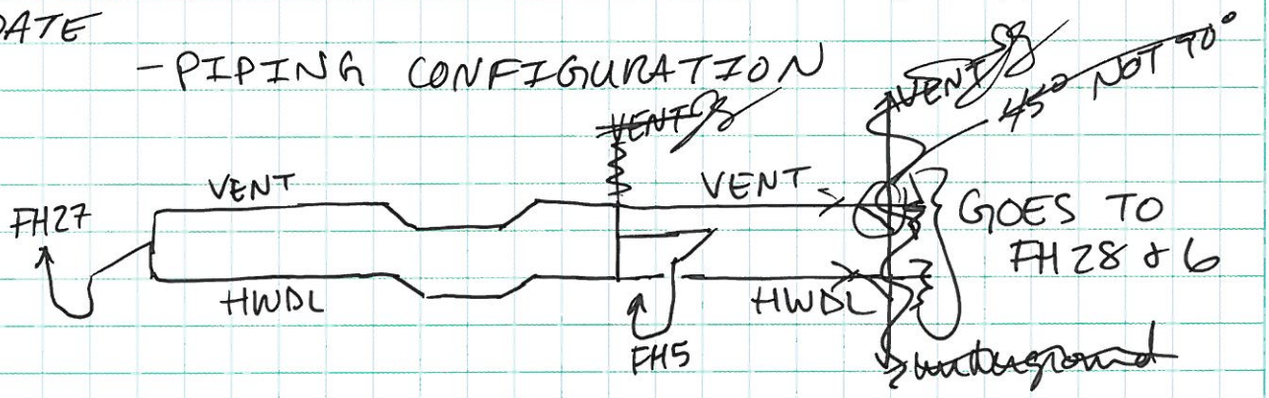
- NO ELEMENTAL MERCURY
- FOUND A BRASS ROD, SCREW, AND A COUPLE OF STIRRING MAGNETS
- ALCONOX RESIDUE WAS ALSO IN THE TRAP.
-

01021 TRIPLE RINSED TRAP AND WILL BAG IT FOR PLUMBERS TO REINSTALL AT A LATER DATE

- PIPING CONFIGURATION



01034 DRY RUN WITH HOSE AND WAS ABLE TO CLEAR THE TEE

01035 2ND RINSE WITH PRESSURE WASHER HOSE

01038 3RD RINSE WITH PRESSURE WASHER HOSE

HOSE WAS ABLE TO CLEAR THE 45° ANGLES
* PIPE END IN CABINET MEASURES 1 1/2" WE WILL NEED A DIFFERENT SIZE CAP

ALSO CUP SINK

- WE ~~WILL~~ BAGGED THE END OF PIPE AND TAPED IT OFF FOR PLUMBERS
- CUP SINK WAS ALSO BAGGED AND TAPED OFF FOR PLUMBERS

01049 OPENING UP HWDL FROM SINK TRAP IN FUME HOOD 5. — DRAGER OX=0, FUEL=0

- NO ELEMENTAL MERCURY
- FOUND TWO STIRRING MAGNETS
- ALCONOX RESIDUE

01050 TRIPLE RINSED TRAP AND WILL BAG IT FOR PLUMBERS

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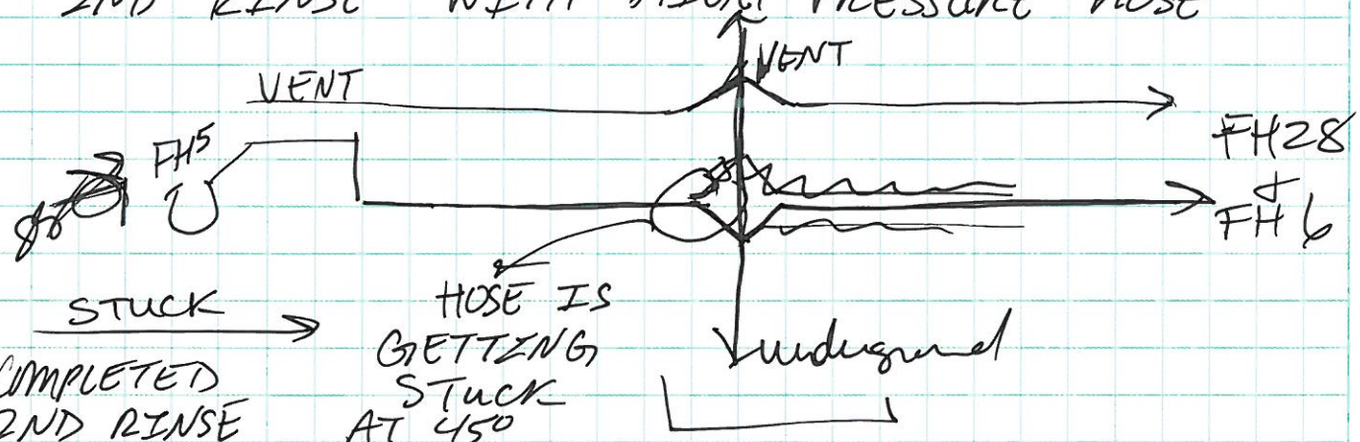
01054 2ND RINSE WITH HIGH PRESSURE HOSE



01058 STUCK → COMPLETED 2ND RINSE

* IS BEHIND A TEST MATERIAL CABINET
* LAB PERSONNEL MOVED THE CABINET FOR ACCESS

01103 3RD RINSE WITH HIGH PRESSURE HOSE

01104 COMPLETED 3RD RINSE.

01107 BAGGED OFF THE PIPE END AND CUP SINK DRAIN

NOTED: FUEL DRAGER SHOWED 10PPB ~~80~~PPM AFTER SITTING INSIDE CABINET OF FH5 WHILE DECON WAS TAKING PLACE

NO ALARM
NO ODOR

01120 SHUT DOWN SITE
- 1 GAL PPE
- 3 GAL DECON WATER FOR TANKER
- 3 GAL PLASTIC SHEETING
- <1GAL MISC DEBRIS CLEARED OUT OF TRAPS

→ SINKS ARE MARKED DO NOT USE & THE HAZ STICKERS HAVE A TRIPLE RINSE STICKER NOW

01125 SECURED SITE WITH FD DISPATCH

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→ FOLLOW UP TO 10 PPB DRAGER ←
READING IN FUME HOOD 5 OF
THE 803 LAB.

① H&S WAS CONTACTED FOR DIRECTION. THEY
RECCOMENDED TAKING ANOTHER READING
BECAUSE THE 803 LAB DOES NOT HANDLE
FUEL OR IT COULD BE DUE TO ANOTHER GAS
LIKE ~~METHANE~~ 98
METHANE.

01328 ENTERED LABORATORY TO GET ANOTHER
READING. PLACED OX & FUEL DRAGER INTO
THE CABINET OF FUME HOOD 5 AT
THE APPROXIMATE LOCATION THEY
~~PRV~~ PREVIOUSLY WERE LOCATED

01340 CHECKED THE DRAGERS AND THE READINGS
WERE ZERO FOR BOTH OX & FUEL

② CHECKED THE LOGBOOK FOR THE HWDL IN
THE 803 LAB. THE LAST DISCHARGE TO THE
DRAIN LINE WAS JUNE ~~6~~ 5, 2012 & IT WAS
SPENT BRULINE
→ NON - HAZ PROFILE 80-04-15

③ VISITED WITH CAL LAB PERSONNEL AT THE
LOCATION WHERE THE DRAGERS WERE ISSUED
- AN ALCOHOL CAN CAUSE ANOMOLOUS
READINGS ON A DRAGER
- HIGH HUMIDITY CAN CAUSE DRIFT ON
~~AR~~ A DRAGER
→ NOTE: 803 LAB WAS BEING ACTIVELY
OPERATED AT HIGH HUMIDITY
TODAY

40 - 50%
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0157 SPOKE WITH ROSEMARY ROBLES AT THE 803 LAB
- CONFIRMED 803 LAB DOES NOT HANDLE FUEL OR FUEL CONTAMINATED MATERIALS
- INDICATED THAT 803 LAB SPEC HAS HUMIDITY BETWEEN 40-50%

CONCLUSION: DRAGER READING WAS LIKELY DUE TO DRIFT CAUSED BY HIGH HUMIDITY IN THE LAB.

0153O NOTIFIED FIELD TEAM OF CONCLUSION

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800 AREA - 803 HWDL CLOSURE

DATE/TIME: 9/20/12 / 7:30
LOCATION: 803 ANALYTICAL LABORATORY FUME HOODS 6 & 28
PERSONNEL: J. GRIFFIN, B. GAGAZ, M. ENGLERT, D. HALVORSEN

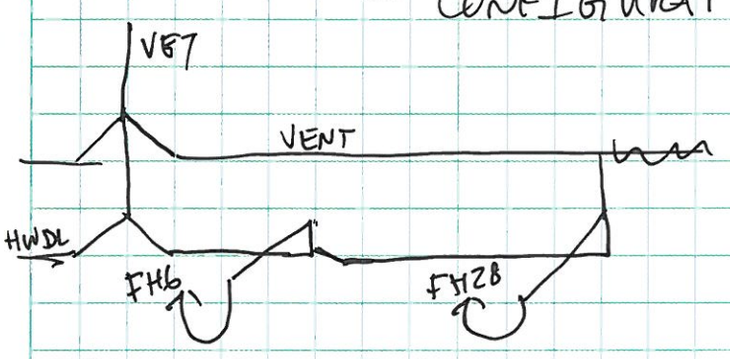
WORK AUTHORIZATION: JHA-044, TPS-401, TPS-403, ETU CLOSURE PLAN

WEATHER: NA (WORK INDOORS)

NEW HAZARDS: (SEE LOGBOOK PAGE 29 FROM 9/19/12)
NO CHANGE FROM THESE ADDITIONS

0730 TAILGATE SAFETY MEETING
0803 ENTERED 803 ANALYTICAL LABORATORY
- FUME HOOD 6 & 28 HAVE NOT BEEN CLEANED OUT
- CONTACTED LABORATORY PERSONNEL TO CLEAN
* OUT → JOB ON HOLD PENDING ←
~~CLAN~~ CLEAN OUT OF THE HOODS

0812 LAB PERSONNEL COMPLETED CLEAN OUT OF THE TWO FUME HOODS
0813 PLACED DRAGERS AT SINK OPENING ON FUME HOOD 28
0820 OPENED PIPE ACCESS PANELS
- CONFIGURATION IS DRAWN BELOW



OX DRAGER 4530011 ERZC-0118
CAL = 10/30/12
FUEL DRAGER 4530011 ERTK-0306
CAL = 9/23/12

~~0860~~ 0826 DRAGER READINGS = 0

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0827 DRAGER READINGS TO BE ~~TK~~ TAKEN AT FUME HOOD 6. PLACED AT CUP SINK.

0832 STARTED 1ST RINSE OF FUME HOOD 28 HWDL BY POURING 5 GAL OF ALCONOX SOLUTION DOWN THE CUP SINK DRAIN

0834 COMPLETED 1ST RINSE

0836 DRAGER READINGS AT FUME HOOD 6 CUP SINK WERE ZERO.

0837 CRACKED THE TRAP ON FH28 CUP SINK AND PLACED THE DRAGERS IN THE CABINET TO GET A READING

0847 DRAGER READINGS = 0 FOR ~~O~~ OX & FUEL

0848 STARTED 1ST RINSE OF FUME HOOD 6 HWDL BY POURING 5 GAL OF ALCONOX SOLUTION DOWN THE CUP SINK DRAIN

0850 REMOVED SINK TRAP ON FH28 OVER 2NDARY CONTAINMENT
- NO ELEMENTAL MERCURY
- ONE PIECE OF WIRE

0852 TRIPLE RINSED THE TRAP AND BAGGED IT FOR REUSE WHEN THE PLUMBERS CONNECT THE SYSTEM TO THE SEWER.

0856 STARTED 2ND RINSE OF HWDL FROM FH28 AND GOT TO THE 45° ON THE DOWN SPOUT TO FLOOR DRAIN

0858 STARTED 3RD RINSE OF HWDL FROM FH28 BY SLOWLY PULLING OUT THE HOSE & PRESSURE WASHING

0900 PAR TO FD DISPATCH

0901 WRAPPED OPEN PIPE END WITH PLASTIC AND TAPE. ~~ALO~~ ALSO WRAPPED THE CUP SINK DRAIN

0902 CRACKED OPEN THE TRAP ON FUME HOOD 6 CUP

0914 SINK AND PLACED DRAGERS FOR A READING
DRAGER READINGS ⇒ OX = 0
FUEL = 0

0916 REMOVED SINK TRAP ON FH6 OVER SECONDARY CONTAINMENT
- NO ELEMENTAL ~~MERCURY~~ MERCURY
- DRINKING STRAW FOUND IN THE TRAP

0918 TRIPLE RINSED THE TRAP AND BAGGED IT FOR REUSE BY PLUMBERS

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0919 STARTED 2ND RINSE OF HWDL FROM FH6
- GOT THE PRESSURE WASHER TO THE 45° ON THE DOWNSPOUT TO THE FLOOR DRAIN

0923 STARTED 3RD RINSE BY PULLING THE PRESSURE WASHER HOSE BACK OUT OF THE LINE

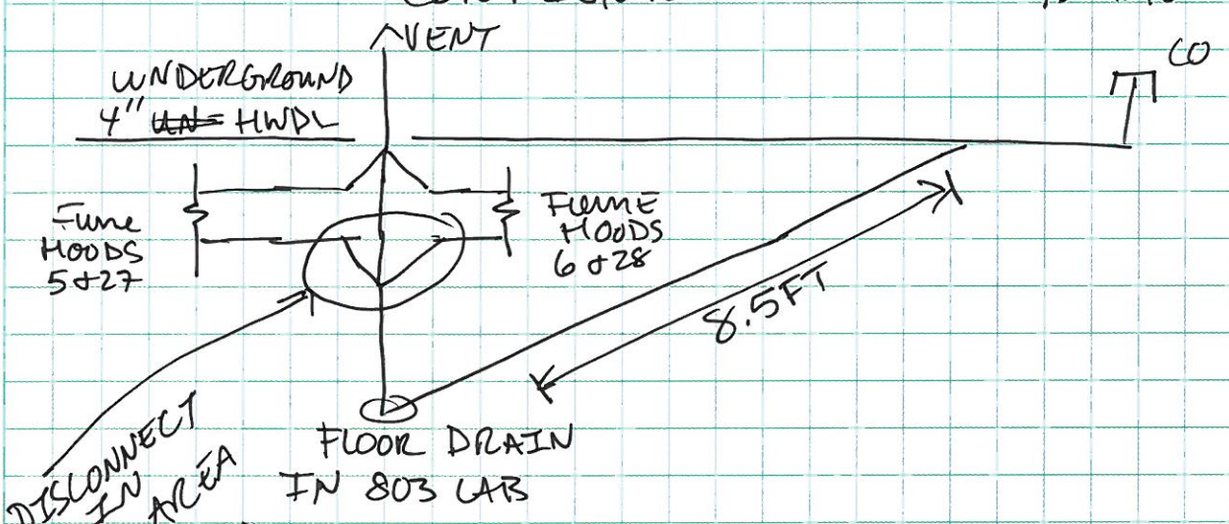
0925 COMPLETED TRIPLE RINSE OF HWDL FROM FH6 & FH28.

0926 WRAPPED OPEN PIPE ENDS WITH PLASTIC AND TAPE. ALSO WRAPPED THE OPEN CUP SINK DRAIN

0930 LABELED SINKS "DO NOT USE" AND PLACED TRIPLE RINSE STICKERS OVER THE HAZ WASTE TAPE

0931 STARTED TO TAKE APART THE VENT SLEEVE TO GAIN ACCESS TO DOWN SPOUT PIPING INTO THE FLOOR DRAIN.
- THIS WILL ALLOW FOR DECON OF THE UNDERGROUND PIPING FROM THE BUILDING TO THE MAIN PIPE THAT FEEDS THE SUMP FROM 803
- CONFIGURATION IS ~~ASSUMED~~ AS FOLLOWS

BASED ON OBSERVATION



DISCONNECT IN THIS AREA IS THE PLAN } THIS CANNOT BE DONE WITHOUT ~~OU~~ CUTTING THE ~~P~~ VENT PIPE OR THE SLEEVE

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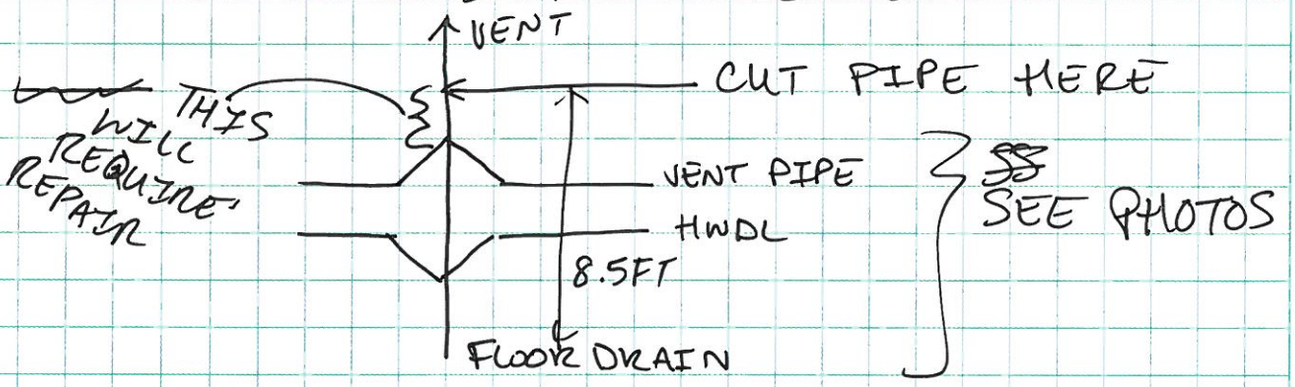
01000 CONTACTED PL-ANTONETTE SANCHEZ FOR A CONFIRMATION ON APPROACH
- DETERMINED THAT VENT PIPE NEEDED TO BE CUT TO GIVE ACCESS TO THE FLOOR DRAIN
- PL AGREED WITH FTL AND FIELD TEAM

01009 BEGAN TO CUT THE VENT PIPE AT THE LOCATION DIAGRAMED BELOW



01020 10 GAL OF ALCONOX SOLUTION HAS BEEN POURED DOWN THE ~~E~~ DRAIN TODAY FROM FH 6 & 28 THIS WILL COUNT AS THE 1st RINSE OF THE PIPE TO THE FLOOR DRAIN AND UNDERGROUND

01023 STARTED 2ND RINSE OF PIPING TO FLOOR DRAIN AND UNDER GROUND TO MAIN 4" HWDL LOCATED OUTSIDE THE BUILDING ON THE WEST SIDE OF 803

01028 STARTED 3RD RINSE OF PIPING TO FLOOR DRAIN AND UNDER GROUND TO MAIN 4-IN HWDL
- HOSE WENT A ~~TOTOA~~ TOTAL OF ~~18.5-IN~~ 18.5-FT
↳ ESTIMATE WAS 17-FT
(8.5 FROM WALL TO 4-IN LINE)
8.5 FROM CUT PIPE END TO FLOOR DRAIN)

01031 803 LAB HWDL TRIPLE RINSE COMPLETE.

01032 STARTED TO CLEAN UP AND SHUT DOWN SITE FOR THE DAY.

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- 2 GAL DECON RINSE WATE
- 2 1 GAL BAGS OF PPE & PLASTIC DEBRIS

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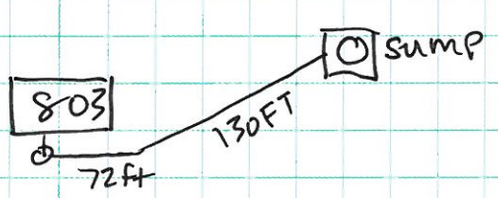
800 AREA - 803 HWDL CLOSURE

DATE/TIME: 9/21/12 / 0812
LOCATION: OUTSIDE 803 AT CLEANOUT
PERSONNEL: J. GRIFFIN, M. ENGLERT, B. GARAZ, D. HALVORSEN
WORK AUTHORIZATION: JHA-044, TPS-0401, TPS-0403, ETU CLOSURE PLAN
WEATHER: SUNNY, 65°F

0815 TAILGATE SAFETY MEETING
0816 SITE SET UP
0823 DRAGER CHECK
OX 4530011 ERZC-0118 CAL 10/30/12
FUEL 4530011 ERTK-0306 CAL 9/23/12
0836 TOOK MEASUREMENTS & CONFIGURATION SHOULD BE AS SHOWN BELOW



0838 OPENED THE CLEAN OUT AND PLACED DRAGERS TO GET A READING
0848 DRAGER OX = 0
FUEL = 0
0849 BEGAN FLUSH OF LINE WITH TAP WATER FROM REGULAR HOSE. THIS WILL HELP MOVE THE PRESSURE WASHER LINE DOWN THE PIPE
0852 STARTED 1ST RINSE WITH PRESSURE WASHER
- PRESSURE IS TOO LOW IN THE LINE. TROUBLESHOOTING (LAST TIME THE NOZZLE WAS CLOGGED.
- NOZZLE IS CLOGGED WITH SAND AND DIRT LIKELY FROM THE WATER SOURCE
0907 RESTARTED 1ST RINSE WITH PRESSURE WASHER
- PRESSURE RESTORED.

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~~COMPLETED 1ST RINSE TO~~ 9/21/12

0923 PRESSURE WASHER HOSE KEEPS GETTING STUCK. GOING TO CONNECT IT TO THE FISH TAPE AND TRY AGAIN

0932 3RD ATTEMPT AT 1ST RINSE WITH PRESSURE WASHER. THIS TIME THE NOZZLE IS ATTACHED TO AN ELECRICIAN'S FISH TAPE.

- ~~CA~~ CAN ONLY GET THE HOSE TO THE 45° ANGLE AT 72-FT

0945 BREAK

01000 4TH ATTEMPT AT 1ST RINSE - NEW CONFIGURATION WITH FISH TAPE - GOING TO GET THE FISH TAPE LEAD

01018 COMPLETED 1ST RINSE TO ~98-FT BASED ON MEASUREMENT ON THE FISH TAPE

01019 STARTED 2ND RINSE BY POURING ALCONOX DOWN THE ~~DRT~~ CLEAN OUT. 20 GAL OF ALCONOX SOLUTION FOR THIS SECTION OF PIPE

01023 COMPLETED 2ND RINSE

01024 STARTED 3RD RINSE BY SLOWLY PULLING OUT THE PRESSURE WASHER HOSE AND OPERATING THE NOZZLE

01027 COMPLETED 3RD RINSE OF HNDL FROM 803 CLEAN OUT TOWARDS THE SUMP

- 98 FT OF THE TOTAL 202 FT WERE TRIPLE RINSED
- THE LAST 104 FT WILL BE PRESSURE WASHED FROM THE SUMP WHEN THE CONFINED SPACE WORK IS PERFORMED.

01031 STARTED TO SHUT DOWN PROJECT SITE FOR WEEK-END - 800 AREA WORK IS COMPLETE

- 1 GAL BAG OF PPE WASTE

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200 AREA – METALLURGY LAB & ENVIRONMENTAL LAB

DATE / TIME: 10/12/12 / 7:30 AM

LOCATION: 200 AREA MET LAB & ENV LAB

PERSONNEL: F. GALLEGOS, D. HALVORSEN, M. ENGLERT, J. GRIFFIN, B. GREENE, M. McCLURE, SALO GARCIA

WORK AUTHORIZATION DOCS: JHA-045 & JHA-046, ETU CLOSURE PLAN

WEATHER: – NA –

0730 TAILGATE SAFETY BRIEFING

0745 INSPECTION OF WORK SITE WITH CHEM LAB PERSONNEL TO DETERMINE WHAT CAN & NEEDS TO BE REMOVED

0750 CHEM LAB PERSONNEL BEGAN TO REMOVE CHEMICALS FROM THE TWO FUME HOODS IN THE MET LAB

0755 BEGAN MOBILIZATION OF EQUIPMENT TO THE WORK AREA

0825 DRAGER CHECK
FUEL: ERTK-0306 CAL 11/24/12
OX: ERZC-0118 CAL 10/30/12

0835 OPENED 2 SINKS & PLACED DRAGERS TO MONITOR – READINGS WERE ZERO

0835 NOTIFIED FD DISPATCH WORK HAS STARTED & WHERE WE ARE WORKING

0840 DRAGER READINGS TAKEN FROM FUME HOOD CUP SINKS – READINGS WERE ZERO

0848 STARTED 10 MIN RINSE OF HWDL WITH TAP WATER FROM FAUCET

0858 COMPLETED RINSE OF HWDL

0900 PAR TO FD DISPATCH

0904 STARTED HWDL REMOVAL AT FIRST SINK
– ON FIRST CUT THE SHEAR BROKE THE PIPE. SECOND CUT REMOVED THE TRAP
– ON ~~SECOND~~ THIRD CUT THE SHEAR DEFORMED THE PIPE BUT WILL NOT CUT IT

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- SHEAR BECAME BOUND IN THE PIPE AND WOULD NOT RELEASE
- USED A HACK SAW TO CUT THE PIPE AND REMOVE THE 2ND TRAP AT SINK TWO
- NO MERCURY (ELEMENTAL) FOUND IN EITHER TRAP
- SHEAR IS NOT RATED FOR 2" SCH 80 HDPE SO FIELD TEAM WILL CUT PIPE USING HACK SAW &/OR SAWS ALL. CUT LOCATION WILL BE MONITORED DUE TO PROXIMITY TO THE NAT GAS LINE
- INSPECTION OF THE PIPE AS IT IS REMOVED SHOWS NO RESIDUE BUILDUP THAT IS VISIBLE. THERE IS DISCOLORATION WHERE FLUID SERVICE HAS DETERIORATED THE PIPE
- THE SAWS ALL DOES NOT FIT BETWEEN THE CABINETS. THE PIPE HAS TO BE CUT BY HAND USING A HACK SAW

01000 PAR TO FD DISPATCH
01010 BREAK
01030 RESUMED WORK - CHEM LAB PERSONNEL MOVING SOME OF THE ~~CHEM 7~~ CHEMICALS IN THE FUME HOOD AWAY FROM THE ~~EDG~~ EDGE OF FUME HOOD
01035 CHEM LAB PERSONNEL SHARPENED BLADE OF SHEAR. TECHS WILL TRY AGAIN - NOW IT WORKS GREAT
01036 RESUMED HWDL REMOVAL
- TAPED UP THE SINK AND CUP SINK DRAINS WITH PLASTIC BAGS AND DUCK TAPE
- CUT VENT PIPE IN MET LAB LOW & LEFT IN PLACE FOR PLUMBERS TO REUSE WHEN THEY REPIPE FOR SEWER SERVICE
- PIPE RUNNING ALONG THE WALL CAME OUT MUCH EASIER
- CHEM LAB PERSONNEL MOVED TABLE & EQ IN THE ELECTRON MICROSCOPE ROOM TO GIVE US ACCESS

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01100 PAR TO FD DISPATCH

— AS THE HWDL IS REMOVED FROM THE WEST WALL THERE IS A SLUDGE RESIDUE COMING OUT OF THE PIPE

- LAB PERSONNEL MOVED AN ARGON CYLINDER OUT OF THE WAY SO THE DRAINLINE COULD BE PULLED THROUGH THE WALL BETWEEN MET LAB AND THE ELECTRON MICROSCOPE ROOM

01141 COMPLETED REMOVAL OF HWDL FROM MET LAB

01145 STARTED TO SHUT DOWN JOB SITE FOR THE DAY. & INCLUDING WASTE COLLECTION & PACKAGING

01155 TRANSPORTED WASTE TO STORAGE AREA

01200 BREAK FOR LUNCH. → 3 GAL BAG PPE

→ __ FT HWDL PIPE

01322 INSPECTED PROJECT SITE. LAB PERSONNEL HAVE REMOVED CHEMICAL STORAGE, GLASSWARE AND WASTE FROM THE CABINETS UNDER THE SINKS AND UNDER THE FUME HOOD. IN THE ENVIRONMENTAL LAB

01324 DISCUSSED 10 MIN RINSE OF PIPE. BY CUTTING LINE IN MET LAB TO THE WALL THERE IS NO LONGER INTEGRITY TO RINSE. REVIEW OF WINPS INDICATED THAT LINE RECIEVED RO RINSE WATER AND GLASSWARE CLEANING SOLUTION. FIELD TEAM DECIDED NOT TO PERFORM 10 MIN RINSE AND PREVENT POTENTIAL SPILL

01349 STARTED REMOVAL OF HWDL IN ENVIRONMENTAL LAB

- DRAGERS ARE INSIDE CABINET WITH TECHS
- CORNER SINK TRAP DID NOT HAVE MERCURY IN IT. INSPECTION OF PIPE SHOWED NO RESIDUE; DRAGER READING ZERO
- SINK ON THE NORTH WALL DID NOT HAVE ANY MERCURY IN IT; DRAGER READING ZERO.

01442 BREAK

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01452 RESUMED HWDL REMOVAL

- AT THE FUME HOOD WE CUT THE VENT LINE ABOUT 1/2 WAY UP THE WALL TO GET ACCESS TO THE CUP SINK DRAIN.
- ~~LEAVING THE VENT LINE FOR THE PLUMBERS TO USE WHEN THEY RE-PIPE TO SANITARY SEWER.~~ 10/12/12
- WHEN WE CUT THE VENT PIPE IT CAME DOWN FROM ~~THE~~ THE CEILING AND WAS NOT A PART OF THE ROOF.
- CUT THE PIPE ON THE CUP SINK JUST BELOW THE ELBOW

01536 COMPLETED HWDL REMOVAL IN THE ENV LAB. REMOVED ALL PIPE THROUGH WALL PENETRATION TO ~~THE~~ THE BREEZEWAY.

- WRAPPED THE TEE IN THE BREEZEWAY IN PLASTIC AND TAPE TO CLOSE IT UP
- TAPED UP THE ~~EXTERIOR~~ EXTERIOR WALL PENETRATION

01543 BEGAN TO SHUT DOWN THE SITE FOR THE DAY

- __ FT OF HWDL PIPE (2 BAGS)
- 3 GAL OF PPE WASTE
- 1 GAL OF DECON/RINSATE WATER

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200 AREA - Wet Chem LAB & VAPOR PROPELLANT LAB

DATE/TIME: 10/13/12 / 7:30

LOCATION: 200 AREA WETCHEM LAB & VAPOR PROPELLANT LABS

PERSONNEL: J. GRIFFIN, M. ENGLERT, B. GALAZ, D. HARVORSEN, T. MARTINEZ, S. GARCIA

WORK AUTHORIZATION: JHA-045 & JHA-046;

WEATHER: - NA -

0730 TAILGATE SAFETY BRIEFING

0745 WORK AREA INSPECTION
- TECHS IDENTIFIED WHAT CHEMICALS AND EQUIPMENT THE CHEM LAB PERSONNEL SHOULD MOVE
- CHEM LAB PERSONNEL STARTED MOVING THE EQUIPMENT AND CHEMICALS

0801 NOTIFIED FD THAT WORK WAS STARTING

0803 TECHS STARTED TO MOBILIZE

0812 AS A SAFETY PRECAUTION A 2.5-GALLON BUCKET OF ALCONOX SOLUTION WAS POURED DOWN THE LAP SINK DRAIN IN THE VAPOR PROPELLANT LAB. THIS WAS DONE IN ADDITION TO A 10-MIN TAP WATER RINSE.
- THIS WAS DONE BECAUSE HISTORICAL USE OF THE HWDL IN THIS LAB INCLUDED DISCHARGE OF NEAT FUEL.
- 5 MIN TAP WATER RINSE
- 2.5 GAL ALCONOX SOLUTION
- 5 MIN TAP WATER RINSE

0820 DRAGER CHECK
FUEL: ERTK-0306 CAL: 11/24/12
OX: ERZC-0118 CAL: 10/30/12

0824 DRAGER READINGS ON VAPOR PROPELLANT LAB SINKS WERE BOTH ZERO

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0847 DRAGER READINGS ON THE WET CHEM LAB FUME HOOD SINKS + LAB SINKS → ZERO

0853 10-MIN WATER RINSE ON FUME HOOD & LAB SINKS IN WET CHEM LAB

0903 PAR TO FD DISPATCH

0908 1ST RINSE OF HWDL FOR FH59. 5-GAL Bucket ALCONOX ~~BUCKET~~ SOLUTION

0909 1ST RINSE OF HWDL FOR LAB SINK #1 – 5-GAL BUCKET OF ALCONOX SOLUTION

0911 1ST RINSE OF HWDL FOR ~~LAB SINK #~~ FH42. 5-GAL BUCKET OF ALCONOX SOLUTION

0912 BEGAN TO TAKE APART CUP SINK TRAP ON FH42
- DRAGER MONITORING – ZERO

0914 1ST RINSE OF HWDL FOR LAB SINK #2. 5-GAL BUCKET OF ALCONOX SOLUTION

0915 REMOVED TRAP FOR CUP SINK ON FH42
- NO MERCURY
- 2 GLASS STOPPERS, PLASTIC EYE DROPER, RUBBER STOPPER WERE REMOVED FROM THE TRAP

0919 PARTIAL CUT OF TRAP ON FH59
- DRAGER MONITORING – ZERO

0922 REMOVED TRAP ON FH59
- NO MERCURY
- BRUSH, PLASTIC, EYE DROPPER

0926 PARTIAL CUT OF TRAPS ON SINKS #1 & 2
- DRAGER MONITORING – ZERO

0928 DRY RUN ON FH-59 WITH PRESSURE WASHER HOSE

0932 2ND RINSE HWDL FROM FH-59 WITH POWER WASHER 360° NOZZLE
- GOT THROUGH THE 90° & TO THE 1ST TEE BEFORE GETTING STUCK

0939 3RD RINSE HWDL FROM FH-59 WITH POWER WASHER 360° NOZZLE BY BACKING IT OUT

0940 2ND RINSE HWDL FROM FH42
- 190° & TEE HEADED TO SINKS
- GOT TO THE 90° BEND BEFORE THE FLOOR DRAIN

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0942 3RD RINSE FROM FLOOR DRAIN BACK OUT TO FH42.

0942 PRESSURE WASHER HAS A LEAK (DOCUMENTED BY PHOTOGRAPH)

0945 CUT PIPE ON WEST WALL NEAR FH-59
- INSPECTION OF PIPE SHOWS ~~A LOT OF~~ RESIDUE POSSIBLY SAND OR PPT

0949 2ND RINSE FROM CUT PIPE END NEAR FH59
- THROUGH 90° & HEADED ALONG BACK WALL BEHIND FUME HOODS
- GOT TO THE 90° AT THE FLOOR DRAIN

0952 3RD RINSE FROM FLOOR DRAIN BACK OUT TO THE CUT END OF PIPE BY FH59.

0956 CLOSED UP THE CUT ENDS OF PIPE WITH PLASTIC BAGGIES AND DUCK TAPE. ON THE FUME HOODS

0957 REMOVED TRAPS FROM TWO LAB SINKS
- NO MERCURY #1 TRAP
- FOUND A SCRUB BRUSH #1 TRAP
- NO MERCURY IN #2 TRAP

01002 2ND RINSE WITH POWER WASHER FROM SINK TRAPS TO TEE & 90° AT FLOOR DRAIN

01004 PAR TO FD DISPATCH

01012 CUT PIPE NEAR FLOOR DRAIN TO GAIN ACCESS TO UNDER GROUND PIPE TO THE BREEZEWAY
- TOOK PICTURE TO SHOW HOW CLEAN THE PIPE IS AFTER TRIPLE RINSE

01017 2ND RINSE OF UNDERGROUND FROM WET CHEM LAB TO BREEZEWAY
- HOSE NOZZLE IS NOT MOVING THROUGH THE UNDER GROUND PIPE
- WILL TRY TO USE FISH TAPE TO AID THE HOSE NOZZLE AND GIVE IT SOME ~~RIGIDITY~~ STRENGTH
- 90° ANGLE AT OPENING OF FLOOR DRAIN WAS IN THE WAY. SO TECHS CUT IT OUT. THIS GIVES THEM A STRAIGT ACCESS PT TO UNDERGROUND.

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01058 TECHS CANNOT GET THE PRESSURE WASHER NOZZLE TO GO THROUGH THE UNDERGROUND PIPE. IT KEEPS GETTING STUCK AT ONE OF THE BENDS IN THE PIPE ABOUT 10-FT FROM THE FLOOR DRAIN.
- OBSERVING ENGR CALLED FOR A DEVIATION TO THE CLOSURE PLAN AS FOLLOWS
  * PERFORM A 20 MIN RINSE OF THIS SECTION OF PIPE WITH TAP WATER FROM A HOSE.

01101 STARTED 20-MIN WATER RINSE OF UNDER GROUND FROM WET CHEM LAB ~~TO~~ FLOOR DRAIN TO BREEZEWAY - COMPLETE 1120

01108 STARTED REMOVAL OF HWDL PIPE ON THE NORTH WALL OF THE WET CHEM LAB.
- CUT HWDL AND MONITOR WITH DRAGERS - ZEROS

01110 BREAK

01119 RESUMED WORK - REMOVAL OF HWDL FROM WET CHEM LAB NORTH WALL

01130 WET CHEM LAB COMPLETE
- PIPE PULLED THROUGH WALL SO ACCESS TO GAS LAB WAS NOT REQUIRED

01144 BREAK

01203 PAR TO FD DISPATCH

01204 RETURNED TO WORK - CUT UP PIPE REMOVED FROM WET CHEM LAB FOR WASTE TRANSPORT.

01211 * CUT TRAP IN FH45 TO MONITOR WITH DRAGERS
→ STARTED VAPOR PROPELLANT LAB HWDL REMOVAL

01216 DRAGERS READ ZERO

01217 STARTED TO REMOVE HWDL FROM OX FUMEHOOD FH45
- REMOVAL OF TRAP ON CUP SINK SHOWED NO MERCURY OR ITEMS
- TAPED UP PIPE END

01220 CUT PIPE IN FUEL FUMEHOOD FH46
DRAGERS PUT IN - ZEROS

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01225 REMOVED SINK TRAP IN FH46
- NO MERCURY
- METAL CAP & CLAMP FOUND IN TRAP

01229 STARTED HWDL REMOVAL IN VAP PROPELLANT LAB

01252 COMPLETED REMOVAL OF HWDL IN VAP PROPELLANT LAB THROUGH WALL PENETRATION TO BREEZEWAY
- SEALED WALL PENETRATION WITH 2" RUBBER STOPPERS AND DUCK TAP
- GENERATED THE FOLLOWING WASTE
  - * ___ FT PIPE FROM WET CHEM
  - * ___ FT PIPE FROM VAP PROP LAB
  - * ___ GAL LIQ WASTE
  - * 5 GAL ~~30~~ GAL BAG PPE & PLASTIC & CHEM WIPES
  - * ~~___~~ 1½ GAL DECON WASTE

01300 SHUT DOWN WORK SITE FOR THE DAY

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200 AREA HWDL - PIPE DECON AT ETU

DATE/TIME: 10/15/12 / 9:10

LOCATION: ETU DECON PAD

PERSONNEL: B. GALAZ, D. HALVOSEN, M. ENGLERT, J. GRIFFIN
A. SANCHEZ

WORK AUTHORIZATION: JHA-045, JHA-046, ETU CLOSURE PLAN

WEATHER: SUNNY & PARTLEY CLOUDY

0910 TAILGATE SAFETY BRIEFING
CHECK IN WITH FD DISPATCH

0930 STARTED PROJECT SITE MOBILIZATION
- THE DECON POOL WERE UNROLLED AND IT WAS DISCOVERED THAT MICE HAD MOVED IN. THERE IS A NEST, URINE, AND FECES. THERE IS ~~ALO~~ ALSO SEVERAL HOLES IN THE POOL BOTTOM.
- M&O WORK ORDER WAS PREPARED BY MIRENA TO COME AND DEAL WITH THE NEST etc.
- BIG POOL IS NOT USABLE
- ORANGE POOL IS USABLE AFTER HANTA VIRUS DECON
- BORROWED DECON POOL FROM CSS LABCON PERSONNEL

01000 PAR TO FD DISPATCH
01110 PAR TO FD DISPATCH
01117 COMPLETED MOBILIZATION
01118 BREAK FOR LUNCH
01239 RE-ENTERED ETU SITE
PAR TO FD DISPATCH
01244 OPENED WRAPPED PLASTIC AROUND HWDL FROM ENU LAB. THERE ARE TWO BURRITO WRAPPED PACKAGES FROM THIS LAB.

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01305 STARTED TRIPLE RINSE OF HWDL FROM ENV LAB - PACKAGE #1
- PRESSURE WASH
- ALCONOX SOLN & SCRUB BRUSH
- PRESSURE WASH

01340 BREAK

01353 PUMPED OUT SUMP ON DECON PAD. WATER IS TAP FROM THE LEAK ON THE PRESSURE WASHER

01400 M&O STOPPED BY TO LOOK AT DECON PADS CONTAMINATED WITH ~~RAT~~ mouse DROPPINGS & A NEST THEY WILL TAKE CARE OF IT TOMORROW 1ST THING.

01402 STARTED TRIPLE RINSE OF HWDL FROM ENV LAB - PACKAGE #2
- PRESSURE WASH
- ALCONOX SOLN & SCRUB BRUSH
- PRESSURE WASH

01438 COMPLETED TRIPLE RINSE OF ENV LAB PIPE

01439 SHUT DOWN PROJECT SITE FOR DAY
- 35GAL DECON WATER
- 10 GAL CONTAM DEBRIS (PPE, PLASTIC ETC.)
↳ 2 BAGS

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200 AREA— HWDL PIPE DECON AT ETU AND RINSATE SAMPLING

DATE/TIME: 10/16/12 / 7:50

LOCATION: ETU DECON PAD

PERSONNEL: J. GRIFFIN, M. ENGLERT, B. GAGAZ, D. HALVOSEN

WORK AUTHORIZATION: JHA-045, JHA-046, ETU CLOSURE PLAN

WEATHER:

0750 TAILGATE SAFETY BRIEFING
0800 MOBILIZATION
0820 OPENED UP HWDL PACKAGE FROM THE MET LAB.
0837 STARTED TRIPLE RINSE OF PIPE FROM THE MET LAB.
- PRESSURE WASH
- ALCONOX SOLUTION + BRUSH
- PRESSURE WASH

NOTE: THIS PIPE HAD A THICK BLACK SLUDGE LIKE RESIDUE.
* INSPECTION OF THE PIPE SHOWS THAT THE SLUDGE WAS REMOVED. HOWEVER THERE IS A HARD WATER DEPOSITE THAT DOES NOT COME OFF WITH WASHING
* ONE OF THE PIPES WAS ALMOST COMPLETLEY BLOCKED WITH A SOLID BLACK SUBSTANCE. TECH KNOCKED THE PIPE AGAINST THE GROUND (FLOOR OF DECON PAD) + ABOUT 4 CUPS CAME OUT. IT IS A POWDER LIKE BLACK SUBSTACE.
* FOUND THE BLACK SUBSTANCE IN SEVERAL PIPES

0900 PAR TO FD DISPATCH

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0913 BREAK
- TECHS CHANGE OUT PPE & WASHED HAND & BOOTS AFTER WORKING WITH THE MET LAB PIPE. THE BLACK RESIDUE IS AN UNKNOWN SUBSTANCE.

0948 DECIDED TO SEGREGATE ALL WASTE MATERIALS FROM THIS MORNINGS EFFORTS. TECHS HAVE RESUMED WORK
- DECON WATER
- PPE & DEBRIS
- HOMOGENOUS BLACK POWDER WASTE

~~ALOS~~

* ALSO DECONTAMINATED EQUIPMENT SO WE WOULD NOT CROSS CONTAMINATE BETWEEN THE MET LAB WASTE AND THE REST OF THE HWDL PIPE

01000 PAR TO FD DISPATCH

01025 OPENED THE VAP PROPELLANT LAB WASTE CONTAINER

01030 STARTED TRIPLE RINSE OF HWDL PIPE FROM VAPOR PROPELLANT LAB.
- PRESSURE WASH
- ALCONOX SOLUTION & BRUSH
- PRESSURE WASH

01054 COMPLETED TRIPLE RINSE OF HWDL FROM VAPOR PROPELLANT LAB.

01100 PAR TO FD DISPATH

01110 BREAK FOR LUNCH

01345 RE-ENTERED PROJECT SITE / NOTIFIED FD DISPATCH

01350 TAILGATE BRIEFING FOR NEW TECH

01356 OPENED UP THE WASTE PACKAGE CONTAINING THE HWDL REMOVED FROM THE WET CHEM LAB

01357 CUT PIPE INTO MANAGBLE PIECES

01405 STARTED TRIPLE RINSE OF HWDL FROM WET CHEM LAB.
- PRESSURE WASH
- ALCONOX SOLUTION & BRUSH
- PRESSURE WASH

01438 PAR TO FD DISPATCH

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01448 COMPLETED TRIPLE RINSE OF HNDL FROM WET LAB.

01449 STARTED WASTE MANAGEMENT ACTIVITIES OF SITE

- 40 GAL DECON WATER
- 20 GAL MET LAB DECON WATER
- 15 GAL MET LAB DEBRIS CONTAM
- <1 GAL MET LAB RESIDUE SOLIDS
- 5 GAL CONTAM DEBRIS

01515 STARTED SHUT DOWN OF PROJECT SITE

01530 END OF DAY

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200 AREA – VERIFICATION AND WASTE SAMPLING
ENV, MET, WET CHEM, AND VAP PROPELLANT
LABORATORIES

DATE/TIME: 10-17-12 / 7:35

LOCATION: ETU DECON PAD

PERSONNEL: J. GRIFFIN; M. ENGLERT; D. MALVORSEN; C. DEL FERRARO

WORK AUTHORIZATION: JHA-045, JHA-046; ETU CLOSURE PLAN

WEATHER: CLEAR SKIES, SUNNY, 61°F

0735 TAILGATE SAFETY BRIEFING
0800 MOBILIZE / CHECK IN WITH FD DISPATCH
0840 OPENED PLASTIC BAG WITH ENV HWDL
0850 STARTED TO COLLECT RINSATE FROM ENV HWDL PIPE
– RAN TAP WATER THROUGH PIPE + ROTATED 360°
0900 COMPLETED RINSATE COLLECTION INTO 5GAL PLASTIC BUCKET

SAMPLE NO.	ANALYSIS	PRESERVATIVE	CONT.	LOT	LAB
1210170913	HYDRAZINE	ICE	40mL AMBER	1-045-003	WSTF
1210170915	VOC	HCL	3, 40mL GLASS	2-059-001	ALS
1210170920	METALS	HNO_3	1, 500mL PLASTIC	052812-2V	ALS
1210170921	CYANIDE	NaOH	1, 500mL PLASTIC	052812-2V	ALS
1210170922	SVOC-8270	ICE	2, 1L AMBER GLASS	042312-1Q	ALS
1210170925	GLYCOL-8015	ICE	3, 40mL GLASS	2-059-003	ALS
1210170926	PESTICIDES (8081)	ICE	2, 1L AMBER GLASS	042312-1Q	ALS

0941 BUCKET (1GAL) RINSATE TO ETU SUMP Continued on Page 57

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0947 ~~OPENED~~ 10/17/12 OPENED PLASTIC BAG WITH WET CHEM HWDL

0949 STARTED TO COLLECT RINSATE FROM WET CHEM HWDL PIPE
- RAN TAP WATER THROUGH PIPE AND ROTATED 360°. RINSATE WAS COLLECTED IN A 5-GAL PLASTIC BUCKET

0952 RCRA INSPECTION STOPPED WORK BRIEFLY

01007 COMPLETED RINSATE COLLECTION

SAMPLE No.	ANALYSIS	PRESERVATIVE	CONT.	LOT No.	LAB
1210171011	Hydrazine	ICE	1, 40ml Amber	1-045-003	~~ALS~~ NE 10/17/12 WSTF
1210171013	VOC	~~HNO_3~~ ME 10/17/12 HCL	3, 40ml Clear glass	2-059-001	ALS
1210171017	METALS	HNO_3	1, 500ml Plastic	052812-2V	ALS
1210171018	CYANIDE	NaOH	1, 500mL Plastic	052812-2V	ALS
1210171019	SVOC-8270	ICE	2, 1liter amber	042312-1Q	ALS
1210171021	SVOC-GLYCOL 8015B	ICE	3, 40mL glass	2-059-003	ALS
1210171024	Pesticides-SVOC 8081	ICE	2, 1 liter amber	042312-1Q	ALS

01027 Bucket (1.5 Gal) Rinsate to ETU Sump

01032 BREAK

01036 STARTED TO COLLECT RINSATE FROM VAPOR PROPELLANT LAB HWDL PIPE
- RAN TAP WATER THROUGH PIPE AND ROTATED 360°.
- RINSATE WAS COLLECTED IN A 5-GAL PLASTIC BUCKET.

01039 COMPLETED COLLECTION OF RINSATE

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SAMPLE No:	ANALYSIS	PRESERVATIVE	CONT.	LOT	LAB
121017 1047	HYDRAZINE	ICE	1, 40ml AMBER	1-045-003	WSTF
121017 1048	VOC	HCl	3, 40ml CLEAR GLASS	2-059-001	ALS
121017 1051	METALS	HNO_3	1, 500 ml PLASTIC	052812-2V	ALS
121017 1052	CYANIDE	NaOH	1, 500ml PLASTIC	052812-2V	ALS
121017 1053	SVOC-8270	ICE	2, 1L AMBER	042312-1Q	ALS
121017 1054	SVOC-GLYCOL (8015)	ICE	~~2, 1L AMBER~~ 3, 40 ml CLEAR GLASS 10/17/12	2-059-003	ALS
121017 1058	SVOC PESTICIDES (8081)	ICE	2, 1L AMBER	042312-1Q	ALS

01059 2.5 GALS OF RINSATE PUT INTO ETU SUMP
01110 STARTED TO SHUT DOWN SITE FOR LUNCH
01123 SHUT DOWN SITE FOR LUNCH
01415 RE-ENTERED SITE TO TAKE AFTERNOON SAMPLES
- WEATHER: SUNNY, WIND NW, 84°F
01432 STARTED TO COLLECT RINSATE FROM MET LAB HNDL. ALSO COLLECTING A RINSATE DUPLICATE
- RAN TAP WATER THROUGH PIPE AND ROTATED 360°
- COLLECTED RINSATE IN A 5-GAL PLASTIC BUCKET
- REPEATED PROCESS IN A SECOND BUCKET FOR A DUPLICATE.

01437 COMPLETED COLLECTION OF RINSATE

SAMPLE - MET LAB HNDL RINSATE

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SAMPLE NO.	ANALYSIS	PRESERVATIVE	CONT.	LOT	LAB
~~121009~~ 10/17/12					
121017 1446	Hydrazine	ICE	1, 40mL AMBER	1-045-003	WSTF
121017 1447	VOC	HCl	3, 40mL CLEAR GLASS	2-059-001	ALS
121017 1449	METALS	HNO_3	1, 500mL PLASTIC	052812-2V	ALS
121017 1450	CYANIDE ~~CYANIDE~~ 10/17/12	NaOH	1, 500mL PLASTIC	052812-2V	ALS
121017 1451	SVOC-8270	ICE	2, 1L AMBER	042312-1Q	ALS
121017 1453	GLYCOL-SVOC 8015	ICE	3, 40mL CLEAR GLASS	2-059-003	ALS
121017 1455	SVOC-PESTICIDES 8081	ICE	2, 1L AMBER	042312-1Q	ALS

01501 PUMPED 3GAL OF RINSATE FROM THE SUMP TO ETU.

DUP SAMPLE — MET LAB HWDL RINSATE

SAMPLE NO.	ANALYSIS	PRESERVATIVE	CONT.	LOT.	LAB
121017 1506	HYDRAZINE	ICE	1, 40mL AMBER	1-045-003	WSTF
121017 1507	VOC	HCl	3, 40mL CLEAR GLASS	2-059-001	ALS
121017 1509	METALS	HNO_3	1, 500mL PLASTIC	052817-2V	ALS
121017 1510	CYANIDE	NaOH	1, 500mL PLASTIC	052817-2V	ALS
121017 1511	SVOC-8270	ICE	2, 1L AMBER	042312-1Q	ALS
121017 1513	GLYCOL-SVOC 8015	ICE	3, 40mL CLEAR	2-059-003	ALS
121017 1514	PESTICIDES-SVOC 8081	ICE	2, 1L AMBER	042312-1Q	ALS

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01519 PUMPED 3GAL OF RINSATE DOWN THE SUMP TO THE ETU

01530 SHUT DOWN PROJECT SITE DOWN

01540 TRANSFERRED SAMPLES FROM ETU YARD TO SAMPLE FRIDGE [TWO SUITES]

01545 DELIVERED TWO HYDRAZINE SAMPLES TO WSTF LAB

— NOTE: 01130 DELIVERED 3 HYDRAZINE SAMPLES TO WSTF LAB

— NOTE: 01140 TRANSFERRED SAMPLES FROM ETU YARD TO SAMPLE FRIDGE [THREE SUITES]

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200 AREA HWDL — SAMPLE SHIPPING

DATE/TIME: 10/18/12, 9:30AM

LOCATION: BLDG 637

WORK AUTHORIZATION: JHA-045 & JHA-046

0930 PREPARED SAMPLES FOR SHIPPING TO ANALYTICAL LABORATORY
— SAMPLES WERE COLLECTED 10/17/12 & REFRIDGERATED OVERNIGHT.

01045 DELIVERED 3 SAMPLE COOLERS TO WSTF CENTRAL SHIPPING & FINISHED PACKAGING FOR FED-EX

10/18/12

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200 AREA HWDL → CLEAN ROOM, CSS, PROCESS EQ ROOM

DATE/TIME: 10/26/12, 7:30 AM

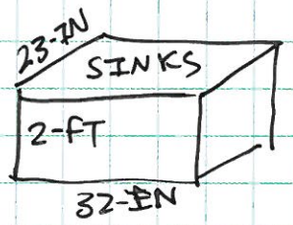
LOCATION: 200 AREA ~~ETU~~ CSS, CLEAN ROOM, PROCESS EQ ROOM

PERSONNEL: J. GRIFFIN, M. ENGLERT, A. SANCHEZ, F. GALLEGOS, C. DEL PERRONA, B. TUFTS, T. KONDY

WORK AUTHORIZATION: JHA's HW-047 & 048, ETU CLOSURE PLAN

WEATHER: NA

0730 TAILGATE SAFETY MEETING
0747 CHECK IN WITH FD DISPATCH
0750 SITE WALK / INSPECTION
0804 STARTED TRIPLE RINSE OF CLEAN ROOM DRAINS LINE.



- FILLED SINKS WITH CLEAN WATER AND THEN OPENED VALVES TO RINSE LINE
- FILLED SINKS WITH ALCONOX AND WATER SOLUTION
- FILLED SINKS WITH CLEAN WATER AND THEN OPENED VALVES TO RINSE LINE

0816 STARTED TO REMOVE CLAMPS AND ZIP TIES FROM HWDL PIPE TO BE REMOVED
0837 EMPTIED THE SINKS IN THE CLEAN ROOM TO COMPLETE FIRST RINSE. THEY WERE FILLED APPROXIMATELY HALF FULL.
0855 2ND RINSE OF CLEAN ROOM PIPE STARTED. ONE 5-GAL BUCKET OF ALCONOX SOLUTION POURED DOWN EACH SINK
0900 PAR TO FD DISPATCH
0906 STARTED 3RD AND FINAL RINSE OF SINKS BY FILLING THEM HALF FULL AND DRAINING THE SINK THROUGH THE ~~HAZ WASTE~~ HWDL
0932 COMPLETED TRIPLE RINSE OF CLEAN ROOM HWDL.
0948 STARTED TO TAKE APART HWDL AT TANK TO DRAIN THE LINE.

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0950 CRACKED THE CHECK VALVE AT THE TANK ON THE DOWNSTREAM SIDE. LINE WAS FULL OF WATER. THE WATER WAS COLLECTED IN FIVE GALLON BUCKETS AND THEN CONTAINERIZED IN A 30-GAL ~~BLE~~ DRUM

0957 STARTED TO REMOVE HWDL IN THE CSS HIGH BAY. - PHOTOS SHOW A CLEAN PIPE WITH NO RESIDUE

01002 PAR TO FD DISPATCH

01035 COMPLETED REMOVAL OF HWDL IN CSS HIGH BAY VALVE SHOP.

01040 BREAK

01055 ENTERED PROCESS EQ ROOM TO INSPECT WORK AREA AND DETERMINE PATH FORWARD

01102 PAR TO FD DISPATCH.

01108 STARTED TO REMOVE THE HWDL FROM THE PROCESS EQ ROOM.

- ONE TEE INTO GOLD ROOM WAS NOT CONNECTED
- 2ND TEE WAS STILL CONNECTED IN GOLD ROOM SO WE CUT IT. IT HAS A FLOOR PENETRATION FOUND TWO MORE FLOOR PENETRATIONS IN GOLD ROOM + TOOK PICS

01156 COMPLETED HWDL REMOVAL IN PROCESS EQ ROOM

NOTE: 01130 A SPILL WAS NOTED IN THE PROCESS EQUIPMENT ROOM. RINSATE WATER FROM THE DRAINLINE LEAKED FROM THE PIPE LOCATED AT GROUND LEVEL. AS THE LEAK WAS FOLLOWED IT WAS DISCOVERED TO HAVE MADE IT TO THE FLOOR DRAIN IN THE ROOM THAT DISCHARGES TO THE SEWER. SPILL WAS ADDRESSED RIGHT AWAY AND CLEANED UP WITH PAPER TOWELS. IT WAS ALSO STOPPED FROM FURTHER DISCHARGE TO THE DRAIN. APPROXIMATELY 4 CUPS OF RINSATE WAS RELEASED FROM THE HWDL. IT IS EST. THAT 2 CUPS ACTUALLY WENT DOWN THE SEWER. THE LINE WAS TRIPLE RINSED EARLIER IN THE DAY FROM THE CLEAN ROOM.

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01230 BREAK FOR LUNCH
01330 RESUMED WORK AT 200 AREA IN THE LABCON HIGH BAY SO THAT THE FLOOR DRAINS CAN BE TRIPLE RINSED.
1400 ~~0200~~ 10/26/12 PUT DRAGERS ON OPEN FLOOR ~~DRAIN~~ DRAIN IN THE CENTER OF THE ROOM
1405 ~~0205~~ 10/26/12 DRAGERS = ZERO
~~0207~~ 10/26/12 1407 STARTED 1ST RINSE OF FLOOR DRAIN LOCATED IN THE CENTER OF THE ROOM
- CAN ONLY GET HOSE TO GO ABOUT TWO FEET BEFORE WE GET STUCK
- ALSO TRIED FISH TAPE AND THE FISH TAPE WITH THE PRESSURE WASHER HOSE ATTACHED.

1433 ~~0233~~ DEVIATION FROM THE CLOSURE PLAN
- HOSE ON FULL VOLUME TO FLUSH THE CENTER FLOOR DRAIN FOR 10 MIN
(1443) - 2 - 5GAL BUCKETS OF ALCONOX SOLUTION
- HOSE ON FULL VOLUME TO FLUSH THE CENTER FLOOR DRAIN FOR 10 MIN

1453 → COMPLETE ~~1453~~ 3RD & RINSE
1443 OPENED 2ND FLOOR DRAIN IN LABCON HIGH BAY
1453 DRAGER READINGS ZERO
1455 STARTED 1ST RINSE OF 2ND FLOOR DRAIN IN LABCON HIGH BAY
- THIS ONE IS STRUCTURED SO THAT THE PRESSURE HOSE CAN GO THROUGH IT
- HOSE WENT ABOUT 20 FT BASED ON THE MEASURMENTS ON THE FISH TAPE

1500 2ND RINSE OF HWDL IN LABCON HIGH BAY (2ND FD)
1502 3RD RINSE OF HWDL (FLOOR DRAIN #2). BY PULLING THE PRESSURE WASHER HOSE OUT SLOWLY
1505 COMPLETED TRIPLE RINSE OF FLOOR DRAIN #2.
1507 STARTED 1ST RINSE OF FLOOR DRAIN LOCATED IN THE OX DECON STATION LOCATED JUST OUTSIDE THE LABCON HIGH BAY.
- DRAGERS = 0

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- THIS FLOOR DRAIN CANNOT BE CLEANED USING THE PRESSURE WASHER HOSE. IT IS IN THE SAME CONFIGURATION AS THE FIRST FLOOR DRAIN IN THE LABCON HIGH BAY
- 1ST RINSE CONSISTS OF HOSE FULL VOLUME OF POTABLE WATER DOWN THE DRAIN FOR 10 MIN

1517 COMPLETED 1ST RINSE

1518 POURED 2-5GAL BUCKETS OF ALCONOX SOLUTION DOWN THE FLOOR DRAIN IN THE OX DECON STATION

1520 COMPLETED 2ND RINSE

1521 STARTED 3RD RINSE – HOSE ON. FULL VOLUME OF POTABLE WATER DOWN THE DRAIN FOR 10 MIN.

1531 COMPLETED 3RD RINSE

1532 STARTED TO SHUT DOWN SITE FOR THE DAY

1533 NOTIFIED FD DISPATCH THAT WE WERE DONE FOR THE DAY

- 1 GAL RINSATE IN A 30-GAL DRUM PUT AT ETU DECON PAD FOR STORAGE
- 2 PACKAGES OF HNDL PIPE
- 2 - 5-GAL BAGS OF PPE + DEBRIS (PAPER TOWELS, GLOVES – etc)

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200 AREA HWDL - WASTE SAMPLING FOR DECON WATER

DATE/TIME: 10/29/12, 0910

LOCATION: ETU

PERSONNEL: D. HALVORSEN, J. GRIFFIN, M. ENGLERT, F. GALLEGOS

WORK AUTHORIZATION: JHA-047, JHA-048, ETU CLOSURE PLAN, SAP

WEATHER: CLEAR & SUNNY,

0910 TAILGATE SAFETY BRIEFING
0920 CHECK IN WITH FD DISPATCH

~~Sample No. Analysis Preservative Cont. Lot Lab~~ 10/29/12

* DRUMS 5081 & 5074 - COMPOSITE DECON WATER SAMPLES
→ NOTE: COLLECTED WITH A ~~COLIWASA~~ COLIWASA

SAMPLE No	ANALYSIS	PRESERVATIVE	CONT.	LOT	LAB
1210290935	HYDRAZINES	ICE	1, 40mL Amber	1-045-003	NSTF
1210290937	VOC	HCl/ICE	3, 40mL Clear GLASS	2-059-001	ALS
1210290956	METALS	HNO_3/ICE	1, 500mL plastic	052812-2V	ALS
1210290959	CYANIDE	NaOH/ICE	1, 500mL plastic	052812-2V	ALS
1210291001 ~~1210291000~~	SVOC - 8270	ICE	2, 1L Amber GLASS	042312-1Q	ALS
1210291004	SVOC Glycol - 8015	ICE	3, 40mL CLEAR ~~2, 1L Amber~~ GLASS	2-059-003	ALS
~~1210291000~~ 1210291008	Pesticides - 8081	ICE	2, 1L Amber GLASS	042312-1Q	ALS

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DRUM No 5075 - DECON WATER FROM MET LAB HWDL

SAMPLE No.	ANALYSIS	PRESERVATIVE	CONT.	LOT	LAB
121029/031	HYDRAZINES	ICE	1, 40 mL ~~CLEAR~~ AMBER GLASS	1-045-003	WSTF
121029/032	VOC	HCl/ICE	3, 40mL CLEAR GLASS	2-059-001	ALS
121029/036	Metals	HNO_3 /ICE	1, 500 mL PLASTIC	052812-2V	ALS
121029/037	Free Cyanide	NaOH/ICE	1, 500 mL PLASTIC	052812-2V	ALS
121029/038	SVOC-8270	ICE	2, 1L AMBER	042312-1Q	ALS
121029/041	SVOC-Glycol (8015)	ICE	3, 40mL CLEAR GLASS	2-059-003	ALS
121029/043	Pesticides - 8081	ICE	2, 1L AMBER	042312-1Q	ALS

0/050 WASTE SAMPLING COMPLETE

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200 AREA HWDL – TRIPLE RINSE HWDL REMOVED FROM CSS HIGH BAY VALVE SHOP AND THE PROCESS EQUIPMENT ROOM
- COLLECT RINSATE AND SAMPLE
- COLLECT DUPLICATE SAMPLE
- COLLECT WASTE SAMPLE (DECON WATER

DATE/TIME: 10/30/12; 0818

LOCATION: ETU DECON PAD

PERSONNEL: J. GRIFFIN, M. ENGLERT, D. HALVORSEN, F. GALLEGOS

WORK AUTHORIZATION: JHA-048; ETU CLOSURE PLAN

WEATHER: SUNNY & CLEAR;

0818 TAILGATE SAFETY BRIEFING
0830 MOBILIZE TO FIELD
0847 NOTIFIED FD DISPATCH
0910 OPENED UP THE PACKAGED PIPE
0915 ~~DROPPED~~ DONNED PPE 10/30/12

0920 STARTED TRIPLE RINSE OF HWDL FROM CSS AND PROCESS EQUIPMENT ROOM
- PRESSURE WASH
- ALCONOX AND WATER SOLUTION AND BRUSH
- PRESSURE WASH

0945 BREAK
0930 VISITORS – SNU SCIENCE CLASS
01003 VISITORS SIGN IN TO SITE SECURITY LOG
01012 RESUMED TRIPLE RINSE OF HWDL PIPE FROM CSS AND PROCESS EQUIPMENT
01035 COMPLETED TRIPLE RINSE OF HWDL
01040 STARTED TO COLLECT WASTE SAMPLE FROM THE DECON WATER GENERATED THIS MORNING

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WASTE DRUM - 5106

SAMPLE No.	ANALYTE	PRESERVATIVE	CONT.	LOT	LAB
1210301040	Hydrazine	ICE	1, 40 mL AMBER GLASS	1-045-003	WST
1210301042	VOC-8260	HCL/ICE	3, 40mL CLEAR	2-059-001	ALS
1210301045	Metals	HNO_3/ICE	1, 500 mL PLASTIC	052812-2V	ALS
1210301047	FREE CYANIDE	NaOH/ICE	1, 500 mL PLASTIC	052812-2V	ALS
1210301048	SVOC-8270	ICE	2, 1L AMBER GLASS	042312-1Q	ALS
1210301050	GLYCOL-8015	ICE	3, 40mL CLEAR GLASS	2-059-003	ALS
1210301051	PESTICIDES-8081	ICE	2, 1L AMBER GLASS	042312-1Q	ALS

01100 STARTED TO SECURE SITE FOR LUNCH BREAK
01107 PAR TO FD DISPATCH
01120 LUNCH BREAK
01245 ENTERED SITE TO SAMPLE RINSATE FROM HNDL DECONTAMINATED (TRIPLE RINSED) THIS MORNING
1300 STARTED TO COLLECT RINSATE IN A STEEL BUCKET

CSS/PER RINSATE SAMPLES

SAMPLE No.	ANALYTES	PRESERVATIVE	CONT.	LOT	LAB
1210301311	HYDRAZINES	ICE	1, 40mL AMBER GLASS	1-045-003	WSTF
1210301312	HYDRAZINES	ICE	1, 40mL AMBER GLASS	1-045-003	WSTF
1210301313	VOC-8260	HCL/ICE	3, 40mL CLEAR GLASS	2-059-001	ALS

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SAMPLE NO.	ANALYTE	PRESERVATIVE	CONT.	LOT	LAB
121030 1315	VOC-8260	HCl / ICE	3, 40 mL CLEAR GLASS	2-059-001	ALS
~~121030 1315~~ 10/30/12					
121030 1320	METAL	HNO_3 / ICE	1, 500 mL PLASTIC	052812-2V	ALS
121030 1321	METALS	HNO_3 / ICE	1, 500 mL PLASTIC	052812-2V	ALS
121030 1322	CYANIDE	NaOH / ICE	1, 500 mL PLASTIC	052812-2U	ALS
121030 1323	CYANIDE	NaOH / ICE	1, 500 mL PLASTIC	052812-2U	ALS
121030 1325	SVOC-8270	ICE	2, 1 L AMBER GLASS	042312-1Q	ALS
121030 1328	SVOC-8270	ICE	2, 1 L AMBER GLASS	042312-1Q	ALS
121030 1330	GLYCOL-8015	ICE	3, 40 mL CLEAR GLASS	2-059-003	ALS
121030 1332	GLYCOL-8015	ICE	3, 40 mL CLEAR GLASS	2-059-003	ALS
121030 1338	PESTICIDES-8081	ICE	2, 1 L AMBER GLASS	042312-1Q	ALS
121030 1341	PESTICIDES-8081	ICE	2, 1 L AMBER GLASS	042312-1Q	ALS

01350 STARTED TO CLEAN UP PROJECT SITE AND DEMOB FOR THE DAY

- 29 GAL DECON WATER
- 2 5 GAL BAG PPE, PLASTIC PAPER

01418 NOTIFIED FD DISPATCH LEAVING FOR THE DAY

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200 AREA HWDL - WEST SIDE OF BUILDING 200, SW SIDE OF BUILDING 200 + 201 UNDERGROUND PIPING

DATE/TIME: 10/31/12

LOCATION: WEST AND SOUTHWEST SIDE OF BUILDING 200 + 201

PERSONNEL: J. GRIFFIN, M. ENGLERT, D. HALVORSEN, T. CONDY

WORK AUTHORIZATION: JHA-047, ETU CLOSURE PLAN

WEATHER: SUNNY CLEAR, 50°F

NOTE: SAMPLES SHIPPED TODAY FROM 10/29 + 10/30

0900 TAILGATE SAFETY BRIEFING
0912 NOTIFIED FD DISPATCH
0925 CUT VENT PIPE ON WEST SIDE OF ~~20~~ BUILDING 200 TO GAIN ACCESS TO UNDERGROUND HWDL FOR TRIPLE RINSE
DRAGER READING (FUEL) = ZERO CAL = 11/24/12
DRAGER READING (OX) = ZERO CAL = 10/30/12
0934 STARTED TRIPLE RINSE OF THE HWDL ON THE WEST SIDE OF ~~200~~ BLDG 200
- 1ST RINSE IS PRESSURE WASHER HOSE PUSHED DOWN THE LENGTH OF PIPE (360° NOZZLE)
0942 - 2ND RINSE OF ALCONOX SOLUTION POURED DOWN HWDL FROM VENT PIPE - 5GAL
0945 - 3RD RINSE IS PRESSURE WASHE HOSE PULLED BACK OUT OF PIPE (360° NOZZLE)
0947 - TRIPLE RINSE COMPLETE FROM ROOF VENT #1 THROUGH ROOF VENT #2
0954 CUT 2ND VENT PIPE ON WEST SIDE
DRAGER READINGS (FUEL) = ZERO
DRAGER READINGS (OX) = ZERO
0959 STARTED TRIPLE RINSE OF HWDL FROM 2ND ROOF DRAIN TO CLEANOUT LOCATED OUTSIDE THE PROCESS SQ ROOM

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0959 — 1ST RINSE IS PRESSURE WASHER PUSHED THROUGH THE LINE

01000 PAR TO FD DISPATCH

* HOSE IS STUCK AT THE 90° TURN AROUND THE BUILDING

* TRYING TO FLOAT IT THOUGH BY ~~APPLYIN~~ APPLYING A WATER HOSE TO THE LINE

— FLOAT WORKED AND THEN IT GOT STUCK AGAIN

~~01011~~ 08

01011 — 2ND RINSE IS ALCONOX SOLUTION - 5 GAL

01013 — 3RD RINSE IS PRESSURE WASHER PULLED BACK OUT OF THE PIPE

01015 TRIPLE RINSE COMPLETE

01020 BOTH ROOF DRAIN PORTS WERE MARKED WITH TRIPLE RINSE STICKERS

01030 CUT OUT LAST SECTION OF PIPE FROM PROCESS EQ RM TO DRAIN TO THE UNDERGROUND ON SW SIDE OF 201

— DRAGER (FUEL) = 0

— DRAGER (OX) = 0

01035 BREAK AND EQUIPMENT ADJUSTMENT

01101 PAR TO FD DISPATCH

01102 RETURN TO JOB SITE

01111 STARTED 1ST RINSE OF PIPE SECTION FROM PROCESS EQ RM DRAIN TO UNDERGROUND HNDL LOCATED OUTSIDE THE SW SIDE OF 201

25 FT → CAN GET TO THE TEE ~~START~~ INTO MAIN LINE WITH THE PRESSURE WASHER HOSE

01115 2ND RINSE WITH ALCONOX SOLUTION - 5 GAL

01116 3RD RINSE WITH PRESSURE WASHER HOSE

01117 COMPLETE TRIPLE RINSE

01118 SECURE SITE FOR LUNCH

↓ NOTES: THE PRESSURE WASHER HOSE CANNOT BE PUSHED THROUGH THIS ENTIRE SECTION OF PIPE. THERE ARE TOO MANY ~~TESS~~ TEES AND 45° & 90° ANGLES SEE SKETCH

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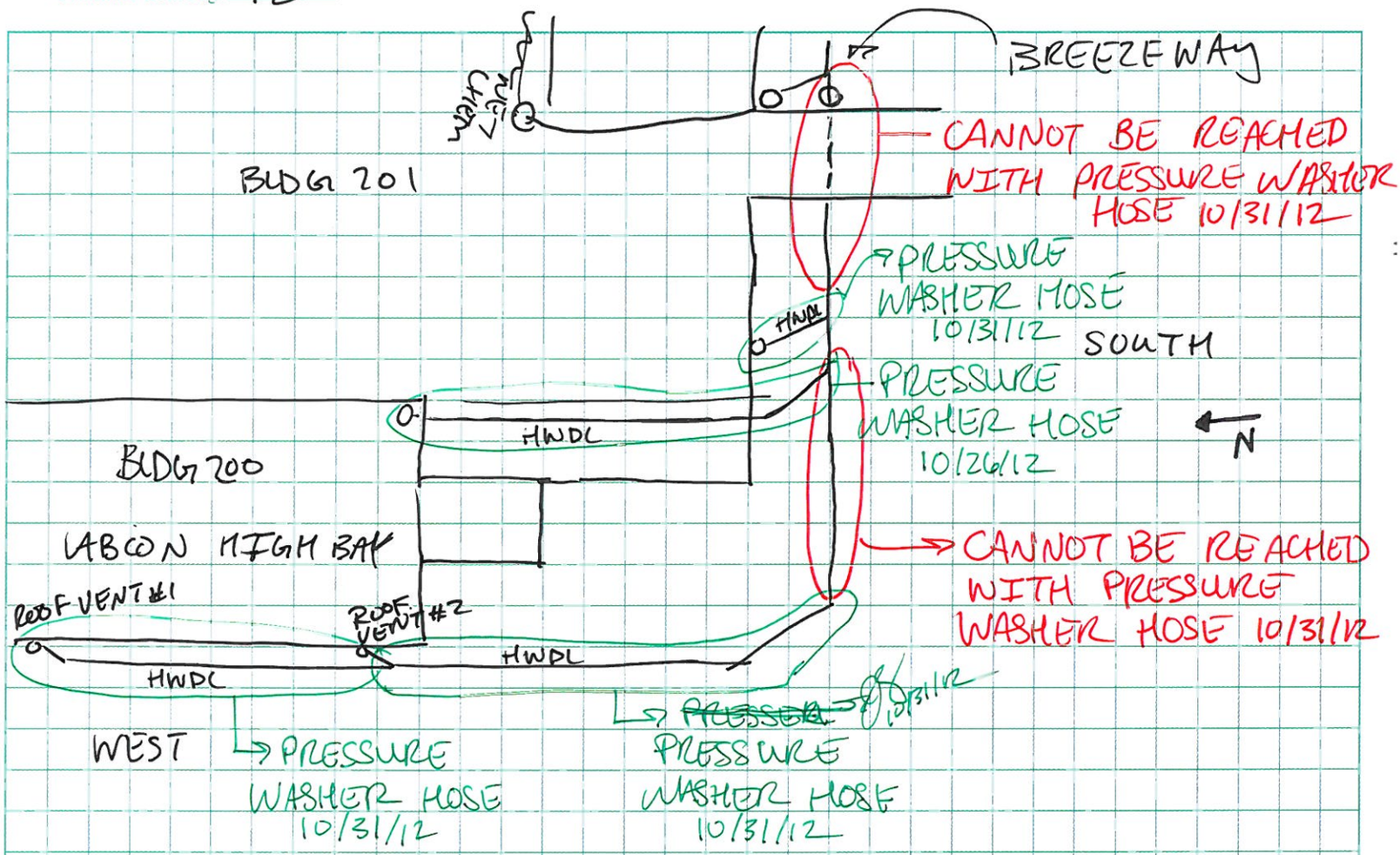

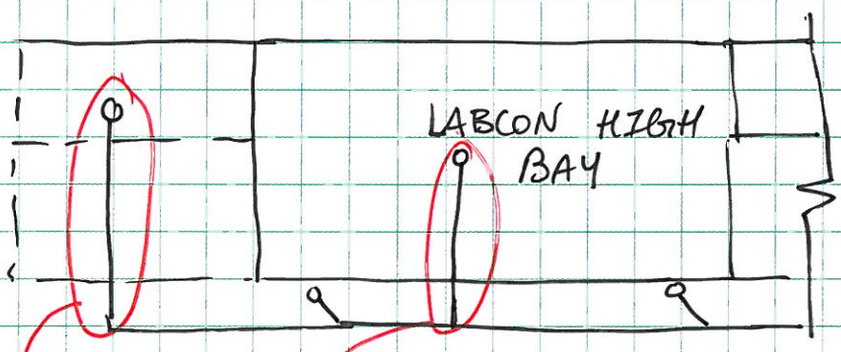

CANNOT BE REACHED WITH PRESSURE WASHER HOSE ⇒ TRIPLE RINSED (W) DIFFERENT METHOD 10/26/12

NOTE: TWO DOWNSTREAM SECTIONS SHOWN ABOVE RECIEVED DECON WATER FROM THE 4-5 TRIPLE RINSES ~~PERFORMED~~ PERFORMED AT LOCATIONS UPSTREAM.

PROPOSE DEVIATION TO CLOSURE PLAN THAT THIS MEETS THE CRITERIA TO TRIPLE RINSE THESE SECTIONS OF THE HWDL LOCATED UNDERGROUND.

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200 AREA - UNDERGROUND PIPING IN THE BREEZEWAY

DATE / TIME: 11/1/12; 0800

LOCATION: 200 AREA BREEZEWAY

PERSONNEL: J. GRIFFIN, M. ENGLERT, D. HALVORSEN, F. GALLEGOS

WORK AUTHORIZATION: JHA-047, ETU CLOSURE

WEATHER: SUNNY & CLEAR

0800 TAILGATE SAFETY BRIEFING
0815 SITE WALK AND PLANNING
0845 GATHER SOME ADDITIONAL EQUIPMENT
- TOOL BOX
- ALCONOX FROM WAREHOUSE
0930 MOBILIZE - SITE SET UP
0935 DRAGER CHECK
- FUEL ERTK-0306 CAL 11/24/12
- OX ERAC-0381 CAL 12/30/12
0940 OPENED HWDL CLEANOUT IN BREEZEWAY NEAR SIDE DOOR OF 201
- DRAGER READINGS
FUEL = 0
OX = 0 } 0947

0954 STARTED TRIPLE RINSE OF HWDL IN BREEZEWAY OF 201 STRAIGT SECTION FIRST AS FAR AS IT WILL GO
- 1ST RINSE IS PRESSURE WASHER HOSE
* CAN ONLY GET HOSE ABOUT ___ FT
* TRY FLOATING IT WITH ETNA WATER BY HOSE GOT ABOUT ___ FT
01009 - 2ND RINSE 5-GAL BUCKET OF ALCONOX SOLN
01011 - 3RD RINSE PULL PRESSURE WASHER HOSE BACK OUT OF HWDL PIPE

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01015 OPENED UP TWO MANHOLES IN BREEZEWAY TO SEE IF THERE IS ACCESS TO HWDL. TOOK PICTURES AND THERE IS NO ACCESS WITHOUT CUTTING THE LINE

01036 CUT PIPE VENT FROM THE UNDERGROUND ACCESS IN THE CORNER OF BREEZEWAY. THIS WILL PROVIDE ACCESS TO ANGLED SECTION FROM WET CHEM LAB TO MAIN UNDERGROUND SECTION
DRAGERS: FUEL = 0
OX = 0

01050 1ST RINSE OF 45° ANGLED SECTION OF HWDL USING THE PRESSURE WASHER HOSE

01056 2ND RINSE OF 45° ANGLED SECTION OF HWDL USING 5-GAL OF ALCONOX SOLUTION

01057 3RD RINSE OF 45° ANGLED SECTION OF HWDL BY PULLING THE PRESSURE WASHER HOSE OUT.

01058 COMPLETED 45° ANGLED SECTION OF HWDL IN THE CORNER OF BREEZWAY WHERE THE WET CHEM LAB CONNECTED TO THE UNDERGROUND.

01100 BREAK FOR LUNCH

01345 MOBILIZED TO PROJECT SITE TO START CLEANOUT & RINSE OF 40° ANGLED HWDL FROM ENV LAB UNDERGROUND TO MAIN LINE IN BREEZEWAY

01400 OPENED HWDL ACCESS JUST OUTSIDE THE ENV LAB
DRAGERS FUEL = 0
OX = 0

01406 1ST RINSE OF HWDL 45° ANGLE FROM ENV LAB TO MAIN LINE WITH PRESSURE WASHER
- ADDED A WATER HOSE TO HELP FLOAT THE HOSE SO THE NOZZLE MOVES IN THE PIPE EASIER — APPROXIMATELY 140FT OF HOSE IN

01425 2ND RINSE - 5-GAL OF ALCONOX SOLUTION POURED DOWN THE HWDL

01428 3RD RINSE OF HWDL BY PULLING PRESSURE WASHER HOSE BACK OUT OF THE HWDL

01430 COMPLETE

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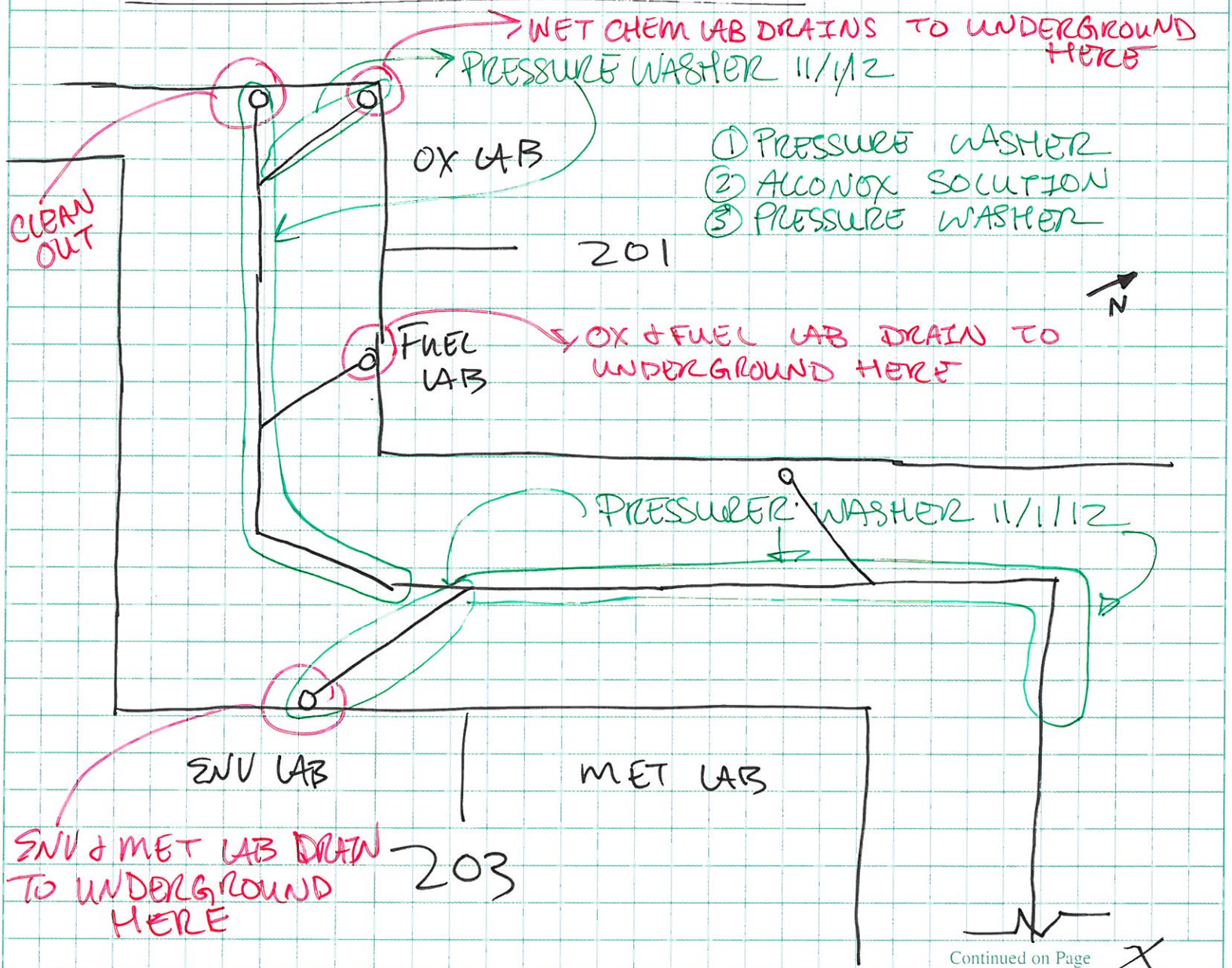
01450 STARTED TO SHUT DOWN PROJECT SITE FOR THE DAY.

- LABELED 3 HWDL ACCESS POINTS TO THE UNDERGROUND AS "TRIPLE RINSED"
- WASTE
  - 1 5-GAL BAG PPE AND PAPER AND PLASTIC DEBRIS

01500 PERSONNEL LEFT PROJECT SITE

NOTES REGARDIN DECON ACTIVITIES:



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200 AREA - OX & FUEL LABS HWDL

DATE/TIME: 11/2/12, 0800

LOCATION: 200 AREA OX & FUEL LAB

PERSONNEL: J. GRIFFIN, M. ENGLERT, D. HALVORSEN, A. MUNTEZ

WORK AUTHORIZATION: JHA-046, ETU CLOSURE PLAN

WEATHER: SUNNY, CLEAR, 50°F

0800 TAILGATE SAFETY BRIEFING
0815 SITE WALK OF OX LAB FOR SAFETY
- LAB PERSONNEL TO MOVE CHEMICALS FROM UNDER CABINETS
- 98% PEROXIDE TO ~~BE~~ MOVED TO SAFE LOCATION OUT OF THE WAY
- ASKED IF BACK DOOR COULD BE OPENED SO OUR HOSES FROM THE PRESSURE WASHER CAN COME THROUGH IT WHILE THE WASHER IS LOCATED OUTSIDE IN THE BREEZEWAY
  X YES BUT THE FUME HOODS MAY CHIRP AND ALARM (PER MARK MCCLURE)

0829 CREW STARTED MOBILIZATION TO SITE
0900 PAR TO FD DISPATCH
0901 ENTERED OX LAB TO START WORK
- OX LAB HAS 2 FUME HOOD SINKS, A LAB SINK, AND A SHOWER DRAIN

0924 STARTED TRIPLE RINSE OF OX LAB HWDL
- 5-GAL OF ALCONOX SOLUTION POURED DOWN EACH DRAIN
- PRESSURE WASH DOWN THE PIPE
- PRESSURE WASH BACK OUT OF THE PIPE

0925 LAB SINK ACCONOX SOLUTION
0927 1ST FUME HOOD SINK ALCONOX SOLUTION

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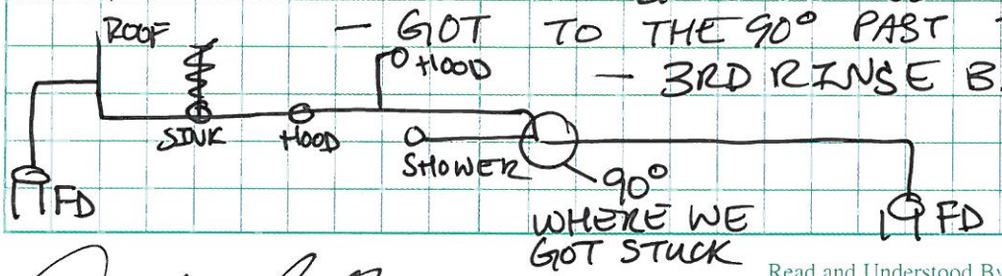
0928 2ND FUMEHOOD SINK ALCONOX SOLUTION
0931 SHOWER DRAIN ALCONOX SOLUTION
0932 TURNED ON WATER IN LAB SINK TO FLUSH SYSTEM HWDL FOR 5-MIN

0940 REMOVED TRAP ON LAB SINK
- NO MERCURY IN THE TRAP
- NO PARTS/DEBRIS IN THE TRAP
0952 2ND RINSE - PRESSUR WASHER DOWN THE LAB SINK DRAIN
- GOT TO THE TEE IN THE BREEZEWAY
0958 3RD RINSE - BACK OUT THE PRESSURE WASHER FROM THE TEE IN THE BREEZEWAY TO THE LAB SINK DRAIN
01000 PAR TO FD DISPATCH
01002 REMOVED TRAP ON 1ST FUME HOOD
- NO MERCURY IN THE TRAP
- NO PARTS/DEBRIS IN THE TRAP
01006 2ND RINSE - PRESSURE WASHER DOWN THE 1ST FUME HOOD SINK (GOT THROUGH BOTH 90° AND TEE OUTSIDE
01008 3RD RINSE - BACK OUT THE PRESSURE WASHER
01010 REMOVED TRAP ON 2ND FUME HOOD
- NO MERCURY IN THE TRAP
- NO PARTS/DEBRIS IN THE TRAP
01013 2ND RINSE - PRESSURER WASHER THROUGH WALL PENETRATION AND 90°
01016 3RD RINSE - BACK OUT THE PRESSURE WASHER
01018 STARTED 2ND RINSE OF SHOWER DRAIN
01019 3RD RINSE OF SHOWER DRAIN
01023 OPENED PIPE CLEAN OUT ON THE ROOF VENT IN THE BREEZEWAY
01024 2ND RINSE OF EXTERIOR (BREEZEWAY)
- GOT TO THE 90° PAST THE OX SHOWER
- 3RD RINSE BACKED IT OUT (01026)



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01030 CUT OX LAB PIPE IN BREEZEWAY BEFORE 90° INTO THE FLOOR DRAIN TO UNDERGROUND

01032 2ND RINSE FROM CUT PIPE TO THE 90° WE GOT STUCK AT BEFORE

01033 3RD RINSE - BACKED PRESSURE WASHER OUT

→ CAUGHT THE RINSE WATER IN A BUCKET FOR WASTE

RINSATE SAMPLE - OX LAB

01045
1. POUR CLEAN TAP WATER DOWN EACH DRAIN (4 TOTAL)
2. COLLECT RINSATE IN CLEAN STAINLESS STEEL BUCKET AT CUT PIPE EDGE IN THE BREEZEWAY
3. SAMPLE

SAMPLE NO.	ANALYTE	PRESERVATIVE	CONT.	LOT	LAB
1211021057	Hydrazine	ICE	1, 40mL AMBER GLASS	1-045-003	WSTF
1211021058	VOC	HCl/ICE	3, 40mL CLEAR GLASS	2-059-001	ALS
1211021101	METALS	HNO_3/ICE	1, 500mL PLASTIC	052812-2V	ALS
1211021102	CYANIDE	NaOH/ICE	1, 500mL PLASTIC	052812-2V	ALS
1211021103	SVOC-8270	ICE	2, 1L AMBER GLASS	042312-1Q	ALS
1211021106	GLYCOL-8015	ICE	3, 40mL CLEAR GLASS	2-059-003	ALS
1211021108	PESTICIDES-8081	ICE	2, 1L AMBER GLASS	042312-1Q	ALS

01115 LABELED EACH DRAIN AND THE HWDL IN THE BREEZEWAY WITH "TRIPLE RINSE STICKERS

01122 BREAK FOR LUNCH

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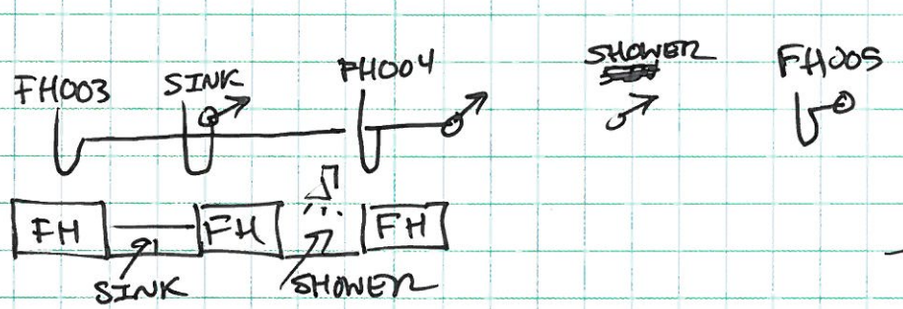
01245 RE ENTERED SITE AND
01335 DRAGER CHECK
FUEL ERTK-0306 = 0
~~OXY~~ NOT REQUIRED
01351 SAFETY RINSE OF HWDL IN FUEL LAB → FH-003



FUEL LAB PIPING INSIDE SOUTH WALL

01356 COMPLETE SAFETY RINSE FH003
01403 SAFETY RINSE OF HWDL FROM LAB SINK
01404 SAFETY RINSE OF HWDL FH004
01408 COMPLETE SAFETY RINSE ~~FH004~~ 11/2/12 LAB SINK
01409 COMPLETE SAFETY RINSE FH004
01410 SAFETY RINSE OF FH005
~~NOTE~~
NOTE: SHOWER HAS NEVER BEEN USED SO NO RINSE (SAFETY)
01415 COMPLETE SAFETY RINSE OF FH005
01442 1ST RINSE ALCONOX SOLUTION - FH003
01444 COMPLETE 1ST RINSE FH003
01445 1ST RINSE ALCONOX SOLUTION - LAB SINK
01446 COMPLETE 1ST RINSE - LAB SINK
01447 1ST RINSE ALCONOX SOLUTION - FH004
01449 COMPLETE 1ST RINSE FH004
01450 1ST RINSE ALCONOX SOLUTION - FH005
01451 COMPLETE 1ST RINSE - FH005
01452 1ST RINSE ALCONOX SOLUTION - SHOWER DRAIN
01456 REMOVED TRAP ON FH003 CUP SINK
- NO MERCURY IN THE TRAP
- NO DEBRIS IN THE TRAP
- TRAP WAS REMOVABLE WITHOUT CUTTING
- DRAGER = 0

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1502 2ND RINSE OF FH003 USING THE PRESSURE WASHER
1503 3RD RINSE OF FH003 - BACK OUT PRESSURE WASHER
1508 REMOVED TRAP ON FH004
- THE PIPE MUST BE CUT BECAUSE IT IS ~~GLUE~~ GLUED
- CHEM LAB STAFF ON HAND TO STABILIZE EQ IN HOOD
- NO MERCURY IN THE TRAP
- NO DEBRIS IN THE TRAP
- DRAGER = ZERO
1513 2ND RINSE FH004 USING THE PRESSURE WASHER
1514 3RD RINSE FH004 - BACK OUT PRESSURE WASHER
1523 REMOVED TRAP ON LAB SINK
- THE PIPE WAS GLUED SO WE CUT IT
- NO MERCURY IN THE TRAP
- NO DEBRIS IN THE TRAP
- DRAGER = 0 ZERO
1528 2ND RINSE FOR THE LAB SINK USING THE PRESSURE WASHER
1529 3RD RINSE FOR THE LAB SINK - BACK OUT THE PRESSURE WASHER
1532 REMOVED TRAP ON FH005
- DID NOT HAVE TO CUT THIS ONE
- NO MERCURY IN TRAP
- NO DEBRIS IN TRAP
- DRAGER = ZERO
1534 2ND RINSE FOR THE ~~LAB S~~ FH005 CUP SINK PRESSURE WASHER
1536 3RD RINSE FOR FH005 CUP SINK - BACKED OUT THE PRESSURE WASHER
1545 2ND RINSE SHOWER DRAIN WITH PRESSURE WASHER
1546 3RD RINSE SHOWER DRAIN - BACKED OUT THE PRESSURE WASHER
1552 SAFETY RINSE FH001
1556 COMPLETED SAFETY RINSE OF FH001
1557 SAFETY RINSE FH002
1602 COMPLETED SAFETY RINSE OF FH002

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01609 1ST RINSE HWDL FROM FH001 CUP SINK WITH ALCONOX SOLUTION - 5 GAL

01615 COMPLETED 1ST RINSE FH001

01616 1ST RINSE HWDL FROM FH002 CUP SINK WITH ALCONOX SOLUTION - 5 GAL

01618 COMPLETED 1ST RINSE FH002

01619 REMOVED TRAP FROM FH001
- NO MERCURY IN TRAP
- NO DEBRIS IN TRAP
- DRAGER = ZERO

DID NOT CUT

01623 2ND RINSE OF HWDL FROM FH001 WITH PRESSURE WASHER

01624 3RD RINSE OF HWDL FROM FH001 - BACK OUT PRESSURE WASHER

01626 REMOVED TRAP FROM FH002
- NO MERCURY IN TRAP
- NO DEBRIS IN TRAP
- DRAGER = 0
- DID NOT CUT THE TRAP

01629 2ND RINSE OF HWDL FROM FH002 WITH PRESSURE WASHER

01630 3RD RINSE OF HWDL FROM FH002 - BACK OUT PRESSURE WASHER.

01641 CUT CAP OFF ~~HIGH~~ HIGH END OF HWDL CONNECTED TO FUEL LAB IN BREEZEWAY

01644 2ND RINSE OF HWDL CONNECTED TO TANK IN BREEZWAY. 1ST RINSE WAS COMPLETED WITH FH3, 4, & 5.

01646 3RD RINSE OF HWDL CONNECTED TO TANK IN BREEZEWAY.

01700 COLLECT COMPOSITE RINSATE SAMPLE FROM THREE LOCATIONS
1. TANK IN BREEZEWAY
2. CUT PIPE IN BREEZEWAY NEAR TANK SOUTH SIDE OF 201 & OUTSIDE FUEL LAB (FH3, 4, 5) — LAB SINK & SHOWER
3. EAST SIDE OF 201 IN BREEZEWAY FROM QUICK CONNECT TO NORTH FUME HOODS 1 & 2

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RINSATE SAMPLE - FUEL LAB

SAMPLE NO	ANALYTE	PRESERVATIVE	CONT	LOT	LAB
121102 1740	HYDRAZINE	ICE	1, 40mL AMBER GLASS	1-045-003	WSTF
121102 1741	HYDRAZINE	ICE	1, 40mL AMBER GLASS	1-045-003	WSTF
121102 1743	VOC	HCL/ICE	3, 40mL CLEAR GLASS	2-059-001	ALS
121102 1745	VOC	HCL/ICE	3, 40mL CLEAR GLASS	2-059-001 ~~052812-2V~~ 14 2416	ALS
121102 1747	METALS	HNO3/ICE	1, 500mL PLASTIC	052812-2V	ALS
121102 1748	METALS	HNO3/ICE	1, 500mL PLASTIC	052812-2V	ALS
121102 1749	CYANIDE	NaOH/ICE	1, 500mL PLASTIC	052812-2V	ALS
121102 1750	CYANIDE	NaOH/ICE	1, 500mL PLASTIC	052812-2V	ALS
121102 1751	SVOC-8270	ICE	2, 1L AMBER GLASS	042312-1Q	ALS
121102 1753	SVOC-8270	ICE	2, 1L AMBER GLASS	042312-1Q	ALS
121102 1756	GLYCOL-8015	ICE	3, 40mL CLEAR GLASS	2-059-003	ALS
121102 1758	GLYCOL-8015	ICE	3, 40mL CLEAR GLASS	2-059-002	ALS
121102 1759	PESTICIDES-8081	ICE	2, 1L AMBER GLASS	042312-1Q	ALS
121102 1801	PESTICIDES-8081	ICE	2, 1L AMBER GLASS	042312-1Q	ALS

~~01812~~ 11/2/12 ✓ STARTED TO
01812 SHUT DOWN SITE FOR WEEKEND

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DATE: 11/5/12

*SHIPPED SAMPLES COLLECTED 11/2/12.

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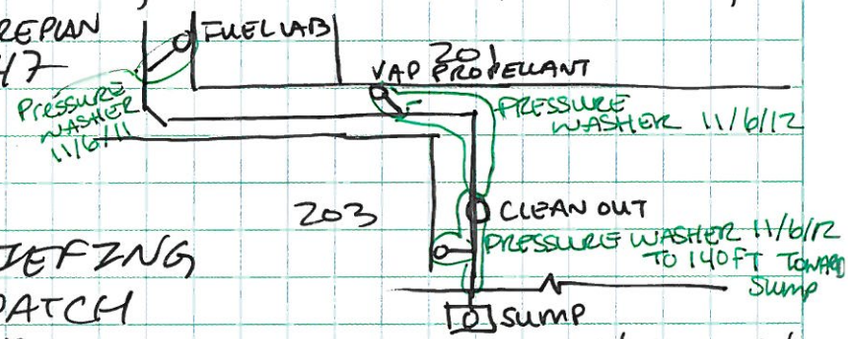
200 AREA – BREEZEWAY (EAST SIDE) AND NORTH SIDE OF 203
UNDERGROUND HWDL TO THE SUMP

DATE/TIME: 11/6/12, 8:00AM

LOCATION: 200 AREA BREEZEWAY

PERSONNEL: J. GRIFFIN, M. ENGLERT, D. HALVORSEN, T. KONDY
ELVIA

WORK AUTHORIZATION: ETU CLOSURE PLAN JHA-047



WEATHER: CLEAR & SUNNY

0800 TAILGATE SAFETY BRIEFING
0805 NOTIFIED FD DISPATCH
0824 STARTED TRIPLE RINSE OF UNDERGROUND HWDL ON THE 45° ANGLE FROM THE FUEL LAB
1ST RINSE – NOTE: THIS LINE RECIVED ALCONOX SOLUTION WHEN THE SINK DRAIN WAS RINSED IN THE FUEL LAB 11/2/12
0824 – 2ND RINSE → PRESSURE WASHER DOWN THE HWDL FROM WHERE IT WAS CUT TO THE JOINT
0827 – 3RD RINSE → PULLED PRESSURE WASHER HOSE BACK OUT OF THE LINE
0835 REMOVED HWDL IN BREEZEWAY CONNECTED TO THE ROOF VENT AND WITH STUB OUT IN FUEL LAB
– DRAGERS OX = 0
FUEL = 0
0840 1ST RINSE FROM ACCESS POINT OUTSIDE VAPOR PROPELLANT LAB IN BREEZEWAY
↳ PRESSURE WASHER HOSE DOWN HWDL
0845 2ND RINSE – 5GAL BUCKET ALCONOX SOLUTION POURED DOWN THE DRAIN
0848 3RD RINSE → PRESSURE WASHER HOSE PULLED OUT OF THE HWDL
0856 BREAK + MOBILIZATION TO NEXT ACCESS POINT ON NORTH SIDE OF 203

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0924 CONFINED SPACE PERMIT BRIEFING

0927 OPENED UP CONFINED SPACE PERMIT HATCH ON NORTH SIDE OF 203

- DRAGER OX = 0
  FUEL = 0
- 5GAS METER O_2 = 20.8 ; LEL = 0 ; TOX = 0

0930 OPENED THE CLEAN OUT FLANGE

- DRAGER OX = 0
  FUEL = 0
- 5 GAS METER = O_2 = 20.8
  LEL = 0
  TOX = 0

} 0934

0937 1ST RINSE OF HWDL FROM CO ON NORTH SIDE OF 203 TOWARD SUMP - PRESSURE WASHER HOSE

- NOZZLE IS NOT PUSHING THROUGH PIPE.
- ADDED A WATER HOSE TO HELP FLOAT THE NOZZLE AND HOSE THROUGH PIPE

0948 2ND RINSE 5-GAL OF ALCONOX SOLUTION DOWN THE HWDL

0950 3RD RINSE - BACK OUT PRESSURE HOSE WITH WATER HOSE TURNED OFF AND REMOVED

→ PRESSURE HOSE WAS ROUTED DOWN THE HWDL TOWARD THE SUMP ~140 FT

0952 TRIPLE RINSE COMPLETE

0953 CLOSED FLANGE ON THE CLEAN OUT AND MARKED IT WITH A TRIPLE RINSE STICKER

01003 1ST RINSE OF SHORT LINE FROM FORMER TANK ON NORTH SIDE OF 203 - PRESSURE WASHER IN

01005 2ND RINSE 5-GAL BUCKET OF ALCONOX SOLUTION

01006 3RD RINSE - BACK OUT PRESSURE WASHER

01045 COMPLETED DEMOB FROM BREEZEWAY.

01329 AT ETU TO TAKE LIQUID PHASE SAMPLES FOR WASTE DISPOSAL.

01355 COLLECTED ETU LIQ PHASE FROM EAST TANK FOR SAMPLING - USING TRASH PUMP + STEEL BUCKET

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ETU- EAST TANK LIQ PHASE

SAMPLE NO	ANALYTE	PRESERVATIVE	CONT	LOT	LAB
121106 1402	HYDRAZINES	ICE	1, 40mL AMBER	1-045-003	WSTF
121106 1403	HYDRAZINES	ICE	1, 40mL AMBER	1-045-003	WSTF
121106 1405	VOC	HCL/ICE	3, 40mL CLEAR	2-059-001	ACS
121106 1411	VOC	HCL/ICE	3, 40mL CLEAR	2-059-001	ACS
121106 1415	METALS	HNO_3/ICE	1, 500mL PLASTIC	052812-2V	ACS
121106 1416	METALS	HNO_3/ICE	1, 500mL PLASTIC	052812-2V	ACS
121106 1417	CYANIDE	NaOH/ICE	1, 500mL PLASTIC	052812-2V	ACS
121106 1418	CYANIDE	NaOH/ICE	1, 500mL PLASTIC	052812-2V	ACS
121106 1419	SVOC	ICE	2, 1L AMBER	042312-1Q	ACS
121106 1420	SVOC	ICE	2, 1L AMBER	042312-1Q	ACS
121106 1421	GLYCOL	ICE	3, 40mL CLEAR	2-059-003	ACS
121106 1423	GLYCOL	ICE	3, 40mL CLEAR	2-059-003	ACS
121106 1424	PESTICIDES	ICE	2, 1L AMBER	042312-1Q	ACS
121106 1425	PESTICIDES	ICE	2, 1L AMBER	042312-1Q	ACS

0144 COLLECTED ETU LIQ PHASE FROM WEST TANK FOR SAMPLING - USING TRASH PUMP & STEEL BUCKET

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ETU - WEST TANK LIQ PHASE

SAMPLE NO.	ANALYSIS	PRESERVATIVE	CONT.	COT	LAB
121106 1444	HYDRAZINES	ICE	1, 40mL AMBER	1-045-003	WSTF
121106 1445	VOC	HCL/ICE	3, 40mL CLEAR	2-059-001	ALS
121106 1447	METAL	HNO_3/ICE	1, 500mL PLASTIC	052812-2V	ALS
121106 1448	CYANIDE	NaOH/ICE	1, 500mL PLASTIC	052812-2V	ALS
121106 1449	SVOC	ICE	2, 1L AMBER	042312-1Q	ALS
121106 1450	GLYCOL	ICE	3, 40mL CLEAR	2-059-003	ALS
121106 1451	PESTICIDES	ICE	2, 1L AMBER	042312-1Q	ALS

01520 DEMOBILIZED FROM SITE
01522 RELINQUISHED HYDRAZINE SAMPLES TO WSTF LAB
01530 PLACED REMAINING SAMPLES IN FRIDGE PENDING SHIPMENT TO ALS.

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200 AREA — DECON FUEL LAB PIPE THAT WAS REMOVED FROM LAB & CSS LIFT TANK

DATE/TIME: 11/7/12, 0833

LOCATION: ETU

PERSONNEL: J. GRIFFIN, M. SNGLERT, D. HALVORSEN, T. KONDY

WORK AUTHORIZATION: JHA-045; JHA-048; ETU CLOSURE

WEATHER: SUNNY & CLEAR

NOTE: SHARED WK SPACE WITH CLEAN HARBORS

0833 TAILGATE SAFETY BRIEFING
0837 MOBILIZATION
0904 STARTED TRIPLE RINSE OF HWDL REMOVED FROM BREEZEWAY 11/6/12. FORMERLY connected to the fuel LAB AND VAPOR PROPELLANT LAB
- PRESSURE WASHER NOZZLE
- ALCONOX SOLUTION AND BRUSH
- PRESSURE WASHER NOZZLE (360° ~~SPAA~~ SPRAY)
- INSPECTION OF THE PIPE INDICATED NO RESIDUE

0908 DELAY - NOZZLE IS CLOGGED AND MUST BE TAKEN APART AND CLEANED

0913 RESUMED TRIPLE RINSE
0920 COMPLETED TRIPLE RINSE
0928 STARTED TRIPLE RINSE OF PIPING REMOVED FROM THE FUEL LAB (201) ROOF AND PART OF THE FUEL LAB SCRUBBER.
- PRESSURE WASH
- ALCONOX SOLUTION AND BRUSH
- PRESSURE WASH

0955 COMPLETED TRIPLE RINSE
0,000 BREAK
0,015 PACKAGE WASTE PPE, PLASTIC & DECON WATER

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01040 STARTED TO TAKE APART THE CSS LIFT TANK

01044 TRIPLE RINSED THE LIFT TANK FROM CSS BY
① SPRAYING IT OUT WITH A WATER HOSE.
② ALCONOX AND SCRUB WITH A BRUSH
③ SPRAYING OUT WITH A WATER HOSE.

01047 TRIPLE RINSED TANK COMPONENTS
- LID
- PUMP
- FLOAT
- PIPING CONNECTED TO THE TANK
~~- HWDL REMOVED WHEN THE TANK WAS REMOVED~~ 11/7/12

01100 TRIPLE RINSE COMPLETE
- 2NDARY CONTAINMENT IS NON HAZ AND IS STORED WITH NON-HAZ HWDL PIPE ALONG THE ETU FENCE.

01115 BREAK FOR LUNCH

1300 RE-ENTERED INTO SITE

1306 TRIPLE RINSED HWDL REMOVED WHEN THE CSS LIFT TANK FROM THE CLEAN ROOM WAS REMOVED
① RINSED WITH A HOSE
② ALCONOX SOLUTION WITH A BRUSH
③ RINSED WITH A HOSE

1308 COMPLETED THE TRIPLE RINSE

1309 STARTED TO WRAP UP TRIPLE RINSED PIPE AND ITEMS FOR WASTE STORAGE

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200 AREA - SUMP

DATE/TIME: 11/14/12
LOCATION: SUMP 200 AREA
PERSONNEL: J. GRIFFIN, D. HALVORSEN, M. DUNFORD, M. ENGLERT
E. BLASCH
WORK AUTHORIZATION:
WEATER: SUNNY / CLEAR / 40°F

0830 PRELIM TAILGATE (FORMAL TO BE HELD AT WK START)
0840 STARTED TO REMOVE METAL LIDS OFF SUMP CONTAINMENT
- STRUCTURAL STEEL OVER SUMP CONTAINMENT IS WELDED TO STEEL PLATES AND IS INTEGRATED ~~IN~~ INTO THE CONCRETE. TRIED TO PULL IT WITH THE CRANE
- ELECTRICAL PANEL IS DISCONNECTED FROM POWER
0922 SLUIA CLEARED THE PIT AS A NON-PERMIT CONFINED SPACE WITH THE LID PANELS OFF
- DRAGER OX = 0
FUEL = 0
- 5 GAS METER = 0's & O_2 = 20.8
0930 SITE SET UP & MOBILIZATION
01115 COMPLETED MOBILIZATION
01119 BREAK FOR LUNCH
01251 RETURNED TO PROJECT SITE
01300 TAILGATE BRIEFING
01330 DONNED PPE AND HARNESS
01343 ENTERED CONFINED SPACE TO START WORK O_2 = 20.8
01345 CUT HWDL PIPE FROM 800 AREA
- INSPECTION OF INNER PIPE IS CLEAN
THERE IS NO RESIDUE OR SLUDGE / CAN SEE DISCOLORED
01352 STARTED FINAL RINSE OF HWDL PIPE FROM 800 AREA - BOTTOM 140-FT
- DELAY DUE TO CLOGGED PRESSURE WASHER HOSE
~~NOZZLE~~ NOZZLE

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01400 RESUMED PRESSURE WASH AND THEN RAN OUT OF GAS. PULLED TECHNICIAN OUT OF CONFINED SPACE AND REMOVED PPE TO WAIST FOR COOL DOWN AND HYDRATION

01426 RESUMED PRESSURE WASH
- WAS ABLE TO GET THE HOSE APPROXIMATELY 40FT UP THE PIPE BEFORE IT GOT STUCK AND WOULD GO NO FURTHER

01433 TOOK DRAGER READINGS FROM HWDL PIPE ON THE SUMP TANK TOP
FUEL = 0
OX = 0
} H2S - IH
ELVIA BLASCH SUPPORTED DOWN-GRADE OF PPE.. SO THE RESPIRATOR IS NO LONGER REQUIRED

01438 CUT HWDL FROM 803 LAB
- PIPE CLEAN - NO RESIDUE; SLIGHT DISCOLORATION

01442 STARTED PRESSURE WASH BACK UP HWDL PIPE FROM SUMP TOWARD 803 LAB.
- CANNOT GET IT MORE THAN 40FT UP THE PIPE BEFORE IT GETS STUCK

01448 STARTED TO CLEAN UP SITE AND SECURE FOR THE DAY
- PUMPED RINSE WATER OUT OF THE DECON POOL AND INTO THE TANK THROUGH THE CUT PIPE

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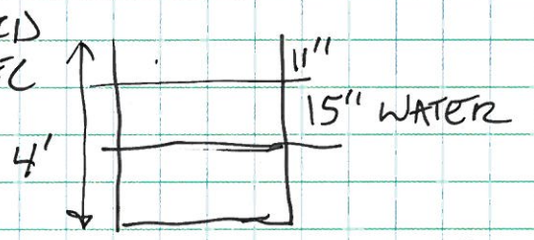
200 AREA - SUMP

DATE/TIME: 11/15/12
LOCATION: 200 AREA SUMP
PERSONNEL: J. GRIFFIN; M. ENGLERT; D. HALVORSEN; M. DUNFORD
WORK AUTHORIZATION: ETU CLOSURE PLAN, JHA-HW-050; JHA-HW-051
WEATHER: SUNNY/CLEAR, 40°

0725 BURN PERMIT APPROVED & SIGNED
0730 WELDER FROM FACILITIES STARTED CUTTING THE STRUCTURAL STEEL FRAME ON THE SUMP VAULT
0750 REMOVED THE STEEL FRAME WITH THE CRANE
0800 MOBILIZATION OF HWDL TEAM PERSONNEL
0830 TAILGATE SAFETY BRIEFING
0845 REMOVED BOLTS ON THE TANK LID IN THE SUMP
0959 ENTERED CONFINED SPACE IN PPE TO CUT THE LID FREE AND MAKE THE LIFT TO ~~REM~~ REMOVE THE LID
01000 BEGAN TO DISCONNECT THE HWDL FROM THE TANK BY CUTTING IT WITH THE SAW
01003 DRAGERS
OX = 0
FUE = 0
01004 PULLED FLANGE ON LID TOP - LIQ LEVEL IN THE TANK IS AT THE BOTTOM OF THE DISCHARGE PIPE
01005 USING A CHISEL & HAMMER WORKED AROUND THE TANK LID TO DISLODGE IT
01008 PULLED THE TANK LID
01012 MEASURE SLUDGE LEVEL



→ NO BAFFELS

01016 STARTED TO PUMP OUT WATER ON TOP OF THE SLUDGE. PUMPED IT TO THE DISCHARGE LINE
01058 COMPLETED PUMP OUT OF LIQUID. NOW SLUDGE IS VISIBLE.

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01115 BREAK FOR LUNCH

01330 RETURNED TO PROJECT SITE

→ PLAN IS TO USE THE VACCUM TANKER TO PUMP OUT THE SLUDGE. MAY HAVE TO ADD WATER AS WE DO IT. THEN THE SLUDGE/WATER WILL BE TRANSPORTED TO THE ETU & DISCHARGED. THE SOLIDS WILL BE REMOVED BY THE CENTRIFUDGE OPERATION

01350 VACCUM TRUCK ARRIVED AND IS BEING BACKED INTO PLACE

01404 READINGS FROM 5-GAS = 0's & O_2 = 20.8

DRAGER O_2 = 0's

Fuel = 0's

01411 STARTED ADDING WATER TO SLUDGE TO MOBILIZE FOR PUMPING

- STRONG ODOR
- CONTINUOUS MONITORING

O_2 = 20.8

H_2S = 0

CO = 0 CO = 5ppm (01414) AT SAME TIME

- FUEL DRAGER
  - HAS ALARMED BUT KEEPS JUMPING AROUND. ZERO'D IT OUT IN FRESH AIR
  - 01418 FUEL DRAGER IS NO LONGER SPORADICALLY ALARMING

01430 COMPLETED PUMPING OUT THE SLUDGE

01432 BREAK

01450 STARTED FIRST RINSE OF SUMP TANK

- USED TAP WATER FROM THE HOSE
- SCRUB BRUSH

01457 PUMPED OUT WATER FROM THE FIRST RINSE WITH THE VACUUM TRUCK

01500 2ND RINSE OF SUMP TANK

- ALCONOX SOLUTION + A SCRUB BRUSH

01505 PUMPED OUT THE ALCONOX SOLUTION FROM THE SUMP TANK.

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01506 THIRD RINSE OF SUMP TANK
- SPRAYED IT DOWN WITH A WATER HOSE

01508 PUMPED OUT RINSE WATER FROM THE SUMP TANK

01513 TRIPLE RINSE OF THE SUMP- TANK IS COMPLETE

01530 COMPLETED WORK FOR THE DAY AND STARTED TO SHUT DOWN SITE

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200 AREA - SUMP

DATE / TIME: 11/16/12,
LOCATION: 200 AREA SUMP
PERSONNEL: J. GRIFFIN, M. DUNFORD, D. HALVORSEN, M. ENGLERT
E. BLASCH
WORK AUTHORIZATION: ETU CLOSURE PLAN, JHA-HW-51
WEATHER: CLOUDY, WINDY

0800 MOBILIZATION
0850 TAILGATE SAFETY BRIEFING
0902 ENTERED CONFINED SPACE
0905 STARTED FINAL RINSE OF UNDERGROUND FROM 200 AREA (PRESSURE WASHER)
0906 CUT ~~DOWN~~ THE HWDL DISCHARGE FROM THE SUMP TANK. THIS WILL ISOLATE THE TANK FOR REMOVAL
0912 COMPLETED RINSE OF HWDL UNDERGROUND FROM 200 AREA TO 50-FT BACK UP THE LINE
0931 TANK IS ISOLATED AND READY TO REMOVE. BOTH INNER AND THE OUTER TANK
0935 EXITED CONFINED SPACE AND BEGAN TO SECURE THE SITE FOR THE WEEKEND.

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200 AREA - SUMP + UNDERGROUND

DATE/TIME: 11/27/12
LOCATION: 200 AREA SUMP; RINSATE SAMPLING
PERSONNEL: J. GRIFFIN, M. ENGLERT, D. HALVORSEN, F. GALLEGOS

WORK AUTHORIZATION: ETU CLOSURE PLAN, SAP-2012-015
JHA-HW-051

WEATHER: SUNNY, CLEAR,

0830 TAILGATE SAFETY BRIEFING
0903 CHECKED IN WITH FD
0904 OPENED PIPE END FROM 800 HFTA
0915 POURED TAP WATER DOWN 800 AREA HFTA HNDL FROM THE STUB OUTS AT DECON STATION #1 + COLLECTED RINSATE IN A STEEL ~~DRUM~~ BUCKET (UNUSED BUCKET)

RINSATE 800 AREA HFTA

SAMPLE NO.	ANALYTE	PRESERVATIVE	CONT.	LOT	LAB
1211270942	HYDRAZINE	ICE	1, 40mL AMBER	1-045-003	WSTF
1211270943	VOC	HCL / ICE	3, 40mL CLEAR	2-059-001	ALS
1211270945	METALS	HNO3 / ICE	1, 500mL PLASTIC	052812-2V	ALS
1211270946	CYANIDE	NaOH / ICE	1, 500mL PLASTIC	052812-2V	ALS
1211270947	SVOC	ICE	2, 1L AMBER	042312-1Q	ALS
1211270948	GLYCOL	ICE	3, 40mL CLEAR	2-059-003	ALS
1211270950	PESTICIDES	ICE	2, 1L AMBER	042312-1Q	ALS

0100S BREAK - LOSS OF PERSONNEL DUE TO PHYSICAL FOR HAZWOPER

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1320 RESUMED FIELDWORK. SET UP TO COLLECT SAMPLES FROM 803 LAB UNDERGROUND ~~PIPINGS~~ PIPING. WATER TO BE DISCHARGED TO 803 LAB HWDL AT EACH CUP SINK DRAIN IN THE LAB (TOTAL OF 4)

1331 STARTED TO COLLECT RINSATE IN A STAINLESS STEEL BUCKET FOR SAMPLING

RINSATE 803 LAB UG HWDL

SAMPLE NO.	ANALYTE	PRESERVATIVE	CONT.	LOT	LAB
1211271359	HYDRAZINES	ICE	1, 40mL AMBER	1-045-003	WSTF
1211271400	VOC	HCL/ICE	3, 40mL CLEAR	2-059-001	ALS
1211271403	METALS	HNO_3/ICE	1, 500mL PLASTIC	052812-2V	ALS
1211271405	CYANIDE	NaOH/ICE	1, 500mL PLASTIC	052812-2V	ALS
1211271406	SVOC	ICE	2, 1L AMBER	042312-1Q	ALS
1211271407	GLYCOL	ICE	3, 40mL CLEAR	2-059-003	ALS
1211271409	PESTICIDES	ICE	2, 1L AMBER	042312-1Q	ALS

01429 PAIR FOR 3 TO FD DISPATCH

01447 BEGAN AC FINAL RINSE OF THE SUMP INNER TANK. THE RINSATE WILL BE COLLECTED FROM THE TANK INTO STEEL BUCKETS FOR SAMPLING

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RINSATE 200 AREA SUMP TANK

SAMPLE NO.	ANALYTE	PRESERVATIVE	CONT.	LOT	LAB
121127/453	HYDRAZINES	ICE	1, 40mL AMBER	1-045-003	WSTF
121127/454	HYDRAZINES	ICE	1, 40mL AMBER	1-045-003	WSTF
121127/455	VOC	HCl / ICE	3, 40mL CLEAR	2-059-001	ALS
121127/456	VOC	HCL/ICE	3, 40mL CLEAR	2-059-001	ALS
121127/458	Metals	HNO_3 / ICE	1, 500mL PLASTIC	052812-2V	ALS
121127/459	metals	HNO_3 / ICE	1, 500mL PLASTIC	052812-2V	ALS
121127/500	CYANIDE	NaOH / ICE	1, 500mL PLASTIC	052812-2V	ALS
121127/501	CYANIDE	NaOH / ICE	1, 500mL PLASTIC	052812-2V	ALS
121127/504	SVOC	ICE	2, 1L AMBER	042312-1Q	ALS
121127/505	SVOC	ICE	2, 1L AMBER	042312-1Q	ALS
121127/508	GLYCOL	ICE	3, 40mL CLEAR	2-059-003	ALS
121127/509	GLYCOL	ICE	3, 40mL CLEAR	2-059-003	ALS
121127/510	PESTICIDES	ICE	2, 1L AMBER	042312-1Q	ALS
121127/512	PESTICIDES	ICE	2, 1L AMBER	042312-1Q	ALS

01605 COMPLETED FIELD WORK FOR THE DAY

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200 AREA - SUMP + UNDERGROUND

DATE/TIME: 11/28/12
LOCATION: 200 AREA UNDERGROUND RINSATE SAMPLING
PERSONNEL: J. GRIFFIN, T. KONDY, M. SNAGERT, F. GALLEGOS
WORK AUTHORIZATION: ETU CLOSURE PLAN, SAP-2012-015
JHA-HW-051
WEATHER: SUNNY CLEAR

0800 TAILGATE SAFETY BRIEFING
0810 WALKDOWN OF LOCATIONS ALONG 200 AREA UNDERGROUND WHERE WATER MUST BE ADDED.
- CSS LABCON HIGHBAY 3 FLOOR DRAINS
- WET CHEM LAB FLOOR DRAIN
- BREEZEWAY - 5 FLOOR DRAINS

POUR WATER DOWN EACH DRAIN IN ORDER AND COLLECT IN A STEEL BUCKET
0832 STARTED TO POUR WATER DOWN THE HNDL AT THE FLOOR DRAINS

RINSATE 200 AREA UNDERGROUND

Sample No	ANALYSIS	PRESERVATIVE	CONT	LOT	LAB
1211280937	HYDRAZINES	ICE	1, 40mL Amber	1-045-003	WSTF
1211280938	VOC	HCl/ICE	3, 40mL CLEAR	2-059-001	ALS
1211280940	METALS	HNO_3/ICE	1, 500mL PLASTIC	052812-2V	ALS
1211280941	CYANIDE	NaOH/ICE	1, 500mL PLASTIC	052812-2V	ALS
1211280942	SVOC	ICE	2, 1L AMBER	042312-1Q	ALS
~~121128~~	~~GLYCOL~~	~~ICE~~	~~3, 40mL CLEAR~~		
~~121128~~	~~PESTICIDES~~	~~ICE~~	~~2, 1L AMBER~~		

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RINSATE SAMPLING – 200 AREA UNDERGROUND CONT.

SAMPLE NO	ANALYSIS	PRESERVATIVE	CONT	LOT	LAB
~~1298~~ 1211280943	GLYCOL	ICE	3, 40mL CLEAR	2-059-003	~~ACS~~ ACS
1211280945	PESTICIDES	ICE	2, 1L AMBER	043312-1Q	ACS

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200 AREA SUMP — REMOVAL OF SUMP FROM VAULT

DATE/TIME: 11/29/12, 0742
LOCATION: 200 AREA SUMP
PERSONNEL: J. GRIFFIN, M. ENGLERT, D. HALVORSEN, F. GALLEGOS
WORK AUTHORIZATION:
WEATHER: SUNNY & CLEAR

0740 STARTED SITE SET UP TO POSITION CRANE
0810 PULLED THE INNER TANK OF THE SUMP. INSPECTION OF TANK SHOWS NO DETERIORATION ON OUTSIDE OF TANK. NO CRACKS, NO ~~HOLES~~ HOLES. OUTLET JOINT ALSO SHOWS NO ~~DETIORATION~~ DETERIORATION, CRACKS, OR LEAKS/HOLES. THERE IS NO SIGN OF LEAKS (NO WATER MARKS, MINERAL DEPOSITS).
0905 ~~0905~~ TRIED TO PULL OUTER TANK AND IT WILL NOT BUDGE. HEAVY EQ WILL BRING A BACKHOE TO DIG OUT SOME OF THE SAND AROUND THE TANK.
0920 STARTED TO REMOVE SAND FROM ~~A~~ AROUND THE OUTER TANK TO LOOSEN IT FOR REMOVAL
0940 PULLED THE OUTER TANK OF THE SUMP FROM THE VAULT. INSPECTION OF THE TANK SHOWS NO DETERIORATION ON OUTSIDE OF TANK. THERE IS NO EVIDENCE OF WATER STAINING, NO CRACKS, NO HOLES, NO SIGN OF LEAKS (WATER MARKS, MINERAL DEPOSITES) ON THE OUTSIDE OR INSIDE OF THIS TANK. INSPECTION OF THE DIRT/SAND IN THE ~~VAULT~~ VAULT UNDER THE OUTER TANK. NO STAINING, POOLING, OR ~~OBVIOUS~~ SIGNS OF A LEAK

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200 AREA – REMOVAL OF HWDL BETWEEN ETU AND THE SUMP

DATE/TIME: 11/30/12, 0815
LOCATION: 200 AREA EAST OF BLDG 203
PERSONNEL: J. GRIFFIN, M. ENGLERT, D. HALVORSEN, F. GALLEGOS
WORK AUTHORIZATION: JHA-~~HW~~-049, ETU CLOSURE PLAN
WEATHER: SUNNY, CLEAR, 48°F

0815 TAILGATE BRIEFING
0830 STARTED TO CUT METAL BRACKETS THE HOLDS THE LINE ONTO THE PIPE ~~RA~~ RACK.
0900 MET WITH FACILITIES PERSONNEL ABOUT THE EXCAVATION OF THE 90-FT OF HWDL EAST OF BLDG 203. PLAN IS TO TRY AND PULL THE INNER PIPE FROM THE CUT END WHERE THE PIPE DAYLIGHTS. IF IT CANNOT BE PULLED THEN PROCEED WITH EXCAVATION.
0931 J. CORKRAN INFORMED PROJECT TEAM THAT THE BREATHING AIR LINE HAS BEEN VENTED TO ~~<25psi~~ <25psi. SO IT IS SAFE TO START CUTTING THE ADJACENT HWDL
0945 STARTED TO REMOVE THE HWDL. VERY HARD TO CUT. DRAINS SAW BATTERIES EVERY TWO CUTS. TRACKING DOWN A BETTER PIECE OF EQUIPMENT
01122 BREAK FOR LUNCH
01300 RESUMED REMOVAL OF THE HWDL
- REMOVED ~100 FT OF DOUBLE WALLED PIPE
- INNER PIPE IS POTENTIALLY CONTAMINATED AND WILL BE STORED IN THE ROLL OFF BIN AS HAZ WASTE UNTIL RINSATE SAMPLE RESULTS ARE BACK
0215 DOWNGRADE ALL PIPE STORED IN THE ROLL OFF TO NON-HAZ BASED ON ANALYTICAL AND APPROVED NO-LONGER-CONTAINED IN
0230 END OF FIELD DAY

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ETU CLOSURE – REMOVAL OF HWDL BTW ETU AND SUMP

DATE/TIME: 12/3/12, 0800
LOCATION: 200 AREA EAST OF BLDG 203
PERSONNEL: J. GRIFFIN, M. ENGLERT, D. HALVORSEN, M. DUNFORD
WORK AUTHORIZATION: ETU CLOSURE PLAN; JHA-HW-049
WEATHER: CLEAR, SUNNY

0800 TAILGATE SAFETY BRIEFING
0806 CHECKED IN WITH FD DISPATCH
0812 STARTED REMOVAL OF HWDL.
- USING A CONCRETE CONSTRUCTION SAW INSTEAD OF THE SAWS ALL
- SEPARATED THE INNER PIPE FROM THE OUTER PIPE. THE OUTER PIPE IS NON-HAZ. THE INNER PIPE WILL BE TRIPLE RINSED AT THE ETU DECON PAD

01016 COMPLETED HWDL REMOVAL ~~BTW TOGG~~ BETWEEN THE SUMP AND ETU.
01030 STARTED TO MOVE PIPE DOWN TO ETU DECON PAD AND YARD
01130 BREAK FOR LUNCH
01230 FACILITIES USED A 6-FT SLING AND THE BACKHOE TO PULL THE INNER PIPE OUT OF THE BURRIED 6-IN CONTAINMENT PIPE. CONTAINMENT PIPE WAS ABANDONED IN PLACE.
01307 STARTED TO CUT INNER PIPE INTO ~~AA~~ PIECES THAT CAN BE MOVED.
~~01200~~
01400 MOVED PIPE TO STORAGE AT ETU.

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ETU - TRIPLE RINSE OF INNER PIPE FROM HWDR BETWEEN THE SUMP & ETU

DATE/TIME: 12/4/12, 0800
LOCATION: ETU
PERSONNEL: T. KONDY, D. HALVORSEN, M. DUNFORD, M. ENGLERT, J. GRIFFIN
WORK AUTHORIZATION: JHA-HW-049, ETU CLOSURE PLAN
WEATHER: PARTLY CLOUDY

0800 ARRIVED AT ETU TO PERFORM WORK. THERE ARE MULTIPLE OPERATIONS IN PROGRESS.
① SAGE CONTINUES TO REMOVE SOLIDS FROM THE WASTE IN THE ETUs.
② HEAVY EQUIPMENT IS TRANSFERRING SOLIDS FROM THE SAGE OPERATION ~~BEW~~ BETWEEN WASTE BINS.

0830 SITE INSPECTION NOTED THE FOLLOWING
① SOME OF THE SOLIDS BEING TRANSFERED BETWEEN THE BIN HAD DROPPED TO THE GROUND. AFTER WE OBSERVED THE HEAVY EQUIPMENT OPERATORS PUT PLASTIC BETWEEN THE TWO BINS TO PREVENT ANY FURTHER SPILL OF THE MATERIAL. THIS MATERIAL IS NON-HAZ PER AN APPROVED NMED NCCI.
② NOTED A LARGE WET AREA NEAR THE GATE INSIDE THE ETU FENCE. THE WET SOIL AND GRAVEL DOES NOT HAVE ~~[illegible]~~ AN ODOR

0900 TAILGATE SAFETY BRIEFING
0917 BEGAN TRIPLE RINSE OF HWDL
① PRESSURE WASHER NOZZLE
② ALCONOX SOLUTION WITH SCRUB BRUSHES
③ PRESSURE WASHER NOZZLE

01015 BREAK
01030 RESUMED TRIPLE RINSE

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01055 COMPLETED TRIPLE RINSE OF APPROXIMATELY HALF OF THE HWDL PIPE.

01100 STARTED TO SECURE SITE FOR A LUNCH BREAK.

- PUMPED DECON WASTEWATER INTO DRUMS
- PACKAGED USED PPE
- MOVED THE REMAINING PIPE TO BE TRIPLE RINSED FROM THE ROLL OFF BIN TO THE DECON PAD AT THE ETU.

01120 BREAK FOR LUNCH

01310 RESUMED FIELD WORK AND CHECKED IN WITH FD DISPATCH.

01314 RESUMED TRIPLE RINSE OF HWDL

01412 PAR TO FD DISPATCH

01423 COMPLETED TRIPLE RINSE OF ALL PRIMARY HWDL PIPING REMOVED BETWEEN THE SUMP AND ETU

01432 STARTED TO SECURE SITE FOR THE DAY

- 70 GAL OF DECON WASTEWATER
- 30 GAL BAG OF DEBRIS (PPE, PLASTIC)

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ETU – RINSATE SAMPLING FOR HWDL PIPE REMOVED BETWEEN ~~[illegible]~~ THE SUMP AND THE ETU

DATE/TIME: 12/05/12,
LOCATION: ETU
PERSONNEL:

WORK AUTHORIZATION: JHA-HW-049, ETU CLOSURE PLAN
WEATHER: 41°F,

0845 TAILGATE
0848 COLLECTED COMPOSITE SAMPLE FROM DRUMS 5106, 5081, 5127

DECON WATER 5106, 5081, 5127

SAMPLE NO.	ANALYTE	PRESERVATIVES	CONT.	LOT	LAB
1212050926	HYDRAZINES	ICE	1, 40ml Amber	1-045-003	WSTF
1212050927	VOC	HCl/ ICE	3, 40ml CLEAR	2-059-001	ALS
1212050929	Metals	HNO_3/ICE	1, 500ml PLASTIC	052812-2V	ALS
1212050930	CYANIDES	NaOH/ICE	1, 500ml PLASTIC	052812-2V	ALS
1212050931	SVOC	ICE	2, 1L AMBER	042312-1Q	ALS
1212050932	GLYCOL	ICE	3, 40ml ~~AMB~~ CLEAR	2-059-003	ALS
1212050934	PESTICIDES	ICE	2, 1L AMBER	042312-1Q	ALS

0941 COLLECTED COMPOSITE SAMPLE FROM DRUMS 5126 + 5121.

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DECON WATER DRUMS 5126 & 5121

SAMPLE NO.	ANALYTE	PRESERVATIVE	CONT.	LOT	LAB
1212050955	HYDRAZINES	ICE	1, 40m AMBER	1-045-003	WSTF
1212050956	VOC	HCL/ICE	3, 40mL CLEAR	2-059-001	ALS
1212050957	METAL	HNO_3/ICE	1, 500mL PLASTIC	052812-2V	ALS
1212050958	CYANIDES	NaOH/ICE	1, 500mL PLASTIC	052812-2V	ALS
1212050959	SVOC	ICE	2, 1L AMBER	042312-1Q	ALS
1212051000 ~~1212050960~~	GLYCOL	ICE	3, 40mL CLEAR	2-059-003	ALS
1212051002 ~~1212050100~~	PESTICIDES	ICE	2, 1L AMBER	042312-1Q	ALS

NOTE: AT TIME OF COLLECTION FACILITIES MOVED THE MANLIFT PARKED BETWEEN THE ETU TANKS. THIS INVOLVED A DIESEL ENGINE AND MAY HAVE CONTAMINATED THE VOC SAMPLES THAT WERE BEING COLLECTED FROM THE ~~R~~ DECON WASH WATER.

01006 PUMPED DRUMS 5106, 5081, & 5127 INTO THE ETU ~62 GALLONS. THIS WAS ~~ETE~~ ENTERED INTO THE ETU LOGBOOK

01017 BREAK

01032 STARTED TO COLLECT RINSATE FROM HWDL PIPE REMOVED BETWEEN THE SUMP AND THE ETU. TAP WATER WILL BE ~~R~~ RUN DOWN EACH SECTION OF PIPE AND COLLECTED IN A STEEL ~~DRUMS~~ BUCKET. A COMPOSITE SAMPLE AND DUPLICATE WILL BE COLLECTED FOR THE ENTIRE ~~750-755~~ 750-755 FT.

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~~RINSATE HWDL ETU~~ 12/5/12

RINSATE HWDL SUMP to ETU

SAMPLE No.	ANALYTE	PRESERVATIVE	CONT.	LOT	LAB
121205|121	HYDRAZINES	ICE	1, 40mL AMBER	1-045-003	WSTF
121205|122	HYDRAZINES	ICE	1, 40mL AMBER	1-045-003	WSTF ~~ALS~~
121205|123	VOC	HCl/ICE	3, 40mL CLEAR	2-059-001	ALS
121205|124	VOC	HCl/ICE	3, 40mL CLEAR	2-059-001	ALS
121205|125	METALS	HNO_3/ICE	1, 500mL PLASTIC	052812-2V	ALS
121205|126	METALS	HNO_3/ICE	1, 500mL PLASTIC	052812-2V	ALS
121205|127	CYANIDES	NaOH/ICE	1, 500mL PLASTIC	052812-2V	ALS
121205|128	CYANIDES	NaOH/ICE	1, 500mL PLASTIC	052812-2V	ALS
121205|129	SVOC	ICE	2, 1L AMBER	042312-1Q	ALS
121205|130	SVOC	ICE	2, 1L AMBER	042312-1Q	ALS
121205|131	GLYCOL	ICE	3, 40mL CLEAR	2-059-003	ALS
121205|132	GLYCOL	ICE	3, 40mL CLEAR	2-059-003	ALS
121205|133	PESTICIDES	ICE	2, 1L AMBER	042312-1Q	ALS
121205|134	PESTICIDES	ICE	2, 1L AMBER	042312-1Q	ALS

01140 COMPLETED FIELD WORK

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ETU WEST TANK - CLEAN PRIMARY LINER

~~LOCATION~~
DATE / TIME: 12/6/12, 0715
LOCATION: ETU
PERSONNEL: J. GRIFFIN, A. SANCHEZ, D. HALVORSEN, M. DUNFORD
T. KONDY
WORK AUTHORIZATION: JHA-HW-052; TPS 2-2HWM-12-0405

WEATHER: SUNNY, CLEAR

0715 TAILGATE SAFETY BRIEFING
- WENT OVER JHA-HW-052
- WENT OVER TPS-0405
- NOTED: ① OBSERVING PERSONNEL SHOULD NOT LOOK OVER TANK RIM DURING RINSE OPERATIONS WITH THE FIRE HOSE
② FIRST USE OF FIRE HOSE WILL REQUIRE TWO MAN AND SLOW INCREASE OF PRESSURE
③ PERSONNEL WILL BE ~~DECONDS~~ DECONTAMINATED COMING OUT OF THE TANK USING WATER AND ALCONOX SOLUTION.

0745 PERSONNEL BEGAN TO MOBILIZE TO THE SITE. START WILL BE DELAYED UNTIL THE OX ASPIRATOR CAN BE DISCHARGED TO THE EAST TANK

01241 CHECKED IN WITH FD DISPATCH

01245 STARTED TO MONITOR ATMOSPHERE IN THE OPEN TOP TANK USING 5 GAS METER

01305 COMPLETED INITIAL MONITORING
$O_2 = 20.8$ (steady) $H_2S = 0$
COMB = 0
CO = 0

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1312 ENTERED WEST ETU TANK TO START CLEANING

1314 STARTED TO RINSE USING A FIRE HOSE & SOFT BRISTLE BROOMS

- STARTED ON THE WEST SIDE OF THE TANK, BRUSHED ALCONOX SOLUTION ON THE WALLS FIRST THEN THE FLOOR OF THE TANK
- PUMP DECON WATER OUT OF THE TANK AND INTO THE EAST ETU TANK

1353 BREAK (MIN 15)

1413 RESUMED WORK

1435 COMPLETED CLEANING OF WEST ETU TANK

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1312 ENTERED WEST ETU TANK TO START CLEANING

1314 STARTED TO RINSE USING A FIRE HOSE AND SOFT BRISTLE BRUSH BROOMS.

— STARTED ON THE WEST SIDE OF THE TANK. BRUSHED ALCONOX SOLUTION ON THE WALLS FIRST AND THEN THE FLOOR OF THE TANK

01353 BREAK (MIN 15)

1413 RESUMED WORK

1435 COMPLETED CLEANING OF WEST ETU TANK

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Appendix D
HWDL Decontamination Analytical Summary Tables

Sample ID	Location	Analyte[1]	CAS No.	Result/ Qualifier	Units	MDL[2]	LDR 40 CFR 268.40 and 268.48	Criteria Met Yes/No
High Performance Liquid Chromatography Method: Hydrazines (Lab Report No.728005)								
1210170913	ENV Lab	1,1 Dimethylhydrazine	57-14-7	ND	mg/L	0.1	NA	YES
1210170913	ENV Lab	1,2 Dimethylhydrazine	540-73-8	ND	mg/L	0.1	NA	YES
1210170913	ENV Lab	Hydrazine	32-01-2	ND	mg/L	0.1	NA	YES
1210170913	ENV Lab	Monomethyl Hydrazine	60-34-4	ND	mg/L	0.1	NA	YES
EPA Method 6010C/7000: Metals & Mercury (Lab Report No. R1207177)								
1210170920	ENV Lab	Antimony	7440-36-0	ND	mg/L	0.003	1.9	YES
1210170920	ENV Lab	Arsenic	7440-38-2	ND	mg/L	0.002	1.4	YES
1210170920	ENV Lab	Barium	7440-39-3	0.034	mg/L	0.0004	1.2	YES
1210170920	ENV Lab	Beryllium	7440-41-7	ND	mg/L	0.0002	0.82	YES
1210170920	ENV Lab	Cadmium	7440-43-9	ND	mg/L	0.0002	0.69	YES
1210170920	ENV Lab	Chromium	7440-47-3	0.009 BJ	mg/L	0.0009	2.77	YES
1210170920	ENV Lab	Copper	7440-50-8	0.088	mg/L	0.002	NA	YES
1210170920	ENV Lab	Lead	7439-92-1	0.0028 J	mg/L	0.0008	0.69	YES
1210170920	ENV Lab	Nickel	7440-02-0	0.013 J	mg/L	0.003	3.98	YES
1210170920	ENV Lab	Selenium	7782-49-2	ND	mg/L	0.004	0.82	YES
1210170920	ENV Lab	Silver	7440-22-4	0.015	mg/L	0.002	0.43	YES
1210170920	ENV Lab	Thallium	7440-28-0	ND	mg/L	0.004	1.4	YES
1210170920	ENV Lab	Vanadium	7440-62-2	0.013 J	mg/L	0.0003	4.3	YES
1210170920	ENV Lab	Zinc	7440-66-6	0.321	mg/L	0.002	2.61	YES
1210170920	ENV Lab	Mercury	7439-97-6	0.0004	mg/L	0.00003	0.15	YES
EPA Method 9012B: Cyanides (Lab Report No. R1207177)								
1210170921	ENV Lab	Cyanide, Amenable to Chlorination	57-12-5	ND	mg/L	NA	1200	YES
1210170921	ENV Lab	Cyanide, Residual	57-12-5	ND	mg/L	0.003	NA	YES
1210170921	ENV Lab	Cyanide, Total	57-12-5	ND	mg/L	0.003	860	YES
EPA Method 8260C: Volatile Organic Compounds (Lab Report No. R1207177)								
1210170915	ENV Lab	1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	ND	ug/L	0.31	57	YES
1210170915	ENV Lab	2-Butanone (MEK)	78-93-3	ND	ug/L	0.81	280	YES
1210170915	ENV Lab	Acetone	67-64-1	2.5 BJ	ug/L	1.3	280	YES
1210170915	ENV Lab	Benzene	71-43-2	ND	ug/L	0.2	140	YES
1210170915	ENV Lab	Cyclohexanone	108-94-1	ND	ug/L	8.2	360	YES
1210170915	ENV Lab	Ethylbenzene	100-41-4	ND	ug/L	0.2	57	YES

Sample ID	Location	Analyte[1]	CAS No.	Result/ Qualifier	Units	MDL[2]	LDR 40 CFR 268.40 and 268.48	Criteria Met Yes/No
1210170915	ENV Lab	Naphthalene	91-20-3	ND	ug/L	0.2	59	YES
1210170915	ENV Lab	Tetrachloroethene (PCE)	127-18-4	ND	ug/L	0.3	56	YES
1210170915	ENV Lab	Toluene	108-88-3	ND	ug/L	0.2	80	YES
1210170915	ENV Lab	Trichloroethene (TCE)	79-01-6	ND	ug/L	0.22	54	YES
1210170915	ENV Lab	Trichlorofluoromethane (CFC 11)	75-69-4	ND	ug/L	0.2	20	YES
1210170915	ENV Lab	m,p-Xylenes	179601-23-1	ND	ug/L	0.33	320	YES
1210170915	ENV Lab	o-Xylene	95-47-6	ND	ug/L	0.2	320	YES
EPA Method 8270D: Semi-Volatile Organic Compounds (Lab Report No. R1207177)								
1210170922	ENV Lab	1,4-Phenylenediamine	106-50-3	ND	ug/L	1	NA	YES
1210170922	ENV Lab	Aniline	62-53-3	ND	ug/L	1.3	810	YES
1210170922	ENV Lab	Benzyl Alcohol	100-51-6	ND	ug/L	1.1	NA	YES
1210170922	ENV Lab	Di-n-butyl Phthalate	84-74-2	ND	ug/L	1	57	YES
1210170922	ENV Lab	N-Nitrosodimethylamine	62-75-9	ND	ug/L	1	400	YES
1210170922	ENV Lab	Naphthalene	91-20-3	ND	ug/L	1	59	YES
1210170922	ENV Lab	Phenol	108-95-2	ND	ug/L	1	39	YES
EPA Method 8015C: Ethylene Glycol (Lab Report No. R1207177)								
1210170925	ENV Lab	Ethylene Glycol	107-21-1	ND	ug/L	800	NA	YES

[1]- List of analytes were compiled from ETU Closure Plan (March, 2012), Attachment 15, Tables (1-11).

[2]- Units for MDL are method-specific and are identified by the units column expressed for each method.

B- Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.

ND- Constituent analyzed for but not detected.

NA- Not Applicable/Available

J - Estimated value due to either being a Tentatively Identified compound (TIC) or that the concentration is between the MRL and the MDL. Concentrations are not verified within the linear range of the calibration.

MDL- Method Detection Limit

Sample ID	Location	Analyte[1]	CAS No.	Result/ Qualifier	Units	MDL[2]	LDR 40 CFR 268.40 and 268.48	Criteria Met Yes/No
High Performance Liquid Chromatography Method: Hydrazines (Lab Report No.728005)								
1210171011	Wet Chem Lab	1,1 Dimethylhydrazine	57-14-7	ND	mg/L	0.1	NA	YES
1210171011	Wet Chem Lab	1,2 Dimethylhydrazine	540-73-8	ND	mg/L	0.1	NA	YES
1210171011	Wet Chem Lab	Hydrazine	32-01-2	ND	mg/L	0.1	NA	YES
1210171011	Wet Chem Lab	Monomethyl Hydrazine	60-34-4	ND	mg/L	0.1	NA	YES
EPA Method 6010C/7000: Metals & Mercury (Lab Report No. R1207177)								
1210171017	Wet Chem Lab	Antimony	7440-36-0	ND	mg/L	0.003	1.9	YES
1210171017	Wet Chem Lab	Arsenic	7440-38-2	ND	mg/L	0.002	1.4	YES
1210171017	Wet Chem Lab	Barium	7440-39-3	0.068	mg/L	0.0004	1.2	YES
1210171017	Wet Chem Lab	Beryllium	7440-41-7	ND	mg/L	0.0002	0.82	YES
1210171017	Wet Chem Lab	Cadmium	7440-43-9	ND	mg/L	0.0002	0.69	YES
1210171017	Wet Chem Lab	Chromium	7440-47-3	0.003 BJ	mg/L	0.0009	2.77	YES
1210171017	Wet Chem Lab	Copper	7440-50-8	0.039	mg/L	0.002	NA	YES
1210171017	Wet Chem Lab	Lead	7439-92-1	0.0029 J	mg/L	0.0008	0.69	YES
1210171017	Wet Chem Lab	Nickel	7440-02-0	ND	mg/L	0.003	3.98	YES
1210171017	Wet Chem Lab	Selenium	7782-49-2	ND	mg/L	0.004	0.82	YES
1210171017	Wet Chem Lab	Silver	7440-22-4	ND	mg/L	0.002	0.43	YES
1210171017	Wet Chem Lab	Thallium	7440-28-0	ND	mg/L	0.004	1.4	YES
1210171017	Wet Chem Lab	Vanadium	7440-62-2	0.013 J	mg/L	0.0003	4.3	YES
1210171017	Wet Chem Lab	Zinc	7440-66-6	0.1	mg/L	0.002	2.61	YES
1210171017	Wet Chem Lab	Mercury	7439-97-6	ND	mg/L	0.00003	0.15	YES
EPA Method 9012B: Cyanides (Lab Report No. R1207177)								
1210171018	Wet Chem Lab	Cyanide, Amenable to Chlorination	57-12-5	ND	mg/L	NA	1200	YES
1210171018	Wet Chem Lab	Cyanide, Residual	57-12-5	ND	mg/L	0.003	NA	YES
1210171018	Wet Chem Lab	Cyanide, Total	57-12-5	ND	mg/L	0.003	860	YES
EPA Method 8260C: Volatile Organic Compounds (Lab Report No. R1207177)								
1210171013	Wet Chem Lab	1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	ND	ug/L	0.31	57	YES
1210171013	Wet Chem Lab	2-Butanone (MEK)	78-93-3	1.5	ug/L	0.81	280	YES
1210171013	Wet Chem Lab	Acetone	67-64-1	2.5 BJ	ug/L	1.3	280	YES
1210171013	Wet Chem Lab	Benzene	71-43-2	ND	ug/L	0.2	140	YES
1210171013	Wet Chem Lab	Cyclohexanone	108-94-1	ND	ug/L	8.2	360	YES
1210171013	Wet Chem Lab	Ethylbenzene	100-41-4	ND	ug/L	0.2	57	YES

Sample ID	Location	Analyte[1]	CAS No.	Result/ Qualifier	Units	MDL[2]	LDR 40 CFR 268.40 and 268.48	Criteria Met Yes/No
1210171013	Wet Chem Lab	Naphthalene	91-20-3	ND	ug/L	0.2	59	YES
1210171013	Wet Chem Lab	Tetrachloroethene (PCE)	127-18-4	ND	ug/L	0.3	56	YES
1210171013	Wet Chem Lab	Toluene	108-88-3	ND	ug/L	0.2	80	YES
1210171013	Wet Chem Lab	Trichloroethene (TCE)	79-01-6	ND	ug/L	0.22	54	YES
1210171013	Wet Chem Lab	Trichlorofluoromethane (CFC 11)	75-69-4	ND	ug/L	0.2	20	YES
1210171013	Wet Chem Lab	m,p-Xylenes	179601-23-1	ND	ug/L	0.33	320	YES
1210171013	Wet Chem Lab	o-Xylene	95-47-6	ND	ug/L	0.2	320	YES
EPA Method 8270D: Semi-Volatile Organic Compounds (Lab Report No. R1207177)								
1210171019	Wet Chem Lab	1,4-Phenylenediamine	106-50-3	ND	ug/L	1	NA	YES
1210171019	Wet Chem Lab	Aniline	62-53-3	ND	ug/L	1.3	810	YES
1210171019	Wet Chem Lab	Benzyl Alcohol	100-51-6	ND	ug/L	1.1	NA	YES
1210171019	Wet Chem Lab	Di-n-butyl Phthalate	84-74-2	ND	ug/L	1	57	YES
1210171019	Wet Chem Lab	N-Nitrosodimethylamine	62-75-9	ND	ug/L	1	400	YES
1210171019	Wet Chem Lab	Naphthalene	91-20-3	ND	ug/L	1	59	YES
1210171019	Wet Chem Lab	Phenol	108-95-2	ND	ug/L	1	39	YES
EPA Method 8015C: Ethylene Glycol (Lab Report No. R1207177)								
1210171021	Wet Chem Lab	Ethylene Glycol	107-21-1	ND	ug/L	800	NA	YES

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MDL- Method Detection Limit

Sample ID	Location	Analyte[1]	CAS No.	Result/ Qualifier	Units	MDL[2]	LDR 40 CFR 268.40 and 268.48	Criteria Met Yes/No
High Performance Liquid Chromatography Method: Hydrazines (Lab Report No.728005)								
1210171047	Vapor Propellant Lab	1,1 Dimethylhydrazine	57-14-7	ND	mg/L	0.1	NA	YES
1210171047	Vapor Propellant Lab	1,2 Dimethylhydrazine	540-73-8	ND	mg/L	0.1	NA	YES
1210171047	Vapor Propellant Lab	Hydrazine	32-01-2	ND	mg/L	0.1	NA	YES
1210171047	Vapor Propellant Lab	Monomethyl Hydrazine	60-34-4	ND	mg/L	0.1	NA	YES
EPA Method 6010C/7000: Metals & Mercury (Lab Report No. R1207177)								
1210171051	Vapor Propellant Lab	Antimony	7440-36-0	ND	mg/L	0.003	1.9	YES
1210171051	Vapor Propellant Lab	Arsenic	7440-38-2	ND	mg/L	0.002	1.4	YES
1210171051	Vapor Propellant Lab	Barium	7440-39-3	0.026	mg/L	0.0004	1.2	YES
1210171051	Vapor Propellant Lab	Beryllium	7440-41-7	ND	mg/L	0.0002	0.82	YES
1210171051	Vapor Propellant Lab	Cadmium	7440-43-9	ND	mg/L	0.0002	0.69	YES
1210171051	Vapor Propellant Lab	Chromium	7440-47-3	0.003 BJ	mg/L	0.0009	2.77	YES
1210171051	Vapor Propellant Lab	Copper	7440-50-8	0.018 J	mg/L	0.002	NA	YES
1210171051	Vapor Propellant Lab	Lead	7439-92-1	ND	mg/L	0.0008	0.69	YES
1210171051	Vapor Propellant Lab	Nickel	7440-02-0	ND	mg/L	0.003	3.98	YES
1210171051	Vapor Propellant Lab	Selenium	7782-49-2	ND	mg/L	0.004	0.82	YES
1210171051	Vapor Propellant Lab	Silver	7440-22-4	ND	mg/L	0.002	0.43	YES
1210171051	Vapor Propellant Lab	Thallium	7440-28-0	ND	mg/L	0.004	1.4	YES
1210171051	Vapor Propellant Lab	Vanadium	7440-62-2	0.013 J	mg/L	0.0003	4.3	YES
1210171051	Vapor Propellant Lab	Zinc	7440-66-6	0.034	mg/L	0.002	2.61	YES
1210171051	Vapor Propellant Lab	Mercury	7439-97-6	ND	mg/L	0.00003	0.15	YES
EPA Method 9012B: Cyanides (Lab Report No. R1207177)								
1210171052	Vapor Propellant Lab	Cyanide, Amenable to Chlorination	57-12-5	ND	mg/L	NA	1200	YES
1210171052	Vapor Propellant Lab	Cyanide, Residual	57-12-5	ND	mg/L	0.003	NA	YES
1210171052	Vapor Propellant Lab	Cyanide, Total	57-12-5	ND	mg/L	0.003	860	YES
EPA Method 8260C: Volatile Organic Compounds (Lab Report No. R1207177)								
1210171048	Vapor Propellant Lab	1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	ND	ug/L	0.31	57	YES
1210171048	Vapor Propellant Lab	2-Butanone (MEK)	78-93-3	0.9 J	ug/L	0.81	280	YES
1210171048	Vapor Propellant Lab	Acetone	67-64-1	2.5 BJ	ug/L	1.3	280	YES
1210171048	Vapor Propellant Lab	Benzene	71-43-2	ND	ug/L	0.2	140	YES
1210171048	Vapor Propellant Lab	Cyclohexanone	108-94-1	ND	ug/L	8.2	360	YES
1210171048	Vapor Propellant Lab	Ethylbenzene	100-41-4	ND	ug/L	0.2	57	YES
1210171048	Vapor Propellant Lab	Naphthalene	91-20-3	ND	ug/L	0.2	59	YES

Sample ID	Location	Analyte[1]	CAS No.	Result/ Qualifier	Units	MDL[2]	LDR 40 CFR 268.40 and 268.48	Criteria Met Yes/No
1210171048	Vapor Propellant Lab	Tetrachloroethene (PCE)	127-18-4	ND	ug/L	0.3	56	YES
1210171048	Vapor Propellant Lab	Toluene	108-88-3	ND	ug/L	0.2	80	YES
1210171048	Vapor Propellant Lab	Trichloroethene (TCE)	79-01-6	ND	ug/L	0.22	54	YES
1210171048	Vapor Propellant Lab	Trichlorofluoromethane (CFC 11)	75-69-4	ND	ug/L	0.2	20	YES
1210171048	Vapor Propellant Lab	m,p-Xylenes	179601-23-1	ND	ug/L	0.33	320	YES
1210171048	Vapor Propellant Lab	o-Xylene	95-47-6	ND	ug/L	0.2	320	YES
EPA Method 8270D: Semi-Volatile Organic Compounds (Lab Report No. R1207177)								
1210171053	Vapor Propellant Lab	1,4-Phenylenediamine	106-50-3	ND	ug/L	1	NA	YES
1210171053	Vapor Propellant Lab	Aniline	62-53-3	ND	ug/L	1.3	810	YES
1210171053	Vapor Propellant Lab	Benzyl Alcohol	100-51-6	ND	ug/L	1.1	NA	YES
1210171053	Vapor Propellant Lab	Di-n-butyl Phthalate	84-74-2	ND	ug/L	1	57	YES
1210171053	Vapor Propellant Lab	N-Nitrosodimethylamine	62-75-9	ND	ug/L	1	400	YES
1210171053	Vapor Propellant Lab	Naphthalene	91-20-3	ND	ug/L	1	59	YES
1210171053	Vapor Propellant Lab	Phenol	108-95-2	ND	ug/L	1	39	YES
1210171053	Vapor Propellant Lab	1,4-Phenylenediamine	106-50-3	ND	ug/L	1	NA	YES
1210171053	Vapor Propellant Lab	Aniline	62-53-3	ND	ug/L	1.3	810	YES
1210171053	Vapor Propellant Lab	Benzyl Alcohol	100-51-6	ND	ug/L	1.1	NA	YES
1210171053	Vapor Propellant Lab	Di-n-butyl Phthalate	84-74-2	ND	ug/L	1	57	YES
1210171053	Vapor Propellant Lab	N-Nitrosodimethylamine	62-75-9	ND	ug/L	1	400	YES
1210171053	Vapor Propellant Lab	Naphthalene	91-20-3	ND	ug/L	1	59	YES
1210171053	Vapor Propellant Lab	Phenol	108-95-2	ND	ug/L	1	39	YES
EPA Method 8015C: Ethylene Glycol (Lab Report No. R1207177)								
1210171054	Vapor Propellant Lab	Ethylene Glycol	107-21-1	ND	ug/L	800	NA	YES

[1]- List of analytes were compiled from ETU Closure Plan (March, 2012), Attachment 15, Tables (1-11).

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J - Estimated value due to either being a Tentatively Identified compound (TIC) or that the concentration is between the MRL and the MDL. Concentrations are not verified within the linear range of the calibration.

MDL- Method Detection Limit

Sample ID	Location	Analyte[1]	CAS No.	Result/ Qualifier	Units	MDL[2]	LDR 40 CFR 268.40 and 268.48	Criteria Met Yes/No
High Performance Liquid Chromatography Method: Hydrazines (Lab Report No.728008)								
1210171446	Met Lab	1,1 Dimethylhydrazine	57-14-7	ND	mg/L	0.1	NA	YES
1210171446	Met Lab	1,2 Dimethylhydrazine	540-73-8	ND	mg/L	0.1	NA	YES
1210171446	Met Lab	Hydrazine	32-01-2	ND	mg/L	0.1	NA	YES
1210171446	Met Lab	Monomethyl Hydrazine	60-34-4	ND	mg/L	0.1	NA	YES
1210171506	Met Lab	1,1 Dimethylhydrazine	57-14-7	ND	mg/L	0.1	NA	YES
1210171506	Met Lab	1,2 Dimethylhydrazine	540-73-8	ND	mg/L	0.1	NA	YES
1210171506	Met Lab	Hydrazine	32-01-2	ND	mg/L	0.1	NA	YES
1210171506	Met Lab	Monomethyl Hydrazine	60-34-4	ND	mg/L	0.1	NA	YES
EPA Method 6010C/7000: Metals & Mercury (Lab Report No. R1207176)								
1210171449	Met Lab	Antimony	7440-36-0	ND	mg/L	0.003	1.9	YES
1210171449	Met Lab	Arsenic	7440-38-2	ND	mg/L	0.002	1.4	YES
1210171449	Met Lab	Barium	7440-39-3	0.021	mg/L	0.0004	1.2	YES
1210171449	Met Lab	Beryllium	7440-41-7	ND	mg/L	0.0002	0.82	YES
1210171449	Met Lab	Cadmium	7440-43-9	ND	mg/L	0.0002	0.69	YES
1210171449	Met Lab	Chromium	7440-47-3	0.007 J	mg/L	0.0009	2.77	YES
1210171449	Met Lab	Copper	7440-50-8	0.039	mg/L	0.002	NA	YES
1210171449	Met Lab	Lead	7439-92-1	0.0044 J	mg/L	0.0008	0.69	YES
1210171449	Met Lab	Nickel	7440-02-0	0.012	mg/L	0.003	3.98	YES
1210171449	Met Lab	Selenium	7782-49-2	ND	mg/L	0.004	0.82	YES
1210171449	Met Lab	Silver	7440-22-4	0.002 J	mg/L	0.002	0.43	YES
1210171449	Met Lab	Thallium	7440-28-0	ND	mg/L	0.004	1.4	YES
1210171449	Met Lab	Vanadium	7440-62-2	0.013 J	mg/L	0.0003	4.3	YES
1210171449	Met Lab	Zinc	7440-66-6	0.113	mg/L	0.002	2.61	YES
1210171449	Met Lab	Mercury	7439-97-6	ND	mg/L	0.00003	0.15	YES
1210171509	Met Lab	Antimony	7440-36-0	ND	mg/L	0.003	1.9	YES
1210171509	Met Lab	Arsenic	7440-38-2	ND	mg/L	0.002	1.4	YES
1210171509	Met Lab	Barium	7440-39-3	0.019 J	mg/L	0.0004	1.2	YES
1210171509	Met Lab	Beryllium	7440-41-7	ND	mg/L	0.0002	0.82	YES
1210171509	Met Lab	Cadmium	7440-43-9	ND	mg/L	0.0002	0.69	YES
1210171509	Met Lab	Chromium	7440-47-3	0.002 J	mg/L	0.0009	2.77	YES
1210171509	Met Lab	Copper	7440-50-8	0.027	mg/L	0.002	NA	YES

Sample ID	Location	Analyte[1]	CAS No.	Result/ Qualifier	Units	MDL[2]	LDR 40 CFR 268.40 and 268.48	Criteria Met Yes/No
1210171509	Met Lab	Lead	7439-92-1	0.0032 J	mg/L	0.0008	0.69	YES
1210171509	Met Lab	Nickel	7440-02-0	0.004 J	mg/L	0.003	3.98	YES
1210171509	Met Lab	Selenium	7782-49-2	0.004 J	mg/L	0.004	0.82	YES
1210171509	Met Lab	Silver	7440-22-4	ND	mg/L	0.002	0.43	YES
1210171509	Met Lab	Thallium	7440-28-0	ND	mg/L	0.004	1.4	YES
1210171509	Met Lab	Vanadium	7440-62-2	0.013 J	mg/L	0.0003	4.3	YES
1210171509	Met Lab	Zinc	7440-66-6	0.07	mg/L	0.002	2.61	YES
1210171509	Met Lab	Mercury	7439-97-6	ND	mg/L	0.00003	0.15	YES
EPA Method 9012B: Cyanides (Lab Report No. R1207176)								
1210171450	Met Lab	Cyanide, Amenable to Chlorination	57-12-5	ND	mg/L	NA	1200	YES
1210171450	Met Lab	Cyanide, Residual	57-12-5	ND	mg/L	0.003	NA	YES
1210171450	Met Lab	Cyanide, Total	57-12-5	ND	mg/L	0.003	860	YES
1210171510	Met Lab	Cyanide, Amenable to Chlorination	57-12-5	ND	mg/L	NA	1200	YES
1210171510	Met Lab	Cyanide, Residual	57-12-5	0.008 J	mg/L	0.003	NA	YES
1210171510	Met Lab	Cyanide, Total	57-12-5	ND	mg/L	0.003	860	YES
EPA Method 8260C: Volatile Organic Compounds (Lab Report No. R1207176)								
1210171447	Met Lab	1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	ND	ug/L	0.31	57	YES
1210171447	Met Lab	2-Butanone (MEK)	78-93-3	ND	ug/L	0.81	280	YES
1210171447	Met Lab	Acetone	67-64-1	1.9 BJ	ug/L	1.3	280	YES
1210171447	Met Lab	Benzene	71-43-2	ND	ug/L	0.2	140	YES
1210171447	Met Lab	Cyclohexanone	108-94-1	ND	ug/L	8.2	360	YES
1210171447	Met Lab	Ethylbenzene	100-41-4	ND	ug/L	0.2	57	YES
1210171447	Met Lab	Naphthalene	91-20-3	ND	ug/L	0.2	59	YES
1210171447	Met Lab	Tetrachloroethene (PCE)	127-18-4	ND	ug/L	0.3	56	YES
1210171447	Met Lab	Toluene	108-88-3	ND	ug/L	0.2	80	YES
1210171447	Met Lab	Trichloroethene (TCE)	79-01-6	ND	ug/L	0.22	54	YES
1210171447	Met Lab	Trichlorofluoromethane (CFC 11)	75-69-4	ND	ug/L	0.2	20	YES
1210171447	Met Lab	m,p-Xylenes	179601-23-1	ND	ug/L	0.33	320	YES
1210171447	Met Lab	o-Xylene	95-47-6	ND	ug/L	0.2	320	YES
1210171507	Met Lab	1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	ND	ug/L	0.31	57	YES
1210171507	Met Lab	2-Butanone (MEK)	78-93-3	ND	ug/L	0.81	280	YES
1210171507	Met Lab	Acetone	67-64-1	2.7 BJ	ug/L	1.3	280	YES

Sample ID	Location	Analyte[1]	CAS No.	Result/ Qualifier	Units	MDL[2]	LDR 40 CFR 268.40 and 268.48	Criteria Met Yes/No
1210171507	Met Lab	Benzene	71-43-2	ND	ug/L	0.2	140	YES
1210171507	Met Lab	Cyclohexanone	108-94-1	ND	ug/L	8.2	360	YES
1210171507	Met Lab	Ethylbenzene	100-41-4	ND	ug/L	0.2	57	YES
1210171507	Met Lab	Naphthalene	91-20-3	ND	ug/L	0.2	59	YES
1210171507	Met Lab	Tetrachloroethene (PCE)	127-18-4	ND	ug/L	0.3	56	YES
1210171507	Met Lab	Toluene	108-88-3	ND	ug/L	0.2	80	YES
1210171507	Met Lab	Trichloroethene (TCE)	79-01-6	ND	ug/L	0.22	54	YES
1210171507	Met Lab	Trichlorofluoromethane (CFC 11)	75-69-4	ND	ug/L	0.2	20	YES
1210171507	Met Lab	m,p-Xylenes	179601-23-1	ND	ug/L	0.33	320	YES
1210171507	Met Lab	o-Xylene	95-47-6	ND	ug/L	0.2	320	YES
EPA Method 8270D: Semi-Volatile Organic Compounds (Lab Report No. R1207176)								
1210171451	Met Lab	1,4-Phenylenediamine	106-50-3	ND	ug/L	1	NA	YES
1210171451	Met Lab	Aniline	62-53-3	ND	ug/L	1.3	810	YES
1210171451	Met Lab	Benzyl Alcohol	100-51-6	ND	ug/L	1.1	NA	YES
1210171451	Met Lab	Di-n-butyl Phthalate	84-74-2	ND	ug/L	1	57	YES
1210171451	Met Lab	N-Nitrosodimethylamine	62-75-9	ND	ug/L	1	400	YES
1210171451	Met Lab	Naphthalene	91-20-3	ND	ug/L	1	59	YES
1210171451	Met Lab	Phenol	108-95-2	ND	ug/L	1	39	YES
1210171511	Met Lab	1,4-Phenylenediamine	106-50-3	ND	ug/L	1	NA	YES
1210171511	Met Lab	Aniline	62-53-3	ND	ug/L	1.3	810	YES
1210171511	Met Lab	Benzyl Alcohol	100-51-6	ND	ug/L	1.1	NA	YES
1210171511	Met Lab	Di-n-butyl Phthalate	84-74-2	ND	ug/L	1	57	YES
1210171511	Met Lab	N-Nitrosodimethylamine	62-75-9	ND	ug/L	1	400	YES
1210171511	Met Lab	Naphthalene	91-20-3	ND	ug/L	1	59	YES
1210171511	Met Lab	Phenol	108-95-2	ND	ug/L	1	39	YES
1210171511	Met Lab	1,4-Phenylenediamine	106-50-3	ND	ug/L	1	NA	YES
1210171511	Met Lab	Aniline	62-53-3	ND	ug/L	1.3	810	YES
1210171511	Met Lab	Benzyl Alcohol	100-51-6	ND	ug/L	1.1	NA	YES
1210171511	Met Lab	Di-n-butyl Phthalate	84-74-2	ND	ug/L	1	57	YES
1210171511	Met Lab	N-Nitrosodimethylamine	62-75-9	ND	ug/L	1	400	YES
1210171511	Met Lab	Naphthalene	91-20-3	ND	ug/L	1	59	YES
1210171511	Met Lab	Phenol	108-95-2	ND	ug/L	1	39	YES

Sample ID	Location	Analyte[1]	CAS No.	Result/ Qualifier	Units	MDL[2]	LDR 40 CFR 268.40 and 268.48	Criteria Met Yes/No
EPA Method 8015C: Ethylene Glycol (Lab Report No. R1207176)								
1210171453	Met Lab	Ethylene Glycol	107-21-1	ND	ug/L	800	NA	YES
1210171513	Met Lab	Ethylene Glycol	107-21-1	ND	ug/L	800	NA	YES

[1]- List of analytes were compiled from ETU Closure Plan (March, 2012), Attachment 15, Tables (1-11).

[2]- Units for MDL are method-specific and are identified by the units column expressed for each method.

B- Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.

ND- Constituent analyzed for but not detected.

NA- Not Applicable/Available

J - Estimated value due to either being a Tentatively Identified compound (TIC) or that the concentration is between the MRL and the MDL. Concentrations are not verified within the linear range of the calibration.

MDL- Method Detection Limit

Sample ID	Location	Analyte[1]	CAS No.	Result/ Qualifier	Units	MDL[2]	LDR 40 CFR 268.40 and 268.48	Criteria Met Yes/No
High Performance Liquid Chromatography Method: Hydrazines (Lab Report No.728085)								
1211021057	Oxidizer Lab	1,1 Dimethylhydrazine	57-14-7	ND	mg/L	0.1	NA	YES
1211021057	Oxidizer Lab	1,2 Dimethylhydrazine	540-73-8	ND	mg/L	0.1	NA	YES
1211021057	Oxidizer Lab	Hydrazine	32-01-2	ND	mg/L	0.1	NA	YES
1211021057	Oxidizer Lab	Monomethyl Hydrazine	60-34-4	ND	mg/L	0.1	NA	YES
EPA Method 6010C/7000: Metals & Mercury (Lab Report No. R1207547)								
1211021101	Oxidizer Lab	Antimony	7440-36-0	ND	mg/L	0.003	1.9	YES
1211021101	Oxidizer Lab	Arsenic	7440-38-2	ND	mg/L	0.002	1.4	YES
1211021101	Oxidizer Lab	Barium	7440-39-3	0.023	mg/L	0.0004	1.2	YES
1211021101	Oxidizer Lab	Beryllium	7440-41-7	ND	mg/L	0.0002	0.82	YES
1211021101	Oxidizer Lab	Cadmium	7440-43-9	ND	mg/L	0.0002	0.69	YES
1211021101	Oxidizer Lab	Chromium	7440-47-3	0.008 J	mg/L	0.0009	2.77	YES
1211021101	Oxidizer Lab	Copper	7440-50-8	0.145	mg/L	0.002	NA	YES
1211021101	Oxidizer Lab	Lead	7439-92-1	0.015	mg/L	0.0008	0.69	YES
1211021101	Oxidizer Lab	Nickel	7440-02-0	0.012 J	mg/L	0.003	3.98	YES
1211021101	Oxidizer Lab	Selenium	7782-49-2	0.01 J	mg/L	0.004	0.82	YES
1211021101	Oxidizer Lab	Silver	7440-22-4	0.011	mg/L	0.002	0.43	YES
1211021101	Oxidizer Lab	Thallium	7440-28-0	ND	mg/L	0.004	1.4	YES
1211021101	Oxidizer Lab	Vanadium	7440-62-2	0.014 BJ	mg/L	0.0003	4.3	YES
1211021101	Oxidizer Lab	Zinc	7440-66-6	0.38	mg/L	0.002	2.61	YES
1211021101	Oxidizer Lab	Mercury	7439-97-6	0.00578	mg/L	0.00003	0.15	YES
EPA Method 9012B: Cyanides (Lab Report No. R1207547)								
1211021102	Oxidizer Lab	Cyanide, Amenable to Chlorination	57-12-5	ND	mg/L	NA	1200	YES
1211021102	Oxidizer Lab	Cyanide, Residual	57-12-5	ND	mg/L	0.003	NA	YES
1211021102	Oxidizer Lab	Cyanide, Total	57-12-5	ND	mg/L	0.003	860	YES
EPA Method 8260C: Volatile Organic Compounds (Lab Report No. R1207547)								
1211021058	Oxidizer Lab	1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	ND	ug/L	0.31	57	YES
1211021058	Oxidizer Lab	2-Butanone (MEK)	78-93-3	ND	ug/L	0.81	280	YES
1211021058	Oxidizer Lab	Acetone	67-64-1	1.9 J	ug/L	1.3	280	YES
1211021058	Oxidizer Lab	Benzene	71-43-2	ND	ug/L	0.2	140	YES
1211021058	Oxidizer Lab	Cyclohexanone	108-94-1	ND	ug/L	8.2	360	YES
1211021058	Oxidizer Lab	Ethylbenzene	100-41-4	ND	ug/L	0.2	57	YES

Sample ID	Location	Analyte[1]	CAS No.	Result/ Qualifier	Units	MDL[2]	LDR 40 CFR 268.40 and 268.48	Criteria Met Yes/No
1211021058	Oxidizer Lab	Naphthalene	91-20-3	ND	ug/L	0.2	59	YES
1211021058	Oxidizer Lab	Tetrachloroethene (PCE)	127-18-4	0.44	ug/L	0.3	56	YES
1211021058	Oxidizer Lab	Toluene	108-88-3	ND	ug/L	0.2	80	YES
1211021058	Oxidizer Lab	Trichloroethene (TCE)	79-01-6	ND	ug/L	0.22	54	YES
1211021058	Oxidizer Lab	Trichlorofluoromethane (CFC 11)	75-69-4	ND	ug/L	0.2	20	YES
1211021058	Oxidizer Lab	m,p-Xylenes	179601-23-1	ND	ug/L	0.33	320	YES
1211021058	Oxidizer Lab	o-Xylene	95-47-6	ND	ug/L	0.2	320	YES
EPA Method 8270D: Semi-Volatile Organic Compounds (Lab Report No. R1207547)								
1211021103	Oxidizer Lab	1,4-Phenylenediamine	106-50-3	ND	ug/L	1	NA	YES
1211021103	Oxidizer Lab	Aniline	62-53-3	ND	ug/L	1.3	810	YES
1211021103	Oxidizer Lab	Benzyl Alcohol	100-51-6	ND	ug/L	1.1	NA	YES
1211021103	Oxidizer Lab	Di-n-butyl Phthalate	84-74-2	ND	ug/L	1	57	YES
1211021103	Oxidizer Lab	N-Nitrosodimethylamine	62-75-9	ND	ug/L	1	400	YES
1211021103	Oxidizer Lab	Naphthalene	91-20-3	ND	ug/L	1	59	YES
1211021103	Oxidizer Lab	Phenol	108-95-2	ND	ug/L	1	39	YES
EPA Method 8015C: Ethylene Glycol (Lab Report No. R1207547)								
1211021106	Oxidizer Lab	Ethylene Glycol	107-21-1	ND	ug/L	800	NA	YES

[1]- List of analytes were compiled from ETU Closure Plan (March, 2012), Attachment 15, Tables (1-11).

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ND- Constituent analyzed for but not detected.

NA- Not Applicable/Available

J - Estimated value due to either being a Tentatively Identified compound (TIC) or that the concentration is between the MRL and the MDL. Concentrations are not verified within the linear range of the calibration.

MDL- Method Detection Limit

Sample ID	Location	Analyte[1]	CAS No.	Result/ Qualifier	Units	MDL[2]	LDR 40 CFR 268.40 and 268.48	Criteria Met Yes/No
High Performance Liquid Chromatography Method: Hydrazines (Lab Report No.728085)								
1211021740	Fuel Lab	1,1 Dimethylhydrazine	57-14-7	ND	mg/L	0.1	NA	YES
1211021740	Fuel Lab	1,2 Dimethylhydrazine	540-73-8	ND	mg/L	0.1	NA	YES
1211021740	Fuel Lab	Hydrazine	32-01-2	ND	mg/L	0.1	NA	YES
1211021740	Fuel Lab	Monomethyl Hydrazine	60-34-4	ND	mg/L	0.1	NA	YES
1211021741	Fuel Lab	1,1 Dimethylhydrazine	57-14-7	ND	mg/L	0.1	NA	YES
1211021741	Fuel Lab	1,2 Dimethylhydrazine	540-73-8	ND	mg/L	0.1	NA	YES
1211021741	Fuel Lab	Hydrazine	32-01-2	ND	mg/L	0.1	NA	YES
1211021741	Fuel Lab	Monomethyl Hydrazine	60-34-4	ND	mg/L	0.1	NA	YES
EPA Method 6010C/7000: Metals & Mercury (Lab Report No. R1207548)								
1211021747	Fuel Lab	Antimony	7440-36-0	0.003 J	mg/L	0.003	1.9	YES
1211021747	Fuel Lab	Arsenic	7440-38-2	ND	mg/L	0.002	1.4	YES
1211021747	Fuel Lab	Barium	7440-39-3	0.016 J	mg/L	0.0004	1.2	YES
1211021747	Fuel Lab	Beryllium	7440-41-7	ND	mg/L	0.0002	0.82	YES
1211021747	Fuel Lab	Cadmium	7440-43-9	ND	mg/L	0.0002	0.69	YES
1211021747	Fuel Lab	Chromium	7440-47-3	0.003 J	mg/L	0.0009	2.77	YES
1211021747	Fuel Lab	Copper	7440-50-8	0.05	mg/L	0.002	NA	YES
1211021747	Fuel Lab	Lead	7439-92-1	0.0015 J	mg/L	0.0008	0.69	YES
1211021747	Fuel Lab	Nickel	7440-02-0	ND	mg/L	0.003	3.98	YES
1211021747	Fuel Lab	Selenium	7782-49-2	0.006 J	mg/L	0.004	0.82	YES
1211021747	Fuel Lab	Silver	7440-22-4	ND	mg/L	0.002	0.43	YES
1211021747	Fuel Lab	Thallium	7440-28-0	ND	mg/L	0.004	1.4	YES
1211021747	Fuel Lab	Vanadium	7440-62-2	0.012 BJ	mg/L	0.0003	4.3	YES
1211021747	Fuel Lab	Zinc	7440-66-6	0.098	mg/L	0.002	2.61	YES
1211021747	Fuel Lab	Mercury	7439-97-6	0.00006 J	mg/L	0.00003	0.15	YES
1211021748	Fuel Lab	Antimony	7440-36-0	0.005 J	mg/L	0.003	1.9	YES
1211021748	Fuel Lab	Arsenic	7440-38-2	ND	mg/L	0.002	1.4	YES
1211021748	Fuel Lab	Barium	7440-39-3	0.016 J	mg/L	0.0004	1.2	YES
1211021748	Fuel Lab	Beryllium	7440-41-7	ND	mg/L	0.0002	0.82	YES
1211021748	Fuel Lab	Cadmium	7440-43-9	ND	mg/L	0.0002	0.69	YES

Sample ID	Location	Analyte[1]	CAS No.	Result/ Qualifier	Units	MDL[2]	LDR 40 CFR 268.40 and 268.48	Criteria Met Yes/No
1211021748	Fuel Lab	Chromium	7440-47-3	0.003 J	mg/L	0.0009	2.77	YES
1211021748	Fuel Lab	Copper	7440-50-8	0.05	mg/L	0.002	NA	YES
1211021748	Fuel Lab	Lead	7439-92-1	0.001 J	mg/L	0.0008	0.69	YES
1211021748	Fuel Lab	Nickel	7440-02-0	ND	mg/L	0.003	3.98	YES
1211021748	Fuel Lab	Selenium	7782-49-2	0.007 J	mg/L	0.004	0.82	YES
1211021748	Fuel Lab	Silver	7440-22-4	ND	mg/L	0.002	0.43	YES
1211021748	Fuel Lab	Thallium	7440-28-0	ND	mg/L	0.004	1.4	YES
1211021748	Fuel Lab	Vanadium	7440-62-2	0.013 BJ	mg/L	0.0003	4.3	YES
1211021748	Fuel Lab	Zinc	7440-66-6	0.099	mg/L	0.002	2.61	YES
1211021748	Fuel Lab	Mercury	7439-97-6	0.00006 J	mg/L	0.00003	0.15	YES
EPA Method 9012B: Cyanides (Lab Report No. R1207548)								
1211021749	Fuel Lab	Cyanide, Amenable to Chlorination	57-12-5	ND	mg/L	NA	1200	YES
1211021749	Fuel Lab	Cyanide, Residual	57-12-5	ND	mg/L	0.003	NA	YES
1211021749	Fuel Lab	Cyanide, Total	57-12-5	ND	mg/L	0.003	860	YES
1211021750	Fuel Lab	Cyanide, Amenable to Chlorination	57-12-5	ND	mg/L	NA	1200	YES
1211021750	Fuel Lab	Cyanide, Residual	57-12-5	ND	mg/L	0.003	NA	YES
1211021750	Fuel Lab	Cyanide, Total	57-12-5	ND	mg/L	0.003	860	YES
EPA Method 8260C: Volatile Organic Compounds (Lab Report No. R1207548)								
1211021743	Fuel Lab	1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	ND	ug/L	0.31	57	YES
1211021743	Fuel Lab	2-Butanone (MEK)	78-93-3	ND	ug/L	0.81	280	YES
1211021743	Fuel Lab	Acetone	67-64-1	2.8 J	ug/L	1.3	280	YES
1211021743	Fuel Lab	Benzene	71-43-2	ND	ug/L	0.2	140	YES
1211021743	Fuel Lab	Cyclohexanone	108-94-1	ND	ug/L	8.2	360	YES
1211021743	Fuel Lab	Ethylbenzene	100-41-4	ND	ug/L	0.2	57	YES
1211021743	Fuel Lab	Naphthalene	91-20-3	ND	ug/L	0.2	59	YES
1211021743	Fuel Lab	Tetrachloroethene (PCE)	127-18-4	ND	ug/L	0.3	56	YES
1211021743	Fuel Lab	Toluene	108-88-3	ND	ug/L	0.2	80	YES
1211021743	Fuel Lab	Trichloroethene (TCE)	79-01-6	ND	ug/L	0.22	54	YES
1211021743	Fuel Lab	Trichlorofluoromethane (CFC 11)	75-69-4	ND	ug/L	0.2	20	YES
1211021743	Fuel Lab	m,p-Xylenes	179601-23-1	ND	ug/L	0.33	320	YES

Sample ID	Location	Analyte[1]	CAS No.	Result/ Qualifier	Units	MDL[2]	LDR 40 CFR 268.40 and 268.48	Criteria Met Yes/No
1211021743	Fuel Lab	o-Xylene	95-47-6	ND	ug/L	0.2	320	YES
1211021745	Fuel Lab	1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	ND	ug/L	0.31	57	YES
1211021745	Fuel Lab	2-Butanone (MEK)	78-93-3	ND	ug/L	0.81	280	YES
1211021745	Fuel Lab	Acetone	67-64-1	2.2 J	ug/L	1.3	280	YES
1211021745	Fuel Lab	Benzene	71-43-2	ND	ug/L	0.2	140	YES
1211021745	Fuel Lab	Cyclohexanone	108-94-1	ND	ug/L	8.2	360	YES
1211021745	Fuel Lab	Ethylbenzene	100-41-4	ND	ug/L	0.2	57	YES
1211021745	Fuel Lab	Naphthalene	91-20-3	ND	ug/L	0.2	59	YES
1211021745	Fuel Lab	Tetrachloroethene (PCE)	127-18-4	ND	ug/L	0.3	56	YES
1211021745	Fuel Lab	Toluene	108-88-3	ND	ug/L	0.2	80	YES
1211021745	Fuel Lab	Trichloroethene (TCE)	79-01-6	ND	ug/L	0.22	54	YES
1211021745	Fuel Lab	Trichlorofluoromethane (CFC 11)	75-69-4	ND	ug/L	0.2	20	YES
1211021745	Fuel Lab	m,p-Xylenes	179601-23-1	ND	ug/L	0.33	320	YES
1211021745	Fuel Lab	o-Xylene	95-47-6	ND	ug/L	0.2	320	YES
EPA Method 8270D: Semi-Volatile Organic Compounds (Lab Report No. R1207548)								
1211021751	Fuel Lab	1,4-Phenylenediamine	106-50-3	ND	ug/L	1	NA	YES
1211021751	Fuel Lab	Aniline	62-53-3	ND	ug/L	1.3	810	YES
1211021751	Fuel Lab	Benzyl Alcohol	100-51-6	ND	ug/L	1.1	NA	YES
1211021751	Fuel Lab	Di-n-butyl Phthalate	84-74-2	ND	ug/L	1	57	YES
1211021751	Fuel Lab	N-Nitrosodimethylamine	62-75-9	ND	ug/L	1	400	YES
1211021751	Fuel Lab	Naphthalene	91-20-3	ND	ug/L	1	59	YES
1211021751	Fuel Lab	Phenol	108-95-2	ND	ug/L	1	39	YES
1211021753	Fuel Lab	1,4-Phenylenediamine	106-50-3	ND	ug/L	1	NA	YES
1211021753	Fuel Lab	Aniline	62-53-3	ND	ug/L	1.3	810	YES
1211021753	Fuel Lab	Benzyl Alcohol	100-51-6	ND	ug/L	1.1	NA	YES
1211021753	Fuel Lab	Di-n-butyl Phthalate	84-74-2	ND	ug/L	1	57	YES
1211021753	Fuel Lab	N-Nitrosodimethylamine	62-75-9	ND	ug/L	1	400	YES
1211021753	Fuel Lab	Naphthalene	91-20-3	ND	ug/L	1	59	YES
1211021753	Fuel Lab	Phenol	108-95-2	ND	ug/L	1	39	YES
EPA Method 8015C: Ethylene Glycol (Lab Report No. R1207548)								
1211021756	Fuel Lab	Ethylene Glycol	107-21-1	ND	ug/L	800	NA	YES

Sample ID	Location	Analyte[1]	CAS No.	Result/ Qualifier	Units	MDL[2]	LDR 40 CFR 268.40 and 268.48	Criteria Met Yes/No
1211021758	Fuel Lab	Ethylene Glycol	107-21-1	ND	ug/L	800	NA	YES

[1]- List of analytes were compiled from ETU Closure Plan (March, 2012), Attachment 15, Tables (1-11).

[2]- Units for MDL are method-specific and are identified by the units column expressed for each method.

B- Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.

ND- Constituent analyzed for but not detected.

NA- Not Applicable/Available

J - Estimated value due to either being a Tentatively Identified compound (TIC) or that the concentration is between the MRL and the MDL. Concentrations are not verified within the linear range of the calibration.

MDL- Method Detection Limit

Sample ID	Location	Analyte[1]	CAS No.	Result/ Qualifier	Units	MDL[2]	LDR 40 CFR 268.40 and 268.48	Criteria Met Yes/No
High Performance Liquid Chromatography Method: Hydrazines (Lab Report No.728047)								
1210301311	CSS & PER	1,1 Dimethylhydrazine	57-14-7	ND	mg/L	0.1	NA	YES
1210301311	CSS & PER	1,2 Dimethylhydrazine	540-73-8	ND	mg/L	0.1	NA	YES
1210301311	CSS & PER	Hydrazine	32-01-2	ND	mg/L	0.1	NA	YES
1210301311	CSS & PER	Monomethyl Hydrazine	60-34-4	ND	mg/L	0.1	NA	YES
1210301312	CSS & PER	1,1 Dimethylhydrazine	57-14-7	ND	mg/L	0.1	NA	YES
1210301312	CSS & PER	1,2 Dimethylhydrazine	540-73-8	ND	mg/L	0.1	NA	YES
1210301312	CSS & PER	Hydrazine	32-01-2	ND	mg/L	0.1	NA	YES
1210301312	CSS & PER	Monomethyl Hydrazine	60-34-4	ND	mg/L	0.1	NA	YES
EPA Method 6010C/7000: Metals & Mercury (Lab Report No. R1207476)								
1210301320	CSS & PER	Antimony	7440-36-0	ND	mg/L	0.003	1.9	YES
1210301320	CSS & PER	Arsenic	7440-38-2	ND	mg/L	0.002	1.4	YES
1210301320	CSS & PER	Barium	7440-39-3	0.022	mg/L	0.0004	1.2	YES
1210301320	CSS & PER	Beryllium	7440-41-7	ND	mg/L	0.0002	0.82	YES
1210301320	CSS & PER	Cadmium	7440-43-9	0.0012 J	mg/L	0.0002	0.69	YES
1210301320	CSS & PER	Chromium	7440-47-3	0.003 J	mg/L	0.0009	2.77	YES
1210301320	CSS & PER	Copper	7440-50-8	0.035	mg/L	0.002	NA	YES
1210301320	CSS & PER	Lead	7439-92-1	0.0021 J	mg/L	0.0008	0.69	YES
1210301320	CSS & PER	Nickel	7440-02-0	ND	mg/L	0.003	3.98	YES
1210301320	CSS & PER	Selenium	7782-49-2	ND	mg/L	0.004	0.82	YES
1210301320	CSS & PER	Silver	7440-22-4	ND	mg/L	0.002	0.43	YES
1210301320	CSS & PER	Thallium	7440-28-0	ND	mg/L	0.004	1.4	YES
1210301320	CSS & PER	Vanadium	7440-62-2	0.013 J	mg/L	0.0003	4.3	YES
1210301320	CSS & PER	Zinc	7440-66-6	0.153	mg/L	0.002	2.61	YES
1210301320	CSS & PER	Mercury	7439-97-6	0.00005 BJ	mg/L	0.00003	0.15	YES
1210301321	CSS & PER	Antimony	7440-36-0	ND	mg/L	0.003	1.9	YES
1210301321	CSS & PER	Arsenic	7440-38-2	ND	mg/L	0.002	1.4	YES
1210301321	CSS & PER	Barium	7440-39-3	0.022	mg/L	0.0004	1.2	YES
1210301321	CSS & PER	Beryllium	7440-41-7	ND	mg/L	0.0002	0.82	YES
1210301321	CSS & PER	Cadmium	7440-43-9	0.0012 J	mg/L	0.0002	0.69	YES
1210301321	CSS & PER	Chromium	7440-47-3	0.003 J	mg/L	0.0009	2.77	YES

Sample ID	Location	Analyte[1]	CAS No.	Result/ Qualifier	Units	MDL[2]	LDR 40 CFR 268.40 and 268.48	Criteria Met Yes/No
1210301321	CSS & PER	Copper	7440-50-8	0.036	mg/L	0.002	NA	YES
1210301321	CSS & PER	Lead	7439-92-1	0.0019 J	mg/L	0.0008	0.69	YES
1210301321	CSS & PER	Nickel	7440-02-0	ND	mg/L	0.003	3.98	YES
1210301321	CSS & PER	Selenium	7782-49-2	0.006 J	mg/L	0.004	0.82	YES
1210301321	CSS & PER	Silver	7440-22-4	ND	mg/L	0.002	0.43	YES
1210301321	CSS & PER	Thallium	7440-28-0	ND	mg/L	0.004	1.4	YES
1210301321	CSS & PER	Vanadium	7440-62-2	0.013 J	mg/L	0.0003	4.3	YES
1210301321	CSS & PER	Zinc	7440-66-6	0.159	mg/L	0.002	2.61	YES
1210301321	CSS & PER	Mercury	7439-97-6	0.00006 BJ	mg/L	0.00003	0.15	YES
EPA Method 9012B: Cyanides (Lab Report No. R1207476)								
1210301322	CSS & PER	Cyanide, Amenable to Chlorination	57-12-5	ND	mg/L	NA	1200	YES
1210301322	CSS & PER	Cyanide, Residual	57-12-5	ND	mg/L	0.003	NA	YES
1210301322	CSS & PER	Cyanide, Total	57-12-5	ND	mg/L	0.003	860	YES
1210301323	CSS & PER	Cyanide, Amenable to Chlorination	57-12-5	ND	mg/L	NA	1200	YES
1210301323	CSS & PER	Cyanide, Residual	57-12-5	ND	mg/L	0.003	NA	YES
1210301323	CSS & PER	Cyanide, Total	57-12-5	ND	mg/L	0.003	860	YES
EPA Method 8260C: Volatile Organic Compounds (Lab Report No. R1207476)								
1210301313	CSS & PER	1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	ND	ug/L	0.31	57	YES
1210301313	CSS & PER	2-Butanone (MEK)	78-93-3	0.88 J	ug/L	0.81	280	YES
1210301313	CSS & PER	Acetone	67-64-1	2.4 J	ug/L	1.3	280	YES
1210301313	CSS & PER	Benzene	71-43-2	ND	ug/L	0.2	140	YES
1210301313	CSS & PER	Cyclohexanone	108-94-1	ND	ug/L	8.2	360	YES
1210301313	CSS & PER	Ethylbenzene	100-41-4	ND	ug/L	0.2	57	YES
1210301313	CSS & PER	Naphthalene	91-20-3	ND	ug/L	0.2	59	YES
1210301313	CSS & PER	Tetrachloroethene (PCE)	127-18-4	ND	ug/L	0.3	56	YES
1210301313	CSS & PER	Toluene	108-88-3	ND	ug/L	0.2	80	YES
1210301313	CSS & PER	Trichloroethene (TCE)	79-01-6	ND	ug/L	0.22	54	YES
1210301313	CSS & PER	Trichlorofluoromethane (CFC 11)	75-69-4	ND	ug/L	0.2	20	YES
1210301313	CSS & PER	m,p-Xylenes	179601-23-1	ND	ug/L	0.33	320	YES
1210301313	CSS & PER	o-Xylene	95-47-6	ND	ug/L	0.2	320	YES
1210301315	CSS & PER	1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	ND	ug/L	0.31	57	YES

Sample ID	Location	Analyte[1]	CAS No.	Result/ Qualifier	Units	MDL[2]	LDR 40 CFR 268.40 and 268.48	Criteria Met Yes/No
1210301315	CSS & PER	2-Butanone (MEK)	78-93-3	0.83 J	ug/L	0.81	280	YES
1210301315	CSS & PER	Acetone	67-64-1	2.5 J	ug/L	1.3	280	YES
1210301315	CSS & PER	Benzene	71-43-2	ND	ug/L	0.2	140	YES
1210301315	CSS & PER	Cyclohexanone	108-94-1	ND	ug/L	8.2	360	YES
1210301315	CSS & PER	Ethylbenzene	100-41-4	ND	ug/L	0.2	57	YES
1210301315	CSS & PER	Naphthalene	91-20-3	ND	ug/L	0.2	59	YES
1210301315	CSS & PER	Tetrachloroethene (PCE)	127-18-4	ND	ug/L	0.3	56	YES
1210301315	CSS & PER	Toluene	108-88-3	ND	ug/L	0.2	80	YES
1210301315	CSS & PER	Trichloroethene (TCE)	79-01-6	ND	ug/L	0.22	54	YES
1210301315	CSS & PER	Trichlorofluoromethane (CFC 11)	75-69-4	ND	ug/L	0.2	20	YES
1210301315	CSS & PER	m,p-Xylenes	179601-23-1	ND	ug/L	0.33	320	YES
1210301315	CSS & PER	o-Xylene	95-47-6	ND	ug/L	0.2	320	YES
EPA Method 8270D: Semi-Volatile Organic Compounds (Lab Report No. R1207476)								
1210301325	CSS & PER	1,4-Phenylenediamine	106-50-3	ND	ug/L	1	NA	YES
1210301325	CSS & PER	Aniline	62-53-3	ND	ug/L	1.3	810	YES
1210301325	CSS & PER	Benzyl Alcohol	100-51-6	ND	ug/L	1.1	NA	YES
1210301325	CSS & PER	Di-n-butyl Phthalate	84-74-2	ND	ug/L	1	57	YES
1210301325	CSS & PER	N-Nitrosodimethylamine	62-75-9	ND	ug/L	1	400	YES
1210301325	CSS & PER	Naphthalene	91-20-3	ND	ug/L	1	59	YES
1210301325	CSS & PER	Phenol	108-95-2	ND	ug/L	1	39	YES
1210301328	CSS & PER	1,4-Phenylenediamine	106-50-3	ND	ug/L	1	NA	YES
1210301328	CSS & PER	Aniline	62-53-3	ND	ug/L	1.3	810	YES
1210301328	CSS & PER	Benzyl Alcohol	100-51-6	ND	ug/L	1.1	NA	YES
1210301328	CSS & PER	Di-n-butyl Phthalate	84-74-2	ND	ug/L	1	57	YES
1210301328	CSS & PER	N-Nitrosodimethylamine	62-75-9	ND	ug/L	1	400	YES
1210301328	CSS & PER	Naphthalene	91-20-3	ND	ug/L	1	59	YES

Sample ID	Location	Analyte[1]	CAS No.	Result/ Qualifier	Units	MDL[2]	LDR 40 CFR 268.40 and 268.48	Criteria Met Yes/No
1210301328	CSS & PER	Phenol	108-95-2	ND	ug/L	1	39	YES
EPA Method 8015C: Ethylene Glycol (Lab Report No. R1207476)								
1210301330	CSS & PER	Ethylene Glycol	107-21-1	ND	ug/L	800	NA	YES
1210301332	CSS & PER	Ethylene Glycol	107-21-1	ND	ug/L	800	NA	YES

[1]- List of analytes were compiled from ETU Closure Plan (March, 2012), Attachment 15, Tables (1-11).

[2]- Units for MDL are method-specific and are identified by the units column expressed for each method.

B- Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.

ND- Constituent analyzed for but not detected.

NA- Not Applicable/Available

J - Estimated value due to either being a Tentatively Identified compound (TIC) or that the concentration is between the MRL and the

MDL- Method Detection Limit

Sample ID	Location	Analyte[1]	CAS No.	Result/ Qualifier	Units	LDR 40 CFR 268.40 and 268.48	Criteria Met Yes/No
High Performance Liquid Chromatography Method: Hydrazines (Lab Report No.728148)							
1211271453	Sump	1,1 Dimethylhydrazine	57-14-7	ND	mg/L	NA	YES
1211271453	Sump	1,2 Dimethylhydrazine	540-73-8	ND	mg/L	NA	YES
1211271453	Sump	Hydrazine	32-01-2	ND	mg/L	NA	YES
1211271453	Sump	Monomethyl Hydrazine	60-34-4	ND	mg/L	NA	YES
1211271454	Sump	1,1 Dimethylhydrazine	57-14-7	ND	mg/L	NA	YES
1211271454	Sump	1,2 Dimethylhydrazine	540-73-8	ND	mg/L	NA	YES
1211271454	Sump	Hydrazine	32-01-2	ND	mg/L	NA	YES
1211271454	Sump	Monomethyl Hydrazine	60-34-4	ND	mg/L	NA	YES
EPA Method 6010C/7000: Metals & Mercury (Lab Report No. R1208142)							
1211271458	Sump	Antimony	7440-36-0	ND	mg/L	1.9	YES
1211271458	Sump	Arsenic	7440-38-2	ND	mg/L	1.4	YES
1211271458	Sump	Barium	7440-39-3	0.031	mg/L	1.2	YES
1211271458	Sump	Beryllium	7440-41-7	ND	mg/L	0.82	YES
1211271458	Sump	Cadmium	7440-43-9	ND	mg/L	0.69	YES
1211271458	Sump	Chromium	7440-47-3	0.002 J	mg/L	2.77	YES
1211271458	Sump	Copper	7440-50-8	0.191	mg/L	NA	YES
1211271458	Sump	Lead	7439-92-1	0.0086 B	mg/L	0.69	YES
1211271458	Sump	Nickel	7440-02-0	0.005 J	mg/L	3.98	YES
1211271458	Sump	Selenium	7782-49-2	0.004 J	mg/L	0.82	YES
1211271458	Sump	Silver	7440-22-4	0.008 J	mg/L	0.43	YES
1211271458	Sump	Thallium	7440-28-0	ND	mg/L	1.4	YES
1211271458	Sump	Vanadium	7440-62-2	0.012 J	mg/L	4.3	YES
1211271458	Sump	Zinc	7440-66-6	0.057	mg/L	2.61	YES
1211271458	Sump	Mercury	7439-97-6	0.00009 J	mg/L	0.15	YES
1211271459	Sump	Antimony	7440-36-0	ND	mg/L	1.9	YES
1211271459	Sump	Arsenic	7440-38-2	ND	mg/L	1.4	YES
1211271459	Sump	Barium	7440-39-3	0.033	mg/L	1.2	YES
1211271459	Sump	Beryllium	7440-41-7	ND	mg/L	0.82	YES
1211271459	Sump	Cadmium	7440-43-9	0.0002 J	mg/L	0.69	YES

Sample ID	Location	Analyte[1]	CAS No.	Result/ Qualifier	Units	LDR 40 CFR 268.40 and 268.48	Criteria Met Yes/No
1211271459	Sump	Chromium	7440-47-3	0.002 J	mg/L	2.77	YES
1211271459	Sump	Copper	7440-50-8	0.2	mg/L	NA	YES
1211271459	Sump	Lead	7439-92-1	0.0096	mg/L	0.69	YES
1211271459	Sump	Nickel	7440-02-0	0.005 J	mg/L	3.98	YES
1211271459	Sump	Selenium	7782-49-2	ND	mg/L	0.82	YES
1211271459	Sump	Silver	7440-22-4	0.007 J	mg/L	0.43	YES
1211271459	Sump	Thallium	7440-28-0	ND	mg/L	1.4	YES
1211271459	Sump	Vanadium	7440-62-2	0.012 J	mg/L	4.3	YES
1211271459	Sump	Zinc	7440-66-6	0.059	mg/L	2.61	YES
1211271459	Sump	Mercury	7439-97-6	0.00009 J	mg/L	0.15	YES
EPA Method 9012B: Cyanides (Lab Report No. R1208142)							
1211271500	Sump	Cyanide, Residual	57-12-5	ND	mg/L	1200	YES
1211271500	Sump	Cyanide, Total	57-12-5	ND	mg/L	1200	YES
1211271500	Sump	Cyanide, Amenable	57-12-5	ND	mg/L	860	YES
1211271501	Sump	Cyanide, Residual	57-12-5	ND	mg/L	1200	YES
1211271501	Sump	Cyanide, Total	57-12-5	ND	mg/L	1200	YES
1211271501	Sump	Cyanide, Amenable	57-12-5	ND	mg/L	860	YES
EPA Method 8260C: Volatile Organic Compounds (Lab Report No. R1208142)							
1211271455	Sump	1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	2.3	ug/L	57	YES
1211271455	Sump	2-Butanone (MEK)	78-93-3	ND	ug/L	280	YES
1211271455	Sump	Acetone	67-64-1	11	ug/L	280	YES
1211271455	Sump	Benzene	71-43-2	ND	ug/L	140	YES
1211271455	Sump	Cyclohexanone	108-94-1	ND	ug/L	360	YES
1211271455	Sump	Ethylbenzene	100-41-4	ND	ug/L	57	YES
1211271455	Sump	Naphthalene	91-20-3	ND	ug/L	59	YES
1211271455	Sump	Tetrachloroethene (PCE)	127-18-4	ND	ug/L	56	YES
1211271455	Sump	Toluene	108-88-3	ND	ug/L	80	YES
1211271455	Sump	Trichloroethene (TCE)	79-01-6	ND	ug/L	54	YES
1211271455	Sump	Trichlorofluoromethane (CFC 11)	75-69-4	ND	ug/L	20	YES
1211271455	Sump	m,p-Xylenes	179601-23-1	ND	ug/L	320	YES

Sample ID	Location	Analyte[1]	CAS No.	Result/ Qualifier	Units	LDR 40 CFR 268.40 and 268.48	Criteria Met Yes/No
1211271455	Sump	o-Xylene	95-47-6	ND	ug/L	320	YES
1211271456	Sump	1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	2.2	ug/L	57	YES
1211271456	Sump	2-Butanone (MEK)	78-93-3	ND	ug/L	280	YES
1211271456	Sump	Acetone	67-64-1	4.2 J	ug/L	280	YES
1211271456	Sump	Benzene	71-43-2	ND	ug/L	140	YES
1211271456	Sump	Cyclohexanone	108-94-1	ND	ug/L	360	YES
1211271456	Sump	Ethylbenzene	100-41-4	ND	ug/L	57	YES
1211271456	Sump	Naphthalene	91-20-3	ND	ug/L	59	YES
1211271456	Sump	Tetrachloroethene (PCE)	127-18-4	ND	ug/L	56	YES
1211271456	Sump	Toluene	108-88-3	ND	ug/L	80	YES
1211271456	Sump	Trichloroethene (TCE)	79-01-6	ND	ug/L	54	YES
1211271456	Sump	Trichlorofluoromethane (CFC 11)	75-69-4	ND	ug/L	20	YES
1211271456	Sump	m,p-Xylenes	179601-23-1	ND	ug/L	320	YES
1211271456	Sump	o-Xylene	95-47-6	ND	ug/L	320	YES
EPA Method 8270D: Semi-Volatile Organic Compounds (Lab Report No. R1208142)							
1211271504	Sump	1,4-Phenylenediamine	106-50-3	ND	ug/L	NA	YES
1211271504	Sump	Aniline	62-53-3	ND	ug/L	810	YES
1211271504	Sump	Benzyl Alcohol	100-51-6	ND	ug/L	NA	YES
1211271504	Sump	Di-n-butyl Phthalate	84-74-2	ND	ug/L	57	YES
1211271504	Sump	N-Nitrosodimethylamine	62-75-9	ND	ug/L	400	YES
1211271504	Sump	Naphthalene	91-20-3	ND	ug/L	59	YES
1211271504	Sump	Phenol	108-95-2	7.4 J	ug/L	39	YES
1211271505	Sump	1,4-Phenylenediamine	106-50-3	ND	ug/L	NA	YES
1211271505	Sump	Aniline	62-53-3	ND	ug/L	810	YES
1211271505	Sump	Benzyl Alcohol	100-51-6	ND	ug/L	NA	YES
1211271505	Sump	Di-n-butyl Phthalate	84-74-2	ND	ug/L	57	YES
1211271505	Sump	Naphthalene	91-20-3	ND	ug/L	59	YES
1211271505	Sump	N-Nitrosodimethylamine	62-75-9	ND	ug/L	400	YES
1211271505	Sump	Phenol	108-95-2	7.3 J	ug/L	39	YES
EPA Method 8015C: Ethylene Glycol (Lab Report No. R1208142)							

Sample ID	Location	Analyte[1]	CAS No.	Result/ Qualifier	Units	LDR 40 CFR 268.40 and 268.48	Criteria Met Yes/No
1211271508	Sump	Ethylene Glycol	107-21-1	ND	ug/L	NA	YES
1211271509	Sump	Ethylene Glycol	107-21-1	ND	ug/L	NA	YES

[1]- List of analytes were compiled from ETU Closure Plan (March, 2012), Attachment 15, Tables (1-11).

[2]- Units for MDL are method-specific and are identified by the units column expressed for each method.

B- Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.

ND- Constituent analyzed for but not detected.

NA- Not Applicable/Available

J - Estimated value due to either being a Tentatively Identified compound (TIC) or that the concentration is between the

MDL- Method Detection Limit

Sample ID	Location	Analyte[1]	CAS No.	Result/ Qualifier	Units	MDL[2]	LDR 40 CFR 268.40 and 268.48	Criteria Met Yes/No
High Performance Liquid Chromatography Method: Hydrazines (Lab Report No.728148)								
1211271359	803 Lab	1,1 Dimethylhydrazine	57-14-7	ND	mg/L	0.1	NA	YES
1211271359	803 Lab	1,2 Dimethylhydrazine	540-73-8	ND	mg/L	0.1	NA	YES
1211271359	803 Lab	Hydrazine	32-01-2	ND	mg/L	0.1	NA	YES
1211271359	803 Lab	Monomethyl Hydrazine	60-34-4	ND	mg/L	0.1	NA	YES
EPA Method 6010C/7000: Metals & Mercury (Lab Report No. R1208142)								
1211271403	803 Lab	Antimony	7440-36-0	0.01	mg/L	0.003	1.9	YES
1211271403	803 Lab	Arsenic	7440-38-2	ND	mg/L	0.02	1.4	YES
1211271403	803 Lab	Barium	7440-39-3	0.157	mg/L	0.0004	1.2	YES
1211271403	803 Lab	Beryllium	7440-41-7	ND	mg/L	0.0002	0.82	YES
1211271403	803 Lab	Cadmium	7440-43-9	0.0016 J	mg/L	0.0002	0.69	YES
1211271403	803 Lab	Chromium	7440-47-3	0.135	mg/L	0.0009	2.77	YES
1211271403	803 Lab	Copper	7440-50-8	0.85	mg/L	0.002	NA	YES
1211271403	803 Lab	Lead	7439-92-1	0.0683	mg/L	0.0008	0.69	YES
1211271403	803 Lab	Nickel	7440-02-0	0.054	mg/L	0.003	3.98	YES
1211271403	803 Lab	Selenium	7782-49-2	0.012	mg/L	0.004	0.82	YES
1211271403	803 Lab	Silver	7440-22-4	0.054	mg/L	0.002	0.43	YES
1211271403	803 Lab	Thallium	7440-28-0	ND	mg/L	0.004	1.4	YES
1211271403	803 Lab	Vanadium	7440-62-2	0.024 J	mg/L	0.0003	4.3	YES
1211271403	803 Lab	Zinc	7440-66-6	1.75	mg/L	0.002	2.61	YES
1211271403	803 Lab	Mercury	7439-97-6	0.00156	mg/L	0.00003	0.15	YES
EPA Method 9012B: Cyanides (Lab Report No. R1208142)								
1211271405	803 Lab	Cyanide, Amenable to Chlorination	57-12-5	ND	mg/L	NA	1200	YES
1211271405	803 Lab	Cyanide, Residual	57-12-5	ND	mg/L	0.003	1200	YES
1211271405	803 Lab	Cyanide, Total	57-12-5	ND	mg/L	0.003	860	YES
EPA Method 8260C: Volatile Organic Compounds (Lab Report No. R1208142)								
1211271400	803 Lab	1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	ND	ug/L	780	57	YES
1211271400	803 Lab	2-Butanone (MEK)	78-93-3	ND	ug/L	2100	280	YES
1211271400	803 Lab	Acetone	67-64-1	5000 J	ug/L	3100	280	YES
1211271400	803 Lab	Benzene	71-43-2	ND	ug/L	500	140	YES

Sample ID	Location	Analyte[1]	CAS No.	Result/ Qualifier	Units	MDL[2]	LDR 40 CFR 268.40 and 268.48	Criteria Met Yes/No
1211271400	803 Lab	Cyclohexanone	108-94-1	ND	ug/L	21000	360	YES
1211271400	803 Lab	Ethylbenzene	100-41-4	ND	ug/L	500	57	YES
1211271400	803 Lab	Naphthalene	91-20-3	ND	ug/L	500	59	YES
1211271400	803 Lab	Tetrachloroethene (PCE)	127-18-4	ND	ug/L	750	56	YES
1211271400	803 Lab	Toluene	108-88-3	ND	ug/L	500	80	YES
1211271400	803 Lab	Trichloroethene (TCE)	79-01-6	ND	ug/L	550	54	YES
1211271400	803 Lab	Trichlorofluoromethane (CFC 11)	75-69-4	ND	ug/L	500	20	YES
1211271400	803 LAB	m,p-Xylenes	179601-23-1	ND	ug/L	830	320	YES
1211271400	803 LAB	o-Xylene	95-47-6	ND	ug/L	500	320	YES
EPA Method 8270D: Semi-Volatile Organic Compounds (Lab Report No. R1208142)								
1211271406	803 Lab	1,4-Phenylenediamine	106-50-3	ND	ug/L	NA	NA	YES
1211271406	803 Lab	Aniline	62-53-3	ND	ug/L	12	810	YES
1211271406	803 Lab	Benzyl Alcohol	100-51-6	ND	ug/L	9.6	NA	YES
1211271406	**803 Lab**	**Di-n-butyl Phthalate**	**84-74-2**	**150**	**ug/L**	**9.5**	**57**	**NO**
1211271406	803 Lab	N-Nitrosodimethylamine	62-75-9	ND	ug/L	9.5	400	YES
1211271406	803 Lab	Naphthalene	91-20-3	ND	ug/L	9.5	59	YES
1211271406	803 Lab	Phenol	108-95-2	ND	ug/L	9.5	39	YES
EPA Method 8015C: Ethylene Glycol (Lab Report No. R1208142)								
1211271407	803 Lab	Ethylene Glycol	107-21-1	48000	ug/L	800	NA	YES

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ND- Constituent analyzed for but not detected.

NA- Not Applicable/Available

J - Estimated value due to either being a Tentatively Identified compound (TIC) or that the concentration is between the MRL and the

MDL- Method Detection Limit

Sample ID	Location	Analyte[1]	CAS No.	Result/ Qualifier	Units	MDL[2]	LDR 40 CFR 268.40 and 268.48	Criteria Met Yes/No
High Performance Liquid Chromatography Method: Hydrazines (Lab Report No.728146)								
1211270942	800 HFTA	1,1 Dimethylhydrazine	57-14-7	ND	mg/L	0.1	NA	YES
1211270942	800 HFTA	1,2 Dimethylhydrazine	540-73-8	ND	mg/L	0.1	NA	YES
1211270942	800 HFTA	Hydrazine	32-01-2	ND	mg/L	0.1	NA	YES
1211270942	800 HFTA	Monomethyl Hydrazine	60-34-4	ND	mg/L	0.1	NA	YES
EPA Method 6010C/7000: Metals & Mercury (Lab Report No. R1208141)								
1211270945	800 HFTA	Antimony	7440-36-0	ND	mg/L	0.003	1.9	YES
1211270945	800 HFTA	Arsenic	7440-38-2	ND	mg/L	0.002	1.4	YES
1211270945	800 HFTA	Barium	7440-39-3	0.04	mg/L	0.0004	1.2	YES
1211270945	800 HFTA	Beryllium	7440-41-7	ND	mg/L	0.0002	0.82	YES
1211270945	800 HFTA	Cadmium	7440-43-9	0.0018 J	mg/L	0.0002	0.69	YES
1211270945	800 HFTA	Chromium	7440-47-3	0.023	mg/L	0.0009	2.77	YES
1211270945	800 HFTA	Copper	7440-50-8	0.073	mg/L	0.002	NA	YES
1211270945	800 HFTA	Lead	7439-92-1	0.0124	mg/L	0.0008	0.69	YES
1211270945	800 HFTA	Nickel	7440-02-0	0.019 J	mg/L	0.003	3.98	YES
1211270945	800 HFTA	Selenium	7782-49-2	0.005 J	mg/L	0.004	0.82	YES
1211270945	800 HFTA	Silver	7440-22-4	ND	mg/L	0.002	0.43	YES
1211270945	800 HFTA	Thallium	7440-28-0	ND	mg/L	0.004	1.4	YES
1211270945	800 HFTA	Vanadium	7440-62-2	0.01 J	mg/L	0.0003	4.3	YES
1211270945	800 HFTA	Zinc	7440-66-6	0.447	mg/L	0.002	2.61	YES
1211270945	800 HFTA	Mercury	7439-97-6	0.00015 J	mg/L	0.00003	0.15	YES
EPA Method 9012B: Cyanides (Lab Report No. R1208141)								
1211270946	800 HFTA	Cyanide, Amenable to Chlorination	57-12-5	ND	mg/L	NA	1200	YES
1211270946	800 HFTA	Cyanide, Residual	57-12-5	ND	mg/L	0.003	1200	YES
1211270946	800 HFTA	Cyanide, Total	57-12-5	ND	mg/L	0.003	860	YES
EPA Method 8260C: Volatile Organic Compounds (Lab Report No. R1208141)								
1211270943	800 HFTA	1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	ND	ug/L	0.31	57	YES
1211270943	800 HFTA	2-Butanone (MEK)	78-93-3	1.8 J	ug/L	0.81	280	YES
1211270943	800 HFTA	Acetone	67-64-1	4.3 J	ug/L	1.3	280	YES
1211270943	800 HFTA	Benzene	71-43-2	ND	ug/L	0.2	140	YES

Sample ID	Location	Analyte[1]	CAS No.	Result/ Qualifier	Units	MDL[2]	LDR 40 CFR 268.40 and 268.48	Criteria Met Yes/No
1211270943	800 HFTA	Cyclohexanone	108-94-1	ND	ug/L	8.2	360	YES
1211270943	800 HFTA	Ethylbenzene	100-41-4	ND	ug/L	0.2	57	YES
1211270943	800 HFTA	Naphthalene	91-20-3	ND	ug/L	0.2	59	YES
1211270943	800 HFTA	Tetrachloroethene (PCE)	127-18-4	ND	ug/L	0.3	56	YES
1211270943	800 HFTA	Toluene	108-88-3	ND	ug/L	0.2	80	YES
1211270943	800 HFTA	Trichloroethene (TCE)	79-01-6	ND	ug/L	0.22	54	YES
1211270943	800 HFTA	Trichlorofluoromethane (CFC 11)	75-69-4	ND	ug/L	0.2	20	YES
1211270943	800 HFTA	m,p-Xylenes	179601-23-1	ND	ug/L	0.33	320	YES
1211270943	800 HFTA	o-Xylene	95-47-6	ND	ug/L	0.2	320	YES
EPA Method 8270D: Semi-Volatile Organic Compounds (Lab Report No. R1208141)								
1211270947	800 HFTA	1,4-Phenylenediamine	106-50-3	ND	ug/L	NA	NA	YES
1211270947	800 HFTA	Aniline	62-53-3	ND	ug/L	1.3	810	YES
1211270947	800 HFTA	Benzyl Alcohol	100-51-6	3.7 J	ug/L	1.1	NA	YES
1211270947	800 HFTA	Di-n-butyl Phthalate	84-74-2	4.3 J	ug/L	1	57	YES
1211270947	800 HFTA	N-Nitrosodimethylamine	62-75-9	ND	ug/L	1	400	YES
1211270947	800 HFTA	Naphthalene	91-20-3	ND	ug/L	1	59	YES
1211270947	800 HFTA	Phenol	108-95-2	ND	ug/L	1	39	YES
EPA Method 8015C: Ethylene Glycol (Lab Report No. R1208141)								
1211270948	800 HFTA	Ethylene Glycol	107-21-1	ND	ug/L	800	NA	YES

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MDL- Method Detection Limit

Sample ID	Location	Analyte[1]	CAS No.	Result/ Qualifier	Units	MDL[2]	LDR 40 CFR 268.40 and 268.48	Criteria Met Yes/No
High Performance Liquid Chromatography Method: Hydrazines (Lab Report No.728148)								
1211280937	200 Area	1,1 Dimethylhydrazine	57-14-7	ND	mg/L	0.1	NA	YES
1211280937	200 Area	1,2 Dimethylhydrazine	540-73-8	ND	mg/L	0.1	NA	YES
1211280937	200 Area	Hydrazine	32-01-2	ND	mg/L	0.1	NA	YES
1211280937	200 Area	Monomethyl Hydrazine	60-34-4	ND	mg/L	0.1	NA	YES
EPA Method 6010C/7000: Metals & Mercury (Lab Report No. R1208140)								
1211280940	200 Area	Antimony	7440-36-0	0.005 J	mg/L	0.003	1.9	YES
1211280940	200 Area	Arsenic	7440-38-2	ND	mg/L	0.002	1.4	YES
1211280940	200 Area	Barium	7440-39-3	0.128	mg/L	0.0004	1.2	YES
1211280940	200 Area	Beryllium	7440-41-7	ND	mg/L	0.0002	0.82	YES
1211280940	200 Area	Cadmium	7440-43-9	0.0052	mg/L	0.0002	0.69	YES
1211280940	200 Area	Chromium	7440-47-3	0.122	mg/L	0.0009	2.77	YES
1211280940	200 Area	Copper	7440-50-8	0.157	mg/L	0.002	NA	YES
1211280940	200 Area	Lead	7439-92-1	0.0162	mg/L	0.0008	0.69	YES
1211280940	200 Area	Nickel	7440-02-0	0.185	mg/L	0.003	3.98	YES
1211280940	200 Area	Selenium	7782-49-2	0.004 J	mg/L	0.004	0.82	YES
1211280940	200 Area	Silver	7440-22-4	0.358	mg/L	0.002	0.43	YES
1211280940	200 Area	Thallium	7440-28-0	ND	mg/L	0.004	1.4	YES
1211280940	200 Area	Vanadium	7440-62-2	0.013 J	mg/L	0.0003	4.3	YES
1211280940	200 Area	Zinc	7440-66-6	0.076	mg/L	0.002	2.61	YES
1211280940	200 Area	Mercury	7439-97-6	0.00032	mg/L	0.00003	0.15	YES
EPA Method 9012B: Cyanides (Lab Report No. R1208140)								
1211280941	200 Area	Cyanide, Amenable to Chlorination	57-12-5	ND	mg/L	NA	1200	YES
1211280941	200 Area	Cyanide, Residual	57-12-5	0.004 J	mg/L	0.003	1200	YES
1211280941	200 Area	Cyanide, Total	57-12-5	0.009 J	mg/L	0.003	860	YES
EPA Method 8260C: Volatile Organic Compounds (Lab Report No. R1208140)								
1211280938	200 Area	1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	0.35 J	ug/L	0.31	57	YES
1211280938	200 Area	2-Butanone (MEK)	78-93-3	ND	ug/L	0.81	280	YES
1211280938	200 Area	Acetone	67-64-1	2.2 J	ug/L	1.3	280	YES
1211280938	200 Area	Benzene	71-43-2	ND	ug/L	0.2	140	YES

Sample ID	Location	Analyte[1]	CAS No.	Result/ Qualifier	Units	MDL[2]	LDR 40 CFR 268.40 and 268.48	Criteria Met Yes/No
1211280938	200 Area	Cyclohexanone	108-94-1	ND	ug/L	8.2	360	YES
1211280938	200 Area	Ethylbenzene	100-41-4	ND	ug/L	0.2	57	YES
1211280938	200 Area	Naphthalene	91-20-3	ND	ug/L	0.2	59	YES
1211280938	200 Area	Tetrachloroethene (PCE)	127-18-4	ND	ug/L	0.3	56	YES
1211280938	200 Area	Toluene	108-88-3	0.44 J	ug/L	0.2	80	YES
1211280938	200 Area	Trichloroethene (TCE)	79-01-6	ND	ug/L	0.22	54	YES
1211280938	200 Area	Trichlorofluoromethane (CFC 11)	75-69-4	ND	ug/L	0.2	20	YES
1211280938	200 Area	m,p-Xylenes	179601-23-1	ND	ug/L	0.33	320	YES
1211280938	200 Area	o-Xylene	95-47-6	ND	ug/L	0.2	320	YES
EPA Method 8270D: Semi-Volatile Organic Compounds (Lab Report No. R1208140)								
1211280942	200 Area	1,4-Phenylenediamine	106-50-3	ND	ug/L	NA	NA	YES
1211280942	200 Area	Aniline	62-53-3	ND	ug/L	1.3	810	YES
1211280942	200 Area	Benzyl Alcohol	100-51-6	ND	ug/L	1.1	NA	YES
1211280942	200 Area	Di-n-butyl Phthalate	84-74-2	ND	ug/L	1	57	YES
1211280942	200 Area	N-Nitrosodimethylamine	62-75-9	ND	ug/L	1	400	YES
1211280942	200 Area	Naphthalene	91-20-3	ND	ug/L	1	59	YES
1211280942	200 Area	Phenol	108-95-2	ND	ug/L	1	39	YES
EPA Method 8015C: Ethylene Glycol (Lab Report No. R1208140)								
1211280943	200 Area	Ethylene Glycol	107-21-1	ND	ug/L	800	NA	YES

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MDL- Method Detection Limit

Sample ID	Location	Analyte[1]	CAS No.	Result/ Qualifier	Units	MDL[2]	LDR 40 CFR 268.40 and 268.48	Criteria Met Yes/No
High Performance Liquid Chromatography Method: Hydrazines (Lab Report No.728178)								
1212051121	Sump to ETU	1,1 Dimethylhydrazine	57-14-7	ND	mg/L	0.1	NA	YES
1212051121	Sump to ETU	1,2 Dimethylhydrazine	540-73-8	ND	mg/L	0.1	NA	YES
1212051121	Sump to ETU	Hydrazine	32-01-2	ND	mg/L	0.1	NA	YES
1212051121	Sump to ETU	Monomethyl Hydrazine	60-34-4	ND	mg/L	0.1	NA	YES
1212051122	Sump to ETU	1,1 Dimethylhydrazine	57-14-7	ND	mg/L	0.1	NA	YES
1212051122	Sump to ETU	1,2 Dimethylhydrazine	540-73-8	ND	mg/L	0.1	NA	YES
1212051122	Sump to ETU	Hydrazine	32-01-2	ND	mg/L	0.1	NA	YES
1212051122	Sump to ETU	Monomethyl Hydrazine	60-34-4	ND	mg/L	0.1	NA	YES
EPA Method 6010C/7000: Metals & Mercury (Lab Report No. R1208403)								
1212051125	Sump to ETU	Antimony	7440-36-0	ND	mg/L	0.003	1.9	YES
1212051125	Sump to ETU	Arsenic	7440-38-2	ND	mg/L	0.002	1.4	YES
1212051125	Sump to ETU	Barium	7440-39-3	0.045	mg/L	0.0004	1.2	YES
1212051125	Sump to ETU	Beryllium	7440-41-7	ND	mg/L	0.0002	0.82	YES
1212051125	Sump to ETU	Cadmium	7440-43-9	ND	mg/L	0.0002	0.69	YES
1212051125	Sump to ETU	Chromium	7440-47-3	0.008 J	mg/L	0.0009	2.77	YES
1212051125	Sump to ETU	Copper	7440-50-8	0.015 J	mg/L	0.002	NA	YES
1212051125	Sump to ETU	Lead	7439-92-1	0.001 J	mg/L	0.0008	0.69	YES
1212051125	Sump to ETU	Nickel	7440-02-0	0.004 J	mg/L	0.003	3.98	YES
1212051125	Sump to ETU	Selenium	7782-49-2	0.005 J	mg/L	0.004	0.82	YES
1212051125	Sump to ETU	Silver	7440-22-4	0.125	mg/L	0.002	0.43	YES
1212051125	Sump to ETU	Thallium	7440-28-0	ND	mg/L	0.004	1.4	YES
1212051125	Sump to ETU	Vanadium	7440-62-2	0.013 J	mg/L	0.0003	4.3	YES
1212051125	Sump to ETU	Zinc	7440-66-6	0.014 J	mg/L	0.002	2.61	YES
1212051125	Sump to ETU	Mercury	7439-97-6	0.0001 J	mg/L	0.00003	0.15	YES
1212051126	Sump to ETU	Antimony	7440-36-0	ND	mg/L	0.003	1.9	YES
1212051126	Sump to ETU	Arsenic	7440-38-2	ND	mg/L	0.002	1.4	YES
1212051126	Sump to ETU	Barium	7440-39-3	0.037	mg/L	0.0004	1.2	YES
1212051126	Sump to ETU	Beryllium	7440-41-7	ND	mg/L	0.0002	0.82	YES
1212051126	Sump to ETU	Cadmium	7440-43-9	ND	mg/L	0.0002	0.69	YES

Sample ID	Location	Analyte[1]	CAS No.	Result/ Qualifier	Units	MDL[2]	LDR 40 CFR 268.40 and 268.48	Criteria Met Yes/No
1212051126	Sump to ETU	Chromium	7440-47-3	0.005 J	mg/L	0.0009	2.77	YES
1212051126	Sump to ETU	Copper	7440-50-8	0.013 J	mg/L	0.002	NA	YES
1212051126	Sump to ETU	Lead	7439-92-1	0.0009 J	mg/L	0.0008	0.69	YES
1212051126	Sump to ETU	Nickel	7440-02-0	ND	mg/L	0.003	3.98	YES
1212051126	Sump to ETU	Selenium	7782-49-2	ND	mg/L	0.004	0.82	YES
1212051126	Sump to ETU	Silver	7440-22-4	0.068	mg/L	0.002	0.43	YES
1212051126	Sump to ETU	Thallium	7440-28-0	ND	mg/L	0.004	1.4	YES
1212051126	Sump to ETU	Vanadium	7440-62-2	0.013 J	mg/L	0.0003	4.3	YES
1212051126	Sump to ETU	Zinc	7440-66-6	0.014 J	mg/L	0.002	2.61	YES
1212051126	Sump to ETU	Mercury	7439-97-6	0.00009 J	mg/L	0.00003	0.15	YES
EPA Method 9012B: Cyanides (Lab Report No. R1208403)								
1212051127	Sump to ETU	Cyanide, Amenable to Chlorination	57-12-5	ND	mg/L	NA	1200	YES
1212051127	Sump to ETU	Cyanide, Residual	57-12-5	ND	mg/L	0.003	1200	YES
1212051127	Sump to ETU	Cyanide, Total	57-12-5	ND	mg/L	0.003	860	YES
1212051128	Sump to ETU	Cyanide, Amenable to Chlorination	57-12-5	ND	mg/L	NA	1200	YES
1212051128	Sump to ETU	Cyanide, Residual	57-12-5	ND	mg/L	0.003	1200	YES
1212051128	Sump to ETU	Cyanide, Total	57-12-5	0.004 J	mg/L	0.003	860	YES
EPA Method 8260C: Volatile Organic Compounds (Lab Report No. R1208403)								
1212051123	Sump to ETU	1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	ND	ug/L	0.31	57	YES
1212051123	Sump to ETU	2-Butanone (MEK)	78-93-3	ND	ug/L	0.81	280	YES
1212051123	Sump to ETU	Acetone	67-64-1	1.7 J	ug/L	1.3	280	YES
1212051123	Sump to ETU	Benzene	71-43-2	ND	ug/L	0.2	140	YES
1212051123	Sump to ETU	Cyclohexanone	108-94-1	ND	ug/L	8.2	360	YES
1212051123	Sump to ETU	Ethylbenzene	100-41-4	ND	ug/L	0.2	57	YES
1212051123	Sump to ETU	Naphthalene	91-20-3	ND	ug/L	0.2	59	YES
1212051123	Sump to ETU	Tetrachloroethene (PCE)	127-18-4	ND	ug/L	0.3	56	YES
1212051123	Sump to ETU	Toluene	108-88-3	ND	ug/L	0.2	80	YES
1212051123	Sump to ETU	Trichloroethene (TCE)	79-01-6	ND	ug/L	0.22	54	YES
1212051123	Sump to ETU	Trichlorofluoromethane (CFC 11)	75-69-4	ND	ug/L	0.2	20	YES
1212051123	Sump to ETU	m,p-Xylenes	179601-23-1	ND	ug/L	0.33	320	YES
1212051123	Sump to ETU	o-Xylene	95-47-6	ND	ug/L	0.2	320	YES

Sample ID	Location	Analyte[1]	CAS No.	Result/ Qualifier	Units	MDL[2]	LDR 40 CFR 268.40 and 268.48	Criteria Met Yes/No
1212051124	Sump to ETU	1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	ND	ug/L	0.31	57	YES
1212051124	Sump to ETU	2-Butanone (MEK)	78-93-3	ND	ug/L	0.81	280	YES
1212051124	Sump to ETU	Acetone	67-64-1	1.5 J	ug/L	1.3	280	NO
1212051124	Sump to ETU	Benzene	71-43-2	ND	ug/L	0.2	140	YES
1212051124	Sump to ETU	Cyclohexanone	108-94-1	ND	ug/L	8.2	360	YES
1212051124	Sump to ETU	Ethylbenzene	100-41-4	ND	ug/L	0.2	57	YES
1212051124	Sump to ETU	Naphthalene	91-20-3	ND	ug/L	0.2	59	YES
1212051124	Sump to ETU	Tetrachloroethene (PCE)	127-18-4	ND	ug/L	0.3	56	YES
1212051124	Sump to ETU	Toluene	108-88-3	ND	ug/L	0.2	80	YES
1212051124	Sump to ETU	Trichloroethene (TCE)	79-01-6	ND	ug/L	0.22	54	YES
1212051124	Sump to ETU	Trichlorofluoromethane (CFC 11)	75-69-4	ND	ug/L	0.2	20	YES
1212051124	Sump to ETU	m,p-Xylenes	179601-23-1	ND	ug/L	0.33	320	YES
1212051124	Sump to ETU	o-Xylene	95-47-6	ND	ug/L	0.2	320	YES
EPA Method 8270D: Semi-Volatile Organic Compounds (Lab Report No. R1208403)								
1212051129	Sump to ETU	1,4-Phenylenediamine	106-50-3	ND	ug/L	NA	NA	YES
1212051129	Sump to ETU	Aniline	62-53-3	ND	ug/L	1.3	810	YES
1212051129	Sump to ETU	Benzyl Alcohol	100-51-6	ND	ug/L	1.1	NA	YES
1212051129	Sump to ETU	Di-n-butyl Phthalate	84-74-2	ND	ug/L	1	57	YES
1212051129	Sump to ETU	N-Nitrosodimethylamine	62-75-9	ND	ug/L	1	400	YES
1212051129	Sump to ETU	Naphthalene	91-20-3	ND	ug/L	1	59	YES
1212051129	Sump to ETU	Phenol	108-95-2	ND	ug/L	1	39	YES
1212051130	Sump to ETU	1,4-Phenylenediamine	106-50-3	ND	ug/L	NA	NA	YES
1212051130	Sump to ETU	Aniline	62-53-3	ND	ug/L	1.3	810	YES
1212051130	Sump to ETU	Benzyl Alcohol	100-51-6	ND	ug/L	1.1	NA	YES
1212051130	Sump to ETU	Di-n-butyl Phthalate	84-74-2	ND	ug/L	1	57	YES
1212051130	Sump to ETU	N-Nitrosodimethylamine	62-75-9	ND	ug/L	1	400	YES
1212051130	Sump to ETU	Naphthalene	91-20-3	ND	ug/L	1	59	YES
1212051130	Sump to ETU	Phenol	108-95-2	ND	ug/L	1	39	YES

Sample ID	Location	Analyte[1]	CAS No.	Result/ Qualifier	Units	MDL[2]	LDR 40 CFR 268.40 and 268.48	Criteria Met Yes/No
EPA Method 8015C: Ethylene Glycol (Lab Report No. R1208403)								
1212051131	Sump to ETU	Ethylene Glycol	107-21-1	ND	ug/L	800	NA	YES
1212051132	Sump to ETU	Ethylene Glycol	107-21-1	ND	ug/L	800	NA	YES

[1]- List of analytes were compiled from ETU Closure Plan (March, 2012), Attachment 15, Tables (1-11).

[2]- Units for MDL are method-specific and are identified by the units column expressed for each method.

B- Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.

ND- Constituent analyzed for but not detected.

NA- Not Applicable/Available

J - Estimated value due to either being a Tentatively Identified compound (TIC) or that the concentration is between the MRL and the

MDL- Method Detection Limit

Sample ID	Location	Analyte[1]	CAS No.	Result/ Qualifier	Units	MDL[2]	LDR 40 CFR 268.40 and 268.48	Criteria Met Yes/No
High Performance Liquid Chromotography Method: Hydrazines (Lab Report No. 727788)								
1209061050	800 HFTA	1,1 Dimethylhydrazine	57-14-7	ND	mg/L	0.1	NA	YES
1209061319	800 HFTA	1,1 Dimethylhydrazine	57-14-7	ND	mg/L	0.1	NA	YES
1209061343	800 HFTA	1,1 Dimethylhydrazine	57-14-7	ND	mg/L	0.1	NA	YES
1209061417	800 HFTA	1,1 Dimethylhydrazine	57-14-7	ND	mg/L	0.1	NA	YES
1209061050	800 HFTA	1,2 Dimethylhydrazine	540-73-8	ND	mg/L	0.1	NA	YES
1209061319	800 HFTA	1,2 Dimethylhydrazine	540-73-8	ND	mg/L	0.1	NA	YES
1209061343	800 HFTA	1,2 Dimethylhydrazine	540-73-8	ND	mg/L	0.1	NA	YES
1209061417	800 HFTA	1,2 Dimethylhydrazine	540-73-8	ND	mg/L	0.1	NA	YES
1209061050	800 HFTA	Hydrazine	32-01-2	ND	mg/L	0.1	NA	YES
1209061319	800 HFTA	Hydrazine	32-01-2	ND	mg/L	0.1	NA	YES
1209061343	800 HFTA	Hydrazine	32-01-2	ND	mg/L	0.1	NA	YES
1209061417	800 HFTA	Hydrazine	32-01-2	ND	mg/L	0.1	NA	YES
1209061050	800 HFTA	Monomethyl Hydrazine	60-34-4	ND	mg/L	0.1	NA	YES
1209061319	800 HFTA	Monomethyl Hydrazine	60-34-4	ND	mg/L	0.1	NA	YES
1209061343	800 HFTA	Monomethyl Hydrazine	60-34-4	ND	mg/L	0.1	NA	YES
1209061417	800 HFTA	Monomethyl Hydrazine	60-34-4	ND	mg/L	0.1	NA	YES
EPA Method 6010C/7000: Metals & Mercury (Lab Report No. R1205959)								
1209061059	800 HFTA	Antimony	7440-36-0	0.053	mg/L	0.003	1.9	YES
1209061325	800 HFTA	Antimony	7440-36-0	ND	mg/L	0.003	1.9	YES
1209061349	800 HFTA	Antimony	7440-36-0	ND	mg/L	0.003	1.9	YES
1209061422	800 HFTA	Antimony	7440-36-0	0.021	mg/L	0.003	1.9	YES
1209061059	800 HFTA	Arsenic	7440-38-2	0.002 J	mg/L	0.002	1.4	YES
1209061325	800 HFTA	Arsenic	7440-38-2	ND	mg/L	0.002	1.4	YES
1209061349	800 HFTA	Arsenic	7440-38-2	ND	mg/L	0.002	1.4	YES
1209061422	800 HFTA	Arsenic	7440-38-2	ND	mg/L	0.002	1.4	YES
1209061059	800 HFTA	Barium	7440-39-3	0.021	mg/L	0.0004	1.2	YES
1209061325	800 HFTA	Barium	7440-39-3	0.02	mg/L	0.0004	1.2	YES
1209061349	800 HFTA	Barium	7440-39-3	0.02 J	mg/L	0.0004	1.2	YES
1209061422	800 HFTA	Barium	7440-39-3	0.019	mg/L	0.0004	1.2	YES
1209061059	800 HFTA	Beryllium	7440-41-7	ND	mg/L	0.0002	0.82	YES
1209061325	800 HFTA	Beryllium	7440-41-7	ND	mg/L	0.0002	0.82	YES
1209061349	800 HFTA	Beryllium	7440-41-7	ND	mg/L	0.0002	0.82	YES
1209061422	800 HFTA	Beryllium	7440-41-7	ND	mg/L	0.0002	0.82	YES

Sample ID	Location	Analyte[1]	CAS No.	Result/ Qualifier	Units	MDL[2]	LDR 40 CFR 268.40 and 268.48	Criteria Met Yes/No
1209061059	800 HFTA	Cadmium	7440-43-9	ND	mg/L	0.0002	0.69	YES
1209061325	800 HFTA	Cadmium	7440-43-9	ND	mg/L	0.0002	0.69	YES
1209061349	800 HFTA	Cadmium	7440-43-9	ND	mg/L	0.0002	0.69	YES
1209061422	800 HFTA	Cadmium	7440-43-9	ND	mg/L	0.0002	0.69	YES
1209061059	800 HFTA	Chromium	7440-47-3	0.001 J	mg/L	0.0009	2.77	YES
1209061325	800 HFTA	Chromium	7440-47-3	0.001 J	mg/L	0.0009	2.77	YES
1209061349	800 HFTA	Chromium	7440-47-3	0.002 J	mg/L	0.0009	2.77	YES
1209061422	800 HFTA	Chromium	7440-47-3	0.002 J	mg/L	0.0009	2.77	YES
1209061059	800 HFTA	Copper	7440-50-8	0.032	mg/L	0.002	NA	YES
1209061325	800 HFTA	Copper	7440-50-8	0.04	mg/L	0.002	NA	YES
1209061349	800 HFTA	Copper	7440-50-8	0.037	mg/L	0.002	NA	YES
1209061422	800 HFTA	Copper	7440-50-8	0.039	mg/L	0.002	NA	YES
1209061059	800 HFTA	Lead	7439-92-1	0.0028 J	mg/L	0.0008	0.69	YES
1209061325	800 HFTA	Lead	7439-92-1	0.0031 J	mg/L	0.0008	0.69	YES
1209061349	800 HFTA	Lead	7439-92-1	0.0022 J	mg/L	0.0008	0.69	YES
1209061422	800 HFTA	Lead	7439-92-1	0.0038 J	mg/L	0.0008	0.69	YES
1209061059	800 HFTA	Mercury	7439-97-6	ND	mg/L	0.00003	0.15	YES
1209061325	800 HFTA	Mercury	7439-97-6	ND	mg/L	0.00003	0.15	YES
1209061349	800 HFTA	Mercury	7439-97-6	ND	mg/L	0.00003	0.15	YES
1209061422	800 HFTA	Mercury	7439-97-6	ND	mg/L	0.00003	0.15	YES
1209061059	800 HFTA	Nickel	7440-02-0	ND	mg/L	0.003	3.98	YES
1209061325	800 HFTA	Nickel	7440-02-0	ND	mg/L	0.003	3.98	YES
1209061349	800 HFTA	Nickel	7440-02-0	ND	mg/L	0.003	3.98	YES
1209061422	800 HFTA	Nickel	7440-02-0	ND	mg/L	0.003	3.98	YES
1209061059	800 HFTA	Selenium	7782-49-2	0.006 J	mg/L	0.004	0.82	YES
1209061325	800 HFTA	Selenium	7782-49-2	0.009 J	mg/L	0.004	0.82	YES
1209061349	800 HFTA	Selenium	7782-49-2	0.005 J	mg/L	0.004	0.82	YES
1209061422	800 HFTA	Selenium	7782-49-2	0.008 J	mg/L	0.004	0.82	YES
1209061059	800 HFTA	Silver	7440-22-4	ND	mg/L	0.002	0.43	YES
1209061325	800 HFTA	Silver	7440-22-4	ND	mg/L	0.002	0.43	YES
1209061349	800 HFTA	Silver	7440-22-4	ND	mg/L	0.002	0.43	YES
1209061422	800 HFTA	Silver	7440-22-4	ND	mg/L	0.002	0.43	YES
1209061059	800 HFTA	Thallium	7440-28-0	ND	mg/L	0.004	1.4	YES
1209061325	800 HFTA	Thallium	7440-28-0	ND	mg/L	0.004	1.4	YES

Sample ID	Location	Analyte[1]	CAS No.	Result/ Qualifier	Units	MDL[2]	LDR 40 CFR 268.40 and 268.48	Criteria Met Yes/No
1209061349	800 HFTA	Thallium	7440-28-0	ND	mg/L	0.004	1.4	YES
1209061422	800 HFTA	Thallium	7440-28-0	ND	mg/L	0.004	1.4	YES
1209061059	800 HFTA	Vanadium	7440-62-2	0.014 J	mg/L	0.0003	4.3	YES
1209061325	800 HFTA	Vanadium	7440-62-2	0.014 J	mg/L	0.0003	4.3	YES
1209061349	800 HFTA	Vanadium	7440-62-2	0.013 J	mg/L	0.0003	4.3	YES
1209061422	800 HFTA	Vanadium	7440-62-2	0.013 J	mg/L	0.0003	4.3	YES
1209061059	800 HFTA	Zinc	7440-66-6	0.261	mg/L	0.002	2.61	YES
1209061325	800 HFTA	Zinc	7440-66-6	0.216	mg/L	0.002	2.61	YES
1209061349	800 HFTA	Zinc	7440-66-6	0.132	mg/L	0.002	2.61	YES
1209061422	800 HFTA	Zinc	7440-66-6	0.144	mg/L	0.002	2.61	YES
EPA Method 9012B: Cyanides (Lab Report No. R1205959)								
1209061100	800 HFTA	Cyanide, Amenable to Chlorination	57-12-5	ND	mg/L	NA	1200	YES
1209061326	800 HFTA	Cyanide, Amenable to Chlorination	57-12-5	ND	mg/L	NA	1200	YES
1209061350	800 HFTA	Cyanide, Amenable to Chlorination	57-12-5	ND	mg/L	NA	1200	YES
1209061423	800 HFTA	Cyanide, Amenable to Chlorination	57-12-5	ND	mg/L	NA	1200	YES
1209061100	800 HFTA	Cyanide, Residual	57-12-5	ND	mg/L	0.003	NA	YES
1209061326	800 HFTA	Cyanide, Residual	57-12-5	ND	mg/L	0.003	NA	YES
1209061350	800 HFTA	Cyanide, Residual	57-12-5	ND	mg/L	0.003	NA	YES
1209061423	800 HFTA	Cyanide, Residual	57-12-5	ND	mg/L	0.003	NA	YES
1209061100	800 HFTA	Cyanide, Total	57-12-5	0.004 J	mg/L	0.003	860	YES
1209061326	800 HFTA	Cyanide, Total	57-12-5	ND	mg/L	0.003	860	YES
1209061350	800 HFTA	Cyanide, Total	57-12-5	ND	mg/L	0.003	860	YES
1209061423	800 HFTA	Cyanide, Total	57-12-5	ND	mg/L	0.003	860	YES
EPA Method 8260C: Volatile Organic Compounds (Lab Report No. R1205959)								
1209061055	800 HFTA	1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	ND	ug/L	0.31	57	YES
1209061320	800 HFTA	1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	ND	ug/L	0.31	57	YES
1209061346	800 HFTA	1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	ND	ug/L	0.31	57	YES
1209061418	800 HFTA	1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	ND	ug/L	0.31	57	YES
1209061055	800 HFTA	2-Butanone (MEK)	78-93-3	2.8 J	ug/L	0.81	280	YES
1209061320	800 HFTA	2-Butanone (MEK)	78-93-3	1.1 J	ug/L	0.81	280	YES
1209061346	800 HFTA	2-Butanone (MEK)	78-93-3	ND	ug/L	0.81	280	YES
1209061418	800 HFTA	2-Butanone (MEK)	78-93-3	1.4 J	ug/L	0.81	280	YES
1209061055	800 HFTA	Acetone	67-64-1	3.7 J	ug/L	1.3	280	YES
1209061320	800 HFTA	Acetone	67-64-1	5.5	ug/L	1.3	280	YES

Sample ID	Location	Analyte[1]	CAS No.	Result/ Qualifier	Units	MDL[2]	LDR 40 CFR 268.40 and 268.48	Criteria Met Yes/No
1209061346	800 HFTA	Acetone	67-64-1	3.4 J	ug/L	1.3	280	YES
1209061418	800 HFTA	Acetone	67-64-1	5.1	ug/L	1.3	280	YES
1209061055	800 HFTA	Benzene	71-43-2	ND	ug/L	0.2	140	YES
1209061320	800 HFTA	Benzene	71-43-2	ND	ug/L	0.2	140	YES
1209061346	800 HFTA	Benzene	71-43-2	ND	ug/L	0.2	140	YES
1209061418	800 HFTA	Benzene	71-43-2	ND	ug/L	0.2	140	YES
1209061055	800 HFTA	Cyclohexanone	108-94-1	ND	ug/L	8.2	360	YES
1209061320	800 HFTA	Cyclohexanone	108-94-1	ND	ug/L	8.2	360	YES
1209061346	800 HFTA	Cyclohexanone	108-94-1	ND	ug/L	8.2	360	YES
1209061418	800 HFTA	Cyclohexanone	108-94-1	ND	ug/L	8.2	360	YES
1209061055	800 HFTA	Ethylbenzene	100-41-4	ND	ug/L	0.2	57	YES
1209061320	800 HFTA	Ethylbenzene	100-41-4	ND	ug/L	0.2	57	YES
1209061346	800 HFTA	Ethylbenzene	100-41-4	ND	ug/L	0.2	57	YES
1209061418	800 HFTA	Ethylbenzene	100-41-4	ND	ug/L	0.2	57	YES
1209061055	800 HFTA	Naphthalene	91-20-3	ND	ug/L	0.2	59	YES
1209061320	800 HFTA	Naphthalene	91-20-3	ND	ug/L	0.2	59	YES
1209061346	800 HFTA	Naphthalene	91-20-3	ND	ug/L	0.2	59	YES
1209061418	800 HFTA	Naphthalene	91-20-3	ND	ug/L	0.2	59	YES
1209061055	800 HFTA	Tetrachloroethene (PCE)	127-18-4	ND	ug/L	0.3	56	YES
1209061320	800 HFTA	Tetrachloroethene (PCE)	127-18-4	ND	ug/L	0.3	56	YES
1209061346	800 HFTA	Tetrachloroethene (PCE)	127-18-4	ND	ug/L	0.3	56	YES
1209061418	800 HFTA	Tetrachloroethene (PCE)	127-18-4	ND	ug/L	0.3	56	YES
1209061055	800 HFTA	Toluene	108-88-3	ND	ug/L	0.2	80	YES
1209061320	800 HFTA	Toluene	108-88-3	ND	ug/L	0.2	80	YES
1209061346	800 HFTA	Toluene	108-88-3	ND	ug/L	0.2	80	YES
1209061418	800 HFTA	Toluene	108-88-3	ND	ug/L	0.2	80	YES
1209061055	800 HFTA	Trichloroethene (TCE)	79-01-6	ND	ug/L	0.22	54	YES
1209061320	800 HFTA	Trichloroethene (TCE)	79-01-6	ND	ug/L	0.22	54	YES
1209061346	800 HFTA	Trichloroethene (TCE)	79-01-6	ND	ug/L	0.22	54	YES
1209061418	800 HFTA	Trichloroethene (TCE)	79-01-6	ND	ug/L	0.22	54	YES
1209061055	800 HFTA	Trichlorofluoromethane (CFC 11)	75-69-4	ND	ug/L	0.2	20	YES
1209061320	800 HFTA	Trichlorofluoromethane (CFC 11)	75-69-4	ND	ug/L	0.2	20	YES
1209061346	800 HFTA	Trichlorofluoromethane (CFC 11)	75-69-4	ND	ug/L	0.2	20	YES
1209061418	800 HFTA	Trichlorofluoromethane (CFC 11)	75-69-4	ND	ug/L	0.2	20	YES

Sample ID	Location	Analyte[1]	CAS No.	Result/ Qualifier	Units	MDL[2]	LDR 40 CFR 268.40 and 268.48	Criteria Met Yes/No
1209061055	800 HFTA	m,p-Xylenes	179601-23-1	ND	ug/L	0.33	320	YES
1209061320	800 HFTA	m,p-Xylenes	179601-23-1	ND	ug/L	0.33	320	YES
1209061346	800 HFTA	m,p-Xylenes	179601-23-1	ND	ug/L	0.33	320	YES
1209061418	800 HFTA	m,p-Xylenes	179601-23-1	ND	ug/L	0.33	320	YES
1209061055	800 HFTA	o-Xylene	95-47-6	ND	ug/L	0.2	320	YES
1209061320	800 HFTA	o-Xylene	95-47-6	ND	ug/L	0.2	320	YES
1209061346	800 HFTA	o-Xylene	95-47-6	ND	ug/L	0.2	320	YES
1209061418	800 HFTA	o-Xylene	95-47-6	ND	ug/L	0.2	320	YES
EPA Method 8270D: Semi-Volatile Organic Compounds (Lab Report No. R1205959)								
1209061102	800 HFTA	1,4-Phenylenediamine	106-50-3	ND	ug/L	NA	NA	YES
1209061327	800 HFTA	1,4-Phenylenediamine	106-50-3	ND	ug/L	NA	NA	YES
1209061351	800 HFTA	1,4-Phenylenediamine	106-50-3	ND	ug/L	NA	NA	YES
1209061424	800 HFTA	1,4-Phenylenediamine	106-50-3	ND	ug/L	NA	NA	YES
1209061102	800 HFTA	Aniline	62-53-3	ND	ug/L	1.3	810	YES
1209061327	800 HFTA	Aniline	62-53-3	ND	ug/L	1.3	810	YES
1209061351	800 HFTA	Aniline	62-53-3	ND	ug/L	1.3	810	YES
1209061424	800 HFTA	Aniline	62-53-3	ND	ug/L	1.3	810	YES
1209061102	800 HFTA	Benzyl Alcohol	100-51-6	ND	ug/L	1.1	NA	YES
1209061327	800 HFTA	Benzyl Alcohol	100-51-6	ND	ug/L	1.1	NA	YES
1209061351	800 HFTA	Benzyl Alcohol	100-51-6	ND	ug/L	1.1	NA	YES
1209061424	800 HFTA	Benzyl Alcohol	100-51-6	ND	ug/L	1.1	NA	YES
1209061102	800 HFTA	Di-n-butyl Phthalate	84-74-2	ND	ug/L	1	57	YES
1209061327	800 HFTA	Di-n-butyl Phthalate	84-74-2	ND	ug/L	1	57	YES
1209061351	800 HFTA	Di-n-butyl Phthalate	84-74-2	ND	ug/L	1	57	YES
1209061424	800 HFTA	Di-n-butyl Phthalate	84-74-2	ND	ug/L	1	57	YES
1209061102	800 HFTA	N-Nitrosodimethylamine	62-75-9	ND	ug/L	1	400	YES
1209061327	800 HFTA	N-Nitrosodimethylamine	62-75-9	ND	ug/L	1	400	YES
1209061351	800 HFTA	N-Nitrosodimethylamine	62-75-9	ND	ug/L	1	400	YES
1209061424	800 HFTA	N-Nitrosodimethylamine	62-75-9	ND	ug/L	1	400	YES
1209061102	800 HFTA	Naphthalene	91-20-3	ND	ug/L	1.1	59	YES
1209061327	800 HFTA	Naphthalene	91-20-3	ND	ug/L	1.1	59	YES
1209061351	800 HFTA	Naphthalene	91-20-3	ND	ug/L	1.1	59	YES
1209061424	800 HFTA	Naphthalene	91-20-3	ND	ug/L	1.1	59	YES
1209061102	800 HFTA	Phenol	108-95-2	ND	ug/L	1	39	YES

Sample ID	Location	Analyte[1]	CAS No.	Result/ Qualifier	Units	MDL[2]	LDR 40 CFR 268.40 and 268.48	Criteria Met Yes/No
1209061327	800 HFTA	Phenol	108-95-2	ND	ug/L	1	39	YES
1209061351	800 HFTA	Phenol	108-95-2	ND	ug/L	1	39	YES
1209061424	800 HFTA	Phenol	108-95-2	ND	ug/L	1	39	YES
EPA Method 8015C: Ethylene Glycol (Lab Report No. R1205959)								
1209061057	800 HFTA	Ethylene Glycol	107-21-1	ND	ug/L	800	NA	YES
1209061323	800 HFTA	Ethylene Glycol	107-21-1	ND	ug/L	800	NA	YES
1209061348	800 HFTA	Ethylene Glycol	107-21-1	ND	ug/L	800	NA	YES
1209061420	800 HFTA	Ethylene Glycol	107-21-1	ND	ug/L	800	NA	YES

[1]- List of analytes were compiled from ETU Closure Plan (March, 2012), Attachment 15, Tables (1-11).

[2]- Units for MDL are mthod-specific and are identified by the units column expressed for each method.

B- Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.

ND- Constituent analyzed for but not detected.

NA- Not Applicable/Available

J - Estimated value due to either being a Tentatively Identified coumpound (TIC) or that the concentation is between the MRL and the MDL. Concentrations are not verfied within the linear range of the calibration.

MDL- Method Detection Limit

Appendix E
ETU Primary Liner and Tank Structural Inspection Report

PRE CLOSURE VISUAL INSPECTION
AND
STRUCTURAL ASSESSMENT
OF THE
200 AREA ETU STEEL STORAGE TANKS
By
J. F. Mathis, P.E./Jacobs Technologies WSTF

Per Attachment 23, Section 4.4 of the ETU Closure Plan, a visual inspection of both 200 Area ETU Steel Storage Tanks was conducted. This visual inspection included: (1) the surface and all seams of the primary XR-5 lining material, (2) the surface and all seams of the secondary XR-5 lining material, (3) the outer surface and all seams of the walls and flooring of the carbon steel shell, and (4) the ground side of the floor plates. The inspection effort took place in January & February, 2013.

From this visual inspection the following structural assessment is provided:

1. West ETU Primary Liner
   1.1. All seams in the primary XR-5 floor liner were 3” wide using heat fusion welding techniques. The floor liner seams were oriented radially resulting in sections being approximately 53” wide at the outer tank wall, and tapering to approximately 6” wide at the center of the tank. 100% of these seams were visually inspected, with none showing any indication of delamination; nor were there any voids observed within the confines of the seams. (see Photo 1, Appendix)
   1.2. The primary wall liner was installed as horizontally oriented pieces with 1” wide heat fusion welded seems connecting adjoining pieces. 100% of these seams were visually inspected, with none showing any indication of delamination; nor were there any voids observed within the confines of the seams.
   1.3. 6 patches were found in the primary liner. They ranged in size from approximately 3”x4” to 8”x8”. All were fully adhered to the parent material. (see Photo 2, Appendix)
   1.4. The overall surface of the primary liner (walls & floor) was inspected for signs of abrasions or mechanical damage with none being found. Of particular interest were the areas where ½” nitrogen purge piping was installed under both the primary liner & the secondary liner. There were no indications of damage or distress to the primary liner over this piping.
   1.5. Overall the primary liner was found to be in excellent condition.

2. West ETU Secondary Liner
   2.1. The seams in the secondary liner were 1” heat fusion welded, connecting strips of liner approximately 53”-58” wide running the width of the tank. 100% of these seams were visually inspected, with none showing any indication of delamination; nor were there any voids observed within the confines of the seams.
   2.2. The secondary wall liner was installed as horizontally oriented pieces with 1” wide heat fusion welded seems connecting adjoining pieces. 100% of these seams were visually inspected, with none showing any indication of delamination; nor were there any voids observed within the confines of the seams.
   2.3. There were no patches in the secondary liner.
   2.4. There were no indications of leakage between the primary & secondary liners; particularly at the patch locations in the primary liner.

3. West ETU Steel Shell
   3.1. The steel shell consisted of ¼" thick carbon steel plate w/ lap-joint fillet welded seams in both the floor and walls. The steel plate sections were 8' wide and as much as 40' in length in the floor section. The wall pieces extended the height of the wall and ran as far as ¼ the circumference of the perimeter.
   3.2. At 20 locations on the fillet welds (of the walls & flooring) the coating was wire-brushed off to expose bare metal. A Certified Welding Inspector then inspected these locations and found no anomalies in the welds. (see Photo 3, Appendix)
   3.3. The rest of the coated welded joints were also inspected visually with no anomalies being found.
   3.4. The coating on the interior of the steel shell (both walls & floor) was observed to be in excellent condition with no mechanic damage or indications of deterioration.
   3.5. The coating on the exterior of the walls was observed to be in excellent condition also.
   3.6. There were no indications of corrosion from moisture exposure anywhere on the surface of the steel shell.
   3.7. In general the steel shell exhibited no signs of dents, corrosion, or mechanical damage.
   3.8. The underside of the floor of the steel shell was found to be in excellent condition with no indication of rust or corrosion. (Note: an active corrosion protection system was installed on the shell of the tank. It was extremely effective where the steel plate was in contact with bare soil.)
   3.9. The plate thickness was checked in over 30 locations (in both walls & flooring) during demolition, with no indications of reduced thickness or corrosion anywhere.

4. East ETU Primary liner
   4.1. A polymer residue left over from the removal of the liquid waste covered much (+/-90%) of the floor of the primary liner in this ETU. The approach taken was to expose approximately 50% of the floor seams for inspection. If any anomalies were encountered then the remainder of the floor seams would be cleaned & inspected. (see Photo 4, Appendix)
   4.2. All the exposed seams in the primary XR-5 floor liner were 3" wide using heat fusion welding techniques. The floor liner seams were oriented radially resulting in sections being approximately 53" wide at the outer tank wall, and tapering to approximately 6" wide at the center of the tank. None of the exposed seams showed any indication of delamination; nor were there any voids observed within the confines of the seams.
   4.3. The primary wall liner was installed as horizontally oriented pieces with 1" wide heat fusion welded seems connecting adjoining pieces. 100% of these seams were visually inspected, with none showing any indication of delamination; nor were there any voids observed within the confines of the seams.
   4.4. 3 patches were found in the primary liner. They ranged in size from approximately 4"x4" to 8"x8". All were fully adhered to the parent material.
   4.5. The exposed surface of the primary liner (walls & floor) was inspected for signs of abrasions or mechanical damage with none being found. Of particular interest were the areas where ½" nitrogen purge piping was installed under both the primary liner & the secondary liner. There were no indications of damage or distress to the primary liner over this piping.

5. East ETU Secondary Liner
   5.1. The seams in the secondary liner were 1" heat fusion welded, connecting strips of liner approximately 53"-58" wide running the width of the tank. 100% of these seams were

visually inspected, with none showing any indication of delamination; nor were there any voids observed within the confines of the seams. (see Photo 5, Appendix)

5.2. The secondary wall liner was installed as horizontally oriented pieces with 1" wide heat fusion welded seems connecting adjoining pieces. 100% of these seams were visually inspected, with none showing any indication of delamination; nor were there any voids observed within the confines of the seams.

5.3. There were no patches in the secondary liner.

5.4. There were no indications of leakage between the primary & secondary liners; particularly at the patch locations in the primary liner.

6. East ETU Steel Shell

6.1. The steel shell consisted of ¼" thick carbon steel plate w/ lap-joint fillet welded seams in both the floor and walls. The steel plate sections were 8' wide and as much as 40' in length in the floor section. The wall pieces extended the height of the wall and ran as far as ¼ the circumference of the perimeter.

6.2. At 20 locations on the fillet welds (of the walls & flooring) the coating was wire-brushed off to expose bare metal. A Certified Welding Inspector then inspected these locations and found no anomalies in the welds.

6.3. The rest of the coated welded joints were also inspected visually with no anomalies being found. (see Photo 3, Appendix)

6.4. The coating on the interior of the steel shell (both walls & floor) was observed to be in excellent condition with no mechanic damage or indications of deterioration.

6.5. The coating on the exterior of the walls was observed to be in excellent condition also.

6.6. There were no indications of corrosion from moisture exposure anywhere on the surface of the steel shell.

6.7. In general the steel shell exhibited no signs of dents, corrosion, or mechanical damage.

6.8. The underside of the floor of the steel shell was found to be in excellent condition with no indication of rust or corrosion. (Note: an active corrosion protection system was installed on the shell of the tank. It was extremely effective where the steel plate was in contact with bare soil.)

6.9. The plate thickness was checked in over 30 locations (in both walls & flooring) during demolition, with no indications of reduced thickness or corrosion anywhere.

7. Earthen Subgrade Beneath Both Tanks

7.1. The earthen subgrade beneath both tanks was visually inspected immediately after the steel shells were removed. There were no signs of subgrade failure or leakage under either of the ETU's. (see Photo 6, Appendix)

SUMMARY

All of structural elements of both ETU's were in excellent condition at the time of demolition. There were no visual indications of structural failures or leakage.

APPENDIX: PHOTOGRAPHS

Photo 1: West Tank Primary Liner Seams

Photo 2: West Tank Primary Liner Patch

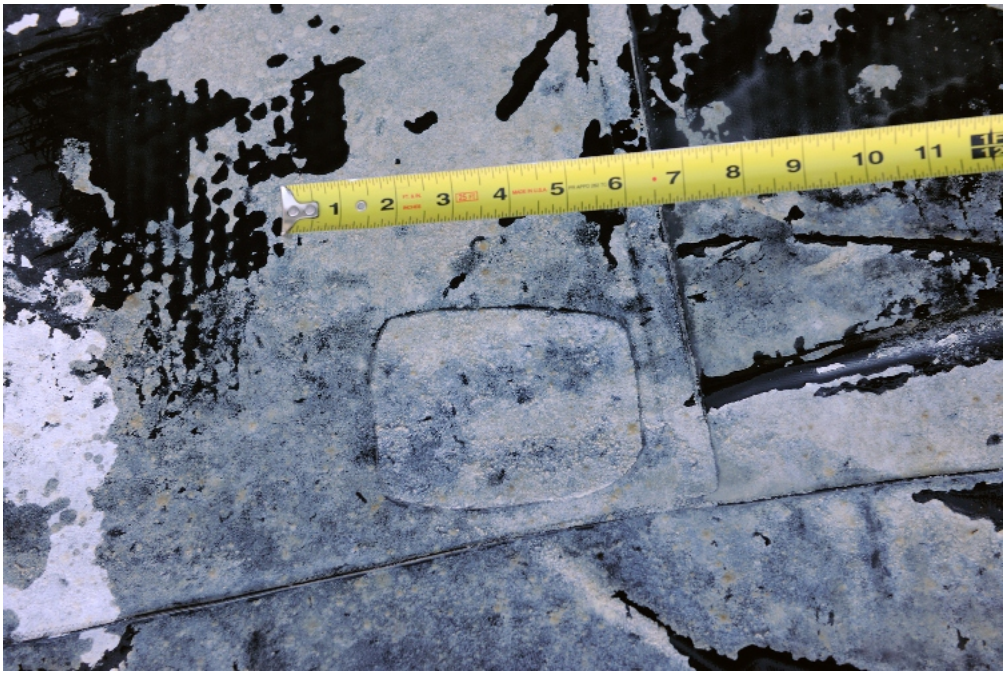

Photo 3: West Tank Steel Shell (typical of both tanks):

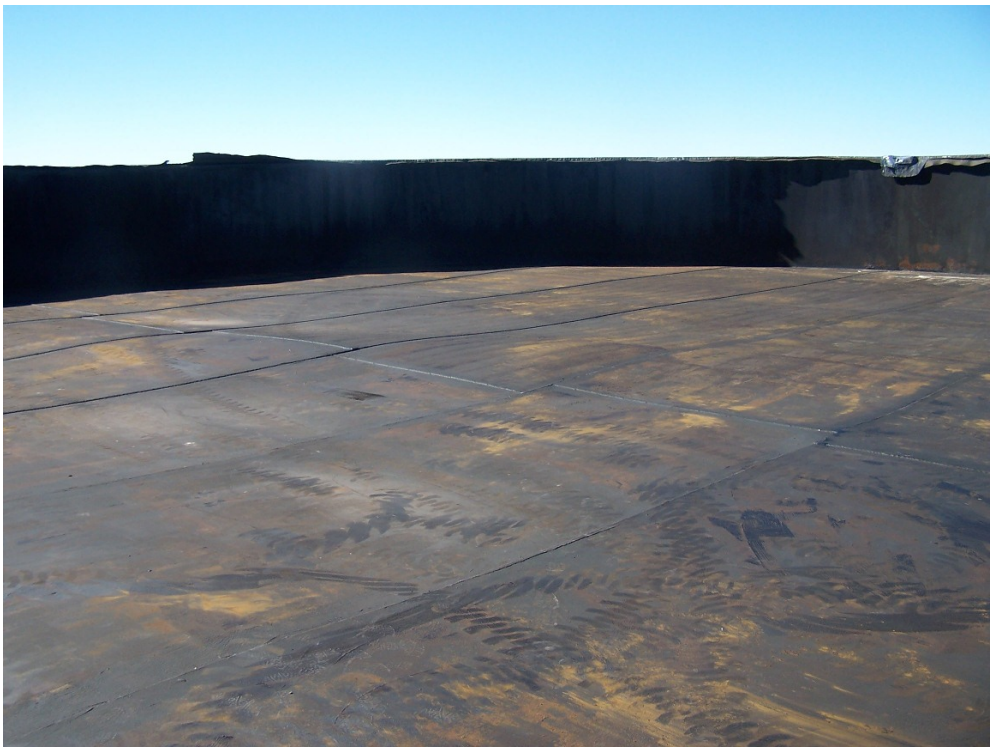

Photo 4: East Tank Primary Liner:

Photo 5: East Tank Secondary Liner:

Photo 6: East Tank Subgrade (typical of both):

Appendix F
ETU Steel Tank Weld Inspection Reports

Certified Weld Inspection

Reference:	200 Area East Evaporative Tank
Components Inspected:	Floor Plate to Floor Plate & Floor Plate to Tank Sides
Date of Inspection:	February 18,2013
Applicable Code:	AWS D.1.1
Visual Inspection Criteria:	AWS D.1.1-/D1.1M:2010 Structural Welding Code-Steel, Section 6.9, Using Table 6.1

Scope: This CWI was asked by the customer to inspect the existing weld joints, plate to plate and sides to plate, in random areas of the tank.

Actions: Seventeen (17) locations were wire brushed to remove the coating and a visual inspection was perform on each of the welds. If any defects (porosity, cracks, discontinuities, etc) were observed then more areas would be inspected.

Conclusion: After inspection of the 17 welds there were 2 areas of concern, welds 7 & 10. There was a defect in each weld but the defects, slight undercutting of the welds, warrants no concern since there is no indication that the defect penetrated the wall in either weld. All other welds observed found no other indications and the welds appear to be satisfactory. This CWI did not find any indications that would require further inspection.

See attached weld photos.

William E. Weed
AWS-CWI # 98010851
QC1 Exp. 01/31/16
Jacobs Technology Inc. (WSTF-NTEC)

FEB 1 8 2013

AWS
William E Weed
CWI 98010851
QC1 EXP. 1/1/2016

Attachment I:
Weld Examination Summary Sheet
Sheet 1 of 1

200 Area East Evaporation Tank

WELD NUMBER	CERTIFIED WELDER	WELD PROCESS EXAMINED IN PLACE (Y/N)	X-RAY (Y/N)	WELD OK (Y/N)	DATE	X-RAY W.O. No.
1	Info Not Available	Y – Weed	N/A	Y	18-Feb-13	N/A
2	Info Not Available	Y – Weed	N/A	Y	18-Feb-13	N/A
3	Info Not Available	Y – Weed	N/A	Y	18-Feb-13	N/A
4	Info Not Available	Y - Weed	N/A	Y	18-Feb-13	N/A
5	Info Not Available	Y - Weed	N/A	Y	18-Feb-13	N/A
6	Info Not Available	Y - Weed	N/A	Y	18-Feb-13	N/A
7	Info Not Available	Y - Weed	N/A	Y	18-Feb-13	N/A
8	Info Not Available	Y – Weed	N/A	Y	18-Feb-13	N/A
9	Info Not Available	Y – Weed	N/A	Y	18-Feb-13	N/A
10	Info Not Available	Y – Weed	N/A	Y	18-Feb-13	N/A
11	Info Not Available	Y – Weed	N/A	Y	18-Feb-13	N/A
12	Info Not Available	Y – Weed	N/A	Y	18-Feb-13	N/A
13	Info Not Available	Y – Weed	N/A	Y	18-Feb-13	N/A
14	Info Not Available	Y – Weed	N/A	Y	18-Feb-13	N/A
15	Info Not Available	Y – Weed	N/A	Y	18-Feb-13	N/A
End of Data						

Note: No radiograph results available at the time of visual inspection, X-Ray work order column marked N/A.

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AWS
William E Weed
CWI 98010551
QC1 EXP. 1/1/2016

Welding In-Process Examination Sheet

Welder Name: Not Available **200 Area East Evaporation Tank** **Weld Process: W01**

WELDING IN PROCESS EXAMINATION	Performed By: Weed, W. Date: 18-Feb-2013	
Preparation and Fabrication Inspection	Weld Number: 01	
	PASS	FAIL
1. Joint preparation and cleanliness	N/A	
a) Joints are cleaned to the appropriate level	N/A	
b) Fit-up - Square ends - no burrs	N/A	
c) Joint clearance	N/A	
d) Internal alignment	N/A	
e) Preheating	N/A	
2. WPS:	N/A	
a) Position:	N/A	
b) Electrode:	N/A	
c) Filler material: See below	N/A	
3. Condition of weld	N/A	
a) Root pass after cleaning, external	N/A	
b) Root pass after cleaning, internal if accessible	N/A	
c) Slag removed between passes	N/A	
d) Weld condition between passes	N/A	
Visual Examination of Finished Weld		
Crack	X	
Lack of fusion	X	
Incomplete penetration	N/A	
Undercutting	X	
Surface porosity or exposed slag inclusion	X	
Concave root surface (suck up)	N/A	
Reinforcement or internal protrusion	N/A	

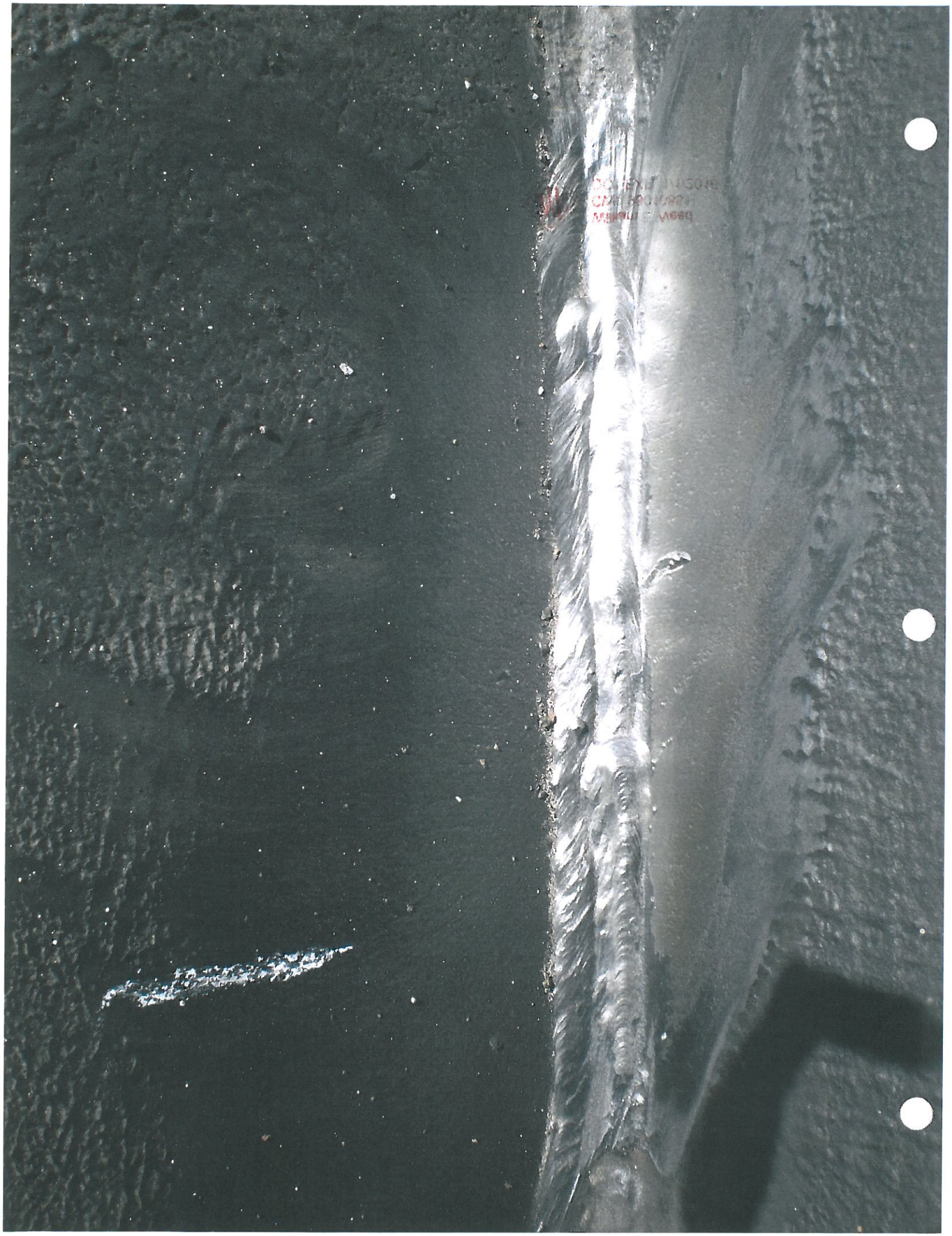
Summary: After visual inspection it is the determination that this weld is acceptable per AWS D.1.1-/D1.1M:2010 Structural Welding Code-Steel, Section 6.9, Using Table 6.1

CWI: Weed, William, 98010851

FEB 1 8 2013

Notes: See photo attached

AWS William E Weed CWI 98010851 QC1 EXP. 1/1/2016



Welding In-Process Examination Sheet

Welder Name: Not Available **200 Area East Evaporation Tank** **Weld Process: W01**

WELDING IN PROCESS EXAMINATION	Performed By: Weed, W. Date: 18-Feb-2013	
Preparation and Fabrication Inspection	Weld Number: 02	
	PASS	FAIL
1. Joint preparation and cleanliness	N/A	
a) Joints are cleaned to the appropriate level	N/A	
b) Fit-up - Square ends - no burrs	N/A	
c) Joint clearance	N/A	
d) Internal alignment	N/A	
e) Preheating	N/A	
2. WPS:	N/A	
a) Position:	N/A	
b) Electrode:	N/A	
c) Filler material: See below	N/A	
3. Condition of weld	N/A	
a) Root pass after cleaning, external	N/A	
b) Root pass after cleaning, internal if accessible	N/A	
c) Slag removed between passes	N/A	
d) Weld condition between passes	N/A	
Visual Examination of Finished Weld		
Crack	X	
Lack of fusion	X	
Incomplete penetration	N/A	
Undercutting	X	
Surface porosity or exposed slag inclusion	X	
Concave root surface (suck up)	N/A	
Reinforcement or internal protrusion	N/A	

Summary: After visual inspection it is the determination that this weld is acceptable per AWS D.1.1-/D1.1M:2010 Structural Welding Code-Steel, Section 6.9, Using Table 6.1

CWI: Weed, William, 98010851

FEB 1 8 2013

Notes: See photo attached

AWS
William E Weed
CWI 98010851
QC1 EXP. 1/1/2016

Welding In-Process Examination Sheet

Welder Name: Not Available **200 Area East Evaporation Tank** **Weld Process: W01**

WELDING IN PROCESS EXAMINATION	Performed By: Weed, W. Date: 18-Feb-2013	
Preparation and Fabrication Inspection	Weld Number: 03	
	PASS	FAIL
1. Joint preparation and cleanliness	N/A	
a) Joints are cleaned to the appropriate level	N/A	
b) Fit-up - Square ends - no burrs	N/A	
c) Joint clearance	N/A	
d) Internal alignment	N/A	
e) Preheating	N/A	
2. WPS:	N/A	
a) Position:	N/A	
b) Electrode:	N/A	
c) Filler material: See below	N/A	
3. Condition of weld	N/A	
a) Root pass after cleaning, external	N/A	
b) Root pass after cleaning, internal if accessible	N/A	
c) Slag removed between passes	N/A	
d) Weld condition between passes	N/A	
Visual Examination of Finished Weld		
Crack	X	
Lack of fusion	X	
Incomplete penetration	N/A	
Undercutting	X	
Surface porosity or exposed slag inclusion	X	
Concave root surface (suck up)	N/A	
Reinforcement or internal protrusion	N/A	

Summary: After visual inspection it is the determination that this weld is acceptable per AWS D.1.1-/D1.1M:2010 Structural Welding Code-Steel, Section 6.9, Using Table 6.1

CWI: Weed, William, 98010851

FEB 1 8 2013

Notes: See photo attached

AWS William E Weed CWI 98010851 QC1 EXP. 1/1/2016

3

Welding In-Process Examination Sheet

Welder Name: Not Available **200 Area East Evaporation Tank** **Weld Process: W01**

WELDING IN PROCESS EXAMINATION	Performed By: Weed, W. Date: 18-Feb-2013	
Preparation and Fabrication Inspection	Weld Number: 04	
	PASS	FAIL
1. Joint preparation and cleanliness	N/A	
a) Joints are cleaned to the appropriate level	N/A	
b) Fit-up - Square ends - no burrs	N/A	
c) Joint clearance	N/A	
d) Internal alignment	N/A	
e) Preheating	N/A	
2. WPS:	N/A	
a) Position:	N/A	
b) Electrode:	N/A	
c) Filler material: See below	N/A	
3. Condition of weld	N/A	
a) Root pass after cleaning, external	N/A	
b) Root pass after cleaning, internal if accessible	N/A	
c) Slag removed between passes	N/A	
d) Weld condition between passes	N/A	
Visual Examination of Finished Weld		
Crack	X	
Lack of fusion	X	
Incomplete penetration	N/A	
Undercutting	X	
Surface porosity or exposed slag inclusion	X	
Concave root surface (suck up)	N/A	
Reinforcement or internal protrusion	N/A	

Summary: After visual inspection it is the determination that this weld is acceptable per AWS D.1.1-/D1.1M:2010 Structural Welding Code-Steel, Section 6.9, Using Table 6.1

FEB 1 8 2013

CWI: Weed, William, 98010851

Notes: See photo attached

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Welding In-Process Examination Sheet

Welder Name: Not Available **200 Area East Evaporation Tank** **Weld Process: W01**

WELDING IN PROCESS EXAMINATION	Performed By: Weed, W. Date: 18-Feb-2013	
Preparation and Fabrication Inspection	Weld Number: 05	
	PASS	FAIL
1. Joint preparation and cleanliness	N/A	
a) Joints are cleaned to the appropriate level	N/A	
b) Fit-up - Square ends - no burrs	N/A	
c) Joint clearance	N/A	
d) Internal alignment	N/A	
e) Preheating	N/A	
2. WPS:	N/A	
a) Position:	N/A	
b) Electrode:	N/A	
c) Filler material: See below	N/A	
3. Condition of weld	N/A	
a) Root pass after cleaning, external	N/A	
b) Root pass after cleaning, internal if accessible	N/A	
c) Slag removed between passes	N/A	
d) Weld condition between passes	N/A	
Visual Examination of Finished Weld		
Crack	X	
Lack of fusion	X	
Incomplete penetration	N/A	
Undercutting	X	
Surface porosity or exposed slag inclusion	X	
Concave root surface (suck up)	N/A	
Reinforcement or internal protrusion	N/A	

Summary: After visual inspection it is the determination that this weld is acceptable per AWS D.1.1-/D1.1M:2010 Structural Welding Code-Steel, Section 6.9, Using Table 6.1

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CWI: Weed, William, 98010851

Notes: See photo attached

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CWI 98010851
QC1 EXP. 1/1/2016

Welding In-Process Examination Sheet

Welder Name: Not Available **200 Area East Evaporation Tank** **Weld Process: W01**

WELDING IN PROCESS EXAMINATION	Performed By: Weed, W. Date: 18-Feb-2013	
Preparation and Fabrication Inspection	Weld Number: 06	
	PASS	FAIL
1. Joint preparation and cleanliness	N/A	
a) Joints are cleaned to the appropriate level	N/A	
b) Fit-up - Square ends - no burrs	N/A	
c) Joint clearance	N/A	
d) Internal alignment	N/A	
e) Preheating	N/A	
2. WPS:	N/A	
a) Position:	N/A	
b) Electrode:	N/A	
c) Filler material: See below	N/A	
3. Condition of weld	N/A	
a) Root pass after cleaning, external	N/A	
b) Root pass after cleaning, internal if accessible	N/A	
c) Slag removed between passes	N/A	
d) Weld condition between passes	N/A	
Visual Examination of Finished Weld		
Crack	X	
Lack of fusion	X	
Incomplete penetration	N/A	
Undercutting	X	
Surface porosity or exposed slag inclusion	X	
Concave root surface (suck up)	N/A	
Reinforcement or internal protrusion	N/A	

Summary: After visual inspection it is the determination that this weld is acceptable per AWS D.1.1-/D1.1M:2010 Structural Welding Code-Steel, Section 6.9, Using Table 6.1

FEB 1 8 2013

CWI: Weed, William, 98010851

Notes: See photo attached

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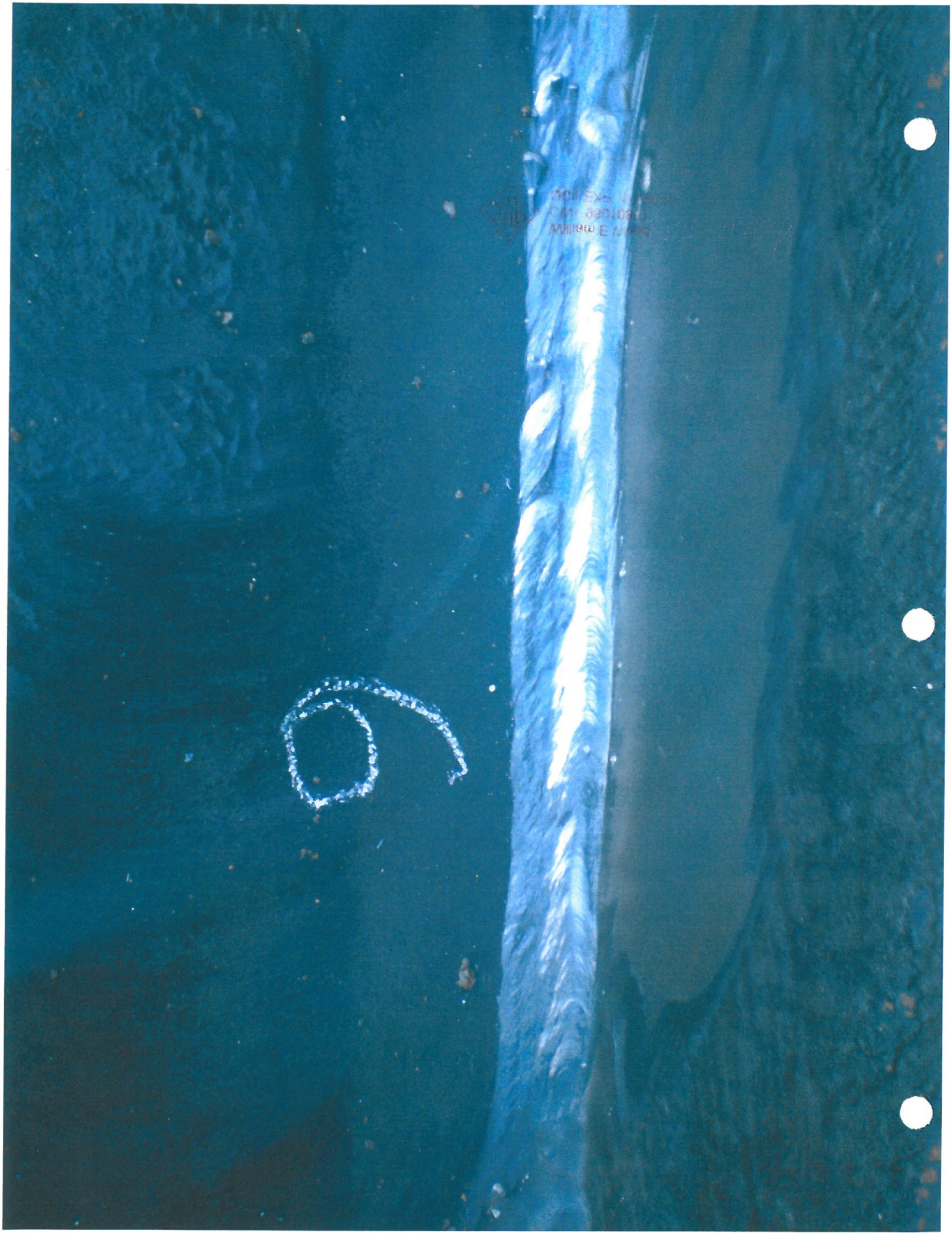

Welding In-Process Examination Sheet

Welder Name: Not Available **200 Area East Evaporation Tank** **Weld Process: W01**

WELDING IN PROCESS EXAMINATION	Performed By: Weed, W. Date: 18-Feb-2013	
Preparation and Fabrication Inspection	Weld Number: 07	
	PASS	FAIL
1. Joint preparation and cleanliness	N/A	
a) Joints are cleaned to the appropriate level	N/A	
b) Fit-up - Square ends - no burrs	N/A	
c) Joint clearance	N/A	
d) Internal alignment	N/A	
e) Preheating	N/A	
2. WPS:	N/A	
a) Position:	N/A	
b) Electrode:	N/A	
c) Filler material: See below	N/A	
3. Condition of weld	N/A	
a) Root pass after cleaning, external	N/A	
b) Root pass after cleaning, internal if accessible	N/A	
c) Slag removed between passes	N/A	
d) Weld condition between passes	N/A	
Visual Examination of Finished Weld		
Crack	X	
Lack of fusion	X	
Incomplete penetration	N/A	
Undercutting	X	
Surface porosity or exposed slag inclusion	X	
Concave root surface (suck up)	N/A	
Reinforcement or internal protrusion	N/A	

Summary: After visual inspection it is the determination that this weld is acceptable per AWS D.1.1-/D1.1M:2010 Structural Welding Code-Steel, Section 6.9, Using Table 6.1

CWI: Weed, William, 98010851

Notes: Weld exhibited one of area of concern but after further inspection there is no concern of wall penetration. See photo

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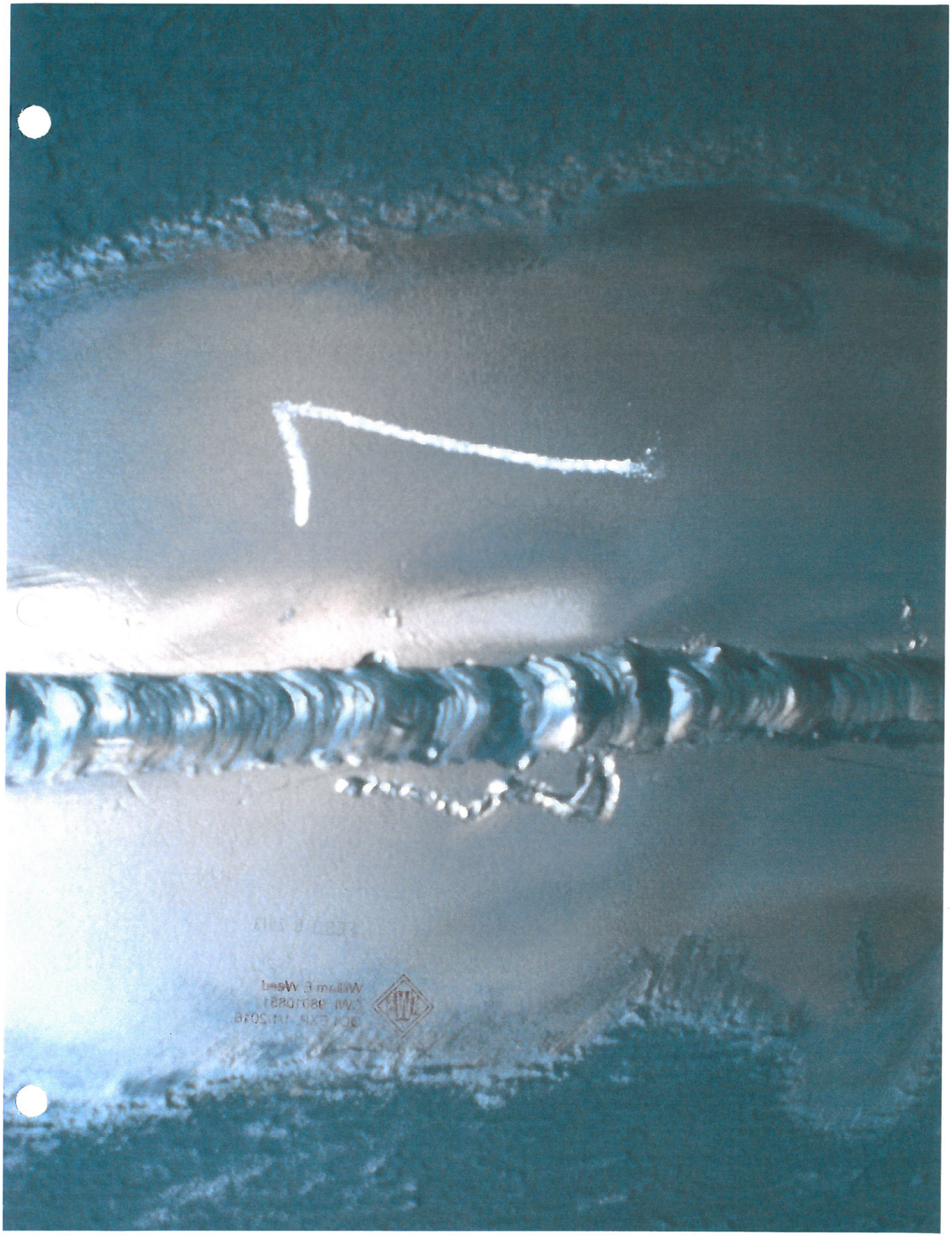

Welding In-Process Examination Sheet

Welder Name: Not Available **200 Area East Evaporation Tank** **Weld Process: W01**

WELDING IN PROCESS EXAMINATION	Performed By: Weed, W. Date: 18-Feb-2013	
Preparation and Fabrication Inspection	Weld Number: 08	
	PASS	FAIL
1. Joint preparation and cleanliness	N/A	
a) Joints are cleaned to the appropriate level	N/A	
b) Fit-up - Square ends - no burrs	N/A	
c) Joint clearance	N/A	
d) Internal alignment	N/A	
e) Preheating	N/A	
2. WPS:	N/A	
a) Position:	N/A	
b) Electrode:	N/A	
c) Filler material: See below	N/A	
3. Condition of weld	N/A	
a) Root pass after cleaning, external	N/A	
b) Root pass after cleaning, internal if accessible	N/A	
c) Slag removed between passes	N/A	
d) Weld condition between passes	N/A	
Visual Examination of Finished Weld		
Crack	X	
Lack of fusion	X	
Incomplete penetration	N/A	
Undercutting	X	
Surface porosity or exposed slag inclusion	X	
Concave root surface (suck up)	N/A	
Reinforcement or internal protrusion	N/A	

Summary: After visual inspection it is the determination that this weld is acceptable per AWS D.1.1-/D1.1M:2010 Structural Welding Code-Steel, Section 6.9, Using Table 6.1

FEB 1 8 2013

CWI: Weed, William, 98010851

Notes: See photo attached

William E Weed
CWI 98010851
QC1 EXP. 1/1/2016

Welding In-Process Examination Sheet

Welder Name: Not Available **200 Area East Evaporation Tank** **Weld Process: W01**

WELDING IN PROCESS EXAMINATION	Performed By: Weed, W. Date: 18-Feb-2013	
Preparation and Fabrication Inspection	Weld Number: 09	
	PASS	FAIL
1. Joint preparation and cleanliness	N/A	
a) Joints are cleaned to the appropriate level	N/A	
b) Fit-up - Square ends - no burrs	N/A	
c) Joint clearance	N/A	
d) Internal alignment	N/A	
e) Preheating	N/A	
2. WPS:	N/A	
a) Position:	N/A	
b) Electrode:	N/A	
c) Filler material: See below	N/A	
3. Condition of weld	N/A	
a) Root pass after cleaning, external	N/A	
b) Root pass after cleaning, internal if accessible	N/A	
c) Slag removed between passes	N/A	
d) Weld condition between passes	N/A	
Visual Examination of Finished Weld		
Crack	X	
Lack of fusion	X	
Incomplete penetration	N/A	
Undercutting	X	
Surface porosity or exposed slag inclusion	X	
Concave root surface (suck up)	N/A	
Reinforcement or internal protrusion	N/A	

Summary: After visual inspection it is the determination that this weld is acceptable per AWS D.1.1-/D1.1M:2010 Structural Welding Code-Steel, Section 6.9, Using Table 6.1

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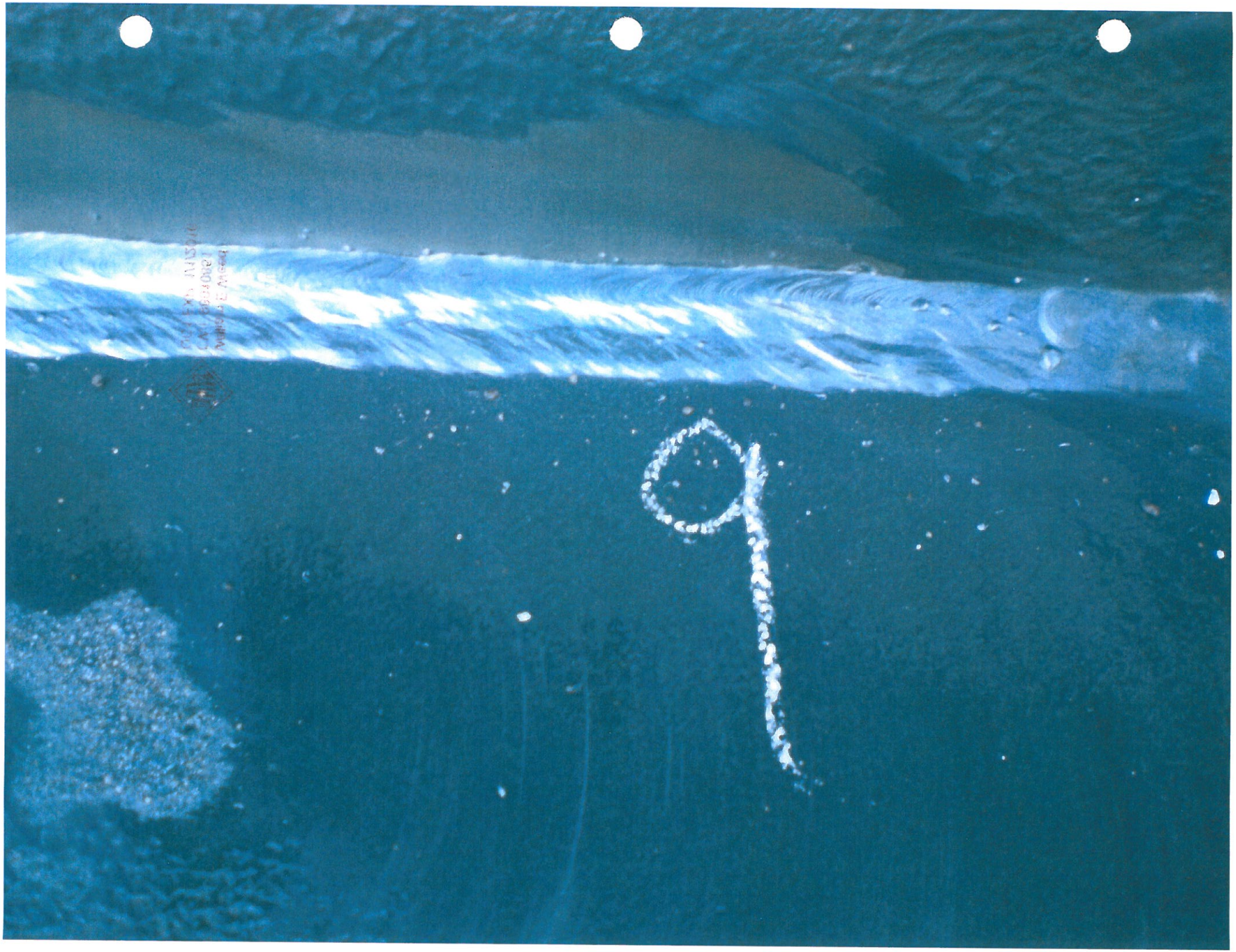
CWI: Weed, William, 98010851

Notes: See photo attached

William E Weed
CWI 98010851
QC1 EXP. 1/1/2016



Welding In-Process Examination Sheet

Welder Name: Not Available **200 Area East Evaporation Tank** **Weld Process: W01**

WELDING IN PROCESS EXAMINATION	Performed By: Weed, W. Date: 18-Feb-2013	
Preparation and Fabrication Inspection	Weld Number: 10	
	PASS	FAIL
1. Joint preparation and cleanliness	N/A	
a) Joints are cleaned to the appropriate level	N/A	
b) Fit-up - Square ends - no burrs	N/A	
c) Joint clearance	N/A	
d) Internal alignment	N/A	
e) Preheating	N/A	
2. WPS:	N/A	
a) Position:	N/A	
b) Electrode:	N/A	
c) Filler material: See below	N/A	
3. Condition of weld	N/A	
a) Root pass after cleaning, external	N/A	
b) Root pass after cleaning, internal if accessible	N/A	
c) Slag removed between passes	N/A	
d) Weld condition between passes	N/A	
Visual Examination of Finished Weld		
Crack	X	
Lack of fusion	X	
Incomplete penetration	N/A	
Undercutting	X	
Surface porosity or exposed slag inclusion	X	
Concave root surface (suck up)	N/A	
Reinforcement or internal protrusion	N/A	

Summary: After visual inspection it is the determination that this weld is acceptable per AWS D.1.1-/D1.1M:2010 Structural Welding Code-Steel, Section 6.9, Using Table 6.1

CWI: Weed, William, 98010851

Notes: exhibited one of area of concern but after further inspection there is no concern of wall penetration. See photo

FEB 1 8 2013

William E Weed
CWI 98010851
QC1 EXP. 1/1/2016

Welding In-Process Examination Sheet

Welder Name: Not Available **200 Area East Evaporation Tank** **Weld Process: W01**

WELDING IN PROCESS EXAMINATION	Performed By: Weed, W. Date: 18-Feb-2013	
Preparation and Fabrication Inspection	Weld Number: 11	
	PASS	FAIL
1. Joint preparation and cleanliness	N/A	
a) Joints are cleaned to the appropriate level	N/A	
b) Fit-up - Square ends - no burrs	N/A	
c) Joint clearance	N/A	
d) Internal alignment	N/A	
e) Preheating	N/A	
2. WPS:	N/A	
a) Position:	N/A	
b) Electrode:	N/A	
c) Filler material: See below	N/A	
3. Condition of weld	N/A	
a) Root pass after cleaning, external	N/A	
b) Root pass after cleaning, internal if accessible	N/A	
c) Slag removed between passes	N/A	
d) Weld condition between passes	N/A	
Visual Examination of Finished Weld		
Crack	X	
Lack of fusion	X	
Incomplete penetration	N/A	
Undercutting	X	
Surface porosity or exposed slag inclusion	X	
Concave root surface (suck up)	N/A	
Reinforcement or internal protrusion	N/A	

Summary: After visual inspection it is the determination that this weld is acceptable per AWS D.1.1-/D1.1M:2010 Structural Welding Code-Steel, Section 6.9, Using Table 6.1

FEB 18 2013

CWI: Weed, William, 98010851

Notes: See photo attached

AWS William E Weed CWI 98010851 QC1 EXP. 1/1/2016

Welding In-Process Examination Sheet

Welder Name: Not Available **200 Area East Evaporation Tank** **Weld Process: W01**

WELDING IN PROCESS EXAMINATION	Performed By: Weed, W. Date: 18-Feb-2013	
Preparation and Fabrication Inspection	Weld Number: 12	
	PASS	FAIL
1. Joint preparation and cleanliness	N/A	
a) Joints are cleaned to the appropriate level	N/A	
b) Fit-up - Square ends - no burrs	N/A	
c) Joint clearance	N/A	
d) Internal alignment	N/A	
e) Preheating	N/A	
2. WPS:	N/A	
a) Position:	N/A	
b) Electrode:	N/A	
c) Filler material: See below	N/A	
3. Condition of weld	N/A	
a) Root pass after cleaning, external	N/A	
b) Root pass after cleaning, internal if accessible	N/A	
c) Slag removed between passes	N/A	
d) Weld condition between passes	N/A	
Visual Examination of Finished Weld		
Crack	X	
Lack of fusion	X	
Incomplete penetration	N/A	
Undercutting	X	
Surface porosity or exposed slag inclusion	X	
Concave root surface (suck up)	N/A	
Reinforcement or internal protrusion	N/A	

Summary: After visual inspection it is the determination that this weld is acceptable per AWS D.1.1-/D1.1M:2010 Structural Welding Code-Steel, Section 6.9, Using Table 6.1

CWI: Weed, William, 98010851

FEB 18 2013

Notes: See photo attached

AWS William E Weed CWI 98010851 QC1 EXP. 1/1/2016

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Welding In-Process Examination Sheet

Welder Name: Not Available **200 Area East Evaporation Tank** **Weld Process: W01**

WELDING IN PROCESS EXAMINATION	Performed By: Weed, W. Date: 18-Feb-2013	
Preparation and Fabrication Inspection	Weld Number: 13	
	PASS	FAIL
1. Joint preparation and cleanliness	N/A	
a) Joints are cleaned to the appropriate level	N/A	
b) Fit-up - Square ends - no burrs	N/A	
c) Joint clearance	N/A	
d) Internal alignment	N/A	
e) Preheating	N/A	
2. WPS:	N/A	
a) Position:	N/A	
b) Electrode:	N/A	
c) Filler material: See below	N/A	
3. Condition of weld	N/A	
a) Root pass after cleaning, external	N/A	
b) Root pass after cleaning, internal if accessible	N/A	
c) Slag removed between passes	N/A	
d) Weld condition between passes	N/A	
Visual Examination of Finished Weld		
Crack	X	
Lack of fusion	X	
Incomplete penetration	N/A	
Undercutting	X	
Surface porosity or exposed slag inclusion	X	
Concave root surface (suck up)	N/A	
Reinforcement or internal protrusion	N/A	

Summary: After visual inspection it is the determination that this weld is acceptable per AWS D.1.1-/D1.1M:2010 Structural Welding Code-Steel, Section 6.9, Using Table 6.1

CWI: Weed, William, 98010851

FEB 1 8 2013

AWS William E Weed CWI 98010851 QC1 EXP. 1/1/2016

Notes: See photo attached

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Welding In-Process Examination Sheet

Welder Name: Not Available **200 Area East Evaporation Tank** **Weld Process: W01**

WELDING IN PROCESS EXAMINATION	Performed By: Weed, W. Date: 18-Feb-2013	
Preparation and Fabrication Inspection	Weld Number: 14	
	PASS	FAIL
1. Joint preparation and cleanliness	N/A	
a) Joints are cleaned to the appropriate level	N/A	
b) Fit-up - Square ends - no burrs	N/A	
c) Joint clearance	N/A	
d) Internal alignment	N/A	
e) Preheating	N/A	
2. WPS:	N/A	
a) Position:	N/A	
b) Electrode:	N/A	
c) Filler material: See below	N/A	
3. Condition of weld	N/A	
a) Root pass after cleaning, external	N/A	
b) Root pass after cleaning, internal if accessible	N/A	
c) Slag removed between passes	N/A	
d) Weld condition between passes	N/A	
Visual Examination of Finished Weld		
Crack	X	
Lack of fusion	X	
Incomplete penetration	N/A	
Undercutting	X	
Surface porosity or exposed slag inclusion	X	
Concave root surface (suck up)	N/A	
Reinforcement or internal protrusion	N/A	

Summary: After visual inspection it is the determination that this weld is acceptable per AWS D.1.1-/D1.1M:2010 Structural Welding Code-Steel, Section 6.9, Using Table 6.1

CWI: Weed, William, 98010851

FEB 1 8 2013

Notes: See photo attached

William E Weed
CWI 98010851
QC1 EXP. 1/1/2016

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Welding In-Process Examination Sheet

Welder Name: Not Available **200 Area East Evaporation Tank** **Weld Process: W01**

WELDING IN PROCESS EXAMINATION	Performed By: Weed, W. Date: 18-Feb-2013	
Preparation and Fabrication Inspection	Weld Number: 15	
	PASS	FAIL
1. Joint preparation and cleanliness	N/A	
a) Joints are cleaned to the appropriate level	N/A	
b) Fit-up - Square ends - no burrs	N/A	
c) Joint clearance	N/A	
d) Internal alignment	N/A	
e) Preheating	N/A	
2. WPS:	N/A	
a) Position:	N/A	
b) Electrode:	N/A	
c) Filler material: See below	N/A	
3. Condition of weld	N/A	
a) Root pass after cleaning, external	N/A	
b) Root pass after cleaning, internal if accessible	N/A	
c) Slag removed between passes	N/A	
d) Weld condition between passes	N/A	
Visual Examination of Finished Weld		
Crack	X	
Lack of fusion	X	
Incomplete penetration	N/A	
Undercutting	X	
Surface porosity or exposed slag inclusion	X	
Concave root surface (suck up)	N/A	
Reinforcement or internal protrusion	N/A	

Summary: After visual inspection it is the determination that this weld is acceptable per AWS D.1.1-/D1.1M:2010 Structural Welding Code-Steel, Section 6.9, Using Table 6.1

CWI: Weed, William, 98010851

Notes: See photo attached

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Welding In-Process Examination Sheet

Welder Name: Not Available **200 Area East Evaporation Tank** **Weld Process: W01**

WELDING IN PROCESS EXAMINATION	Performed By: Weed, W. Date: 18-Feb-2013	
Preparation and Fabrication Inspection	Weld Number: 16	
	PASS	FAIL
1. Joint preparation and cleanliness	N/A	
a) Joints are cleaned to the appropriate level	N/A	
b) Fit-up - Square ends - no burrs	N/A	
c) Joint clearance	N/A	
d) Internal alignment	N/A	
e) Preheating	N/A	
2. WPS:	N/A	
a) Position:	N/A	
b) Electrode:	N/A	
c) Filler material: See below	N/A	
3. Condition of weld	N/A	
a) Root pass after cleaning, external	N/A	
b) Root pass after cleaning, internal if accessible	N/A	
c) Slag removed between passes	N/A	
d) Weld condition between passes	N/A	
Visual Examination of Finished Weld		
Crack	X	
Lack of fusion	X	
Incomplete penetration	N/A	
Undercutting	X	
Surface porosity or exposed slag inclusion	X	
Concave root surface (suck up)	N/A	
Reinforcement or internal protrusion	N/A	

Summary: After visual inspection it is the determination that this weld is acceptable per AWS D.1.1-/D1.1M:2010 Structural Welding Code-Steel, Section 6.9, Using Table 6.1

CWI: Weed, William, 98010851

FEB 1 8 2013

Notes: See photo attached

William E Weed
CWI 98010851
QC1 EXP. 1/1/2016

Welding In-Process Examination Sheet

Welder Name: Not Available **200 Area East Evaporation Tank** **Weld Process: W01**

WELDING IN PROCESS EXAMINATION	Performed By: Weed, W. Date: 18-Feb-2013	
Preparation and Fabrication Inspection	Weld Number: 17	
	PASS	FAIL
1. Joint preparation and cleanliness	N/A	
a) Joints are cleaned to the appropriate level	N/A	
b) Fit-up - Square ends - no burrs	N/A	
c) Joint clearance	N/A	
d) Internal alignment	N/A	
e) Preheating	N/A	
2. WPS:	N/A	
a) Position:	N/A	
b) Electrode:	N/A	
c) Filler material: See below	N/A	
3. Condition of weld	N/A	
a) Root pass after cleaning, external	N/A	
b) Root pass after cleaning, internal if accessible	N/A	
c) Slag removed between passes	N/A	
d) Weld condition between passes	N/A	
Visual Examination of Finished Weld		
Crack	X	
Lack of fusion	X	
Incomplete penetration	N/A	
Undercutting	X	
Surface porosity or exposed slag inclusion	X	
Concave root surface (suck up)	N/A	
Reinforcement or internal protrusion	N/A	

Summary: After visual inspection it is the determination that this weld is acceptable per AWS D.1.1-/D1.1M:2010 Structural Welding Code-Steel, Section 6.9, Using Table 6.1

CWI: Weed, William, 98010851

Notes: See photo attached

FEB 1 8 2013

AWS William E Weed CWI 98010851 QC1 EXP. 1/1/2016

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Certified Weld Inspection

Reference:	200 Area West Evaporative Tank
Components Inspected:	Floor Plate to Floor Plate & Floor Plate to Tank Sides
Date of Inspection:	February 01,2013
Applicable Code:	AWS D.1.1
Visual Inspection Criteria:	AWS D.1.1-/D1.1M:2010 Structural Welding Code-Steel, Section 6.9, Using Table 6.1

Scope: This CWI was asked by the customer to inspect the existing weld joints, plate to plate and sides to plate, in random areas of the tank.

Fifteen (15) locations were wire brushed to remove the coating and a visual inspection was perform on each of the welds. If any defects (porosity, cracks, discontinuities, etc) were observed then more areas would be inspected.

Conclusion: After inspection of the 15 welds there were no defects observed and the welds appear to be satisfactory. This CWI did not find any indications that would require further inspection.

See attached weld photos.

William E. Weed
AWS-CWI # 98010851
QC1 Exp. 01/31/16
Jacobs Technology Inc. (WSTF-NTEC)

FEB 0 1 2013

AWS
William E Weed
CWI 98010851
QC1 EXP. 1/1/2016

Attachment I:
Weld Examination Summary Sheet
Sheet 1 of 1

200 Area West Evaporation Tank

WELD NUMBER	CERTIFIED WELDER	WELD PROCESS EXAMINED IN PLACE (Y/N)	X-RAY (Y/N)	WELD OK (Y/N)	DATE	X-RAY W.O. No.
1	Info Not Available	Y – Weed	N/A	Y	01-Feb-13	N/A
2	Info Not Available	Y – Weed	N/A	Y	01-Feb-13	N/A
3	Info Not Available	Y – Weed	N/A	Y	01-Feb-13	N/A
4	Info Not Available	Y - Weed	N/A	Y	01-Feb-13	N/A
5	Info Not Available	Y - Weed	N/A	Y	01-Feb-13	N/A
6	Info Not Available	Y - Weed	N/A	Y	01-Feb-13	N/A
7	Info Not Available	Y - Weed	N/A	Y	01-Feb-13	N/A
8	Info Not Available	Y – Weed	N/A	Y	01-Feb-13	N/A
9	Info Not Available	Y – Weed	N/A	Y	01-Feb-13	N/A
10	Info Not Available	Y – Weed	N/A	Y	01-Feb-13	N/A
11	Info Not Available	Y – Weed	N/A	Y	01-Feb-13	N/A
12	Info Not Available	Y – Weed	N/A	Y	01-Feb-13	N/A
13	Info Not Available	Y – Weed	N/A	Y	01-Feb-13	N/A
14	Info Not Available	Y – Weed	N/A	Y	01-Feb-13	N/A
15	Info Not Available	Y – Weed	N/A	Y	01-Feb-13	N/A
End of Data						

Note: No radiograph results available at the time of visual inspection, X-Ray work order column marked N/A.

FEB 0 1 2013

AWS
William E Weed
CWI 98010851
QC1 EXP. 1/1/2016

Welding In-Process Examination Sheet

Welder Name: Not Available **200 Area West Evaporation Tank** **Weld Process: W01**

WELDING IN PROCESS EXAMINATION	Performed By: Weed, W. Date: 01-Feb-2013	
Preparation and Fabrication Inspection	Weld Number: 01	
	PASS	FAIL
1. Joint preparation and cleanliness	N/A	
a) Joints are cleaned to the appropriate level	N/A	
b) Fit-up - Square ends - no burrs	N/A	
c) Joint clearance	N/A	
d) Internal alignment	N/A	
e) Preheating	N/A	
2. WPS:	N/A	
a) Position:	N/A	
b) Electrode:	N/A	
c) Filler material: See below	N/A	
3. Condition of weld	N/A	
a) Root pass after cleaning, external	N/A	
b) Root pass after cleaning, internal if accessible	N/A	
c) Slag removed between passes	N/A	
d) Weld condition between passes	N/A	
Visual Examination of Finished Weld		
Crack	X	
Lack of fusion	X	
Incomplete penetration	N/A	
Undercutting	X	
Surface porosity or exposed slag inclusion	X	
Concave root surface (suck up)	N/A	
Reinforcement or internal protrusion	N/A	

Summary: After visual inspection it is the determination that this weld is acceptable per AWS D.1.1-/D1.1M:2010 Structural Welding Code-Steel, Section 6.9, Using Table 6.1

CWI: Weed, William, 98010851

FEB 0 1 2013

Notes: See photo attached

William E Weed
CWI 98010851
QC1 EXP. 1/1/2016

1

Welding In-Process Examination Sheet

Welder Name: Not Available **200 Area West Evaporation Tank** **Weld Process: W01**

WELDING IN PROCESS EXAMINATION	Performed By: Weed, W. Date: 01-Feb-2013	
Preparation and Fabrication Inspection	Weld Number: 02	
	PASS	FAIL
1. Joint preparation and cleanliness	N/A	
a) Joints are cleaned to the appropriate level	N/A	
b) Fit-up - Square ends - no burrs	N/A	
c) Joint clearance	N/A	
d) Internal alignment	N/A	
e) Preheating	N/A	
2. WPS:	N/A	
a) Position:	N/A	
b) Electrode:	N/A	
c) Filler material: See below	N/A	
3. Condition of weld	N/A	
a) Root pass after cleaning, external	N/A	
b) Root pass after cleaning, internal if accessible	N/A	
c) Slag removed between passes	N/A	
d) Weld condition between passes	N/A	
Visual Examination of Finished Weld		
Crack	X	
Lack of fusion	X	
Incomplete penetration	N/A	
Undercutting	X	
Surface porosity or exposed slag inclusion	X	
Concave root surface (suck up)	N/A	
Reinforcement or internal protrusion	N/A	

Summary: After visual inspection it is the determination that this weld is acceptable per AWS D.1.1-/D1.1M:2010 Structural Welding Code-Steel, Section 6.9, Using Table 6.1

CWI: Weed, William, 98010851

FEB 0 1 2013

Notes: See photo attached

AWS
William E Weed
CWI 98010851
QC1 EXP. 1/1/2016

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Welding In-Process Examination Sheet

Welder Name: Not Available **200 Area West Evaporation Tank** **Weld Process: W01**

WELDING IN PROCESS EXAMINATION	Performed By: Weed, W. Date: 01-Feb-2013	
Preparation and Fabrication Inspection	Weld Number: 03	
	PASS	FAIL
1. Joint preparation and cleanliness	N/A	
a) Joints are cleaned to the appropriate level	N/A	
b) Fit-up - Square ends - no burrs	N/A	
c) Joint clearance	N/A	
d) Internal alignment	N/A	
e) Preheating	N/A	
2. WPS:	N/A	
a) Position:	N/A	
b) Electrode:	N/A	
c) Filler material: See below	N/A	
3. Condition of weld	N/A	
a) Root pass after cleaning, external	N/A	
b) Root pass after cleaning, internal if accessible	N/A	
c) Slag removed between passes	N/A	
d) Weld condition between passes	N/A	
Visual Examination of Finished Weld		
Crack	X	
Lack of fusion	X	
Incomplete penetration	N/A	
Undercutting	X	
Surface porosity or exposed slag inclusion	X	
Concave root surface (suck up)	N/A	
Reinforcement or internal protrusion	N/A	

Summary: After visual inspection it is the determination that this weld is acceptable per AWS D.1.1-/D1.1M:2010 Structural Welding Code-Steel, Section 6.9, Using Table 6.1

CWI: Weed, William, 98010851

FEB 0 1 2013

Notes: See photo attached

AWS
William E Weed
CWI 98010851
QC1 EXP. 1/1/2016

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Welding In-Process Examination Sheet

Welder Name: Not Available **200 Area West Evaporation Tank** **Weld Process: W01**

WELDING IN PROCESS EXAMINATION	Performed By: Weed, W. Date: 01-Feb-2013	
Preparation and Fabrication Inspection	Weld Number: 04	
	PASS	FAIL
1. Joint preparation and cleanliness	N/A	
a) Joints are cleaned to the appropriate level	N/A	
b) Fit-up - Square ends - no burrs	N/A	
c) Joint clearance	N/A	
d) Internal alignment	N/A	
e) Preheating	N/A	
2. WPS:	N/A	
a) Position:	N/A	
b) Electrode:	N/A	
c) Filler material: See below	N/A	
3. Condition of weld	N/A	
a) Root pass after cleaning, external	N/A	
b) Root pass after cleaning, internal if accessible	N/A	
c) Slag removed between passes	N/A	
d) Weld condition between passes	N/A	
Visual Examination of Finished Weld		
Crack	X	
Lack of fusion	X	
Incomplete penetration	N/A	
Undercutting	X	
Surface porosity or exposed slag inclusion	X	
Concave root surface (suck up)	N/A	
Reinforcement or internal protrusion	N/A	

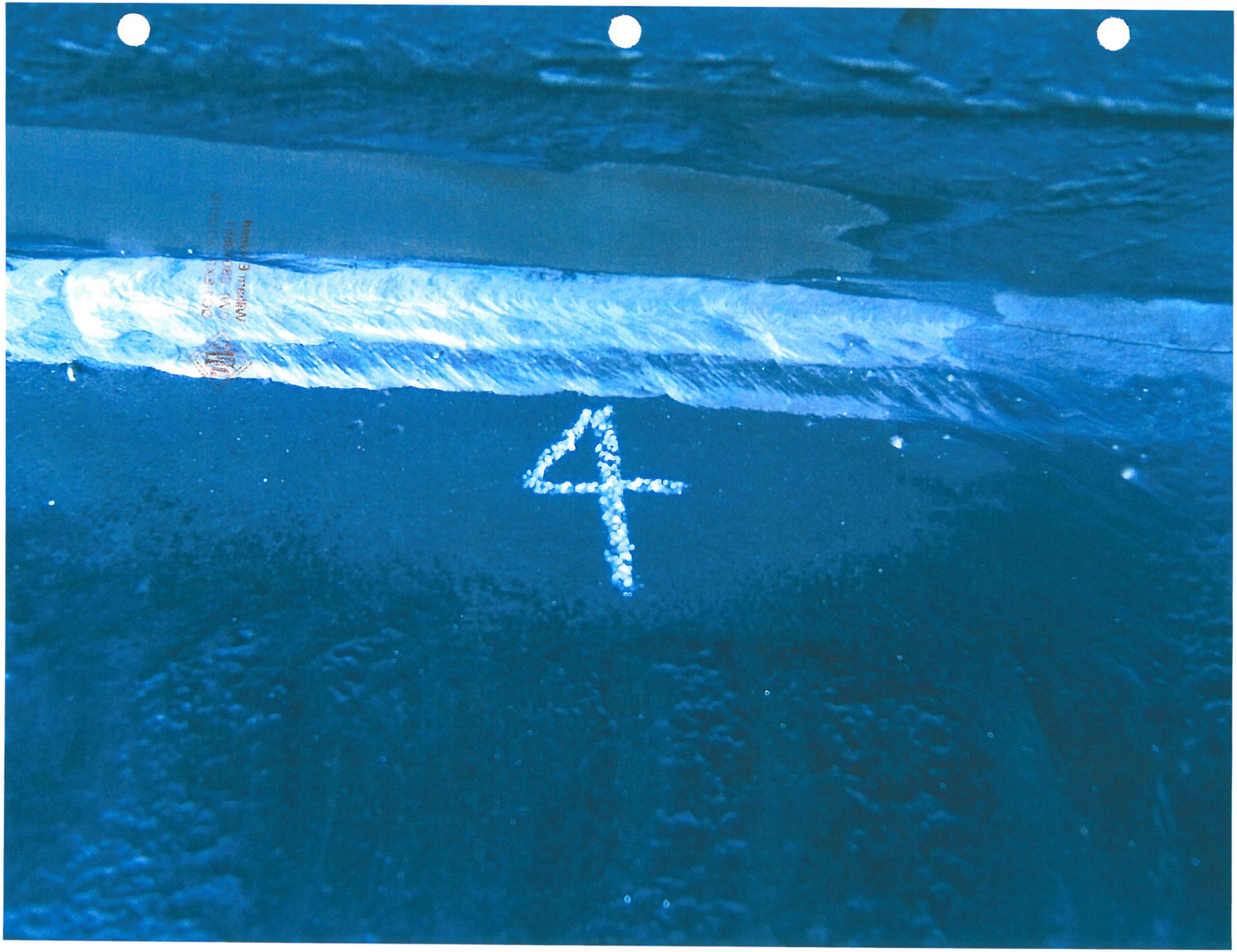
Summary: After visual inspection it is the determination that this weld is acceptable per AWS D.1.1-/D1.1M:2010 Structural Welding Code-Steel, Section 6.9, Using Table 6.1

CWI: Weed, William, 98010851

FEB 0 1 2013

Notes: See photo attached

AWS
William E Weed
CWI 98010851
QC1 EXP. 1/1/2016


4

Welding In-Process Examination Sheet

Welder Name: Not Available **200 Area West Evaporation Tank** **Weld Process: W01**

WELDING IN PROCESS EXAMINATION	Performed By: Weed, W. Date: 01-Feb-2013	
Preparation and Fabrication Inspection	Weld Number: 05	
	PASS	FAIL
1. Joint preparation and cleanliness	N/A	
a) Joints are cleaned to the appropriate level	N/A	
b) Fit-up - Square ends - no burrs	N/A	
c) Joint clearance	N/A	
d) Internal alignment	N/A	
e) Preheating	N/A	
2. WPS:	N/A	
a) Position:	N/A	
b) Electrode:	N/A	
c) Filler material: See below	N/A	
3. Condition of weld	N/A	
a) Root pass after cleaning, external	N/A	
b) Root pass after cleaning, internal if accessible	N/A	
c) Slag removed between passes	N/A	
d) Weld condition between passes	N/A	
Visual Examination of Finished Weld		
Crack	X	
Lack of fusion	X	
Incomplete penetration	N/A	
Undercutting	X	
Surface porosity or exposed slag inclusion	X	
Concave root surface (suck up)	N/A	
Reinforcement or internal protrusion	N/A	

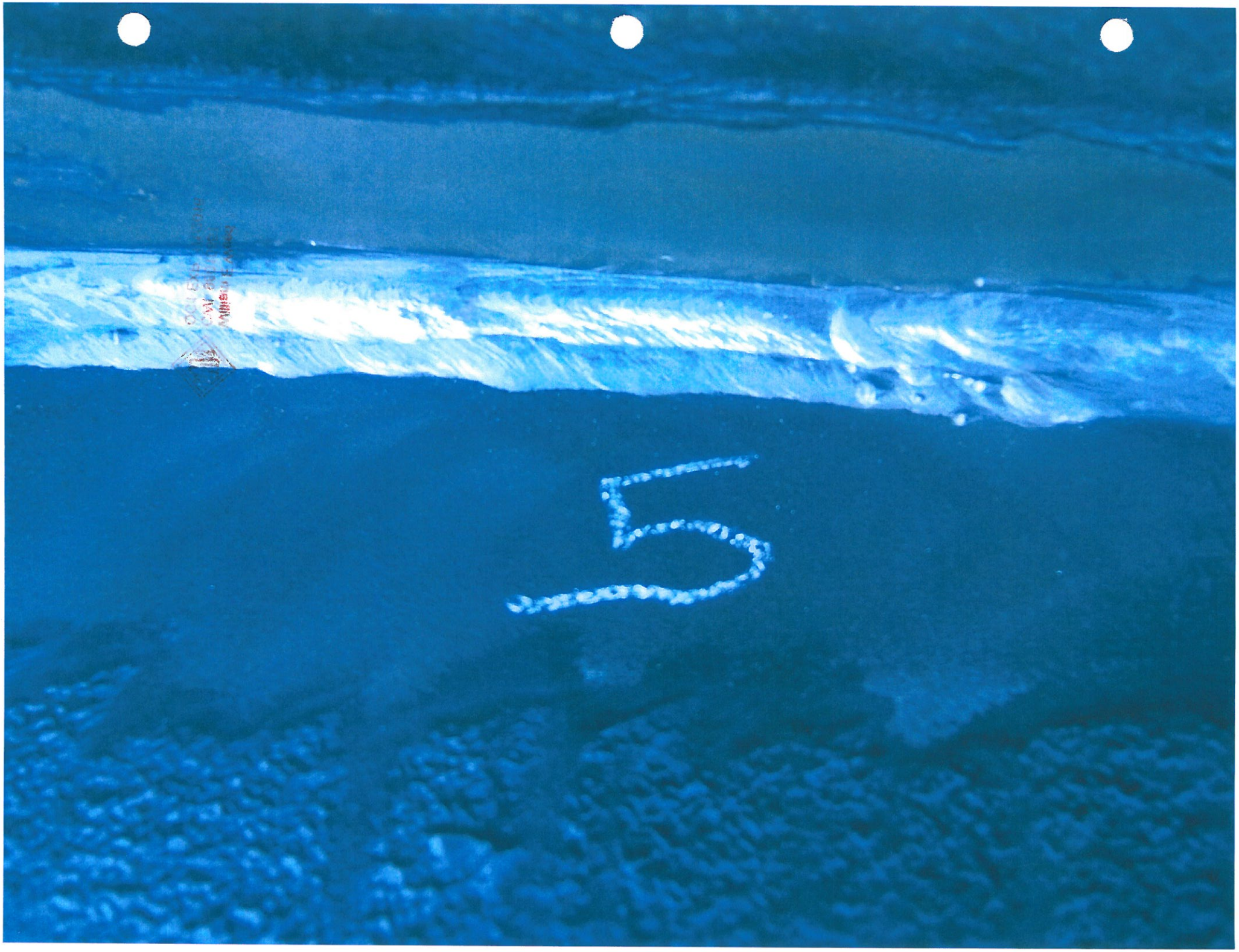
Summary: After visual inspection it is the determination that this weld is acceptable per AWS D.1.1-/D1.1M:2010 Structural Welding Code-Steel, Section 6.9, Using Table 6.1

FEB 0 1 2013

CWI: Weed, William, 98010851

Notes: See photo attached

AWS
William E Weed
CWI 98010851
QC1 EXP. 1/1/2016


5

Welding In-Process Examination Sheet

Welder Name: Not Available **200 Area West Evaporation Tank** **Weld Process: W01**

WELDING IN PROCESS EXAMINATION	Performed By: Weed, W. Date: 01-Feb-2013	
Preparation and Fabrication Inspection	Weld Number: 06	
	PASS	FAIL
1. Joint preparation and cleanliness	N/A	
a) Joints are cleaned to the appropriate level	N/A	
b) Fit-up - Square ends - no burrs	N/A	
c) Joint clearance	N/A	
d) Internal alignment	N/A	
e) Preheating	N/A	
2. WPS:	N/A	
a) Position:	N/A	
b) Electrode:	N/A	
c) Filler material: See below	N/A	
3. Condition of weld	N/A	
a) Root pass after cleaning, external	N/A	
b) Root pass after cleaning, internal if accessible	N/A	
c) Slag removed between passes	N/A	
d) Weld condition between passes	N/A	
Visual Examination of Finished Weld		
Crack	X	
Lack of fusion	X	
Incomplete penetration	N/A	
Undercutting	X	
Surface porosity or exposed slag inclusion	X	
Concave root surface (suck up)	N/A	
Reinforcement or internal protrusion	N/A	

Summary: After visual inspection it is the determination that this weld is acceptable per AWS D.1.1-/D1.1M:2010 Structural Welding Code-Steel, Section 6.9, Using Table 6.1

CWI: Weed, William, 98010851

FEB 0 1 2013

Notes: See photo attached

AWS William E Weed CWI 98010851 QC1 EXP. 1/1/2016

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Welding In-Process Examination Sheet

Welder Name: Not Available **200 Area West Evaporation Tank** **Weld Process: W01**

WELDING IN PROCESS EXAMINATION	Performed By: Weed, W. Date: 01-Feb-2013	
Preparation and Fabrication Inspection	Weld Number: 07	
	PASS	FAIL
1. Joint preparation and cleanliness	N/A	
a) Joints are cleaned to the appropriate level	N/A	
b) Fit-up - Square ends - no burrs	N/A	
c) Joint clearance	N/A	
d) Internal alignment	N/A	
e) Preheating	N/A	
2. WPS:	N/A	
a) Position:	N/A	
b) Electrode:	N/A	
c) Filler material: See below	N/A	
3. Condition of weld	N/A	
a) Root pass after cleaning, external	N/A	
b) Root pass after cleaning, internal if accessible	N/A	
c) Slag removed between passes	N/A	
d) Weld condition between passes	N/A	
Visual Examination of Finished Weld		
Crack	X	
Lack of fusion	X	
Incomplete penetration	N/A	
Undercutting	X	
Surface porosity or exposed slag inclusion	X	
Concave root surface (suck up)	N/A	
Reinforcement or internal protrusion	N/A	

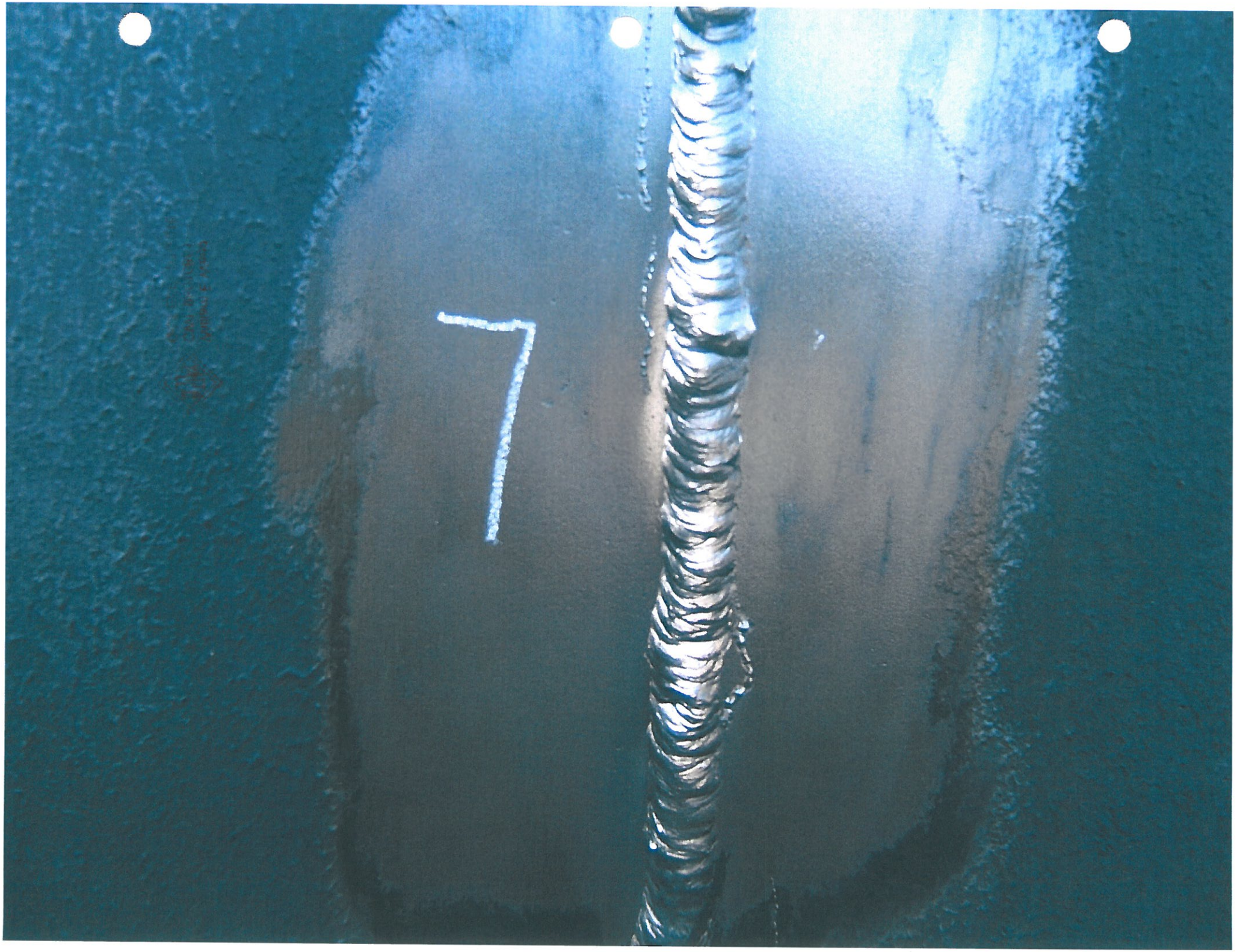
Summary: After visual inspection it is the determination that this weld is acceptable per AWS D.1.1-/D1.1M:2010 Structural Welding Code-Steel, Section 6.9, Using Table 6.1

FEB 0 1 2013

CWI: Weed, William, 98010851

AWS William E Weed CWI 98010851 QC1 EXP. 1/1/2016

Notes: See photo attached


7

Welding In-Process Examination Sheet

Welder Name: Not Available **200 Area West Evaporation Tank** **Weld Process: W01**

WELDING IN PROCESS EXAMINATION	Performed By: Weed, W. Date: 01-Feb-2013	
Preparation and Fabrication Inspection	Weld Number: 08	
	PASS	FAIL
1. Joint preparation and cleanliness	N/A	
a) Joints are cleaned to the appropriate level	N/A	
b) Fit-up - Square ends - no burrs	N/A	
c) Joint clearance	N/A	
d) Internal alignment	N/A	
e) Preheating	N/A	
2. WPS:	N/A	
a) Position:	N/A	
b) Electrode:	N/A	
c) Filler material: See below	N/A	
3. Condition of weld	N/A	
a) Root pass after cleaning, external	N/A	
b) Root pass after cleaning, internal if accessible	N/A	
c) Slag removed between passes	N/A	
d) Weld condition between passes	N/A	
Visual Examination of Finished Weld		
Crack	X	
Lack of fusion	X	
Incomplete penetration	N/A	
Undercutting	X	
Surface porosity or exposed slag inclusion	X	
Concave root surface (suck up)	N/A	
Reinforcement or internal protrusion	N/A	

Summary: After visual inspection it is the determination that this weld is acceptable per AWS D.1.1-/D1.1M:2010 Structural Welding Code-Steel, Section 6.9, Using Table 6.1

CWI: Weed, William, 98010851

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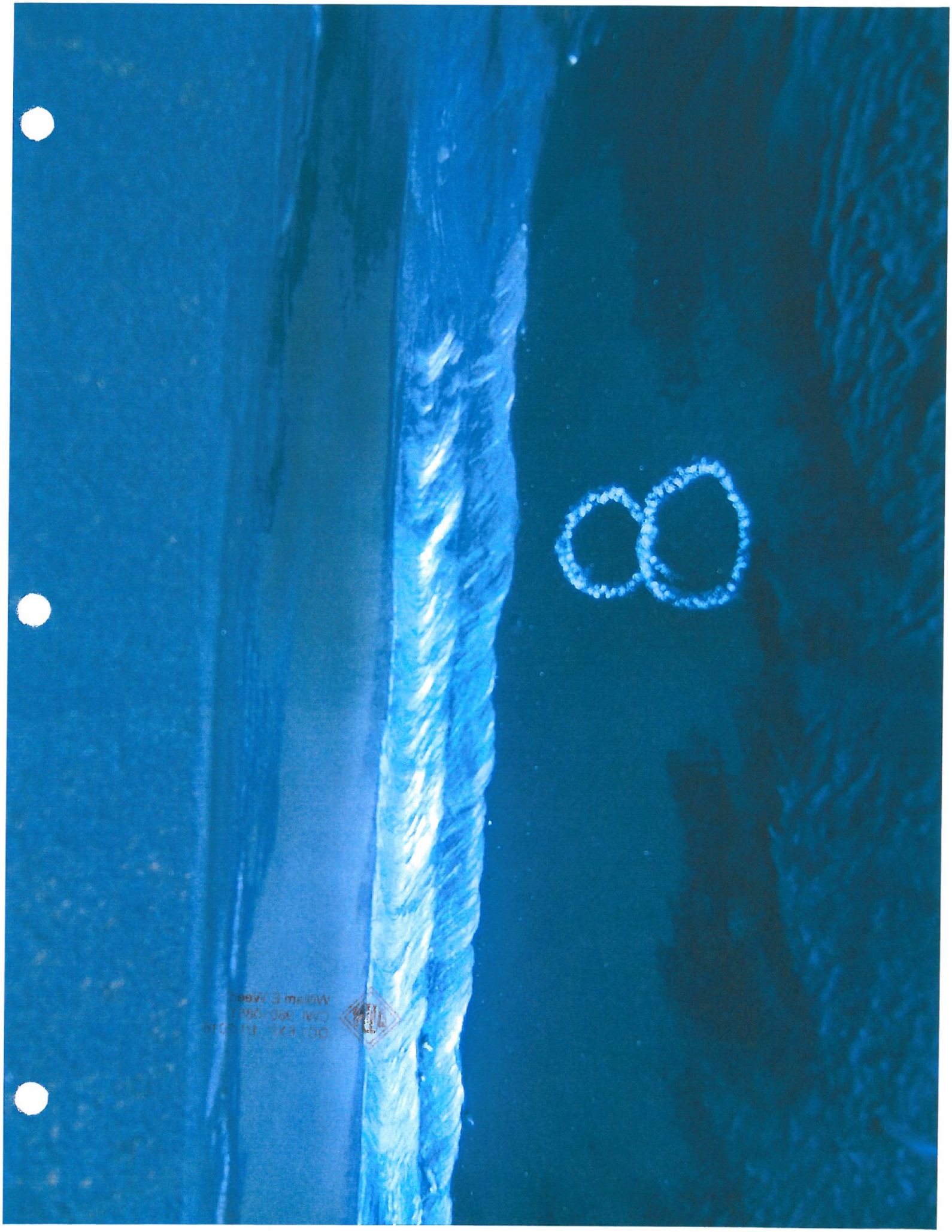
William E Weed
CWI 98010851
QC1 EXP. 1/1/2016

Notes: See photo attached



Welding In-Process Examination Sheet

Welder Name: Not Available **200 Area West Evaporation Tank** **Weld Process: W01**

WELDING IN PROCESS EXAMINATION	Performed By: Weed, W. Date: 01-Feb-2013	
Preparation and Fabrication Inspection	Weld Number: 09	
	PASS	FAIL
1. Joint preparation and cleanliness	N/A	
a) Joints are cleaned to the appropriate level	N/A	
b) Fit-up - Square ends - no burrs	N/A	
c) Joint clearance	N/A	
d) Internal alignment	N/A	
e) Preheating	N/A	
2. WPS:	N/A	
a) Position:	N/A	
b) Electrode:	N/A	
c) Filler material: See below	N/A	
3. Condition of weld	N/A	
a) Root pass after cleaning, external	N/A	
b) Root pass after cleaning, internal if accessible	N/A	
c) Slag removed between passes	N/A	
d) Weld condition between passes	N/A	
Visual Examination of Finished Weld		
Crack	X	
Lack of fusion	X	
Incomplete penetration	N/A	
Undercutting	X	
Surface porosity or exposed slag inclusion	X	
Concave root surface (suck up)	N/A	
Reinforcement or internal protrusion	N/A	

Summary: After visual inspection it is the determination that this weld is acceptable per AWS D.1.1-/D1.1M:2010 Structural Welding Code-Steel, Section 6.9, Using Table 6.1

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CWI: Weed, William, 98010851

Notes: See photo attached

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Welding In-Process Examination Sheet

Welder Name: Not Available **200 Area West Evaporation Tank** **Weld Process: W01**

WELDING IN PROCESS EXAMINATION	Performed By: Weed, W. Date: 01-Feb-2013	
Preparation and Fabrication Inspection	Weld Number: 10	
	PASS	FAIL
1. Joint preparation and cleanliness	N/A	
a) Joints are cleaned to the appropriate level	N/A	
b) Fit-up - Square ends - no burrs	N/A	
c) Joint clearance	N/A	
d) Internal alignment	N/A	
e) Preheating	N/A	
2. WPS:	N/A	
a) Position:	N/A	
b) Electrode:	N/A	
c) Filler material: See below	N/A	
3. Condition of weld	N/A	
a) Root pass after cleaning, external	N/A	
b) Root pass after cleaning, internal if accessible	N/A	
c) Slag removed between passes	N/A	
d) Weld condition between passes	N/A	
Visual Examination of Finished Weld		
Crack	X	
Lack of fusion	X	
Incomplete penetration	N/A	
Undercutting	X	
Surface porosity or exposed slag inclusion	X	
Concave root surface (suck up)	N/A	
Reinforcement or internal protrusion	N/A	

Summary: After visual inspection it is the determination that this weld is acceptable per AWS D.1.1-/D1.1M:2010 Structural Welding Code-Steel, Section 6.9, Using Table 6.1

CWI: Weed, William, 98010851

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Notes: See photo attached

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Welding In-Process Examination Sheet

Welder Name: Not Available **200 Area West Evaporation Tank** **Weld Process: W01**

WELDING IN PROCESS EXAMINATION	Performed By: Weed, W. Date: 01-Feb-2013	
Preparation and Fabrication Inspection	Weld Number: 11	
	PASS	FAIL
1. Joint preparation and cleanliness	N/A	
a) Joints are cleaned to the appropriate level	N/A	
b) Fit-up - Square ends - no burrs	N/A	
c) Joint clearance	N/A	
d) Internal alignment	N/A	
e) Preheating	N/A	
2. WPS:	N/A	
a) Position:	N/A	
b) Electrode:	N/A	
c) Filler material: See below	N/A	
3. Condition of weld	N/A	
a) Root pass after cleaning, external	N/A	
b) Root pass after cleaning, internal if accessible	N/A	
c) Slag removed between passes	N/A	
d) Weld condition between passes	N/A	
Visual Examination of Finished Weld		
Crack	X	
Lack of fusion	X	
Incomplete penetration	N/A	
Undercutting	X	
Surface porosity or exposed slag inclusion	X	
Concave root surface (suck up)	N/A	
Reinforcement or internal protrusion	N/A	

Summary: After visual inspection it is the determination that this weld is acceptable per AWS D.1.1-/D1.1M:2010 Structural Welding Code-Steel, Section 6.9, Using Table 6.1

CWI: Weed, William, 98010851

FEB 01 2013

Notes: See photo attached

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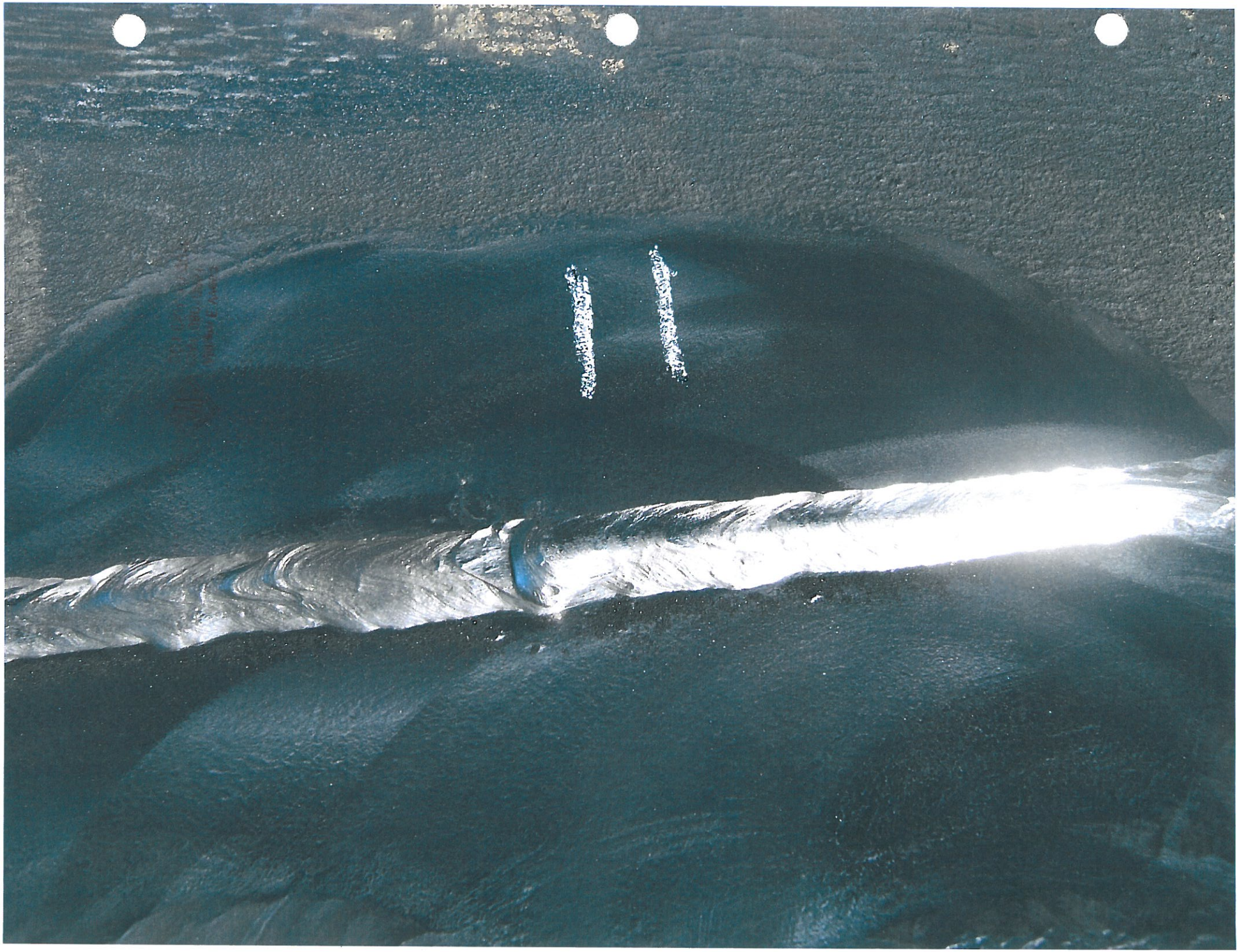

Welding In-Process Examination Sheet

Welder Name: Not Available **200 Area West Evaporation Tank** **Weld Process: W01**

WELDING IN PROCESS EXAMINATION	Performed By: Weed, W. Date: 01-Feb-2013	
Preparation and Fabrication Inspection	Weld Number: 12	
	PASS	FAIL
1. Joint preparation and cleanliness	N/A	
a) Joints are cleaned to the appropriate level	N/A	
b) Fit-up - Square ends - no burrs	N/A	
c) Joint clearance	N/A	
d) Internal alignment	N/A	
e) Preheating	N/A	
2. WPS:	N/A	
a) Position:	N/A	
b) Electrode:	N/A	
c) Filler material: See below	N/A	
3. Condition of weld	N/A	
a) Root pass after cleaning, external	N/A	
b) Root pass after cleaning, internal if accessible	N/A	
c) Slag removed between passes	N/A	
d) Weld condition between passes	N/A	
Visual Examination of Finished Weld		
Crack	X	
Lack of fusion	X	
Incomplete penetration	N/A	
Undercutting	X	
Surface porosity or exposed slag inclusion	X	
Concave root surface (suck up)	N/A	
Reinforcement or internal protrusion	N/A	

Summary: After visual inspection it is the determination that this weld is acceptable per AWS D.1.1-/D1.1M:2010 Structural Welding Code-Steel, Section 6.9, Using Table 6.1

CWI: Weed, William, 98010851

FEB 01 2013

Notes: See photo attached

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Welding In-Process Examination Sheet

Welder Name: Not Available **200 Area West Evaporation Tank** **Weld Process: W01**

WELDING IN PROCESS EXAMINATION	Performed By: Weed, W. Date: 01-Feb-2013	
Preparation and Fabrication Inspection	Weld Number: 13	
	PASS	FAIL
1. Joint preparation and cleanliness	N/A	
a) Joints are cleaned to the appropriate level	N/A	
b) Fit-up - Square ends - no burrs	N/A	
c) Joint clearance	N/A	
d) Internal alignment	N/A	
e) Preheating	N/A	
2. WPS:	N/A	
a) Position:	N/A	
b) Electrode:	N/A	
c) Filler material: See below	N/A	
3. Condition of weld	N/A	
a) Root pass after cleaning, external	N/A	
b) Root pass after cleaning, internal if accessible	N/A	
c) Slag removed between passes	N/A	
d) Weld condition between passes	N/A	
Visual Examination of Finished Weld		
Crack	X	
Lack of fusion	X	
Incomplete penetration	N/A	
Undercutting	X	
Surface porosity or exposed slag inclusion	X	
Concave root surface (suck up)	N/A	
Reinforcement or internal protrusion	N/A	

Summary: After visual inspection it is the determination that this weld is acceptable per AWS D.1.1-/D1.1M:2010 Structural Welding Code-Steel, Section 6.9, Using Table 6.1

CWI: Weed, William, 98010851

FEB 0 1 2013

Notes: See photo attached

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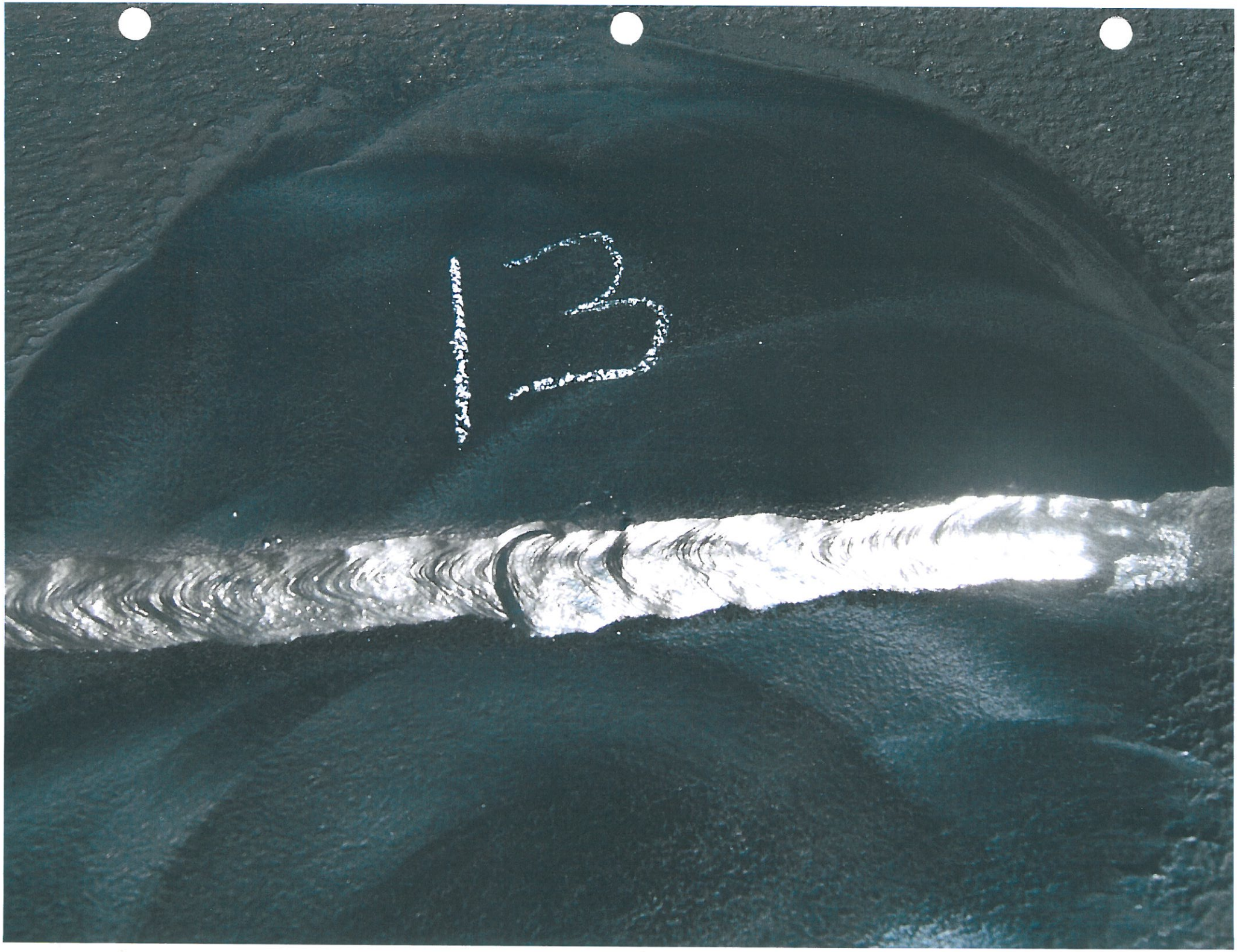
13

Welding In-Process Examination Sheet

Welder Name: Not Available **200 Area West Evaporation Tank** **Weld Process: W01**

WELDING IN PROCESS EXAMINATION	Performed By: Weed, W. Date: 01-Feb-2013	
Preparation and Fabrication Inspection	Weld Number: 14	
	PASS	FAIL
1. Joint preparation and cleanliness	N/A	
a) Joints are cleaned to the appropriate level	N/A	
b) Fit-up - Square ends - no burrs	N/A	
c) Joint clearance	N/A	
d) Internal alignment	N/A	
e) Preheating	N/A	
2. WPS:	N/A	
a) Position:	N/A	
b) Electrode:	N/A	
c) Filler material: See below	N/A	
3. Condition of weld	N/A	
a) Root pass after cleaning, external	N/A	
b) Root pass after cleaning, internal if accessible	N/A	
c) Slag removed between passes	N/A	
d) Weld condition between passes	N/A	
Visual Examination of Finished Weld		
Crack	X	
Lack of fusion	X	
Incomplete penetration	N/A	
Undercutting	X	
Surface porosity or exposed slag inclusion	X	
Concave root surface (suck up)	N/A	
Reinforcement or internal protrusion	N/A	

Summary: After visual inspection it is the determination that this weld is acceptable per AWS D.1.1-/D1.1M:2010 Structural Welding Code-Steel, Section 6.9, Using Table 6.1

CWI: Weed, William, 98010851

FEB 0 1 2013

Notes: See photo attached

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Welding In-Process Examination Sheet

Welder Name: Not Available **200 Area West Evaporation Tank** **Weld Process: W01**

WELDING IN PROCESS EXAMINATION	Performed By: Weed, W. Date: 01-Feb-2013	
Preparation and Fabrication Inspection	Weld Number: 15	
	PASS	FAIL
1. Joint preparation and cleanliness	N/A	
a) Joints are cleaned to the appropriate level	N/A	
b) Fit-up - Square ends - no burrs	N/A	
c) Joint clearance	N/A	
d) Internal alignment	N/A	
e) Preheating	N/A	
2. WPS:	N/A	
a) Position:	N/A	
b) Electrode:	N/A	
c) Filler material: See below	N/A	
3. Condition of weld	N/A	
a) Root pass after cleaning, external	N/A	
b) Root pass after cleaning, internal if accessible	N/A	
c) Slag removed between passes	N/A	
d) Weld condition between passes	N/A	
Visual Examination of Finished Weld		
Crack	X	
Lack of fusion	X	
Incomplete penetration	N/A	
Undercutting	X	
Surface porosity or exposed slag inclusion	X	
Concave root surface (suck up)	N/A	
Reinforcement or internal protrusion	N/A	

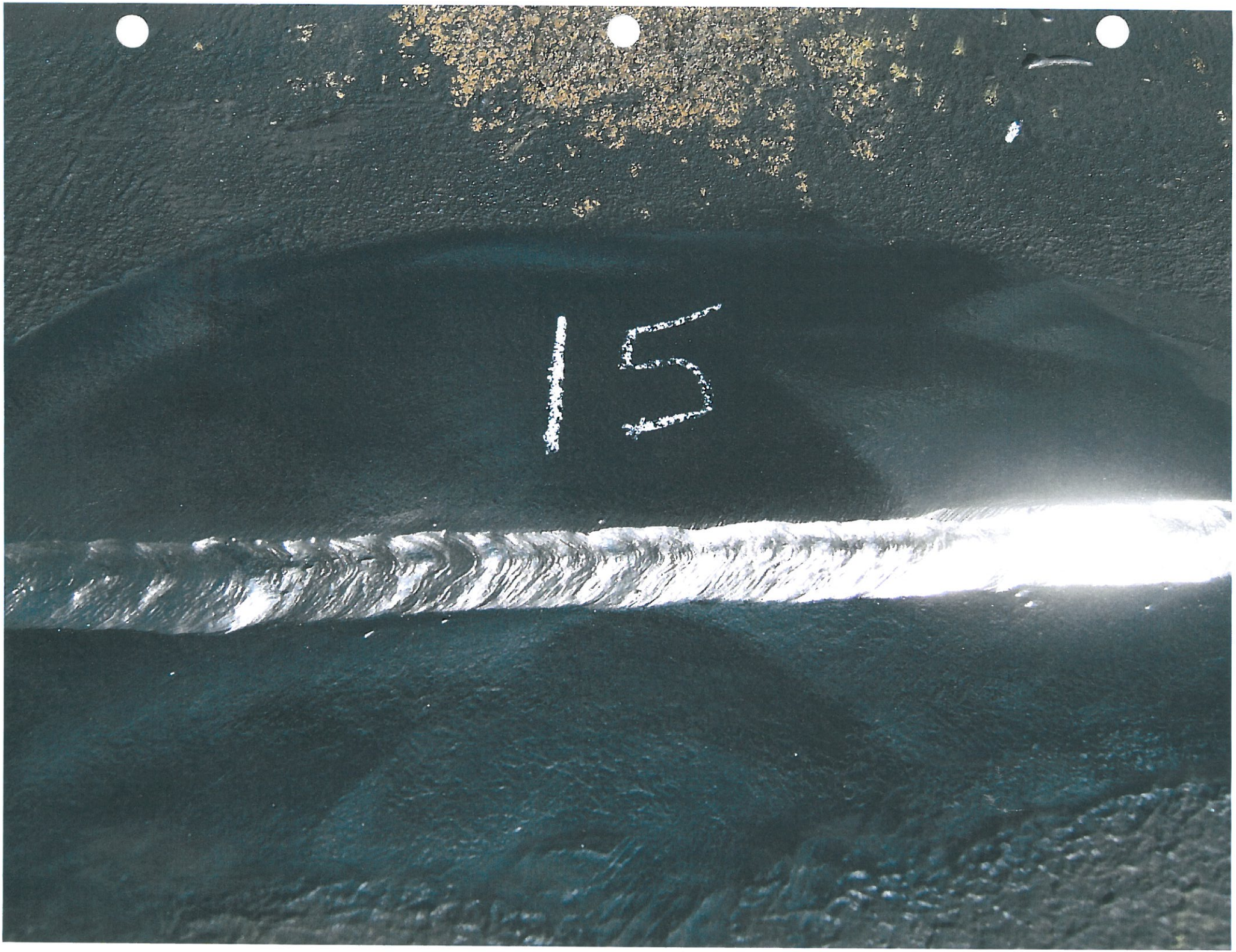
Summary: After visual inspection it is the determination that this weld is acceptable per AWS D.1.1-/D1.1M:2010 Structural Welding Code-Steel, Section 6.9, Using Table 6.1

CWI: Weed, William, 98010851

FEB 0 1 2013

Notes: See photo attached

AWS William E Weed CWI 98010851 QC1 EXP. 1/1/2016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Appendix G
ETU Soil Investigation Sampling and Analysis Plan

Sampling and Analysis Plan 2013-006

ETU Closure

Soil Investigation Samples

Jennifer Griffin	February 8, 2013
Author	Date 2/12/13

Antonette Sanchez	February 8, 2013
Reviewer/Approver	Date 2/12/13

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1 Introduction

This Sampling and Analysis Plan (SAP) has been developed for NASA WSTF to document the sampling and analysis approach that will be used to perform the soils investigation in support the closure of the Evaporation Treatment Tanks (ETU) and the associated Hazardous Waste Drain Line (HWDL) per the requirements of the NMED-approved Closure Plan (March, 2012).

2 Scope

This SAP is applicable only to the soil investigation that will be performed to confirm that a release to the environment from the ETU Tank system (i.e., tanks, sump, and HWDL) has not occurred. The scope of the soil investigation includes the following (Figures 1 – 10):

- ~~12~~ 10 soil borings located underneath the HWDL in the 800 Area (2-ft deep).
- ~~20~~ 19 soil borings located underneath the HWDL in the 200 Area (2-ft deep).
- 2 soil borings in the sump vault (at center and 2-ft from center to a depth of 2-ft).
- 10 soil borings underneath the ETU Tanks (2-ft deep)
- ~~2~~ 3 soil borings underneath the ETU Tanks at the low end of the sloped bottom (10-ft deep)
- Collection of soil samples at varying depths from each boring (92 samples).
- Collection of QA/QC samples (field duplicates, equipment blanks).
- Collection of waste characterization samples (decontamination wash water).
- Management of all waste materials generated due to closure activities including packaging and storage, pending disposal.

The data gathered from the soil investigation will be used, along with the other closure documentation (logbooks, photographs, disposal records), and the historical operating record of the unit to demonstrate "clean closure" in accordance with 40 CFR 264.111(a) – (c). Appendix A provides the soil investigation boring and sample instructions. Appendix B provides a list of the chemicals of potential concern (COPC).

3 Background

3.1 HWDL

The HWDL is a gravity flow piping system designed to convey liquid waste from the 200 Component Services Section (CSS), 200 Chemistry Laboratories and the 800Area to the ETU. It consists of a sump and four main pipe sections or branches that are above ground, below ground, and inside buildings. The piping is typically double walled and is constructed of welded seam fiberglass or polypropylene piping based upon the location and type of service. The HWDL received waste for approximately 20 years from sinks, decontamination stations, safety showers, cleaning tanks, and chemical laboratories. It is specifically designed, installed and operated to prevent the migration of wastes or accumulated liquid out of the system. There are no documented releases to the environmental from the HWDL sump.

The "clean closure" of the HWDL was started on August 8, 2012 and completed on December 5, 2012 and included the removal or triple rinse in place of approximately 3000 linear feet of pipe. The following bullets summarize the effort:

- 800 Area HFTA, 800 Area, and 803 Laboratory
  - Removed aboveground HWDL piping between Decon Station 3 and Decon Station 1.
  - Triple Rinsed underground HWDL piping between Decon Station 1 and the sump.
  - Triple Rinsed aboveground HWDL piping in the 803 Laboratory.
  - Triple Rinsed underground HWDL piping between the 803 Laboratory and the sump.

- 200 Area
  - Removed aboveground HWDL piping in the Environmental, Metallurgy, Wet Chemistry, Vapor Propellant laboratories
  - Removed the aboveground HWDL piping in the Labcon High Bay and the Process Equipment Room.
  - Triple Rinsed aboveground HWDL piping in the Oxidizer and Fuel Laboratories.
  - Triple Rinsed the underground HWDL from the floor drains in the Labon High Bay to the sump.
  - Removed the inner HWDL piping from the first 90-ft of buried pipeline between the Sump and ETU Tanks. The outer containment pipe was left in place.
  - Removed all aboveground HWDL piping between the sump and ETU Tanks.

All HWDL piping that was removed was also triple rinsed at a nearby location or at the ETU decontamination pad to meet the closure criteria for disposal as non-hazardous waste. Field inspections and observations of the aboveground HWDL piping during the closure activities provided no evidence of a leak or release to the environment. The belowground portions of the HWDL could not be inspected.

3.2 Sump

The HWDL from the 800 HFTA, 803 Laboratory, and the 200 Area discharge to a 370-gallon sump that is comprise of an inner tank and an outer containment tank that includes leak detection provided by an electronic optical liquid sensor located in the bottom of the annular space between the two tank walls. The inner tank is 48-in diameter and 51-in in height. The outer containment tank is 72-in diameter and 62-in in height. Both tanks are ¼-in thick and constructed of rigid double walled reinforced resin plastic. The sump inputs discharge only to the inner tank and are connected to the lid. The sump gravity discharges through a doubled walled pipe to the ETU. The sump is located below finished grade within a square concrete vault. The vault has a dirt bottom and is backfilled with fine homogenous sand to approximately 18-in below the top of the sump. There are no documented releases to the environment from the HWDL sump.

On November 15, 2012, the sump lid was removed so that the sump could be emptied and triple rinsed for closure. The inner tank was 78% full of liquid and sludge up to the bottom of the discharge pipe to the ETU Tanks. The HWDL closure team used the vacuum truck to removed approximately 312-gallons of liquid and sludge prior to triple rinsing the tank per the closure plan requirements. On November 16, 2012 the inner tank was given a final fourth and sampled. On November 29, 2012 the sump tanks were removed from the vault by removing sand from one side, dislodging the tank, and lifting each tank out of the vault. Each was inspected as it was removed. There was no evidence of a leak or deterioration due to a leak (i.e., water staining, mineral deposits, cracks, holes). After the tanks were removed the sand at the bottom of the vault and underneath the tank was also inspected. There was no evidence of a leak (i.e., no staining, odor, or fluid).

3.3 ETU Tanks and Remaining Auxiliary Equipment

The ETU Tanks (e.g., netting, liners, leak detection system, tanks) and the remaining auxiliary equipment (e.g., pumps, decontamination pad, nitrogen lines, water piping, electrical wiring, fencing, and piping) will be decontaminated and removed in January and February of 2013. These activities are expected to coincide with the soil investigation. The final 12 borings and samples of the soil investigation, to be located underneath the ETU Tanks, are tied to the completion of these activities.

4 Data Quality Objectives

Table 1 summarizes the DQOs for the ETU Closure Soils Investigation.

Table 1

Summary of DQOs

DQO	Description
Investigation Question(s):	Did an unknown/undefined leak or breach of the ETU Tank System components (i.e., HWDL, piping, tanks) contaminate the surrounding soil with hazardous waste?
Information Need(s):	Presence and/or concentrations of the contaminants of potential concern in the soil underneath the HWDL, Sump Tank, and ETU Tanks, as identified in the NMED approved Closure Plan, Attachment 15 - Table 12.
Study Boundaries:	Soil Under the Aboveground HWDL at Sample Intervals (0-1 ft, 1-2 ft) - 4, 2-ft Boreholes 800 Area HFTA - 2, 2-ft Boreholes between the Sump and the ETU Soil Under the Belowground HWDL at Sample Intervals (0-6 in, 1-2 ft) - 6, 2-ft Boreholes 800 Area HFTA - 2, 2-ft Boreholes 803 Lab - 18, 2-ft Boreholes 200 Area Soil Under the Sump at Sample Intervals (0-6 in, 1-2 ft) - 2, 2-ft Boreholes Sump Vault Soil Under the ETU Tanks at Sample Intervals (0-1 ft, 1-2 ft, 9-10 ft) - 5, 2-ft Boreholes West ETU Tank - 1, 10-ft Borehole West ETU Tank - 5, 2-ft Boreholes East ETU Tank - 1, 10-ft Borehole East ETU Tank
Decision Rules:	If the concentrations of contaminants are below the criteria stipulated in Section 7.7 of the ETU Closure Plan, a successful demonstration/verification that the soil has not been contaminated is achieved. If the concentrations of contaminants are not below the criteria stipulated in Section 7.7 of the ETU Closure Plan, it will be determined that the soil has come into contact with hazardous waste and NASA will manage the soil in accordance with the Post Closure Care requirements specified in 40 CFR 264.197(b).

Acceptance Criteria & Data Requirements	Sampling and Analysis and Quality Assurance Plan incorporating standard lab QC parameters and procedures.
Design Rationale:	Successful demonstration/verification that the soil underneath the HWDL, sump, and ETU Tanks was not contaminated by hazardous waste will be based on the analysis of soil samples collected from 46 boreholes drilled at various locations as stipulated in Sections 7.7.1, 7.7.2, and 7.7.3 of the ETU Closure Plan. The depth of the boreholes will vary from 2 – 10 ft and will be sampled at different intervals (0-6 in, 0-1 ft, 1-2 ft, 9-10 ft) as stipulated in Sections 7.7.1, 7.7.2, and 7.7.3 of the ETU Closure Plan.

5 Sampling Approach

The ETU Closure soil investigation will require drilling boreholes underneath the HWDL, sump, and each of the ETU Tanks. A total of 46 boreholes will be drilled to 2-ft and sampled at 2 intervals as specified in Section 7.7.1, 7.7.2, and 7.7.3 of the ETU Closure Plan. At least 2 additional boreholes will be drilled to 10-ft and sampled at 3 intervals as specified in Section 7.7.1 of the ETU Closure Plan. Each borehole will be biased to a specific location which may include pipe joints/transitions, inlets/outlets, and underneath tanks. Table 2 identifies the location of each boring, the sample interval, and the contaminant that will be analyzed for. Detailed instructions for drilling each boring is provided in Appendix A.

Table 2

ETU Closure - Soil Investigation Samples

Event	Area	Boring ID No.	Location Description	Depth		Analytes
S-001	800 HFTA	800-HWDL-01	Decon Station #3 Elbow	0-1 ft	1-2 ft	Hydrazines, Metals, Mercury, Cyanide, VOC, SVOC
		800-HWDL-02	Decon Station #2 Tee	0-1 ft	1-2 ft	
		~~800-HWDL-03~~	~~Decon Station #1 90 Elbow~~	~~0-1 ft~~	~~1-2 ft~~	
		~~800-HWDL-04~~	~~Decon Station #1 Inlet Underground~~	~~0-1 ft~~	~~1-2 ft~~	
		~~800-HWDL-05~~ 03	Decon Station #1 Underground Tee	0-6 in	1-2 ft	
		~~800-HWDL-06~~ 04	Clean Out 1A	0-6 in	1-2 ft	
		~~800-HWDL-07~~ 05	45 Elbow #1	0-6 in	1-2 ft	
		~~800-HWDL-08~~ 06	Clean Out 1	0-6 in	1-2 ft	
		~~800-HWDL-09~~ 07	45 Elbow #2	0-6 in	1-2 ft	
		~~800-HWDL-10~~ 08	Clean Out 2/3	0-6 in	1-2 ft	
S-002	803 Lab	~~800-HWDL-11~~ 09	Clean Out	0-6 in	1-2 ft	Hydrazines, Metals, Mercury, Cyanide, VOC, SVOC
		~~800-HWDL-12~~ 10	Inlet Tee	0-6 in	1-2 ft	
S-003	200 Area West Side	200-HWDL-01	90 Elbow CSS Ox Decon	0-6 in	1-2 ft	Hydrazines, Metals, Mercury, Cyanide, VOC, SVOC
		200-HWDL-02	Tee Labcon High Bay	0-6 in	1-2 ft	

		200-HWDL-03	45 Elbows West of 200	0-6 in	1-2 ft	
		200-HWDL-04	PER Tee to Ground	0-6 in	1-2 ft	
		200-HWDL-05	45 Elbow from PER	0-6 in	1-2 ft	
S-004	Breezeway/ Corridor Between Building 200 and 203	200-HWDL-06	Wet Chem Tee to Ground	0-6 in	1-2 ft	Hydrazines, Metals, Mercury, Cyanide, VOC, SVOC
		200-HWDL-07	45 Elbow from Wet Chem	0-6 in	1-2 ft	
		200-HWDL-08	Ox/Fuel Lab Tee to Ground	0-6 in	1-2 ft	
		200-HWDL-09	45 Elbow from Ox/Fuel	0-6 in	1-2 ft	
		200-HWDL-10	45 Elbows #1 - Breezeway	0-6 in	1-2 ft	
		200-HWDL-11	Vap Prop Lab Tee to Ground	0-6 in	1-2 ft	
		200-HWDL-12	45 Elbow from Vap Prop	0-6 in	1-2 ft	
		200-HWDL-13	Env/Met Lab Tee to Ground	0-6 in	1-2 ft	
		200-HWDL-14	45 Elbow from Env/Met	0-6 in	1-2 ft	
		200-HWDL-15	Pipe Transition	0-6 in	1-2 ft	
		200-HWDL-16	45 Elbows #2 - Breezeway	0-6 in	1-2 ft	
S-005	North Side of Building 203	200-HWDL-17	CO #1 North 203	0-6 in	1-2 ft	Hydrazines, Metals, Mercury, Cyanide, VOC, SVOC
		200-HWDL-18	Capped Line Tee North 203	0-6 in	1-2 ft	
S-006	Sump Vault	200-HWDL-19	Center	0-6 in	1-2 ft	Hydrazines, Metals, Mercury, Cyanide, VOC, SVOC
		200-HWDL-20	2-ft from Center (Bias to Outlet)	0-6 in	1-2 ft	
S-007	Sump to ETU	200-HWDL-21	Clean Out 4	0-6 in	1-2 ft	Hydrazines, Metals, Mercury, Cyanide, VOC, SVOC
		200-HWDL-22	Elbow #3	0-6 in	1-2 ft	
S-008	ETU West Tank	200-ETU-01	Center	0-1 ft	1-2 ft	Hydrazines, Metals, Mercury, Cyanide, VOC, SVOC
		200-ETU-02	20-ft from Tank Wall NE	0-1 ft	1-2 ft	
		200-ETU-03	20-ft from Tank Wall NW	0-1 ft	1-2 ft	
		200-ETU-04	20-ft from Tank Wall SE	0-1 ft	1-2 ft	
		200-ETU-05	20-ft from Tank Wall SW	0-1 ft	1-2 ft	
		200-ETU-06	5-ft from Tank Wall at Low End	0-1 ft	1-2 ft	
				9-10 ft		
S-009	ETU East Tank	200-ETU-07	Center	0-1 ft	1-2 ft	Hydrazines, Metals, Mercury,

		200-ETU-08	20-ft from Tank Wall NE	0-1 ft	1-2 ft	Cyanide, VOC, SVOC
		200-ETU-09	20-ft from Tank Wall NW	0-1 ft	1-2 ft	
		200-ETU-10	20-ft from Tank Wall SE	0-1 ft	1-2 ft	
		200-ETU-11	20-ft from Tank Wall SW	0-1 ft	1-2 ft	
		200-ETU-12	5-ft from Tank Wall at Low End	0-1 ft	1-2 ft	
				9-10 ft		

Samples will be taken under "authoritative sampling" (per RCRA Waste Sampling Technical Guide). This is due to the fact that the soil samples will be used to provide case support development to a governing agency such as NMED, to prove the positive. Also, based on acceptable knowledge of the concentrations within the soil, the concentration is either well above or well below the regulatory threshold. There is no statistical usefulness in regards to the soil samples when determining concentrations.

6 Analytical Requirements

6.1 Analytical Methods

The soil, as a solid matrix, will be analyzed for total constituents using the appropriate SW-846 Method as specified in the ETU Closure plan. Table 3 identifies the analytical methods and rationale.

Table 3

Analytical Methods and Rationale

Analysis	Method	Analytical Laboratory	Rationale
Hydrazines	HPLC	Test America, Arvada CO	• ETU Hazardous Constituents as identified in Attachment 15, Table 12 of the ETU Closure Plan. [1] • Required by Section 7.7 of the Closure Plan
VOC	EPA SW-846 Method 8260C, GC/MS	Test America, La Roche GA	• ETU Hazardous Constituents as identified in Attachment 15, Table 12 of the ETU Closure Plan [1] • Required by Section 7.7 of the Closure Plan
Metals & Mercury	EPA SW-846 Method 6010C/6020A, 7471	Test America, La Roche GA	• ETU Hazardous Constituents as identified in Attachment 15, Table 12 of the ETU Closure Plan [1] • Required by Section 7.7 of the Closure Plan
Cyanide	EPA SW-846 Method 9012B	Test America, La Roche GA	• ETU Hazardous Constituents as identified in Attachment 15, Table 12 of the ETU Closure Plan [1]

SVOC	EPA SW-846 Method 8270D, GC/MS	Test America, La Roche GA	• ETU Hazardous Constituents as identified in Attachment 15, Table 12 of the ETU Closure Plan [1] • Required by Section 7.7 of the Closure Plan

[1] See Attachment B for the list of ETU Hazardous Constituents.

6.2 Analytical Laboratory

NASA contracts to off-site analytical laboratories accredited by the National Environmental Laboratory Accreditation Program (NELAP). The analytical tasks required to achieve the project objectives are awarded to the laboratory that is successful in the competitive bid process. Potential laboratories must respond to comprehensive statements of work (SOWs) developed to meet the project objectives. Analytical standard operating procedures (SOPs), laboratory quality manuals, and other laboratory-specific documentation are provided by the analytical laboratory following award of the contract.

The analytical laboratory contracted for the analysis of the **VOC, SVOC, Metals, and Cyanide** samples is identified as follows:

Test America
5102 La Roche Avenue
Savannah, GA 31404

The analytical laboratory contracted for the analysis of the **Hydrazine** samples is identified as follows:

Test America
4955 Yarrow Street
Arvada, CO 80002

7 Field Methods and Procedures

7.1 Equipment and Materials

The equipment list for implementation of this SAP includes the following:

- Nitrile or equivalent plastic gloves
- Paper towels
- 2 Steel Bowls and Spoons
- 2 Steel Buckets
- Hand Auger
- 2 Shovels
- 1 Coliwasa
- DI water

- Alconox
- Ice and Coolers
- Sample labels, sample seals, chain of custody, logbook
- Sample coolers pre-packaged with the sample containers and preservatives as provided by the contracted laboratory
- 1 Gallon Zip Lock Bags
- 1 Quart Zip Lock Bags
- 5-Gallon Waste Bags
- 1 table, 2 chairs

7.2 Health and Safety

The soils investigation will be performed in accordance with WSI 09-SW-0002. "Process Control Utilizing Work Instructions and Work Authorizing Documents" and WSI 09-SW-0001, "Test Preparation Sheet (TPS)." In addition, the following work control documents are applicable:

- Navarro ECO Bridge Contract WSTF HASP
- HASP Site Specific Addendum (SSA) ETU Closure Project Soil Investigation
- Evaporation Treatment Unit (ETU) Closure Plan
- WJI-ENV-0038, Waste Movement and Transfer
- WJI-ENV-0084, Environmental Sample Management
- WSI-22-SW-0005, Waste Management
- WSI-25-SW-0024, Lightning Protection.
- WSI-25-SW-0036, Fall Protection Program.
- WSP-24-005, Excavation.
- WSI-25-SW-003, Confined Space Entry Program
- JHA-HW-027, Containerized Waste Movement/Transfer (Drums, Tanks, and other Containers) Hazardous and Non-Hazardous
- JHA-HW-043, General Field Operations
- JHA-HW-053, ETU Closure – Soil Investigation Sampling
- 200-2HWM-13-A, ETU Closure – Soil Investigation Sampling

7.3 Sample Collection

Based on the methods described in section 7.1.4 *Sample Collection Device* of the RCRA Waste Sampling Technique Guide, samples will be collected utilizing different types of sampling equipment based on the media being sampled and the analytical test method. All soil investigation samples (i.e., soil, equipment blanks, decontamination waste water) will be collected following the procedures specified in TPS 200-2HWM-13-A, ETU Closure – Soil Investigation Sampling.

7.4 Sample Handling, Containers, Preservation, and Storage

Samples will be collected and containerized in appropriate pre-cleaned sample containers. The requirements in SW-846 (EPA, 1986) for sample containers, preservation techniques, and holding times are presented in Table 4. Samples that require cooling to 4° Celsius will be placed in a cooler with ice or "blue ice" or in a refrigerator immediately upon collection.

When applicable, sampling operations will be performed per the procedures and requirements outlined in Permit Attachment 12, "Waste Analysis Plan" of the NASA/WSTF Hazardous Waste Operating Permit.

The sample preservation and storage protocols recommended by Chapters Two, Three, and Four of SW-846 will be used for most samples collected. If more appropriate, guidance from the Standard Guide for Sampling Waste and Soil for Volatile Organic Compounds (ASTM D 4547-98) or other EPA-recommended guidance may be utilized for the preservation of waste samples.

Table 4

Handling, Containers, Preservation, and Hold Times

Analysis	Method	Matrix	Volumes/Containers	Preservative	Hold Times
Hydrazines	Ion Chromatography	Soil	1, 4oz Amber Glass	≤ 4 °C	None AB 48 HOURS
	Ion Chromatography	Water	500 mL Amber Glass	≤ 4 °C	48 Hours
Cyanide	EPA SW 846 Method 9012B	Soil	1, 4 oz Amber Glass	≤ 4 °C	14 Days
		Water	1, 250 ml Plastic	NaOH; ≤ 4 °C	14 Days
Metals & Hg	EPA SW 846 6020A and 7471B	Soil	1, 4 oz Amber Glass	≤ 4 °C	180 Days 28 Days for Hg
		Water	1, 250 mL Plastic	Nitric Acid; ≤ 4 °C	180 Days 28 Days for Hg
SVOC	EPA SW 846 8270D	Soil	1, 8 oz Clear Glass	≤ 4 °C	14 Days
		Water	2, 1 L Amber Glass	≤ 4 °C	14 Days
VOC	EPA SW 846 8260B	Soil	1, 40 mL Clear Glass	Methanol; ≤ 4 °C	14 Days
		Soil	2, 40 mL Clear Glass	Sodium Bisulfate; ≤ 4 °C	14 Days
		Water	3, 40 mL Clear Glass	HCl; ≤ 4 °C	14 Days

Sample containers will be obtained from a sampling equipment vendor or from the laboratory performing analyses. All lab-supplied sample containers will be certified pre-cleaned by the supplier.

7.5 Decontamination Procedures

Reusable sampling equipment will be either single-use pre-cleaned (per EPA protocol as with sample containers) or decontaminated prior to use. Decontamination will include the following:

1. Scraping to remove residue soil.
2. Washing with detergent solution.
3. Rinsing several times with deionized water.
4. Air drying.
5. Rinsing with DI water into a steel bucket
6. Collecting an equipment rinsate blank.

Equipment rinsate blanks will be collected and analyzed for VOC, Hydrazines, SVOC, Metals, and Cyanides per WSTF procedures and TPS 200-2HWM-13-A, ETU Closure – Soil Investigation Sampling. Table 4 provides the sample handling, analytical methods, containers, preservation requirements and hold times.

8 Sample Documentation and Shipment

8.1 Logbook

All pertinent information on the sampling effort must be recorded in a bound logbook. Information must be recorded in ink and any cross-outs must be made with a single line and the change initialed and dated by the author. The sample logbook will include the following information:

(a) the sample location;

(b) suspected composition;

(c) sample identification number;

(d) volume/mass of sample taken;

(e) purpose of sampling;

(f) description of sample point and sampling methodology;

(g) date and time of collection;

(h) name of the sample collector;

(i) sample destination and how it will be transported;

(j) observations;

(k) name(s) of personnel responsible for the observations

(l) sample analytical method.

8.2 Labels

NASA has developed a comprehensive internal standard operating procedure for sample custody, packaging, and shipment. WSTF Job Instruction (WJI) ENV-0084, "Environmental Sample Management," provides specific information on sample collection documentation. The WJI contains instructions for sample custody (internal to WSTF and external during shipment), storage, packaging, shipment, delivery tracking, and related recordkeeping. All personnel involved in sample management will follow this procedure.

8.3 Sample Numbering

All samples will be named based on the date and time on which they were collected. Sample names will follow the format:

- YYMMDDTTTT

Where, YY is the two digit year, MM is the two digit month, DD is the two digit day, and TTTT is the four digit sample collection time (military time). For example, a sample collected on November 1, 2012 at 2:15 PM would be identified as "1211011415".

8.4 Chain of Custody

When applicable, sampling operations will be performed per the procedures and requirements outlined in Permit Attachment 12, "Waste Analysis Plan" of the NASA/WSTF Hazardous Waste Operating Permit. Strict chain of custody controls are utilized for all samples collected at WSTF. Each sample will be recorded on a designated chain of custody form or work order that includes chain of custody data. Chain of custody forms are used to track possession of samples from the time of collection through sample analysis and the reporting of analytical results to NASA by on-site and offsite laboratories. Chain of custody forms provide legal documentation of possession throughout the entire sampling and analysis process. Each form will contain the following information as applicable to on-site and off-site laboratories:

- Sample shipment information.
- Unique sample number of each sample.
- Sample type/matrix.
- Sample collection location.
- Number of containers for each sample.
- Required chemical analyses.
- Date of sample shipment.
- Signature(s) with date(s) and time(s) of all personnel involved in sample custody.

8.5 Packaging and Shipment

A chain of custody form is completed for each shipment of samples and is included in the ice chest during shipment or delivery to the analytical laboratory. A copy of the form is retained at WSTF with the shipping documentation. The original chain of custody accompanies the samples to the analytical

laboratory, and is eventually returned with the analytical report from the laboratory to become a part of the permanent sampling and analytical records maintained at WSTF.

9 Quality Control Requirements

Sampling and analysis will be performed in accordance with the instructions provided in this SAP and the analytical methods SW-846 Methods listed in the Table 4. Any deviation that occurs or anomalies that are observed during sampling activities will be annotated in the applicable ETU Closure logbook. Table 5 identifies the QA/QC samples that will be required.

Table 5

QA/QC Samples for the ETU Closure Soils Investigation

QA/QC Sample	Requirements	Minimum Quantity	Analysis
Field Duplicate	1 for every 10 samples collected	9	Hydrazines, VOC, SVOC, Metals, Mercury, Cyanide
Equipment Blank	1 per boring location	46	Hydrazines, VOC, SVOC, Metals, Mercury, Cyanide
Trip Blank	1 per shipping container	TBD	VOC
Method Blanks/Matrix Spikes, Laboratory Duplicates	1 per every 20 samples for all batch runs	8	Hydrazines, VOC, SVOC, Metals, Mercury, Cyanide

Equipment rinsate blanks will be collected and analyzed for VOC, Hydrazines, SVOC, Metals, and Cyanides per WSTF procedures and TPS 200-2HWM-13-A, ETU Closure – Soil Investigation Sampling. Table 4 provides the sample handling, analytical methods, containers, preservation requirements and hold times.

9.1 Blank Samples

Analytical results of field rinsate (equipment) blanks are used to evaluate the adequacy of the equipment decontamination procedures and the possibility of cross-contamination caused by incomplete decontamination of sampling equipment. Field rinsate (equipment) blanks will be collected prior to augering the borehole and collecting samples at a frequency of 1 for each boring location.

Trip blanks will be included with each sample shipment to an off-site laboratory. The analytical results of trip blanks shall be reviewed to evaluate the possibility for environmental contamination introduced during shipping.

9.2 Field Duplicate Samples

Field duplicate samples will be collected at a frequency of 1 for every 10 samples collected. The duplicate sample will be analyzed for the same media and parameters as the primary samples to verify the sampling methods used in the field by sampling personnel. The duplicate sample location will be recorded in the field, but will not be disclosed to the laboratory.

9.3 Laboratory Quality Control Samples

The overall objective for laboratory analysis is to produce data of known and sufficient quality. Appropriate procedures and QC checks will be used so that known and acceptable levels of accuracy and precision are maintained for each data set. All samples will be analyzed by a NELAP-accredited laboratory in accordance with the laboratory quality assurance plan. The use of a NELAP-accredited laboratory ensures that the contract laboratory adheres to standardized analytical protocols and reporting requirements and is capable of producing accurate analytical data.

Method blanks and laboratory quality control samples are prepared and analyzed in accordance with the laboratory's method-specific standard operating procedures. The analytical results of method blanks shall be reviewed to evaluate the possibility of contamination caused by analytical procedures. At a minimum, the laboratory will analyze method blanks and laboratory control samples at a frequency of one in 20 for all batch runs.

10 Waste Management

All wastes generated due to the ETU Closure Soil Investigation will be managed and characterized as indicated in Table 6.

Table 6
Identification of Waste Streams, Management Requirements, and Methods of Characterization

Area	Boring Location Location	Waste Streams	Waste Management	Characterization
800 Area	800-HWDL-01 800-HWDL-07 800-HWDL-02 800-HWDL-08 800-HWDL-03 800-HWDL-09 800-HWDL-04 800-HWDL-10 800-HWDL-05 800-HWDL-11 800-HWDL-06 800-HWDL-12	Soil Cuttings	Non-Hazardous	Investigation Analytical Results
		Decon Water/Rinsate		Waste Sampling (VOC, SVOC, Metals, Cyanide, Hydrazine)
		IDW (PPE, plastic, debris)		AK based on analytical from other two waste streams.
200 Area [a]	200-HWDL-01 200-HWDL-02 200-HWDL-03 200-HWDL-04 200-HWDL-05	Soil Cuttings	Hazardous Pending	Investigation Analytical Results
		Decon Water/Rinsate		Waste Sampling (VOC, SVOC, Metals, Cyanide, Hydrazine)
		IDW (PPE, plastic, debris)		AK based on analytical from other two waste streams.
200	200-HWDL-06 200-HWDL-15	Soil Cuttings	Non-	Investigation Analytical Results

Area	200-HWDL-07 200-HWDL-08 200-HWDL-09 200-HWDL-10 200-HWDL-11 200-HWDL-12 200-HWDL-13 200-HWDL-14	200-HWDL-16 200-HWDL-17 200-HWDL-18 200-HWDL-19 200-HWDL-20 200-HWDL-21 200-HWDL-22	Decon Water/Rinsate	Hazardous	Waste Sampling (VOC, SVOC, Metals, Cyanide, Hydrazine)
			IDW (PPE, plastic, debris)		AK based on analytical from other two waste streams.
ETU	200-ETU-01 200-ETU-02 200-ETU-03 200-ETU-04 200-ETU-05 200-ETU-06	200-ETU-07 200-ETU-08 200-ETU-09 200-ETU-10 200-ETU-11 200-ETU-12	Soil Cuttings	Non-Hazardous	Investigation Analytical Results
			Decon Water/Rinsate		Waste Sampling (VOC, SVOC, Metals, Cyanide, Hydrazine)
			IDW (PPE, plastic, debris)		AK based on analytical from other two waste streams.

a. The boreholes located on the West side of Building 200 are located in an area that overlaps with potential soil contamination from another undefined source. The contaminated was identified during soil vapor gas sampling in the 200 Area. The contaminant of concern is TCE.

Waste samples will be collected from composited decontamination water/rinsate water and analyzed for VOC, Hydrazines, SVOC, Metals, and Cyanides per WSTF procedures and TPS 200-2HWM-13-A, ETU Closure – Soil Investigation Sampling. Table 4 provides the sample handling, analytical methods, containers, preservation requirements and hold times.

11 Assessment

An Environmental Department Representative shall perform a review of this SAP prior to implementation. The ETU Closure logbook and the Chain of Custody will be reviewed at the conclusion of the sampling event. Upon receipt of the analytical data reports from the site laboratories, the reports will be reviewed. Any deviations along with a summary of possible impact shall be noted in a Section 12, Data Review Summary.

12 Data Review Summary

Data Reviewer Title/Position:	
Name:	
Date:	

Notes:

13 References

NASA/WSTF Hazardous Waste Permit No. NM8800019434, December, 2009

40 CFR Part 261 - Identification and Listing of Hazardous Waste

40 CFR Part 268 - Land Disposal Restrictions

SW-846 Test Methods for Evaluating Solid Waste, Physical/Chemical Methods

McCoy's 2010 RCRA Unraveled-Chapter 18 Waste Characterization/Sampling

NMED approved ETU Closure Plan (March, 2012)

NASA WSTF TPS Tracking # 0403

RCRA Waste Sampling Draft Technical Guidance (EPA530-D-02-002), August 2002

Analytical Reports

Figure 2

Soil Sample Locations – 800 HFTA Decon Station #2 and 3

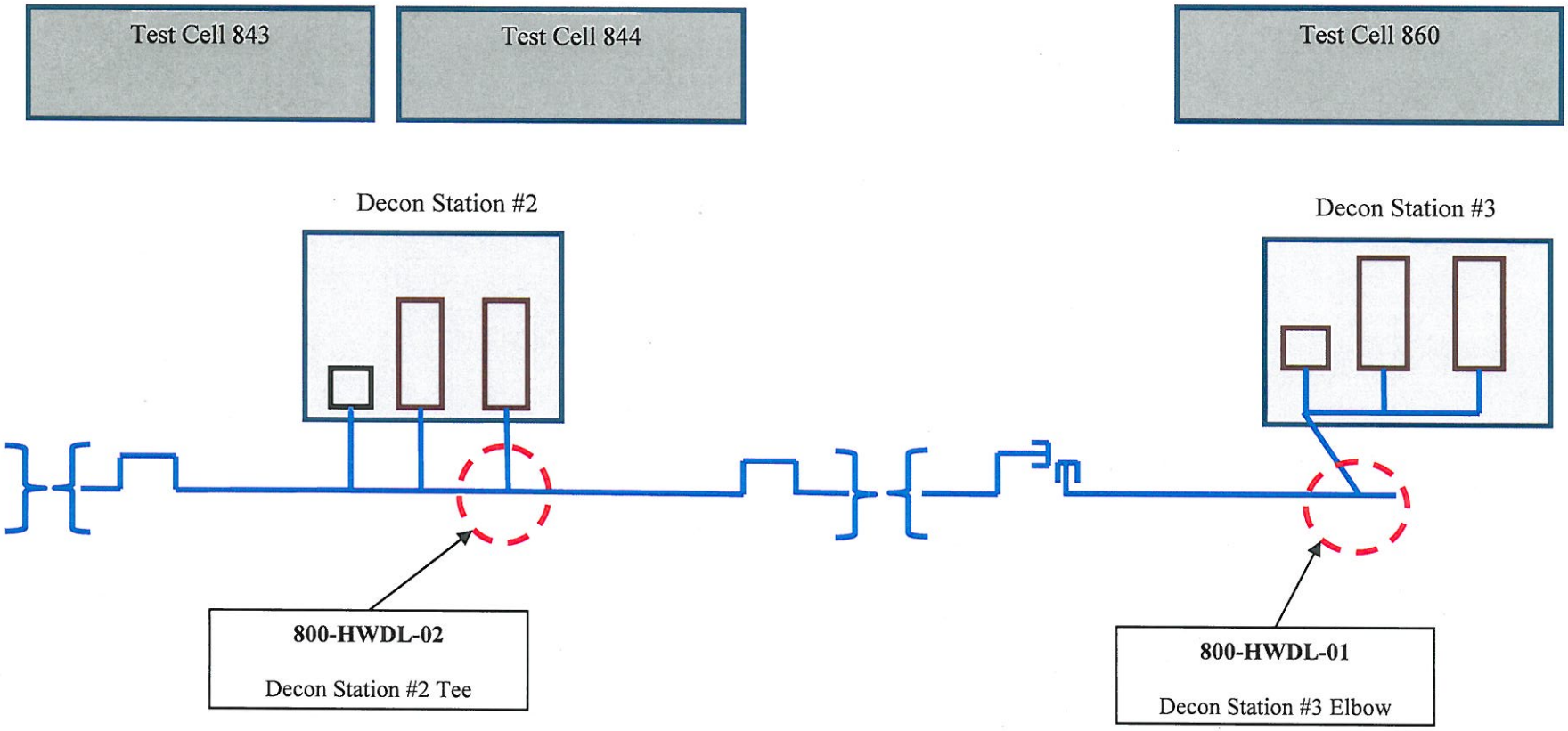


Figure 3

Soil Sample Locations – 800 HFTA Decon Station 1 to Clean Out 2/3

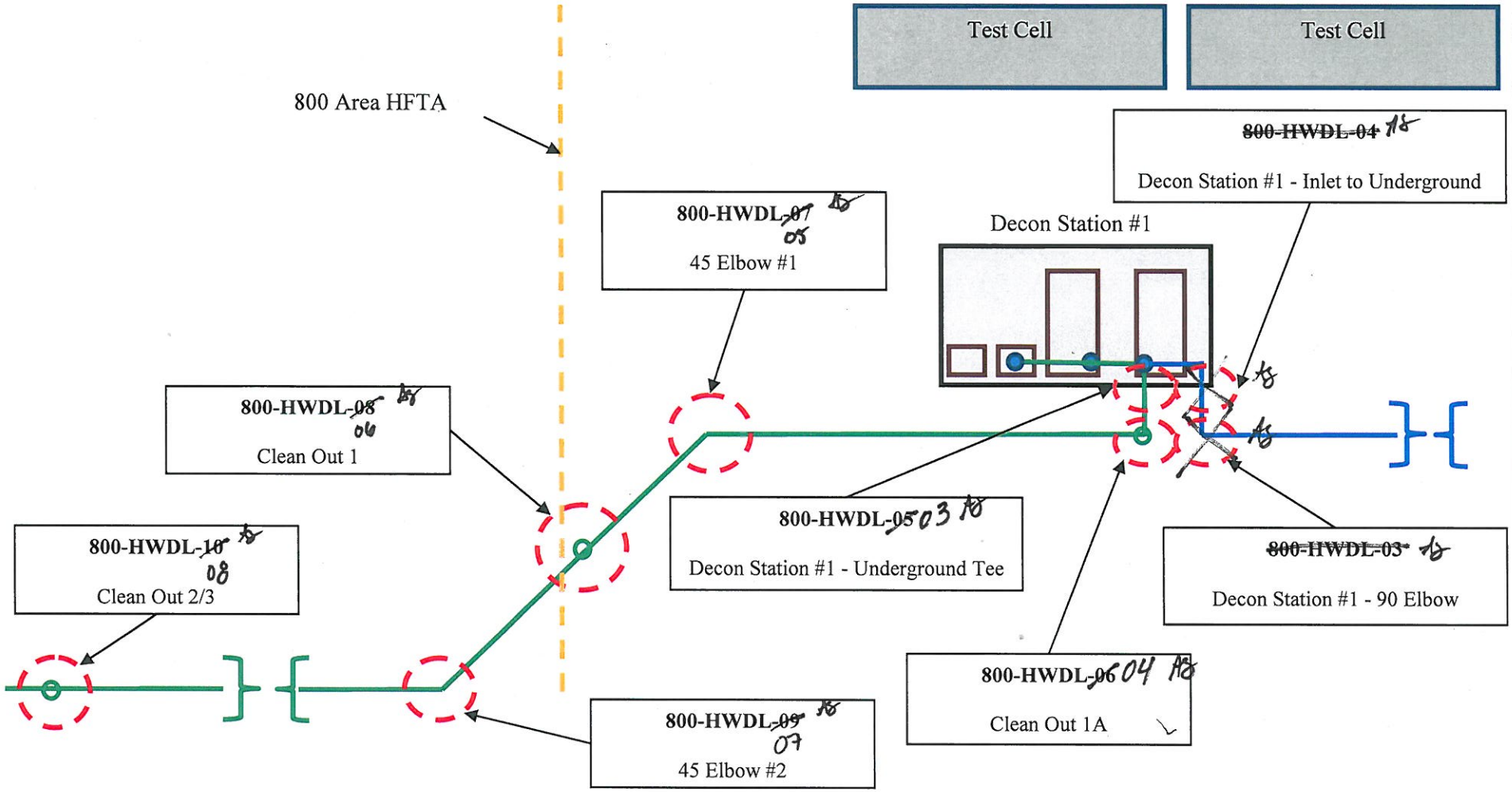


Figure 4

Soil Sample Locations – 803 Laboratory

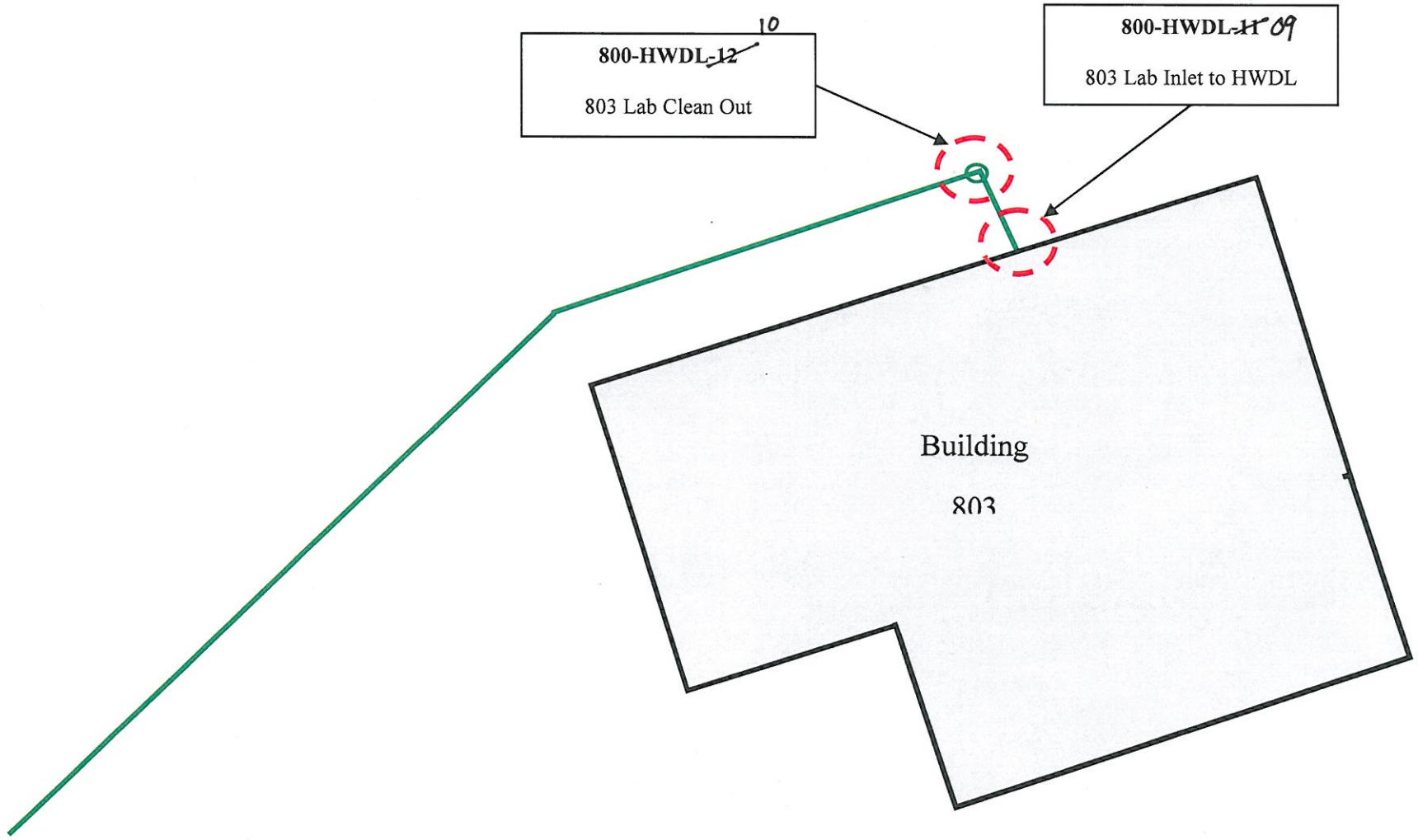


Figure 5

Soil Sample Locations – West Side of Building 200

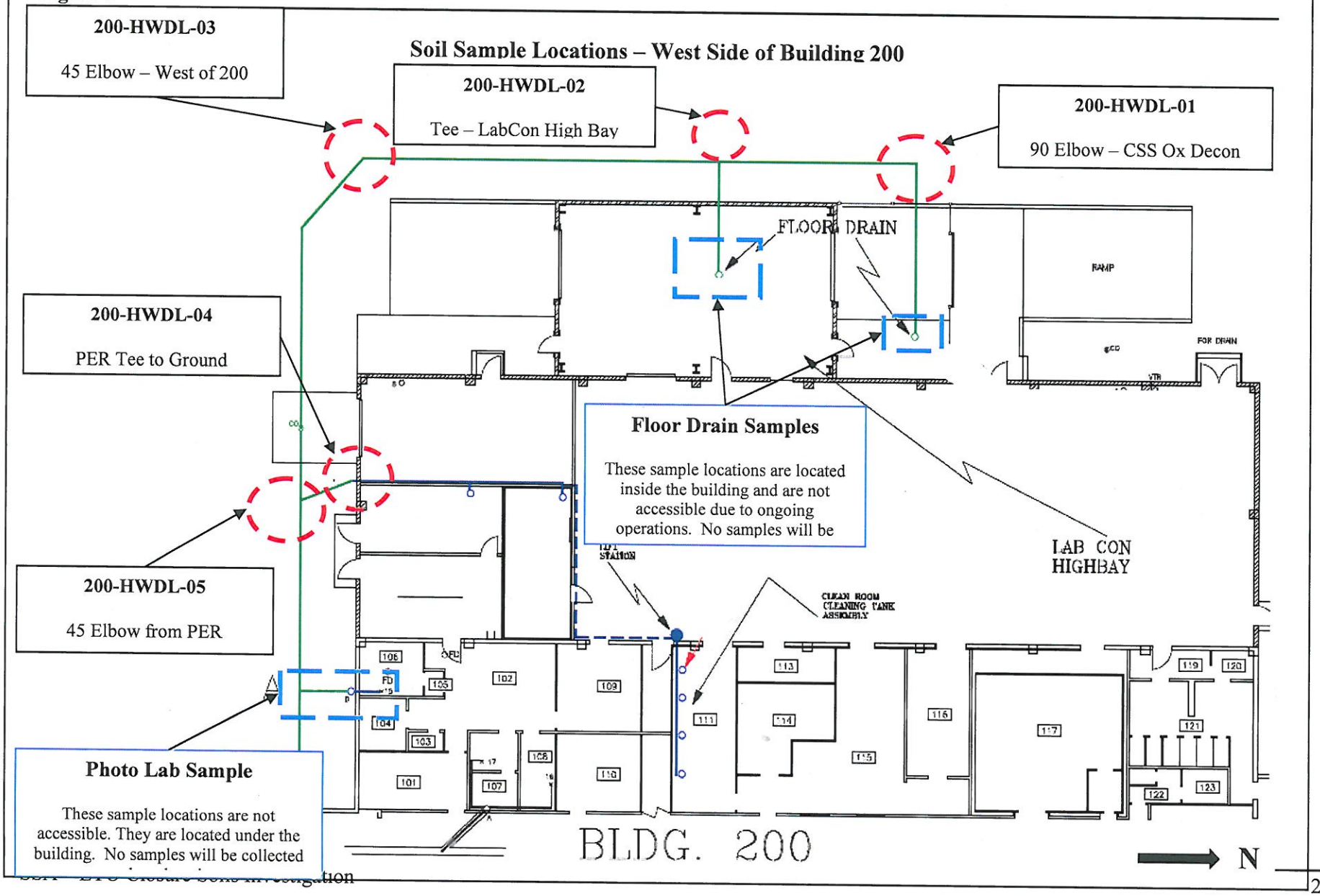


Figure 6

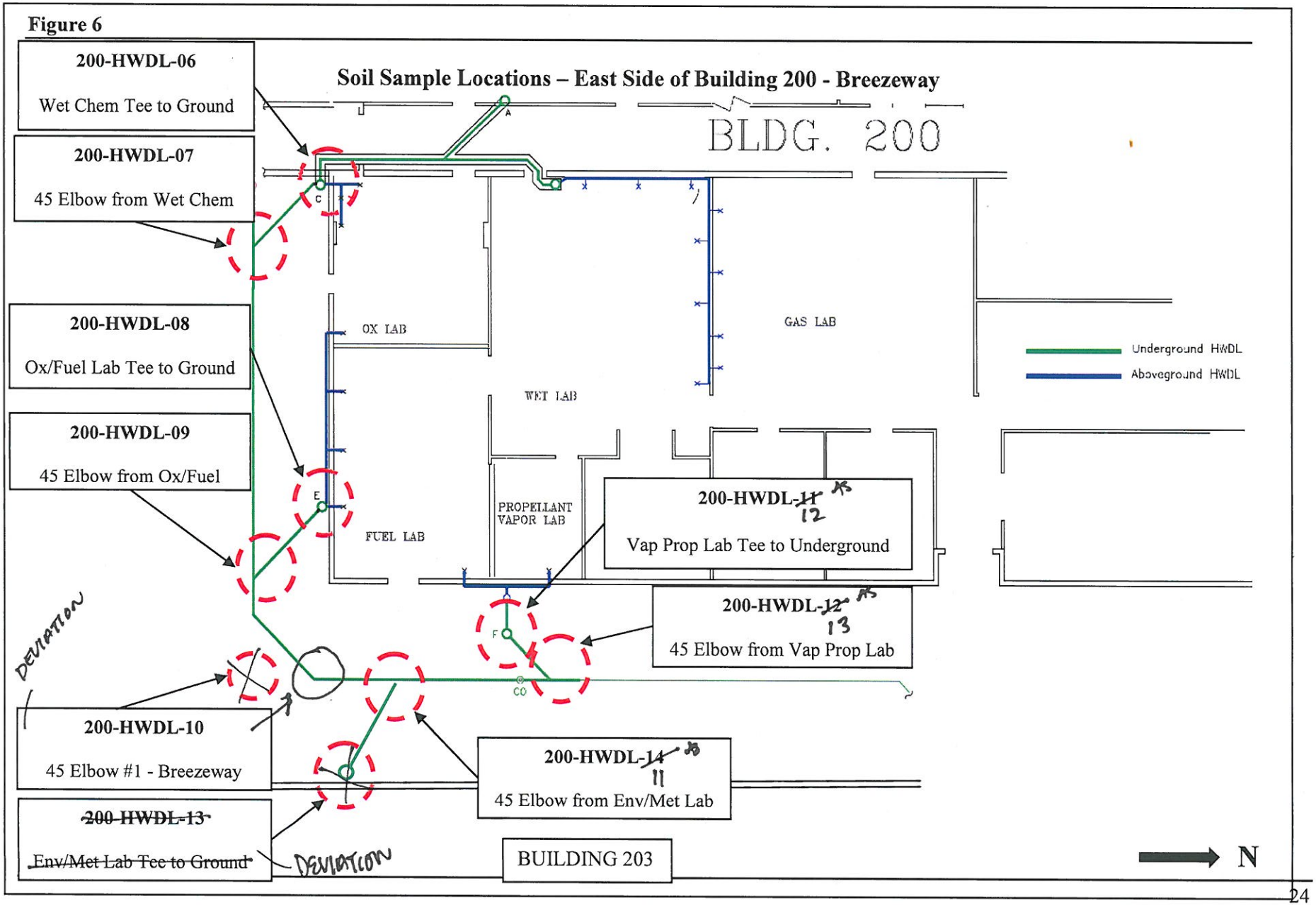

Soil Sample Locations – East Side of Building 200 - Breezeway
200-HWDL-06
Wet Chem Tee to Ground
200-HWDL-07
45 Elbow from Wet Chem
200-HWDL-08
Ox/Fuel Lab Tee to Ground
200-HWDL-09
45 Elbow from Ox/Fuel
200-HWDL-~~11~~ 12 AS
Vap Prop Lab Tee to Underground
200-HWDL-~~12~~ 13 AS
45 Elbow from Vap Prop Lab
200-HWDL-10
45 Elbow #1 - Breezeway
200-HWDL-~~14~~ 11 AS
45 Elbow from Env/Met Lab
~~200-HWDL-13~~
~~Env/Met Lab Tee to Ground~~
DEVIATION
DEVIATION
BUILDING 203
BLDG. 200
OX LAB
GAS LAB
WET LAB
FUEL LAB
PROPELLANT VAPOR LAB
Underground HWDL
Aboveground HWDL
N

Figure 7

Soil Sample Locations – Breezeway and North of Building 203

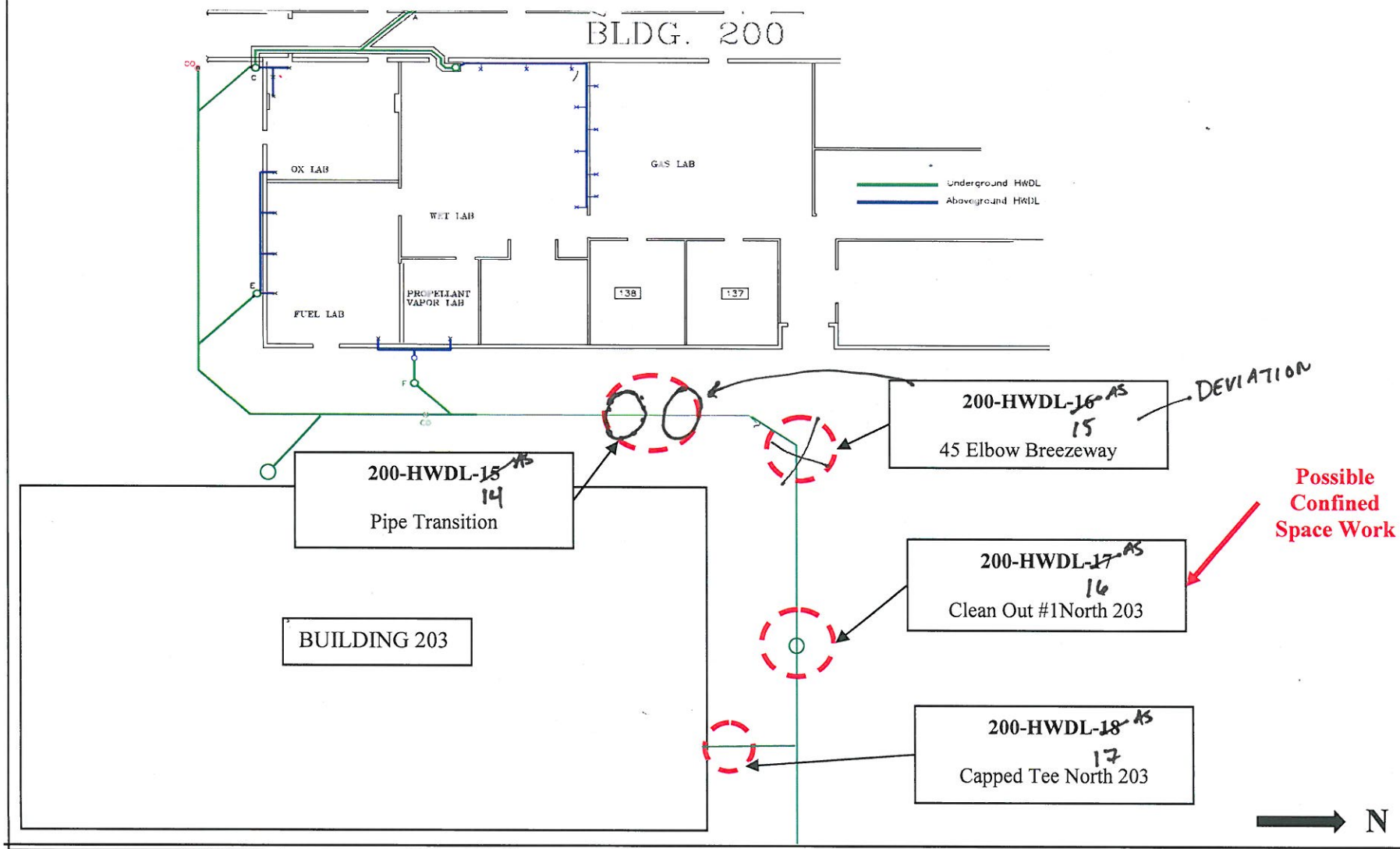


Figure 8

Soil Sample Locations - Sump

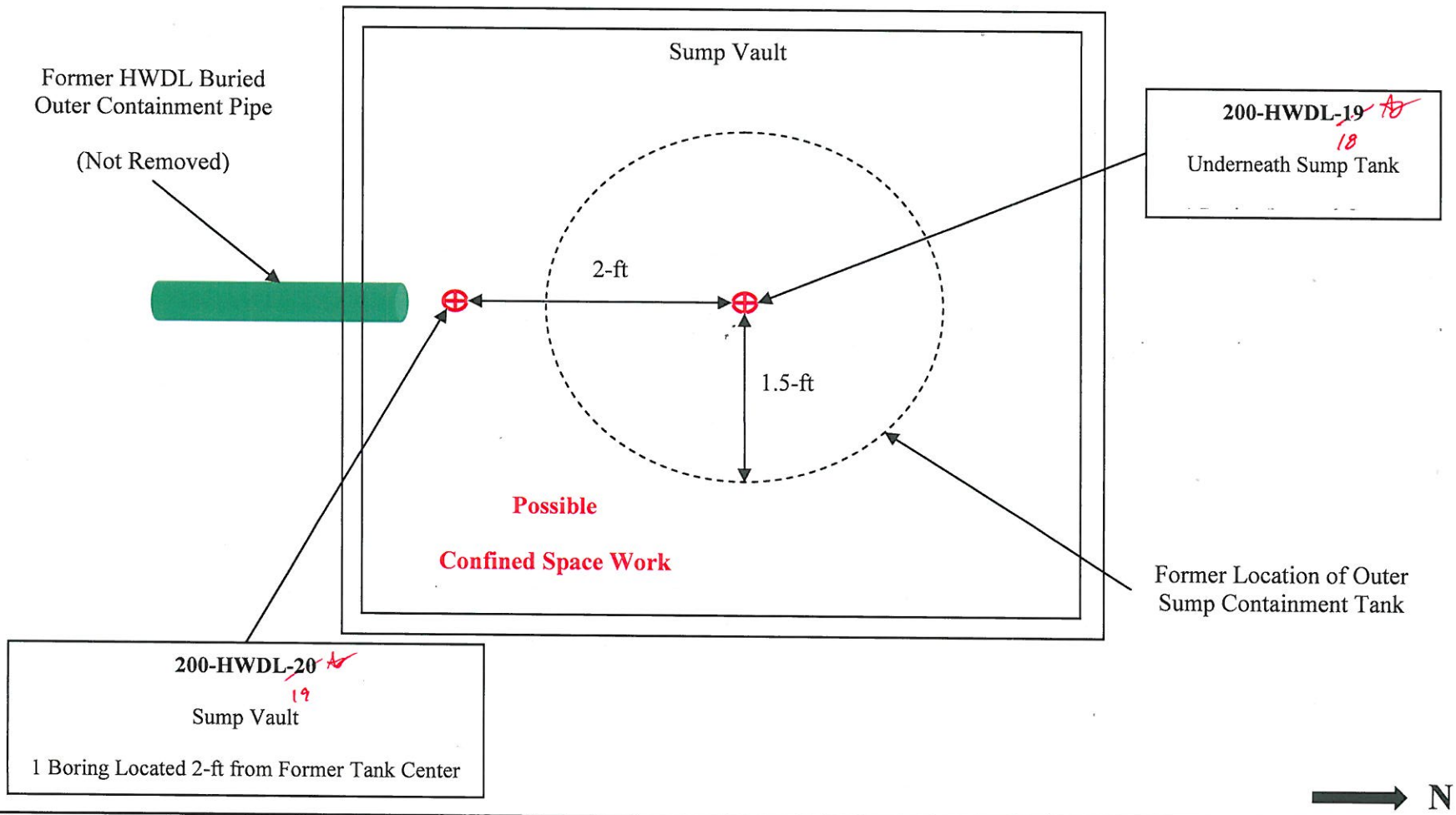


Figure 9

Soil Sample Locations – Sump to ETU

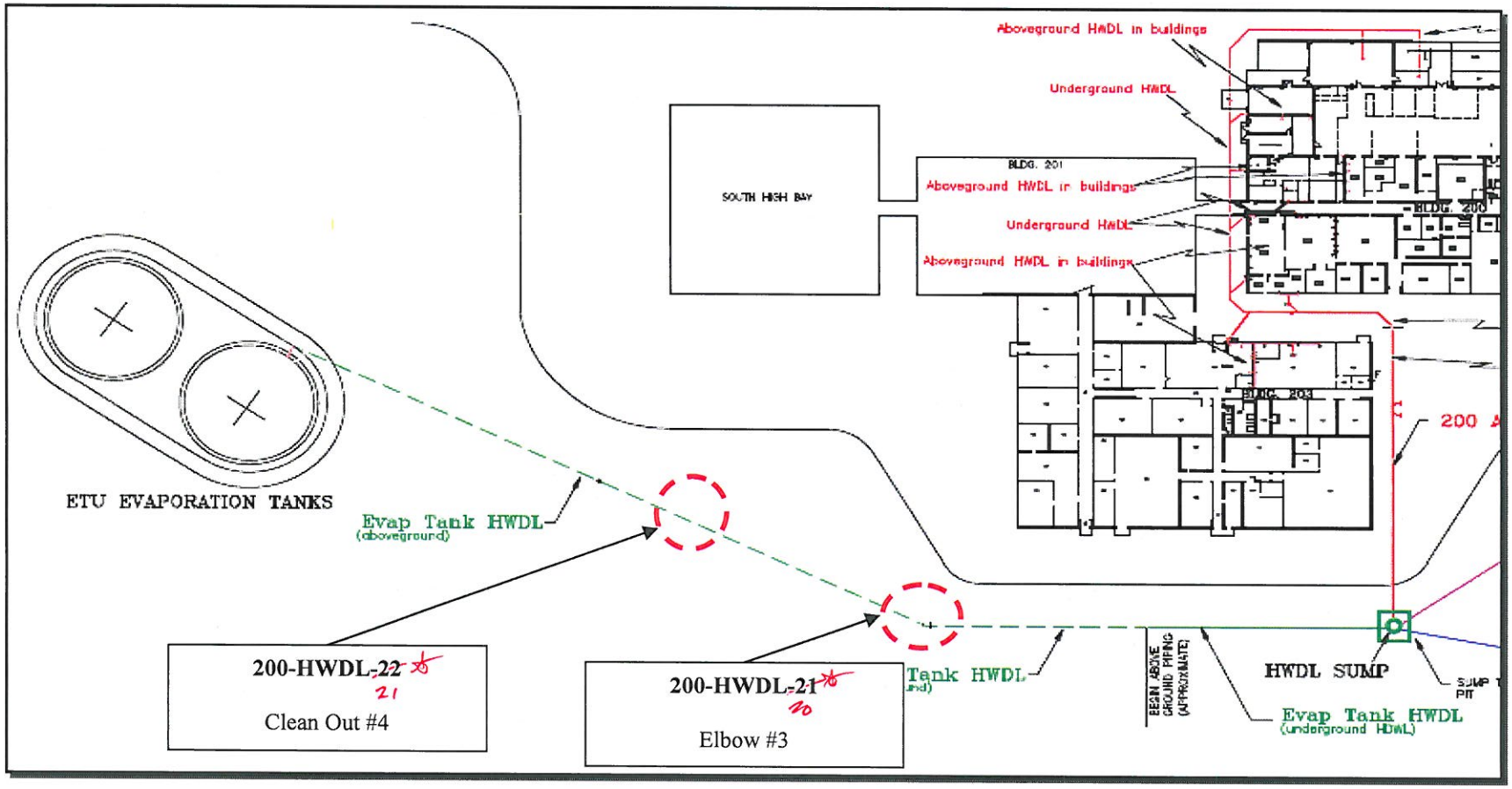
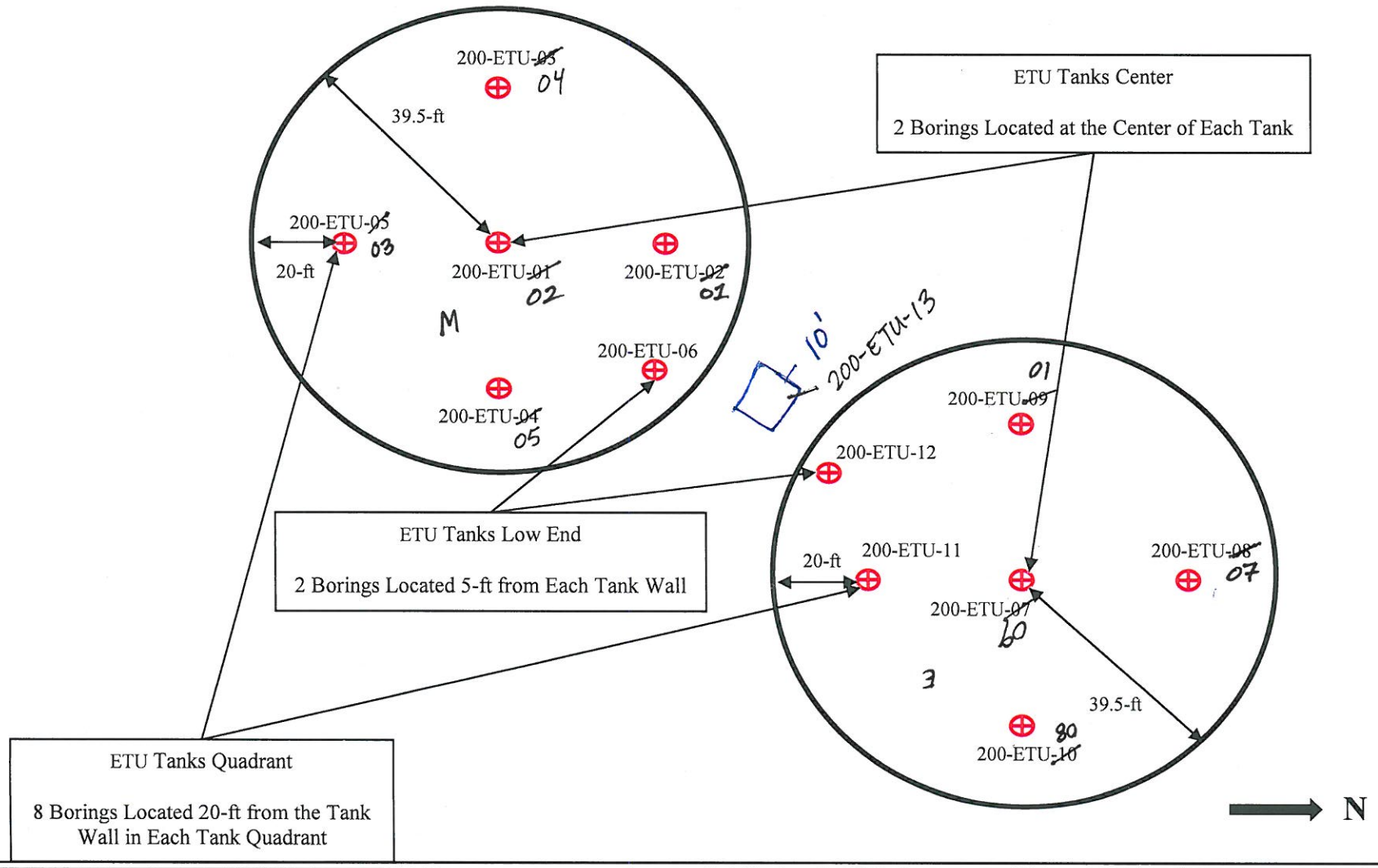


Figure 10

Soil Sample Locations – Underneath ETU Tanks



Appendix A

ETU Closure Soil Investigation Boring and Sampling Instructions

Area	Boring ID No.	Locations Description	Sample Depths	Analytes	Notes
800 HFTA	800-HWDL-01	Decon Station #3 - Elbow	0-1 ft 1-2 ft	Hydrazines, VOC, SVOC, Metals, Glycols, Free Cyanide	Clear gravel and begin boring from soil surface.
	800-HWDL-02	Decon Station #2 - Elbow	0-1 ft 1-2 ft	Hydrazines, VOC, SVOC, Metals, Glycols, Free Cyanide	Clear gravel and begin boring from soil surface.
	800-HWDL-03	Decon Station #1 - 90 Elbow	0-1 ft 1-2 ft	Hydrazines, VOC, SVOC, Metals, Glycols, Free Cyanide	Clear gravel and begin boring from soil surface.
	800-HWDL-04	Decon Station #1 - Inlet to Underground	0-1 ft 1-2 ft	Hydrazines, VOC, SVOC, Metals, Glycols, Free Cyanide	Location is underneath a concrete pad at an active decon station. Step off the boring to the edge of the concrete on the NE side of the pad.
	800-HWDL-05	Decon Station #1 - Underground Tee	0-6 in 1-2 ft	Hydrazines, VOC, SVOC, Metals, Glycols, Free Cyanide	Location is underneath a concrete pad at an active decon station. Requires excavation BY HAND to uncover the HWDL pipe at the edge of the concrete on the east side of the pad south of the previous boring.
	800-HWDL-06	Clean Out 1A Tee	0-6 in 1-2 ft	Hydrazines, VOC, SVOC, Metals, Glycols, Free Cyanide	Excavate BY HAND to uncover the HWDL pipe tee. Boring should be located next to the tee and start at or near the bottom of the pipe.
	800-HWDL-07	45 Elbow #1	0-6 in 1-2 ft	Hydrazines, VOC, SVOC, Metals, Glycols, Free Cyanide	FACILITIES to excavate soil to uncover the 45 Elbow. Boring should be located next to the Elbow and start at or near the bottom of the pipe.
	800-HWDL-08	Clean Out 1 Tee	0-6 in	Hydrazines, VOC, SVOC,	FACILITIES to excavate soil to uncover the Tee. Boring should be located next to the Tee and start at or near the

Area	Boring ID No.	Locations Description	Sample Depths	Analytes	Notes
			1-2 ft	Metals, Glycols, Free Cyanide	bottom of the pipe.
	800-HWDL-09	45 Elbow #2	0-6 in 1-2 ft	Hydrazines, VOC, SVOC, Metals, Glycols, Free Cyanide	FACILITIES to excavate soil to uncover the 45 Elbow. Boring should be located next to the Elbow and start at or near the bottom of the pipe.
	800-HWDL-10	Clean Out 2/3	0-6 in 1-2 ft	Hydrazines, VOC, SVOC, Metals, Glycols, Free Cyanide	FACILITIES to excavate soi to uncover the Tee. Boring should be located next to the Tee and start at or near the bottom of the pipe.
803 Lab	800-HWDL-11	Clean Out Tee	0-6 in 1-2 ft	Hydrazines, VOC, SVOC, Metals, Glycols, Free Cyanide	FACILITIES to excavate soil to uncover the Tee. Boring should be located next to the Tee and start at or near the bottom of the pipe.
	800 HWDL-12	Inlet Tee	0-6 in 1-2 ft	Hydrazines, VOC, SVOC, Metals, Glycols, Free Cyanide	FACILITIES to excavate soil to uncover Tee. Boring should be located next to the Tee and start at or near the bottom of the pipe.
West Side Building 200	200-HWDL-01	90 Elbow - CSS Ox Decon	0-6 in 1-2 ft	Hydrazines, VOC, SVOC, Metals, Glycols, Free Cyanide	Clear gravel and excavate BY HAND to uncover the elbow. Boring should be located next to the Elbow and start at or near the bottom of the pipe.
	200-HWDL-02	Tee Labcon High Bay	0-6 in 1-2 ft	Hydrazines, VOC, SVOC, Metals, Glycols, Free Cyanide	Location is underneath the vacuum pump and shed on the west side of Building 200. Step off to asphalt in front of the shed. FACILITIES to cut minimum 2x2-ft section of asphalt to allow access to soil. Begin boring from soil surface.
	200-HWDL-03	45 Elbows - West of 200	0-6 in 1-2 ft	Hydrazines, VOC, SVOC, Metals, Glycols, Free Cyanide	FACILITIES to excavate soil to uncover Tee. Boring should be located next to the Tee and start at or near the bottom of the pipe.
	200-HWDL-04	PER Tee to Ground	0-6 in	Hydrazines, VOC, SVOC,	FACILITIES to excavate soil to uncover Tee. Boring should be located next to the Tee and start at or near the bottom of

Area	Boring ID No.	Locations Description	Sample Depths	Analytes	Notes
			1-2 ft	Metals, Glycols, Free Cyanide	the pipe.
	200-HWDL-05	45 Elbow from PER	0-6 in	Hydrazines, VOC, SVOC, Metals, Glycols, Free Cyanide	FACILITIES to excavate soil to uncover Elbow. Boring should be located next to the Elbow and start at or near the bottom of the pipe.
			1-2 ft		
	NA	Floor Drain - CSS Ox Decon	0-6 in	NA	SAMPLE POINTS ARE LOCATED UNDER THE BUILDING AND/OR INSIDE THE BUILDING AND ARE NOT ACCESSIBLE. THESE FOUR LOCATIONS WILL NOT BE SAMPLED.
			1-2 ft		
		Floor Drain - Labcon High Bay	0-6 in		
			1-2 ft		
		Photo Lab Tee to Ground	0-6 in		
			1-2 ft		
		45 Elbow from Photo Lab	0-6 in		
			1-2 ft		
Breezeway/ Corridor Between Building 200 and 203	200-HWDL-06	Wet Chem Tee to Ground	0-6 in	Hydrazines, VOC, SVOC, Metals, Glycols, Free Cyanide	FACILITIES to cut concrete and excavate soil to uncover Tee. Boring should be located next to the Tee and start at or near the bottom of the pipe.
			1-2 ft		
	200-HWDL-07	45 Elbow from Wet Chem	0-6 in	Hydrazines, VOC, SVOC, Metals, Glycols, Free Cyanide	FACILITIES to cut concrete and excavate soil to uncover Elbow. Boring should be located next to the Elbow and start at or near the bottom of the pipe.
			1-2 ft		
	200-HWDL-08	Ox/Fuel Lab Tee to Ground	0-6 in	Hydrazines, VOC, SVOC, Metals, Glycols, Free Cyanide	FACILITIES to cut concrete and excavate soil to uncover Tee. Boring should be located next to the Tee and start at or near the bottom of the pipe.
			1-2 ft		

Area	Boring ID No.	Locations Description	Sample Depths	Analytes	Notes
	200-HWDL-09	45 Elbow from Ox/Fuel	0-6 in 1-2 ft	Hydrazines, VOC, SVOC, Metals, Glycols, Free Cyanide	FACILITIES to cut concrete and excavate soil to uncover Elbow. Boring should be located next to the Elbow and start at or near the bottom of the pipe.
	200-HWDL-10	45 Elbows #1 - Breezeway	0-6 in 1-2 ft	Hydrazines, VOC, SVOC, Metals, Glycols, Free Cyanide	FACILITIES to cut minimum 2x2-ft section of asphalt next to the leak detection vault to allow access to soil. Begin boring from soil surface.
	200-HWDL-11	Vap Prop Lab Tee to Ground	0-6 in 1-2 ft	Hydrazines, VOC, SVOC, Metals, Glycols, Free Cyanide	FACILITIES to cut asphalt and excavate soil to uncover Tee. Boring should be located next to the Tee and start at or near the bottom of the pipe.
	200-HWDL-12	45 Elbow from Vap Prop	0-6 in 1-2 ft	Hydrazines, VOC, SVOC, Metals, Glycols, Free Cyanide	FACILITIES to cut asphalt and excavate soil to uncover Elbow. Boring should be located next to the Elbow and start at or near the bottom of the pipe.
	200-HWDL-13	Env/Met Lab Tee to Ground	0-6 in 1-2 ft	Hydrazines, VOC, SVOC, Metals, Glycols, Free Cyanide	FACILITIES to cut concrete and excavate soil to uncover Tee. Boring should be located next to the Tee and start at or near the bottom of the pipe.
	200-HWDL-14	45 Elbow from Env/Met	0-6 in 1-2 ft	Hydrazines, VOC, SVOC, Metals, Glycols, Free Cyanide	FACILITIES to cut concrete and excavate soil to uncover Elbow. Boring should be located next to the Elbow and start at or near the bottom of the pipe.
	200-HWDL-15	PipeTransition	0-6 in 1-2 ft	Hydrazines, VOC, SVOC, Metals, Glycols, Free Cyanide	FACILITIES to cut asphalt and excavate soil to uncover Pipe. Boring should be located next to the Pipe and start at or near the bottom of the pipe.
	200-HWDL-16	45 Elbows #2 - Breezeway	0-6 in 1-2 ft	Hydrazines, VOC, SVOC, Metals, Glycols, Free Cyanide	FACILITIES to cut asphalt and excavate soil to uncover Elbow. Boring should be located next to the Elbow and start at or near the bottom of the pipe.
North Side of Building	200-HWDL-17	Clean Out North 203	0-6 in	Hydrazines, VOC, SVOC,	Located under manhole marked as confined space. Pit has a dirt bottom. Boring should be located next to the Clean Out

Area	Boring ID No.	Locations Description	Sample Depths	Analytes	Notes
203			1-2 ft	Metals, Glycols, Free Cyanide	Tee and should start at or near the bottom of the pipe. Some minor excavation BY HAND may be required.
	200-HWDL-18	Capped Line Tee North 203	0-6 in 1-2 ft	Hydrazines, VOC, SVOC, Metals, Glycols, Free Cyanide	FACILITIES to cut minimum 2x2-ft section of asphalt next to the valve pit to allow access to soil. Begin boring from soil surface.
Sump Vault	200-HWDL-19	Center	0-6 in 1-2 ft	Hydrazines, VOC, SVOC, Metals, Glycols, Free Cyanide	Begin boring at the center of the sump vault in the hole left after the sump tanks were removed. This work is possibly CONFINED SPACE.
	200-HWDL-20	2-ft from Center (Bias to Outlet)	0-6 in 1-2 ft	Hydrazines, VOC, SVOC, Metals, Glycols, Free Cyanide	Begin boring approximately 2-ft from the center of the sump fault and bias it to the location of the discharge pipe. NOTE: The outer casing of the discharge pipe is still located in the vault on the south side. This work is possibly CONFINED SPACE.
East of Building 203 Along Pillers	200-HWDL-21	Elbow #3	0-6 in 1-2 ft	Hydrazines, VOC, SVOC, Metals, Glycols, Free Cyanide	Clear gravel and begin boring from soil surface.
	200-HWDL-22	Clean Out 4	0-6 in 1-2 ft	Hydrazines, VOC, SVOC, Metals, Glycols, Free Cyanide	Clear gravel and begin boring from soil surface.
ETU West Tank	200-ETU-01	Center	0-1 ft 1-2 ft	Hydrazines, VOC, SVOC, Metals, Glycols, Free Cyanide	DRILLING SUBCONTRACTOR to drill borings and provide cuttings for sampling by Environmental Technicians.
	200-ETU-02	20-ft from Tank Wall NE	0-1 ft 1-2 ft	Hydrazines, VOC, SVOC, Metals, Glycols, Free Cyanide	

Area	Boring ID No.	Locations Description	Sample Depths	Analytes	Notes
	200-ETU-03	20-ft from Tank Wall NW	0-1 ft	Hydrazines, VOC, SVOC, Metals, Glycols, Free Cyanide	
			1-2 ft		
	200-ETU-04	20-ft from Tank Wall SE	0-1 ft	Hydrazines, VOC, SVOC, Metals, Glycols, Free Cyanide	
			1-2 ft		
	200-ETU-05	20-ft from Tank Wall SW	0-1 ft	Hydrazines, VOC, SVOC, Metals, Glycols, Free Cyanide	
			1-2 ft		
	200-ETU-06	5-ft from Tank Wall at Low End	0-1 ft	Hydrazines, VOC, SVOC, Metals, Glycols, Free Cyanide	
			1-2 ft		
			9-10 ft		
ETU East Tank	200-ETU-07	Center	0-1 ft	Hydrazines, VOC, SVOC, Metals, Glycols, Free Cyanide	DRILLING SUBCONTRACTOR to drill borings and provide cuttings for sampling by Environmental Technicians.
			1-2 ft		
	200-ETU-08	20-ft from Tank Wall NE	0-1 ft	Hydrazines, VOC, SVOC, Metals, Glycols, Free Cyanide	
			1-2 ft		
	200-ETU-09	20-ft from Tank Wall NW	0-1 ft	Hydrazines, VOC, SVOC, Metals, Glycols, Free Cyanide	
			1-2 ft		
	200-ETU-10	20-ft from Tank Wall SE	0-1 ft	Hydrazines, VOC, SVOC, Metals, Glycols, Free Cyanide	
			1-2 ft		

Area	Boring ID No.	Locations Description	Sample Depths	Analytes	Notes
	200-ETU-11	20-ft from Tank Wall SW	0-1 ft	Hydrazines, VOC, SVOC, Metals, Glycols, Free Cyanide	
			1-2 ft		
	200-ETU-12	5-ft from Tank Wall at Low End	0-1 ft	Hydrazines, VOC, SVOC, Metals, Glycols, Free Cyanide	
			1-2 ft		
			9-10 ft		

Appendix B

Constituents of Concern (COC's) for the HWDL

CAS #	CONSTITUENT	ANALYSIS
57-14-7	1,1 - Dimethylhydrazine	HPLC
540-73-8	1,2-Dimethylhydrazine	HPLC
302-01-2	Hydrazine	HPLC
60-34-4	Monomethylhydrazine	HPLC
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	VOC - 8260
78-93-3	2-Butanone (MEK)	VOC - 8260
67-64-1	Acetone	VOC - 8260
71-43-2	Benzene	VOC - 8260
108-94-1	Cyclohexanone	VOC - 8260
100-41-4	Ethyl Benzene	VOC - 8260
127-18-4	Tetrachloroethene (PCE)	VOC - 8260
108-88-3	Toluene	VOC - 8260
79-01-6	Trichloroethene (TCE)	VOC - 8260
75-69-4	Trichlorofluoromethane (Freon 11)	VOC - 8260
1330-20-7	Xylene	VOC - 8260
106-50-3	1,4-Phenylenediamine	SVOC - 8270
62-53-3	Analine	SVOC - 8270
100-51-6	Benzyl Alcohol	SVOC - 8270
84-74-2	Di-n-n-butyl phthalate	SVOC - 8270
91-20-3	Naphthalene	SVOC - 8270
62-75-9	N-Nitrosodimethylamine (NDMA)	SVOC - 8270
108-95-2	Phenol	SVOC - 8270
7440-36-0	Antimony	Metals - 6010

7440-38-2	Arsenic	Metals - 6010
7440-39-3	Barium	Metals - 6010
7440-41-7	Beryllium	Metals - 6010
7440-43-9	Cadmium	Metals - 6010
7440-47-3	Chromium	Metals - 6010
65357-62-2	Copper	Metals - 6010
7439-92-1	Lead	Metals - 6010
7440-02-0	Nickel	Metals - 6010
7782-49-2	Selenium	Metals - 6010
7440-22-0	Silver	Metals - 6010
7440-62-2	Vanadium	Metals - 6010
7440-66-6	Zinc	Metals - 6010
7439-97-6	Mercury	Mercury - 7470
57-12-5	Cyanides (Amenable)	Cyanides - 9012
57-12-5	Cyanides (Total)	Cyanides - 9012

Appendix H
ETU Soil Investigation Fieldnotes

ETU Soil Investigation Images

800 Area HWDL -05: Soil Collection

800 Area HWDL-05: Soil Retrieval

800 Area HWDL -05: HWDL Inspection

800 Area HWDL-05: Soil Inspection

200 Area HWDL Sump: Soil Retrieval

200 Area HWDL Sump: Soil Inspection

200 Area HWDL Sump: Maximum Depth

200 ETU -06: Soil Retrieval

200 ETU -06: Borehole Depth Reached

200 ETU -06: Soil Inspection

Project ETU SOIL INVESTIGATION Notebook No. 2

Continues from Page X

DATE: FEBRUARY 19, 2013
TIME: 0800 HRS
PERSONNEL: A. SANCHEZ, S. PORTILLO, F. GALLEGOS, A. MONTES
LOCATION: 800 HFTA, DECON. STATION #1, #2, #3
WEATHER: CLEAR, SUNNY, SMALL BREEZE, ~43°
WORK AUTHORIZATION: ETU CLOSURE HASP ADDENDUM, TPS 102488, JHA HW-053, SAP 2013-006

DECON. STATION # 3

0800 SAFETY TAILGATE BRIEFING: TOOL USE SAFETY, ENVIRONMENTAL HAZARDS (SPIDERS, SNAKES, etc.), TOOL USE ERGONOMICS, WEATHER ISSUES, HFTA SAFETY ISSUES.
0820 FILLED IN BORE LOG FORMS (PHOTOS, OBSERVATIONS, INSPECTION, etc.)
0835 EQUIPMENT BLANK RINSATE SAMPLE ON SHOVEL, AUGER BIT, SAMPLE SPOON, SAMPLE BOWL USING DI WATER.
0846 BEGAN EQUIPMENT BLANKS SAMPLING CARBOY #5

SAMPLE ID#	ANALYSIS	LOT #	CONTAINER	PRESERVATIVE	LAB	MATRIX
1302190847 EB	HYDRAZINE	0120601X	500mL AMBER	ICE	T.A.-CO	A
1302190848-0850 EB	VOA	0127101X	3-40 mL CLEAR	HCl ~~Sodium Bisulfate~~ ~~Methanol~~	T.A.-GA	A
1302190851-52 EB	SVOA	0210401X	2-1 L AMBER	ICE	T.A.-GA	A
1302190853 EB	METALS	0321 ~~1B0~~ 301X	250mL PLASTIC	HNO_3	T.A.-GA	A
1302190854 EB	CYANIDES	0311201V	250 mL PLASTIC	NaOH	T.A.-GA	A

0907 BEGAN SOIL BORING WITH HAND AUGER TO A DEPTH OF 1 FOOT (1st 6").

0914 FILLED IN BORE LOG FORM (SOIL DESCRIPTION, PHOTOS, INSPECTION, ETC.)
(a) = FIRST DEPTH (0-6")

SAMPLE ID#	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1302190916 (a)	HYDRAZINE	0310401X	4oz AMBER	ICE	T.A.-CO	S
1302190917 (a)	VOA	0301801X	3-40mL CLEAR	Methanol	T.A.-GA	S
1302190918 (a)	SVOA	0610401X	8oz CLEAR	ICE	T.A.-GA	S
1302190919 (a)	Metals	0310401X	4oz AMBER	ICE	T.A.-GA	S
1302190920 (a)	Cyanides	0310401X	4oz AMBER	ICE	T.A.-GA	S
1302190917 (a)	VOA	117139	40mL CLEAR	$NaHSO_3$	T.A.-GA	S
1302190917 (a)	VOA	117139	40 mL CLEAR	SOBI	T.A.-GA	S

0933 SECOND EQUIPMENT RINSE BEFORE NEXT DEPTH - DID NOT USE ALCONOX TO RINSE
0940 BEGAN SOIL BORING WITH HAND AUGER TO A DEPTH OF 2 FEET (2nd SOIL SAMPLE).
0951 FILLED IN BORE LOG FORM (SOIL DESCRIPTION, PHOTOS, INSPECTION, ETC.)

Continued on Page X 20

Read and Understood By

Signed: A. Sanchez Date: 2/20/13 Signed: Date:

Project ETU SOIL INVESTIGATION Notebook No. 2

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SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERVATIVE	LAB	MATRIX
~~1302095~~ AS						
1302190954 (b)	HYDRAZINE	0310401X	4oz AMBER	ICE	T.A.- CO	S
1302190955 (b)	VOA	117139	40mL CLEAR	SOBI	T.A.- GA	S
1302190955 (b)	VOA	117139	40mL CLEAR	SOBI	T.A.- GA	S
1302190955 (b)	VOA	DE695	40mL CLEAR	MeOH	T.A.- GA	S
1302190956 (b)	SVOA	0610401X	8oz CLEAR	ICE	T.A.- GA	S
1302190957 (b)	METALS	0310401X	4oz AMBER	ICE	T.A.- GA	S
1302190958 (b)	CYANIDES	0310401X	4oz AMBER	ICE	T.A.- GA	S

(b) = SECOND DEPTH (1'-2')

1003 EQUIPMENT RINSE PRIOR TO NEXT HOLE (HWDL-002)

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERVATIVE	LAB	MATRIX
1302191009 EB	HYDRAZINE	0120601X	500mL AMBER	ICE	T.A.-CO	A

1016 ~~CLOSED~~ CLEANED UP WORK SITE. GENERATED 1.5 GALLONS OF RINSATE WASTE, 1/2 GALLON DEBRIS WASTE.

1130 SENT FIRST TWO HYDRAZINE SAMPLES TO T.A.-CO. BROKE FOR LUNCH.

1400 RETURNED TO DECON. STATION #2. PREPARING TO TAKE EQUIPMENT RINSE SAMPLES.

EQUIPMENT BLANK RINSATE SAMPLES

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERVATIVE	LAB	MATRIX
1302191410 EB	VOA	0127101X	40mL CLEAR	HCl	T.A.-GA	A
1302191410 EB	VOA	"	40mL CLEAR	HCl	T.A.-GA	A
1302191410 EB	VOA	"	40mL CLEAR	HCl	T.A.-GA	A
1302191411 EB	SVOA	0210401X	2-1LITER AMBER	ICE	T.A.-GA	A
1302191412 EB	METALS	0321301X	250mL PLASTIC	HNO_3	T.A.-GA	A
1302191413 EB	CYANIDES	0311201V	250mL PLASTIC	NaOH	T.A.-GA	A

1430 BEGAN HAND AUGERING FOR FIRST DEPTH (0-6") AND COLLECTING SOIL SAMPLES.

3/5/13

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SAMPLE ID#	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
130219 1446 (a)	HYDRAZINE	~~0713~~ 0310401X	4oz AMBER	ICE	T.A.-CO	S
130219 1447 (a)	VOA	DE695	40ML CLEAR	MeOH	T.A.-GA	S
130219 1448 (a)	SVOA	0610401X	8oz CLEAR	ICE	T.A.-GA	S
130219 1449 (a)	METALS	0310401X	4oz AMBER	ICE	T.A.-GA	S
130219 1450 (a)	CYANIDES	0310401X	4oz AMBER	ICE	T.A.-GA	S
130219 1447 (a)	VOA	117139	40mL CLEAR	SOBI	800 HFTA-02	S
130219 1447 (a)	VOA	117139	"	SOBI	T.A.-GA	S

(a) = FIRST DEPTH (0-6")

1500 FILLED IN BORE LOG FORM FOR 800-HWDL-002. NO SOIL STAINING OBSERVED, NO MOISTURE OBSERVED.

1505 ~~1515~~ AS BEGAN HAND AUGERING FOR SECOND DEPTH (1'-2') AND COLLECTING SOIL SAMPLES.

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
130219 1509 (b)	HYDRAZINE	0310401X	4oz AMBER	ICE	T.A.-GO	S
130219 1510 (b)	VOA	DE695	40mL CLEAR	MeOH	T.A.-GA	S
130219 1511 (b)	SVOA	0610401X	8oz CLEAR	ICE	T.A.-GA	S
130219 1512 (b)	METALS	0310401X	4oz AMBER	ICE	T.A.-G.A.	S
130219 1513 (b)	CYANIDES	0310401X	4oz AMBER	ICE	800 HFTA 02	S
130219 1510 (b)	VOA	117139	40mL CLEAR	SOBI	T.A.-G.A.	S
130219 1510 (b)	VOA	117139	"	SOBI	T.A.-G.A.	S

(b) = SECOND DEPTH (1'-2')

1521 FILLED IN BORE LOG FORM FOR SECOND DEPTH OF 800HWDL-002.

1525 DECONTAMINATED SOIL EQUIPMENT. COVERED UP BORE HOLE

1530 LEFT WORK SITE 800 HFTA FOR THE DAY.

1535 DISPOSED OF DECON. WATER, DEBRIS INTO S.A.A. NEAR BLDG. 203.

AS 2/19/13

Continued on Page ~~X~~

Read and Understood By

Signed 2/20/13 Date Signed Date

DATE: FEBRUARY 20, 2013
PERSONNEL: A. SANCHEZ, S. PORTILLO, F. GALLEGOS, A. MONTES
LOCATION: 800 HFTA DECON. STATION # 1
WEATHER: WINDY, COLD, ~25°F, CLEAR
WORK AUTHORIZATION: ETU CLOSURE PLAN, TPS102488, JHA HW-053, SAP 2013-006

0740 TAILGATE SAFTY BRIEFING WITH ENV. TECHNICIANS.
- REVIEWED DAILY WORK HAZARDS
- LESSONS LEARNED

0800 DEMOBILIZED, SET UP WORK AREA, POSTED CAUTION TAPE FOR EXCLUSION ZONE.

0809 BEGAN SHOVELING/EXCAVATING 800 HWDL-003 -
* NOTE: DEVIATION FROM SAP/ETU CLOSURE PLAN; 800 HWDL 005 & 006 WILL NOW BE 800 HWDL 003 & 004. AFTER REVIEW OF THE PROXIMITY OF THE 4 SEPARATE HOLES, 2 SAMPLES WOULD BE REPRESENTATIVE OF THE 4 HOLES DUE TO THE CLOSE LOCATION. NOTE THE SAP DEVIATION.

0817 LOCATED 800 HWDL-003 NEAR THE OUTPUT OF THE SINK LOCATIONS. DEPTH OF LOCATION IS 20" TO TOP OF HWDL.

0824 BEGINNING EQUIPMENT RINSATE + TAKING EQUIPMENT BLANK SAMPLES.
CARBOY #5

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1302200830	HYDRAZINE	0120601X	500mL AMBER	ICE	T.A.-CO	A
1302200831	VOA	0127101X	3-40mL CLEAR	HCL	T.A.-GA	A
1302200832	SVOA	0210401X	2-1L AMBER	ICE	"	A
1302200833	METALS	0321301X	250mL PLASTIC	HNO_3	800 HFTA 03	A
1302200834	CYANIDES	0311201V	250mL PLASTIC	NaOH	"	A

0850 BEGAN HAND AUGERING BOREHOLE 800 HWDL-03 BELOW HWDL LEVEL. COMPLETED BORE LOG FORMS. COLLECTED SOIL SAMPLES
(a) = FIRST DEPTH (0-6")

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1302200859 (a)	HYDRAZINE	0310401X	4oz AMBER	ICE	T.A.-CO.	S
1302200900 (a)	VOA	DE695	40mL CLEAR	MeOH	T.A.-GA.	S
1302200900 (a)	VOA	117139	40mL CLEAR	NaBS	T.A.-GA.	S
1302200900 (a)	VOA	117139	40mL CLEAR	NaBS	800 HFTA 03	S
1302200901 (a)	SVOA	0610401X	8oz CLEAR	ICE	"	S
1302200902 (a)	METALS	0310401X	4oz AMBER	ICE	"	S
1302200903 (a)	CYANIDES	0310401X	4oz AMBER	ICE	"	S

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Project ETU SOIL INVESTIGATION Notebook No. 2

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0920 TAKE A BREAK FROM WIND.

0940 START HAND AUGERING 800 HWDL-03 FOR SECOND DEPTH (1'-2') + COLLECTING SOIL SAMPLES. COMPLETED BORE LOG FORM FORM FOR SOIL DESCRIPTION.

(b) = SECOND DEPTH (1'-2')

SAMPLE ID #	ANALYSIS	LOT #	PRESERV.	CONTAINER	LAB	MATRIX
1302200958 (b)	HYDRAZINE	0310401X	4oz AMBER	ICE	T.A.-CO	S
1302200959 (b)	VOA	DE695	40mL CLEAR	MeOH	T.A.-GA	S
1302200959 (b)	VOA	117139	40mL CLEAR	NaBS	T.A.-GA	S
1302200959 (b)	VOA	117139	40mL CLEAR	NaBS	T.A.-GA	S
1302201000 (b)	SVOA	0610401X	8oz CLEAR	ICE	T.A.-GA	S
1302201001 (b)	METALS	0310401X	4oz AMBER	ICE	800 HFTA 03	S
1302201002 (b)	CYANIDES	0310401X	4oz AMBER	ICE	T.A.-GA	S

1030 CLEANED UP WORK-SITE, RINSED AUGERING EQUIPMENT + PLACED PLASTIC COVERING OVER EQUIPMENT. DUE TO HIGH WINDS WORK WAS POSTPONED FOR TOMORROW. SAMPLES WITH LABELS WILL BE SHIPPED TOMORROW EXCEPT FOR (A) HYDRAZINES.

1045 WORKED ON SAMPLE COC'S + PLACED INTO COOLERS FOR SHIPMENT.

1130 SAMPLES SHIPPED.

AS 2/20/13

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Project ETU SOIL INVESTIGATION Notebook No. 2

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DATE: FEBRUARY 21, 2013
PERSONNEL: A. SANCHEZ, S. PORTILLO, A. MONTES, F. GALLEGOS
LOCATION: 800 HFTA, DECON. STATION #1
WEATHER: COLD, SLIGHTLY BREEZY, ~27°F
WORK AUTHORIZATION: ETU CLOSURE PLAN, TPS 102488, JHA-HW-053, SAP 2013-006

0745 TAILGATE SAFETY BRIEFING WITH ENV. TECHS.
- COLD WEATHER
- LESSONS LEARNED
- GOAL FOR THE DAY: 800 HWDL 04-06

0800 DEMOBILIZED, SET-UP WORK AREA, POSTED CAUTION TAPE FOR EXCLUSION ZONE.

0805 BEGINNING EQUIPMENT RINSATE FOR BOREHOLE EQUIPMENT.

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERVE	LAB	MATRIX
130221 0807	HYDRAZINE	0120601X	500 mL AMBER	ICE	T.A.-CO	A
130221 0808	VOA	0127101X	3-40 mL CLEAR	HCL	T.A.-GA	A
130221 0809	SVOA	0210401X	2-1 L AMBER	ICE	800 HFTA 05	A
130221 0810	METALS	0321301X	250 mL PLASTIC	HNO_3	"	A
130221 0811	CYANIDES	0311201V	250 mL PLASTIC	NaOH	"	A

0825 800 HWDL-05 BOREHOLE WAS PRE-EXCAVATED BY HEAVY EQUIPMENT PERSONNEL. BOREHOLE 800 HWDL-05 WAS LOCATED AT A DEPTH OF

0830 BEGIN AUGERING FOR FIRST DEPTH (0-6") SOIL SAMPLES. BELOW HWDL INSPECTION OF THE HWDL: NO OBSERVED INTEGRITY ISSUES, NO SOIL STAINING OR MOISTURE PRESENT. FILLED OUT BORE LOG FORMS.

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
130221 0839 (a)	HYDRAZINE	0310401X	4oz AMBER	ICE	T.A.-CO	S
130221 0841 (a)	VOA	D2695 ~~0610 10ml~~	40mL CLEAR ~~8oz CLEAR~~	NaOH ~~ICE~~	T.A.-GA	S
130221 0843 (a)	SVOA	0610401X	8oz CLEAR	ICE	T.A.-GA	S
130221 0845 (a)	METALS	0310401X	4oz AMBER	ICE	T.A.-GA	S
130221 0847 (a)	CYANIDES	0310401X	4oz AMBER	ICE	T.A.-GA	S
130221 0841 (a)	VOA	117139	40 mL CLEAR	SOBI	800 HFTA 05	S
130221 0841 (a)	VOA	117139	40mL CLEAR	SOBI	T.A.-GA	S

(a) = FIRST DEPTH (0-6")

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SAMPLE DUPLICATES WERE TAKEN IN ACCORDANCE WITH SAP 2013-006. FROM BOREHOLE 800 HWDL-05 (0-6").

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1302210840 (D)	HYDRAZINES	0310401X	4oz AMBER	ICE	T.A.-CO	S
1302210842 (D)	VOA	DE695	40mL CLEAR	MeOH	T.A.-GA	S
1302210842 (D)	VOA	117139	40mL CLEAR	SOBI	T.A.-GA	S
1302210842 (D)	VOA	117139	40mL CLEAR	SOBI	[illegible]	S
1302210846 (D)	METALS + Hg	0310401X	4oz AMBER	ICE	[illegible]	S
1302210844 (D)	SVOA	0610401X	8oz CLEAR	ICE	T.A.-GA	S
1302210848 (D)	CYANIDE	0310401X	4oz AMBER	ICE	T.A.-GA	S

800 HFTA 05

(D) = DUPLICATE SAMPLE

0908 CONTINUED TO HAND AUGER TO SECOND DEPTH AT 800 HWDL-05 (1'-2') BELOW HWDL. COMPLETED BORE LOG FORMS. REVIEWED THE HWDL EZBOW (45°), NO INTEGRITY ISSUES, NO SOIL STAINING, NO MOISTURE. COLLECTED SOIL SAMPLES.

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1302210923 (b)	HYDRAZINE	0310401X	4oz AMBER	ICE	T.A.-CO	S
1302210924 (b)	VOA	DE695	40mL CLEAR	MeOH	T.A.-GA	S
1302210924 (b)	VOA	117139	40mL CLEAR	SOBI	T.A.-GA	S
1302210924 (b)	VOA	117139	40mL CLEAR	SOBI	T.A.-GA	S
1302210925 (b)	SVOA	0610401X	8oz CLEAR	ICE	T.A.GA	S
1302210926 (b)	METALS + Hg	0310401X	4oz AMBER	ICE	[illegible]	S
1302210927 (b)	CYANIDES	0310401X	4oz AMBER	ICE	[illegible]	S

800 HFTA 05

(b) = SECOND DEPTH (1'-2')

0940 RELOCATED TO NEXT BOREHOLE - 800 HWDL-06

0943 DECONTAMINATED BOREHOLE EQUIPMENT PRIOR TO NEXT BOREHOLE. COLLECTED EQUIPMENT BLANK VERIFICATION SAMPLES.

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1302210959	HYDRAZINE	0120601X	500mL AMBER	ICE	T.A.-CO	A
1302211000	VOA	0127101X	3-40mL CLEAR	HCl	T.A.-GA	A
1302211001	SVOA	0210401X	2-1L AMBER	ICE	T.A.-G.A.	A
1302211002	METALS + Hg	0321301X	250 mL PLASTIC	HNO_3	[illegible] G.A.	A
1302211003	CYANIDES	0311201V	250 mL PLASTIC	NaOH	[illegible] G.A.	A

800 HFTA 06

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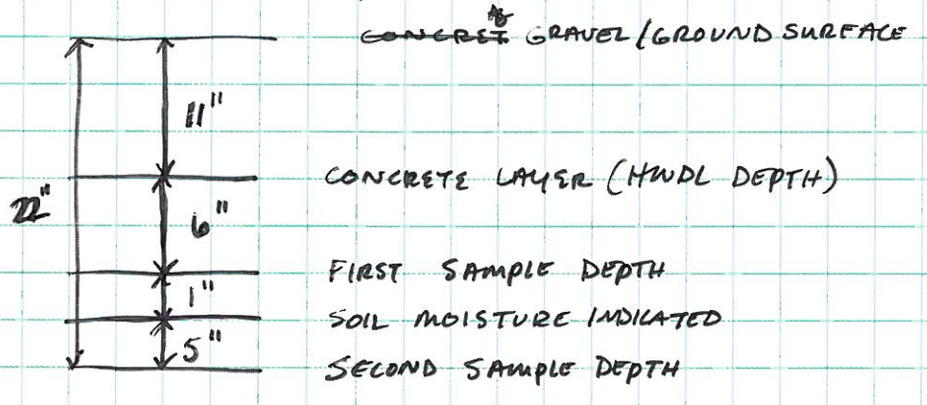
1014 BEGAN TO HAND AUGER BOREHOLE 800 HWDL-06 FIRST DEPTH (0-6"). REVIEWED SOIL CHARACTERISTICS: NO STAINING, NO MOISTURE.

* NOTE: SAMPLES WILL BE COLLECTED 3'-4' EAST AND DOWNSLOPE OF ACTUAL FLANGE (HWDL CLEANOUT) DUE TO THE CONCRETE BASE BELOW THE FLANGE. IT WAS DETERMINED THAT ANY LEAKS WOULD BE PRESENT IN THE SOIL DOWN SLOPE OF THE CLEAN OUT.

SOIL THAT WAS (0-6") BELOW THE FLANGE DEPTH WAS DRY & NO SOIL STAINING WAS OBSERVED. NO ACTUAL OBSERVATIONS OF THE HWDL BELOW THE SURFACE WERE TAKEN BECAUSE OF THE PROXIMITY OF THE CONCRETE BASE OF THE FLANGE. THE HWDL IS INTENDED FOR RE-USE SO NO MODIFICATIONS OR EXCAVATIONS WERE PERFORMED WITHIN 3'-4' OF THE CLEAN-OUT.

1020 SAMPLE DEPTH (1'-2') WAS EXPOSED FROM PREVIOUS EXCAVATION SO 2ND SAMPLE DEPTH WAS TAKEN FIRST. OBSERVATIONS OF THE SOIL AT 1'-2' SHOWED THAT THERE WAS SOIL MOISTURE, HOWEVER NO SOIL STAINING NEAR THE CALICHE LAYER.



SAMPLE ID #	ANALYSIS	CONTAINER	LOT #	PRESERV.	LAB	MATRIX
130221 1025 (b)	HYDRAZINE	4oz AMBER	0310401X	ICE	T.A.-CO	S
130221 1026 (b)	VOA	40mL CLEAR	DE695	MeOH	T.A.-GA	S
130221 1026 (b)	VOA	40mL CLEAR	117139	SOBI	"	S
130221 1026 (b)	VOA	40mL CLEAR	117139	SOBI	"	S
130221 1027 (b)	SVOA	8oz CLEAR	0610401X	ICE	"	S
130221 1028 (b)	METALS + Hg	4oz AMBER	0310401X	ICE	800 METALS	S
130221 1029 (b)	CYANIDES	4oz AMBER	0310401X	ICE	"	S

(b) = SECOND DEPTH (1'-2')

1035 BEGAN TO HAND AUGER + COLLECT SOIL SAMPLES FROM FIRST DEPTH (0-6") BELOW CONCRETE DEPTH.

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SAMPLE ID#	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1302211045	(a) HYDRAZINE	0310401X	4oz AMBER	ICE	T.A.-CO	S
1302211046	(a) VOA	DE695	40mL CLEAR	MeOH	T.A.-GA	S
1302211046	(a) VOA	117139	40mL CLEAR	SOBI	"	S
1302211046	(a) VOA	117139	40mL CLEAR	SOBI	"	S
1302211047	(a) SVOA	0610401X	8oz CLEAR	ICE	"	S
1302211048	(a) METALS + Hg	0310401X	4oz AMBER	ICE	"	S
1302211049	(a) CYANIDES	0310401X	4oz AMBER	ICE	"	S

800 HETA 06

(a) = FIRST DEPTH (0-6")

~~1100 CLEARED UP WORK-SITE~~ AS

DECONTAMINATION OF EQUIPMENT FOR BOREHOLE AUGERING. TOOK EQUIPMENT BLANK FOR HYDRAZINE TO MAKE 48 HOUR HOLD TIME.

SAMPLE ID#	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1302211025	HYDRAZINE	0120601X	500mL AMBER	ICE	TA.-CO	A

1100 CLEARED UP WORK-SITE, PLACED PLASTIC BAGS OVER EQUIPMENT.
1200 SHIPPED SAMPLES.

1300 RETURNED TO 800 AREA DECON. STATION #1 FOR BOREHOLE 800 HWDL-04. DECONTAMINATED EQUIPMENT FOR THE REST OF EQUIPMENT BLANKS.

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1302211317	VOA	0127101X	3-40mL CLEAR	HCL	T.A.-GA	A
1302211318	SVOA	0210401X	2-1 LITER	ICE	T.A.-GA	A
1302211319	METALS + Hg	0321301X	250mL PLASTIC	HNO_3	T.A.-GA	A
1302211320	CYANIDES	0311201V	250mL PLASTIC	NaOH	T.A.-GA	A

800 HETA 04

1325 BEGAN EXCAVATING WITH PICK AND SHOVEL TO LOCATE CLEAN-OUT 1A.
1330 LOCATED HWDL - OFF-SET 18" SOUTH OF CLEAN-OUT. OBSERVATIONS OF HWDL INDICATE THE HWDL IS INTACT; SOIL IS MOIST FROM EXISTING PRECIPITATION + THERE IS NO EVIDENCE OF SOIL STAINING. FILLED BORE LOG FORM. HWDL WAS LOCATED 22" BGS. SOIL WAS IDENTIFIED AS SAND BACKFILL.
1340 BEGAN RETRIEVING FIRST DEPTH (0-6") OF SOIL BENEATH 800 HWDL-04 CLEANOUT.

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SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	LAB	PRESERV.	MATRIX
1302211343	(a) HYDRAZINE	0310401X	4oz AMBER	T.A.-CO	ICE	S
1302211344	(a) VOA	DE695	40mL CLEAR	T.A.-GA	MeOH	S
1302211344	(a) VOA	L17139	"	"	SOBI	S
1302211344	(a) VOA	L17139	"	"	SOBI	S
1302211345	(a) SVOA	0610401X	8oz. CLEAR	"	ICE	S
1302211346	(a) METALS + Hg	0310401X	4oz AMBER	"	ICE	S
1302211347	(a) CYANIDES	0310401X	4oz AMBER	"	ICE	S

800 HFTA 04

(a) = FIRST DEPTH (0-6")

1412 CONTINUED HAND AUGERING FOR SECOND DEPTH (1'-2') BELOW HWDL. SOIL BELOW HWDL INDICATED MOISTURE IS PRESENT HOWEVER THERE IS NO EVIDENCE OF STAINING ON THE SOIL. BEGAN COLLECTING SOIL SAMPLES OF SECOND DEPTH (1'-2') OF BOREHOLE 800 HWDL-04. COMPLETED BORE LOG FORM.

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	LAB	PRESERV.	MATRIX
1302211418	(b) HYDRAZINE	0310401X	4oz AMBER	T.A.-CO	ICE	S
1302211419	(b) VOA	DE695	40mL CLEAR	T.A.-GA	MeOH	S
1302211419	(b) VOA	L17139	"	"	SOBI	S
1302211419	(b) VOA	L17139	"	"	SOBI	S
1302211420	(b) SVOA	0610401X	8oz CLEAR	"	ICE	S
1302211421	(b) METALS + Hg	0310401X	4oz AMBER	"	ICE	S
1302211422	(b) CYANIDES	0310401X	4oz AMBER	"	ICE	S

800 HFTA 04

(b) = SECOND DEPTH (1'-2')

1420 BEGAN CLEARING UP WORK-SITE. LEFT JOB-SITE FOR THE DAY. TAKE SAMPLES TO WAS REFRIGERATOR FOR STORAGE. COMPLETED COC'S.

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DATE: FEBRUARY 22, 2013
PERSONNEL: A SANCHEZ, S. PORTILLO, A. MONTES, F. GALLEGOS
LOCATION: 800 AREA, NE OF BLDG 801
WEATHER: CLEAR, SUNNY, SLIGHT BREEZE ~ 35°F
WORK AUTHORIZATION DOCS: ETU CLOSURE PLAN, TPS #102488, JHA HW-053, SAP 2013-006

0830 TAILGATE SAFETY BRIEFING WITH ENV. TECHS.
- UNEVEN SURFACES, TRAFFIC HAZARDS, SLIPS, TRIPS, + FALLS

0845 REVIEWED SAMPLING STRATEGY FOR SOIL SAMPLES OF BOREHOLE 800 HWDL-07 (45 ELBOW #2)

0855 EQUIPMENT DECON. FOR EQUIPMENT BLANKS PRIOR TO NEXT BOREHOLE.

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1302220900	HYDRAZINE	0120601X	500mL AMBER	ICE	T.A.-CO	A
1302220901	VOA	012710X ~~0210401X~~ ~~0121040~~	3-40mL CLEAR	HCl	T.A.-GA	A
1302220902	SVOA	0210401X ~~0321301X~~	2-1L AMBER	ICE	"	A
1302220903	METALS + Hg	0321301X	250mL PLASTIC	HNO_3	"	A
1302220904	CYANIDES	0311201V	250mL PLASTIC	NaOH	"	A

800 HFTA 07

0913 BEGAN HAND AUGERING TO COLLECT FIRST DEPTH (0-6") BELOW HWDL. EXPOSED HWDL SHOWS NO EVIDENCE OF LEAKS, NO INTEGRITY ISSUES ON THE HWDL, NO SOIL STAINING, SAND BELOW HWDL CONTAINED SOME MOISTURE. COMPLETED BORE LOG FORMS. COLLECTED SOIL SAMPLES OF FIRST DEPTH.

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1302220919 (a)	HYDRAZINES	0310401X	4oz AMBER	ICE	T.A.-CO	S
1302220920 (a)	VOA	DE695	40mL CLEAR	MeOH	T.A.-GA	S
1302220920 (a)	VOA	117139	"	SOBI	"	S
1302220920 (a)	VOA	117139	"	SOBI	"	S
1302220921 (a)	SVOA	0610401X	8oz CLEAR	ICE	"	S
1302220922 (a)	METALS + Hg	0310401X	4oz AMBER	ICE	"	S
1302220923 (a)	CYANIDES	0310401X	4oz AMBER	ICE	"	S

800 HFTA 07

(a) = FIRST DEPTH (0-6") BELOW HWDL

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0929 BORE HOLE EQUIPMENT RINSE BEFORE NEXT DEPTH HAND AUGER.

0935 BEGAN HAND AUGERING FOR SECOND DEPTH SAMPLES COLLECTION (1'-2') BELOW HWDL. COMPLETED BORE LOG FORM. SOIL OBSERVATIONS: SOIL SHOWED SOME MOISTURE, NO STAINING; NO DISCOLORATION

SAMPLE ID #	ANALYSIS	LOT	CONTAINER	PRESERV.	LAB	MATRIX
130222 0951	HYDRAZINE	0310401X	4oz AMBER	ICE	T.A.-CO	S
130222 0952	VOA	DE695	40mL CLEAR	MeOH	T.A.-GA	S
130222 0952	VOA	117139	40mL CLEAR	SOBI	"	S
130222 0952	VOA	117139	40mL CLEAR	SOBI	"	S
130222 0953	SVOA	0610401X	8oz CLEAR	ICE	"	S
130222 0954	METALS + Hg	0310401X	4oz AMBER	ICE	"	S
130222 0955	CYANIDE	0310401X	4oz AMBER	ICE	"	S

800 HWDL 07

(b) = SECOND DEPTH (1'-2') BELOW HWDL

1000 EQUIPMENT RINSE FOR NEXT BOREHOLE (800 HWDL-08) CLEAN OUT 2/3. RELOCATE TO NEXT BOREHOLE DEMOB./MOB.

1021 REVIEWED EXCAVATED HOLE, CLEAN OUT IS LOCATED NEAR SEPTIC SEWAGE TANK/LEACH-FIELD. THERE IS A SULFUR-LIKE ODOR EMINATING FROM THIS SAMPLE POINT. UPON REVIEW OF THE EXPOSED HWDL CLEAN-OUT, THERE ARE NO INTEGRITY ISSUES, NO LEAKS, NO SOIL/SAND MOISTURE OR SOIL/SAND STAINING.

1024 BEGAN EQUIPMENT BLANK SAMPLES

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
130222 1025	HYDRAZINE	0120601X ~~0127101X~~ AS	500mL AMBER	ICE	T.A.-CO	A
130222 1026	VOA	0127101X	3-40mL CLEAR	HCl	T.A.-GA	A
130222 1027	SVOA	0210401X	2-1L AMBER	ICE	"	A
130222 1028	METALS + Hg	0321301X	250mL PLASTIC	HNO_3	"	A
130222 1029	CYANIDES	0311201V	250mL PLASTIC	NaOH	"	A

800 HWDL 08

1040 BEGAN HAND AUGERING FOR FIRST DEPTH (0-6") BELOW HWDL/CLEAN-OUT (800 HWDL-08). REVIEWED SOIL: SOIL WAS SLIGHTLY MOIST, NO STAINING. COMPLETED BORE ~~LOG~~ AS LOG FORMS. COLLECTED FIRST DEPTH (0-6") SOIL SAMPLES.

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SAMPLE ID#	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
130222 1055 (a)	HYDRAZINE	0310401x	4oz AMBER	ICE	T.A.-CO	S
130222 1056 (a)	VOA	DE695	40mL CLEAR	MeOH	T.A.-GA	S
130222 1056 (a)	VOA	*X117139	"	SOBI	"	S
130222 1056 (a)	VOA	117139	"	SOBI	"	S
130222 1057 (a)	SVOA	0610401x	8OZ. CLEAR	ICE	"	S
130222 1058 (a)	METALS + Hg	0310401x	4oz AMBER	ICE	"	S
130222 1059 (a)	CYANIDE	0310401x	4oz AMBER	ICE	"	S

800 HWDL 08

(a) = FIRST DEPTH (0-6")

1105 RINSED AUGERING + EXCAVATION EQUIPMENT WITH DI H_2O PRIOR TO NEXT DEPTH.

1107 BEGAN AUGURING FOR SECOND DEPTH (1'-2') BELOW HWDL/CLEAN-OUT. RETRIEVED SOIL INTO SAMPLE BOWL. SOIL IS SLIGHTLY MOIST. NO STAINING. NO ODORS. COMPOSITION IS MOSTLY SAND (BACKFILL). COMPLETED BORE LOG FORMS. BEGAN COLLECTING SOIL SAMPLES.

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
130222 1115 (b)	HYDRAZINE	0310401x	4oz AMBER	ICE	T.A.-CO	S
130222 1116 (b)	VOA	DE695	40mL CLEAR	MeOH	T.A.-GA	S
130222 1116 (b)	VOA	117139	40mL CLEAR	SOBI	"	S
130222 1116 (b)	VOA	117139	40mL CLEAR	SOBI	"	S
130222 1117 (b)	SVOA	0610401x	8oz CLEAR	ICE	"	S
130222 1118 (b)	METALS + Hg	0310401x	4oz AMBER	ICE	"	S
130222 1119 (b)	CYANIDE	0310401x	4oz AMBER	ICE	"	S

800 HWDL 08

(b) = SECOND DEPTH (1'-2') BELOW HWDL

1120 CLEANED-UP JOBSITE, TAKE SAMPLES TO REFRIGERATOR FOR HOLDING. LEFT JOBSITE. COMPLETED COC'S FOR ALL SAMPLES.

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FEBRUARY 25, 2013
PERSONNEL: A. SANCHEZ, S. PORTILLO, A. MONTES, R. GALAZ
LOCATION: NW CORNER OF BLDG. 803
WEATHER: COLD, SUNNY, CLEAR ~25°F
WORK AUTHORIZATION DOCUMENTS: ETU CLOSURE PLAN, TRS 102488, JHA HW-053, SAP 2013-006

0835 TAILGATE SAFETY BRIEFING WITH ENVIRONMENTAL TECHS.
- HIGH PRESSURE LINES, SLIPS, TRIPS, + FALLS
- GOAL FOR THE DAY: 800 HWDL-09 + 800 HWDL-10 (MATRIX SPIKE) (SAMPLE DUPLICATE)

0840 BEGIN EQUIPMENT RINSE FOR EQUIPMENT BLANK SAMPLES.

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1302250850	HYDRAZINE	0120601X	500 mL AMBER	ICE	T.A.-CO	A
1302250851	VOA	0127101X	3-40mL CLEAR	HCL	T.A.-GA	A
1302250852	SVOA	0210401X	2-1L AMBER	ICE	T.A.-GA	A
1302250853	METALS + Hg	0321301X	250mL PLASTIC	HNO3	T.A.-GA	A
1302250854	CYANIDES	0311201V	250mL PLASTIC	NaOH	T.A.-GA	A

800 HWDL 09

0855 INSPECTED BOREHOLE 800 HWDL-09; HWDL WAS EXPOSED BY HEAVY EQUIPMENT. HWDL DOES NOT SHOW ANY EVIDENCE OF LEAKAGE OR BREAKAGE. SOIL DOES NOT SHOW ~~ANY~~ AS ANY MOISTURE OR STAINING. COMPLETED BORE LOG FORM.

0908 BEGAN HAND AUGURING FOR FIRST DEPTH (0-6") FROM BOREHOLE 800 HWDL-09. COLLECTED SOIL SAMPLES.

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1302250917 (a)	HYDRAZINE	0310401X	4oz AMBER	ICE	T.A.-CO	S
1302250918 (a)	VOA	DE695	40mL CLEAR	MeOH	T.A.-GA	S
1302250918 (a)	VOA	117139	40mL CLEAR	SOBI	"	S
1302250918 (a)	VOA	117139	40mL CLEAR	SOBI	"	S
1302250919 (a)	SVOA	0610401X	8oz CLEAR	ICE	"	S
1302250920* (a)	METALS + Hg	0310401X	4oz AMBER	ICE	"	S
1302250921* (a)	CYANIDES	0310401X	4oz AMBER	ICE	"	S

800 HWDL 09

(a) = FIRST DEPTH (0-6")
* = CIGARETTE SMOKE IN THE VICINITY OF SAMPLE EVENT

0930 EQUIPMENT RINSED PRIOR TO NEXT DEPTH SOIL COLLECTION.

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0931 SOIL INSPECTION SHOWED SAND AT FIRST DEPTH (0-6"); MOISTURE PRESENT, NO STAINING OF THE SOIL/SAND.

0938 BEGAN HAND AUGERING FOR SECOND DEPTH (1'-2') AT BOREHOLE 800 HWDL-09. SAMPLE LOCATION IS 2-3" FROM A HIGH PRESSURED NITROGEN GAS LINE.

0940 SOIL INSPECTION OF SECOND DEPTH (1'-2') SHOWS SOIL/SAND/PEBBLE MIXTURE THAT IS SLIGHTLY MOIST. COMPLETED BORE LOG FORMS. MAXIMUM DEPTH REACHED WAS 1' BELOW HWDL.

SAMPLE ID#	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1302250943* (b)	HYDRAZINE	0310401X	4oz AMBER	ICE	T.A.-CO	S
1302250944* (b)	VOA	DE695	40mL CLEAR	MeOH	T.A.-GA	S
1302250944* (b)	VOA	117139	40mL CLEAR	SOBI	"	S
1302250944* (b)	VOA	117139	40mL CLEAR	SOBI	"	S
1302250945* (b)	SVOA	0610401X	8oz CLEAR	ICE	"	S
1302250946* (b)	METALS + Hg	0310401X	4oz AMBER	ICE	"	S
1302250947* (b)	CYANIDES	0310401X	4oz AMBER	ICE	"	S

800 HWDL 09

(b) = SECOND DEPTH (1'-2')

* = CIGARETTE SMOKE IN THE VICINITY

1000 DECONTAMINATED AUGER EQUIPMENT BEFORE ENTERING NEXT BOREHOLE 800 HWDL-10. TAKE EQUIPMENT BLANK SAMPLES.

SAMPLE ID#	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1302251021	HYDRAZINES	0120601X	500mL AMBER	ICE	T.A.-CO	A
1302251022	VOA	0127101X	3-40mL CLEAR	HCL	T.A.-GA	A
1302251023*	SVOA	0210401X	2-1L AMBER	ICE	T.A.-GA	A
1302251024	METALS + Hg	0321301X	250mL PLASTIC	HNO_3	T.A.-GA	A
1302251025	CYANIDES	0311201V	250mL PLASTIC	NaOH	T.A.-GA	A

800 HWDL 10

* = DIESEL EXHAUST PRESENT IN 1-1L AMBER DURING SAMPLING (a). NOT (b).

1030 BEGAN HAND AUGERING FOR FIRST DEPTH (0-6") AT BOREHOLE 800 HWDL-10. SOIL OBSERVATION FOR FIRST DEPTH SHOWS A SANDY SOIL MIXTURE, SLIGHT MOISTURE, NO SOIL STAINING PRESENT. HWDL IS INTACT, NO INTEGRITY ISSUES (CRACKS, LEAKS). COMPLETED BORE LOG FORMS. COLLECTED SOIL SAMPLES.

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SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
130225 1040 (a)	HYDRAZINE	0310401X	4oz AMBER	ICE	T.A.-CO	S
130225 1041 (a)	VOA	DE695	40mL CLEAR	MeOH	T.A.-GA	S
130225 1041 (a)	VOA	117139	40mL CLEAR	SOBI	"	S
130225 1041 (a)	VOA	117139	40mL CLEAR	SOBI	"	S
130225 1042 (a)	SVOA	0610401X	8oz CLEAR	ICE	"	S
130225 1043 (a)	METALS + Hg	0310401X	4oz AMBER	ICE	"	S
130225 1044 (a)	CYANIDES	0310401X	4oz AMBER	ICE	"	S

800 HWDL 10

(a) = FIRST DEPTH (0-6")

1046 COLLECTED ADDITIONAL SOIL FROM BOREHOLE 800 HWDL-10 AT 0-6" DEPTH. COLLECTED SOIL SAMPLES.

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
130225 1050 (d)	HYDRAZINE	0310401X	4oz AMBER	ICE	T.A.-CO	S
130225 1051 (d)	VOA	DE695	40mL CLEAR	MeOH	T.A.-GA	S
130225 1051 (d)	VOA	117139	40mL CLEAR	SOBI	"	S
130225 1051 (d)	VOA	117139	40mL CLEAR	SOBI	"	S
130225 1052 (d)	SVOA	0610401X	8oz CLEAR	ICE	"	S
130225 1053 (d)	METALS + Hg	0310401X	4oz AMBER	ICE	"	S
130225 1054 (d)	CYANIDES	0310401X	4oz AMBER	ICE	"	S

800 HWDL 10

(d) = DUPLICATE SAMPLE

1104 BEGAN HAND AUGERING / EXCAVATING FOR SECOND DEPTH (1'-2'). THERE IS A SOLID CALICHE LAYER 6"-10" BELOW THE HWDL (45° - CLEANOUT). DIFFICULTY RETRIEVING SECOND DEPTH OF SOIL. HWDL / CLEANOUT INSPECTION SHOWS NO INTEGRITY ISSUES, NO EVIDENCE OF BREAKAGE OR LEAKAGE. NO SOIL STAINING OBSERVED. BEGAN COLLECTING SOIL SAMPLES.

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
130225 1115 (b)	HYDRAZINE	0310401X	4oz AMBER	ICE	T.A.-CO	S
130225 1116 (b)	VOA	DE695	40mL CLEAR	MeOH	T.A.-GA	S
130225 1116 (b)	VOA	117139	40mL CLEAR	SOBI	"	S
130225 1116 (b)	VOA	117139	40mL CLEAR	SOBI	"	S
130225 1117 (b)	SVOA	0610401X	8oz CLEAR	ICE	"	S
130225 1118 (b)	METALS + Hg	0310401X	4oz AMBER	ICE	"	S
130225 1119 (b)	CYANIDE	0310401X	4oz AMBER	ICE	"	S

800 HWDL 10

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DATE: FEBRUARY 26, 2013
PERSONNEL: A. SANCHEZ, P. EGAN, A. MONTES, B. GALAZ
LOCATION: 200 AREA LABCON HIGHBAY (WEST SIDE)
WEATHER: COLD, SLIGHTLY BREEZY
WORK AUTHORIZATION: ETU CLOSURE PLAN, ~~JHA HW~~ TPS # 102488, JHA-HW-056, SAP 2013-006

0800 TAILGATE SAFETY BRIEFING WITH ENV. TECHS.
- TRAFFIC CONTROL, TIGHT WORKING SPACES
- GOALS FOR THE DAY 200 HWDL 01 & 02

0805 BEGIN HAND AUGERING FOR SOIL SAMPLES. INSPECTED 800 HWDL-01 TEE, IDENTIFIED SOIL DISCOLORATION NEAR THE TEE, SOIL/SAND BACK FILL CONTAINED SOME MOISTURE. COMPLETED SOIL BORE LOG FORMS. ~~COLLECTED SOIL SAMPLES~~ AS

0810 DECONTAMINATED HAND AUGER EQUIPMENT PRIOR TO SAMPLING EVENT FOR BORE HOLE 200 HWDL-01.

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1302260811	HYDRAZINE	0120601X	500mL-AMBER	ICE	T.A.-CO	A
1302260812	VOA	0127101X	3-40mL CLEAR	HCL	T.A.-GA	A
1302260813	SVOA	0210401X	2-1 LITER AMBER	ICE	"	A
1302260814	METALS + Hg	0321301X	250mL PLASTIC	HNO_3	"	A
1302260815	CYANIDES	0311201V	250mL PLASTIC	NaOH	"	A

200 HWDL 01

0826 BEGIN HAND AUGERING FOR SOIL COLLECTION OF FIRST DEPTH (0-6") OF BOREHOLE 200 HWDL-01. COMPLETING BORE LOG FORMS. SOIL SAMPLES ARE TAKEN IN A HIGHLY VEHICULAR TRAFFIC AREA, EXHAUST FUMES ARE PRESENT.

SAMPLE ID#	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1302260840* (a)	HYDRAZINE	0310401X	4oz AMBER	ICE	T.A.-CO	S
1302260841* (a)	VOA	DEG95	40mL CLEAR	MeOH	T.A.-GA	S
1302260841* (a)	VOA	117139	40mL CLEAR	SOBI	"	S
1302260841* (a)	VOA	117139	40mL CLEAR	SOBI	"	S
1302260842* (a)	SVOA	0610401X	8oz CLEAR	ICE	"	S
1302260843* (a)	METALS + Hg	0310401X	4oz AMBER	ICE	"	S
1302260844* (a)	CYANIDE	0310401X	4oz AMBER	ICE	"	S

200 HWDL 01

(a) = FIRST DEPTH (0-6")
* = DIESEL/GASOLINE EXHAUST PRESENT DURING SAMPLING EVENT

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0854 RINSING EQUIPMENT PRIOR TO NEXT DEPTH. COLLECTING + MANAGING RINSATE ACCORDING TO SAP 2013-006.

0910 BEGIN HAND AUGERING FOR SECOND DEPTH (1'-2'). REACHED A MAX. DEPTH OF 12" BELOW HWDL.

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1302260920 (b)	HYDRAZINE	0310401X	4oz AMBER	ICE	T.A.-CO	S
1302260921 (b)	VOA	DE695	40mL CLEAR	MEOH	T.A.-GA	S
1302260921 (b)	VOA	117139	40mL CLEAR	SOBI	"	S
1302260921 (b)	VOA	117139	40mL CLEAR	SOBI	"	S
1302260924 (b)	METALS + Hg	0310401X	4oz AMBER	ICE	"	S
1302260925 (b)	CYANIDES	0310401X	4oz AMBER	ICE		S

200 HWDL 01

(b) = SECOND DEPTH (1'-2') BELOW HWDL

1302260923 (b)	SVOA	0610401X	8oz CLEAR	ICE	"	S

SOIL OBSERVATIONS OF SECOND DEPTH (1'-2') BELOW HWDL INDICATE MOISTURE PRESENT; SOIL DOES NOT SHOW DISCOLORATION. COULD NOT REACH BELOW 12" DUE TO ASPHALT LAYER. VEHICLE TRAFFIC IN THE VICINITY OF SECOND SOIL SAMPLING EVENT. COMPLETED BORE LOG FORM FOR 200 HWDL-01(b).

0931 DECONTAMINATED BOREHOLE EQUIPMENT PRIOR TO NEXT BOREHOLE 200 HWDL-02. COLLECTED RINSATE ACCORDING TO SAP 2013-006. TAKE EQUIPMENT BLANK SAMPLES.

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1302261000	HYDRAZINE	0120601X	500mL AMBER	ICE	T.A.-CO	A
1302261001	VOA	0127101X	3-40mL CLEAR	HCL	T.A.-GA	A
1302261002	SVOA	0210401X	2-1 LITER AMBER	ICE	"	A
1302261003	METALS+Hg	0321301X	250mL CLEAR	HNO_3	"	A
1302261004	CYANIDES	0311201V	250mL CLEAR	NaOH		A

200 HWDL 02

1012 BEGAN HAND AUGERING FOR FIRST DEPTH OF 200 HWDL-02 (0-6"). DID NOT LOCATE HWDL DUE TO BUILDING OBSTRUCTION. EXCAVATED HOLE DOWN-SLOPE OF TEE INTERSECTION TO TAKE SAMPLES 1' BELOW CONCRETE LEVEL. COLLECTED + MANAGED EXCAVATED SOIL ACCORDING TO SAP 2013-006. COMPLETED BORE LOG FORMS. SOIL OBSERVATIONS INDICATE MOISTURE IS PRESENT, NO SOIL DISCOLORATION, NO ODORS.

1020 BEGAN COLLECTING SOIL SAMPLES. VEHICLE TRAFFIC PRESENT DURING SAMPLING, EXHAUST MAY BE PRESENT DURING SAMPLE EVENT.

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SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1302261023* (a)	HYDRAZINE	0310401X	4oz AMBER	ICE	T.A.-CO	S
130226 1024* (a)	VOA	DE695	40ml CLEAR	MEOH	T.A.-GA	S
130226 1024* (a)	VOA	117139	40ml CLEAR	SOBI	"	S
130226 1024* (a)	VOA	117139	40ml CLEAR	SOBI	"	S
130226 1025* (a)	SVOA	06104 01X ~~0310401X~~ AS	8oz CLEAR	ICE	"	S
130226 1026* (a)	METALS + Hg	0310401X	4oz AMBER	ICE	200 HWDL 02	S
130226 1027* (a)	CYANIDES	0310401X	4oz AMBER	ICE	"	S

(a) = FIRST DEPTH (0-6") BELOW 1' OF CONCRETE LEVEL

* = VEHICULAR TRAFFIC, EXHAUST MAY BE PRESENT DURING SAMPLING

1039 BEGAN RINSING EQUIPMENT PRIOR TO NEXT DEPTH. MANAGING RINSATE ACCORDING TO SAP 2013-006.

1047 BEGAN AUGERING FOR SOIL SAMPLES. SOIL OBSERVATIONS INDICATE SOIL IS MOIST. NO STAINING. NO ODORS. COMPLETED BORE LOG FORMS.

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1302261055*	(b) HYDRAZINES	0310401X	4oz AMBER	ICE	T.A.-CO	S
130226 1056*	(b) VOA	DE695	40ml CLEAR	MeOH	T.A.-GA	S
130226 1056**	(b) VOA	117139	40ml CLEAR	SOBI	"	S
130226 1056*	(b) VOA	117139	40ml CLEAR	SOBI	"	S
130226 1057*	(b) SVOA	06104 01X	8oz CLEAR	ICE	"	S
130226 1058*	(b) METALS + Hg	0310401X	4oz AMBER	ICE	200 HWDL 02	S
130226 1059*	(b) CYANIDES	0310401X	4oz AMBER	ICE	"	S

(b): 2nd DEPTH (1'-2') BELOW 1' OF CONCRETE LEVEL.

COLLECTED SOIL BENEATH CONCRETE LAYER. ~~ACCORDING TO DIAGRAM.~~ AS

* = VEHICULAR TRAFFIC, EXHAUST MAY BE PRESENT.

** = SOBI REACTED HIGHLY WITH SOIL SAMPLE

1110 PLACED AQUEOUS SAMPLES IN REFRIGERATOR FOR OVERNIGHT STORAGE. SHIPPED SOIL & HYDRAZINE SAMPLES.

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DATE: FEBRUARY 27, 2013
PERSONNEL: P. EGAN, A. SANCHEZ, B. GALAZ, A. MONTOS
LOCATION: 200 BLDG. SW OF LABCON HIGHBAY
WEATHER: COLD, SUNNY, NO WIND
WORK AUTHORIZING DOCS: ETU CLOSURE PLAN, TPS # 102488, JHA HW-056, SAP 2013-006

0817 TAILGATE SAFETY BRIEFING WITH ENV. TECHS.
- TRAFFIC, TIGHT SPACES, COLD WEATHER

0820 EQUIPMENT BLANK RINSATE OF HAND AUGERING EQUIPMENT.

SAMPLE ID #	ANALYSIS	LOT#	CONTAINER	PRESERV.	LAB	MATRIX
1302270822*	HYDRAZINE	0120601X	500mL AMBER	ICE	T.A.-CO	A
1302270823*	VOA	0127101X	3-40mL CLEAR	HCL	T.A.-GA	A
1302270824*	SVOA	0210401X	2-1L AMBER	ICE	"	A
1302270825*	METALS + Hg	0321301X	250mL PLASTIC	HNO_3	200 JA	A
1302270826*	CYANIDE	0311201V	250mL PLASTIC	NaOH	"	A

* = HEAVY EQUIPMENT OPERATING WHILE TAKING EQUIPMENT BLANKS.

0841 200 HWDL-03 ELBOW HAS BEEN EXPOSED BY HEAVY EQUIPMENT. INSPECTION OF THE HWDL HAS REVEALED NO INTEGRITY ISSUES, NO LEAKS, NO SIGNS OF LEAKAGE. SOIL SURROUNDING HWDL IS MOIST + IS COMPOSED OF A SANDY COBBLE BACKFILL. VEHICLE TRAFFIC IN THE SURROUNDING AREA. BEGAN ~~TAKEN~~ TAKING FIRST DEPTH (0-6") SOIL SAMPLES. BORE LOG FORMS ARE COMPLETING.

0846 SOIL SAMPLES TAKEN.

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1302270848 (a)	HYDRAZINE	0310401X	4oz AMBER	ICE	T.A.-CO	S
1302270849 (a)	VOA	D2695	40mL CLEAR	MeOH	T.A.-GA	S
1302270849 (a)	VOA	117139	40mL CLEAR	SOBI	"	S
1302270849 (a)	VOA	117139	40mL CLEAR	SOBI	"	S
1302270850 (a)	SVOA	0610401X	8oz CLEAR	ICE	"	S
1302270851 (a)	METALS + Hg	0310401X	4oz AMBER	ICE	200 HWDL 03	S
1302270852 (a)	CYANIDE	0310401X	4oz AMBER	ICE	"	S

(a) = FIRST DEPTH (0-6") BELOW HWDL

0858 EQUIPMENT RINSE BEFORE NEXT DEPTH. EQUIPMENT RINSATE WILL BE MANAGED IN ACCORDANCE WITH SAP 2013-006.

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0902 ~~BG~~ BEGIN HAND AUGERING FOR SECOND DEPTH (1'-2') BELOW HWDL OF BOREHOLE 200 HWDL-03. COMPLETED SOIL BORE LOG FORMS. SOIL IS A CONSTRUCTION MIXTURE OF SANDY SILT + ~~CB~~ SMALL COBBLE, PRESENTED WITH SOME MOISTURE, NO STAINING.

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1302270907 (b)	HYDRAZINE	0310401X	4oz AMBER	ICE	T.A.-CO	S
1302270908 (b)	VOA	DE695	40mL CLEAR	MeOH	T.A.-GA	S
1302270908 (b)	VOA	117139	40mL CLEAR	SOBI	"	S
1302270908 (b)	VOA	117139	40mL CLEAR	SOBI	"	S
1302270909 (b)	SVOA	0610401X	8oz CLEAR	ICE	"	S
1302270910 (b)	METALS + Hg	0310401X	4oz AMBER	ICE	200 HWDL 03	S
1302270911 (b)	CYANIDES	0310401X	4oz AMBER	ICE	"	S

(b) = SECOND DEPTH (1'-2') BELOW HWDL

(200 HWDL-04)

0917 EQUIPMENT DECONTAMINATION PRIOR TO NEXT BOREHOLE. EQUIPMENT BLANKS TAKEN.

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1302270944	HYDRAZINES	0120601X	500mL AMBER	ICE	T.A.-CO	A
1302270945	VOA	0127101X	3-40mL CLEAR	HCL	T.A.-GA	A
1302270946	SVOA	0210401X	2-1L AMBER	ICE	"	A
1302270947	METALS + Hg	0321301X	250mL PLASTIC	HNO_3	200 HWDL 04	A
1302270948	CYANIDES	0311201V	250mL PLASTIC	NaOH	"	A

0956 BEGAN HAND AUGERING FOR FIRST DEPTH (0-6") OF BOREHOLE 200 HWDL-04. HWDL IS LOCATED NEAR ELECTRICAL CONDUIT, THERE IS DIFFICULTY RETRIEVING SOIL SAMPLES. SOIL CONDITION IS MOIST, NO STAINING, NO ODORS, COMPOSITION IS OF SANDY SOIL WITH SMALL COBBLE. COMPLETED BORE LOG FORMS. BEGAN COLLECTING SOIL SAMPLES.

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1302271003 (a)	HYDRAZINE	0310401X	4oz AMBER	ICE	T.A.-CO	S
1302271004 (a)	VOA	DE695	40mL CLEAR	MeOH	T.A.-GA	S
1302271004 (a)	VOA	117139	40mL CLEAR	SOBI	"	S
1302271004 (a)	VOA	117139	40mL CLEAR	SOBI	"	S
1302271005 (a)	SVOA	0610401X	8oz CLEAR	ICE	"	S
1302271006 (a)	METALS + Hg	0310401X	4oz AMBER	ICE	200 HWDL 04	S
1302271007 (a)	CYANIDES	0310401X	4oz AMBER	ICE	"	S

(a) = FIRST DEPTH (0-6") BELOW HWDL.

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1011 EQUIPMENT RINSE PRIOR TO NEXT DEPTH. RINSATE WILL BE MANAGED IN ACCORDANCE WITH SAP 2013-006.

1016 BEGIN HAND AUGERING FOR SECOND DEPTH (1'-2') BELOW HWDL ELBOW OF BOREHOLE 200 HWDL-04. SOIL REMOVED FROM BENEATH HWDL CONTAINS ADDITIONAL MOISTURE THAN PREVIOUS DEPTH. NO SOIL STAINING; COMPOSITION IS A GRAVELLY SAND WITH SOME SILT. NO ~~#~~ ODORS FROM THE SAMPLE. HWDL SHOWS NO SIGNS OF LEAKAGE OR INTEGRITY ISSUES. BEGAN TAKING SOIL SAMPLES.

SAMPLE ID #		ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1302271028	(b)	HYDRAZINE	0310401x	4oz AMBER	ICE	T.A.-CO	S
1302271029	(b)	VOA	DE695	40mL CLEAR	MeOH	T.A.-GA	S
1302271030 ~~029~~	(b)	VOA	117139	40mL CLEAR	SOBI	"	S
1302271029	(b)	VOA	117139	40 mL CLEAR	SOBI	"	S
1302271030	(b)	SVOA	0610401x	8oz CLEAR	ICE	200 HWDL 04	S
1302271031	(b)	METALS + Hg	0310401x	4oz AMBER	ICE	"	S
1302271032	(b)	CYANIDES	0310401x	4oz AMBER	ICE	"	S

(b) = SECOND DEPTH (1'-2') BELOW HWDL.

HWDL WAS LOCATED 26" BELOW ASPHALT LAYER. SAMPLE MAX. DEPTH WAS 15" BELOW HWDL.

1145 SHIPPED SAMPLES. COMPLETED COC'S. BACKFILLED BOREHOLES # 200 HWDL 03 + 04.

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CARBOY D4

DATE: FEBRUARY 28, 2013
PERSONNEL: P. EGAN, A. SANCHEZ, A. MONTES, B. GALAZ
LOCATION: 200 AREA LABCON HIGHBAY, SW SIDE OF BLDG. 201
WEATHER: COLD, SUNNY, SMALL BREEZE
WORK AUTHORIZING DOCUMENTS: ETL CLOSURE PLAN, TPS 102488, JHA HW-053
SAP 2013-006

0755 TAILGATE SAFETY BRIEFING WITH ENV. TECHS.
- COLD, TRAFFIC AWARENESS, AWARENESS FOR OTHERS, ELECTRICAL

0800 CLEAR/CLEAN BOREHOLE 200 HWDL #05.
RINSING EQUIPMENT PRIOR TO EXCAVATION. TAKING EQUIPMENT BLANK SAMPLES.

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1302280800 *	HYDRAZINE	0120601X	500 ml AMBER	ICE	T.A.-CO	A
1302280801 *	VOA	0127101X	3-40 ml CLEAR	HCL	T.A.-GA	A
1302280802 *	SVOA	0210401X	2-1L AMBER	ICE	"	A
1302280803 *	METALS + Hg	0321301X	250 ml PLASTIC	HNO_3	"	A
1302280804 *	CYANIDE	0311201V	250 ml PLASTIC	NaOH	"	A

200 HWDL 05

* = VEHICLE TRAFFIC WITHIN VICINITY OF SAMPLING EVENT.

0814 BEGAN CLEARING HOLE FOR SOIL SAMPLES. EXPOSED HWDL "Y". HWDL DOES NOT HAVE ANY INTEGRITY ISSUES, NO EVIDENCE OF BREAKAGE OR LEAKS. SOIL SURROUNDING HWDL IS MOIST. COMPOSITION IS NOT SIMILAR TO CONSTRUCTION BACKFILL. ~~GRAVELLY~~, AS SANDY, ~~WITH~~ SILT. W/ LESS THAN 10% GRAVEL. NO DISCOLORATION OR ODORS EMANATING FROM THE SOIL. RETRIEVED SOIL SAMPLE FROM FIRST DEPTH (0-6").

0826 COLLECTED SAMPLES. (a) = FIRST DEPTH (0-6") BELOW HWDL.

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1302280826 (a)	HYDRAZINE	0310401X	4oz AMBER	ICE	T.A.-CO	S
1302280827 (a)	VOA	DE695	40 ml CLEAR	MeOH	T.A.-GA	S
1302280827 (a)	VOA	117139	"	SOBI	=	S
1302280827 (a)	VOA	117139	"	SOBI	=	S
1302280828 (a)	SVOA	0610401X	8oz CLEAR	ICE	=	S
1302280829 (a)	METALS + Hg	0310401X	4oz AMBER	ICE	=	S
1302280830 (a)	CYANIDES	0310401X	4oz AMBER	ICE	=	S

200 HWDL 05

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Signed: A. Sanchez Date: 3/04/13 Signed: Date:

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0833 COLLECTED SAMPLE DUPLICATE FROM (06") DEPTH. SOIL COMPOSITION IS SIMILAR TO FIRST SAMPLE - SANDY, WELL SORTED, WITH ~2% 1/4" DIAMETER GRAVEL. SAMPLE IS SLIGHTLY MOIST, NO NOTICEABLE ODORS, NO SOIL STAINING.

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1302280837	(D) HYDRAZINE	0310401X	4oz AMBER	ICE	T.A.-CO	S
1302280838	(D) VOA	DE695	40mL CLEAR	MeOH	T.A.-GA	S
1302280838	(D) VOA	117139	"	SOBI	"	S
1302280838	(D) VOA	117139	"	SOBI	"	S
1302280839	(D) SVOA	0610401X	8oz CLEAR	ICE	"	S
1302280840	(D) MET. + Hg	0310401X	4oz AMBER	ICE	200 HWDL 05	S
1302280841	(D) CYANIDES	0310401X	4oz AMBER	ICE	"	S

(D) = DUPLICATE SAMPLE

0846 EQUIPMENT RINSE PRIOR TO NEXT DEPTH. EXCAVATED SECOND DEPTH (1'-2') BELOW HWDL. SOIL COMPOSITION IS A SANDY CLAY BACKFILL, WITH <1% GRAVEL. SAMPLE WAS SLIGHTLY MOIST, NO ODORS OR STAINING. COMPLETED BORE LOG FORM. COLLECTED SOIL SAMPLES.

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1302280909	(b) HYDRAZINE	0310401X	4oz AMBER	ICE	T.A.-CO	S
1302280910	(b) VOA	DE695	40mL CLEAR	MeOH	T.A.-GA	S
1302280910	(b) VOA	117139	"	SOBI	"	S
1302280910	(b) VOA	117139	"	SOBI	"	S
1302280911	(b) SVOA	0610401X	8oz CLEAR	ICE	"	S
1302280912	(b) MET. + Hg	0310401X	4oz AMBER	ICE	200 HWDL 05	S
1302280913	(b) CYANIDES	0310401X	4oz AMBER	ICE	"	S

(b) = SECOND DEPTH (1'-2') BELOW THE HWDL

0930 COMPLETED COC'S FOR SOIL + EB SAMPLES. SHIPPED SOIL + YESTERDAY EB SAMPLES.

AS 2/28/13

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DATE: MARCH 4, 2013
PERSONNEL: A. SANCHEZ, S. PORTILLO, A. MONTES, T. TORRES
LOCATION: 200 AREA CORRIDOR (BETWEEN BLDGS. 201 + 203)
WEATHER: OVERCAST, COOL
WORK AUTHORIZING DOCS: ETU CLOSURE PLAN

0815 TAILGATE SAFETY BRIEFING WITH GW. TECHS + CM+O PERSONNEL
-LIMITED ACCESS/EGRESS, DUAL WORKING GROUPS, EQUIPMENT HAZARDS

0839 EQUIPMENT RINSATE SAMPLES OF HAND AUGERING EQUIPMENT FOR BOREHOLE 200-HWDL-06.

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1303040842*	HYDRAZINES	0120601X	500mL AMBER	ICE	T.A.-CO	A
1303040843	VOA	0127101X	3-40mL CLEAR	HCL	T.A.-GA	A
1303040844	SVOA	0210401X	2-1L AMBER	ICE	200 HWDL 06	A
1303040845	METALS + Hg	0321301X	250mL PLASTIC	HNO_3		A
1303040846*	CYANIDES	0311201V	250mL PLASTIC	NaOH	"	A

*= EXHAUST FROM MACHINERY PRESENT DURING SAMPLE EVENT

0850 HAND AUGERED TO DESIRED DEPTH (0-6") BELOW HWDL BOREHOLE 200 HWDL 06. COMPLETED BORE LOG FORMS. REACHED 5-6" AS ADJACENT TO HWDL, 6" BELOW LEVEL OF HWDL. BEGAN SOIL COLLECTION. SOIL MOISTURE PRESENT; NO DISCOLORATION, NO ODORS. SOIL COMPOSITION IS A SANDY BACKFILL.

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1303040902*	(a) HYDRAZINE	0310401X	4oz AMBER	ICE	T.A.-CO	S
1303040903*	(a) VOA	DE695	40mL CLEAR	MeOH	T.A.-GA	S
1303040903*	(a) VOA	117139	"	SOBI	"	S
1303040903*	(a) VOA	117139	"	200 HWDL 06	"	S
1303040904*	(a) SVOA	0610401X	8oz CLEAR	ICE		S
1303040905*	(a) METALS + Hg	0310401X	4oz AMBER	ICE	"	S
1303040906*	(a) CYANIDES	0310401X	4oz AMBER	ICE	"	S

(a) = FIRST DEPTH (0-6") BELOW HWDL LEVEL.
* = EXHAUST PRESENT DURING SAMPLING EVENT.

0908 EQUIPMENT RINSE PRIOR TO NEXT DEPTH.

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BEGAN HANDAUGERING FOR SECOND DEPTH OF (1'-2') BOREHOLE 200 HWDL 06. COLLECTED SOIL SAMPLES. SOIL COMPOSITION: SANDY BACKFILL. MOISTURE PRESENT; NO ODORS, NO STAINING.

SAMPLE ID#	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1303040935 *	(b) HYDRAZINE	0310401x	4oz AMBER	ICE	T.A.-CO	S
1303040936 *	(b) VOA	D2695	40ml CLEAR	MeOH	T.A.-GA	S
1303040936 *	(b) VOA	117139	"	SOBI	"	S
1303040936 *	(b) VOA	117139	"	SOBI	"	S
1303040937 *	(b) SVOA	0610401x	8oz CLEAR	ICE	"	S
1303040938 *	(b) METALS + Hg	0310401x	4oz AMBER	ICE	"	S
1303040939 *	(b) CYANIDES	0310401x	4oz AMBER	ICE	"	S

200 HWDL 06

(b) = SECOND DEPTH (1'-2') BELOW HWDL, ADJACENT TO SAMPLE LOCATION.
* = MACHINERY PRESENT / EXHAUST PRESENT, DURING SAMPLE EVENT.

0943 EQUIPMENT RINSE PRIOR TO NEXT BOREHOLE: 200 HWDL 07. EQUIPMENT BLANKS WILL BE COLLECTED.

SAMPLE ID#	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1303041010	HYDRAZINES	0120601x	500ml AMBER	ICE	T.A.-CO	A
1303041011	VOA	0127101x	3-40ml CLEAR	HCL	T.A.-GA	A
1303041012	SVOA	0210401x	2-1L AMBER	ICE	T.A.-GA	A
1303041013	METALS + Hg	0321301x	250ml PLASTIC	HNO_3	T.A.-GA	A
1303041014	CYANIDES	0311201V	250ml PLASTIC	NaOH	T.A.-GA	A

200 HWDL 07

1016 BEGAN HAND AUGERING FOR FIRST DEPTH OF BOREHOLE 200 HWDL 07 FIRST DEPTH (0-6") BELOW HWDL JOINT. RETRIEVED SOIL SAMPLES. SOIL IS MOIST; COMPOSITION IS SANDY BACKFILL WITH SMALL COBBLE STONE. NO ODORS, NO SOIL STAINING. COMPLETED SOIL BORE LOG FORMS. COLLECTED SOIL SAMPLES. HEAVY MACHINERY IN USE DURING SOIL RETRIEVAL.

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
130304 1022 *	(a) HYDRAZINE	0310401x	4oz AMBER	ICE	T.A.-CO	S
130304 1023 *	(a) VOA	DE695	40ml CLEAR	MeOH	T.A.-GA	S
130304 1023 *	(a) VOA	117139	"	SOBI	"	S
130304 1023 *	(a) VOA	117139	"	SOBI	"	S
130304 1024 *	(a) SVOA	0610401x	8oz CLEAR	ICE	"	S
130304 1025 *	(a) MET. + Hg	0310401x	4oz AMBER	ICE	"	S
130304 1026 *	(a) CYANIDES	0310401x	4oz AMBER	ICE	"	S

200 HWDL 07

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(a) = FIRST DEPTH (0-6") BELOW HWDL
* = HEAVY MACHINERY IN USE DURING SOIL REMOVAL + COLLECTION

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1030 EQUIPMENT RINSE ~~PHE~~ AS PRIOR TO NEXT DEPTH (1'-2') BELOW HWDL JOINT.

1040 BEGAN HAND AUGER FOR NEXT DEPTH OF BOREHOLE 200 HWDL 07 (1'-2'). SOIL RETRIEVAL; SOIL SHOWS SOME ~~Co~~ AS DISCOLORATION, HAS A SULFUR-LIKE ODOR. SOIL HAS SOME MOISTURE ALSO. REACHED A DEPTH OF 1' BELOW HWDL. *NOTE: SANITARY SEWER LINE IS LOCATED BELOW HWDL. COMPLETED BORE LOG FORMS.

SAMPLE ID #	~~HYDRAZINES~~ ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
130304 1049*	(b) HYDRAZINES	0310401X	4oz AMBER	ICE	T.A.-CO	S
130304 1050*	(b) VOA	DE695	40ml CLEAR	MeOH	T.A.-GA	S
130304 1050*	(b) VOA	117139	40ml CLEAR	SOBI	"	S
130304 1050*	(b) VOA	117139	40ml CLEAR	SOBI	"	S
130304 1051*	(b) SVOA	0610401X	8oz CLEAR	ICE	"	S
130304 1052*	(b) Met. & Hg	0310401X	4oz AMBER	ICE	"	S
130304 1053*	(b) CYANIDES	0310401X	4oz AMBER	ICE	"	S

200 HWDL 07

(b) = SECOND DEPTH (1'-2') BELOW HWDL JOINT.

* = HEAVY EQUIPMENT IN USE DURING SOIL RETRIEVAL & SAMPLE

1100 COMPLETED COC'S FOR SAMPLES. MADE DAILY SAMPLE SHIPMENT.

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CARBON D2

DATE: MARCH 5, 2013
PERSONNEL: A. MONTES, A. SANCHEZ, T. TORRES, S. PORTILLO, B. GALAZ
LOCATION: 200 AREA BREEZEWAY, NEAR ~~FUEL~~ AS FUEL LABORATORY
WEATHER: SUNNY, WARM, SLIGHT BREEZE
WORK AUTHORIZATION DOCS: ETU CLOSURE PLAN, TPS 102488, JHA HW-053, SAP 2013-006.

0808 TAILGATE SAFETY BRIEFING WITH ENV. TECHS + CM+O PERSONNEL.
— DUAL WORKING GROUPS, HEAVY MACHINERY, TIGHT SPACES, WIND HAZARD

0830 EQUIPMENT RINSATE FOR EQUIPMENT BLANKS. BOREHOLE 200 HWDL 08

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1303050838	HYDRAZINE	0120601X	500 mL AMBER	ICE	T.A.-6A	A
1303050839	VOA	0127101X	3-40 mL CLEAR	HCL	T.A.-6A	A
1303050840	SVOA	0210401X	2-1L AMBER	ICE	T.A.-6A	A
1303050841	METALS + Hg	0821301X	250 mL PLASTIC	HNO_3	T.A.-6A	A
1303050842	CYANIDES	0311201V	250 mL PLASTIC	NaOH	T.A.-6A	A

200 HWDL 08

0845 USED FUEL DRAGER TO INVESTIGATE POSSIBLE FUMES, DRAGER READING WAS 0 ppb NEAR EXCAVATED BOREHOLE / HWDL.

0846 DISCUSSED BOREHOLE 200 HWDL 16 (45 ELBOW BREEZEWAY) WITH FACILITIES. THE EXCAVATION PROCESS HAS ENCOUNTERED SEVERAL ISSUES. THERE IS A HIGH PRESSURE GN2 LINE (~1800 PSI) AT A DEPTH OF ABOVE PIPE TRANSITION LINE. ALSO LOCATED AT A DEPTH OF A STAINLESS STEEL LINE IN A PVC SLEEVE. WILL DEVIATE FROM SAP 2013-006, DUE TO HAZARDOUS LINES IN THE DIRECT VICINITY OF THE ELBOW. TWO SAMPLE LOCATIONS WITHIN 10' OF THE ELBOW ARE REPRESENTATIVE OF SAMPLING POINT 200-HWDL-16. SAMPLE POINT DEVIATION WILL BE NOTED IN SAP 2013-006, pg 25.

0855 BEGAN HAND AUGERING FOR SOIL SAMPLE RETRIEVAL AT BOREHOLE 200 HWDL 08. FUEL DRAGER READINGS: 0 ppm. SOIL HAS MOISTURE, NO STAINING. NO ODORS. NO DISCOLORATION. COMPLETED BORE LOG FORMS. COLLECTED SAMPLES.

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SAMPLE ID #	~~Hyb~~ ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1303050906	(a) HYDRAZINES	0310401X	4oz AMBER	ICE	T.A.-CO	S
1303050907	(a) VOA	DE695	40mL CLEAR	MeOH	T.A.-GA	S
1303050907	(a) VOA	117139	"	SOBI	"	S
1303050907	(a) VOA	117139	"	SOBI	"	S
1303050908	(a) SVOA	0610401X	8 oz CLEAR	ICE	200 HWDL 08	S
1303050909	(a) METALS + Hg	0310401X	4oz AMBER	ICE	"	S
1303050910	(a) CYANIDES	0310401X	4oz AMBER	ICE	"	S

(a)= FIRST DEPTH (0-6") BELOW HWDL TEE

0912 EQUIPMENT RINSE PRIOR TO NEXT DEPTH.

0925 MANAGERIAL WALK-THROUGH WITH M. LEIFESTE, H. BERSON, D. BURNAM, B. GREENE, R. ROBLES; B. WOLLE.

0933 BEGAN HAND AUGERING FOR SECOND DEPTH (1'-2') BELOW HWDL. SOIL SAMPLE RETRIEVAL. MAXIMUM DEPTH REACHED 9" BELOW HWDL. REACHED CONCRETE FOUNDATION BELOW HWDL. SOIL CONTAINS MOISTURE, NO DISCOLORATION, NO ODORS. DRAGER READING AT 0 ppb. COMPLETED BORE LOG FORMS.

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1303050941	(b) HYDRAZINES	0310401X	4oz AMBER	ICE	T.A.-CO	S
1303050942	(b) VOA	DE695	40mL CLEAR	MeOH	T.A.-GA	S
1303050942	(b) VOA	117139	"	SOBI	"	S
1303050942	(b) VOA	117139	"	SOBI	"	S
1303050943	(b) SVOA	0610401X	8oz CLEAR	ICE	"	S
1303050944	(b) METALS + Hg	0310401X	4oz AMBER	ICE	200 HWDL 08	S
1303050945	(b) CYANIDES	0310401X	4oz AMBER	ICE	"	S

(b) = SECOND DEPTH (1'-2') BELOW HWDL (~ 8.5")

1005 EQUIPMENT RINSE/DECON PRIOR TO NEXT ~~HOT~~ BOREHOLE 200 HWDL-09 (45 ELBOW).

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1303051010	HYDRAZINES	0120601X	500mL AMBER	ICE	T.A.-CO	A
1303051011	VOA	0127101X	3-40mL CLEAR	HCL	T.A.-GA	A
1303051012	SVOA	0210401X	2-1L AMBER	ICE	200 HWDL 09	A
1303051013	MET. + Hg	0321301X	250mL PLASTIC	HNO_3	T.A.-GA	A
1303051014	CYANIDES	0311201V	250 mL PLASTIC	NaOH	T.A.-GA	A

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1016 EXCAVATED BORE HOLE 200 HWDL 09 TO REVEAL ELBOW. DRAGER READING ~~0ppb.~~ 0 ppb. BEGAN COLLECTING SOIL SAMPLES OF FIRST DEPTH (0-6") BELOW ELBOW OF HWDL. DRAGER READING OF SOIL 0 ppb. SOIL IS MOIST, NO DISCOLORATION, NO ODORS. HWDL LOOKS INTACT, NO INTEGRITY ISSUES, NO EVIDENCE OF LEAKS.

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
130305 1020	(a) HYDRAZINES	0310401X	4oz AMBER	ICE	T.A.-CO	S
130305 1021	(a) VOA	DE695	40mL CLEAR	MeOH	T.A.-GA	S
130305 1021	(a) VOA	117139	40mL CLEAR	SOBI	"	S
130305 1021	(a) VOA	117139	40mL CLEAR	SOBI	"	S
130305 1022	(a) SVOA	0610401X	8oz CLEAR	ICE	"	S
130305 1023	(a) MET. + Hg	0310401X	4oz AMBER	ICE	200 HWDL 09	S
130305 1024	(a) CYANIDES	0310401X	4oz AMBER	ICE	"	S

(a) = FIRST DEPTH (0-6"). ~6" BELOW ELBOW

1025 EQUIPMENT RINSATE PRIOR TO NEXT DEPTH.

1037 BEGAN HAND AUGERING FOR NEXT DEPTH (1'-2') OF SOIL OF BOREHOLE 200 HWDL 09. COLLECTED SOIL SAMPLES. DRAGER READING RESULTS: 0 ppb. SOIL WAS MOIST + CLUMPY. HAD A SLIGHT ODOR. NO STAINING OR DISCOLORATION.

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
130305 1045	(b) HYDRAZINES	0310401X	4oz AMBER	ICE	T.A.-CO	S
130305 1046	(b) VOA	DE695	40mL CLEAR	MeOH	T.A.-GA	S
130305 1046	(b) VOA	117139	40mL CLEAR	SOBI	"	S
130305 1046	(b) VOA	117139	40mL CLEAR	SOBI	"	S
130305 1047	(b) SVOA	0610401X	8oz CLEAR	ICE	"	S
130305 1048	(b) MET. + Hg	0310401X	4oz CLEAR	ICE	200 HWDL 09	S
130305 1049	(b) CYANIDES	0310401X	4oz CLEAR	ICE	"	S

(b) = SECOND DEPTH (1'-2') BELOW HWDL. ~12" MAX. DEPTH.

1051 CLEANED UP WORK SITE. COC'S FOR SAMPLE & SAMPLE SHIPMENT.

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DATE: MARCH 6, 2013
PERSONNEL: A. SANCHEZ, S. PORTILLO, A. MONTES, T. TORRES, M. AVALOS
LOCATION: 200 AREA CORRIDOR BETWEEN BLDG. 201 + 203
WEATHER: COOL, OVERCAST, NO WIND
WORK AUTHORIZING DOCS: ETU CLOSURE PLAN, TPS 102488, JHA-HW-053, SAP 2013-006

0800 TAILGATE SAFETY BRIEFING WITH ENV. TECHS. + CHEM. LAB PERSONNEL.
- EMERGENCY EXIT ROUTES, SLIP, TRIPS + FALLS, NO HEAVY EQUIPMENT

0815 EQUIPMENT RINSE FOR EQ. BLANKS PRIOR TO FIRST DEPTH OF BOREHOLE 200 HWDL-10.

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1303060818	HYDRAZINE	0120601X	500 mL AMBER	ICE	T.A.-CO	A
1303060819	VOA	0127101X	3-40mL CLEAR	HCL	T.A.-GA	A
1303060820	SVOA	0210401X	2-1L AMBER	ICE	"	A
1303060821	MET. + Hg	0321301X	250 mL PLASTIC	HNO_3	"	A
1303060822	CYANIDES	0311201V	250 mL PLASTIC	NaOH	"	A

200 HWDL 10

0825 HAND AUGERED SAMPLE POINT TO EXPOSE HWDL ELBOW. HWDL CONNECTION + INTEGRITY LOOK INTACT. NO EVIDENCE OF LEAKS, CRACKS, OR BREAKAGE. EXISTING DRAWINGS INDICATE CONGESTION OF ADDITIONAL LINES BENEATH HWDL. SOIL ~~BEA~~ SAMPLE RETRIEVAL BEGAN. SOIL CONTAINS MOISTURE + FRAGMENTS OF TAPE. NO NOTICEABLE ODORS; DRAGER READING 0 ppb; NO STAINING OR DISCOLORATION. COMPLETED SOIL BORE LOG FORMS.

SAMPLE ID#	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1303060835 (a)	HYDRAZINE	0310401X	4oz AMBER	ICE	T.A.-CO	S
1303060836 (a)	VOA	DE695	40mL CLEAR	MeOH	T.A.-GA	S
1303060836 (a)	VOA	117139	"	SOBI	"	S
1303060836 (a)	VOA	117139	"	SOBI	"	S
1303060837 (a)	SVOA	0610401X	8 oz CLEAR	ICE	"	S
1303060838 (a)	MET. + Hg	0310401X	4oz AMBER	ICE	"	S
1303060839 (a)	CYANIDES	0310401X	4oz AMBER	ICE	"	S

200 HWDL 10

(a) = FIRST DEPTH (0-6") BELOW HWDL CONNECTION.

0841 RINSING EQUIPMENT PRIOR TO NEXT DEPTH WITH TAP WATER.

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0843 ENCOUNTERED HARD LAYER 6" BELOW HWDL. WILL STEP TO THE EAST ABOUT 1' & CONTINUE EXCAVATION FOR SECOND DEPTH. UNCOVERED YELLOW + BLACK TAPE WHICH CAN BE ~~INDICATED~~ AS INDICATIVE OF UTILITY LINE. TO NOT INTERFERE OR RISK PUNCTURING AN UNKNOWN LINE IT WAS DECIDED THAT WE STEP OFF ~1'.

0855 BEGAN HAND SHOVELING 1' EAST OF 1st SAMPLING POINT FOR SECOND DEPTH (1'-2') OF BOREHOLE. REACHED ~ 11" BELOW HWDL BEFORE WE REACHED A SANITARY SEWER LINE. SOIL WAS REMOVED FROM 5" BELOW HWDL TO RETRIEVE SAMPLES. DRAGER READING WAS 0 ppb. NO ODORS. NO SOIL STAINING OR DISCOLORATION. SOIL WAS A SANDY/SOIL MIXTURE WITH MOISTURE. SOIL BORE LOG FORMS COMPLETED. COLLECTED SOIL SAMPLES. BOTH SECOND DEPTH + DUPLICATE.

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1303060915 (b)	HYDRAZINES	0310401x	4oz. AMBER	ICE	T.A.-CO	S
1303060916 (b)	VOA	DE695	40ml CLEAR	MeOH	T.A.-GA	S
1303060916 (b)	VOA	117139	"	SOBI	"	S
1303060916 (b)	VOA	117139	"	SOBI	"	S
1303060917 (b)	SVOA	0610401x	8oz CLEAR	ICE		S
1303060918 (b)	MET. + Hg	0310401x	4oz CLEAR	ICE	"	S
1303060919 (b)	CYANIDES	0310401x	4oz CLEAR	ICE	"	S

200 HWDL 10

(b) = ~~FIRST~~ SECOND DEPTH ~~(0-6")~~ (1'-2') BELOW HWDL. (~ 11") BELOW HWDL.

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1303060920 (D)	HYDRAZINES	0310401x	4oz AMBER	ICE	T.A.-CO	S
1303060921 (D)	VOA	DE695	40ml CLEAR	MeOH	T.A.-GA	S
1303060921 (D)	VOA	117139	"	SOBI	"	S
1303060921 (D)	VOA	117139	"	SOBI	"	S
1303060922 (D)	SVOA	0610401x	8oz CLEAR	ICE	"	S
1303060923 (D)	MET. + Hg	0310401x	4oz. AMBER	ICE		S
1303060924 (D)	CYANIDES	0310401x	4oz. AMBER	ICE	"	S

200 HWDL 10

(D) = DUPLICATE SAMPLES (REQUIRED PER SAP 2013-006 FOR EVERY 10 SAMPLES)

0926 EQUIPMENT DECONTAMINATION + RINSE PRIOR TO NEXT BOREHOLE. WILL COLLECT SOIL SAMPLES FROM BOREHOLE 200 HWDL 11.

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0945 BEGAN HAND AUGERING FOR NEXT BOREHOLE 200 HWDL 11 (45 ELBOW FROM ENV/MET) EQUIPMENT BLANKS WERE TAKEN.

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1303060949	HYDRAZINES	0120601x	500 mL AMBER	ICE	T.A.-CO	A
1303060950	VOA	0127101x	3-40 mL CLEAR	HCL	T.A.-GA	A
1303060951	SVOA	0210401x	2-1 L AMBER		200 HWDL-11	A
1303060952	MET. + Hg	0321301x	250 PLASTIC	HNO_3	T.A.-GA	A
1303060953	CYANIDES	0311201V	250 mL PLASTIC	NaOH	T.A.-GA	A

0955 SOIL WAS COLLECTED ~6" BELOW THE HWDL. THE SOIL CONTAINED MINUTE FRAGMENTS OF PAPER TRASH/DEBRIS. SOIL WAS A SANDY BACKFILL. DRAGER READING WAS 0ppb. SOIL DID NOT HAVE ANY ODORS, NO STAINING OR DISCOLORATION. STYROFOAM WAS ALSO NOTED. THE HWDL CONNECTION WAS WELL INTACT, NO EVIDENCE OF LEAKAGE OR CRACKS OR BREAKS FROM THE HWDL. SOIL WAS COLLECTED.

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1303061000 (a)	HYDRAZINES	0310401x	4oz AMBER	ICE	T.A.-CO	S
1303061001 (a)	VOA	DE695	40 mL CLEAR	MeOH	T.A.-GA	S
1303061001 (a)	VOA	117139	"	SOBI	"	S
1303061001 (a)	VOA	117139	"	SOBI	"	S
1303061002 (a)	SVOA	0610401x	8 oz. CLEAR	ICE	200 HWDL 11	S
1303061003 (a)	METALS + Hg	0310401x	4oz. AMBER	ICE	"	S
1303061004 (a)	CYANIDES	0310401x	4oz. AMBER	ICE	"	S

(a) = FIRST DEPTH (0-6") BELOW HWDL. COLLECTED ~6" BELOW HWDL.

1006 EQUIPMENT RINSE PRIOR TO NEXT DEPTH (1'-2').

1022 BEGIN HAND AUGERING FOR SECOND DEPTH (1'-2') BELOW HWDL. SOIL COLLECTION, SOIL WAS A SANDY BACKFILL, CONTAINED MOISTURE. NO ODORS, NO STAINING OR DISCOLORATION. COMPLETED BORE LOG FORM. ~~COLLECTED SOIL SAMPLES. DRAGER READING WAS AT 0 ppb. SOIL CONTAINED SMALL FRAGMENTS OF HARD ROCK. SOIL COMPOSITION WAS NOT SIMILAR TO OTHER BOREHOLE BACKFILL SOILS.~~ AS

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SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1303061028 (b)	HYDRAZINES	0310401x	4oz AMBER	ICE	T.A.-CO	S
1303061029 (b)	VOA	DE695	40ml CLEAR	MeOH	T.A.-GA	S
1303061029 (b)	VOA	117139	"	SOBI	"	S
1303061029 (b)	VOA	117139	"	SOBI	"	S
1303061029 (b)	VOA	117139		ICE	"	S
1303061030 (b)	SVOA	0610401x	8oz. CLEAR	ICE		S
1303061031 (b)	MET. + Hg	0310401x	4oz. AMBER	ICE	"	S
1303061032 (b)	CYANIDES	0310401x	4oz. AMBER	ICE		S

200 HWDL 11

(b) = SECOND DEPTH (1'-2') BELOW HWDL. (~ 14") BELOW HWDL.

1040 CLEARED WORKSITE, REPLACED ply BOARD OVER HOLES & STANCHIONS/BARRICADES OVER EXPOSED SAMPLING POINTS. COMPLETED COC's FOR SAMPLES. SAMPLES SHIPPED.

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DATE: MARCH 7, 2013
PERSONNEL: A. SANCHEZ, S. PORTILLO, A. MONTES, R. BURROWS, B. GREENE
LOCATION: 200 AREA CORRIDOR BETWEEN BLDGS. 200 + 201
WEATHER: SLIGHT CLOUDS, SUNNY, WARM
WORK AUTHORIZING DOCS: ETU CLOSURE PLAN, TPS

0800 TAILGATE SAFETY BRIEFING WITH ENV. TECHS + BEN GREENE FROM CHEM LABS. GOAL FOR TODAY: BOREHOLES 200 HWDL 12 + 200 HWDL 13

0813 EQUIPMENT RINSATE FOR EQUIPMENT BLANKS PRIOR TO FIRST HOLE.

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1303070817	HYDRAZINES	0120601X	500 mL AMBER	ICE	T.A.-CO	A
1303070818	VOA	0127101X	3-40 mL CLEAR	HCL	T.A.-GA	A
1303070819	SVOA	0210401X	2-1L AMBER	ICE	T.A.-GA	A
1303070820	MET. + Hg	0321301X	250 mL PLASTIC	HNO_3	T.A.-GA	A
1303070821	CYANIDES	0311201V	250 mL PLASTIC	NaOH	T.A.-GA	A

200 HWDL 12

0827 BEGAN HAND AUGERING FOR FIRST DEPTH (0-6") AT 200 HWDL-12. SOIL RETRIEVED FROM BOREHOLE CONTAINS SEPERATE LAYERS OF DRY + MOIST SOILS. SOILS ARE MULTICOLORED. CONTAIN SMALL FRAGMENTS OF RUST OR RUST-COLORED SLIVERS. NO NOTICEABLE ODORS. HWDL TEE FROM V.P.R. LOOKS INTACT. NO EVIDENCE OF LEAKS OR BREAKS FROM THE HWDL. NO CRACKS OR OBVIOUS STRUCTURAL ABNORMALITIES. COMPLETED SOIL BORE LOG FORMS. COLLECTED SOIL SAMPLES. HWDL SITS 2'5" BELOW GROUND SURFACE. DRAGER READING WAS AT 0 ppb.

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1303070835	(a) HYDRAZINES	0310401X	4oz AMBER	ICE	T.A.-CO	S
1303070836	(a) VOA	DE695	40 mL CLEAR	MeOH	T.A.-GA	S
1303070836	(a) VOA	117139	40 mL CLEAR	SOB1	//	S
1303070836	(a) VOA	117139	40 mL CLEAR	SOB1	//	S
1303070837	(a) SVOA	0610401X	8oz CLEAR	ICE	//	S
1303070838	(a) MET. + Hg	0310401X	4oz CLEAR	ICE	//	S
1303070839	(a) CYANIDES	0310401X	4oz CLEAR	ICE		S

200 HWDL 12

(a) = FIRST DEPTH (0-6") BELOW HWDL. (REACHED SAMPLE MAX @ 6")

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0841 EQUIPMENT RINSE PRIOR TO NEXT DEPTH (1'-2') BELOW HWDL.

0855 BEGAN HAND AUGERING FOR NEXT DEPTH (1'-2') BELOW HWDL. HIT HARD LAYER OF ROCK AT ABOUT 8-9" BELOW. CONTINUED TO HIT A HARD SURFACE. HWDL UPON FURTHER INSPECTION LOOKED WELL INTACT (SEE PHOTOS).

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1303070916 (b)	HYDRAZINE	0310401X	4oz AMBER	ICE	T.A.-CO	S
1303070917 (b)	VOA	D2695	40mL CLEAR	MeOH	T.A.-GA	S
1303070917 (b)	VOA	117139	"	SOBI	"	S
1303070917 (b)	VOA	117139	"	SOBI	"	S
1303070918 (b)	SVOA	0610401X	8 oz CLEAR	ICE	"	S
1303070919 (b)	MET. + Hg	0310401X	4oz AMBER	ICE	200 HWDL 12	S
1303070920 (b)	CYANIDES	0310401X	4oz AMBER	ICE	"	S

(b)= SECOND DEPTH (1'-2') BELOW HWDL. (REACHED MAX. DEPTH ~ 8") COULD NOT REACH DESIRED DEPTH OF 12" DUE TO A HARD ROCK LAYER BELOW THE HWDL AT 7". MADE 4 DIFFERENT BOREHOLE ATTEMPTS TO REACH 12". MAX. DEPTH REACHED WAS 8". SOIL COMPOSITION WAS OF A ROCKY SOIL BACKFILL THAT CONTAINED SMALL HARD ROCK FRAGMENTS. DRAGER READING WAS 0 ppb.

0948 EQUIPMENT BLANK FOR EQUIPMENT. & HYDRAZINE BOTTLE CONTAINS METALS PRESERVATIVE ~~(NaOH)~~ AS HNO_3.

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1303070950	HYDRAZINE	0120601X	500mL AMBER	ICE	T.A.-CO	A
1303070951	VOA	0271601X	3-40mL CLEAR	HCL	T.A.-GA	A
1303070952	SVOA	0210401X	2-1L AMBER	ICE	T.A.-GA	A
1303070953	MET. + Hg	0321301X	250mL PLASTIC	HNO_3	200 HWDL 13	A
1303070954	CYANIDES	0311201V	250mL PLASTIC	NaOH	T.A.-GA	A

1000 BEGAN CLEARING UP THE NEXT BOREHOLE 200 HWDL-13 FOR HAND AUGER & SOIL SAMPLE RETRIEVAL. SOIL IS A Sandy BACKFILL WITH SOME MOISTURE. NO SOIL STAINING OR DISCOLORATION. NO ODORS FROM THE SOIL. REACHED A MAXIMUM DEPTH OF 7" BELOW THE HWDL PVR ELBOW ~~(45)~~ AS (45). SOIL w

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SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1303071006	(a) HYDRAZINES	0310401X	4oz AMBER	ICE	T.A.-CO	S
1303071007	(a) VOA	DE695	40ml CLEAR	NaOH	T.A.-GA	S
1303071007	(a) VOA	117139	//	SODI	//	S
1303071007	(a) VOA	117139	//	SODI	//	S
1303071008	(a) SVOA	0610401X	8oz CLEAR	ICE	//	S
1303071009	(a) MET. + Hg	0310401X	4oz AMBER	ICE	200 HWDL 13	S
1303071010	(a) CYANIDES	0310401X	4oz AMBER	ICE	//	S

(a) = FIRST DEPTH (0-6") BELOW HWDL. REACHED MAXIMUM DEPTH ~7".

1011 RINSE EQUIPMENT PRIOR TO NEXT DEPTH (1'-2'). RINSATE MANAGED IN ACCORDANCE WITH SAP 2013-006.

1026 BEGAN HAND AUGERING FOR NEXT DEPTH (1'-2') BELOW HWDL. SOIL COLLECTION FOR SAMPLES. SOIL WAS A SANDY / COBBLE MIXTURE. CONTAINED MOISTURE. NO ODORS. DRAGER READING 0 ppb. NO STAINING OR DISCOLORATION. SOIL CONTAINS FRAGMENTS OF ASPHALT / BLACKTOP.

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1303071028	(b) HYDRAZINE	0310401X	4oz AMBER	ICE	T.A.-CO	S
1303071029	(b) VOA	DE695	40ml CLEAR	NaOH	T.A.-GA	S
1303071029	(b) VOA	117139	//	SODI	//	S
1303071029	(b) VOA	117139	//	SODI	//	S
1303071030	(b) SVOA	0610401X	8oz CLEAR	ICE	200 HWDL 13	S
1303071031	(b) MET. + Hg	0310401X	4oz AMBER	ICE	//	S
1303071032	(b) CYANIDES	0310401X	4oz AMBER	ICE	//	S

(b) = SECOND DEPTH (1'-2') BELOW HWDL. MAXIMUM DEPTH REACHED WAS 20".

1034 HWDL INSPECTION: HWDL LOOKS INTACT. NO STRUCTURAL ISSUES. NO EVIDENCE OF LEAKS, CRACKS, OR BREAKS. JOINTS LOOK WELL INTACT. HWDL WAS LOCATED 28" BGS.

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DATE: MARCH 8, 2013

PERSONNEL: A. SANCHEZ, S. PORTILLO, A. MONTES, R. BURROWS, S. PATTERSON, D. BURNAM, D. McCULLOUGH

LOCATION: 200 AREA CORRIDOR, BETWEEN BLDGS. 201 + 203

WEATHER: COOL, SUNNY, SLIGHT BREEZE.

WORK AUTHORIZING DOCS: ETU CLOSURE PLAN, TPS 102488, JHA HW-053, SAP 2013-006

0800 TAILGATE SAFETY BRIEFING WITH CHEMISTRY PERSONNEL, ENV. TECHS, + SAFETY PERSONNEL.
- FALL SAFETY, WALKING HAZARDS, POSSIBLE FUEL ~~TREATMENT~~ SHIPMENT IS
- GOALS: BOREHOLE 200 HWDL 14 + 200 HWDL 15.

0820 SET-UP ~~AS~~ AS WORK STATION. REVIEWING SAFETY HAZARDS BEFORE ENTERING SAMPLE BOREHOLE.

0826 EQUIPMENT RINSATE FOR EQUIPMENT BLANKS PRIOR TO FIRST HOLE.

FOR BOREHOLE 200 HWDL 14:

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	LAB	PRESERV.	MATRIX
1303080827	HYDRAZINE	0120601X	500 mL AMBER	T.A.-CO	ICE	A
1303080828	VOA	0127101X	3-40 mL CLEAR	T.A.-GA	HCL	A
1303080829	SVOA	0210401X	2-1L AMBER	T.A.-GA	ICE	A
1303080830	MET. + Hg	0321301X	250 mL PLASTIC	T.A.-GA	HNO_3	A
1303080831	CYANIDE	0312QV	250 mL PLASTIC	T.A.-GA	NaOH	A

200 HWDL 14

0835 HAND EXCAVATING / CLEARING BOREHOLE FOR SOIL SAMPLE COLLECTION. RETRIEVED SOIL SAMPLE. DRAEGER READING WAS 0ppb. NO ODORS. NO SOIL STAINING. NO SOIL DISCOLORATION. SOIL CONTAINED NATURAL MOISTURE. SOIL IS A NATURAL SOIL BACKFILL. CONTAINS SOME CLAY MATERIAL. COMPLETED BORE LOG FORMS. COLLECTED SOIL SAMPLES. HWDL DEPTH IS AT 48" BGS. SAMPLE ~~LOCATI~~ LOCATION IS ≈ 58" BGS.

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1303080850 (a)	HYDRAZINES	0310401X	4oz AMBER	ICE	T.A.-CO	S
1303080851 (a)	VOA	DE695	40 mL CLEAR	NaOH	T.A.-GA	S
1303080851 (a)	VOA	117139	"	SOBI	"	S
1303080851 (a)	VOA	117139	"	SOBI	"	S
1303080852 (a)	SVOA	0610401X	8 oz CLEAR	ICE	"	S
1303080853 (a)	MET. + Hg	0310401X	4oz AMBER	ICE	"	S
1303080854 (a)	CYANIDES	0310401X	4oz AMBER	ICE	"	S

200 HWDL 14

(a): FIRST DEPTH (0-6"). MAX. DEPTH ~ 7" BELOW HWDL.

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0855 EQUIPMENT RINSE PRIOR TO NEXT BOREHOLE DEPTH (1'-2') BELOW HWDL.

0911 BEGAN HAND AUGERING BOREHOLE 200 HWDL 14 FOR SECOND DEPTH (1'-2'). HIT ~~HARD~~ HARD MATERIAL BELOW HWDL. SOIL COLLECTION HAS A DISTINCT ODOR FROM THE SOILS, SIMILAR TO NATURAL GAS, HOWEVER WHEN LEFT OUT TO AERATE TO COMPLETE SAMPLE COLLECTION, SCENT WENT AWAY. THERE ARE NO KNOWN NATURAL GAS LINES IN THE AREA. SOIL DEPTH OF SAMPLE WAS 9" BELOW HWDL. SOIL CONTAINS SMALL ROCK MIXED WITH NATURAL SOIL. UNCERTAIN IF THIS IS BACKFILL SOIL OR NATURAL SOIL. NO DISCOLORATION OR STAINING. CONTAINS MOISTURE. COMPLETED BORE LOG FORMS.

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER ~~CONTAINER #~~	PRESERV. ~~PRESERV. #~~	LAB	MATRIX
1303080920	(b) HYDRAZINE	0310401X	4oz AMBER	ICE	T.A.-CO	S
1303080921	(b) VOA	D6695	40ml CLEAR	MeOH	T.A.-GA	S
1303080921	(b) VOA	117139	"	SOBI	T.A.-GA	S
1303080921	(b) VOA	117139	"	SOBI	"	S
1303080922	(b) SVOA	0610401X	8oz CLEAR	ICE	"	S
1303080923	(b) MET. + Hg	0310401X	4oz AMBER	ICE	"	S
1303080924	(b) CYANIDES	0310401X	4oz AMBER	ICE		S

200 HWDL 14

(b) = SECOND DEPTH (1'-2') BELOW HWDL, MAX. DEPTH ~ 9" BELOW HWDL.

0930 EQUIPMENT DECONTAMINATION PRIOR TO NEXT BOREHOLE: 200 HWDL 15. WILL TAKE SAMPLE DUPLICATE TO MEET QA/QC REQUIREMENTS OF SAP 2013-006.

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1303080955	HYDRAZINE	0120601X	500ml AMBER	ICE	T.A.-CO	A
1303080956	VOA	0127101X	3-40ml CLEAR	HCL	T.A.-GA	A
1303080957	SVOA	0210401X	2-1L AMBER	ICE	T.A.-GA	A
1303080958	MET. + Hg	0321301X	250 ml PLASTIC	HNO_3	T.A.-GA	A
1303080959	CYANIDES	0311201V	250 ml PLASTIC	NaOH	T.A.-GA	A

200 HWDL 15

1003 BEGAN CLEARING AREA FOR NEXT BOREHOLE 200 HWDL 15. HWDL LOCATION IS APPROXIMATELY 49" BELOW GROUND SURFACE. THIS BOREHOLE IS A DEVIATION FROM SAP 2013-006. INITIALLY THE SAMPLING POINT WAS DESIGNATED AT

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THE 45° ELBOW THE DOG LEGS TO THE EAST TOWARDS ~~AS~~ THE SUMP. HOWEVER DUE TO THE EXCAVATION HAZARDS OF TWO KNOWN UTILITIES ABOVE THE HWDL. ONE UTILITY ~~AS~~ IS AN ABANDONED STAINLESS STEEL LINE IN ~~AS~~ A PVC SLEEVE. THE OTHER MORE DANGEROUS LINE IS A 1400 psi NITROGEN GAS LINE LOCATED 1'½" ABOVE THE HWDL. IT WAS RECOMMENDED THAT ~~WAS~~ THE SAMPLE BE TAKEN AT THE MOST ACCESIBLE POINT IN THE LINE WITHOUT CAUSING A DISRUPTION OR POSSIBLE DAMAGE TO THE NITROGEN LINE. THIS WAS TO ENSURE WORKER'S SAFETY & STRUCTURAL INTEGRITY OF SURROUNDING UTILITIES. THIS DEVIATION IS ALSO NOTED IN SAP 2013-006.

1010 RETRIEVED SOIL SAMPLE FROM BOREHOLE 200 HWDL 15. SOIL WAS MOIST. NO ODORS. DRAGER READING WAS 0ppb. SOIL CONTAINED NATURAL SOIL BACKFILL WITH SMALL ROCK. NO DISCOLORATION OR STAINING. HWDL FROM THE TOP VIEW DOES NOT SHOW ANY INTEGRITY ISSUES, CRACKS, OR EVIDENCE OF LEAKAGE. VERY DIFFICULT TO EXAMINE THE HWDL FROM ANY OTHER VIEW AS EXCAVATION WAS DIFFICULT IN ACHIEVING FULL HWDL EXPOSURE

1021 COLLECTED SOIL SAMPLE DUPLICATE FROM TOP DEPTH (0-6") ABOUT 2-3" ADJACENT TO FIRST HOLE.

FIRST DEPTH:

SAMPLE ID #		ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
130308 1015	(a)	HYDRAZINE	0310401X	4oz AMBER	ICE	T.A.-CO	S
130308 1016	(a)	VOA	DE685	40ml CLEAR	MeOH	T.A.-GA	S
130308 1016	(a)	VOA	117139	"	SOBI	"	S
130308 1016	(a)	VOA	117139	"	SOBI	"	S
130308 1017	(a)	SVOA	06104 01X	8oz CLEAR	ICE		S
130308 1018	(a)	MET. + Hg	0310401X	4oz AMBER	ICE		S
130308 1019	(a)	CYANIDES	0310401X	4oz AMBER	ICE	"	S

200 HWDL

(a) = FIRST DEPTH (0-6") BELOW HWDL. MAX DEPTH REACHED WAS 6" BELOW HWDL.

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SAMPLE ID#	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1303081020	(d) HYDRAZINES	0310401X	4oz AMBER	ICE	T.A.-CO	S
1303081021	(d) VOA	DE695	40mL CLEAR	MeOH	T.A.-GA	S
1303081021	(d) VOA	117139	"	SOBI	"	S
1303081021	(d) VOA	117139	"	SOBI	"	S
1303081022	(d) SVOA	0610401X	8oz CLEAR	ICE	"	S
1303081023	(d) MET. + Hg	0310401X	4oz AMBER	ICE	"	S
1303081024	(d) CYANIDES	0310401X	4oz AMBER	ICE	"	S

200 HWDL 15

(d) = DUPLICATE SAMPLE OF BOREHOLE 200 HWDL-15 (0-6"). MAX DEPTH ≈ 6" BELOW HWDL.

1026 EQUIPMENT RINS PRIOR TO NEXT DEPTH (1'-2').

1086 HAND AUGER FOR NEXT DEPTH SOIL COLLECTION. HIT HARD MATERIAL BELOW HWDL, HAVING DIFFICULTY HAND AUGERING TO COLLECT NEXT DEPTH. DRAGER READING WAS 0ppb. SOIL HAS A REDDISH COLOR. CONTAINS SMALL ROCK FRAGMENTS. IS A NATURAL SOIL BACKFILL. ~~No ODORS.~~ No STAINING. CONTAINS SOME MOISTURE. SOIL HAS A SLIGHT ODOR, SOMEWHAT LIKE NATURAL GAS BUT NOT AS STRONG.

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1303081047	(b) HYDRAZINES	0310401X	4oz AMBER	ICE	T.A-CO	S
1303081048	(b) VOA	DE695	40mL CLEAR	MeOH	T.A.-GA	S
1303081048	(b) VOA	117139	"	SOBI	"	S
1303081048	(b) VOA	117139	"	SOBI	"	S
1303081049	(b) SVOA	0610401X	8oz CLEAR	ICE	"	S
1303081050	(b) MET. + Hg	0310401X	4oz AMBER	ICE	"	S
1303081051	(b) CYANIDES	0310401X	4oz AMBER	ICE	"	S

200 HWDL 15

(b) = SECOND DEPTH (1'-2') BELOW HWDL. MAX. DEPTH REACHED 12".

1100 CLEANED WORK SITE. MANAGED PPE & RINSATE IN ACCORDANCE WITH SAP 2013-006.

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DATE: MARCH 12, 2013
PERSONNEL: A. SANCHEZ, S. PORTILLO, A. MONTES, F. GALLEGOS
LOCATION: NORTHSIDE BLDG. 203, 200 HWDL-16 + 200 HWDL-17
WEATHER: SUNNY, NO BREEZE,
WORK AUTHORIZATION DOCS: ETU CLOSURE PLAN, TPS 102488, JHA HW-053, SAP 2013-006

0845 SAFETY TAILGATE BRIEFING W/ ENV. TECHS.
- CONFINED SPACE ENTRY, SLIPS, TRIPS, + FALLS, PEDESTRIAN TRAFFIC

0850 EQUIPMENT RINSATE PRIOR TO FIRST BOREHOLE 200 HWDL-16.

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1303120848	HYDRAZINE	0120601X	500 mL AMBER	ICE	T.A.-CO	A
1303120849	VOA	0127101X	3-40mL CLEAR	HCL	T.A.-GA	A
1303120850	SVOA	0210401X	2-1L AMBER	ICE	T.A.-GA	A
1303120851	MET. + Hg	0321201X	250mL PLASTIC	HNO_3	T.A.-GA	A
1303120852	CYANIDE	0311201V	250 mL PLASTIC	NaOH	T.A.-GA	A

200 HWDL 16

0856 BEGAN HAND EXCAVATING NEAR 200 HWDL 16 CLEAN OUT TO LOCATE HWDL / CLEANOUT ~~EE~~ AS & INTERSECTION. COMPLETED CONFINED SPACE ENTRY PERMIT. * NOTE: USED FUEL DRAGER AS AIR CONTAMINATE INDICATOR. DIFFICULTY OBTAINING SOIL SAMPLE. CLEAN OUT IS PLACED IN A 3' DIAMETER CULVERT BURIED IN LOOSE SAND. ESTIMATES INDICATE THAT THE HWDL IS LOCATED ~~4'8"~~ 3'9" AS FROM THE TOP OF THE CLEANOUT ~~R~~ FLANGE. THE ANGLE TO REMOVE THE SAND WAS COMPLICATED SO OUR SOIL EXTRACTION METHOD CHANGED. WE EXCAVATED TO A DEPTH OF 2' BELOW THE FLANGE. TAPED THE TOP OF THE AUGER BARREL WITH CALIPICO TAPE + BORED DOWN TO 4'8", AS WAS INDICATED ON MEASURED MARKINGS ON THE HAND AUGER. ONCE THE DESIRED DEPTH WAS MET, A SEPARATE BORING WAS COMPLETED ON A SAMPLE RETRIVED (0-6") BELOW THE MEASURED HWDL. MAX. DEPTH REACHED WAS ~~5'2"~~ 4'4" AS FOR FIRST SAMPLE DEPTH. SOIL WAS A SANDY BACKFILL (UNNATURAL), CONTAINED TRACE MOISTURE. NO STAINING OR ODORS. DRAGER READING 0 ppb. COMPLETED BORE LOG FORMS. COLLECTED SOIL SAMPLES FOR FIRST DEPTH (0-6").

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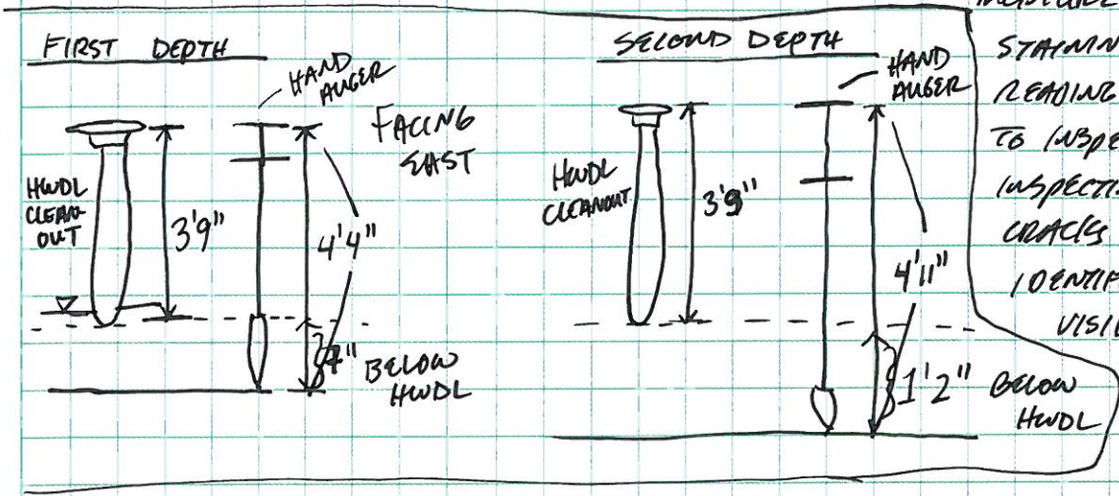
SAMPLE ID#		ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1303120925	(a)	HYDRAZINES	0310401X	4oz AMBER	ICE	T.A.-CO	S
1303120926	(a)	VOA	D2695	40mL CLEAR	MeOH	T.A.-GA	S
1303120926	(a)	VOA	117139	"	SOB1	"	S
1303120926	(a)	VOA	117139	"	SOB1	"	S
1303120927	(a)	SVOA	0610401X	8oz CLEAR	ICE	"	S
1303120928	(a)	MET. + Hg	0310401X	4oz AMBER	ICE	"	S
1303120929	(a)	CYANIDES	0310401X	4oz AMBER	ICE	"	S

200 HWDL 16

(a) = FIRST DEPTH (0-6") BELOW HWDL LEVEL. MAX. DEPTH ~~5'2"~~ 4'4" AS BELOW HWDL.

0934 EQUIPMENT RINSATE PRIOR TO NEXT DEPTH (1'-2') BELOW HWDL. PLACED TAPE ON TOP OF CORE BARREL TO ENSURE DEPTH SAMPLE

0938 PLACED HAND AUGER EXTENSION. MEASURED APPROXIMATELY ~~4'10"~~ 4'11" AS ACCORDING TO HAND AUGER MEASUREMENT. THIS INDICATED A DEPTH OF ~~4'~~ 1' AS BELOW HWDL DEPTH. COLLECTED SOIL SAMPLE. SOIL WAS ALSO A SANDY BACKFILL WITH TRACE MOISTURE. NO DISCOLORATION OR STAINING. NO ODORS. DRAGER READING WAS 0ppb. WAS UNABLE TO INSPECT HWDL HOWEVER, AFTER INSPECTING INNER PIPE, NO SIGNIFICANT CRACKS OR INTEGRITY ISSUES WERE IDENTIFIED. COULD NOT TAKE A VISIBLE PHOTO OF INNER PIPE DUE TO LOW FLASH QUALITY OF CAMERA.



SAMPLE ID#		ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1303120947	(b)	HYDRAZINES	0310401X	4oz AMBER	ICE	T.A.-CO	S
1303120948	(b)	VOA	D2695	40mL CLEAR	MeOH	T.A.-GA	S
1303120948	(b)	VOA	117139	"	SOB1	=	S
1303120948	(b)	VOA	117139	"	SOB1	=	S
1303120949	(b)	SVOA	0610401X	8oz CLEAR	ICE	=	S
1303120950	(b)	MET. + Hg	0310401X	4oz AMBER	ICE	=	S
1303120951	(b)	CYANIDES	0310401X	4oz AMBER	ICE	=	S

200 HWDL 16

(b) = SECOND DEPTH (1'-2') BELOW HWDL. MAX. DEPTH OF ~~4'10"~~ 4'11" AS

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0954 CLEARED WORKSITE FOR 200 HWDL 16. EQUIPMENT DECONTAMINATION FOR NEXT BOREHOLE 200 HWDL 17. EQUIPMENT BLANKS

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
130312 1023	HYDRAZINE	0120601X	500 mL AMBER	ICE	T.A.-CO	A
130312 1024	VOA	0127101X	3-40 mL CLEAR	HCL	T.A.-GA	A
130312 1025	SVOA	0210401X	2-1 L AMBER	ICE	T.A.-GA	A
130312 1026	MET. + Hg	0321301X	250 mL PLASTIC	HNO_3	T.A.-GA	A
130312 1027	CYANIDES	0311201X	250 mL PLASTIC	NaOH	T.A.-GA	A

200 HWDL 17

1034 BEGAN HAND AUGERING FOR FIRST DEPTH AT 200 HWDL-17 (0-6"). BEGAN COLLECTING SOIL. SOIL WAS A NATURAL SOIL WITH CLAY BACKFILL. CONTAINED MOISTURE, NO DISCOLORATION, NO STAINING. DRAGER READING WAS 0 ppb. COMPLETED BORE LOG FORMS

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
130312 1037	(a) HYDRAZINE	0310401X	4 oz AMBER	ICE	T.A.-CO	S
130312 1038	(a) VOA	DE695	40 mL CLEAR	MeOH	T.A.-GA	S
130312 1038	(a) VOA	117139	"	SOB1	"	S
130312 1038	(a) VOA	117139	"	SOB1	"	S
130312 1039	(a) SVOA	0610401X	8 oz CLEAR	ICE	"	S
130312 1040	(a) MET. + Hg	0310401X	4 oz AMBER	ICE	"	S
130312 1041	(a) CYANIDES	0310401X	4 oz AMBER	ICE	"	S

200 HWDL 17

(a) = FIRST DEPTH (0-6") BELOW HWDL. MAX. DEPTH ~ 7" BELOW HWDL

1043 EQUIPMENT RINSE PRIOR TO NEXT DEPTH (1'-2').

1048 BEGAN COLLECTING SOIL SAMPLES FOR SECOND DEPTH. DRAGER READING WAS 0 ppb. SOIL WAS A NATURAL SOIL/CLAY BACKFILL. CONTAINED MOISTURE. NO DISCOLORATION OR STAINING, NO ODORS. COMPLETED SOIL BORE LOG FORMS. HWDL CONNECTION WAS A DISCONNECTED STAINLESS STEEL LINE. LOOKED IN GOOD CONDITION, NO SIGN OF INTEGRITY ISSUES OR EVIDENCE OF LEAKS FROM THE HWDL.

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SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1303121050	(b) HYDRAZINE	03104011X	4oz AMBER	ICE	TA-CO	S
1303121051	(b) VOA	DE695	40mL CLEAR	MeOH	TA-GA	S
1303121051	(b) VOA	117139	"	SOBI	"	S
1303121051	(b) VOA	117139	"	SOBI	"	S
1303121052	(b) SVOA	06104011X	8oz CLEAR	ICE	200 HWDL 17	S
1303121053	(b) MET. & Hg	03104011X	4oz AMBER	ICE	"	S
1303121054	(b) CYANIDES	03104011X	4oz AMBER	ICE	"	S

(b) = SECOND DEPTH (1'-2') BELOW HWDL. MAX DEPTH

1100 CLEANED WORK SITE. MANAGED PPE & DEBRIS & RINSATE I.A.W. SAP 2013-006.

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DATE: MARCH 13, 2013

PERSONNEL: A. SANCHEZ, S. PORTILLO, A. MONTES, F. GALLEGOS, S. PATTERSON, D. LEONARD

LOCATION: 200 AREA HWDL SUMP (SOUTH OF B. 803)

WEATHER: COOL, SUNNY, CLEAR

WORK AUTHORIZING DOCS: ETU CLOSURE PLAN, TPS 102488, JHA HW-053, SAP 2013-006

0805 TAILGATE SAFETY BRIEFING WITH ENV. TECHS, SAFETY, GLS.
- BOREHOLE GOALS: 200 HWDL-18 + 200 HWDL-19
- EGRESS ISSUES, FOOTING ISSUES, LADDER SAFETY
- SET-UP WORK AREA.

EQUIPMENT RINSATE PRIOR TO NEXT BOREHOLE-18. EQUIPMENT BLANKS TAKEN.

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1303130830	HYDRAZINES	0120601X	500 mL AMBER	ICE	T.A.-CO	A
1303130831	VOA	0127101X	3-40 mL CLEAR	HCL	T.A.-GA	A
1303130832	SVOA	0210401X	2-1L AMBER	200 HWDL-18		A
1303130833	MET. + Hg	0321301X	250 mL PLASTIC	HNO_3	T.A.-GA	A
1303130834	CYANIDES	0311201V	250 mL PLASTIC	NaOH	T.A.-GA	A

0840 BEGAN ENTERING SUMP, CLEANED AWAY DEBRIS THAT HAD BLOWN IN. BEGAN COLLECTING FIRST SAMPLE @ FIRST DEPTH (0-6") IN CENTER OF SUMP. COLLECTED SOIL SAMPLE. NATURAL SOIL BACKFILL WITH SMALL COBBLE. HAS A SLIGHT ODOR SIMILAR TO DECAYED ORGANIC MATERIAL + WHAT THE SUMP WASTE SMELLS LIKE. NO SOIL STAINING OR DISCOLORATION. CONTAINS SLIGHT MOISTURE. COMPLETED SOIL BORE LOGS. DRAGER READING Ø ppb.

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1303130850 * (a)	HYDRAZINES	0310401X	4oz AMBER	ICE	T.A.-CO	~~A~~ S
1303130851 * (a)	VOA	DE695	40 mL CLEAR	MeOH	T.A.-GA	S
1303130851 * (a)	VOA	117139	//	SOBI	//	S
1303130851 * (a)	VOA	117139	//	SOBI	//	S
1303130852 * (a)	SVOA	0610401X	8 oz CLEAR	ICE	//	S
1303130853 * (a)	MET. + Hg	0310401X	4oz AMBER	ICE	200 HWDL 18	S
1303130854 * (a)	CYANIDES	0310401X	4oz AMBER	ICE	//	S

(a) = FIRST DEPTH (0-6"). MAX. DEPTH REACHED 6" BELOW SUMP LEVEL.

* = VEHICLE TRAFFIC IN AREA, POSSIBLE EXHAUST FUMES DURING SAMPLE EVENT.

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0856 EQUIPMENT RINSE PRIOR TO NEXT DEPTH (1'-2') @ 200 HWDL-18.

0915 BEGAN HAND AUGERING SECOND DEPTH (1'-2') FOR SOIL COLLECTION. SOIL IS A SANDY, NATURAL BACKFILL. HAD SIMILAR ODOR AS FIRST DEPTH, ORGANIC DECAY MATERIAL SIMILAR TO SUMP WASTE SMELL. NO SOIL STAINING OR DISCOLORATION. DRAGER READING WAS Ø ppb. COMPLETED BORE LOG FORMS.

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1303130925* (b)	HYDRAZINE	0310401X	4oz AMBER	ICE	T.A.-CO	S
1303130926* (b)	VOA	DE695	40 mL CLEAR	MeOH	T.A.-GA	S
1303130926* (b)	VOA	117139	"	SOBI	"	S
1303130926* (b)	VOA	117139	"	SOBI	"	S
1303130927* (b)	SVOA	0610401X	8oz CLEAR	ICE	"	S
1303130928* (b)	MET. + Hg	0310401X	4oz AMBER	ICE	"	S
1303130929 (b)	CYANIDES	0310401X	4oz AMBER	ICE	"	S

200 HWDL 18

(b) = SECOND DEPTH (1'-2'). MAX. DEPTH OF 12" REACHED.

* = VEHICLE TRAFFIC IN AREA, POSSIBLE EXHAUST IN AREA DURING SAMPLING.

0932 EQUIPMENT RINSE / DECONTAMINATE PRIOR TO NEXT BORE HOLE 200 HWDL-19. EQUIPMENT BLANKS TAKEN.

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1303130953	HYDRAZINE	0120601X	500 mL AMBER	ICE	T.A.-CO	A
1303130954	VOA	0127101X	3-40mL CLEAR	HCL	T.A.-GA	A
1303130955	SVOA	0210401X	2-1L AMBER	ICE	T.A.-GA	A
1303130956	MET. + Hg	0321301X	250 mL PLASTIC	HNO_3	T.A.-GA	A
1303130957	CYANIDES	0311201V	250 mL PLASTIC	NaOH	T.A.-GA	A

200 HWDL-19

1000 BEGAN HAND AUGERING FOR FIRST DEPTH (0-6") BELOW SUMP OUTPUT DISCHARGE PIPE. SOIL CONSISTS OF A SANDY BACKFILL WITH SMALL COBBLE. NO ODORS. NO SOIL STAINING OR DISCOLORATION. DRAGER READING at Ø ppb. TRACE MOISTURE PRESENT. COMPLETED BORE LOG FORMS. COLLECTED SOIL SAMPLES.

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SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
130313 1010 (a)	HYDRAZINES	0310401X	4oz AMBER	ICE	T.A.-CO	S
130313 1011 (a)	VOA	DE695	40mL CLEAR	MeOH	T.A.-GA	S
130313 1011 (a)	VOA	117139	"	SOBI	"	S
130313 1011 (a)	VOA	117139	"	SOBI	"	S
130313 1012 (a)	SVOA	0610401X	8oz CLEAR	ICE	"	S
130313 1013 (a)	MET. & Hg	0310401X	4oz AMBER	ICE	"	S
130313 1014 (a)	CYANIDES	0310401X	4oz AMBER	ICE	"	S

(a)= FIRST DEPTH (0-6") BELOW OUTPUT DISCHARGE PIPE. MAX. DEPTH 6".

1015 EQUIPMENT RINSE PRIOR TO NEXT DEPTH (1'-2')

BEGAN HAND AUGERING FOR NEXT DEPTH (1'-2'). SOIL WAS A SANDY BACKFILL, NO ODORS, DRAGER READING AT 0 ppb. NO SOIL STAINING OR DISCOLORATION. TRACE MOISTURE PRESENT. COMPLETED BORE LOG FORMS.

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
130313 1033 (b)	HYDRAZINES	0310401X	4oz AMBER	ICE	T.A.-CO	S
130313 1034 (b)	VOA	DE695	40mL CLEAR	MeOH	T.A.-GA	S
130313 1034 (b)	VOA	117139	"	SOBI	"	S
130313 1034 (b)	VOA	117139	"	SOBI	"	S
130313 1035 (b)	SVOA	0610401X	8oz CLEAR	ICE	"	S
130313 1036 (b)	MET. & Hg	0310401X	4oz AMBER	ICE	"	S
130313 1037 (b)	CYANIDES	0310401X	4oz AMBER	ICE	"	S

(b)= SECOND DEPTH (1'-2') BELOW SUMP OUTPUT DISCHARGE PIPE. MAX DEPTH REACHED 17" BELOW SURFACE.

1040 BEGAN CLEARING UP WORK SITE. RE-SET BARRICADES & FENCING AROUND SUMP.

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DATE: MARCH 14, 2013

PERSONNEL: A. SANCHEZ, S. PORTILLO, A. MONTES, F. GALLEGOS

LOCATION: 200 AREA, EAST OF BLDG. 203, ~200' SOUTH OF HWDL SUMP

WEATHER: CLEAR, SUNNY, SLIGHT BREEZE

WORK AUTHORIZING DOCS: ETU CLOSURE PLAN, TPS 102488, JHA HW-053, SAP 2013-006

0800 TAILGATE SAFETY BRIEFING WITH ENV. TECHS.
- WILDLIFE, WALKING/TRIPPING HAZARDS, ERGONOMICS
- GOALS: 200 HWDL-20, 200 HWDL-20(D), & 200 HWDL-21

0805 EQUIPMENT RINSATE PRIOR FIRST BOREHOLE. EQUIPMENT BLANKS. TAKEN.

SAMPLE ID#	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1303140806	HYDRAZINES	0120601X	500 mL AMBER	ICE	T.A.-CO	A
1303140807	VOA	0127101X	3-40 mL CLEAR	HCL	T.A.-GA	A
1303140808	SVOA	0210401X	2-1L AMBER	ICE	T.A.-GA	A
1303140809	MET. + Hg	0321301X	250 mL PLASTIC	HNO_3	T.A.-GA	A
1303140810	CYANIDES	0311201V	250 mL PLASTIC	NaOH	T.A.-GA	A

200 HWDL 20

0811 BEGAN HAND EXCAVATION BOREHOLE 200 HWDL-20. USED A SHOVEL TO REMOVE UPPER 1"-2" LAYER OF TOP SOIL. WILL TAKE FIRST DEPTH (0-6"). COLLECTED SOIL SAMPLE FOR SAMPLE + SAMPLE DUPLICATE. SOIL IS A NATURAL SOIL BELOW THE ELBOW WHERE THE HWDL WAS EXISTED. SOIL HAD TRACE MOISTURE. NO ODORS OR STAINING. NO KNOWN RELEASES TO GRADE SO NO DRAGER READING REQUIREMENT. COMPLETED BORE LOG FORMS.

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1303140822* (a)	HYDRAZINE	0310401X	4oz AMBER	ICE	T.A.-CO	S
1303140823* (a)	VOA	DE6135	40m CLEAR	MeOH	T.A.-GA	S
1303140823* (a)	VOA	117139	"	5021	"	S
1303140823* (a)	VOA	117139	"	5001	"	S
1303140824* (a)	SVOA	0610401X	8 oz CLEAR	ICE		S
1303140825* (a)	MET. + Hg	0310401X	4oz AMBER	ICE	"	S
1303140826 (a)	CYANIDES	0310401X	4oz AMBER	ICE	"	S

200 HWDL 20

(a) = FIRST DEPTH (0-6"). MAP DEPTH AT 5".

* = CIGARETTE SMOKE + EXHAUST NOTED IN VICINITY DURING SAMPLE EVENT.

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SA 0828 COLLECTED SAMPLE DUPLICATE ON FIRST DEPTH (0-6").

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1303140827 (d)	HYDRAZINES	0310401X	4oz AMBER	ICE	T.A.-CO	S
1303140828 (d)	VOA	DE695	40mL CLEAR	MeOH	T.A.-GA	S
1303140828 (d)	VOA	117139	"	SOBI	"	S
1303140828 (d)	VOA	117139	"	SOBI	"	S
1303140829 (d)	SVOA	0610401X	8oz CLEAR	ICE	200 HWDL 20	S
1303140830 (d)	MET. + Hg	0310401X	4oz AMBER	ICE	"	S
1303140831 (d)	CYANIDES	0310401X	4oz AMBER	ICE	"	S

(d) = DUPLICATE SAMPLE AT (0-6") DEPTH.

0833 EQUIPMENT RINSE PRIOR TO NEXT DEPTH (1'-2').

0845 BEGAN HAND EXCAVATING FOR SECOND DEPTH (1'-2') AT BOREHOLE 200 HWDL 20. CLEARED OUT 7" OF SOIL BEFORE COLLECTING SOIL SAMPLES. COLLECTED SOIL. SOIL WAS A NATURAL SOIL WITH SMALL COBBLE. CONTAINED MOISTURE. NO ODOR OR STAINING. NO DISCOLORATION. NO KNOWN LEAKS, NO DRAGER READING. COMPLETED BORE LOG FORMS.

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1303140854 (b)	HYDRAZINE	0310401X	4oz AMBER	ICE	T.A.-CO	S
1303140855 (b)	VOA	DE695	40mL CLEAR	MeOH	T.A.-GA	S
1303140855 (b)	VOA	117139	"	SOBI	"	S
1303140855 (b)	VOA	117139	"	SOBI	"	S
1303140856 (b)	SVOA	0610401X	8oz CLEAR	ICE	"	S
1303140857 (b)	MET. + Hg	0310401X	4oz AMBER	ICE	"	S
1303140858 (b)	CYANIDES	0310401X	4oz AMBER	ICE	"	S

(b) = SECOND DEPTH (1'-2'). MAX. DEPTH REACHED 14" BGS.

0900 EQUIPMENT DECONTAMINATION PRIOR TO NEXT BOREHOLE. EQUIPMENT BLANKS TAKEN.

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1303140927	HYDRAZINES	0120601X	500mL AMBER	ICE	T.A.-CO	A
1303140928	VOA	0127101X	3-40mL CLEAR	HCL	200 HWDL 21	A
1303140929	SVOA	0210401X	2-1L AMBER	ICE	T.A.-GA	A
1303140930	MET. + Hg	0321301X	250mL PLASTIC	HNO_3	T.A.-GA	A
1303140931	CYANIDES	0311201V	250mL PLASTIC	NaOH	T.A.-GA	A

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BEGAN HAND EXCAVATION OF BOREHOLE 200 HWDL-21 (CLEAN OUT). USING A SHOVEL, CLEARED 1"-2" OF TOP SOIL/WEED DEBRIS. BEGAN COLLECTING SOIL SAMPLE. SOIL WAS A NATURAL SOIL WITH SMALL ROCK FRAGMENTS + WEEDS. NO ODORS. NO STAINING. NO MOISTURE OR SOIL DISCOLORATION. NO KNOWN LEAKS FROM HWDL TO GRADE, NO DRAGER READING. COMPLETED BORE LOG FORMS.

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1303140940	(a) HYDRAZINES	0310401x	4oz AMBER	ICE	T.A.-CO	S
1303140941	(a) VOA	DE695	40mL CLEAR	MeOH	T.A.-GA	S
1303140941*	(a) VOA	117139	//	SOBI	//	S
1303140941*	(a) VOA	117139	//	SOBI	//	S
1303140942	(a) SVOA	0610401x	8oz CLEAR	ICE		S
1303140943	(a) MET. + Hg	0310401x	4oz AMBER	ICE	//	S
1303140944	(a) CYANIDES	0310401x	4oz AMBER	ICE	//	S

200 HWDL 21

(a) = FIRST DEPTH (0-6") BELOW GROUND SURFACE. MAX. DEPTH REACHED 5" BGS.

* = PRESERVATIVE REACTED WITH SOIL + BUBBLED OVER CONTAINER.

0948 EQUIPMENT RINSATE PRIOR TO NEXT DEPTH (1'-2'). REMOVED 7" OF SOIL TO REACH 1' DEPTH FOR SECOND SAMPLE RETRIEVAL. SOIL COLLECTED IS A NATURAL SOIL WITH SMALL COBBLE. CONTAINS NO MOISTURE + HAS NO ODORS. NO STAINING OR SOIL DISCOLORATION. NO KNOWN DISCHARGES TO GRADE FROM HWDL SO NO DRAGER READING. COMPLETED SOIL BORE LOG FORMS.

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1303141005	(b) HYDRAZINES	0310401x	4oz AMBER	ICE	T.A.-CO	S
1303141006	(b) VOA	DE695	40mL CLEAR	MeOH	T.A.-GA	S
1303141006	(b) VOA	117139	//	SOBI	//	S
1303141006	(b) VOA	117139	//	SOBI	//	S
1303141007	(b) SVOA	0610401x	8oz CLEAR	ICE		S
1303141008	(b) MET. + Hg	0310401x	4oz AMBER	ICE	//	S
1303141009	(b) CYANIDES	0310401x	4oz AMBER	ICE	//	S

200 HWDL 21

(b) = SECOND DEPTH (1'-2') BGS. MAX DEPTH REACHED 12" BGS.

1013 CLEARED UP WORK SITE. BACKFILLED EXCAVATION BOREHOLES. PREPARED COC'S + SHIPPED SAMPLES.

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DATE: MARCH 18, 2013

LOCATION: 637 YARD DECON. PAD, ETU LAYDOWN YARD

PERSONNEL: A. SANCHEZ, S. PORTILLO, B. GALAZ, T. TORRES, B. WILLIAMS, M. DUENEZ, J. TARTER S. PATTERSON, J. ROLAND

WEATHER: CLOUDY, OVERCAST, COOL

WORK AUTHORIZING DOCS: ETU CLOSURE PLAN, TPS 102488, JHA HW-053, SAP 2013-006 (P/N 4530350) DRAGER MONITOR CALIBRATION: 1/24/13 NEXT CALIBRATION 3/25/13

0830 DRILLERS ARRIVED ON-SITE. DRILLERS WERE BADGED IN. MOBILIZED AT THE 637 DECON. PAD.

0900 TAILGATE SAFETY BRIEFING WITH SNV. TECHS., DRILLERS, SAFETY PERSONNEL, & GEOLOGISTS.

0930 DECON. RIG PRIOR TO MOBILIZING TO ETU. COLLECTED DECON. RINSATE INTO CONTAINER FOR STORAGE.

1038 MOBILIZED RIG TO ETU LAYDOWN YARD. PLACED PLASTIC SHEETING BELOW DRILL RIG. SET-UP EXCLUSION & CONTAMINATION REDUCTION ZONES.

1050 EQUIPMENT BLANKS COMPLETED ON SPLIT-SPOON BARREL (2") PRIOR TO FIRST HOLE. (200 ETU-01)

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1303181052	HYDRAZINES	0120601X	500mL AMBER	ICE	T.A.-CO	A
1303181053	VOA	0127101X	3-40mL CLEAR	HCL	T.A.-GA	A
1303181054	SVOA	0210401X	2-1L AMBER	ICE	T.A.-GA	A
1303181055	MET. +Hg	0321301X	250 mL PLASTIC	HNO_3	T.A.-GA	A
1303181056	CYANIDES	0311201V	250 mL PLASTIC	NaOH	T.A.-GA	A

200 ETU 01

1100 REPLACED SPLIT-SPOON INTO DRILL AUGER. RETRIEVED FIRST SAMPLE. SOIL CONSISTS OF FINES + GRAVEL, UNCONSOLIDATED BACK FILL. NO ~~Ø~~ DISCOLORATION OR ODORS. TRACE MOISTURE PRESENT. MAX DEPTH REACHED 11" BGS. NO SOIL STAINING. DRAGER READING Ø ppb.

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SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
130318 1107 *	(a) HYDRAZINE	0310401X	4oz AMBER	ICE	T.A.-CO	S
130318 1108 *	(a) VOA	DE695	40mL CLEAR	MeOH	T.A.-GA	S
130318 1108 *	(a) VOA	117139	"	SOBI	"	S
130318 1108 *	(a) VOA	117139	"	SOBI	"	S
130318 1109 *	(a) SVOA	0610401X	8oz CLEAR	ICE	"	S
130318 1110 *	(a) MET + Hg	0310401X	4oz AMBER	ICE	"	S
130318 1111 *	(a) CYANIDES	0310401X	4oz AMBER	ICE	"	S

(a) = FIRST DEPTH (0-1') BGS.

* = DRILL RIG RUNNING DURING SOIL SAMPLE EVENT, EXHAUST PRESENT.

1120 REPLACED SPLIT-SPOON WITH 3.5" SPLIT-SPOON FOR BETTER SAMPLE RECOVERY. * NOTE: DID NOT TAKE EQUIPMENT BLANK FROM SUBSTITUTED SPLIT-SPOON BARREL. RETRIEVED SOIL FROM SECOND DEPTH (1'-2'). SOIL SAMPLE IS A NATURAL SOIL BACKFILL WITH SMALL ROCK FRAGMENTS. SOIL HAS A PETROLEUM-BASED SMELL. THERE IS TRACE MOISTURE CAUSING SOME SOIL CLUMPING. SOIL CONTAINS 40% GRAVEL MATERIAL. DRAGER READING Ø ppb. MAX DEPTH REACHED WAS 24" BGS. COMPLETED BORE LOG FORMS.

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
130318 1128	(b) HYDRAZINES	0310401X	4oz AMBER	ICE	T.A.-CO	S
130318 1129	(b) VOA	DE695	40mL ~~AMB~~ CLEAR	MeOH	T.A.-GA	S
130318 1130 AS 29	(b) VOA	117139	"	SOBI	"	S
130318 1129	(b) VOA	117139	"	SOBI	"	S
130318 1130	(b) SVOA	0610401X	8oz CLEAR	ICE	"	S
130318 1131	(b) MET. + Hg	0310401X	4oz AMBER	ICE	200 ETU 01	S
130318 1132	(b) CYANIDES	0310401X	4oz AMBER	ICE	"	S

(b) = SECOND DEPTH (1'-2') BGS.

1140 MOBILIZED TO NEXT BOREHOLE (200 ETU-02).

1300 EQUIPMENT BLANK FOR EQUIPMENT, SPLIT-SPOON BARREL.

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
130318 1300	HYDRAZINES	0120601X	500mL AMBER	ICE	T.A.-CO	A
130318 1301	VOA	0127101X	3-40mL CLEAR	HCL	T.A.-GA	A
130318 1302	SVOA	0210401X	2-1L AMBER	ICE	200 ETU 02	A
130318 1303	MET. + Hg	0321301X	250mL PLASTIC	HNO_3	T.A.-GA	A
130318 1304	CYANIDES	0311201V	250mL PLASTIC	NaOH	T.A.-GA	(A)

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1315 BEGAN BORE AUGERING FOR FIRST DEPTH (0-1') OF 200 ETU-02. RETRIEVED FIRST SOIL SAMPLE. SOIL IS A NATURAL SOIL BACKFILL WITH ROCK FRAGMENTS. THERE IS TRACE MOISTURE IN THE UPPER COLUMN BUT SOIL IS DRY IN IN THE ~~LOWER~~ UPPER 10" OF DEPTH. SOIL DOES NOT HAVE A DISTINCT ODOR. DRAGER READING WAS Ø ppb. NO SOIL STAINING OR DISCOLORATION IN THE SOIL. RETRIEVED SOIL SAMPLES.

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
130318318	(a) HYDRAZINE	0310401X	4oz AMBER	ICE	T.A.-CO	S
130318319	(a) VOA	DE695	40ml CLEAR	MeOH	T.A.-GA	S
130318319	(a) VOA	117139	"	SOBI	T.A.-GA	S
130318319	(a) VOA	117139	"	SOBI	"	S
130318320	(a) SVOA	0610401X	8oz CLEAR	ICE	200 ETU02	S
130318321	(a) MET. + Hg	0310401X	4oz AMBER	ICE	"	S
130318322	(a) CYANIDES	0310401X	4oz AMBER	ICE	"	S

(a) = FIRST DEPTH (0-1') BGS. MAX. DEPTH REACHED 13".

1326 BEGAN BORE HOLE AUGER FOR NEXT DEPTH (1'-2'). RETRIEVED SOIL SAMPLE FROM SPOON. SOIL WAS A NATURAL SOIL BACKFILL THAT CONTAINS SMALL ROCKS. SOIL CONTAINED MOISTURE AT THE BOTTOM 5" OF COLUMN WHICH IS ~21" BGS. SOIL WAS NOT STAINED, WAS NOT DISCOLORED. DID NOT HAVE ANY ODOR OTHER THAN NATURAL SOIL ODOR. DRAGER READING WAS Ø ppb. COLLECTED SOIL SAMPLES

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
130318333	(b) HYDRAZINE	0310401X	4oz AMBER	ICE	T.A.-CO	S
130318334	(b) VOA	DE695	40ml CLEAR	MeOH	T.A.-GA	S
130318334	(b) VOA	117139	"	SOBI	"	S
130318334	(b) VOA	117139	"	SOBI	"	S
130318335	(b) SVOA	0610401X	8oz CLEAR	ICE	200 ETU02	S
130318336	(b) MET. + Hg	0310401X	4oz AMBER	ICE	"	S
130318337	(b) CYANIDES	0310401X	4oz AMBER	ICE	"	S

(b) = SECOND DEPTH (1'-2') BGS. MAX DEPTH REACHED 26" BGS.

1345 RELOCATED RIG TO NEXT SOIL ~~LOCA~~ BOREHOLE LOCATION: 200 ETU 03. EQUIPMENT RINSATE PRIOR TO NEXT BOREHOLE LOCATION. EQUIPMENT BLANKS TAKEN OF SPOON.

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SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
130318 1353*	HYDRAZINE	0120601X	500 mL AMBER	ICE	T.A.-CO	A
130318 1354*	VOA	0127101X	3-40 mL CLEAR	HCL	T.A.-GA	A
130318 1355*	SVOA	0210401X	2-1L AMBER	ICE	T.A.-GA	A
130318 1356*	MET. + Hg	0321301X	250 mL PLASTIC	HNO_3	T.A.-GA	A
130318 1357*	CYANIDES	0311201V	250 mL PLASTIC	NaOH	T.A.-GA	A

200 ETU 03

*= VEHICLE TRAFFIC IN THE AREA, EXHAUST MAY BE PRESENT.

1400 BEGAN AUGERING FOR SECOND FIRST DEPTH (0-1') AT BOREHOLE 200 ETU 03. RETRIEVED SOIL SAMPLE FROM SAMPLE SPOON. MAX. DEPTH OF COLUMN 14". SOIL IS A NATURAL SOIL BACKFILL WITH ROCK FRAGMENTS. MOISTURE WAS PRESENT AT LOWER 5" OF COLUMN. SOIL WAS NOT STAINED OR DISCOLORED. NO ODORS FROM SOIL. DRAGER READING WAS Ø ppb. COLLECTED SOIL SAMPLES.

SAMPLE ID #		ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
130318 1414	(a)	HYDRAZINE	0310401X	4oz AMBER	ICE	T.A.-CO	S
130318 1415	(a)	VOA	DE695	40 mL CLEAR	MeOH	T.A.-GA	S
130318 1415	(a)	VOA	117139	"	SOBI	"	S
130318 1415	(a)	VOA	117139	"	SOBI	"	S
130318 1416	(a)	SVOA	0610401X	8oz CLEAR	ICE		S
130318 1417	(a)	MET. + Hg	0310401X	4oz AMBER	ICE		S
130318 1418	(a)	CYANIDES	0310401X	4oz AMBER	ICE	"	S

200 ETU 03

(a) = FIRST DEPTH (0-1') BGS. MAX. DEPTH REACHED WAS 14" BGS.

1419 BEGAN AUGERING FOR SECOND DEPTH OF SOIL SAMPLES (1'-2') OF 200 ETU 03.
1423 RETRIEVED SOIL SAMPLES FROM AUGER/SPOON. SOIL IS A NATURAL SOIL BACKFILL WITH ROCK FRAGMENTS. MOISTURE WAS PRESENT THROUGHOUT THE COLUMN. MAX. DEPTH REACHED WAS 16" ~~BGS~~ FROM FIRST DEPTH WHICH IS 30" BGS. SOIL DID NOT HAVE ANY ODORS + DRAGER READING WAS Ø ppb. NO SOIL STAINING OR DISCOLORATION. COLLECTED SOIL SAMPLES.

SAMPLE ID #		ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
130318 1428	(b)	HYDRAZINES	0310401X	4oz AMBER	ICE	T.A.-CO	S
130318 1429	(b)	VOA	DE695	40 mL CLEAR	Me OH	T.A-GA	S
130318 1429	(b)	VOA	117139	"	SOBI	"	S
130318 1429	(b)	VOA	117139	"	SOBI	"	S
130318 1430	(b)	SVOA	0610401X	8oz CLEAR	ICE	"	S
130318 1431	(b)	MET. + Hg	0310401X	4oz AMBER	ICE		S
130318 1432	(b)	CYANIDES	0310401X	4oz AMBER	ICE	"	

200 ETU 03

(b) = SECOND DEPTH (2'-2') BELOW FIRST DEPTH.

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DATE: MARCH 19, 2013

PERSONNEL: A. SANCHEZ, S. PORTILLO, A. MONTES, R. BURROWS, D. DUENEZ, M. DUENEZ, J. TARTER

LOCATION: 200 AREA ETU LAYDOWN YARD

WEATHER: OVERCAST, COOL

WORK AUTHORIZING DOCS.: ETU CLOSURE PLAN, TPS 102488, JHA HW-053, SAP 2013-006

P/N 4530350 DRAGER CAL. DATE: 1/24/13 NEXT CAL.: 3/25/13

0805 TAILGATE SAFETY BRIEFING WITH ENV. TECHS. + DRILLING CREW.

0815 EQUIPMENT RINSATE ON 3" SPLIT-SPOON. EQUIPMENT BLANKS TAKEN.

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	LAB	PRESERV.	MATRIX
1303190815	HYDRAZINES	0120601X	500 mL AMBER	T.A.-CO	ICE	A
1303190816	VOA	0127101X	3-40 mL CLEAR	T.A.-GA	HCL	A
1303190817	SVOA	0210401X	2-1 L AMBER	T.A.-GA	200 ETU 04	A
1303190818	MET. + Hg	0321301X	250 mL PLASTIC	T.A.-GA	HNO_3	A
1303190819	CYANIDES	0311201V	250 mL PLASTIC	T.A.-GA	NaOH	A

0827 BEGAN DIRECT-PUSH OF 5" SPLIT-SPOON INTO BOREHOLE 200 ETU 04 FOR FIRST DEPTH (0-1'). RETRIEVED SOIL SAMPLE. SOIL WAS A NATURAL SOIL BACKFILL WITH SMALL TO MEDIUM ROCK FRAGMENTS. NO MOISTURE OR TRACE MOISTURE (WHICH MAY BE DUE TO RESIDUAL LIQUID FROM EQ. RINSE). DRAGER READING WAS Ø ppb. SOIL DID NOT HAVE UNUSUAL ODORS OR STAINING. NO DISCOLORATION OF THE SOIL. COMPLETED SOIL BORE LOGS.

SAMPLE ID #		ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1303190832	(a)	HYDRAZINES	0310401X	4oz AMBER	ICE	T.A.-CO	S
1303190833	(a)	VOA	DE695	40 mL CLEAR	Me OH	T.A.-GA	S
1303190833	(a)	VOA	117139	"	SOBI	"	S
1303190833	(a)	VOA	117139	"	SOBI	"	S
1303190834	(a)	SVOA	0610401X	8oz CLEAR	ICE	"	S
1303190835	(a)	MET. + Hg	0310401X	4oz AMBER	ICE	200 ETU 04	S
1303190836	(a)	CYANIDES	0310401X	4oz AMBER	ICE	"	S

(a): FIRST DEPH (0-1') BGS. MAX DEPTH REACHED WAS 12" BGS.

0839 BEGAN DIRECT-PUSH OF 3" SPLIT-SPOON INTO BOREHOLE 200 ETU 04 FOR SECOND DEPTH (1'-2') BELOW FIRST DEPTH. RETRIEVED SOIL SAMPLE. SOIL WAS A NATURAL SOIL BACKFILL THAT CONTAINED

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MEDIUM TO MEDIUM-LARGE ROCKS. NO MOISTURE PRESENT OR SOIL STAINING. NO UNUSUAL ODORS. DRAGER READING WAS Ø ppb. NO SOIL STAINING OR DISCOLORATION. COMPLETED SOIL BORE LOGS.

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1303190845	(b) HYDRAZINES	0310401X	4oz. AMBER	ICE	T.A.-CO	S
1303190846	(b) VOA	DE695	40 ml CLEAR	MeOH	T.A.-GA	S
1303190846	(b) VOA	117139	//	SOBI	//	S
1303190846	(b) VOA	117139	//	SOBI	//	S
1303190847	(b) SVOA	0610401X	8oz CLEAR	ICE	//	S
1303190848	(b) MET. + Hg	0310401X	4oz CLEAR	ICE	//	S
1303190849	(b) CYANIDES	0310401X	4oz CLEAR	ICE	//	S

200 ETU 04

(b) = SECOND DEPTH (1'-2') BGS. MAX. DEPTH 24" BGS.

0851 BEGAN EQUIPMENT DECON. OF 3" SPLIT-SPOON, SAMPLE BOWL + SAMPLE SPOON. RELOCATED TO NEXT BOREHOLE 200 ETU 05. EQUIPMENT BLANK SAMPLES TAKEN.

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1303190852	HYDRAZINES	0120601X	500 ml AMBER	ICE	T.A.-CO	A
1303190853	VOA	0127101X	3-40 ml CLEAR	HCL	T.A.-GA	A
1303190854 *	SVOA	0210401X	2-1L AMBER	ICE	T.A.-GA	
1303190855 *	MET. + Hg	0321301X	250 ml PLASTIC	HNO_3	T.A.-GA	A
1303190856 *	CYANIDES	0311201V	250 ml PLASTIC	NaOH	T.A.-GA	A

200 ETU 05

* - VEHICLE TRAFFIC, DIESEL EXHAUST PRESENT DURING SAMPLE EVENT.

0903 BEGAN DIRECT-PUSH OF 3" SPLIT-SPOON INTO BOREHOLE 200 ETU 05 FOR FIRST DEPTH OF SOIL SAMPLE (0-1'). SOIL WAS A NATURAL SOIL BACKFILL WITH SMALL TO MEDIUM ROCKS. NO MOISTURE PRESENT OR SOIL STAINING. DRAGER READING WAS Ø ppb. NO UNUSUAL SOIL ODORS. NO DISCOLORATION. SOIL DEPTH REACHED WAS 12" BGS. SOIL BORE LOG FORMS COMPLETED.
HAD TO USE 2 4oz AMBER CONTAINERS FOR SVOA SOIL SAMPLE FROM THIS POINT FORWARD.

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SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1303190909	(a) HYDRAZINE	0310401X	4oz. AMBER	ICE	T.A.-CO	S
1303190910 *	(a) VOA	DE695	40mL CLEAR	MeOH	T.A.-GA	S
1303190910 *	(a) VOA	117139	//	SOB1	//	S
1303190910 *	(a) VOA	117139	//	SOB1	//	S
1303190911 *	(a) SVOA	0310401X ~~0610401X~~ AS	2x 4oz AMBER	ICE	//	S
1303190912 *	(a) MET. + Hg	0310401X	4oz. AMBER	ICE	//	S
1303190913 *	(a) CYANIDES	0310401X	4oz. AMBER	ICE	//	S

(a) = FIRST DEPTH (0-2') BGS.
* = EXHAUST PRESENT DURING SAMPLE EVENT.

~~130~~ AS 0909 BEGAN DIRECT-PUSH FOR SAMPLE DUPLICATE. COLLECTED SAMPLE. SOIL IS A NATURAL SOIL BACKFILL WITH SMALL TO MEDIUM-SIZED ROCKS. DRAGER READING WAS Ø ppb. NO UNUSUAL SOIL ODORS. NO MOISTURE PRESENT OR SOIL STAINING. NO SO DISCOLORATION. SOIL WAS POORLY SORTED. COMPLETED SOIL BORE LOG FORMS. MAX. DEPTH REACHED WAS 12" BGS.

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1303190916	(d) HYDRAZINES	0310401X	4oz. AMBER	ICE	T.A.-CO	S
1303190917	(d) VOA	DE695	40mL CLEAR	MeOH	T.A.-GA	S
1303190917	(d) VOA	117139	//	SOB1	//	S
1303190917	(d) VOA	117139	//	SOB1	//	S
1303190918	(d) SVOA	0310401X	2x 4oz AMBER	ICE	200 ETU 05	S
1303190919	(d) MET. + Hg	0310401X	4oz AMBER	ICE	//	S
1303190920	(d) CYANIDES	0310401X	4oz AMBER	ICE	"	S

(d) = SAMPLE DUPLICATE; MAX DEPTH REACHED WAS 12" BGS.

0926 BEGAN DIRECT-PUSH FOR SECOND DEPTH (1'-2') OF BOREHOLE 200 ETU 05, DRAGER READING WAS Ø ppb. NO UNUSUAL ODORS OF THE SOIL. MAX. DEPTH OF 12". SOIL WAS POORLY SORTED + CONTAINED SMALL TO MEDIUM ROCKS. NO MOISTURE PRESENT NOR WAS THE SOIL DISCOLORED. COMPLETED SOIL BORE LOG FORMS. SOIL WAS NOT STAINED.

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SAMPLE ID #		ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1303190935	(b)	HYDRAZINES	0310401x	4oz AMBER	ICE	T.A.-CO	S
1303190936	(b)	VOA	DE695	40 mL CLEAR	NaOH	T.A.-GA	S
1303190936	(b)	VOA	117139	"	SOB1	"	S
1303190936	(b)	VOA	117139	"	SOB1	"	S
1303190937	(b)	SVOA	0310401x	2x 4oz AMBER	ICE	"	S
1303190938	(b)	MET. + Hg	0310401x	4oz AMBER	ICE	"	S
1303190939	(b)	CYANIDES	0310401x	4oz AMBER	ICE	"	S

(b) = SECOND DEPTH (1'-2') BGS. MAX DEPTH REACHED: 12" BELOW FIRST DEPTH.

0942 RELOCATED TO NEXT BOREHOLE 200 ETU 06. THIS IS THE FIRST 10' DEPTH HOLE. WILL REQUIRE THE USE OF AUGER. AUGER WAS PRE DECON'ED PRIOR TO MOBILIZING ON-SITE.

0949 EQUIPMENT DECON. OF SPLIT-SPOON, BOWL + SPOON. EQUIPMENT BLANKS TAKEN.

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1303190950	HYDRAZINES	0120601x	500 mL AMBER	ICE	T.A.-CO	A
1303190951	VOA	0127101x	3-40mL CLEAR	HCL	T.A-GA	A
1303190952	SVOA	0210401x	2-1L AMBER	ICE	T.A.-GA	A
1303190953	MET. + Hg	0321301x	250 mL PLASTIC	HNO_3	T.A.-GA	A
1303190954	CYANIDES	0311201V	250mL PLASTIC	NaOH	T.A.-GA	A

1004 BEGAN AUGERING TO 10' DEPTH. REACHED A DEPTH OF 10' AND USED SPLIT-SPOON TO COLLECTED 1' OF SOIL SAMPLE. REACHED ~~A~~ MAX. DEPTH 11'. SOIL WAS A DRY NATURAL BACKFILL WITH TRACE MOISTURE. MOISTURE WAS NOT FROM DECON. OF SPLIT-SPOON. DRAGER READING WAS 0 ppb. SOIL HAD AN ODOR SIMILAR TO THAT OF THE ETU TANK WASTE. SOIL WAS POORLY SORTED AND WAS UNIFORM IN COLOR. NO SOIL STAINING. ~~DR~~ AB SOIL CONTAINED SMALL-MEDIUM-LARGE ROCK FRAGMENTS. COMPLETED SOIL BORE LOG FORMS. COLLECTED SOIL SAMPLE.

* NOTE: THE DECISION TO TAKE ONLY ONE SAMPLE DEPTH FROM 200 ETU 06 WAS A DEVIATION FROM ~~SA~~ ~~SA~~ SAP 2013-006. THE ETU CLOSURE PLAN ONLY REQUIRED ONE-DEPTH SAMPLE OF 10'.

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SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1303191025	HYDRAZINE	0310401x	4oz AMBER	ICE	T.A.-CO	S
✓ 1303191026	VOA	DE695	40ml CLEAR	MeOH	T.A.-GA	S
1303191026	VOA	117139	//	SOBI	//	S
1303191026	VOA	117139	//	SOBI	//	S
1303191027	SVOA	0310401x	2x 4oz AMBER	ICE	//	S
1303191028	MET. + Hg	0310401x	4oz AMBER	ICE	//	S
1303191029	CYANIDES	0310401x	4oz AMBER	ICE	//	S

MAX. SAMPLE DEPTH REACHED WAS 11' BGS.

1034 EQUIPMENT DECON. PRIOR TO NEXT BOREHOLE 200 ETU 07. RINSED 3" SPLIT-SPOON, SAMPLE BOWL + SAMPLE SPOON. EQUIPMENT BLANKS TAKEN.

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1303191102	HYDRAZINE	0120600x	500 ml AMBER	ICE	T.A.-CO	A
1303191103	VOA	0127101x	3-40ml CLEAR	HCL	T.A.-GA	A
1303191104	SVOA	0210401x	2-1L AMBER	ICE	T.A.-GA	A
1303191105	MET. + Hg	0321301x	250ml PLASTIC	HNO_3	T.A.-GA	A
1303191106	CYANIDES	0311201V	250ml PLASTIC	NaOH	T.A.-GA	A

1109 BEGAN DIRECT-PUSH OF 3" SPLIT-SPOON INTO NEXT BOREHOLE 200 ETU 07 FOR FIRST DEPTH (0-1') BGS. RETRIEVED SAMPLE. SOIL COLLECTED WAS A NATURAL SOIL BACKFILL WITH SMALL-MEDIUM ROCKS. TRACE MOISTURE PRESENT AT BOTTOM 3" OF COLUMN. DRAGER READING WAS Ø ppb. NO ODORS OR VISUAL STAINING OF SOILS. UNCONSOLIDATED SOIL. COMPLETED BORE LOG FORMS. MAX. DEPTH REACHED WAS 13" BGS

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1303191115	(a) HYDRAZINE	0310401x	4oz AMBER	ICE	T.A-CO	S
✓ 1303191116	(a) VOA	DE695	40ml CLEAR	MeOH	T.A.-GA	S
1303191116	(a) VOA	117139	//	SOBI	//	S
1303191116	(a) VOA	117139	//	SOBI	//	S
1303191117	(a) SVOA	0310401x	2x 4oz AMBER	ICE	//	S
1303191118	(a) MET. + Hg	0310401x	4oz AMBER	ICE	//	S
1303191119	(a) CYANIDES	0310401x	4oz AMBER	ICE	//	S

(a)- FIRST DEPTH (0-1') BGS. MAX. DEPTH REACHED 13" BGS.

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1118 BEGAN DIRECT-PUSH FOR SECOND DEPTH (1'-2') BELOW G.S. RETRIEVED SOIL SAMPLE. SOIL WAS A FINE GRAIN SOIL AT THE BOTTOM 10" OF THE COLUMN. VERY ROCKY AT THE BOTTOM 1" OF THE COLUMN. DRAGER READING WAS Ø ppb. NO ODORS FROM THE SOIL. TRACE MOISTURE THROUGHOUT THE COLUMN. NO SOIL STAINING OR DISCOLORATION. FAIRLY UNIFORM LAYERS THROUGHOUT COLUMN. COMPLETED SOIL BORE LOG FORMS.

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
130319/125	(b) HYDRAZINE	0310401x	4oz AMBER	ICE	T.A.-CO	S
✓ 130319/126	(b) VOA	DE695	40ml CLEAR	MeOH	T.A.-GA	S
130319/126	(b) VOA	117139	"	SOBI	"	S
130319/126	(b) VOA	117139	"	SOBI	"	S
130319/127	(b) SVOA	0310401x	2x 4oz AMBER	ICE	R00 ETU 07	
130319/128	(b) MET. + Hg	"	4oz AMBER	ICE	"	S
130319/129	(b) CYANIDES	"	4oz AMBER	ICE	"	S

(b)= SECOND DEPTH (1'-2') BGS. MAX DEPTH REACHED WAS 13" BELOW FIRST DEPTH WITH A MAX. TOTAL DEPTH OF 26" BGS.

1135 CLEANED-UP WORKSITE. MANAGED EQUIPMENT RINSATE ACCORDING TO SAP 2013-006. COMPLETED COC'S + SHIPPED SAMPLES.

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DATE: MARCH 20, 2013
LOCATION: 200 AREA ETU LAYDOWN YARD
WEATHER: WINDY, COOL
PERSONNEL: A. SANCHEZ, S. PORTILLO, A. MONTES, R. BURROWS, M. DUANEZ, D. DUANEZ
WORK AUTHORIZING DOCS: ETU CLOSURE PLAN, TPS 102488, JHA HW-053, SAP 2013-006.
P/N 4530350 DRAGER CAL. DATE: 1/24/13 NEXT CAL. DATE: 3/25/13

0815 SAFETY TAILGATE MEETING WITH ENV. TECHS. + DRILLING CREW

0816 EQUIPMENT RINSATE OF 3" SPLIT-SPOON PRIOR TO FIRST BOREHOLE 200 ETU 08.

SAMPLE ID #	ANALYSIS	LOT	CONTAINER	PRESERV.	LAB	MATRIX
1303200816	HYDRAZINE	0120601X	500 mL AMBER	ICE	T.A.-CO	A
1303200817	VOA	0127101X	3-40mL CLEAR	HCL	T.A.-GA	A
1303200818	SVOA	0210401X	2-1L AMBER	ICE	T.A.-GA	A
1303200819	MET. + Hg	0321301X	250 mL PLASTIC	HNO_3	T.A.-GA	A
1303200820	CYANIDES	0311201V	250mL PLASTIC	NaOH	T.A.-GA	A

80 N

0823 BEGAN DIRECT-PUSH OF 3" SPLIT-SPOON INTO BOREHOLE 200 ETU 08 FIRST DEPTH (0-1'). RETRIEVED SOIL SAMPLE. MAX. DEPTH 14" BGS. SOIL WAS A NATURAL SOIL BACKFILL WITH SMALL TO MEDIUM ROCK. DRAGER READING WAS Ø ppb. TRACE MOISTURE IN THE BOTTOM 2" OF COLUMN. NO ODORS, NO SOIL STAINING, NO DISCOLORATION. SOIL IS POORLY SORTED. COMPLETED SOIL BORE LOG FORMS. COLLECTED SOIL SAMPLES.

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1303200830 (a)	HYDRAZINE	0310401X	4oz AMBER	ICE	T.A.-CO	S
1303200831 (a)	VOA	DE695	40mL CLEAR	MeOH	T.A.-GA	S
1303200831 (a)	VOA	117139	//	SOXI	//	S
1303200831 (a)	VOA	117139	//	SOXI	//	S
1303200832 (a)	SVOA	0310401X	2x 4oz AMBER	ICE	//	S
1303200833 (a)	MET. + Hg	//	4oz AMBER	ICE	//	S
1303200834 (a)	CYANIDES	//	4oz AMBER	ICE	//	S

200 ETU 08

(a) = FIRST DEPTH (0-1') BGS. MAX. DEPTH REACHED 14" BGS.

0839 BEGAN DIRECT-~~PUCK~~ PUSH OF 3" SPLIT-SPOON INTO BOREHOLE 200 ETU-08 FOR SECOND DEPTH (1-2') BGS.

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RETRIEVED SOIL SAMPLE. MAX. DEPTH REACHED WAS 12" BELOW FIRST DEPTH, SO A TOTAL DEPTH OF 24" BGS. TRACE MOISTURE IN BOTTOM 8" OF COLUMN. DRAGER READING WAS Ø ppb. NO ODORS, NO SOIL STAINING, NO DISCOLORATION. SOIL CONTAINS NATURAL SOIL BACKFILL WITH MEDIUM TO LARGE ROCK. COMPLETED BORE LOG FORM. COLLECTED SOIL SAMPLE.

SAMPLE ID#	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1303200845	(b) HYDRAZINE	0310401X	4oz AMBER	ICE	T.A.-CO	S
1303200846	(b) VOA	DE695	40mL CLEAR	MeOH	T.A.-GA	S
1303200846	(b) I VOA	117139	"	SOBI	"	S
1303200846	(b) II VOA	117139	"	SOBI	"	S
1303200847	(b) SVOA	0310401X	2x 4oz AMBER	ICE	200 ETU 08	S
1303200848	(b) MET. + Hg	"	4oz AMBER	ICE	"	S
1303200849	(b) CYANIDES	"	4oz AMBER	ICE	"	S

(b) = SECOND DEPTH (1'-2') BGS. MAX DEPTH REACHED WAS 24"

I = VIAL DID NOT CONTAIN NORMAL AMOUNT OF PRESERV. AS II.

0850 EQUIPMENT DECONTAMINATION OF SPLIT-SPOON (3"), SAMPLE BOWL, & SAMPLE SPOON. ~~AB~~ RELOCATED TO NEXT BOREHOLE 200-ETU-09. EQUIPMENT BLANKS TAKEN.

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1303200901	HYDRAZINE	0120601X	500 mL AMBER	ICE	TA-CO	A
1303200902	VOA	0127101X	3-40mL VIAL	HCL	TA-GA	A
1303200903	SVOA	0210401X	2-1L AMBER	ICE	T[illegible]	A
1303200904	MET. + Hg	0321301X	250 mL PLASTIC	HNO_3	T.A.[illegible]	A
1303200905	CYANIDES	0311201V	250 mL PLASTIC	NaOH	T.A.-GA	A

200 ETU 09

0913 BEGAN DIRECT-PUSH INTO BOREHOLE 200 ETU 09 FOR FIRST DEPTH (0-1'). RETRIEVED SOIL SAMPLE. MAX. DEPTH 12" BGS. DRAGER READING Ø ppb. SOIL CONTAINS A STRONG ORGANIC SMELL. SOIL CONTAINED TRACE MOISTURE NEAR THE TEETH OF SPLIT-SPOON. SOIL IS A NATURAL SOIL BACKFILL WITH MEDIUM-SIZED ROCK. NO SOIL STAINING OR DISCOLORATION. POORLY SORTED SOIL. COMPLETED SOIL BORE LOGS. COLLECTED SOIL SAMPLES.

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SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1303200919	(a) HYDRAZINE	0310401X	4oz AMBER	ICE	T.A.-CO	S
1303200920	(a) VOA	DE695	40ML CLEAR	MeOH	T.A.-GA	S
1303200920	(a) VOA	117139	//	SOBI	//	S
1303200920	(a) VOA	117139	//	SOBI	//	S
1303200921	(a) SVOA	0310401X	2x 4oz AMBER	ICE	//	S
1303200922	(a) MET. + Hg	//	4oz AMBER	ICE	//	S
1303200923	(a) CYANIDES	//	4oz AMBER	ICE	//	S

(a)= FIRST DEPTH (0-1') BGS. MAX DEPTH REACHED 12" BGS.

0924 BEGAN DIRECT-PUSH FOR SECOND DEPTH (1'-2') OF BOREHOLE 200 ETU 09. RETRIEVED SOIL SAMPLE. DRAGER READING WAS Ø ppb. STRONG ORGANIC ODOR FROM SOIL. SOIL WAS DRY WITH TRACE MOISTURE. SOIL IS A NATURAL SOIL BACKFILL WITH SMALL TO MEDIUM-SIZE ROCKS. ~~LOT~~ AS SOIL IS POORLY SORTED. NO SOIL STAINING, DISCOLORATION. ~~OR~~ AS COMPLETED SOIL BORE LOG FORMS. COLLECTED SOIL SAMPLE.

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1303200930	(b) HYDRAZINE	0310401X	4oz AMBER	ICE	T.A.-CO	S
1303200931	*(b) VOA	DE695	40ML CLEAR	MeOH	T.A.-GA	S
1303200931	(b) VOA	117139	//	SOBI	//	S
1303200931	(b) VOA	117139	//	SOBI	//	S
1303200932	(b) SVOA	0310401X	2x 4oz. AMBER	ICE	//	S
1303200933	(b) MET. + Hg	//	4oz. AMBER	ICE	//	S
1303200934	(b) CYANIDES	//	4oz. AMBER	ICE	//	S

200 ETU 09

(b)= SECOND DEPTH (1'-2') BGS. MAX DEPTH REACHED 25" BGS.

*= IDENTIFIED A PLASTIC TOOTH FROM SPLIT-SPOON SAMPLE BASKET IN VIAL

0939 RELOCATED TO NEXT BOREHOLE 200 ETU-10. EQUIPMENT DECONTAMINATION OF 3" SPLIT-SPOON, SAMPLE BOWL, & SAMPLE SPOON. EQUIPMENT BLANKS TAKEN.

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1303200945	HYDRAZINES	0120601X	500 ML AMBER	ICE	TA-CO	A
1303200946	VOA	0127101X	3-40ML CLEAR	HCL	TA-GA	A
1303200947	SVOA	0210401X	2-1L AMBER	ICE	TA-GA	A
1303200948	MET. + Hg	0321301X	250 ML PLASTIC	HNO_3	TA-GA	A
1303200949	CYANIDES	0311201V	250 ML PLASTIC	NaOH	TA-GA	A

200 ETU 10

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0950 BEGAN DIRECT-PUSH OF 3" SPLIT-SPOON INTO BOREHOLE 200 ETU 10 FOR FIRST DEPTH. RETRIEVED SOIL SAMPLE. DRAGER READING Ø ppb. SOIL HAD A STRONG ORGANIC ODOR, NO SOIL STAINING. SOIL HAD MOISTURE THROUGHOUT COLUMN. SOIL WAS A NATURAL SOIL BACKFILL WITH SMALL TO MEDIUM ROCK. NO DISCOLORATION OF THE SOIL. COMPLETED SOIL BORE LOG FORM. COLLECTED SOIL SAMPLE.

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1303201002	(a) HYDRAZINE	0310401x	4oz AMBER	ICE	T.A.-CO	S
1303201003	(a) VOA	DE695	40 ml CLEAR	MeOH	T.A.-GA	S
1303201003	(a) VOA	117139	//	SOBI	//	S
1303201003	(a) VOA	117139	//	SOBI	200 ETU 10	S
1303201004	(a) SVOA	0310401x	2x 4oz AMBER	ICE	//	S
1303201005	(a) MET. + Hg	//	4oz AMBER	ICE	//	S
1303201006	(a) CYANIDES	//	4oz AMBER	ICE	//	S

(a)= FIRST DEPTH (0-1') BGS. MAX. DEPTH WAS 14" BGS.

1007 BEGAN DIRECT-PUSH OF 3" SPLIT-SPOON INTO BOREHOLE ~~ETU~~ 200 ETU-10 AFTER A 6" SHIFT TO COLLECT SOIL SAMPLE FROM UPPER DEPTH FOR SAMPLE DUPLICATE. DRAGER READING WAS Ø ppb. SOIL HAS A STRONG ORGANIC ODOR. SOIL HAS MOISTURE THROUGHOUT COLUMN (TRACE). NO SOIL STAINING OR DISCOLORATION. SOIL IN A NATURAL SOIL BACKFILL WITH SMALL TO MEDIUM ROCK. COMPLETED BORE LOG FORM. COLLECTED SOIL SAMPLE.

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1303201015	(d) HYDRAZINE	0310401x	4oz AMBER	ICE	T.A.-CO	S
1303201016	(d) VOA	DE695	40ml CLEAR	MeOH	T.A-GA	S
1303201016	(d) VOA	117139	//	SOBI	//	S
1303201016	(d) VOA	117139	//	SOBI	200 ETU 10	S
1303201017	(d) SVOA	0310401x	2x 4oz. AMBER	ICE	//	S
1303201018	(d) MET. + Hg	//	4oz. AMBER	ICE	//	S
1303201019	(d) CYANIDE	//	4oz. AMBER	ICE	//	S

(d)= DUPLICATE SAMPLE OF (0-1') DEPTH. MAX. DEPTH OF 14" BGS.

BEGAN DIRECT-PUSH OF 3" SPLIT-SPOON INTO SAME BOREHOLE AS DUPLICATE BOREHOLE. RETRIEVED SOIL SAMPLE. SOIL CONTAINED MOISTURE THROUGHOUT COLUMN. DRAGER WAS Ø ppb. NO SOIL STAINING OR SOIL DISCOLORATION. STRONG ORGANIC ODOR FROM SOIL. SOIL WAS A NATURAL SOIL BACKFILL WITH SMALL TO MEDIUM ROCK. COMPLETED BORE LOG FORM. COLLECTED SOIL SAMPLE.

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SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1303201025	(b) HYDRAZINES	0310401X	4oz. AMBER	ICE	T.A.-CO	S
1303201026	(b) VOA	DE695	40mL CLEAR	MeOH	T.A.-GA	S
1303201026	(b) VOA	117139	"	SOBI	"	S
1303201026	(b) VOA	117139	"	SOOI	200 ETU 10	S
1303201027	(b) SVOA	0310401X	2x 4oz. AMBER	ICE	"	S
1303201028	(b) Mgr. + Hg	"	4oz. AMBER	ICE	"	S
1303201029	(b) CYANIDES	"	4oz. AMBER	ICE	"	S

(b)= SECOND DEPTH (1'-2') BGS. MAX DEPTH REACHED 14" BELOW FIRST DEPTH FOR A TOTAL DEPTH OF 28" BGS.

1035 CLEARED WORK AREA. MANAGED RINSATE/DECON. WATER ACCORDING TO SAP 2013-006. COMPLETED COC'S + SHIPPED SAMPLES.

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DATE: MARCH 21, 2013
PERSONNEL: A. SANCHEZ, S. PORTILLO, R. BURROWS, A. MONTES, D. DUENEZ, M. DUENEZ
LOCATION: 200 AREA ETU LAYDOWN YARD
WEATHER: COOL, OVERCAST
WORK AUTHORIZING DOCS: ETU CLOSURE PLAN, TPS 102388, JHA HW-053, SAP 2013-006. P/N 4530350 FUEL DRAGER, NEXT CAL. DATE 3/25/13

0755 TAILGATE SAFETY BRIEFING WITH ENV. TECHS. + DRILLING CREW.
0815 MOBILIZED TO NEXT BOREHOLE 200 ETU-11.
0830 EQUIPMENT DECON. PRIOR TO NEXT BOREHOLE. EQUIPMENT BLANKS TAKEN.

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1303210830	HYDRAZINE	0120601X	500 mL AMBER	ICE	T.A.-CO	A
1303210831	VOA	0127101X	3-40 mL CLEAR	HCL	T.A.-GA	A
1303210832	SVOA	0210401X	2-1 L AMBER	ICE	T.A.-GA	A
1303210833	MET. + Hg	0321301X	250 mL PLASTIC	HNO_3	T.A.-GA	A
1303210834	CYANIDES	0321301X	250 mL PLASTIC	NaOH	T.A.-GA	A

200 ETU 11

0838 BEGAN DIRECT-PUSH OF 3" SPLIT-SPOON INTO BOREHOLE 200 ETU 11 FOR SAMPLE COLLECTION OF FIRST DEPTH (0-1'). RETRIEVED SOIL SAMPLE. SOIL WAS A NATURAL SOIL BACKFILL WITH SMALL TO MEDIUM-SIZED ROCK. DRAGER READING WAS Ø ppb. SOIL HAD A MEDIUM ORGANIC ODOR. NO SOIL STAINING OR DISCOLORATION. SOIL HAD TRACE MOISTURE ON INTERIOR OF THE CORE THROUGHOUT COLUMN. COMPLETED BORE LOG FORMS. COLLECTED SOIL SAMPLES.

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1303210842	(a) HYDRAZINE	0310401X	4oz AMBER	ICE	T.A.-CO	S
1303210843	(a) VOA	DE695	40 mL CLEAR	MeOH	T.A.-GA	S
1303210843	(a) VOA	117139	"	SOBI	"	S
1303210843	(a) VOA	117139	"	SOBI	"	S
1303210844	(a) SVOA	0610401X	8oz CLEAR	ICE	"	S
1303210845	(a) MET. + Hg	0310401X	4oz AMBER	ICE	"	S
1303210846	(a) CYANIDE	0310401X	4oz AMBER	ICE	"	S

200 ETU 11

(a) = FIRST DEPTH (0-1') BGS. MAX DEPTH REACHED 14" BGS.

0848 BEGAN DIRECT-PUSH OF 3" SPLIT-SPOON INTO BOREHOLE 200 ETU-11 FOR SECOND DEPTH (1'-2') BGS. DRILLERS SWITCHED OUT SPLIT-SPOON

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FOR ANOTHER SPLIT-SPOON THAT ~~DID~~ EQUIP. BLANK WAS NOT TAKEN OFF. DECAPPED SAMPLE & USED COPPER SPLIT-SPOON FOR SECOND DEPTH SAMPLE RETRIEVAL. SOIL WAS A NATURAL SOIL BACKFILL WITH SMALL TO MEDIUM ROCKS. DRAGER READING WAS Ø ppb. SOIL HAD A MEDIUM ORGANIC SMELL. SOIL HAD TRACE MOISTURE, NO STAINING, OR DISCOLORATION. COMPLETED BORE LOG FORMS. COLLECTED SOIL SAMPLES.

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1303210905	(b) HYDRAZINE	0310401X	4oz AMBER	ICE	T.A.-CO	S
1303210906	(b) VOA	DE695	40 ml CLEAR	MeOH	T.A.-GA	S
1303210906	(b) VOA	117139	"	SOBI	"	S
1303210906	(b) VOA	117139	"	SOBI	"	S
1303210907	(b) SVOA	0610401X	8oz. CLEAR	ICE	200 ETU 11	S
1303210908	(b) MET. + Hg	0310401X	4oz AMBER	ICE	"	S
1303210909	(b) CYANIDES	0310401X	4oz AMBER	ICE	"	S

(b) = SECOND DEPTH (1'-2') BGS. MAX. DEPTH REACHED WAS 26" BGS.

0912 RELOCATED TO BOREHOLE 200 ETU-12.

0930 EQUIPMENT DECONTAMINATION OF 3" SPLIT-SPOON, SAMPLE BOWL, & SAMPLE SPOON. EQUIPMENT BLANKS TAKEN.

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1303210925	HYDRAZINES	0120601X	500 ml AMBER	ICE	T.A.-CO	A
1303210926	VOA	0127101X	3-40ml CLEAR	HCL	T.A.-GA	A
1303210927	SVOA	0210401X	2-1L AMBER	ICE	200 ETU 12	A
1303210928	MET. + Hg	0321301X	250ml PLASTIC	HNO_3	T.A.-GA	A
1303210929	CYANIDES	0311201V	250 ml PLASTIC	NaOH	T.A.-GA	A

0938 BEGAN AUGERING TO 10' DEPTH ON BOREHOLE 200 ETU-12. SOIL RETRIEVED AT 10'-11' INTERVAL. SOIL IS A NATURAL SOIL BACKFILL. LARGE ROCK FRAGMENTS AT THE BOTTOM 7" OF COLUMN. ALSO CONTAINS SMALL ROCK FRAGMENTS WITH SAND. DRAGER READING WAS Ø ppb. SOIL CONTAINED STRONG ORGANIC ODOR. NO MOISTURE OR SOIL STAINING PRESENT. DRILLERS NOTICED THAT BEFORE 5 FEET IN DEPTH THEY CAME UPON METAL FRAGMENTS THAT DAMAGED THEIR SOIL AUGER. COMPLETED SOIL BORE LOG FORMS. COLLECTED SOIL SAMPLES.

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SAMPLE ID #	ANALYSIS	CONTAINER	LOT #	PRESERV.	LAB	MATRIX
1303211000	HYDRAZINE	4oz AMBER	0310401X	ICE	T.A.-CO	S
1303211001	VOA	40mL CLEAR	DE695	MeOH	T.A.-GA	S
1303211001	VOA	"	117139	SOBI	"	S
1303211001	VOA	"	117139	SOBI	"	S
1303211002	SVOA	8oz CLEAR	0610401X	ICE	200 ETU 12	S
1303211003	MET. + Hg	4oz AMBER	0310401X	ICE	"	S
1303211004	CYANIDES	4oz AMBER	0310401X	ICE	"	S

1016 RELOCATED TO NEXT BOREHOLE 200 ETU-13. THIS BOREHOLE WAS ADDED INTO THE SAMPLING PLAN TO VERIFY THAT NO CONTAMINATION FROM THE ETU SUMP ~~Ø~~ WAS DISCHARGED TO GRADE. THIS WILL ALSO BE AN ADDITIONAL 10' BOREHOLE. THIS DEVIATION WAS ALSO NOTED IN SAP 2013-006.

1029 EQUIPMENT DECON. OF 3" SPLIT-SPOON, SAMPLE BOWL, + SAMPLE SPOON. EQUIPMENT BLANKS TAKEN.

SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1303211030	HYDRAZINE	0120601X	500mL AMBER	ICE	T.A.-CO	A
1303211030~~Ø~~ 1	VOA	0127101X	3-40mL CLEAR	HCL	T.A.-GA	A
1303211032	SVOA	0210401X	2-1L AMBER	ICE	200 ETU13	A
1303211033	MET. + Hg	0321301X	250mL PLASTIC	HNO_3	T.A.-GA	A
1303211034	CYANIDES	0311201V	250mL PLASTIC	NaOH	T.A.-GA	A

1035 BEGAN AUGERING TO 10' DEPTH OF 200 ETU-13. SOIL SAMPLE RETRIEVED. SOIL WAS A NATURE SOIL (NOT BACKFILL). CONTAINED TRACE MOISTURE. DRAGER READING WAS Øppb. SOIL HAD A MEDIUM ORGANIC ODOR. SOIL WAS POORLY SORTED WITH MEDIUM TO LARGE ROCK, SAND, WITH SOME FINES. NO SOIL STAINING. THERE WAS A SMALL UNIT OF SOIL THAT HAD A YELLOW COLOR TO IT. COMPLETED SOIL BORE LOG FORMS. COLLECTED SOIL SAMPLES.

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SAMPLE ID #	ANALYSIS	LOT #	CONTAINER	PRESERV.	LAB	MATRIX
1303211050	HYDRAZINE	0310401X	4oz AMBER	ICE	T.A.-CO	S
1303211051	VOA	DE695	40mL CLEAR	MeOH	T.A.-GA	S
1303211051	VOA	~~DE695~~ 117139	"	SOBI	"	S
1303211051	VOA	117139	"	SOBI	"	S
1303211052	SVOA	0610401X	8oz CLEAR	ICE	"	S
1303211053	MET. + Hg	0310401X	4oz AMBER	ICE	300 ETU 13	S
1303211054	CYANIDES	0310401X	4oz AMBER	ICE	"	S

1057 CLEARED WORK SITE. ASSISTED DRILLING CREW WITH DECON. OPERATION OF RIG, AUGERS, SPLIT-SPOON, + EQUIPMENT. MANAGED DECON. WATER ACCORDING TO SAP 2013-006 IN A CONTAINER TO AWAIT SOIL DATA. COMPLETED COC'S + SHIPPED SOIL SAMPLES.

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Appendix I
ETU Soil Investigation Analytical Summary Tables

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
Ion Chromatography Method: HYDRAZINES (Lab Report No. 280-39119-1)											
1302190916 1302190954	800 HFTA-01	1,1 Dimethylhydrazine	57-14-7	ND, H*	ND, H*	mg/Kg	0.0039	NA	NA	Yes	Yes
1302190916 1302190954	800 HFTA-01	Hydrazine	32-01-2	ND, H	ND, H	mg/Kg	0.0022	NA	NA	Yes	Yes
1302190916 1302190954	800 HFTA-01	Monomethyl Hydrazine	60-34-4	ND, H	ND, H	mg/Kg	0.0075	NA	NA	Yes	Yes
EPA Method 6020A/7471B METALS & MERCURY (Lab Report No. 680-87665-1)											
1302190919 1302190957	800 HFTA-01	Arsenic	7440-38-2	5.4	5.6	mg/Kg	0.27	NA	3.90E+00	No	No
1302190919 1302190957	800 HFTA-01	Barium	7440-39-3	110	130	mg/Kg	0.54	NA	1.56E+04	Yes	Yes
1302190919 1302190957	800 HFTA-01	Beryllium	7440-41-7	0.39	0.44	mg/Kg	0.054	NA	1.56E+02	Yes	Yes
1302190919 1302190957	800 HFTA-01	Cadmium	7440-43-9	0.21	0.13	mg/Kg	0.054	NA	7.03E+01	Yes	Yes
1302190919 1302190957	800 HFTA-01	Chromium	7440-47-3	11 Q	14 Q	mg/Kg	0.54	NA	1.17E+05	Yes	Yes
1302190919 1302190957	800 HFTA-01	Copper	7440-50-8	7.3	6.9	mg/Kg	7.3	NA	3.13E+03	Yes	Yes
1302190919 1302190957	800 HFTA-01	Lead	7439-92-1	6.9	6.8	mg/Kg	6.9	NA	4.00E+02	Yes	Yes
1302190919 1302190957	800 HFTA-01	Nickel	7440-02-0	8.2	10	mg/Kg	0.54	NA	1.56E+03	Yes	Yes
1302190919 1302190957	800 HFTA-01	Selenium	7782-49-2	ND	ND	mg/Kg	0.54	NA	3.91E+02	Yes	Yes
1302190919 1302190957	800 HFTA-01	Silver	7440-22-4	ND	ND	mg/Kg	0.11	NA	3.91E+02	Yes	Yes
1302190919 1302190957	800 HFTA-01	Vanadium	7440-62-2	22	25	mg/Kg	0.54	NA	3.91E+02	Yes	Yes

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
1302190919 1302190957	800 HFTA-01	Zinc	7440-66-6	35	36	mg/Kg	2.1	NA	2.35E+04	Yes	Yes
1302190919 1302190957	800 HFTA-01	Mercury	7439-97-6	0.036	0.025	mg/Kg	0.019	NA	1.56E+01	Yes	Yes
EPA Method 9012B: Cyanides (Lab Report No. 680-87665-1)											
1302190920 1302190958	800 HFTA-01	Cyanide, Total	57-12-5	0.28	0.49	mg/Kg	0.53	590	4.69E+01	Yes	Yes
EPA Method 8260B: Volatile Organic Compounds (Lab Report No. 680-87665-1)											
1302190917 1302190955	800 HFTA-01	1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	ND	ND	mg/Kg	0.0055	30	NA	Yes	Yes
1302190917 1302190955	800 HFTA-01	2-Butanone (MEK)	78-93-3	0.013 J	0.01 J	mg/Kg	0.027	36	NA	Yes	Yes
1302190917 1302190955	800 HFTA-01	Acetone	67-64-1	0.04 J	0.041 J	mg/Kg	0.055	160	NA	Yes	Yes
1302190917 1302190955	800 HFTA-01	Benzene	71-43-2	0.0022 J	0.0014 J	mg/Kg	0.0055	10	NA	Yes	Yes
1302190917 1302190955	800 HFTA-01	Ethylbenzene	100-41-4	ND	ND	mg/Kg	0.0055	10	NA	Yes	Yes
1302190917 1302190955	800 HFTA-01	Tetrachloroethene (PCE)	127-18-4	ND	ND	mg/Kg	0.0055	6	NA	Yes	Yes
1302190917 1302190955	800 HFTA-01	Toluene	108-88-3	0.0024 J	0.0015 J	mg/Kg	0.0055	10	NA	Yes	Yes
1302190917 1302190955	800 HFTA-01	Trichloroethene (TCE)	79-01-6	ND	ND	mg/Kg	0.0055	6	NA	Yes	Yes
1302190917 1302190955	800 HFTA-01	Trichlorofluoromethane (CFC 11)	75-69-4	ND	ND	mg/Kg	0.0055	30	NA	Yes	Yes
1302190917 1302190955	800 HFTA-01	Xylenes, Total	1330-20-7	ND	ND	mg/Kg	0.011	30	NA	Yes	Yes
EPA Method 8270C: Semi-Volatile Organic Compounds (Lab Report No. 680-87665-1)											
1302190918 1302190956	800 HFTA-01	Aniline	62-53-3	ND	ND	mg/Kg	0.38	14	NA	Yes	Yes

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
1302190918 1302190956	800 HFTA-01	Di-n-butyl Phthalate	84-74-2	ND	ND	mg/Kg	0.32	28	NA	Yes	Yes
1302190918 1302190956	800 HFTA-01	Naphthalene	91-20-3	ND	ND	mg/Kg	0.32	5.6	NA	Yes	Yes
1302190918 1302190956	800 HFTA-01	Phenol	108-95-2	ND	ND	mg/Kg	0.32	6.2	NA	Yes	Yes
1302190918 1302190956	800 HFTA-01	N-Nitrosodimethylamine	62-75-9	ND	ND	mg/Kg	0.51	2.3	NA	Yes	Yes

[1]- List of analytes were compiled from ETU Closure Plan (March, 2012) Attachment 15, Tables (1-11)

[2]- Units for MDL and LOQ are method-specific and are identified by the units column expressed for each method.

[3]- Values for Residential Soil Screening Levels (SSL) retrieved from NMED SSL (June 2012).

Q- One or more quality control criteria failed.

B- Compound was found in the blank and sample

J- Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

H- Sample was prepped or analyzed beyond the specified holding time.

MDL- Method Detection Limit

LOQ- Limit of quantitation

(a)- First Depth (0-6') below HWDL/Ground Surface

(b)- Second Depth (1'-2') below HWDL/Ground Surface

(D)- Duplicate Sample (1 Field Duplicate every 10 samples) per SAP 2013-006, Section 9: *Quality Control Requirements*

ND- Constituent analyzed for but not detected.

*- RPD of the LCS and LCSD exceeds the control limits

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
Ion Chromatography Method: HYDRAZINES (Lab Report No. 280-39119-1)											
1302191446 1302191509	800 HWDL-02	1,1 Dimethylhydrazine	57-14-7	ND, H*	ND, H*	mg/Kg	0.004	NA	NA	Yes	Yes
1302191446 1302191509	800 HWDL-02	Hydrazine	32-01-2	ND, H	ND, H	mg/Kg	0.002	NA	NA	Yes	Yes
1302191446 1302191509	800 HWDL-02	Monomethyl Hydrazine	60-34-4	ND, H	ND, H	mg/Kg	0.008	NA	NA	Yes	Yes
EPA Method 6020A/7471B METALS & MERCURY (Lab Report No. 680-87665-1)											
1302191449 1302191512	800 HWDL-02	Arsenic	7440-38-2	7.7	7.7	mg/Kg	0.24	NA	3.90E+00	No	No
1302191449 1302191512	800 HWDL-02	Barium	7440-39-3	220	170	mg/Kg	0.48	NA	1.56E+04	Yes	Yes
1302191449 1302191512	800 HWDL-02	Beryllium	7440-41-7	0.57	0.53	mg/Kg	0.048	NA	1.56E+02	Yes	Yes
1302191449 1302191512	800 HWDL-02	Cadmium	7440-43-9	0.34	0.21	mg/Kg	0.048	NA	7.03E+01	Yes	Yes
1302191449 1302191512	800 HWDL-02	Chromium	7440-47-3	1.75 Q	0.7 Q	mg/Kg	0.48	NA	1.17E+05	Yes	Yes
1302191449 1302191512	800 HWDL-02	Copper	7440-50-8	7.8	6.6	mg/Kg	0.48	NA	3.13E+03	Yes	Yes
1302191449 1302191512	800 HWDL-02	Lead	7439-92-1	9	8.4	mg/Kg	0.19	NA	4.00E+02	Yes	Yes
1302191449 1302191512	800 HWDL-02	Nickel	7440-02-0	21	11	mg/Kg	0.48	NA	1.56E+03	Yes	Yes
1302191449 1302191512	800 HWDL-02	Selenium	7782-49-2	0.012 J	ND	mg/Kg	0.48	NA	3.91E+02	Yes	Yes
1302191449 1302191512	800 HWDL-02	Silver	7440-22-4	ND	ND	mg/Kg	0.096	NA	3.91E+02	Yes	Yes
1302191449 1302191512	800 HWDL-02	Vanadium	7440-62-2	34	30	mg/Kg	0.48	NA	3.91E+02	Yes	Yes

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
1302191449 1302191512	800 HWDL-02	Zinc	7440-66-6	40	36	mg/Kg	1.9	NA	2.35E+04	Yes	Yes
1302191449 1302191512	800 HWDL-02	Mercury	7439-97-6	0.023	0.022	mg/Kg	0.019	NA	1.56E+01	Yes	Yes
EPA Method 9012B: Cyanides (Lab Report No. 680-87665-1)											
1302191450 1302191513	800 HWDL-02	Cyanide, Total	57-12-5	0.29	0.28 J	mg/Kg	0.53	590	4.69E+01	Yes	Yes
EPA Method 8260B: Volatile Organic Compounds (Lab Report No. 680-87665-1)											
1302191447 1302191510	800 HWDL-02	1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	ND	ND	mg/Kg	0.006	30	NA	Yes	Yes
1302191447 1302191510	800 HWDL-02	2-Butanone (MEK)	78-93-3	ND	ND	mg/Kg	0.027	36	NA	Yes	Yes
1302191447 1302191510	800 HWDL-02	Acetone	67-64-1	0.023 J	0.023 J	mg/Kg	0.055	160	NA	Yes	Yes
1302191447 1302191510	800 HWDL-02	Benzene	71-43-2	ND	ND	mg/Kg	0.006	10	NA	Yes	Yes
1302191447 1302191510	800 HWDL-02	Ethylbenzene	100-41-4	ND	ND	mg/Kg	0.006	10	NA	Yes	Yes
1302191447 1302191510	800 HWDL-02	Tetrachloroethene (PCE)	127-18-4	ND	ND	mg/Kg	0.006	6	NA	Yes	Yes
1302191447 1302191510	800 HWDL-02	Toluene	108-88-3	ND	ND	mg/Kg	0.006	10	NA	Yes	Yes
1302191447 1302191510	800 HWDL-02	Trichloroethene (TCE)	79-01-6	ND	ND	mg/Kg	0.006	6	NA	Yes	Yes
1302191447 1302191510	800 HWDL-02	Trichlorofluoromethane (CFC 11)	75-69-4	ND	ND	mg/Kg	0.006	30	NA	Yes	Yes
1302191447 1302191510	800 HWDL-02	Xylenes, Total	1330-20-7	ND	ND	mg/Kg	0.011	30	NA	Yes	Yes
EPA Method 8270C: Semi-Volatile Organic Compounds (Lab Report No. 680-87665-1)											
1302191448 1302191511	800 HWDL-02	Aniline	62-53-3	ND	ND	mg/Kg	0.41	14	NA	Yes	Yes

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
1302191448 1302191511	800 HWDL-02	Di-n-butyl Phthalate	84-74-2	ND	ND	mg/Kg	0.34	28	NA	Yes	Yes
1302191448 1302191511	800 HWDL-02	Naphthalene	91-20-3	ND	ND	mg/Kg	0.34	5.6	NA	Yes	Yes
1302191448 1302191511	800 HWDL-02	Phenol	108-95-2	ND	ND	mg/Kg	0.34	6.2	NA	Yes	Yes
1302191448 1302191511	800 HWDL-02	N-Nitrosodimethylamine	62-75-9	ND	ND	mg/Kg	0.54	2.3	NA	Yes	Yes

[1]- List of analytes were compiled from ETU Closure Plan (March, 2012) Attachment 15, Tables (1-11)

[2]- Units for MDL and LOQ are method-specific and are identified by the units column expressed for each method.

[3]- Values for Residential Soil Screening Levels (SSL) retrieved from NMED SSL (June 2012).

Q- One or more quality control criteria failed.

B- Compound was found in the blank and sample

J- Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

H- Sample was prepped or analyzed beyond the specified holding time.

MDL- Method Detection Limit

LOQ- Limit of quantitation

(a)- First Depth (0-6') below HWDL/Ground Surface

(b)- Second Depth (1'-2') below HWDL/Ground Surface

(D)- Duplicate Sample (1 Field Duplicate every 10 samples) per SAP 2013-006, Section 9: *Quality Control Requirements*

ND- Constituent analyzed for but not detected.

*- RPD of the LCS and LCSD exceeds the control limits

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
Ion Chromatography Method: HYDRAZINES (Lab Report No. 280-39119-1)											
1302200859 1302200958	800 HWDL-03	1,1 Dimethylhydrazine	57-14-7	ND, H*	ND, H*	mg/Kg	0.004	NA	NA	Yes	Yes
1302200859 1302200958	800 HWDL-03	Hydrazine	32-01-2	ND, H	ND, H	mg/Kg	0.002	NA	NA	Yes	Yes
1302200859 1302200958	800 HWDL-03	Monomethyl Hydrazine	60-34-4	ND, H	ND, H	mg/Kg	0.008	NA	NA	Yes	Yes
EPA Method 6020A/7471B METALS & MERCURY (Lab Report No. 680-87665-1)											
1302200902 1302201001	800 HWDL-03	Arsenic	7440-38-2	6.8	6	mg/Kg	0.25	NA	3.90E+00	No	No
1302200902 1302201001	800 HWDL-03	Barium	7440-39-3	140	130	mg/Kg	0.49	NA	1.56E+04	Yes	Yes
1302200902 1302201001	800 HWDL-03	Beryllium	7440-41-7	0.42	0.53	mg/Kg	0.049	NA	1.56E+02	Yes	Yes
1302200902 1302201001	800 HWDL-03	Cadmium	7440-43-9	0.26	0.24	mg/Kg	0.049	NA	7.03E+01	Yes	Yes
1302200902 1302201001	800 HWDL-03	Chromium	7440-47-3	16 Q	19 Q	mg/Kg	0.49	NA	1.17E+05	Yes	Yes
1302200902 1302201001	800 HWDL-03	Copper	7440-50-8	17	12	mg/Kg	0.47	NA	3.13E+03	Yes	Yes
1302200902 1302201001	800 HWDL-03	Lead	7439-92-1	9	9	mg/Kg	0.2	NA	4.00E+02	Yes	Yes
1302200902 1302201001	800 HWDL-03	Nickel	7440-02-0	13	19	mg/Kg	0.49	NA	1.56E+03	Yes	Yes
1302200902 1302201001	800 HWDL-03	Selenium	7782-49-2	ND	ND	mg/Kg	0.47	NA	3.91E+02	Yes	Yes
1302200902 1302201001	800 HWDL-03	Silver	7440-22-4	ND	ND	mg/Kg	0.094	NA	3.91E+02	Yes	Yes
1302200902 1302201001	800 HWDL-03	Thallium	7440-28-0	0.1	0.099	mg/Kg	0.099	NA	NA	Yes	Yes
1302200902 1302201001	800 HWDL-03	Vanadium	7440-62-2	30	29	mg/Kg	0.49	NA	3.91E+02	Yes	Yes

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
1302200902 1302201001	800 HWDL-03	Zinc	7440-66-6	43	56	mg/Kg	2	NA	2.35E+04	Yes	Yes
1302200902 1302201001	800 HWDL-03	Mercury	7439-97-6	0.032	0.032	mg/Kg	0.022	NA	1.56E+01	Yes	Yes
EPA Method 9012B: Cyanides (Lab Report No. 680-87665-1)											
1302200903 1302201002	800 HWDL-03	Cyanide, Total	57-12-5	0.24 J	ND	mg/Kg	0.53	590	4.69E+01	Yes	Yes
EPA Method 8260B: Volatile Organic Compounds (Lab Report No. 680-87665-1)											
1302200900 1302200959	800 HWDL-03	1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	ND	ND	mg/Kg	0.006	30	NA	Yes	Yes
1302200900 1302200959	800 HWDL-03	2-Butanone (MEK)	78-93-3	ND	0.012 J	mg/Kg	0.027	36	NA	Yes	Yes
1302200900 1302200959	800 HWDL-03	Acetone	67-64-1	0.024 J	0.041 J	mg/Kg	0.055	160	NA	Yes	Yes
1302200900 1302200959	800 HWDL-03	Benzene	71-43-2	ND	ND	mg/Kg	0.006	10	NA	Yes	Yes
1302200900 1302200959	800 HWDL-03	Ethylbenzene	100-41-4	ND	ND	mg/Kg	0.006	10	NA	Yes	Yes
1302200900 1302200959	800 HWDL-03	Tetrachloroethene (PCE)	127-18-4	ND	ND	mg/Kg	0.006	6	NA	Yes	Yes
1302200900 1302200959	800 HWDL-03	Toluene	108-88-3	0.00097 J	ND	mg/Kg	0.006	10	NA	Yes	Yes
1302200900 1302200959	800 HWDL-03	Trichloroethene (TCE)	79-01-6	ND	ND	mg/Kg	0.006	6	NA	Yes	Yes
1302200900 1302200959	800 HWDL-03	Trichlorofluoromethane (CFC 11)	75-69-4	ND	ND	mg/Kg	0.006	30	NA	Yes	Yes
1302200900 1302200959	800 HWDL-03	Xylenes, Total	1330-20-7	ND	ND	mg/Kg	0.011	30	NA	Yes	Yes
EPA Method 8270C: Semi-Volatile Organic Compounds (Lab Report No. 680-87665-1)											
1302200901 1302201000	800 HWDL-03	Aniline	62-53-3	ND	ND	mg/Kg	0.42	14	NA	Yes	Yes

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
1302200901 1302201000	800 HWDL-03	Di-n-butyl Phthalate	84-74-2	ND	ND	mg/Kg	0.35	28	NA	Yes	Yes
1302200901 1302201000	800 HWDL-03	Naphthalene	91-20-3	ND	ND	mg/Kg	0.35	5.6	NA	Yes	Yes
1302200901 1302201000	800 HWDL-03	Phenol	108-95-2	ND	ND	mg/Kg	0.35	6.2	NA	Yes	Yes
1302200901 1302201000	800 HWDL-03	N-Nitrosodimethylamine	62-75-9	ND	ND	mg/Kg	0.55	2.3	NA	Yes	Yes

[1]- List of analytes were compiled from ETU Closure Plan (March, 2012) Attachment 15, Tables (1-11)

[2]- Units for MDL and LOQ are method-specific and are identified by the units column expressed for each method.

[3]- Values for Residential Soil Screening Levels (SSL) retrieved from NMED SSL (June 2012).

Q- One or more quality control criteria failed.

B- Compound was found in the blank and sample

J- Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

H- Sample was prepped or analyzed beyond the specified holding time.

MDL- Method Detection Limit

LOQ- Limit of quantitation

(a)- First Depth (0-6') below HWDL/Ground Surface

(b)- Second Depth (1'-2') below HWDL/Ground Surface

(D)- Duplicate Sample (1 Field Duplicate every 10 samples) per SAP 2013-006, Section 9: *Quality Control Requirements*

ND- Constituent analyzed for but not detected.

*- RPD of the LCS and LCSD exceeds the control limits

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
Ion Chromatography Method: HYDRAZINES (Lab Report No. 280-39171-1)											
1302211343 1302211418	800 HWDL-04	1,1 Dimethylhydrazine	57-14-7	ND	ND	mg/Kg	0.004	NA	NA	Yes	Yes
1302211343 1302211418	800 HWDL-04	Hydrazine	32-01-2	ND	ND	mg/Kg	0.002	NA	NA	Yes	Yes
1302211343 1302211418	800 HWDL-04	Monomethyl Hydrazine	60-34-4	ND	ND	mg/Kg	0.008	NA	NA	Yes	Yes
EPA Method 6020A/7471B METALS & MERCURY (Lab Report No. 680-87772-1)											
1302211346 1302211421	800 HWDL-04	Arsenic	7440-38-2	ND	8.4	mg/Kg	0.23	NA	3.90E+00	Yes	No
1302211346 1302211421	800 HWDL-04	Barium	7440-39-3	110	93	mg/Kg	0.47	NA	1.56E+04	Yes	Yes
1302211346 1302211421	800 HWDL-04	Beryllium	7440-41-7	0.3	0.32	mg/Kg	0.047	NA	1.56E+02	Yes	Yes
1302211346 1302211421	800 HWDL-04	Cadmium	7440-43-9	0.25	0.2	mg/Kg	0.047	NA	7.03E+01	Yes	Yes
1302211346 1302211421	800 HWDL-04	Chromium	7440-47-3	9 Q	7.4 Q	mg/Kg	0.47	NA	1.17E+05	Yes	Yes
1302211346 1302211421	800 HWDL-04	Copper	7440-50-8	7.9	8.7	mg/Kg	0.47	NA	3.13E+03	Yes	Yes
1302211346 1302211421	800 HWDL-04	Lead	7439-92-1	10	7.4	mg/Kg	0.19	NA	4.00E+02	Yes	Yes
1302211346 1302211421	800 HWDL-04	Nickel	7440-02-0	11	7.7	mg/Kg	0.47	NA	1.56E+03	Yes	Yes
1302211346 1302211421	800 HWDL-04	Selenium	7782-49-2	ND	ND	mg/Kg	0.5	NA	3.91E+02	Yes	Yes
1302211346 1302211421	800 HWDL-04	Silver	7440-22-4	0.059 J	0.5 J	mg/Kg	0.093	NA	3.91E+02	Yes	Yes
1302211346 1302211421	800 HWDL-04	Thallium	7440-28-0	0.07 J	0.054 J	mg/Kg	0.093	NA	NA	Yes	Yes
1302211346 1302211421	800 HWDL-04	Vanadium	7440-62-2	14	15	mg/Kg	0.47	NA	3.91E+02	Yes	Yes

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
1302211346 1302211421	800 HWDL-04	Zinc	7440-66-6	34	28	mg/Kg	1.9	NA	2.35E+04	Yes	Yes
1302211346 1302211421	800 HWDL-04	Mercury	7439-97-6	0.019 J	5.6 X	mg/Kg	0.02	NA	1.56E+01	Yes	Yes
EPA Method 9012B: Cyanides (Lab Report No. 680-87772-1)											
1302211347 1302211422	800 HWDL-04	Cyanide, Total	57-12-5	ND	ND	mg/Kg	0.52	590	4.69E+01	Yes	Yes
EPA Method 8260B: Volatile Organic Compounds (Lab Report No. 680-87772-1)											
1302211344 1302211419	800 HWDL-04	1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	ND	ND	mg/Kg	0.006	30	NA	Yes	Yes
1302211344 1302211419	800 HWDL-04	2-Butanone (MEK)	78-93-3	0.0044 J	0.0054 J	mg/Kg	0.03	36	NA	Yes	Yes
1302211344 1302211419	800 HWDL-04	Acetone	67-64-1	0.017 J	0.026 J	mg/Kg	0.061	160	NA	Yes	Yes
1302211344 1302211419	800 HWDL-04	Benzene	71-43-2	ND	ND	mg/Kg	0.006	10	NA	Yes	Yes
1302211344 1302211419	800 HWDL-04	Ethylbenzene	100-41-4	ND	ND	mg/Kg	0.006	10	NA	Yes	Yes
1302211344 1302211419	800 HWDL-04	Tetrachloroethene (PCE)	127-18-4	ND	ND	mg/Kg	0.006	6	NA	Yes	Yes
1302211344 1302211419	800 HWDL-04	Toluene	108-88-3	ND	ND	mg/Kg	0.006	10	NA	Yes	Yes
1302211344 1302211419	800 HWDL-04	Trichloroethene (TCE)	79-01-6	ND	ND	mg/Kg	0.005	6	NA	Yes	Yes
1302211344 1302211419	800 HWDL-04	Trichlorofluoromethane (CFC 11)	75-69-4	ND	ND	mg/Kg	0.006	30	NA	Yes	Yes
1302211344 1302211419	800 HWDL-04	Xylenes, Total	1330-20-7	ND	ND	mg/Kg	0.012	30	NA	Yes	Yes
EPA Method 8270C: Semi-Volatile Organic Compounds (Lab Report No.680-87772-1)											
1302211345 1302211420	800 HWDL-04	Aniline	62-53-3	ND	ND	mg/Kg	0.39	14	NA	Yes	Yes

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
1302211345 1302211420	800 HWDL-04	Di-n-butyl Phthalate	84-74-2	ND	ND	mg/Kg	0.33	28	NA	Yes	Yes
1302211345 1302211420	800 HWDL-04	Naphthalene	91-20-3	ND	ND	mg/Kg	0.33	5.6	NA	Yes	Yes
1302211345 1302211420	800 HWDL-04	Phenol	108-95-2	ND	ND	mg/Kg	0.33	6.2	NA	Yes	Yes
1302211345 1302211420	800 HWDL-04	N-Nitrosodimethylamine	62-75-9	ND	ND	mg/Kg	0.52	2.3	NA	Yes	Yes

[1]- List of analytes were compiled from ETU Closure Plan (March, 2012) Attachment 15, Tables (1-11)

[2]- Units for MDL and LOQ are method-specific and are identified by the units column expressed for each method.

[3]- Values for Residential Soil Screening Levels (SSL) retrieved from NMED SSL (June 2012).

Q- One or more quality control criteria failed.

B- Compound was found in the blank and sample

J- Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

H- Sample was prepped or analyzed beyond the specified holding time.

X- Result is from a dilution of 0.42.

MDL- Method Detection Limit

LOQ- Limit of quantitation

(a)- First Depth (0-6') below HWDL/Ground Surface

(b)- Second Depth (1'-2') below HWDL/Ground Surface

(D)- Duplicate Sample (1 Field Duplicate every 10 samples) per SAP 2013-006, Section 9: *Quality Control Requirements*

ND- Constituent analyzed for but not detected.

*- RPD of the LCS and LCSD exceeds the control limits

Sample ID (a) (b) (D)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Results/ Qualifier (D)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No	Criteria Met (D) Yes/No
Ion Chromatography Method: HYDRAZINES (Lab Report No. 280-39171-1)													
1302210839 1302210840 1302210923	800 HWDL-05	1,1 Dimethylhydrazine	57-14-7	ND	ND	ND	mg/Kg	0.004	NA	NA	Yes	Yes	Yes
1302210839 1302210840 1302210923	800 HWDL-05	Hydrazine	32-01-2	ND	ND	0.0069 JB	mg/Kg	0.002	NA	NA	Yes	Yes	Yes
1302210839 1302210840 1302210923	800 HWDL-05	Monomethyl Hydrazine	60-34-4	ND	ND	ND	mg/Kg	0.007	NA	NA	Yes	Yes	Yes
EPA Method 6020A/7471B METALS & MERCURY (Lab Report No. 680-87711-1)													
1302210845 1302210846 1302210926	800 HWDL-05	Arsenic	7440-38-2	4	5.3	2.5	mg/Kg	0.22	NA	3.90E+00	No	No	Yes
1302210845 1302210846 1302210926	800 HWDL-05	Barium	7440-39-3	5	8	7	mg/Kg	0.45	NA	1.56E+04	Yes	Yes	Yes
1302210845 1302210846 1302210926	800 HWDL-05	Beryllium	7440-41-7	0.017	0.02	0.0145	mg/Kg	0.045	NA	1.56E+02	Yes	Yes	Yes
1302210845 1302210846 1302210926	800 HWDL-05	Cadmium	7440-43-9	0.0033	0.012	0.00315	mg/Kg	0.045	NA	7.03E+01	Yes	Yes	Yes
1302210845 1302210846 1302210926	800 HWDL-05	Chromium	7440-47-3	0.295	0.6	0.335	mg/Kg	0.45	NA	1.17E+05	Yes	Yes	Yes
1302210845 1302210846 1302210926	800 HWDL-05	Copper	7440-50-8	0.325	0.33	0.455	mg/Kg	0.45	NA	3.13E+03	Yes	Yes	Yes
1302210845 1302210846 1302210926	800 HWDL-05	Lead	7439-92-1	0.25	0.39	0.215	mg/Kg	0.18	NA	4.00E+02	Yes	Yes	Yes

Sample ID (a) (b) (D)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Results/ Qualifier (D)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No	Criteria Met (D) Yes/No
1302210845 1302210846 1302210926	800 HWDL-05	Nickel	7440-02-0	0.335	0.55	0.34	mg/Kg	0.54	NA	1.56E+03	Yes	Yes	Yes
1302210845 1302210846 1302210926	800 HWDL-05	Selenium	7782-49-2	ND	ND	ND	mg/Kg	0.45	NA	3.91E+02	Yes	Yes	Yes
1302210845 1302210846 1302210926	800 HWDL-05	Silver	7440-22-4	ND	ND	ND	mg/Kg	0.089	NA	3.91E+02	Yes	Yes	Yes
1302210845 1302210846 1302210926	800 HWDL-05	Thallium	7440-28-0	0.00215 J	0.0022 J	0.0025 J	mg/Kg	0.089	NA	NA	Yes	Yes	Yes
1302210845 1302210846 1302210926	800 HWDL-05	Vanadium	7440-62-2	0.85	1.6	0.9	mg/Kg	0.45	NA	3.91E+02	Yes	Yes	Yes
1302210845 1302210846 1302210926	800 HWDL-05	Zinc	7440-66-6	1.15	1.3	1.1	mg/Kg	1.8	NA	2.35E+04	Yes	Yes	Yes
1302210845 1302210846 1302210926	800 HWDL-05	Mercury	7439-97-6	ND	0.0005 J	ND	mg/Kg	0.017	NA	1.56E+01	Yes	Yes	Yes
EPA Method 9012B: Cyanides (Lab Report No. 680-87711-1)													
1302210847 1302210848 1302210927	800 HWDL-05	Cyanide, Total	57-12-5	ND	ND	ND	mg/Kg	0.49	590	4.69E+01	Yes	Yes	Yes
EPA Method 8260B: Volatile Organic Compounds (Lab Report No. 680-87711-1)													
1302210841 1302210842 1302210924	800 HWDL-05	1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	ND	ND	ND	mg/Kg	0.006	30	NA	Yes	Yes	Yes
1302210841 1302210842 1302210924	800 HWDL-05	2-Butanone (MEK)	78-93-3	0.0052 J	0.0067 J	ND	mg/Kg	0.025	36	NA	Yes	Yes	Yes

Sample ID (a) (b) (D)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Results/ Qualifier (D)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No	Criteria Met (D) Yes/No
1302210841 1302210842 1302210924	800 HWDL-05	Acetone	67-64-1	0.037 J	0.022 J	0.026 J	mg/Kg	0.05	160	NA	Yes	Yes	Yes
1302210841 1302210842 1302210924	800 HWDL-05	Benzene	71-43-2	ND	ND	ND	mg/Kg	0.005	10	NA	Yes	Yes	Yes
1302210841 1302210842 1302210924	800 HWDL-05	Ethylbenzene	100-41-4	ND	ND	ND	mg/Kg	0.005	10	NA	Yes	Yes	Yes
1302210841 1302210842 1302210924	800 HWDL-05	Tetrachloroethene (PCE)	127-18-4	ND	ND	ND	mg/Kg	0.005	6	NA	Yes	Yes	Yes
1302210841 1302210842 1302210924	800 HWDL-05	Toluene	108-88-3	ND	ND	ND	mg/Kg	0.005	10	NA	Yes	Yes	Yes
1302210841 1302210842 1302210924	800 HWDL-05	Trichloroethene (TCE)	79-01-6	ND	ND	ND	mg/Kg	0.005	6	NA	Yes	Yes	Yes
1302210841 1302210842 1302210924	800 HWDL-05	Trichlorofluoromethane (CFC 11)	75-69-4	ND	ND	ND	mg/Kg	0.005	30	NA	Yes	Yes	Yes
1302210841 1302210842 1302210924	800 HWDL-05	Xylenes, Total	1330-20-7	ND	ND	ND	mg/Kg	0.01	30	NA	Yes	Yes	Yes
EPA Method 8270C: Semi-Volatile Organic Compounds (Lab Report No. 680-87711-1)													
1302210843 1302210844 1302210925	800 HWDL-05	Aniline	62-53-3	ND	ND	ND	mg/Kg	0.38	14	NA	Yes	Yes	Yes
1302210843 1302210844 1302210925	800 HWDL-05	Di-n-butyl Phthalate	84-74-2	ND	ND	ND	mg/Kg	0.32	28	NA	Yes	Yes	Yes
1302210843 1302210844 1302210925	800 HWDL-05	Naphthalene	91-20-3	ND	ND	ND	mg/Kg	0.32	5.6	NA	Yes	Yes	Yes

Sample ID (a) (b) (D)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Results/ Qualifier (D)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No	Criteria Met (D) Yes/No
1302210843 1302210844 1302210925	800 HWDL-05	Phenol	108-95-2	ND	ND	ND	mg/Kg	0.32	6.2	NA	Yes	Yes	Yes
1302210843 1302210844 1302210925	800 HWDL-05	N-Nitrosodimethylamine	62-75-9	ND	ND	ND	mg/Kg	0.5	2.3	NA	Yes	Yes	Yes

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J- Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

H- Sample was prepped or analyzed beyond the specified holding time.

MDL- Method Detection Limit

LOQ- Limit of quantitation

(a)- First Depth (0-6') below HWDL/Ground Surface

(b)- Second Depth (1'-2') below HWDL/Ground Surface

(D)- Duplicate Sample (1 Field Duplicate every 10 samples) per SAP 2013-006, Section 9: *Quality Control Requirements*

ND- Constituent analyzed for but not detected.

*- RPD of the LCS and LCSD exceeds the control limits

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
Ion Chromatography Method: HYDRAZINES (Lab Report No. 280-39171-1)											
1302211045 1302211025	800 HWDL-06	1,1 Dimethylhydrazine	57-14-7	ND	ND	mg/Kg	0.004	NA	NA	Yes	Yes
1302211045 1302211025	800 HWDL-06	Hydrazine	32-01-2	0.0051 JB	0.0069 JB	mg/Kg	0.002	NA	NA	Yes	Yes
1302211045 1302211025	800 HWDL-06	Monomethyl Hydrazine	60-34-4	ND	ND	mg/Kg	0.008	NA	NA	Yes	Yes
EPA Method 6020A/7471B METALS & MERCURY (Lab Report No. 680-87711-1)											
1302211048 1302211028	800 HWDL-06	Arsenic	7440-38-2	2	6.6	mg/Kg	0.26	NA	3.90E+00	Yes	No
1302211048 1302211028	800 HWDL-06	Barium	7440-39-3	110	150	mg/Kg	0.51	NA	1.56E+04	Yes	Yes
1302211048 1302211028	800 HWDL-06	Beryllium	7440-41-7	0.27	0.5	mg/Kg	0.051	NA	1.56E+02	Yes	Yes
1302211048 1302211028	800 HWDL-06	Cadmium	7440-43-9	0.048	0.21	mg/Kg	0.051	NA	7.03E+01	Yes	Yes
1302211048 1302211028	800 HWDL-06	Chromium	7440-47-3	4.9	17	mg/Kg	0.51	NA	1.17E+05	Yes	Yes
1302211048 1302211028	800 HWDL-06	Copper	7440-50-8	3.9	8.4	mg/Kg	0.51	NA	3.13E+03	Yes	Yes
1302211048 1302211028	800 HWDL-06	Lead	7439-92-1	4.2	7.1	mg/Kg	0.2	NA	4.00E+02	Yes	Yes
1302211048 1302211028	800 HWDL-06	Nickel	7440-02-0	5.7	14	mg/Kg	0.51	NA	1.56E+03	Yes	Yes
1302211048 1302211028	800 HWDL-06	Selenium	7782-49-2	ND	ND	mg/Kg	0.51	NA	3.91E+02	Yes	Yes
1302211048 1302211028	800 HWDL-06	Silver	7440-22-4	ND	ND	mg/Kg	0.1	NA	3.91E+02	Yes	Yes
1302211048 1302211028	800 HWDL-06	Thallium	7440-28-0	0.042 J	0.09 J	mg/Kg	0.1	NA	NA	Yes	Yes
1302211048 1302211028	800 HWDL-06	Vanadium	7440-62-2	16	27	mg/Kg	0.51	NA	3.91E+02	Yes	Yes

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
1302211048 1302211028	800 HWDL-06	Zinc	7440-66-6	19	33	mg/Kg	2	NA	2.35E+04	Yes	Yes
1302211048 1302211028	800 HWDL-06	Mercury	7439-97-6	ND	0.024	mg/Kg	0.02	NA	1.56E+01	Yes	Yes
EPA Method 9012B: Cyanides (Lab Report No. 680-87711-1)											
1302211049 1302211029	800 HWDL-06	Cyanide, Total	57-12-5	0.30 J	ND	mg/Kg	0.55	590	4.69E+01	Yes	Yes
EPA Method 8260B: Volatile Organic Compounds (Lab Report No. 680-87711-1)											
1302211046 1302211026	800 HWDL-06	1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	ND	ND	mg/Kg	0.001	30	NA	Yes	Yes
1302211046 1302211026	800 HWDL-06	2-Butanone (MEK)	78-93-3	0.0098 J	0.0075 J	mg/Kg	0.003	36	NA	Yes	Yes
1302211046 1302211026	800 HWDL-06	Acetone	67-64-1	0.037 J	0.029 J	mg/Kg	0.055	160	NA	Yes	Yes
1302211046 1302211026	800 HWDL-06	Benzene	71-43-2	ND	ND	mg/Kg	0.006	10	NA	Yes	Yes
1302211046 1302211026	800 HWDL-06	Ethylbenzene	100-41-4	ND	ND	mg/Kg	0.001	10	NA	Yes	Yes
1302211046 1302211026	800 HWDL-06	Tetrachloroethene (PCE)	127-18-4	ND	ND	mg/Kg	0.002	6	NA	Yes	Yes
1302211046 1302211026	800 HWDL-06	Toluene	108-88-3	ND	ND	mg/Kg	0.001	10	NA	Yes	Yes
1302211046 1302211026	800 HWDL-06	Trichloroethene (TCE)	79-01-6	ND	ND	mg/Kg	0.001	6	NA	Yes	Yes
1302211046 1302211026	800 HWDL-06	Trichlorofluoromethane (CFC 11)	75-69-4	ND	ND	mg/Kg	0.001	30	NA	Yes	Yes
1302211046 1302211026	800 HWDL-06	Xylenes, Total	1330-20-7	ND	ND	mg/Kg	0.001	30	NA	Yes	Yes
EPA Method 8270C: Semi-Volatile Organic Compounds (Lab Report No. 680-87711-1)											
1302211047 1302211027	800 HWDL-06	Aniline	62-53-3	ND	ND	mg/Kg	0.42	14	NA	Yes	Yes

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
1302211047 1302211027	800 HWDL-06	Di-n-butyl Phthalate	84-74-2	ND	ND	mg/Kg	0.36	28	NA	Yes	Yes
1302211047 1302211027	800 HWDL-06	Naphthalene	91-20-3	ND	ND	mg/Kg	0.36	5.6	NA	Yes	Yes
1302211047 1302211027	800 HWDL-06	Phenol	108-95-2	ND	ND	mg/Kg	0.36	6.2	NA	Yes	Yes
1302211047 1302211027	800 HWDL-06	N-Nitrosodimethylamine	62-75-9	ND	ND	mg/Kg	0.56	2.3	NA	Yes	Yes

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MDL- Method Detection Limit

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(a)- First Depth (0-6') below HWDL/Ground Surface

(b)- Second Depth (1'-2') below HWDL/Ground Surface

(D)- Duplicate Sample (1 Field Duplicate every 10 samples) per SAP 2013-006, Section 9: *Quality Control Requirements*

ND- Constituent analyzed for but not detected.

*- RPD of the LCS and LCSD exceeds the control limits

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
Ion Chromatography Method: HYDRAZINES (Lab Report No. 280-39200-1)											
1302220919 1302220951	800 HWDL-07	1,1 Dimethylhydrazine	57-14-7	ND	ND	mg/Kg	0.004	NA	NA	Yes	Yes
1302220919 1302220951	800 HWDL-07	Hydrazine	32-01-2	ND	ND	mg/Kg	0.002	NA	NA	Yes	Yes
1302220919 1302220951	800 HWDL-07	Monomethyl Hydrazine	60-34-4	ND	ND	mg/Kg	0.008	NA	NA	Yes	Yes
EPA Method 6020A/7471B METALS & MERCURY (Lab Report No. 680-87772-1)											
1302220922 1302220954	800 HWDL-07	Arsenic	7440-38-2	1.5	1.4	mg/Kg	0.27	NA	3.90E+00	Yes	Yes
1302220922 1302220954	800 HWDL-07	Barium	7440-39-3	130	120	mg/Kg	0.54	NA	1.56E+04	Yes	Yes
1302220922 1302220954	800 HWDL-07	Beryllium	7440-41-7	0.24	0.21	mg/Kg	0.054	NA	1.56E+02	Yes	Yes
1302220922 1302220954	800 HWDL-07	Cadmium	7440-43-9	0.025 J	0.017 J	mg/Kg	0.054	NA	7.03E+01	Yes	Yes
1302220922 1302220954	800 HWDL-07	Chromium	7440-47-3	3.9 Q	3.3 Q	mg/Kg	0.54	NA	1.17E+05	Yes	Yes
1302220922 1302220954	800 HWDL-07	Copper	7440-50-8	3.1	2.7	mg/Kg	7.3	NA	3.13E+03	Yes	Yes
1302220922 1302220954	800 HWDL-07	Lead	7439-92-1	3.1	2.8	mg/Kg	6.9	NA	4.00E+02	Yes	Yes
1302220922 1302220954	800 HWDL-07	Nickel	7440-02-0	4.7	4	mg/Kg	0.54	NA	1.56E+03	Yes	Yes
1302220922 1302220954	800 HWDL-07	Selenium	7782-49-2	ND	ND	mg/Kg	0.54	NA	3.91E+02	Yes	Yes
1302220922 1302220954	800 HWDL-07	Silver	7440-22-4	ND	ND	mg/Kg	0.11	NA	3.91E+02	Yes	Yes
1302220922 1302220954	800 HWDL-07	Thallium	7440-28-0	ND	ND	mg/Kg	0.11	NA	NA	Yes	Yes
1302220922 1302220954	800 HWDL-07	Vanadium	7440-62-2	12	11	mg/Kg	0.54	NA	3.91E+02	Yes	Yes

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
1302220922 1302220954	800 HWDL-07	Zinc	7440-66-6	15	13	mg/Kg	2.1	NA	2.35E+04	Yes	Yes
1302220922 1302220954	800 HWDL-07	Mercury	7439-97-6	0.012 J	0.014 J	mg/Kg	0.019	NA	1.56E+01	Yes	Yes
EPA Method 9012B: Cyanides (Lab Report No. 680-87772-1)											
1302220923 1302220955	800 HWDL-07	Cyanide, Total	57-12-5	ND	ND	mg/Kg	0.5	590	4.69E+01	Yes	Yes
EPA Method 8260B: Volatile Organic Compounds (Lab Report No. 680-87772-1)											
1302220920 1302220952	800 HWDL-07	1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	ND	ND	mg/Kg	0.006	30	NA	Yes	Yes
1302220920 1302220952	800 HWDL-07	2-Butanone (MEK)	78-93-3	0.0039 J	ND	mg/Kg	0.029	36	NA	Yes	Yes
1302220920 1302220952	800 HWDL-07	Acetone	67-64-1	0.022 J	0.018 J	mg/Kg	0.057	160	NA	Yes	Yes
1302220920 1302220952	800 HWDL-07	Benzene	71-43-2	ND	ND	mg/Kg	0.006	10	NA	Yes	Yes
1302220920 1302220952	800 HWDL-07	Ethylbenzene	100-41-4	ND	ND	mg/Kg	0.006	10	NA	Yes	Yes
1302220920 1302220952	800 HWDL-07	Tetrachloroethene (PCE)	127-18-4	ND	ND	mg/Kg	0.006	6	NA	Yes	Yes
1302220920 1302220952	800 HWDL-07	Toluene	108-88-3	ND	ND	mg/Kg	0.006	10	NA	Yes	Yes
1302220920 1302220952	800 HWDL-07	Trichloroethene (TCE)	79-01-6	ND	ND	mg/Kg	0.006	6	NA	Yes	Yes
1302220920 1302220952	800 HWDL-07	Trichlorofluoromethane (CFC 11)	75-69-4	ND	ND	mg/Kg	0.006	30	NA	Yes	Yes
1302220920 1302220952	800 HWDL-07	Xylenes, Total	1330-20-7	ND	ND	mg/Kg	0.001	30	NA	Yes	Yes
EPA Method 8270C: Semi-Volatile Organic Compounds (Lab Report No. 680-87772-1)											
1302220921 1302220953	800 HWDL-07	Aniline	62-53-3	ND	ND	mg/Kg	0.42	14	NA	Yes	Yes

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
1302220921 1302220953	800 HWDL-07	Di-n-butyl Phthalate	84-74-2	ND	ND	mg/Kg	0.36	28	NA	Yes	Yes
1302220921 1302220953	800 HWDL-07	Naphthalene	91-20-3	ND	ND	mg/Kg	0.36	5.6	NA	Yes	Yes
1302220921 1302220953	800 HWDL-07	Phenol	108-95-2	ND	ND	mg/Kg	0.36	6.2	NA	Yes	Yes
1302220921 1302220953	800 HWDL-07	N-Nitrosodimethylamine	62-75-9	ND	ND	mg/Kg	0.56	2.3	NA	Yes	Yes

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Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
Ion Chromatography Method: HYDRAZINES (Lab Report No. 280-39200-1)											
1302221055 1302221115	800 HWDL-08	1,1 Dimethylhydrazine	57-14-7	ND	ND	mg/Kg	0.004	NA	NA	Yes	Yes
1302221055 1302221115	800 HWDL-08	Hydrazine	32-01-2	ND	ND	mg/Kg	0.002	NA	NA	Yes	Yes
1302221055 1302221115	800 HWDL-08	Monomethyl Hydrazine	60-34-4	ND	ND	mg/Kg	0.008	NA	NA	Yes	Yes
EPA Method 6020A/7471B METALS & MERCURY (Lab Report No. 680-87772-1)											
1302221058 1302221118	800 HWDL-08	Arsenic	7440-38-2	3.7	4.8	mg/Kg	0.026	NA	3.90E+00	Yes	No
1302221058 1302221118	800 HWDL-08	Barium	7440-39-3	180	94	mg/Kg	0.51	NA	1.56E+04	Yes	Yes
1302221058 1302221118	800 HWDL-08	Beryllium	7440-41-7	0.3	0.37	mg/Kg	0.051	NA	1.56E+02	Yes	Yes
1302221058 1302221118	800 HWDL-08	Cadmium	7440-43-9	0.3	0.11	mg/Kg	0.051	NA	7.03E+01	Yes	Yes
1302221058 1302221118	800 HWDL-08	Chromium	7440-47-3	5.6 Q	11 Q	mg/Kg	0.51	NA	1.17E+05	Yes	Yes
1302221058 1302221118	800 HWDL-08	Copper	7440-50-8	5.2	5.6	mg/Kg	7.3	NA	3.13E+03	Yes	Yes
1302221058 1302221118	800 HWDL-08	Lead	7439-92-1	5.6	6	mg/Kg	6.9	NA	4.00E+02	Yes	Yes
1302221058 1302221118	800 HWDL-08	Nickel	7440-02-0	7.1	9.7	mg/Kg	0.54	NA	1.56E+03	Yes	Yes
1302221058 1302221118	800 HWDL-08	Selenium	7782-49-2	ND	ND	mg/Kg	0.54	NA	3.91E+02	Yes	Yes
1302221058 1302221118	800 HWDL-08	Silver	7440-22-4	ND	ND	mg/Kg	0.11	NA	3.91E+02	Yes	Yes
1302221058 1302221118	800 HWDL-08	Thallium	7440-28-0	0.05 J	0.046 J	mg/Kg	0.11	NA	NA	Yes	Yes
1302221058 1302221118	800 HWDL-08	Vanadium	7440-62-2	15	20	mg/Kg	0.54	NA	3.91E+02	Yes	Yes

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
1302221058 1302221118	800 HWDL-08	Zinc	7440-66-6	23	29	mg/Kg	2.1	NA	2.35E+04	Yes	Yes
1302221058 1302221118	800 HWDL-08	Mercury	7439-97-6	0.017 J	0.019 J	mg/Kg	0.019	NA	1.56E+01	Yes	Yes
EPA Method 9012B: Cyanides (Lab Report No. 680-87772-1)											
1302221059 1302221119	800 HWDL-08	Cyanide, Total	57-12-5	ND	ND	mg/Kg	0.53	590	4.69E+01	Yes	Yes
EPA Method 8260B: Volatile Organic Compounds (Lab Report No. 680-87772-1)											
1302221056 1302221116	800 HWDL-08	1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	ND	ND	mg/Kg	0.006	30	NA	Yes	Yes
1302221056 1302221116	800 HWDL-08	2-Butanone (MEK)	78-93-3	0.011 J	ND	mg/Kg	0.029	36	NA	Yes	Yes
1302221056 1302221116	800 HWDL-08	Acetone	67-64-1	0.038 J	0.027 J	mg/Kg	0.058	160	NA	Yes	Yes
1302221056 1302221116	800 HWDL-08	Benzene	71-43-2	ND	ND	mg/Kg	0.006	10	NA	Yes	Yes
1302221056 1302221116	800 HWDL-08	Ethylbenzene	100-41-4	ND	ND	mg/Kg	0.006	10	NA	Yes	Yes
1302221056 1302221116	800 HWDL-08	Tetrachloroethene (PCE)	127-18-4	ND	ND	mg/Kg	0.006	6	NA	Yes	Yes
1302221056 1302221116	800 HWDL-08	Toluene	108-88-3	ND	ND	mg/Kg	0.006	10	NA	Yes	Yes
1302221056 1302221116	800 HWDL-08	Trichloroethene (TCE)	79-01-6	ND	ND	mg/Kg	0.006	6	NA	Yes	Yes
1302221056 1302221116	800 HWDL-08	Trichlorofluoromethane (CFC 11)	75-69-4	ND	ND	mg/Kg	0.006	30	NA	Yes	Yes
1302221056 1302221116	800 HWDL-08	Xylenes, Total	1330-20-7	ND	ND	mg/Kg	0.012	30	NA	Yes	Yes
EPA Method 8270C: Semi-Volatile Organic Compounds (Lab Report No. 680-87772-1)											
1302221057 1302221117	800 HWDL-08	Aniline	62-53-3	ND	ND	mg/Kg	0.42	14	NA	Yes	Yes

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
1302221057 1302221117	800 HWDL-08	Di-n-butyl Phthalate	84-74-2	ND	ND	mg/Kg	0.36	28	NA	Yes	Yes
1302221057 1302221117	800 HWDL-08	Naphthalene	91-20-3	ND	ND	mg/Kg	0.36	5.6	NA	Yes	Yes
1302221057 1302221117	800 HWDL-08	Phenol	108-95-2	ND	ND	mg/Kg	0.36	6.2	NA	Yes	Yes
1302221057 1302221117	800 HWDL-08	N-Nitrosodimethylamine	62-75-9	ND	ND	mg/Kg	0.56	2.3	NA	Yes	Yes

[1]- List of analytes were compiled from ETU Closure Plan (March, 2012) Attachment 15, Tables (1-11)

[2]- Units for MDL and LOQ are method-specific and are identified by the units column expressed for each method.

[3]- Values for Residential Soil Screening Levels (SSL) retrieved from NMED SSL (June 2012).

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B- Compound was found in the blank and sample

J- Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

H- Sample was prepped or analyzed beyond the specified holding time.

MDL- Method Detection Limit

LOQ- Limit of quantitation

(a)- First Depth (0-6') below HWDL/Ground Surface

(b)- Second Depth (1'-2') below HWDL/Ground Surface

(D)- Duplicate Sample (1 Field Duplicate every 10 samples) per SAP 2013-006, Section 9: *Quality Control Requirements*

ND- Constituent analyzed for but not detected.

*- RPD of the LCS and LCSD exceeds the control limits

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
Ion Chromatography Method: HYDRAZINES (Lab Report No. 280-39243-1)											
1302250917 1302250943	800 HWDL-09	1,1 Dimethylhydrazine	57-14-7	ND	ND	mg/Kg	0.004	NA	NA	Yes	Yes
1302250917 1302250943	800 HWDL-09	Hydrazine	32-01-2	0.007 JB	0.006 JB	mg/Kg	0.002	NA	NA	Yes	Yes
1302250917 1302250943	800 HWDL-09	Monomethyl Hydrazine	60-34-4	ND	ND*	mg/Kg	0.008	NA	NA	Yes	Yes
EPA Method 6020A/7471B METALS & MERCURY (Lab Report No. 680-87790-1)											
1302250920 1302250946	800 HWDL-09	Arsenic	7440-38-2	2.3	2.1	mg/Kg	0.27	NA	3.90E+00	Yes	Yes
1302250920 1302250946	800 HWDL-09	Barium	7440-39-3	140	130	mg/Kg	0.54	NA	1.56E+04	Yes	Yes
1302250920 1302250946	800 HWDL-09	Beryllium	7440-41-7	0.29	0.27	mg/Kg	0.054	NA	1.56E+02	Yes	Yes
1302250920 1302250946	800 HWDL-09	Cadmium	7440-43-9	0.072	0.06	mg/Kg	0.054	NA	7.03E+01	Yes	Yes
1302250920 1302250946	800 HWDL-09	Chromium	7440-47-3	8.2	7.8	mg/Kg	0.54	NA	1.17E+05	Yes	Yes
1302250920 1302250946	800 HWDL-09	Copper	7440-50-8	3.9	3.6	mg/Kg	7.3	NA	3.13E+03	Yes	Yes
1302250920 1302250946	800 HWDL-09	Lead	7439-92-1	4.4	4.1	mg/Kg	6.9	NA	4.00E+02	Yes	Yes
1302250920 1302250946	800 HWDL-09	Nickel	7440-02-0	7.6	7.2	mg/Kg	0.54	NA	1.56E+03	Yes	Yes
1302250920 1302250946	800 HWDL-09	Selenium	7782-49-2	ND	ND	mg/Kg	0.54	NA	3.91E+02	Yes	Yes
1302250920 1302250946	800 HWDL-09	Silver	7440-22-4	ND	ND	mg/Kg	0.11	NA	3.91E+02	Yes	Yes
1302250920 1302250946	800 HWDL-09	Thallium	7440-28-0	0.048 J	0.038 J	mg/Kg	0.11	NA	NA	Yes	Yes
1302250920 1302250946	800 HWDL-09	Vanadium	7440-62-2	14	13	mg/Kg	0.54	NA	3.91E+02	Yes	Yes

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
1302250920 1302250946	800 HWDL-09	Zinc	7440-66-6	20	18	mg/Kg	2.1	NA	2.35E+04	Yes	Yes
1302250920 1302250946	800 HWDL-09	Mercury	7439-97-6	0.1 J	0.1 J	mg/Kg	0.019	NA	1.56E+01	Yes	Yes
EPA Method 9012B: Cyanides (Lab Report No. 680-87790-1)											
1302250921 1302250947	800 HWDL-09	Cyanide, Total	57-12-5	ND	ND	mg/Kg	0.5	590	4.69E+01	Yes	Yes
EPA Method 8260B: Volatile Organic Compounds (Lab Report No. 680-87790-1)											
1302250918 1302250944	800 HWDL-09	1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	ND	ND	mg/Kg	0.005	30	NA	Yes	Yes
1302250918 1302250944	800 HWDL-09	2-Butanone (MEK)	78-93-3	0.0035 J	0.0053 J	mg/Kg	0.026	36	NA	Yes	Yes
1302250918 1302250944	800 HWDL-09	Acetone	67-64-1	0.016 J	0.013 J	mg/Kg	0.051	160	NA	Yes	Yes
1302250918 1302250944	800 HWDL-09	Benzene	71-43-2	ND	ND	mg/Kg	0.005	10	NA	Yes	Yes
1302250918 1302250944	800 HWDL-09	Ethylbenzene	100-41-4	ND	ND	mg/Kg	0.005	10	NA	Yes	Yes
1302250918 1302250944	800 HWDL-09	Tetrachloroethene (PCE)	127-18-4	ND	ND	mg/Kg	0.005	6	NA	Yes	Yes
1302250918 1302250944	800 HWDL-09	Toluene	108-88-3	ND	ND	mg/Kg	0.005	10	NA	Yes	Yes
1302250918 1302250944	800 HWDL-09	Trichloroethene (TCE)	79-01-6	ND	ND	mg/Kg	0.005	6	NA	Yes	Yes
1302250918 1302250944	800 HWDL-09	Trichlorofluoromethane (CFC 11)	75-69-4	ND	ND	mg/Kg	0.005	30	NA	Yes	Yes
1302250918 1302250944	800 HWDL-09	Xylenes, Total	1330-20-7	ND	ND	mg/Kg	0.01	30	NA	Yes	Yes
EPA Method 8270C: Semi-Volatile Organic Compounds (Lab Report No. 680-87790-1)											
1302250919 1302250945	800 HWDL-09	Aniline	62-53-3	ND	ND	mg/Kg	0.42	0.38	NA	Yes	Yes

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
1302250919 1302250945	800 HWDL-09	Di-n-butyl Phthalate	84-74-2	ND	ND	mg/Kg	0.36	0.32	NA	Yes	Yes
1302250919 1302250945	800 HWDL-09	Naphthalene	91-20-3	ND	ND	mg/Kg	0.36	0.32	NA	Yes	Yes
1302250919 1302250945	800 HWDL-09	Phenol	108-95-2	ND	ND	mg/Kg	0.36	0.32	NA	Yes	Yes
1302250919 1302250945	800 HWDL-09	N-Nitrosodimethylamine	62-75-9	ND	ND	mg/Kg	0.56	0.51	NA	Yes	Yes

[1]- List of analytes were compiled from ETU Closure Plan (March, 2012) Attachment 15, Tables (1-11)

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H- Sample was prepped or analyzed beyond the specified holding time.

MDL- Method Detection Limit

LOQ- Limit of quantitation

(a)- First Depth (0-6') below HWDL/Ground Surface

(b)- Second Depth (1'-2') below HWDL/Ground Surface

(D)- Duplicate Sample (1 Field Duplicate every 10 samples) per SAP 2013-006, Section 9: *Quality Control Requirements*

ND- Constituent analyzed for but not detected.

*- RPD of the LCS and LCSD exceeds the control limits

Sample ID (a) (b) (D)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Results/ Qualifier (D)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No	Criteria Met (D) Yes/No
Ion Chromatography Method: HYDRAZINES (Lab Report No. 280-39171-1)													
1302251040 1302251050 1302251115	800 HWDL-10	1,1 Dimethylhydrazine	57-14-7	ND	ND	ND	mg/Kg	0.004	NA	NA	Yes	Yes	Yes
1302251040 1302251050 1302251115	800 HWDL-10	Hydrazine	32-01-2	0.011 JB	0.0076 JB	0.0072 JB	mg/Kg	0.002	NA	NA	Yes	Yes	Yes
1302251040 1302251050 1302251115	800 HWDL-10	Monomethyl Hydrazine	60-34-4	ND*	ND*	ND*	mg/Kg	0.008	NA	NA	Yes	Yes	Yes
EPA Method 6020A/7471B METALS & MERCURY (Lab Report No. 680-87711-1)													
1302251043 1302251053 1302251118	800 HWDL-10	Arsenic	7440-38-2	4	5	4.2	mg/Kg	0.26	NA	3.90E+00	No	No	No
1302251043 1302251053 1302251118	800 HWDL-10	Barium	7440-39-3	120.0	77	120	mg/Kg	0.51	NA	1.56E+04	Yes	Yes	Yes
1302251043 1302251053 1302251118	800 HWDL-10	Beryllium	7440-41-7	0.34	0.44	0.29	mg/Kg	0.051	NA	1.56E+02	Yes	Yes	Yes
1302251043 1302251053 1302251118	800 HWDL-10	Cadmium	7440-43-9	0.097	0.14	0.089	mg/Kg	0.051	NA	7.03E+01	Yes	Yes	Yes
1302251043 1302251053 1302251118	800 HWDL-10	Chromium	7440-47-3	8.8	14	8	mg/Kg	0.51	NA	1.17E+05	Yes	Yes	Yes
1302251043 1302251053 1302251118	800 HWDL-10	Copper	7440-50-8	4.8	5.2	4.9	mg/Kg	0.51	NA	3.13E+03	Yes	Yes	Yes
1302251043 1302251053 1302251118	800 HWDL-10	Lead	7439-92-1	5.3	7.2	5.1	mg/Kg	0.2	NA	4.00E+02	Yes	Yes	Yes

Sample ID (a) (b) (D)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Results/ Qualifier (D)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No	Criteria Met (D) Yes/No
1302251043 1302251053 1302251118	800 HWDL-10	Nickel	7440-02-0	8.3	12	7.7	mg/Kg	0.51	NA	1.56E+03	Yes	Yes	Yes
1302251043 1302251053 1302251118	800 HWDL-10	Selenium	7782-49-2	ND	ND	ND	mg/Kg	0.54	NA	3.91E+02	Yes	Yes	Yes
1302251043 1302251053 1302251118	800 HWDL-10	Silver	7440-22-4	ND	ND	ND	mg/Kg	0.11	NA	3.91E+02	Yes	Yes	Yes
1302251043 1302251053 1302251118	800 HWDL-10	Thallium	7440-28-0	0.05 J	0.044 J	0.04 J	mg/Kg	0.11	NA	NA	Yes	Yes	Yes
1302251043 1302251053 1302251118	800 HWDL-10	Vanadium	7440-62-2	18	27	17	mg/Kg	0.51	NA	3.91E+02	Yes	Yes	Yes
1302251043 1302251053 1302251118	800 HWDL-10	Zinc	7440-66-6	30	30	24	mg/Kg	2	NA	2.35E+04	Yes	Yes	Yes
1302251043 1302251053 1302251118	800 HWDL-10	Mercury	7439-97-6	0.013 J	0.012 J	0.012 J	mg/Kg	0.019	NA	1.56E+01	Yes	Yes	Yes
EPA Method 9012B: Cyanides (Lab Report No. 680-87711-1)													
1302251044 1302251054 1302251119	800 HWDL-10	Cyanide, Total	57-12-5	ND	ND	ND	mg/Kg	0.51	590	4.69E+01	Yes	Yes	Yes
EPA Method 8260B: Volatile Organic Compounds (Lab Report No. 680-87711-1)													
1302251041 1302251051 1302251116	800 HWDL-10	1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	ND	ND	ND	mg/Kg	0.006	30	NA	Yes	Yes	Yes
1302251041 1302251051 1302251116	800 HWDL-10	2-Butanone (MEK)	78-93-3	0.0055 J	0.0091 J	0.0046 J	mg/Kg	0.023	36	NA	Yes	Yes	Yes

Sample ID (a) (b) (D)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Results/ Qualifier (D)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No	Criteria Met (D) Yes/No
1302251041 1302251051 1302251116	800 HWDL-10	Acetone	67-64-1	0.021 J	0.021 J	0.018 J	mg/Kg	0.046	160	NA	Yes	Yes	Yes
1302251041 1302251051 1302251116	800 HWDL-10	Benzene	71-43-2	ND	ND	ND	mg/Kg	0.005	10	NA	Yes	Yes	Yes
1302251041 1302251051 1302251116	800 HWDL-10	Ethylbenzene	100-41-4	ND	ND	ND	mg/Kg	0.005	10	NA	Yes	Yes	Yes
1302251041 1302251051 1302251116	800 HWDL-10	Tetrachloroethene (PCE)	127-18-4	ND	ND	ND	mg/Kg	0.005	6	NA	Yes	Yes	Yes
1302251041 1302251051 1302251116	800 HWDL-10	Toluene	108-88-3	ND	ND	ND	mg/Kg	0.005	10	NA	Yes	Yes	Yes
1302251041 1302251051 1302251116	800 HWDL-10	Trichloroethene (TCE)	79-01-6	ND	ND	ND	mg/Kg	0.005	6	NA	Yes	Yes	Yes
1302251041 1302251051 1302251116	800 HWDL-10	Trichlorofluoromethane (CFC 11)	75-69-4	ND	ND	ND	mg/Kg	0.005	30	NA	Yes	Yes	Yes
1302251041 1302251051 1302251116	800 HWDL-10	Xylenes, Total	1330-20-7	ND	ND	ND	mg/Kg	0.009	30	NA	Yes	Yes	Yes
EPA Method 8270C: Semi-Volatile Organic Compounds (Lab Report No. 680-87790-1)													
1302251042 1302251052 1302251117	800 HWDL-10	Aniline	62-53-3	ND	ND	ND	mg/Kg	0.42	0.39	NA	Yes	Yes	Yes
1302251042 1302251052 1302251117	800 HWDL-10	Di-n-butyl Phthalate	84-74-2	ND	ND	ND	mg/Kg	0.36	0.33	NA	Yes	Yes	Yes
1302251042 1302251052 1302251117	800 HWDL-10	Naphthalene	91-20-3	ND	ND	ND	mg/Kg	0.36	0.33	NA	Yes	Yes	Yes

Sample ID (a) (b) (D)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Results/ Qualifier (D)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No	Criteria Met (D) Yes/No
1302251042 1302251052 1302251117	800 HWDL-10	Phenol	108-95-2	ND	ND	ND	mg/Kg	0.36	0.33	NA	Yes	Yes	Yes
1302251042 1302251052 1302251117	800 HWDL-10	N-Nitrosodimethylamine	62-75-9	ND	ND	ND	mg/Kg	0.56	0.52	NA	Yes	Yes	Yes

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(D)- Duplicate Sample (1 Field Duplicate every 10 samples) per SAP 2013-006, Section 9: *Quality Control Requirements*

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*- RPD of the LCS and LCSD exceeds the control limits

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
Ion Chromatography Method: HYDRAZINES (Lab Report No. 280-39281-1)											
1302260840 1302260920	200 HWDL-01	1,1 Dimethylhydrazine	57-14-7	ND H	ND H	mg/Kg	0.005	NA	NA	Yes	Yes
1302260840 1302260920	200 HWDL-01	Hydrazine	32-01-2	ND H	ND H	mg/Kg	0.003	NA	NA	Yes	Yes
1302260840 1302260920	200 HWDL-01	Monomethyl Hydrazine	60-34-4	ND H	ND H	mg/Kg	0.007	NA	NA	Yes	Yes
EPA Method 6020A/7471B METALS & MERCURY (Lab Report No. 680-87965-1)											
1302260843 1302260924	200 HWDL-01	Arsenic	7440-38-2	3	11	mg/Kg	0.25	NA	3.90E+00	Yes	No
1302260843 1302260924	200 HWDL-01	Barium	7440-39-3	110	90	mg/Kg	0.5	NA	1.56E+04	Yes	Yes
1302260843 1302260924	200 HWDL-01	Beryllium	7440-41-7	0.57	0.59	mg/Kg	0.05	NA	1.56E+02	Yes	Yes
1302260843 1302260924	200 HWDL-01	Cadmium	7440-43-9	0.33 Q	1.8 Q	mg/Kg	0.05	NA	7.03E+01	Yes	Yes
1302260843 1302260924	200 HWDL-01	Chromium	7440-47-3	6.6 Q	20 Q	mg/Kg	0.5	NA	1.17E+05	Yes	Yes
1302260843 1302260924	200 HWDL-01	Copper	7440-50-8	6.3	14	mg/Kg	0.5	NA	3.13E+03	Yes	Yes
1302260843 1302260924	200 HWDL-01	Lead	7439-92-1	52	200	mg/Kg	0.2	NA	4.00E+02	Yes	Yes
1302260843 1302260924	200 HWDL-01	Nickel	7440-02-0	6.3 B	20 B	mg/Kg	0.5	NA	1.56E+03	Yes	Yes
1302260843 1302260924	200 HWDL-01	Selenium	7782-49-2	ND	ND	mg/Kg	0.5	NA	3.91E+02	Yes	Yes
1302260843 1302260924	200 HWDL-01	Silver	7440-22-4	0.075 J	0.32	mg/Kg	0.1	NA	3.91E+02	Yes	Yes
1302260843 1302260924	200 HWDL-01	Thallium	7440-28-0	0.22	0.23	mg/Kg	0.1	NA	NA	Yes	Yes
1302260843 1302260924	200 HWDL-01	Vanadium	7440-62-2	18	28	mg/Kg	0.5	NA	3.91E+02	Yes	Yes

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
1302260843 1302260924	200 HWDL-01	Zinc	7440-66-6	75 B	140 B	mg/Kg	2	NA	2.35E+04	Yes	Yes
1302260843 1302260924	200 HWDL-01	Mercury	7439-97-6	0.011 J	0.024	mg/Kg	0.019	NA	1.56E+01	Yes	Yes
EPA Method 9012B: Cyanides (Lab Report No. 680-87965-1)											
1302260844 1302260925	200 HWDL-01	Cyanide, Total	57-12-5	ND	ND	mg/Kg	0.53	590	4.69E+01	Yes	Yes
EPA Method 8260B: Volatile Organic Compounds (Lab Report No. 680-87965-1)											
1302260841 1302260921	200 HWDL-01	1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	ND	ND	mg/Kg	0.004	30	NA	Yes	Yes
1302260841 1302260921	200 HWDL-01	2-Butanone (MEK)	78-93-3	0.006 J	0.0042 J	mg/Kg	0.021	36	NA	Yes	Yes
1302260841 1302260921	200 HWDL-01	Acetone	67-64-1	0.033 J	0.028 J	mg/Kg	0.043	160	NA	Yes	Yes
1302260841 1302260921	200 HWDL-01	Benzene	71-43-2	ND	ND	mg/Kg	0.004	10	NA	Yes	Yes
1302260841 1302260921	200 HWDL-01	Ethylbenzene	100-41-4	ND	ND	mg/Kg	0.004	10	NA	Yes	Yes
1302260841 1302260921	200 HWDL-01	Tetrachloroethene (PCE)	127-18-4	ND	ND	mg/Kg	0.004	6	NA	Yes	Yes
1302260841 1302260921	200 HWDL-01	Toluene	108-88-3	ND	ND	mg/Kg	0.004	10	NA	Yes	Yes
1302260841 1302260921	200 HWDL-01	Trichloroethene (TCE)	79-01-6	ND	ND	mg/Kg	0.004	6	NA	Yes	Yes
1302260841 1302260921	200 HWDL-01	Trichlorofluoromethane (CFC 11)	75-69-4	ND	ND	mg/Kg	0.004	30	NA	Yes	Yes
1302260841 1302260921	200 HWDL-01	Xylenes, Total	1330-20-7	ND	0.0035 J	mg/Kg	0.009	30	NA	Yes	Yes
EPA Method 8270C: Semi-Volatile Organic Compounds (Lab Report No. 680-87865-1)											
1302260842 1302260923	200 HWDL-01	Aniline	62-53-3	ND	ND	mg/Kg	0.39	14	NA	Yes	Yes

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
1302260842 1302260923	200 HWDL-01	Di-n-butyl Phthalate	84-74-2	ND	ND	mg/Kg	0.33	28	NA	Yes	Yes
1302260842 1302260923	200 HWDL-01	Naphthalene	91-20-3	ND	ND	mg/Kg	0.33	5.6	NA	Yes	Yes
1302260842 1302260923	200 HWDL-01	Phenol	108-95-2	ND	ND	mg/Kg	0.33	6.2	NA	Yes	Yes
1302260842 1302260923	200 HWDL-01	N-Nitrosodimethylamine	62-75-9	ND	ND	mg/Kg	0.52	2.3	NA	Yes	Yes

[1]- List of analytes were compiled from ETU Closure Plan (March, 2012) Attachment 15, Tables (1-11)

[2]- Units for MDL and LOQ are method-specific and are identified by the units column expressed for each method.

[3]- Values for Residential Soil Screening Levels (SSL) retrieved from NMED SSL (June 2012).

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B- Compound was found in the blank and sample

J- Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

H- Sample was prepped or analyzed beyond the specified holding time.

MDL- Method Detection Limit

LOQ- Limit of quantitation

(a)- First Depth (0-6') below HWDL/Ground Surface

(b)- Second Depth (1'-2') below HWDL/Ground Surface

(D)- Duplicate Sample (1 Field Duplicate every 10 samples) per SAP 2013-006, Section 9: *Quality Control Requirements*

ND- Constituent analyzed for but not detected.

*- RPD of the LCS and LCSD exceeds the control limits

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
Ion Chromatography Method: HYDRAZINES (Lab Report No. 280-39119-1)											
1302261023 1302261055	200 HWDL-02	1,1 Dimethylhydrazine	57-14-7	ND H	ND H	mg/Kg	0.005	NA	NA	Yes	Yes
1302261023 1302261055	200 HWDL-02	Hydrazine	32-01-2	ND H	ND H	mg/Kg	0.003	NA	NA	Yes	Yes
1302261023 1302261055	200 HWDL-02	Monomethyl Hydrazine	60-34-4	ND H	ND H	mg/Kg	0.008	NA	NA	Yes	Yes
EPA Method 6020A/7471B METALS & MERCURY (Lab Report No. 680-87818-1)											
1302261026 1302261058	200 HWDL-02	Arsenic	7440-38-2	7	7.2	mg/Kg	0.26	NA	3.90E+00	No	No
1302261026 1302261058	200 HWDL-02	Barium	7440-39-3	120	120 J	mg/Kg	0.52	NA	1.56E+04	Yes	Yes
1302261026 1302261058	200 HWDL-02	Beryllium	7440-41-7	0.48	0.44	mg/Kg	0.052	NA	1.56E+02	Yes	Yes
1302261026 1302261058	200 HWDL-02	Cadmium	7440-43-9	0.27 J	0.36 J	mg/Kg	0.052	NA	7.03E+01	Yes	Yes
1302261026 1302261058	200 HWDL-02	Chromium	7440-47-3	14 Q	14 Q	mg/Kg	0.52	NA	1.17E+05	Yes	Yes
1302261026 1302261058	200 HWDL-02	Copper	7440-50-8	9.8	7.3	mg/Kg	0.52	NA	3.13E+03	Yes	Yes
1302261026 1302261058	200 HWDL-02	Lead	7439-92-1	41	37 J	mg/Kg	0.21	NA	4.00E+02	Yes	Yes
1302261026 1302261058	200 HWDL-02	Nickel	7440-02-0	12 B	11 J B	mg/Kg	0.52	NA	1.56E+03	Yes	Yes
1302261026 1302261058	200 HWDL-02	Selenium	7782-49-2	ND	0.32 J	mg/Kg	0.52	NA	3.91E+02	Yes	Yes
1302261026 1302261058	200 HWDL-02	Silver	7440-22-4	0.059 J	0.06 J	mg/Kg	0.1	NA	3.91E+02	Yes	Yes
1302261026 1302261058	200 HWDL-02	Thallium	7440-28-0	0.12	0.12	mg/Kg	0.1	NA	NA	Yes	Yes
1302261026 1302261058	200 HWDL-02	Vanadium	7440-62-2	27	26	mg/Kg	0.52	NA	3.91E+02	Yes	Yes

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
1302261026 1302261058	200 HWDL-02	Zinc	7440-66-6	74 B	42 J B	mg/Kg	2.1	NA	2.35E+04	Yes	Yes
1302261026 1302261058	200 HWDL-02	Mercury	7439-97-6	0.021	0.02	mg/Kg	0.019	NA	1.56E+01	Yes	Yes
EPA Method 9012B: Cyanides (Lab Report No. 680-87818-1)											
1302261027 1302261059	200 HWDL-02	Cyanide, Total	57-12-5	ND	ND	mg/Kg	0.52	590	4.69E+01	Yes	Yes
EPA Method 8260B: Volatile Organic Compounds (Lab Report No. 680-87818-1)											
1302261024 1302261056	200 HWDL-02	1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	ND	ND	mg/Kg	0.004	30	NA	Yes	Yes
1302261024 1302261056	200 HWDL-02	2-Butanone (MEK)	78-93-3	0.0071 J	0.0054 J	mg/Kg	0.019	36	NA	Yes	Yes
1302261024 1302261056	200 HWDL-02	Acetone	67-64-1	0.023 J	0.024 J	mg/Kg	0.038	160	NA	Yes	Yes
1302261024 1302261056	200 HWDL-02	Benzene	71-43-2	0.0014 J	0.00075 J	mg/Kg	0.004	10	NA	Yes	Yes
1302261024 1302261056	200 HWDL-02	Ethylbenzene	100-41-4	ND	ND	mg/Kg	0.004	10	NA	Yes	Yes
1302261024 1302261056	200 HWDL-02	Tetrachloroethene (PCE)	127-18-4	ND	ND	mg/Kg	0.004	6	NA	Yes	Yes
1302261024 1302261056	200 HWDL-02	Toluene	108-88-3	0.0018 J	0.001 J	mg/Kg	0.004	10	NA	Yes	Yes
1302261024 1302261056	200 HWDL-02	Trichloroethene (TCE)	79-01-6	0.003	0.0015 J	mg/Kg	0.004	6	NA	Yes	Yes
1302261024 1302261056	200 HWDL-02	Trichlorofluoromethane (CFC 11)	75-69-4	ND	ND	mg/Kg	0.004	30	NA	Yes	Yes
1302261024 1302261056	200 HWDL-02	Xylenes, Total	1330-20-7	ND	ND	mg/Kg	0.008	30	NA	Yes	Yes
EPA Method 8270C: Semi-Volatile Organic Compounds (Lab Report No. 680-87818-1)											
1302261025 1302261057	200 HWDL-02	Aniline	62-53-3	ND	ND	mg/Kg	0.41	14	NA	Yes	Yes

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
1302261025 1302261057	200 HWDL-02	Di-n-butyl Phthalate	84-74-2	ND	ND	mg/Kg	0.34	28	NA	Yes	Yes
1302261025 1302261057	200 HWDL-02	Naphthalene	91-20-3	ND	ND	mg/Kg	0.34	5.6	NA	Yes	Yes
1302261025 1302261057	200 HWDL-02	Phenol	108-95-2	ND	ND	mg/Kg	0.34	6.2	NA	Yes	Yes
1302261025 1302261057	200 HWDL-02	N-Nitrosodimethylamine	62-75-9	ND	ND	mg/Kg	0.54	2.3	NA	Yes	Yes

[1]- List of analytes were compiled from ETU Closure Plan (March, 2012) Attachment 15, Tables (1-11)

[2]- Units for MDL and LOQ are method-specific and are identified by the units column expressed for each method.

[3]- Values for Residential Soil Screening Levels (SSL) retrieved from NMED SSL (June 2012).

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B- Compound was found in the blank and sample

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MDL- Method Detection Limit

LOQ- Limit of quantitation

(a)- First Depth (0-6') below HWDL/Ground Surface

(b)- Second Depth (1'-2') below HWDL/Ground Surface

(D)- Duplicate Sample (1 Field Duplicate every 10 samples) per SAP 2013-006, Section 9: *Quality Control Requirements*

ND- Constituent analyzed for but not detected.

*- RPD of the LCS and LCSD exceeds the control limits

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
Ion Chromatography Method: HYDRAZINES (Lab Report No. 280-39119-1)											
1302270848 1302270907	200 HWDL-03	1,1 Dimethylhydrazine	57-14-7	ND	ND	mg/Kg	0.11	NA	NA	Yes	Yes
1302270848 1302270907	200 HWDL-03	Hydrazine	32-01-2	ND	ND	mg/Kg	0.054	NA	NA	Yes	Yes
1302270848 1302270907	200 HWDL-03	Monomethyl Hydrazine	60-34-4	ND	ND	mg/Kg	0.054	NA	NA	Yes	Yes
EPA Method 6020A/7471B METALS & MERCURY (Lab Report No. 680-87865-1)											
1302270851 1302270910	200 HWDL-03	Arsenic	7440-38-2	5.2	3.4	mg/Kg	0.25	5	3.90E+00	No	Yes
1302270851 1302270910	200 HWDL-03	Barium	7440-39-3	230	110	mg/Kg	0.5	21	1.56E+04	Yes	Yes
1302270851 1302270910	200 HWDL-03	Beryllium	7440-41-7	0.41	0.35	mg/Kg	0.05	1.22	1.56E+02	Yes	Yes
1302270851 1302270910	200 HWDL-03	Cadmium	7440-43-9	0.22 Q	0.18 Q	mg/Kg	0.05	0.11	7.03E+01	Yes	Yes
1302270851 1302270910	200 HWDL-03	Chromium	7440-47-3	10 Q	7.8 Q	mg/Kg	0.5	0.6	1.17E+05	Yes	Yes
1302270851 1302270910	200 HWDL-03	Copper	7440-50-8	6.6	5.6	mg/Kg	0.5	NA	3.13E+03	Yes	Yes
1302270851 1302270910	200 HWDL-03	Lead	7439-92-1	11	11	mg/Kg	0.2	0.75	4.00E+02	Yes	Yes
1302270851 1302270910	200 HWDL-03	Nickel	7440-02-0	9.9 B	7 B	mg/Kg	0.5	11	1.56E+03	Yes	Yes
1302270851 1302270910	200 HWDL-03	Selenium	7782-49-2	ND	ND	mg/Kg	0.5	5.7	3.91E+02	Yes	Yes
1302270851 1302270910	200 HWDL-03	Silver	7440-22-4	ND	ND	mg/Kg	0.1	0.14	3.91E+02	Yes	Yes
1302270851 1302270910	200 HWDL-03	Thallium	7440-28-0	0.14	0.12	mg/Kg	0.1	0.2	NA	Yes	Yes
1302270851 1302270910	200 HWDL-03	Vanadium	7440-62-2	22	18	mg/Kg	0.5	1.6	3.91E+02	Yes	Yes

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
1302270851 1302270910	200 HWDL-03	Zinc	7440-66-6	29 B	29 B	mg/Kg	2	4.3	2.35E+04	Yes	Yes
1302270851 1302270910	200 HWDL-03	Mercury	7439-97-6	0.074	0.064	mg/Kg	0.02	0.2	1.56E+01	Yes	Yes
EPA Method 9012B: Cyanides (Lab Report No. 680-87865-1)											
1302270852 1302270911	200 HWDL-03	Cyanide, Total	57-12-5	ND	ND	mg/Kg	0.52	590	4.69E+01	Yes	Yes
EPA Method 8260B: Volatile Organic Compounds (Lab Report No. 680-87865-1)											
1302270849 1302270908	200 HWDL-03	1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	ND	ND	mg/Kg	0.004	30	NA	Yes	Yes
1302270849 1302270908	200 HWDL-03	2-Butanone (MEK)	78-93-3	ND	ND	mg/Kg	0.019	36	NA	Yes	Yes
1302270849 1302270908	200 HWDL-03	Acetone	67-64-1	0.020 J	0.016 J	mg/Kg	0.038	160	NA	Yes	Yes
1302270849 1302270908	200 HWDL-03	Benzene	71-43-2	ND	ND	mg/Kg	0.004	10	NA	Yes	Yes
1302270849 1302270908	200 HWDL-03	Ethylbenzene	100-41-4	ND	ND	mg/Kg	0.004	10	NA	Yes	Yes
1302270849 1302270908	200 HWDL-03	Tetrachloroethene (PCE)	127-18-4	ND	ND	mg/Kg	0.004	6	NA	Yes	Yes
1302270849 1302270908	200 HWDL-03	Toluene	108-88-3	0.0018 J	0.0037 J	mg/Kg	0.004	10	NA	Yes	Yes
1302270849 1302270908	200 HWDL-03	Trichloroethene (TCE)	79-01-6	ND	ND	mg/Kg	0.004	6	NA	Yes	Yes
1302270849 1302270908	200 HWDL-03	Trichlorofluoromethane (CFC 11)	75-69-4	ND	ND	mg/Kg	0.004	30	NA	Yes	Yes
1302270849 1302270908	200 HWDL-03	Xylenes, Total	1330-20-7	ND	0.0049 J	mg/Kg	0.008	30	NA	Yes	Yes
EPA Method 8270C: Semi-Volatile Organic Compounds (Lab Report No. 680-87865-1)											
1302270850 1302270909	200 HWDL-03	Aniline	62-53-3	ND	ND	mg/Kg	0.39	14	NA	Yes	Yes

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
1302270850 1302270909	200 HWDL-03	Di-n-butyl Phthalate	84-74-2	ND	ND	mg/Kg	0.33	28	NA	Yes	Yes
1302270850 1302270909	200 HWDL-03	Naphthalene	91-20-3	ND	ND	mg/Kg	0.33	5.6	NA	Yes	Yes
1302270850 1302270909	200 HWDL-03	Phenol	108-95-2	ND	ND	mg/Kg	0.33	6.2	NA	Yes	Yes
1302270850 1302270909	200 HWDL-03	N-Nitrosodimethylamine	62-75-9	ND	ND	mg/Kg	0.52	2.3	NA	Yes	Yes

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*- RPD of the LCS and LCSD exceeds the control limits

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
Ion Chromatography Method: HYDRAZINES (Lab Report No. 280-39119-1)											
1302271003 1302271028	200 HWDL-04	1,1 Dimethylhydrazine	57-14-7	ND	ND	mg/Kg	0.11	NA	NA	Yes	Yes
1302271003 1302271028	200 HWDL-04	Hydrazine	32-01-2	ND	ND	mg/Kg	0.053	NA	NA	Yes	Yes
1302271003 1302271028	200 HWDL-04	Monomethyl Hydrazine	60-34-4	ND	ND	mg/Kg	0.053	NA	NA	Yes	Yes
EPA Method 6020A/7471B METALS & MERCURY (Lab Report No. 680-87865-1)											
1302271006 1302271031	200 HWDL-04	Arsenic	7440-38-2	3.8	3.9	mg/Kg	0.23	5	3.90E+00	Yes	No
1302271006 1302271031	200 HWDL-04	Barium	7440-39-3	84	87	mg/Kg	0.47	21	1.56E+04	Yes	Yes
1302271006 1302271031	200 HWDL-04	Beryllium	7440-41-7	0.48	0.54	mg/Kg	0.047	1.22	1.56E+02	Yes	Yes
1302271006 1302271031	200 HWDL-04	Cadmium	7440-43-9	0.26 Q	0.21 Q	mg/Kg	0.047	0.11	7.03E+01	Yes	Yes
1302271006 1302271031	200 HWDL-04	Chromium	7440-47-3	9 Q	11 Q	mg/Kg	0.47	0.6	1.17E+05	Yes	Yes
1302271006 1302271031	200 HWDL-04	Copper	7440-50-8	4.9	6.7	mg/Kg	0.47	NA	3.13E+03	Yes	Yes
1302271006 1302271031	200 HWDL-04	Lead	7439-92-1	32	15	mg/Kg	0.19	0.75	4.00E+02	Yes	Yes
1302271006 1302271031	200 HWDL-04	Nickel	7440-02-0	8.4 Q	12 B	mg/Kg	0.47	11	1.56E+03	Yes	Yes
1302271006 1302271031	200 HWDL-04	Selenium	7782-49-2	ND	ND	mg/Kg	0.47	5.7	3.91E+02	Yes	Yes
1302271006 1302271031	200 HWDL-04	Silver	7440-22-4	0.065 J	ND	mg/Kg	0.094	0.14	3.91E+02	Yes	Yes
1302271006 1302271031	200 HWDL-04	Thallium	7440-28-0	0.081 J	0.081 J	mg/Kg	0.094	0.2	NA	Yes	Yes
1302271006 1302271031	200 HWDL-04	Vanadium	7440-62-2	15	16	mg/Kg	0.47	1.6	3.91E+02	Yes	Yes

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
1302271006 1302271031	200 HWDL-04	Zinc	7440-66-6	47 B	34 B	mg/Kg	1.9	4.3	2.35E+04	Yes	Yes
1302271006 1302271031	200 HWDL-04	Mercury	7439-97-6	0.015 J	0.015 J	mg/Kg	0.02	0.2	1.56E+01	Yes	Yes
EPA Method 9012B: Cyanides (Lab Report No. 680-87865-1)											
1302271007 1302271032	200 HWDL-04	Cyanide, Total	57-12-5	ND	ND	mg/Kg	0.53	590	4.69E+01	Yes	Yes
EPA Method 8260B: Volatile Organic Compounds (Lab Report No. 680-87865-1)											
1302271004 1302271029	200 HWDL-04	1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	ND	ND	mg/Kg	0.004	30	NA	Yes	Yes
1302271004 1302271029	200 HWDL-04	2-Butanone (MEK)	78-93-3	0.0086 J	0.0099 J	mg/Kg	0.02	36	NA	Yes	Yes
1302271004 1302271029	200 HWDL-04	Acetone	67-64-1	0.020 J	0.044	mg/Kg	0.039	160	NA	Yes	Yes
1302271004 1302271029	200 HWDL-04	Benzene	71-43-2	ND	ND	mg/Kg	0.004	10	NA	Yes	Yes
1302271004 1302271029	200 HWDL-04	Ethylbenzene	100-41-4	ND	ND	mg/Kg	0.004	10	NA	Yes	Yes
1302271004 1302271029	200 HWDL-04	Tetrachloroethene (PCE)	127-18-4	ND	ND	mg/Kg	0.004	6	NA	Yes	Yes
1302271004 1302271029	200 HWDL-04	Toluene	108-88-3	ND	0.001 J	mg/Kg	0.004	10	NA	Yes	Yes
1302271004 1302271029	200 HWDL-04	Trichloroethene (TCE)	79-01-6	ND	ND	mg/Kg	0.004	6	NA	Yes	Yes
1302271004 1302271029	200 HWDL-04	Trichlorofluoromethane (CFC 11)	75-69-4	ND	ND	mg/Kg	0.004	30	NA	Yes	Yes
1302271004 1302271029	200 HWDL-04	Xylenes, Total	1330-20-7	ND	ND	mg/Kg	0.008	30	NA	Yes	Yes
EPA Method 8270C: Semi-Volatile Organic Compounds (Lab Report No. 680-87865-1)											
1302271005 1302271030	200 HWDL-04	Aniline	62-53-3	ND	ND	mg/Kg	0.41	14	NA	Yes	Yes

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
1302271005 1302271030	200 HWDL-04	Di-n-butyl Phthalate	84-74-2	ND	ND	mg/Kg	0.34	28	NA	Yes	Yes
1302271005 1302271030	200 HWDL-04	Naphthalene	91-20-3	ND	ND	mg/Kg	0.34	5.6	NA	Yes	Yes
1302271005 1302271030	200 HWDL-04	Phenol	108-95-2	ND	ND	mg/Kg	0.34	6.2	NA	Yes	Yes
1302271005 1302271030	200 HWDL-04	N-Nitrosodimethylamine	62-75-9	ND	ND	mg/Kg	0.54	2.3	NA	Yes	Yes

[1]- List of analytes were compiled from ETU Closure Plan (March, 2012) Attachment 15, Tables (1-11)

[2]- Units for MDL and LOQ are method-specific and are identified by the units column expressed for each method.

[3]- Values for Residential Soil Screening Levels (SSL) retrieved from NMED SSL (June 2012).

Q- One or more quality control criteria failed.

B- Compound was found in the blank and sample

J- Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

H- Sample was prepped or analyzed beyond the specified holding time.

MDL- Method Detection Limit

LOQ- Limit of quantitation

(a)- First Depth (0-6') below HWDL/Ground Surface

(b)- Second Depth (1'-2') below HWDL/Ground Surface

(D)- Duplicate Sample (1 Field Duplicate every 10 samples) per SAP 2013-006, Section 9: *Quality Control Requirements*

ND- Constituent analyzed for but not detected.

*- RPD of the LCS and LCSD exceeds the control limits

Sample ID (a) (b) (D)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Results/ Qualifier (D)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No	Criteria Met (D) Yes/No
Ion Chromatography Method: HYDRAZINES (Lab Report No. 280-39376-1)													
1302280826 1302280837 1302280909	200 HWDL-05	1,1 Dimethylhydrazine	57-14-7	ND	ND	ND	mg/Kg	0.006	NA	NA	Yes	Yes	Yes
1302280826 1302280837 1302280909	200 HWDL-05	Hydrazine	32-01-2	ND	ND	0.0066 J	mg/Kg	0.065	NA	NA	Yes	Yes	Yes
1302280826 1302280837 1302280909	200 HWDL-05	Monomethyl Hydrazine	60-34-4	0.011 J	ND	ND	mg/Kg	0.065	NA	NA	Yes	Yes	Yes
EPA Method 6020A/7471B METALS & MERCURY (Lab Report No. 680-87908-1)													
1302280829 1302280840 1302280912	200 HWDL-05	Arsenic	7440-38-2	1.7	2	1.8	mg/Kg	0.25	NA	3.90E+00	Yes	Yes	Yes
1302280829 1302280840 1302280912	200 HWDL-05	Barium	7440-39-3	100.0	210	83	mg/Kg	0.51	NA	1.56E+04	Yes	Yes	Yes
1302280829 1302280840 1302280912	200 HWDL-05	Beryllium	7440-41-7	0.41	0.33	0.44	mg/Kg	0.051	NA	1.56E+02	Yes	Yes	Yes
1302280829 1302280840 1302280912	200 HWDL-05	Cadmium	7440-43-9	0.042 Q	0.042 Q	0.0024 Q	mg/Kg	0.051	NA	7.03E+01	Yes	Yes	Yes
1302280829 1302280840 1302280912	200 HWDL-05	Chromium	7440-47-3	4.6 Q	5.6 Q	0.25 Q	mg/Kg	0.51	NA	1.17E+05	Yes	Yes	Yes
1302280829 1302280840 1302280912	200 HWDL-05	Copper	7440-50-8	3.6	4.3	3.5	mg/Kg	0.51	NA	3.13E+03	Yes	Yes	Yes
1302280829 1302280840 1302280912	200 HWDL-05	Lead	7439-92-1	3.7	4.1	4.8	mg/Kg	0.2	NA	4.00E+02	Yes	Yes	Yes

Sample ID (a) (b) (D)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Results/ Qualifier (D)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No	Criteria Met (D) Yes/No
1302280829 1302280840 1302280912	200 HWDL-05	Nickel	7440-02-0	5.3	6.4	5.6	mg/Kg	0.51	NA	1.56E+03	Yes	Yes	Yes
1302280829 1302280840 1302280912	200 HWDL-05	Selenium	7782-49-2	ND	ND	ND	mg/Kg	0.51	NA	3.91E+02	Yes	Yes	Yes
1302280829 1302280840 1302280912	200 HWDL-05	Silver	7440-22-4	ND	ND	ND	mg/Kg	0.1	NA	3.91E+02	Yes	Yes	Yes
1302280829 1302280840 1302280912	200 HWDL-05	Thallium	7440-28-0	0.098 J	0.058 J	0.0055	mg/Kg	0.1	NA	NA	Yes	Yes	Yes
1302280829 1302280840 1302280912	200 HWDL-05	Vanadium	7440-62-2	14	17	17	mg/Kg	0.51	NA	3.91E+02	Yes	Yes	Yes
1302280829 1302280840 1302280912	200 HWDL-05	Zinc	7440-66-6	18	20	20	mg/Kg	2	NA	2.35E+04	Yes	Yes	Yes
1302280829 1302280840 1302280912	200 HWDL-05	Mercury	7439-97-6	ND	ND	ND	mg/Kg	0.019	NA	1.56E+01	Yes	Yes	Yes
EPA Method 9012B: Cyanides (Lab Report No. 680-87908-1)													
1302280830 1302280841 1302280913	200 HWDL-05	Cyanide, Total	57-12-5	ND	ND	ND	mg/Kg	0.52	590	4.69E+01	Yes	Yes	Yes
EPA Method 8260B: Volatile Organic Compounds (Lab Report No. 680-87908-1)													
1302280827 1302280838 1302280910	200 HWDL-05	1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	ND	ND	ND	mg/Kg	0.005	30	NA	Yes	Yes	Yes
1302280827 1302280838 1302280910	200 HWDL-05	2-Butanone (MEK)	78-93-3	0.0046 J	0.0036 J	0.01 J	mg/Kg	0.023	36	NA	Yes	Yes	Yes

Sample ID (a) (b) (D)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Results/ Qualifier (D)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No	Criteria Met (D) Yes/No
1302280827 1302280838 1302280910	200 HWDL-05	Acetone	67-64-1	0.023 J	0.021 J	0.042 J	mg/Kg	0.046	160	NA	Yes	Yes	Yes
1302280827 1302280838 1302280910	200 HWDL-05	Benzene	71-43-2	ND	ND	ND	mg/Kg	0.005	10	NA	Yes	Yes	Yes
1302280827 1302280838 1302280910	200 HWDL-05	Ethylbenzene	100-41-4	ND	ND	ND	mg/Kg	0.005	10	NA	Yes	Yes	Yes
1302280827 1302280838 1302280910	200 HWDL-05	Tetrachloroethene (PCE)	127-18-4	ND	ND	ND	mg/Kg	0.005	6	NA	Yes	Yes	Yes
1302280827 1302280838 1302280910	200 HWDL-05	Toluene	108-88-3	ND	ND	ND	mg/Kg	0.005	10	NA	Yes	Yes	Yes
1302280827 1302280838 1302280910	200 HWDL-05	Trichloroethene (TCE)	79-01-6	ND	ND	ND	mg/Kg	0.005	6	NA	Yes	Yes	Yes
1302280827 1302280838 1302280910	200 HWDL-05	Trichlorofluoromethane (CFC 11)	75-69-4	ND	ND	ND	mg/Kg	0.005	30	NA	Yes	Yes	Yes
1302280827 1302280838 1302280910	200 HWDL-05	Xylenes, Total	1330-20-7	ND	ND	ND	mg/Kg	0.009	30	NA	Yes	Yes	Yes
EPA Method 8270C: Semi-Volatile Organic Compounds (Lab Report No. 680-87908-1)													
1302280828 1302280839 1302280911	200 HWDL-05	Aniline	62-53-3	ND	ND	ND	mg/Kg	0.39	14	NA	Yes	Yes	Yes
1302280828 1302280839 1302280911	200 HWDL-05	Di-n-butyl Phthalate	84-74-2	ND	ND	ND	mg/Kg	0.33	28	NA	Yes	Yes	Yes

Sample ID (a) (b) (D)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Results/ Qualifier (D)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No	Criteria Met (D) Yes/No
1302280828 1302280839 1302280911	200 HWDL-05	Naphthalene	91-20-3	ND	ND	ND	mg/Kg	0.33	5.6	NA	Yes	Yes	Yes
1302280828 1302280839 1302280911	200 HWDL-05	Phenol	108-95-2	ND	ND	ND	mg/Kg	0.33	6.2	NA	Yes	Yes	Yes
1302280828 1302280839 1302280911	200 HWDL-05	N-Nitrosodimethylamine	62-75-9	ND	ND	ND	mg/Kg	0.52	2.3	NA	Yes	Yes	Yes

[1]- List of analytes were compiled from ETU Closure Plan (March, 2012) Attachment 15, Tables (1-11)

[2]- Units for MDL and LOQ are method-specific and are identified by the units column expressed for each method.

[3]- Values for Residential Soil Screening Levels (SSL) retrieved from NMED SSL (June 2012).

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B- Compound was found in the blank and sample

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H- Sample was prepped or analyzed beyond the specified holding time.

MDL- Method Detection Limit

LOQ- Limit of quantitation

(a)- First Depth (0-6') below HWDL/Ground Surface

(b)- Second Depth (1'-2') below HWDL/Ground Surface

(D)- Duplicate Sample (1 Field Duplicate every 10 samples) per SAP 2013-006, Section 9: *Quality Control Requirements*

ND- Constituent analyzed for but not detected.

*- RPD of the LCS and LCSD exceeds the control limits

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
Ion Chromatography Method: HYDRAZINES (Lab Report No. 280-39119-1)											
1303040902 1303040935	200 HWDL-06	1,1 Dimethylhydrazine	57-14-7	ND	ND	mg/Kg	0.005	NA	NA	Yes	Yes
1303040902 1303040935	200 HWDL-06	Hydrazine	32-01-2	ND	ND	mg/Kg	0.003	NA	NA	Yes	Yes
1303040902 1303040935	200 HWDL-06	Monomethyl Hydrazine	60-34-4	ND	ND	mg/Kg	0.007	NA	NA	Yes	Yes
EPA Method 6020A/7471B METALS & MERCURY (Lab Report No. 680-87665-1)											
1303040938 1303040905	200 HWDL-06	Arsenic	7440-38-2	2.6	3.6	mg/Kg	0.26	NA	3.90E+00	Yes	Yes
1303040938 1303040905	200 HWDL-06	Barium	7440-39-3	69 J	56	mg/Kg	0.52	NA	1.56E+04	Yes	Yes
1303040938 1303040905	200 HWDL-06	Beryllium	7440-41-7	0.49	0.61	mg/Kg	0.052	NA	1.56E+02	Yes	Yes
1303040938 1303040905	200 HWDL-06	Cadmium	7440-43-9	0.077 J	0.076 J	mg/Kg	0.052	NA	7.03E+01	Yes	Yes
1303040938 1303040905	200 HWDL-06	Chromium	7440-47-3	5 Q J	8 Q	mg/Kg	0.52	NA	1.17E+05	Yes	Yes
1303040938 1303040905	200 HWDL-06	Copper	7440-50-8	3.1	3.7	mg/Kg	0.52	NA	3.13E+03	Yes	Yes
1303040938 1303040905	200 HWDL-06	Lead	7439-92-1	6.8 J	7.2	mg/Kg	0.21	NA	4.00E+02	Yes	Yes
1303040938 1303040905	200 HWDL-06	Nickel	7440-02-0	4.1	6.2	mg/Kg	0.52	NA	1.56E+03	Yes	Yes
1303040938 1303040905	200 HWDL-06	Selenium	7782-49-2	ND	ND	mg/Kg	0.52	NA	3.91E+02	Yes	Yes
1303040938 1303040905	200 HWDL-06	Silver	7440-22-4	0.18	ND	mg/Kg	0.1	NA	3.91E+02	Yes	Yes
1303040938 1303040905	200 HWDL-06	Thallium	7440-28-0	0.06 J	0.076 J	mg/Kg	0.1	NA	NA	Yes	Yes
1303040938 1303040905	200 HWDL-06	Vanadium	7440-62-2	14 J	20	mg/Kg	0.52	NA	3.91E+02	Yes	Yes

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
1303040938 1303040905	200 HWDL-06	Zinc	7440-66-6	35 J	32	mg/Kg	2.1	NA	2.35E+04	Yes	Yes
1303040938 1303040905	200 HWDL-06	Mercury	7439-97-6	0.016 J	0.018 J	mg/Kg	0.021	NA	1.56E+01	Yes	Yes
EPA Method 9012B: Cyanides (Lab Report No. 680-87665-1)											
1303040906 1303040939	200 HWDL-06	Cyanide, Total	57-12-5	ND	ND	mg/Kg	0.51	590	4.69E+01	Yes	Yes
EPA Method 8260B: Volatile Organic Compounds (Lab Report No. 680-87665-1)											
1303040936 1303040903	200 HWDL-06	1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	ND	ND	mg/Kg	0.004	30	NA	Yes	Yes
1303040936 1303040903	200 HWDL-06	2-Butanone (MEK)	78-93-3	0.006 J	0.0048 J	mg/Kg	0.019	36	NA	Yes	Yes
1303040936 1303040903	200 HWDL-06	Acetone	67-64-1	0.027 J	0.020 J	mg/Kg	0.038	160	NA	Yes	Yes
1303040936 1303040903	200 HWDL-06	Benzene	71-43-2	ND	ND	mg/Kg	0.004	10	NA	Yes	Yes
1303040936 1303040903	200 HWDL-06	Ethylbenzene	100-41-4	ND	ND	mg/Kg	0.004	10	NA	Yes	Yes
1303040936 1303040903	200 HWDL-06	Tetrachloroethene (PCE)	127-18-4	ND	ND	mg/Kg	0.004	6	NA	Yes	Yes
1303040936 1303040903	200 HWDL-06	Toluene	108-88-3	ND	ND	mg/Kg	0.004	10	NA	Yes	Yes
1303040936 1303040903	200 HWDL-06	Trichloroethene (TCE)	79-01-6	ND	ND	mg/Kg	0.004	6	NA	Yes	Yes
1303040936 1303040903	200 HWDL-06	Trichlorofluoromethane (CFC 11)	75-69-4	ND	ND	mg/Kg	0.004	30	NA	Yes	Yes
1303040936 1303040903	200 HWDL-06	Xylenes, Total	1330-20-7	ND	ND	mg/Kg	0.008	30	NA	Yes	Yes
EPA Method 8270C: Semi-Volatile Organic Compounds (Lab Report No. 680-87973-1)											
1303040904 1303040937	200 HWDL-06	Aniline	62-53-3	ND	ND	mg/Kg	0.39	14	NA	Yes	Yes

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
1303040904 1303040937	200 HWDL-06	Di-n-butyl Phthalate	84-74-2	ND	ND	mg/Kg	0.33	28	NA	Yes	Yes
1303040904 1303040937	200 HWDL-06	Naphthalene	91-20-3	ND	ND	mg/Kg	0.33	5.6	NA	Yes	Yes
1303040904 1303040937	200 HWDL-06	Phenol	108-95-2	ND	ND	mg/Kg	0.33	6.2	NA	Yes	Yes
1303040904 1303040937	200 HWDL-06	N-Nitrosodimethylamine	62-75-9	ND	ND	mg/Kg	0.52	2.3	NA	Yes	Yes

[1]- List of analytes were compiled from ETU Closure Plan (March, 2012) Attachment 15, Tables (1-11)

[2]- Units for MDL and LOQ are method-specific and are identified by the units column expressed for each method.

[3]- Values for Residential Soil Screening Levels (SSL) retrieved from NMED SSL (June 2012).

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B- Compound was found in the blank and sample

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H- Sample was prepped or analyzed beyond the specified holding time.

MDL- Method Detection Limit

LOQ- Limit of quantitation

(a)- First Depth (0-6') below HWDL/Ground Surface

(b)- Second Depth (1'-2') below HWDL/Ground Surface

(D)- Duplicate Sample (1 Field Duplicate every 10 samples) per SAP 2013-006, Section 9: *Quality Control Requirements*

ND- Constituent analyzed for but not detected.

*- RPD of the LCS and LCSD exceeds the control limits

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
Ion Chromatography Method: HYDRAZINES (Lab Report No. 280-39119-1)											
1303041022 1303041049	200 HWDL-07	1,1 Dimethylhydrazine	57-14-7	ND	ND	mg/Kg	0.005	NA	NA	Yes	Yes
1303041022 1303041049	200 HWDL-07	Hydrazine	32-01-2	ND	ND	mg/Kg	0.003	NA	NA	Yes	Yes
1303041022 1303041049	200 HWDL-07	Monomethyl Hydrazine	60-34-4	ND	ND	mg/Kg	0.007	NA	NA	Yes	Yes
EPA Method 6020A/7471B METALS & MERCURY (Lab Report No. 680-87665-1)											
1303041025 1303041052	200 HWDL-07	Arsenic	7440-38-2	3.6	3.3	mg/Kg	0.27	NA	3.90E+00	Yes	Yes
1303041025 1303041052	200 HWDL-07	Barium	7440-39-3	360	110	mg/Kg	0.54	NA	1.56E+04	Yes	Yes
1303041025 1303041052	200 HWDL-07	Beryllium	7440-41-7	0.58	0.49	mg/Kg	0.054	NA	1.56E+02	Yes	Yes
1303041025 1303041052	200 HWDL-07	Cadmium	7440-43-9	0.11 Q	0.078 Q	mg/Kg	0.054	NA	7.03E+01	Yes	Yes
1303041025 1303041052	200 HWDL-07	Chromium	7440-47-3	8 Q	10 Q	mg/Kg	0.54	NA	1.17E+05	Yes	Yes
1303041025 1303041052	200 HWDL-07	Copper	7440-50-8	5.3	3.5	mg/Kg	0.54	NA	3.13E+03	Yes	Yes
1303041025 1303041052	200 HWDL-07	Lead	7439-92-1	11	8	mg/Kg	0.22	NA	4.00E+02	Yes	Yes
1303041025 1303041052	200 HWDL-07	Nickel	7440-02-0	6.8	6.1	mg/Kg	0.54	NA	1.56E+03	Yes	Yes
1303041025 1303041052	200 HWDL-07	Selenium	7782-49-2	ND	ND	mg/Kg	0.54	NA	3.91E+02	Yes	Yes
1303041025 1303041052	200 HWDL-07	Silver	7440-22-4	ND	ND	mg/Kg	0.11	NA	3.91E+02	Yes	Yes
1303041025 1303041052	200 HWDL-07	Thallium	7440-28-0	0.09 J	0.056 J	mg/Kg	0.11	NA	NA	Yes	Yes
1303041025 1303041052	200 HWDL-07	Vanadium	7440-62-2	20	19	mg/Kg	0.54	NA	3.91E+02	Yes	Yes

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
1303041025 1303041052	200 HWDL-07	Zinc	7440-66-6	39	32	mg/Kg	2.2	NA	2.35E+04	Yes	Yes
1303041025 1303041052	200 HWDL-07	Mercury	7439-97-6	0.016 J	0.014 J	mg/Kg	0.02	NA	1.56E+01	Yes	Yes
EPA Method 9012B: Cyanides (Lab Report No. 680-87665-1)											
1303041026 1303041053	200 HWDL-07	Cyanide, Total	57-12-5	ND	ND	mg/Kg	0.52	590	4.69E+01	Yes	Yes
EPA Method 8260B: Volatile Organic Compounds (Lab Report No. 680-87665-1)											
1303041023 1303041050	200 HWDL-07	1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	ND	ND	mg/Kg	0.004	30	NA	Yes	Yes
1303041023 1303041051	200 HWDL-07	2-Butanone (MEK)	78-93-3	0.0072 J	0.0066 J	mg/Kg	0.02	36	NA	Yes	Yes
1303041023 1303041052	200 HWDL-07	Acetone	67-64-1	0.030 J	0.029 J	mg/Kg	0.04	160	NA	Yes	Yes
1303041023 1303041053	200 HWDL-07	Benzene	71-43-2	ND	ND	mg/Kg	0.004	10	NA	Yes	Yes
1303041023 1303041055	200 HWDL-07	Ethylbenzene	100-41-4	ND	ND	mg/Kg	0.004	10	NA	Yes	Yes
1303041023 1303041056	200 HWDL-07	Tetrachloroethene (PCE)	127-18-4	ND	ND	mg/Kg	0.004	6	NA	Yes	Yes
1303041023 1303041057	200 HWDL-07	Toluene	108-88-3	ND	ND	mg/Kg	0.004	10	NA	Yes	Yes
1303041023 1303041058	200 HWDL-07	Trichloroethene (TCE)	79-01-6	ND	ND	mg/Kg	0.004	6	NA	Yes	Yes
1303041023 1303041059	200 HWDL-07	Trichlorofluoromethane (CFC 11)	75-69-4	ND	ND	mg/Kg	0.004	30	NA	Yes	Yes
1303041023 1303041060	200 HWDL-07	Xylenes, Total	1330-20-7	ND	ND	mg/Kg	0.008	30	NA	Yes	Yes
EPA Method 8270C: Semi-Volatile Organic Compounds (Lab Report No. 680-87973-1)											
1303041024 1303041052	200 HWDL-07	Aniline	62-53-3	ND	ND	mg/Kg	0.39	14	NA	Yes	Yes

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
1303041024 1303041053	200 HWDL-07	Di-n-butyl Phthalate	84-74-2	ND	ND	mg/Kg	0.33	28	NA	Yes	Yes
1303041024 1303041054	200 HWDL-07	Naphthalene	91-20-3	ND	ND	mg/Kg	0.33	5.6	NA	Yes	Yes
1303041024 1303041055	200 HWDL-07	Phenol	108-95-2	ND	ND	mg/Kg	0.33	6.2	NA	Yes	Yes
1303041024 1303041056	200 HWDL-07	N-Nitrosodimethylamine	62-75-9	ND	ND	mg/Kg	0.52	2.3	NA	Yes	Yes

[1]- List of analytes were compiled from ETU Closure Plan (March, 2012) Attachment 15, Tables (1-11)

[2]- Units for MDL and LOQ are method-specific and are identified by the units column expressed for each method.

[3]- Values for Residential Soil Screening Levels (SSL) retrieved from NMED SSL (June 2012).

Q- One or more quality control criteria failed.

B- Compound was found in the blank and sample

J- Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

H- Sample was prepped or analyzed beyond the specified holding time.

MDL- Method Detection Limit

LOQ- Limit of quantitation

(a)- First Depth (0-6') below HWDL/Ground Surface

(b)- Second Depth (1'-2') below HWDL/Ground Surface

(D)- Duplicate Sample (1 Field Duplicate every 10 samples) per SAP 2013-006, Section 9: *Quality Control Requirements*

ND- Constituent analyzed for but not detected.

*- RPD of the LCS and LCSD exceeds the control limits

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
Ion Chromatography Method: HYDRAZINES (Lab Report No. 280-39527-1)											
1303050906 1303050941	200 HWDL-08	1,1 Dimethylhydrazine	57-14-7	ND	ND	mg/Kg	0.005	NA	NA	Yes	Yes
1303050906 1303050941	200 HWDL-08	Hydrazine	32-01-2	ND	ND	mg/Kg	0.003	NA	NA	Yes	Yes
1303050906 1303050941	200 HWDL-08	Monomethyl Hydrazine	60-34-4	ND	ND	mg/Kg	0.008	NA	NA	Yes	Yes
EPA Method 6020A/7471B METALS & MERCURY (Lab Report No. 680-88022-1)											
1303050909 1303050944	200 HWDL-08	Arsenic	7440-38-2	2.7	4	mg/Kg	0.25	NA	3.90E+00	Yes	No
1303050909 1303050944	200 HWDL-08	Barium	7440-39-3	110	150	mg/Kg	0.5	NA	1.56E+04	Yes	Yes
1303050909 1303050944	200 HWDL-08	Beryllium	7440-41-7	0.56	0.65	mg/Kg	0.05	NA	1.56E+02	Yes	Yes
1303050909 1303050944	200 HWDL-08	Cadmium	7440-43-9	0.054 Q	0.084 Q	mg/Kg	0.05	NA	7.03E+01	Yes	Yes
1303050909 1303050944	200 HWDL-08	Chromium	7440-47-3	6.3 Q	8.5 Q	mg/Kg	0.5	NA	1.17E+05	Yes	Yes
1303050909 1303050944	200 HWDL-08	Copper	7440-50-8	3.1	4.1	mg/Kg	0.5	NA	3.13E+03	Yes	Yes
1303050909 1303050944	200 HWDL-08	Lead	7439-92-1	7.6	8.8	mg/Kg	0.2	NA	4.00E+02	Yes	Yes
1303050909 1303050944	200 HWDL-08	Nickel	7440-02-0	4.7 B	6.76 Q	mg/Kg	0.5	NA	1.56E+03	Yes	Yes
1303050909 1303050944	200 HWDL-08	Selenium	7782-49-2	ND	ND	mg/Kg	0.5	NA	3.91E+02	Yes	Yes
1303050909 1303050944	200 HWDL-08	Silver	7440-22-4	ND	ND	mg/Kg	0.1	NA	3.91E+02	Yes	Yes
1303050909 1303050944	200 HWDL-08	Thallium	7440-28-0	0.056 J	0.063 J	mg/Kg	0.1	NA	NA	Yes	Yes
1303050909 1303050944	200 HWDL-08	Vanadium	7440-62-2	16	21	mg/Kg	0.5	NA	3.91E+02	Yes	Yes

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
1303050909 1303050944	200 HWDL-08	Zinc	7440-66-6	27	34	mg/Kg	2	NA	2.35E+04	Yes	Yes
1303050909 1303050944	200 HWDL-08	Mercury	7439-97-6	ND	ND	mg/Kg	0.019	NA	1.56E+01	Yes	Yes
EPA Method 9012B: Cyanides (Lab Report No. 680-88022-1)											
1303050910 1303050945	200 HWDL-08	Cyanide, Total	57-12-5	ND	ND	mg/Kg	0.54	590	4.69E+01	Yes	Yes
EPA Method 8260B: Volatile Organic Compounds (Lab Report No. 680-88022-1)											
1303050907 1303050942	200 HWDL-08	1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	ND	ND	mg/Kg	0.004	30	NA	Yes	Yes
1303050907 1303050942	200 HWDL-08	2-Butanone (MEK)	78-93-3	0.0098 J	0.0054 J	mg/Kg	0.021	36	NA	Yes	Yes
1303050907 1303050942	200 HWDL-08	Acetone	67-64-1	0.049	0.029 J	mg/Kg	0.042	160	NA	Yes	Yes
1303050907 1303050942	200 HWDL-08	Benzene	71-43-2	ND	ND	mg/Kg	0.004	10	NA	Yes	Yes
1303050907 1303050942	200 HWDL-08	Ethylbenzene	100-41-4	ND	ND	mg/Kg	0.004	10	NA	Yes	Yes
1303050907 1303050942	200 HWDL-08	Tetrachloroethene (PCE)	127-18-4	ND	ND	mg/Kg	0.004	6	NA	Yes	Yes
1303050907 1303050942	200 HWDL-08	Toluene	108-88-3	ND	ND	mg/Kg	0.004	10	NA	Yes	Yes
1303050907 1303050942	200 HWDL-08	Trichloroethene (TCE)	79-01-6	ND	ND	mg/Kg	0.004	6	NA	Yes	Yes
1303050907 1303050942	200 HWDL-08	Trichlorofluoromethane (CFC 11)	75-69-4	ND	ND	mg/Kg	0.004	30	NA	Yes	Yes
1303050907 1303050942	200 HWDL-08	Xylenes, Total	1330-20-7	ND	ND	mg/Kg	0.008	30	NA	Yes	Yes
EPA Method 8270C: Semi-Volatile Organic Compounds (Lab Report No. 680-88022-1)											
1303050908 1303050942	200 HWDL-08	Aniline	62-53-3	ND	ND	mg/Kg	0.39	14	NA	Yes	Yes

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
1303050908 1303050942	200 HWDL-08	Di-n-butyl Phthalate	84-74-2	ND	ND	mg/Kg	0.33	28	NA	Yes	Yes
1303050908 1303050942	200 HWDL-08	Naphthalene	91-20-3	ND	ND	mg/Kg	0.33	5.6	NA	Yes	Yes
1303050908 1303050942	200 HWDL-08	Phenol	108-95-2	ND	ND	mg/Kg	0.33	6.2	NA	Yes	Yes
1303050908 1303050942	200 HWDL-08	N-Nitrosodimethylamine	62-75-9	ND	ND	mg/Kg	0.52	2.3	NA	Yes	Yes

[1]- List of analytes were compiled from ETU Closure Plan (March, 2012) Attachment 15, Tables (1-11)

[2]- Units for MDL and LOQ are method-specific and are identified by the units column expressed for each method.

[3]- Values for Residential Soil Screening Levels (SSL) retrieved from NMED SSL (June 2012).

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MDL- Method Detection Limit

LOQ- Limit of quantitation

(a)- First Depth (0-6') below HWDL/Ground Surface

(b)- Second Depth (1'-2') below HWDL/Ground Surface

(D)- Duplicate Sample (1 Field Duplicate every 10 samples) per SAP 2013-006, Section 9: *Quality Control Requirements*

ND- Constituent analyzed for but not detected.

*- RPD of the LCS and LCSD exceeds the control limits

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
Ion Chromatography Method: HYDRAZINES (Lab Report No. 280-39527-1)											
1303051020 1303051045	200 HWDL-09	1,1 Dimethylhydrazine	57-14-7	ND	ND	mg/Kg	0.005	NA	NA	Yes	Yes
1303051020 1303051046	200 HWDL-09	Hydrazine	32-01-2	ND	ND	mg/Kg	0.003	NA	NA	Yes	Yes
1303051020 1303051047	200 HWDL-09	Monomethyl Hydrazine	60-34-4	ND	ND	mg/Kg	0.008	NA	NA	Yes	Yes
EPA Method 6020A/7471B METALS & MERCURY (Lab Report No. 680-88022-1)											
1303051023 1303051048	200 HWDL-09	Arsenic	7440-38-2	3.2	5.3	mg/Kg	0.25	NA	3.90E+00	Yes	No
1303051023 1303051049	200 HWDL-09	Barium	7440-39-3	100	110	mg/Kg	0.51	NA	1.56E+04	Yes	Yes
1303051023 1303051050	200 HWDL-09	Beryllium	7440-41-7	0.39	0.5	mg/Kg	0.051	NA	1.56E+02	Yes	Yes
1303051023 1303051051	200 HWDL-09	Cadmium	7440-43-9	0.15 Q	0.18 Q	mg/Kg	0.051	NA	7.03E+01	Yes	Yes
1303051023 1303051052	200 HWDL-09	Chromium	7440-47-3	9.7 Q	15 Q	mg/Kg	0.51	NA	1.17E+05	Yes	Yes
1303051023 1303051053	200 HWDL-09	Copper	7440-50-8	9.9	9.9	mg/Kg	0.51	NA	3.13E+03	Yes	Yes
1303051023 1303051054	200 HWDL-09	Lead	7439-92-1	14	8.5	mg/Kg	0.2	NA	4.00E+02	Yes	Yes
1303051023 1303051055	200 HWDL-09	Nickel	7440-02-0	8.5 B	12 B	mg/Kg	0.51	NA	1.56E+03	Yes	Yes
1303051023 1303051056	200 HWDL-09	Selenium	7782-49-2	ND	0.32 J	mg/Kg	0.51	NA	3.91E+02	Yes	Yes
1303051023 1303051057	200 HWDL-09	Silver	7440-22-4	ND	0.054 J	mg/Kg	0.1	NA	3.91E+02	Yes	Yes
1303051023 1303051058	200 HWDL-09	Thallium	7440-28-0	0.1 J	0.11	mg/Kg	0.1	NA	NA	Yes	Yes
1303051023 1303051059	200 HWDL-09	Vanadium	7440-62-2	31	29	mg/Kg	0.51	NA	3.91E+02	Yes	Yes

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
1303051023 1303051060	200 HWDL-09	Zinc	7440-66-6	36	39	mg/Kg	2	NA	2.35E+04	Yes	Yes
1303051023 1303051061	200 HWDL-09	Mercury	7439-97-6	0.027	0.039	mg/Kg	0.019	NA	1.56E+01	Yes	Yes
EPA Method 9012B: Cyanides (Lab Report No. 680-88022-1)											
1303051024 1303051049	200 HWDL-09	Cyanide, Total	57-12-5	ND	ND	mg/Kg	0.5	590	4.69E+01	Yes	Yes
EPA Method 8260B: Volatile Organic Compounds (Lab Report No. 680-88022-1)											
1303051021 1303051046	200 HWDL-09	1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	ND	ND	mg/Kg	0.005	30	NA	Yes	Yes
1303051021 1303051047	200 HWDL-09	2-Butanone (MEK)	78-93-3	ND	0.0053 J	mg/Kg	0.023	36	NA	Yes	Yes
1303051021 1303051048	200 HWDL-09	Acetone	67-64-1	0.027 J	0.017 J	mg/Kg	0.045	160	NA	Yes	Yes
1303051021 1303051049	200 HWDL-09	Benzene	71-43-2	ND	ND	mg/Kg	0.005	10	NA	Yes	Yes
1303051021 1303051051	200 HWDL-09	Ethylbenzene	100-41-4	ND	ND	mg/Kg	0.005	10	NA	Yes	Yes
1303051021 1303051052	200 HWDL-09	Tetrachloroethene (PCE)	127-18-4	ND	ND	mg/Kg	0.005	6	NA	Yes	Yes
1303051021 1303051053	200 HWDL-09	Toluene	108-88-3	ND	ND	mg/Kg	0.005	10	NA	Yes	Yes
1303051021 1303051054	200 HWDL-09	Trichloroethene (TCE)	79-01-6	ND	ND	mg/Kg	0.005	6	NA	Yes	Yes
1303051021 1303051055	200 HWDL-09	Trichlorofluoromethane (CFC 11)	75-69-4	ND	ND	mg/Kg	0.005	30	NA	Yes	Yes
1303051021 1303051056	200 HWDL-09	Xylenes, Total	1330-20-7	ND	ND	mg/Kg	0.009	30	NA	Yes	Yes
EPA Method 8270C: Semi-Volatile Organic Compounds (Lab Report No. 680-88022-1)											
1303051022 1303051048	200 HWDL-09	Aniline	62-53-3	ND	ND	mg/Kg	0.39	14	NA	Yes	Yes

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
1303051022 1303051049	200 HWDL-09	Di-n-butyl Phthalate	84-74-2	ND	ND	mg/Kg	0.33	28	NA	Yes	Yes
1303051022 1303051050	200 HWDL-09	Naphthalene	91-20-3	ND	ND	mg/Kg	0.33	5.6	NA	Yes	Yes
1303051022 1303051051	200 HWDL-09	Phenol	108-95-2	ND	ND	mg/Kg	0.33	6.2	NA	Yes	Yes
1303051022 1303051052	200 HWDL-09	N-Nitrosodimethylamine	62-75-9	ND	ND	mg/Kg	0.52	2.3	NA	Yes	Yes

[1]- List of analytes were compiled from ETU Closure Plan (March, 2012) Attachment 15, Tables (1-11)

[2]- Units for MDL and LOQ are method-specific and are identified by the units column expressed for each method.

[3]- Values for Residential Soil Screening Levels (SSL) retrieved from NMED SSL (June 2012).

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MDL- Method Detection Limit

LOQ- Limit of quantitation

(a)- First Depth (0-6') below HWDL/Ground Surface

(b)- Second Depth (1'-2') below HWDL/Ground Surface

(D)- Duplicate Sample (1 Field Duplicate every 10 samples) per SAP 2013-006, Section 9: *Quality Control Requirements*

ND- Constituent analyzed for but not detected.

*- RPD of the LCS and LCSD exceeds the control limits

Sample ID (a) (b) (D)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Results/ Qualifier (D)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No	Criteria Met (D) Yes/No
Ion Chromatography Method: HYDRAZINES (Lab Report No. 280-39622-1)													
1303060835 1303060915 1303060920	200 HWDL-10	1,1 Dimethylhydrazine	57-14-7	ND	ND	ND	mg/Kg	0.006	NA	NA	Yes	Yes	Yes
1303060835 1303060915 1303060921	200 HWDL-10	Hydrazine	32-01-2	ND	ND	ND	mg/Kg	0.003	NA	NA	Yes	Yes	Yes
1303060835 1303060915 1303060922	200 HWDL-10	Monomethyl Hydrazine	60-34-4	ND	ND	ND	mg/Kg	0.008	NA	NA	Yes	Yes	Yes
EPA Method 6020A/7471B METALS & MERCURY (Lab Report No. 680-88083-1)													
1303060838 1303060918 1303060923	200 HWDL-10	Arsenic	7440-38-2	2.8	0.1	0.6	mg/Kg	0.23	NA	3.90E+00	Yes	Yes	Yes
1303060838 1303060918 1303060924	200 HWDL-10	Barium	7440-39-3	4.4 J	1.7	3.25	mg/Kg	0.46	NA	1.56E+04	Yes	Yes	Yes
1303060838 1303060918 1303060925	200 HWDL-10	Beryllium	7440-41-7	0.0165	0.009	0.0175	mg/Kg	0.046	NA	1.56E+02	Yes	Yes	Yes
1303060838 1303060918 1303060926	200 HWDL-10	Cadmium	7440-43-9	0.0055	0.00365	0.009	mg/Kg	0.046	NA	7.03E+01	Yes	Yes	Yes
1303060838 1303060918 1303060927	200 HWDL-10	Chromium	7440-47-3	0.36	0.16	0.8	mg/Kg	0.46	NA	1.17E+05	Yes	Yes	Yes
1303060838 1303060918 1303060928	200 HWDL-10	Copper	7440-50-8	0.2	0.16	0.355	mg/Kg	0.46	NA	3.13E+03	Yes	Yes	Yes
1303060838 1303060918 1303060929	200 HWDL-10	Lead	7439-92-1	0.295	0.205	0.38	mg/Kg	0.18	NA	4.00E+02	Yes	Yes	Yes

Sample ID (a) (b) (D)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Results/ Qualifier (D)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No	Criteria Met (D) Yes/No
1303060838 1303060918 1303060930	200 HWDL-10	Nickel	7440-02-0	0.31	0.2	0.6	mg/Kg	0.46	NA	1.56E+03	Yes	Yes	Yes
1303060838 1303060918 1303060931	200 HWDL-10	Selenium	7782-49-2	ND	ND	ND	mg/Kg	0.46	NA	3.91E+02	Yes	Yes	Yes
1303060838 1303060918 1303060932	200 HWDL-10	Silver	7440-22-4	ND	ND	0.0029 J	mg/Kg	0.092	NA	3.91E+02	Yes	Yes	Yes
1303060838 1303060918 1303060933	200 HWDL-10	Thallium	7440-28-0	0.0015 J	0.00205 J	0.0042 J	mg/Kg	0.092	NA	NA	Yes	Yes	Yes
1303060838 1303060918 1303060934	200 HWDL-10	Vanadium	7440-62-2	0.75 J	0.42	0.95	mg/Kg	0.46	NA	3.91E+02	Yes	Yes	Yes
1303060838 1303060918 1303060935	200 HWDL-10	Zinc	7440-66-6	1..05 J	0.75	1.45	mg/Kg	1.8	NA	2.35E+04	Yes	Yes	Yes
1303060838 1303060918 1303060936	200 HWDL-10	Mercury	7439-97-6	0.0005 J	0.00042 J	0.0007 J	mg/Kg	0.018	NA	1.56E+01	Yes	Yes	Yes
EPA Method 9012B: Cyanides (Lab Report No. 680-88083-1)													
1303060839 1303060919 1303060924	200 HWDL-10	Cyanide, Total	57-12-5	ND	ND	ND	mg/Kg	0.51	590	4.69E+01	Yes	Yes	Yes
EPA Method 8260B: Volatile Organic Compounds (Lab Report No. 680-88083-1)													
1303060836 1303060916 1303060921	200 HWDL-10	1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	ND	ND	ND	mg/Kg	0.005	30	NA	Yes	Yes	Yes
1303060836 1303060916 1303060922	200 HWDL-10	2-Butanone (MEK)	78-93-3	ND	0.0044 J	0.0033 J	mg/Kg	0.023	36	NA	Yes	Yes	Yes

Sample ID (a) (b) (D)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Results/ Qualifier (D)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No	Criteria Met (D) Yes/No
1303060836 1303060916 1303060923	200 HWDL-10	Acetone	67-64-1	0.017 J	0.022 J	0.013 J	mg/Kg	0.047	160	NA	Yes	Yes	Yes
1303060836 1303060916 1303060924	200 HWDL-10	Benzene	71-43-2	ND	ND	ND	mg/Kg	0.005	10	NA	Yes	Yes	Yes
1303060836 1303060916 1303060926	200 HWDL-10	Ethylbenzene	100-41-4	ND	ND	ND	mg/Kg	0.005	10	NA	Yes	Yes	Yes
1303060836 1303060916 1303060927	200 HWDL-10	Tetrachloroethene (PCE)	127-18-4	ND	ND	ND	mg/Kg	0.005	6	NA	Yes	Yes	Yes
1303060836 1303060916 1303060928	200 HWDL-10	Toluene	108-88-3	ND	ND	ND	mg/Kg	0.005	10	NA	Yes	Yes	Yes
1303060836 1303060916 1303060929	200 HWDL-10	Trichloroethene (TCE)	79-01-6	ND	ND	ND	mg/Kg	0.005	6	NA	Yes	Yes	Yes
1303060836 1303060916 1303060930	200 HWDL-10	Trichlorofluoromethane (CFC 11)	75-69-4	ND	ND	ND	mg/Kg	0.005	30	NA	Yes	Yes	Yes
1303060836 1303060916 1303060931	200 HWDL-10	Xylenes, Total	1330-20-7	ND	ND	ND	mg/Kg	0.009	30	NA	Yes	Yes	Yes
EPA Method 8270C: Semi-Volatile Organic Compounds (Lab Report No. 680-88083-1)													
1303060837 1303060917 1303060923	200 HWDL-10	Aniline	62-53-3	ND	ND	ND	mg/Kg	0.4	14	NA	Yes	Yes	Yes
1303060837 1303060917 1303060924	200 HWDL-10	Di-n-butyl Phthalate	84-74-2	ND	ND	ND	mg/Kg	0.34	28	NA	Yes	Yes	Yes

Sample ID (a) (b) (D)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Results/ Qualifier (D)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No	Criteria Met (D) Yes/No
1303060837 1303060917 1303060925	200 HWDL-10	Naphthalene	91-20-3	ND	ND	ND	mg/Kg	0.34	5.6	NA	Yes	Yes	Yes
1303060837 1303060917 1303060926	200 HWDL-10	Phenol	108-95-2	ND	ND	ND	mg/Kg	0.34	6.2	NA	Yes	Yes	Yes
1303060837 1303060917 1303060927	200 HWDL-10	N-Nitrosodimethylamine	62-75-9	ND	ND	ND	mg/Kg	0.53	2.3	NA	Yes	Yes	Yes

[1]- List of analytes were compiled from ETU Closure Plan (March, 2012) Attachment 15, Tables (1-11)

[2]- Units for MDL and LOQ are method-specific and are identified by the units column expressed for each method.

[3]- Values for Residential Soil Screening Levels (SSL) retrieved from NMED SSL (June 2012).

Q- One or more quality control criteria failed.

B- Compound was found in the blank and sample

J- Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

H- Sample was prepped or analyzed beyond the specified holding time.

MDL- Method Detection Limit

LOQ- Limit of quantitation

(a)- First Depth (0-6') below HWDL/Ground Surface

(b)- Second Depth (1'-2') below HWDL/Ground Surface

(D)- Duplicate Sample (1 Field Duplicate every 10 samples) per SAP 2013-006, Section 9: *Quality Control Requirements*

ND- Constituent analyzed for but not detected.

*- RPD of the LCS and LCSD exceeds the control limits

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
Ion Chromatography Method: HYDRAZINES (Lab Report No. 280-39622-1)											
1303061000 1303061028	200 HWDL-11	1,1 Dimethylhydrazine	57-14-7	ND	ND	mg/Kg	0.006	NA	NA	Yes	Yes
1303061000 1303061028	200 HWDL-11	Hydrazine	32-01-2	ND	ND	mg/Kg	0.003	NA	NA	Yes	Yes
1303061000 1303061028	200 HWDL-11	Monomethyl Hydrazine	60-34-4	ND	ND	mg/Kg	0.005	NA	NA	Yes	Yes
EPA Method 6020A/7471B METALS & MERCURY (Lab Report No. 680-88083-1)											
1303061003 1303061031	200 HWDL-11	Arsenic	7440-38-2	3.3	6.9	mg/Kg	0.26	NA	3.90E+00	Yes	No
1303061003 1303061031	200 HWDL-11	Barium	7440-39-3	85	150	mg/Kg	0.53	NA	1.56E+04	Yes	Yes
1303061003 1303061031	200 HWDL-11	Beryllium	7440-41-7	0.43	0.35	mg/Kg	0.053	NA	1.56E+02	Yes	Yes
1303061003 1303061031	200 HWDL-11	Cadmium	7440-43-9	0.11	0.16	mg/Kg	0.053	NA	7.03E+01	Yes	Yes
1303061003 1303061031	200 HWDL-11	Chromium	7440-47-3	6.1	9	mg/Kg	0.53	NA	1.17E+05	Yes	Yes
1303061003 1303061031	200 HWDL-11	Copper	7440-50-8	5.5	6.2	mg/Kg	0.53	NA	3.13E+03	Yes	Yes
1303061003 1303061031	200 HWDL-11	Lead	7439-92-1	13	7.1	mg/Kg	0.21	NA	4.00E+02	Yes	Yes
1303061003 1303061031	200 HWDL-11	Nickel	7440-02-0	6.7	10	mg/Kg	0.53	NA	1.56E+03	Yes	Yes
1303061003 1303061031	200 HWDL-11	Selenium	7782-49-2	ND	ND	mg/Kg	0.53	NA	3.91E+02	Yes	Yes
1303061003 1303061031	200 HWDL-11	Silver	7440-22-4	ND	ND	mg/Kg	0.11	NA	3.91E+02	Yes	Yes
1303061003 1303061031	200 HWDL-11	Thallium	7440-28-0	0.049 J	0.05 J	mg/Kg	0.11	NA	NA	Yes	Yes
1303061003 1303061031	200 HWDL-11	Vanadium	7440-62-2	13	25	mg/Kg	0.53	NA	3.91E+02	Yes	Yes

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
1303061003 1303061031	200 HWDL-11	Zinc	7440-66-6	29	26	mg/Kg	2.1	NA	2.35E+04	Yes	Yes
1303061003 1303061031	200 HWDL-11	Mercury	7439-97-6	0.012 J	0.01	mg/Kg	0.018	NA	1.56E+01	Yes	Yes
EPA Method 9012B: Cyanides (Lab Report No. 680-88083-1)											
1303061004 1303061032	200 HWDL-11	Cyanide, Total	57-12-5	ND	ND	mg/Kg	0.52	590	4.69E+01	Yes	Yes
EPA Method 8260B: Volatile Organic Compounds (Lab Report No. 680-88083-1)											
1303061001 1303061029	200 HWDL-11	1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	ND	ND	mg/Kg	0.004	30	NA	Yes	Yes
1303061001 1303061029	200 HWDL-11	2-Butanone (MEK)	78-93-3	ND	0.0026	mg/Kg	0.021	36	NA	Yes	Yes
1303061001 1303061029	200 HWDL-11	Acetone	67-64-1	0.012 J	0.012 J	mg/Kg	0.042	160	NA	Yes	Yes
1303061001 1303061029	200 HWDL-11	Benzene	71-43-2	ND	ND	mg/Kg	0.004	10	NA	Yes	Yes
1303061001 1303061029	200 HWDL-11	Ethylbenzene	100-41-4	ND	ND	mg/Kg	0.004	10	NA	Yes	Yes
1303061001 1303061029	200 HWDL-11	Tetrachloroethene (PCE)	127-18-4	ND	ND	mg/Kg	0.004	6	NA	Yes	Yes
1303061001 1303061029	200 HWDL-11	Toluene	108-88-3	ND	ND	mg/Kg	0.004	10	NA	Yes	Yes
1303061001 1303061029	200 HWDL-11	Trichloroethene (TCE)	79-01-6	ND	ND	mg/Kg	0.004	6	NA	Yes	Yes
1303061001 1303061029	200 HWDL-11	Trichlorofluoromethane (CFC 11)	75-69-4	ND	ND	mg/Kg	0.004	30	NA	Yes	Yes
1303061001 1303061029	200 HWDL-11	Xylenes, Total	1330-20-7	ND	ND	mg/Kg	0.008	30	NA	Yes	Yes
EPA Method 8270C: Semi-Volatile Organic Compounds (Lab Report No. 680-88083-1)											
1303061002 1303061030	200 HWDL-11	Aniline	62-53-3	ND	ND	mg/Kg	0.41	14	NA	Yes	Yes

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
1303061002 1303061030	200 HWDL-11	Di-n-butyl Phthalate	84-74-2	ND	ND	mg/Kg	0.35	28	NA	Yes	Yes
1303061002 1303061030	200 HWDL-11	Naphthalene	91-20-3	ND	ND	mg/Kg	0.35	5.6	NA	Yes	Yes
1303061002 1303061030	200 HWDL-11	Phenol	108-95-2	ND	ND	mg/Kg	0.35	6.2	NA	Yes	Yes
1303061002 1303061030	200 HWDL-11	N-Nitrosodimethylamine	62-75-9	ND	ND	mg/Kg	0.55	2.3	NA	Yes	Yes

[1]- List of analytes were compiled from ETU Closure Plan (March, 2012) Attachment 15, Tables (1-11)

[2]- Units for MDL and LOQ are method-specific and are identified by the units column expressed for each method.

[3]- Values for Residential Soil Screening Levels (SSL) retrieved from NMED SSL (June 2012).

Q- One or more quality control criteria failed.

B- Compound was found in the blank and sample

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H- Sample was prepped or analyzed beyond the specified holding time.

MDL- Method Detection Limit

LOQ- Limit of quantitation

(a)- First Depth (0-6') below HWDL/Ground Surface

(b)- Second Depth (1'-2') below HWDL/Ground Surface

(D)- Duplicate Sample (1 Field Duplicate every 10 samples) per SAP 2013-006, Section 9: *Quality Control Requirements*

ND- Constituent analyzed for but not detected.

*- RPD of the LCS and LCSD exceeds the control limits

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
Ion Chromatography Method: HYDRAZINES (Lab Report No. 280-39674-1)											
1303078035 1303070916	200 HWDL-12	1,1 Dimethylhydrazine	57-14-7	ND	ND	mg/Kg	0.006	NA	NA	Yes	Yes
1303078035 1303070916	200 HWDL-12	Hydrazine	32-01-2	ND	ND	mg/Kg	0.003	NA	NA	Yes	Yes
1303078035 1303070916	200 HWDL-12	Monomethyl Hydrazine	60-34-4	ND	ND	mg/Kg	0.008	NA	NA	Yes	Yes
EPA Method 6020A/7471B METALS & MERCURY (Lab Report No. 680-88125-1)											
1303070838 1303070919	200 HWDL-12	Arsenic	7440-38-2	7.2 J	6.1	mg/Kg	0.25	NA	3.90E+00	Yes	No
1303070838 1303070919	200 HWDL-12	Barium	7440-39-3	140	89	mg/Kg	0.5	NA	1.56E+04	Yes	Yes
1303070838 1303070919	200 HWDL-12	Beryllium	7440-41-7	0.49	0.36	mg/Kg	0.05	NA	1.56E+02	Yes	Yes
1303070838 1303070919	200 HWDL-12	Cadmium	7440-43-9	0.26 Q	0.16 Q	mg/Kg	0.05	NA	7.03E+01	Yes	Yes
1303070838 1303070919	200 HWDL-12	Chromium	7440-47-3	15 J Q	8.5 Q	mg/Kg	0.5	NA	1.17E+05	Yes	Yes
1303070838 1303070919	200 HWDL-12	Copper	7440-50-8	9.5 J	6.8	mg/Kg	0.5	NA	3.13E+03	Yes	Yes
1303070838 1303070919	200 HWDL-12	Lead	7439-92-1	40 J	34	mg/Kg	0.2	NA	4.00E+02	Yes	Yes
1303070838 1303070919	200 HWDL-12	Nickel	7440-02-0	16	9.9	mg/Kg	0.5	NA	1.56E+03	Yes	Yes
1303070838 1303070919	200 HWDL-12	Selenium	7782-49-2	ND	ND	mg/Kg	0.5	NA	3.91E+02	Yes	Yes
1303070838 1303070919	200 HWDL-12	Silver	7440-22-4	1.68 J	0.078 J	mg/Kg	0.1	NA	3.91E+02	Yes	Yes
1303070838 1303070919	200 HWDL-12	Thallium	7440-28-0	0.075 J	0.076 J	mg/Kg	0.1	NA	NA	Yes	Yes
1303070838 1303070919	200 HWDL-12	Vanadium	7440-62-2	21 J	21	mg/Kg	0.5	NA	3.91E+02	Yes	Yes

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
1303070838 1303070919	200 HWDL-12	Zinc	7440-66-6	42 J	34	mg/Kg	2	NA	2.35E+04	Yes	Yes
1303070838 1303070919	200 HWDL-12	Mercury	7439-97-6	0.022	ND	mg/Kg	0.02	NA	1.56E+01	Yes	Yes
EPA Method 9012B: Cyanides (Lab Report No. 680-88125-1)											
1303070839 1303070920	200 HWDL-12	Cyanide, Total	57-12-5	ND	ND	mg/Kg	0.53	590	4.69E+01	Yes	Yes
EPA Method 8260B: Volatile Organic Compounds (Lab Report No. 680-39674-1)											
1303070836 1303070917	200 HWDL-12	1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	ND	ND	mg/Kg	0.004	30	NA	Yes	Yes
1303070836 1303070917	200 HWDL-12	2-Butanone (MEK)	78-93-3	0.002	ND	mg/Kg	0.02	36	NA	Yes	Yes
1303070836 1303070917	200 HWDL-12	Acetone	67-64-1	0.010 J	0.015 J	mg/Kg	0.039	160	NA	Yes	Yes
1303070836 1303070917	200 HWDL-12	Benzene	71-43-2	ND	ND	mg/Kg	0.004	10	NA	Yes	Yes
1303070836 1303070917	200 HWDL-12	Ethylbenzene	100-41-4	ND	ND	mg/Kg	0.004	10	NA	Yes	Yes
1303070836 1303070917	200 HWDL-12	Tetrachloroethene (PCE)	127-18-4	ND	ND	mg/Kg	0.004	6	NA	Yes	Yes
1303070836 1303070917	200 HWDL-12	Toluene	108-88-3	ND	ND	mg/Kg	0.004	10	NA	Yes	Yes
1303070836 1303070917	200 HWDL-12	Trichloroethene (TCE)	79-01-6	ND	ND	mg/Kg	0.004	6	NA	Yes	Yes
1303070836 1303070917	200 HWDL-12	Trichlorofluoromethane (CFC 11)	75-69-4	ND	ND	mg/Kg	0.004	30	NA	Yes	Yes
1303070836 1303070917	200 HWDL-12	Xylenes, Total	1330-20-7	ND	ND	mg/Kg	0.008	30	NA	Yes	Yes
EPA Method 8270C: Semi-Volatile Organic Compounds (Lab Report No. 680-88125-1)											
1303070837 1303070918	200 HWDL-12	Aniline	62-53-3	ND	ND	mg/Kg	0.41	14	NA	Yes	Yes

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
1303070837 1303070918	200 HWDL-12	Di-n-butyl Phthalate	84-74-2	ND	ND	mg/Kg	0.35	28	NA	Yes	Yes
1303070837 1303070918	200 HWDL-12	Naphthalene	91-20-3	ND	ND	mg/Kg	0.35	5.6	NA	Yes	Yes
1303070837 1303070918	200 HWDL-12	Phenol	108-95-2	ND	ND	mg/Kg	0.35	6.2	NA	Yes	Yes
1303070837 1303070918	200 HWDL-12	N-Nitrosodimethylamine	62-75-9	ND	ND	mg/Kg	0.55	2.3	NA	Yes	Yes

[1]- List of analytes were compiled from ETU Closure Plan (March, 2012) Attachment 15, Tables (1-11)

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LOQ- Limit of quantitation

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*- RPD of the LCS and LCSD exceeds the control limits

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
Ion Chromatography Method: HYDRAZINES (Lab Report No. 280-39674-1)											
1303071006 1303071028	200 HWDL-13	1,1 Dimethylhydrazine	57-14-7	ND	ND	mg/Kg	0.005	NA	NA	Yes	Yes
1303071006 1303071028	200 HWDL-13	Hydrazine	32-01-2	ND	ND	mg/Kg	0.003	NA	NA	Yes	Yes
1303071006 1303071028	200 HWDL-13	Monomethyl Hydrazine	60-34-4	ND	ND	mg/Kg	0.008	NA	NA	Yes	Yes
EPA Method 6020A/7471B METALS & MERCURY (Lab Report No. 680-88125-1)											
1303071009 1303071031	200 HWDL-13	Arsenic	7440-38-2	3.9	3.4	mg/Kg	0.93	NA	3.90E+00	No	Yes
1303071009 1303071031	200 HWDL-13	Barium	7440-39-3	110	100	mg/Kg	0.47	NA	1.56E+04	Yes	Yes
1303071009 1303071031	200 HWDL-13	Beryllium	7440-41-7	0.37	0.35	mg/Kg	0.047	NA	1.56E+02	Yes	Yes
1303071009 1303071031	200 HWDL-13	Cadmium	7440-43-9	0.15 Q	0.21 Q	mg/Kg	0.047	NA	7.03E+01	Yes	Yes
1303071009 1303071031	200 HWDL-13	Chromium	7440-47-3	7.1 Q	7.9 Q	mg/Kg	0.47	NA	1.17E+05	Yes	Yes
1303071009 1303071031	200 HWDL-13	Copper	7440-50-8	5.5	5.5	mg/Kg	0.47	NA	3.13E+03	Yes	Yes
1303071009 1303071031	200 HWDL-13	Lead	7439-92-1	16	21	mg/Kg	0.19	NA	4.00E+02	Yes	Yes
1303071009 1303071031	200 HWDL-13	Nickel	7440-02-0	7.8	7.9	mg/Kg	0.47	NA	1.56E+03	Yes	Yes
1303071009 1303071031	200 HWDL-13	Selenium	7782-49-2	ND	ND	mg/Kg	0.47	NA	3.91E+02	Yes	Yes
1303071009 1303071031	200 HWDL-13	Silver	7440-22-4	ND	ND	mg/Kg	0.093	NA	3.91E+02	Yes	Yes
1303071009 1303071031	200 HWDL-13	Thallium	7440-28-0	0.052 J	0.064 J	mg/Kg	0.093	NA	NA	Yes	Yes
1303071009 1303071031	200 HWDL-13	Vanadium	7440-62-2	18	17	mg/Kg	0.47	NA	3.91E+02	Yes	Yes

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
1303071009 1303071031	200 HWDL-13	Zinc	7440-66-6	27	29	mg/Kg	1.9	NA	2.35E+04	Yes	Yes
1303071009 1303071031	200 HWDL-13	Mercury	7439-97-6	ND	ND	mg/Kg	0.02	NA	1.56E+01	Yes	Yes
EPA Method 9012B: Cyanides (Lab Report No. 680-88125-1)											
1303071010 1303071032	200 HWDL-13	Cyanide, Total	57-12-5	ND	ND	mg/Kg	0.53	590	4.69E+01	Yes	Yes
EPA Method 8260B: Volatile Organic Compounds (Lab Report No. 680-39674-1)											
1303071007 1303071029	200 HWDL-13	1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	ND	ND	mg/Kg	0.004	30	NA	Yes	Yes
1303071007 1303071029	200 HWDL-13	2-Butanone (MEK)	78-93-3	ND	ND	mg/Kg	0.02	36	NA	Yes	Yes
1303071007 1303071029	200 HWDL-13	Acetone	67-64-1	0.018 J	0.013 J	mg/Kg	0.04	160	NA	Yes	Yes
1303071007 1303071029	200 HWDL-13	Benzene	71-43-2	ND	0.0006 J	mg/Kg	0.004	10	NA	Yes	Yes
1303071007 1303071029	200 HWDL-13	Ethylbenzene	100-41-4	ND	ND	mg/Kg	0.004	10	NA	Yes	Yes
1303071007 1303071029	200 HWDL-13	Tetrachloroethene (PCE)	127-18-4	ND	ND	mg/Kg	0.004	6	NA	Yes	Yes
1303071007 1303071029	200 HWDL-13	Toluene	108-88-3	ND	0.0008 J	mg/Kg	0.004	10	NA	Yes	Yes
1303071007 1303071029	200 HWDL-13	Trichloroethene (TCE)	79-01-6	ND	ND	mg/Kg	0.004	6	NA	Yes	Yes
1303071007 1303071029	200 HWDL-13	Trichlorofluoromethane (CFC 11)	75-69-4	ND	ND	mg/Kg	0.004	30	NA	Yes	Yes
1303071007 1303071029	200 HWDL-13	Xylenes, Total	1330-20-7	ND	ND	mg/Kg	0.008	30	NA	Yes	Yes
EPA Method 8270C: Semi-Volatile Organic Compounds (Lab Report No. 680-88125-1)											
1303071008 1303071030	200 HWDL-13	Aniline	62-53-3	ND	ND	mg/Kg	4000	14	NA	Yes	Yes

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
1303071008 1303071030	200 HWDL-13	Di-n-butyl Phthalate	84-74-2	ND	ND	mg/Kg	3400	28	NA	Yes	Yes
1303071008 1303071030	200 HWDL-13	Naphthalene	91-20-3	ND	ND	mg/Kg	3400	5.6	NA	Yes	Yes
1303071008 1303071030	200 HWDL-13	Phenol	108-95-2	ND	1800 J D	mg/Kg	3400	6.2	NA	Yes	Yes
1303071008 1303071030	200 HWDL-13	N-Nitrosodimethylamine	62-75-9	ND	ND	mg/Kg	5300	2.3	NA	Yes	Yes

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(a)- First Depth (0-6') below HWDL/Ground Surface

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*- RPD of the LCS and LCSD exceeds the control limits

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
Ion Chromatography Method: HYDRAZINES (Lab Report No. 280-39745-1)											
1303080850 1303080920	200 HWDL-14	1,1 Dimethylhydrazine	57-14-7	ND	ND	mg/Kg	0.005	NA	NA	Yes	Yes
1303080850 1303080920	200 HWDL-14	Hydrazine	32-01-2	ND	ND	mg/Kg	0.003	NA	NA	Yes	Yes
1303080850 1303080920	200 HWDL-14	Monomethyl Hydrazine	60-34-4	ND	ND	mg/Kg	0.007	NA	NA	Yes	Yes
EPA Method 6020A/7471B METALS & MERCURY (Lab Report No. 680-88183-1)											
1303080853 1303080923	200 HWDL-14	Arsenic	7440-38-2	2.2	1.7	mg/Kg	0.23	NA	3.90E+00	Yes	Yes
1303080853 1303080923	200 HWDL-14	Barium	7440-39-3	75	41	mg/Kg	0.45	NA	1.56E+04	Yes	Yes
1303080853 1303080923	200 HWDL-14	Beryllium	7440-41-7	0.45	0.25	mg/Kg	0.045	NA	1.56E+02	Yes	Yes
1303080853 1303080923	200 HWDL-14	Cadmium	7440-43-9	0.058 Q	0.24	mg/Kg	0.045	NA	7.03E+01	Yes	Yes
1303080853 1303080923	200 HWDL-14	Chromium	7440-47-3	4.9	7 Q	mg/Kg	0.45	NA	1.17E+05	Yes	Yes
1303080853 1303080923	200 HWDL-14	Copper	7440-50-8	2.5	2.3	mg/Kg	0.45	NA	3.13E+03	Yes	Yes
1303080853 1303080923	200 HWDL-14	Lead	7439-92-1	7.4	8.4	mg/Kg	0.18	NA	4.00E+02	Yes	Yes
1303080853 1303080923	200 HWDL-14	Nickel	7440-02-0	4.1	4.4	mg/Kg	0.45	NA	1.56E+03	Yes	Yes
1303080853 1303080923	200 HWDL-14	Selenium	7782-49-2	ND	ND	mg/Kg	0.45	NA	3.91E+02	Yes	Yes
1303080853 1303080923	200 HWDL-14	Silver	7440-22-4	ND	ND	mg/Kg	0.09	NA	3.91E+02	Yes	Yes
1303080853 1303080923	200 HWDL-14	Thallium	7440-28-0	0.078 J	0.037 J	mg/Kg	0.09	NA	NA	Yes	Yes
1303080853 1303080923	200 HWDL-14	Vanadium	7440-62-2	11	11	mg/Kg	0.45	NA	3.91E+02	Yes	Yes

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
1303080853 1303080923	200 HWDL-14	Zinc	7440-66-6	22	17	mg/Kg	1.8	NA	2.35E+04	Yes	Yes
1303080853 1303080923	200 HWDL-14	Mercury	7439-97-6	ND	ND	mg/Kg	0.02	NA	1.56E+01	Yes	Yes
EPA Method 9012B: Cyanides (Lab Report No. 680-88183-1)											
1303080854 1303080924	200 HWDL-14	Cyanide, Total	57-12-5	ND	ND	mg/Kg	0.51	590	4.69E+01	Yes	Yes
EPA Method 8260B: Volatile Organic Compounds (Lab Report No. 680-88183-1)											
1303080851 1303080921	200 HWDL-14	1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	ND	ND	mg/Kg	0.004	30	NA	Yes	Yes
1303080851 1303080921	200 HWDL-14	2-Butanone (MEK)	78-93-3	0.0057 J	0.006 J	mg/Kg	0.019	36	NA	Yes	Yes
1303080851 1303080921	200 HWDL-14	Acetone	67-64-1	0.033 J	0.031 J	mg/Kg	0.039	160	NA	Yes	Yes
1303080851 1303080921	200 HWDL-14	Benzene	71-43-2	ND	ND	mg/Kg	0.004	10	NA	Yes	Yes
1303080851 1303080921	200 HWDL-14	Ethylbenzene	100-41-4	ND	ND	mg/Kg	0.004	10	NA	Yes	Yes
1303080851 1303080921	200 HWDL-14	Tetrachloroethene (PCE)	127-18-4	ND	ND	mg/Kg	0.004	6	NA	Yes	Yes
1303080851 1303080921	200 HWDL-14	Toluene	108-88-3	ND	ND	mg/Kg	0.004	10	NA	Yes	Yes
1303080851 1303080921	200 HWDL-14	Trichloroethene (TCE)	79-01-6	ND	ND	mg/Kg	0.004	6	NA	Yes	Yes
1303080851 1303080921	200 HWDL-14	Trichlorofluoromethane (CFC 11)	75-69-4	ND	ND	mg/Kg	0.004	30	NA	Yes	Yes
1303080851 1303080921	200 HWDL-14	Xylenes, Total	1330-20-7	ND	ND	mg/Kg	0.008	30	NA	Yes	Yes
EPA Method 8270C: Semi-Volatile Organic Compounds (Lab Report No. 680-88183-1)											
1303080852 1303080922	200 HWDL-14	Aniline	62-53-3	ND	ND	mg/Kg	0.38	14	NA	Yes	Yes

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
1303080852 1303080922	200 HWDL-14	Di-n-butyl Phthalate	84-74-2	ND	ND	mg/Kg	0.32	28	NA	Yes	Yes
1303080852 1303080922	200 HWDL-14	Naphthalene	91-20-3	ND	ND	mg/Kg	0.32	5.6	NA	Yes	Yes
1303080852 1303080922	200 HWDL-14	Phenol	108-95-2	ND	ND	mg/Kg	0.32	6.2	NA	Yes	Yes
1303080852 1303080922	200 HWDL-14	N-Nitrosodimethylamine	62-75-9	ND	ND	mg/Kg	0.51	2.3	NA	Yes	Yes

[1]- List of analytes were compiled from ETU Closure Plan (March, 2012) Attachment 15, Tables (1-11)

[2]- Units for MDL and LOQ are method-specific and are identified by the units column expressed for each method.

[3]- Values for Residential Soil Screening Levels (SSL) retrieved from NMED SSL (June 2012).

Q- One or more quality control criteria failed.

B- Compound was found in the blank and sample

J- Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

H- Sample was prepped or analyzed beyond the specified holding time.

MDL- Method Detection Limit

LOQ- Limit of quantitation

(a)- First Depth (0-6') below HWDL/Ground Surface

(b)- Second Depth (1'-2') below HWDL/Ground Surface

(D)- Duplicate Sample (1 Field Duplicate every 10 samples) per SAP 2013-006, Section 9: *Quality Control Requirements*

ND- Constituent analyzed for but not detected.

*- RPD of the LCS and LCSD exceeds the control limits

Sample ID (a) (b) (D)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Results/ Qualifier (D)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No	Criteria Met (D) Yes/No
Ion Chromatography Method: HYDRAZINES (Lab Report No. 280-39745-1)													
1303081015 1303081020 1303081047	200 HWDL-15	1,1 Dimethylhydrazine	57-14-7	ND	ND	ND	mg/Kg	0.005	NA	NA	Yes	Yes	Yes
1303081015 1303081020 1303081047	200 HWDL-15	Hydrazine	32-01-2	ND	ND	ND	mg/Kg	0.003	NA	NA	Yes	Yes	Yes
1303081015 1303081020 1303081047	200 HWDL-15	Monomethyl Hydrazine	60-34-4	ND	ND	ND	mg/Kg	0.007	NA	NA	Yes	Yes	Yes
EPA Method 6020A/7471B METALS & MERCURY (Lab Report No. 680-88183-1)													
1303081018 1303081023 1303081050	200 HWDL-15	Arsenic	7440-38-2	4.2	3.4	1.7	mg/Kg	0.23	NA	3.90E+00	No	Yes	Yes
1303081018 1303081023 1303081050	200 HWDL-15	Barium	7440-39-3	81.0	87	49	mg/Kg	0.47	NA	1.56E+04	Yes	Yes	Yes
1303081018 1303081023 1303081050	200 HWDL-15	Beryllium	7440-41-7	0.68	0.48	0.41	mg/Kg	0.047	NA	1.56E+02	Yes	Yes	Yes
1303081018 1303081023 1303081050	200 HWDL-15	Cadmium	7440-43-9	0.078 Q	0.11 Q	0.04 Q J	mg/Kg	0.047	NA	7.03E+01	Yes	Yes	Yes
1303081018 1303081023 1303081050	200 HWDL-15	Chromium	7440-47-3	9.1 Q	23 Q	4.4 Q	mg/Kg	0.47	NA	1.17E+05	Yes	Yes	Yes
1303081018 1303081023 1303081050	200 HWDL-15	Copper	7440-50-8	4.9	3.6	1.5	mg/Kg	0.47	NA	3.13E+03	Yes	Yes	Yes
1303081018 1303081023 1303081050	200 HWDL-15	Lead	7439-92-1	7.4	7.4	4.2	mg/Kg	0.19	NA	4.00E+02	Yes	Yes	Yes

Sample ID (a) (b) (D)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Results/ Qualifier (D)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No	Criteria Met (D) Yes/No
1303081018 1303081023 1303081050	200 HWDL-15	Nickel	7440-02-0	6	14	3.4	mg/Kg	0.47	NA	1.56E+03	Yes	Yes	Yes
1303081018 1303081023 1303081050	200 HWDL-15	Selenium	7782-49-2	ND	ND	ND	mg/Kg	0.47	NA	3.91E+02	Yes	Yes	Yes
1303081018 1303081023 1303081050	200 HWDL-15	Silver	7440-22-4	ND	ND	ND	mg/Kg	0.094	NA	3.91E+02	Yes	Yes	Yes
1303081018 1303081023 1303081050	200 HWDL-15	Thallium	7440-28-0	0.062 J	0.046 J	0.03 J	mg/Kg	0.094	NA	NA	Yes	Yes	Yes
1303081018 1303081023 1303081050	200 HWDL-15	Vanadium	7440-62-2	19	16	6.8	mg/Kg	0.47	NA	3.91E+02	Yes	Yes	Yes
1303081018 1303081023 1303081050	200 HWDL-15	Zinc	7440-66-6	23	27	15	mg/Kg	1.9	NA	2.35E+04	Yes	Yes	Yes
1303081018 1303081023 1303081050	200 HWDL-15	Mercury	7439-97-6	ND	ND	ND	mg/Kg	0.02	NA	1.56E+01	Yes	Yes	Yes
EPA Method 9012B: Cyanides (Lab Report No. 680-88183-1)													
1303081019 1303081024 1303081051	200 HWDL-15	Cyanide, Total	57-12-5	ND	ND	ND	mg/Kg	0.52	590	4.69E+01	Yes	Yes	Yes
EPA Method 8260B: Volatile Organic Compounds (Lab Report No. 680-88183-1)													
1303081016 1303081021 1303081048	200 HWDL-15	1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	ND	ND	ND	mg/Kg	0.004	30	NA	Yes	Yes	Yes
1303081016 1303081021 1303081048	200 HWDL-15	2-Butanone (MEK)	78-93-3	0.0068 J	0.0058 J	0.0079 J	mg/Kg	0.021	36	NA	Yes	Yes	Yes

Sample ID (a) (b) (D)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Results/ Qualifier (D)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No	Criteria Met (D) Yes/No
1303081016 1303081021 1303081048	200 HWDL-15	Acetone	67-64-1	0.035 J	0.025 J	0.037 J	mg/Kg	0.041	160	NA	Yes	Yes	Yes
1303081016 1303081021 1303081048	200 HWDL-15	Benzene	71-43-2	ND	ND	ND	mg/Kg	0.004	10	NA	Yes	Yes	Yes
1303081016 1303081021 1303081048	200 HWDL-15	Ethylbenzene	100-41-4	ND	ND	ND	mg/Kg	0.004	10	NA	Yes	Yes	Yes
1303081016 1303081021 1303081048	200 HWDL-15	Tetrachloroethene (PCE)	127-18-4	ND	ND	ND	mg/Kg	0.004	6	NA	Yes	Yes	Yes
1303081016 1303081021 1303081048	200 HWDL-15	Toluene	108-88-3	ND	ND	ND	mg/Kg	0.004	10	NA	Yes	Yes	Yes
1303081016 1303081021 1303081048	200 HWDL-15	Trichloroethene (TCE)	79-01-6	ND	ND	ND	mg/Kg	0.004	6	NA	Yes	Yes	Yes
1303081016 1303081021 1303081048	200 HWDL-15	Trichlorofluoromethane (CFC 11)	75-69-4	ND	ND	ND	mg/Kg	0.004	30	NA	Yes	Yes	Yes
1303081016 1303081021 1303081048	200 HWDL-15	Xylenes, Total	1330-20-7	ND	ND	ND	mg/Kg	0.008	30	NA	Yes	Yes	Yes
EPA Method 8270C: Semi-Volatile Organic Compounds (Lab Report No. 680-88183-1)													
1303081017 1303081022 1303081049	200 HWDL-15	Aniline	62-53-3	ND	ND	ND	mg/Kg	0.39	14	NA	Yes	Yes	Yes
1303081017 1303081022 1303081049	200 HWDL-15	Di-n-butyl Phthalate	84-74-2	ND	ND	ND	mg/Kg	0.33	28	NA	Yes	Yes	Yes

Sample ID (a) (b) (D)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Results/ Qualifier (D)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No	Criteria Met (D) Yes/No
1303081017 1303081022 1303081049	200 HWDL-15	Naphthalene	91-20-3	ND	ND	ND	mg/Kg	0.33	5.6	NA	Yes	Yes	Yes
1303081017 1303081022 1303081049	200 HWDL-15	Phenol	108-95-2	ND	ND	ND	mg/Kg	0.33	6.2	NA	Yes	Yes	Yes
1303081017 1303081022 1303081049	200 HWDL-15	N-Nitrosodimethylamine	62-75-9	ND	ND	ND	mg/Kg	0.53	2.3	NA	Yes	Yes	Yes

[1]- List of analytes were compiled from ETU Closure Plan (March, 2012) Attachment 15, Tables (1-11)

[2]- Units for MDL and LOQ are method-specific and are identified by the units column expressed for each method.

[3]- Values for Residential Soil Screening Levels (SSL) retrieved from NMED SSL (June 2012).

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H- Sample was prepped or analyzed beyond the specified holding time.

MDL- Method Detection Limit

LOQ- Limit of quantitation

(a)- First Depth (0-6') below HWDL/Ground Surface

(b)- Second Depth (1'-2') below HWDL/Ground Surface

(D)- Duplicate Sample (1 Field Duplicate every 10 samples) per SAP 2013-006, Section 9: *Quality Control Requirements*

ND- Constituent analyzed for but not detected.

*- RPD of the LCS and LCSD exceeds the control limits

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
Ion Chromatography Method: HYDRAZINES (Lab Report No. 280-39841-1)											
1303120925 1303120947	200 HWDL-16	1,1 Dimethylhydrazine	57-14-7	ND	ND	mg/Kg	0.005	NA	NA	Yes	Yes
1303120925 1303120947	200 HWDL-16	Hydrazine	32-01-2	ND	ND	mg/Kg	0.003	NA	NA	Yes	Yes
1303120925 1303120947	200 HWDL-16	Monomethyl Hydrazine	60-34-4	ND	ND	mg/Kg	0.007	NA	NA	Yes	Yes
EPA Method 6020A/7471B METALS & MERCURY (Lab Report No. 680-88253-1)											
1303120928 1303120950	200 HWDL-16	Arsenic	7440-38-2	7.3	2	mg/Kg	0.25	NA	3.90E+00	No	Yes
1303120928 1303120950	200 HWDL-16	Barium	7440-39-3	68	70	mg/Kg	0.5	NA	1.56E+04	Yes	Yes
1303120928 1303120950	200 HWDL-16	Beryllium	7440-41-7	0.29	0.25	mg/Kg	0.05	NA	1.56E+02	Yes	Yes
1303120928 1303120950	200 HWDL-16	Cadmium	7440-43-9	0.14 Q	0.094 Q	mg/Kg	0.05	NA	7.03E+01	Yes	Yes
1303120928 1303120950	200 HWDL-16	Chromium	7440-47-3	6.8 Q	5.7 Q	mg/Kg	0.5	NA	1.17E+05	Yes	Yes
1303120928 1303120950	200 HWDL-16	Copper	7440-50-8	5.6	3.8	mg/Kg	0.5	NA	3.13E+03	Yes	Yes
1303120928 1303120950	200 HWDL-16	Lead	7439-92-1	6.9	5.1	mg/Kg	0.2	NA	4.00E+02	Yes	Yes
1303120928 1303120950	200 HWDL-16	Nickel	7440-02-0	7	5.8	mg/Kg	0.5	NA	1.56E+03	Yes	Yes
1303120928 1303120950	200 HWDL-16	Selenium	7782-49-2	ND	ND	mg/Kg	0.5	NA	3.91E+02	Yes	Yes
1303120928 1303120950	200 HWDL-16	Silver	7440-22-4	ND	ND	mg/Kg	0.1	NA	3.91E+02	Yes	Yes
1303120928 1303120950	200 HWDL-16	Thallium	7440-28-0	0.046 J	0.038 J	mg/Kg	0.1	NA	NA	Yes	Yes
1303120928 1303120950	200 HWDL-16	Vanadium	7440-62-2	14	12	mg/Kg	0.5	NA	3.91E+02	Yes	Yes

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
1303120928 1303120950	200 HWDL-16	Zinc	7440-66-6	35	21	mg/Kg	2	NA	2.35E+04	Yes	Yes
1303120928 1303120950	200 HWDL-16	Mercury	7439-97-6	ND	.008 J	mg/Kg	0.02	NA	1.56E+01	Yes	Yes
EPA Method 9012B: Cyanides (Lab Report No. 680-88253-1)											
1303120929 1303120951	200 HWDL-16	Cyanide, Total	57-12-5	ND	ND	mg/Kg	0.51	590	4.69E+01	Yes	Yes
EPA Method 8260B: Volatile Organic Compounds (Lab Report No. 680-88253-1)											
1303120926 1303120948	200 HWDL-16	1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	ND	ND	mg/Kg	0.004	30	NA	Yes	Yes
1303120926 1303120948	200 HWDL-16	2-Butanone (MEK)	78-93-3	ND	0.0076 J	mg/Kg	0.021	36	NA	Yes	Yes
1303120926 1303120948	200 HWDL-16	Acetone	67-64-1	0.014 J	0.029 J	mg/Kg	0.041	160	NA	Yes	Yes
1303120926 1303120948	200 HWDL-16	Benzene	71-43-2	ND	0.001 J	mg/Kg	0.004	10	NA	Yes	Yes
1303120926 1303120948	200 HWDL-16	Ethylbenzene	100-41-4	ND	ND	mg/Kg	0.004	10	NA	Yes	Yes
1303120926 1303120948	200 HWDL-16	Tetrachloroethene (PCE)	127-18-4	ND	ND	mg/Kg	0.004	6	NA	Yes	Yes
1303120926 1303120948	200 HWDL-16	Toluene	108-88-3	ND	0.0012 J	mg/Kg	0.004	10	NA	Yes	Yes
1303120926 1303120948	200 HWDL-16	Trichloroethene (TCE)	79-01-6	ND	ND	mg/Kg	0.004	6	NA	Yes	Yes
1303120926 1303120948	200 HWDL-16	Trichlorofluoromethane (CFC 11)	75-69-4	ND	ND	mg/Kg	0.004	30	NA	Yes	Yes
1303120926 1303120948	200 HWDL-16	Xylenes, Total	1330-20-7	ND	ND	mg/Kg	0.008	30	NA	Yes	Yes
EPA Method 8270C: Semi-Volatile Organic Compounds (Lab Report No. 680-88253-1)											
1303120928 1303120949	200 HWDL-16	Aniline	62-53-3	ND	ND	mg/Kg	0.4	14	NA	Yes	Yes

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
1303120928 1303120949	200 HWDL-16	Di-n-butyl Phthalate	84-74-2	ND	ND	mg/Kg	0.34	28	NA	Yes	Yes
1303120928 1303120949	200 HWDL-16	Naphthalene	91-20-3	ND	ND	mg/Kg	0.34	5.6	NA	Yes	Yes
1303120928 1303120949	200 HWDL-16	Phenol	108-95-2	ND	ND	mg/Kg	0.34	6.2	NA	Yes	Yes
1303120928 1303120949	200 HWDL-16	N-Nitrosodimethylamine	62-75-9	ND	ND	mg/Kg	0.54	2.3	NA	Yes	Yes

[1]- List of analytes were compiled from ETU Closure Plan (March, 2012) Attachment 15, Tables (1-11)

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LOQ- Limit of quantitation

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(b)- Second Depth (1'-2') below HWDL/Ground Surface

(D)- Duplicate Sample (1 Field Duplicate every 10 samples) per SAP 2013-006, Section 9: *Quality Control Requirements*

ND- Constituent analyzed for but not detected.

*- RPD of the LCS and LCSD exceeds the control limits

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
Ion Chromatography Method: HYDRAZINES (Lab Report No. 280-39841-1)											
1303121037 1303121050	200 HWDL-17	1,1 Dimethylhydrazine	57-14-7	ND	ND	mg/Kg	0.005	NA	NA	Yes	Yes
1303121037 1303121050	200 HWDL-17	Hydrazine	32-01-2	ND	ND	mg/Kg	0.003	NA	NA	Yes	Yes
1303121037 1303121050	200 HWDL-17	Monomethyl Hydrazine	60-34-4	ND	ND	mg/Kg	0.008	NA	NA	Yes	Yes
EPA Method 6020A/7471B METALS & MERCURY (Lab Report No. 680-88125-1)											
1303121040 1303121053	200 HWDL-17	Arsenic	7440-38-2	8.9	3.8	mg/Kg	0.26	NA	3.90E+00	No	Yes
1303121040 1303121053	200 HWDL-17	Barium	7440-39-3	110	65	mg/Kg	0.52	NA	1.56E+04	Yes	Yes
1303121040 1303121053	200 HWDL-17	Beryllium	7440-41-7	0.56	0.49	mg/Kg	0.052	NA	1.56E+02	Yes	Yes
1303121040 1303121053	200 HWDL-17	Cadmium	7440-43-9	0.17 Q	0.11 Q	mg/Kg	0.052	NA	7.03E+01	Yes	Yes
1303121040 1303121053	200 HWDL-17	Chromium	7440-47-3	9.2	7.2 Q	mg/Kg	0.52	NA	1.17E+05	Yes	Yes
1303121040 1303121053	200 HWDL-17	Copper	7440-50-8	7.7	5.4	mg/Kg	0.52	NA	3.13E+03	Yes	Yes
1303121040 1303121053	200 HWDL-17	Lead	7439-92-1	9.1	11	mg/Kg	0.21	NA	4.00E+02	Yes	Yes
1303121040 1303121053	200 HWDL-17	Nickel	7440-02-0	9.1	7.1	mg/Kg	0.52	NA	1.56E+03	Yes	Yes
1303121040 1303121053	200 HWDL-17	Selenium	7782-49-2	0.25 J	ND	mg/Kg	0.52	NA	3.91E+02	Yes	Yes
1303121040 1303121053	200 HWDL-17	Silver	7440-22-4	ND	ND	mg/Kg	0.1	NA	3.91E+02	Yes	Yes
1303121040 1303121053	200 HWDL-17	Thallium	7440-28-0	0.098 J	0.074 J	mg/Kg	0.1	NA	NA	Yes	Yes
1303121040 1303121053	200 HWDL-17	Vanadium	7440-62-2	23	18	mg/Kg	0.52	NA	3.91E+02	Yes	Yes

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
1303121040 1303121053	200 HWDL-17	Zinc	7440-66-6	36	29	mg/Kg	2.1	NA	2.35E+04	Yes	Yes
1303121040 1303121053	200 HWDL-17	Mercury	7439-97-6	ND	ND	mg/Kg	0.022	NA	1.56E+01	Yes	Yes
EPA Method 9012B: Cyanides (Lab Report No. 680-88125-1)											
1303121041 1303121054	200 HWDL-17	Cyanide, Total	57-12-5	ND	ND	mg/Kg	0.5	590	4.69E+01	Yes	Yes
EPA Method 8260B: Volatile Organic Compounds (Lab Report No. 680-39674-1)											
1303121038 1303121051	200 HWDL-17	1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	ND	ND	mg/Kg	0.004	30	NA	Yes	Yes
1303121038 1303121051	200 HWDL-17	2-Butanone (MEK)	78-93-3	ND	ND	mg/Kg	0.02	36	NA	Yes	Yes
1303121038 1303121051	200 HWDL-17	Acetone	67-64-1	0.018 J	0.021 J	mg/Kg	0.04	160	NA	Yes	Yes
1303121038 1303121051	200 HWDL-17	Benzene	71-43-2	0.001 J	0.0016 J	mg/Kg	0.004	10	NA	Yes	Yes
1303121038 1303121051	200 HWDL-17	Ethylbenzene	100-41-4	ND	ND	mg/Kg	0.004	10	NA	Yes	Yes
1303121038 1303121051	200 HWDL-17	Tetrachloroethene (PCE)	127-18-4	ND	ND	mg/Kg	0.004	6	NA	Yes	Yes
1303121038 1303121051	200 HWDL-17	Toluene	108-88-3	0.0011 J	0.0015	mg/Kg	0.004	10	NA	Yes	Yes
1303121038 1303121051	200 HWDL-17	Trichloroethene (TCE)	79-01-6	ND	ND	mg/Kg	0.004	6	NA	Yes	Yes
1303121038 1303121051	200 HWDL-17	Trichlorofluoromethane (CFC 11)	75-69-4	ND	ND	mg/Kg	0.004	30	NA	Yes	Yes
1303121038 1303121051	200 HWDL-17	Xylenes, Total	1330-20-7	ND	ND	mg/Kg	0.008	30	NA	Yes	Yes
EPA Method 8270C: Semi-Volatile Organic Compounds (Lab Report No. 680-88125-1)											
1303121039 1303121052	200 HWDL-17	Aniline	62-53-3	ND	ND	mg/Kg	0.41	14	NA	Yes	Yes

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
1303121039 1303121052	200 HWDL-17	Di-n-butyl Phthalate	84-74-2	ND	ND	mg/Kg	0.35	28	NA	Yes	Yes
1303121039 1303121052	200 HWDL-17	Naphthalene	91-20-3	ND	ND	mg/Kg	0.35	5.6	NA	Yes	Yes
1303121039 1303121052	200 HWDL-17	Phenol	108-95-2	ND	ND	mg/Kg	0.35	6.2	NA	Yes	Yes
1303121039 1303121052	200 HWDL-17	N-Nitrosodimethylamine	62-75-9	ND	ND	mg/Kg	0.55	2.3	NA	Yes	Yes

[1]- List of analytes were compiled from ETU Closure Plan (March, 2012) Attachment 15, Tables (1-11)

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[3]- Values for Residential Soil Screening Levels (SSL) retrieved from NMED SSL (June 2012).

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B- Compound was found in the blank and sample

J- Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

H- Sample was prepped or analyzed beyond the specified holding time.

MDL- Method Detection Limit

LOQ- Limit of quantitation

(a)- First Depth (0-6') below HWDL/Ground Surface

(b)- Second Depth (1'-2') below HWDL/Ground Surface

(D)- Duplicate Sample (1 Field Duplicate every 10 samples) per SAP 2013-006, Section 9: *Quality Control Requirements*

ND- Constituent analyzed for but not detected.

*- RPD of the LCS and LCSD exceeds the control limits

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
Ion Chromatography Method: HYDRAZINES (Lab Report No. 280-39901-1)											
1303130850 1303130925	200 HWDL-18	1,1 Dimethylhydrazine	57-14-7	ND	ND	mg/Kg	0.005	NA	NA	Yes	Yes
1303130850 1303130925	200 HWDL-18	Hydrazine	32-01-2	ND	0.0053 J	mg/Kg	0.003	NA	NA	Yes	Yes
1303130850 1303130925	200 HWDL-18	Monomethyl Hydrazine	60-34-4	ND	ND	mg/Kg	0.007	NA	NA	Yes	Yes
EPA Method 6020A/7471B METALS & MERCURY (Lab Report No. 680-88296-1)											
1303130853 1303130928	200 HWDL-18	Arsenic	7440-38-2	3	3	mg/Kg	0.24	NA	3.90E+00	Yes	Yes
1303130853 1303130928	200 HWDL-18	Barium	7440-39-3	61	70	mg/Kg	0.48	NA	1.56E+04	Yes	Yes
1303130853 1303130928	200 HWDL-18	Beryllium	7440-41-7	0.86	0.41	mg/Kg	0.048	NA	1.56E+02	Yes	Yes
1303130853 1303130928	200 HWDL-18	Cadmium	7440-43-9	0.25 Q	0.093 Q	mg/Kg	0.048	NA	7.03E+01	Yes	Yes
1303130853 1303130928	200 HWDL-18	Chromium	7440-47-3	9.7 Q	5.7 Q	mg/Kg	0.48	NA	1.17E+05	Yes	Yes
1303130853 1303130928	200 HWDL-18	Copper	7440-50-8	4.6	4	mg/Kg	0.48	NA	3.13E+03	Yes	Yes
1303130853 1303130928	200 HWDL-18	Lead	7439-92-1	6.2	6.9	mg/Kg	0.19	NA	4.00E+02	Yes	Yes
1303130853 1303130928	200 HWDL-18	Nickel	7440-02-0	8.8	6.4	mg/Kg	0.48	NA	1.56E+03	Yes	Yes
1303130853 1303130928	200 HWDL-18	Selenium	7782-49-2	ND	ND	mg/Kg	0.48	NA	3.91E+02	Yes	Yes
1303130853 1303130928	200 HWDL-18	Silver	7440-22-4	ND	ND	mg/Kg	0.096	NA	3.91E+02	Yes	Yes
1303130853 1303130928	200 HWDL-18	Thallium	7440-28-0	0.04 J	0.035 J	mg/Kg	0.096	NA	NA	Yes	Yes
1303130853 1303130928	200 HWDL-18	Vanadium	7440-62-2	15	16	mg/Kg	0.48	NA	3.91E+02	Yes	Yes

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
1303130853 1303130928	200 HWDL-18	Zinc	7440-66-6	29	23	mg/Kg	1.9	NA	2.35E+04	Yes	Yes
1303130853 1303130928	200 HWDL-18	Mercury	7439-97-6	ND	ND	mg/Kg	0.018	NA	1.56E+01	Yes	Yes
EPA Method 9012B: Cyanides (Lab Report No. 680-88296-1)											
1303130854 1303130929	200 HWDL-18	Cyanide, Total	57-12-5	0.33 J	ND	mg/Kg	0.52	590	4.69E+01	Yes	Yes
EPA Method 8260B: Volatile Organic Compounds (Lab Report No. 680-88296-1)											
1303130851 1303130926	200 HWDL-18	1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	ND	ND	mg/Kg	0.004	30	NA	Yes	Yes
1303130851 1303130926	200 HWDL-18	2-Butanone (MEK)	78-93-3	ND	ND	mg/Kg	0.021	36	NA	Yes	Yes
1303130851 1303130926	200 HWDL-18	Acetone	67-64-1	ND	ND	mg/Kg	0.042	160	NA	Yes	Yes
1303130851 1303130926	200 HWDL-18	Benzene	71-43-2	ND	ND	mg/Kg	0.004	10	NA	Yes	Yes
1303130851 1303130926	200 HWDL-18	Ethylbenzene	100-41-4	ND	ND	mg/Kg	0.004	10	NA	Yes	Yes
1303130851 1303130926	200 HWDL-18	Tetrachloroethene (PCE)	127-18-4	ND	ND	mg/Kg	0.004	6	NA	Yes	Yes
1303130851 1303130926	200 HWDL-18	Toluene	108-88-3	ND	ND	mg/Kg	0.004	10	NA	Yes	Yes
1303130851 1303130926	200 HWDL-18	Trichloroethene (TCE)	79-01-6	ND	ND	mg/Kg	0.004	6	NA	Yes	Yes
1303130851 1303130926	200 HWDL-18	Trichlorofluoromethane (CFC 11)	75-69-4	ND	ND	mg/Kg	0.004	30	NA	Yes	Yes
1303130851 1303130926	200 HWDL-18	Xylenes, Total	1330-20-7	ND	ND	mg/Kg	0.009	30	NA	Yes	Yes
EPA Method 8270C: Semi-Volatile Organic Compounds (Lab Report No. 680-88296-1)											
1303130852 1303130927	200 HWDL-18	Aniline	62-53-3	ND	ND	mg/Kg	0.39	14	NA	Yes	Yes

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
1303130852 1303130927	200 HWDL-18	Di-n-butyl Phthalate	84-74-2	ND	ND	mg/Kg	0.33	28	NA	Yes	Yes
1303130852 1303130927	200 HWDL-18	Naphthalene	91-20-3	ND	ND	mg/Kg	0.33	5.6	NA	Yes	Yes
1303130852 1303130927	200 HWDL-18	Phenol	108-95-2	ND	ND	mg/Kg	0.33	6.2	NA	Yes	Yes
1303130852 1303130927	200 HWDL-18	N-Nitrosodimethylamine	62-75-9	ND	ND	mg/Kg	0.52	2.3	NA	Yes	Yes

[1]- List of analytes were compiled from ETU Closure Plan (March, 2012) Attachment 15, Tables (1-11)

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MDL- Method Detection Limit

LOQ- Limit of quantitation

(a)- First Depth (0-6') below HWDL/Ground Surface

(b)- Second Depth (1'-2') below HWDL/Ground Surface

(D)- Duplicate Sample (1 Field Duplicate every 10 samples) per SAP 2013-006, Section 9: *Quality Control Requirements*

ND- Constituent analyzed for but not detected.

*- RPD of the LCS and LCSD exceeds the control limits

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
Ion Chromatography Method: HYDRAZINES (Lab Report No. 280-39901-1)											
1303131010 1303131033	200 HWDL-19	1,1 Dimethylhydrazine	57-14-7	ND	ND	mg/Kg	0.005	NA	NA	Yes	Yes
1303131010 1303131033	200 HWDL-19	Hydrazine	32-01-2	ND	ND	mg/Kg	0.003	NA	NA	Yes	Yes
1303131010 1303131033	200 HWDL-19	Monomethyl Hydrazine	60-34-4	ND	ND	mg/Kg	0.007	NA	NA	Yes	Yes
EPA Method 6020A/7471B METALS & MERCURY (Lab Report No. 680-88296-1)											
1303131013 1303131036	200 HWDL-19	Arsenic	7440-38-2	4.4	2.2	mg/Kg	0.21	NA	3.90E+00	No	Yes
1303131013 1303131036	200 HWDL-19	Barium	7440-39-3	150	140	mg/Kg	0.43	NA	1.56E+04	Yes	Yes
1303131013 1303131036	200 HWDL-19	Beryllium	7440-41-7	0.35	0.33	mg/Kg	0.043	NA	1.56E+02	Yes	Yes
1303131013 1303131036	200 HWDL-19	Cadmium	7440-43-9	0.034 Q J	0.042 Q	mg/Kg	0.043	NA	7.03E+01	Yes	Yes
1303131013 1303131036	200 HWDL-19	Chromium	7440-47-3	3.4 Q	5.5 Q	mg/Kg	0.43	NA	1.17E+05	Yes	Yes
1303131013 1303131036	200 HWDL-19	Copper	7440-50-8	4.9	3.7	mg/Kg	0.43	NA	3.13E+03	Yes	Yes
1303131013 1303131036	200 HWDL-19	Lead	7439-92-1	4	4	mg/Kg	0.17	NA	4.00E+02	Yes	Yes
1303131013 1303131036	200 HWDL-19	Nickel	7440-02-0	11	6.6	mg/Kg	0.43	NA	1.56E+03	Yes	Yes
1303131013 1303131036	200 HWDL-19	Selenium	7782-49-2	ND	ND	mg/Kg	0.43	NA	3.91E+02	Yes	Yes
1303131013 1303131036	200 HWDL-19	Silver	7440-22-4	ND	ND	mg/Kg	0.086	NA	3.91E+02	Yes	Yes
1303131013 1303131036	200 HWDL-19	Thallium	7440-28-0	0.044 J	0.053 J	mg/Kg	0.086	NA	NA	Yes	Yes
1303131013 1303131036	200 HWDL-19	Vanadium	7440-62-2	20	14	mg/Kg	0.43	NA	3.91E+02	Yes	Yes

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
1303131013 1303131036	200 HWDL-19	Zinc	7440-66-6	24	19	mg/Kg	1.7	NA	2.35E+04	Yes	Yes
1303131013 1303131036	200 HWDL-19	Mercury	7439-97-6	ND	ND	mg/Kg	0.02	NA	1.56E+01	Yes	Yes
EPA Method 9012B: Cyanides (Lab Report No. 680-88296-1)											
1303131014 1303131037	200 HWDL-19	Cyanide, Total	57-12-5	ND	ND	mg/Kg	0.5	590	4.69E+01	Yes	Yes
EPA Method 8260B: Volatile Organic Compounds (Lab Report No. 680-88296-1)											
1303131011 1303131034	200 HWDL-19	1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	ND	ND	mg/Kg	0.005	30	NA	Yes	Yes
1303131011 1303131034	200 HWDL-19	2-Butanone (MEK)	78-93-3	0.0035 J	1.0028	mg/Kg	0.024	36	NA	Yes	Yes
1303131011 1303131034	200 HWDL-19	Acetone	67-64-1	0.018 J	0.015 J	mg/Kg	0.047	160	NA	Yes	Yes
1303131011 1303131034	200 HWDL-19	Benzene	71-43-2	ND	ND	mg/Kg	0.005	10	NA	Yes	Yes
1303131011 1303131034	200 HWDL-19	Ethylbenzene	100-41-4	ND	ND	mg/Kg	0.005	10	NA	Yes	Yes
1303131011 1303131034	200 HWDL-19	Tetrachloroethene (PCE)	127-18-4	ND	ND	mg/Kg	0.005	6	NA	Yes	Yes
1303131011 1303131034	200 HWDL-19	Toluene	108-88-3	ND	ND	mg/Kg	0.005	10	NA	Yes	Yes
1303131011 1303131034	200 HWDL-19	Trichloroethene (TCE)	79-01-6	ND	ND	mg/Kg	0.005	6	NA	Yes	Yes
1303131011 1303131034	200 HWDL-19	Trichlorofluoromethane (CFC 11)	75-69-4	ND	ND	mg/Kg	0.005	30	NA	Yes	Yes
1303131011 1303131034	200 HWDL-19	Xylenes, Total	1330-20-7	ND	ND	mg/Kg	0.009	30	NA	Yes	Yes
EPA Method 8270C: Semi-Volatile Organic Compounds (Lab Report No. 680-88296-1)											
1303131012 1303131035	200 HWDL-19	Aniline	62-53-3	ND	ND	mg/Kg	0.4	14	NA	Yes	Yes

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
1303131012 1303131035	200 HWDL-19	Di-n-butyl Phthalate	84-74-2	ND	ND	mg/Kg	0.34	28	NA	Yes	Yes
1303131012 1303131035	200 HWDL-19	Naphthalene	91-20-3	ND	ND	mg/Kg	0.34	5.6	NA	Yes	Yes
1303131012 1303131035	200 HWDL-19	Phenol	108-95-2	ND	ND	mg/Kg	0.34	6.2	NA	Yes	Yes
1303131012 1303131035	200 HWDL-19	N-Nitrosodimethylamine	62-75-9	ND	ND	mg/Kg	0.53	2.3	NA	Yes	Yes

[1]- List of analytes were compiled from ETU Closure Plan (March, 2012) Attachment 15, Tables (1-11)

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LOQ- Limit of quantitation

(a)- First Depth (0-6') below HWDL/Ground Surface

(b)- Second Depth (1'-2') below HWDL/Ground Surface

(D)- Duplicate Sample (1 Field Duplicate every 10 samples) per SAP 2013-006, Section 9: *Quality Control Requirements*

ND- Constituent analyzed for but not detected.

*- RPD of the LCS and LCSD exceeds the control limits

Sample ID (a) (b) (D)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Results/ Qualifier (D)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No	Criteria Met (D) Yes/No
Ion Chromatography Method: HYDRAZINES (Lab Report No. 280-39622-1)													
1303140822 1303140827 1303140854	200 HWDL-20	1,1 Dimethylhydrazine	57-14-7	ND	ND	ND	mg/Kg	0.005	NA	NA	Yes	Yes	Yes
1303140822 1303140827 1303140854	200 HWDL-20	Hydrazine	32-01-2	ND	ND	0.0037 J	mg/Kg	0.003	NA	NA	Yes	Yes	Yes
1303140822 1303140827 1303140854	200 HWDL-20	Monomethyl Hydrazine	60-34-4	ND	ND	ND	mg/Kg	0.008	NA	NA	Yes	Yes	Yes
EPA Method 6020A/7471B METALS & MERCURY (Lab Report No. 680-88358-1)													
1303140825 1303140830 1303140857	200 HWDL-20	Arsenic	7440-38-2	4.6 J	8.6	7.6	mg/Kg	0.24	NA	3.90E+00	Yes	No	No
1303140825 1303140830 1303140857	200 HWDL-20	Barium	7440-39-3	60.0	140	120	mg/Kg	0.48	NA	1.56E+04	Yes	Yes	Yes
1303140825 1303140830 1303140857	200 HWDL-20	Beryllium	7440-41-7	0.34	0.72	0.55	mg/Kg	0.048	NA	1.56E+02	Yes	Yes	Yes
1303140825 1303140830 1303140857	200 HWDL-20	Cadmium	7440-43-9	0.019 Q	0.25 Q	0.35	mg/Kg	0.048	NA	7.03E+01	Yes	Yes	Yes
1303140825 1303140830 1303140857	200 HWDL-20	Chromium	7440-47-3	6.3 Q J	12 Q	10 Q	mg/Kg	0.48	NA	1.17E+05	Yes	Yes	Yes
1303140825 1303140830 1303140857	200 HWDL-20	Copper	7440-50-8	6.3 J	10	12	mg/Kg	0.48	NA	3.13E+03	Yes	Yes	Yes
1303140825 1303140830 1303140857	200 HWDL-20	Lead	7439-92-1	12 J	13	17	mg/Kg	0.19	NA	4.00E+02	Yes	Yes	Yes

Sample ID (a) (b) (D)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Results/ Qualifier (D)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No	Criteria Met (D) Yes/No
1303140825 1303140830 1303140857	200 HWDL-20	Nickel	7440-02-0	5.9 J	13	12	mg/Kg	0.48	NA	1.56E+03	Yes	Yes	Yes
1303140825 1303140830 1303140857	200 HWDL-20	Selenium	7782-49-2	ND	0.27 J	0.25 J	mg/Kg	0.48	NA	3.91E+02	Yes	Yes	Yes
1303140825 1303140830 1303140857	200 HWDL-20	Silver	7440-22-4	ND	ND	ND	mg/Kg	0.096	NA	3.91E+02	Yes	Yes	Yes
1303140825 1303140830 1303140857	200 HWDL-20	Thallium	7440-28-0	0.79 J	0.15	0.12	mg/Kg	0.096	NA	NA	Yes	Yes	Yes
1303140825 1303140830 1303140857	200 HWDL-20	Vanadium	7440-62-2	13 J	24	20	mg/Kg	0.48	NA	3.91E+02	Yes	Yes	Yes
1303140825 1303140830 1303140857	200 HWDL-20	Zinc	7440-66-6	38 J	64	68	mg/Kg	1.9	NA	2.35E+04	Yes	Yes	Yes
1303140825 1303140830 1303140857	200 HWDL-20	Mercury	7439-97-6	0.3 J	0.044	0.31	mg/Kg	0.018	NA	1.56E+01	Yes	Yes	Yes
EPA Method 9012B: Cyanides (Lab Report No. 680-88358-1)													
1303140826 1303140831 1303140858	200 HWDL-20	Cyanide, Total	57-12-5	ND	ND	ND	mg/Kg	0.5	590	4.69E+01	Yes	Yes	Yes
EPA Method 8260B: Volatile Organic Compounds (Lab Report No. 680-88358-1)													
1303140823 1303140828 1303140855	200 HWDL-20	1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	ND	ND	ND	mg/Kg	0.004	30	NA	Yes	Yes	Yes
1303140823 1303140828 1303140855	200 HWDL-20	2-Butanone (MEK)	78-93-3	0.0079 J	0.009 J	0.012 J	mg/Kg	0.021	36	NA	Yes	Yes	Yes

Sample ID (a) (b) (D)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Results/ Qualifier (D)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No	Criteria Met (D) Yes/No
1303140823 1303140828 1303140855	200 HWDL-20	Acetone	67-64-1	0.032 J	0.035 J	0.046 J	mg/Kg	0.042	160	NA	Yes	Yes	Yes
1303140823 1303140828 1303140855	200 HWDL-20	Benzene	71-43-2	0.0012 J	0.0013 J	0.0015 J	mg/Kg	0.004	10	NA	Yes	Yes	Yes
1303140823 1303140828 1303140855	200 HWDL-20	Ethylbenzene	100-41-4	ND	ND	ND	mg/Kg	0.004	10	NA	Yes	Yes	Yes
1303140823 1303140828 1303140855	200 HWDL-20	Tetrachloroethene (PCE)	127-18-4	ND	ND	ND	mg/Kg	0.004	6	NA	Yes	Yes	Yes
1303140823 1303140828 1303140855	200 HWDL-20	Toluene	108-88-3	0.0013 J	0.0015 J	0.0018 J	mg/Kg	0.004	10	NA	Yes	Yes	Yes
1303140823 1303140828 1303140855	200 HWDL-20	Trichloroethene (TCE)	79-01-6	ND	ND	ND	mg/Kg	0.004	6	NA	Yes	Yes	Yes
1303140823 1303140828 1303140855	200 HWDL-20	Trichlorofluoromethane (CFC 11)	75-69-4	ND	ND	ND	mg/Kg	0.004	30	NA	Yes	Yes	Yes
1303140823 1303140828 1303140855	200 HWDL-20	Xylenes, Total	1330-20-7	ND	ND	ND	mg/Kg	0.008	30	NA	Yes	Yes	Yes
EPA Method 8270C: Semi-Volatile Organic Compounds (Lab Report No. 680-88358-1)													
1303140824 1303140829 1303140856	200 HWDL-20	Aniline	62-53-3	ND	ND	ND	mg/Kg	0.4	14	NA	Yes	Yes	Yes
1303140824 1303140829 1303140856	200 HWDL-20	Di-n-butyl Phthalate	84-74-2	ND	ND	ND	mg/Kg	0.34	28	NA	Yes	Yes	Yes

Sample ID (a) (b) (D)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Results/ Qualifier (D)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No	Criteria Met (D) Yes/No
1303140824 1303140829 1303140856	200 HWDL-20	Naphthalene	91-20-3	ND	ND	ND	mg/Kg	0.34	5.6	NA	Yes	Yes	Yes
1303140824 1303140829 1303140856	200 HWDL-20	Phenol	108-95-2	ND	ND	ND	mg/Kg	0.34	6.2	NA	Yes	Yes	Yes
1303140824 1303140829 1303140856	200 HWDL-20	N-Nitrosodimethylamine	62-75-9	ND	ND	ND	mg/Kg	0.53	2.3	NA	Yes	Yes	Yes

[1]- List of analytes were compiled from ETU Closure Plan (March, 2012) Attachment 15, Tables (1-11)

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B- Compound was found in the blank and sample

J- Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

H- Sample was prepped or analyzed beyond the specified holding time.

MDL- Method Detection Limit

LOQ- Limit of quantitation

(a)- First Depth (0-6') below HWDL/Ground Surface

(b)- Second Depth (1'-2') below HWDL/Ground Surface

(D)- Duplicate Sample (1 Field Duplicate every 10 samples) per SAP 2013-006, Section 9: *Quality Control Requirements*

ND- Constituent analyzed for but not detected.

*- RPD of the LCS and LCSD exceeds the control limits

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
Ion Chromatography Method: HYDRAZINES (Lab Report No. 280-39674-1)											
1303140940 1303141005	200 HWDL-21	1,1 Dimethylhydrazine	57-14-7	ND	ND	mg/Kg	0.005	NA	NA	Yes	Yes
1303140940 1303141005	200 HWDL-21	Hydrazine	32-01-2	ND	0.0039 J	mg/Kg	0.003	NA	NA	Yes	Yes
1303140940 1303141005	200 HWDL-21	Monomethyl Hydrazine	60-34-4	ND	ND	mg/Kg	0.007	NA	NA	Yes	Yes
EPA Method 6020A/7471B METALS & MERCURY (Lab Report No. 680-88358-1)											
1303140943 1303141008	200 HWDL-21	Arsenic	7440-38-2	5.7	8.4	mg/Kg	0.23	NA	3.90E+00	No	No
1303140943 1303141008	200 HWDL-21	Barium	7440-39-3	94	130	mg/Kg	0.45	NA	1.56E+04	Yes	Yes
1303140943 1303141008	200 HWDL-21	Beryllium	7440-41-7	0.43	0.63	mg/Kg	0.045	NA	1.56E+02	Yes	Yes
1303140943 1303141008	200 HWDL-21	Cadmium	7440-43-9	0.16 Q	0.24 Q	mg/Kg	0.045	NA	7.03E+01	Yes	Yes
1303140943 1303141008	200 HWDL-21	Chromium	7440-47-3	7.4 Q	12 Q	mg/Kg	0.45	NA	1.17E+05	Yes	Yes
1303140943 1303141008	200 HWDL-21	Copper	7440-50-8	8	9.3	mg/Kg	0.45	NA	3.13E+03	Yes	Yes
1303140943 1303141008	200 HWDL-21	Lead	7439-92-1	9.2	10	mg/Kg	0.18	NA	4.00E+02	Yes	Yes
1303140943 1303141008	200 HWDL-21	Nickel	7440-02-0	8	12	mg/Kg	0.45	NA	1.56E+03	Yes	Yes
1303140943 1303141008	200 HWDL-21	Selenium	7782-49-2	ND	0.26 J	mg/Kg	0.45	NA	3.91E+02	Yes	Yes
1303140943 1303141008	200 HWDL-21	Silver	7440-22-4	ND	ND	mg/Kg	0.091	NA	3.91E+02	Yes	Yes
1303140943 1303141008	200 HWDL-21	Thallium	7440-28-0	0.087 J	0.12	mg/Kg	0.091	NA	NA	Yes	Yes
1303140943 1303141008	200 HWDL-21	Vanadium	7440-62-2	18	30	mg/Kg	0.45	NA	3.91E+02	Yes	Yes

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
1303140943 1303141008	200 HWDL-21	Zinc	7440-66-6	42	42	mg/Kg	1.8	NA	2.35E+04	Yes	Yes
1303140943 1303141008	200 HWDL-21	Mercury	7439-97-6	ND	ND	mg/Kg	0.018	NA	1.56E+01	Yes	Yes
EPA Method 9012B: Cyanides (Lab Report No. 680-88358-1)											
1303140944 1303141009	200 HWDL-21	Cyanide, Total	57-12-5	ND	ND	mg/Kg	0.5	590	4.69E+01	Yes	Yes
EPA Method 8260B: Volatile Organic Compounds (Lab Report No. 680-88358-1)											
1303140941 1303141006	200 HWDL-21	1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	ND	ND	mg/Kg	0.005	30	NA	Yes	Yes
1303140941 1303141006	200 HWDL-21	2-Butanone (MEK)	78-93-3	0.0092 J	0.0069 J	mg/Kg	0.027	36	NA	Yes	Yes
1303140941 1303141006	200 HWDL-21	Acetone	67-64-1	0.042 J	0.03 J	mg/Kg	0.053	160	NA	Yes	Yes
1303140941 1303141006	200 HWDL-21	Benzene	71-43-2	0.0011 J	0.001 J	mg/Kg	0.005	10	NA	Yes	Yes
1303140941 1303141006	200 HWDL-21	Ethylbenzene	100-41-4	ND	ND	mg/Kg	0.005	10	NA	Yes	Yes
1303140941 1303141006	200 HWDL-21	Tetrachloroethene (PCE)	127-18-4	ND	ND	mg/Kg	0.005	6	NA	Yes	Yes
1303140941 1303141006	200 HWDL-21	Toluene	108-88-3	0.0014 J	0.0012 J	mg/Kg	0.005	10	NA	Yes	Yes
1303140941 1303141006	200 HWDL-21	Trichloroethene (TCE)	79-01-6	ND	ND	mg/Kg	0.005	6	NA	Yes	Yes
1303140941 1303141006	200 HWDL-21	Trichlorofluoromethane (CFC 11)	75-69-4	ND	ND	mg/Kg	0.005	30	NA	Yes	Yes
1303140941 1303141006	200 HWDL-21	Xylenes, Total	1330-20-7	ND	ND	mg/Kg	0.011	30	NA	Yes	Yes
EPA Method 8270C: Semi-Volatile Organic Compounds (Lab Report No. 680-88358-1)											
1303140942 1303141007	200 HWDL-21	Aniline	62-53-3	ND	ND	mg/Kg	0.37	14	NA	Yes	Yes

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
1303140942 1303141007	200 HWDL-21	Di-n-butyl Phthalate	84-74-2	ND	ND	mg/Kg	0.32	28	NA	Yes	Yes
1303140942 1303141007	200 HWDL-21	Naphthalene	91-20-3	ND	ND	mg/Kg	0.32	5.6	NA	Yes	Yes
1303140942 1303141007	200 HWDL-21	Phenol	108-95-2	ND	ND	mg/Kg	0.32	6.2	NA	Yes	Yes
1303140942 1303141007	200 HWDL-21	N-Nitrosodimethylamine	62-75-9	ND	ND	mg/Kg	0.5	2.3	NA	Yes	Yes

[1]- List of analytes were compiled from ETU Closure Plan (March, 2012) Attachment 15, Tables (1-11)

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MDL- Method Detection Limit

LOQ- Limit of quantitation

(a)- First Depth (0-6') below HWDL/Ground Surface

(b)- Second Depth (1'-2') below HWDL/Ground Surface

(D)- Duplicate Sample (1 Field Duplicate every 10 samples) per SAP 2013-006, Section 9: *Quality Control Requirements*

ND- Constituent analyzed for but not detected.

*- RPD of the LCS and LCSD exceeds the control limits

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
Ion Chromatography Method: HYDRAZINES (Lab Report No. 280-40028-1)											
1303181128 1303181107	200 ETU-01	1,1 Dimethylhydrazine	57-14-7	ND	ND	mg/Kg	0.005	NA	NA	Yes	Yes
1303181128 1303181107	200 ETU-01	Hydrazine	32-01-2	ND	ND	mg/Kg	0.003	NA	NA	Yes	Yes
1303181128 1303181107	200 ETU-01	Monomethyl Hydrazine	60-34-4	ND	ND	mg/Kg	0.008	NA	NA	Yes	Yes
EPA Method 6020A/7471B METALS & MERCURY (Lab Report No. 680-88451-1)											
1303181110 1303181131	200 ETU-01	Arsenic	7440-38-2	2.9	3	mg/Kg	0.25	NA	3.90E+00	Yes	Yes
1303181110 1303181131	200 ETU-01	Barium	7440-39-3	75	79	mg/Kg	0.5	NA	1.56E+04	Yes	Yes
1303181110 1303181131	200 ETU-01	Beryllium	7440-41-7	0.62	0.64	mg/Kg	0.05	NA	1.56E+02	Yes	Yes
1303181110 1303181131	200 ETU-01	Cadmium	7440-43-9	0.04 Q	0.1 Q	mg/Kg	0.05	NA	7.03E+01	Yes	Yes
1303181110 1303181131	200 ETU-01	Chromium	7440-47-3	6.3 Q	14 Q	mg/Kg	0.5	NA	1.17E+05	Yes	Yes
1303181110 1303181131	200 ETU-01	Copper	7440-50-8	4.5	6.3	mg/Kg	0.5	NA	3.13E+03	Yes	Yes
1303181110 1303181131	200 ETU-01	Lead	7439-92-1	9	9.5	mg/Kg	0.2	NA	4.00E+02	Yes	Yes
1303181110 1303181131	200 ETU-01	Nickel	7440-02-0	4.9	5.5	mg/Kg	0.5	NA	1.56E+03	Yes	Yes
1303181110 1303181131	200 ETU-01	Selenium	7782-49-2	ND	ND	mg/Kg	0.5	NA	3.91E+02	Yes	Yes
1303181110 1303181131	200 ETU-01	Silver	7440-22-4	ND	ND	mg/Kg	0.1	NA	3.91E+02	Yes	Yes
1303181110 1303181131	200 ETU-01	Thallium	7440-28-0	0.08 J	0.06 J	mg/Kg	0.1	NA	NA	Yes	Yes
1303181110 1303181131	200 ETU-01	Vanadium	7440-62-2	13	14	mg/Kg	0.5	NA	3.91E+02	Yes	Yes

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
1303181110 1303181131	200 ETU-01	Zinc	7440-66-6	27	27	mg/Kg	2	NA	2.35E+04	Yes	Yes
1303181110 1303181131	200 ETU-01	Mercury	7439-97-6	.014 J	ND	mg/Kg	0.02	NA	1.56E+01	Yes	Yes
EPA Method 9012B: Cyanides (Lab Report No. 680-88451-1)											
1303181111 1303181132	200 ETU-01	Cyanide, Total	57-12-5	ND	ND	mg/Kg	0.52	590	4.69E+01	Yes	Yes
EPA Method 8260B: Volatile Organic Compounds (Lab Report No. 680-88451-1)											
1303181108 1303181129	200 ETU-01	1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	ND	ND	mg/Kg	0.004	30	NA	Yes	Yes
1303181108 1303181129	200 ETU-01	2-Butanone (MEK)	78-93-3	0.0061 J	ND	mg/Kg	0.022	36	NA	Yes	Yes
1303181108 1303181129	200 ETU-01	Acetone	67-64-1	0.021 J	0.011 J	mg/Kg	0.044	160	NA	Yes	Yes
1303181108 1303181129	200 ETU-01	Benzene	71-43-2	ND	ND	mg/Kg	0.004	10	NA	Yes	Yes
1303181108 1303181129	200 ETU-01	Ethylbenzene	100-41-4	ND	ND	mg/Kg	0.004	10	NA	Yes	Yes
1303181108 1303181129	200 ETU-01	Tetrachloroethene (PCE)	127-18-4	ND	ND	mg/Kg	0.004	6	NA	Yes	Yes
1303181108 1303181129	200 ETU-01	Toluene	108-88-3	ND	ND	mg/Kg	0.004	10	NA	Yes	Yes
1303181108 1303181129	200 ETU-01	Trichloroethene (TCE)	79-01-6	ND	ND	mg/Kg	0.004	6	NA	Yes	Yes
1303181108 1303181129	200 ETU-01	Trichlorofluoromethane (CFC 11)	75-69-4	ND	ND	mg/Kg	0.004	30	NA	Yes	Yes
1303181108 1303181129	200 ETU-01	Xylenes, Total	1330-20-7	ND	ND	mg/Kg	0.009	30	NA	Yes	Yes
EPA Method 8270C: Semi-Volatile Organic Compounds (Lab Report No. 680-88451-1)											
1303181109 1303181130	200 ETU-01	Aniline	62-53-3	ND	ND	mg/Kg	0.39	14	NA	Yes	Yes

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
1303181109 1303181130	200 ETU-01	Di-n-butyl Phthalate	84-74-2	ND	ND	mg/Kg	0.33	28	NA	Yes	Yes
1303181109 1303181130	200 ETU-01	Naphthalene	91-20-3	ND	ND	mg/Kg	0.33	5.6	NA	Yes	Yes
1303181109 1303181130	200 ETU-01	Phenol	108-95-2	ND	ND	mg/Kg	0.33	6.2	NA	Yes	Yes
1303181109 1303181130	200 ETU-01	N-Nitrosodimethylamine	62-75-9	ND	ND	mg/Kg	0.52	2.3	NA	Yes	Yes

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*- RPD of the LCS and LCSD exceeds the control limits

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
Ion Chromatography Method: HYDRAZINES (Lab Report No. 280-40029-1)											
1303181318 1303181333	200 ETU-02	1,1 Dimethylhydrazine	57-14-7	ND	ND	mg/Kg	0.005	NA	NA	Yes	Yes
1303181318 1303181333	200 ETU-02	Hydrazine	32-01-2	ND	ND	mg/Kg	0.003	NA	NA	Yes	Yes
1303181318 1303181333	200 ETU-02	Monomethyl Hydrazine	60-34-4	ND	ND	mg/Kg	0.007	NA	NA	Yes	Yes
EPA Method 6020A/7471B METALS & MERCURY (Lab Report No. 680-88488-1)											
1303181321 1303181336	200 ETU-02	Arsenic	7440-38-2	3.3	5.6	mg/Kg	0.24	NA	3.90E+00	Yes	No
1303181321 1303181336	200 ETU-02	Barium	7440-39-3	65	150	mg/Kg	0.48	NA	1.56E+04	Yes	Yes
1303181321 1303181336	200 ETU-02	Beryllium	7440-41-7	0.67	0.78	mg/Kg	0.048	NA	1.56E+02	Yes	Yes
1303181321 1303181336	200 ETU-02	Cadmium	7440-43-9	0.088	0.16	mg/Kg	0.048	NA	7.03E+01	Yes	Yes
1303181321 1303181336	200 ETU-02	Chromium	7440-47-3	7.7 Q	11 Q	mg/Kg	0.48	NA	1.17E+05	Yes	Yes
1303181321 1303181336	200 ETU-02	Copper	7440-50-8	4.7	8.5	mg/Kg	0.48	NA	3.13E+03	Yes	Yes
1303181321 1303181336	200 ETU-02	Lead	7439-92-1	7.7	12	mg/Kg	0.19	NA	4.00E+02	Yes	Yes
1303181321 1303181336	200 ETU-02	Nickel	7440-02-0	6	10	mg/Kg	0.48	NA	1.56E+03	Yes	Yes
1303181321 1303181336	200 ETU-02	Selenium	7782-49-2	ND	ND	mg/Kg	0.48	NA	3.91E+02	Yes	Yes
1303181321 1303181336	200 ETU-02	Silver	7440-22-4	ND	ND	mg/Kg	0.096	NA	3.91E+02	Yes	Yes
1303181321 1303181336	200 ETU-02	Thallium	7440-28-0	0.068 J	0.099	mg/Kg	0.096	NA	NA	Yes	Yes
1303181321 1303181336	200 ETU-02	Vanadium	7440-62-2	15	25	mg/Kg	0.48	NA	3.91E+02	Yes	Yes

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
1303181321 1303181336	200 ETU-02	Zinc	7440-66-6	29	34	mg/Kg	1.9	NA	2.35E+04	Yes	Yes
1303181321 1303181336	200 ETU-02	Mercury	7439-97-6	0.1 J	0.016 J	mg/Kg	0.018	NA	1.56E+01	Yes	Yes
EPA Method 9012B: Cyanides (Lab Report No. 680-88488-1)											
1303181322 1303181337	200 ETU-02	Cyanide, Total	57-12-5	ND	ND	mg/Kg	0.5	590	4.69E+01	Yes	Yes
EPA Method 8260B: Volatile Organic Compounds (Lab Report No. 680-88488-1)											
1303181319 1303181334	200 ETU-02	1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	ND	ND	mg/Kg	0.33	30	NA	Yes	Yes
1303181319 1303181334	200 ETU-02	2-Butanone (MEK)	78-93-3	ND	0.0066 J	mg/Kg	0.16	36	NA	Yes	Yes
1303181319 1303181334	200 ETU-02	Acetone	67-64-1	ND	0.030 J	mg/Kg	3.3	160	NA	Yes	Yes
1303181319 1303181334	200 ETU-02	Benzene	71-43-2	ND	ND	mg/Kg	0.33	10	NA	Yes	Yes
1303181319 1303181334	200 ETU-02	Ethylbenzene	100-41-4	ND	ND	mg/Kg	0.33	10	NA	Yes	Yes
1303181319 1303181334	200 ETU-02	Tetrachloroethene (PCE)	127-18-4	ND	ND	mg/Kg	0.33	6	NA	Yes	Yes
1303181319 1303181334	200 ETU-02	Toluene	108-88-3	ND	ND	mg/Kg	0.33	10	NA	Yes	Yes
1303181319 1303181334	200 ETU-02	Trichloroethene (TCE)	79-01-6	ND	ND	mg/Kg	0.33	6	NA	Yes	Yes
1303181319 1303181334	200 ETU-02	Trichlorofluoromethane (CFC 11)	75-69-4	ND	ND	mg/Kg	0.33	30	NA	Yes	Yes
1303181319 1303181334	200 ETU-02	Xylenes, Total	1330-20-7	ND	ND	mg/Kg	0.66	30	NA	Yes	Yes
EPA Method 8270C: Semi-Volatile Organic Compounds (Lab Report No. 680-88488-1)											
1303181320 1303181335	200 ETU-02	Aniline	62-53-3	ND	ND	mg/Kg	0.39	14	NA	Yes	Yes

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
1303181320 1303181335	200 ETU-02	Di-n-butyl Phthalate	84-74-2	ND	ND	mg/Kg	0.33	28	NA	Yes	Yes
1303181320 1303181335	200 ETU-02	Naphthalene	91-20-3	ND	ND	mg/Kg	0.33	5.6	NA	Yes	Yes
1303181320 1303181335	200 ETU-02	Phenol	108-95-2	ND	ND	mg/Kg	0.33	6.2	NA	Yes	Yes
1303181320 1303181335	200 ETU-02	N-Nitrosodimethylamine	62-75-9	ND	ND	mg/Kg	0.52	2.3	NA	Yes	Yes

[1]- List of analytes were compiled from ETU Closure Plan (March, 2012) Attachment 15, Tables (1-11)

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[3]- Values for Residential Soil Screening Levels (SSL) retrieved from NMED SSL (June 2012).

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B- Compound was found in the blank and sample

J- Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

H- Sample was prepped or analyzed beyond the specified holding time.

MDL- Method Detection Limit

LOQ- Limit of quantitation

(a)- First Depth (0-6') below HWDL/Ground Surface

(b)- Second Depth (1'-2') below HWDL/Ground Surface

(D)- Duplicate Sample (1 Field Duplicate every 10 samples) per SAP 2013-006, Section 9: *Quality Control Requirements*

ND- Constituent analyzed for but not detected.

*- RPD of the LCS and LCSD exceeds the control limits

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
Ion Chromatography Method: HYDRAZINES (Lab Report No. 280-40029-1)											
1303181414 1303181428	200 ETU-03	1,1 Dimethylhydrazine	57-14-7	ND	ND	mg/Kg	0.005	NA	NA	Yes	Yes
1303181414 1303181428	200 ETU-03	Hydrazine	32-01-2	ND	0.0034 J	mg/Kg	0.003	NA	NA	Yes	Yes
1303181414 1303181428	200 ETU-03	Monomethyl Hydrazine	60-34-4	ND	ND	mg/Kg	0.007	NA	NA	Yes	Yes
EPA Method 6020A/7471B METALS & MERCURY (Lab Report No. 680-88488-1)											
1303181417 1303181431	200 ETU-03	Arsenic	7440-38-2	3.8	7.1	mg/Kg	0.24	NA	3.90E+00	Yes	No
1303181417 1303181431	200 ETU-03	Barium	7440-39-3	78	110	mg/Kg	0.48	NA	1.56E+04	Yes	Yes
1303181417 1303181431	200 ETU-03	Beryllium	7440-41-7	0.6	0.5	mg/Kg	0.048	NA	1.56E+02	Yes	Yes
1303181417 1303181431	200 ETU-03	Cadmium	7440-43-9	0.12	0.16	mg/Kg	0.048	NA	7.03E+01	Yes	Yes
1303181417 1303181431	200 ETU-03	Chromium	7440-47-3	7.8 Q	12 Q	mg/Kg	0.48	NA	1.17E+05	Yes	Yes
1303181417 1303181431	200 ETU-03	Copper	7440-50-8	5.9	7.9	mg/Kg	0.48	NA	3.13E+03	Yes	Yes
1303181417 1303181431	200 ETU-03	Lead	7439-92-1	11	10	mg/Kg	0.19	NA	4.00E+02	Yes	Yes
1303181417 1303181431	200 ETU-03	Nickel	7440-02-0	6.1	9	mg/Kg	0.48	NA	1.56E+03	Yes	Yes
1303181417 1303181431	200 ETU-03	Selenium	7782-49-2	ND	0.26 J	mg/Kg	0.48	NA	3.91E+02	Yes	Yes
1303181417 1303181431	200 ETU-03	Silver	7440-22-4	ND	ND	mg/Kg	0.095	NA	3.91E+02	Yes	Yes
1303181417 1303181431	200 ETU-03	Thallium	7440-28-0	0.074 J	0.09 J	mg/Kg	0.095	NA	NA	Yes	Yes
1303181417 1303181431	200 ETU-03	Vanadium	7440-62-2	20	27	mg/Kg	0.48	NA	3.91E+02	Yes	Yes

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
1303181417 1303181431	200 ETU-03	Zinc	7440-66-6	29	33	mg/Kg	1.9	NA	2.35E+04	Yes	Yes
1303181417 1303181431	200 ETU-03	Mercury	7439-97-6	0.012 J	0.018 J	mg/Kg	0.019	NA	1.56E+01	Yes	Yes
EPA Method 9012B: Cyanides (Lab Report No. 680-88488-1)											
1303181418 1303181432	200 ETU-03	Cyanide, Total	57-12-5	ND	ND	mg/Kg	0.51	590	4.69E+01	Yes	Yes
EPA Method 8260B: Volatile Organic Compounds (Lab Report No. 680-88488-1)											
1303181415 1303181429	200 ETU-03	1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	ND	ND	mg/Kg	0.004	30	NA	Yes	Yes
1303181415 1303181429	200 ETU-03	2-Butanone (MEK)	78-93-3	0.0082 J	0.00858 J	mg/Kg	0.022	36	NA	Yes	Yes
1303181415 1303181429	200 ETU-03	Acetone	67-64-1	0.032 J	0.033 J	mg/Kg	0.044	160	NA	Yes	Yes
1303181415 1303181429	200 ETU-03	Benzene	71-43-2	ND	ND	mg/Kg	0.004	10	NA	Yes	Yes
1303181415 1303181429	200 ETU-03	Ethylbenzene	100-41-4	ND	ND	mg/Kg	0.004	10	NA	Yes	Yes
1303181415 1303181429	200 ETU-03	Tetrachloroethene (PCE)	127-18-4	ND	ND	mg/Kg	0.004	6	NA	Yes	Yes
1303181415 1303181429	200 ETU-03	Toluene	108-88-3	ND	ND	mg/Kg	0.004	10	NA	Yes	Yes
1303181415 1303181429	200 ETU-03	Trichloroethene (TCE)	79-01-6	ND	ND	mg/Kg	0.004	6	NA	Yes	Yes
1303181415 1303181429	200 ETU-03	Trichlorofluoromethane (CFC 11)	75-69-4	ND	ND	mg/Kg	0.004	30	NA	Yes	Yes
1303181415 1303181429	200 ETU-03	Xylenes, Total	1330-20-7	ND	ND	mg/Kg	0.009	30	NA	Yes	Yes
EPA Method 8270C: Semi-Volatile Organic Compounds (Lab Report No. 680-88488-1)											
1303181416 1303181430	200 ETU-03	Aniline	62-53-3	ND	ND	mg/Kg	0.38	14	NA	Yes	Yes

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
1303181416 1303181430	200 ETU-03	Di-n-butyl Phthalate	84-74-2	ND	ND	mg/Kg	0.32	28	NA	Yes	Yes
1303181416 1303181430	200 ETU-03	Naphthalene	91-20-3	ND	ND	mg/Kg	0.32	5.6	NA	Yes	Yes
1303181416 1303181430	200 ETU-03	Phenol	108-95-2	ND	ND	mg/Kg	0.32	6.2	NA	Yes	Yes
1303181416 1303181430	200 ETU-03	N-Nitrosodimethylamine	62-75-9	ND	ND	mg/Kg	0.5	2.3	NA	Yes	Yes

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(b)- Second Depth (1'-2') below HWDL/Ground Surface

(D)- Duplicate Sample (1 Field Duplicate every 10 samples) per SAP 2013-006, Section 9: *Quality Control Requirements*

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*- RPD of the LCS and LCSD exceeds the control limits

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
Ion Chromatography Method: HYDRAZINES (Lab Report No. 280-40098-1)											
1303190832 1303190845	200 ETU-04	1,1 Dimethylhydrazine	57-14-7	ND	ND	mg/Kg	0.005	NA	NA	Yes	Yes
1303190832 1303190845	200 ETU-04	Hydrazine	32-01-2	ND	ND	mg/Kg	0.003	NA	NA	Yes	Yes
1303190832 1303190845	200 ETU-04	Monomethyl Hydrazine	60-34-4	ND	ND	mg/Kg	0.007	NA	NA	Yes	Yes
EPA Method 6020A/7471B METALS & MERCURY (Lab Report No. 680-88488-1)											
1303190835 1303190848	200 ETU-04	Arsenic	7440-38-2	2.9	4.4	mg/Kg	0.097	NA	3.90E+00	Yes	No
1303190835 1303190848	200 ETU-04	Barium	7440-39-3	62	83	mg/Kg	0.13	NA	1.56E+04	Yes	Yes
1303190835 1303190848	200 ETU-04	Beryllium	7440-41-7	0.82	0.52	mg/Kg	0.048	NA	1.56E+02	Yes	Yes
1303190835 1303190848	200 ETU-04	Cadmium	7440-43-9	0.089	0.11	mg/Kg	0.048	NA	7.03E+01	Yes	Yes
1303190835 1303190848	200 ETU-04	Chromium	7440-47-3	5.8 Q	8 Q	mg/Kg	0.48	NA	1.17E+05	Yes	Yes
1303190835 1303190848	200 ETU-04	Copper	7440-50-8	4.2	6.2	mg/Kg	0.48	NA	3.13E+03	Yes	Yes
1303190835 1303190848	200 ETU-04	Lead	7439-92-1	9.4	9.9	mg/Kg	0.19	NA	4.00E+02	Yes	Yes
1303190835 1303190848	200 ETU-04	Nickel	7440-02-0	4.4	6.4	mg/Kg	0.48	NA	1.56E+03	Yes	Yes
1303190835 1303190848	200 ETU-04	Selenium	7782-49-2	ND	ND	mg/Kg	0.48	NA	3.91E+02	Yes	Yes
1303190835 1303190848	200 ETU-04	Silver	7440-22-4	ND	ND	mg/Kg	0.097	NA	3.91E+02	Yes	Yes
1303190835 1303190848	200 ETU-04	Thallium	7440-28-0	0.06 J	0.08 J	mg/Kg	0.097	NA	NA	Yes	Yes
1303190835 1303190848	200 ETU-04	Vanadium	7440-62-2	15	18	mg/Kg	0.48	NA	3.91E+02	Yes	Yes

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
1303190835 1303190848	200 ETU-04	Zinc	7440-66-6	29	31	mg/Kg	1.9	NA	2.35E+04	Yes	Yes
1303190835 1303190848	200 ETU-04	Mercury	7439-97-6	0.023	0.014 J	mg/Kg	0.02	NA	1.56E+01	Yes	Yes
EPA Method 9012B: Cyanides (Lab Report No. 680-88488-1)											
1303190836 1303190849	200 ETU-04	Cyanide, Total	57-12-5	ND	ND	mg/Kg	0.51	590	4.69E+01	Yes	Yes
EPA Method 8260B: Volatile Organic Compounds (Lab Report No. 680-88488-1)											
1303190833 1303190846	200 ETU-04	1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	ND	ND	mg/Kg	0.005	30	NA	Yes	Yes
1303190833 1303190846	200 ETU-04	2-Butanone (MEK)	78-93-3	0.0095 J	0.0082 J	mg/Kg	0.023	36	NA	Yes	Yes
1303190833 1303190846	200 ETU-04	Acetone	67-64-1	0.040 J	0.038 J	mg/Kg	0.045	160	NA	Yes	Yes
1303190833 1303190846	200 ETU-04	Benzene	71-43-2	ND	ND	mg/Kg	0.005	10	NA	Yes	Yes
1303190833 1303190846	200 ETU-04	Ethylbenzene	100-41-4	ND	ND	mg/Kg	0.005	10	NA	Yes	Yes
1303190833 1303190846	200 ETU-04	Tetrachloroethene (PCE)	127-18-4	ND	ND	mg/Kg	0.005	6	NA	Yes	Yes
1303190833 1303190846	200 ETU-04	Toluene	108-88-3	0.0009 J	ND	mg/Kg	0.005	10	NA	Yes	Yes
1303190833 1303190846	200 ETU-04	Trichloroethene (TCE)	79-01-6	ND	ND	mg/Kg	0.005	6	NA	Yes	Yes
1303190833 1303190846	200 ETU-04	Trichlorofluoromethane (CFC 11)	75-69-4	ND	ND	mg/Kg	0.005	30	NA	Yes	Yes
1303190833 1303190846	200 ETU-04	Xylenes, Total	1330-20-7	ND	ND	mg/Kg	0.009	30	NA	Yes	Yes
EPA Method 8270C: Semi-Volatile Organic Compounds (Lab Report No. 680-88488-1)											
1303190834 1303190847	200 ETU-04	Aniline	62-53-3	ND	ND	mg/Kg	0.39	14	NA	Yes	Yes

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
1303190834 1303190847	200 ETU-04	Di-n-butyl Phthalate	84-74-2	ND	ND	mg/Kg	0.33	28	NA	Yes	Yes
1303190834 1303190847	200 ETU-04	Naphthalene	91-20-3	ND	ND	mg/Kg	0.33	5.6	NA	Yes	Yes
1303190834 1303190847	200 ETU-04	Phenol	108-95-2	ND	ND	mg/Kg	0.33	6.2	NA	Yes	Yes
1303190834 1303190847	200 ETU-04	N-Nitrosodimethylamine	62-75-9	ND	ND	mg/Kg	0.53	2.3	NA	Yes	Yes

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(b)- Second Depth (1'-2') below HWDL/Ground Surface

(D)- Duplicate Sample (1 Field Duplicate every 10 samples) per SAP 2013-006, Section 9: *Quality Control Requirements*

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*- RPD of the LCS and LCSD exceeds the control limits

Sample ID (a) (b) (D)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Results/ Qualifier (D)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No	Criteria Met (D) Yes/No
Ion Chromatography Method: HYDRAZINES (Lab Report No. 280-40098-1)													
1303190909 1303190916 1303190935	200 ETU-05	1,1 Dimethylhydrazine	57-14-7	ND	ND	ND	mg/Kg	0.005	NA	NA	Yes	Yes	Yes
1303190909 1303190916 1303190935	200 ETU-05	Hydrazine	32-01-2	ND	ND	ND	mg/Kg	0.003	NA	NA	Yes	Yes	Yes
1303190909 1303190916 1303190935	200 ETU-05	Monomethyl Hydrazine	60-34-4	ND	ND	ND	mg/Kg	0.008	NA	NA	Yes	Yes	Yes
EPA Method 6020A/7471B METALS & MERCURY (Lab Report No. 680-88358-1)													
1303190912 1303190919 1303190938	200 ETU-05	Arsenic	7440-38-2	2.9	3.2	3.5	mg/Kg	0.24	NA	3.90E+00	Yes	Yes	Yes
1303190912 1303190919 1303190938	200 ETU-05	Barium	7440-39-3	73.0	110	81	mg/Kg	0.48	NA	1.56E+04	Yes	Yes	Yes
1303190912 1303190919 1303190938	200 ETU-05	Beryllium	7440-41-7	0.61	0.48	0.81	mg/Kg	0.048	NA	1.56E+02	Yes	Yes	Yes
1303190912 1303190919 1303190938	200 ETU-05	Cadmium	7440-43-9	0.094	0.16	0.1	mg/Kg	0.048	NA	7.03E+01	Yes	Yes	Yes
1303190912 1303190919 1303190938	200 ETU-05	Chromium	7440-47-3	8 Q	5.4 Q	6.8 Q	mg/Kg	0.48	NA	1.17E+05	Yes	Yes	Yes
1303190912 1303190919 1303190938	200 ETU-05	Copper	7440-50-8	5.1	4.2	5.5	mg/Kg	0.48	NA	3.13E+03	Yes	Yes	Yes
1303190912 1303190919 1303190938	200 ETU-05	Lead	7439-92-1	9.8	6.7	11	mg/Kg	0.19	NA	4.00E+02	Yes	Yes	Yes

Sample ID (a) (b) (D)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Results/ Qualifier (D)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No	Criteria Met (D) Yes/No
1303190912 1303190919 1303190938	200 ETU-05	Nickel	7440-02-0	5.9	4.8	5.7	mg/Kg	0.48	NA	1.56E+03	Yes	Yes	Yes
1303190912 1303190919 1303190938	200 ETU-05	Selenium	7782-49-2	ND	ND	ND	mg/Kg	0.48	NA	3.91E+02	Yes	Yes	Yes
1303190912 1303190919 1303190938	200 ETU-05	Silver	7440-22-4	ND	ND	ND	mg/Kg	0.095	NA	3.91E+02	Yes	Yes	Yes
1303190912 1303190919 1303190938	200 ETU-05	Thallium	7440-28-0	0.066 J	0.06 J	0.096 J	mg/Kg	0.095	NA	NA	Yes	Yes	Yes
1303190912 1303190919 1303190938	200 ETU-05	Vanadium	7440-62-2	20	14	20	mg/Kg	0.48	NA	3.91E+02	Yes	Yes	Yes
1303190912 1303190919 1303190938	200 ETU-05	Zinc	7440-66-6	35	23	39	mg/Kg	1.9	NA	2.35E+04	Yes	Yes	Yes
1303190912 1303190919 1303190938	200 ETU-05	Mercury	7439-97-6	0.012 J	0.02	0.014 J	mg/Kg	0.019	NA	1.56E+01	Yes	Yes	Yes
EPA Method 9012B: Cyanides (Lab Report No. 680-88358-1)													
1303190913 1303190920 1303190939	200 ETU-05	Cyanide, Total	57-12-5	ND	ND	ND	mg/Kg	0.5	590	4.69E+01	Yes	Yes	Yes
EPA Method 8260B: Volatile Organic Compounds (Lab Report No. 680-88358-1)													
1303190910 1303190917 1303190936	200 ETU-05	1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	ND	ND	ND	mg/Kg	0.36	30	NA	Yes	Yes	Yes
1303190910 1303190917 1303190936	200 ETU-05	2-Butanone (MEK)	78-93-3	ND	ND	ND	mg/Kg	1.8	36	NA	Yes	Yes	Yes

Sample ID (a) (b) (D)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Results/ Qualifier (D)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No	Criteria Met (D) Yes/No
1303190910 1303190917 1303190936	200 ETU-05	Acetone	67-64-1	ND	ND	ND	mg/Kg	3.6	160	NA	Yes	Yes	Yes
1303190910 1303190917 1303190936	200 ETU-05	Benzene	71-43-2	ND	ND	ND	mg/Kg	0.36	10	NA	Yes	Yes	Yes
1303190910 1303190917 1303190936	200 ETU-05	Ethylbenzene	100-41-4	ND	ND	ND	mg/Kg	0.36	10	NA	Yes	Yes	Yes
1303190910 1303190917 1303190936	200 ETU-05	Tetrachloroethene (PCE)	127-18-4	ND	ND	ND	mg/Kg	0.36	6	NA	Yes	Yes	Yes
1303190910 1303190917 1303190936	200 ETU-05	Toluene	108-88-3	ND	ND	ND	mg/Kg	0.36	10	NA	Yes	Yes	Yes
1303190910 1303190917 1303190936	200 ETU-05	Trichloroethene (TCE)	79-01-6	ND	ND	ND	mg/Kg	0.36	6	NA	Yes	Yes	Yes
1303190910 1303190917 1303190936	200 ETU-05	Trichlorofluoromethane (CFC 11)	75-69-4	ND	ND	ND	mg/Kg	0.36	30	NA	Yes	Yes	Yes
1303190910 1303190917 1303190936	200 ETU-05	Xylenes, Total	1330-20-7	ND	ND	ND	mg/Kg	0.72	30	NA	Yes	Yes	Yes
EPA Method 8270C: Semi-Volatile Organic Compounds (Lab Report No. 680-88358-1)													
1303190911 1303190918 1303190937	200 ETU-05	Aniline	62-53-3	ND	ND	ND	mg/Kg	0.4	14	NA	Yes	Yes	Yes
1303190911 1303190918 1303190937	200 ETU-05	Di-n-butyl Phthalate	84-74-2	ND	ND	ND	mg/Kg	0.34	28	NA	Yes	Yes	Yes
1303190911 1303190918 1303190937	200 ETU-05	Naphthalene	91-20-3	ND	ND	ND	mg/Kg	0.34	5.6	NA	Yes	Yes	Yes

Sample ID (a) (b) (D)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Results/ Qualifier (D)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No	Criteria Met (D) Yes/No
1303190911 1303190918 1303190937	200 ETU-05	Phenol	108-95-2	ND	ND	ND	mg/Kg	0.34	6.2	NA	Yes	Yes	Yes
1303190911 1303190918 1303190937	200 ETU-05	N-Nitrosodimethylamine	62-75-9	ND	ND	ND	mg/Kg	0.54	2.3	NA	Yes	Yes	Yes

[1]- List of analytes were compiled from ETU Closure Plan (March, 2012) Attachment 15, Tables (1-11)

[2]- Units for MDL and LOQ are method-specific and are identified by the units column expressed for each method.

[3]- Values for Residential Soil Screening Levels (SSL) retrieved from NMED SSL (June 2012).

Q- One or more quality control criteria failed.

B- Compound was found in the blank and sample

J- Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

H- Sample was prepped or analyzed beyond the specified holding time.

MDL- Method Detection Limit

LOQ- Limit of quantitation

(a)- First Depth (0-6') below HWDL/Ground Surface

(b)- Second Depth (1'-2') below HWDL/Ground Surface

(D)- Duplicate Sample (1 Field Duplicate every 10 samples) per SAP 2013-006, Section 9: *Quality Control Requirements*

ND- Constituent analyzed for but not detected.

*- RPD of the LCS and LCSD exceeds the control limits

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Units	MDL/ LOQ[2]	NMED Residential SSL[3]	LDR 40 CFR 268.40 & 268.48	Criteria Met (a) Yes/No
Ion Chromatography Method: HYDRAZINES (Lab Report No. 280-40098-1)									
1303191025	200 ETU-06	1,1 Dimethylhydrazine	57-14-7	ND	mg/Kg	0.005	NA	NA	Yes
1303191025	200 ETU-06	Hydrazine	32-01-2	ND	mg/Kg	0.003	NA	NA	Yes
1303191025	200 ETU-06	Monomethyl Hydrazine	60-34-4	ND	mg/Kg	0.007	NA	NA	Yes
EPA Method 6020A/7471B METALS & MERCURY (Lab Report No. 680-88488-1)									
1303191028	200 ETU-06	Arsenic	7440-38-2	4.3	mg/Kg	0.23	3.90E+00	NA	No
1303191028	200 ETU-06	Barium	7440-39-3	140	mg/Kg	0.47	1.56E+04	NA	Yes
1303191028	200 ETU-06	Beryllium	7440-41-7	0.44	mg/Kg	0.047	1.56E+02	NA	Yes
1303191028	200 ETU-06	Cadmium	7440-43-9	0.13	mg/Kg	0.047	7.03E+01	NA	Yes
1303191028	200 ETU-06	Chromium	7440-47-3	15 Q	mg/Kg	0.47	1.17E+05	NA	Yes
1303191028	200 ETU-06	Copper	7440-50-8	6.4	mg/Kg	0.47	3.13E+03	NA	Yes
1303191028	200 ETU-06	Lead	7439-92-1	6.8	mg/Kg	0.19	4.00E+02	NA	Yes
1303191028	200 ETU-06	Nickel	7440-02-0	12	mg/Kg	0.47	1.56E+03	NA	Yes
1303191028	200 ETU-06	Selenium	7782-49-2	ND	mg/Kg	0.47	3.91E+02	NA	Yes
1303191028	200 ETU-06	Silver	7440-22-4	ND	mg/Kg	0.093	3.91E+02	NA	Yes
1303191028	200 ETU-06	Thallium	7440-28-0	0.054 J	mg/Kg	0.093	NA	NA	Yes
1303191028	200 ETU-06	Vanadium	7440-62-2	27	mg/Kg	0.47	3.91E+02	NA	Yes

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Units	MDL/ LOQ[2]	NMED Residential SSL[3]	LDR 40 CFR 268.40 & 268.48	Criteria Met (a) Yes/No
1303191028	200 ETU-06	Zinc	7440-66-6	30	mg/Kg	1.9	2.35E+04	NA	Yes
1303191028	200 ETU-06	Mercury	7439-97-6	0.0084 J	mg/Kg	0.019	1.56E+01	NA	Yes
EPA Method 9012B: Cyanides (Lab Report No. 680-88488-1)									
1303191029	200 ETU-06	Cyanide, Total	57-12-5	ND	mg/Kg	0.49	4.69E+01	590	Yes
EPA Method 8260B: Volatile Organic Compounds (Lab Report No. 680-88488-1)									
1303191026	200 ETU-06	1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	ND	mg/Kg	0.35	NA	30	Yes
1303191026	200 ETU-06	2-Butanone (MEK)	78-93-3	ND	mg/Kg	1.7	NA	36	Yes
1303191026	200 ETU-06	Acetone	67-64-1	ND	mg/Kg	3.5	NA	160	Yes
1303191026	200 ETU-06	Benzene	71-43-2	ND	mg/Kg	0.35	NA	10	Yes
1303191026	200 ETU-06	Ethylbenzene	100-41-4	ND	mg/Kg	0.35	NA	10	Yes
1303191026	200 ETU-06	Tetrachloroethene (PCE)	127-18-4	ND	mg/Kg	0.35	NA	6	Yes
1303191026	200 ETU-06	Toluene	108-88-3	ND	mg/Kg	0.35	NA	10	Yes
1303191026	200 ETU-06	Trichloroethene (TCE)	79-01-6	ND	mg/Kg	0.35	NA	6	Yes
1303191026	200 ETU-06	Trichlorofluoromethane (CFC 11)	75-69-4	ND	mg/Kg	0.35	NA	30	Yes
1303191026	200 ETU-06	Xylenes, Total	1330-20-7	ND	mg/Kg	0.69	NA	30	Yes
EPA Method 8270C: Semi-Volatile Organic Compounds (Lab Report No. 680-88488-1)									
1303191027	200 ETU-06	Aniline	62-53-3	ND	mg/Kg	0.37	NA	14	Yes

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Units	MDL/ LOQ[2]	NMED Residential SSL[3]	LDR 40 CFR 268.40 & 268.48	Criteria Met (a) Yes/No
1303191027	200 ETU-06	Di-n-butyl Phthalate	84-74-2	ND	mg/Kg	0.31	NA	28	Yes
1303191027	200 ETU-06	Naphthalene	91-20-3	ND	mg/Kg	0.31	NA	5.6	Yes
1303191027	200 ETU-06	Phenol	108-95-2	ND	mg/Kg	0.31	NA	6.2	Yes
1303191027	200 ETU-06	N-Nitrosodimethylamine	62-75-9	ND	mg/Kg	0.5	NA	2.3	Yes

[1]- List of analytes were compiled from ETU Closure Plan (March, 2012) Attachment 15, Tables (1-11)

[2]- Units for MDL and LOQ are method-specific and are identified by the units column expressed for each method.

[3]- Values for Residential Soil Screening Levels (SSL) retrieved from NMED SSL (June 2012).

Q- One or more quality control criteria failed.

B- Compound was found in the blank and sample

J- Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

H- Sample was prepped or analyzed beyond the specified holding time.

MDL- Method Detection Limit

LOQ- Limit of quantitation

(a)- First Depth (10') below HWDL/Ground Surface

ND- Constituent analyzed for but not detected.

*- RPD of the LCS and LCSD exceeds the control limits

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
Ion Chromatography Method: HYDRAZINES (Lab Report No. 280-39119-1)											
1303191115 1303191125	200 ETU-07	1,1 Dimethylhydrazine	57-14-7	ND	ND	mg/Kg	0.005	NA	NA	Yes	Yes
1303191115 1303191125	200 ETU-07	Hydrazine	32-01-2	ND	0.0035 J	mg/Kg	0.003	NA	NA	Yes	Yes
1303191115 1303191125	200 ETU-07	Monomethyl Hydrazine	60-34-4	ND	ND	mg/Kg	0.007	NA	NA	Yes	Yes
EPA Method 6020A/7471B METALS & MERCURY (Lab Report No. 680-88488-1)											
1303191118 1303191128	200 ETU-07	Arsenic	7440-38-2	2.7	6.2	mg/Kg	0.26	NA	3.90E+00	Yes	No
1303191118 1303191128	200 ETU-07	Barium	7440-39-3	47	150	mg/Kg	0.52	NA	1.56E+04	Yes	Yes
1303191118 1303191128	200 ETU-07	Beryllium	7440-41-7	0.73	0.54	mg/Kg	0.052	NA	1.56E+02	Yes	Yes
1303191118 1303191128	200 ETU-07	Cadmium	7440-43-9	0.079	0.14	mg/Kg	0.052	NA	7.03E+01	Yes	Yes
1303191118 1303191128	200 ETU-07	Chromium	7440-47-3	4.7 Q	9.2 Q	mg/Kg	0.52	NA	1.17E+05	Yes	Yes
1303191118 1303191128	200 ETU-07	Copper	7440-50-8	3.4	6.8	mg/Kg	0.52	NA	3.13E+03	Yes	Yes
1303191118 1303191128	200 ETU-07	Lead	7439-92-1	11	7.9	mg/Kg	0.21	NA	4.00E+02	Yes	Yes
1303191118 1303191128	200 ETU-07	Nickel	7440-02-0	3.5	9	mg/Kg	0.52	NA	1.56E+03	Yes	Yes
1303191118 1303191128	200 ETU-07	Selenium	7782-49-2	ND	0.31 J	mg/Kg	0.52	NA	3.91E+02	Yes	Yes
1303191118 1303191128	200 ETU-07	Silver	7440-22-4	ND	ND	mg/Kg	0.1	NA	3.91E+02	Yes	Yes
1303191118 1303191128	200 ETU-07	Thallium	7440-28-0	0.055 J	0.093 J	mg/Kg	0.1	NA	NA	Yes	Yes
1303191118 1303191128	200 ETU-07	Vanadium	7440-62-2	12	23	mg/Kg	0.52	NA	3.91E+02	Yes	Yes

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
1303191118 1303191128	200 ETU-07	Zinc	7440-66-6	34	32	mg/Kg	2.1	NA	2.35E+04	Yes	Yes
1303191118 1303191128	200 ETU-07	Mercury	7439-97-6	0.019 J	0.013 J	mg/Kg	0.02	NA	1.56E+01	Yes	Yes
EPA Method 9012B: Cyanides (Lab Report No. 680-88488-1)											
1303191119 1303191129	200 ETU-07	Cyanide, Total	57-12-5	ND	0.32 J	mg/Kg	0.51	590	4.69E+01	Yes	Yes
EPA Method 8260B: Volatile Organic Compounds (Lab Report No. 680-88488-1)											
1303191116 1303191126	200 ETU-07	1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	ND	ND	mg/Kg	0.35	30	NA	Yes	Yes
1303191116 1303191126	200 ETU-07	2-Butanone (MEK)	78-93-3	ND	ND	mg/Kg	1.8	36	NA	Yes	Yes
1303191116 1303191126	200 ETU-07	Acetone	67-64-1	ND	ND	mg/Kg	3.5	160	NA	Yes	Yes
1303191116 1303191126	200 ETU-07	Benzene	71-43-2	ND	ND	mg/Kg	0.35	10	NA	Yes	Yes
1303191116 1303191126	200 ETU-07	Ethylbenzene	100-41-4	ND	ND	mg/Kg	0.35	10	NA	Yes	Yes
1303191116 1303191126	200 ETU-07	Tetrachloroethene (PCE)	127-18-4	ND	ND	mg/Kg	0.35	6	NA	Yes	Yes
1303191116 1303191126	200 ETU-07	Toluene	108-88-3	ND	ND	mg/Kg	0.35	10	NA	Yes	Yes
1303191116 1303191126	200 ETU-07	Trichloroethene (TCE)	79-01-6	ND	ND	mg/Kg	0.35	6	NA	Yes	Yes
1303191116 1303191126	200 ETU-07	Trichlorofluoromethane (CFC 11)	75-69-4	ND	ND	mg/Kg	0.35	30	NA	Yes	Yes
1303191116 1303191126	200 ETU-07	Xylenes, Total	1330-20-7	ND	ND	mg/Kg	0.7	30	NA	Yes	Yes
EPA Method 8270C: Semi-Volatile Organic Compounds (Lab Report No. 680-88488-1)											
1303191117 1303191127	200 ETU-07	Aniline	62-53-3	ND	ND	mg/Kg	0.43	14	NA	Yes	Yes

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
1303191117 1303191127	200 ETU-07	Di-n-butyl Phthalate	84-74-2	ND	ND	mg/Kg	0.36	28	NA	Yes	Yes
1303191117 1303191127	200 ETU-07	Naphthalene	91-20-3	ND	ND	mg/Kg	0.36	5.6	NA	Yes	Yes
1303191117 1303191127	200 ETU-07	Phenol	108-95-2	ND	ND	mg/Kg	0.36	6.2	NA	Yes	Yes
1303191117 1303191127	200 ETU-07	N-Nitrosodimethylamine	62-75-9	ND	ND	mg/Kg	0.57	2.3	NA	Yes	Yes

[1]- List of analytes were compiled from ETU Closure Plan (March, 2012) Attachment 15, Tables (1-11)

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MDL- Method Detection Limit

LOQ- Limit of quantitation

(a)- First Depth (0-6') below HWDL/Ground Surface

(b)- Second Depth (1'-2') below HWDL/Ground Surface

(D)- Duplicate Sample (1 Field Duplicate every 10 samples) per SAP 2013-006, Section 9: *Quality Control Requirements*

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*- RPD of the LCS and LCSD exceeds the control limits

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
Ion Chromatography Method: HYDRAZINES (Lab Report No. 280-40159-1)											
1303200830 1303200845	200 ETU-08	1,1 Dimethylhydrazine	57-14-7	ND	ND	mg/Kg	0.005	NA	NA	Yes	Yes
1303200830 1303200845	200 ETU-08	Hydrazine	32-01-2	ND	0.0042 J	mg/Kg	0.003	NA	NA	Yes	Yes
1303200830 1303200845	200 ETU-08	Monomethyl Hydrazine	60-34-4	ND	ND	mg/Kg	0.007	NA	NA	Yes	Yes
EPA Method 6020A/7471B METALS & MERCURY (Lab Report No. 680-87665-1)											
1303200833 1303200848	200 ETU-08	Arsenic	7440-38-2	2.8	5.4	mg/Kg	1	NA	3.90E+00	Yes	No
1303200833 1303200848	200 ETU-08	Barium	7440-39-3	73	110	mg/Kg	0.5	NA	1.56E+04	Yes	Yes
1303200833 1303200848	200 ETU-08	Beryllium	7440-41-7	0.57	0.49	mg/Kg	0.05	NA	1.56E+02	Yes	Yes
1303200833 1303200848	200 ETU-08	Cadmium	7440-43-9	0.098 Q	0.15 Q	mg/Kg	0.05	NA	7.03E+01	Yes	Yes
1303200833 1303200848	200 ETU-08	Chromium	7440-47-3	5.4 Q	8.4 Q	mg/Kg	0.5	NA	1.17E+05	Yes	Yes
1303200833 1303200848	200 ETU-08	Copper	7440-50-8	4.4	6.2 B	mg/Kg	0.5	NA	3.13E+03	Yes	Yes
1303200833 1303200848	200 ETU-08	Lead	7439-92-1	11	7.4	mg/Kg	0.2	NA	4.00E+02	Yes	Yes
1303200833 1303200848	200 ETU-08	Nickel	7440-02-0	4.8	7.1 Q	mg/Kg	0.5	NA	1.56E+03	Yes	Yes
1303200833 1303200848	200 ETU-08	Selenium	7782-49-2	ND	ND	mg/Kg	0.5	NA	3.91E+02	Yes	Yes
1303200833 1303200848	200 ETU-08	Silver	7440-22-4	ND	ND	mg/Kg	0.1	NA	3.91E+02	Yes	Yes
1303200833 1303200848	200 ETU-08	Thallium	7440-28-0	0.071 J	0.092 J	mg/Kg	0.1	NA	NA	Yes	Yes
1303200833 1303200848	200 ETU-08	Vanadium	7440-62-2	13	16	mg/Kg	0.5	NA	3.91E+02	Yes	Yes

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
1303200833 1303200848	200 ETU-08	Zinc	7440-66-6	27	30	mg/Kg	2	NA	2.35E+04	Yes	Yes
1303200833 1303200848	200 ETU-08	Mercury	7439-97-6	ND	0.0093 J	mg/Kg	0.018	NA	1.56E+01	Yes	Yes
EPA Method 9012B: Cyanides (Lab Report No. 680-87665-1)											
1303200834 1303200849	200 ETU-08	Cyanide, Total	57-12-5	ND	ND	mg/Kg	0.52	590	4.69E+01	Yes	Yes
EPA Method 8260B: Volatile Organic Compounds (Lab Report No. 680-87665-1)											
1303200831 1303200846	200 ETU-08	1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	ND	ND	mg/Kg	0.005	30	NA	Yes	Yes
1303200831 1303200846	200 ETU-08	2-Butanone (MEK)	78-93-3	ND	ND	mg/Kg	0.022	36	NA	Yes	Yes
1303200831 1303200846	200 ETU-08	Acetone	67-64-1	ND	ND	mg/Kg	0.045	160	NA	Yes	Yes
1303200831 1303200846	200 ETU-08	Benzene	71-43-2	ND	ND	mg/Kg	0.005	10	NA	Yes	Yes
1303200831 1303200846	200 ETU-08	Ethylbenzene	100-41-4	ND	ND	mg/Kg	0.005	10	NA	Yes	Yes
1303200831 1303200846	200 ETU-08	Tetrachloroethene (PCE)	127-18-4	ND	ND	mg/Kg	0.005	6	NA	Yes	Yes
1303200831 1303200846	200 ETU-08	Toluene	108-88-3	ND	ND	mg/Kg	0.005	10	NA	Yes	Yes
1303200831 1303200846	200 ETU-08	Trichloroethene (TCE)	79-01-6	ND	ND	mg/Kg	0.005	6	NA	Yes	Yes
1303200831 1303200846	200 ETU-08	Trichlorofluoromethane (CFC 11)	75-69-4	ND	ND	mg/Kg	0.005	30	NA	Yes	Yes
1303200831 1303200846	200 ETU-08	Xylenes, Total	1330-20-7	ND	ND	mg/Kg	0.009	30	NA	Yes	Yes
EPA Method 8270C: Semi-Volatile Organic Compounds (Lab Report No. 680-87665-1)											
1303200832 1303200847	200 ETU-08	Aniline	62-53-3	ND	ND	mg/Kg	0.39	14	NA	Yes	Yes

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
1303200832 1303200847	200 ETU-08	Di-n-butyl Phthalate	84-74-2	ND	ND	mg/Kg	0.33	28	NA	Yes	Yes
1303200832 1303200847	200 ETU-08	Naphthalene	91-20-3	ND	ND	mg/Kg	0.33	5.6	NA	Yes	Yes
1303200832 1303200847	200 ETU-08	Phenol	108-95-2	ND	ND	mg/Kg	0.33	6.2	NA	Yes	Yes
1303200832 1303200847	200 ETU-08	N-Nitrosodimethylamine	62-75-9	ND	ND	mg/Kg	0.52	2.3	NA	Yes	Yes

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(a)- First Depth (0-6') below HWDL/Ground Surface

(b)- Second Depth (1'-2') below HWDL/Ground Surface

(D)- Duplicate Sample (1 Field Duplicate every 10 samples) per SAP 2013-006, Section 9: *Quality Control Requirements*

ND- Constituent analyzed for but not detected.

*- RPD of the LCS and LCSD exceeds the control limits

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
Ion Chromatography Method: HYDRAZINES (Lab Report No. 280-40159-1)											
1303200919 1303200930	200 ETU-09	1,1 Dimethylhydrazine	57-14-7	ND	ND	mg/Kg	0.005	NA	NA	Yes	Yes
1303200919 1303200930	200 ETU-09	Hydrazine	32-01-2	ND	ND	mg/Kg	0.003	NA	NA	Yes	Yes
1303200919 1303200930	200 ETU-09	Monomethyl Hydrazine	60-34-4	ND	ND	mg/Kg	0.007	NA	NA	Yes	Yes
EPA Method 6020A/7471B METALS & MERCURY (Lab Report No. 680-87665-1)											
1303200922 1303200933	200 ETU-09	Arsenic	7440-38-2	3	5.3	mg/Kg	0.25	NA	3.90E+00	Yes	No
1303200922 1303200933	200 ETU-09	Barium	7440-39-3	90	86	mg/Kg	0.5	NA	1.56E+04	Yes	Yes
1303200922 1303200933	200 ETU-09	Beryllium	7440-41-7	0.59	0.5	mg/Kg	0.05	NA	1.56E+02	Yes	Yes
1303200922 1303200933	200 ETU-09	Cadmium	7440-43-9	0.11 Q	0.19 Q	mg/Kg	0.05	NA	7.03E+01	Yes	Yes
1303200922 1303200933	200 ETU-09	Chromium	7440-47-3	5.6 Q	7.8 Q	mg/Kg	0.5	NA	1.17E+05	Yes	Yes
1303200922 1303200933	200 ETU-09	Copper	7440-50-8	4.7 B	7.3 B	mg/Kg	0.5	NA	3.13E+03	Yes	Yes
1303200922 1303200933	200 ETU-09	Lead	7439-92-1	8.8	9.6	mg/Kg	0.2	NA	4.00E+02	Yes	Yes
1303200922 1303200933	200 ETU-09	Nickel	7440-02-0	5.5 Q	7.7 Q	mg/Kg	0.5	NA	1.56E+03	Yes	Yes
1303200922 1303200933	200 ETU-09	Selenium	7782-49-2	ND	ND	mg/Kg	0.5	NA	3.91E+02	Yes	Yes
1303200922 1303200933	200 ETU-09	Silver	7440-22-4	ND	ND	mg/Kg	0.099	NA	3.91E+02	Yes	Yes
1303200922 1303200933	200 ETU-09	Thallium	7440-28-0	0.087 J	0.08 J	mg/Kg	0.099	NA	NA	Yes	Yes
1303200922 1303200933	200 ETU-09	Vanadium	7440-62-2	13	18	mg/Kg	0.5	NA	3.91E+02	Yes	Yes

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
1303200922 1303200933	200 ETU-09	Zinc	7440-66-6	26	34	mg/Kg	2	NA	2.35E+04	Yes	Yes
1303200922 1303200933	200 ETU-09	Mercury	7439-97-6	ND	0.014 J	mg/Kg	0.017	NA	1.56E+01	Yes	Yes
EPA Method 9012B: Cyanides (Lab Report No. 680-87665-1)											
1303200923 1303200934	200 ETU-09	Cyanide, Total	57-12-5	ND	ND	mg/Kg	0.5	590	4.69E+01	Yes	Yes
EPA Method 8260B: Volatile Organic Compounds (Lab Report No. 680-87665-1)											
1303200920 1303200931	200 ETU-09	1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	ND	ND	mg/Kg	0.004	30	NA	Yes	Yes
1303200920 1303200931	200 ETU-09	2-Butanone (MEK)	78-93-3	ND	ND	mg/Kg	0.004	36	NA	Yes	Yes
1303200920 1303200931	200 ETU-09	Acetone	67-64-1	ND	ND	mg/Kg	0.041	160	NA	Yes	Yes
1303200920 1303200931	200 ETU-09	Benzene	71-43-2	ND	ND	mg/Kg	0.004	10	NA	Yes	Yes
1303200920 1303200931	200 ETU-09	Ethylbenzene	100-41-4	ND	ND	mg/Kg	0.004	10	NA	Yes	Yes
1303200920 1303200931	200 ETU-09	Tetrachloroethene (PCE)	127-18-4	ND	ND	mg/Kg	0.004	6	NA	Yes	Yes
1303200920 1303200931	200 ETU-09	Toluene	108-88-3	ND	ND	mg/Kg	0.004	10	NA	Yes	Yes
1303200920 1303200931	200 ETU-09	Trichloroethene (TCE)	79-01-6	ND	ND	mg/Kg	0.004	6	NA	Yes	Yes
1303200920 1303200931	200 ETU-09	Trichlorofluoromethane (CFC 11)	75-69-4	ND	ND	mg/Kg	0.004	30	NA	Yes	Yes
1303200920 1303200931	200 ETU-09	Xylenes, Total	1330-20-7	ND	ND	mg/Kg	0.008	30	NA	Yes	Yes
EPA Method 8270C: Semi-Volatile Organic Compounds (Lab Report No. 680-87665-1)											
1303200932 1303200921	200 ETU-09	Aniline	62-53-3	ND	ND	mg/Kg	0.38	14	NA	Yes	Yes

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
1303200932 1303200921	200 ETU-09	Di-n-butyl Phthalate	84-74-2	ND	ND	mg/Kg	0.32	28	NA	Yes	Yes
1303200932 1303200921	200 ETU-09	Naphthalene	91-20-3	ND	ND	mg/Kg	0.32	5.6	NA	Yes	Yes
1303200932 1303200921	200 ETU-09	Phenol	108-95-2	ND	ND	mg/Kg	0.32	6.2	NA	Yes	Yes
1303200932 1303200921	200 ETU-09	N-Nitrosodimethylamine	62-75-9	ND	ND	mg/Kg	0.5	2.3	NA	Yes	Yes

[1]- List of analytes were compiled from ETU Closure Plan (March, 2012) Attachment 15, Tables (1-11)

[2]- Units for MDL and LOQ are method-specific and are identified by the units column expressed for each method.

[3]- Values for Residential Soil Screening Levels (SSL) retrieved from NMED SSL (June 2012).

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B- Compound was found in the blank and sample

J- Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

H- Sample was prepped or analyzed beyond the specified holding time.

MDL- Method Detection Limit

LOQ- Limit of quantitation

(a)- First Depth (0-6') below HWDL/Ground Surface

(b)- Second Depth (1'-2') below HWDL/Ground Surface

(D)- Duplicate Sample (1 Field Duplicate every 10 samples) per SAP 2013-006, Section 9: *Quality Control Requirements*

ND- Constituent analyzed for but not detected.

*- RPD of the LCS and LCSD exceeds the control limits

Sample ID (a) (b) (D)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Results/ Qualifier (D)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No	Criteria Met (D) Yes/No
Ion Chromatography Method: HYDRAZINES (Lab Report No. 280-40159-1)													
1303201002 1303201015 1303201025	200 ETU-10	1,1 Dimethylhydrazine	57-14-7	ND	ND	ND	mg/Kg	0.005	NA	NA	Yes	Yes	Yes
1303201002 1303201015 1303201025	200 ETU-10	Hydrazine	32-01-2	ND	ND	0.0053 J	mg/Kg	0.003	NA	NA	Yes	Yes	Yes
1303201002 1303201015 1303201025	200 ETU-10	Monomethyl Hydrazine	60-34-4	ND	ND	ND	mg/Kg	0.008	NA	NA	Yes	Yes	Yes
EPA Method 6020A/7471B METALS & MERCURY (Lab Report No. 680-88358-1)													
1303201005 1303201018 1303201028	200 ETU-10	Arsenic	7440-38-2	3	2.8	4.5	mg/Kg	0.23	NA	3.90E+00	Yes	Yes	No
1303201005 1303201018 1303201028	200 ETU-10	Barium	7440-39-3	66 J	76	100	mg/Kg	0.46	NA	1.56E+04	Yes	Yes	Yes
1303201005 1303201018 1303201028	200 ETU-10	Beryllium	7440-41-7	0.53	0.55	0.47	mg/Kg	0.046	NA	1.56E+02	Yes	Yes	Yes
1303201005 1303201018 1303201028	200 ETU-10	Cadmium	7440-43-9	0.098 Q	0.11 Q	0.14 Q	mg/Kg	0.046	NA	7.03E+01	Yes	Yes	Yes
1303201005 1303201018 1303201028	200 ETU-10	Chromium	7440-47-3	4.5 Q	4.9 Q	9 Q	mg/Kg	0.46	NA	1.17E+05	Yes	Yes	Yes
1303201005 1303201018 1303201028	200 ETU-10	Copper	7440-50-8	3.9 B	4.1 B	6.5 B	mg/Kg	0.46	NA	3.13E+03	Yes	Yes	Yes
1303201005 1303201018 1303201028	200 ETU-10	Lead	7439-92-1	8.3	9.6	8	mg/Kg	0.18	NA	4.00E+02	Yes	Yes	Yes

Sample ID (a) (b) (D)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Results/ Qualifier (D)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No	Criteria Met (D) Yes/No
1303201005 1303201018 1303201028	200 ETU-10	Nickel	7440-02-0	4.2 Q	4.5 Q	8.1 Q	mg/Kg	0.46	NA	1.56E+03	Yes	Yes	Yes
1303201005 1303201018 1303201028	200 ETU-10	Selenium	7782-49-2	ND	ND	ND	mg/Kg	0.46	NA	3.91E+02	Yes	Yes	Yes
1303201005 1303201018 1303201028	200 ETU-10	Silver	7440-22-4	ND	ND	ND	mg/Kg	0.092	NA	3.91E+02	Yes	Yes	Yes
1303201005 1303201018 1303201028	200 ETU-10	Thallium	7440-28-0	0.059 J	0.084 J	0.08 J	mg/Kg	0.092	NA	NA	Yes	Yes	Yes
1303201005 1303201018 1303201028	200 ETU-10	Vanadium	7440-62-2	11	13	17	mg/Kg	0.46	NA	3.91E+02	Yes	Yes	Yes
1303201005 1303201018 1303201028	200 ETU-10	Zinc	7440-66-6	24	23	32	mg/Kg	1.8	NA	2.35E+04	Yes	Yes	Yes
1303201005 1303201018 1303201028	200 ETU-10	Mercury	7439-97-6	ND	ND	0.015 J	mg/Kg	0.019	NA	1.56E+01	Yes	Yes	Yes
EPA Method 9012B: Cyanides (Lab Report No. 680-88358-1)													
1303201006 1303201019 1303201029	200 ETU-10	Cyanide, Total	57-12-5	ND	ND	ND	mg/Kg	0.5	590	4.69E+01	Yes	Yes	Yes
EPA Method 8260B: Volatile Organic Compounds (Lab Report No. 680-88358-1)													
1303201003 1303201016 1303201026	200 ETU-10	1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	ND	ND	ND	mg/Kg	0.004	30	NA	Yes	Yes	Yes
1303201003 1303201016 1303201026	200 ETU-10	2-Butanone (MEK)	78-93-3	ND	ND	ND	mg/Kg	0.022	36	NA	Yes	Yes	Yes

Sample ID (a) (b) (D)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Results/ Qualifier (D)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No	Criteria Met (D) Yes/No
1303201003 1303201016 1303201026	200 ETU-10	Acetone	67-64-1	ND	0.24 Q	ND	mg/Kg	0.044	160	NA	Yes	Yes	Yes
1303201003 1303201016 1303201026	200 ETU-10	Benzene	71-43-2	ND	ND	ND	mg/Kg	0.004	10	NA	Yes	Yes	Yes
1303201003 1303201016 1303201026	200 ETU-10	Ethylbenzene	100-41-4	ND	ND	ND	mg/Kg	0.004	10	NA	Yes	Yes	Yes
1303201003 1303201016 1303201026	200 ETU-10	Tetrachloroethene (PCE)	127-18-4	ND	ND	ND	mg/Kg	0.004	6	NA	Yes	Yes	Yes
1303201003 1303201016 1303201026	200 ETU-10	Toluene	108-88-3	ND	ND	ND	mg/Kg	0.004	10	NA	Yes	Yes	Yes
1303201003 1303201016 1303201026	200 ETU-10	Trichloroethene (TCE)	79-01-6	ND	ND	ND	mg/Kg	0.004	6	NA	Yes	Yes	Yes
1303201003 1303201016 1303201026	200 ETU-10	Trichlorofluoromethane (CFC 11)	75-69-4	ND	ND	ND	mg/Kg	0.004	30	NA	Yes	Yes	Yes
1303201003 1303201016 1303201026	200 ETU-10	Xylenes, Total	1330-20-7	ND	ND	ND	mg/Kg	0.009	30	NA	Yes	Yes	Yes
EPA Method 8270C: Semi-Volatile Organic Compounds (Lab Report No. 680-88358-1)													
1303201004 1303201017 1303201027	200 ETU-10	Aniline	62-53-3	ND	ND	ND	mg/Kg	0.4	14	NA	Yes	Yes	Yes
1303201004 1303201017 1303201027	200 ETU-10	Di-n-butyl Phthalate	84-74-2	ND	ND	ND	mg/Kg	0.34	28	NA	Yes	Yes	Yes
1303201004 1303201017 1303201027	200 ETU-10	Naphthalene	91-20-3	ND	ND	ND	mg/Kg	0.34	5.6	NA	Yes	Yes	Yes

Sample ID (a) (b) (D)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Results/ Qualifier (D)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No	Criteria Met (D) Yes/No
1303201004 1303201017 1303201027	200 ETU-10	Phenol	108-95-2	ND	ND	ND	mg/Kg	0.34	6.2	NA	Yes	Yes	Yes
1303201004 1303201017 1303201027	200 ETU-10	N-Nitrosodimethylamine	62-75-9	ND	ND	ND	mg/Kg	0.53	2.3	NA	Yes	Yes	Yes

[1]- List of analytes were compiled from ETU Closure Plan (March, 2012) Attachment 15, Tables (1-11)

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LOQ- Limit of quantitation

(a)- First Depth (0-6') below HWDL/Ground Surface

(b)- Second Depth (1'-2') below HWDL/Ground Surface

(D)- Duplicate Sample (1 Field Duplicate every 10 samples) per SAP 2013-006, Section 9: *Quality Control Requirements*

ND- Constituent analyzed for but not detected.

*- RPD of the LCS and LCSD exceeds the control limits

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
Ion Chromatography Method: HYDRAZINES (Lab Report No. 280-40209-1)											
1303210842 1303210905	200 ETU-11	1,1 Dimethylhydrazine	57-14-7	ND	ND	mg/Kg	0.005	NA	NA	Yes	Yes
1303210842 1303210905	200 ETU-11	Hydrazine	32-01-2	ND	0.0038 J	mg/Kg	0.003	NA	NA	Yes	Yes
1303210842 1303210905	200 ETU-11	Monomethyl Hydrazine	60-34-4	ND	ND	mg/Kg	0.007	NA	NA	Yes	Yes
EPA Method 6020A/7471B METALS & MERCURY (Lab Report No. 680-87665-1)											
1303210845 1303210908	200 ETU-11	Arsenic	7440-38-2	3.4	6.5	mg/Kg	0.26	NA	3.90E+00	Yes	No
1303210845 1303210908	200 ETU-11	Barium	7440-39-3	79	130	mg/Kg	0.52	NA	1.56E+04	Yes	Yes
1303210845 1303210908	200 ETU-11	Beryllium	7440-41-7	0.49	0.55	mg/Kg	0.052	NA	1.56E+02	Yes	Yes
1303210845 1303210908	200 ETU-11	Cadmium	7440-43-9	0.096 Q	0.18 Q	mg/Kg	0.052	NA	7.03E+01	Yes	Yes
1303210845 1303210908	200 ETU-11	Chromium	7440-47-3	5.4 Q	9.7 Q	mg/Kg	0.52	NA	1.17E+05	Yes	Yes
1303210845 1303210908	200 ETU-11	Copper	7440-50-8	4.5	8	mg/Kg	0.52	NA	3.13E+03	Yes	Yes
1303210845 1303210908	200 ETU-11	Lead	7439-92-1	8.1	9.5	mg/Kg	0.21	NA	4.00E+02	Yes	Yes
1303210845 1303210908	200 ETU-11	Nickel	7440-02-0	5.1 Q	9.2 Q	mg/Kg	0.52	NA	1.56E+03	Yes	Yes
1303210845 1303210908	200 ETU-11	Selenium	7782-49-2	ND	0.25 J	mg/Kg	0.52	NA	3.91E+02	Yes	Yes
1303210845 1303210908	200 ETU-11	Silver	7440-22-4	ND	ND	mg/Kg	0.1	NA	3.91E+02	Yes	Yes
1303210845 1303210908	200 ETU-11	Thallium	7440-28-0	0.069 J	0.092 J	mg/Kg	0.1	NA	NA	Yes	Yes
1303210845 1303210908	200 ETU-11	Vanadium	7440-62-2	14	21	mg/Kg	0.52	NA	3.91E+02	Yes	Yes

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
1303210845 1303210908	200 ETU-11	Zinc	7440-66-6	24	33	mg/Kg	2.1	NA	2.35E+04	Yes	Yes
1303210845 1303210908	200 ETU-11	Mercury	7439-97-6	0.0085 J	0.013 J	mg/Kg	0.019	NA	1.56E+01	Yes	Yes
EPA Method 9012B: Cyanides (Lab Report No. 680-87665-1)											
1303210846 1303210909	200 ETU-11	Cyanide, Total	57-12-5	ND	ND	mg/Kg	0.52	590	4.69E+01	Yes	Yes
EPA Method 8260B: Volatile Organic Compounds (Lab Report No. 680-87665-1)											
1303210843 1303210906	200 ETU-11	1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	ND	ND	mg/Kg	0.41	30	NA	Yes	Yes
1303210843 1303210906	200 ETU-11	2-Butanone (MEK)	78-93-3	ND	ND	mg/Kg	2	36	NA	Yes	Yes
1303210843 1303210906	200 ETU-11	Acetone	67-64-1	ND	ND	mg/Kg	4.1	160	NA	Yes	Yes
1303210843 1303210906	200 ETU-11	Benzene	71-43-2	ND	ND	mg/Kg	0.41	10	NA	Yes	Yes
1303210843 1303210906	200 ETU-11	Ethylbenzene	100-41-4	ND	ND	mg/Kg	0.41	10	NA	Yes	Yes
1303210843 1303210906	200 ETU-11	Tetrachloroethene (PCE)	127-18-4	ND	ND	mg/Kg	0.41	6	NA	Yes	Yes
1303210843 1303210906	200 ETU-11	Toluene	108-88-3	ND	ND	mg/Kg	0.41	10	NA	Yes	Yes
1303210843 1303210906	200 ETU-11	Trichloroethene (TCE)	79-01-6	ND	ND	mg/Kg	0.41	6	NA	Yes	Yes
1303210843 1303210906	200 ETU-11	Trichlorofluoromethane (CFC 11)	75-69-4	ND	ND	mg/Kg	0.41	30	NA	Yes	Yes
1303210843 1303210906	200 ETU-11	Xylenes, Total	1330-20-7	ND	ND	mg/Kg	0.81	30	NA	Yes	Yes
EPA Method 8270C: Semi-Volatile Organic Compounds (Lab Report No. 680-87665-1)											
1303210844 1303210907	200 ETU-11	Aniline	62-53-3	ND	ND	mg/Kg	0.4	14	NA	Yes	Yes

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Results/ Qualifier (b)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No	Criteria Met (b) Yes/No
1303210844 1303210907	200 ETU-11	Di-n-butyl Phthalate	84-74-2	ND	ND	mg/Kg	0.34	28	NA	Yes	Yes
1303210844 1303210907	200 ETU-11	Naphthalene	91-20-3	ND	ND	mg/Kg	0.34	5.6	NA	Yes	Yes
1303210844 1303210907	200 ETU-11	Phenol	108-95-2	ND	ND	mg/Kg	0.34	6.2	NA	Yes	Yes
1303210844 1303210907	200 ETU-11	N-Nitrosodimethylamine	62-75-9	ND	ND	mg/Kg	0.53	2.3	NA	Yes	Yes

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*- RPD of the LCS and LCSD exceeds the control limits

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No
Ion Chromatography Method: HYDRAZINES (Lab Report No. 280-40209-1)									
1303211000	200 ETU-12	1,1 Dimethylhydrazine	57-14-7	ND	mg/Kg	0.0051	NA	NA	Yes
1303211000	200 ETU-12	Hydrazine	32-01-2	ND	mg/Kg	0.0031	NA	NA	Yes
1303211000	200 ETU-12	Monomethyl Hydrazine	60-34-4	ND	mg/Kg	0.0073	NA	NA	Yes
EPA Method 6020A/7471B METALS & MERCURY (Lab Report No. 680-88488-1)									
1303211003	200 ETU-12	Arsenic	7440-38-2	5.5 J	mg/Kg	0.24	NA	3.90E+00	Yes
1303211003	200 ETU-12	Barium	7440-39-3	66 J	mg/Kg	0.49	NA	1.56E+04	Yes
1303211003	200 ETU-12	Beryllium	7440-41-7	0.59 J	mg/Kg	0.049	NA	1.56E+02	Yes
1303211003	200 ETU-12	Cadmium	7440-43-9	0.23 J Q	mg/Kg	0.049	NA	7.03E+01	Yes
1303211003	200 ETU-12	Chromium	7440-47-3	20 J Q	mg/Kg	0.49	NA	1.17E+05	Yes
1303211003	200 ETU-12	Copper	7440-50-8	7.7 J	mg/Kg	0.49	NA	3.13E+03	Yes
1303211003	200 ETU-12	Lead	7439-92-1	9.3 J	mg/Kg	0.19	NA	4.00E+02	Yes
1303211003	200 ETU-12	Nickel	7440-02-0	20 J Q	mg/Kg	0.49	NA	1.56E+03	Yes
1303211003	200 ETU-12	Selenium	7782-49-2	ND	mg/Kg	0.49	NA	3.91E+02	Yes
1303211003	200 ETU-12	Silver	7440-22-4	0.25 J	mg/Kg	0.097	NA	3.91E+02	Yes
1303211003	200 ETU-12	Thallium	7440-28-0	0.065 J	mg/Kg	0.097	NA	NA	Yes
1303211003	200 ETU-12	Vanadium	7440-62-2	25 J	mg/Kg	0.49	NA	3.91E+02	Yes

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No
1303211003	200 ETU-12	Zinc	7440-66-6	38 J	mg/Kg	1.9	NA	2.35E+04	Yes
1303211003	200 ETU-12	Mercury	7439-97-6	ND	mg/Kg	0.021	NA	1.56E+01	Yes
EPA Method 9012B: Cyanides (Lab Report No. 680-88488-1)									
1303211004	200 ETU-12	Cyanide, Total	57-12-5	0.22 J	mg/Kg	0.51	590	4.69E+01	Yes
EPA Method 8260B: Volatile Organic Compounds (Lab Report No. 680-88488-1)									
1303211001	200 ETU-12	1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	ND	mg/Kg	0.35	30	NA	Yes
1303211001	200 ETU-12	2-Butanone (MEK)	78-93-3	ND	mg/Kg	1.8	36	NA	Yes
1303211001	200 ETU-12	Acetone	67-64-1	ND	mg/Kg	3.5	160	NA	Yes
1303211001	200 ETU-12	Benzene	71-43-2	ND	mg/Kg	0.35	10	NA	Yes
1303211001	200 ETU-12	Ethylbenzene	100-41-4	ND	mg/Kg	0.35	10	NA	Yes
1303211001	200 ETU-12	Tetrachloroethene (PCE)	127-18-4	ND	mg/Kg	0.35	6	NA	Yes
1303211001	200 ETU-12	Toluene	108-88-3	ND	mg/Kg	0.35	10	NA	Yes
1303211001	200 ETU-12	Trichloroethene (TCE)	79-01-6	ND	mg/Kg	0.35	6	NA	Yes
1303211001	200 ETU-12	Trichlorofluoromethane (CFC 11)	75-69-4	ND	mg/Kg	0.35	30	NA	Yes
1303211001	200 ETU-12	Xylenes, Total	1330-20-7	ND	mg/Kg	0.7	30	NA	Yes
EPA Method 8270C: Semi-Volatile Organic Compounds (Lab Report No. 680-88488-1)									
1303211002	200 ETU-12	Aniline	62-53-3	ND	mg/Kg	0.39	14	NA	Yes

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No
1303211002	200 ETU-12	Di-n-butyl Phthalate	84-74-2	ND	mg/Kg	0.33	28	NA	Yes
1303211002	200 ETU-12	Naphthalene	91-20-3	ND	mg/Kg	0.33	5.6	NA	Yes
1303211002	200 ETU-12	Phenol	108-95-2	ND	mg/Kg	0.33	6.2	NA	Yes
1303211002	200 ETU-12	N-Nitrosodimethylamine	62-75-9	ND	mg/Kg	0.52	2.3	NA	Yes

[1]- List of analytes were compiled from ETU Closure Plan (March, 2012) Attachment 15, Tables (1-11)

[2]- Units for MDL and LOQ are method-specific and are identified by the units column expressed for each method.

[3]- Values for Residential Soil Screening Levels (SSL) retrieved from NMED SSL (June 2012).

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H- Sample was prepped or analyzed beyond the specified holding time.

MDL- Method Detection Limit

LOQ- Limit of quantitation

(a)- First Depth (10') below HWDL/Ground Surface

ND- Constituent analyzed for but not detected.

*- RPD of the LCS and LCSD exceeds the control limits

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No
Ion Chromatography Method: HYDRAZINES (Lab Report No. 280-40209-1)									
1303211050	200 ETU-13	1,1 Dimethylhydrazine	57-14-7	ND	mg/Kg	0.0048	NA	NA	Yes
1303211050	200 ETU-13	Hydrazine	32-01-2	ND	mg/Kg	0.003	NA	NA	Yes
1303211050	200 ETU-13	Monomethyl Hydrazine	60-34-4	ND	mg/Kg	0.0069	NA	NA	Yes
EPA Method 6020A/7471B METALS & MERCURY (Lab Report No. 680-88488-1)									
1303211053	200 ETU-13	Arsenic	7440-38-2	4.2	mg/Kg	0.26	NA	3.90E+00	Yes
1303211053	200 ETU-13	Barium	7440-39-3	67	mg/Kg	0.51	NA	1.56E+04	Yes
1303211053	200 ETU-13	Beryllium	7440-41-7	0.45	mg/Kg	0.051	NA	1.56E+02	Yes
1303211053	200 ETU-13	Cadmium	7440-43-9	0.19 Q	mg/Kg	0.051	NA	7.03E+01	Yes
1303211053	200 ETU-13	Chromium	7440-47-3	17 Q	mg/Kg	0.51	NA	1.17E+05	Yes
1303211053	200 ETU-13	Copper	7440-50-8	7.9	mg/Kg	0.51	NA	3.13E+03	Yes
1303211053	200 ETU-13	Lead	7439-92-1	7.4	mg/Kg	0.2	NA	4.00E+02	Yes
1303211053	200 ETU-13	Nickel	7440-02-0	22 Q	mg/Kg	0.51	NA	1.56E+03	Yes
1303211053	200 ETU-13	Selenium	7782-49-2	ND	mg/Kg	0.51	NA	3.91E+02	Yes
1303211053	200 ETU-13	Silver	7440-22-4	ND	mg/Kg	0.1	NA	3.91E+02	Yes
1303211053	200 ETU-13	Thallium	7440-28-0	0.055 J	mg/Kg	0.1	NA	NA	Yes
1303211053	200 ETU-13	Vanadium	7440-62-2	23	mg/Kg	0.51	NA	3.91E+02	Yes

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No
1303211053	200 ETU-13	Zinc	7440-66-6	45	mg/Kg	2	NA	2.35E+04	Yes
1303211053	200 ETU-13	Mercury	7439-97-6	ND	mg/Kg	0.019	NA	1.56E+01	Yes
EPA Method 9012B: Cyanides (Lab Report No. 680-88488-1)									
1303211054	200 ETU-13	Cyanide, Total	57-12-5	ND	mg/Kg	0.5	590	4.69E+01	Yes
EPA Method 8260B: Volatile Organic Compounds (Lab Report No. 680-88488-1)									
1303211051	200 ETU-13	1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	ND	mg/Kg	1	30	NA	Yes
1303211051	200 ETU-13	2-Butanone (MEK)	78-93-3	ND	mg/Kg	10	36	NA	Yes
1303211051	200 ETU-13	Acetone	67-64-1	ND	mg/Kg	25	160	NA	Yes
1303211051	200 ETU-13	Benzene	71-43-2	ND	mg/Kg	1	10	NA	Yes
1303211051	200 ETU-13	Ethylbenzene	100-41-4	ND	mg/Kg	1	10	NA	Yes
1303211051	200 ETU-13	Tetrachloroethene (PCE)	127-18-4	ND	mg/Kg	1	6	NA	Yes
1303211051	200 ETU-13	Toluene	108-88-3	ND	mg/Kg	1	10	NA	Yes
1303211051	200 ETU-13	Trichloroethene (TCE)	79-01-6	ND	mg/Kg	1	6	NA	Yes
1303211051	200 ETU-13	Trichlorofluoromethane (CFC 11)	75-69-4	ND	mg/Kg	1	30	NA	Yes
1303211051	200 ETU-13	Xylenes, Total	1330-20-7	ND	mg/Kg	2	30	NA	Yes
EPA Method 8270C: Semi-Volatile Organic Compounds (Lab Report No. 680-88488-1)									
1303211052	200 ETU-13	Aniline	62-53-3	ND	mg/Kg	0.39	14	NA	Yes

Sample ID (a) & (b)	Borehole	Analyte[1]	CAS No.	Results/ Qualifier (a)	Units	MDL/ LOQ[2]	LDR 40 CFR 268.40 & 268.48	NMED Residential SSL[3]	Criteria Met (a) Yes/No
1303211052	200 ETU-13	Di-n-butyl Phthalate	84-74-2	ND	mg/Kg	0.33	28	NA	Yes
1303211052	200 ETU-13	Naphthalene	91-20-3	ND	mg/Kg	0.33	5.6	NA	Yes
1303211052	200 ETU-13	Phenol	108-95-2	ND	mg/Kg	0.33	6.2	NA	Yes
1303211052	200 ETU-13	N-Nitrosodimethylamine	62-75-9	ND	mg/Kg	0.52	2.3	NA	Yes

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