9/29/05 - 03992

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Shaw The Shaw Group Inc.™

September 29, 2005

DEPARTMENT OF THE NAVY

Mr. Rodger Jackson
NAVFAC, North Carolina/Caribbean IPT
6506 Hampton Blvd.
Norfolk, VA 23508-1278

Re: Contract N62470-02-D-3260; Task Order 0014
SWMU Interim Measures, Various Site
Marine Corps Base, Camp Lejeune, N.C.

Dear Mr. Jackson:

With the finalization of the SWMU 303/318 scope, attached find the following materials for insert into the Shaw Work Plan to update and complete the plan:

- Hardcopy text and SAP Addendum inserts for insertion into your existing submittal binder
- Hardcopy Figure 1.7 insert of the current delineation and excavation scheme for 303/318.
- One CD version of the updated/final Work Plan

Please note one set of the above has also been provided to Mr. Ken Cobb (EMD) and Mr. Matt Humphrey (ROICC) at Camp Lejeune. One additional set of materials is being provided to the Base in case State submission is required.

Note this new text discusses "up-front" sampling the area for disposal, allowing for a direct load – out of excavated material from the Airfield area, which may require State review.

Should any additional clarification be needed, please do not hesitate to contact me at 770-663-1453 at your convenience, and thank you for allowing me to continue serving LANTDIV and Camp Lejeune's environmental project needs.

Sincerely,

Shaw Environmental, Inc.

Ronald B. Kenyon
Project Manager

Attachments

pc: Ken Cobb – EMD
Matt Humphrey - AROICC
File 846069

FINAL
WORKPLAN
INTERIM REMEDIAL MEASURES FOR SOLID WASTE MANAGEMENT UNITS 254, 258, 293, 299, 314, and 303/318 MCB CAMP LEJEUNE, NORTH CAROLINA

Prepared for:

DEPARTMENT OF THE NAVY
Naval Facilities Engineering Command

NAVFAC
Naval Facilities Engineering Command

6506 Hampton Boulevard
Norfolk, Virginia 23508-1273

Prepared by:

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Task Order 0014
Shaw Project No. 846069

October 2005

FINAL
WORKPLAN
INTERIM REMEDIAL MEASURES
FOR
SOLID WASTE MANAGEMENT UNITS 254, 258, 293, 299, 314 and 303/318
MCB, CAMP LEJEUNE, NORTH CAROLINA

Prepared for:

DEPARTMENT OF THE NAVY
Contract No. N62470-02-D-3260
Task Order 014

Atlantic Division
Naval Facilities Engineering Command
6506 Hampton Boulevard
Norfolk, Virginia 24508-1273

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NORTH CAROLINA LICENSED SEAL 1238 GEOLOGIST ROBERT S. BROWN

9/29/05

Robert S. Brown, L.G.
Licensed Geology Number 1238

Ron Kenyon
Project Manager

James A. Dunn, Jr., P.E.
Program Manager

October 2005
Shaw Project No. 846069
Revision 1

During the supplemental investigation in 2003, a groundwater monitoring well (SWMU314-MW04) was installed next to the location of temporary well SWMU314-TW03. This well was installed and sampled to confirm the high lead results obtained from during the 2002 site investigation. Lead was not detected in the groundwater at SWMU314-MW04. All of the compounds detected in groundwater were detected in soils at SWMU 314.

1.1.6 SWMU 303/318

SWMUs 303 and 318 were investigated as separate SWMUs during the Phase I and II CSIs. Soil and groundwater contamination was identified at both SWMUs. In a broader context, evidence from the IR Site 86 Amended Remedial Investigation report and demolition of the helicopter wash pad suggested that there was a soil and groundwater contamination plume larger than the individual SWMUs. Completion of additional contamination assessment activities in 2005 identified the limits of soil contamination at the site. *Figure 1.7* presents a site map of the SWMU 303/318 area.

1.1.6.1 SWMU 303 - Aboveground Storage Tank

SWMU 303 is located in the MCAS area east of Bancroft Street between the helicopter parking apron and Building AS-515. The SWMU consists of two ASTs that are contained within a concrete, bermed structure. The tanks are labeled as "Hydraulic Fluid, Engine and Transmission Oils Only, No Solvents or Other Chemicals." The steel tanks were installed in 1983 and are still in use.

A Phase I CSI was conducted in September 1997. The purpose of the investigation was to determine if operation of the ASTs had impacted surface and subsurface soils in the vicinity of the SWMU. At the time of the investigation, petroleum staining was noted on the outside of the concrete berm. Surface and subsurface soil samples were collected from four borings advanced around the perimeter of the SWMU. The samples were submitted to Quanterra Laboratories and analyzed for VOCs, SVOCs, and RCRA metals. The analytical results were compared to background criteria, NC DENR soil to groundwater screening criteria and USEPA Region IX residential PRGs. Based on the evaluation of the results, acetone, a few SVOCs, and arsenic exceeded the regulatory driven criteria and established background/secondary criteria. Therefore, further investigation at SWMU 303 was recommended in the form of a Phase II CSI.

The Phase II CSI was conducted on March 19, 20, and April 2, 2002. The purpose of the investigation was to further evaluate potential impacts to soil at the SWMU and determine if

groundwater had been impacted as a result of a release(s) from the SWMU. The sample locations were selected based on results from the Phase I CSI. The field investigation included the following:

- Surface and subsurface soil sampling at three temporary well borings and two soil borings
- Groundwater sampling at three temporary wells
- Re-sampling surface soil at location SWMU303-IS04-00

A few SVOCs and metals were detected in soil and groundwater at concentrations exceeding the applicable screening criteria. Compounds that exceeded both the AOC and Base background screening criteria and NC DENR soil to groundwater screening criteria and/or Region IX industrial PRGs in soil included benzo(a)pyrene and arsenic.

4-methylphenol, naphthalene, arsenic, chromium, and lead exceeded the Base background screening criteria and/or the North Carolina 2L standards in groundwater. Conclusions from the Phase II investigation suggested that elevated turbidity in the groundwater samples from the temporary wells may have caused artificially high concentrations of metals in the samples.

Based on the data collected during the two phases of the CSI, it was recommended that a RFI be conducted at the site to further evaluate the SWMU.

1.1.6.2 SWMU 318 - AS515 Oil/Water Separator

SWMU 318 is a concrete, multi-chambered oil/water separator and grit chamber located adjacent to the helicopter wash pad at the Marine Corps Air Station (MCAS) New River. The primary function of the SWMU is to collect water, soap, oil, grease, and dirt from the helicopter wash pad, separate the solids from the liquids, and then segregate the oil and grease from the remaining liquids. The helicopter wash pad is covered with concrete. The area surrounding the SWMU is covered with grass. A drainage ditch that collects storm water run-off from the surrounding area is located adjacent to the oil/water separator.

A Phase I CSI was performed in September 1997. The purpose of the investigation was to determine if operation of the oil/water separator had impacted surface and subsurface soils in the vicinity of the SWMU. Surface soil samples were collected at three soil borings advanced around the perimeter of the SWMU. Initially, two soil samples were proposed to be collected

from each boring. However, the shallow depth to groundwater precluded collection of additional, deeper samples. In addition, one surface soil sample was collected from the drainage ditch adjacent to the oil/water separator. The samples were submitted to Quanterra Laboratories and analyzed for VOCs, SVOCs and RCRA metals. The analytical results were compared to background criteria, NC DENR soil to groundwater screening criteria and USEPA Region IX residential PRGs. Based on the evaluation of the results, several VOCs, SVOCs, and metals exceeded the regulatory driven criteria and established background/secondary criteria. Therefore, additional investigation at SWMU 318 was recommended in the form of a Phase II CSI.

The Phase II CSI was conducted on March 19 and 20, and April 2, 2002. The purpose of the investigation was to further evaluate potential impacts to soil at the SWMU and determine if groundwater had been impacted as a result of a release(s) from the SWMU. The sample locations were selected based on results from the Phase I CSI.

The field investigation included the following:

- Surface and subsurface soil sampling at three temporary well borings
- Surface soil sampling at two locations in the drainage ditch
- Groundwater sampling at three temporary wells

Several VOCs, SVOCs and metals were detected in soil and/or groundwater at concentrations exceeding the applicable screening criteria. Compounds that exceeded both the AOC and Base background screening criteria and NC DENR soil to groundwater screening criteria and/or USEPA Region III industrial PRGs in soil included: 1,2-dichlorobenzene, 1,4-dichlorobenzene, 1,1,2-trichloroethane, bromoform and methylene chloride (VOCs); benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenz(a,h)anthracene, bis(2-ethylhexyl)phthalate, indeno(1,2,3-cd)pyrene, and naphthalene (SVOCs); and arsenic, cadmium, chromium, mercury, and silver (metals).

Compounds that exceeded both the Base background screening criteria and/or 2L standards in groundwater included benzene, trichloroethene, vinyl chloride, 4-methylphenol, naphthalene, and arsenic. It was noted during the assessment that the elevated turbidity in the groundwater samples from the temporary wells might have caused artificially high arsenic concentrations in the samples.

1.2 INTERIM REMEDIAL ACTION OBJECTIVES

The primary objective of the interim remedial actions for the SWMUs are the removal of the delineated contaminated soil, proper disposal of the soil, and the subsequent backfilling and restoration of each area.

Additionally at SWMU 299 a new waste oil AST and collection system will be installed adjacent to Building AS-113 for use by Base personnel.

The excavation will be backfilled with clean off-site fill material, followed by re-grading and the placement of grass seed. *Figure 1.6* presents a site map showing the location of the excavation.

4.6.2 SWMU-314 Confirmation Soil Sample Collection and Analysis

Confirmation sidewall and floor samples will be collected from the excavation for laboratory analyses. Samples will be collected at the midpoint of the excavation sidewall at 50-feet intervals and one floor sample per 500 square feet of surface area (unless the excavation proceeds to groundwater). The excavation will require 4 sidewall and 2 floor samples. The samples will be shipped to a laboratory approved by the State of North Carolina for analysis. The confirmation soil samples will be analyzed for SVOCs using EPA Method 8270C and eight RCRA Metals using EPA Method 6010B and 7000 Series.

The excavation will remain open until the laboratory analytical results are received. Following receipt of analytical results a determination of whether to continue soil removal activities or backfill the excavation will be made.

4.7 SWMU 303/318- ASTS NEAR BUILDING AS-515 AND BUILDING AS-515 OIL/WATER SEPARATOR REMEDIAL ACTIVITIES

4.7.1 SWMU 303/318 ASTs Soil Excavation Activities

During removal activities, asphalt and concrete will be removed as necessary and staged separately from the contaminated soil. The asphalt will either be disposed at the Base landfill as construction debris or shipped to a local asphalt recycler. The concrete will be disposed at the Base landfill as construction debris.

Because soil cannot be staged in an area of active aircraft traffic, the soil will be loaded directly onto trucks for disposal. Therefore, disposal characterization will be completed prior to initiation of excavation work. Two composite soil samples will be collected from a representative area of the site and analyzed for Full RCRA TCLP analysis plus physical properties (one sample per 1,000 cubic yards) and 10 representative samples will be collected for TPH-DRO and TPH-GRO analysis (one per 200 cubic yards).

Shaw will remove the concrete from the helicopter wash pad prior to soil removal. The concrete oil/water separator will also be removed during demolition activities. Shaw will

excavate contaminated surface soils to depths ranging from 1-feet to 2-feet below land surface (or until groundwater is encountered) at five locations at SWMU-303/318. An estimated 1,600 bank cubic yards (2,000 tons) of soil will be excavated with a rubber tired back-hoe, and ultimately transported to a local solid waste (RCRA Subtitle D) landfill. Each of the five excavations will be backfilled with clean off-site fill material, followed by re-grading and the placement of either concrete, asphalt or grass (dependant on original surface cover).

Excavation Area 1 (180 x 100 feet x 1 foot deep and 20 x 120 feet x 1 foot deep) encompasses a majority of the helicopter wash pad area. Excavation Area 2 (40 x 25 feet x 2 feet deep) is located around soil boring SWMU318-SB05. Excavation Area 3 (25 x 35 feet x 2 feet deep) is located around soil boring SWMU318-TW02. Excavation Area 4 (25 x 40 feet x 2 feet deep) is located around soil boring SWMU318-SB03. Excavation Area 5 (15 x 30 feet x 2 feet deep) is located around soil boring SWMU318-IS04. *Figure 1.7* presents a site map showing the location of the excavation areas.

4.7.2 SWMU 303/318 Confirmation Soil Sample Collection and Analysis

Confirmation sidewall and floor samples will be collected from the excavation for laboratory analyses. Samples will be collected at the midpoint of the excavation sidewall at 50-feet intervals and one floor sample per 500 square feet of surface area (unless the excavation proceeds to groundwater). The excavation will require an estimated 20 sidewall and 35 floor samples. The samples will be shipped to a laboratory approved by the State of North Carolina for analysis. The confirmation soil samples will be analyzed for VOCs using EPA Method 8260B, SVOCs using EPA Method 8270C and eight RCRA Metals using EPA Method 6010B and 7000 Series.

4.8 BACKFILL/COMPACTING/GRADING

Clean soil will be used to backfill the excavations. This will either be imported fill or fill from an on site source. Possible on-site sources include the on-site borrow pit. Any off-site borrow material to be used as backfill will be sampled and analyzed for contaminants of concern prior to transport and use on site.

The fill soil will be placed in successive one-foot lifts and compacted with the site equipment before placing the next lift. After backfilling, the excavation areas will be compacted to pre-

Addendum to the
Camp Lejeune Basewide Sampling and Analysis Plan
for Solid Waste Management Units 254, 258, 293, 299, 314, and 303/318

1.0 Introduction

This Addendum to the Basewide SAP for Camp Lejeune Marine Corps Base was developed to provide task-specific requirements for implementing Interim Remedial Measures at specified Solid Waste Management Units (SWMUs). This Addendum is to be used in conjunction with the Basewide SAP. In the case of discrepancies between this Addendum and the Basewide SAP, this document takes precedence.

2.0 Scope of Investigation

The Interim Remedial Measure for SWMUs 254, 258, 293, 299, 314, and 303/318 will include excavation and disposal of impacted soils followed by backfilling and grading. SWMU 254 is a dumpster located west of Building 1408 and containing unpunched paint cans and approximately one gallon of Citrakleen. SWMU 258 is a concrete oil/water separator and grit chamber located within the central portion of the Hadnot Point Industrial Area adjacent to Building 1711. SWMU 293 is a baffled, concrete, in-ground oil/water separator containing waste oil, antifreeze, and possibly solvents. SWMU 299 is an above-ground storage tank (AST) that stores used oil and is located adjacent to Buildings AS-114 and AS-116. SWMU 314 is a concrete oil/water separator and vehicle wash rack located south/southwest of Montford Landing Road. SWMU 303/318 consists of ASTs near building AS-515.

3.0 Sampling and Analytical Methodology

The samples will be collected in accordance with the requirements of the Camp Lejeune Basewide SAP. Also reference Table B-1 of this SAP Addendum for sampling procedures. The samples will be analyzed by the fixed-base laboratory using appropriate SW-846 Update III and other EPA-approved methods.

3.1 Confirmation Samples

All excavations proposed for this scope of work will remain open until analytical results are available. Confirmation samples will be collected in each excavation at the midpoint of the sidewalls at 50-ft. intervals and floor samples every 500 sq.ft. A 3-day laboratory turn-around time will be requested for all confirmation samples.

3.1.1 SWMU 254

In the SWMU 254 excavation, the anticipated dimensions are 6-ft. below land surface (bls) by 50-ft. long by 25-ft. wide. This will yield 4 sidewall samples and 3 floor samples. All of these soil samples will be tested for Semi-volatile Organic Compounds (SVOCs) by SW-846 method 8270C.

3.1.2 SWMU 258

The SWMU 258 excavation will be approximately 3-ft. bls by 60-ft. long by 30-ft. wide. There will be 4 sidewall and 4 floor samples. All of these soil samples will be tested for RCRA Metals by SW-846 methods 6010B/7000 series.

3.1.3 SWMU 293

SWMU 293 will have an excavation 6-ft. bls by 13-ft. long by 10-ft. wide. This will yield 4 sidewall samples and 1 floor sample. All of these soil samples will be tested for RCRA Metals by SW-846 methods 6010B/7000 series.

3.1.4 SWMU 299

There will be three excavations at SWMU 299. Excavation A will require 6 sidewall and 2 floor samples. Excavation B will have 6 sidewall and 5 floor samples. Excavation C will need 4 sidewall and 2 floor samples. All of these soil samples will be tested for SVOCs by SW-846 method 8270C and RCRA Metals by SW-846 methods 6010B/7000 series.

3.1.5 SWMU 314

SWMU 314 will have an excavation approximately 3-ft. bls by 30-ft. long by 25-ft. wide. There will be 4 sidewall and 2 floor samples. All of these soil samples will be tested for SVOCs by SW-846 method 8270C and RCRA Metals by SW-846 methods 6010B/7000 series.

3.1.6 SWMU 303/318

Soil excavation activities at SWMU 303/318 will include five separate areas with an estimated 1,600 cubic yards of soil being removed. Reference the project Work Plan for locations and dimensions of these excavations. Asphalt and concrete will be staged separately from the contaminated soil. Prior to initiation of excavation work, two representative composite soil samples will be collected and analyzed for disposal characterization including full TCLP parameters by SW-846 method 1311 with Reactivity, Corrosivity, and Ignitability. Additionally ten representative samples will be collected for analysis of Diesel Range Organics (DRO) and Gasoline Range Organics (GRO) by SW-846 method 8015B. Approximately 20 sidewall and 35 floor confirmation samples will be collected from the excavations. These will be analyzed for Volatile Organic Compounds (VOCs) by SW-846 method 8260B, SVOCs by SW-846 method 8270C, and RCRA Metals by SW-846 methods 6010B/7000 series.

3.2 Backfill Samples

If backfill material is used from an on-site source, a representative sample will be collected and analyzed for contaminants of concern. The required analytical methods will be Target Compound List VOCs by SW-846 8260B, SVOCs by SW-846 8270C, and Target Analyte List Metals by SW-846 6010B/7000 series.

3.3 Disposal Samples

The excavated material will be stockpiled on a plastic liner to await disposal characterization. One sample per every 1,000 cubic yards will be tested for TCLP Metals by SW-846 method 1311/6010B/7000 series. One sample per every 200 cubic yards will be analyzed for DRO and GRO by SW-846 method 8015B.

3.4 Decontamination Water

Any water generated during the excavation activities will be collected and stored for appropriate disposal. Analysis for SVOCs and RCRA Metals may be required.

4.0 Subcontracted Laboratory

A laboratory previously procured for Navy Atlantic Division work will be assigned this task based on the capacity and capabilities of the pre-approved laboratories at the time of sampling.

Tables

TABLE B-1
Sampling and Analysis Summary

Sample Location	Sample Point	Matrix	Sampling Frequency	Approx Sample No.	Sampling Method	Sampling Equipment	TAT	QC Level	Required Analysis	Analytical Method	Holding Time	Preservatives	Containers
SWMU 254	Sidewall	Soil	50-foot intervals	4 + 1 MS/MSD	Grab	SS Spoon SS Bowl	3 days	Project Standard	SVOC	8270C	14 / 40 days	Cool to 4°C	1-4 oz. Jar
	Floor	Soil	1 every 500-sq.ft.	3 + 1 DUP	Grab	SS Spoon SS Bowl	3 days	Project Standard	SVOC	8270C	14 / 40 days	Cool to 4°C	1-4 oz. Jar
SWMU 258	Sidewall	Soil	50-foot intervals	4 + 1 MS/MSD	Grab	SS Spoon SS Bowl	3 days	Project Standard	RCRA Metals	6010B/7000	180 days	Cool to 4°C	1-4 oz. Jar
	Floor	Soil	1 every 500-sq.ft.	4 + 1 DUP	Grab	SS Spoon SS Bowl	3 days	Project Standard	RCRA Metals	6010B/7000	180 days	Cool to 4°C	1-4 oz. Jar
SWMU 293	Sidewall	Soil	50-foot intervals	4 + 1 DUP	Grab	SS Spoon SS Bowl	3 days	Project Standard	RCRA Metals	6010B/7000	180 days	Cool to 4°C	1-4 oz. Jar
	Floor	Soil	1 every 500-sq.ft.	1 + 1 MS/MSD	Grab	SS Spoon SS Bowl	3 days	Project Standard	RCRA Metals	6010B/7000	180 days	Cool to 4°C	1-4 oz. Jar

TABLE B-1
Sampling and Analysis Summary

Sample Location	Sample Point	Matrix	Sampling Frequency	Approx Sample No	Sampling Method	Sampling Equipment	TAT	QC Level	Required Analysis	Analytical Method	Holding Time	Preservatives	Containers
SWMU 299 Excavation A	Sidewall	Soil	50-foot intervals	6 + 1 MS/MSD	Grab	SS Spoon SS Bowl	3 days	Project Standard	SVOC RCRA Metals	8270C 6010B/7000	14 / 40 days 180 days	Cool to 4°C	2-4 oz. Jar
	Floor	Soil	1 every 500-sq.ft.	2 + 1 DUP	Grab	SS Spoon SS Bowl	3 days	Project Standard	SVOC RCRA Metals	8270C 6010B/7000	14 / 40 days 180 days	Cool to 4°C	2-4 oz. Jar
SWMU 299 Excavation B	Sidewall	Soil	50-foot intervals	6 + 1 DUP	Grab	SS Spoon SS Bowl	3 days	Project Standard	SVOC RCRA Metals	8270C 6010B/7000	14 / 40 days 180 days	Cool to 4°C	2-4 oz. Jar
	Floor	Soil	1 every 500-sq.ft.	5	Grab	SS Spoon SS Bowl	3 days	Project Standard	SVOC RCRA Metals	8270C 6010B/7000	14 / 40 days 180 days	Cool to 4°C	2-4 oz. Jar
SWMU 299 Excavation C	Sidewall	Soil	50-foot intervals	4	Grab	SS Spoon SS Bowl	3 days	Project Standard	SVOC RCRA Metals	8270C 6010B/7000	14 / 40 days 180 days	Cool to 4°C	2-4 oz. Jar
	Floor	Soil	1 every 500-sq.ft.	2	Grab	SS Spoon SS Bowl	3 days	Project Standard	SVOC RCRA Metals	8270C 6010B/7000	14 / 40 days 180 days	Cool to 4°C	2-4 oz. Jar
SWMU 314	Sidewall	Soil	50-foot intervals	4 + 1 DUP	Grab	SS Spoon SS Bowl	3 days	Project Standard	SVOC RCRA Metals	8270C 6010B/7000	14 / 40 days 180 days	Cool to 4°C	2-4 oz. Jar
	Floor	Soil	1 every 500-sq.ft.	2	Grab	SS Spoon SS Bowl	3 days	Project Standard	SVOC RCRA Metals	8270C 6010B/7000	14 / 40 days 180 days	Cool to 4°C	2-4 oz. Jar

TABLE B-1
Sampling and Analysis Summary

Sample Location	Sample Point	Matrix	Sampling Frequency	Approx Sample No	Sampling Method	Sampling Equipment	TAT	QC Level	Required Analysis	Analytical Method	Holding Time	Preservatives	Containers
SWMU 303/318	Sidewall	Soil	50-foot intervals	20 + 1 DUP + 1 MS/MSD	Grab	SS Spoon SS Bowl	3 days	Project Standard	VOC SVOC RCRA Metals	8260B 8270C 6010B/7000	14 days 14 / 40 days 180 days	Cool to 4°C	2-4 oz. Jar 3 EnCore Samplers
	Floor	Soil	1 every 500-sq.ft.	35 + 2 DUP + 1 MS/MSD	Grab	SS Spoon SS Bowl	3 days	Project Standard	VOC SVOC RCRA Metals	8260B 8270C 6010B/7000	14 days 14 / 40 days 180 days	Cool to 4°C	2-4 oz. Jar 3 EnCore Samplers
	Disposal Stockpile	Soil	1 every 1000 cubic yards	2	Grab	SS Spoon SS Bowl	14 days	Project Standard	TCLP Volatiles TCLP Semi-volatiles TCLP Pesticides TCLP Herbicides TCLP Metals Reactive Cyanide Reacitive Sulfide pH (Corrosivity) Ignitability	1311/8260B 1311/8270C 1311/8081A 1311/8151A 1311/6010B/7000 7.3 7.3 9040B 1010	14 / 14 days 14 / 14 / 40 days 14 / 14 / 40 days 14 / 14 / 40 days 14 / 180 days None None None None	Cool to 4°C	3-16 oz. Jars
		Soil	1 every 200 cubic yards	10	Grab	SS Spoon SS Bowl	14 days	Project Standard	Diesel Range Organics Gasoline Range Organics	8015B 5035/8015B	14 / 40 days 14 / 40 days	Cool to 4°C	1-4 oz. Jar 3 EnCore Samplers
Backfill Material	On-site Source	Soil	Once	1	Grab	SS Spoon SS Bowl	14 days	Project Standard	TCL VOC TCL SVOC TAL Metals	5035/8260B 8270C 6010B/7000	14 days 14 / 40 days 180 days	Cool to 4°C	2-4 oz. Jar 3 EnCore Samplers
Disposal	Stockpile	Soil	1 every 1000 cubic yards	5	Grab	SS Spoon SS Bowl	14 days	Project Standard	TCLP Metals	1311/6010B/7000	14 / 180 days	Cool to 4°C	1-4 oz. Jar
	Stockpile	Soil	1 every 200 cubic yards	25	Grab	SS Spoon SS Bowl	14 days	Project Standard	Diesel Range Organics Gasoline Range Organics	8015B 5035/8015B	14 / 40 days 14 / 40 days	Cool to 4°C	1-4 oz. Jar 3 EnCore Samplers
Decon Water	Waste Drums	Water	Once	1	Grab	Jar	14 days	Project Standard	SVOC RCRA Metals	8270C 6010B/7000	14 / 40 days 180 days	Cool to 4°C HNO_3	2-1L Ambers 1-250mL HDPE

TABLE B-2
Project Quality Control Objectives

		Project Action Limits		Minimum PQL		Accuracy Limits MS/MSD Recoveries		Precision Limits MS/MSD Deviation		Accuracy Limits LCS Recoveries		Precision Limits Field Dup Deviation		Completeness Limits	
Method No	Analyte / Component	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
TCL VOLATILES BY GC/MS		ug/L	ug/kg	ug/L	ug/kg	%	%	%	%	%	%	%	%	%	%
8260B	Acetone	700000	3000	2	10	60-140	20-150	<30	<50	65-135	43-165	<50	<75	95	90
8260B	Benzene	5000	5.6	2	10	60-140	20-150	<30	<50	65-135	51-139	<50	<75	95	90
8260B	Bromodichloromethane	NS	NS	4	20	60-140	20-150	<30	<50	65-135	58-145	<50	<75	95	90
8260B	Bromoform	NS	NS	6	30	60-140	20-150	<30	<50	65-135	67-129	<50	<75	95	90
8260B	Bromomethane	NS	NS	5.5	25	60-140	20-150	<30	<50	62-135	49-117	<50	<75	95	90
8260B	2-Butanone	170000	700	10	10	60-140	20-150	<30	<50	65-135	50-163	<50	<75	95	90
8260B	Carbon Disulfide	700000	4000	10	10	60-140	20-150	<30	<50	65-135	76-119	<50	<75	95	90
8260B	Carbon Tetrachloride	NS	NS	10.5	10	60-140	20-150	<30	<50	52-135	67-125	<50	<75	95	90
8260B	Chlorobenzene	NS	NS	2	10	60-140	20-150	<30	<50	65-135	69-140	<50	<75	95	90
8260B	Chloroethane	NS	NS	5	10	60-140	20-150	<30	<50	55-135	62-116	<50	<75	95	90
8260B	Chloroform	190	1	1.5	2	60-140	20-150	<30	<50	64-135	65-129	<50	<75	95	90
8260B	Chloromethane	2600	20	6.5	10	60-140	20-150	<30	<50	65-135	38-116	<50	<75	95	90
8260B	Dibromochloromethane	410	2	2.5	3	60-140	20-150	<30	<50	63-135	64-120	<50	<75	95	90
8260B	1,1-Dichloroethane	700000	4000	2	10	60-140	20-150	<30	<50	62-135	62-141	<50	<75	95	90
8260B	1,2-Dichloroethane	380	1.8	3	3	60-140	20-150	<30	<50	58-137	68-135	<50	<75	95	90
8260B	1,1-Dichloroethene	7000	45	6	10	60-140	20-150	<30	<50	65-135	54-128	<50	<75	95	90
8260B	Cis-1,2-Dichloroethene	70000	350	6	10	60-140	20-150	<30	<50	65-135	60-141	<50	<75	95	90
8260B	Trans-1,2-Dichloroethene	70000	380	3	10	60-140	20-150	<30	<50	65-135	51-148	<50	<75	95	90
8260B	1,2-Dichloropropane	560	2.9	2	2	60-140	20-150	<30	<50	60-135	76-132	<50	<75	95	90
8260B	Cis-1,3-Dichloropropene	200	0.9	5	5	60-140	20-150	<30	<50	64-135	70-122	<50	<75	95	90
8260B	Trans-1,3-Dichloropropene	200	0.9	5	5	60-140	20-150	<30	<50	56-135	42-154	<50	<75	95	90
8260B	Ethylbenzene	29000	240	3	10	60-140	20-150	<30	<50	65-135	59-140	<50	<75	95	90
8260B	2-Hexanone	280000	1900	10	10	60-140	20-150	<30	<50	65-135	47-165	<50	<75	95	90
8260B	4-Methyl-2-pentanone	NS	NS	10	10	60-140	20-150	<30	<50	65-135	77-119	<50	<75	95	90
8260B	Methylene Chloride	5000	20	1.5	10	60-140	20-150	<30	<50	65-135	55-126	<50	<75	95	90
8260B	Styrene	100000	2240	2	10	60-140	20-150	<30	<50	65-135	71-133	<50	<75	95	90
8260B	1,1,2,2-Tetrachloroethane	170	1	2	2	60-140	20-150	<30	<50	64-135	55-138	<50	<75	95	90
8260B	Tetrachloroethene	700	7.4	7	7	60-140	20-150	<30	<50	61-135	67-131	<50	<75	95	90
8260B	Toluene	257500	7000	5.5	10	60-140	20-150	<30	<50	64-135	31-137	<50	<75	95	90
8260B	1,1,1-Trichloroethane	NS	NS	4	10	60-140	20-150	<30	<50	65-135	68-135	<50	<75	95	90
8260B	1,1,2-Trichloroethane	NS	NS	5	10	60-140	20-150	<30	<50	65-135	70-141	<50	<75	95	90
8260B	Trichloroethene	2800	18.3	5	10	60-140	20-150	<30	<50	61-135	67-137	<50	<75	95	90
8260B	Vinyl Chloride	15	NS	5.5	9	60-140	20-150	<30	<50	36-144	31-121	<50	<75	95	90
8260B	Xylenes, Total	87500	5000	2.5	10	60-140	20-150	<30	<50	65-135	68-133	<50	<75	95	90
8260B	Dibromofluoromethane (surr)					75-125	65-135								
8260B	Toluene-d8 (surr)					75-125	65-135								
8260B	4-Bromofluorobenzene (surr)					75-1225	65-135								
8260B	1,2-Dichloroethane-d4 (surr)					62-139	52-149								

Notes:
NS = Not Specified
NA = Not Applicable

TABLE B-2
Project Quality Control Objectives

		Project Action Limits		Minimum PQL		Accuracy Limits MS/MSD Recoveries		Precision Limits MS/MSD Deviation		Accuracy Limits LCS Recoveries		Precision Limits Field Dup Deviation		Completeness Limits	
Method No	Analyte / Component	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
TCL SEMI-VOLATILES BY GC/MS		ug/L	ug/kg	ug/L	ug/kg	%	%	%	%	%	%	%	%	%	%
8270C	Phenol	NS	NS	10	330	60-140	20-150	<30	<50	25-125	25-135	<50	<75	95	90
8270C	Bis (2-chloroethyl) ether	31	NS	10	330	60-140	20-150	<30	<50	44-125	34-135	<50	<75	95	90
8270C	2-Chlorophenol	NS	NS	10	330	60-140	20-150	<30	<50	41-125	31-135	<50	<75	95	90
8270C	1,3-Dichlorobenzene	61500	24000	10	330	60-140	20-150	<30	<50	36-125	26-135	<50	<75	95	90
8270C	1,4-Dichlorobenzene	39500	1000	10	330	60-140	20-150	<30	<50	30-125	25-135	<50	<75	95	90
8270C	1,2-Dichlorobenzene	72500	7000	10	330	60-140	20-150	<30	<50	42-155	32-135	<50	<75	95	90
8270C	2-Methylphenol	NS	NS	10	330	60-140	20-150	<30	<50	25-125	25-135	<50	<75	95	90
8270C	Bis (2-chloroisopropyl) ether	NS	NS	10	330	60-140	20-150	<30	<50	36-166	26-175	<50	<75	95	90
8270C	4-Methylphenol	NS	NS	10	330	60-140	20-150	<30	<50	33-125	25-135	<50	<75	95	90
8270C	N-Nitrosodi-n-propylamine	NS	NS	10	330	60-140	20-150	<30	<50	37-125	27-135	<50	<75	95	90
8270C	Hexachloroethane	NS	NS	10	330	60-140	20-150	<30	<50	25-153	25-163	<50	<75	95	90
8270C	Nitrobenzene	NS	NS	10	330	60-140	20-150	<30	<50	46-133	36-143	<50	<75	95	90
8270C	Isophorone	NS	NS	10	330	60-140	20-150	<30	<50	26-175	25-175	<50	<75	95	90
8270C	2-Nitrophenol	NS	NS	10	330	60-140	20-150	<30	<50	44-125	34-135	<50	<75	95	90
8270C	2,4-Dimethylphenol	140000	900	10	330	60-140	20-150	<30	<50	45-139	35-149	<50	<75	95	90
8270C	Bis (2-chloroethoxy) methane	NS	NS	10	330	60-140	20-150	<30	<50	49-125	39-135	<50	<75	95	90
8270C	2,4-Dichlorophenol	NS	NS	10	330	60-140	20-150	<30	<50	46-125	36-135	<50	<75	95	90
8270C	1,2,4-Trichlorobenzene	9500	2600	10	330	60-140	20-150	<30	<50	44-142	34-152	<50	<75	95	90
8270C	Naphthalene	15500	580	10	330	60-140	20-150	<30	<50	50-125	40-135	<50	<75	95	90
8270C	4-Chloroaniline	NS	NS	20	330	60-140	20-150	<30	<50	45-136	35-146	<50	<75	95	90
8270C	Hexachlorobutadiene	440	2600	10	330	60-140	20-150	<30	<50	25-125	25-135	<50	<75	95	90
8270C	4-Chloro-3-methyl phenol	NS	NS	20	330	60-140	20-150	<30	<50	44-125	34-135	<50	<75	95	90
8270C	2-Methylnaphthalene	12500	3000	10	330	60-140	20-150	<30	<50	41-125	31-135	<50	<75	95	90
8270C	Hexachlorocyclopentadiene	NS	NS	10	330	60-140	20-150	<30	<50	41-125	31-135	<50	<75	95	90
8270C	2,4,6-Trichlorophenol	NS	NS	10	330	60-140	20-150	<30	<50	39-128	29-138	<50	<75	95	90
8270C	2,4,5-Trichlorophenol	NS	NS	50	800	60-140	20-150	<30	<50	25-175	25-175	<50	<75	95	90
8270C	2-Chloronaphthalene	NS	NS	10	330	60-140	20-150	<30	<50	60-125	50-135	<50	<75	95	90
8270C	2-Nitroaniline	NS	NS	50	800	60-140	20-150	<30	<50	50-125	40-135	<50	<75	95	90
8270C	Dimethyl phthalate	NS	NS	10	330	60-140	20-150	<30	<50	25-175	25-175	<50	<75	95	90
8270C	Acenaphthylene	1965	11000	10	330	60-140	20-150	<30	<50	47-125	37-135	<50	<75	95	90
8270C	2,6-Dinitrotoluene	NS	NS	10	330	60-140	20-150	<30	<50	51-125	41-135	<50	<75	95	90
8270C	3-Nitroaniline	NS	NS	50	800	60-140	20-150	<30	<50	51-125	41-135	<50	<75	95	90
8270C	Acenaphthene	2120	8000	10	330	60-140	20-150	<30	<50	49-124	39-135	<50	<75	95	90
8270C	2,4-Dinitrophenol	NS	NS	50	800	60-140	20-150	<30	<50	30-151	25-161	<50	<75	95	90
8270C	4-Nitrophenol	NS	NS	50	800	60-140	20-150	<30	<50	25-131	25-141	<50	<75	95	90
8270C	Dibenzofuran	28000	4700	10	330	60-140	20-150	<30	<50	52-125	42-135	<50	<75	95	90
8270C	2,4-Dinitrotoluene	NS	NS	10	330	60-140	20-150	<30	<50	39-139	29-149	<50	<75	95	90
8270C	Diethyl phthalate	NS	NS	10	330	60-140	20-150	<30	<50	37-125	27-135	<50	<75	95	90
8270C	4-Chlorophenyl-phenyl ether	NS	NS	10	330	60-140	20-150	<30	<50	51-132	41-142	<50	<75	95	90
8270C	Fluorene	950	44000	10	330	60-140	20-150	<30	<50	48-139	38-149	<50	<75	95	90
8270C	4-Nitroaniline	NS	NS	50	800	60-140	20-150	<30	<50	40-143	30-153	<50	<75	95	90
8270C	4,6-Dinitro-2-methyl phenol	NS	NS	50	800	60-140	20-150	<30	<50	26-134	25-144	<50	<75	95	90
8270C	N-Nitrosodiphenylamine	NS	NS	10	330	60-140	20-150	<30	<50	27-125	25-135	<50	<75	95	90
8270C	4-Bromophenyl-phenyl ether	NS	NS	10	330	60-140	20-150	<30	<50	53-127	43-137	<50	<75	95	90

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TABLE B-2
Project Quality Control Objectives

		Project Action Limits		Minimum PQL		Accuracy Limits MS/MSD Recoveries		Precision Limits MS/MSD Deviation		Accuracy Limits LCS Recoveries		Precision Limits Field Dup Deviation		Completeness Limits	
Method No	Analyte / Component	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
TCL SEMI-VOLATILES BY GC/MS		ug/L	ug/kg	ug/L	ug/kg	%	%	%	%	%	%	%	%	%	%
8270C	Hexachlorobenzene	NS	NS	10	330	60-140	20-150	<30	<50	46-133	36-143	<50	<75	95	90
8270C	Pentachlorophenol	NS	NS	50	800	60-140	20-150	<30	<50	28-136	38-146	<50	<75	95	90
8270C	Phenanthrene	410	60000	10	330	60-140	20-150	<30	<50	54-125	44-135	<50	<75	95	90
8270C	Anthracene	2100	995000	10	330	60-140	20-150	<30	<50	45-165	35-175	<50	<75	95	90
8270C	Carbazole	NS	NS	10	330	60-140	20-150	<30	<50	34-132	34-132	<50	<75	95	90
8270C	Di-n-butyl phthalate	NS	NS	10	330	60-140	20-150	<30	<50	34-126	25-136	<50	<75	95	90
8270C	Fluoranthene	280	276000	10	330	60-140	20-150	<30	<50	47-125	37-135	<50	<75	95	90
8270C	Pyrene	210	286000	10	330	60-140	20-150	<30	<50	47-136	37-146	<50	<75	95	90
8270C	Butyl benzyl phthalate	NS	NS	10	330	60-140	20-150	<30	<50	26-125	25-135	<50	<75	95	90
8270C	3,3'-Dichlorobenzidine	NS	NS	20	330	60-140	20-150	<30	<50	29-175	25-175	<50	<75	95	90
8270C	Benzo (a) anthracene	22	340	10	330	60-140	20-150	<30	<50	51-133	41-143	<50	<75	95	90
8270C	Chrysene	5	38000	10	330	60-140	20-150	<30	<50	55-133	45-143	<50	<75	95	90
8270C	Bis (2-ethylhexyl) phthalate	3000	6670	10	330	60-140	20-150	<30	<50	33-129	25-139	<50	<75	95	90
8270C	Di-n-octyl phthalate	NS	NS	10	330	60-140	20-150	<30	<50	38-127	28-137	<50	<75	95	90
8270C	Benzo (b) fluoranthene	0.6	1000	10	330	60-140	20-150	<30	<50	37-125	27-135	<50	<75	95	90
8270C	Benzo (k) fluoranthene	0.47	12000	10	330	60-140	20-150	<30	<50	37-123	37-123	<50	<75	95	90
8270C	Benzo (a) pyrene	1.5	91	10	660	60-140	20-150	<30	<50	41-125	31-135	<50	<75	95	90
8270C	Indeno (1,2,3-c,d) pyrene	31	3000	10	660	60-140	20-150	<30	<50	27-160	25-170	<50	<75	95	90
8270C	Dibenzo (a,h) anthracene	0.25	170	10	660	60-140	20-150	<30	<50	50-125	40-135	<50	<75	95	90
8270C	Benzo (g,h,i) perylene	210	6720000	10	660	60-140	20-150	<30	<50	34-149	25-159	<50	<75	95	90
8270C	2,4,6-Tribromophenol					25-134	19-122								
8270C	2-Fluorobiphenyl					43-125	30-115								
8270C	2-Fluorophenol					25-125	25-121								
8270C	Nitrobenzene-d5					32-125	23-120								
8270C	Phenol-d5					25-125	24-113								
8270C	Terphenyl-d14					42-126	18-137								
TOTAL ORGANICS BY GC		ug/L	mg/kg	ug/L	mg/kg	%	%	%	%	%	%	%	%	%	%
8015B	Diesel Range Organics	NS	10	10	10	60-140	30-170	<30	<50	25-125	61-143	<50	<75	95	90
8015B	Gasoline Range Organics	NS	10	10	1	60-140	30-170	<30	<50	44-125	67-136	<50	<75	95	90
TAL METALS BY ICP		mg/L	mg/kg	mg/L	mg/kg	%	%	%	%	%	%	%	%	%	%
6010B	Aluminum	NS	NS	0.2	22.0	50-150	30-170	<30	<50	80-120	80-120	<50	<75	95	90
6010B	Antimony	NS	NS	0.06	10.0	50-150	30-170	<30	<50	80-120	80-120	<50	<75	95	90
6010B	Arsenic	NS	NS	0.01	40.0	50-150	30-170	<30	<50	80-120	80-120	<50	<75	95	90
6010B	Barium	2000000	848000	0.2	1.0	50-150	30-170	<30	<50	80-120	80-120	<50	<75	95	90
6010B	Beryllium	NS	NS	0.005	1.0	50-150	30-170	<30	<50	80-120	80-120	<50	<75	95	90
6010B	Cadmium	NS	NS	0.005	0.50	50-150	30-170	<30	<50	80-120	80-120	<50	<75	95	90
6010B	Calcium	NS	NS	5	100	50-150	30-170	<30	<50	80-120	80-120	<50	<75	95	90
6010B	Chromium	50000	27000	0.01	20	50-150	30-170	<30	<50	80-120	80-120	<50	<75	95	90
6010B	Cobalt	NS	NS	0.05	10.0	50-150	30-170	<30	<50	80-120	80-120	<50	<75	95	90
6010B	Copper	NS	NS	0.025	2.0	50-150	30-170	<30	<50	80-120	80-120	<50	<75	95	90
6010B	Iron	NS	NS	0.1	3.0	50-150	30-170	<30	<50	80-120	80-120	<50	<75	95	90
6010B	Lead	15000	270000	0.003	10.0	50-150	30-170	<30	<50	80-120	80-120	<50	<75	95	90
6010B	Magnesium	NS	NS	5	100	50-150	30-170	<30	<50	80-120	80-120	<50	<75	95	90
TAL METALS BY ICP		mg/L	mg/kg	mg/L	mg/kg	%	%	%	%	%	%	%	%	%	%
6010B	Manganese	NS	NS	0.015	2.0	50-150	30-170	<30	<50	80-120	80-120	<50	<75	95	90
6010B	Nickel	NS	NS	0.04	2.0	50-150	30-170	<30	<50	80-120	80-120	<50	<75	95	90
6010B	Potassium	NS	NS	5	600	50-150	30-170	<30	<50	80-120	80-120	<50	<75	95	90
6010B	Selenium	NS	NS	0.005	3.0	50-150	30-170	<30	<50	80-120	80-120	<50	<75	95	90
6010B	Silver	18000	230	0.01	1.0	50-150	30-170	<30	<50	80-120	80-120	<50	<75	95	90
6010B	Sodium	NS	NS	5	10.0	50-150	30-170	<30	<50	80-120	80-120	<50	<75	95	90

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TABLE B-2
Project Quality Control Objectives

		Project Action Limits		Minimum PQL		Accuracy Limits MS/MSD Recoveries		Precision Limits MS/MSD Deviation		Accuracy Limits LCS Recoveries		Precision Limits Field Dup Deviation		Completeness Limits	
Method No	Analyte / Component	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
6010B	Thallium	NS	NS	0.01	6.0	50-150	30-170	<30	<50	80-120	80-120	<50	<75	95	90
6010B	Vanadium	NS	NS	0.05	1.0	50-150	30-170	<30	<50	80-120	80-120	<50	<75	95	90
6010B	Zinc	NS	NS	0.02	1.0	50-150	30-170	<30	<50	80-120	80-120	<50	<75	95	90
MERCURY BY COLD VAPOR		mg/L	mg/kg	mg/L	mg/kg	%	%	%	%	%	%	%	%	%	%
7470A	Mercury	NS	NA	0.001	NA	50-150	NA	<30	NA	70-130	NA	<50	NA	95	NA
7471A	Mercury	NA	NS	NA	0.001	50-150	NA	<30	NA	70-130	NA	<50	NA	95	NA

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TABLE B-2
Project Quality Control Objectives

Method No	Analyte / Component	Project Action Limits	Minimum PQL	Accuracy Limits MS/MSD Recoveries	Precision Limits MS/MSD Deviation	Accuracy Limits LCS Recoveries	Precision Limits Field Dup Deviation	Completeness Limits
		TCLP	TCLP	TCLP	TCLP	TCLP	TCLP	TCLP
TCLP VOLATILES BY GC/MS		mg/L	mg/L	%	%	%	%	%
1311/8260B	Benzene	0.5	0.1	50-150	<50	70-130	<50	90
1311/8260B	Carbon Tetrachloride	0.5	0.1	50-150	<50	70-130	<50	90
1311/8260B	Chlorobenzene	100	20	50-150	<50	70-130	<50	90
1311/8260B	Chloroform	6	1	50-150	<50	70-130	<50	90
1311/8260B	1,1-Dichloroethene	0.7	0.1	50-150	<50	70-130	<50	90
1311/8260B	1,2-Dichloroethane	0.5	0.1	50-150	<50	70-130	<50	90
1311/8260B	Methyl etheyl ketone	200	20	50-150	<50	70-130	<50	90
1311/8260B	Tetrachloroethene	0.7	0.7	50-150	<50	70-130	<50	90
1311/8260B	Trichloroethene	0.5	0.1	50-150	<50	70-130	<50	90
1311/8260B	Vinyl Chloride	0.2	0.05	50-150	<50	70-130	<50	90
TCLP SEMI-VOLATILES BY GC/MS		mg/L	mg/L	%	%	%	%	%
1311/8270C	Cresols	200	40	50-150	<50	70-130	<50	90
1311/8270C	1,4-Dichlorobenzene	7.5	1	50-150	<50	70-130	<50	90
1311/8270C	2,4-Dinitrotoluene	0.13	0.02	50-150	<50	70-130	<50	90
1311/8270C	Hexachlorobenzene	0.13	0.02	50-150	<50	70-130	<50	90
1311/8270C	Hexachlorobutadiene	0.5	0.4	50-150	<50	70-130	<50	90
1311/8270C	Hexachloroethane	3	0.5	50-150	<50	70-130	<50	90
1311/8270C	Nitrobenzene	2	0.4	50-150	<50	70-130	<50	90
1311/8270C	Pentachlorophenol	100	80	50-150	<50	70-130	<50	90
1311/8270C	Pyridine	5	1	50-150	<50	70-130	<50	90
1311/8270C	2,4,5-Trichlorophenol	400	80	50-150	<50	70-130	<50	90
1311/8270C	2,4,6-Trichlorophenol	2	0.4	50-150	<50	70-130	<50	90
TCLP PESTICIDES BY GC		mg/L	mg/L	%	%	%	%	%
1311/8081A	Endrin	0.02	0.004	50-150	<50	70-130	<50	90
1311/8081A	Lindane	0.4	0.08	50-150	<50	70-130	<50	90
1311/8081A	Methoxychlor	10	1	50-150	<50	70-130	<50	90
1311/8081A	Toxaphene	0.5	0.1	50-150	<50	70-130	<50	90
1311/8081A	Chlordane	0.03	0.005	50-150	<50	70-130	<50	90
1311/8081A	Heptachlor	0.008	0.001	50-150	<50	70-130	<50	90
1311/8081A	Heptachlor epoxide	0.008	0.001	50-150	<50	70-130	<50	90
TCLP HERBICIDES BY GC		mg/L	mg/L	%	%	%	%	%
1311/8151A	2,4-D	10	2	50-150	<50	70-130	<50	90
1311/8151A	2,4,5-TP	1	0.2	50-150	<50	70-130	<50	90

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NA= not applicable

TABLE B-2
Project Quality Control Objectives

Method No	Analyte / Component	Project Action Limits	Minimum PQL	Accuracy Limits MS/MSD Recoveries	Precision Limits MS/MSD Deviation	Accuracy Limits LCS Recoveries	Precision Limits Field Dup Deviation	Completeness Limits
		TCLP	TCLP	TCLP	TCLP	TCLP	TCLP	TCLP
TCLP METALS BY ICP/CV		mg/L	mg/L	%	%	%	%	%
6010B	Arsenic	5	1	50-150	<50	70-130	<50	90
6010B	Barium	100	20	50-150	<50	70-130	<50	90
6010B	Cadmium	1	0.2	50-150	<50	70-130	<50	90
6010B	Chromium	5	1	50-150	<50	70-130	<50	90
6010B	Lead	5	1	50-150	<50	70-130	<50	90
7470A	Mercury	0.2	0.04	50-150	<50	70-130	<50	90
6010B	Selenium	1	0.2	50-150	<50	70-130	<50	90
6010B	Silver	5	1	50-150	<50	70-130	<50	90
TCLP CHARACTERISTICS		mg/L	mg/L	%	%	%	%	%
7.3	Reactive Sulfide	500	50	N/A	<50	N/A	<50	90
7.3	Reactive Cyanide	250	25	N/A	<50	N/A	<50	90
1010	Ignitability	<60°C or <140°F	40°C or 100°F	N/A	<50	N/A	<50	90
9040B	pH (Corrosivity)	≤2; ≥12.5	N/A	N/A	<50	N/A	<50	90

Notes:
NS= not specified
NA= not applicable