ATC ASSOCIATES OF NORTH CAROLINA, P.C.
Engineering Individual Solutions

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August 19, 2014

Mr. David P. Kwiatkowski
North Carolina Department of Environment and Natural Resources
Division of Waste Management,
Inactive Hazardous Sites Branch - Superfund Section
Pre-Regulatory Landfill Unit
1646 Mail Service Center
Raleigh, North Carolina 27699-1646

RE: Work Plan and Cost Proposal for Task Orders 265DP-7 and 265DP-8
For Surface Water, Sediment, Soil, and Groundwater Sampling
Stedman Dump
Stedman, Cumberland County, North Carolina
ID No. NONCD0000265
State Contract No. N13003S

Dear Mr. Kwiatkowski:

ATC Associates of North Carolina, P.C. (ATC) is submitting this Work Plan and cost proposal in response to the Pre-Regulatory Landfill Unit's (Unit) July 22, 2014, request referencing *Task Orders 265DP-7* and *265DP-8*. This workplan details investigation to be performed at the above referenced site to evaluate soil, groundwater, surface water, and sediment within and around the waste disposal area. In addition, ATC will also characterize the subsurface waste and determine an approximate waste volume based on this assessment and previous remedial investigations. Section 1.0 of this submittal describes general procedures to be followed during field activities, Section 2.0 contains a detailed description of the proposed scope of work by task, Section 3.0 details the proposed schedule and staffing, and Section 4.0 provides estimated costs.

1.0 GENERAL PROCEDURES

Sampling procedures for field activities detailed in this workplan will be in accordance with ATC's approved Standard Operating Procedures (SOPs) and Quality Assurance (QA) Manual dated April 17, 2013. In addition, all employees, including subcontractor personnel, engaged in intrusive field activities will be trained in accordance with Occupational Safety and Health Administration (OSHA) Hazardous Waste Operations and Emergency Response (HAZWOPER) requirements. The following general procedures will be followed for all field activities detailed in this workplan:

- Before and after photographs will be taken of any areas that are disturbed as part of the scope of work. Photographs of any damage will be provided to the Unit within 48 hours.
- Survey locations will be recorded with a Global Positioning System (GPS) unit in latitude and longitude by decimal degrees to the seventh order using the North American Datum

of 1983 (NAD83) format. Coordinates will also be reported in latitude and longitude using WGS 84 format.

- Updates will be provided to the Unit on a daily basis via email and/or telephone.
- For quality assurance/quality control, one trip blank will be included in each sample shipment for analysis of volatile organic compounds (VOCs), one equipment rinsate blank will be collected per media per week and analyzed for all parameters, and one duplicate sample will be collected per media per day and analyzed for all parameters. Note the rinsate samples will be collected from the hand auger during sediment sampling and the water level meter during groundwater sampling. (Refer to Section 2.0 for additional details regarding proposed analyses for each media of concern.)
- A copy of Appendix B of the Unit Guidelines (December 2013) has been provided to the laboratories as a reference for the required analytical parameters. The target compounds and their proposed reporting limits are summarized in ***Attachment 4***.
- A completeness check of laboratory analytical reports will be performed. If issues are identified, ATC will work with the laboratory to attempt to resolve issues. Once issues are resolved, ATC will provide documentation of the completeness check with a statement that the data is usable.
- Field notes, sample sheets, and if applicable, photographs, will be provided to the Unit upon completion of field activities. Tables and figures will then be provided to the Unit and billed under the appropriate sub-tasks for *Task Order 265DP-7*. Upon approval by the Unit, the final report will be submitted and billed under Task Order *Task Order 265DP-8*.

2.0 SCOPE OF WORK

Task Order 265DP-7 – Work Plan and Field Services

Subtask A – Work Plan and Estimate Preparation

Under this subtask, ATC will prepare a work plan and cost proposal for the requested scope of work as noted in *Task Orders 265DP-7 and 265DP-8*. This submittal is intended to fulfill this task. Refer to subsequent sections of this submittal for details regarding the proposed scope of work.

Subtask B – Surface Water/Sediment Sampling of On-Site Seep/Drainage Feature

This subtask includes sampling of surface water and sediment from two locations (SW/SED-1 and SW/SED-2) as shown on the attached ***Figure 1***. Samples will be collected in a downstream to upstream order. If the surface water samples are highly turbid, samples for metals analysis will be allowed to sit for several minutes prior to decanting into sample containers. If decantation is performed, ATC will also collect post-decantation turbidity readings. Samples for other analyses will be immediately placed into sample containers. The samples will be submitted to a North Carolina certified laboratory and analyzed for the following parameters by the most current U.S. EPA Contract Laboratory Program Target Compound List:

- VOCs by SW-846 Method 8260 plus 10 tentatively identified compounds (TICs)
- 1,4-dioxane by Method 8260SIM
- Semivolatile organic compounds (SVOCs) by SW-846 Method 8270 plus 10 TICs

- Inorganic hazardous substances by SW-846 Method 6020 (antimony, arsenic, beryllium, cadmium, chromium, copper, iron, lead, manganese, nickel, selenium, silver, thallium, and zinc)
- Mercury by Method 7470/7471
- Ammonia and nitrate by SM 4500
- Sulfate by ASTM D516

Subtask C – Installation of Soil Boring and Analysis

This subtask includes soil boring advancement and soil sampling outside the waste disposal area. See ***Subtask D*** for details concerning boring advancement inside the waste. A total of six borings (SB-1 through SB-6) will be advanced at the locations depicted on the Unit's attached ***Figure 1***. Note that if waste is encountered at these locations, additional borings will be added in the field to refine delineation based on field conditions. The soil borings will be described in the field using a "B#" for borings from which no soil samples are submitted for laboratory analysis (beginning with B-23 if necessary) and "SB#" for borings from which soil samples are submitted for laboratory analysis.

Boring depths will continue until 10 feet below ground surface (bgs), or refusal, whichever is reached first. The first 5 feet of each boring will be advanced and samples will be collected using a hand auger in order to avoid potential unmarked utility lines. Below a depth of 5 feet bgs, the direct-push rig will be used to collect a continuous soil core using a Macrocore® with Teflon® liners. Per instructions from Unit personnel during ATC's SOP and QA Manual preparation, a photoionization detector (PID) will be used to screen the air zone directly overlying the sample core. Samples will then be collected at the desired sample depth directly into laboratory supplied containers. For all of the borings, soil samples will be collected and submitted for laboratory analysis from 1 foot bgs, an intermediate depth to be determined in the field based on PID readings, visual evidence, and/or odor, and 10 feet bgs. Soil samples will be submitted to a North Carolina certified laboratory and analyzed for the following parameters by the most current U.S. EPA Contract Laboratory Program Target Compound List:

- VOCs by SW-846 Method 8260 plus 10 TICs
- 1,4-dioxane by Method 8260SIM
- SVOCs by SW-846 Method 8270 plus 10 TICs
- Inorganic hazardous substances by SW-846 Method 6020 (antimony, arsenic, beryllium, cadmium, chromium, copper, iron, lead, manganese, nickel, selenium, silver, thallium, and zinc)
- Mercury by Method 7471
- Ammonia and nitrate by SM 4500
- Sulfate by ASTM D516

At the conclusion of each boring advancement, the borehole will be abandoned and finished to match surface conditions. See ***Subtask F*** for further details regarding abandonment methods and investigative derived waste (IDW) management.

Subtask D – Waste Characterization

This subtask includes soil boring advancement and soil sampling inside the waste disposal area. A total of four borings (SB-7 through SB-10) will be advanced at the locations depicted on the Unit's attached ***Figure 1***. Boring depths will continue until native soil below the waste is reached or refusal is encountered. The first 5 feet of each boring will be advanced and samples will be collected using a hand auger in order to avoid potential unmarked utility lines. Below a depth of 5 feet bgs, the direct-push rig will be used to collect a continuous soil core using a Macrocore® with Teflon® liners. Per instructions from Unit personnel during ATC's SOP and QA Manual preparation, a PID will be used to screen the air zone directly overlying the sample core. Samples will then be collected at the desired sample depth directly into laboratory supplied containers. For all of the borings, soil samples will be collected and submitted for laboratory analysis from 1 foot bgs, an intermediate depth in the waste to be determined in the field based on PID readings, visual evidence, and/or odor, and at the interface of the waste fill material and native soil.

Soil samples will be submitted to a North Carolina certified laboratory and analyzed for the parameters listed in *Subtask C*. In addition, samples will also be collected at two foot intervals throughout the borings and submitted for asbestos. ATC's costs assume that the boring depths will be 15 feet bgs or less. An accredited asbestos inspector will perform the required debris and asbestos sampling in general conformance with the Asbestos Hazard Emergency Response Act. ATC's costs assume that up to eight samples per boring will be submitted for analysis of asbestos. For quality assurance/quality control, one (1) duplicate sample will also be collected for each day of sampling. Based on past experience, collection of soil and waste material will likely result in samples that are best qualitatively analyzed by conducting a filtrate collection, followed by transmission electron microscopy (TEM), to yield a positive or negative result for the presence of asbestos. However, if building materials are encountered, the standard polarized light microscopy (PLM) analytical technique (EPA/600/R-93/116, July 1993) will be conducted. For proposal purposes, given the TEM method's higher pricing, we have assumed the TEM method for the entire sample set.

At the conclusion of each boring advancement, the borehole will be abandoned and finished to match surface conditions. See *Subtask F* for further details regarding abandonment methods and investigative derived waste (IDW) management.

Subtask E – Installation of Temporary Monitoring Wells, Sampling, and Analysis

This subtask includes temporary monitoring well installation at the locations depicted on the Unit's attached ***Figure 1***. A total of four, type II, temporary monitoring wells (TW-1 through TW-4) will be installed using hollow-stem auger drilling techniques. The wells will be advanced to approximately eight feet below the encountered groundwater table. If refusal is encountered before groundwater, ATC will contact the Unit Project Manager for direction. Costs assume that the monitoring wells will be 2-inch in diameter and installed to an average depth of 15 feet bgs. Monitoring wells will be installed with 10 feet of 0.010-inch machine slotted poly vinyl chloride (PVC) well screens and solid PVC risers. The annular space will be filled with filter sand and a 2-foot thick bentonite seal above the filter sand.

After the temporary installation, the monitoring wells will be developed using dedicated high density polyethylene (HDPE) tubing and a stainless steel foot valve. ATC will perform a survey

of the monitoring well locations, ground surface elevations at the base of the monitoring wells, and the top of casing elevations for the monitoring wells. Following the collection of groundwater samples and survey data, the temporary wells will be properly abandoned.

A minimum of 24 hours following installation, static water levels will be gauged and groundwater samples will be collected from the monitoring wells. Groundwater samples will be collected using Teflon® tubing and low flow sampling methods. If they are highly turbid, samples for metals analysis will be allowed to sit for several minutes prior to decanting into sample containers. If decantation is performed, ATC will also collect post-decantation turbidity readings. Samples for other analyses will be immediately placed into sample containers. The samples will be submitted to a North Carolina certified laboratory and analyzed for the following parameters by the most current U.S. EPA Contract Laboratory Program Target Compound List:

- VOCs by SW-846 Method 8260 plus 10 TICs
- 1,4-dioxane by Method 8260SIM
- SVOCs by SW-846 Method 8270 plus 10 TICs
- Inorganic hazardous substances by SW-846 Method 6020 (antimony, arsenic, beryllium, cadmium, chromium, copper, iron, lead, manganese, nickel, selenium, silver, thallium, and zinc)
- Mercury by Method 7470
- Ammonia and nitrate by SM 4500
- Sulfate by ASTM D516

Subtask F – Investigative Derived Waste

The following procedures will be followed for IDW disposal and boring abandonment:

- Borings which intersect the groundwater table will be filled with bentonite to a level above the groundwater table.
- Above the water table and within the boundary of the waste disposal area, borings will be backfilled with cuttings, regardless of whether field indications of contamination are encountered.
- Above the water table and outside the boundary of the waste disposal area, borings showing no field indications of contamination will be backfilled with soil cuttings. If field indications of contamination are encountered outside the waste disposal area, soil from those borings will be containerized pending laboratory analyses.
- If soil cuttings will not physically fit back in the borehole, cuttings will be containerized.
- For liquids generated during the investigation (decontamination water and monitoring well purge water), if no contamination is suspected and the area around the well is unpaved, the water will be discharged to the ground surface. If contamination is suspected and/or the area around the well is paved, the liquids will be containerized.

If containerization is required per the criteria listed above, IDW will be containerized in 55-gallon steel drums (estimation of five). IDW will be temporarily stored on wooden pallets inside of a secured area on-site. The secured area will consist of a 12 feet wide by 6 feet tall chain link fence compound that will be secured with a lock. Note that ATC's costs assume that the waste disposal facility will accept the soil drums as non-hazardous based on historical analytical data and that the asbestos sampling will not indicate detectable asbestos. If the disposal facility

requires additional sampling for waste characterization, or if the waste is found to contain asbestos, ATC will request a cost adjustment.

Subtask G – Estimate of Waste Volumes

This subtask includes labor for the volume estimation of subsurface waste. The estimation will be derived from *Task Order 265DP-7* and from previous investigations as documented in the July 28, 2011, "Remedial Investigation First Phase Report" prepared by Withers and Ravenel.

Subtask H – Project Management, Coordination, and Support

This subtask includes labor for collection of subcontractor bids, scheduling subcontractors and personnel, bid review, coordination with field personnel and the Unit, evaluation of data collected in the field, development of site-specific sampling forms and logs, pre-loading the GPS unit, and general laboratory completeness checks.

Task Order 265DP-8 – Compilation of the Remedial Investigation – Delineation Phase Report

This subtask is for compilation of a letter report once the field work is completed for *Task Order 265DP-7*. The report will include one or more CAD drawn site maps showing the locations of the temporarily installed and sampled monitoring wells with background topographic contours in light grey. Additional maps will show groundwater elevations contours and media exceedences (if detected). In addition, the report will include tables summarizing the temporary monitoring well construction details, groundwater elevation data, and analytical data. Lastly, field notes including calibration logs, boring and well construction logs, field readings, and procedures will also be included as appendices.

3.0 PROPOSED STAFFING AND SCHEDULE

The following tables detail our proposed staffing and schedule for the project.

STAFFING	
Level	**Proposed Staff**
Senior Project Manager	Genna Olson, P.G.
Project Manager (PM)	Justin Ballard, P.G.
Staff Scientists	Elizabeth DePoy and Garrett Stancil

Note: Technician, CAD, and administrative level staff not specified.

Task 265DP-7 – Proposed Field Services Schedule & Level of Effort					
Schedule	**Task**	**ATC On-Site Staff**			**Others On-Site**
		PM	**Staff**	**Tech**	
Week 1, Day 1	Clearing for drill rig access, begin drilling if time allows		1		Driller
Week 1, Days 2-3	Supervision of drilling, well development and survey, groundwater sampling		1	1	Driller
Week 1, Day 4	Surface water/sediment sampling		1	1	None
Week X, Day 1	IDW management		1	1	None

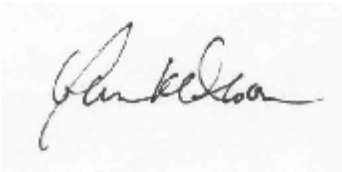
The field work will begin within four weeks following approval of this work plan by the Unit. Laboratory analyses will require an additional two weeks. ATC requests two weeks to review lab data, request changes if needed, and compile tables and figures. Per this schedule, a package which includes field notes, boring logs, sample sheets, laboratory reports, tables, and figures will be provided to the Unit within eight weeks of authorization to proceed. The final report will be submitted within two weeks following Unit approval of the initial submittal.

4.0 COST ESTIMATE

A proposal spreadsheet showing the breakdown of estimated costs for *Task Orders 265DP-7 and 265DP-8* is included in ***Attachment 1***.

If you have questions or require additional information, please do not hesitate to contact Justin Ballard or Genna Olson at (919) 871-0999.

Sincerely,
ATC Associates of North Carolina, P.C.



Justin C. Ballard, P.G.
Project Manager

Genna K. Olson, P.G.
Program Manager

Attachment 1– Cost Breakdown
Attachment 2 – Figure
Attachment 3 – Subcontractor Proposals
Attachment 4 – Laboratory Reporting Limit Summary

ATTACHMENT 1

Cost Breakdown

Task Order 265DP-7 - Work Plan and Field Services

Subtask A - Workplan

Senior	$116	/hr x	4	hrs =	464.00	
Project	$100	/hr x	12	hrs =	1200.00	
Word Processor/Clerical	$49	/hr x	2	hrs =	98.00	
				Subtotal - Subtask A		*$1,762.00*

Subtask B - Surface Water/Sediment Sampling of On-Site Drainage Feature

Labor

Staff (field)	$85	/hr x	12	hrs =	1020.00	
Staff (office: prep and report)	$85	/hr x	10	hrs =	850.00	
Technician (field)	$70	/hr x	12	hrs =	840.00	
Technician (office: prep)	$70	/hr x	4	hrs =	280.00	
Draftsperson/CAD (office)	$65	/hr x	4	hrs =	260.00	
Word Processor/Clerical (office)	$49	/hr x	2	hrs =	98.00	

Expendables and Reimbursables

Mileage	$0.555	/mile	680	miles =	377.40	
Per Diem	$130	/day	5	days =	650.00	
Field Expendables	$30	/day	5	days =	150.00	
GPS	$125	/day	1	days =	125.00	
Turbidity meter	$30	/day	1	days =	30.00	
pH/Conductivity/Temperature meter	$30	/day	1	days =	30.00	
Laboratory (VOCs by 8260 plus TICS)	$105	/unit	7	unit =	735.00	
Laboratory (1,4-dioxane by 8260SIM)	$81	/unit	7	unit =	567.00	
Laboratory (SVOCs by 8270 plus TICs)	$200	/unit	7	unit =	1400.00	
Laboratory (inorganic hazardous substances by 200.7/200.8; mercury by 7470/7471)	$138	/unit	7	unit =	966.00	
Laboratory (ammonia and nitrate by SM 4500)	$36	/unit	7	unit =	252.00	
Laboratory (sulfate by ASTM D516)	$19	/unit	7	unit =	133.00	
				Subtotal - Subtask B		*$8,763.40*

Subtask C - Installation of Soil Boring and Analysis

Labor

Staff (field)	$85	/hr x	12	hrs =	1020.00	
Staff (office)	$85	/hr x	6	hrs =	510.00	
Technician (field)	$70	/hr x	12	hrs =	840.00	
Draftsperson/CAD (office)	$65	/hr x	4	hrs =	260.00	
Word Processor/Clerical (office)	$49	/hr x	1	hrs =	49.00	

Expendables and Reimbursables

GPS	$125	/day	1	days =	125.00	
PID	$125	/day	1	days =	125.00	
IDW fencing materials	$250.00	/unit	1	unit =	250.00	
Drilling Subcontractor	$9,255.00	/unit	1	unit =	9255.00	
Laboratory (VOCs by 8260 plus TICS)	$105	/unit	19	unit =	1995.00	
Laboratory (1,4-dioxane by 8260SIM)	$81	/unit	19	unit =	1539.00	
Laboratory (SVOCs by 8270 plus TICs)	$200	/unit	19	unit =	3800.00	
Laboratory (inorganic hazardous substances by 200.7/200.8; mercury by 7470/7471)	$138	/unit	19	unit =	2622.00	
Laboratory (ammonia and nitrate by SM 4500)	$36	/unit	19	unit =	684.00	
Laboratory (sulfate by ASTM D516)	$19	/unit	19	unit =	361.00	
				Subtotal - Subtask C		*$23,435.00*

Subtask D - Waste Characterization

Labor					
Staff (field)	$85	/hr x	12	hrs =	1020.00
Staff (office)	$85	/hr x	6	hrs =	510.00
Draftsperson/CAD (office)	$65	/hr x	4	hrs =	260.00
Word Processor/Clerical (office)	$49	/hr x	1	hrs =	49.00
Expendables and Reimbursables					
GPS	$125	/day	1	days =	125.00
PID	$125	/day	1	days =	125.00
Laboratory (Asbestos)	$32	/unit	33	unit =	1056.00
Laboratory (VOCs by 8260 plus TICS)	$105	/unit	13	unit =	1365.00
Laboratory (1,4-dioxane by 8260SIM)	$81	/unit	13	unit =	1053.00
Laboratory (SVOCs by 8270 plus TICs)	$200	/unit	13	unit =	2600.00
Laboratory (inorganic hazardous substances by 200.7/200.8; mercury by 7470/7471)	$138	/unit	13	unit =	1794.00
Laboratory (ammonia and nitrate by SM 4500)	$36	/unit	13	unit =	468.00
Laboratory (sulfate by ASTM D516)	$19	/unit	13	unit =	247.00
				Subtotal - Subtask D	*$10,672.00*

Subtask E - Installation of Temporary Monitoring Wells, Sampling, and Analysis

Labor					
Staff (field)	$85	/hr x	12	hrs =	1020.00
Staff (office)	$85	/hr x	10	hrs =	850.00
Technician (field)	$70	/hr x	12	hrs =	840.00
Draftsperson/CAD (office)	$65	/hr x	6	hrs =	390.00
Word Processor/Clerical (office)	$49	/hr x	2	hrs =	98.00
Equipment					
[1]Teflon® tubing	$2.15	/foot	100	feet =	215.00
[1]Well development tubing (HDPE)	$0.30	/foot	100	feet =	30.00
Peristaltic Pump	$50	/day	1	days =	50.00
Water level meter	$30	/day	1	days =	30.00
Turbidity meter	$30	/day	1	days =	30.00
pH/Conductivity/Temperature Meter	$30	/day	1	days =	30.00
Expendables and Reimbursables					
Laboratory (VOCs by 8260 plus TICS)	$105	/unit	6	unit =	630.00
Laboratory (1,4-dioxane by 8260SIM)	$81	/unit	6	unit =	486.00
Laboratory (SVOCs by 8270 plus TICs)	$200	/unit	6	unit =	1200.00
Laboratory (inorganic hazardous substances by 200.7/200.8; mercury by 7470)	$138	/unit	6	unit =	828.00
Laboratory (ammonia and nitrate by SM 4500)	$36	/unit	6	unit =	216.00
Laboratory (sulfate by ASTM D516)	$19	/unit	6	unit =	114.00
NC Sales Tax (Teflon® and HDPE tubing)	$16.54	/unit	1	unit =	16.54
				Subtotal - Subtask E	*$7,073.54*

Subtask F - Investigative Derived Waste

Labor					
Staff (field)	$85	/hr x	8	hrs =	680.00
Staff (office)	$85	/hr x	2	hrs =	170.00
Technician (field)	$70	/hr x	8	hrs =	560.00
				Subtotal - Subtask F	*$1,410.00*

Subtask G - Estimate of Waste Volumes

Labor					
Staff	$85	/hr x	8	hrs =	680.00
Draftsperson/CAD (office)	$65	/hr x	6	hrs =	390.00
				Subtotal - Subtask G	*$1,070.00*

Subtask H - Project Management, Coordination, and Support

Senior	$116	/hr x	4	hrs =	464.00
Project	$100	/hr x	32	hrs =	3200.00
Word Processor/Clerical	$49	/hr x	6	hrs =	294.00
				Subtotal - Subtask H	*$3,958.00*
				Total - Task 265DP-7	*$58,143.94*

Notes:
2. [1] Taxable item at 6.75%.

Task 265DP-8 - Compilation of the Remedial Investigation - Delineation Phase Report

Senior	$116	/hr x	2	hrs =	232.00
Project	$100	/hr x	16	hrs =	1600.00
Staff	$85	/hr x	8	hrs =	680.00
Draftsperson/CAD (office)	$65	/hr x	4	hrs =	260.00
Word Processor/Clerical	$49	/hr x	2	hrs =	98.00

Total - Task 265DP-8 *$2,870.00*

ATTACHMENT 2

Figure

⊕ - Proposed Temporary Well Location
● - Proposed soil boring location
◇ - Proposed Surface Water/SEDIMENT SAMPLE LOCATION

LEGEND

WASTE DISPOSAL BOUNDARY (PER RECENT DELINEATION EVALUATION)

(CONCENTRATED) SURFACE WASTE

PROPERTY BOUNDARY

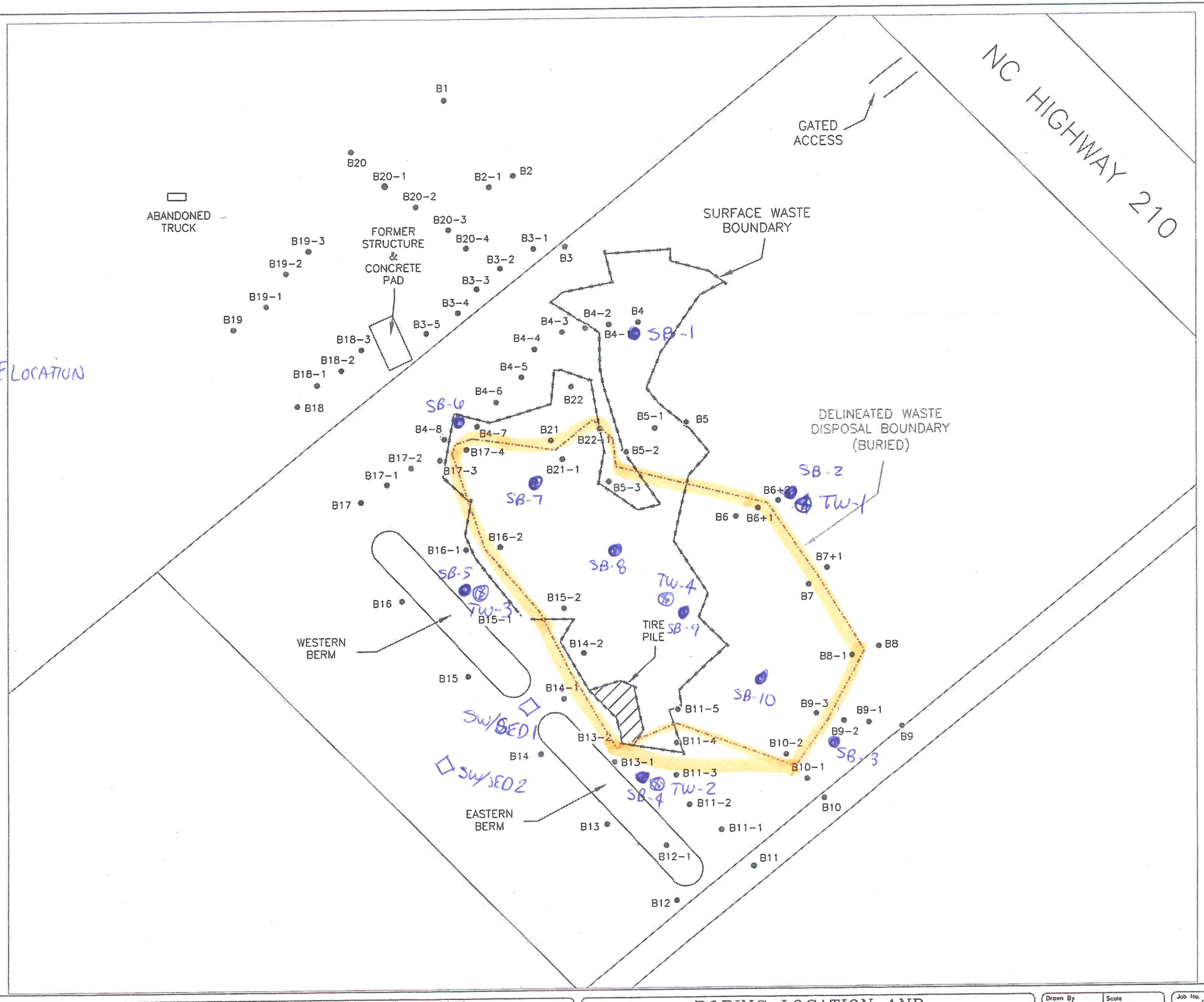
● B-1 DELINEATION BORING LOCATION

NOTES:
1. PARCEL INFORMATION OBTAINED FROM CUMBERLAND COUNTY GIS DEPARTMENT.

GRAPHIC SCALE

50 0 25 50 100

1 inch = 50 ft.



WITHERS & RAVENEL
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111 MacKenan Drive Cary, North Carolina 27511 tel 919-469-3340 www.withersravenel.com License No. C-0832

Revisions			
No.	Description	Date	By

STEDMAN DUMP – NONCD0000265
N.C. HIGHWAY 210 SOUTH
STEDMAN, CUMBERLAND COUNTY, NORTH CAROLINA

BORING LOCATION AND SURFACE WASTE MAP

Drawn By	Scale
JP	1"=50'
Checked By	Date
CCB	7/31/12

Job No. 02100001.05
Figure 1

ATTACHMENT 3

Subcontractor Proposals

TERRASONIC INTERNATIONAL

DATE: 8/14/2014
ESTIMATE #:

CUSTOMER	PROJECT
Justin Ballard Cardno ATC 2725 E. Millbrook Road Suite 121 Raleigh, North Carolina 27604 919-573-1196 / Cell - 252-548-9191 justin.ballard@cardno.com	**Stedman Dump** 5739 NC Highway 210 Stedman, North Carolina

PROJECT DESCRIPTION:
10 - 20' soil borings with Teflon liners and 4 - 15' x 2" Temp. wells. Price for drums, decon pad, teflon liners, security fence and borehole abandonment have been included in this cost.

ID	DESCRIPTION	QTY	Unit	Rate	TOTAL
1	Mobilization / Demobilization	1	ls	$ 425.00	$ 425.00
2	Per Diem	2	night	$ 190.00	$ 380.00
3	Rig & 2-Man Crew (Geoprobe 7822DT)	3	day	$ 1,700.00	$ 5,100.00
4	5' Teflon Liners	20	ea	$ 80.00	$ 1,600.00
5	2" PVC & Annular Materials	60	ft	$ 10.00	$ 600.00
6	Drums	6	ea	$ 50.00	$ 300.00
7	IDW Management / Clearing Equipment	3	day	$ 250.00	$ 750.00
8	Decon Pad	1	ls	$ 100.00	$ 100.00
9	Borehole Abandonment	60	ft	$ 3.00	Included
10	Security Fence w/ pallets for drums	1	ls	$ 375.00	$ ~~375.00~~ NOT INCLUDED IN SCOPE
				TOTAL	$ ~~9,630.00~~

Completion: ~3 Days on Site

$9,255.00

THANK YOU FOR YOUR BUSINESS!

Chris

JCB
8/14/14

Branch Operations Manager

Terra Sonic International

(803) 230-7992
cschappell@carolina.rr.com

Client will locate all underground utilities near boring locations
Terra Sonic has the right to revise pricing should the scope change materially
Price includes a ten hour work day unless otherwise stated in this proposal

Client Acceptance:_____

Date:_____

GEOLOGIC EXPLORATION

Monitoring & Recovery Well Specialists

PRICE ESTIMATE

CLIENT: ATC – Raleigh
PROJECT MANAGER: Justin Ballard
PROJECT NAME: Stedman Dump Site – Stedman, NC
DATE: August 14, 2014

WORK DESCRIPTION	AMOUNT	QTY	TOTAL
GEOPROBE:			
Daily rate including mob/demob, all labor	$1,500.00/day	3	$ 4,500.00
MATERIALS:			
Macro core liners	$ 5.00/ea	40	$ 200.00
Teflon liners	$ 100.00/ea	20	$ 2,000.00
Temporary wells ((4) 2" x 15', 10'/0.010")	$ 85.00/ea	4	$ 340.00
Portland cement	$ 12.00/bag	5	$ 60.00
STEAMCLEANING:			
Equipment	$ 75.00/day	3	$ 225.00
Water tank	$ 50.00/day	3	$ 150.00
ABANDONMENT:			
Boring abandonment	$ 2.00/ft	80	$ 160.00
OTHER:			
Per diem	$ 300.00/night	2	$ 600.00
UN1A2 55 gallon drums	$ 45.00/ea	5	$ 225.00
Fencing and pallets	$ 650.00/project	1	$ 650.00
Skid steer	$1,500.00/week	1	$ 1,500.00

NOT INCLUDED IN SCOPE

TOTAL COST ESTIMATE: ~~$10,610.00~~

$9,960.00

JCB
8/14/14

176 Commerce Boulevard • Statesville, NC 28677 • Tel: (704) 872-7686 • Fax (704) 872-0246 • 1 (800) 752-8853

ATTACHMENT 4

Laboratory Reporting Limit Summary

VOCs in Soil

		Lab Name				
	Parameter	PQL (mg/kg)	MDL (mg/kg)	PSRGs (mg/kg)	PQL> PSRG?	MDL> PSRG?
1	Dichlorodifluoromethane	0.020	0.0013	19	NO	NO
2	1,1,1-Trichloroethane	0.002	0.0010	120	NO	NO
3	1,1,2,2-Tetrachloroethane	0.0010	0.0009	0.0012	NO	NO
4	1,1,2-Trichloro-1,2,2-trifluoroethane	0.010	0.0009	910	NO	NO
5	1,1,2-Trichloroethane	0.0020	0.0012	0.0032	NO	NO
6	1,1-Dichloroethane	0.002	0.0007	0.03	NO	NO
7	1,1-Dichloroethene	0.004	0.0011	0.045	NO	NO
8	1,2,3-Trichlorobenzene	0.002	0.0006	9.8	NO	NO
9	1,2,4-Trichlorobenzene	0.002	0.0008	2.2	NO	NO
10	1,2-Dibromo-3-chloropropane	0.0020	0.0011	0.00025	YES	YES
11	1,2-Dibromoethane	0.0010	0.0010	0.000097	YES	YES
12	1,2-Dichlorobenzene	0.002	0.0007	0.24	NO	NO
13	1,2-Dichloroethane	0.0020	0.0013	0.002	NO	NO
14	1,2-Dichloropropane	0.0020	0.0013	0.0032	NO	NO
15	1,3-Dichlorobenzene	0.002	0.0007	2.4	NO	NO
16	1,4-Dichlorobenzene	0.0020	0.0008	0.07	NO	NO
17	1,4-Dioxane	0.100	0.0580	0.012	YES	YES
18	2-Butanone	0.040	0.0180	16	NO	NO
19	2-Hexanone	0.020	0.0110	0.17	NO	NO
20	4-Methyl-2-pentanone	0.020	0.0076	0.43	NO	NO
21	Acetone	0.100	0.0230	24	NO	NO
22	Benzene	0.002	0.0007	0.0073	NO	NO
23	Bromochloromethane	0.002	0.0014	32	NO	NO
24	Bromodichloromethane	0.0020	0.0006	0.0029	NO	NO
25	Bromoform	0.002	0.0014	0.019	NO	NO
26	Bromomethane	0.010	0.0017	0.048	NO	NO
27	Carbon disulfide	0.006	0.0033	3.8	NO	NO
28	Carbon tetrachloride	0.0020	0.0008	0.0021	NO	NO
29	Chlorobenzene	0.002	0.0007	0.43	NO	NO
30	Chloroethane	0.020	0.0015	2100	NO	NO
31	Chloroform	0.004	0.0007	0.29	NO	NO
32	Chloromethane	0.010	0.0009	0.015	NO	NO
33	cis-1,2-Dichloroethene	0.002	0.0008	0.36	NO	NO
34	cis-1,3-Dichloropropene	0.0010	0.0007	0.0023	NO	NO
35	Cyclohexane	0.002	0.0008	120	NO	NO
36	Dibromochloromethane	0.0010	0.0007	0.0019	NO	NO
37	Ethylbenzene	0.002	0.0008	5.4	NO	NO
38	Isopropylbenzene	0.002	0.0007	1.3	NO	NO
39	m,p-Xylene	0.004	0.0017	120	NO	NO
40	Methyl acetate	0.002	0.0016	16000	NO	NO
41	Methyl tert-butyl ether	0.004	0.0009	0.085	NO	NO
42	Methylcyclohexane	0.002	0.00100	NL	NO	NO
43	Methylene chloride	0.020	0.0071	0.023	NO	NO
44	o-Xylene	0.002	0.0007	140	NO	NO
45	Styrene	0.002	0.0006	0.92	NO	NO
46	Tetrachloroethene	0.002	0.0013	0.005	NO	NO
47	Toluene	0.002	0.0008	5.5	NO	NO
48	trans-1,2-Dichloroethene	0.002	0.0009	0.51	NO	NO
49	trans-1,3-Dichloropropene	0.0010	0.0007	0.0023	NO	NO
50	Trichloroethene	0.002	0.0009	0.018	NO	NO
51	Trichlorofluoromethane	0.010	0.0011	160	NO	NO
52	Vinyl chloride	0.0100	0.0011	0.00019	YES	YES

NL = No PSRG listed.

PSRG listed is the lower of Protection of Groundwater and Residential values. Bolded values indicate Protection of Groundwater PSRG. Unbolded values indicate Residential PSRG.

* = PSRG for 1,3-dichloropropane is for combined cis and trans 1,3-dichloropropene

SVOCs in Soil

		Lab Name				
	Parameter	PQL (mg/kg)	MDL (mg/kg)	PSRGs (mg/kg)	PQL> PSRG?	MDL> PSRG?
1	1,1'-Biphenyl	0.67	0.420	10	NO	NO
2	1,2,4,5-Tetrachlorobenzene	0.34	0.200	0.097	YES	YES
3	2,2'-Oxybis(1-choloropropane)	0.34	0.140	NL	NO	NO
4	2,3,4,6-Tetrachlorophenol	0.67	0.340	13	NO	NO
5	2,4,5-Trichlorophenol	0.34	0.180	2.5	NO	NO
6	2,4,6-Trichlorophenol	0.34	0.220	0.16	YES	YES
7	2,4-Dichlorophenol	0.34	0.100	0.014	YES	YES
8	2,4-Dimethylphenol	0.34	0.098	1.4	NO	NO
9	2,4-Dinitrophenol	0.66	0.340	24	NO	NO
10	2,4-Dinitrotoluene	0.34	0.130	0.0016	YES	YES
11	2,6-Dinitrotoluene	0.34	0.110	12	NO	NO
12	2-Chloronaphthalene (chloronaphthalene)	0.34	0.110	180	NO	NO
13	2-Chlorophenol	0.34	0.100	0.0041	YES	YES
14	2-Methylnaphthalene	0.17	0.090	1.6	NO	NO
15	2-Methylphenol (o-cresol)	0.34	0.110	4.1	NO	NO
16	2-Nitroaniline	0.34	0.240	120	NO	NO
17	2-Nitrophenol	0.34	0.100	NL	NO	NO
18	3,3'-dicholorobenzidine	0.17	0.160	1.1	NO	NO
19	3-Nitroaniline	0.34	0.160	NL	NO	NO
20	4,6-Dinitro-2-methylphenol (4,6-dintro-o-cresol)	0.34	0.140	0.98	NO	NO
21	4-Bromophenyl-phenylether	0.34	0.084	NL	NO	NO
22	4-Chloro-3-methylphenol (p-chloro-m-cresol)	0.66	0.140	1200	NO	NO
23	4-Chloroaniline (p-chloroaniline)	0.66	0.170	2.4	NO	NO
24	4-Chlorophenyl-phenyl ether	0.34	0.120	NL	NO	NO
25	4-Methylphenol (p-cresol)	0.34	0.190	12	NO	NO
26	4-Nitroaniline	0.34	0.180	24	NO	NO
27	4-Nitrophenol	0.66	0.600	NL	NO	NO
28	Acenaphthene	0.17	0.085	8.4	NO	NO
29	Acenaphthylene	0.17	0.082	21	NO	NO
30	Acetophenone	0.34	0.082	3.5	NO	NO
31	Anthracene	0.17	0.100	660	NO	NO
32	Atrazine	0.67	0.560	0.025	YES	YES
33	Benzaldehyde	0.34	0.320	3	NO	NO
34	Benzo(a) pyrene	0.17	0.060	0.015	YES	YES
35	Benzo(a)anthracene	0.17	0.077	0.15	YES	NO
36	Benzo(b) fluoranthene	0.17	0.150	0.15	YES	NO
37	Benzo(g,h,i) perylene	0.17	0.140	7800	NO	NO
38	Benzo(k) fluoranthene	0.17	0.150	1.5	NO	NO
39	Bis(2-chloroethoxy) methane	0.34	0.120	36	NO	NO
40	Bis(2-chloroethyl) ether	0.34	0.140	0.00014	YES	YES
41	Bis(2-ethylhexyl) phthalate	0.34	0.076	7.2	NO	NO
42	Butylbenzylphthalate	0.34	0.140	150	NO	NO
43	Caprolactam	0.34	0.260	18	NO	NO
44	Carbazole	0.17	0.120	0.37	NO	NO
45	Chrysene	0.17	0.110	15	NO	NO
46	Dibenzo(a,h) anthracene	0.17	0.096	0.015	YES	YES
47	Dibenzofuran	0.34	0.079	5.2	NO	NO
48	Diethylphthalate	0.34	0.120	37	NO	NO
49	Dimethylphthalate	0.34	0.130	NL	NO	NO
50	Di-n-butylphthalate (dibutyl phthalate)	0.34	0.140	19	NO	NO
51	Di-n-octylphthalate	0.67	0.460	38	NO	NO
52	Fluoranthene	0.17	0.150	330	NO	NO
53	Fluorene	0.17	0.130	56	NO	NO
54	Hexachlorobenzene	0.34	0.160	0.0026	YES	YES
55	Hexachlorobutadiene	0.34	0.110	0.0087	YES	YES
56	Hexachlorocyclopentadiene	0.34	0.220	74	NO	NO
57	Hexachloroethane	0.34	0.095	8.6	NO	NO
58	Indeno(1,2,3,-cd) pyrene	0.17	0.110	0.15	YES	NO
59	Isophorone	0.34	0.098	0.21	YES	NO
60	Naphthalene	0.17	0.075	0.21	NO	NO
61	Nitrobenzene	0.34	0.094	4.8	NO	NO
62	N-Nitroso-di-n propylamine	0.34	0.110	0.069	YES	YES
63	N-Nitrosodiphenylamine	0.34	0.160	99	NO	NO
64	Pentachlorophenol	0.34	0.130	0.031	YES	YES
65	Phenanthrene	0.17	0.091	68	NO	NO
66	Phenol	0.34	0.090	0.23	YES	NO
67	Pyrene	0.17	0.120	220	NO	NO

NL = No PSRG listed.

PSRG listed is the lower of Protection of Groundwater and Residential values. Bolded values indicate Protection of Groundwater PSRG. Unbolded values indicate Residential PSRG.

Metals in Soil

		Lab Name				
	Parameter	PQL (mg/kg)	MDL (mg/kg)	PSRGs (mg/kg)	PQL> PSRG?	MDL> PSRG?
1	Aluminum	1.700	0.0120	15000	NO	NO
2	Antimony	0.540	0.0062	6.2	NO	NO
3	Arsenic	0.050	0.0120	39	NO	NO
4	Barium	2.500	0.0038	3000	NO	NO
5	Beryllium	0.068	0.0008	32	NO	NO
6	Cadmium	0.095	0.0006	14	NO	NO
7	Calcium	7.500	1.4000	NL	NO	NO
8	Chromium	1.200	0.0061	0.29	YES	NO
9	Cobalt	0.460	0.0004	4.6	NO	NO
10	Copper	1.200	0.0030	620	NO	NO
11	Iron	2.500	0.1700	11000	NO	NO
12	Lead	0.500	0.0009	400	NO	NO
13	Magnesium	7.500	0.7800	NL	NO	NO
14	Manganese	1.300	0.0083	360	NO	NO
15	Nickel	1.200	0.0045	130	NO	NO
16	Potassium	100.000	17.0000	NL	NO	NO
17	Selenium	0.210	0.0027	78	NO	NO
18	Silver	0.022	0.0009	78	NO	NO
19	Sodium	100.000	49.0000	NL	NO	NO
20	Thallium	0.016	0.0005	0.16	NO	NO
21	Vanadium	2.500	0.0130	78	NO	NO
22	Zinc	2.500	0.0076	4600	NO	NO
23	Mercury by Cold Vapor Atomic Absorption (CVAA)	0.025	0.0036	1	NO	NO
24	Cyanide by Spectrophotometry	0.500	0.3100	NL	NO	NO

NL = No PSRG listed.

PSRG listed is the lower of Protection of Groundwater and Residential values. Bolded values indicate Protection of Groundwater PSRG. Unbolded values indicate Residential PSRG.

Chromium is listed separately in the PSRG table as chromium (III) and chromium VI. The PSRG is lowest of the two and the PQL and MDL are listed by the lab as total chromium.

Inorganics in Soil

		Lab Name				
	Parameter	PQL (mg/kg)	MDL (mg/kg)	PSRGs (mg/kg)	PQL> PSRG?	MDL> PSRG?
1	Ammonia	30	14.0000	NL	NO	NO
2	Nitrate	2.5	1.6000	26000	NO	NO
3	Sulfate	200.0	160.00	NL	NO	NO

NL = No PSRG listed.

PSRG listed is the lower of Protection of Groundwater and Residential values. Bolded values indicate Protection of Groundwater PSRG. Unbolded values indicate Residential PSRG.

Chromium is listed separately in the PSRG table as chromium (III) and chromium VI. The PSRG is lowest of the two and the PQL and MDL are listed by the lab as total chromium.

VOCs in Groundwater

		Lab Name					
	Parameter	PQL (ug/L)	MDL (ug/L)	NC 2L (ug/L)	PQL> NC2L?	MDL> NC2L?	Notes
1	Dichlorodifluoromethane	2.000	0.1200	1000	NO	NO	
2	1,1,1-Trichloroethane	1.000	0.0940	200	NO	NO	
3	1,1,2,2-Tetrachloroethane	0.500	0.1200	0.2	YES	NO	
4	1,1,2-Trichloro-1,2,2-trifluoroethane	1.000	0.0920	200000	NO	NO	
5	1,1,2-Trichloroethane	1.000	0.1200	5	NO	NO	
6	1,1-Dichloroethane	1.000	0.1600	6	NO	NO	
7	1,1-Dichloroethene	1.000	0.2100	7	NO	NO	
8	1,2,3-Trichlorobenzene	5.000	0.1400	NL	NO	NO	
9	1,2,4-Trichlorobenzene	1.000	0.1200	70	NO	NO	
10	1,2-Dibromo-3-chloropropane	5.000	0.3400	0.04	YES	YES	can be met with 504
11	1,2-Dibromoethane	0.500	0.0890	0.02	YES	YES	can be met with 504
12	1,2-Dichlorobenzene	1.000	0.0760	20	NO	NO	
13	1,2-Dichloroethane	1.000	0.1900	0.4	YES	NO	
14	1,2-Dichloropropane	1.000	0.1100	0.6	YES	NO	
15	1,3-Dichlorobenzene	1.000	0.0790	200	NO	NO	
16	1,4-Dichlorobenzene	1.000	0.0460	6	NO	NO	
17	1,4-Dioxane	50.000	26.0000	3	YES	YES	can be met with 8270M
18	2-Butanone	20.000	2.4000	4000	NO	NO	
19	2-Hexanone	10.000	1.5000	40	NO	NO	
20	4-Methyl-2-pentanone	10.000	1.5000	NL	NO	NO	
21	Acetone	50.000	4.7000	6000	NO	NO	
22	Benzene	1.000	0.0790	1	NO	NO	
23	Bromochloromethane	1.000	0.2200	NL	NO	NO	
24	Bromodichloromethane	0.500	0.0880	0.6	NO	NO	
25	Bromoform	1.000	0.2100	4	NO	NO	
26	Bromomethane	2.000	0.9400	10	NO	NO	
27	Carbon disulfide	4.000	1.0000	700	NO	NO	
28	Carbon tetrachloride	5.000	0.1000	0.3	YES	NO	
29	Chlorobenzene	1.000	0.1200	50	NO	NO	
30	Chloroethane	2.000	0.1600	3000	NO	NO	
31	Chloroform	2.000	0.1400	70	NO	NO	
32	Chloromethane	2.000	0.3200	3	NO	NO	
33	cis-1,2-Dichloroethene	1.000	0.1500	70	NO	NO	
34	cis-1,3-Dichloropropene	0.500	0.0620	0.4	YES	NO	
35	Cyclohexane	5.000	0.2000	NL	NO	NO	
36	Dibromochloromethane	0.500	0.0540	0.4	YES	NO	
37	Ethylbenzene	1.000	0.0920	600	NO	NO	
38	Isopropylbenzene	1.000	0.1100	70	NO	NO	
39	m,p-Xylene	2.000	0.1800	500	NO	NO	
40	Methyl acetate	1.000	0.1900	NL	NO	NO	
41	Methyl tert-butyl ether	1.000	0.0900	20	NO	NO	
42	Methylcyclohexane	1.000	0.6300	NL	NO	NO	
43	Methylene chloride	5.000	3.2000	5	NO	NO	
44	o-Xylene	1.000	0.1100	500	NO	NO	
45	Styrene	1.000	0.1200	70	NO	NO	
46	Tetrachloroethene	0.500	0.0800	0.7	NO	NO	
47	Toluene	1.000	0.0900	600	NO	NO	
48	trans-1,2-Dichloroethene	1.000	0.1500	100	NO	NO	
49	trans-1,3-Dichloropropene	0.500	0.0560	0.4	YES	NO	
50	Trichloroethene	1.000	0.0770	3	NO	NO	
51	Trichlorofluoromethane	2.000	0.1500	2000	NO	NO	
52	Vinyl chloride	2.000	0.1300	0.03	YES	YES	

NL = No 2L Standard listed.

SVOCs in Groundwater

		Lab Name					
	Parameter	PQL (ug/L)	MDL (ug/L)	NC 2L (ug/L)	PQL> NC2L?	MDL> NC2L?	Notes
1	1,1'-Biphenyl	20.0	10.0	NL	NO	NO	
2	1,2,4,5-Tetrachlorobenzene	10.0	3.1	2	YES	YES	
3	2,2'-Oxybis(1-choloropropane)	10.0	7.3	NL	NO	NO	Bis(2-chloroisopropyl) ether
4	2,3,4,6-Tetrachlorophenol	20.0	10.0	200	NO	NO	
5	2,4,5-Trichlorophenol	10.0	4.7	63	NO	NO	
6	2,4,6-Trichlorophenol	10.0	4.4	4	YES	YES	
7	2,4-Dichlorophenol	10.0	4.8	0.98	YES	YES	
8	2,4-Dimethylphenol	10.0	5.0	100	NO	NO	
9	2,4-Dinitrophenol	10.0	4.6	NL	NO	NO	
10	2,4-Dinitrotoluene	10.0	6.8	0.1	YES	YES	
11	2,6-Dinitrotoluene	10.0	4.7	NL	NO	NO	
12	2-Chloronaphthalene	10.0	4.0	NL	NO	NO	
13	2-Chlorophenol	10.0	4.0	0.4	YES	YES	
14	2-Methylnaphthalene	5.0	4.1	30	NO	NO	
15	2-Methylphenol (o-cresol)	10.0	5.6	400	NO	NO	
16	2-Nitroaniline	10.0	8.9	NL	NO	NO	
17	2-Nitrophenol	10.0	3.8	NL	NO	NO	
18	3,3'-dicholorobenzidine	10.0	3.7	NL	NO	NO	
19	3-Nitroaniline	10.0	5.6	NL	NO	NO	
20	4,6-Dinitro-2-methylphenol (4,6-dintro-o-cresol)	10.0	7.4	NL	NO	NO	
21	4-Bromophenyl-phenylether	10.0	3.3	NL	NO	NO	
22	4-Chloro-3-methylphenol (p-chloro-m-cresol)	10.0	7.1	NL	NO	NO	
23	4-Chloroaniline	10.0	3.6	NL	NO	NO	
24	4-Chlorophenyl-phenyl ether	10.0	4.5	NL	NO	NO	
25	4-Methylphenol (p-cresol)	10.0	4.8	40	NO	NO	
26	4-Nitroaniline	10.0	7.4	NL	NO	NO	
27	4-Nitrophenol	10.0	4.3	NL	NO	NO	
28	Acenaphthene	5.0	3.6	80	NO	NO	
29	Acenaphthylene	5.0	3.4	200	NO	NO	
30	Acetophenone	10.0	4.9	700	NO	NO	
31	Anthracene	5.0	2.7	2000	NO	NO	
32	Atrazine	20.0	16.0	3	YES	YES	
33	Benzaldehyde	10.0	8.7	700	NO	NO	
34	Benzo(a) pyrene	0.10	0.04	0.005	YES	YES	by SIM method
35	Benzo(a)anthracene	0.05	0.05	0.05	NO	NO	by SIM method
36	Benzo(b) fluoranthene	0.05	0.02	0.05	NO	NO	by SIM method
37	Benzo(g,h,i) perylene	5.0	3.5	200	NO	NO	
38	Benzo(k) fluoranthene	0.2	0.1	0.5	NO	NO	by SIM method
39	Bis(2-chloroethoxy) methane	10.0	4.6	NL	NO	NO	
40	Bis(2-chloroethyl) ether [bis(chloroethyl) ether]	10.0	5.7	0.21	YES	YES	
41	Bis(2-ethylhexyl) phthalate	10.0	4.3	3	YES	YES	
42	Butylbenzylphthalate	10.0	3.9	1000	NO	NO	
43	Caprolactam	10.0	2.4	4000	NO	NO	
44	Carbazole	10.0	4.2	2	YES	YES	
45	Chrysene	5.0	2.7	5	NO	NO	
46	Dibenzo(a,h) anthracene	0.10	0.04	0.005	YES	YES	by SIM method
47	Dibenzofuran	5.0	3.8	28	NO	NO	
48	Diethylphthalate	10.0	5.4	6000	NO	NO	
49	Dimethylphthalate	10.0	3.6	NL	NO	NO	
50	Di-n-butylphthalate (dibutyl phthalate)	10.0	4.8	700	NO	NO	
51	Di-n-octylphthalate	10.0	4.3	100	NO	NO	
52	Fluoranthene	5.0	4.4	300	NO	NO	
53	Fluorene	5.0	4.3	300	NO	NO	
54	Hexachlorobenzene	10.0	3.9	0.02	YES	YES	
55	Hexachlorobutadiene	10.0	3.3	0.4	YES	YES	
56	Hexachlorocyclopentadiene	10.0	5.6	NL	NO	NO	
57	Hexachloroethane	10.0	4.2	NL	NO	NO	
58	Indeno(1,2,3,-cd) pyrene	0.20	0.08	0.05	YES	YES	by SIM method
59	Isophorone	10.0	4.4	40	NO	NO	
60	Naphthalene	5.0	3.6	6	NO	NO	
61	Nitrobenzene	10.0	4.6	NL	NO	NO	
62	N-Nitroso-di-n propylamine	10.0	5.8	NL	NO	NO	
63	N-Nitrosodiphenylamine	10.0	4.0	NL	NO	NO	
64	Pentachlorophenol	10.0	3.4	0.3	YES	YES	
65	Phenanthrene	5.0	2.9	200	NO	NO	
66	Phenol	10.0	2.9	30	NO	NO	
67	Pyrene	5.0	3.9	200	NO	NO	

NL = No 2L Standard listed.

Metals in Groundwater

		Lab Name				
	Parameter	PQL (ug/L)	MDL (ug/L)	NC 2L (ug/L)	PQL> NC2L?	MDL> NC2L?
1	Aluminum	50.000	1.6000	NL	NO	NO
2	Antimony	1.000	0.1500	1	NO	NO
3	Arsenic	0.400	0.3500	10	NO	NO
4	Barium	10.000	1.2000	700	NO	NO
5	Beryllium	0.400	0.0730	4	NO	NO
6	Cadmium	0.500	0.0300	2	NO	NO
7	Calcium	150.000	88.0000	NL	NO	NO
8	Chromium	1.000	0.6600	10	NO	NO
9	Cobalt	1.000	0.0330	1	NO	NO
10	Copper	5.000	0.0810	1000	NO	NO
11	Iron	50.000	12.0000	300	NO	NO
12	Lead	1.000	0.0610	15	NO	NO
13	Magnesium	150.000	37.0000	NL	NO	NO
14	Manganese	1.000	0.0990	50	NO	NO
15	Nickel	5.000	0.0650	100	NO	NO
16	Potassium	2000.000	460.0000	NL	NO	NO
17	Selenium	5.000	0.7400	20	NO	NO
18	Silver	0.500	0.0630	20	NO	NO
19	Sodium	2000.000	1900.0000	NL	NO	NO
20	Thallium	0.200	0.0370	0.2	NO	NO
21	Vanadium	5.000	0.5400	0.3	YES	YES
22	Zinc	10.000	1.9000	1000	NO	NO
23	Mercury by Cold Vapor Atomic Absorption (CVAA)	1.00E-01	3.90E-02	1	NO	NO
24	Cyanide by Spectrophotometry	1.00E+01	8.00E+00	70	NO	NO

NL = No 2L Standard listed.

Inorganics in Groundwater

		Lab Name				
	Parameter	PQL (ug/L)	MDL (ug/L)	NC 2L (ug/L)	PQL> NC2L?	MDL> NC2L?
1	Ammonia	300	140.00	NL	NO	NO
2	Nitrate	50	32.00	10000	NO	NO
3	Sulfate	2000	1600.00	250000	NO	NO

NL = No 2L Standard listed.