DENR USE ONLY: ☐ Paper Report ☐ Electronic Data - Email CD (data loaded: Yes / No) Doc/Event #:

NC DENR
Division of Waste Management - Solid Waste

Environmental Monitoring Reporting Form

Notice: This form and any information attached to it are "Public Records" as defined in NC General Statute 132-1. As such, these documents are available for inspection and examination by any person upon request (NC General Statute 132-6).

Instructions:

- **Prepare one form for each individually monitored unit.**
- **Please type or print legibly.**
- Attach a notification table with values that attain or exceed NC 2L groundwater standards or NC 2B surface water standards. The notification must include a preliminary analysis of the cause and significance of each value. (e.g. naturally occurring, off-site source, pre-existing condition, etc.).
- Attach a notification table of any groundwater or surface water values that equal or exceed the reporting limits.
- Attach a notification table of any methane gas values that attain or exceed explosive gas levels. This includes any structures on or nearby the facility (NCAC 13B .1629 (4)(a)(i).
- Send the original signed and sealed form, any tables, and Electronic Data Deliverable to: Compliance Unit, NCDENR-DWM, Solid Waste Section, 1646 Mail Service Center, Raleigh, NC 27699-1646.

Solid Waste Monitoring Data Submittal Information

Name of entity submitting data (laboratory, consultant, facility owner):

Smith Gardner, Inc.

Contact for questions about data formatting. Include data preparer's name, telephone number and E-mail address:

Name: Madeline German, PG Phone: 919-828-0577 x 222

E-mail: madeline@smithgardnerinc.com

Facility name:	Facility Address:	Facility Permit #	NC Landfill Rule: (.0500 or .1600)	Actual sampling dates (e.g., October 20-24, 2006)
Avery County C&D Landfill	Brushy Creek Road, Spruce Pine, NC	06-03	.0500	April 19 & 20, 2016

Environmental Status: (Check all that apply)

☐ Initial/Background Monitoring ☒ Detection Monitoring ☐ Assessment Monitoring ☐ Corrective Action

Type of data submitted: (Check all that apply)

☒ Groundwater monitoring data from monitoring wells
☐ Groundwater monitoring data from private water supply wells
☐ Leachate monitoring data
☒ Surface water monitoring data
☐ Methane gas monitoring data
☐ Corrective action data (specify)
☐ Other(specify)

Notification attached?

☐ No. No groundwater or surface water standards were exceeded.
☒ Yes, a notification of values exceeding a groundwater or surface water standard is attached. It includes a list of groundwater and surface water monitoring points, dates, analytical values, NC 2L groundwater standard, NC 2B surface water standard or NC Solid Waste GWPS and preliminary analysis of the cause and significance of any concentration.
☐ Yes, a notification of values exceeding an explosive methane gas limit is attached. It includes the methane monitoring points, dates, sample values and explosive methane gas limits.

Certification

To the best of my knowledge, the information reported and statements made on this data submittal and attachments are true and correct. Furthermore, I have attached complete notification of any sampling values meeting or exceeding groundwater standards or explosive gas levels, and a preliminary analysis of the cause and significance of concentrations exceeding groundwater standards. I am aware that there are significant penalties for making any false statement, representation, or certification including the possibility of a fine and imprisonment.

Madeline German, PG — Geologist — 919-828-0577 x 222

Facility Representative Name (Print) — Title — (Area Code) Telephone Number

Signature — Date: 6/16/16

Affix NC Licensed/ Professional Geologist Seal

NORTH CAROLINA LICENSED SEAL 2275 GEOLOGIST MADELINE GERMAN 6/16/16

14 N. Boylan Ave., Raleigh NC 27603

Facility Representative Address

C0828

NC PE Firm License Number (if applicable effective May 1, 2009)

Revised 6/2009

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April 2016 Semi-Annual Groundwater Monitoring Report

Avery County C&D Landfill
Spruce Pine, North Carolina
NC Solid Waste Permit No. 06-03

Prepared for:

Avery County Solid Waste
175 Linville Street
Newland, North Carolina 28657

Prepared by:

NC LIC. NO. C-0828 (ENGINEERING)

SMITH+GARDNER

14 N. Boylan Avenue, Raleigh NC 27603 | 919.828.0577

June 2016

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April 2016 Semi-Annual Groundwater Monitoring Report

Avery County C&D Landfill
NC Solid Waste Permit No. 06-03

Prepared For:

Avery County Solid Waste
Newland, North Carolina

S+G Project No. Avery 14-2

NORTH CAROLINA LICENSED SEAL 2275 6-16-16 GEOLOGIST MADELINE GERMAN

Madeline German, P.G.
Project Geologist

Joan A. Smyth, P.G.
Senior Hydrogeologist

June 2016

NC LIC. NO. C-0828 (ENGINEERING)

SMITH+GARDNER

14 N. Boylan Avenue, Raleigh NC 27603 | 919.828.0577

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Avery County C&D Landfill
NC Solid Waste Permit No. 06-03

April 2016 Semi-Annual Groundwater Monitoring Report

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1.0 INTRODUCTION

Avery County C&D Landfill, currently operating under Solid Waste Permit # 06-03 (C&D) and 15A NCAC 13B.0544, is required to submit semi-annual groundwater monitoring reports. This report presents the semi-annual sampling results for the event conducted on April 19&20, 2016.

The monitoring network for the C&D landfill includes four groundwater monitoring wells, a potable well, and two surface water points. This report includes a field parameter summary, laboratory analyses, a hydrogeologic evaluation, and groundwater velocity calculations.

2.0 SITE GEOLOGY AND HYDROGEOLOGY

The Avery County C&D Landfill is located in the North Carolina Blue Ridge province, along the eastern limb of the Blue Ridge anticlinorium. Published geologic mapping[1] places the site approximately twelve miles west of the Brevard Zone (measured perpendicular to strike), which is the boundary between the Blue Ridge Belt and the Piedmont. Local rock types comprise medium to high-grade metamorphic species of sedimentary origin, and plutonic rocks of mid Proterozoic age (>1000 MY) to Devonian age (390 MY). The rocks in the region tend to be highly jointed, due to the mechanical stresses imposed, with the older rocks typically exhibiting more complex jointing.

The NC Geologic Map presents Alligator Back amphibolite underlying the higher, northern portion, surrounded by Alligator Back gneiss, including the lower, southern portion, with Grenville-age biotite gneiss existing close by to the east and Devonian quartz diorite further south. The surface topography reflects the underlying geology e.g., the southern, gentler slopes near Brushy Creek are probably indicative of the more deeply weathered micaceous gneiss and schist, whereas the steeper northern terrain likely results from the more resistant amphibolite. Test borings confirmed the gneiss and amphibolite contact.

Hydrogeologic data from site permitting activities (2008-2009) established hydraulic conductivity for piezometers installed during that investigation. The following table illustrates hydraulic conductivity values from site piezometers, grouped relative to principal hydrogeologic units defined on the basis of material density. The field hydraulic conductivity values relative to each hydrogeologic unit vary as follows:

[1] North Carolina Geologic Survey at http://www.geology.enr.state.nc.us

Hydro Unit	Unit Description	Conductivity (cm/sec)			Conductivity (ft/day)		
		Maximum	Minimum	Average	Maximum	Minimum	Average
1A	Saprolite <100 bpf	7.67 E-4 PZ-13i	3.42 E-4 PZ-12	4.92 E-4	2.17 PZ-13i	0.968 PZ-12	1.40
1B	Saprolite <100 bpf	1.60 E-3 PZ-9	8.19 E-6 MW-3d	7.24 E-4	4.53 PZ-9	0.002 MW-3d	2.05
2	Bedrock	2.66 E-3 MW-1d	5.64 E-4 B-6	1.61 E-3	7.53 MW-1d	1.60 B-6	4.65

Conductivity data indicates a slight increasing trend with depth, potentially due to higher clay content in the upper soils, more sand-like conditions and fracturing at depth, as indicated by low Rock Quality Data (RQD) values gathered during bedrock drilling at the site.

3.0 SAMPLING PROCEDURES

Smith Gardner, Inc. (S+G) personnel performed the sampling event in April 2016 in accordance with the approved Sampling and Analysis Plan[2]. Samples were collected from four groundwater wells (CDMW-1a, CDMW-2s, CDMW-3s and CDMW-4s), a potable well, and two surface water monitoring locations (SW-1 and SW-2).

Sampling methods followed the protocol outlined in the North Carolina Water Quality Monitoring Guidance Document for Solid Waste Facilities[3]. The depth to water in each well was gauged prior to purging and sampling. Field measurements for pH, specific conductivity, turbidity and temperature were recorded at each sampling location.

Samples from monitoring wells were collected using new factory sealed teflon bailers. The samples were placed in laboratory prepared containers for the specified analytical procedures. Groundwater samples were properly preserved, placed on ice and transported to a NC certified laboratory facility within the specified hold times for each analysis.

Sampling locations are shown on **Figure 1**. Water table elevation data is presented in **Table 1.** Monitoring well information is provided in **Appendix A**.

[2] Richardson Smith Gardner & Associates, Inc. Water Quality Monitoring Plan Avery County C&D Landfill Ingalls, North Carolina, February 2009.
[3] Solid Waste Section Guidelines for Groundwater, Soil, and Surface Water Sampling, NCDENR, DWM, SWS, Rev. 4-08.

4.0 FIELD AND LABORATORY RESULTS

4.1 Field Measurements

Following purging, field parameters for temperature, pH, turbidity and specific conductance were measured. These results are summarized in **Table 2**. In general these measurements were consistent with data from previous events.

4.2 Laboratory Analysis

Ground and surface water samples were transported to the Shealy Environmental Services, Inc. facility in West Columbia, SC for metals analysis via EPA Test Method 6020A and organics via EPA Test Method 8260B; alkalinity, total suspended solids, sulfate and chloride were analyzed via Solid Waste Section (SWS) approved methods. Samples were transported under proper chain of custody and analyzed at the specified Division of Waste Management (DWM) Solid Waste Quantitation Limits (SWSLs)[4] for Appendix I and C&D landfill mandated constituents. The laboratory report is attached as **Appendix B**.

4.3 Laboratory Results

No inorganic constituents were reported at concentrations above their 2L or GWP Standards in well samples collected this event.

Vinyl Chloride was reported at a concentration above its 2L Standard in the sample collected from CDMW-3S this event.

No inorganic or organic constituents were detected in surface water samples above the 2B Standard for Class C Waters.

Detected constituents are presented in **Table 3.** Groundwater chemistry parameters are summarized in **Table 4**.

4.4 On-Site Potable Well

In accordance with the Water Quality Monitoring Plan, the on site potable well was sampled this event. No constituents were detected above their 2L or GWP Standard for this event.

[4] New Guidelines for Electronic Submittal of Environmental Monitoring Data Memo, NCDENR – Solid Waste Section, October 27, 2006

5.0 GROUNDWATER CHARACTERIZATION

A potentiometric surface map was prepared from groundwater data from this sampling event. The data indicates that groundwater is flowing generally in a southerly direction across the site. Hydraulic conductivity data is not available for these wells however; an average hydraulic conductivity and effective porosity from shallow wells across the site were used to evaluate groundwater velocities. Groundwater velocity ranges from 0.005 ft/day (CDMW-1A and CDMW-3S) to 0.019 ft/day (CDMW-4S); average groundwater velocity for the site is 0.009 ft/day. The potentiometric surface map is included as **Figure 1.**

6.0 CONCLUSIONS

Laboratory results indicate the water quality at the Avery County C&D Landfill is generally consistent with historically reported results. Only vinyl choride was reported above its 2L Standard in the sample collected from CDMW-3S this event. This is the first vinyl chloride detection as far back as data is available (2007). The next groundwater monitoring event is scheduled for October 2016. A report summarizing that event will be submitted to NCDEQ with laboratory analyses.

FIGURE

April 2016 Semi-Annual Groundwater Report
Avery County C&D Landfill
NC Solid Waste Permit No. 06-03

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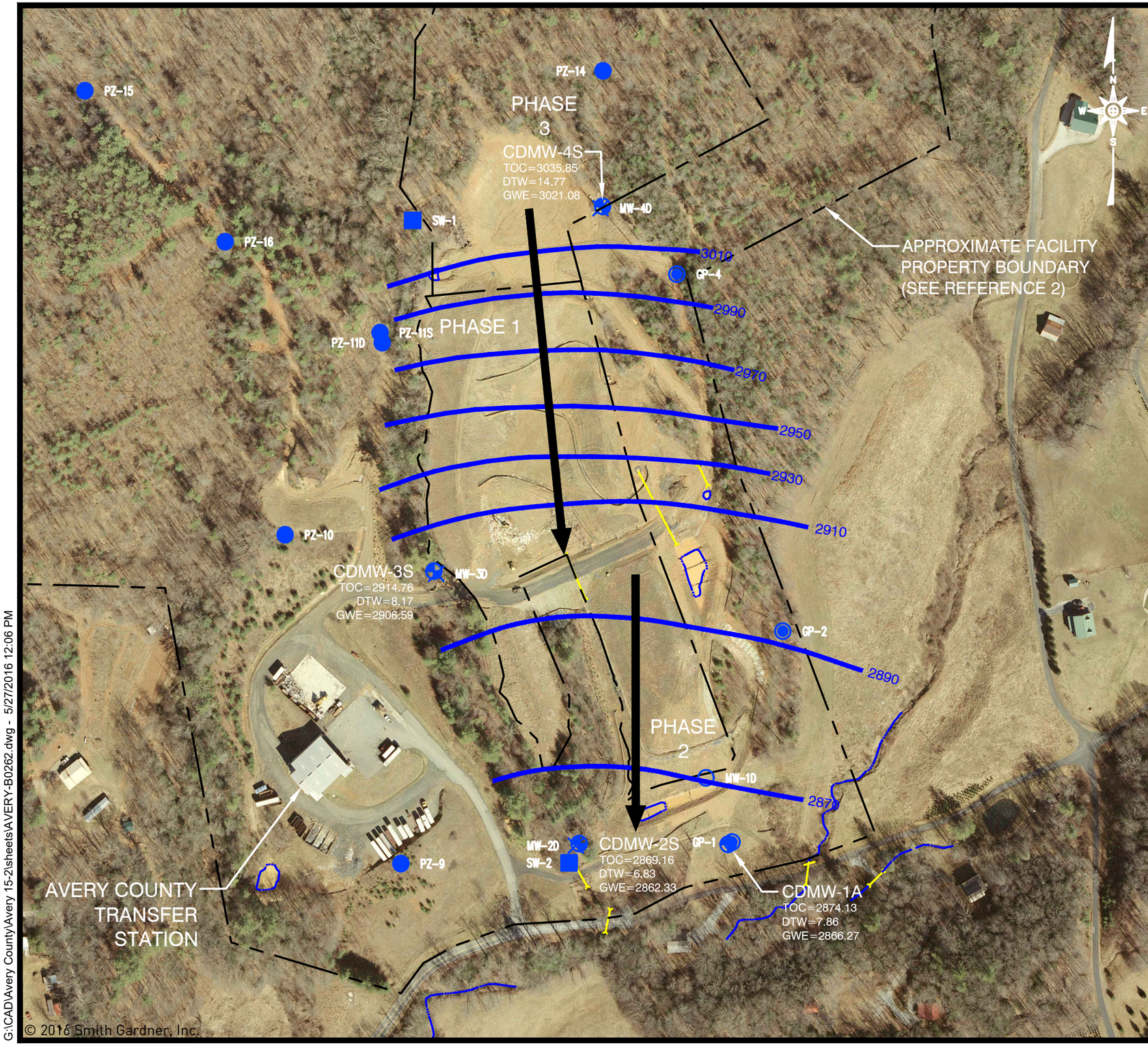

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LEGEND

	STREAM/WATER BODY
	PERMITTED PHASE LIMITS
	FACILITY BOUNDARY
MW-4D	EXISTING GROUNDWATER MONITORING WELL
PZ-9	EXISTING PIEZOMETER
SW-2	EXISTING SURFACE WATER MONITORING LOCATION
GP-3	LANDFILL GAS WELL
2970	POTENTIOMETRIC CONTOUR (DASHED WHERE INFERRED)
	GROUNDWATER FLOW DIRECTION
MW-1	MONITORING WELL DESIGNATION
TOC=	TOP OF CASING
DTW=	DEPTH TO WATER
GWE=	GROUNDWATER ELEVATION

NOTES

1. DEPTH TO WATER MEASUREMENTS COLLECTED BY SMITH GARDNER INC. PERSONNEL ON APRIL 19 & 20, 2016.

REFERENCES

1. IMAGERY FROM AERIAL SURVEY PERFORMED BY GEODATA CORPORATION, DATED MARCH 3, 2011.
2. SITE PROPERTY LINE AND MONITORING WELL LOCATIONS FROM FIELD SURVEYS DATED JANUARY 29, 2010, BY SURVEYING SOLUTIONS, P.C.

0 200' 400'

PREPARED BY:

NC LIC. NO. C-0926 [ENGINEERING]
SMITH+GARDNER
14 N. Boylan Avenue, Raleigh NC 27603 | 919.828.0577

DRAWN: T.R.S.	APPROVED: M.M.G.	SCALE: AS SHOWN	FIGURE NO. 1
DATE: May 2016	PROJECT NO: AVERY 14-2	FILENAME: AVERY-B0262	

PREPARED FOR:

AVERY COUNTY C&D LANDFILL
POTENTIOMETRIC SURFACE MAP
APRIL 2016

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TABLES

April 2016 Semi-Annual Groundwater Report
Avery County C&D Landfill
NC Solid Waste Permit No. 06-03

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SMITH+GARDNER

By: MG
Date: 5/18/2016

Table 1
Groundwater Elevations
Avery County C&D Landfill
April 19&20 , 2016

Well	Well Installation Date	Latitude	Longitude	Well Diameter (inches)	Total Well Depth (ft. bgs)	Ground Surface Elevation (ft. amsl)	TOC Elevation (ft. amsl)	Depth to Water (ft. bgs)	Groundwater Elevation (ft. amsl)	Screen Interval (ft. bgs)	Screen Geology
CDMW-1a	10/29/2009	35.95919	81.96956	2	13.00	2870.32	2874.13	7.86	2866.27	4'-12	clayey sandy silt
CDMW-2s	NA	35.95917	81.97053	2	22.65	2866.54	2869.16	6.83	2862.33	10' - 20	NA
CDMW-3s	NA	35.96060	81.97153	2	23.00	2912.77	2914.76	8.17	2906.59	10' - 20	NA
CDMW-4s	11/19/2007	35.96256	81.97050	2	32.00	3033.03	3035.85	14.77	3021.08	22' - 32'	saprolite

Note:
1. Survey data from 9/2007 and 1/14/2008 by Surveying Solutions, P.C. and 1/11/2010 by Appalachian Professional Land Surveyors, and Consultants, PA.
2. Depth to Water measured from Top of Casing
3. Data for CDMW-1a and CDMW-4s is from boring logs (Appendix A)
4. No boring logs available for CDMW-2s and CDMW-3s
5. Screened interval for CDMW-2s and CDMW-3s assumed based on depth to bottom measurements.

SMITH+GARDNER

By: MG
Date:5/18/2016

Table 2
Field Parameters
Avery County C&D Landfill
April 19 &20, 2016

Well	Temperature (°Celsius)	Turbidity (NTU)	Specific Conductivity (MS/cm)	pH
CDMW-1a	12.4	24.8	0.09	5.92
CDMW-2s	12.5	5.38	0.16	5.44
CDMW-3s	11.8	1.74	0.53	6.11
CDMW-4s	12.8	6.76	0.04	5.63
SW-1	12.3	3.61	0.05	6.54
SW-2	11.6	4.77	0.07	6.98

Note:
1. pH measured with a 'Hanna" pH/EC/TDS Meter, type HI9811
2. Temperature measured with a laboratory grade thermometer.
3. Data Collected by Smith Gardner, Inc. personnel April 20, 2016.

SMITH+GARDNER

By: FH
Date: 10/02/2015

Table 3
Inorganic and Organic Detections
Avery County C&D Landfill
April 19 & 20, 2016

Constituents	MDL	PQL	SWSL	2L or GWP* Standards	MCL	2B Standard	CDMW-1a	CDMW-2s	CDMW-3s	CDMW-4s	On-Site Potable Well	SW-1	SW-2
Inorganic													
Barium	0.53	5	100	700	2000	2000000	38	96	22	13	35	9.3	10
Beryllium	0.12	0.4	1	4*	4	6.5	<0.12	0.16 J	<0.12	0.13 J	<0.12	<0.12	0.36 J
Cadmium	0.044	0.1	1	2	5	2	<0.044	0.22	0.067 J	<0.044	<0.044	<0.044	<0.044
Chromium	0.63	5	10	10	NE	50	1.7 J	<0.63	1.5 J	<0.63	<0.63	1.1 J	<0.63
Cobalt	0.26	5	10	1*	1300	4	0.65 J	0.47 J	1.3 J	<0.26	<0.26	0.41 J	0.36 J
Copper	0.15	1	10	1000	1300	7	1.6	0.75 J	1.9	0.41 J	2	1.5	1.1
Lead	0.15	1	10	15	15	25	0.61 J	<0.15	0.30 J	<0.15	<0.15	0.42 J	0.21 J
Nickel	0.63	5	50	100	NE	88	1.4 J	0.77 J	2.9 J	<0.63	<0.63	0.68 J	<0.63
Vanadium	1	5	25	0.3*	NE	NE	3.1 J	1.5 J	4.1 J	1 J	1.1 J	2.6 J	2 J
Zinc	1.60	10	10	1000	5000**	50	10	5.3 J	13	3.8 J	6 J	16	9.2 J
Organic													
1,1-Dichloroethane	0.19	1	5	6	NE	100	<0.19	0.45 J	<0.19	<0.19	<0.19	<0.19	<0.19
cis-1,2-Dichloroethene	0.2	1	5	70	NE	720	<0.2	0.71 J	<0.2	<0.2	<0.2	<0.2	<0.2
Vinyl Chloride	0.5	1	1	0.03	2	2.4	<0.5	<0.5	**1.4**	<0.5	<0.5	<0.5	<0.5

Note:

MDL	-	Method Detection Limit
PQL	-	Practical Quantitaltion Limit
SWSL	-	Solid Waste Section Quantitation Limit
2L	-	Groundwater Standard (15A NCAC 2L 0200)
GWP	-	Groundwater Protection Standard (noted by *)
MCL	-	Federal Maximum Contaminant Limit
2B	-	NCAC 2B Standard for Class C waters
< BRL	-	Not detected at or above the RL
Bold	-	Levels above 2L or 2B Standard
J	-	Defined by the laboratory as an estimated result < PQL and ≥ MDL
**	-	National Secondary Drinking Water Standards

Results are presented in ug/l.
Data from 5/4/16 Shealy Environmental Services, Inc., Lot Number RD21043

SMITH+GARDNER

By: MG
Date: 5/23/2016

Table 4

Groundwater Chemistry Parameters
Avery County C & D Landfill
April 19 & 20, 2016

Parameter	MDL	PQL	SWSL	2L	CDMW-1a	CDMW-2s	CDMW-3s	CDMW-4s
Total Alkalinity	1.2	10	NE	NE	31	29	160	9.5 J
Total Suspended Solids	0.34	1	NE	NE	120	12	46	5
Chloride	0.033	1	NE	250	1.1	7	6.6	0.76 J
Sulfate	0.28	1	250	250	0.62 J	19	44	0.49 J

Note:

1. Table data are presented in mg/l.
2. PQL is the laboratory practical quantitation limit
3. MDL = Method Detection Limit
4. SWSL = Solid Waste Section Limit
5. 2L = Groundwater Standard (15A NCAC 2L 0200)
6. J = Defined by the laboratory as an estimated result < PQL and ≥ MDL
7. BRL = Not detected above the laboratory established reporting limit for this parameter

Data from 5/4/16 Shealy Environmental Services, Inc., Lot Number RD21043

SMITH+GARDNER

By:MG
Date: 5/31/2016

Table 5
Groundwater Velocity Calculation
Avery County C&D Landfill
April 19 & 20, 2016

Well	Groundwater Elevation (feet)	Hydraulic Conductivity (ft/day)	Porosity (%)	Gradient (ft/ft)	Velocity (ft/day)
CDMW-1a	2866.27	2.26	19	0.039	0.005
CDMW-2s	2862.33	2.26	19	0.055	0.007
CDMW-3s	2906.59	2.26	19	0.043	0.005
CDMW-4s	3021.08	2.26	19	0.158	0.019
				Avg V (ft/day)	0.009

Note:
1) Survey data from 9/2007 and 1/14/2008 by Surveying Solutions, P.C. and 1/11/2010 by Appalachian Professional Land Surveyors, and Consultants, PA.
2) Hydraulic conductivity values are an average of values measured in piezometers during Phase 3 Permit to Construct investigation

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Appendix A

Monitoring Well Information

April 2016 Semi-Annual Groundwater Report
Avery County C&D Landfill
NC Solid Waste Permit No. 06-03

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Richardson Smith Gardner & Assoc
14 North Boylan Avenue, Raleigh NC 27603
(919) 828-0577

FIELD BOREHOLE LOG

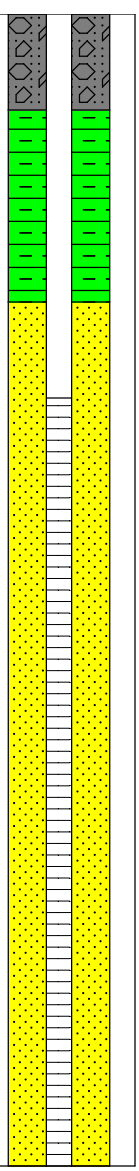
BOREHOLE NUMBER **MW-1a** Page 1 of 1

PROJECT NAME: **Avery County C&D Landfill**
LOCATION: **Ingalls, NC**
DRILLING CO: **Mad Dawg Drilling Inc**
DRILLING METHOD: **Geoprobe/HSA**
FIELD PARTY: **Tom Whitehead**
GEOLOGIST: **Joan Smyth**
DATE BEGUN: **10/26/09** COMPLETED: **10/26/09**

TOTAL DEPTH: **13**
TOP OF CASING ELEV.: GROUND ELEV.:
NORTHING: **0** EASTING: **0**

STATIC WATER LEVEL (BLS)		
Depth (ft)	--	--
Time	--	--
Date	--	--

DEPTH Feet	BLOW COUNT Per 6"	SAMPLING METHOD	RECOVERY Inches	DRILL METHOD	DESCRIPTION	LITHOLOGY	DEPTH Feet	WELL INSTALLATION
0.0		Grab		GP/HSA	SANDY SILT: Dry micaceous brown sandy silt		0.0	
5.0		Grab			CLAYEY SANDY SILT: Dry brown micaceous clayey sandy silt.		5.0	
10.0		Grab			CLAYEY SANDY SILT: Clayey sandy silt to sandy clayey silt with relict structure. Wet at bottom of borehole. Auger refusal at 13'. (This was the deepest auger refusal of three attempted borings in this area).		10.0	



David Garrett and Associates

Engineering and Geology

Depths in feet, referenced b.g.s.

Boring No. MW-4s

Page **1** of **1**

Client and Project	**Avery County C&D Expansion**			Ground Elevation	**3032.72**
Equipment	**Dietrich D-50 ATV**	Drilling Method	**HSA**	Water Level, TOB	**20.00**
Date Started	**11/19/07**	Date Ended	**11/19/07**	Water Level, 24 Hr.	**15.78**
Drilling Firm	**Red Dog Drilling, Inc.**	Logged by	**Joan Smythe**	Stabilized Level	**18.30**
Comments	**Immediately north of landfill**	Total Depth	**32.0**	Observation Date	**2/7/08**

Elev.	SPT Depth, Value and Plot		Strata Depth and Soil Description (USCS)		Piezometer Constuction Data
		N = 0 20 40 60 80 100 BPF			
3032			SILT: Saprolite; finely laminated; highly micaceous;rock frags., qtz, feldspar, mica; relict rock texture and structure with depth (mica gneiss); approximately horizontal layering with sub-vertical fractures; dark mineral staining and more abundant rock frags. with depth; tan to brown; sample clayey from 7.5 to 10 feet; sample becoming wet at 23.5 feet, very wet at 33.5 with iron-manganese stains but alternating wet and dry layers noted; very wet (muddy) conditions at 43.5 feet in initial boring		
3030					
3028	3.5	32 27 11		MH	
3026					
3024	8.5	2 2 4		MH	
3022					Grout 0 to 18.0 ft.
3020					
3018	13.5	4 4 10		MH	
3016					
3014	18.5	1 2 4		MH	Bentonite Seal 18.0 to 20.0 ft.
3012					
3010			Initial boring extended to 45 feet but caved at 35 feet, was redrilled to 73.5 feet and called MW-4d, new boring installed to 32 feet and called MW-4s		Sand Pack 20.0 to 32.0 ft.
3008	23.5	8 5 6		MH	0.010" Slotted Screen 22.0 to 32.0 ft.
3006					
3004	28.5	3 4 5		MH	
3002			Boring Terminated at 32 feet		

Appendix B

Laboratory Analytical Report

April 2016 Semi-Annual Groundwater Report
Avery County C&D Landfill
NC Solid Waste Permit No. 06-03

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Report of Analysis

Smith Gardner, Inc.
14 North Boylan Avenue
Raleigh, NC 27603
Attention: Madeline German

Project Name: **Avery County C&D**

Lot Number: **RD21043**
Date Completed: **05/04/2016**

Kelly M. Nance
Project Manager

This report shall not be reproduced, except in its entirety, without the written approval of Shealy Environmental Services, Inc.

The following non-paginated documents are considered part of this report: Chain of Custody Record and Sample Receipt Checklist.

Case Narrative
Smith Gardner, Inc.
Lot Number: RD21043
Project Name: Avery County C&D
Project Number:

This Report of Analysis contains the analytical result(s) for the sample(s) listed on the Sample Summary following this Case Narrative. The sample receiving date is documented in the header information associated with each sample.

All results listed in this report relate only to the samples that are contained within this report.

Sample receipt, sample analysis, and data review have been performed in accordance with the most current approved NELAC standards, the Shealy Environmental Services, Inc. ("Shealy") Quality Assurance Management Plan (QAMP), standard operating procedures (SOPs), and Shealy policies. Any exceptions to the NELAC standards, the QAMP, SOPs or policies are qualified on the results page or discussed below.

If you have any questions regarding this report please contact the Shealy Project Manager listed on the cover page.

Inorganic Metals

The method blank associated with batch 11519 had copper detected at a concentration that was above the MDL but below ½ the PQL. All samples associated with this method blank that have detections for copper have been flagged with a "B".

Inorganic Non-Metals

The method blank associated with batch 12419 had sulfate detected at a concentration that was above the MDL but below ½ the PQL. All samples associated with this method blank that have detections for sulfate have been flagged with a "B".

Sample Summary

Smith Gardner, Inc.

Lot Number: RD21043

Project Name: Avery County C&D

Project Number:

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	CDMW-1A	Aqueous	04/20/2016 0945	04/21/2016
002	CDMW-2S	Aqueous	04/20/2016 1010	04/21/2016
003	CDMW-3S	Aqueous	04/20/2016 0920	04/21/2016
004	CDMW-4S	Aqueous	04/20/2016 0830	04/21/2016
005	SW-1	Aqueous	04/20/2016 0855	04/21/2016
006	SW-2	Aqueous	04/20/2016 1035	04/21/2016
007	Office	Aqueous	04/20/2016 1100	04/21/2016

(7 samples)

Executive Summary
Smith Gardner, Inc.
Lot Number: RD21043
Project Name: Avery County C&D
Project Number:

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
001	CDMW-1A	Aqueous	Alkalinity	SM 2320B-	31		mg/L	6
001	CDMW-1A	Aqueous	Chloride	9056A	1.1		mg/L	6
001	CDMW-1A	Aqueous	Sulfate	9056A	0.62	BJ	mg/L	6
001	CDMW-1A	Aqueous	TSS	SM 2540D-	120		mg/L	6
001	CDMW-1A	Aqueous	Barium	6020A	38		ug/L	9
001	CDMW-1A	Aqueous	Chromium	6020A	1.7	J	ug/L	9
001	CDMW-1A	Aqueous	Cobalt	6020A	0.65	J	ug/L	9
001	CDMW-1A	Aqueous	Copper	6020A	1.6	B	ug/L	9
001	CDMW-1A	Aqueous	Lead	6020A	0.61	J	ug/L	9
001	CDMW-1A	Aqueous	Nickel	6020A	1.4	J	ug/L	9
001	CDMW-1A	Aqueous	Vanadium	6020A	3.1	J	ug/L	9
001	CDMW-1A	Aqueous	Zinc	6020A	10		ug/L	9
002	CDMW-2S	Aqueous	Alkalinity	SM 2320B-	29		mg/L	10
002	CDMW-2S	Aqueous	Chloride	9056A	7.0		mg/L	10
002	CDMW-2S	Aqueous	Sulfate	9056A	19	B	mg/L	10
002	CDMW-2S	Aqueous	TSS	SM 2540D-	12		mg/L	10
002	CDMW-2S	Aqueous	1,1-Dichloroethane	8260B	0.45	J	ug/L	11
002	CDMW-2S	Aqueous	cis-1,2-Dichloroethene	8260B	0.71	J	ug/L	11
002	CDMW-2S	Aqueous	Barium	6020A	96		ug/L	13
002	CDMW-2S	Aqueous	Beryllium	6020A	0.16	J	ug/L	13
002	CDMW-2S	Aqueous	Cadmium	6020A	0.22		ug/L	13
002	CDMW-2S	Aqueous	Cobalt	6020A	0.47	J	ug/L	13
002	CDMW-2S	Aqueous	Copper	6020A	0.75	BJ	ug/L	13
002	CDMW-2S	Aqueous	Nickel	6020A	0.77	J	ug/L	13
002	CDMW-2S	Aqueous	Vanadium	6020A	1.5	J	ug/L	13
002	CDMW-2S	Aqueous	Zinc	6020A	5.3	J	ug/L	13
003	CDMW-3S	Aqueous	Alkalinity	SM 2320B-	160		mg/L	14
003	CDMW-3S	Aqueous	Chloride	9056A	6.6		mg/L	14
003	CDMW-3S	Aqueous	Sulfate	9056A	44	B	mg/L	14
003	CDMW-3S	Aqueous	TSS	SM 2540D-	46		mg/L	14
003	CDMW-3S	Aqueous	Vinyl chloride	8260B	1.4		ug/L	16
003	CDMW-3S	Aqueous	Barium	6020A	22		ug/L	17
003	CDMW-3S	Aqueous	Cadmium	6020A	0.067	J	ug/L	17
003	CDMW-3S	Aqueous	Chromium	6020A	1.5	J	ug/L	17
003	CDMW-3S	Aqueous	Cobalt	6020A	1.3	J	ug/L	17
003	CDMW-3S	Aqueous	Copper	6020A	1.9	B	ug/L	17
003	CDMW-3S	Aqueous	Lead	6020A	0.30	J	ug/L	17
003	CDMW-3S	Aqueous	Nickel	6020A	2.9	J	ug/L	17
003	CDMW-3S	Aqueous	Vanadium	6020A	4.1	J	ug/L	17
003	CDMW-3S	Aqueous	Zinc	6020A	13		ug/L	17
004	CDMW-4S	Aqueous	Alkalinity	SM 2320B-	9.5	J	mg/L	18
004	CDMW-4S	Aqueous	Chloride	9056A	0.76	J	mg/L	18
004	CDMW-4S	Aqueous	Sulfate	9056A	0.49	BJ	mg/L	18

Executive Summary (Continued)

Lot Number: RD21043

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
004	CDMW-4S	Aqueous	TSS	SM 2540D-	5.0		mg/L	18
004	CDMW-4S	Aqueous	Barium	6020A	13		ug/L	21
004	CDMW-4S	Aqueous	Beryllium	6020A	0.13	J	ug/L	21
004	CDMW-4S	Aqueous	Copper	6020A	0.41	BJ	ug/L	21
004	CDMW-4S	Aqueous	Vanadium	6020A	1.0	J	ug/L	21
004	CDMW-4S	Aqueous	Zinc	6020A	3.8	J	ug/L	21
005	SW-1	Aqueous	Barium	6020A	9.3		ug/L	24
005	SW-1	Aqueous	Chromium	6020A	1.1	J	ug/L	24
005	SW-1	Aqueous	Cobalt	6020A	0.41	J	ug/L	24
005	SW-1	Aqueous	Copper	6020A	1.5	B	ug/L	24
005	SW-1	Aqueous	Lead	6020A	0.42	J	ug/L	24
005	SW-1	Aqueous	Nickel	6020A	0.68	J	ug/L	24
005	SW-1	Aqueous	Vanadium	6020A	2.6	J	ug/L	24
005	SW-1	Aqueous	Zinc	6020A	16		ug/L	24
006	SW-2	Aqueous	Barium	6020A	10		ug/L	27
006	SW-2	Aqueous	Cobalt	6020A	0.36	J	ug/L	27
006	SW-2	Aqueous	Copper	6020A	1.1	B	ug/L	27
006	SW-2	Aqueous	Lead	6020A	0.21	J	ug/L	27
006	SW-2	Aqueous	Vanadium	6020A	2.0	J	ug/L	27
006	SW-2	Aqueous	Zinc	6020A	9.2	J	ug/L	27
007	Office	Aqueous	Barium	6020A	35		ug/L	30
007	Office	Aqueous	Copper	6020A	2.0	B	ug/L	30
007	Office	Aqueous	Vanadium	6020A	1.1	J	ug/L	30
007	Office	Aqueous	Zinc	6020A	6.0	J	ug/L	30

(67 detections)

Inorganic non-metals

Client: **Smith Gardner, Inc.** Laboratory ID: **RD21043-001**

Description: **CDMW-1A** Matrix: **Aqueous**

Date Sampled: **04/20/2016 0945** Project Name: **Avery County C&D**

Date Received: **04/21/2016** Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Alkalinity) SM 2320B-2011	1	04/28/2016 2028	MJI		12065
2		(Chloride) 9056A	1	05/03/2016 1746	SLU		12303
2		(Sulfate) 9056A	1	05/03/2016 0045	SLU		12419
1		(TSS) SM 2540D-2011	1	04/25/2016 0902	AMM1		11649

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Alkalinity		**SM 2320B-20**	**31**		**10**	**1.2**	**mg/L**	**1**
Chloride		**9056A**	**1.1**		**1.0**	**0.033**	**mg/L**	**2**
Sulfate		**9056A**	**0.62**	**BJ**	**1.0**	**0.28**	**mg/L**	**2**
TSS		**SM 2540D-20**	**120**		**7.4**	**0.34**	**mg/L**	**1**

PQL = Practical quantitation limit B = Detected in the method blank E = Quantitation of compound exceeded the calibration range H = Out of holding time

ND = Not detected at or above the MDL J = Estimated result < PQL and ≥ MDL P = The RPD between two GC columns exceeds 40% N = Recovery is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Volatile Organic Compounds by GC/MS

Client: **Smith Gardner, Inc.** Laboratory ID: **RD21043-001**
Description: **CDMW-1A** Matrix: **Aqueous**
Date Sampled: **04/20/2016 0945** Project Name: **Avery County C&D**
Date Received: **04/21/2016** Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	04/26/2016 1243	RAG		11786

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Acetone	67-64-1	8260B	ND		20	1.6	ug/L	1
Acrylonitrile	107-13-1	8260B	ND		20	0.62	ug/L	1
Benzene	71-43-2	8260B	ND		1.0	0.21	ug/L	1
Bromochloromethane	74-97-5	8260B	ND		1.0	0.45	ug/L	1
Bromodichloromethane	75-27-4	8260B	ND		1.0	0.23	ug/L	1
Bromoform	75-25-2	8260B	ND		1.0	0.35	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260B	ND		2.0	0.19	ug/L	1
2-Butanone (MEK)	78-93-3	8260B	ND		10	1.8	ug/L	1
Carbon disulfide	75-15-0	8260B	ND		1.0	0.45	ug/L	1
Carbon tetrachloride	56-23-5	8260B	ND		1.0	0.31	ug/L	1
Chlorobenzene	108-90-7	8260B	ND		1.0	0.20	ug/L	1
Chloroethane	75-00-3	8260B	ND		2.0	0.28	ug/L	1
Chloroform	67-66-3	8260B	ND		1.0	0.21	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260B	ND		1.0	0.19	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260B	ND		1.0	0.57	ug/L	1
Dibromochloromethane	124-48-1	8260B	ND		1.0	0.23	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260B	ND		1.0	0.17	ug/L	1
Dibromomethane (Methylene bromide)	74-95-3	8260B	ND		1.0	0.26	ug/L	1
trans-1,4-Dichloro-2-butene	110-57-6	8260B	ND		2.0	1.4	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260B	ND		1.0	0.46	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260B	ND		1.0	0.19	ug/L	1
1,1-Dichloroethane	75-34-3	8260B	ND		1.0	0.19	ug/L	1
1,2-Dichloroethane	107-06-2	8260B	ND		1.0	0.23	ug/L	1
1,1-Dichloroethene	75-35-4	8260B	ND		1.0	0.31	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260B	ND		1.0	0.20	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260B	ND		1.0	0.33	ug/L	1
1,2-Dichloropropane	78-87-5	8260B	ND		1.0	0.29	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260B	ND		1.0	0.30	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260B	ND		1.0	0.22	ug/L	1
Ethylbenzene	100-41-4	8260B	ND		1.0	0.21	ug/L	1
2-Hexanone	591-78-6	8260B	ND		10	0.26	ug/L	1
Methyl iodide (Iodomethane)	74-88-4	8260B	ND		5.0	0.28	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260B	ND		10	0.29	ug/L	1
Methylene chloride	75-09-2	8260B	ND		1.0	0.42	ug/L	1
Styrene	100-42-5	8260B	ND		1.0	0.13	ug/L	1
1,1,1,2-Tetrachloroethane	630-20-6	8260B	ND		1.0	0.19	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260B	ND		1.0	0.13	ug/L	1
Tetrachloroethene	127-18-4	8260B	ND		1.0	0.22	ug/L	1
Tetrahydrofuran	109-99-9	8260B	ND		5.0	0.57	ug/L	1
Toluene	108-88-3	8260B	ND		1.0	0.24	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260B	ND		1.0	0.24	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260B	ND		1.0	0.22	ug/L	1
Trichloroethene	79-01-6	8260B	ND		1.0	0.16	ug/L	1
Trichlorofluoromethane	75-69-4	8260B	ND		1.0	0.74	ug/L	1

PQL = Practical quantitation limit B = Detected in the method blank E = Quantitation of compound exceeded the calibration range H = Out of holding time
ND = Not detected at or above the MDL J = Estimated result < PQL and ≥ MDL P = The RPD between two GC columns exceeds 40% N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Volatile Organic Compounds by GC/MS

Client: **Smith Gardner, Inc.**
Laboratory ID: **RD21043-001**
Description: **CDMW-1A**
Matrix: **Aqueous**
Date Sampled: **04/20/2016 0945**
Project Name: **Avery County C&D**
Date Received: **04/21/2016**
Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	04/26/2016 1243	RAG		11786

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
1,2,3-Trichloropropane	96-18-4	8260B	ND		1.0	0.35	ug/L	1
Vinyl acetate	108-05-4	8260B	ND		5.0	1.0	ug/L	1
Vinyl chloride	75-01-4	8260B	ND		1.0	0.50	ug/L	1
Xylenes (total)	1330-20-7	8260B	ND		1.0	0.32	ug/L	1
m+p - Xylenes	179601-23-1	8260B	ND		1.0	0.19	ug/L	1
o - Xylenes	95-47-6	8260B	ND		1.0	0.14	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		103	70-130
Bromofluorobenzene		100	70-130
Toluene-d8		102	70-130

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the MDL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

ICP-MS

Client: **Smith Gardner, Inc.** Laboratory ID: **RD21043-001**

Description: **CDMW-1A** Matrix: **Aqueous**

Date Sampled: **04/20/2016 0945** Project Name: **Avery County C&D**

Date Received: **04/21/2016** Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6020A	1	04/25/2016 1630	BNW	04/22/2016 0841	11519

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Antimony	7440-36-0	6020A	ND		1.0	0.17	ug/L	1
Arsenic	7440-38-2	6020A	ND		1.0	0.26	ug/L	1
Barium	**7440-39-3**	**6020A**	**38**		**5.0**	**0.53**	**ug/L**	**1**
Beryllium	7440-41-7	6020A	ND		0.40	0.12	ug/L	1
Cadmium	7440-43-9	6020A	ND		0.10	0.044	ug/L	1
Chromium	**7440-47-3**	**6020A**	**1.7**	**J**	**5.0**	**0.63**	**ug/L**	**1**
Cobalt	**7440-48-4**	**6020A**	**0.65**	**J**	**5.0**	**0.26**	**ug/L**	**1**
Copper	**7440-50-8**	**6020A**	**1.6**	**B**	**1.0**	**0.15**	**ug/L**	**1**
Lead	**7439-92-1**	**6020A**	**0.61**	**J**	**1.0**	**0.15**	**ug/L**	**1**
Nickel	**7440-02-0**	**6020A**	**1.4**	**J**	**5.0**	**0.63**	**ug/L**	**1**
Selenium	7782-49-2	6020A	ND		1.0	0.95	ug/L	1
Silver	7440-22-4	6020A	ND		1.0	0.17	ug/L	1
Thallium	7440-28-0	6020A	ND		0.50	0.075	ug/L	1
Vanadium	**7440-62-2**	**6020A**	**3.1**	**J**	**5.0**	**1.0**	**ug/L**	**1**
Zinc	**7440-66-6**	**6020A**	**10**		**10**	**1.6**	**ug/L**	**1**

PQL = Practical quantitation limit B = Detected in the method blank E = Quantitation of compound exceeded the calibration range H = Out of holding time

ND = Not detected at or above the MDL J = Estimated result < PQL and ≥ MDL P = The RPD between two GC columns exceeds 40% N = Recovery is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Inorganic non-metals

Client: **Smith Gardner, Inc.** Laboratory ID: **RD21043-002**

Description: **CDMW-2S** Matrix: **Aqueous**

Date Sampled: **04/20/2016 1010** Project Name: **Avery County C&D**

Date Received: **04/21/2016** Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Alkalinity) SM 2320B-2011	1	04/28/2016 2032	MJI		12065
2		(Chloride) 9056A	1	05/03/2016 1810	SLU		12303
2		(Sulfate) 9056A	1	05/03/2016 0057	SLU		12419
1		(TSS) SM 2540D-2011	1	04/25/2016 0902	AMM1		11649

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Alkalinity		**SM 2320B-20**	**29**		**10**	**1.2**	**mg/L**	**1**
Chloride		**9056A**	**7.0**		**1.0**	**0.033**	**mg/L**	**2**
Sulfate		**9056A**	**19**	**B**	**1.0**	**0.28**	**mg/L**	**2**
TSS		**SM 2540D-20**	**12**		**1.0**	**0.34**	**mg/L**	**1**

PQL = Practical quantitation limit B = Detected in the method blank E = Quantitation of compound exceeded the calibration range H = Out of holding time

ND = Not detected at or above the MDL J = Estimated result < PQL and ≥ MDL P = The RPD between two GC columns exceeds 40% N = Recovery is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Volatile Organic Compounds by GC/MS

Client: **Smith Gardner, Inc.** Laboratory ID: **RD21043-002**
Description: **CDMW-2S** Matrix: **Aqueous**
Date Sampled: **04/20/2016 1010** Project Name: **Avery County C&D**
Date Received: **04/21/2016** Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	04/26/2016 1306	RAG		11786

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Acetone	67-64-1	8260B	ND		20	1.6	ug/L	1
Acrylonitrile	107-13-1	8260B	ND		20	0.62	ug/L	1
Benzene	71-43-2	8260B	ND		1.0	0.21	ug/L	1
Bromochloromethane	74-97-5	8260B	ND		1.0	0.45	ug/L	1
Bromodichloromethane	75-27-4	8260B	ND		1.0	0.23	ug/L	1
Bromoform	75-25-2	8260B	ND		1.0	0.35	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260B	ND		2.0	0.19	ug/L	1
2-Butanone (MEK)	78-93-3	8260B	ND		10	1.8	ug/L	1
Carbon disulfide	75-15-0	8260B	ND		1.0	0.45	ug/L	1
Carbon tetrachloride	56-23-5	8260B	ND		1.0	0.31	ug/L	1
Chlorobenzene	108-90-7	8260B	ND		1.0	0.20	ug/L	1
Chloroethane	75-00-3	8260B	ND		2.0	0.28	ug/L	1
Chloroform	67-66-3	8260B	ND		1.0	0.21	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260B	ND		1.0	0.19	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260B	ND		1.0	0.57	ug/L	1
Dibromochloromethane	124-48-1	8260B	ND		1.0	0.23	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260B	ND		1.0	0.17	ug/L	1
Dibromomethane (Methylene bromide)	74-95-3	8260B	ND		1.0	0.26	ug/L	1
trans-1,4-Dichloro-2-butene	110-57-6	8260B	ND		2.0	1.4	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260B	ND		1.0	0.46	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260B	ND		1.0	0.19	ug/L	1
1,1-Dichloroethane	**75-34-3**	**8260B**	**0.45**	**J**	**1.0**	**0.19**	**ug/L**	**1**
1,2-Dichloroethane	107-06-2	8260B	ND		1.0	0.23	ug/L	1
1,1-Dichloroethene	75-35-4	8260B	ND		1.0	0.31	ug/L	1
cis-1,2-Dichloroethene	**156-59-2**	**8260B**	**0.71**	**J**	**1.0**	**0.20**	**ug/L**	**1**
trans-1,2-Dichloroethene	156-60-5	8260B	ND		1.0	0.33	ug/L	1
1,2-Dichloropropane	78-87-5	8260B	ND		1.0	0.29	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260B	ND		1.0	0.30	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260B	ND		1.0	0.22	ug/L	1
Ethylbenzene	100-41-4	8260B	ND		1.0	0.21	ug/L	1
2-Hexanone	591-78-6	8260B	ND		10	0.26	ug/L	1
Methyl iodide (Iodomethane)	74-88-4	8260B	ND		5.0	0.28	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260B	ND		10	0.29	ug/L	1
Methylene chloride	75-09-2	8260B	ND		1.0	0.42	ug/L	1
Styrene	100-42-5	8260B	ND		1.0	0.13	ug/L	1
1,1,1,2-Tetrachloroethane	630-20-6	8260B	ND		1.0	0.19	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260B	ND		1.0	0.13	ug/L	1
Tetrachloroethene	127-18-4	8260B	ND		1.0	0.22	ug/L	1
Tetrahydrofuran	109-99-9	8260B	ND		5.0	0.57	ug/L	1
Toluene	108-88-3	8260B	ND		1.0	0.24	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260B	ND		1.0	0.24	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260B	ND		1.0	0.22	ug/L	1
Trichloroethene	79-01-6	8260B	ND		1.0	0.16	ug/L	1
Trichlorofluoromethane	75-69-4	8260B	ND		1.0	0.74	ug/L	1

PQL = Practical quantitation limit B = Detected in the method blank E = Quantitation of compound exceeded the calibration range H = Out of holding time
ND = Not detected at or above the MDL J = Estimated result < PQL and ≥ MDL P = The RPD between two GC columns exceeds 40% N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Volatile Organic Compounds by GC/MS

Client: **Smith Gardner, Inc.** Laboratory ID: **RD21043-002**

Description: **CDMW-2S** Matrix: **Aqueous**

Date Sampled: **04/20/2016 1010** Project Name: **Avery County C&D**

Date Received: **04/21/2016** Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	04/26/2016 1306	RAG		11786

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
1,2,3-Trichloropropane	96-18-4	8260B	ND		1.0	0.35	ug/L	1
Vinyl acetate	108-05-4	8260B	ND		5.0	1.0	ug/L	1
Vinyl chloride	75-01-4	8260B	ND		1.0	0.50	ug/L	1
Xylenes (total)	1330-20-7	8260B	ND		1.0	0.32	ug/L	1
m+p - Xylenes	179601-23-1	8260B	ND		1.0	0.19	ug/L	1
o - Xylenes	95-47-6	8260B	ND		1.0	0.14	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		102	70-130
Bromofluorobenzene		94	70-130
Toluene-d8		100	70-130

PQL = Practical quantitation limit B = Detected in the method blank E = Quantitation of compound exceeded the calibration range H = Out of holding time

ND = Not detected at or above the MDL J = Estimated result < PQL and ≥ MDL P = The RPD between two GC columns exceeds 40% N = Recovery is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

ICP-MS

Client: **Smith Gardner, Inc.**
Laboratory ID: **RD21043-002**
Description: **CDMW-2S**
Matrix: **Aqueous**
Date Sampled: **04/20/2016 1010**
Project Name: **Avery County C&D**
Date Received: **04/21/2016**
Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6020A	1	04/25/2016 1635	BNW	04/22/2016 0841	11519

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Antimony	7440-36-0	6020A	ND		1.0	0.17	ug/L	1
Arsenic	7440-38-2	6020A	ND		1.0	0.26	ug/L	1
Barium	**7440-39-3**	**6020A**	**96**		**5.0**	**0.53**	**ug/L**	**1**
Beryllium	**7440-41-7**	**6020A**	**0.16**	**J**	**0.40**	**0.12**	**ug/L**	**1**
Cadmium	**7440-43-9**	**6020A**	**0.22**		**0.10**	**0.044**	**ug/L**	**1**
Chromium	7440-47-3	6020A	ND		5.0	0.63	ug/L	1
Cobalt	**7440-48-4**	**6020A**	**0.47**	**J**	**5.0**	**0.26**	**ug/L**	**1**
Copper	**7440-50-8**	**6020A**	**0.75**	**BJ**	**1.0**	**0.15**	**ug/L**	**1**
Lead	7439-92-1	6020A	ND		1.0	0.15	ug/L	1
Nickel	**7440-02-0**	**6020A**	**0.77**	**J**	**5.0**	**0.63**	**ug/L**	**1**
Selenium	7782-49-2	6020A	ND		1.0	0.95	ug/L	1
Silver	7440-22-4	6020A	ND		1.0	0.17	ug/L	1
Thallium	7440-28-0	6020A	ND		0.50	0.075	ug/L	1
Vanadium	**7440-62-2**	**6020A**	**1.5**	**J**	**5.0**	**1.0**	**ug/L**	**1**
Zinc	**7440-66-6**	**6020A**	**5.3**	**J**	**10**	**1.6**	**ug/L**	**1**

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the MDL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Inorganic non-metals

Client: **Smith Gardner, Inc.** Laboratory ID: **RD21043-003**

Description: **CDMW-3S** Matrix: **Aqueous**

Date Sampled: **04/20/2016 0920** Project Name: **Avery County C&D**

Date Received: **04/21/2016** Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Alkalinity) SM 2320B-2011	1	04/28/2016 2038	MJI		12065
2		(Chloride) 9056A	1	05/03/2016 1834	SLU		12303
2		(Sulfate) 9056A	1	05/03/2016 0134	SLU		12419
1		(TSS) SM 2540D-2011	1	04/25/2016 0902	AMM1		11649

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Alkalinity		**SM 2320B-20**	**160**		**10**	**1.2**	**mg/L**	**1**
Chloride		**9056A**	**6.6**		**1.0**	**0.033**	**mg/L**	**2**
Sulfate		**9056A**	**44**	**B**	**1.0**	**0.28**	**mg/L**	**2**
TSS		**SM 2540D-20**	**46**		**2.0**	**0.34**	**mg/L**	**1**

PQL = Practical quantitation limit B = Detected in the method blank E = Quantitation of compound exceeded the calibration range H = Out of holding time

ND = Not detected at or above the MDL J = Estimated result < PQL and ≥ MDL P = The RPD between two GC columns exceeds 40% N = Recovery is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Volatile Organic Compounds by GC/MS

Client: **Smith Gardner, Inc.** Laboratory ID: **RD21043-003**
Description: **CDMW-3S** Matrix: **Aqueous**
Date Sampled: **04/20/2016 0920** Project Name: **Avery County C&D**
Date Received: **04/21/2016** Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	04/26/2016 1329	RAG		11786

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Acetone	67-64-1	8260B	ND		20	1.6	ug/L	1
Acrylonitrile	107-13-1	8260B	ND		20	0.62	ug/L	1
Benzene	71-43-2	8260B	ND		1.0	0.21	ug/L	1
Bromochloromethane	74-97-5	8260B	ND		1.0	0.45	ug/L	1
Bromodichloromethane	75-27-4	8260B	ND		1.0	0.23	ug/L	1
Bromoform	75-25-2	8260B	ND		1.0	0.35	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260B	ND		2.0	0.19	ug/L	1
2-Butanone (MEK)	78-93-3	8260B	ND		10	1.8	ug/L	1
Carbon disulfide	75-15-0	8260B	ND		1.0	0.45	ug/L	1
Carbon tetrachloride	56-23-5	8260B	ND		1.0	0.31	ug/L	1
Chlorobenzene	108-90-7	8260B	ND		1.0	0.20	ug/L	1
Chloroethane	75-00-3	8260B	ND		2.0	0.28	ug/L	1
Chloroform	67-66-3	8260B	ND		1.0	0.21	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260B	ND		1.0	0.19	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260B	ND		1.0	0.57	ug/L	1
Dibromochloromethane	124-48-1	8260B	ND		1.0	0.23	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260B	ND		1.0	0.17	ug/L	1
Dibromomethane (Methylene bromide)	74-95-3	8260B	ND		1.0	0.26	ug/L	1
trans-1,4-Dichloro-2-butene	110-57-6	8260B	ND		2.0	1.4	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260B	ND		1.0	0.46	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260B	ND		1.0	0.19	ug/L	1
1,1-Dichloroethane	75-34-3	8260B	ND		1.0	0.19	ug/L	1
1,2-Dichloroethane	107-06-2	8260B	ND		1.0	0.23	ug/L	1
1,1-Dichloroethene	75-35-4	8260B	ND		1.0	0.31	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260B	ND		1.0	0.20	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260B	ND		1.0	0.33	ug/L	1
1,2-Dichloropropane	78-87-5	8260B	ND		1.0	0.29	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260B	ND		1.0	0.30	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260B	ND		1.0	0.22	ug/L	1
Ethylbenzene	100-41-4	8260B	ND		1.0	0.21	ug/L	1
2-Hexanone	591-78-6	8260B	ND		10	0.26	ug/L	1
Methyl iodide (Iodomethane)	74-88-4	8260B	ND		5.0	0.28	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260B	ND		10	0.29	ug/L	1
Methylene chloride	75-09-2	8260B	ND		1.0	0.42	ug/L	1
Styrene	100-42-5	8260B	ND		1.0	0.13	ug/L	1
1,1,1,2-Tetrachloroethane	630-20-6	8260B	ND		1.0	0.19	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260B	ND		1.0	0.13	ug/L	1
Tetrachloroethene	127-18-4	8260B	ND		1.0	0.22	ug/L	1
Tetrahydrofuran	109-99-9	8260B	ND		5.0	0.57	ug/L	1
Toluene	108-88-3	8260B	ND		1.0	0.24	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260B	ND		1.0	0.24	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260B	ND		1.0	0.22	ug/L	1
Trichloroethene	79-01-6	8260B	ND		1.0	0.16	ug/L	1
Trichlorofluoromethane	75-69-4	8260B	ND		1.0	0.74	ug/L	1

PQL = Practical quantitation limit B = Detected in the method blank E = Quantitation of compound exceeded the calibration range H = Out of holding time
ND = Not detected at or above the MDL J = Estimated result < PQL and ≥ MDL P = The RPD between two GC columns exceeds 40% N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Volatile Organic Compounds by GC/MS

Client: **Smith Gardner, Inc.**		Laboratory ID: **RD21043-003**	
Description: **CDMW-3S**		Matrix: **Aqueous**	
Date Sampled: **04/20/2016 0920**	Project Name: **Avery County C&D**		
Date Received: **04/21/2016**	Project Number:		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	04/26/2016 1329	RAG		11786

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
1,2,3-Trichloropropane	96-18-4	8260B	ND		1.0	0.35	ug/L	1
Vinyl acetate	108-05-4	8260B	ND		5.0	1.0	ug/L	1
Vinyl chloride	**75-01-4**	**8260B**	**1.4**		**1.0**	**0.50**	**ug/L**	**1**
Xylenes (total)	1330-20-7	8260B	ND		1.0	0.32	ug/L	1
m+p - Xylenes	179601-23-1	8260B	ND		1.0	0.19	ug/L	1
o - Xylenes	95-47-6	8260B	ND		1.0	0.14	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		102	70-130
Bromofluorobenzene		97	70-130
Toluene-d8		102	70-130

PQL = Practical quantitation limit | B = Detected in the method blank | E = Quantitation of compound exceeded the calibration range | H = Out of holding time

ND = Not detected at or above the MDL | J = Estimated result < PQL and ≥ MDL | P = The RPD between two GC columns exceeds 40% | N = Recovery is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

ICP-MS

Client: **Smith Gardner, Inc.** Laboratory ID: **RD21043-003**

Description: **CDMW-3S** Matrix: **Aqueous**

Date Sampled: **04/20/2016 0920** Project Name: **Avery County C&D**

Date Received: **04/21/2016** Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6020A	1	04/25/2016 1640	BNW	04/22/2016 0841	11519

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Antimony	7440-36-0	6020A	ND		1.0	0.17	ug/L	1
Arsenic	7440-38-2	6020A	ND		1.0	0.26	ug/L	1
Barium	**7440-39-3**	**6020A**	**22**		**5.0**	**0.53**	**ug/L**	**1**
Beryllium	7440-41-7	6020A	ND		0.40	0.12	ug/L	1
Cadmium	**7440-43-9**	**6020A**	**0.067**	**J**	**0.10**	**0.044**	**ug/L**	**1**
Chromium	**7440-47-3**	**6020A**	**1.5**	**J**	**5.0**	**0.63**	**ug/L**	**1**
Cobalt	**7440-48-4**	**6020A**	**1.3**	**J**	**5.0**	**0.26**	**ug/L**	**1**
Copper	**7440-50-8**	**6020A**	**1.9**	**B**	**1.0**	**0.15**	**ug/L**	**1**
Lead	**7439-92-1**	**6020A**	**0.30**	**J**	**1.0**	**0.15**	**ug/L**	**1**
Nickel	**7440-02-0**	**6020A**	**2.9**	**J**	**5.0**	**0.63**	**ug/L**	**1**
Selenium	7782-49-2	6020A	ND		1.0	0.95	ug/L	1
Silver	7440-22-4	6020A	ND		1.0	0.17	ug/L	1
Thallium	7440-28-0	6020A	ND		0.50	0.075	ug/L	1
Vanadium	**7440-62-2**	**6020A**	**4.1**	**J**	**5.0**	**1.0**	**ug/L**	**1**
Zinc	**7440-66-6**	**6020A**	**13**		**10**	**1.6**	**ug/L**	**1**

PQL = Practical quantitation limit B = Detected in the method blank E = Quantitation of compound exceeded the calibration range H = Out of holding time

ND = Not detected at or above the MDL J = Estimated result < PQL and ≥ MDL P = The RPD between two GC columns exceeds 40% N = Recovery is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Inorganic non-metals

Client: **Smith Gardner, Inc.** Laboratory ID: **RD21043-004**

Description: **CDMW-4S** Matrix: **Aqueous**

Date Sampled: **04/20/2016 0830** Project Name: **Avery County C&D**

Date Received: **04/21/2016** Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Alkalinity) SM 2320B-2011	1	04/28/2016 2042	MJI		12065
2		(Chloride) 9056A	1	05/03/2016 1858	SLU		12303
2		(Sulfate) 9056A	1	05/03/2016 0146	SLU		12419
1		(TSS) SM 2540D-2011	1	04/25/2016 0902	AMM1		11649

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Alkalinity		**SM 2320B-20**	**9.5**	**J**	**10**	**1.2**	**mg/L**	**1**
Chloride		**9056A**	**0.76**	**J**	**1.0**	**0.033**	**mg/L**	**2**
Sulfate		**9056A**	**0.49**	**BJ**	**1.0**	**0.28**	**mg/L**	**2**
TSS		**SM 2540D-20**	**5.0**		**1.0**	**0.34**	**mg/L**	**1**

PQL = Practical quantitation limit B = Detected in the method blank E = Quantitation of compound exceeded the calibration range H = Out of holding time

ND = Not detected at or above the MDL J = Estimated result < PQL and ≥ MDL P = The RPD between two GC columns exceeds 40% N = Recovery is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Volatile Organic Compounds by GC/MS

Client: **Smith Gardner, Inc.** Laboratory ID: **RD21043-004**
Description: **CDMW-4S** Matrix: **Aqueous**
Date Sampled: **04/20/2016 0830** Project Name: **Avery County C&D**
Date Received: **04/21/2016** Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	04/26/2016 1351	RAG		11786

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Acetone	67-64-1	8260B	ND		20	1.6	ug/L	1
Acrylonitrile	107-13-1	8260B	ND		20	0.62	ug/L	1
Benzene	71-43-2	8260B	ND		1.0	0.21	ug/L	1
Bromochloromethane	74-97-5	8260B	ND		1.0	0.45	ug/L	1
Bromodichloromethane	75-27-4	8260B	ND		1.0	0.23	ug/L	1
Bromoform	75-25-2	8260B	ND		1.0	0.35	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260B	ND		2.0	0.19	ug/L	1
2-Butanone (MEK)	78-93-3	8260B	ND		10	1.8	ug/L	1
Carbon disulfide	75-15-0	8260B	ND		1.0	0.45	ug/L	1
Carbon tetrachloride	56-23-5	8260B	ND		1.0	0.31	ug/L	1
Chlorobenzene	108-90-7	8260B	ND		1.0	0.20	ug/L	1
Chloroethane	75-00-3	8260B	ND		2.0	0.28	ug/L	1
Chloroform	67-66-3	8260B	ND		1.0	0.21	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260B	ND		1.0	0.19	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260B	ND		1.0	0.57	ug/L	1
Dibromochloromethane	124-48-1	8260B	ND		1.0	0.23	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260B	ND		1.0	0.17	ug/L	1
Dibromomethane (Methylene bromide)	74-95-3	8260B	ND		1.0	0.26	ug/L	1
trans-1,4-Dichloro-2-butene	110-57-6	8260B	ND		2.0	1.4	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260B	ND		1.0	0.46	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260B	ND		1.0	0.19	ug/L	1
1,1-Dichloroethane	75-34-3	8260B	ND		1.0	0.19	ug/L	1
1,2-Dichloroethane	107-06-2	8260B	ND		1.0	0.23	ug/L	1
1,1-Dichloroethene	75-35-4	8260B	ND		1.0	0.31	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260B	ND		1.0	0.20	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260B	ND		1.0	0.33	ug/L	1
1,2-Dichloropropane	78-87-5	8260B	ND		1.0	0.29	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260B	ND		1.0	0.30	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260B	ND		1.0	0.22	ug/L	1
Ethylbenzene	100-41-4	8260B	ND		1.0	0.21	ug/L	1
2-Hexanone	591-78-6	8260B	ND		10	0.26	ug/L	1
Methyl iodide (Iodomethane)	74-88-4	8260B	ND		5.0	0.28	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260B	ND		10	0.29	ug/L	1
Methylene chloride	75-09-2	8260B	ND		1.0	0.42	ug/L	1
Styrene	100-42-5	8260B	ND		1.0	0.13	ug/L	1
1,1,1,2-Tetrachloroethane	630-20-6	8260B	ND		1.0	0.19	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260B	ND		1.0	0.13	ug/L	1
Tetrachloroethene	127-18-4	8260B	ND		1.0	0.22	ug/L	1
Tetrahydrofuran	109-99-9	8260B	ND		5.0	0.57	ug/L	1
Toluene	108-88-3	8260B	ND		1.0	0.24	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260B	ND		1.0	0.24	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260B	ND		1.0	0.22	ug/L	1
Trichloroethene	79-01-6	8260B	ND		1.0	0.16	ug/L	1
Trichlorofluoromethane	75-69-4	8260B	ND		1.0	0.74	ug/L	1

PQL = Practical quantitation limit B = Detected in the method blank E = Quantitation of compound exceeded the calibration range H = Out of holding time
ND = Not detected at or above the MDL J = Estimated result < PQL and ≥ MDL P = The RPD between two GC columns exceeds 40% N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Volatile Organic Compounds by GC/MS

Client: **Smith Gardner, Inc.**
Laboratory ID: **RD21043-004**
Description: **CDMW-4S**
Matrix: **Aqueous**
Date Sampled: **04/20/2016 0830**
Project Name: **Avery County C&D**
Date Received: **04/21/2016**
Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	04/26/2016 1351	RAG		11786

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
1,2,3-Trichloropropane	96-18-4	8260B	ND		1.0	0.35	ug/L	1
Vinyl acetate	108-05-4	8260B	ND		5.0	1.0	ug/L	1
Vinyl chloride	75-01-4	8260B	ND		1.0	0.50	ug/L	1
Xylenes (total)	1330-20-7	8260B	ND		1.0	0.32	ug/L	1
m+p - Xylenes	179601-23-1	8260B	ND		1.0	0.19	ug/L	1
o - Xylenes	95-47-6	8260B	ND		1.0	0.14	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		103	70-130
Bromofluorobenzene		98	70-130
Toluene-d8		102	70-130

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the MDL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

ICP-MS

Client: **Smith Gardner, Inc.** Laboratory ID: **RD21043-004**

Description: **CDMW-4S** Matrix: **Aqueous**

Date Sampled: **04/20/2016 0830** Project Name: **Avery County C&D**

Date Received: **04/21/2016** Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6020A	1	04/25/2016 1645	BNW	04/22/2016 0841	11519

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Antimony	7440-36-0	6020A	ND		1.0	0.17	ug/L	1
Arsenic	7440-38-2	6020A	ND		1.0	0.26	ug/L	1
Barium	**7440-39-3**	**6020A**	**13**		**5.0**	**0.53**	**ug/L**	**1**
Beryllium	**7440-41-7**	**6020A**	**0.13**	**J**	**0.40**	**0.12**	**ug/L**	**1**
Cadmium	7440-43-9	6020A	ND		0.10	0.044	ug/L	1
Chromium	7440-47-3	6020A	ND		5.0	0.63	ug/L	1
Cobalt	7440-48-4	6020A	ND		5.0	0.26	ug/L	1
Copper	**7440-50-8**	**6020A**	**0.41**	**BJ**	**1.0**	**0.15**	**ug/L**	**1**
Lead	7439-92-1	6020A	ND		1.0	0.15	ug/L	1
Nickel	7440-02-0	6020A	ND		5.0	0.63	ug/L	1
Selenium	7782-49-2	6020A	ND		1.0	0.95	ug/L	1
Silver	7440-22-4	6020A	ND		1.0	0.17	ug/L	1
Thallium	7440-28-0	6020A	ND		0.50	0.075	ug/L	1
Vanadium	**7440-62-2**	**6020A**	**1.0**	**J**	**5.0**	**1.0**	**ug/L**	**1**
Zinc	**7440-66-6**	**6020A**	**3.8**	**J**	**10**	**1.6**	**ug/L**	**1**

PQL = Practical quantitation limit B = Detected in the method blank E = Quantitation of compound exceeded the calibration range H = Out of holding time

ND = Not detected at or above the MDL J = Estimated result < PQL and ≥ MDL P = The RPD between two GC columns exceeds 40% N = Recovery is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Volatile Organic Compounds by GC/MS

Client: **Smith Gardner, Inc.** Laboratory ID: **RD21043-005**
Description: **SW-1** Matrix: **Aqueous**
Date Sampled: **04/20/2016 0855** Project Name: **Avery County C&D**
Date Received: **04/21/2016** Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	04/26/2016 1414	RAG		11786

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Acetone	67-64-1	8260B	ND		20	1.6	ug/L	1
Acrylonitrile	107-13-1	8260B	ND		20	0.62	ug/L	1
Benzene	71-43-2	8260B	ND		1.0	0.21	ug/L	1
Bromochloromethane	74-97-5	8260B	ND		1.0	0.45	ug/L	1
Bromodichloromethane	75-27-4	8260B	ND		1.0	0.23	ug/L	1
Bromoform	75-25-2	8260B	ND		1.0	0.35	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260B	ND		2.0	0.19	ug/L	1
2-Butanone (MEK)	78-93-3	8260B	ND		10	1.8	ug/L	1
Carbon disulfide	75-15-0	8260B	ND		1.0	0.45	ug/L	1
Carbon tetrachloride	56-23-5	8260B	ND		1.0	0.31	ug/L	1
Chlorobenzene	108-90-7	8260B	ND		1.0	0.20	ug/L	1
Chloroethane	75-00-3	8260B	ND		2.0	0.28	ug/L	1
Chloroform	67-66-3	8260B	ND		1.0	0.21	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260B	ND		1.0	0.19	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260B	ND		1.0	0.57	ug/L	1
Dibromochloromethane	124-48-1	8260B	ND		1.0	0.23	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260B	ND		1.0	0.17	ug/L	1
Dibromomethane (Methylene bromide)	74-95-3	8260B	ND		1.0	0.26	ug/L	1
trans-1,4-Dichloro-2-butene	110-57-6	8260B	ND		2.0	1.4	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260B	ND		1.0	0.46	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260B	ND		1.0	0.19	ug/L	1
1,1-Dichloroethane	75-34-3	8260B	ND		1.0	0.19	ug/L	1
1,2-Dichloroethane	107-06-2	8260B	ND		1.0	0.23	ug/L	1
1,1-Dichloroethene	75-35-4	8260B	ND		1.0	0.31	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260B	ND		1.0	0.20	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260B	ND		1.0	0.33	ug/L	1
1,2-Dichloropropane	78-87-5	8260B	ND		1.0	0.29	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260B	ND		1.0	0.30	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260B	ND		1.0	0.22	ug/L	1
Ethylbenzene	100-41-4	8260B	ND		1.0	0.21	ug/L	1
2-Hexanone	591-78-6	8260B	ND		10	0.26	ug/L	1
Methyl iodide (Iodomethane)	74-88-4	8260B	ND		5.0	0.28	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260B	ND		10	0.29	ug/L	1
Methylene chloride	75-09-2	8260B	ND		1.0	0.42	ug/L	1
Styrene	100-42-5	8260B	ND		1.0	0.13	ug/L	1
1,1,1,2-Tetrachloroethane	630-20-6	8260B	ND		1.0	0.19	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260B	ND		1.0	0.13	ug/L	1
Tetrachloroethene	127-18-4	8260B	ND		1.0	0.22	ug/L	1
Tetrahydrofuran	109-99-9	8260B	ND		5.0	0.57	ug/L	1
Toluene	108-88-3	8260B	ND		1.0	0.24	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260B	ND		1.0	0.24	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260B	ND		1.0	0.22	ug/L	1
Trichloroethene	79-01-6	8260B	ND		1.0	0.16	ug/L	1
Trichlorofluoromethane	75-69-4	8260B	ND		1.0	0.74	ug/L	1

PQL = Practical quantitation limit B = Detected in the method blank E = Quantitation of compound exceeded the calibration range H = Out of holding time
ND = Not detected at or above the MDL J = Estimated result < PQL and ≥ MDL P = The RPD between two GC columns exceeds 40% N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Volatile Organic Compounds by GC/MS

Client: **Smith Gardner, Inc.** Laboratory ID: **RD21043-005**

Description: **SW-1** Matrix: **Aqueous**

Date Sampled: **04/20/2016 0855** Project Name: **Avery County C&D**

Date Received: **04/21/2016** Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	04/26/2016 1414	RAG		11786

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
1,2,3-Trichloropropane	96-18-4	8260B	ND		1.0	0.35	ug/L	1
Vinyl acetate	108-05-4	8260B	ND		5.0	1.0	ug/L	1
Vinyl chloride	75-01-4	8260B	ND		1.0	0.50	ug/L	1
Xylenes (total)	1330-20-7	8260B	ND		1.0	0.32	ug/L	1
m+p - Xylenes	179601-23-1	8260B	ND		1.0	0.19	ug/L	1
o - Xylenes	95-47-6	8260B	ND		1.0	0.14	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		102	70-130
Bromofluorobenzene		97	70-130
Toluene-d8		100	70-130

PQL = Practical quantitation limit B = Detected in the method blank E = Quantitation of compound exceeded the calibration range H = Out of holding time

ND = Not detected at or above the MDL J = Estimated result < PQL and ≥ MDL P = The RPD between two GC columns exceeds 40% N = Recovery is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

ICP-MS

Client: **Smith Gardner, Inc.** Laboratory ID: **RD21043-005**

Description: **SW-1** Matrix: **Aqueous**

Date Sampled: **04/20/2016 0855** Project Name: **Avery County C&D**

Date Received: **04/21/2016** Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6020A	1	04/25/2016 1651	BNW	04/22/2016 0841	11519

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Antimony	7440-36-0	6020A	ND		1.0	0.17	ug/L	1
Arsenic	7440-38-2	6020A	ND		1.0	0.26	ug/L	1
Barium	**7440-39-3**	**6020A**	**9.3**		**5.0**	**0.53**	**ug/L**	**1**
Beryllium	7440-41-7	6020A	ND		0.40	0.12	ug/L	1
Cadmium	7440-43-9	6020A	ND		0.10	0.044	ug/L	1
Chromium	**7440-47-3**	**6020A**	**1.1**	**J**	**5.0**	**0.63**	**ug/L**	**1**
Cobalt	**7440-48-4**	**6020A**	**0.41**	**J**	**5.0**	**0.26**	**ug/L**	**1**
Copper	**7440-50-8**	**6020A**	**1.5**	**B**	**1.0**	**0.15**	**ug/L**	**1**
Lead	**7439-92-1**	**6020A**	**0.42**	**J**	**1.0**	**0.15**	**ug/L**	**1**
Nickel	**7440-02-0**	**6020A**	**0.68**	**J**	**5.0**	**0.63**	**ug/L**	**1**
Selenium	7782-49-2	6020A	ND		1.0	0.95	ug/L	1
Silver	7440-22-4	6020A	ND		1.0	0.17	ug/L	1
Thallium	7440-28-0	6020A	ND		0.50	0.075	ug/L	1
Vanadium	**7440-62-2**	**6020A**	**2.6**	**J**	**5.0**	**1.0**	**ug/L**	**1**
Zinc	**7440-66-6**	**6020A**	**16**		**10**	**1.6**	**ug/L**	**1**

PQL = Practical quantitation limit B = Detected in the method blank E = Quantitation of compound exceeded the calibration range H = Out of holding time

ND = Not detected at or above the MDL J = Estimated result < PQL and ≥ MDL P = The RPD between two GC columns exceeds 40% N = Recovery is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Volatile Organic Compounds by GC/MS

Client: **Smith Gardner, Inc.** Laboratory ID: **RD21043-006**
Description: **SW-2** Matrix: **Aqueous**
Date Sampled: **04/20/2016 1035** Project Name: **Avery County C&D**
Date Received: **04/21/2016** Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	04/26/2016 1437	RAG		11786

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Acetone	67-64-1	8260B	ND		20	1.6	ug/L	1
Acrylonitrile	107-13-1	8260B	ND		20	0.62	ug/L	1
Benzene	71-43-2	8260B	ND		1.0	0.21	ug/L	1
Bromochloromethane	74-97-5	8260B	ND		1.0	0.45	ug/L	1
Bromodichloromethane	75-27-4	8260B	ND		1.0	0.23	ug/L	1
Bromoform	75-25-2	8260B	ND		1.0	0.35	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260B	ND		2.0	0.19	ug/L	1
2-Butanone (MEK)	78-93-3	8260B	ND		10	1.8	ug/L	1
Carbon disulfide	75-15-0	8260B	ND		1.0	0.45	ug/L	1
Carbon tetrachloride	56-23-5	8260B	ND		1.0	0.31	ug/L	1
Chlorobenzene	108-90-7	8260B	ND		1.0	0.20	ug/L	1
Chloroethane	75-00-3	8260B	ND		2.0	0.28	ug/L	1
Chloroform	67-66-3	8260B	ND		1.0	0.21	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260B	ND		1.0	0.19	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260B	ND		1.0	0.57	ug/L	1
Dibromochloromethane	124-48-1	8260B	ND		1.0	0.23	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260B	ND		1.0	0.17	ug/L	1
Dibromomethane (Methylene bromide)	74-95-3	8260B	ND		1.0	0.26	ug/L	1
trans-1,4-Dichloro-2-butene	110-57-6	8260B	ND		2.0	1.4	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260B	ND		1.0	0.46	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260B	ND		1.0	0.19	ug/L	1
1,1-Dichloroethane	75-34-3	8260B	ND		1.0	0.19	ug/L	1
1,2-Dichloroethane	107-06-2	8260B	ND		1.0	0.23	ug/L	1
1,1-Dichloroethene	75-35-4	8260B	ND		1.0	0.31	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260B	ND		1.0	0.20	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260B	ND		1.0	0.33	ug/L	1
1,2-Dichloropropane	78-87-5	8260B	ND		1.0	0.29	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260B	ND		1.0	0.30	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260B	ND		1.0	0.22	ug/L	1
Ethylbenzene	100-41-4	8260B	ND		1.0	0.21	ug/L	1
2-Hexanone	591-78-6	8260B	ND		10	0.26	ug/L	1
Methyl iodide (Iodomethane)	74-88-4	8260B	ND		5.0	0.28	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260B	ND		10	0.29	ug/L	1
Methylene chloride	75-09-2	8260B	ND		1.0	0.42	ug/L	1
Styrene	100-42-5	8260B	ND		1.0	0.13	ug/L	1
1,1,1,2-Tetrachloroethane	630-20-6	8260B	ND		1.0	0.19	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260B	ND		1.0	0.13	ug/L	1
Tetrachloroethene	127-18-4	8260B	ND		1.0	0.22	ug/L	1
Tetrahydrofuran	109-99-9	8260B	ND		5.0	0.57	ug/L	1
Toluene	108-88-3	8260B	ND		1.0	0.24	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260B	ND		1.0	0.24	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260B	ND		1.0	0.22	ug/L	1
Trichloroethene	79-01-6	8260B	ND		1.0	0.16	ug/L	1
Trichlorofluoromethane	75-69-4	8260B	ND		1.0	0.74	ug/L	1

PQL = Practical quantitation limit B = Detected in the method blank E = Quantitation of compound exceeded the calibration range H = Out of holding time
ND = Not detected at or above the MDL J = Estimated result < PQL and ≥ MDL P = The RPD between two GC columns exceeds 40% N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Volatile Organic Compounds by GC/MS

Client: **Smith Gardner, Inc.** Laboratory ID: **RD21043-006**

Description: **SW-2** Matrix: **Aqueous**

Date Sampled: **04/20/2016 1035** Project Name: **Avery County C&D**

Date Received: **04/21/2016** Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	04/26/2016 1437	RAG		11786

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
1,2,3-Trichloropropane	96-18-4	8260B	ND		1.0	0.35	ug/L	1
Vinyl acetate	108-05-4	8260B	ND		5.0	1.0	ug/L	1
Vinyl chloride	75-01-4	8260B	ND		1.0	0.50	ug/L	1
Xylenes (total)	1330-20-7	8260B	ND		1.0	0.32	ug/L	1
m+p - Xylenes	179601-23-1	8260B	ND		1.0	0.19	ug/L	1
o - Xylenes	95-47-6	8260B	ND		1.0	0.14	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		101	70-130
Bromofluorobenzene		96	70-130
Toluene-d8		99	70-130

PQL = Practical quantitation limit B = Detected in the method blank E = Quantitation of compound exceeded the calibration range H = Out of holding time

ND = Not detected at or above the MDL J = Estimated result < PQL and ≥ MDL P = The RPD between two GC columns exceeds 40% N = Recovery is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

ICP-MS

Client: **Smith Gardner, Inc.** Laboratory ID: **RD21043-006**

Description: **SW-2** Matrix: **Aqueous**

Date Sampled: **04/20/2016 1035** Project Name: **Avery County C&D**

Date Received: **04/21/2016** Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6020A	1	04/25/2016 1656	BNW	04/22/2016 0841	11519

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Antimony	7440-36-0	6020A	ND		1.0	0.17	ug/L	1
Arsenic	7440-38-2	6020A	ND		1.0	0.26	ug/L	1
Barium	**7440-39-3**	**6020A**	**10**		**5.0**	**0.53**	**ug/L**	**1**
Beryllium	7440-41-7	6020A	ND		0.40	0.12	ug/L	1
Cadmium	7440-43-9	6020A	ND		0.10	0.044	ug/L	1
Chromium	7440-47-3	6020A	ND		5.0	0.63	ug/L	1
Cobalt	**7440-48-4**	**6020A**	**0.36**	**J**	**5.0**	**0.26**	**ug/L**	**1**
Copper	**7440-50-8**	**6020A**	**1.1**	**B**	**1.0**	**0.15**	**ug/L**	**1**
Lead	**7439-92-1**	**6020A**	**0.21**	**J**	**1.0**	**0.15**	**ug/L**	**1**
Nickel	7440-02-0	6020A	ND		5.0	0.63	ug/L	1
Selenium	7782-49-2	6020A	ND		1.0	0.95	ug/L	1
Silver	7440-22-4	6020A	ND		1.0	0.17	ug/L	1
Thallium	7440-28-0	6020A	ND		0.50	0.075	ug/L	1
Vanadium	**7440-62-2**	**6020A**	**2.0**	**J**	**5.0**	**1.0**	**ug/L**	**1**
Zinc	**7440-66-6**	**6020A**	**9.2**	**J**	**10**	**1.6**	**ug/L**	**1**

PQL = Practical quantitation limit B = Detected in the method blank E = Quantitation of compound exceeded the calibration range H = Out of holding time

ND = Not detected at or above the MDL J = Estimated result < PQL and ≥ MDL P = The RPD between two GC columns exceeds 40% N = Recovery is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Volatile Organic Compounds by GC/MS

Client: **Smith Gardner, Inc.** Laboratory ID: **RD21043-007**
Description: **Office** Matrix: **Aqueous**
Date Sampled: **04/20/2016 1100** Project Name: **Avery County C&D**
Date Received: **04/21/2016** Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	04/26/2016 1459	RAG		11786

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Acetone	67-64-1	8260B	ND		20	1.6	ug/L	1
Acrylonitrile	107-13-1	8260B	ND		20	0.62	ug/L	1
Benzene	71-43-2	8260B	ND		1.0	0.21	ug/L	1
Bromochloromethane	74-97-5	8260B	ND		1.0	0.45	ug/L	1
Bromodichloromethane	75-27-4	8260B	ND		1.0	0.23	ug/L	1
Bromoform	75-25-2	8260B	ND		1.0	0.35	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260B	ND		2.0	0.19	ug/L	1
2-Butanone (MEK)	78-93-3	8260B	ND		10	1.8	ug/L	1
Carbon disulfide	75-15-0	8260B	ND		1.0	0.45	ug/L	1
Carbon tetrachloride	56-23-5	8260B	ND		1.0	0.31	ug/L	1
Chlorobenzene	108-90-7	8260B	ND		1.0	0.20	ug/L	1
Chloroethane	75-00-3	8260B	ND		2.0	0.28	ug/L	1
Chloroform	67-66-3	8260B	ND		1.0	0.21	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260B	ND		1.0	0.19	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260B	ND		1.0	0.57	ug/L	1
Dibromochloromethane	124-48-1	8260B	ND		1.0	0.23	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260B	ND		1.0	0.17	ug/L	1
Dibromomethane (Methylene bromide)	74-95-3	8260B	ND		1.0	0.26	ug/L	1
trans-1,4-Dichloro-2-butene	110-57-6	8260B	ND		2.0	1.4	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260B	ND		1.0	0.46	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260B	ND		1.0	0.19	ug/L	1
1,1-Dichloroethane	75-34-3	8260B	ND		1.0	0.19	ug/L	1
1,2-Dichloroethane	107-06-2	8260B	ND		1.0	0.23	ug/L	1
1,1-Dichloroethene	75-35-4	8260B	ND		1.0	0.31	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260B	ND		1.0	0.20	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260B	ND		1.0	0.33	ug/L	1
1,2-Dichloropropane	78-87-5	8260B	ND		1.0	0.29	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260B	ND		1.0	0.30	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260B	ND		1.0	0.22	ug/L	1
Ethylbenzene	100-41-4	8260B	ND		1.0	0.21	ug/L	1
2-Hexanone	591-78-6	8260B	ND		10	0.26	ug/L	1
Methyl iodide (Iodomethane)	74-88-4	8260B	ND		5.0	0.28	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260B	ND		10	0.29	ug/L	1
Methylene chloride	75-09-2	8260B	ND		1.0	0.42	ug/L	1
Styrene	100-42-5	8260B	ND		1.0	0.13	ug/L	1
1,1,1,2-Tetrachloroethane	630-20-6	8260B	ND		1.0	0.19	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260B	ND		1.0	0.13	ug/L	1
Tetrachloroethene	127-18-4	8260B	ND		1.0	0.22	ug/L	1
Tetrahydrofuran	109-99-9	8260B	ND		5.0	0.57	ug/L	1
Toluene	108-88-3	8260B	ND		1.0	0.24	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260B	ND		1.0	0.24	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260B	ND		1.0	0.22	ug/L	1
Trichloroethene	79-01-6	8260B	ND		1.0	0.16	ug/L	1
Trichlorofluoromethane	75-69-4	8260B	ND		1.0	0.74	ug/L	1

PQL = Practical quantitation limit B = Detected in the method blank E = Quantitation of compound exceeded the calibration range H = Out of holding time
ND = Not detected at or above the MDL J = Estimated result < PQL and ≥ MDL P = The RPD between two GC columns exceeds 40% N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Volatile Organic Compounds by GC/MS

Client: **Smith Gardner, Inc.**
Laboratory ID: **RD21043-007**
Description: **Office**
Matrix: **Aqueous**
Date Sampled: **04/20/2016 1100**
Project Name: **Avery County C&D**
Date Received: **04/21/2016**
Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	04/26/2016 1459	RAG		11786

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
1,2,3-Trichloropropane	96-18-4	8260B	ND		1.0	0.35	ug/L	1
Vinyl acetate	108-05-4	8260B	ND		5.0	1.0	ug/L	1
Vinyl chloride	75-01-4	8260B	ND		1.0	0.50	ug/L	1
Xylenes (total)	1330-20-7	8260B	ND		1.0	0.32	ug/L	1
m+p - Xylenes	179601-23-1	8260B	ND		1.0	0.19	ug/L	1
o - Xylenes	95-47-6	8260B	ND		1.0	0.14	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		101	70-130
Bromofluorobenzene		96	70-130
Toluene-d8		100	70-130

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the MDL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

ICP-MS

Client: **Smith Gardner, Inc.**
Laboratory ID: **RD21043-007**
Description: **Office**
Matrix: **Aqueous**
Date Sampled: **04/20/2016 1100**
Project Name: **Avery County C&D**
Date Received: **04/21/2016**
Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6020A	1	04/25/2016 1701	BNW	04/22/2016 0841	11519

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Antimony	7440-36-0	6020A	ND		1.0	0.17	ug/L	1
Arsenic	7440-38-2	6020A	ND		1.0	0.26	ug/L	1
Barium	**7440-39-3**	**6020A**	**35**		**5.0**	**0.53**	**ug/L**	**1**
Beryllium	7440-41-7	6020A	ND		0.40	0.12	ug/L	1
Cadmium	7440-43-9	6020A	ND		0.10	0.044	ug/L	1
Chromium	7440-47-3	6020A	ND		5.0	0.63	ug/L	1
Cobalt	7440-48-4	6020A	ND		5.0	0.26	ug/L	1
Copper	**7440-50-8**	**6020A**	**2.0**	**B**	**1.0**	**0.15**	**ug/L**	**1**
Lead	7439-92-1	6020A	ND		1.0	0.15	ug/L	1
Nickel	7440-02-0	6020A	ND		5.0	0.63	ug/L	1
Selenium	7782-49-2	6020A	ND		1.0	0.95	ug/L	1
Silver	7440-22-4	6020A	ND		1.0	0.17	ug/L	1
Thallium	7440-28-0	6020A	ND		0.50	0.075	ug/L	1
Vanadium	**7440-62-2**	**6020A**	**1.1**	**J**	**5.0**	**1.0**	**ug/L**	**1**
Zinc	**7440-66-6**	**6020A**	**6.0**	**J**	**10**	**1.6**	**ug/L**	**1**

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the MDL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

QC Summary

Inorganic non-metals - MB

Sample ID: RQ11649-001
Batch: 11649
Analytical Method: SM 2540D-2011
Matrix: Aqueous

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
TSS	ND		1	1.0	0.34	mg/L	04/25/2016 0902

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Inorganic non-metals - LCS

Sample ID: RQ11649-002
Batch: 11649
Analytical Method: SM 2540D-2011

Matrix: Aqueous

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
TSS	250	250		1	100	90-110	04/25/2016 0902

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Inorganic non-metals - MB

Sample ID: RQ12065-001
Batch: 12065
Analytical Method: SM 2320B-2011
Matrix: Aqueous

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
Alkalinity	ND		1	10	1.2	mg/L	04/28/2016 2009

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Inorganic non-metals - LCS

Sample ID: RQ12065-002
Batch: 12065
Analytical Method: SM 2320B-2011

Matrix: Aqueous

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Alkalinity	100	110		1	108	90-110	04/28/2016 2014

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Inorganic non-metals - MB

Sample ID: RQ12303-001
Batch: 12303
Analytical Method: 9056A
Matrix: Aqueous

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
Chloride	ND		1	1.0	0.033	mg/L	05/03/2016 1450

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Inorganic non-metals - LCS

Sample ID: RQ12303-002
Batch: 12303
Analytical Method: 9056A
Matrix: Aqueous

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Chloride	20	20		1	98	80-120	05/03/2016 1514

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Inorganic non-metals - MS

Sample ID: RD21043-002MS
Batch: 12303
Analytical Method: 9056A
Matrix: Aqueous

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Chloride	7.0	20	26		1	97	80-120	05/03/2016 1922

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Inorganic non-metals - MSD

Sample ID: RD21043-002MD
Batch: 12303
Analytical Method: 9056A
Matrix: Aqueous

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Chloride	7.0	20	26		1	96	0.68	80-120	20	05/03/2016 1947

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Inorganic non-metals - MB

Sample ID: RQ12419-001
Batch: 12419
Analytical Method: 9056A
Matrix: Aqueous

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
Sulfate	**0.47**	**J**	**1**	**1.0**	**0.28**	**mg/L**	**05/03/2016 0021**

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Inorganic non-metals - LCS

Sample ID: RQ12419-002
Batch: 12419
Analytical Method: 9056A
Matrix: Aqueous

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Sulfate	20	20		1	102	80-120	05/03/2016 0033

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Inorganic non-metals - MS

Sample ID: RD21043-002MS
Batch: 12419
Analytical Method: 9056A
Matrix: Aqueous

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Sulfate	19	20	39		1	100	80-120	05/03/2016 0109

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Inorganic non-metals - MSD

Sample ID: RD21043-002MD
Batch: 12419
Analytical Method: 9056A
Matrix: Aqueous

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Sulfate	19	20	39		1	99	0.30	80-120	20	05/03/2016 0121

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: RQ11786-001
Batch: 11786
Analytical Method: 8260B

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
Acetone	ND		1	20	1.6	ug/L	04/26/2016 1020
Acrylonitrile	ND		1	20	0.62	ug/L	04/26/2016 1020
Benzene	ND		1	1.0	0.21	ug/L	04/26/2016 1020
Bromochloromethane	ND		1	1.0	0.45	ug/L	04/26/2016 1020
Bromodichloromethane	ND		1	1.0	0.23	ug/L	04/26/2016 1020
Bromoform	ND		1	1.0	0.35	ug/L	04/26/2016 1020
Bromomethane (Methyl bromide)	ND		1	2.0	0.19	ug/L	04/26/2016 1020
2-Butanone (MEK)	ND		1	10	1.8	ug/L	04/26/2016 1020
Carbon disulfide	ND		1	1.0	0.45	ug/L	04/26/2016 1020
Carbon tetrachloride	ND		1	1.0	0.31	ug/L	04/26/2016 1020
Chlorobenzene	ND		1	1.0	0.20	ug/L	04/26/2016 1020
Chloroethane	ND		1	2.0	0.28	ug/L	04/26/2016 1020
Chloroform	ND		1	1.0	0.21	ug/L	04/26/2016 1020
Chloromethane (Methyl chloride)	ND		1	1.0	0.19	ug/L	04/26/2016 1020
1,2-Dibromo-3-chloropropane (DBCP)	ND		1	1.0	0.57	ug/L	04/26/2016 1020
Dibromochloromethane	ND		1	1.0	0.23	ug/L	04/26/2016 1020
1,2-Dibromoethane (EDB)	ND		1	1.0	0.17	ug/L	04/26/2016 1020
Dibromomethane (Methylene bromide)	ND		1	1.0	0.26	ug/L	04/26/2016 1020
trans-1,4-Dichloro-2-butene	ND		1	2.0	1.4	ug/L	04/26/2016 1020
1,2-Dichlorobenzene	ND		1	1.0	0.46	ug/L	04/26/2016 1020
1,4-Dichlorobenzene	ND		1	1.0	0.19	ug/L	04/26/2016 1020
1,1-Dichloroethane	ND		1	1.0	0.19	ug/L	04/26/2016 1020
1,2-Dichloroethane	ND		1	1.0	0.23	ug/L	04/26/2016 1020
1,1-Dichloroethene	ND		1	1.0	0.31	ug/L	04/26/2016 1020
cis-1,2-Dichloroethene	ND		1	1.0	0.20	ug/L	04/26/2016 1020
trans-1,2-Dichloroethene	ND		1	1.0	0.33	ug/L	04/26/2016 1020
1,2-Dichloropropane	ND		1	1.0	0.29	ug/L	04/26/2016 1020
cis-1,3-Dichloropropene	ND		1	1.0	0.30	ug/L	04/26/2016 1020
trans-1,3-Dichloropropene	ND		1	1.0	0.22	ug/L	04/26/2016 1020
Ethylbenzene	ND		1	1.0	0.21	ug/L	04/26/2016 1020
2-Hexanone	ND		1	10	0.26	ug/L	04/26/2016 1020
Methyl iodide (Iodomethane)	ND		1	5.0	0.28	ug/L	04/26/2016 1020
4-Methyl-2-pentanone	ND		1	10	0.29	ug/L	04/26/2016 1020
Methylene chloride	ND		1	1.0	0.42	ug/L	04/26/2016 1020
Styrene	ND		1	1.0	0.13	ug/L	04/26/2016 1020
1,1,1,2-Tetrachloroethane	ND		1	1.0	0.19	ug/L	04/26/2016 1020
1,1,2,2-Tetrachloroethane	ND		1	1.0	0.13	ug/L	04/26/2016 1020
Tetrachloroethene	ND		1	1.0	0.22	ug/L	04/26/2016 1020
Tetrahydrofuran	ND		1	5.0	0.57	ug/L	04/26/2016 1020
Toluene	ND		1	1.0	0.24	ug/L	04/26/2016 1020
1,1,1-Trichloroethane	ND		1	1.0	0.24	ug/L	04/26/2016 1020
1,1,2-Trichloroethane	ND		1	1.0	0.22	ug/L	04/26/2016 1020
Trichloroethene	ND		1	1.0	0.16	ug/L	04/26/2016 1020
Trichlorofluoromethane	ND		1	1.0	0.74	ug/L	04/26/2016 1020

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: RQ11786-001
Batch: 11786
Analytical Method: 8260B

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
1,2,3-Trichloropropane	ND		1	1.0	0.35	ug/L	04/26/2016 1020
Vinyl acetate	ND		1	5.0	1.0	ug/L	04/26/2016 1020
Vinyl chloride	ND		1	1.0	0.50	ug/L	04/26/2016 1020
m+p - Xylenes	ND		1	1.0	0.19	ug/L	04/26/2016 1020
o - Xylenes	ND		1	1.0	0.14	ug/L	04/26/2016 1020
Xylenes (total)	ND		1	1.0	0.32	ug/L	04/26/2016 1020

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		99	70-130
1,2-Dichloroethane-d4		104	70-130
Toluene-d8		104	70-130

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: RQ11786-002
Batch: 11786
Analytical Method: 8260B

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Acetone	100	67		1	67	60-140	04/26/2016 0847
Acrylonitrile	100	99		1	99	70-130	04/26/2016 0847
Benzene	50	48		1	97	70-130	04/26/2016 0847
Bromochloromethane	50	52		1	105	70-130	04/26/2016 0847
Bromodichloromethane	50	52		1	103	70-130	04/26/2016 0847
Bromoform	50	49		1	97	70-130	04/26/2016 0847
Bromomethane (Methyl bromide)	50	52		1	104	60-140	04/26/2016 0847
2-Butanone (MEK)	100	85		1	85	60-140	04/26/2016 0847
Carbon disulfide	50	54		1	108	60-140	04/26/2016 0847
Carbon tetrachloride	50	57		1	113	70-130	04/26/2016 0847
Chlorobenzene	50	49		1	97	70-130	04/26/2016 0847
Chloroethane	50	53		1	105	60-140	04/26/2016 0847
Chloroform	50	52		1	103	70-130	04/26/2016 0847
Chloromethane (Methyl chloride)	50	46		1	92	60-140	04/26/2016 0847
1,2-Dibromo-3-chloropropane (DBCP)	50	41		1	82	70-130	04/26/2016 0847
Dibromochloromethane	50	51		1	102	70-130	04/26/2016 0847
1,2-Dibromoethane (EDB)	50	47		1	93	70-130	04/26/2016 0847
Dibromomethane (Methylene bromide)	50	49		1	97	70-130	04/26/2016 0847
trans-1,4-Dichloro-2-butene	50	57		1	114	34-142	04/26/2016 0847
1,2-Dichlorobenzene	50	49		1	98	70-130	04/26/2016 0847
1,4-Dichlorobenzene	50	46		1	93	70-130	04/26/2016 0847
1,1-Dichloroethane	50	53		1	106	70-130	04/26/2016 0847
1,2-Dichloroethane	50	48		1	97	70-130	04/26/2016 0847
1,1-Dichloroethene	50	53		1	105	70-130	04/26/2016 0847
cis-1,2-Dichloroethene	50	50		1	99	70-130	04/26/2016 0847
trans-1,2-Dichloroethene	50	51		1	103	70-130	04/26/2016 0847
1,2-Dichloropropane	50	49		1	98	70-130	04/26/2016 0847
cis-1,3-Dichloropropene	50	51		1	103	70-130	04/26/2016 0847
trans-1,3-Dichloropropene	50	50		1	100	70-130	04/26/2016 0847
Ethylbenzene	50	49		1	98	70-130	04/26/2016 0847
2-Hexanone	100	99		1	99	60-140	04/26/2016 0847
Methyl iodide (Iodomethane)	50	50		1	101	70-130	04/26/2016 0847
4-Methyl-2-pentanone	100	96		1	96	60-140	04/26/2016 0847
Methylene chloride	50	52		1	103	70-130	04/26/2016 0847
Styrene	50	50		1	100	70-130	04/26/2016 0847
1,1,1,2-Tetrachloroethane	50	51		1	102	70-130	04/26/2016 0847
1,1,2,2-Tetrachloroethane	50	45		1	90	60-140	04/26/2016 0847
Tetrachloroethene	50	51		1	103	70-130	04/26/2016 0847
Tetrahydrofuran	50	44		1	89	70-130	04/26/2016 0847
Toluene	50	50		1	100	70-130	04/26/2016 0847
1,1,1-Trichloroethane	50	53		1	106	70-130	04/26/2016 0847
1,1,2-Trichloroethane	50	46		1	92	70-130	04/26/2016 0847
Trichloroethene	50	49		1	99	70-130	04/26/2016 0847
Trichlorofluoromethane	50	57		1	114	70-130	04/26/2016 0847

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ND = Not detected at or above the MDL
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N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: RQ11786-002
Batch: 11786
Analytical Method: 8260B

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
1,2,3-Trichloropropane	50	45		1	89	70-130	04/26/2016 0847
Vinyl acetate	50	49		1	98	60-140	04/26/2016 0847
Vinyl chloride	50	57		1	113	70-130	04/26/2016 0847
m+p - Xylenes	50	52		1	104	70-130	04/26/2016 0847
o - Xylenes	50	50		1	101	70-130	04/26/2016 0847
Xylenes (total)	100	100		1	102	70-130	04/26/2016 0847

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		99	70-130
1,2-Dichloroethane-d4		100	70-130
Toluene-d8		104	70-130

PQL = Practical quantitation limit
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P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

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Note: Calculations are performed before rounding to avoid round-off errors in calculated results

ICP-MS - MB

Sample ID: RQ11519-001
Batch: 11519
Analytical Method: 6020A

Matrix: Aqueous
Prep Method: 3005A
Prep Date: 04/22/2016 841

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
Antimony	ND		1	1.0	0.17	ug/L	04/25/2016 1516
Arsenic	ND		1	1.0	0.26	ug/L	04/25/2016 1516
Barium	ND		1	5.0	0.53	ug/L	04/25/2016 1516
Beryllium	ND		1	0.40	0.12	ug/L	04/25/2016 1516
Cadmium	ND		1	0.10	0.044	ug/L	04/25/2016 1516
Chromium	ND		1	5.0	0.63	ug/L	04/25/2016 1516
Cobalt	ND		1	5.0	0.26	ug/L	04/25/2016 1516
Copper	**0.25**	**J**	**1**	**1.0**	**0.15**	**ug/L**	**04/25/2016 1516**
Lead	ND		1	1.0	0.15	ug/L	04/25/2016 1516
Nickel	ND		1	5.0	0.63	ug/L	04/25/2016 1516
Selenium	ND		1	1.0	0.95	ug/L	04/25/2016 1516
Silver	ND		1	1.0	0.17	ug/L	04/25/2016 1516
Thallium	ND		1	0.50	0.075	ug/L	04/25/2016 1516
Vanadium	ND		1	5.0	1.0	ug/L	04/25/2016 1516
Zinc	ND		1	10	1.6	ug/L	04/25/2016 1516

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
P = The RPD between two GC columns exceeds 40%
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N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

ICP-MS - LCS

Sample ID: RQ11519-002
Batch: 11519
Analytical Method: 6020A

Matrix: Aqueous
Prep Method: 3005A
Prep Date: 04/22/2016 841

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Antimony	100	100		1	100	80-120	04/25/2016 1522
Arsenic	100	100		1	101	80-120	04/25/2016 1522
Barium	100	100		1	103	80-120	04/25/2016 1522
Beryllium	100	100		1	102	80-120	04/25/2016 1522
Cadmium	100	99		1	99	80-120	04/25/2016 1522
Chromium	100	99		1	99	80-120	04/25/2016 1522
Cobalt	100	100		1	101	80-120	04/25/2016 1522
Copper	100	100		1	102	80-120	04/25/2016 1522
Lead	100	100		1	101	80-120	04/25/2016 1522
Nickel	100	100		1	100	80-120	04/25/2016 1522
Selenium	100	100		1	105	80-120	04/25/2016 1522
Silver	100	100		1	104	80-120	04/25/2016 1522
Thallium	100	100		1	102	80-120	04/25/2016 1522
Vanadium	100	99		1	99	80-120	04/25/2016 1522
Zinc	100	100		1	101	80-120	04/25/2016 1522

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
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Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Chain of Custody
and
Miscellaneous Documents

SHEALY ENVIRONMENTAL SERVICES, INC.

SHEALY **Chain of Custody Record**

SHEALY ENVIRONMENTAL SERVICES, INC.
106 Vantage Point Drive • West Columbia, SC 29172
Telephone No. 803-791-9700 Fax No. 803-791-9111
www.shealylab.com

Number 60084

Client: S+G
Address: 614 Off Rd
City: Cola | State: SC | Zip Code: 29205
Project Name: Avery County C 3 D
Project No.:
P.O. No.:

Report to Contact: Madeline German
Sampler's Signature: x Britt Ransom
Printed Name: Britt Ransom

Telephone No. / E-mail: madeline@smithgardnerinc.com
Quote No.: 18543
Page 1 of 1

RD21043

Sample ID / Description (Containers for each sample may be combined on one line.)	Date	Time	Grab G / Composite C	Matrix: Aqueous	Solid	Non-Aqueous	No of Containers by Preservative Type: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnO/NaOH	App I VOCs+THF	App I Metals	TSS	Cl, SO4, Alk	Remarks / Cooler I.D.
CDMW - 1A	4/20	945	G	/			2		1	3			✓	✓	✓	✓	
CDMW - 2S	4/20	1010	G	/			2		1	3			✓	✓	✓	✓	
CDMW - 3S	4/20	920	G	/			2		1	3			✓	✓	✓	✓	
CDMW - 4S	4/20	830	G	/			2		1	3			✓	✓	✓	✓	
SW - 1	4/20	855	G	/					1	3			✓	✓			
SW - 2	4/20	1035	G	/					1	3			✓	✓			
office	4/20	1100	G	/					1	3			✓	✓			

Turn Around Time Required (Prior lab approval required for expedited TAT.): ☐ Standard ☐ Rush (Specify)

Sample Disposal: ☐ Return to Client ☐ Disposal by Lab

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

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished by: Britt Ransom	4/21/16	1238	1. Received by		
2. Relinquished by			2. Received by		
3. Relinquished by			3. Received by		
4. Relinquished by			4. Laboratory received by: Patricia McDonald	4/21/16	1238

Note: All samples are retained for four weeks from receipt unless other arrangements are made.

LAB USE ONLY
Received on ice (Circle) Yes No Ice Pack
Receipt Temp 1.8 °C

DISTRIBUTION: WHITE & YELLOW-Return to laboratory with Sample(s); PINK-Field/Client Copy

Document Number: F-AD-133 Effective Date: 08-01-2014

SHEALY ENVIRONMENTAL SERVICES, INC.

Shealy Environmental Services, Inc.
Document Number: MD0018C-04

Page 1 of 1
Effective Date: 02/05/2016
Expiry Date: 02/05/2021

Sample Receipt Checklist (SRC)

Client: S+G Cooler Inspected by/date: KJB / 4/21/16 Lot #: RD21043

Means of receipt: ☐ SESI ☑ Client ☐ UPS ☐ FedEx ☐ Other

Yes ☐	No ☑		1. Were custody seals present on the cooler?
Yes ☐	No ☐	NA ☑	2. If custody seals were present, were they intact and unbroken?

pH strip ID: 15-1440 Cl strip ID: NA

Cooler ID/Original temperature upon receipt/Derived (corrected) temperature upon receipt:

/ 1.8 / 1.8 °C / / °C / / °C / / °C

Method: ☑ Temperature Blank ☐ Against Bottles IR Gun ID: 6 IR Gun Correction Factor: 0 °C

Method of coolant: ☑ Wet Ice ☐ Blue Ice ☐ Dry Ice ☐ None

Yes ☐	No ☐	NA ☑	3. If temperature of any cooler exceeded 6.0°C, was Project Manager notified? PM was notified by: phone / email / face-to-face (circle one).
Yes ☐	No ☐	NA ☑	4. Is the commercial courier's packing slip attached to this form?
Yes ☑	No ☐		5. Were proper custody procedures (relinquished/received) followed?
Yes ☑	No ☐		6. Were sample IDs listed on the COC?
Yes ☑	No ☐		7. Were sample IDs listed on all sample containers?
Yes ☑	No ☐		8. Was collection date & time listed on the COC?
Yes ☑	No ☐		9. Was collection date & time listed on all sample containers?
Yes ☑	No ☐		10. Did all container label information (ID, date, time) agree with the COC?
Yes ☑	No ☐		11. Were tests to be performed listed on the COC?
Yes ☑	No ☐		12. Did all samples arrive in the proper containers for each test and/or in good condition (unbroken, lids on, etc.)?
Yes ☑	No ☐		13. Was adequate sample volume available?
Yes ☑	No ☐		14. Were all samples received within ½ the holding time or 48 hours, whichever comes first?
KJB 4/21/16 Yes ☑	No ☑		15. Were any samples containers missing/excess (circle one) samples not listed on COC?
Yes ☐	No ☑	NA ☐	16. Were bubbles present >"pea-size" (¼"or 6mm in diameter) in any VOA vials?
Yes ☑	No ☐	NA ☐	17. Were all metals/O&G/HEM/nutrient samples received at a pH of <2?
Yes ☐	No ☐	NA ☑	18. Were all cyanide and/or sulfide samples received at a pH >12?
Yes ☐	No ☐	NA ☑	19. Were all applicable NH3/TKN/cyanide/phenol (<0.2mg/L) samples free of residual chlorine?
Yes ☐	No ☐	NA ☑	20. Were collection temperatures documented on the COC for NC samples?
Yes ☐	No ☐	NA ☑	21. Were client remarks/requests (i.e. requested dilutions, MS/MSD designations, etc…) correctly transcribed from the COC into the comment section in LIMS?
Yes ☑	No ☐	18543	22. Was the quote number used taken from the container label?

Sample Preservation (Must be completed for any sample(s) incorrectly preserved or with headspace.)

Sample(s) _____ were received incorrectly preserved and were adjusted accordingly in sample receiving with _____ (H_2SO_4, HNO3, HCl, NaOH) using SR # _____.

Sample(s) _____ were received with bubbles >6 mm in diameter.

Samples(s) _____ were received with TRC >0.2 mg/L (If #21 is No) and were adjusted accordingly in sample receiving with sodium thiosulfate ($Na_2S_2O_3$) with Shealy ID: _____.

SC Drinking Water Project Sample(s) pH verified to be >12 by _____ Date: _____

Sample(s) _____ were not received at a pH of <2 and were adjusted accordingly using SR# _____

Sample labels applied by: KJB Verified by: _____ Date: 4/21/16

Comments: _____