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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):

Buxton Environmental, Inc.

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

Name: Ross Klingman, P.G.

Phone: 704-344-1450

E-mail: buxtonenv@bellsouth.net

Facility name:	Facility Address:	Facility Permit #	NC Landfill Rule: (.0500 or .1600)	Actual sampling dates (e.g., October 20-24, 2006)
Alamance County - Closed Swepsonville Landfill	Alfred Road Graham, NC 27253	0101	.0500	April 9, 2014

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

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.

Ross Klingman, P.G.

President

704-344-1450

Facility Representative Name (Print)

Title

(Area Code) Telephone Number

Signature

April 29, 2014

Date

Affix NC Licensed Professional Geologist Seal

1101 South Blvd., Suite 101; Charlotte, NC 28203

Facility Representative Address

C-278

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

Revised 6/2009



**FIRST SEMI-ANNUAL 2014
GROUNDWATER AND SURFACE WATER MONITORING EVENT
CLOSED SWEPSONVILLE LANDFILL
ALAMANCE COUNTY, NORTH CAROLINA**

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**FIRST SEMI-ANNUAL 2014
GROUNDWATER AND SURFACE WATER MONITORING EVENT
CLOSED SWEPSONVILLE LANDFILL
ALAMANCE COUNTY, NORTH CAROLINA**

1.0 INTRODUCTION

Buxton Environmental, Inc. respectfully submits the methods and results of the first semi-annual 2014 groundwater and surface water monitoring activities conducted at the closed Swepsonville Landfill located in Alamance County, North Carolina. The purpose for conducting the assessment was to monitor water quality at the subject site. A site layout map is provided in Figure 1.

The monitoring activities were conducted in general accordance with the North Carolina Department of Environment and Natural Resources, Division of Waste Management-Solid Waste Section (NCSWS) rules, and NCDWM memorandums dated October 27, 2006, February 23, 2007 and October 16, 2007 concerning changes to laboratory detection limits and reporting requirements, and the NCDWM groundwater and surface water sampling guidelines dated April 2008. In addition, the North Carolina Ground Water Protection Standards (NCGPS's) presented in this report have been updated to reflect current standards.

A summary of background information, and the methods, results, conclusions and recommendations of this investigation are outlined below.

2.0 BACKGROUND INFORMATION

The Swepsonville Landfill operated as a municipal solid waste landfill until it was closed in 1993. To comply with NCDWM rules, semi-annual groundwater and surface water monitoring has been conducted at the site since October 1995. Water samples have been analyzed for Appendix I volatile organic compounds (VOC's) and metals plus mercury. Historical groundwater samples have indicated VOC's and metals above the North Carolina Groundwater Protection Standards (NCGPS's).

3.0 GROUNDWATER AND SURFACE WATER MONITORING ACTIVITIES

On April 9, 2014, Buxton Environmental, Inc. conducted the first semi-annual 2014 groundwater and surface water monitoring event at the subject site. Groundwater monitoring activities were conducted at eleven monitor wells MW-1, MW-2, MW-3, MW-4, MW-5, MW-6, MW-7A, MW-7B, MW-8A, MW-8B and MW-9. Two surface water samples SW-1 and SW-2 were collected from Haw Creek located to the east the landfill.

Prior to conducting the sampling activities, groundwater levels were obtained from each monitor well with a depth-to-water electrode to the nearest 0.01 foot. Following the gauging activities, each well was purged of three well bore volumes of water or until dryness with a disposable Teflon bailer attached to new nylon rope. Field parameters including pH, conductivity and

temperature were collected at each well following purging and at surface water sample locations. Purge water was poured on the ground surface at respective well heads. Groundwater gauging and field parameter data are provided in Tables 1 and 2, respectively.

The groundwater and surface water samples were analyzed for Appendix I VOC's by EPA Method 8260B, Appendix I metals by EPA Method 6020A, and mercury by EPA Method 7470A. For quality control purposes, one trip blank was analyzed for Appendix I VOC's. The trip blank was prepared by the laboratory. The laboratory analyses were conducted by Shealy Environmental Services, Inc. in West Columbia, South Carolina. The water samples were collected in general accordance with accepted protocol, including chain-of-custody documentation.

4.0 GROUNDWATER AND SURFACE WATER ANALYTICAL RESULTS

The groundwater and surface water analytical results for the first semi-annual 2014 event are presented in Tables 2 and 3, respectively. Laboratory data sheets are presented in Appendix A.

Groundwater Analytical Results

Groundwater samples MW-1, MW-2, MW-3, MW-4, MW-6, MW-7A, MW-7B and MW-8A indicated target constituents above NCGPS's, which are summarized below.

Groundwater sample MW-1 indicated the presence of 1.4 micrograms per liter (ug/l) tetrachloroethene and 5.3 ug/l vanadium.

Groundwater sample MW-2 indicated the presence of 150 ug/l 1,1-dichloroethane, 2.7 ug/l 1,2-dichloroethane, 11 ug/l 1,1-dichloroethene, 88 ug/l cis-1,2-dichloroethene, 4.8 ug/l 1,2-dichloropropane, 24 ug/l tetrachloroethene, 62 ug/l trichloroethene, 8.3 ug/l vinyl chloride and 6.9 ug/l vanadium.

Groundwater sample MW-3 indicated the presence of 8.5 ug/l vanadium.

Groundwater sample MW-4 indicated the presence of 13 ug/l 1,4-dichlorobenzene, 52 ug/l 1,1-dichloroethane, 370 ug/l cis-1,2-dichloroethene, 15 ug/l vinyl chloride and 89 ug/l cobalt.

Groundwater sample MW-6 indicated the presence of 7.8 ug/l vanadium.

Groundwater sample MW-7A indicated the presence of 3.8 ug/l benzene, 24 ug/l 1,1-dichloroethane, 9.8 ug/l tetrachloroethene, 16 ug/l trichloroethene, 4.2 ug/l vinyl chloride and 11 ug/l vanadium.

Groundwater sample MW-7B indicated the presence of 4.7 ug/l benzene, 26 ug/l 1,1-dichloroethane, 12 ug/l tetrachloroethene, 17 ug/l trichloroethene, 5.9 ug/l vinyl chloride and 8.3 ug/l vanadium.

Groundwater sample MW-8A indicated the presence of 10 ug/l vanadium.

The remaining groundwater samples collected at monitor wells MW-5, MW-8B and MW-9 did not indicate target constituents above NCGPS's.

Surface Water Analytical Results

Surface water samples SW-1 and SW-2 did not indicated the presence of Appendix I constituents above established North Carolina Surface Water and Wetland Standards (15A NCAC 02B) for Haw Creek (Class WS-V water) or EPA National Criteria standards (utilized by North Carolina Division of Water Quality as default standards for non listed parameters) (NCSWWS's).

Quality Control Analytical Results

The trip blank did not indicate target constituents above method detection limits.

5.0 CONCLUSIONS

On April 9, 2014, Buxton Environmental, Inc. conducted the first semi-annual 2014 groundwater and surface water monitoring activities at the closed Swepsonville Landfill located in Alamance County, North Carolina. A summary of the findings of this investigation is provided below.

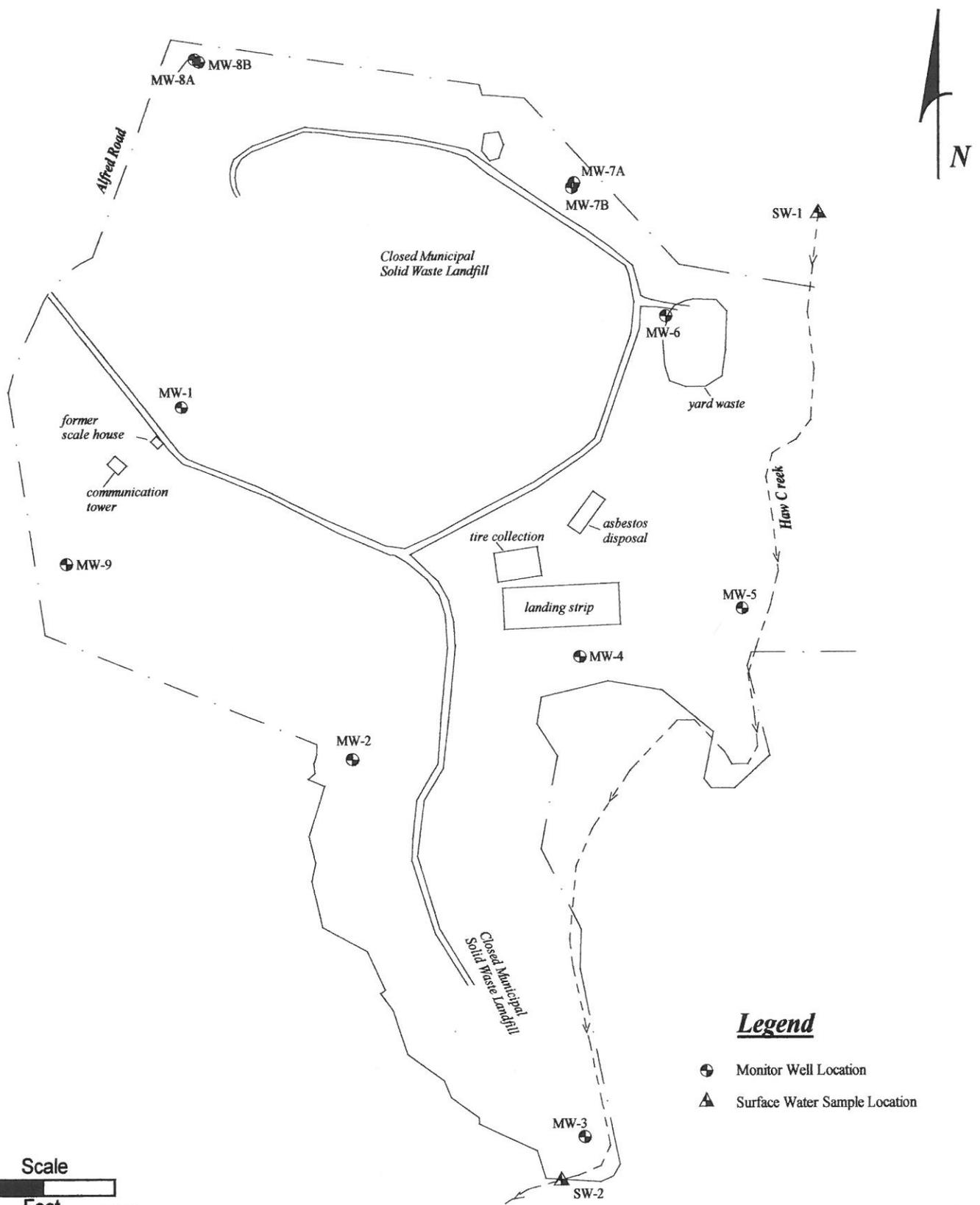
- Groundwater samples collected at MW-1, MW-2, MW-3, MW-4, MW-6, MW-7A, MW-7B and MW-8A indicated target constituents above NCGPS's.
- The surface water samples did not indicate target constituents above the NCSWWS's.

6.0 RECOMMENDATIONS

Based on the findings of this assessment, Buxton Environmental, Inc. makes the following recommendations.

- Semi-annual groundwater and surface water monitoring should continue to be conducted at the closed Swepsonville Landfill. The next sampling event is anticipated to be conducted in September 2014.
- A copy of this report should be forwarded to the NCSWS for their review.

FIGURES



Source: "Monitoring Well and Surface Water Locations" map prepared by MACTEC Engineering & Consulting, Inc. in May 2004

Closed Swebsonville Landfill
Alamance County, NC

Buxton Environmental, Inc.

Figure 1.
Site Layout Map

TABLES

TABLE 1
GROUNDWATER GAUGING DATA
CLOSED SWEPSONVILLE LANDFILL
ALAMANCE COUNTY, NORTH CAROLINA
APRIL 9, 2014

<i>Well ID</i>	<i>TD BTOC (ft)</i>	<i>TOC Elevation (ft)</i>	<i>DTW BTOC (ft)</i>	<i>DTW Elevation (ft)</i>
MW-1	33.00	574.67	20.17	554.50
MW-2	29.90	510.67	25.69	484.98
MW-3	24.10	466.63	5.10	461.53
MW-4	50.00	497.57	28.19	469.38
MW-5	19.00	476.56	7.46	469.10
MW-6	50.00	529.50	20.05	509.45
MW-7A	31.05	554.12	16.93	537.19
MW-7B	64.02	553.09	19.66	533.43
MW-8A	65.00	591.08	21.57	569.51
MW-8B	26.00	591.25	20.95	570.30
MW-9	27.50	568.78	16.94	551.84

Notes:

Depth to water measurements obtained on April 9, 2014 to the nearest 0.01 foot with a depth to water meter.
 TD=total depth;BTOC=below top of casing;TOC=top of casing;DTW=depth to water;ft=feet
 TD and TOC elevation data obtained from the "Report of Semi-Annual Water Quality Monitoring, Swepsonville Landfill, Graham, Alamance Co., North Carolina" report prepared by MACTEC in April 2005

TABLE 2
GROUNDWATER AND SURFACE WATER FIELD PARAMETER DATA
CLOSED SWEPSONVILLE LANDFILL
ALAMANCE COUNTY, NORTH CAROLINA
APRIL 9, 2014

<i>Sample ID</i>	<i>Field Parameters</i>		
	<i>pH (standard units)</i>	<i>K (uS)</i>	<i>T (fahrenheit)</i>
MW-1	6.25	130	6.1
MW-2	6.30	351	62.0
MW-3	6.01	113	62.4
MW-4	6.22	958	61.3
MW-5	6.35	201	62.1
MW-6	6.51	184	62.4
MW-7A	6.00	168	63.0
MW-7B	6.37	300	60.8
MW-8A	6.47	74	60.5
MW-8B	6.18	165	60.2
MW-9	5.89	90	60.8
SW-1	7.35	75	58.9
SW-2	7.20	68	57.5

Notes:

Field parameters collected on April 9, 2014 by Buxton Environmental, Inc. utilizing EXTECH ExStik and ExStik II meters. Field parameters at monitor wells collected after purging 3 well volumes of water.

Leachate and surface water field parameters collected immediately prior to sampling.

K = conductivity

T = temperature

uS = microsiemens

TABLE 3
GROUNDWATER ANALYTICAL DATA
CLOSED SWEPSONVILLE LANDFILL
ALAMANCE COUNTY, NORTH CAROLINA
APRIL 9, 2014

Sample ID	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7A	MW-7B	MW-8A	MW-8B	MW-9	NCGPS
VOC's												
Benzene	BDL	0.66J	BDL	1.8J	BDL	BDL	3.8	4.7	BDL	BDL	BDL	1
Chlorobenzene	BDL	1.4	BDL	2.1J	BDL	BDL	BDL	0.54J	BDL	BDL	BDL	50
Chloroethane	BDL	1.7J	BDL	7J	BDL	BDL	2.2	3.4	BDL	BDL	BDL	3,000
1,4-Dichlorobenzene	BDL	4.7	BDL	13	BDL	BDL	2.7	4	BDL	BDL	BDL	6
1,1-Dichloroethane	BDL	150	BDL	52	BDL	BDL	24	26	BDL	BDL	BDL	6
1,2-Dichloroethane	BDL	2.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.4
1,1-Dichloroethene	BDL	11	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	7
cis-1,2-Dichloroethene	BDL	88	BDL	370	BDL	BDL	46	68	BDL	BDL	BDL	70
trans-1,2-Dichloroethene	BDL	2.4	BDL	1.8J	BDL	BDL	BDL	0.3J	BDL	BDL	BDL	100
1,2-Dichloropropane	BDL	4.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.6
Methylene Chloride	BDL	0.35J	BDL	BDL	BDL	BDL	BDL	0.51J	BDL	BDL	BDL	5
Tetrachloroethene	1.4	24	BDL	BDL	BDL	BDL	9.8	12	BDL	BDL	BDL	0.7
1,1,2-Trichloroethane	BDL	0.55J	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.6
Trichloroethene	BDL	62	BDL	BDL	BDL	BDL	16	17	BDL	BDL	BDL	3
Vinyl Chloride	BDL	8.3	BDL	15	BDL	BDL	4.2	5.9	BDL	BDL	BDL	0.03
Metals												
Antimony	0.13J	BDL	BDL	BDL	0.43J	BDL	BDL	BDL	BDL	BDL	BDL	1
Barium	120	170	55	150	62	100	96	150	14	34	32	700
Beryllium	0.46	0.028J	BDL	BDL	BDL	0.099J	0.052J	BDL	BDL	BDL	BDL	4
Cadmium	0.28	0.68	0.3	0.22	BDL	0.23	0.17	0.94	0.31	0.7	0.14	2
Cobalt	0.43J	1.7J	0.63J	89	1.7J	1.9J	3.1J	0.63J	BDL	1.1J	1.4J	1
Copper	1.3	1.8	0.46J	0.91J	2.1	3.8	1.1	1.3	0.42J	1.5J	BDL	1,000
Lead	0.1J	2.8	0.1J	0.086J	0.11J	0.096J	BDL	BDL	BDL	0.3J	0.097J	15
Mercury	0.15	0.031J	0.042J	0.019J	0.028J	BDL	0.049J	0.073J	0.033J	0.037J	0.055J	1
Nickel	0.48J	7.8	1.3J	6.7	0.78J	0.84J	1.1J	1.4J	0.28J	BDL	BDL	100
Selenium	0.61BJ	1B	BDL	0.88BJ	BDL	BDL	0.55BJ	1.1B	0.97BJ	BDL	BDL	20
Silver	0.14BJ	0.095BJ	0.13BJ	BDL	0.013BJ	BDL	BDL	BDL	BDL	0.067BJ	BDL	20
Vanadium	5.3	6.9	8.5	2.2J	3.9J	7.8	11	8.3	10	BDL	BDL	0.3
Zinc	48	66	22	58	23	40	39	64	6.8J	17J	BDL	1,000

Notes:

Groundwater samples collected on April 9, 2014 and analyzed for Appendix I volatile organic compounds (VOC's) by

EPA Method 8260B, Appendix I metals by EPA 6020A and mercury by EPA Method 7470A.

Analyses by Shealy Environmental Services, Inc. in West Columbia, SC.

NCGPS=North Carolina Groundwater Protection Standard (J-flagged data not considered)

BDL=below detection limit

Bold and shade denotes above NCGPS data presented in micrograms per liter (ug/l)

NT = not tested (limited water or dry well)

B = detected in method blank

J = estimated result <PQL and >=MDL

TABLE 4
SURFACE WATER ANALYTICAL DATA
CLOSED SWEPSONVILLE LANDFILL
ALAMANCE COUNTY, NORTH CAROLINA
APRIL 9, 2014

Sample ID	SW-1	SW-2	NCSWWS
Volatile Organic Compounds	BDL	BDL	NS
Metals			
Arsenic	BDL	3.7BJ	10
Barium	34	35	1,000
Cadmium	BDL	0.54	2
Cobalt	0.67J	0.67J	3
Copper	2.1J	2.5J	7
Lead	0.74J	0.67J	25
Mercury	BDL	0.022J	0.012
Vanadium	BDL	18J	NS

Notes:

Surface water samples collected on April 9, 2014 and analyzed for Appendix I volatile organic compounds (VOC's) by EPA Method 8260B, Appendix I metals by EPA 6020A, & mercury by EPA Method 7470A. Analyses by Shealy Environmental Services, Inc. in West Columbia, SC.

BDL=below detection limit; NA = not applicable

NCGPS=North Carolina Groundwater Protection Standard

NCSWWS = North Carolina Surface Water and Wetland Standards (15A NCAC 02B) for Haw Creek (Class WS-V Water) or are EPA National Criteria.

Bold and shade denotes above established NCSWWS (J-flagged data not considered) data presented in micrograms per liter (ug/l)

B = detected in method blank

J = estimated result <PQL and >=MDL

NS = no standard

NA = not applicable

APPENDIX A
LABORATORY DATA SHEETS

Report of Analysis

Buxton Environmental
PO Box 11550
Charlotte, NC 28220
Attention: Ross Klingman

Project Name: **Alamance Co Swepsonville Landfill**

Project Number: **NC**

Lot Number: **PD10057**

Date Completed: **04/18/2014**


Nisreen Saikaly
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.

• • • • •

SHEALY ENVIRONMENTAL SERVICES, INC.

SC DHEC No: 32010

NELAC No: E87653

NC DENR No: 329

NC Field Parameters No: 5639

Case Narrative Buxton Environmental Lot Number: PD10057

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.

SHEALY ENVIRONMENTAL SERVICES, INC.

Sample Summary Buxton Environmental Lot Number: PD10057

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	MW-1	Aqueous	04/09/2014 1500	04/10/2014
002	MW-2	Aqueous	04/09/2014 1715	04/10/2014
003	MW-3	Aqueous	04/09/2014 1730	04/10/2014
004	MW-4	Aqueous	04/09/2014 1800	04/10/2014
005	MW-5	Aqueous	04/09/2014 1845	04/10/2014
006	MW-6	Aqueous	04/09/2014 1545	04/10/2014
007	MW-7A	Aqueous	04/09/2014 1630	04/10/2014
008	MW-7B	Aqueous	04/09/2014 1615	04/10/2014
009	MW-8A	Aqueous	04/09/2014 1645	04/10/2014
010	MW-8B	Aqueous	04/09/2014 1700	04/10/2014
011	MW-9	Aqueous	04/09/2014 1515	04/10/2014
012	SW-1	Aqueous	04/09/2014 1600	04/10/2014
013	SW-2	Aqueous	04/09/2014 1745	04/10/2014
014	TRIP BLANK	Aqueous	04/09/2014	04/10/2014

(14 samples)

SHEALY ENVIRONMENTAL SERVICES, INC.

Executive Summary Buxton Environmental Lot Number: PD10057

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
001	MW-1	Aqueous	Tetrachloroethene	8260B	1.4		ug/L	8
001	MW-1	Aqueous	Antimony	6020A	0.13	J	ug/L	10
001	MW-1	Aqueous	Barium	6020A	120		ug/L	10
001	MW-1	Aqueous	Beryllium	6020A	0.46		ug/L	10
001	MW-1	Aqueous	Cadmium	6020A	0.28		ug/L	10
001	MW-1	Aqueous	Cobalt	6020A	0.43	J	ug/L	10
001	MW-1	Aqueous	Copper	6020A	1.3		ug/L	10
001	MW-1	Aqueous	Lead	6020A	0.10	J	ug/L	10
001	MW-1	Aqueous	Nickel	6020A	0.48	J	ug/L	10
001	MW-1	Aqueous	Selenium	6020A	0.61	BJ	ug/L	10
001	MW-1	Aqueous	Silver	6020A	0.14	BJ	ug/L	10
001	MW-1	Aqueous	Vanadium	6020A	5.3		ug/L	10
001	MW-1	Aqueous	Zinc	6020A	48		ug/L	10
001	MW-1	Aqueous	Mercury	7470A	0.00015		mg/L	11
002	MW-2	Aqueous	Benzene	8260B	0.66	J	ug/L	12
002	MW-2	Aqueous	Chlorobenzene	8260B	1.4		ug/L	12
002	MW-2	Aqueous	Chloroethane	8260B	1.7	J	ug/L	12
002	MW-2	Aqueous	1,4-Dichlorobenzene	8260B	4.7		ug/L	12
002	MW-2	Aqueous	1,1-Dichloroethane	8260B	150		ug/L	12
002	MW-2	Aqueous	1,2-Dichloroethane	8260B	2.7		ug/L	12
002	MW-2	Aqueous	1,1-Dichloroethene	8260B	11		ug/L	12
002	MW-2	Aqueous	cis-1,2-Dichloroethene	8260B	88		ug/L	12
002	MW-2	Aqueous	trans-1,2-Dichloroethene	8260B	2.4		ug/L	12
002	MW-2	Aqueous	1,2-Dichloropropane	8260B	4.8		ug/L	12
002	MW-2	Aqueous	Methylene chloride	8260B	0.35	J	ug/L	12
002	MW-2	Aqueous	Tetrachloroethene	8260B	24		ug/L	12
002	MW-2	Aqueous	1,1,2-Trichloroethane	8260B	0.55	J	ug/L	12
002	MW-2	Aqueous	Trichloroethene	8260B	62		ug/L	12
002	MW-2	Aqueous	Vinyl chloride	8260B	8.3		ug/L	13
002	MW-2	Aqueous	Barium	6020A	170		ug/L	14
002	MW-2	Aqueous	Beryllium	6020A	0.028	J	ug/L	14
002	MW-2	Aqueous	Cadmium	6020A	0.68		ug/L	14
002	MW-2	Aqueous	Cobalt	6020A	1.7	J	ug/L	14
002	MW-2	Aqueous	Copper	6020A	1.8		ug/L	14
002	MW-2	Aqueous	Lead	6020A	2.8		ug/L	14
002	MW-2	Aqueous	Nickel	6020A	7.8		ug/L	14
002	MW-2	Aqueous	Selenium	6020A	1.0	B	ug/L	14
002	MW-2	Aqueous	Silver	6020A	0.095	BJ	ug/L	14
002	MW-2	Aqueous	Vanadium	6020A	6.9		ug/L	14
002	MW-2	Aqueous	Zinc	6020A	66		ug/L	14
002	MW-2	Aqueous	Mercury	7470A	0.000031	J	mg/L	15
003	MW-3	Aqueous	Barium	6020A	55		ug/L	18
003	MW-3	Aqueous	Cadmium	6020A	0.30		ug/L	18
003	MW-3	Aqueous	Cobalt	6020A	0.63	J	ug/L	18
003	MW-3	Aqueous	Copper	6020A	0.46	J	ug/L	18

Executive Summary (Continued)

Lot Number: PD10057

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
003	MW-3	Aqueous	Lead	6020A	0.10	J	ug/L	18
003	MW-3	Aqueous	Nickel	6020A	1.3	J	ug/L	18
003	MW-3	Aqueous	Silver	6020A	0.13	BJ	ug/L	18
003	MW-3	Aqueous	Vanadium	6020A	8.5		ug/L	18
003	MW-3	Aqueous	Zinc	6020A	22		ug/L	18
003	MW-3	Aqueous	Mercury	7470A	0.000042	J	mg/L	19
004	MW-4	Aqueous	Benzene	8260B	1.8	J	ug/L	20
004	MW-4	Aqueous	Chlorobenzene	8260B	2.1	J	ug/L	20
004	MW-4	Aqueous	Chloroethane	8260B	7.0	J	ug/L	20
004	MW-4	Aqueous	1,4-Dichlorobenzene	8260B	13		ug/L	20
004	MW-4	Aqueous	1,1-Dichloroethane	8260B	52		ug/L	20
004	MW-4	Aqueous	cis-1,2-Dichloroethene	8260B	370		ug/L	20
004	MW-4	Aqueous	trans-1,2-Dichloroethene	8260B	1.8	J	ug/L	20
004	MW-4	Aqueous	Vinyl chloride	8260B	15		ug/L	21
004	MW-4	Aqueous	Barium	6020A	150		ug/L	22
004	MW-4	Aqueous	Cadmium	6020A	0.22		ug/L	22
004	MW-4	Aqueous	Cobalt	6020A	89		ug/L	22
004	MW-4	Aqueous	Copper	6020A	0.91	J	ug/L	22
004	MW-4	Aqueous	Lead	6020A	0.086	J	ug/L	22
004	MW-4	Aqueous	Nickel	6020A	6.7		ug/L	22
004	MW-4	Aqueous	Selenium	6020A	0.88	BJ	ug/L	22
004	MW-4	Aqueous	Vanadium	6020A	2.2	J	ug/L	22
004	MW-4	Aqueous	Zinc	6020A	58		ug/L	22
004	MW-4	Aqueous	Mercury	7470A	0.000019	J	mg/L	23
005	MW-5	Aqueous	Antimony	6020A	0.43	J	ug/L	26
005	MW-5	Aqueous	Barium	6020A	62		ug/L	26
005	MW-5	Aqueous	Cobalt	6020A	1.7	J	ug/L	26
005	MW-5	Aqueous	Copper	6020A	2.1		ug/L	26
005	MW-5	Aqueous	Lead	6020A	0.11	J	ug/L	26
005	MW-5	Aqueous	Nickel	6020A	0.78	J	ug/L	26
005	MW-5	Aqueous	Silver	6020A	0.013	BJ	ug/L	26
005	MW-5	Aqueous	Vanadium	6020A	3.9	J	ug/L	26
005	MW-5	Aqueous	Zinc	6020A	23		ug/L	26
005	MW-5	Aqueous	Mercury	7470A	0.000028	J	mg/L	27
006	MW-6	Aqueous	Barium	6020A	100		ug/L	30
006	MW-6	Aqueous	Beryllium	6020A	0.099	J	ug/L	30
006	MW-6	Aqueous	Cadmium	6020A	0.23		ug/L	30
006	MW-6	Aqueous	Cobalt	6020A	1.9	J	ug/L	30
006	MW-6	Aqueous	Copper	6020A	3.8		ug/L	30
006	MW-6	Aqueous	Lead	6020A	0.096	J	ug/L	30
006	MW-6	Aqueous	Nickel	6020A	0.84	J	ug/L	30
006	MW-6	Aqueous	Vanadium	6020A	7.8		ug/L	30
006	MW-6	Aqueous	Zinc	6020A	40		ug/L	30
007	MW-7A	Aqueous	Benzene	8260B	3.8		ug/L	32
007	MW-7A	Aqueous	Chloroethane	8260B	2.2		ug/L	32
007	MW-7A	Aqueous	1,4-Dichlorobenzene	8260B	2.7		ug/L	32
007	MW-7A	Aqueous	1,1-Dichloroethane	8260B	24		ug/L	32
007	MW-7A	Aqueous	cis-1,2-Dichloroethene	8260B	46		ug/L	32

Executive Summary (Continued)

Lot Number: PD10057

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
007	MW-7A	Aqueous	Tetrachloroethene	8260B	9.8		ug/L	32
007	MW-7A	Aqueous	Trichloroethene	8260B	16		ug/L	32
007	MW-7A	Aqueous	Vinyl chloride	8260B	4.2		ug/L	33
007	MW-7A	Aqueous	Barium	6020A	96		ug/L	34
007	MW-7A	Aqueous	Beryllium	6020A	0.052	J	ug/L	34
007	MW-7A	Aqueous	Cadmium	6020A	0.17		ug/L	34
007	MW-7A	Aqueous	Cobalt	6020A	3.1	J	ug/L	34
007	MW-7A	Aqueous	Copper	6020A	1.1		ug/L	34
007	MW-7A	Aqueous	Nickel	6020A	1.1	J	ug/L	34
007	MW-7A	Aqueous	Selenium	6020A	0.55	BJ	ug/L	34
007	MW-7A	Aqueous	Vanadium	6020A	11		ug/L	34
007	MW-7A	Aqueous	Zinc	6020A	39		ug/L	34
007	MW-7A	Aqueous	Mercury	7470A	0.000049	J	mg/L	35
008	MW-7B	Aqueous	Benzene	8260B	4.7		ug/L	36
008	MW-7B	Aqueous	Chlorobenzene	8260B	0.54	J	ug/L	36
008	MW-7B	Aqueous	Chloroethane	8260B	3.4		ug/L	36
008	MW-7B	Aqueous	1,4-Dichlorobenzene	8260B	4.0		ug/L	36
008	MW-7B	Aqueous	1,1-Dichloroethane	8260B	26		ug/L	36
008	MW-7B	Aqueous	cis-1,2-Dichloroethene	8260B	68		ug/L	36
008	MW-7B	Aqueous	trans-1,2-Dichloroethene	8260B	0.30	J	ug/L	36
008	MW-7B	Aqueous	Methylene chloride	8260B	0.51	J	ug/L	36
008	MW-7B	Aqueous	Tetrachloroethene	8260B	12		ug/L	36
008	MW-7B	Aqueous	Trichloroethene	8260B	17		ug/L	36
008	MW-7B	Aqueous	Vinyl chloride	8260B	5.9		ug/L	37
008	MW-7B	Aqueous	Barium	6020A	150		ug/L	38
008	MW-7B	Aqueous	Cadmium	6020A	0.94		ug/L	38
008	MW-7B	Aqueous	Cobalt	6020A	0.63	J	ug/L	38
008	MW-7B	Aqueous	Copper	6020A	1.3		ug/L	38
008	MW-7B	Aqueous	Nickel	6020A	1.4	J	ug/L	38
008	MW-7B	Aqueous	Selenium	6020A	1.1	B	ug/L	38
008	MW-7B	Aqueous	Vanadium	6020A	8.3		ug/L	38
008	MW-7B	Aqueous	Zinc	6020A	64		ug/L	38
008	MW-7B	Aqueous	Mercury	7470A	0.000073	J	mg/L	39
009	MW-8A	Aqueous	Barium	6020A	14		ug/L	42
009	MW-8A	Aqueous	Cadmium	6020A	0.31		ug/L	42
009	MW-8A	Aqueous	Copper	6020A	0.42	J	ug/L	42
009	MW-8A	Aqueous	Nickel	6020A	0.28	J	ug/L	42
009	MW-8A	Aqueous	Selenium	6020A	0.97	BJ	ug/L	42
009	MW-8A	Aqueous	Vanadium	6020A	10		ug/L	42
009	MW-8A	Aqueous	Zinc	6020A	6.8	J	ug/L	42
009	MW-8A	Aqueous	Mercury	7470A	0.000033	J	mg/L	43
010	MW-8B	Aqueous	Barium	6020A	34		ug/L	46
010	MW-8B	Aqueous	Cadmium	6020A	0.70		ug/L	46
010	MW-8B	Aqueous	Cobalt	6020A	1.1	J	ug/L	46
010	MW-8B	Aqueous	Copper	6020A	1.5	J	ug/L	46
010	MW-8B	Aqueous	Lead	6020A	0.30	J	ug/L	46
010	MW-8B	Aqueous	Silver	6020A	0.067	BJ	ug/L	46
010	MW-8B	Aqueous	Zinc	6020A	17	J	ug/L	46

Executive Summary (Continued)

Lot Number: PD10057

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
010	MW-8B	Aqueous	Mercury	7470A	0.000037	J	mg/L	47
011	MW-9	Aqueous	Barium	6020A	32		ug/L	50
011	MW-9	Aqueous	Cadmium	6020A	0.14		ug/L	50
011	MW-9	Aqueous	Cobalt	6020A	1.4	J	ug/L	50
011	MW-9	Aqueous	Lead	6020A	0.097	J	ug/L	50
011	MW-9	Aqueous	Mercury	7470A	0.000055	J	mg/L	51
012	SW-1	Aqueous	Barium	6020A	34		ug/L	54
012	SW-1	Aqueous	Cobalt	6020A	0.67	J	ug/L	54
012	SW-1	Aqueous	Copper	6020A	2.1	J	ug/L	54
012	SW-1	Aqueous	Lead	6020A	0.74	J	ug/L	54
013	SW-2	Aqueous	Arsenic	6020A	3.7	BJ	ug/L	58
013	SW-2	Aqueous	Barium	6020A	35		ug/L	58
013	SW-2	Aqueous	Cadmium	6020A	0.54		ug/L	58
013	SW-2	Aqueous	Cobalt	6020A	0.67	J	ug/L	58
013	SW-2	Aqueous	Copper	6020A	2.5	J	ug/L	58
013	SW-2	Aqueous	Lead	6020A	0.67	J	ug/L	58
013	SW-2	Aqueous	Vanadium	6020A	18	J	ug/L	58
013	SW-2	Aqueous	Mercury	7470A	0.000022	J	mg/L	59

(159 detections)

SHEALY ENVIRONMENTAL SERVICES, INC.

Shealy Environmental Services, Inc.
106 Vantage Point Drive
West Columbia, South Carolina 29172
Telephone No. (803) 791-9700 Fax No. (803) 791-9111
www.shealylab.com

Number 33079

Chain of Custody Record

Client Bestway Environmental		Region/Contact ROSS K. Wynn		Quote No.	
Address 1101 South Blvd Ste 101		Telephone No. / Fax No. / Email 703-314-1430		Waybill No.	
City Charlotte		State NC		Zip Code 28203	
Project Name LAMARCE (J) - SUPER-SOIL LEAD		Preservative 1. Uppers 4. HNO3 7. HCl 2. NaOH/24 5. HCL 3. H2SO4 6. Na Ibb.		Number of Containers Bottle (See reductions on back)	
Project Number NC		F.O. Number		Presentative PD10057	
Sample ID / Description (Containers for each sample may be combined on one line)		Date		Time	
Matrix		Analysis		Lot No. PD10057	
MW-1		4-9-14		15:00	
MW-2		"		17:15	
MW-3		"		17:30	
MW-4		"		18:00	
MW-5		"		18:45	
MW-6		"		15:45	
MW-7A		"		16:30	
MW-7B		"		16:15	
MW-8A		"		16:45	
MW-8B		"		17:00	
MW-9		"		15:15	
SW-1		"		16:00	
SW-2		"		17:45	
TSLP SW-1		"		"	
Remarks / Cooler ID		Analysis		Remarks / Cooler ID	
APPT VOCs		APPT VOCs		APPT VOCs	
APPT METALS		APPT METALS		APPT METALS	
APPT Hg		APPT Hg		APPT Hg	
Possible Hazard Identification		Possible Hazard Identification		Possible Hazard Identification	
Flammable		Flammable		Flammable	
Corrosive		Corrosive		Corrosive	
Toxic		Toxic		Toxic	
Unknown		Unknown		Unknown	
OC Requirements: (Specify if Low or High Risk)		OC Requirements: (Specify if Low or High Risk)		OC Requirements: (Specify if Low or High Risk)	
1. Received by		Date		Time	
2. Received by		Date		Time	
3. Received by		Date		Time	
4. Laboratory Received by		Date		Time	
LAB USE ONLY		Receipt Temp. °C		Temp Blank <input type="checkbox"/>	

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

SHEALY ENVIRONMENTAL SERVICES, INC.

Shealy Environmental Services, Inc.
 Document Number: F-AD-016
 Revision Number: 14

Page 1 of 1
 Replaces Date: 09/26/13
 Effective Date: 03/07/14

Sample Receipt Checklist (SRC)

Client: Buckhorn Cooler Inspected by/date: KWP 14-10-14 Lot #: PD10057

Means of receipt: <input checked="" type="checkbox"/> SESI <input type="checkbox"/> Client <input type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> Airborne Exp <input type="checkbox"/> Other		
Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	1. Were custody seals present on the cooler?
Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/> 2. If custody seals were present, were they intact and unbroken?
Cooler ID/Original temperature upon receipt/Derived (corrected) temperature upon receipt: <u>130151</u> °C / <u>1</u> °C / <u>1</u> °C / <u>1</u> °C		
Method: <input type="checkbox"/> Temperature Blank <input checked="" type="checkbox"/> Against Bottles IR Gun ID: <u>#5</u> IR Gun Correction Factor: <u>40.1°C</u>		
Method of coolant: <input checked="" type="checkbox"/> Wet Ice <input type="checkbox"/> Blue Ice <input type="checkbox"/> Dry Ice <input type="checkbox"/> None		
Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/> 3. If temperature of any cooler exceeded 6.0°C, was Project Manager notified? PM notified by SRC, phone, note (circle one), other: _____ (For coolers received via commercial courier, PMs are to be notified immediately.)
Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/> 4. Is the commercial courier's packing slip attached to this form?
Yes <input type="checkbox"/>	No <input type="checkbox"/>	5. Were proper custody procedures (relinquished/received) followed?
Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/> 5a Were samples relinquished by client to commercial courier?
Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	6. Were sample IDs listed on the COC?
Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	7. Were sample IDs listed on all sample containers?
Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	8. Was collection date & time listed on the COC?
Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	9. Was collection date & time listed on all sample containers?
Yes <input type="checkbox"/>	No <input type="checkbox"/>	10. Did all container label information (ID, date, time) agree with the COC?
Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	11. Were tests to be performed listed on the COC?
Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	12. Did all samples arrive in the proper containers for each test?
Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	13. Did all containers arrive in good condition (unbroken, lids on, etc.)?
Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	14. Was adequate sample volume available?
Yes <input type="checkbox"/>	No <input type="checkbox"/>	15. Were all samples received within 1/2 the holding time or 48 hours, whichever comes first?
Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	16. Were any samples containers missing?
Yes <input type="checkbox"/>	No <input type="checkbox"/>	17. Were there any excess samples not listed on COC?
Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	NA <input type="checkbox"/> 18. Were bubbles present > "pea-size" (1/4" or 6mm in diameter) in any VOA vials?
Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	NA <input type="checkbox"/> 19. Were all metals/O&G/HEM/nutrient samples received at a pH of <2?
Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/> 20. Were all cyanide and/or sulfide samples received at a pH >12?
Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/> 21. Were all applicable NH3/TKN/cyanide/phenol (<0.2mg/L) samples free of residual chlorine?
Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input type="checkbox"/> 22. Were collection temperatures documented on the COC for NC samples?
Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input type="checkbox"/> 23. Were client remarks/requests (i.e. requested dilutions, MS/MSD designations, etc...) correctly transcribed from the COC into the comment section in LIMS?
Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	24. 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 _____ (H2SO4, HNO3, HCl, NaOH) using SR # _____		
Sample(s) _____ were received with bubbles >6 mm in diameter.		
Sample(s) _____ were received with TRC >0.2 mg/L (If #21 is No)		
SC Drinking Water Project Sample(s) pH verified to be >2 by _____ Date: _____		
Sample(s) _____ were not received at a pH of >2 and were adjusted accordingly using SR# _____		
Sample labels applied by: <u>KWP</u> Verified by: _____ Date: <u>4-10-14</u>		

Comments: