BUNNELL-LAMMONS ENGINEERING, INC.

GEOTECHNICAL, ENVIRONMENTAL AND CONSTRUCTION MATERIALS CONSULTANTS

REPORT OF GROUNDWATER QUALITY RESULTS & STATISTICAL ANALYSIS

SECOND SEMI-ANNUAL SAMPLING EVENT OF 2012

WHITE OAK LANDFILL
PERMIT NUMBER: 44-07
HAYWOOD COUNTY, NORTH CAROLINA

Prepared For:

HAYWOOD COUNTY SOLID WASTE MANAGEMENT
278 Recycle Road
Clyde, North Carolina 28721

Prepared By:

BUNNELL-LAMMONS ENGINEERING, INC.
6004 Ponders Court
Greenville, South Carolina 29615

February 12, 2013

BLE Project Number J12-1957-31

BUNNELL-LAMMONS ENGINEERING, INC.
GEOTECHNICAL, ENVIRONMENTAL AND CONSTRUCTION MATERIALS CONSULTANTS

February 12, 2013

Haywood County Solid Waste Management
278 Recycle Road
Clyde, North Carolina 28721

Attention: Mr. Stephen King
Solid Waste Director

Subject: **Report of Groundwater Quality Results & Statistical Analysis**
Second Semi-Annual Sampling Event of 2012
White Oak Landfill
Permit Number: 44-07
Haywood County, North Carolina
BLE Project Number J12-1957-31

Dear Mr. King:

As authorized, Bunnell-Lammons Engineering, Inc. (BLE) has performed the statistical analysis of groundwater quality data obtained during the second semi-annual sampling event of 2012 for the White Oak Municipal Solid Waste (MSW) and Construction and Demolition (C&D) Landfills. The enclosed report describes the work performed and presents the results obtained with our conclusions. The purpose of this work was to statistically compare the laboratory analytical results of groundwater samples from the background monitoring wells to the downgradient monitoring wells at the subject landfill in accordance with Title 15A NCAC 13B .1632 (g), (h), and (i). This report of the sampling and statistical analysis has been prepared for submittal to the North Carolina Division of Waste Management (NCDWM) in accordance with Rule 15A NCAC 13B .1632 (j).

We appreciate the opportunity to serve as your geological consultant on this project and look forward to working with you on future projects. If you have any questions, please contact us at (864) 288-1265.

Sincerely,
BUNNELL-LAMMONS ENGINEERING, INC.

NORTH CAROLINA LICENSED SEAL 2025 GEOLOGIST TREVOR J. BENTON

Trevor J. Benton, L.G.
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cc: Mr. Ervin Lane – NC DENR Solid Waste Section, 401 Oberlin Road, Ste. 150, Raleigh, NC 27605
Mr. Will Martin – Santek Waste Services, Inc., 650 25th Street, NW, Ste. 100, Cleveland, TN 37311

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PROJECT INFORMATION

The White Oak Landfill site is located in Haywood County, North Carolina, approximately twelve miles north of the city of Waynesville on White Oak Road at Exit 15 off Interstate 40 (**Figure 1**). The Subtitle D lined MSW landfill has eleven groundwater monitoring wells consisting of two upgradient (MW-11S and MW-11D) and nine downgradient wells (MW-1A, MW-2, MW-2D, MW-3r, MW-3Dr, MW-4A, MW-8, MW-16, and MW-17). Monitoring wells MW-5A, MW-5D, MW-12, MW-13S, and MW-13D were abandoned in 2009 and monitoring wells MW-16 and MW-17 were installed in 2010 as related to the construction of Phase No. 3 at the facility. Additionally, there are four surface water sampling points (SW-1, SW-2, SW-3, and SW-5), and a leachate lagoon sampling point (LSP). The C&D landfill, which is located on the same property, is monitored by one upgradient (MW-14), one downgradient well (MW-15), and two locations for surface water monitoring (SW-6 and SW-7).

BLE was retained by Santek Waste Services, Inc. to prepare the semi-annual sampling reports for 2012. Historical data from multiple sources and in multiple formats had to be gathered from multiple sources and formats, and synthesized into this report. Water quality data available to BLE extends back to April 1993, however, many of the currently existing wells were not present during the earlier sampling events. As a result, the statistical database in this report uses data from sampling events ranging from April 2000 to the current sampling event (October 2012).

This report presents data from the second semi-annual sampling event in 2012 for the site. The water samples were collected and analyzed as required in North Carolina's regulations for operation of MSW and C&D landfills.

FIELD ACTIVITIES, SAMPLING, AND ANALYSIS

Groundwater and surface water samples were collected by personnel from Pace Analytical Services, Inc. (Pace) of Asheville, North Carolina on October 23-24, 2012. Sampling was performed in general accordance with the *Operations Plan* for the White Oak Landfill. Summary tables of historic and current analytical results are attached in **Appendix A** (groundwater) and **Appendix B** (surface water).

Water samples were collected from the monitoring wells, surface water points, and the LSP. The collected samples were analyzed in the laboratory for North Carolina's *Appendix I* list of constituents that include total metals and volatile organic compounds (VOCs) and in the field for pH, specific conductance, turbidity, and temperature. A copy of the Pace laboratory and field data is included in **Appendix C**.

GROUNDWATER FLOW

The water level data collected during the groundwater sampling is presented in **Table 1**. A water table surface elevation contour map is presented as **Figure 2** along with generalized groundwater flow directions. Flow velocity calculations are provided on **Table 2**. Please note, hydraulic

conductivity and effective porosity values for the existing wells were obtained from prior reports prepared by other consultants.

SUMMARY OF LABORATORY RESULTS

Groundwater

Concentrations of total barium (thirteen wells), total cadmium (one well), total chromium (three wells), total cobalt (four wells), total copper (three wells), total lead (one well), total nickel (six wells), total vanadium (two wells), and total zinc (eleven wells) were detected in the groundwater monitoring wells during the current sampling event. Total barium (MW-2 and MW-2D) and total chromium (MW-11S) were detected at concentrations above the North Carolina maximum contaminant level[1] (MCL). Additionally, one VOC chloroethane was detected but at levels below the established North Carolina MCL. A summary of the detected concentrations is included in **Appendix A**.

Surface Water

Total metals were detected in each of the six surface water samples, and the LSP sample during the current sampling event. The detections included total arsenic (LSP), total barium (six surface waters and the LSP), total chromium (LSP), total cobalt (one surface water and the LSP), total nickel (LSP), total vanadium (LSP), and total zinc (two surface waters). No VOCs were detected in the samples from the surface water locations. 1,4-dichlorobenzene, xylenes, phosphorus, nitrate, nitrite, total nitrogen, sulfate, BOD, and COD were detected in the LSP sample. Only the concentration of arsenic and nickel in the LSP sample were detected above North Carolina's established surface water MCLs[2]; the other detections were either below the MCL or a MCL has not been established for the detected constituents. Summary of the detected surface water concentrations is included in **Appendix B**.

STATISTICAL METHODS PERFORMED

The purpose of performing statistical analysis of groundwater quality data is to determine if a release of leachate has occurred from the landfill cells to the groundwater at the site. The US EPA has prepared a guidance document for evaluating groundwater quality data titled *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities – Unified Guidance* (March 2009). The procedures and methodology used for data analysis of this project are consistent with this US EPA guidance document, and meet or exceed the performance criteria specified in the North Carolina solid waste management rules Title 15A NCAC 13B .1632(g-i). Four methods of statistical analysis were performed depending on the number of detected concentrations and the distribution of the data for a specific compound, as follows:

[1] North Carolina Department of Environment and Natural Resources (NCDENR), Classifications of Water Quality Standards, Section 15A NCAC 2L.202, December 1, 2005.

[2] North Carolina Department of Environment and Natural Resources, "Redbook", Surface Waters and Wetlands Standards, Section 15A NCAC 02B.0100, .0200, and .0300, May 1, 2007.

1. If 15% to 90% of the data were not detected, the one-way non-parametric analysis of variance (ANOVA) Kruskal-Wallis rank-sum test was performed;

2. If less than 15% of the data were not detected, and if the data was normally distributed and homogeneous, then one-way parametric ANOVA was performed. If the data were not normally distributed and homogeneous, then a non-parametric type test was used (Kruskal-Wallis);

3. Alternatively, if greater than 50% of the data were not detected, Poisson Prediction Limits may be performed, or if less than 50% of the data were not detected, Normal Prediction Limits may be performed. Wilcoxon rank-sum tests were performed for those compounds that failed the initial Poisson Prediction Limits test; and

4. Intrawell comparisons were performed, if necessary, using Shewhart-CUSUM control charts or the Kendall-Mann Non-Parametric Trend Test.

It is important to note that the nature of the statistical procedures applied to the data frequently leads to false positives, which result in statistically significant increases (SSI). These false positives are inherent to the statistical procedures themselves and are a result of the insufficiency of the mathematical equations to represent the multiple factors affecting the groundwater quality variability at a given site. Furthermore, a clear distinction should be made between the terms "calculated SSI" and "validated SSI." A calculated SSI is the result of the application of mathematical equations to evaluate variability of water quality data over time by mathematical means. A validated SSI is determined when, based on a review of the data set as a whole, it can be concluded that the calculated statistical significance might be a function of a release of leachate to groundwater, and not a function of natural variability and/or other conditions.

SUMMARY OF STATISTICAL RESULTS

The statistical analysis was performed on constituents that have been historically detected and that were detected during the current sampling event. The statistical results summarized on **Table 3** and included in **Appendix D** indicate that:

1. The Poisson Prediction Limit tests performed for total antimony, total selenium, total silver, total thallium, acetone, carbon disulfide, 2-butanone and chloroethane did not calculate SSIs; and

2. The Kruskal-Wallis tests and Shewhart-CUSUM control charts did not calculate SSIs for total arsenic, total beryllium, total cadmium, total chromium, total cobalt, total copper, total lead, total nickel, total vanadium, and total zinc; however, the tests calculated SSIs for total barium in wells MW-2 and MW-2D.

CONCLUSION

Concentrations of various total metals were detected in the groundwater monitoring wells and surface water sampling points during the current sampling event. Only the concentrations of total barium (MW-2 and MW-2D) and total chromium (MW-11S), total arsenic (LSP) and total nickel (LSP) were detected at concentrations exceeding North Carolina MCLs. The remaining detected concentrations were either below North Carolina's promulgated MCLs, or MCLs have not been established for a particular constituent. Additionally, only total barium in wells MW-2 and MW-2D were calculated to be statistically significant.

The current sampling event represents the fifth (N5) baseline sampling event for new wells MW-16 and MW-17 installed in association with Phase No. 3 and the construction of the future Phase No. 4. Interwell comparisons (background wells versus compliance wells) indicate statistical significance for total cobalt in monitoring well MW-16, but the database for this new well is too small for intrawell comparisons (statistical comparisons of its own history). As additional laboratory data becomes available during subsequent sampling events, other intrawell statistical methods, such at the Shewhart-CUSUM Control Charts (a minimum of nine sampling events required), will be used to evaluate statistical significance.

In summary, the detected concentrations of total metals in the groundwater and surface water samples are most likely naturally occurring and related to sample turbidity. Metal cations typically adsorb to the surface of platy particles (clay and silt). Therefore, turbidity of the groundwater and surface water samples will relate to detected concentrations of the metal cations. Consequently, the metal concentrations detected should be considered natural background concentrations.

We recommend that sampling continue on a semi-annual basis for the *Appendix I* list of VOCs and total metals constituents. As a result of recent NCDENR solid waste rule revisions regarding statistical analysis requirements, we will review the necessity of performing statistical analysis of the water quality data for the facility prior to the next scheduled semi-annual sampling event.

TABLES

TABLE 1

GROUNDWATER MONITORING WELL CONSTRUCTION AND GROUNDWATER ELEVATION DATA
White Oak Landfill
Haywood County, North Carolina
BLE Project Number J12-1957-31

October 23, 2012															
Well	**Northing (feet)**	**Easting (feet)**	**Meas. Pt. Elevation**	**Gnd. Surface Elevation**	***Depth to Water (bgs)**	**Depth to Water (bmp)**	**Water Elevation**	**Total Borehole Depth (bgs)**	**Screen Depth (bgs)**	**Screen Elevation**	**Well Type**	**Well Monitors**	**Top of Rock Depth (bgs)**	**Top of Rock Elev.**
MW-1A	721,096.30	812,481.47	2,520.02	2,517.97	20.04	22.09	2497.93	UK	10.4 - 25.4	2507.6 - 2492.6	UK	Deep Residuum	UK	UK
MW-2	721,460.76	812,309.44	2,496.71	2,494.43	28.65	30.93	2465.78	UK	19.9 - 34.9	2474.5 - 2459.5	UK	Deep Residuum/PWR	UK	UK
MW-2D	721,456.01	812,311.87	2,496.89	2,494.69	28.69	30.89	2466.00	UK	44.6 - 54.6	2450.1 - 2440.1	UK	Bedrock	36.9	2457.8
MW-3r	721,943.38	812,063.70	2,462.61	2,459.53	30.34	33.42	2429.19	41.5	26.3 - 41.3	2433.2 - 2418.2	II	Deep Residuum	NE	NE
MW-3Dr	721,940.67	812,082.82	2,461.89	2,458.42	34.08	37.55	2424.34	65.0	49.8 - 64.8	2408.6 - 2393.6	IIIs	Bedrock	44.0	2414.4
MW-4A	721,693.04	811,976.64	2,493.85	2,491.60	44.07	46.32	2447.53	UK	80.6 - 95.6	2411.0 - 2396.0	UK	Bedrock	23.3	2468.3
MW-8	721,704.50	812,155.03	2,477.33	2,474.84	28.65	31.14	2446.19	UK	31.0 - 41.0	2443.8 - 2433.8	UK	Deep Residuum	UK	UK
MW-11S	719,905.88	811,642.89	2,674.58	UK	UK	81.57	2593.01	UK	UK - UK	UK - UK	UK	UK	UK	UK
MW-11D	719,909.34	811,651.55	2,674.89	2,672.01	79.46	82.34	2592.55	UK	118.0 - 127.6	2554.0 - 2544.4	UK	Bedrock	97.0	2575.0
MW-14	UK	UK	2,711.69	UK	UK	100.80	2610.89	UK	UK - UK	UK - UK	UK	UK	UK	UK
MW-15	UK	UK	2,547.41	UK	UK	9.69	2537.72	UK	UK - UK	UK - UK	UK	UK	UK	UK
MW-16	721,821.98	811,660.70	2,519.35	2,516.07	32.07	35.35	2484.00	41.0	25.8 - 40.8	2490.3 - 2475.3	II	Fill / Residuum	40.0	2476.1
MW-17	721,783.47	811,219.93	2,542.55	2,539.13	53.34	56.76	2485.79	63.0	43.0 - 58.0	2496.1 - 2481.1	II	Bedrock	40.0	2499.1

Notes:
All survey data provided by McGill Associates, all units in feet. Data for MW-14 & MW-15 sourced from historical Municipal Engineering reports.
*DTW from bgs values have been calculated from survey data provided by McGill Associates.
All values shown to the nearest 0.1-ft have been rounded.
Water levels were measured on 10/23/012 by Pace Analytical.
MW-4A was lowered 4.59 feet by Haywood County. All bgs referenced depths for MW-4A have been adjusted accordingly on this table.

Measuring Point Elevation is top of casing.
II = Type II well
IIIs = Type III screened well
NE = Not encountered
UK = Unknown, information is not available

Prepared by: IAI
Checked by: DRM

TABLE 2

GROUNDWATER FLOW DATA
White Oak Landfill
Haywood County, North Carolina
BLE Project Number J12-1957-31

Monitoring Well	Hydraulic Conductivity			Local Hydraulic Gradient (ft/ft)	Effective Porosity	Flow Velocity (ft/day)	Flow Velocity (ft/yr)
	cm/sec	ft/min	ft/day				
MW-1A	1.50E-04	2.95E-04	4.25E-01	0.0750	0.114	0.28	102.08
MW-2	1.50E-04	2.95E-04	4.31E+00	0.0750	0.114	2.83	1,033.59
MW-4A	1.49E-04	2.93E-04	4.28E+00	0.1000	0.05	8.55	3,121.78
MW-8	1.50E-04	2.95E-04	4.31E+00	0.0750	0.114	2.83	1,033.59
MW-11S	2.40E-06	4.72E-06	6.89E-02	0.0869	0.114	0.05	19.16
MW-14	1.38E-05	2.72E-05	3.96E-01	0.0665	0.17	0.15	56.57
MW-15	2.10E-05	4.13E-05	6.03E-01	0.0665	0.17	0.24	86.08

Notes:

1. Hydraulic conductivity and effective porosity values are from prior site hydrogeologic studies performed by others.
2. Hydraulic gradients and flow velocities calculated from measurements collected during the October 23-24, 2012 sampling event.
3. Groundwater flow velocities calculated using the equation $V = Ki/n_e$ where
4. V = velocity
5. K = hydraulic conductivity
6. i = hydraulic gradient
7. n_e = effective porosity
8. NA = information not available

TABLE 3

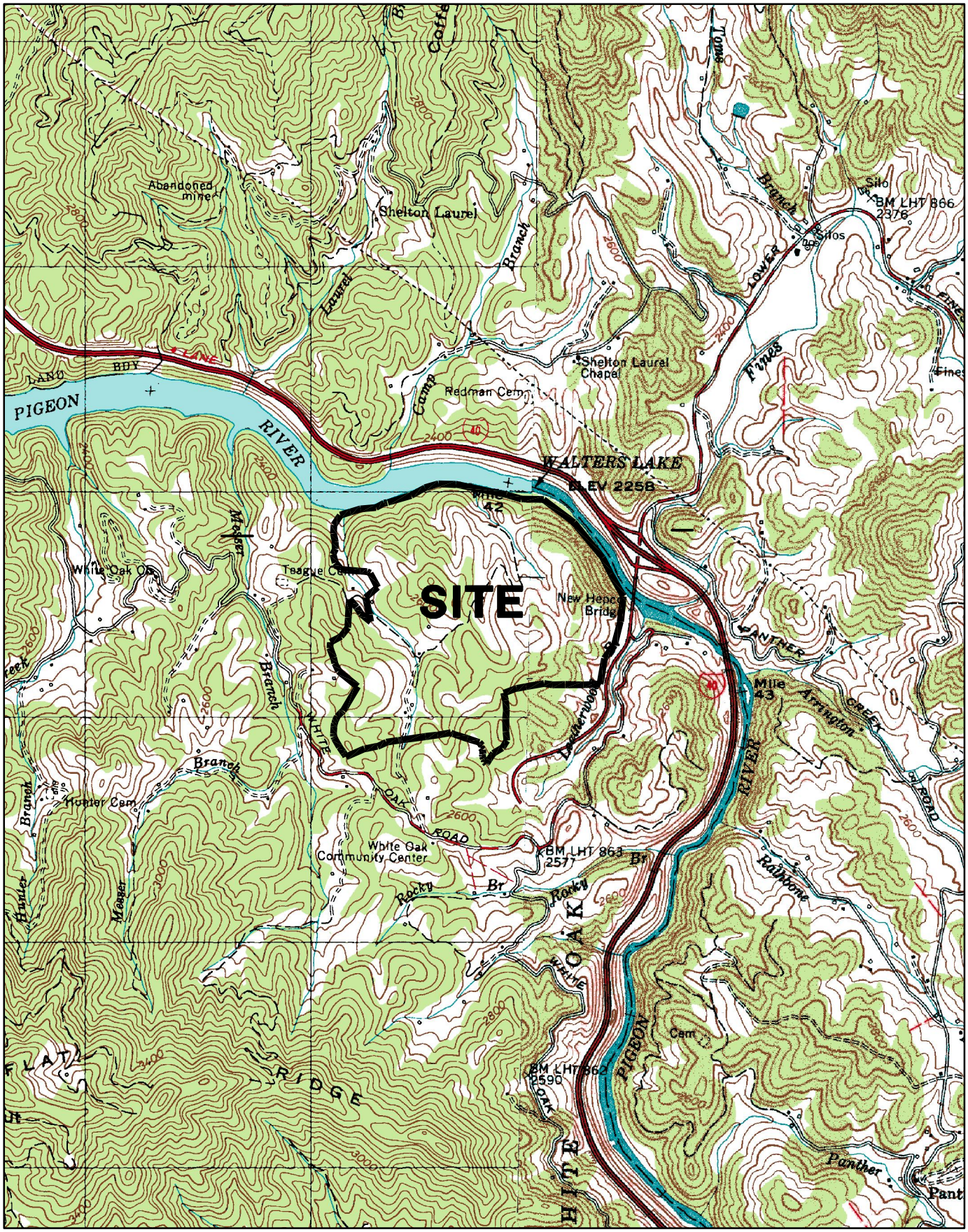
SUMMARY OF STATISTICAL ANALYSIS RESULTS
White Oak Landfill
Haywood County, North Carolina
BLE Project Number J12-1957-31

Chemical/ Compound	Percent ND	Primary Statistical Test	Primary Pass/Fail	Secondary Statistical Test	Secondary Pass/Fail	SSI Calculated	SSI Validated as Leachate	SSI Concentration Above MCL During Current Event
Total Antimony	98%	Poisson Prediction Limits	Pass	-	-	-	-	-
Total Arsenic	90%	Kruskal-Wallis	Fail	Shewhart-CUSUM	Pass	-	-	-
Total Barium (3)	6%	Kruskal-Wallis	Fail	Shewhart-CUSUM	Fail	MW-2, MW-2D (4)	No (4)	Yes (MW-2, MW-2D)
Total Beryllium	84%	Kruskal-Wallis	Fail	Shewhart-CUSUM	Pass	-	-	-
Total Cadmium	85%	Kruskal-Wallis	Pass	-	-	-	-	-
Total Chromium	50%	Kruskal-Wallis	Pass	-	-	-	-	-
Total Cobalt	61%	Kruskal-Wallis	Fail	Shewhart-CUSUM	Pass	MW-16 (5)	No (5)	Not Established
Total Copper	57%	Kruskal-Wallis	Fail	Shewhart-CUSUM	Pass	-	-	-
Total Lead	71%	Kruskal-Wallis	Fail	Shewhart-CUSUM	Pass	-	-	-
Total Nickel	46%	Kruskal-Wallis	Fail	Shewhart-CUSUM	Pass	-	-	-
Total Selenium	98%	Poisson Prediction Limits	Pass	-	-	-	-	-
Total Silver	99%	Poisson Prediction Limits	Pass	-	-	-	-	-
Total Thallium	93%	Poisson Prediction Limits	Pass	-	-	-	-	-
Total Vanadium	52%	Kruskal-Wallis	Fail	Shewhart-CUSUM	Pass	-	-	-
Total Zinc	28%	Kruskal-Wallis	Fail	Shewhart-CUSUM	Pass	-	-	-
Acetone	100%	Poisson Prediction Limits	Pass	-	-	-	-	-
Carbon Disulfide	99%	Poisson Prediction Limits	Pass	-	-	-	-	-
Chloroethane	100%	Poisson Prediction Limits	Pass	-	-	-	-	-
2-Butanone	100%	Poisson Prediction Limits	Pass	-	-	-	-	-

Notes:

1. MCL = *Maximum Contaminant Level*
2. SSI = *Statistically Significant Increase*
3. The dataset for total barium was not homogeneous and normally distributed. Therefore, a non-parametric ANOVA testing procedure was used (Kruskal-Wallis) rather than parametric ANOVA.
4. Total barium is a naturally occuring metal throughout much of North Carolina and is likely related to sample turbidity.
5. New monitoring well MW-16 does not have a sufficient background database for intrawell analysis.

FIGURES



REFERENCE:
USGS TOPOGRAPHIC MAP, 7.5 MINUTE SERIES,
COVE CREEK GAP AND FINES CREEK, N.C. QUADRANGLES, 1967.

DRAWN: ACE	DATE: 02-01-13	BLE INC. BUNNELL-LAMMONS ENGINEERING, INC. 6004 PONDERS COURT GREENVILLE, SOUTH CAROLINA 29615 PHONE: (864)288-1265 FAX: (864)288-4430	SITE LOCATION MAP WHITE OAK LANDFILL HAYWOOD COUNTY, NORTH CAROLINA	FIGURE 1
CHECKED: TJB	CAD: HCWOLF31-SLM			
APPROVED:	JOB NO: J12-1957-31			

REFERENCES:
DRAWING TITLED "ENVIRONMENTAL MONITORING PLAN AS-BUILT INFORMATION" (OCTOBER 2010) PROVIDED BY McGILL ASSOCIATES.
LOCATION OF AND SURVEY DATA FOR MW-14 AND MW-15 SOURCED FROM HISTORICAL REPORTS BY MUNICIPAL ENGINEERING.

REVISIONS		
No.	DESCRIPTION	BY

DRAWN:	ACE
CHECKED:	PVH
APPROVED:	TJB

DATE:	02-01-13
CAD FILE:	HCWOLF31-WTM102312
JOB NO:	J12-1957-31

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GROUNDWATER ELEVATION CONTOUR MAP – OCTOBER 23, 2012
WHITE OAK LANDFILL
HAYWOOD COUNTY, NORTH CAROLINA

FIGURE NO.
2

APPENDICES

APPENDIX A

SUMMARY TABLES OF GROUNDWATER ANALYTICAL RESULTS

White Oak Landfill - Haywood Co., NC
Groundwater Sampling Event (4-24-2000)

TEST	UNITS	MRL	MCL	MW-11S	MW-11D	MW-14	MW-1A	MW-2A	MW-2D	MW-3A	MW-3D	MW-4A	MW-8	MW-15	MW-16	MW-17	EQUIP. BLANK
pH	pH units (on-site)	-	NE	**6.9**	NS	NS	**6.1**	**5.1**	**5.1**	**6.2**	**5.9**	**5.4**	**5.2**	NS	NP	NP	NS
Specific Conductance	µmhos/cm (on-site)	1	NE	**72**	NS	NS	**69**	**55**	**51**	**89**	**85**	**89**	**100**	NS	NP	NP	NS
Temperature	°C (on-site)	-	NE	**12**	NS	NS	**13**	**14**	**14**	**12**	**12**	**13**	**13**	NS	NP	NP	NS
Turbidity	NTU (on-site)	NT	NE	NT	NS	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NS
Total Antimony (Sb)	µg/l	10	NE	ND	NS	NS	ND	ND	ND	ND	ND	ND	ND	NS	NP	NP	NS
Total Arsenic (As)	µg/l	10	50	ND	NS	NS	ND	ND	ND	ND	ND	ND	ND	NS	NP	NP	NS
Total Barium (Ba)	µg/l	5	1000	**250**	NS	NS	**240**	**420**	**200**	**63**	**300**	**93**	**230**	NS	NP	NP	NS
Total Beryllium (Be)	µg/l	2	NE	**4.4**	NS	NS	ND	**2**	ND	**2.2**	ND	ND	ND	NS	NP	NP	NS
Total Cadmium (Cd)	µg/l	1	5	**2**	NS	NS	ND	**1.3**	**1.2**	**1.3**	**2.1**	ND	**5.4**	NS	NP	NP	NS
Total Chromium (Cr)	µg/l	5	50	**15**	NS	NS	**18**	**17**	**11**	ND	**26**	**5.4**	**50**	NS	NP	NP	NS
Total Cobalt (Co)	µg/l	5	NE	ND	NS	NS	ND	**8.2**	**5.4**	ND	**14**	ND	**16**	NS	NP	NP	NS
Total Copper (Cu)	µg/l	5	1000	**12**	NS	NS	ND	ND	**13**	ND	**27**	ND	**22**	NS	NP	NP	NS
Total Lead (Pb)	µg/l	10	15	**35**	NS	NS	ND	ND	ND	ND	**11**	ND	ND	NS	NP	NP	NS
Total Nickel (Ni)	µg/l	5	100	**15**	NS	NS	**17**	**12**	**8.3**	ND	**24**	**6.7**	**22**	NS	NP	NP	NS
Total Selenium (Se)	µg/l	20	50	ND	NS	NS	ND	ND	ND	ND	ND	ND	ND	NS	NP	NP	NS
Total Silver (Ag)	µg/l	2	18	**3.7**	NS	NS	ND	ND	ND	**6.9**	ND	ND	ND	NS	NP	NP	NS
Total Thallium (Tl)	µg/l	2	NE	**2**	NS	NS	ND	**3**	**2**	**4**	ND	**2**	**5**	NS	NP	NP	NS
Total Vanadium (V)	µg/l	5	NE	**17**	NS	NS	**19**	**32**	**21**	ND	**29**	**8.9**	**78**	NS	NP	NP	NS
Total Zinc (Zn)	µg/l	10	2100	**150**	NS	NS	**35**	**48**	**36**	**12**	**43**	**28**	**68**	NS	NP	NP	NS
Acetone	µg/l	100	700	NT	NS	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NS
Acrylonitrile	µg/l	200	NE	NT	NS	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NS
Benzene	µg/l	5	1	NT	NS	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NS
Bromochloromethane	µg/l	5	NE	NT	NS	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NS
Bromodichloromethane	µg/l	5	NE	NT	NS	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NS
Bromoform	µg/l	5	0.19	NT	NS	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NS
Carbon Disulfide	µg/l	100	NE	NT	NS	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NS
Bromomethane (Methylbromide)	µg/l	10	NE	NT	NS	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NS
Carbon tetrachloride	µg/l	10	0.3	NT	NS	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NS
Chlorobenzene (mono)	µg/l	5	50	NT	NS	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NS
Chloroethane	µg/l	10	NE	NT	NS	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NS
Chloroform	µg/l	5	0.19	NT	NS	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NS
Chloromethane (Methylchloride)	µg/l	10	NE	NT	NS	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NS
Dibromochloromethane	µg/l	5	NE	NT	NS	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NS
1,2-Dibromo-3-chloropropane; DBCP	µg/l	25	0.025	NT	NS	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NS
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.0004	NT	NS	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NS
Dibromomethane	µg/l	10	NE	NT	NS	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NS
1,2-Dichlorobenzene	µg/l	5	620	NT	NS	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NS
1,4-Dichlorobenzene	µg/l	5	75	NT	NS	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NS
trans-1,4-Dichloro-2-butene	µg/l	100	NE	NT	NS	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NS
1,1-Dichloroethane	µg/l	5	700	NT	NS	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NS
1,2-Dichloroethane	µg/l	5	0.38	NT	NS	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NS
1,1-Dichloroethene (-ethylene)	µg/l	5	7	NT	NS	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NS
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	NT	NS	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NS
trans-1,2-Dichloroethene (-ylene)	µg/l	5	70	NT	NS	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NS
1,2-Dichloropropane	µg/l	5	0.56	NT	NS	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NS
cis-1,3-Dichloropropene (-propylene)	µg/l	10	NE	NT	NS	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NS
trans-1,3-Dichloropropene (-propylene)	µg/l	10	NE	NT	NS	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NS
Ethylbenzene	µg/l	5	29	NT	NS	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NS
2-Hexanone	µg/l	50	NE	NT	NS	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NS
Iodomethane	µg/l	10	NE	NT	NS	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NS
Dichloromethane (Methylene chloride)	µg/l	10	5	NT	NS	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NS
2-Butanone (Methyl ethyl ketone)	µg/l	100	170	NT	NS	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NS
4-Methyl-2-Pentanone	µg/l	100	NE	NT	NS	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NS
Styrene	µg/l	10	100	NT	NS	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NS
1,1,1,2-Tetrachloroethane	µg/l	5	NE	NT	NS	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NS
1,1,2,2-Tetrachloroethane	µg/l	5	NE	NT	NS	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NS
Tetrachloroethene (-ethylene)	µg/l	5	0.7	NT	NS	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NS
Toluene	µg/l	5	1000	NT	NS	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NS
1,1,1-Trichloroethane	µg/l	5	200	NT	NS	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NS
1,1,2-Trichloroethane	µg/l	5	NE	NT	NS	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NS
Trichloroethene (-ethylene)	µg/l	5	2.8	NT	NS	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NS
Trichlorofluoromethane	µg/l	5	2100	NT	NS	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NS
1,2,3-Trichloropropane	µg/l	15	NE	NT	NS	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NS
Vinyl acetate	µg/l	50	NE	NT	NS	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NS
Vinyl chloride	µg/l	10	0.015	NT	NS	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NS
Xylene	µg/l	5	530	NT	NS	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NS

Notes:

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MRL = Laboratory Method Reporting Limit

ND = Not Detected at the method detection limit

NS = Not Sampled

NT = Not Tested

NE = Not Established; North Carolina has not established a MCL

NP = Not Present during sampling event

Shaded cells indicated exceedances of MCLs.

White Oak Landfill - Haywood Co., NC
Groundwater Sampling Event (6-26-2000)

TEST	UNITS	MRL	MCL	MW-11S	MW-11D	MW-14	MW-1A	MW-2	MW-2D	MW-3	MW-3D	MW-4A	MW-8	MW-15	MW-16	MW-17	EQUIP. BLANK
pH	pH units (on-site)	-	NE	**5.9**	**6.8**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Specific Conductance	µmhos/cm (on-site)	1	NE	**29**	**60**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Temperature	°C (on-site)	-	NE	**14**	**14**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Turbidity	NTU (on-site)	NT	NE	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Total Antimony (Sb)	µg/l	10	NE	ND	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Total Arsenic (As)	µg/l	10	50	ND	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Total Barium (Ba)	µg/l	5	1000	**300**	**67**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Total Beryllium (Be)	µg/l	2	NE	ND	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Total Cadmium (Cd)	µg/l	1	5	**1.6**	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Total Chromium (Cr)	µg/l	5	50	**22**	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Total Cobalt (Co)	µg/l	5	NE	**10**	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Total Copper (Cu)	µg/l	5	1000	**17**	**6**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Total Lead (Pb)	µg/l	10	15	ND	**10**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Total Nickel (Ni)	µg/l	5	100	**15**	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Total Selenium (Se)	µg/l	20	50	ND	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Total Silver (Ag)	µg/l	2	18	ND	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Total Thallium (Tl)	µg/l	2	NE	ND	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Total Vanadium (V)	µg/l	5	NE	**40**	**6.3**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Total Zinc (Zn)	µg/l	10	2100	**37**	**12**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Acetone	µg/l	100	700	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Acrylonitrile	µg/l	200	NE	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Benzene	µg/l	5	1	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Bromochloromethane	µg/l	5	NE	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Bromodichloromethane	µg/l	5	NE	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Bromoform	µg/l	5	0.19	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Carbon Disulfide	µg/l	100	NE	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Bromomethane (Methylbromide)	µg/l	10	NE	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Carbon tetrachloride	µg/l	10	0.3	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Chlorobenzene (mono)	µg/l	5	50	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Chloroethane	µg/l	10	NE	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Chloroform	µg/l	5	0.19	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Chloromethane (Methylchloride)	µg/l	10	NE	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Dibromochloromethane	µg/l	5	NE	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
1,2-Dibromo-3-chloropropane; DBCP	µg/l	25	0.025	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.0004	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Dibromomethane	µg/l	10	NE	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
1,2-Dichlorobenzene	µg/l	5	620	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
1,4-Dichlorobenzene	µg/l	5	75	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
trans-1,4-Dichloro-2-butene	µg/l	100	NE	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
1,1-Dichloroethane	µg/l	5	700	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
1,2-Dichloroethane	µg/l	5	0.38	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
1,1-Dichloroethene (-ethylene)	µg/l	5	7	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
trans-1,2-Dichloroethene (-ylene)	µg/l	5	70	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
1,2-Dichloropropane	µg/l	5	0.56	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
cis-1,3-Dichloropropene (-propylene)	µg/l	10	NE	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
trans-1,3-Dichloropropene (-propylene)	µg/l	10	NE	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Ethylbenzene	µg/l	5	29	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
2-Hexanone	µg/l	50	NE	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Iodomethane	µg/l	10	NE	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Dichloromethane (Methylene chloride)	µg/l	10	5	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
2-Butanone (Methyl ethyl ketone)	µg/l	100	170	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
4-Methyl-2-Pentanone	µg/l	100	NE	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Styrene	µg/l	10	100	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
1,1,1,2-Tetrachloroethane	µg/l	5	NE	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
1,1,2,2-Tetrachloroethane	µg/l	5	NE	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Tetrachloroethene (-ethylene)	µg/l	5	0.7	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Toluene	µg/l	5	1000	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
1,1,1-Trichloroethane	µg/l	5	200	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
1,1,2-Trichloroethane	µg/l	5	NE	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Trichloroethene (-ethylene)	µg/l	5	2.8	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Trichlorofluoromethane	µg/l	5	2100	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
1,2,3-Trichloropropane	µg/l	15	NE	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Vinyl acetate	µg/l	50	NE	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Vinyl chloride	µg/l	10	0.015	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Xylene	µg/l	5	530	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT

Notes:

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White Oak Landfill - Haywood Co., NC
Groundwater Sampling Event (7-26-2000)

TEST	UNITS	MRL	MCL	MW-11S	MW-11D	MW-14	MW-1A	MW-2	MW-2D	MW-3	MW-3D	MW-4A	MW-8	MW-15	MW-16	MW-17	EQUIP. BLANK
pH	pH units (on-site)	-	NE	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Specific Conductance	µmhos/cm (on-site)	1	NE	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Temperature	°C (on-site)	-	NE	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Turbidity	NTU (on-site)	NT	NE	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Total Antimony (Sb)	µg/l	10	NE	ND	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Total Arsenic (As)	µg/l	10	50	ND	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Total Barium (Ba)	µg/l	5	1000	**330**	**30**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Total Beryllium (Be)	µg/l	2	NE	ND	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Total Cadmium (Cd)	µg/l	1	5	**1.1**	**3.2**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Total Chromium (Cr)	µg/l	5	50	**29**	**20**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Total Cobalt (Co)	µg/l	5	NE	**9.9**	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Total Copper (Cu)	µg/l	5	1000	**12**	**6.1**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Total Lead (Pb)	µg/l	10	15	ND	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Total Nickel (Ni)	µg/l	5	100	**16**	**9.7**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Total Selenium (Se)	µg/l	20	50	ND	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Total Silver (Ag)	µg/l	2	18	ND	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Total Thallium (Tl)	µg/l	2	NE	ND	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Total Vanadium (V)	µg/l	5	NE	**45**	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Total Zinc (Zn)	µg/l	10	2100	**65**	**66**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Acetone	µg/l	100	700	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Acrylonitrile	µg/l	200	NE	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Benzene	µg/l	5	1	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Bromochloromethane	µg/l	5	NE	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Bromodichloromethane	µg/l	5	NE	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Bromoform	µg/l	5	0.19	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Carbon Disulfide	µg/l	100	NE	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Bromomethane (Methylbromide)	µg/l	10	NE	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Carbon tetrachloride	µg/l	10	0.3	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Chlorobenzene (mono)	µg/l	5	50	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Chloroethane	µg/l	10	NE	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Chloroform	µg/l	5	0.19	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Chloromethane (Methylchloride)	µg/l	10	NE	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Dibromochloromethane	µg/l	5	NE	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
1,2-Dibromo-3-chloropropane; DBCP	µg/l	25	0.025	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.0004	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Dibromomethane	µg/l	10	NE	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
1,2-Dichlorobenzene	µg/l	5	620	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
1,4-Dichlorobenzene	µg/l	5	75	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
trans-1,4-Dichloro-2-butene	µg/l	100	NE	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
1,1-Dichloroethane	µg/l	5	700	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
1,2-Dichloroethane	µg/l	5	0.38	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
1,1-Dichloroethene (-ethylene)	µg/l	5	7	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
trans-1,2-Dichloroethene (-ylene)	µg/l	5	70	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
1,2-Dichloropropane	µg/l	5	0.56	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
cis-1,3-Dichloropropene (-propylene)	µg/l	10	NE	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
trans-1,3-Dichloropropene (-propylene)	µg/l	10	NE	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Ethylbenzene	µg/l	5	29	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
2-Hexanone	µg/l	50	NE	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Iodomethane	µg/l	10	NE	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Dichloromethane (Methylene chloride)	µg/l	10	5	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
2-Butanone (Methyl ethyl ketone)	µg/l	100	170	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
4-Methyl-2-Pentanone	µg/l	100	NE	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Styrene	µg/l	10	100	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
1,1,1,2-Tetrachloroethane	µg/l	5	NE	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
1,1,2,2-Tetrachloroethane	µg/l	5	NE	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Tetrachloroethene (-ethylene)	µg/l	5	0.7	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Toluene	µg/l	5	1000	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
1,1,1-Trichloroethane	µg/l	5	200	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
1,1,2-Trichloroethane	µg/l	5	NE	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Trichloroethene (-ethylene)	µg/l	5	2.8	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Trichlorofluoromethane	µg/l	5	2100	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
1,2,3-Trichloropropane	µg/l	15	NE	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Vinyl acetate	µg/l	50	NE	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Vinyl chloride	µg/l	10	0.015	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Xylene	µg/l	5	530	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT

Notes:

MCL = Maximum Contaminant Level, as established in the NCDENR, Classifications of Water Quality Standards Applicable to Groundwaters of North Carolina, Section 15A NCAC 2L.202.

MRL = Laboratory Method Reporting Limit

ND = Not Detected at the method detection limit

NS = Not Sampled

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NE = Not Established; North Carolina has not established a MCL

NP = Not Present during sampling event

Shaded cells indicated exceedances of MCLs.

White Oak Landfill - Haywood Co., NC
Groundwater Sampling Event (9-18-2000)

TEST	UNITS	MRL	MCL	MW-11S	MW-11D	MW-14	MW-1A	MW-2	MW-2D	MW-3	MW-3D	MW-4A	MW-8	MW-15	MW-16	MW-17	EQUIP. BLANK
pH	pH units (on-site)	-	NE	NS	NS	NS	NT	NT	NS	NS	NS	NT	NS	NS	NP	NP	NT
Specific Conductance	µmhos/cm (on-site)	1	NE	NS	NS	NS	NT	NT	NS	NS	NS	NT	NS	NS	NP	NP	NT
Temperature	°C (on-site)	-	NE	NS	NS	NS	NT	NT	NS	NS	NS	NT	NS	NS	NP	NP	NT
Turbidity	NTU (on-site)	NT	NE	NS	NS	NS	NT	NT	NS	NS	NS	NT	NS	NS	NP	NP	NT
Total Antimony (Sb)	µg/l	30	NE	NS	NS	NS	NT	NT	NS	NS	NS	NT	NS	NS	NP	NP	ND
Total Arsenic (As)	µg/l	10	50	NS	NS	NS	NT	NT	NS	NS	NS	NT	NS	NS	NP	NP	ND
Total Barium (Ba)	µg/l	500	1000	NS	NS	NS	**330**	**92**	NS	NS	NS	NT	NS	NS	NP	NP	ND
Total Beryllium (Be)	µg/l	2	NE	NS	NS	NS	NT	NT	NS	NS	NS	NT	NS	NS	NP	NP	ND
Total Cadmium (Cd)	µg/l	1	5	NS	NS	NS	NT	NT	NS	NS	NS	NT	NS	NS	NP	NP	ND
Total Chromium (Cr)	µg/l	10	50	NS	NS	NS	NT	NT	NS	NS	NS	NT	NS	NS	NP	NP	ND
Total Cobalt (Co)	µg/l	10	NE	NS	NS	NS	NT	NT	NS	NS	NS	NT	NS	NS	NP	NP	ND
Total Copper (Cu)	µg/l	200	1000	NS	NS	NS	NT	NT	NS	NS	NS	NT	NS	NS	NP	NP	ND
Total Lead (Pb)	µg/l	10	15	NS	NS	NS	NT	NT	NS	NS	NS	ND	NS	NS	NP	NP	ND
Total Nickel (Ni)	µg/l	50	100	NS	NS	NS	**8.8**	NT	NS	NS	NS	NT	NS	NS	NP	NP	ND
Total Selenium (Se)	µg/l	20	50	NS	NS	NS	NT	NT	NS	NS	NS	NT	NS	NS	NP	NP	ND
Total Silver (Ag)	µg/l	10	18	NS	NS	NS	NT	NT	NS	NS	NS	NT	NS	NS	NP	NP	ND
Total Thallium (Tl)	µg/l	20	NE	NS	NS	NS	NT	NT	NS	NS	NS	NT	NS	NS	NP	NP	ND
Total Vanadium (V)	µg/l	40	NE	NS	NS	NS	NT	NT	NS	NS	NS	NT	NS	NS	NP	NP	ND
Total Zinc (Zn)	µg/l	50	2100	NS	NS	NS	NT	NT	NS	NS	NS	NT	NS	NS	NP	NP	ND
Acetone	µg/l	100	700	NS	NS	NS	NT	NT	NS	NS	NS	NT	NS	NS	NP	NP	NT
Acrylonitrile	µg/l	200	NE	NS	NS	NS	NT	NT	NS	NS	NS	NT	NS	NS	NP	NP	NT
Benzene	µg/l	5	1	NS	NS	NS	NT	NT	NS	NS	NS	NT	NS	NS	NP	NP	NT
Bromochloromethane	µg/l	5	NE	NS	NS	NS	NT	NT	NS	NS	NS	NT	NS	NS	NP	NP	NT
Bromodichloromethane	µg/l	5	NE	NS	NS	NS	NT	NT	NS	NS	NS	NT	NS	NS	NP	NP	NT
Bromoform	µg/l	5	0.19	NS	NS	NS	NT	NT	NS	NS	NS	NT	NS	NS	NP	NP	NT
Carbon Disulfide	µg/l	100	NE	NS	NS	NS	NT	NT	NS	NS	NS	NT	NS	NS	NP	NP	NT
Bromomethane (Methylbromide)	µg/l	10	NE	NS	NS	NS	NT	NT	NS	NS	NS	NT	NS	NS	NP	NP	NT
Carbon tetrachloride	µg/l	10	0.3	NS	NS	NS	NT	NT	NS	NS	NS	NT	NS	NS	NP	NP	NT
Chlorobenzene (mono)	µg/l	5	50	NS	NS	NS	NT	NT	NS	NS	NS	NT	NS	NS	NP	NP	NT
Chloroethane	µg/l	10	NE	NS	NS	NS	NT	NT	NS	NS	NS	NT	NS	NS	NP	NP	NT
Chloroform	µg/l	5	0.19	NS	NS	NS	NT	NT	NS	NS	NS	NT	NS	NS	NP	NP	NT
Chloromethane (Methylchloride)	µg/l	10	NE	NS	NS	NS	NT	NT	NS	NS	NS	NT	NS	NS	NP	NP	NT
Dibromochloromethane	µg/l	5	NE	NS	NS	NS	NT	NT	NS	NS	NS	NT	NS	NS	NP	NP	NT
1,2-Dibromo-3-chloropropane; DBCP	µg/l	25	0.025	NS	NS	NS	NT	NT	NS	NS	NS	NT	NS	NS	NP	NP	NT
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.0004	NS	NS	NS	NT	NT	NS	NS	NS	NT	NS	NS	NP	NP	NT
Dibromomethane	µg/l	10	NE	NS	NS	NS	NT	NT	NS	NS	NS	NT	NS	NS	NP	NP	NT
1,2-Dichlorobenzene	µg/l	5	620	NS	NS	NS	NT	NT	NS	NS	NS	NT	NS	NS	NP	NP	NT
1,4-Dichlorobenzene	µg/l	5	75	NS	NS	NS	NT	NT	NS	NS	NS	NT	NS	NS	NP	NP	NT
trans-1,4-Dichloro-2-butene	µg/l	100	NE	NS	NS	NS	NT	NT	NS	NS	NS	NT	NS	NS	NP	NP	NT
1,1-Dichloroethane	µg/l	5	700	NS	NS	NS	NT	NT	NS	NS	NS	NT	NS	NS	NP	NP	NT
1,2-Dichloroethane	µg/l	5	0.38	NS	NS	NS	NT	NT	NS	NS	NS	NT	NS	NS	NP	NP	NT
1,1-Dichloroethene (-ethylene)	µg/l	5	7	NS	NS	NS	NT	NT	NS	NS	NS	NT	NS	NS	NP	NP	NT
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	NS	NS	NS	NT	NT	NS	NS	NS	NT	NS	NS	NP	NP	NT
trans-1,2-Dichloroethene (-ylene)	µg/l	5	70	NS	NS	NS	NT	NT	NS	NS	NS	NT	NS	NS	NP	NP	NT
1,2-Dichloropropane	µg/l	5	0.56	NS	NS	NS	NT	NT	NS	NS	NS	NT	NS	NS	NP	NP	NT
cis-1,3-Dichloropropene (-propylene)	µg/l	10	NE	NS	NS	NS	NT	NT	NS	NS	NS	NT	NS	NS	NP	NP	NT
trans-1,3-Dichloropropene (-propylene)	µg/l	10	NE	NS	NS	NS	NT	NT	NS	NS	NS	NT	NS	NS	NP	NP	NT
Ethylbenzene	µg/l	5	29	NS	NS	NS	NT	NT	NS	NS	NS	NT	NS	NS	NP	NP	NT
2-Hexanone	µg/l	50	NE	NS	NS	NS	NT	NT	NS	NS	NS	NT	NS	NS	NP	NP	NT
Iodomethane	µg/l	10	NE	NS	NS	NS	NT	NT	NS	NS	NS	NT	NS	NS	NP	NP	NT
Dichloromethane (Methylene chloride)	µg/l	10	5	NS	NS	NS	NT	NT	NS	NS	NS	NT	NS	NS	NP	NP	NT
2-Butanone (Methyl ethyl ketone)	µg/l	100	170	NS	NS	NS	NT	NT	NS	NS	NS	NT	NS	NS	NP	NP	NT
4-Methyl-2-Pentanone	µg/l	100	NE	NS	NS	NS	NT	NT	NS	NS	NS	NT	NS	NS	NP	NP	NT
Styrene	µg/l	10	100	NS	NS	NS	NT	NT	NS	NS	NS	NT	NS	NS	NP	NP	NT
1,1,1,2-Tetrachloroethane	µg/l	5	NE	NS	NS	NS	NT	NT	NS	NS	NS	NT	NS	NS	NP	NP	NT
1,1,2,2-Tetrachloroethane	µg/l	5	NE	NS	NS	NS	NT	NT	NS	NS	NS	NT	NS	NS	NP	NP	NT
Tetrachloroethene (-ethylene)	µg/l	5	0.7	NS	NS	NS	NT	NT	NS	NS	NS	NT	NS	NS	NP	NP	NT
Toluene	µg/l	5	1000	NS	NS	NS	NT	NT	NS	NS	NS	NT	NS	NS	NP	NP	NT
1,1,1-Trichloroethane	µg/l	5	200	NS	NS	NS	NT	NT	NS	NS	NS	NT	NS	NS	NP	NP	NT
1,1,2-Trichloroethane	µg/l	5	NE	NS	NS	NS	NT	NT	NS	NS	NS	NT	NS	NS	NP	NP	NT
Trichloroethene (-ethylene)	µg/l	5	2.8	NS	NS	NS	NT	NT	NS	NS	NS	NT	NS	NS	NP	NP	NT
Trichlorofluoromethane	µg/l	5	2100	NS	NS	NS	NT	NT	NS	NS	NS	NT	NS	NS	NP	NP	NT
1,2,3-Trichloropropane	µg/l	15	NE	NS	NS	NS	NT	NT	NS	NS	NS	NT	NS	NS	NP	NP	NT
Vinyl acetate	µg/l	50	NE	NS	NS	NS	NT	NT	NS	NS	NS	NT	NS	NS	NP	NP	NT
Vinyl chloride	µg/l	10	0.015	NS	NS	NS	NT	NT	NS	NS	NS	NT	NS	NS	NP	NP	NT
Xylene	µg/l	5	530	NS	NS	NS	NT	NT	NS	NS	NS	NT	NS	NS	NP	NP	NT

Notes:

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Shaded cells indicated exceedances of MCLs.

White Oak Landfill - Haywood Co., NC
Groundwater Sampling Event (4-9-2001)

TEST	UNITS	MRL	MCL	MW-11S	MW-11D	MW-14	MW-1A	MW-2	MW-2D	MW-3	MW-3D	MW-4A	MW-8	MW-15	MW-16	MW-17	EQUIP. BLANK
pH	pH units (on-site)	-	NE	**5.9**	**7.3**	NS	**6.4**	**6**	**6.3**	**6**	**6.1**	**8.2**	**5.8**	NS	NP	NP	NT
Specific Conductance	µmhos/cm (on-site)	1	NE	**20**	**60**	NS	**75**	**75**	**68**	**130**	**90**	**110**	**125**	NS	NP	NP	NT
Temperature	°C (on-site)	-	NE	**15**	**15**	NS	**13**	**15**	**15**	**14**	**15**	**15**	**15**	NS	NP	NP	NT
Turbidity	NTU (on-site)	NT	NE	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
Total Antimony (Sb)	µg/l	10	NE	ND	ND	NS	ND	ND	ND	ND	ND	ND	ND	NS	NP	NP	ND
Total Arsenic (As)	µg/l	10	50	ND	ND	NS	ND	ND	ND	ND	ND	ND	ND	NS	NP	NP	ND
Total Barium (Ba)	µg/l	5	1000	**1300**	**380**	NS	**180**	**330**	**120**	**80**	**290**	**360**	**970**	NS	NP	NP	ND
Total Beryllium (Be)	µg/l	2	NE	**2.3**	**7**	NS	ND	ND	ND	ND	ND	**2.4**	**4.8**	NS	NP	NP	ND
Total Cadmium (Cd)	µg/l	1	5	**130**	**2**	NS	ND	ND	ND	**1.7**	**1.8**	**2.7**	**19**	NS	NP	NP	ND
Total Chromium (Cr)	µg/l	5	50	**130**	ND	NS	**11**	**8.4**	ND	ND	**20**	**27**	**160**	NS	NP	NP	ND
Total Cobalt (Co)	µg/l	5	NE	**54**	ND	NS	ND	ND	ND	**13**	**12**	**13**	**59**	NS	NP	NP	ND
Total Copper (Cu)	µg/l	5	1000	**77**	**8.4**	NS	ND	ND	**5.4**	ND	**26**	**38**	**110**	NS	NP	NP	ND
Total Lead (Pb)	µg/l	10	15	ND	**59**	NS	ND	ND	ND	ND	ND	**18**	**2.5**	NS	NP	NP	ND
Total Nickel (Ni)	µg/l	5	100	**76**	**7.2**	NS	**9.6**	**5.3**	ND	ND	**18**	**28**	**6.1**	NS	NP	NP	ND
Total Selenium (Se)	µg/l	20	50	ND	ND	NS	ND	ND	ND	ND	ND	ND	ND	NS	NP	NP	ND
Total Silver (Ag)	µg/l	2	18	ND	ND	NS	ND	ND	ND	ND	ND	ND	ND	NS	NP	NP	ND
Total Thallium (Tl)	µg/l	2	NE	**40**	ND	NS	ND	ND	ND	ND	ND	ND	ND	NS	NP	NP	ND
Total Vanadium (V)	µg/l	5	NE	**250**	**1.4**	NS	**13**	**19**	**9.3**	ND	**24**	**41**	**230**	NS	NP	NP	ND
Total Zinc (Zn)	µg/l	10	2100	**230**	**130**	NS	**12**	**24**	**18**	**17**	**33**	**75**	**200**	NS	NP	NP	**24**
Acetone	µg/l	100	700	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
Acrylonitrile	µg/l	200	NE	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
Benzene	µg/l	5	1	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
Bromochloromethane	µg/l	5	NE	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
Bromodichloromethane	µg/l	5	NE	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
Bromoform	µg/l	5	0.19	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
Carbon Disulfide	µg/l	100	NE	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
Bromomethane (Methylbromide)	µg/l	10	NE	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
Carbon tetrachloride	µg/l	10	0.3	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
Chlorobenzene (mono)	µg/l	5	50	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
Chloroethane	µg/l	10	NE	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
Chloroform	µg/l	5	0.19	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
Chloromethane (Methylchloride)	µg/l	10	NE	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
Dibromochloromethane	µg/l	5	NE	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
1,2-Dibromo-3-chloropropane; DBCP	µg/l	25	0.025	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.0004	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
Dibromomethane	µg/l	10	NE	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
1,2-Dichlorobenzene	µg/l	5	620	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
1,4-Dichlorobenzene	µg/l	5	75	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
trans-1,4-Dichloro-2-butene	µg/l	100	NE	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
1,1-Dichloroethane	µg/l	5	700	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
1,2-Dichloroethane	µg/l	5	0.38	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
1,1-Dichloroethene (-ethylene)	µg/l	5	7	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
trans-1,2-Dichloroethene (-ylene)	µg/l	5	70	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
1,2-Dichloropropane	µg/l	5	0.56	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
cis-1,3-Dichloropropene (-propylene)	µg/l	10	NE	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
trans-1,3-Dichloropropene (-propylene)	µg/l	10	NE	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
Ethylbenzene	µg/l	5	29	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
2-Hexanone	µg/l	50	NE	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
Iodomethane	µg/l	10	NE	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
Dichloromethane (Methylene chloride)	µg/l	10	5	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
2-Butanone (Methyl ethyl ketone)	µg/l	100	170	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
4-Methyl-2-Pentanone	µg/l	100	NE	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
Styrene	µg/l	10	100	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
1,1,1,2-Tetrachloroethane	µg/l	5	NE	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
1,1,2,2-Tetrachloroethane	µg/l	5	NE	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
Tetrachloroethene (-ethylene)	µg/l	5	0.7	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
Toluene	µg/l	5	1000	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
1,1,1-Trichloroethane	µg/l	5	200	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
1,1,2-Trichloroethane	µg/l	5	NE	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
Trichloroethene (-ethylene)	µg/l	5	2.8	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
Trichlorofluoromethane	µg/l	5	2100	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
1,2,3-Trichloropropane	µg/l	15	NE	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
Vinyl acetate	µg/l	50	NE	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
Vinyl chloride	µg/l	10	0.015	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
Xylene	µg/l	5	530	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT

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White Oak Landfill - Haywood Co., NC
Groundwater Sampling Event (9-18-2001)

TEST	UNITS	MRL	MCL	MW-11S	MW-11D	MW-14	MW-1A	MW-2	MW-2D	MW-3	MW-3D	MW-4A	MW-8	MW-15	MW-16	MW-17	EQUIP. BLANK
pH	pH units (on-site)	-	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Specific Conductance	µmhos/cm (on-site)	1	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Temperature	°C (on-site)	-	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Turbidity	NTU (on-site)	NT	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Total Antimony (Sb)	µg/l	10	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Total Arsenic (As)	µg/l	10	50	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Total Barium (Ba)	µg/l	5	1000	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Total Beryllium (Be)	µg/l	2	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Total Cadmium (Cd)	µg/l	1	5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Total Chromium (Cr)	µg/l	5	50	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Total Cobalt (Co)	µg/l	5	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Total Copper (Cu)	µg/l	5	1000	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Total Lead (Pb)	µg/l	10	15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Total Nickel (Ni)	µg/l	5	100	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Total Selenium (Se)	µg/l	20	50	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Total Silver (Ag)	µg/l	2	18	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Total Thallium (Tl)	µg/l	2	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Total Vanadium (V)	µg/l	5	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Total Zinc (Zn)	µg/l	10	2100	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Acetone	µg/l	100	700	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Acrylonitrile	µg/l	200	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Benzene	µg/l	5	1	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Bromochloromethane	µg/l	5	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Bromodichloromethane	µg/l	5	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Bromoform	µg/l	5	0.19	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Carbon Disulfide	µg/l	100	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Bromomethane (Methylbromide)	µg/l	10	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Carbon tetrachloride	µg/l	10	0.3	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Chlorobenzene (mono)	µg/l	5	50	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Chloroethane	µg/l	10	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Chloroform	µg/l	5	0.19	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Chloromethane (Methylchloride)	µg/l	10	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Dibromochloromethane	µg/l	5	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
1,2-Dibromo-3-chloropropane; DBCP	µg/l	25	0.025	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.0004	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Dibromomethane	µg/l	10	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
1,2-Dichlorobenzene	µg/l	5	620	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
1,4-Dichlorobenzene	µg/l	5	75	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
trans-1,4-Dichloro-2-butene	µg/l	100	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
1,1-Dichloroethane	µg/l	5	700	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
1,2-Dichloroethane	µg/l	5	0.38	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
1,1-Dichloroethene (-ethylene)	µg/l	5	7	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
trans-1,2-Dichloroethene (-ylene)	µg/l	5	70	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
1,2-Dichloropropane	µg/l	5	0.56	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
cis-1,3-Dichloropropene (-propylene)	µg/l	10	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
trans-1,3-Dichloropropene (-propylene)	µg/l	10	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Ethylbenzene	µg/l	5	29	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
2-Hexanone	µg/l	50	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Iodomethane	µg/l	10	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Dichloromethane (Methylene chloride)	µg/l	10	5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
2-Butanone (Methyl ethyl ketone)	µg/l	100	170	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
4-Methyl-2-Pentanone	µg/l	100	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Styrene	µg/l	10	100	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
1,1,1,2-Tetrachloroethane	µg/l	5	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
1,1,2,2-Tetrachloroethane	µg/l	5	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Tetrachloroethene (-ethylene)	µg/l	5	0.7	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Toluene	µg/l	5	1000	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
1,1,1-Trichloroethane	µg/l	5	200	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
1,1,2-Trichloroethane	µg/l	5	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Trichloroethene (-ethylene)	µg/l	5	2.8	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Trichlorofluoromethane	µg/l	5	2100	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
1,2,3-Trichloropropane	µg/l	15	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Vinyl acetate	µg/l	50	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Vinyl chloride	µg/l	10	0.015	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Xylene	µg/l	5	530	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT

Notes:

MCL = Maximum Contaminant Level, as established in the NCDENR, Classifications of Water Quality Standards Applicable to Groundwaters of North Carolina, Section 15A NCAC 2L.202.

MRL = Laboratory Method Reporting Limit

ND = Not Detected at the method detection limit

NS = Not Sampled

NT = Not Tested

NE = Not Established; North Carolina has not established a MCL

NP = Not Present during sampling event

Shaded cells indicated exceedances of MCLs.

White Oak Landfill - Haywood Co., NC
Groundwater Sampling Event (10-29-2001)

TEST	UNITS	MRL	MCL	MW-11S	MW-11D	MW-14	MW-1A	MW-2	MW-2D	MW-3	MW-3D	MW-4A	MW-8	MW-15	MW-16	MW-17	EQUIP. BLANK
pH	pH units (on-site)	-	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Specific Conductance	µmhos/cm (on-site)	1	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Temperature	°C (on-site)	-	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Turbidity	NTU (on-site)	NT	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Total Antimony (Sb)	µg/l	10	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Total Arsenic (As)	µg/l	10	50	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Total Barium (Ba)	µg/l	5	1000	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Total Beryllium (Be)	µg/l	2	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Total Cadmium (Cd)	µg/l	1	5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Total Chromium (Cr)	µg/l	5	50	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Total Cobalt (Co)	µg/l	5	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Total Copper (Cu)	µg/l	5	1000	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Total Lead (Pb)	µg/l	10	15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Total Nickel (Ni)	µg/l	5	100	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Total Selenium (Se)	µg/l	20	50	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Total Silver (Ag)	µg/l	2	18	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Total Thallium (Tl)	µg/l	2	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	**3.1**
Total Vanadium (V)	µg/l	5	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Total Zinc (Zn)	µg/l	10	2100	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Acetone	µg/l	100	700	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Acrylonitrile	µg/l	200	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Benzene	µg/l	5	1	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Bromochloromethane	µg/l	5	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Bromodichloromethane	µg/l	5	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Bromoform	µg/l	5	0.19	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Carbon Disulfide	µg/l	100	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Bromomethane (Methylbromide)	µg/l	10	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Carbon tetrachloride	µg/l	10	0.3	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Chlorobenzene (mono)	µg/l	5	50	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Chloroethane	µg/l	10	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Chloroform	µg/l	5	0.19	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Chloromethane (Methylchloride)	µg/l	10	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Dibromochloromethane	µg/l	5	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
1,2-Dibromo-3-chloropropane; DBCP	µg/l	25	0.025	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.0004	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Dibromomethane	µg/l	10	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
1,2-Dichlorobenzene	µg/l	5	620	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
1,4-Dichlorobenzene	µg/l	5	75	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
trans-1,4-Dichloro-2-butene	µg/l	100	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
1,1-Dichloroethane	µg/l	5	700	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
1,2-Dichloroethane	µg/l	5	0.38	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
1,1-Dichloroethene (-ethylene)	µg/l	5	7	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
trans-1,2-Dichloroethene (-ylene)	µg/l	5	70	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
1,2-Dichloropropane	µg/l	5	0.56	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
cis-1,3-Dichloropropene (-propylene)	µg/l	10	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
trans-1,3-Dichloropropene (-propylene)	µg/l	10	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Ethylbenzene	µg/l	5	29	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
2-Hexanone	µg/l	50	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Iodomethane	µg/l	10	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Dichloromethane (Methylene chloride)	µg/l	10	5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
2-Butanone (Methyl ethyl ketone)	µg/l	100	170	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
4-Methyl-2-Pentanone	µg/l	100	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Styrene	µg/l	10	100	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
1,1,1,2-Tetrachloroethane	µg/l	5	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
1,1,2,2-Tetrachloroethane	µg/l	5	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Tetrachloroethene (-ethylene)	µg/l	5	0.7	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Toluene	µg/l	5	1000	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
1,1,1-Trichloroethane	µg/l	5	200	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
1,1,2-Trichloroethane	µg/l	5	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Trichloroethene (-ethylene)	µg/l	5	2.8	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Trichlorofluoromethane	µg/l	5	2100	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
1,2,3-Trichloropropane	µg/l	15	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Vinyl acetate	µg/l	50	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Vinyl chloride	µg/l	10	0.015	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Xylene	µg/l	5	530	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT

Notes:

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NE = Not Established; North Carolina has not established a MCL

NP = Not Present during sampling event

Shaded cells indicated exceedances of MCLs.

White Oak Landfill - Haywood Co., NC
Groundwater Sampling Event (1-30-2002)

TEST	UNITS	MRL	MCL	MW-11S	MW-11D	MW-14	MW-1A	MW-2	MW-2D	MW-3	MW-3D	MW-4A	MW-8	MW-15	MW-16	MW-17	EQUIP. BLANK
pH	pH units (on-site)	-	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Specific Conductance	µmhos/cm (on-site)	1	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Temperature	°C (on-site)	-	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Turbidity	NTU (on-site)	NT	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Total Antimony (Sb)	µg/l	10	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Total Arsenic (As)	µg/l	10	50	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Total Barium (Ba)	µg/l	5	1000	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Total Beryllium (Be)	µg/l	2	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Total Cadmium (Cd)	µg/l	1	5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Total Chromium (Cr)	µg/l	5	50	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Total Cobalt (Co)	µg/l	5	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Total Copper (Cu)	µg/l	5	1000	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Total Lead (Pb)	µg/l	10	15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Total Nickel (Ni)	µg/l	5	100	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Total Selenium (Se)	µg/l	20	50	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Total Silver (Ag)	µg/l	2	18	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Total Thallium (Tl)	µg/l	2	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Total Vanadium (V)	µg/l	5	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Total Zinc (Zn)	µg/l	10	2100	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Acetone	µg/l	100	700	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Acrylonitrile	µg/l	200	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Benzene	µg/l	5	1	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Bromochloromethane	µg/l	5	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Bromodichloromethane	µg/l	5	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Bromoform	µg/l	5	0.19	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Carbon Disulfide	µg/l	100	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Bromomethane (Methylbromide)	µg/l	10	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Carbon tetrachloride	µg/l	10	0.3	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Chlorobenzene (mono)	µg/l	5	50	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Chloroethane	µg/l	10	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Chloroform	µg/l	5	0.19	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Chloromethane (Methylchloride)	µg/l	10	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Dibromochloromethane	µg/l	5	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
1,2-Dibromo-3-chloropropane; DBCP	µg/l	25	0.025	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.0004	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Dibromomethane	µg/l	10	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
1,2-Dichlorobenzene	µg/l	5	620	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
1,4-Dichlorobenzene	µg/l	5	75	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
trans-1,4-Dichloro-2-butene	µg/l	100	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
1,1-Dichloroethane	µg/l	5	700	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
1,2-Dichloroethane	µg/l	5	0.38	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
1,1-Dichloroethene (-ethylene)	µg/l	5	7	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
trans-1,2-Dichloroethene (-ylene)	µg/l	5	70	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
1,2-Dichloropropane	µg/l	5	0.56	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
cis-1,3-Dichloropropene (-propylene)	µg/l	10	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
trans-1,3-Dichloropropene (-propylene)	µg/l	10	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Ethylbenzene	µg/l	5	29	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
2-Hexanone	µg/l	50	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Iodomethane	µg/l	10	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Dichloromethane (Methylene chloride)	µg/l	10	5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
2-Butanone (Methyl ethyl ketone)	µg/l	100	170	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
4-Methyl-2-Pentanone	µg/l	100	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Styrene	µg/l	10	100	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
1,1,1,2-Tetrachloroethane	µg/l	5	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
1,1,2,2-Tetrachloroethane	µg/l	5	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Tetrachloroethene (-ethylene)	µg/l	5	0.7	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Toluene	µg/l	5	1000	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
1,1,1-Trichloroethane	µg/l	5	200	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
1,1,2-Trichloroethane	µg/l	5	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Trichloroethene (-ethylene)	µg/l	5	2.8	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Trichlorofluoromethane	µg/l	5	2100	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
1,2,3-Trichloropropane	µg/l	15	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Vinyl acetate	µg/l	50	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Vinyl chloride	µg/l	10	0.015	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Xylene	µg/l	5	530	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT

Notes:

MCL = Maximum Contaminant Level, as established in the NCDENR, Classifications of Water Quality Standards Applicable to Groundwaters of North Carolina, Section 15A NCAC 2L.202.

MRL = Laboratory Method Reporting Limit

ND = Not Detected at the method detection limit

NS = Not Sampled

NT = Not Tested

NE = Not Established; North Carolina has not established a MCL

NP = Not Present during sampling event

Shaded cells indicated exceedances of MCLs.

White Oak Landfill - Haywood Co., NC
Groundwater Sampling Event (2-28-2002)

TEST	UNITS	MRL	MCL	MW-11S	MW-11D	MW-14	MW-1A	MW-2	MW-2D	MW-3	MW-3D	MW-4A	MW-8	MW-15	MW-16	MW-17	EQUIP. BLANK
pH	pH units (on-site)	-	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Specific Conductance	µmhos/cm (on-site)	1	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Temperature	°C (on-site)	-	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Turbidity	NTU (on-site)	NT	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Total Antimony (Sb)	µg/l	30	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Total Arsenic (As)	µg/l	10	50	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Total Barium (Ba)	µg/l	500	1000	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Total Beryllium (Be)	µg/l	2	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Total Cadmium (Cd)	µg/l	1	5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Total Chromium (Cr)	µg/l	10	50	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Total Cobalt (Co)	µg/l	10	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Total Copper (Cu)	µg/l	200	1000	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Total Lead (Pb)	µg/l	10	15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Total Nickel (Ni)	µg/l	50	100	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Total Selenium (Se)	µg/l	20	50	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Total Silver (Ag)	µg/l	10	18	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Total Thallium (Tl)	µg/l	20	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Total Vanadium (V)	µg/l	40	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Total Zinc (Zn)	µg/l	50	2100	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	ND
Acetone	µg/l	100	700	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Acrylonitrile	µg/l	200	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Benzene	µg/l	5	1	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Bromochloromethane	µg/l	5	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Bromodichloromethane	µg/l	5	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Bromoform	µg/l	5	0.19	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Carbon Disulfide	µg/l	100	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Bromomethane (Methylbromide)	µg/l	10	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Carbon tetrachloride	µg/l	10	0.3	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Chlorobenzene (mono)	µg/l	5	50	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Chloroethane	µg/l	10	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Chloroform	µg/l	5	0.19	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Chloromethane (Methylchloride)	µg/l	10	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Dibromochloromethane	µg/l	5	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
1,2-Dibromo-3-chloropropane; DBCP	µg/l	25	0.025	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.0004	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Dibromomethane	µg/l	10	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
1,2-Dichlorobenzene	µg/l	5	620	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
1,4-Dichlorobenzene	µg/l	5	75	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
trans-1,4-Dichloro-2-butene	µg/l	100	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
1,1-Dichloroethane	µg/l	5	700	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
1,2-Dichloroethane	µg/l	5	0.38	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
1,1-Dichloroethene (-ethylene)	µg/l	5	7	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
trans-1,2-Dichloroethene (-ylene)	µg/l	5	70	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
1,2-Dichloropropane	µg/l	5	0.56	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
cis-1,3-Dichloropropene (-propylene)	µg/l	10	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
trans-1,3-Dichloropropene (-propylene)	µg/l	10	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Ethylbenzene	µg/l	5	29	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
2-Hexanone	µg/l	50	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Iodomethane	µg/l	10	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Dichloromethane (Methylene chloride)	µg/l	10	5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
2-Butanone (Methyl ethyl ketone)	µg/l	100	170	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
4-Methyl-2-Pentanone	µg/l	100	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Styrene	µg/l	10	100	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
1,1,1,2-Tetrachloroethane	µg/l	5	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
1,1,2,2-Tetrachloroethane	µg/l	5	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Tetrachloroethene (-ethylene)	µg/l	5	0.7	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Toluene	µg/l	5	1000	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
1,1,1-Trichloroethane	µg/l	5	200	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
1,1,2-Trichloroethane	µg/l	5	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Trichloroethene (-ethylene)	µg/l	5	2.8	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Trichlorofluoromethane	µg/l	5	2100	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
1,2,3-Trichloropropane	µg/l	15	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Vinyl acetate	µg/l	50	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Vinyl chloride	µg/l	10	0.015	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT
Xylene	µg/l	5	530	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NT

Notes:

MCL = Maximum Contaminant Level, as established in the NCDENR, Classifications of Water Quality Standards Applicable to Groundwaters of North Carolina, Section 15A NCAC 2L.202.

MRL = Laboratory Method Reporting Limit

ND = Not Detected at the method detection limit

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Shaded cells indicated exceedances of MCLs.

White Oak Landfill - Haywood Co., NC
Groundwater Sampling Event (4-15-2002)

TEST	UNITS	MRL	MCL	MW-11S	MW-11D	MW-14	MW-1A	MW-2	MW-2D	MW-3	MW-3D	MW-4A	MW-8	MW-15	MW-16	MW-17	EQUIP. BLANK
pH	pH units (on-site)	-	NE	**6.01**	**6.42**	NS	**6.46**	**5.89**	**5.25**	**5.75**	**5.68**	**6.88**	**6.01**	NS	NP	NP	NT
Specific Conductance	µmhos/cm (on-site)	1	NE	**21**	**42**	NS	**75**	**82**	**84**	**101**	**93**	**94**	**125**	NS	NP	NP	NT
Temperature	°C (on-site)	-	NE	**15.9**	**17.4**	NS	**15.3**	**15.7**	**16.8**	**16.2**	**13.2**	**16.3**	**17.3**	NS	NP	NP	NT
Turbidity	NTU (on-site)	NT	NE	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
Total Antimony (Sb)	µg/l	10	NE	**15.0**	ND	NS	ND	ND	ND	NT	ND	ND	**11**	NS	NP	NP	ND
Total Arsenic (As)	µg/l	10	50	ND	ND	NS	ND	ND	ND	NT	ND	ND	ND	NS	NP	NP	ND
Total Barium (Ba)	µg/l	5	1000	**1300**	**41**	NS	ND	ND	**160**	**23**	**190**	**460**	**1400**	NS	NP	NP	ND
Total Beryllium (Be)	µg/l	2	NE	**2.1**	ND	NS	ND	ND	ND	ND	ND	**2.5**	**4.5**	NS	NP	NP	ND
Total Cadmium (Cd)	µg/l	10	5	**13**	ND	NS	ND	ND	ND	**4**	ND	**5.5**	**19**	NS	NP	NP	ND
Total Chromium (Cr)	µg/l	5	50	**170**	ND	NS	ND	ND	**5.7**	**7**	**10**	**56**	**180**	NS	NP	NP	ND
Total Cobalt (Co)	µg/l	5	NE	**58**	ND	NS	ND	ND	ND	**18**	**8.2**	**21**	**82**	NS	NP	NP	ND
Total Copper (Cu)	µg/l	2	1000	**69**	ND	NS	ND	ND	ND	ND	**13**	**68**	**120**	NS	NP	NP	**150**
Total Lead (Pb)	µg/l	10	15	**13**	ND	NS	ND	ND	ND	ND	ND	**13**	**29**	NS	NP	NP	ND
Total Nickel (Ni)	µg/l	5	100	**74**	ND	NS	ND	ND	ND	**6.2**	**9.2**	**44**	**68**	NS	NP	NP	ND
Total Selenium (Se)	µg/l	20	50	ND	ND	NS	ND	ND	ND	ND	ND	ND	ND	NS	NP	NP	ND
Total Silver (Ag)	µg/l	2	18	ND	ND	NS	ND	ND	ND	ND	ND	ND	ND	NS	NP	NP	ND
Total Thallium (Tl)	µg/l	2	NE	**40**	ND	NS	ND	ND	ND	ND	ND	ND	ND	NS	NP	NP	ND
Total Vanadium (V)	µg/l	5	NE	**240**	ND	NS	ND	ND	**11**	**21**	**14**	**69**	**260**	NS	NP	NP	ND
Total Zinc (Zn)	µg/l	10	2100	**230**	**16**	NS	ND	ND	**13**	**33**	**38**	**120**	**230**	NS	NP	NP	**15**
Acetone	µg/l	100	700	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
Acrylonitrile	µg/l	200	NE	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
Benzene	µg/l	5	1	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
Bromochloromethane	µg/l	5	NE	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
Bromodichloromethane	µg/l	5	NE	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
Bromoform	µg/l	5	0.19	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
Carbon Disulfide	µg/l	100	NE	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
Bromomethane (Methylbromide)	µg/l	10	NE	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
Carbon tetrachloride	µg/l	10	0.3	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
Chlorobenzene (mono)	µg/l	5	50	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
Chloroethane	µg/l	10	NE	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
Chloroform	µg/l	5	0.19	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
Chloromethane (Methylchloride)	µg/l	10	NE	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
Dibromochloromethane	µg/l	5	NE	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
1,2-Dibromo-3-chloropropane; DBCP	µg/l	25	0.025	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.0004	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
Dibromomethane	µg/l	10	NE	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
1,2-Dichlorobenzene	µg/l	5	620	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
1,4-Dichlorobenzene	µg/l	5	75	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
trans-1,4-Dichloro-2-butene	µg/l	100	NE	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
1,1-Dichloroethane	µg/l	5	700	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
1,2-Dichloroethane	µg/l	5	0.38	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
1,1-Dichloroethene (-ethylene)	µg/l	5	7	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
trans-1,2-Dichloroethene (-ylene)	µg/l	5	70	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
1,2-Dichloropropane	µg/l	5	0.56	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
cis-1,3-Dichloropropene (-propylene)	µg/l	10	NE	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
trans-1,3-Dichloropropene (-propylene)	µg/l	10	NE	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
Ethylbenzene	µg/l	5	29	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
2-Hexanone	µg/l	50	NE	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
Iodomethane	µg/l	10	NE	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
Dichloromethane (Methylene chloride)	µg/l	10	5	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
2-Butanone (Methyl ethyl ketone)	µg/l	100	170	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
4-Methyl-2-Pentanone	µg/l	100	NE	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
Styrene	µg/l	10	100	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
1,1,1,2-Tetrachloroethane	µg/l	5	NE	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
1,1,2,2-Tetrachloroethane	µg/l	5	NE	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
Tetrachloroethene (-ethylene)	µg/l	5	0.7	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
Toluene	µg/l	5	1000	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
1,1,1-Trichloroethane	µg/l	5	200	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
1,1,2-Trichloroethane	µg/l	5	NE	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
Trichloroethene (-ethylene)	µg/l	5	2.8	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
Trichlorofluoromethane	µg/l	5	2100	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
1,2,3-Trichloropropane	µg/l	15	NE	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
Vinyl acetate	µg/l	50	NE	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
Vinyl chloride	µg/l	10	0.015	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
Xylene	µg/l	5	530	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT

Notes:

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MRL = Laboratory Method Reporting Limit

ND = Not Detected at the method detection limit

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NP = Not Present during sampling event

Shaded cells indicated exceedances of MCLs.

White Oak Landfill - Haywood Co., NC
Groundwater Sampling Event (9-26-2002)

TEST	UNITS	MRL	MCL	MW-11S	MW-11D	MW-14	MW-1A	MW-2	MW-2D	MW-3	MW-3D	MW-4A	MW-8	MW-15	MW-16	MW-17	EQUIP. BLANK
pH	pH units (on-site)	-	NE	**6.5**	**7.3**	**7.09**	**6.14**	**6.17**	**6.18**	**5.96**	**5.96**	**7.22**	**6.37**	**6.65**	NP	NP	NT
Specific Conductance	µmhos/cm (on-site)	1	NE	**22**	**59**	**52**	**71**	**85**	**82**	**117**	**101**	**92**	**130**	**97**	NP	NP	NT
Temperature	°C (on-site)	-	NE	**15.1**	**13.5**	**13.7**	**13.5**	**13.9**	**14**	**15.8**	**14.6**	**15.1**	**17.7**	**16.6**	NP	NP	NT
Turbidity	NTU (on-site)	NT	NE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
Total Antimony (Sb)	µg/l	10	NE	ND	ND	ND	**12**	ND	ND	ND	ND	ND	ND	**98**	NP	NP	ND
Total Arsenic (As)	µg/l	5	50	ND	**5.7**	ND	ND	ND	ND	ND	ND	**27**	ND	**68**	NP	NP	ND
Total Barium (Ba)	µg/l	5	1000	**330**	**500**	**750**	**4200**	**120**	**230**	**93**	**410**	**910**	**1400**	**11000**	NP	NP	ND
Total Beryllium (Be)	µg/l	2	NE	ND	**7**	**2.1**	**5.1**	ND	ND	ND	ND	**8.5**	**4.7**	**95**	NP	NP	ND
Total Cadmium (Cd)	µg/l	1	5	ND	ND	**4.2**	**21**	ND	**10**	ND	**2.3**	**4.2**	**19**	**180**	NP	NP	ND
Total Chromium (Cr)	µg/l	5	50	**33**	**5.4**	**33**	**510**	ND	**5.2**	ND	**37**	**36**	**230**	**770**	NP	NP	ND
Total Cobalt (Co)	µg/l	5	NE	**13**	**5.4**	**16**	**100**	ND	**16**	**7.4**	**21**	**19**	**85**	**560**	NP	NP	ND
Total Copper (Cu)	µg/l	2	1000	**20**	**10**	**31**	**220**	ND	ND	**2.6**	**42**	**88**	**150**	**450**	NP	NP	ND
Total Lead (Pb)	µg/l	10	15	ND	**76**	**29**	ND	ND	ND	ND	ND	**150**	**20**	**740**	NP	NP	ND
Total Nickel (Ni)	µg/l	5	100	**16**	**6.8**	**31**	**400**	ND	ND	ND	**27**	**40**	**78**	**430**	NP	NP	ND
Total Selenium (Se)	µg/l	20	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Total Silver (Ag)	µg/l	2	18	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Total Thallium (Tl)	µg/l	2	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**65**	NP	NP	ND
Total Vanadium (V)	µg/l	5	NE	**58**	**16**	**44**	**640**	ND	ND	ND	**42**	**50**	**310**	**1000**	NP	NP	ND
Total Zinc (Zn)	µg/l	10	2100	**57**	**120**	**110**	**580**	ND	**20**	ND	**56**	**250**	**280**	**4800**	NP	NP	**2000**
Acetone	µg/l	100	700	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
Acrylonitrile	µg/l	200	NE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
Benzene	µg/l	5	1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
Bromochloromethane	µg/l	5	NE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
Bromodichloromethane	µg/l	5	NE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
Bromoform	µg/l	5	0.19	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
Carbon Disulfide	µg/l	100	NE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
Bromomethane (Methylbromide)	µg/l	10	NE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
Carbon tetrachloride	µg/l	10	0.3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
Chlorobenzene (mono)	µg/l	5	50	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
Chloroethane	µg/l	10	NE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
Chloroform	µg/l	5	0.19	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
Chloromethane (Methylchloride)	µg/l	10	NE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
Dibromochloromethane	µg/l	5	NE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
1,2-Dibromo-3-chloropropane; DBCP	µg/l	25	0.025	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.0004	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
Dibromomethane	µg/l	10	NE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
1,2-Dichlorobenzene	µg/l	5	620	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
1,4-Dichlorobenzene	µg/l	5	75	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
trans-1,4-Dichloro-2-butene	µg/l	100	NE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
1,1-Dichloroethane	µg/l	5	700	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
1,2-Dichloroethane	µg/l	5	0.38	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
1,1-Dichloroethene (-ethylene)	µg/l	5	7	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
trans-1,2-Dichloroethene (-ylene)	µg/l	5	70	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
1,2-Dichloropropane	µg/l	5	0.56	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
cis-1,3-Dichloropropene (-propylene)	µg/l	10	NE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
trans-1,3-Dichloropropene (-propylene)	µg/l	10	NE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
Ethylbenzene	µg/l	5	29	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
2-Hexanone	µg/l	50	NE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
Iodomethane	µg/l	10	NE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
Dichloromethane (Methylene chloride)	µg/l	10	5	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
2-Butanone (Methyl ethyl ketone)	µg/l	100	170	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
4-Methyl-2-Pentanone	µg/l	100	NE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
Styrene	µg/l	10	100	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
1,1,1,2-Tetrachloroethane	µg/l	5	NE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
1,1,2,2-Tetrachloroethane	µg/l	5	NE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
Tetrachloroethene (-ethylene)	µg/l	5	0.7	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
Toluene	µg/l	5	1000	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
1,1,1-Trichloroethane	µg/l	5	200	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
1,1,2-Trichloroethane	µg/l	5	NE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
Trichloroethene (-ethylene)	µg/l	5	2.8	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
Trichlorofluoromethane	µg/l	5	2100	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
1,2,3-Trichloropropane	µg/l	15	NE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
Vinyl acetate	µg/l	50	NE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
Vinyl chloride	µg/l	10	0.015	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
Xylene	µg/l	5	530	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT

Notes:

MCL = Maximum Contaminant Level, as established in the NCDENR, Classifications of Water Quality Standards Applicable to Groundwaters of North Carolina, Section 15A NCAC 2L.202.

MRL = Laboratory Method Reporting Limit

ND = Not Detected at the method detection limit

NS = Not Sampled

NT = Not Tested

NE = Not Established; North Carolina has not established a MCL

NP = Not Present during sampling event

Shaded cells indicated exceedances of MCLs.

White Oak Landfill - Haywood Co., NC
Groundwater Sampling Event (4-28-2003)

TEST	UNITS	MRL	MCL	MW-11S	MW-11D	MW-14	MW-1A	MW-2	MW-2D	MW-3	MW-3D	MW-4A	MW-8	MW-15	MW-16	MW-17	EQUIP. BLANK
pH	pH units (on-site)	-	NE	**8.3**	**7.15**	**6.89**	**6.37**	**6.21**	**6.17**	**6.4**	**6.16**	**8.15**	**5.85**	**6.75**	NP	NP	NT
Specific Conductance	µmhos/cm (on-site)	1	NE	**29**	**43**	**55**	**91**	**110**	**99**	**150**	**114**	**100**	**138**	**125**	NP	NP	NT
Temperature	°C (on-site)	-	NE	**16.7**	**15.9**	**15.6**	**15.6**	**16.3**	**15.3**	**13.5**	**14.2**	**17.7**	**14.9**	**18.4**	NP	NP	NT
Turbidity	NTU (on-site)	NT	NE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
Total Antimony (Sb)	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Total Arsenic (As)	µg/l	5	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**24**	NP	NP	ND
Total Barium (Ba)	µg/l	5	1000	**600**	**66**	**220**	**1800**	**160**	**140**	**110**	**92**	**360**	**800**	**2800**	NP	NP	ND
Total Beryllium (Be)	µg/l	2	NE	ND	ND	ND	ND	ND	ND	ND	ND	**2**	**2.2**	**20**	NP	NP	ND
Total Cadmium (Cd)	µg/l	1	5	**3.6**	ND	ND	**6**	ND	ND	ND	ND	**2.9**	**16**	**20**	NP	NP	ND
Total Chromium (Cr)	µg/l	5	50	ND	ND	ND	**89**	ND	ND	ND	ND	ND	**110**	**27**	NP	NP	ND
Total Cobalt (Co)	µg/l	5	NE	**21**	ND	ND	**37**	ND	ND	**6.9**	ND	**17**	**50**	**81**	NP	NP	ND
Total Copper (Cu)	µg/l	2	1000	**24**	ND	**2.6**	**40**	ND	ND	ND	ND	**28**	**94**	**71**	NP	NP	ND
Total Lead (Pb)	µg/l	10	15	ND	ND	ND	ND	ND	ND	ND	ND	**25**	ND	**300**	NP	NP	ND
Total Nickel (Ni)	µg/l	5	100	ND	ND	ND	**90**	ND	ND	ND	ND	ND	**26**	**70**	NP	NP	ND
Total Selenium (Se)	µg/l	20	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Total Silver (Ag)	µg/l	2	18	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Total Thallium (Tl)	µg/l	1	NE	ND	ND	ND	**1.6**	ND	ND	ND	ND	**1.4**	ND	**15**	NP	NP	ND
Total Vanadium (V)	µg/l	5	NE	**89**	ND	**9.6**	**170**	**6.8**	**6.8**	ND	ND	**37**	**230**	**130**	NP	NP	ND
Total Zinc (Zn)	µg/l	10	2100	**86**	**14**	**31**	**160**	**16**	ND	ND	ND	**81**	**190**	**800**	NP	NP	ND
Acetone	µg/l	100	700	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
Acrylonitrile	µg/l	200	NE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
Benzene	µg/l	5	1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
Bromochloromethane	µg/l	5	NE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
Bromodichloromethane	µg/l	5	NE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
Bromoform	µg/l	5	0.19	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
Carbon Disulfide	µg/l	100	NE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
Bromomethane (Methylbromide)	µg/l	10	NE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
Carbon tetrachloride	µg/l	10	0.3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
Chlorobenzene (mono)	µg/l	5	50	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
Chloroethane	µg/l	10	NE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
Chloroform	µg/l	5	0.19	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
Chloromethane (Methylchloride)	µg/l	10	NE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
Dibromochloromethane	µg/l	5	NE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
1,2-Dibromo-3-chloropropane; DBCP	µg/l	25	0.025	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.0004	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
Dibromomethane	µg/l	10	NE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
1,2-Dichlorobenzene	µg/l	5	620	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
1,4-Dichlorobenzene	µg/l	5	75	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
trans-1,4-Dichloro-2-butene	µg/l	100	NE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
1,1-Dichloroethane	µg/l	5	700	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
1,2-Dichloroethane	µg/l	5	0.38	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
1,1-Dichloroethene (-ethylene)	µg/l	5	7	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
trans-1,2-Dichloroethene (-ylene)	µg/l	5	70	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
1,2-Dichloropropane	µg/l	5	0.56	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
cis-1,3-Dichloropropene (-propylene)	µg/l	10	NE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
trans-1,3-Dichloropropene (-propylene)	µg/l	10	NE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
Ethylbenzene	µg/l	5	29	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
2-Hexanone	µg/l	50	NE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
Iodomethane	µg/l	10	NE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
Dichloromethane (Methylene chloride)	µg/l	10	5	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
2-Butanone (Methyl ethyl ketone)	µg/l	100	170	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
4-Methyl-2-Pentanone	µg/l	100	NE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
Styrene	µg/l	10	100	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
1,1,1,2-Tetrachloroethane	µg/l	5	NE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
1,1,2,2-Tetrachloroethane	µg/l	5	NE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
Tetrachloroethene (-ethylene)	µg/l	5	0.7	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
Toluene	µg/l	5	1000	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
1,1,1-Trichloroethane	µg/l	5	200	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
1,1,2-Trichloroethane	µg/l	5	NE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
Trichloroethene (-ethylene)	µg/l	5	2.8	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
Trichlorofluoromethane	µg/l	5	2100	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
1,2,3-Trichloropropane	µg/l	15	NE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
Vinyl acetate	µg/l	50	NE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
Vinyl chloride	µg/l	10	0.015	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
Xylene	µg/l	5	530	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT

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White Oak Landfill - Haywood Co., NC
Groundwater Sampling Event (10-30-2003)

TEST	UNITS	MRL	MCL	MW-11S	MW-11D	MW-14	MW-1A	MW-2	MW-2D	MW-3	MW-3D	MW-4A	MW-8	MW-15	MW-16	MW-17	EQUIP. BLANK
pH	pH units (on-site)	-	NE	**6.58**	**6.9**	**6.73**	**6.57**	**6.26**	**6.44**	**6.33**	**6.27**	**7.7**	**6.18**	**6.46**	NP	NP	NT
Specific Conductance	µmhos/cm (on-site)	1	NE	**29**	**39**	**58**	**82**	**119**	**110**	**140**	**115**	**105**	**149**	**120**	NP	NP	NT
Temperature	°C (on-site)	-	NE	**15**	**15.1**	**14.9**	**15.8**	**15.9**	**16.7**	**15**	**14**	**17.5**	**16.3**	**16**	NP	NP	NT
Turbidity	NTU (on-site)	NT	NE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
Total Antimony (Sb)	µg/l	5	NE	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Total Arsenic (As)	µg/l	5	50	ND	ND	NT	ND	ND	ND	ND	ND	ND	**5.3**	**81**	NP	NP	ND
Total Barium (Ba)	µg/l	5	1000	**320**	**100**	NT	**210**	**310**	**130**	**95**	**110**	**1200**	**270**	**4900**	NP	NP	ND
Total Beryllium (Be)	µg/l	1	NE	ND	ND	NT	ND	ND	ND	ND	ND	**2.4**	ND	**33**	NP	NP	ND
Total Cadmium (Cd)	µg/l	1	5	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Total Chromium (Cr)	µg/l	2	50	**30**	ND	NT	ND	**6.2**	ND	ND	ND	**31**	**4.6**	**140**	NP	NP	ND
Total Cobalt (Co)	µg/l	5	NE	**9**	ND	NT	ND	ND	ND	**5.7**	ND	**52**	**8.8**	**110**	NP	NP	ND
Total Copper (Cu)	µg/l	2	1000	**18**	ND	NT	ND	**2.3**	**2.6**	ND	**3**	**85**	**4.4**	**150**	NP	NP	ND
Total Lead (Pb)	µg/l	5	15	**8.7**	**12**	NT	ND	ND	ND	ND	ND	**39**	**7.4**	**640**	NP	NP	ND
Total Nickel (Ni)	µg/l	5	100	**19**	ND	NT	**6.9**	**6.9**	ND	ND	ND	**48**	ND	**190**	NP	NP	ND
Total Selenium (Se)	µg/l	5	50	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Total Silver (Ag)	µg/l	2	18	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Total Thallium (Tl)	µg/l	10	NE	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Total Vanadium (V)	µg/l	5	NE	**54**	ND	NT	**6.6**	**16**	ND	ND	ND	**92**	**14**	**200**	NP	NP	ND
Total Zinc (Zn)	µg/l	10	2100	**55**	**22**	NT	**17**	**26**	**10**	ND	ND	**140**	**26**	**1800**	NP	NP	ND
Acetone	µg/l	10	700	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Acrylonitrile	µg/l	25	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Benzene	µg/l	5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Bromochloromethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Bromodichloromethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Bromoform	µg/l	5	0.19	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Carbon Disulfide	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Bromomethane (Methylbromide)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Carbon tetrachloride	µg/l	5	0.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Chlorobenzene (mono)	µg/l	5	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Chloroethane	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Chloroform	µg/l	5	0.19	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Chloromethane (Methylchloride)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Dibromochloromethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	5	0.025	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.0004	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Dibromomethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,2-Dichlorobenzene	µg/l	5	620	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,4-Dichlorobenzene	µg/l	5	75	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
trans-1,4-Dichloro-2-butene	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,1-Dichloroethane	µg/l	5	700	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,2-Dichloroethane	µg/l	5	0.38	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,1-Dichloroethene (-ethylene)	µg/l	5	7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	5	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,2-Dichloropropane	µg/l	5	0.56	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Ethylbenzene	µg/l	5	29	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
2-Hexanone	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Iodomethane	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Dichloromethane (Methylene chloride)	µg/l	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
2-Butanone (Methyl ethyl ketone)	µg/l	10	170	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
4-Methyl-2-Pentanone	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Styrene	µg/l	5	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,1,1,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,1,2,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Tetrachloroethene (-ethylene)	µg/l	5	0.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Toluene	µg/l	5	1000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,1,1-Trichloroethane	µg/l	5	200	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,1,2-Trichloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Trichloroethene (-ethylene)	µg/l	5	2.8	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Trichlorofluoromethane	µg/l	5	2100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,2,3-Trichloropropane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Vinyl acetate	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Vinyl chloride	µg/l	5	0.015	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Xylene	µg/l	5	530	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND

Notes:

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MRL = Laboratory Method Reporting Limit

ND = Not Detected at the method detection limit

NS = Not Sampled

NT = Not Tested

NE = Not Established; North Carolina has not established a MCL

NP = Not Present during sampling event

Shaded cells indicated exceedances of MCLs.

White Oak Landfill - Haywood Co., NC
Groundwater Sampling Event (4-20-2004)

TEST	UNITS	MRL	MCL	MW-11S	MW-11D	MW-14	MW-1A	MW-2	MW-2D	MW-3	MW-3D	MW-4A	MW-8	MW-15	MW-16	MW-17	EQUIP. BLANK
pH	pH units (on-site)	-	NE	**6.71**	**6.81**	**6.78**	**5.57**	**5.4**	**5.47**	**5.47**	**5.41**	**7.36**	**5.17**	**6.83**	NP	NP	NT
Specific Conductance	µmhos/cm (on-site)	1	NE	**25**	**31**	**40**	**67**	**135**	**120**	**115**	**100**	**100**	**115**	**70**	NP	NP	NT
Temperature	°C (on-site)	-	NE	**15.8**	**15.6**	**15.5**	**13.5**	**14.6**	**14.4**	**13.5**	**14.1**	**15.3**	**14.9**	**13.8**	NP	NP	NT
Turbidity	NTU (on-site)	NT	NE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
Total Antimony (Sb)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Total Arsenic (As)	µg/l	5	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	**7.4**	**30**	NP	NP	ND
Total Barium (Ba)	µg/l	5	1000	**320**	**56**	**120**	**410**	**460**	**170**	**140**	**210**	**62**	**940**	**2000**	NP	NP	ND
Total Beryllium (Be)	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**21**	NP	NP	ND
Total Cadmium (Cd)	µg/l	1	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	**8.8**	**8.9**	NP	NP	ND
Total Chromium (Cr)	µg/l	2	50	**33**	ND	**2.1**	**45**	**13**	ND	ND	**11**	**3.5**	**190**	**68**	NP	NP	ND
Total Cobalt (Co)	µg/l	5	NE	**9.5**	ND	ND	**7.7**	**5.2**	ND	**13**	**6.4**	ND	**43**	**50**	NP	NP	ND
Total Copper (Cu)	µg/l	2	1000	**18**	ND	**2.8**	**12**	**5.3**	**2.3**	**4.3**	**13**	**7.4**	**100**	**89**	NP	NP	ND
Total Lead (Pb)	µg/l	5	15	**7.2**	**7**	**5.2**	**6.4**	**5.4**	ND	ND	ND	**12**	**39**	**250**	NP	NP	ND
Total Nickel (Ni)	µg/l	5	100	**20**	ND	ND	**30**	**7.3**	ND	ND	**12**	**5.3**	**49**	**110**	NP	NP	ND
Total Selenium (Se)	µg/l	5	50	ND	ND	ND	ND	ND	**5**	ND	ND	ND	ND	ND	NP	NP	ND
Total Silver (Ag)	µg/l	2	18	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Total Thallium (Tl)	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Total Vanadium (V)	µg/l	5	NE	**55**	ND	ND	**45**	**25**	ND	ND	**13**	**5.1**	**240**	**88**	NP	NP	ND
Total Zinc (Zn)	µg/l	10	2100	**55**	**10**	ND	**44**	**30**	**11**	**14**	**19**	**23**	**220**	**770**	NP	NP	**11**
Acetone	µg/l	10	700	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	NT
Acrylonitrile	µg/l	25	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	NT
Benzene	µg/l	5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	NT
Bromochloromethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	NT
Bromodichloromethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	NT
Bromoform	µg/l	5	0.19	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	NT
Carbon Disulfide	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	NT
Bromomethane (Methylbromide)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	NT
Carbon tetrachloride	µg/l	5	0.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	NT
Chlorobenzene (mono)	µg/l	5	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	NT
Chloroethane	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	NT
Chloroform	µg/l	5	0.19	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	NT
Chloromethane (Methylchloride)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	NT
Dibromochloromethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	NT
1,2-Dibromo-3-chloropropane; DBCP	µg/l	5	0.025	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	NT
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.0004	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	NT
Dibromomethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	NT
1,2-Dichlorobenzene	µg/l	5	620	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	NT
1,4-Dichlorobenzene	µg/l	5	75	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	NT
trans-1,4-Dichloro-2-butene	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	NT
1,1-Dichloroethane	µg/l	5	700	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	NT
1,2-Dichloroethane	µg/l	5	0.38	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	NT
1,1-Dichloroethene (-ethylene)	µg/l	5	7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	NT
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	NT
trans-1,2-Dichloroethene (-ylene)	µg/l	5	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	NT
1,2-Dichloropropane	µg/l	5	0.56	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	NT
cis-1,3-Dichloropropene (-propylene)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	NT
trans-1,3-Dichloropropene (-propylene)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	NT
Ethylbenzene	µg/l	5	29	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	NT
2-Hexanone	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	NT
Iodomethane	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	NT
Dichloromethane (Methylene chloride)	µg/l	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	NT
2-Butanone (Methyl ethyl ketone)	µg/l	10	170	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	NT
4-Methyl-2-Pentanone	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	NT
Styrene	µg/l	5	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	NT
1,1,1,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	NT
1,1,2,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	NT
Tetrachloroethene (-ethylene)	µg/l	5	0.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	NT
Toluene	µg/l	5	1000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	NT
1,1,1-Trichloroethane	µg/l	5	200	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	NT
1,1,2-Trichloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	NT
Trichloroethene (-ethylene)	µg/l	5	2.8	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	NT
Trichlorofluoromethane	µg/l	5	2100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	NT
1,2,3-Trichloropropane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	NT
Vinyl acetate	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	NT
Vinyl chloride	µg/l	5	0.015	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	NT
Xylene	µg/l	5	530	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	NT

Notes:

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White Oak Landfill - Haywood Co., NC
Groundwater Sampling Event (10-21-2004)

TEST	UNITS	MRL	MCL	MW-11S	MW-11D	MW-14	MW-1A	MW-2	MW-2D	MW-3	MW-3D	MW-4A	MW-8	MW-15	MW-16	MW-17	EQUIP. BLANK
pH	pH units (on-site)	-	NE	**6.83**	**6.55**	**6.76**	**6.9**	**5.92**	**6.39**	**5.75**	**6.03**	**7.84**	**5.57**	**7.12**	NP	NP	NT
Specific Conductance	µmhos/cm (on-site)	1	NE	**29**	**49**	**62**	**96**	**290**	**302**	**196**	**148**	**111**	**198**	**134**	NP	NP	NT
Temperature	°C (on-site)	-	NE	**14.3**	**16.7**	**14**	**13**	**14.7**	**14.3**	**15**	**14.5**	**14.2**	**14.6**	**17**	NP	NP	NT
Turbidity	NTU (on-site)	NT	NE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
Total Antimony (Sb)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Total Arsenic (As)	µg/l	5	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**59**	NP	NP	ND
Total Barium (Ba)	µg/l	5	1000	**320**	**40**	**200**	**300**	**310**	**140**	**140**	**130**	**12**	**900**	**4900**	NP	NP	ND
Total Beryllium (Be)	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	**1.4**	**28**	NP	NP	ND
Total Cadmium (Cd)	µg/l	1	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Total Chromium (Cr)	µg/l	2	50	**21**	ND	**2.8**	**16**	**2**	ND	ND	ND	ND	**120**	**140**	NP	NP	ND
Total Cobalt (Co)	µg/l	5	NE	**6.2**	ND	ND	ND	ND	ND	ND	ND	ND	**31**	**120**	NP	NP	ND
Total Copper (Cu)	µg/l	2	1000	**11**	ND	ND	**2**	ND	ND	ND	ND	ND	**63**	**140**	NP	NP	ND
Total Lead (Pb)	µg/l	5	15	**7.2**	**5.6**	**5.7**	ND	ND	ND	ND	ND	ND	**24**	**430**	NP	NP	ND
Total Nickel (Ni)	µg/l	5	100	**12**	ND	ND	**13**	ND	ND	ND	ND	ND	**35**	**160**	NP	NP	ND
Total Selenium (Se)	µg/l	5	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Total Silver (Ag)	µg/l	2	18	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Total Thallium (Tl)	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Total Vanadium (V)	µg/l	5	NE	**41**	ND	ND	**18**	ND	ND	ND	ND	ND	**160**	**210**	NP	NP	ND
Total Zinc (Zn)	µg/l	10	2100	**29**	ND	ND	**17**	ND	**14**	ND	**12**	**15**	**70**	**1200**	NP	NP	ND
Acetone	µg/l	10	700	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Acrylonitrile	µg/l	25	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Benzene	µg/l	5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Bromochloromethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Bromodichloromethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Bromoform	µg/l	5	0.19	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Carbon Disulfide	µg/l	10	NE	ND	**24**	ND	ND	ND	ND	ND	ND	**15**	ND	ND	NP	NP	ND
Bromomethane (Methylbromide)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Carbon tetrachloride	µg/l	5	0.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Chlorobenzene (mono)	µg/l	5	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Chloroethane	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Chloroform	µg/l	5	0.19	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Chloromethane (Methylchloride)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Dibromochloromethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	5	0.025	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.0004	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Dibromomethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,2-Dichlorobenzene	µg/l	5	620	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,4-Dichlorobenzene	µg/l	5	75	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
trans-1,4-Dichloro-2-butene	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,1-Dichloroethane	µg/l	5	700	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,2-Dichloroethane	µg/l	5	0.38	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,1-Dichloroethene (-ethylene)	µg/l	5	7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	5	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,2-Dichloropropane	µg/l	5	0.56	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Ethylbenzene	µg/l	5	29	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
2-Hexanone	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Iodomethane	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Dichloromethane (Methylene chloride)	µg/l	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
2-Butanone (Methyl ethyl ketone)	µg/l	10	170	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
4-Methyl-2-Pentanone	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Styrene	µg/l	5	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,1,1,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,1,2,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Tetrachloroethene (-ethylene)	µg/l	5	0.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Toluene	µg/l	5	1000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,1,1-Trichloroethane	µg/l	5	200	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,1,2-Trichloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Trichloroethene (-ethylene)	µg/l	5	2.8	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Trichlorofluoromethane	µg/l	5	2100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,2,3-Trichloropropane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Vinyl acetate	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Vinyl chloride	µg/l	5	0.015	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Xylene	µg/l	5	530	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND

Notes:

MCL = Maximum Contaminant Level, as established in the NCDENR, Classifications of Water Quality Standards Applicable to Groundwaters of North Carolina, Section 15A NCAC 2L.202.

MRL = Laboratory Method Reporting Limit

ND = Not Detected at the method detection limit

NS = Not Sampled

NT = Not Tested

NE = Not Established; North Carolina has not established a MCL

NP = Not Present during sampling event

Shaded cells indicated exceedances of MCLs.

White Oak Landfill - Haywood Co., NC
Groundwater Sampling Event (4-18-2005)

TEST	UNITS	MRL	MCL	MW-11S	MW-11D	MW-14	MW-1A	MW-2	MW-2D	MW-3	MW-3D	MW-4A	MW-8	MW-15	MW-16	MW-17	EQUIP. BLANK
pH	pH units (on-site)	-	NE	**6.95**	**7.44**	**6.15**	**6.2**	**5.58**	**6.04**	**6.02**	**6.18**	**7.46**	**5.6**	**6.85**	NP	NP	NT
Specific Conductance	µmhos/cm (on-site)	1	NE	**25**	**40**	**42**	**78**	**330**	**161**	**171**	**139**	**95**	**149**	**138**	NP	NP	NT
Temperature	°C (on-site)	-	NE	**14.2**	**15.6**	**15**	**13.5**	**15**	**17.7**	**13**	**13.5**	**16.2**	**14.1**	**16.4**	NP	NP	NT
Turbidity	NTU (on-site)	NT	NE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
Total Antimony (Sb)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**12**	NP	NP	ND
Total Arsenic (As)	µg/l	5	50	ND	ND	ND	**10**	ND	ND	ND	ND	ND	**5.2**	**65**	NP	NP	ND
Total Barium (Ba)	µg/l	5	1000	**480**	**55**	**160**	**7200**	**610**	**180**	**160**	**140**	**12**	**1000**	**3700**	NP	NP	ND
Total Beryllium (Be)	µg/l	1	NE	ND	ND	ND	**7.2**	ND	ND	ND	ND	ND	**3.8**	**26**	NP	NP	ND
Total Cadmium (Cd)	µg/l	1	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Total Chromium (Cr)	µg/l	2	50	**49**	**12**	**8.3**	**680**	**2.9**	ND	ND	**3.2**	ND	**210**	**100**	NP	NP	ND
Total Cobalt (Co)	µg/l	5	NE	**12**	ND	ND	**110**	ND	ND	ND	ND	ND	**36**	**70**	NP	NP	ND
Total Copper (Cu)	µg/l	2	1000	**29**	ND	ND	**240**	ND	ND	ND	**3.8**	ND	**120**	**130**	NP	NP	ND
Total Lead (Pb)	µg/l	5	15	**13**	**8**	**5.2**	**73**	ND	ND	ND	ND	ND	**39**	**380**	NP	NP	ND
Total Nickel (Ni)	µg/l	5	100	**29**	**9.6**	**17**	**460**	ND	ND	**5.5**	**5.4**	ND	**59**	**170**	NP	NP	ND
Total Selenium (Se)	µg/l	5	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Total Silver (Ag)	µg/l	2	18	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Total Thallium (Tl)	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Total Vanadium (V)	µg/l	5	NE	**85**	ND	ND	**680**	**5.4**	ND	ND	ND	ND	**240**	**110**	NP	NP	ND
Total Zinc (Zn)	µg/l	10	2100	**83**	ND	ND	**780**	ND	**30**	**13**	**10**	ND	**240**	**1200**	NP	NP	ND
Acetone	µg/l	25	700	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Acrylonitrile	µg/l	25	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Benzene	µg/l	5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Bromochloromethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Bromodichloromethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Bromoform	µg/l	5	0.19	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Carbon Disulfide	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Bromomethane (Methylbromide)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Carbon tetrachloride	µg/l	5	0.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Chlorobenzene (mono)	µg/l	5	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Chloroethane	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Chloroform	µg/l	5	0.19	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Chloromethane (Methylchloride)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Dibromochloromethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	5	0.025	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.0004	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Dibromomethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,2-Dichlorobenzene	µg/l	5	620	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,4-Dichlorobenzene	µg/l	5	75	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
trans-1,4-Dichloro-2-butene	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,1-Dichloroethane	µg/l	5	700	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,2-Dichloroethane	µg/l	5	0.38	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,1-Dichloroethene (-ethylene)	µg/l	5	7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	5	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,2-Dichloropropane	µg/l	5	0.56	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Ethylbenzene	µg/l	5	29	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
2-Hexanone	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Iodomethane	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Dichloromethane (Methylene chloride)	µg/l	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
2-Butanone (Methyl ethyl ketone)	µg/l	10	170	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
4-Methyl-2-Pentanone	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Styrene	µg/l	5	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,1,1,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,1,2,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Tetrachloroethene (-ethylene)	µg/l	5	0.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Toluene	µg/l	5	1000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,1,1-Trichloroethane	µg/l	5	200	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,1,2-Trichloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Trichloroethene (-ethylene)	µg/l	5	2.8	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Trichlorofluoromethane	µg/l	5	2100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,2,3-Trichloropropane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Vinyl acetate	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Vinyl chloride	µg/l	5	0.015	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Xylene	µg/l	5	530	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND

Notes:

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Shaded cells indicated exceedances of MCLs.

White Oak Landfill - Haywood Co., NC
Groundwater Sampling Event (10-13-2005)

TEST	UNITS	MRL	MCL	MW-11S	MW-11D	MW-14	MW-1A	MW-2	MW-2D	MW-3	MW-3D	MW-4A	MW-8	MW-15	MW-16	MW-17	EQUIP. BLANK
pH	pH units (on-site)	-	NE	**7.21**	**7.38**	**7.79**	**6.36**	**6.07**	**6.25**	**6.08**	**6.6**	**7.73**	**6.08**	**6.72**	NP	NP	NT
Specific Conductance	µmhos/cm (on-site)	1	NE	**21**	**35**	**40**	**85**	**580**	**201**	**185**	**160**	**102**	**180**	**52**	NP	NP	NT
Temperature	°C (on-site)	-	NE	**13.2**	**14**	**13.3**	**13.3**	**14.9**	**14.3**	**16.5**	**15.5**	**15.3**	**16.5**	**16.8**	NP	NP	NT
Turbidity	NTU (on-site)	NT	NE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
Total Antimony (Sb)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Total Arsenic (As)	µg/l	5	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**44**	NP	NP	ND
Total Barium (Ba)	µg/l	5	1000	**770**	**37**	**160**	**1700**	**870**	**250**	**160**	**140**	**27**	**810**	**2700**	NP	NP	ND
Total Beryllium (Be)	µg/l	1	NE	ND	ND	ND	**3**	ND	ND	ND	ND	ND	**3.4**	**21**	NP	NP	ND
Total Cadmium (Cd)	µg/l	1	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Total Chromium (Cr)	µg/l	2	50	**52**	ND	**3.7**	**230**	**4.7**	ND	ND	ND	ND	**150**	**88**	NP	NP	ND
Total Cobalt (Co)	µg/l	5	NE	**21**	ND	ND	**32**	ND	ND	**5.1**	ND	ND	**29**	**56**	NP	NP	ND
Total Copper (Cu)	µg/l	2	1000	**31**	**2.6**	**3.5**	**70**	ND	ND	ND	ND	**3**	**82**	**96**	NP	NP	ND
Total Lead (Pb)	µg/l	5	15	**14**	**6.9**	ND	**20**	ND	ND	ND	ND	ND	**29**	**290**	NP	NP	ND
Total Nickel (Ni)	µg/l	5	100	**29**	ND	ND	**160**	**6.8**	ND	ND	**6.1**	ND	**46**	**100**	NP	NP	ND
Total Selenium (Se)	µg/l	5	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Total Silver (Ag)	µg/l	2	18	**2.9**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Total Thallium (Tl)	µg/l	10	NE	**22**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Total Vanadium (V)	µg/l	5	NE	**82**	ND	ND	**210**	**8.9**	ND	ND	ND	ND	**170**	**82**	NP	NP	ND
Total Zinc (Zn)	µg/l	10	2100	**92**	**13**	**12**	**230**	**19**	**25**	ND	ND	**14**	**170**	**800**	NP	NP	ND
Acetone	µg/l	25	700	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Acrylonitrile	µg/l	25	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Benzene	µg/l	5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Bromochloromethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Bromodichloromethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Bromoform	µg/l	5	0.19	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Carbon Disulfide	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Bromomethane (Methylbromide)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Carbon tetrachloride	µg/l	5	0.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Chlorobenzene (mono)	µg/l	5	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Chloroethane	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Chloroform	µg/l	5	0.19	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Chloromethane (Methylchloride)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Dibromochloromethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	5	0.025	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.0004	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Dibromomethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,2-Dichlorobenzene	µg/l	5	620	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,4-Dichlorobenzene	µg/l	5	75	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
trans-1,4-Dichloro-2-butene	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,1-Dichloroethane	µg/l	5	700	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,2-Dichloroethane	µg/l	5	0.38	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,1-Dichloroethene (-ethylene)	µg/l	5	7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	5	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,2-Dichloropropane	µg/l	5	0.56	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Ethylbenzene	µg/l	5	29	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
2-Hexanone	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Iodomethane	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Dichloromethane (Methylene chloride)	µg/l	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
2-Butanone (Methyl ethyl ketone)	µg/l	10	170	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
4-Methyl-2-Pentanone	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Styrene	µg/l	5	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,1,1,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,1,2,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Tetrachloroethene (-ethylene)	µg/l	5	0.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Toluene	µg/l	5	1000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,1,1-Trichloroethane	µg/l	5	200	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,1,2-Trichloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Trichloroethene (-ethylene)	µg/l	5	2.8	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Trichlorofluoromethane	µg/l	5	2100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,2,3-Trichloropropane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Vinyl acetate	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Vinyl chloride	µg/l	5	0.015	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Xylene	µg/l	5	530	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND

Notes:

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White Oak Landfill - Haywood Co., NC
Groundwater Sampling Event (4-25-2006)

TEST	UNITS	MRL	MCL	MW-11S	MW-11D	MW-14	MW-1A	MW-2	MW-2D	MW-3	MW-3D	MW-4A	MW-8	MW-15	MW-16	MW-17	EQUIP. BLANK
pH	pH units (on-site)	-	NE	**6.33**	**7.06**	**6.61**	**6.07**	**5.45**	**6.16**	**5.63**	**5.62**	**7.7**	**5.56**	**5.83**	NP	NP	NT
Specific Conductance	µmhos/cm (on-site)	1	NE	**53**	**48**	**52**	**106**	**105**	**383**	**301**	**236**	**136**	**251**	**70**	NP	NP	NT
Temperature	°C (on-site)	-	NE	**18.1**	**19.2**	**16.1**	**13.7**	**19.5**	**20.6**	**12.4**	**13.8**	**14.6**	**14.8**	**12.9**	NP	NP	NT
Turbidity	NTU (on-site)	NT	NE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
Total Antimony (Sb)	µg/l	30	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Total Arsenic (As)	µg/l	10	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**42**	NP	NP	ND
Total Barium (Ba)	µg/l	500	2000	**650**	ND	ND	ND	**1100**	ND	ND	ND	ND	**750**	**2700**	NP	NP	ND
Total Beryllium (Be)	µg/l	2	NE	ND	ND	ND	ND	ND	ND	ND	ND	**2.1**	ND	**17**	NP	NP	ND
Total Cadmium (Cd)	µg/l	1	1.75	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Total Chromium (Cr)	µg/l	10	50	**65**	ND	**16**	ND	ND	ND	ND	ND	**16**	**100**	**93**	NP	NP	ND
Total Cobalt (Co)	µg/l	10	NE	**16**	ND	ND	ND	ND	ND	ND	ND	ND	**25**	**57**	NP	NP	ND
Total Copper (Cu)	µg/l	200	1000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Total Lead (Pb)	µg/l	10	15	**15**	ND	ND	ND	ND	ND	ND	ND	**53**	**19**	**300**	NP	NP	ND
Total Nickel (Ni)	µg/l	50	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**88**	NP	NP	ND
Total Selenium (Se)	µg/l	20	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Total Silver (Ag)	µg/l	10	17.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Total Thallium (Tl)	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Total Vanadium (V)	µg/l	40	NE	**110**	ND	ND	ND	ND	ND	ND	ND	ND	**120**	**85**	NP	NP	ND
Total Zinc (Zn)	µg/l	50	1050	**130**	ND	**88**	ND	ND	ND	ND	ND	**110**	**120**	**780**	NP	NP	ND
Acetone	µg/l	25	700	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Acrylonitrile	µg/l	25	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Benzene	µg/l	5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Bromochloromethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Bromodichloromethane	µg/l	5	0.56	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Bromoform	µg/l	5	0.19	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Carbon Disulfide	µg/l	10	700	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Bromomethane (Methylbromide)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Carbon tetrachloride	µg/l	5	0.269	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Chlorobenzene (mono)	µg/l	5	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Chloroethane	µg/l	10	2800	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Chloroform	µg/l	5	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Chloromethane (Methylchloride)	µg/l	5	2.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Dibromochloromethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	5	0.025	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.00047	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Dibromomethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,2-Dichlorobenzene	µg/l	5	24	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,4-Dichlorobenzene	µg/l	5	1.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
trans-1,4-Dichloro-2-butene	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,1-Dichloroethane	µg/l	5	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,2-Dichloroethane	µg/l	5	0.38	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,1-Dichloroethene (-ethylene)	µg/l	5	7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	5	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,2-Dichloropropane	µg/l	5	0.51	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	5	0.19	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	5	0.19	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Ethylbenzene	µg/l	5	550	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
2-Hexanone	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Iodomethane	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Dichloromethane (Methylene chloride)	µg/l	5	4.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
2-Butanone (Methyl ethyl ketone)	µg/l	10	4200	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
4-Methyl-2-Pentanone	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Styrene	µg/l	5	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,1,1,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,1,2,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Tetrachloroethene (-ethylene)	µg/l	5	0.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Toluene	µg/l	5	1000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,1,1-Trichloroethane	µg/l	5	200	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,1,2-Trichloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Trichloroethene (-ethylene)	µg/l	5	2.8	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Trichlorofluoromethane	µg/l	5	2100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,2,3-Trichloropropane	µg/l	5	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Vinyl acetate	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Vinyl chloride	µg/l	5	0.015	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Xylene	µg/l	5	530	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND

Notes:

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MRL = Laboratory Method Reporting Limit

ND = Not Detected at the method detection limit

NS = Not Sampled

NT = Not Tested

NE = Not Established; North Carolina has not established a MCL

NP = Not Present during sampling event

Shaded cells indicated exceedances of MCLs.

White Oak Landfill - Haywood Co., NC
Groundwater Sampling Event (10-20-2006)

TEST	UNITS	MRL	MCL	MW-11S	MW-11D	MW-14	MW-1A	MW-2	MW-2D	MW-3	MW-3D	MW-4A	MW-8	MW-15	MW-16	MW-17	EQUIP. BLANK
pH	pH units (on-site)	-	NE	**6.47**	**6.81**	**6.51**	**6.74**	**5.56**	**6.14**	**5.87**	**5.74**	**8.2**	**5.61**	**5.97**	NP	NP	NT
Specific Conductance	µmhos/cm (on-site)	1	NE	**229**	**48**	**53**	**108**	**876**	**564**	**149**	**200**	**12.8**	**330**	**33**	NP	NP	NT
Temperature	°C (on-site)	-	NE	**12.2**	**11.9**	**12.8**	**12.5**	**12.7**	**12.9**	**14.9**	**13.7**	**13.5**	**13.3**	**14.9**	NP	NP	NT
Turbidity	NTU (on-site)	NT	NE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
Total Antimony (Sb)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Total Arsenic (As)	µg/l	5	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**13**	NP	NP	ND
Total Barium (Ba)	µg/l	5	2000	**410**	**22**	**180**	**470**	**1100**	ND	ND	ND	**160**	ND	**650**	NP	NP	ND
Total Beryllium (Be)	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**5.7**	NP	NP	ND
Total Cadmium (Cd)	µg/l	1	1.75	**3.8**	ND	ND	ND	ND	ND	ND	ND	**1.5**	ND	**5.2**	NP	NP	ND
Total Chromium (Cr)	µg/l	5	50	**50**	ND	**11**	**24**	ND	ND	ND	ND	**17**	ND	**27**	NP	NP	ND
Total Cobalt (Co)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Total Copper (Cu)	µg/l	5	1000	**26**	ND	ND	**9.6**	ND	ND	ND	ND	**20**	ND	**25**	NP	NP	ND
Total Lead (Pb)	µg/l	5	15	**20**	ND	ND	ND	ND	ND	ND	ND	**32**	ND	**89**	NP	NP	ND
Total Nickel (Ni)	µg/l	5	100	**22**	ND	**8.3**	**25**	ND	ND	ND	ND	**13**	ND	**24**	NP	NP	ND
Total Selenium (Se)	µg/l	10	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Total Silver (Ag)	µg/l	5	17.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Total Thallium (Tl)	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Total Vanadium (V)	µg/l	5	NE	**79**	ND	ND	**28**	ND	ND	ND	ND	**23**	ND	**30**	NP	NP	ND
Total Zinc (Zn)	µg/l	10	1050	**74**	ND	**20**	**37**	ND	ND	ND	ND	**55**	ND	**200**	NP	NP	ND
Acetone	µg/l	25	700	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Acrylonitrile	µg/l	25	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Benzene	µg/l	5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Bromochloromethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Bromodichloromethane	µg/l	5	0.56	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Bromoform	µg/l	5	0.19	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Carbon Disulfide	µg/l	10	700	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Bromomethane (Methylbromide)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Carbon tetrachloride	µg/l	5	0.269	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Chlorobenzene (mono)	µg/l	5	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Chloroethane	µg/l	10	2800	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Chloroform	µg/l	5	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Chloromethane (Methylchloride)	µg/l	5	2.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Dibromochloromethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	5	0.025	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.00047	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Dibromomethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,2-Dichlorobenzene	µg/l	5	24	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,4-Dichlorobenzene	µg/l	5	1.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
trans-1,4-Dichloro-2-butene	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,1-Dichloroethane	µg/l	5	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,2-Dichloroethane	µg/l	5	0.38	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,1-Dichloroethene (-ethylene)	µg/l	5	7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	5	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,2-Dichloropropane	µg/l	5	0.51	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	5	0.19	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	5	0.19	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Ethylbenzene	µg/l	5	550	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
2-Hexanone	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Iodomethane	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Dichloromethane (Methylene chloride)	µg/l	5	4.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
2-Butanone (Methyl ethyl ketone)	µg/l	10	4200	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
4-Methyl-2-Pentanone	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Styrene	µg/l	5	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,1,1,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,1,2,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Tetrachloroethene (-ethylene)	µg/l	5	0.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Toluene	µg/l	5	1000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,1,1-Trichloroethane	µg/l	5	200	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,1,2-Trichloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Trichloroethene (-ethylene)	µg/l	5	2.8	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Trichlorofluoromethane	µg/l	10	2100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,2,3-Trichloropropane	µg/l	5	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Vinyl acetate	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Vinyl chloride	µg/l	5	0.015	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Xylene	µg/l	5	530	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND

Notes:

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White Oak Landfill - Haywood Co., NC
Groundwater Sampling Event (4-25-2007)

TEST	UNITS	MRL	MCL	MW-11S	MW-11D	MW-14	MW-1A	MW-2	MW-2D	MW-3	MW-3D	MW-4A	MW-8	MW-15	MW-16	MW-17	EQUIP. BLANK
pH	pH units (on-site)	-	NE	**6.04**	**7.08**	**6.27**	**6.25**	**5.36**	**5.83**	**5.7**	**5.73**	**8.02**	**5.54**	**9.08**	NP	NP	NT
Specific Conductance	µmhos/cm (on-site)	1	NE	**31**	**50**	**54**	**105**	**1540**	**757**	**391**	**312**	**134**	**336**	**46**	NP	NP	NT
Temperature	°C (on-site)	-	NE	**13.4**	**14.2**	**14**	**13**	**14**	**14.6**	**14**	**13**	**15.7**	**15.4**	**12.5**	NP	NP	NT
Turbidity	NTU (on-site)	NT	NE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
Total Antimony (Sb)	µg/l	6	NE	ND	ND	ND	ND	ND	**20**	ND	ND	ND	ND	ND	NP	NP	ND
Total Arsenic (As)	µg/l	5	50	ND	ND	ND	ND	ND	**280**	ND	ND	ND	ND	**12**	NP	NP	ND
Total Barium (Ba)	µg/l	100	2000	**290**	ND	**200**	**240**	**1300**	**1500**	**130**	**180**	ND	ND	**600**	NP	NP	ND
Total Beryllium (Be)	µg/l	1	NE	ND	ND	ND	ND	ND	**14**	ND	ND	ND	ND	**4.9**	NP	NP	ND
Total Cadmium (Cd)	µg/l	1	1.75	ND	ND	ND	ND	ND	**2.2**	ND	ND	ND	ND	ND	NP	NP	ND
Total Chromium (Cr)	µg/l	10	50	**20**	ND	ND	**16**	ND	**410**	ND	ND	ND	ND	**17**	NP	NP	ND
Total Cobalt (Co)	µg/l	10	NE	ND	ND	ND	ND	ND	**260**	ND	ND	ND	ND	ND	NP	NP	ND
Total Copper (Cu)	µg/l	10	1000	**15**	ND	ND	ND	ND	**330**	ND	ND	ND	ND	**26**	NP	NP	ND
Total Lead (Pb)	µg/l	10	15	ND	ND	ND	ND	ND	**96**	ND	ND	ND	ND	**69**	NP	NP	ND
Total Nickel (Ni)	µg/l	50	100	ND	ND	ND	ND	ND	**330**	ND	ND	ND	ND	ND	NP	NP	ND
Total Selenium (Se)	µg/l	10	50	**12**	ND	ND	ND	ND	**460**	ND	ND	ND	ND	**18**	NP	NP	ND
Total Silver (Ag)	µg/l	10	17.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Total Thallium (Tl)	µg/l	5.5	NE	ND	ND	ND	ND	ND	**35**	ND	ND	ND	ND	ND	NP	NP	ND
Total Vanadium (V)	µg/l	25	NE	**43**	ND	ND	ND	ND	**300**	ND	ND	ND	ND	**26**	NP	NP	ND
Total Zinc (Zn)	µg/l	10	1050	**55**	**21**	**30**	**30**	**22**	**830**	**22**	**15**	**10**	**12**	**200**	NP	NP	**12**
Acetone	µg/l	25	700	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Acrylonitrile	µg/l	25	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Benzene	µg/l	5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Bromochloromethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Bromodichloromethane	µg/l	5	0.56	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Bromoform	µg/l	5	0.19	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Carbon Disulfide	µg/l	10	700	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Bromomethane (Methylbromide)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Carbon tetrachloride	µg/l	5	0.269	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Chlorobenzene (mono)	µg/l	5	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Chloroethane	µg/l	10	2800	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Chloroform	µg/l	5	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Chloromethane (Methylchloride)	µg/l	5	2.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Dibromochloromethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	5	0.025	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.00047	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Dibromomethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,2-Dichlorobenzene	µg/l	5	24	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,4-Dichlorobenzene	µg/l	5	1.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
trans-1,4-Dichloro-2-butene	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,1-Dichloroethane	µg/l	5	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,2-Dichloroethane	µg/l	5	0.38	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,1-Dichloroethene (-ethylene)	µg/l	5	7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	5	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,2-Dichloropropane	µg/l	5	0.51	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	5	0.19	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	5	0.19	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Ethylbenzene	µg/l	5	550	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
2-Hexanone	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Iodomethane	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Dichloromethane (Methylene chloride)	µg/l	5	4.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
2-Butanone (Methyl ethyl ketone)	µg/l	10	4200	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
4-Methyl-2-Pentanone	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Styrene	µg/l	5	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,1,1,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,1,2,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Tetrachloroethene (-ethylene)	µg/l	5	0.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Toluene	µg/l	5	1000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,1,1-Trichloroethane	µg/l	5	200	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,1,2-Trichloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Trichloroethene (-ethylene)	µg/l	5	2.8	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Trichlorofluoromethane	µg/l	10	2100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,2,3-Trichloropropane	µg/l	5	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Vinyl acetate	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Vinyl chloride	µg/l	5	0.015	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Xylene	µg/l	5	530	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND

Notes:

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MRL = Laboratory Method Reporting Limit

ND = Not Detected at the method detection limit

NS = Not Sampled

NT = Not Tested

NE = Not Established; North Carolina has not established a MCL

NP = Not Present during sampling event

Shaded cells indicated exceedances of MCLs.

White Oak Landfill - Haywood Co., NC
Groundwater Sampling Event (10-31-2007)

TEST	UNITS	MRL	MCL	MW-11S	MW-11D	MW-14	MW-1A	MW-2	MW-2D	MW-3	MW-3D	MW-4A	MW-8	MW-15	MW-16	MW-17	EQUIP. BLANK
pH	pH units (on-site)	-	NE	**6.6**	**6.8**	**6.3**	**6.22**	**5.9**	**6**	**5.5**	**5.9**	**7.99**	**5.5**	**5.9**	NP	NP	NT
Specific Conductance	µmhos/cm (on-site)	1	NE	**28**	**61**	**45**	**94**	**1475**	**911**	**346**	**300**	**132**	**543**	**36**	NP	NP	NT
Temperature	°C (on-site)	-	NE	**13.8**	**16**	**16.1**	**14.8**	**17.5**	**17.6**	**17.5**	**17.2**	**14.8**	**15.6**	**17.2**	NP	NP	NT
Turbidity	NTU (on-site)	NT	NE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
Total Antimony (Sb)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Total Arsenic (As)	µg/l	5	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**21.4**	NP	NP	ND
Total Barium (Ba)	µg/l	5	2000	**501**	**31.5**	**223**	**198**	**1350**	**591**	**184**	**208**	**62.4**	**516**	**872**	NP	NP	ND
Total Beryllium (Be)	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**6**	NP	NP	ND
Total Cadmium (Cd)	µg/l	1	1.75	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Total Chromium (Cr)	µg/l	5	50	**40.9**	ND	**11.9**	**10.9**	**7.8**	ND	ND	ND	**5.1**	**75.5**	**33.7**	NP	NP	ND
Total Cobalt (Co)	µg/l	5	NE	**16.8**	ND	ND	ND	**10.6**	ND	ND	ND	ND	ND	**17.6**	NP	NP	ND
Total Copper (Cu)	µg/l	5	1000	**29.2**	ND	ND	ND	ND	ND	ND	ND	**6.3**	**40.3**	**47.4**	NP	NP	ND
Total Lead (Pb)	µg/l	5	15	**17.5**	**8.1**	ND	ND	ND	ND	ND	ND	ND	**12.3**	**123**	NP	NP	ND
Total Nickel (Ni)	µg/l	5	100	**24**	ND	**8**	**8.4**	**13.8**	ND	**5.8**	**9.8**	ND	**20.2**	**36.2**	NP	NP	ND
Total Selenium (Se)	µg/l	10	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Total Silver (Ag)	µg/l	5	17.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Total Thallium (Tl)	µg/l	5.5	NE	**11.6**	ND	ND	ND	ND	ND	ND	ND	ND	**9.5**	ND	NP	NP	ND
Total Vanadium (V)	µg/l	5	NE	**89**	ND	**8.8**	**14.7**	**20**	ND	ND	ND	**8.6**	**103**	**48.2**	NP	NP	ND
Total Zinc (Zn)	µg/l	10	1050	**86**	ND	**66.2**	**14**	**37.4**	**33.3**	**12**	ND	**11.6**	**91.1**	**336**	NP	NP	ND
Acetone	µg/l	25	700	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Acrylonitrile	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Benzene	µg/l	1	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Bromochloromethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Bromodichloromethane	µg/l	1	0.56	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Bromoform	µg/l	1	0.19	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Carbon Disulfide	µg/l	2	700	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Bromomethane (Methylbromide)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Carbon tetrachloride	µg/l	1	0.269	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Chlorobenzene (mono)	µg/l	1	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Chloroethane	µg/l	1	2800	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Chloroform	µg/l	1	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Chloromethane (Methylchloride)	µg/l	1	2.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Dibromochloromethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	3	0.025	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	1	0.00047	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Dibromomethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,2-Dichlorobenzene	µg/l	1	24	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,4-Dichlorobenzene	µg/l	1	1.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
trans-1,4-Dichloro-2-butene	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,1-Dichloroethane	µg/l	1	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,2-Dichloroethane	µg/l	1	0.38	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,1-Dichloroethene (-ethylene)	µg/l	1	7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	1	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	1	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,2-Dichloropropane	µg/l	1	0.51	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	1	0.19	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	1	0.19	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Ethylbenzene	µg/l	1	550	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
2-Hexanone	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Iodomethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Dichloromethane (Methylene chloride)	µg/l	2	4.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
2-Butanone (Methyl ethyl ketone)	µg/l	5	4200	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
4-Methyl-2-Pentanone	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Styrene	µg/l	1	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,1,1,2-Tetrachloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,1,2,2-Tetrachloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Tetrachloroethene (-ethylene)	µg/l	1	0.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Toluene	µg/l	1	1000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,1,1-Trichloroethane	µg/l	1	200	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,1,2-Trichloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Trichloroethene (-ethylene)	µg/l	1	2.8	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Trichlorofluoromethane	µg/l	1	2100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,2,3-Trichloropropane	µg/l	1	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Vinyl acetate	µg/l	2	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Vinyl chloride	µg/l	1	0.015	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Xylenes	µg/l	2	530	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND

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White Oak Landfill - Haywood Co., NC
Groundwater Sampling Event (04-23-2008)

TEST	UNITS	MRL	MCL	MW-11S	MW-11D	MW-14	MW-1A	MW-2	MW-2D	MW-3	MW-3D	MW-4A	MW-8	MW-15	MW-16	MW-17	EQUIP. BLANK
pH	pH units (on-site)	-	NE	**6.59**	**7.22**	**6.58**	**6.33**	**5.71**	**6.05**	**5.66**	**5.65**	**8.13**	**5.56**	**6.69**	NP	NP	NT
Specific Conductance	µmhos/cm (on-site)	1	NE	**25**	**49**	**49**	**102**	**1546**	**946**	**411**	**318**	**124**	**481**	**33**	NP	NP	NT
Temperature	°C (on-site)	-	NE	**13.9**	**14.2**	**14.2**	**13.2**	**14.6**	**14.4**	**13.4**	**14.7**	**17.4**	**14.8**	**14.1**	NP	NP	NT
Turbidity	NTU (on-site)	NT	NE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
Total Antimony (Sb)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Total Arsenic (As)	µg/l	5	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**10.2**	NP	NP	ND
Total Barium (Ba)	µg/l	5	2000	**194**	**30.8**	**253**	**168**	**1230**	**661**	**216**	**202**	**61.8**	**151**	**361**	NP	NP	ND
Total Beryllium (Be)	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**3**	NP	NP	ND
Total Cadmium (Cd)	µg/l	1	1.75	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**1.6**	NP	NP	ND
Total Chromium (Cr)	µg/l	5	50	**10.7**	ND	**16.8**	**7.8**	ND	ND	ND	ND	**7.6**	**7.3**	**14.9**	NP	NP	ND
Total Cobalt (Co)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**22.3**	NP	NP	ND
Total Copper (Cu)	µg/l	5	1000	**7.2**	ND	ND	ND	ND	ND	ND	ND	**7.2**	ND	**17**	NP	NP	ND
Total Lead (Pb)	µg/l	5	15	ND	ND	**8.4**	ND	ND	ND	ND	ND	**5.8**	ND	**50.2**	NP	NP	ND
Total Nickel (Ni)	µg/l	5	100	**7.3**	ND	**12.9**	**6.3**	**10.8**	**5.7**	ND	**11.3**	**5.3**	ND	**19**	NP	NP	ND
Total Selenium (Se)	µg/l	10	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Total Silver (Ag)	µg/l	5	17.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Total Thallium (Tl)	µg/l	5.5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Total Vanadium (V)	µg/l	5	NE	**26.1**	ND	**11.4**	**9.7**	**10.1**	ND	ND	**5.1**	**9.7**	**10**	**23.1**	NP	NP	ND
Total Zinc (Zn)	µg/l	10	1050	**27.3**	ND	**50.3**	**12.2**	**24.4**	**36.9**	ND	**10.3**	**17.5**	**38.8**	**138**	NP	NP	ND
Acetone	µg/l	25	700	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Acrylonitrile	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Benzene	µg/l	1	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Bromochloromethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Bromodichloromethane	µg/l	1	0.56	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Bromoform	µg/l	1	0.19	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Carbon Disulfide	µg/l	2	700	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Bromomethane (Methylbromide)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Carbon tetrachloride	µg/l	1	0.269	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Chlorobenzene (mono)	µg/l	1	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Chloroethane	µg/l	1	2800	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Chloroform	µg/l	1	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Chloromethane (Methylchloride)	µg/l	1	2.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Dibromochloromethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	3	0.025	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	1	0.00047	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Dibromomethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,2-Dichlorobenzene	µg/l	1	24	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,4-Dichlorobenzene	µg/l	1	1.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
trans-1,4-Dichloro-2-butene	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,1-Dichloroethane	µg/l	1	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,2-Dichloroethane	µg/l	1	0.38	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,1-Dichloroethene (-ethylene)	µg/l	1	7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	1	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	1	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,2-Dichloropropane	µg/l	1	0.51	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	1	0.19	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	1	0.19	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Ethylbenzene	µg/l	1	550	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
2-Hexanone	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Iodomethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Dichloromethane (Methylene chloride)	µg/l	2	4.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
2-Butanone (Methyl ethyl ketone)	µg/l	5	4200	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
4-Methyl-2-Pentanone	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Styrene	µg/l	1	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,1,1,2-Tetrachloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,1,2,2-Tetrachloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Tetrachloroethene (-ethylene)	µg/l	1	0.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Toluene	µg/l	1	1000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,1,1-Trichloroethane	µg/l	1	200	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,1,2-Trichloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Trichloroethene (-ethylene)	µg/l	1	2.8	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Trichlorofluoromethane	µg/l	1	2100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,2,3-Trichloropropane	µg/l	1	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Vinyl acetate	µg/l	2	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Vinyl chloride	µg/l	1	0.015	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Xylenes	µg/l	2	530	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND

Notes:

MCL = Maximum Contaminant Level, as established in the NCDENR, Classifications of Water Quality Standards Applicable to Groundwaters of North Carolina, Section 15A NCAC 2L.202.

MRL = Laboratory Method Reporting Limit

ND = Not Detected at the method detection limit

NS = Not Sampled

NT = Not Tested

NE = Not Established; North Carolina has not established a MCL

NP = Not Present during sampling event

Shaded cells indicated exceedances of MCLs.

White Oak Landfill - Haywood Co., NC
Groundwater Sampling Event (10-20-2008)

TEST	UNITS	MRL	MCL	MW-11S	MW-11D	MW-14	MW-1A	MW-2	MW-2D	MW-3	MW-3D	MW-4A	MW-8	MW-15	MW-16	MW-17	EQUIP. BLANK
pH	pH units (on-site)	-	NE	**5.7**	**6.7**	**6.2**	**6.1**	**5.9**	**6.0**	**5.9**	**5.8**	**7.9**	**5.6**	**5.5**	NP	NP	NT
Specific Conductance	µmhos/cm (on-site)	1	NE	**28.0**	**54.0**	**44.0**	**104**	**1420**	**1111**	**320**	**350.0**	**129.0**	**621.0**	**41.0**	NP	NP	NT
Temperature	°C (on-site)	-	NE	**13.8**	**14.2**	**12.0**	**13.2**	**14.3**	**15.4**	**14.9**	**14.6**	**15.2**	**14.5**	**16.5**	NP	NP	NT
Turbidity	NTU (on-site)	NT	NE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	NT
Total Antimony (Sb)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Total Arsenic (As)	µg/l	5	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**6.6**	NP	NP	ND
Total Barium (Ba)	µg/l	5	2000	**474**	**66.0**	**313**	**224**	**1210**	**894**	**164**	**216**	**41.1**	**182**	**245**	NP	NP	ND
Total Beryllium (Be)	µg/l	1	NE	ND	**1.2**	ND	ND	ND	ND	ND	ND	ND	ND	**1.9**	NP	NP	ND
Total Cadmium (Cd)	µg/l	1	1.75	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Total Chromium (Cr)	µg/l	5	50	**38.6**	ND	**29.4**	**12.7**	ND	ND	ND	ND	ND	ND	**6.8**	NP	NP	ND
Total Cobalt (Co)	µg/l	5	NE	**27.0**	**10.4**	**19.5**	**9.4**	**7.7**	ND	**12.6**	**5.3**	**7.1**	ND	**18.4**	NP	NP	ND
Total Copper (Cu)	µg/l	5	1000	**26.5**	ND	**8.3**	ND	ND	ND	ND	ND	ND	ND	**9.7**	NP	NP	ND
Total Lead (Pb)	µg/l	5	15	ND	**13.5**	**7.6**	ND	ND	ND	ND	ND	ND	ND	**25.9**	NP	NP	ND
Total Nickel (Ni)	µg/l	5	100	**23.0**	ND	**21.0**	**11.1**	**10.7**	**7.5**	ND	**14.0**	ND	ND	**8.5**	NP	NP	ND
Total Selenium (Se)	µg/l	10	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Total Silver (Ag)	µg/l	5	17.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Total Thallium (Tl)	µg/l	5.4	NE	**7.2**	ND	ND	ND	ND	ND	ND	**6.1**	ND	ND	ND	NP	NP	ND
Total Vanadium (V)	µg/l	5	NE	**79.0**	ND	**15.1**	**15.8**	ND	ND	ND	ND	**5.4**	ND	**14.8**	NP	NP	ND
Total Zinc (Zn)	µg/l	10	1050	**66.5**	**19.9**	**59.2**	**15.3**	**10.6**	**29.1**	ND	**12.4**	ND	**17.4**	**71.5**	NP	NP	ND
Acetone	µg/l	25	700	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**140**	NP	NP	ND
Acrylonitrile	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Benzene	µg/l	1	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Bromochloromethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Bromodichloromethane	µg/l	1	0.56	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Bromoform	µg/l	1	0.19	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Carbon Disulfide	µg/l	2	700	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Bromomethane (Methylbromide)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Carbon tetrachloride	µg/l	1	0.269	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Chlorobenzene (mono)	µg/l	1	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Chloroethane	µg/l	1	2800	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Chloroform	µg/l	1	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Chloromethane (Methylchloride)	µg/l	1	2.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Dibromochloromethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	3	0.025	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	1	0.00047	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Dibromomethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,2-Dichlorobenzene	µg/l	1	24	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,4-Dichlorobenzene	µg/l	1	1.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
trans-1,4-Dichloro-2-butene	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,1-Dichloroethane	µg/l	1	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,2-Dichloroethane	µg/l	1	0.38	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,1-Dichloroethene (-ethylene)	µg/l	1	7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	1	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	1	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,2-Dichloropropane	µg/l	1	0.51	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	1	0.19	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	1	0.19	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Ethylbenzene	µg/l	1	550	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
2-Hexanone	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Iodomethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Dichloromethane (Methylene chloride)	µg/l	2	4.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
2-Butanone (Methyl ethyl ketone)	µg/l	5	4200	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**54.4**	NP	NP	ND
4-Methyl-2-Pentanone	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Styrene	µg/l	1	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,1,1,2-Tetrachloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,1,2,2-Tetrachloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Tetrachloroethene (-ethylene)	µg/l	1	0.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Toluene	µg/l	1	1000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,1,1-Trichloroethane	µg/l	1	200	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,1,2-Trichloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Trichloroethene (-ethylene)	µg/l	1	2.8	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Trichlorofluoromethane	µg/l	1	2100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
1,2,3-Trichloropropane	µg/l	1	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Vinyl acetate	µg/l	2	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Vinyl chloride	µg/l	1	0.015	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND
Xylenes	µg/l	2	530	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	ND

Notes:

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MRL = Laboratory Method Reporting Limit

ND = Not Detected at the method detection limit

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Shaded cells indicated exceedances of MCLs.

White Oak Landfill - Haywood Co., NC
Groundwater Sampling Event (4-22-2009)

TEST	UNITS	MRL	MCL	MW-11S	MW-11D	MW-14	MW-1A	MW-2	MW-2D	MW-3	MW-3D	MW-4A	MW-8	MW-15	MW-16	MW-17	EQUIP. BLANK
pH	pH units (on-site)	-	NE	**5.64**	**6.89**	**6.32**	**5.83**	**5.74**	**5.92**	**5.75**	**5.72**	**7.56**	**5.47**	NS	NP	NP	NT
Specific Conductance	µmhos/cm (on-site)	1	NE	**28.0**	**53.0**	**12.0**	**131**	**1427**	**1109**	**398**	**358**	**131**	**536.0**	NS	NP	NP	NT
Temperature	°C (on-site)	-	NE	**13.3**	**13.1**	**47**	**13.4**	**12.8**	**13.1**	**11.7**	**12.1**	**14.4**	**15.1**	NS	NP	NP	NT
Turbidity	NTU (on-site)	NT	NE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	NT
Total Antimony (Sb)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NP	NP	ND
Total Arsenic (As)	µg/l	5	50	ND	ND	**5.4**	ND	ND	**5.6**	ND	ND	ND	ND	NS	NP	NP	ND
Total Barium (Ba)	µg/l	5	2000	**126**	**47.2**	**591**	**309**	**1300**	**817**	**230**	**216**	**77.0**	**163**	NS	NP	NP	ND
Total Beryllium (Be)	µg/l	1	NE	ND	ND	**1.5**	ND	ND	ND	ND	ND	ND	ND	NS	NP	NP	ND
Total Cadmium (Cd)	µg/l	1	1.75	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NP	NP	ND
Total Chromium (Cr)	µg/l	5	50	**12.3**	ND	**28.9**	**19.7**	**5.1**	ND	ND	ND	**7.3**	ND	NS	NP	NP	ND
Total Cobalt (Co)	µg/l	5	NE	**5.0**	**6.3**	**17.1**	**8.5**	**5.7**	ND	**7.0**	ND	**6.4**	ND	NS	NP	NP	ND
Total Copper (Cu)	µg/l	5	1000	**5.1**	ND	**22.6**	**6.0**	ND	ND	ND	ND	**8.8**	ND	NS	NP	NP	ND
Total Lead (Pb)	µg/l	5	15	ND	**8.7**	**24.4**	ND	ND	ND	ND	ND	**9.8**	ND	NS	NP	NP	ND
Total Nickel (Ni)	µg/l	5	100	**5.6**	**7.2**	**19.7**	**16.7**	**10.9**	**6.0**	**5.1**	**14.0**	**6.0**	ND	NS	NP	NP	ND
Total Selenium (Se)	µg/l	10	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NP	NP	ND
Total Silver (Ag)	µg/l	5	17.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NP	NP	ND
Total Thallium (Tl)	µg/l	5.4	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NP	NP	ND
Total Vanadium (V)	µg/l	5	NE	**16.0**	ND	**32.7**	**19.8**	**7.7**	ND	ND	ND	**13.3**	ND	NS	NP	NP	ND
Total Zinc (Zn)	µg/l	10	1050	**23.1**	**43.5**	**99.9**	**25.3**	**17.9**	**17.6**	**10.5**	ND	**35.2**	ND	NS	NP	NP	ND
Acetone	µg/l	25	700	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NP	NP	ND
Acrylonitrile	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NP	NP	ND
Benzene	µg/l	1	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NP	NP	ND
Bromochloromethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NP	NP	ND
Bromodichloromethane	µg/l	1	0.56	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NP	NP	ND
Bromoform	µg/l	1	0.19	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NP	NP	ND
Carbon Disulfide	µg/l	2	700	ND	ND	ND	ND	ND	ND	ND	ND	**4.5**	ND	NS	NP	NP	ND
Bromomethane (Methylbromide)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NP	NP	ND
Carbon tetrachloride	µg/l	1	0.269	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NP	NP	ND
Chlorobenzene (mono)	µg/l	1	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NP	NP	ND
Chloroethane	µg/l	1	2800	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NP	NP	ND
Chloroform	µg/l	1	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NP	NP	ND
Chloromethane (Methylchloride)	µg/l	1	2.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NP	NP	ND
Dibromochloromethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NP	NP	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	3	0.025	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NP	NP	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	1	0.00047	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NP	NP	ND
Dibromomethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NP	NP	ND
1,2-Dichlorobenzene	µg/l	1	24	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NP	NP	ND
1,4-Dichlorobenzene	µg/l	1	1.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NP	NP	ND
trans-1,4-Dichloro-2-butene	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NP	NP	ND
1,1-Dichloroethane	µg/l	1	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NP	NP	ND
1,2-Dichloroethane	µg/l	1	0.38	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NP	NP	ND
1,1-Dichloroethene (-ethylene)	µg/l	1	7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NP	NP	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	1	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NP	NP	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	1	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NP	NP	ND
1,2-Dichloropropane	µg/l	1	0.51	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NP	NP	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	1	0.19	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NP	NP	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	1	0.19	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NP	NP	ND
Ethylbenzene	µg/l	1	550	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NP	NP	ND
2-Hexanone	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NP	NP	ND
Iodomethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NP	NP	ND
Dichloromethane (Methylene chloride)	µg/l	2	4.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NP	NP	ND
2-Butanone (Methyl ethyl ketone)	µg/l	5	4200	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NP	NP	ND
4-Methyl-2-Pentanone	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NP	NP	ND
Styrene	µg/l	1	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NP	NP	ND
1,1,1,2-Tetrachloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NP	NP	ND
1,1,2,2-Tetrachloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NP	NP	ND
Tetrachloroethene (-ethylene)	µg/l	1	0.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NP	NP	ND
Toluene	µg/l	1	1000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NP	NP	ND
1,1,1-Trichloroethane	µg/l	1	200	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NP	NP	ND
1,1,2-Trichloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NP	NP	ND
Trichloroethene (-ethylene)	µg/l	1	2.8	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NP	NP	ND
Trichlorofluoromethane	µg/l	1	2100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NP	NP	ND
1,2,3-Trichloropropane	µg/l	1	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NP	NP	ND
Vinyl acetate	µg/l	2	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NP	NP	ND
Vinyl chloride	µg/l	1	0.015	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NP	NP	ND
Xylenes	µg/l	2	530	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NP	NP	ND

Notes:

MCL = Maximum Contaminant Level, as established in the NCDENR, Classifications of Water Quality Standards Applicable to Groundwaters of North Carolina, Section 15A NCAC 2L.202.

MRL = Laboratory Method Reporting Limit

ND = Not Detected at the method detection limit

NS = Not Sampled

NT = Not Tested

NE = Not Established; North Carolina has not established a MCL

NP = Not Present during sampling event

Shaded cells indicated exceedances of MCLs.

White Oak Landfill - Haywood Co., NC
Groundwater Sampling Event (10-26-2009)

TEST	UNITS	MRL	MCL	MW-11S	MW-11D	MW-14	MW-1A	MW-2	MW-2D	MW-3	MW-3D	MW-4A	MW-8	MW-15	MW-16	MW-17	EQUIP. BLANK
pH	pH units (on-site)	-	NE	**5.88**	**6.35**	**6.0**	**5.76**	**5.78**	**5.95**	NS	NS	NS	**5.32**	**5.30**	NP	NP	NT
Specific Conductance	µmhos/cm (on-site)	1	NE	**29**	**50**	**37.0**	**127**	**1532**	**1120**	NS	NS	NS	**637**	**39**	NP	NP	NT
Temperature	°C (on-site)	-	NE	**13.4**	**13.2**	**14.4**	**14.6**	**14.7**	**15.9**	NS	NS	NS	**14.5**	**15.3**	NP	NP	NT
Turbidity	NTU (on-site)	NT	NE	NT	NT	NT	NT	NT	NT	NS	NS	NS	NT	NT	NP	NP	NT
Total Antimony (Sb)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	NS	NS	NS	ND	ND	NP	NP	ND
Total Arsenic (As)	µg/l	5	50	ND	ND	ND	ND	**6.0**	ND	NS	NS	NS	ND	ND	NP	NP	ND
Total Barium (Ba)	µg/l	5	2000	**131**	**16.8**	**144**	**188**	**1720**	**987**	NS	NS	NS	**209**	**178**	NP	NP	ND
Total Beryllium (Be)	µg/l	1	NE	ND	ND	ND	ND	ND	ND	NS	NS	NS	ND	**1.7**	NP	NP	ND
Total Cadmium (Cd)	µg/l	1	1.75	ND	ND	ND	ND	ND	ND	NS	NS	NS	ND	ND	NP	NP	ND
Total Chromium (Cr)	µg/l	5	50	**10.0**	ND	**8.1**	ND	**18.7**	ND	NS	NS	NS	**10.9**	**8.1**	NP	NP	ND
Total Cobalt (Co)	µg/l	5	NE	ND	ND	ND	ND	**6.0**	ND	NS	NS	NS	ND	**6.0**	NP	NP	ND
Total Copper (Cu)	µg/l	5	1000	**5.8**	ND	ND	ND	**6.4**	ND	NS	NS	NS	ND	**7.1**	NP	NP	ND
Total Lead (Pb)	µg/l	5	15	ND	ND	ND	ND	ND	ND	NS	NS	NS	ND	**24.7**	NP	NP	ND
Total Nickel (Ni)	µg/l	5	100	**6.7**	ND	**5.2**	**6.0**	**18.0**	**7.5**	NS	NS	NS	**6.0**	**8.4**	NP	NP	ND
Total Selenium (Se)	µg/l	10	50	ND	ND	ND	ND	ND	ND	NS	NS	NS	ND	ND	NP	NP	ND
Total Silver (Ag)	µg/l	5	17.5	ND	ND	ND	ND	ND	ND	NS	NS	NS	ND	ND	NP	NP	ND
Total Thallium (Tl)	µg/l	5.4	NE	ND	ND	ND	ND	ND	ND	NS	NS	NS	ND	ND	NP	NP	ND
Total Vanadium (V)	µg/l	5	NE	**17.9**	ND	ND	**5.3**	**33.6**	ND	NS	NS	NS	**12.2**	**11.9**	NP	NP	ND
Total Zinc (Zn)	µg/l	10	1050	**19.6**	ND	**14.8**	ND	**37.8**	ND	NS	NS	NS	ND	**63.8**	NP	NP	ND
Acetone	µg/l	25	700	ND	ND	ND	ND	ND	ND	NS	NS	NS	ND	ND	NP	NP	ND
Acrylonitrile	µg/l	10	NE	ND	ND	ND	ND	ND	ND	NS	NS	NS	ND	ND	NP	NP	ND
Benzene	µg/l	1	1	ND	ND	ND	ND	ND	ND	NS	NS	NS	ND	ND	NP	NP	ND
Bromochloromethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	NS	NS	NS	ND	ND	NP	NP	ND
Bromodichloromethane	µg/l	1	0.56	ND	ND	ND	ND	ND	ND	NS	NS	NS	ND	ND	NP	NP	ND
Bromoform	µg/l	1	0.19	ND	ND	ND	ND	ND	ND	NS	NS	NS	ND	ND	NP	NP	ND
Carbon Disulfide	µg/l	2	700	ND	ND	ND	ND	ND	ND	NS	NS	NS	ND	ND	NP	NP	ND
Bromomethane (Methylbromide)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	NS	NS	NS	ND	ND	NP	NP	ND
Carbon tetrachloride	µg/l	1	0.269	ND	ND	ND	ND	ND	ND	NS	NS	NS	ND	ND	NP	NP	ND
Chlorobenzene (mono)	µg/l	1	50	ND	ND	ND	ND	ND	ND	NS	NS	NS	ND	ND	NP	NP	ND
Chloroethane	µg/l	1	2800	ND	ND	ND	ND	ND	ND	NS	NS	NS	ND	ND	NP	NP	ND
Chloroform	µg/l	1	70	ND	ND	ND	ND	ND	ND	NS	NS	NS	ND	ND	NP	NP	ND
Chloromethane (Methylchloride)	µg/l	1	2.6	ND	ND	ND	ND	ND	ND	NS	NS	NS	ND	ND	NP	NP	ND
Dibromochloromethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	NS	NS	NS	ND	ND	NP	NP	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	3	0.025	ND	ND	ND	ND	ND	ND	NS	NS	NS	ND	ND	NP	NP	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	1	0.00047	ND	ND	ND	ND	ND	ND	NS	NS	NS	ND	ND	NP	NP	ND
Dibromomethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	NS	NS	NS	ND	ND	NP	NP	ND
1,2-Dichlorobenzene	µg/l	1	24	ND	ND	ND	ND	ND	ND	NS	NS	NS	ND	ND	NP	NP	ND
1,4-Dichlorobenzene	µg/l	1	1.4	ND	ND	ND	ND	ND	ND	NS	NS	NS	ND	ND	NP	NP	ND
trans-1,4-Dichloro-2-butene	µg/l	1	NE	ND	ND	ND	ND	ND	ND	NS	NS	NS	ND	ND	NP	NP	ND
1,1-Dichloroethane	µg/l	1	70	ND	ND	ND	ND	ND	ND	NS	NS	NS	ND	ND	NP	NP	ND
1,2-Dichloroethane	µg/l	1	0.38	ND	ND	ND	ND	ND	ND	NS	NS	NS	ND	ND	NP	NP	ND
1,1-Dichloroethene (-ethylene)	µg/l	1	7	ND	ND	ND	ND	ND	ND	NS	NS	NS	ND	ND	NP	NP	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	1	70	ND	ND	ND	ND	ND	ND	NS	NS	NS	ND	ND	NP	NP	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	1	100	ND	ND	ND	ND	ND	ND	NS	NS	NS	ND	ND	NP	NP	ND
1,2-Dichloropropane	µg/l	1	0.51	ND	ND	ND	ND	ND	ND	NS	NS	NS	ND	ND	NP	NP	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	1	0.19	ND	ND	ND	ND	ND	ND	NS	NS	NS	ND	ND	NP	NP	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	1	0.19	ND	ND	ND	ND	ND	ND	NS	NS	NS	ND	ND	NP	NP	ND
Ethylbenzene	µg/l	1	550	ND	ND	ND	ND	ND	ND	NS	NS	NS	ND	ND	NP	NP	ND
2-Hexanone	µg/l	5	NE	ND	ND	ND	ND	ND	ND	NS	NS	NS	ND	ND	NP	NP	ND
Iodomethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	NS	NS	NS	ND	ND	NP	NP	ND
Dichloromethane (Methylene chloride)	µg/l	2	4.6	ND	ND	ND	ND	ND	ND	NS	NS	NS	ND	ND	NP	NP	ND
2-Butanone (Methyl ethyl ketone)	µg/l	5	4200	ND	ND	ND	ND	ND	ND	NS	NS	NS	ND	ND	NP	NP	ND
4-Methyl-2-Pentanone	µg/l	5	NE	ND	ND	ND	ND	ND	ND	NS	NS	NS	ND	ND	NP	NP	ND
Styrene	µg/l	1	100	ND	ND	ND	ND	ND	ND	NS	NS	NS	ND	ND	NP	NP	ND
1,1,1,2-Tetrachloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	NS	NS	NS	ND	ND	NP	NP	ND
1,1,2,2-Tetrachloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	NS	NS	NS	ND	ND	NP	NP	ND
Tetrachloroethene (-ethylene)	µg/l	1	0.7	ND	ND	ND	ND	ND	ND	NS	NS	NS	ND	ND	NP	NP	ND
Toluene	µg/l	1	1000	ND	ND	ND	ND	ND	ND	NS	NS	NS	ND	ND	NP	NP	ND
1,1,1-Trichloroethane	µg/l	1	200	ND	ND	ND	ND	ND	ND	NS	NS	NS	ND	ND	NP	NP	ND
1,1,2-Trichloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	NS	NS	NS	ND	ND	NP	NP	ND
Trichloroethene (-ethylene)	µg/l	1	2.8	ND	ND	ND	ND	ND	ND	NS	NS	NS	ND	ND	NP	NP	ND
Trichlorofluoromethane	µg/l	1	2100	ND	ND	ND	ND	ND	ND	NS	NS	NS	ND	ND	NP	NP	ND
1,2,3-Trichloropropane	µg/l	1	0.005	ND	ND	ND	ND	ND	ND	NS	NS	NS	ND	ND	NP	NP	ND
Vinyl acetate	µg/l	2	NE	ND	ND	ND	ND	ND	ND	NS	NS	NS	ND	ND	NP	NP	ND
Vinyl chloride	µg/l	1	0.015	ND	ND	ND	ND	ND	ND	NS	NS	NS	ND	ND	NP	NP	ND
Xylenes	µg/l	2	530	ND	ND	ND	ND	ND	ND	NS	NS	NS	ND	ND	NP	NP	ND

Notes:

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ND = Not Detected at the method detection limit

NS = Not Sampled

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Shaded cells indicated exceedances of MCLs.

White Oak Landfill - Haywood Co., NC
Groundwater Sampling Event (4-22-2010)

TEST	UNITS	MRL	MCL	MW-11S	MW-11D	MW-14	MW-1A	MW-2	MW-2D	MW-3	MW-3D	MW-4A	MW-8	MW-15	MW-16	MW-17	EQUIP. BLANK
pH	pH units (on-site)	-	NE	**6.05**	**6.54**	**6.33**	**6.06**	**5.90**	**5.94**	NS	NS	**7.04**	**5.50**	**5.69**	NP	NP	NT
Specific Conductance	µmhos/cm (on-site)	1	NE	**65**	**96**	**8.2**	**161**	**1987**	**1812**	NS	NS	**1727**	**659**	**83**	NP	NP	NT
Temperature	°C (on-site)	-	NE	**13.5**	**13.8**	**13.9**	**13.5**	**13.3**	**13.4**	NS	NS	**14.9**	**14.6**	**12.7**	NP	NP	NT
Turbidity	NTU (on-site)	NT	NE	NT	NT	NT	NT	NT	NT	NS	NS	NT	NT	NT	NP	NP	NT
Total Antimony (Sb)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND	NP	NP	ND
Total Arsenic (As)	µg/l	5	50	ND	ND	ND	ND	**7.4**	**9.8**	NS	NS	ND	ND	ND	NP	NP	ND
Total Barium (Ba)	µg/l	5	2000	**208**	**43.5**	**153**	**157**	**1920**	**1380**	NS	NS	**20.9**	**150**	**74.8**	NP	NP	ND
Total Beryllium (Be)	µg/l	1	NE	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND	NP	NP	ND
Total Cadmium (Cd)	µg/l	1	1.75	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND	NP	NP	ND
Total Chromium (Cr)	µg/l	5	50	**14.3**	**10.9**	**13.1**	ND	ND	ND	NS	NS	ND	ND	ND	NP	NP	ND
Total Cobalt (Co)	µg/l	5	NE	**5.6**	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND	NP	NP	ND
Total Copper (Cu)	µg/l	5	1000	**9.9**	ND	ND	ND	ND	**5.9**	NS	NS	ND	ND	ND	NP	NP	ND
Total Lead (Pb)	µg/l	5	15	ND	**10.5**	ND	ND	ND	ND	NS	NS	ND	ND	**9.2**	NP	NP	ND
Total Nickel (Ni)	µg/l	5	100	**8.6**	**9.6**	**7.6**	ND	**6.2**	ND	NS	NS	ND	ND	ND	NP	NP	ND
Total Selenium (Se)	µg/l	10	50	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND	NP	NP	ND
Total Silver (Ag)	µg/l	5	17.5	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND	NP	NP	ND
Total Thallium (Tl)	µg/l	5.4	NE	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND	NP	NP	ND
Total Vanadium (V)	µg/l	5	NE	**27.9**	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND	NP	NP	ND
Total Zinc (Zn)	µg/l	10	1050	**22.2**	**14.2**	ND	ND	ND	ND	NS	NS	ND	ND	**24.6**	NP	NP	ND
Acetone	µg/l	25	700	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND	NP	NP	ND
Acrylonitrile	µg/l	10	NE	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND	NP	NP	ND
Benzene	µg/l	1	1	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND	NP	NP	ND
Bromochloromethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND	NP	NP	ND
Bromodichloromethane	µg/l	1	0.56	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND	NP	NP	ND
Bromoform	µg/l	1	0.19	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND	NP	NP	ND
Carbon Disulfide	µg/l	2	700	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND	NP	NP	ND
Bromomethane (Methylbromide)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND	NP	NP	ND
Carbon tetrachloride	µg/l	1	0.269	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND	NP	NP	ND
Chlorobenzene (mono)	µg/l	1	50	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND	NP	NP	ND
Chloroethane	µg/l	1	2800	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND	NP	NP	ND
Chloroform	µg/l	1	70	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND	NP	NP	ND
Chloromethane (Methylchloride)	µg/l	1	2.6	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND	NP	NP	ND
Dibromochloromethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND	NP	NP	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	3	0.025	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND	NP	NP	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	1	0.00047	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND	NP	NP	ND
Dibromomethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND	NP	NP	ND
1,2-Dichlorobenzene	µg/l	1	24	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND	NP	NP	ND
1,4-Dichlorobenzene	µg/l	1	1.4	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND	NP	NP	ND
trans-1,4-Dichloro-2-butene	µg/l	1	NE	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND	NP	NP	ND
1,1-Dichloroethane	µg/l	1	70	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND	NP	NP	ND
1,2-Dichloroethane	µg/l	1	0.38	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND	NP	NP	ND
1,1-Dichloroethene (-ethylene)	µg/l	1	7	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND	NP	NP	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	1	70	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND	NP	NP	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	1	100	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND	NP	NP	ND
1,2-Dichloropropane	µg/l	1	0.51	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND	NP	NP	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	1	0.19	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND	NP	NP	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	1	0.19	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND	NP	NP	ND
Ethylbenzene	µg/l	1	550	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND	NP	NP	ND
2-Hexanone	µg/l	5	NE	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND	NP	NP	ND
Iodomethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND	NP	NP	ND
Dichloromethane (Methylene chloride)	µg/l	2	4.6	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND	NP	NP	ND
2-Butanone (Methyl ethyl ketone)	µg/l	5	4200	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND	NP	NP	ND
4-Methyl-2-Pentanone	µg/l	5	NE	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND	NP	NP	ND
Styrene	µg/l	1	100	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND	NP	NP	ND
1,1,1,2-Tetrachloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND	NP	NP	ND
1,1,2,2-Tetrachloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND	NP	NP	ND
Tetrachloroethene (-ethylene)	µg/l	1	0.7	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND	NP	NP	ND
Toluene	µg/l	1	1000	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND	NP	NP	ND
1,1,1-Trichloroethane	µg/l	1	200	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND	NP	NP	ND
1,1,2-Trichloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND	NP	NP	ND
Trichloroethene (-ethylene)	µg/l	1	2.8	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND	NP	NP	ND
Trichlorofluoromethane	µg/l	1	2100	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND	NP	NP	ND
1,2,3-Trichloropropane	µg/l	1	0.005	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND	NP	NP	ND
Vinyl acetate	µg/l	2	NE	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND	NP	NP	ND
Vinyl chloride	µg/l	1	0.015	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND	NP	NP	ND
Xylenes	µg/l	2	530	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND	NP	NP	ND

Notes:

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MRL = Laboratory Method Reporting Limit

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White Oak Landfill - Haywood Co., NC
Groundwater Sampling Event (10-27-2010)

TEST	UNITS	MRL	MCL	MW-11S	MW-11D	MW-14	MW-1A	MW-2	MW-2D	MW-3R	MW-3DR	MW-4A	MW-8	MW-15	MW-16	MW-17	EQUIP. BLANK
pH	pH units (on-site)	-	NE	**5.33**	**6.38**	**6.06**	**5.69**	**5.72**	**5.96**	**5.43**	**5.65**	**7.36**	**5.29**	**5.44**	**5.65**	**5.82**	NT
Specific Conductance	µmhos/cm (on-site)	1	NE	**35**	**52**	**54**	**113**	**189**	**177**	**418**	**317**	**140**	**772**	**46**	**221**	**90**	NT
Temperature	°C (on-site)	-	NE	**13.7**	**14.1**	**14.1**	**13.9**	**13.9**	**14.7**	**15.2**	**15.0**	**15.7**	**14.7**	**16.5**	**15.9**	**15.0**	NT
Turbidity	NTU (on-site)	NT	NE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Total Antimony (Sb)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Arsenic (As)	µg/l	5	50	ND	ND	ND	ND	**5.4**	**5.9**	ND	ND	ND	ND	ND	ND	ND	ND
Total Barium (Ba)	µg/l	5	2000	**147**	**15.8**	**162**	**178**	**1760**	**1550**	**531**	**234**	**20.0**	**190**	**111**	**191**	**84.4**	ND
Total Beryllium (Be)	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Cadmium (Cd)	µg/l	1	1.75	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Chromium (Cr)	µg/l	5	50	**10.1**	ND	**6.6**	**7.1**	ND	ND	**12.0**	**9.2**	ND	ND	**5.2**	ND	ND	ND
Total Cobalt (Co)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	**17.3**	**5.6**	ND	ND	**7.8**	**29.6**	ND	ND
Total Copper (Cu)	µg/l	5	1000	**6.7**	ND	ND	ND	ND	ND	ND	**12.4**	ND	ND	**53.9**	ND	ND	ND
Total Lead (Pb)	µg/l	5	15	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**16.0**	ND	ND	ND
Total Nickel (Ni)	µg/l	5	100	**7.0**	ND	ND	ND	**7.4**	ND	**21.5**	**19.0**	ND	ND	**7.5**	**10.8**	ND	ND
Total Selenium (Se)	µg/l	10	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Silver (Ag)	µg/l	5	17.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Thallium (Tl)	µg/l	5.4	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Vanadium (V)	µg/l	5	NE	**17.4**	ND	ND	**6.9**	ND	ND	**14.2**	**7.1**	ND	ND	**5.9**	ND	ND	ND
Total Zinc (Zn)	µg/l	10	1050	**19.1**	ND	**12.3**	**15.0**	ND	ND	**32.4**	**16.3**	ND	ND	**60.7**	ND	ND	ND
Acetone	µg/l	25	700	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acrylonitrile	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	µg/l	1	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromochloromethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	µg/l	1	0.56	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	µg/l	1	0.19	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	µg/l	2	700	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane (Methylbromide)	µg/l	2	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	µg/l	1	0.269	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene (mono)	µg/l	1	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	µg/l	1	2800	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	µg/l	1	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane (Methylchloride)	µg/l	1	2.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	5	0.025	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	1	0.00047	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromomethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	µg/l	1	24	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	µg/l	1	1.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,4-Dichloro-2-butene	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	µg/l	1	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	µg/l	1	0.38	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene (-ethylene)	µg/l	1	7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	1	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	1	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	µg/l	1	0.51	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	1	0.19	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	1	0.19	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	µg/l	1	550	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Hexanone	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodomethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichloromethane (Methylene chloride)	µg/l	2	4.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone (Methyl ethyl ketone)	µg/l	5	4200	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	µg/l	1	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	1	0.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	µg/l	1	1000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	µg/l	1	200	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	1	2.8	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	µg/l	1	2100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	µg/l	1	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl acetate	µg/l	2	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	µg/l	1	0.015	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes	µg/l	2	530	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

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MRL = Laboratory Method Reporting Limit

ND = Not Detected at the method detection limit

NS = Not Sampled

NT = Not Tested

NE = Not Established; North Carolina has not established a MCL

NP = Not Present during sampling event

Shaded cells indicate exceedance of MCLs.

White Oak Landfill - Haywood Co., NC
Groundwater Sampling Event (4-29-2011)

TEST	UNITS	MRL	MCL	MW-11S	MW-11D	MW-14	MW-1A	MW-2	MW-2D	MW-3R	MW-3DR	MW-4A	MW-8	MW-15	MW-16	MW-17	EQUIP. BLANK
pH	pH units (on-site)	-	NE	**6.00**	**6.50**	**6.50**	**6.10**	**5.80**	**6.00**	**5.60**	**5.60**	**6.20**	**5.40**	**5.70**	**5.60**	**5.60**	NT
Specific Conductance	µmhos/cm (on-site)	1	NE	**29**	**50**	**53**	**127**	**1770**	**1593**	**491**	**290**	**135**	**762**	**90**	**197**	**125**	NT
Temperature	°C (on-site)	-	NE	**14.3**	**14.6**	**13.7**	**13.2**	**14.5**	**14.7**	**15.3**	**14.5**	**14.8**	**14.4**	**13.2**	**15.2**	**14.8**	NT
Turbidity	NTU (on-site)	NT	NE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Total Antimony (Sb)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Arsenic (As)	µg/l	5	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Barium (Ba)	µg/l	5	700	**191**	**16.3**	**188**	**182**	**1620**	**1390**	**428**	**173**	**13.6**	**196**	**125**	**201**	**133.0**	ND
Total Beryllium (Be)	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**1.1**	ND	ND	ND
Total Cadmium (Cd)	µg/l	1	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Chromium (Cr)	µg/l	5	10	**8.0**	ND	**8.6**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Cobalt (Co)	µg/l	5	NE	ND	ND	ND	ND	**6.9**	ND	**8.9**	ND	ND	ND	ND	**26.3**	ND	ND
Total Copper (Cu)	µg/l	5	1000	**6.4**	ND	ND	ND	**6.7**	**6.1**	ND	ND	ND	ND	**5.2**	ND	ND	ND
Total Lead (Pb)	µg/l	5	15	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**11.0**	ND	ND	ND
Total Nickel (Ni)	µg/l	5	100	ND	ND	ND	ND	**10.5**	**8.6**	**19.5**	**15.2**	ND	ND	ND	**10.3**	ND	ND
Total Selenium (Se)	µg/l	10	20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Silver (Ag)	µg/l	5	20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Thallium (Tl)	µg/l	5.4	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Vanadium (V)	µg/l	5	NE	**15.8**	ND	**5.1**	ND	ND	ND	ND	ND	ND	ND	**5.5**	**7.3**	ND	ND
Total Zinc (Zn)	µg/l	10	1000	**25.7**	ND	**21.9**	ND	**11.8**	**23.9**	**13.7**	ND	ND	ND	**42.9**	**20.5**	**21.5**	ND
Acetone	µg/l	25	6000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acrylonitrile	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	µg/l	1	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromochloromethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	µg/l	1	0.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	µg/l	1	4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	µg/l	2	700	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane (Methylbromide)	µg/l	2	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	µg/l	1	0.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene (mono)	µg/l	1	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	µg/l	1	3000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	µg/l	1	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane (Methylchloride)	µg/l	1	3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	5	0.04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	1	0.02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromomethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	µg/l	1	20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	µg/l	1	6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,4-Dichloro-2-butene	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	µg/l	1	6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	µg/l	1	0.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene (-ethylene)	µg/l	1	7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	1	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	1	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	µg/l	1	0.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	1	0.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	1	0.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	µg/l	1	600	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Hexanone	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodomethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichloromethane (Methylene chloride)	µg/l	2	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone (Methyl ethyl ketone)	µg/l	5	4000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	µg/l	1	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	1	0.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	µg/l	1	600	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	µg/l	1	200	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	1	3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	µg/l	1	2000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	µg/l	1	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl acetate	µg/l	2	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	µg/l	1	0.03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes	µg/l	2	500	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

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White Oak Landfill - Haywood Co., NC
Groundwater Sampling Event (10-25-2011)

TEST	UNITS	MRL	MCL	MW-11S	MW-11D	MW-14	MW-1A	MW-2	MW-2D	MW-3R	MW-3DR	MW-4A	MW-8	MW-15	MW-16	MW-17	EQUIP. BLANK
pH	pH units (on-site)	-	NE	**6.50**	**6.20**	**6.40**	**6.10**	**5.60**	**5.40**	**5.40**	**5.30**	**7.00**	**5.20**	**5.60**	**5.60**	**5.80**	NT
Specific Conductance	µmhos/cm (on-site)	1	NE	**32**	**47**	**46**	**108**	**1275**	**1450**	**395**	**297**	**137**	**802**	**52**	**245**	**145**	NT
Temperature	°C (on-site)	-	NE	**14.2**	**13.5**	**15.3**	**12.4**	**13.2**	**13.7**	**15.8**	**15.1**	**15.7**	**16.2**	**16.9**	**16.3**	**15.6**	NT
Turbidity	NTU (on-site)	NT	NE	**96.5**	**8.09**	**17.7**	**9.06**	**9.22**	**1.78**	**8.72**	**5.24**	**1.91**	**80.5**	**154.0**	**4.62**	**1.77**	NT
Total Antimony (Sb)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Arsenic (As)	µg/l	5	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Barium (Ba)	µg/l	5	700	**185**	**19.7**	**120**	**332**	**1200**	**1300**	**945**	**205**	**8.2**	**238**	**123**	**161**	**154**	ND
Total Beryllium (Be)	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**1.6**	ND	ND	ND
Total Cadmium (Cd)	µg/l	1	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Chromium (Cr)	µg/l	5	10	**15.0**	ND	ND	**21.1**	ND	ND	**8.1**	ND	ND	**9.2**	**5.1**	ND	ND	ND
Total Cobalt (Co)	µg/l	5	NE	**5.3**	ND	ND	**6.4**	**6.3**	ND	**21.0**	ND	ND	ND	ND	**42.4**	ND	ND
Total Copper (Cu)	µg/l	5	1000	**9.6**	ND	ND	**9.4**	**6.8**	**11.2**	**7.6**	ND	ND	**5.1**	**6.9**	ND	ND	ND
Total Lead (Pb)	µg/l	5	15	ND	ND	ND	ND	ND	ND	**6.3**	ND	ND	ND	**14.6**	ND	ND	ND
Total Nickel (Ni)	µg/l	5	100	**6.9**	ND	ND	**14.7**	**8.8**	**7.5**	**20.8**	**19.9**	ND	ND	ND	**8.0**	ND	ND
Total Selenium (Se)	µg/l	10	20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Silver (Ag)	µg/l	5	20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Thallium (Tl)	µg/l	5.4	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Vanadium (V)	µg/l	5	NE	**25.6**	ND	ND	**23.0**	ND	ND	**15.1**	ND	ND	**9.7**	**6.3**	ND	ND	ND
Total Zinc (Zn)	µg/l	10	1000	**34.5**	ND	**11.6**	**23.7**	**12.8**	**10.1**	**32.5**	ND	ND	**17.7**	**49.9**	**15.1**	ND	ND
Acetone	µg/l	25	6000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acrylonitrile	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	µg/l	1	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromochloromethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	µg/l	1	0.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	µg/l	1	4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	µg/l	2	700	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane (Methylbromide)	µg/l	2	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	µg/l	1	0.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene (mono)	µg/l	1	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	µg/l	1	3000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	µg/l	1	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane (Methylchloride)	µg/l	1	3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	5	0.04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	1	0.02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromomethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	µg/l	1	20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	µg/l	1	6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,4-Dichloro-2-butene	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	µg/l	1	6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	µg/l	1	0.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene (-ethylene)	µg/l	1	7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	1	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	1	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	µg/l	1	0.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	1	0.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	1	0.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	µg/l	1	600	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Hexanone	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodomethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichloromethane (Methylene chloride)	µg/l	2	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone (Methyl ethyl ketone)	µg/l	5	4000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	µg/l	1	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	1	0.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	µg/l	1	600	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	µg/l	1	200	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	1	3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	µg/l	1	2000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	µg/l	1	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl acetate	µg/l	2	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	µg/l	1	0.03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes	µg/l	2	500	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

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MRL = Laboratory Method Reporting Limit

ND = Not Detected at the method detection limit

NS = Not Sampled

NT = Not Tested

NE = Not Established; North Carolina has not established a MCL

NP = Not Present during sampling event

Shaded cells indicate exceedance of MCLs.

White Oak Landfill - Haywood Co., NC
Groundwater Sampling Event (4-20-2012)

TEST	UNITS	MRL	MCL	MW-11S	MW-11D	MW-14	MW-1A	MW-2	MW-2D	MW-3R	MW-3DR	MW-4A	MW-8	MW-15	MW-16	MW-17	EQUIP. BLANK
pH	pH units (on-site)	-	NE	**6.4**	**6.9**	**6.6**	**6.3**	**6.2**	**6.1**	**5.7**	**5.8**	**8.3**	**5.5**	**5.8**	**6.0**	**6.0**	NT
Specific Conductance	µmhos/cm (on-site)	1	NE	**29.1**	**48.1**	**45.5**	**112.2**	**1339**	**1397**	**508**	**341**	**140**	**845**	**61.4**	**284.3**	**165.9**	NT
Temperature	°C (on-site)	-	NE	**13.5**	**13.9**	**13.6**	**14.0**	**14.9**	**14.7**	**15.9**	**14.2**	**15.1**	**15.2**	**14.0**	**15.9**	**14.9**	NT
Turbidity	NTU (on-site)	NT	NE	**90**	**48.1**	**11.5**	**4.28**	**3.53**	**2.50**	**14.70**	**3.63**	**4.36**	**2.21**	**70.0**	**21.10**	**1.75**	NT
Total Antimony (Sb)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Arsenic (As)	µg/l	5	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Barium (Ba)	µg/l	5	700	**304**	**17.5**	**129**	**153**	**1020**	**1140**	**442**	**215**	**9.5**	**232**	**64.8**	**249**	**169**	ND
Total Beryllium (Be)	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Cadmium (Cd)	µg/l	1	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**4.8**	ND	ND
Total Chromium (Cr)	µg/l	5	10	**24.5**	ND	ND	**5.1**	ND	ND	**7.9**	ND	ND	ND	ND	**12.3**	ND	ND
Total Cobalt (Co)	µg/l	5	NE	**6.9**	ND	ND	ND	ND	ND	**6.4**	ND	ND	ND	ND	**134.0**	ND	ND
Total Copper (Cu)	µg/l	5	1000	**15.6**	ND	ND	ND	**5.8**	**5.2**	ND	ND	ND	ND	ND	**6.5**	ND	ND
Total Lead (Pb)	µg/l	5	15	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**6.4**	ND	ND	ND
Total Nickel (Ni)	µg/l	5	100	**12.2**	ND	ND	ND	**9.4**	**9.4**	**23.8**	**24.6**	ND	ND	ND	**19.3**	ND	ND
Total Selenium (Se)	µg/l	10	20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Silver (Ag)	µg/l	5	20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Thallium (Tl)	µg/l	5.4	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Vanadium (V)	µg/l	5	NE	**44.3**	ND	ND	ND	ND	ND	**10.0**	ND	ND	ND	ND	**15.0**	ND	ND
Total Zinc (Zn)	µg/l	10	1000	**47.6**	ND	**12.5**	ND	**11.6**	**10.1**	**21.1**	ND	ND	**11.1**	**30.7**	**50.8**	ND	ND
Acetone	µg/l	25	6000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acrylonitrile	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	µg/l	1	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromochloromethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	µg/l	1	0.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	µg/l	1	4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	µg/l	2	700	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane (Methylbromide)	µg/l	2	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	µg/l	1	0.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene (mono)	µg/l	1	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	µg/l	1	3000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	µg/l	1	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane (Methylchloride)	µg/l	1	3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	5	0.04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	1	0.02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromomethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	µg/l	1	20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	µg/l	1	6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,4-Dichloro-2-butene	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	µg/l	1	6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	µg/l	1	0.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene (-ethylene)	µg/l	1	7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	1	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	1	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	µg/l	1	0.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	1	0.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	1	0.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	µg/l	1	600	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Hexanone	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodomethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichloromethane (Methylene chloride)	µg/l	2	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone (Methyl ethyl ketone)	µg/l	5	4000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	µg/l	1	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	1	0.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	µg/l	1	600	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	µg/l	1	200	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	1	3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	µg/l	1	2000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	µg/l	1	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl acetate	µg/l	2	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	µg/l	1	0.03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes	µg/l	2	500	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

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White Oak Landfill - Haywood Co., NC
Groundwater Sampling Event (10-24-2012)

TEST	UNITS	MRL	MCL	MW-11S	MW-11D	MW-14	MW-1A	MW-2	MW-2D	MW-3R	MW-3DR	MW-4A	MW-8	MW-15	MW-16	MW-17	EQUIP. BLANK
pH	pH units (on-site)	-	NE	**6.3**	**6.8**	**6.3**	**6.3**	**6.1**	**6.0**	**5.6**	**5.7**	**8.1**	**5.3**	**5.6**	**5.9**	**5.8**	NT
Specific Conductance	µmhos/cm (on-site)	1	NE	**28.0**	**49.0**	**49.0**	**122.0**	**1200**	**1332**	**540**	**395**	**140**	**867**	**50.0**	**260.0**	**171.0**	NT
Temperature	°C (on-site)	-	NE	**14.4**	**13.3**	**12.5**	**16.5**	**15.3**	**15.2**	**15.6**	**15.2**	**15.3**	**15.4**	**16.1**	**15.9**	**15.7**	NT
Turbidity	NTU (on-site)	NT	NE	**921**	**3.2**	**9.2**	**8.64**	**5.54**	**2.67**	**6.39**	**4.52**	**10.31**	**2.50**	**56.0**	**2.82**	**2.23**	NT
Total Antimony (Sb)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Arsenic (As)	µg/l	5	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Barium (Ba)	µg/l	5	700	**389**	**19.0**	**124**	**167**	**889**	**1030**	**393**	**229**	**26.1**	**235**	**43.2**	**177**	**181**	ND
Total Beryllium (Be)	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Cadmium (Cd)	µg/l	1	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**1.0**	ND	ND
Total Chromium (Cr)	µg/l	5	10	**30.4**	**6.0**	ND	**6.4**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Cobalt (Co)	µg/l	5	NE	**15.7**	ND	ND	ND	**5.6**	ND	**6.5**	ND	ND	ND	ND	**48.5**	ND	ND
Total Copper (Cu)	µg/l	5	1000	**22.7**	ND	ND	ND	**6.0**	ND	ND	ND	**5.1**	ND	ND	ND	ND	ND
Total Lead (Pb)	µg/l	5	15	**5.9**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Nickel (Ni)	µg/l	5	100	**18.5**	ND	ND	ND	**10.1**	**8.9**	**20.0**	**25.3**	ND	ND	ND	**9.6**	ND	ND
Total Selenium (Se)	µg/l	10	20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Silver (Ag)	µg/l	5	20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Thallium (Tl)	µg/l	5.4	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Vanadium (V)	µg/l	5	NE	**59.0**	ND	ND	**5.9**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Zinc (Zn)	µg/l	10	1000	**93.4**	**10.4**	**11.3**	**22.4**	**23.8**	ND	**10.3**	**16.1**	**14.9**	**12.2**	**15.7**	**15.8**	ND	ND
Acetone	µg/l	25	6000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acrylonitrile	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	µg/l	1	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromochloromethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	µg/l	1	0.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	µg/l	1	4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	µg/l	2	700	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane (Methylbromide)	µg/l	2	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	µg/l	1	0.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene (mono)	µg/l	1	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	µg/l	1	3000	ND	ND	ND	ND	**4.4**	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	µg/l	1	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane (Methylchloride)	µg/l	1	3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	5	0.04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	1	0.02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromomethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	µg/l	1	20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	µg/l	1	6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,4-Dichloro-2-butene	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	µg/l	1	6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	µg/l	1	0.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene (-ethylene)	µg/l	1	7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	1	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	1	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	µg/l	1	0.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	1	0.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	1	0.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	µg/l	1	600	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Hexanone	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodomethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichloromethane (Methylene chloride)	µg/l	2	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone (Methyl ethyl ketone)	µg/l	5	4000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	µg/l	1	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	1	0.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	µg/l	1	600	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	µg/l	1	200	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	1	3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	µg/l	1	2000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	µg/l	1	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl acetate	µg/l	2	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	µg/l	1	0.03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes	µg/l	2	500	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

MCL = Maximum Contaminant Level, as established in the NCDENR, Classifications of Water Quality Standards Applicable to Groundwaters of North Carolina, Section 15A NCAC 2L.202.

MRL = Laboratory Method Reporting Limit

ND = Not Detected at the method detection limit

NS = Not Sampled

NT = Not Tested

NE = Not Established; North Carolina has not established a MCL

NP = Not Present during sampling event

Shaded cells indicate exceedance of MCLs.

APPENDIX B

SUMMARY TABLE OF SURFACE WATER ANALYTICAL RESULTS

White Oak Landfill - Haywood Co., NC
Surface Water Sampling Event (4-24-2000)

TEST	UNITS	MRL	MCL	SW-1	SW-2	SW-3	SW-4	SW-5	SW-6	SW-7	Leachate
pH	pH units (on-site)	-	<6.0; >9.0	**6.4**	**6.3**	**6.7**	**6.4**	NS	NS	NS	**7.8**
Specific Conductance	µmhos/cm (on-site)	1	NE	**65**	**65**	**59**	**65**	NS	NS	NS	**2600**
Temperature	°C (on-site)	-	29	**11**	**11**	**14**	**11**	NS	NS	NS	**11**
Turbidity	NTU (on-site)	NT	50	NT	NT	NT	NT	NS	NS	NS	NT
Nitrate as N	mg/l	0.1	NE	NT	NT	NT	NT	NS	NS	NS	NT
Nitrate/Nitrite as N	mg/l	0.1	NE	NT	NT	NT	NT	NS	NS	NS	**300**
Nitrite as N	mg/l	0.1	NE	NT	NT	NT	NT	NS	NS	NS	NT
Nitrogen	mg/l	0.2	NE	NT	NT	NT	NT	NS	NS	NS	**95**
Total Nitrogen, Kjeldahl	mg/l	100	NE	NT	NT	NT	NT	NS	NS	NS	**95**
Sulfate	mg/l	500	NE	NT	NT	NT	NT	NS	NS	NS	NT
Biochemical Oxygen Demand	mg/l	2	NE	NT	NT	NT	NT	NS	NS	NS	**190**
Chemical Oxygen Demand	mg/l	25	NE	NT	NT	NT	NT	NS	NS	NS	**670**
Total Dissolved Solids	mg/l	20	NE	NT	NT	NT	NT	NS	NS	NS	**2700**
Cyanide	µg/l	2	5	NT	NT	NT	NT	NS	NS	NS	**13**
Total Antimony (Sb)	µg/l	30	NE	ND	ND	ND	**25**	NS	NS	NS	NT
Total Arsenic (As)	µg/l	10	10	ND	ND	ND	ND	NS	NS	NS	NT
Total Barium (Ba)	µg/l	500	NE	**91**	**70**	**29**	**62**	NS	NS	NS	NT
Total Beryllium (Be)	µg/l	2	6.5	ND	**2**	ND	ND	NS	NS	NS	NT
Total Cadmium (Cd)	µg/l	1	0.4	ND	ND	ND	ND	NS	NS	NS	NT
Total Chromium (Cr)	µg/l	10	50	ND	ND	ND	ND	NS	NS	NS	**13**
Total Cobalt (Co)	µg/l	10	NE	ND	ND	ND	**16**	NS	NS	NS	NT
Total Copper (Cu)	µg/l	200	7	ND	ND	ND	ND	NS	NS	NS	NT
Total Lead (Pb)	µg/l	10	25	ND	ND	ND	ND	NS	NS	NS	ND
Total Nickel (Ni)	µg/l	50	88	ND	ND	ND	ND	NS	NS	NS	NT
Total Selenium (Se)	µg/l	20	5	ND	ND	ND	ND	NS	NS	NS	ND
Total Silver (Ag)	µg/l	10	0.06	ND	ND	ND	**3.8**	NS	NS	NS	NT
Total Thallium (Tl)	µg/l	10	NE	ND	ND	ND	ND	NS	NS	NS	**2**
Total Vanadium (V)	µg/l	40	NE	ND	ND	ND	ND	NS	NS	NS	NT
Total Zinc (Zn)	µg/l	50	50	**13**	**26**	**14**	ND	NS	NS	NS	NT
Mercury	µg/l	0.2	0.012	NT	NT	NT	NT	NS	NS	NS	**0.3**
Acetone	µg/l	100	NE	NT	NT	NT	NT	NS	NS	NS	NT
Acrylonitrile	µg/l	200	NE	NT	NT	NT	NT	NS	NS	NS	NT
Benzene	µg/l	5	51	NT	NT	NT	NT	NS	NS	NS	NT
Bromochloromethane	µg/l	5	NE	NT	NT	NT	NT	NS	NS	NS	NT
Bromodichloromethane	µg/l	5	NE	NT	NT	NT	NT	NS	NS	NS	NT
Bromoform	µg/l	5	NE	NT	NT	NT	NT	NS	NS	NS	NT
Carbon Disulfide	µg/l	100	NE	NT	NT	NT	NT	NS	NS	NS	NT
Bromomethane (Methylbromide)	µg/l	10	NE	NT	NT	NT	NT	NS	NS	NS	NT
Carbon tetrachloride	µg/l	10	1.6	NT	NT	NT	NT	NS	NS	NS	NT
Chlorobenzene (mono)	µg/l	5	NE	NT	NT	NT	NT	NS	NS	NS	NT
Chloroethane	µg/l	10	NE	NT	NT	NT	NT	NS	NS	NS	NT
Chloroform	µg/l	5	NE	NT	NT	NT	NT	NS	NS	NS	NT
Chloromethane (Methylchloride)	µg/l	10	NE	NT	NT	NT	NT	NS	NS	NS	NT
Dibromochloromethane	µg/l	5	NE	NT	NT	NT	NT	NS	NS	NS	NT
1,2-Dibromo-3-chloropropane; DBCP	µg/l	25	NE	NT	NT	NT	NT	NS	NS	NS	NT
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	NE	NT	NT	NT	NT	NS	NS	NS	NT
Dibromomethane	µg/l	10	NE	NT	NT	NT	NT	NS	NS	NS	NT
1,2-Dichlorobenzene	µg/l	5	NE	NT	NT	NT	NT	NS	NS	NS	NT
1,4-Dichlorobenzene	µg/l	5	NE	NT	NT	NT	NT	NS	NS	NS	NT
trans-1,4-Dichloro-2butene	µg/l	100	NE	NT	NT	NT	NT	NS	NS	NS	NT
1,1-Dichloroethane	µg/l	5	NE	NT	NT	NT	NT	NS	NS	NS	NT
1,2-Dichloroethane	µg/l	5	NE	NT	NT	NT	NT	NS	NS	NS	NT
1,1-Dichloroethene (-ethylene)	µg/l	5	NE	NT	NT	NT	NT	NS	NS	NS	NT
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	NE	NT	NT	NT	NT	NS	NS	NS	NT
trans-1,2-Dichloroethene (-ylene)	µg/l	5	NE	NT	NT	NT	NT	NS	NS	NS	NT
1,2-Dichloropropane	µg/l	5	NE	NT	NT	NT	NT	NS	NS	NS	NT
cis-1,3-Dichloropropene (-propylene)	µg/l	10	NE	NT	NT	NT	NT	NS	NS	NS	NT
trans-1,3-Dichloropropene (-propylene)	µg/l	10	NE	NT	NT	NT	NT	NS	NS	NS	NT
Ethylbenzene	µg/l	5	NE	NT	NT	NT	NT	NS	NS	NS	NT
2-Hexanone	µg/l	50	NE	NT	NT	NT	NT	NS	NS	NS	NT
Iodomethane	µg/l	10	NE	NT	NT	NT	NT	NS	NS	NS	NT
Dichloromethane (Methylene chloride)	µg/l	10	NE	NT	NT	NT	NT	NS	NS	NS	NT
2-Butanone (Methyl ethyl ketone)	µg/l	100	NE	NT	NT	NT	NT	NS	NS	NS	NT
4-Methyl-2-Pentanone	µg/l	100	NE	NT	NT	NT	NT	NS	NS	NS	NT
Styrene	µg/l	10	NE	NT	NT	NT	NT	NS	NS	NS	NT
1,1,1,2-Tetrachloroethane	µg/l	5	NE	NT	NT	NT	NT	NS	NS	NS	NT
1,1,2,2-Tetrachloroethane	µg/l	5	4	NT	NT	NT	NT	NS	NS	NS	NT
Tetrachloroethene (-ethylene)	µg/l	5	3.3	NT	NT	NT	NT	NS	NS	NS	NT
Toluene	µg/l	5	0.36	NT	NT	NT	NT	NS	NS	NS	NT
1,1,1-Trichloroethane	µg/l	5	NE	NT	NT	NT	NT	NS	NS	NS	NT
1,1,2-Trichloroethane	µg/l	5	NE	NT	NT	NT	NT	NS	NS	NS	NT
Trichloroethene (-ethylene)	µg/l	5	30	NT	NT	NT	NT	NS	NS	NS	NT
Trichlorofluoromethane	µg/l	5	NE	NT	NT	NT	NT	NS	NS	NS	NT
1,2,3-Trichloropropane	µg/l	15	NE	NT	NT	NT	NT	NS	NS	NS	NT
Vinyl acetate	µg/l	50	NE	NT	NT	NT	NT	NS	NS	NS	NT
Vinyl chloride	µg/l	10	2.4	NT	NT	NT	NT	NS	NS	NS	NT
Xylene	µg/l	5	NE	NT	NT	NT	NT	NS	NS	NS	NT

Notes:

MCL = Maximum Contaminant Level, as established in the NCDENR, "Redbook" Surface Waters and Wetlands Standards Section 15A NCAC 02B.0100, .0200, and .0300.

ND = Not Detected at the Method Reporting Limit

NS = Not Sampled

NT = Not Tested

NE = Not Established; North Carolina has not established a MCL

NP = Not Present during sampling event

Shaded cells indicate exceedances of MCLs.

White Oak Landfill - Haywood Co., NC
Surface Water Sampling Event (4-9-2001)

TEST	UNITS	MRL	MCL	SW-1	SW-2	SW-3	SW-5	SW-6	SW-7	Leachate
pH	pH units (on-site)	-	<6.0; >9.0	**7**	**7.1**	**7.1**	NS	NS	NS	**8.1**
Specific Conductance	µmhos/cm (on-site)	1	NE	**73**	**80**	**75**	NS	NS	NS	**3600**
Temperature	°C (on-site)	-	29	**11**	**13**	**18**	NS	NS	NS	**15**
Turbidity	NTU (on-site)	NT	50	NT	NT	NT	NS	NS	NS	NT
Nitrate as N	mg/l	0.1	NE	NT	NT	NT	NS	NS	NS	NT
Nitrate/Nitrite as N	mg/l	0.1	NE	NT	NT	NT	NS	NS	NS	ND
Nitrite as N	mg/l	0.1	NE	NT	NT	NT	NS	NS	NS	NT
Nitrogen	mg/l	0.2	NE	NT	NT	NT	NS	NS	NS	**120**
Total Nitrogen, Kjeldahl	mg/l	100	NE	NT	NT	NT	NS	NS	NS	**120**
Sulfate	mg/l	500	NE	NT	NT	NT	NS	NS	NS	NT
Biochemical Oxygen Demand	mg/l	2	NE	NT	NT	NT	NS	NS	NS	**240**
Chemical Oxygen Demand	mg/l	25	NE	NT	NT	NT	NS	NS	NS	**430**
Total Dissolved Solids	mg/l	20	NE	NT	NT	NT	NS	NS	NS	**5000**
Cyanide	µg/l	2	5	NT	NT	NT	NS	NS	NS	ND
Total Antimony (Sb)	µg/l	30	NE	ND	ND	ND	NS	NS	NS	NT
Total Arsenic (As)	µg/l	10	10	ND	ND	ND	NS	NS	NS	NT
Total Barium (Ba)	µg/l	500	NE	**99**	**81**	**55**	NS	NS	NS	NT
Total Beryllium (Be)	µg/l	2	6.5	ND	ND	ND	NS	NS	NS	NT
Total Cadmium (Cd)	µg/l	1	0.4	ND	ND	ND	NS	NS	NS	NT
Total Chromium (Cr)	µg/l	10	50	ND	ND	ND	NS	NS	NS	**10**
Total Cobalt (Co)	µg/l	10	NE	ND	ND	ND	NS	NS	NS	NT
Total Copper (Cu)	µg/l	200	7	ND	ND	ND	NS	NS	NS	NT
Total Lead (Pb)	µg/l	10	25	ND	ND	ND	NS	NS	NS	ND
Total Nickel (Ni)	µg/l	50	88	ND	ND	ND	NS	NS	NS	NT
Total Selenium (Se)	µg/l	20	5	ND	ND	ND	NS	NS	NS	**210**
Total Silver (Ag)	µg/l	10	0.06	ND	ND	ND	NS	NS	NS	NT
Total Thallium (Tl)	µg/l	10	NE	ND	ND	ND	NS	NS	NS	ND
Total Vanadium (V)	µg/l	40	NE	ND	ND	ND	NS	NS	NS	NT
Total Zinc (Zn)	µg/l	50	50	**15**	**31**	**20**	NS	NS	NS	NT
Mercury	µg/l	0.2	0.012	NT	NT	NT	NS	NS	NS	ND
Acetone	µg/l	100	NE	NT	NT	NT	NS	NS	NS	NT
Acrylonitrile	µg/l	200	NE	NT	NT	NT	NS	NS	NS	NT
Benzene	µg/l	5	51	NT	NT	NT	NS	NS	NS	NT
Bromochloromethane	µg/l	5	NE	NT	NT	NT	NS	NS	NS	NT
Bromodichloromethane	µg/l	5	NE	NT	NT	NT	NS	NS	NS	NT
Bromoform	µg/l	5	NE	NT	NT	NT	NS	NS	NS	NT
Carbon Disulfide	µg/l	100	NE	NT	NT	NT	NS	NS	NS	NT
Bromomethane (Methylbromide)	µg/l	10	NE	NT	NT	NT	NS	NS	NS	NT
Carbon tetrachloride	µg/l	10	1.6	NT	NT	NT	NS	NS	NS	NT
Chlorobenzene (mono)	µg/l	5	NE	NT	NT	NT	NS	NS	NS	NT
Chloroethane	µg/l	10	NE	NT	NT	NT	NS	NS	NS	NT
Chloroform	µg/l	5	NE	NT	NT	NT	NS	NS	NS	NT
Chloromethane (Methylchloride)	µg/l	10	NE	NT	NT	NT	NS	NS	NS	NT
Dibromochloromethane	µg/l	5	NE	NT	NT	NT	NS	NS	NS	NT
1,2-Dibromo-3-chloropropane; DBCP	µg/l	25	NE	NT	NT	NT	NS	NS	NS	NT
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	NE	NT	NT	NT	NS	NS	NS	NT
Dibromomethane	µg/l	10	NE	NT	NT	NT	NS	NS	NS	NT
1,2-Dichlorobenzene	µg/l	5	NE	NT	NT	NT	NS	NS	NS	NT
1,4-Dichlorobenzene	µg/l	5	NE	NT	NT	NT	NS	NS	NS	NT
trans-1,4-Dichloro-2butene	µg/l	100	NE	NT	NT	NT	NS	NS	NS	NT
1,1-Dichloroethane	µg/l	5	NE	NT	NT	NT	NS	NS	NS	NT
1,2-Dichloroethane	µg/l	5	NE	NT	NT	NT	NS	NS	NS	NT
1,1-Dichloroethene (-ethylene)	µg/l	5	NE	NT	NT	NT	NS	NS	NS	NT
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	NE	NT	NT	NT	NS	NS	NS	NT
trans-1,2-Dichloroethene (-ylene)	µg/l	5	NE	NT	NT	NT	NS	NS	NS	NT
1,2-Dichloropropane	µg/l	5	NE	NT	NT	NT	NS	NS	NS	NT
cis-1,3-Dichloropropene (-propylene)	µg/l	10	NE	NT	NT	NT	NS	NS	NS	NT
trans-1,3-Dichloropropene (-propylene)	µg/l	10	NE	NT	NT	NT	NS	NS	NS	NT
Ethylbenzene	µg/l	5	NE	NT	NT	NT	NS	NS	NS	NT
2-Hexanone	µg/l	50	NE	NT	NT	NT	NS	NS	NS	NT
Iodomethane	µg/l	10	NE	NT	NT	NT	NS	NS	NS	NT
Dichloromethane (Methylene chloride)	µg/l	10	NE	NT	NT	NT	NS	NS	NS	NT
2-Butanone (Methyl ethyl ketone)	µg/l	100	NE	NT	NT	NT	NS	NS	NS	NT
4-Methyl-2-Pentanone	µg/l	100	NE	NT	NT	NT	NS	NS	NS	NT
Styrene	µg/l	10	NE	NT	NT	NT	NS	NS	NS	NT
1,1,1,2-Tetrachloroethane	µg/l	5	NE	NT	NT	NT	NS	NS	NS	NT
1,1,2,2-Tetrachloroethane	µg/l	5	4	NT	NT	NT	NS	NS	NS	NT
Tetrachloroethene (-ethylene)	µg/l	5	3.3	NT	NT	NT	NS	NS	NS	NT
Toluene	µg/l	5	0.36	NT	NT	NT	NS	NS	NS	NT
1,1,1-Trichloroethane	µg/l	5	NE	NT	NT	NT	NS	NS	NS	NT
1,1,2-Trichloroethane	µg/l	5	NE	NT	NT	NT	NS	NS	NS	NT
Trichloroethene (-ethylene)	µg/l	5	30	NT	NT	NT	NS	NS	NS	NT
Trichlorofluoromethane	µg/l	5	NE	NT	NT	NT	NS	NS	NS	NT
1,2,3-Trichloropropane	µg/l	15	NE	NT	NT	NT	NS	NS	NS	NT
Vinyl acetate	µg/l	50	NE	NT	NT	NT	NS	NS	NS	NT
Vinyl chloride	µg/l	10	2.4	NT	NT	NT	NS	NS	NS	NT
Xylene	µg/l	5	NE	NT	NT	NT	NS	NS	NS	NT

Notes:

MCL = Maximum Contaminant Level, as established in the NCDENR, "Redbook" Surface Waters and Wetlands Standards Section 15A NCAC 02B.0100, .0200, and .0300.

ND = Not Detected at the Method Reporting Limit

NS = Not Sampled

NT = Not Tested

NE = Not Established; North Carolina has not established a MCL

NP = Not Present during sampling event

Shaded cells indicate exceedances of MCLs.

White Oak Landfill - Haywood Co., NC
Surface Water Sampling Event (9-18-2001)

TEST	UNITS	MRL	MCL	SW-1	SW-2	SW-3	SW-5	SW-6	SW-7	Leachate
pH	pH units (on-site)	-	<6.0; >9.0	NS	NS	NS	**7.48**	NS	NS	NS
Specific Conductance	µmhos/cm (on-site)	1	NE	NS	NS	NS	**160**	NS	NS	NS
Temperature	°C (on-site)	-	29	NS	NS	NS	**20**	NS	NS	NS
Turbidity	NTU (on-site)	NT	50	NS	NS	NS	NT	NS	NS	NS
Nitrate as N	mg/l	0.1	NE	NS	NS	NS	NT	NS	NS	NS
Nitrate/Nitrite as N	mg/l	0.1	NE	NS	NS	NS	NT	NS	NS	NS
Nitrite as N	mg/l	0.1	NE	NS	NS	NS	NT	NS	NS	NS
Nitrogen	mg/l	0.2	NE	NS	NS	NS	NT	NS	NS	NS
Total Nitrogen, Kjeldahl	mg/l	100	NE	NS	NS	NS	NT	NS	NS	NS
Sulfate	mg/l	500	NE	NS	NS	NS	NT	NS	NS	NS
Biochemical Oxygen Demand	mg/l	2	NE	NS	NS	NS	NT	NS	NS	NS
Chemical Oxygen Demand	mg/l	25	NE	NS	NS	NS	NT	NS	NS	NS
Total Dissolved Solids	mg/l	20	NE	NS	NS	NS	NT	NS	NS	NS
Cyanide	µg/l	2	5	NS	NS	NS	NT	NS	NS	NS
Total Antimony (Sb)	µg/l	30	NE	NS	NS	NS	ND	NS	NS	NS
Total Arsenic (As)	µg/l	10	10	NS	NS	NS	ND	NS	NS	NS
Total Barium (Ba)	µg/l	500	NE	NS	NS	NS	**71**	NS	NS	NS
Total Beryllium (Be)	µg/l	2	6.5	NS	NS	NS	ND	NS	NS	NS
Total Cadmium (Cd)	µg/l	1	0.4	NS	NS	NS	ND	NS	NS	NS
Total Chromium (Cr)	µg/l	10	50	NS	NS	NS	ND	NS	NS	NS
Total Cobalt (Co)	µg/l	10	NE	NS	NS	NS	**7.2**	NS	NS	NS
Total Copper (Cu)	µg/l	200	7	NS	NS	NS	ND	NS	NS	NS
Total Lead (Pb)	µg/l	10	25	NS	NS	NS	ND	NS	NS	NS
Total Nickel (Ni)	µg/l	50	88	NS	NS	NS	**9.4**	NS	NS	NS
Total Selenium (Se)	µg/l	20	5	NS	NS	NS	ND	NS	NS	NS
Total Silver (Ag)	µg/l	10	0.06	NS	NS	NS	ND	NS	NS	NS
Total Thallium (Tl)	µg/l	10	NE	NS	NS	NS	ND	NS	NS	NS
Total Vanadium (V)	µg/l	40	NE	NS	NS	NS	ND	NS	NS	NS
Total Zinc (Zn)	µg/l	50	50	NS	NS	NS	**11**	NS	NS	NS
Mercury	µg/l	0.2	0.012	NS	NS	NS	NT	NS	NS	NS
Acetone	µg/l	100	NE	NS	NS	NS	NT	NS	NS	NS
Acrylonitrile	µg/l	200	NE	NS	NS	NS	NT	NS	NS	NS
Benzene	µg/l	5	51	NS	NS	NS	NT	NS	NS	NS
Bromochloromethane	µg/l	5	NE	NS	NS	NS	NT	NS	NS	NS
Bromodichloromethane	µg/l	5	NE	NS	NS	NS	NT	NS	NS	NS
Bromoform	µg/l	5	NE	NS	NS	NS	NT	NS	NS	NS
Carbon Disulfide	µg/l	100	NE	NS	NS	NS	NT	NS	NS	NS
Bromomethane (Methylbromide)	µg/l	10	NE	NS	NS	NS	NT	NS	NS	NS
Carbon tetrachloride	µg/l	10	1.6	NS	NS	NS	NT	NS	NS	NS
Chlorobenzene (mono)	µg/l	5	NE	NS	NS	NS	NT	NS	NS	NS
Chloroethane	µg/l	10	NE	NS	NS	NS	NT	NS	NS	NS
Chloroform	µg/l	5	NE	NS	NS	NS	NT	NS	NS	NS
Chloromethane (Methylchloride)	µg/l	10	NE	NS	NS	NS	NT	NS	NS	NS
Dibromochloromethane	µg/l	5	NE	NS	NS	NS	NT	NS	NS	NS
1,2-Dibromo-3-chloropropane; DBCP	µg/l	25	NE	NS	NS	NS	NT	NS	NS	NS
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	NE	NS	NS	NS	NT	NS	NS	NS
Dibromomethane	µg/l	10	NE	NS	NS	NS	NT	NS	NS	NS
1,2-Dichlorobenzene	µg/l	5	NE	NS	NS	NS	NT	NS	NS	NS
1,4-Dichlorobenzene	µg/l	5	NE	NS	NS	NS	NT	NS	NS	NS
trans-1,4-Dichloro-2butene	µg/l	100	NE	NS	NS	NS	NT	NS	NS	NS
1,1-Dichloroethane	µg/l	5	NE	NS	NS	NS	NT	NS	NS	NS
1,2-Dichloroethane	µg/l	5	NE	NS	NS	NS	NT	NS	NS	NS
1,1-Dichloroethene (-ethylene)	µg/l	5	NE	NS	NS	NS	NT	NS	NS	NS
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	NE	NS	NS	NS	NT	NS	NS	NS
trans-1,2-Dichloroethene (-ylene)	µg/l	5	NE	NS	NS	NS	NT	NS	NS	NS
1,2-Dichloropropane	µg/l	5	NE	NS	NS	NS	NT	NS	NS	NS
cis-1,3-Dichloropropene (-propylene)	µg/l	10	NE	NS	NS	NS	NT	NS	NS	NS
trans-1,3-Dichloropropene (-propylene)	µg/l	10	NE	NS	NS	NS	NT	NS	NS	NS
Ethylbenzene	µg/l	5	NE	NS	NS	NS	NT	NS	NS	NS
2-Hexanone	µg/l	50	NE	NS	NS	NS	NT	NS	NS	NS
Iodomethane	µg/l	10	NE	NS	NS	NS	NT	NS	NS	NS
Dichloromethane (Methylene chloride)	µg/l	10	NE	NS	NS	NS	NT	NS	NS	NS
2-Butanone (Methyl ethyl ketone)	µg/l	100	NE	NS	NS	NS	NT	NS	NS	NS
4-Methyl-2-Pentanone	µg/l	100	NE	NS	NS	NS	NT	NS	NS	NS
Styrene	µg/l	10	NE	NS	NS	NS	NT	NS	NS	NS
1,1,1,2-Tetrachloroethane	µg/l	5	NE	NS	NS	NS	NT	NS	NS	NS
1,1,2,2-Tetrachloroethane	µg/l	5	4	NS	NS	NS	NT	NS	NS	NS
Tetrachloroethene (-ethylene)	µg/l	5	3.3	NS	NS	NS	NT	NS	NS	NS
Toluene	µg/l	5	0.36	NS	NS	NS	NT	NS	NS	NS
1,1,1-Trichloroethane	µg/l	5	NE	NS	NS	NS	NT	NS	NS	NS
1,1,2-Trichloroethane	µg/l	5	NE	NS	NS	NS	NT	NS	NS	NS
Trichloroethene (-ethylene)	µg/l	5	30	NS	NS	NS	NT	NS	NS	NS
Trichlorofluoromethane	µg/l	5	NE	NS	NS	NS	NT	NS	NS	NS
1,2,3-Trichloropropane	µg/l	15	NE	NS	NS	NS	NT	NS	NS	NS
Vinyl acetate	µg/l	50	NE	NS	NS	NS	NT	NS	NS	NS
Vinyl chloride	µg/l	10	2.4	NS	NS	NS	NT	NS	NS	NS
Xylene	µg/l	5	NE	NS	NS	NS	NT	NS	NS	NS

Notes:

MCL = Maximum Contaminant Level, as established in the NCDENR, "Redbook" Surface Waters and Wetlands Standards Section 15A NCAC 02B.0100, .0200, and .0300.

ND = Not Detected at the Method Reporting Limit

NS = Not Sampled

NT = Not Tested

NE = Not Established; North Carolina has not established a MCL

NP = Not Present during sampling event

Shaded cells indicate exceedances of MCLs.

White Oak Landfill - Haywood Co., NC
Surface Water Sampling Event (4-15-2002)

TEST	UNITS	MRL	MCL	SW-1	SW-2	SW-3	SW-5	SW-6	SW-7	Leachate
pH	pH units (on-site)	-	<6.0; >9.0	**6.67**	**6.08**	**6.46**	**7**	NS	NS	**6.71**
Specific Conductance	µmhos/cm (on-site)	1	NE	**78**	**78**	**80**	**170**	NS	NS	**265**
Temperature	°C (on-site)	-	29	**17.8**	**13.3**	**19.4**	**20**	NS	NS	**20.1**
Turbidity	NTU (on-site)	NT	50	NT	NT	NT	NT	NS	NS	NT
Nitrate as N	mg/l	0.1	NE	NT	NT	NT	NT	NS	NS	NT
Nitrate/Nitrite as N	mg/l	0.1	NE	NT	NT	NT	NT	NS	NS	**0.3**
Nitrite as N	mg/l	0.1	NE	NT	NT	NT	NT	NS	NS	NT
Nitrogen	mg/l	0.2	NE	NT	NT	NT	NT	NS	NS	**96**
Total Nitrogen, Kjeldahl	mg/l	100	NE	NT	NT	NT	NT	NS	NS	**96**
Sulfate	mg/l	500	NE	NT	NT	NT	NT	NS	NS	NT
Biochemical Oxygen Demand	mg/l	2	NE	NT	NT	NT	NT	NS	NS	**740**
Chemical Oxygen Demand	mg/l	25	NE	NT	NT	NT	NT	NS	NS	**1400**
Total Dissolved Solids	mg/l	20	NE	NT	NT	NT	NT	NS	NS	**2300**
Cyanide	µg/l	2	5	NT	NT	NT	NT	NS	NS	**0.006**
Total Antimony (Sb)	µg/l	30	NE	ND	ND	ND	ND	NS	NS	NT
Total Arsenic (As)	µg/l	10	10	ND	ND	ND	ND	NS	NS	NT
Total Barium (Ba)	µg/l	500	NE	**92**	**91**	**40**	**140**	NS	NS	NT
Total Beryllium (Be)	µg/l	2	6.5	ND	ND	ND	ND	NS	NS	NT
Total Cadmium (Cd)	µg/l	1	0.4	ND	ND	ND	ND	NS	NS	NT
Total Chromium (Cr)	µg/l	10	50	ND	ND	ND	ND	NS	NS	**34**
Total Cobalt (Co)	µg/l	10	NE	ND	ND	ND	**7.7**	NS	NS	NT
Total Copper (Cu)	µg/l	200	7	ND	ND	ND	ND	NS	NS	NT
Total Lead (Pb)	µg/l	10	25	ND	ND	ND	ND	NS	NS	ND
Total Nickel (Ni)	µg/l	50	88	ND	ND	ND	**9**	NS	NS	NT
Total Selenium (Se)	µg/l	20	5	ND	ND	ND	ND	NS	NS	ND
Total Silver (Ag)	µg/l	10	0.06	ND	ND	ND	ND	NS	NS	NT
Total Thallium (Tl)	µg/l	10	NE	ND	ND	ND	ND	NS	NS	ND
Total Vanadium (V)	µg/l	40	NE	ND	ND	ND	**6.5**	NS	NS	NT
Total Zinc (Zn)	µg/l	50	50	ND	**37**	**32**	**60**	NS	NS	NT
Mercury	µg/l	0.2	0.012	NT	NT	NT	NT	NS	NS	ND
Acetone	µg/l	100	NE	NT	NT	NT	NT	NS	NS	NT
Acrylonitrile	µg/l	200	NE	NT	NT	NT	NT	NS	NS	NT
Benzene	µg/l	5	51	NT	NT	NT	NT	NS	NS	NT
Bromochloromethane	µg/l	5	NE	NT	NT	NT	NT	NS	NS	NT
Bromodichloromethane	µg/l	5	NE	NT	NT	NT	NT	NS	NS	NT
Bromoform	µg/l	5	NE	NT	NT	NT	NT	NS	NS	NT
Carbon Disulfide	µg/l	100	NE	NT	NT	NT	NT	NS	NS	NT
Bromomethane (Methylbromide)	µg/l	10	NE	NT	NT	NT	NT	NS	NS	NT
Carbon tetrachloride	µg/l	10	1.6	NT	NT	NT	NT	NS	NS	NT
Chlorobenzene (mono)	µg/l	5	NE	NT	NT	NT	NT	NS	NS	NT
Chloroethane	µg/l	10	NE	NT	NT	NT	NT	NS	NS	NT
Chloroform	µg/l	5	NE	NT	NT	NT	NT	NS	NS	NT
Chloromethane (Methylchloride)	µg/l	10	NE	NT	NT	NT	NT	NS	NS	NT
Dibromochloromethane	µg/l	5	NE	NT	NT	NT	NT	NS	NS	NT
1,2-Dibromo-3-chloropropane; DBCP	µg/l	25	NE	NT	NT	NT	NT	NS	NS	NT
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	NE	NT	NT	NT	NT	NS	NS	NT
Dibromomethane	µg/l	10	NE	NT	NT	NT	NT	NS	NS	NT
1,2-Dichlorobenzene	µg/l	5	NE	NT	NT	NT	NT	NS	NS	NT
1,4-Dichlorobenzene	µg/l	5	NE	NT	NT	NT	NT	NS	NS	NT
trans-1,4-Dichloro-2butene	µg/l	100	NE	NT	NT	NT	NT	NS	NS	NT
1,1-Dichloroethane	µg/l	5	NE	NT	NT	NT	NT	NS	NS	NT
1,2-Dichloroethane	µg/l	5	NE	NT	NT	NT	NT	NS	NS	NT
1,1-Dichloroethene (-ethylene)	µg/l	5	NE	NT	NT	NT	NT	NS	NS	NT
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	NE	NT	NT	NT	NT	NS	NS	NT
trans-1,2-Dichloroethene (-ylene)	µg/l	5	NE	NT	NT	NT	NT	NS	NS	NT
1,2-Dichloropropane	µg/l	5	NE	NT	NT	NT	NT	NS	NS	NT
cis-1,3-Dichloropropene (-propylene)	µg/l	10	NE	NT	NT	NT	NT	NS	NS	NT
trans-1,3-Dichloropropene (-propylene)	µg/l	10	NE	NT	NT	NT	NT	NS	NS	NT
Ethylbenzene	µg/l	5	NE	NT	NT	NT	NT	NS	NS	NT
2-Hexanone	µg/l	50	NE	NT	NT	NT	NT	NS	NS	NT
Iodomethane	µg/l	10	NE	NT	NT	NT	NT	NS	NS	NT
Dichloromethane (Methylene chloride)	µg/l	10	NE	NT	NT	NT	NT	NS	NS	NT
2-Butanone (Methyl ethyl ketone)	µg/l	100	NE	NT	NT	NT	NT	NS	NS	NT
4-Methyl-2-Pentanone	µg/l	100	NE	NT	NT	NT	NT	NS	NS	NT
Styrene	µg/l	10	NE	NT	NT	NT	NT	NS	NS	NT
1,1,1,2-Tetrachloroethane	µg/l	5	NE	NT	NT	NT	NT	NS	NS	NT
1,1,2,2-Tetrachloroethane	µg/l	5	4	NT	NT	NT	NT	NS	NS	NT
Tetrachloroethene (-ethylene)	µg/l	5	3.3	NT	NT	NT	NT	NS	NS	NT
Toluene	µg/l	5	0.36	NT	NT	NT	NT	NS	NS	NT
1,1,1-Trichloroethane	µg/l	5	NE	NT	NT	NT	NT	NS	NS	NT
1,1,2-Trichloroethane	µg/l	5	NE	NT	NT	NT	NT	NS	NS	NT
Trichloroethene (-ethylene)	µg/l	5	30	NT	NT	NT	NT	NS	NS	NT
Trichlorofluoromethane	µg/l	5	NE	NT	NT	NT	NT	NS	NS	NT
1,2,3-Trichloropropane	µg/l	15	NE	NT	NT	NT	NT	NS	NS	NT
Vinyl acetate	µg/l	50	NE	NT	NT	NT	NT	NS	NS	NT
Vinyl chloride	µg/l	10	2.4	NT	NT	NT	NT	NS	NS	NT
Xylene	µg/l	5	NE	NT	NT	NT	NT	NS	NS	NT

Notes:

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Shaded cells indicate exceedances of MCLs.

White Oak Landfill - Haywood Co., NC
Surface Water Sampling Event (9-26-2002)

TEST	UNITS	MRL	MCL	SW-1	SW-2	SW-3	SW-5	SW-6	SW-7	Leachate
pH	pH units (on-site)	-	<6.0; >9.0	**6.9**	**6.88**	**7.01**	NS	NS	NS	**7.48**
Specific Conductance	µmhos/cm (on-site)	1	NE	**102**	**151**	**115**	NS	NS	NS	**3700**
Temperature	°C (on-site)	-	29	**16.5**	**17.2**	**17.5**	NS	NS	NS	**18.4**
Turbidity	NTU (on-site)	NT	50	NT	NT	NT	NS	NS	NS	NT
Nitrate as N	mg/l	0.1	NE	NT	NT	NT	NS	NS	NS	NT
Nitrate/Nitrite as N	mg/l	0.1	NE	NT	NT	NT	NS	NS	NS	ND
Nitrite as N	mg/l	0.1	NE	NT	NT	NT	NS	NS	NS	NT
Nitrogen	mg/l	0.2	NE	NT	NT	NT	NS	NS	NS	ND
Total Nitrogen, Kjeldahl	mg/l	100	NE	NT	NT	NT	NS	NS	NS	**130**
Sulfate	mg/l	500	NE	NT	NT	NT	NS	NS	NS	NT
Biochemical Oxygen Demand	mg/l	2	NE	NT	NT	NT	NS	NS	NS	**210**
Chemical Oxygen Demand	mg/l	25	NE	NT	NT	NT	NS	NS	NS	**1300**
Total Dissolved Solids	mg/l	20	NE	NT	NT	NT	NS	NS	NS	**3000**
Cyanide	µg/l	2	5	NT	NT	NT	NS	NS	NS	**2.5**
Total Antimony (Sb)	µg/l	30	NE	ND	ND	ND	NS	NS	NS	NT
Total Arsenic (As)	µg/l	10	10	ND	ND	ND	NS	NS	NS	NT
Total Barium (Ba)	µg/l	500	NE	**150**	**160**	**80**	NS	NS	NS	NT
Total Beryllium (Be)	µg/l	2	6.5	ND	ND	ND	NS	NS	NS	NT
Total Cadmium (Cd)	µg/l	1	0.4	ND	ND	ND	NS	NS	NS	NT
Total Chromium (Cr)	µg/l	10	50	ND	ND	ND	NS	NS	NS	**34**
Total Cobalt (Co)	µg/l	10	NE	**7.2**	ND	ND	NS	NS	NS	NT
Total Copper (Cu)	µg/l	200	7	ND	**4.5**	**2.7**	NS	NS	NS	NT
Total Lead (Pb)	µg/l	10	25	ND	ND	ND	NS	NS	NS	ND
Total Nickel (Ni)	µg/l	50	88	ND	ND	ND	NS	NS	NS	NT
Total Selenium (Se)	µg/l	20	5	ND	ND	ND	NS	NS	NS	ND
Total Silver (Ag)	µg/l	10	0.06	ND	ND	ND	NS	NS	NS	NT
Total Thallium (Tl)	µg/l	10	NE	ND	ND	ND	NS	NS	NS	ND
Total Vanadium (V)	µg/l	40	NE	ND	**6.4**	ND	NS	NS	NS	NT
Total Zinc (Zn)	µg/l	50	50	**19**	**100**	**41**	NS	NS	NS	NT
Mercury	µg/l	0.2	0.012	NT	NT	NT	NS	NS	NS	ND
Acetone	µg/l	100	NE	NT	NT	NT	NS	NS	NS	NT
Acrylonitrile	µg/l	200	NE	NT	NT	NT	NS	NS	NS	NT
Benzene	µg/l	5	51	NT	NT	NT	NS	NS	NS	NT
Bromochloromethane	µg/l	5	NE	NT	NT	NT	NS	NS	NS	NT
Bromodichloromethane	µg/l	5	NE	NT	NT	NT	NS	NS	NS	NT
Bromoform	µg/l	5	NE	NT	NT	NT	NS	NS	NS	NT
Carbon Disulfide	µg/l	100	NE	NT	NT	NT	NS	NS	NS	NT
Bromomethane (Methylbromide)	µg/l	10	NE	NT	NT	NT	NS	NS	NS	NT
Carbon tetrachloride	µg/l	10	1.6	NT	NT	NT	NS	NS	NS	NT
Chlorobenzene (mono)	µg/l	5	NE	NT	NT	NT	NS	NS	NS	NT
Chloroethane	µg/l	10	NE	NT	NT	NT	NS	NS	NS	NT
Chloroform	µg/l	5	NE	NT	NT	NT	NS	NS	NS	NT
Chloromethane (Methylchloride)	µg/l	10	NE	NT	NT	NT	NS	NS	NS	NT
Dibromochloromethane	µg/l	5	NE	NT	NT	NT	NS	NS	NS	NT
1,2-Dibromo-3-chloropropane; DBCP	µg/l	25	NE	NT	NT	NT	NS	NS	NS	NT
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	NE	NT	NT	NT	NS	NS	NS	NT
Dibromomethane	µg/l	10	NE	NT	NT	NT	NS	NS	NS	NT
1,2-Dichlorobenzene	µg/l	5	NE	NT	NT	NT	NS	NS	NS	NT
1,4-Dichlorobenzene	µg/l	5	NE	NT	NT	NT	NS	NS	NS	NT
trans-1,4-Dichloro-2butene	µg/l	100	NE	NT	NT	NT	NS	NS	NS	NT
1,1-Dichloroethane	µg/l	5	NE	NT	NT	NT	NS	NS	NS	NT
1,2-Dichloroethane	µg/l	5	NE	NT	NT	NT	NS	NS	NS	NT
1,1-Dichloroethene (-ethylene)	µg/l	5	NE	NT	NT	NT	NS	NS	NS	NT
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	NE	NT	NT	NT	NS	NS	NS	NT
trans-1,2-Dichloroethene (-ylene)	µg/l	5	NE	NT	NT	NT	NS	NS	NS	NT
1,2-Dichloropropane	µg/l	5	NE	NT	NT	NT	NS	NS	NS	NT
cis-1,3-Dichloropropene (-propylene)	µg/l	10	NE	NT	NT	NT	NS	NS	NS	NT
trans-1,3-Dichloropropene (-propylene)	µg/l	10	NE	NT	NT	NT	NS	NS	NS	NT
Ethylbenzene	µg/l	5	NE	NT	NT	NT	NS	NS	NS	NT
2-Hexanone	µg/l	50	NE	NT	NT	NT	NS	NS	NS	NT
Iodomethane	µg/l	10	NE	NT	NT	NT	NS	NS	NS	NT
Dichloromethane (Methylene chloride)	µg/l	10	NE	NT	NT	NT	NS	NS	NS	NT
2-Butanone (Methyl ethyl ketone)	µg/l	100	NE	NT	NT	NT	NS	NS	NS	NT
4-Methyl-2-Pentanone	µg/l	100	NE	NT	NT	NT	NS	NS	NS	NT
Styrene	µg/l	10	NE	NT	NT	NT	NS	NS	NS	NT
1,1,1,2-Tetrachloroethane	µg/l	5	NE	NT	NT	NT	NS	NS	NS	NT
1,1,2,2-Tetrachloroethane	µg/l	5	4	NT	NT	NT	NS	NS	NS	NT
Tetrachloroethene (-ethylene)	µg/l	5	3.3	NT	NT	NT	NS	NS	NS	NT
Toluene	µg/l	5	0.36	NT	NT	NT	NS	NS	NS	NT
1,1,1-Trichloroethane	µg/l	5	NE	NT	NT	NT	NS	NS	NS	NT
1,1,2-Trichloroethane	µg/l	5	NE	NT	NT	NT	NS	NS	NS	NT
Trichloroethene (-ethylene)	µg/l	5	30	NT	NT	NT	NS	NS	NS	NT
Trichlorofluoromethane	µg/l	5	NE	NT	NT	NT	NS	NS	NS	NT
1,2,3-Trichloropropane	µg/l	15	NE	NT	NT	NT	NS	NS	NS	NT
Vinyl acetate	µg/l	50	NE	NT	NT	NT	NS	NS	NS	NT
Vinyl chloride	µg/l	10	2.4	NT	NT	NT	NS	NS	NS	NT
Xylene	µg/l	5	NE	NT	NT	NT	NS	NS	NS	NT

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White Oak Landfill - Haywood Co., NC
Surface Water Sampling Event (4-29-2003)

TEST	UNITS	MRL	MCL	SW-1	SW-2	SW-3	SW-5	SW-6	SW-7	Leachate
pH	pH units (on-site)	-	<6.0; >9.0	**6.91**	**6.42**	**7.17**	NS	**6.41**	**6.71**	NT
Specific Conductance	µmhos/cm (on-site)	1	NE	**77**	**75**	**101**	NS	**19**	**29**	NT
Temperature	°C (on-site)	-	29	**11.8**	**13**	**16**	NS	**15.6**	**14.9**	NT
Turbidity	NTU (on-site)	NT	50	NT	NT	NT	NS	NT	NT	NT
Nitrate as N	mg/l	0.1	NE	NT	NT	NT	NS	NT	NT	NT
Nitrate/Nitrite as N	mg/l	0.1	NE	NT	NT	NT	NS	NT	NT	ND
Nitrite as N	mg/l	0.1	NE	NT	NT	NT	NS	NT	NT	NT
Nitrogen	mg/l	0.2	NE	NT	NT	NT	NS	NT	NT	**220**
Total Nitrogen, Kjeldahl	mg/l	100	NE	NT	NT	NT	NS	NT	NT	**220**
Sulfate	mg/l	500	NE	NT	NT	NT	NS	NT	NT	NT
Biochemical Oxygen Demand	mg/l	2	NE	NT	NT	NT	NS	NT	NT	**2500**
Chemical Oxygen Demand	mg/l	25	NE	NT	NT	NT	NS	NT	NT	**1100**
Total Dissolved Solids	mg/l	20	NE	NT	NT	NT	NS	NT	NT	**120**
Cyanide	µg/l	2	5	NT	NT	NT	NS	NT	NT	**110**
Total Antimony (Sb)	µg/l	30	NE	ND	ND	ND	NS	ND	ND	ND
Total Arsenic (As)	µg/l	10	10	ND	ND	ND	NS	ND	ND	**15**
Total Barium (Ba)	µg/l	500	NE	**90**	**82**	**64**	NS	**27**	**27**	**270**
Total Beryllium (Be)	µg/l	2	6.5	ND	ND	ND	NS	ND	ND	ND
Total Cadmium (Cd)	µg/l	1	0.4	ND	ND	ND	NS	ND	ND	**2.5**
Total Chromium (Cr)	µg/l	10	50	ND	ND	ND	NS	ND	ND	ND
Total Cobalt (Co)	µg/l	10	NE	ND	ND	ND	NS	ND	ND	**16**
Total Copper (Cu)	µg/l	200	7	ND	ND	ND	NS	ND	ND	ND
Total Lead (Pb)	µg/l	10	25	ND	ND	ND	NS	ND	ND	ND
Total Nickel (Ni)	µg/l	50	88	ND	ND	ND	NS	ND	ND	ND
Total Selenium (Se)	µg/l	20	5	ND	ND	ND	NS	ND	ND	ND
Total Silver (Ag)	µg/l	10	0.06	ND	ND	ND	NS	ND	ND	**2.4**
Total Thallium (Tl)	µg/l	10	NE	ND	ND	ND	NS	ND	ND	ND
Total Vanadium (V)	µg/l	40	NE	ND	ND	ND	NS	ND	ND	**19**
Total Zinc (Zn)	µg/l	50	50	ND	**45**	**20**	NS	ND	ND	**1000**
Mercury	µg/l	0.2	0.012	NT	NT	NT	NS	NT	NT	NT
Acetone	µg/l	100	NE	NT	NT	NT	NS	NT	NT	NT
Acrylonitrile	µg/l	200	NE	NT	NT	NT	NS	NT	NT	NT
Benzene	µg/l	5	51	NT	NT	NT	NS	NT	NT	NT
Bromochloromethane	µg/l	5	NE	NT	NT	NT	NS	NT	NT	NT
Bromodichloromethane	µg/l	5	NE	NT	NT	NT	NS	NT	NT	NT
Bromoform	µg/l	5	NE	NT	NT	NT	NS	NT	NT	NT
Carbon Disulfide	µg/l	100	NE	NT	NT	NT	NS	NT	NT	NT
Bromomethane (Methylbromide)	µg/l	10	NE	NT	NT	NT	NS	NT	NT	NT
Carbon tetrachloride	µg/l	10	1.6	NT	NT	NT	NS	NT	NT	NT
Chlorobenzene (mono)	µg/l	5	NE	NT	NT	NT	NS	NT	NT	NT
Chloroethane	µg/l	10	NE	NT	NT	NT	NS	NT	NT	NT
Chloroform	µg/l	5	NE	NT	NT	NT	NS	NT	NT	NT
Chloromethane (Methylchloride)	µg/l	10	NE	NT	NT	NT	NS	NT	NT	NT
Dibromochloromethane	µg/l	5	NE	NT	NT	NT	NS	NT	NT	NT
1,2-Dibromo-3-chloropropane; DBCP	µg/l	25	NE	NT	NT	NT	NS	NT	NT	NT
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	NE	NT	NT	NT	NS	NT	NT	NT
Dibromomethane	µg/l	10	NE	NT	NT	NT	NS	NT	NT	NT
1,2-Dichlorobenzene	µg/l	5	NE	NT	NT	NT	NS	NT	NT	NT
1,4-Dichlorobenzene	µg/l	5	NE	NT	NT	NT	NS	NT	NT	NT
trans-1,4-Dichloro-2butene	µg/l	100	NE	NT	NT	NT	NS	NT	NT	NT
1,1-Dichloroethane	µg/l	5	NE	NT	NT	NT	NS	NT	NT	NT
1,2-Dichloroethane	µg/l	5	NE	NT	NT	NT	NS	NT	NT	NT
1,1-Dichloroethene (-ethylene)	µg/l	5	NE	NT	NT	NT	NS	NT	NT	NT
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	NE	NT	NT	NT	NS	NT	NT	NT
trans-1,2-Dichloroethene (-ylene)	µg/l	5	NE	NT	NT	NT	NS	NT	NT	NT
1,2-Dichloropropane	µg/l	5	NE	NT	NT	NT	NS	NT	NT	NT
cis-1,3-Dichloropropene (-propylene)	µg/l	10	NE	NT	NT	NT	NS	NT	NT	NT
trans-1,3-Dichloropropene (-propylene)	µg/l	10	NE	NT	NT	NT	NS	NT	NT	NT
Ethylbenzene	µg/l	5	NE	NT	NT	NT	NS	NT	NT	NT
2-Hexanone	µg/l	50	NE	NT	NT	NT	NS	NT	NT	NT
Iodomethane	µg/l	10	NE	NT	NT	NT	NS	NT	NT	NT
Dichloromethane (Methylene chloride)	µg/l	10	NE	NT	NT	NT	NS	NT	NT	NT
2-Butanone (Methyl ethyl ketone)	µg/l	100	NE	NT	NT	NT	NS	NT	NT	NT
4-Methyl-2-Pentanone	µg/l	100	NE	NT	NT	NT	NS	NT	NT	NT
Styrene	µg/l	10	NE	NT	NT	NT	NS	NT	NT	NT
1,1,1,2-Tetrachloroethane	µg/l	5	NE	NT	NT	NT	NS	NT	NT	NT
1,1,2,2-Tetrachloroethane	µg/l	5	4	NT	NT	NT	NS	NT	NT	NT
Tetrachloroethene (-ethylene)	µg/l	5	3.3	NT	NT	NT	NS	NT	NT	NT
Toluene	µg/l	5	0.36	NT	NT	NT	NS	NT	NT	NT
1,1,1-Trichloroethane	µg/l	5	NE	NT	NT	NT	NS	NT	NT	NT
1,1,2-Trichloroethane	µg/l	5	NE	NT	NT	NT	NS	NT	NT	NT
Trichloroethene (-ethylene)	µg/l	5	30	NT	NT	NT	NS	NT	NT	NT
Trichlorofluoromethane	µg/l	5	NE	NT	NT	NT	NS	NT	NT	NT
1,2,3-Trichloropropane	µg/l	15	NE	NT	NT	NT	NS	NT	NT	NT
Vinyl acetate	µg/l	50	NE	NT	NT	NT	NS	NT	NT	NT
Vinyl chloride	µg/l	10	2.4	NT	NT	NT	NS	NT	NT	NT
Xylene	µg/l	5	NE	NT	NT	NT	NS	NT	NT	NT

Notes:

MCL = Maximum Contaminant Level, as established in the NCDENR, "Redbook" Surface Waters and Wetlands Standards Section 15A NCAC 02B.0100, .0200, and .0300.

ND = Not Detected at the Method Reporting Limit

NS = Not Sampled

NT = Not Tested

NE = Not Established; North Carolina has not established a MCL

NP = Not Present during sampling event

Shaded cells indicate exceedances of MCLs.

White Oak Landfill - Haywood Co., NC
Surface Water Sampling Event (10-30-2003)

TEST	UNITS	MRL	MCL	SW-1	SW-2	SW-3	SW-5	SW-6	SW-7	Leachate
pH	pH units (on-site)	-	<6.0; >9.0	**7.41**	**7.38**	**7.42**	NS	**5.87**	**7.14**	**8.37**
Specific Conductance	µmhos/cm (on-site)	1	NE	**80**	**80**	**80**	NS	**19**	**29**	**3500**
Temperature	°C (on-site)	-	29	**12**	**12**	**12**	NS	**14.2**	**15.1**	**19.3**
Turbidity	NTU (on-site)	NT	50	NT	NT	NT	NS	NT	NT	NT
Nitrate as N	mg/l	0.1	NE	NT	NT	NT	NS	NT	NT	**3.4**
Nitrate/Nitrite as N	mg/l	0.1	NE	NT	NT	NT	NS	NT	NT	**3.4**
Nitrite as N	mg/l	0.1	NE	NT	NT	NT	NS	NT	NT	NT
Nitrogen	mg/l	0.2	NE	NT	NT	NT	NS	NT	NT	**72**
Total Nitrogen, Kjeldahl	mg/l	100	NE	NT	NT	NT	NS	NT	NT	**69**
Sulfate	mg/l	500	NE	NT	NT	NT	NS	NT	NT	NT
Biochemical Oxygen Demand	mg/l	2	NE	NT	NT	NT	NS	NT	NT	ND
Chemical Oxygen Demand	mg/l	25	NE	NT	NT	NT	NS	NT	NT	**250**
Total Dissolved Solids	mg/l	20	NE	NT	NT	NT	NS	NT	NT	**2500**
Cyanide	µg/l	2	5	NT	NT	NT	NS	NT	NT	NT
Total Antimony (Sb)	µg/l	30	NE	ND	ND	ND	NS	ND	ND	NT
Total Arsenic (As)	µg/l	10	10	ND	ND	ND	NS	**5.5**	ND	NT
Total Barium (Ba)	µg/l	500	NE	**110**	**130**	**84**	NS	**24**	**27**	NT
Total Beryllium (Be)	µg/l	2	6.5	ND	ND	ND	NS	ND	ND	NT
Total Cadmium (Cd)	µg/l	1	0.4	ND	ND	ND	NS	ND	ND	NT
Total Chromium (Cr)	µg/l	10	50	ND	ND	ND	NS	ND	ND	**10**
Total Cobalt (Co)	µg/l	10	NE	ND	ND	ND	NS	ND	ND	NT
Total Copper (Cu)	µg/l	200	7	ND	**2.7**	**2.2**	NS	**2.2**	ND	NT
Total Lead (Pb)	µg/l	10	25	ND	ND	ND	NS	ND	ND	ND
Total Nickel (Ni)	µg/l	50	88	ND	ND	ND	NS	ND	ND	NT
Total Selenium (Se)	µg/l	20	5	ND	ND	ND	NS	ND	ND	ND
Total Silver (Ag)	µg/l	10	0.06	ND	ND	ND	NS	ND	ND	NT
Total Thallium (Tl)	µg/l	10	NE	ND	ND	ND	NS	ND	ND	ND
Total Vanadium (V)	µg/l	40	NE	ND	**5.3**	ND	NS	ND	ND	NT
Total Zinc (Zn)	µg/l	50	50	ND	**80**	**40**	NS	**14**	ND	NT
Mercury	µg/l	0.2	0.012	NT	NT	NT	NS	NT	NT	ND
Acetone	µg/l	100	NE	ND	ND	ND	NS	ND	ND	NT
Acrylonitrile	µg/l	200	NE	ND	ND	ND	NS	ND	ND	NT
Benzene	µg/l	5	51	ND	ND	ND	NS	ND	ND	NT
Bromochloromethane	µg/l	5	NE	ND	ND	ND	NS	ND	ND	NT
Bromodichloromethane	µg/l	5	NE	ND	ND	ND	NS	ND	ND	NT
Bromoform	µg/l	5	NE	ND	ND	ND	NS	ND	ND	NT
Carbon Disulfide	µg/l	100	NE	ND	ND	ND	NS	ND	**11**	NT
Bromomethane (Methylbromide)	µg/l	10	NE	ND	ND	ND	NS	ND	ND	NT
Carbon tetrachloride	µg/l	10	1.6	ND	ND	ND	NS	ND	ND	NT
Chlorobenzene (mono)	µg/l	5	NE	ND	ND	ND	NS	ND	ND	NT
Chloroethane	µg/l	10	NE	ND	ND	ND	NS	ND	ND	NT
Chloroform	µg/l	5	NE	ND	ND	ND	NS	ND	ND	NT
Chloromethane (Methylchloride)	µg/l	10	NE	ND	ND	ND	NS	ND	ND	NT
Dibromochloromethane	µg/l	5	NE	ND	ND	ND	NS	ND	ND	NT
1,2-Dibromo-3-chloropropane; DBCP	µg/l	25	NE	ND	ND	ND	NS	ND	ND	NT
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	NE	ND	ND	ND	NS	ND	ND	NT
Dibromomethane	µg/l	10	NE	ND	ND	ND	NS	ND	ND	NT
1,2-Dichlorobenzene	µg/l	5	NE	ND	ND	ND	NS	ND	ND	NT
1,4-Dichlorobenzene	µg/l	5	NE	ND	ND	ND	NS	ND	ND	NT
trans-1,4-Dichloro-2butene	µg/l	100	NE	ND	ND	ND	NS	ND	ND	NT
1,1-Dichloroethane	µg/l	5	NE	ND	ND	ND	NS	ND	ND	NT
1,2-Dichloroethane	µg/l	5	NE	ND	ND	ND	NS	ND	ND	NT
1,1-Dichloroethene (-ethylene)	µg/l	5	NE	ND	ND	ND	NS	ND	ND	NT
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	NE	ND	ND	ND	NS	ND	ND	NT
trans-1,2-Dichloroethene (-ylene)	µg/l	5	NE	ND	ND	ND	NS	ND	ND	NT
1,2-Dichloropropane	µg/l	5	NE	ND	ND	ND	NS	ND	ND	NT
cis-1,3-Dichloropropene (-propylene)	µg/l	10	NE	ND	ND	ND	NS	ND	ND	NT
trans-1,3-Dichloropropene (-propylene)	µg/l	10	NE	ND	ND	ND	NS	ND	ND	NT
Ethylbenzene	µg/l	5	NE	ND	ND	ND	NS	ND	ND	NT
2-Hexanone	µg/l	50	NE	ND	ND	ND	NS	ND	ND	NT
Iodomethane	µg/l	10	NE	ND	ND	ND	NS	ND	ND	NT
Dichloromethane (Methylene chloride)	µg/l	10	NE	ND	ND	ND	NS	ND	ND	NT
2-Butanone (Methyl ethyl ketone)	µg/l	100	NE	ND	ND	ND	NS	ND	ND	NT
4-Methyl-2-Pentanone	µg/l	100	NE	ND	ND	ND	NS	ND	ND	NT
Styrene	µg/l	10	NE	ND	ND	ND	NS	ND	ND	NT
1,1,1,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND	NS	ND	ND	NT
1,1,2,2-Tetrachloroethane	µg/l	5	4	ND	ND	ND	NS	ND	ND	NT
Tetrachloroethene (-ethylene)	µg/l	5	3.3	ND	ND	ND	NS	ND	ND	NT
Toluene	µg/l	5	0.36	ND	ND	ND	NS	ND	ND	NT
1,1,1-Trichloroethane	µg/l	5	NE	ND	ND	ND	NS	ND	ND	NT
1,1,2-Trichloroethane	µg/l	5	NE	ND	ND	ND	NS	ND	ND	NT
Trichloroethene (-ethylene)	µg/l	5	30	ND	ND	ND	NS	ND	ND	NT
Trichlorofluoromethane	µg/l	5	NE	ND	ND	ND	NS	ND	ND	NT
1,2,3-Trichloropropane	µg/l	15	NE	ND	ND	ND	NS	ND	ND	NT
Vinyl acetate	µg/l	50	NE	ND	ND	ND	NS	ND	ND	NT
Vinyl chloride	µg/l	10	2.4	ND	ND	ND	NS	ND	ND	NT
Xylene	µg/l	5	NE	ND	ND	ND	NS	ND	ND	NT

Notes:

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NP = Not Present during sampling event

Shaded cells indicate exceedances of MCLs.

White Oak Landfill - Haywood Co., NC
Surface Water Sampling Event (4-20-2004)

TEST	UNITS	MRL	MCL	SW-1	SW-2	SW-3	SW-5	SW-6	SW-7	Leachate
pH	pH units (on-site)	-	<6.0; >9.0	**6.8**	**7.05**	**7.19**	**8.05**	**6.19**	**6.35**	**8.37**
Specific Conductance	µmhos/cm (on-site)	1	NE	**74**	**73**	**142**	**1790**	**19**	**29**	**4050**
Temperature	°C (on-site)	-	29	**13**	**13**	**15**	**17**	**17**	**16**	**28.4**
Turbidity	NTU (on-site)	NT	50	NT	NT	NT	NT	NT	NT	NT
Nitrate as N	mg/l	0.1	NE	NT	NT	NT	NT	NT	NT	**0.11**
Nitrate/Nitrite as N	mg/l	0.1	NE	NT	NT	NT	NT	NT	NT	**0.11**
Nitrite as N	mg/l	0.1	NE	NT	NT	NT	NT	NT	NT	NT
Nitrogen	mg/l	0.2	NE	NT	NT	NT	NT	NT	NT	NT
Total Nitrogen, Kjeldahl	mg/l	100	NE	NT	NT	NT	NT	NT	NT	NT
Sulfate	mg/l	500	NE	NT	NT	NT	NT	NT	NT	**640**
Biochemical Oxygen Demand	mg/l	2	NE	NT	NT	NT	NT	NT	NT	**470**
Chemical Oxygen Demand	mg/l	25	NE	NT	NT	NT	NT	NT	NT	**1100**
Total Dissolved Solids	mg/l	20	NE	NT	NT	NT	NT	NT	NT	NT
Cyanide	µg/l	2	5	NT	NT	NT	NT	NT	NT	NT
Total Antimony (Sb)	µg/l	30	NE	ND	ND	ND	ND	ND	ND	ND
Total Arsenic (As)	µg/l	10	10	ND	ND	ND	ND	ND	ND	**16**
Total Barium (Ba)	µg/l	500	NE	**120**	**95**	**83**	**260**	**18**	**26**	**140**
Total Beryllium (Be)	µg/l	2	6.5	ND	ND	ND	ND	ND	ND	ND
Total Cadmium (Cd)	µg/l	1	0.4	ND	ND	ND	ND	ND	ND	ND
Total Chromium (Cr)	µg/l	10	50	ND	ND	ND	ND	ND	ND	**28**
Total Cobalt (Co)	µg/l	10	NE	ND	ND	ND	**26**	ND	ND	**17**
Total Copper (Cu)	µg/l	200	7	ND	ND	**3.1**	ND	ND	ND	ND
Total Lead (Pb)	µg/l	10	25	ND	ND	ND	ND	ND	ND	ND
Total Nickel (Ni)	µg/l	50	88	ND	ND	ND	**12**	ND	ND	**45**
Total Selenium (Se)	µg/l	20	5	ND	ND	ND	**6**	ND	ND	**8**
Total Silver (Ag)	µg/l	10	0.06	ND	ND	ND	ND	ND	ND	ND
Total Thallium (Tl)	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND
Total Vanadium (V)	µg/l	40	NE	ND	ND	ND	ND	ND	ND	**12**
Total Zinc (Zn)	µg/l	50	50	ND	**48**	**31**	**310**	**15**	ND	**62**
Mercury	µg/l	0.2	0.012	NT	NT	NT	ND	NT	NT	ND
Acetone	µg/l	100	NE	ND	ND	ND	ND	ND	ND	**490**
Acrylonitrile	µg/l	200	NE	ND	ND	ND	ND	ND	ND	ND
Benzene	µg/l	5	51	ND	ND	ND	ND	ND	ND	ND
Bromochloromethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
Bromoform	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	µg/l	100	NE	ND	ND	ND	ND	ND	ND	**14**
Bromomethane (Methylbromide)	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	µg/l	10	1.6	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene (mono)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
Chloroethane	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND
Chloroform	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
Chloromethane (Methylchloride)	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	25	NE	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
Dibromomethane	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
trans-1,4-Dichloro-2butene	µg/l	100	NE	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene (-ethylene)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
2-Hexanone	µg/l	50	NE	ND	ND	ND	ND	ND	ND	ND
Iodomethane	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND
Dichloromethane (Methylene chloride)	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND
2-Butanone (Methyl ethyl ketone)	µg/l	100	NE	ND	ND	ND	ND	ND	ND	**300**
4-Methyl-2-Pentanone	µg/l	100	NE	ND	ND	ND	ND	ND	ND	ND
Styrene	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	5	4	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	5	3.3	ND	ND	ND	ND	ND	ND	ND
Toluene	µg/l	5	0.36	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	5	30	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	µg/l	15	NE	ND	ND	ND	ND	ND	ND	ND
Vinyl acetate	µg/l	50	NE	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	µg/l	10	2.4	ND	ND	ND	ND	ND	ND	ND
Xylene	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND

Notes:

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ND = Not Detected at the Method Reporting Limit

NS = Not Sampled

NT = Not Tested

NE = Not Established; North Carolina has not established a MCL

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Shaded cells indicate exceedances of MCLs.

White Oak Landfill - Haywood Co., NC
Surface Water Sampling Event (10-21-2004)

TEST	UNITS	MRL	MCL	SW-1	SW-2	SW-3	SW-5	SW-6	SW-7	Leachate
pH	pH units (on-site)	-	<6.0; >9.0	**7.06**	**6.62**	NS	**7.16**	**7.42**	**6.41**	**7.89**
Specific Conductance	µmhos/cm (on-site)	1	NE	**103**	**103**	NS	**129**	**26**	**38**	**3270**
Temperature	°C (on-site)	-	29	**14**	**14.5**	NS	**15**	**15**	**16**	**23.4**
Turbidity	NTU (on-site)	NT	50	NT	NT	NS	NT	NT	NT	NT
Nitrate as N	mg/l	0.1	NE	NT	NT	NS	NT	NT	NT	ND
Nitrate/Nitrite as N	mg/l	0.1	NE	NT	NT	NS	NT	NT	NT	ND
Nitrite as N	mg/l	0.1	NE	NT	NT	NS	NT	NT	NT	NT
Nitrogen	mg/l	0.2	NE	NT	NT	NS	NT	NT	NT	NT
Total Nitrogen, Kjeldahl	mg/l	100	NE	NT	NT	NS	NT	NT	NT	NT
Sulfate	mg/l	500	NE	NT	NT	NS	NT	NT	NT	**34**
Biochemical Oxygen Demand	mg/l	2	NE	NT	NT	NS	NT	NT	NT	**640**
Chemical Oxygen Demand	mg/l	25	NE	NT	NT	NS	NT	NT	NT	**1300**
Total Dissolved Solids	mg/l	20	NE	NT	NT	NS	NT	NT	NT	NT
Cyanide	µg/l	2	5	NT	NT	NS	NT	NT	NT	NT
Total Antimony (Sb)	µg/l	30	NE	ND	ND	NS	ND	ND	ND	ND
Total Arsenic (As)	µg/l	10	10	ND	ND	NS	ND	ND	ND	**10**
Total Barium (Ba)	µg/l	500	NE	**100**	**100**	NS	**87**	**24**	**31**	**160**
Total Beryllium (Be)	µg/l	2	6.5	ND	ND	NS	ND	**2.6**	ND	ND
Total Cadmium (Cd)	µg/l	1	0.4	ND	ND	NS	ND	**2.1**	ND	ND
Total Chromium (Cr)	µg/l	10	50	ND	ND	NS	ND	**3.7**	**2.3**	**26**
Total Cobalt (Co)	µg/l	10	NE	ND	ND	NS	**6.5**	ND	ND	ND
Total Copper (Cu)	µg/l	200	7	ND	ND	NS	ND	ND	ND	ND
Total Lead (Pb)	µg/l	10	25	ND	ND	NS	ND	ND	ND	ND
Total Nickel (Ni)	µg/l	50	88	ND	ND	NS	ND	ND	ND	**24**
Total Selenium (Se)	µg/l	20	5	ND	ND	NS	ND	ND	ND	**6.2**
Total Silver (Ag)	µg/l	10	0.06	ND	ND	NS	ND	ND	ND	ND
Total Thallium (Tl)	µg/l	10	NE	ND	ND	NS	ND	ND	ND	ND
Total Vanadium (V)	µg/l	40	NE	ND	ND	NS	ND	ND	ND	**8.2**
Total Zinc (Zn)	µg/l	50	50	ND	**44**	NS	**17**	**12**	**13**	**43**
Mercury	µg/l	0.2	0.012	NT	NT	NS	NT	NT	NT	NT
Acetone	µg/l	100	NE	ND	ND	NS	ND	ND	ND	**290**
Acrylonitrile	µg/l	200	NE	ND	ND	NS	ND	ND	ND	ND
Benzene	µg/l	5	51	ND	ND	NS	ND	ND	ND	ND
Bromochloromethane	µg/l	5	NE	ND	ND	NS	ND	ND	ND	ND
Bromodichloromethane	µg/l	5	NE	ND	ND	NS	ND	ND	ND	ND
Bromoform	µg/l	5	NE	ND	ND	NS	ND	ND	ND	ND
Carbon Disulfide	µg/l	100	NE	ND	ND	NS	ND	**39**	**32**	ND
Bromomethane (Methylbromide)	µg/l	10	NE	ND	ND	NS	ND	ND	ND	ND
Carbon tetrachloride	µg/l	10	1.6	ND	ND	NS	ND	ND	ND	ND
Chlorobenzene (mono)	µg/l	5	NE	ND	ND	NS	ND	ND	ND	ND
Chloroethane	µg/l	10	NE	ND	ND	NS	ND	ND	ND	ND
Chloroform	µg/l	5	NE	ND	ND	NS	ND	ND	ND	ND
Chloromethane (Methylchloride)	µg/l	10	NE	ND	ND	NS	ND	ND	ND	ND
Dibromochloromethane	µg/l	5	NE	ND	ND	NS	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	25	NE	ND	ND	NS	ND	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	NE	ND	ND	NS	ND	ND	ND	ND
Dibromomethane	µg/l	10	NE	ND	ND	NS	ND	ND	ND	ND
1,2-Dichlorobenzene	µg/l	5	NE	ND	ND	NS	ND	ND	ND	ND
1,4-Dichlorobenzene	µg/l	5	NE	ND	ND	NS	ND	ND	ND	ND
trans-1,4-Dichloro-2butene	µg/l	100	NE	ND	ND	NS	ND	ND	ND	ND
1,1-Dichloroethane	µg/l	5	NE	ND	ND	NS	ND	ND	ND	ND
1,2-Dichloroethane	µg/l	5	NE	ND	ND	NS	ND	ND	ND	ND
1,1-Dichloroethene (-ethylene)	µg/l	5	NE	ND	ND	NS	ND	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	NE	ND	ND	NS	ND	ND	ND	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	5	NE	ND	ND	NS	ND	ND	ND	ND
1,2-Dichloropropane	µg/l	5	NE	ND	ND	NS	ND	ND	ND	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	10	NE	ND	ND	NS	ND	ND	ND	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	10	NE	ND	ND	NS	ND	ND	ND	ND
Ethylbenzene	µg/l	5	NE	ND	ND	NS	ND	ND	ND	ND
2-Hexanone	µg/l	50	NE	ND	ND	NS	ND	ND	ND	ND
Iodomethane	µg/l	10	NE	ND	ND	NS	ND	ND	ND	ND
Dichloromethane (Methylene chloride)	µg/l	10	NE	ND	ND	NS	ND	ND	ND	ND
2-Butanone (Methyl ethyl ketone)	µg/l	100	NE	ND	ND	NS	ND	ND	ND	**260**
4-Methyl-2-Pentanone	µg/l	100	NE	ND	ND	NS	ND	ND	ND	ND
Styrene	µg/l	10	NE	ND	ND	NS	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	µg/l	5	NE	ND	ND	NS	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	5	4	ND	ND	NS	ND	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	5	3.3	ND	ND	NS	ND	ND	ND	ND
Toluene	µg/l	5	0.36	ND	ND	NS	ND	ND	ND	ND
1,1,1-Trichloroethane	µg/l	5	NE	ND	ND	NS	ND	ND	ND	ND
1,1,2-Trichloroethane	µg/l	5	NE	ND	ND	NS	ND	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	5	30	ND	ND	NS	ND	ND	ND	ND
Trichlorofluoromethane	µg/l	5	NE	ND	ND	NS	ND	ND	ND	ND
1,2,3-Trichloropropane	µg/l	15	NE	ND	ND	NS	ND	ND	ND	ND
Vinyl acetate	µg/l	50	NE	ND	ND	NS	ND	ND	ND	ND
Vinyl chloride	µg/l	10	2.4	ND	ND	NS	ND	ND	ND	ND
Xylene	µg/l	5	NE	ND	ND	NS	ND	ND	ND	ND

Notes:

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ND = Not Detected at the Method Reporting Limit

NS = Not Sampled

NT = Not Tested

NE = Not Established; North Carolina has not established a MCL

NP = Not Present during sampling event

Shaded cells indicate exceedances of MCLs.

White Oak Landfill - Haywood Co., NC
Surface Water Sampling Event (4-18-2005)

TEST	UNITS	MRL	MCL	SW-1	SW-2	SW-3	SW-5	SW-6	SW-7	Leachate
pH	pH units (on-site)	-	<6.0; >9.0	**6.49**	**5.99**	**6.21**	**7.05**	**7.08**	**7.27**	**7.28**
Specific Conductance	µmhos/cm (on-site)	1	NE	**79**	**88**	**151**	**120**	**21**	**28**	**6500**
Temperature	°C (on-site)	-	29	**13**	**123**	**13.5**	**16**	**14.1**	**13**	**19**
Turbidity	NTU (on-site)	NT	50	NT	NT	NT	NT	NT	NT	NT
Nitrate as N	mg/l	0.1	NE	NT	NT	NT	NT	NT	NT	ND
Nitrate/Nitrite as N	mg/l	0.1	NE	NT	NT	NT	NT	NT	NT	ND
Nitrite as N	mg/l	0.1	NE	NT	NT	NT	NT	NT	NT	NT
Nitrogen	mg/l	0.2	NE	NT	NT	NT	NT	NT	NT	NT
Total Nitrogen, Kjeldahl	mg/l	100	NE	NT	NT	NT	NT	NT	NT	NT
Sulfate	mg/l	500	NE	NT	NT	NT	NT	NT	NT	**1300**
Biochemical Oxygen Demand	mg/l	2	NE	NT	NT	NT	NT	NT	NT	**300**
Chemical Oxygen Demand	mg/l	25	NE	NT	NT	NT	NT	NT	NT	**760**
Total Dissolved Solids	mg/l	20	NE	NT	NT	NT	NT	NT	NT	NT
Cyanide	µg/l	2	5	NT	NT	NT	NT	NT	NT	NT
Total Antimony (Sb)	µg/l	30	NE	ND	ND	ND	ND	ND	ND	ND
Total Arsenic (As)	µg/l	10	10	ND	ND	ND	ND	ND	ND	**22**
Total Barium (Ba)	µg/l	500	NE	**100**	**120**	**98**	**79**	**24**	**28**	**390**
Total Beryllium (Be)	µg/l	2	6.5	ND	ND	ND	ND	ND	ND	ND
Total Cadmium (Cd)	µg/l	1	0.4	ND	ND	ND	ND	ND	ND	ND
Total Chromium (Cr)	µg/l	10	50	ND	ND	ND	ND	ND	ND	**31**
Total Cobalt (Co)	µg/l	10	NE	ND	ND	ND	ND	ND	ND	**14**
Total Copper (Cu)	µg/l	200	7	ND	ND	ND	ND	ND	ND	ND
Total Lead (Pb)	µg/l	10	25	ND	ND	ND	ND	ND	ND	ND
Total Nickel (Ni)	µg/l	50	88	ND	ND	ND	ND	ND	ND	**50**
Total Selenium (Se)	µg/l	20	5	ND	ND	ND	ND	ND	ND	**7.4**
Total Silver (Ag)	µg/l	10	0.06	ND	ND	ND	ND	ND	ND	ND
Total Thallium (Tl)	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND
Total Vanadium (V)	µg/l	40	NE	ND	ND	ND	ND	ND	ND	**17**
Total Zinc (Zn)	µg/l	50	50	ND	**50**	**22**	**34**	ND	ND	**150**
Mercury	µg/l	0.2	0.012	NT	NT	NT	NT	NT	NT	NT
Acetone	µg/l	100	NE	ND	ND	ND	ND	ND	ND	**240**
Acrylonitrile	µg/l	200	NE	ND	ND	ND	ND	ND	ND	ND
Benzene	µg/l	5	51	ND	ND	ND	ND	ND	ND	ND
Bromochloromethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
Bromoform	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	µg/l	100	NE	ND	ND	ND	ND	ND	ND	ND
Bromomethane (Methylbromide)	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	µg/l	10	1.6	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene (mono)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
Chloroethane	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND
Chloroform	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
Chloromethane (Methylchloride)	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	25	NE	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
Dibromomethane	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
trans-1,4-Dichloro-2butene	µg/l	100	NE	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene (-ethylene)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	**11**
trans-1,2-Dichloroethene (-ylene)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	µg/l	5	NE	ND	ND	ND	ND	ND	ND	**11**
2-Hexanone	µg/l	50	NE	ND	ND	ND	ND	ND	ND	ND
Iodomethane	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND
Dichloromethane (Methylene chloride)	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND
2-Butanone (Methyl ethyl ketone)	µg/l	100	NE	ND	ND	ND	ND	ND	ND	**410**
4-Methyl-2-Pentanone	µg/l	100	NE	ND	ND	ND	ND	ND	ND	**40**
Styrene	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	5	4	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	5	3.3	ND	ND	ND	ND	ND	ND	ND
Toluene	µg/l	5	0.36	ND	ND	ND	ND	ND	ND	**63**
1,1,1-Trichloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	5	30	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	µg/l	15	NE	ND	ND	ND	ND	ND	ND	ND
Vinyl acetate	µg/l	50	NE	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	µg/l	10	2.4	ND	ND	ND	ND	ND	ND	ND
Xylene	µg/l	5	NE	ND	ND	ND	ND	ND	ND	**43**

Notes:

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NT = Not Tested

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NP = Not Present during sampling event

Shaded cells indicate exceedances of MCLs.

White Oak Landfill - Haywood Co., NC
Surface Water Sampling Event (10-13-2005)

TEST	UNITS	MRL	MCL	SW-1	SW-2	SW-3	SW-5	SW-6	SW-7	Leachate
pH	pH units (on-site)	-	<6.0; >9.0	**7.11**	**6.72**	**7.18**	**6.28**	**6.76**	**8.13**	**8.01**
Specific Conductance	µmhos/cm (on-site)	1	NE	**89**	**90**	**240**	**340**	**91**	**31**	**6500**
Temperature	°C (on-site)	-	29	**15.7**	**16.9**	**16.9**	**18.9**	**18.7**	**15.2**	**21.1**
Turbidity	NTU (on-site)	NT	50	NT	NT	NT	NT	NT	NT	NT
Nitrate as N	mg/l	0.1	NE	NT	NT	NT	NT	NT	NT	ND
Nitrate/Nitrite as N	mg/l	0.1	NE	NT	NT	NT	NT	NT	NT	ND
Nitrite as N	mg/l	0.1	NE	NT	NT	NT	NT	NT	NT	ND
Nitrogen	mg/l	0.2	NE	NT	NT	NT	NT	NT	NT	NT
Total Nitrogen, Kjeldahl	mg/l	100	NE	NT	NT	NT	NT	NT	NT	NT
Sulfate	mg/l	500	NE	NT	NT	NT	NT	NT	NT	**1300**
Biochemical Oxygen Demand	mg/l	2	NE	NT	NT	NT	NT	NT	NT	**720**
Chemical Oxygen Demand	mg/l	25	NE	NT	NT	NT	NT	NT	NT	**920**
Total Dissolved Solids	mg/l	20	NE	NT	NT	NT	NT	NT	NT	NT
Cyanide	µg/l	2	5	NT	NT	NT	NT	NT	NT	NT
Total Antimony (Sb)	µg/l	30	NE	NT	NT	NT	ND	NT	NT	NT
Total Arsenic (As)	µg/l	10	10	ND	ND	ND	ND	ND	ND	**16**
Total Barium (Ba)	µg/l	500	NE	**120**	**96**	**140**	**90**	**86**	**36**	**430**
Total Beryllium (Be)	µg/l	2	6.5	NT	NT	NT	ND	NT	NT	NT
Total Cadmium (Cd)	µg/l	1	0.4	ND	ND	ND	ND	ND	ND	ND
Total Chromium (Cr)	µg/l	10	50	ND	ND	ND	**4.2**	ND	ND	**50**
Total Cobalt (Co)	µg/l	10	NE	NT	NT	NT	**6.8**	NT	NT	NT
Total Copper (Cu)	µg/l	200	7	NT	NT	NT	**2.4**	NT	NT	NT
Total Lead (Pb)	µg/l	10	25	ND	ND	ND	ND	ND	ND	ND
Total Nickel (Ni)	µg/l	50	88	NT	NT	NT	ND	NT	NT	NT
Total Selenium (Se)	µg/l	20	5	ND	ND	ND	ND	ND	ND	**9.2**
Total Silver (Ag)	µg/l	10	0.06	ND	ND	ND	ND	ND	ND	ND
Total Thallium (Tl)	µg/l	10	NE	NT	NT	NT	ND	NT	NT	NT
Total Vanadium (V)	µg/l	40	NE	NT	NT	NT	ND	NT	NT	NT
Total Zinc (Zn)	µg/l	50	50	NT	NT	NT	**33**	NT	NT	NT
Mercury	µg/l	0.2	0.012	NT	NT	NT	NT	NT	NT	ND
Acetone	µg/l	100	NE	ND	ND	ND	ND	ND	ND	ND
Acrylonitrile	µg/l	200	NE	ND	ND	ND	ND	ND	ND	ND
Benzene	µg/l	5	51	ND	ND	ND	ND	ND	ND	ND
Bromochloromethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
Bromoform	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	µg/l	100	NE	ND	ND	ND	ND	ND	ND	ND
Bromomethane (Methylbromide)	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	µg/l	10	1.6	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene (mono)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
Chloroethane	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND
Chloroform	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
Chloromethane (Methylchloride)	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	25	NE	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
Dibromomethane	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
trans-1,4-Dichloro-2butene	µg/l	100	NE	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene (-ethylene)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
2-Hexanone	µg/l	50	NE	ND	ND	ND	ND	ND	ND	ND
Iodomethane	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND
Dichloromethane (Methylene chloride)	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND
2-Butanone (Methyl ethyl ketone)	µg/l	100	NE	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone	µg/l	100	NE	ND	ND	ND	ND	ND	ND	ND
Styrene	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	5	4	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	5	3.3	ND	ND	ND	ND	ND	ND	ND
Toluene	µg/l	5	0.36	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	5	30	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	µg/l	15	NE	ND	ND	ND	ND	ND	ND	ND
Vinyl acetate	µg/l	50	NE	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	µg/l	10	2.4	ND	ND	ND	ND	ND	ND	ND
Xylene	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND

Notes:

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NT = Not Tested

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Shaded cells indicate exceedances of MCLs.

White Oak Landfill - Haywood Co., NC
Surface Water Sampling Event (4-25-2006)

TEST	UNITS	MRL	MCL	SW-1	SW-2	SW-3	SW-5	SW-6	SW-7	Leachate
pH	pH units (on-site)	-	<6.0; >9.0	**7.07**	**7.11**	**7.18**	**6.73**	**6.45**	**6.28**	**7.55**
Specific Conductance	µmhos/cm (on-site)	1	NE	**107**	**138**	**340**	**201**	**45**	**53**	**8660**
Temperature	°C (on-site)	-	29	**14.1**	**13.8**	**15.6**	**18.6**	**14.8**	**14.3**	**17.1**
Turbidity	NTU (on-site)	NT	50	NT	NT	NT	NT	NT	NT	NT
Nitrate as N	mg/l	0.1	NE	NT	NT	NT	NT	NT	NT	**2.4**
Nitrate/Nitrite as N	mg/l	0.1	NE	NT	NT	NT	NT	NT	NT	**2.4**
Nitrite as N	mg/l	0.1	NE	NT	NT	NT	NT	NT	NT	NT
Nitrogen	mg/l	0.2	NE	NT	NT	NT	NT	NT	NT	NT
Total Nitrogen, Kjeldahl	mg/l	100	NE	NT	NT	NT	NT	NT	NT	NT
Sulfate	mg/l	500	NE	NT	NT	NT	NT	NT	NT	**2400**
Biochemical Oxygen Demand	mg/l	2	NE	NT	NT	NT	NT	NT	NT	**51**
Chemical Oxygen Demand	mg/l	25	NE	NT	NT	NT	NT	NT	NT	**700**
Total Dissolved Solids	mg/l	20	NE	NT	NT	NT	NT	NT	NT	NT
Cyanide	µg/l	2	5	NT	NT	NT	NT	NT	NT	NT
Total Antimony (Sb)	µg/l	30	NE	ND	ND	ND	ND	ND	ND	ND
Total Arsenic (As)	µg/l	10	10	ND	ND	ND	ND	ND	ND	**18**
Total Barium (Ba)	µg/l	500	NE	ND	ND	ND	ND	ND	ND	**580**
Total Beryllium (Be)	µg/l	2	6.5	ND	ND	ND	ND	ND	ND	ND
Total Cadmium (Cd)	µg/l	1	0.4	ND	ND	ND	ND	ND	ND	ND
Total Chromium (Cr)	µg/l	10	50	ND	ND	ND	ND	ND	ND	**40**
Total Cobalt (Co)	µg/l	10	NE	ND	ND	ND	ND	ND	ND	**15**
Total Copper (Cu)	µg/l	200	7	ND	ND	ND	ND	ND	ND	ND
Total Lead (Pb)	µg/l	10	25	ND	ND	ND	**11**	ND	ND	ND
Total Nickel (Ni)	µg/l	50	88	ND	ND	ND	ND	ND	ND	**56**
Total Selenium (Se)	µg/l	20	5	ND	ND	ND	ND	ND	ND	ND
Total Silver (Ag)	µg/l	10	0.06	ND	ND	ND	ND	ND	ND	ND
Total Thallium (Tl)	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND
Total Vanadium (V)	µg/l	40	NE	ND	ND	ND	ND	ND	ND	ND
Total Zinc (Zn)	µg/l	50	50	ND	ND	ND	ND	ND	ND	**130**
Mercury	µg/l	0.2	0.012	NT	NT	NT	NT	NT	NT	NT
Acetone	µg/l	100	NE	ND	ND	ND	ND	ND	ND	ND
Acrylonitrile	µg/l	200	NE	ND	ND	ND	ND	ND	ND	ND
Benzene	µg/l	5	51	ND	ND	ND	ND	ND	ND	ND
Bromochloromethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
Bromoform	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	µg/l	100	NE	ND	ND	ND	ND	ND	ND	ND
Bromomethane (Methylbromide)	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	µg/l	10	1.6	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene (mono)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
Chloroethane	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND
Chloroform	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
Chloromethane (Methylchloride)	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	25	NE	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
Dibromomethane	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
trans-1,4-Dichloro-2butene	µg/l	100	NE	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene (-ethylene)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	µg/l	5	NE	ND	ND	ND	ND	ND	ND	**6.2**
2-Hexanone	µg/l	50	NE	ND	ND	ND	ND	ND	ND	ND
Iodomethane	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND
Dichloromethane (Methylene chloride)	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND
2-Butanone (Methyl ethyl ketone)	µg/l	100	NE	ND	ND	ND	ND	ND	ND	**24**
4-Methyl-2-Pentanone	µg/l	100	NE	ND	ND	ND	ND	ND	ND	**15**
Styrene	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	5	4	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	5	3.3	ND	ND	ND	ND	ND	ND	ND
Toluene	µg/l	5	0.36	ND	ND	ND	ND	ND	ND	**12**
1,1,1-Trichloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	5	30	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	µg/l	15	NE	ND	ND	ND	ND	ND	ND	ND
Vinyl acetate	µg/l	50	NE	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	µg/l	10	2.4	ND	ND	ND	ND	ND	ND	ND
Xylene	µg/l	5	NE	ND	ND	ND	ND	ND	ND	**16.1**

Notes:

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ND = Not Detected at the Method Reporting Limit

NS = Not Sampled

NT = Not Tested

NE = Not Established; North Carolina has not established a MCL

NP = Not Present during sampling event

Shaded cells indicate exceedances of MCLs.

White Oak Landfill - Haywood Co., NC
Surface Water Sampling Event (10-16-2006)

TEST	UNITS	MRL	MCL	SW-1	SW-2	SW-3	SW-5	SW-6	SW-7	Leachate
pH	pH units (on-site)	-	<6.0; >9.0	**7.53**	**7.1**	NT	**7.14**	**6.64**	**7.13**	**8.11**
Specific Conductance	µmhos/cm (on-site)	1	NE	**123**	**139**	NT	**200**	**46**	**40**	**9800**
Temperature	°C (on-site)	-	29	**11.9**	**10.9**	NT	**11.9**	**13.4**	**11.3**	**19.6**
Turbidity	NTU (on-site)	NT	50	NT	NT	NT	NT	NT	NT	NT
Nitrate as N	mg/l	0.1	NE	NT	NT	NT	NT	NT	NT	**0.58**
Nitrate/Nitrite as N	mg/l	0.1	NE	NT	NT	NT	NT	NT	NT	ND
Nitrite as N	mg/l	0.1	NE	NT	NT	NT	NT	NT	NT	ND
Nitrogen	mg/l	0.2	NE	NT	NT	NT	NT	NT	NT	NT
Total Nitrogen, Kjeldahl	mg/l	100	NE	NT	NT	NT	NT	NT	NT	NT
Sulfate	mg/l	500	NE	NT	NT	NT	NT	NT	NT	**2100**
Biochemical Oxygen Demand	mg/l	2	NE	NT	NT	NT	NT	NT	NT	**61**
Chemical Oxygen Demand	mg/l	25	NE	NT	NT	NT	NT	NT	NT	**780**
Total Dissolved Solids	mg/l	20	NE	NT	NT	NT	NT	NT	NT	NT
Cyanide	µg/l	2	5	NT	NT	NT	NT	NT	NT	NT
Total Antimony (Sb)	µg/l	30	NE	ND	ND	ND	ND	ND	ND	ND
Total Arsenic (As)	µg/l	10	10	ND	ND	ND	ND	ND	ND	**18**
Total Barium (Ba)	µg/l	500	NE	**120**	**140**	**120**	**240**	**54**	**33**	**430**
Total Beryllium (Be)	µg/l	2	6.5	ND	ND	ND	ND	ND	ND	ND
Total Cadmium (Cd)	µg/l	1	0.4	ND	ND	ND	**5.8**	ND	ND	ND
Total Chromium (Cr)	µg/l	10	50	ND	ND	ND	**21**	ND	ND	**54**
Total Cobalt (Co)	µg/l	10	NE	ND	ND	ND	ND	**7.4**	ND	**14**
Total Copper (Cu)	µg/l	200	7	ND	ND	ND	**23**	ND	ND	ND
Total Lead (Pb)	µg/l	10	25	ND	ND	ND	**18**	ND	ND	ND
Total Nickel (Ni)	µg/l	50	88	ND	ND	ND	**8.4**	ND	ND	**68**
Total Selenium (Se)	µg/l	20	5	ND	ND	ND	ND	ND	ND	ND
Total Silver (Ag)	µg/l	10	0.06	ND	ND	ND	ND	ND	ND	ND
Total Thallium (Tl)	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND
Total Vanadium (V)	µg/l	40	NE	ND	ND	ND	**62**	ND	ND	**18**
Total Zinc (Zn)	µg/l	50	50	ND	**39**	**22**	**130**	ND	ND	**63**
Mercury	µg/l	0.2	0.012	NT	NT	NT	NT	NT	NT	NT
Acetone	µg/l	100	NE	ND	ND	ND	ND	ND	ND	ND
Acrylonitrile	µg/l	200	NE	ND	ND	ND	ND	ND	ND	ND
Benzene	µg/l	5	51	ND	ND	ND	ND	ND	ND	ND
Bromochloromethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
Bromoform	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	µg/l	100	NE	ND	ND	ND	ND	ND	ND	ND
Bromomethane (Methylbromide)	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	µg/l	10	1.6	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene (mono)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
Chloroethane	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND
Chloroform	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
Chloromethane (Methylchloride)	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	25	NE	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
Dibromomethane	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
trans-1,4-Dichloro-2butene	µg/l	100	NE	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene (-ethylene)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
2-Hexanone	µg/l	50	NE	ND	ND	ND	ND	ND	ND	ND
Iodomethane	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND
Dichloromethane (Methylene chloride)	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND
2-Butanone (Methyl ethyl ketone)	µg/l	100	NE	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone	µg/l	100	NE	ND	ND	ND	ND	ND	ND	ND
Styrene	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	5	4	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	5	3.3	ND	ND	ND	ND	ND	ND	ND
Toluene	µg/l	5	0.36	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	5	30	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	µg/l	15	NE	ND	ND	ND	ND	ND	ND	ND
Vinyl acetate	µg/l	50	NE	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	µg/l	10	2.4	ND	ND	ND	ND	ND	ND	ND
Xylene	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND

Notes:

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ND = Not Detected at the Method Reporting Limit

NS = Not Sampled

NT = Not Tested

NE = Not Established; North Carolina has not established a MCL

NP = Not Present during sampling event

Shaded cells indicate exceedances of MCLs.

White Oak Landfill - Haywood Co., NC
Surface Water Sampling Event (4-23-2007)

TEST	UNITS	MRL	MCL	SW-1	SW-2	SW-3	SW-5	SW-6	SW-7	Leachate
pH	pH units (on-site)	-	<6.0; >9.0	NT	NT	NT	NT	NT	NT	NT
Specific Conductance	µmhos/cm (on-site)	1	NE	NT	NT	NT	NT	NT	NT	NT
Temperature	°C (on-site)	-	29	NT	NT	NT	NT	NT	NT	NT
Turbidity	NTU (on-site)	NT	50	NT	NT	NT	NT	NT	NT	NT
Nitrate as N	mg/l	0.1	NE	NT	NT	NT	NT	NT	NT	**0.38**
Nitrate/Nitrite as N	mg/l	0.1	NE	NT	NT	NT	NT	NT	NT	NT
Nitrite as N	mg/l	0.1	NE	NT	NT	NT	NT	NT	NT	ND
Nitrogen	mg/l	0.2	NE	NT	NT	NT	NT	NT	NT	NT
Total Nitrogen, Kjeldahl	mg/l	100	NE	NT	NT	NT	NT	NT	NT	NT
Sulfate	mg/l	500	NE	NT	NT	NT	NT	NT	NT	**2400**
Biochemical Oxygen Demand	mg/l	2	NE	NT	NT	NT	NT	NT	NT	**89**
Chemical Oxygen Demand	mg/l	25	NE	NT	NT	NT	NT	NT	NT	**1000**
Total Dissolved Solids	mg/l	20	NE	NT	NT	NT	NT	NT	NT	NT
Cyanide	µg/l	2	5	NT	NT	NT	NT	NT	NT	NT
Total Antimony (Sb)	µg/l	30	NE	ND	ND	ND	ND	ND	ND	ND
Total Arsenic (As)	µg/l	10	10	ND	ND	ND	ND	ND	ND	**16**
Total Barium (Ba)	µg/l	500	NE	**100**	**120**	**250**	ND	ND	ND	**380**
Total Beryllium (Be)	µg/l	2	6.5	ND	ND	ND	ND	ND	ND	ND
Total Cadmium (Cd)	µg/l	1	0.4	ND	ND	ND	ND	ND	ND	ND
Total Chromium (Cr)	µg/l	10	50	ND	ND	ND	ND	ND	ND	**46**
Total Cobalt (Co)	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND
Total Copper (Cu)	µg/l	200	7	ND	ND	ND	**38**	ND	ND	ND
Total Lead (Pb)	µg/l	10	25	ND	ND	ND	ND	ND	ND	ND
Total Nickel (Ni)	µg/l	50	88	ND	ND	ND	ND	ND	ND	**50**
Total Selenium (Se)	µg/l	20	5	ND	ND	ND	ND	ND	ND	ND
Total Silver (Ag)	µg/l	10	0.06	ND	ND	ND	ND	ND	ND	ND
Total Thallium (Tl)	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND
Total Vanadium (V)	µg/l	40	NE	ND	ND	ND	ND	ND	ND	ND
Total Zinc (Zn)	µg/l	50	50	**13**	**37**	**130**	**91**	**15**	**11**	**80**
Mercury	µg/l	0.2	0.012	NT	NT	NT	NT	NT	NT	NT
Acetone	µg/l	100	NE	ND	ND	ND	ND	ND	ND	ND
Acrylonitrile	µg/l	200	NE	ND	ND	ND	ND	ND	ND	ND
Benzene	µg/l	5	51	ND	ND	ND	ND	ND	ND	ND
Bromochloromethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
Bromoform	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	µg/l	100	NE	ND	ND	ND	ND	ND	ND	ND
Bromomethane (Methylbromide)	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	µg/l	10	1.6	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene (mono)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
Chloroethane	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND
Chloroform	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
Chloromethane (Methylchloride)	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	25	NE	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
Dibromomethane	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
trans-1,4-Dichloro-2butene	µg/l	100	NE	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene (-ethylene)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	µg/l	5	NE	ND	ND	ND	ND	ND	ND	**10**
2-Hexanone	µg/l	50	NE	ND	ND	ND	ND	ND	ND	ND
Iodomethane	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND
Dichloromethane (Methylene chloride)	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND
2-Butanone (Methyl ethyl ketone)	µg/l	100	NE	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone	µg/l	100	NE	ND	ND	ND	ND	ND	ND	ND
Styrene	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	5	4	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	5	3.3	ND	ND	ND	ND	ND	ND	ND
Toluene	µg/l	5	0.36	ND	ND	ND	ND	ND	ND	**46**
1,1,1-Trichloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	5	30	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	µg/l	15	NE	ND	ND	ND	ND	ND	ND	ND
Vinyl acetate	µg/l	50	NE	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	µg/l	10	2.4	ND	ND	ND	ND	ND	ND	ND
Xylene	µg/l	5	NE	ND	ND	ND	ND	ND	ND	**31.3**

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NT = Not Tested

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Shaded cells indicate exceedances of MCLs.

White Oak Landfill - Haywood Co., NC
Surface Water Sampling Event (10-31-07)

TEST	UNITS	MRL	MCL	SW-1	SW-2	SW-3	SW-5	SW-6	SW-7	Leachate
pH	pH units (on-site)	-	<6.0; >9.0	**7.04**	**7.11**	**6.8**	**7.5**	**6.35**	**6.74**	**8.03**
Specific Conductance	µmhos/cm (on-site)	1	NE	**156**	**150**	**266**	**320**	**61**	**40**	**1282**
Temperature	°C (on-site)	-	29	**16.5**	**13.4**	**12.7**	**17.2**	**11.5**	**9**	**14.3**
Turbidity	NTU (on-site)	NT	50	NT	NT	NT	NT	NT	NT	NT
Nitrate as N	mg/l	0.1	NE	NT	NT	NT	NT	NT	NT	NT
Nitrate/Nitrite as N	mg/l	0.1	NE	NT	NT	NT	NT	NT	NT	NT
Nitrite as N	mg/l	0.1	NE	NT	NT	NT	NT	NT	NT	NT
Nitrogen	mg/l	0.1	NE	NT	NT	NT	NT	NT	NT	**0.53**
Total Nitrogen, Kjeldahl	mg/l	100	NE	NT	NT	NT	NT	NT	NT	NT
Sulfate	mg/l	500	NE	NT	NT	NT	NT	NT	NT	**3010**
Biochemical Oxygen Demand	mg/l	2	NE	NT	NT	NT	NT	NT	NT	**221**
Chemical Oxygen Demand	mg/l	100	NE	NT	NT	NT	NT	NT	NT	**968**
Total Dissolved Solids	mg/l	20	NE	NT	NT	NT	NT	NT	NT	NT
Cyanide	µg/l	2	5	NT	NT	NT	NT	NT	NT	NT
Total Antimony (Sb)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
Total Arsenic (As)	µg/l	5	10	ND	ND	ND	ND	ND	ND	**24.6**
Total Barium (Ba)	µg/l	5	NE	**583**	**154**	**162**	**85**	**111**	**30.3**	**436**
Total Beryllium (Be)	µg/l	1	6.5	ND	ND	ND	ND	ND	ND	ND
Total Cadmium (Cd)	µg/l	1	0.4	ND	ND	ND	ND	ND	ND	ND
Total Chromium (Cr)	µg/l	5	50	**25.7**	ND	ND	ND	ND	ND	**74.1**
Total Cobalt (Co)	µg/l	5	NE	**10.5**	ND	ND	ND	ND	ND	**12**
Total Copper (Cu)	µg/l	5	7	**18.4**	ND	ND	ND	**8.3**	ND	ND
Total Lead (Pb)	µg/l	5	25	ND	ND	ND	ND	ND	ND	ND
Total Nickel (Ni)	µg/l	5	88	**18.1**	ND	ND	ND	ND	ND	**81.2**
Total Selenium (Se)	µg/l	10	5	ND	ND	ND	ND	ND	ND	ND
Total Silver (Ag)	µg/l	5	0.06	ND	ND	ND	ND	ND	ND	ND
Total Thallium (Tl)	µg/l	5.5	NE	**6.3**	ND	ND	ND	ND	ND	ND
Total Vanadium (V)	µg/l	5	NE	**56.2**	ND	ND	**6.8**	**11.4**	ND	**23.9**
Total Zinc (Zn)	µg/l	10	50	**135**	**71.9**	**60**	**41.3**	**20.4**	ND	**76.7**
Mercury	µg/l	0.2	0.012	NT	NT	NT	NT	NT	NT	NT
Acetone	µg/l	25	NE	ND	ND	ND	ND	ND	ND	ND
Acrylonitrile	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND
Benzene	µg/l	1	51	ND	ND	ND	ND	ND	ND	ND
Bromochloromethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Bromoform	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	µg/l	2	NE	ND	ND	ND	ND	ND	ND	ND
Bromomethane (Methylbromide)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	µg/l	1	1.6	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene (mono)	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Chloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Chloroform	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Chloromethane (Methylchloride)	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	3	NE	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Dibromomethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
trans-1,4-Dichloro-2butene	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene (-ethylene)	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
2-Hexanone	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
Iodomethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
Dichloromethane (Methylene chloride)	µg/l	2	NE	ND	ND	ND	ND	ND	ND	ND
2-Butanone (Methyl ethyl ketone)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
Styrene	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	1	4	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	1	3.3	ND	ND	ND	ND	ND	ND	ND
Toluene	µg/l	1	0.36	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	1	30	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Vinyl acetate	µg/l	2	NE	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	µg/l	1	2.4	ND	ND	ND	ND	ND	ND	ND
Xylene	µg/l	2	NE	ND	ND	ND	ND	ND	ND	ND

Notes:

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NP = Not Present during sampling event

Shaded cells indicate exceedances of MCLs.

White Oak Landfill - Haywood Co., NC
Surface Water Sampling Event (04-23-08)

TEST	UNITS	MRL	MCL	SW-1	SW-2	SW-3	SW-5	SW-6	SW-7	Leachate
pH	pH units (on-site)	-	<6.0; >9.0	**6.8**	**7.32**	**7.06**	**7.2**	**7.56**	**7**	**8.56**
Specific Conductance	µmhos/cm (on-site)	1	NE	**124**	**162**	**234**	**426**	**48**	**42**	**8140**
Temperature	°C (on-site)	-	29	**13.1**	**14.5**	**14.3**	**16.9**	**15.2**	**15.6**	**21.4**
Turbidity	NTU (on-site)	NT	50	NT	NT	NT	NT	NT	NT	NT
Nitrate as N	mg/l	0.1	NE	NT	NT	NT	NT	NT	NT	ND
Nitrate/Nitrite as N	mg/l	0.1	NE	NT	NT	NT	NT	NT	NT	NT
Nitrite as N	mg/l	0.1	NE	NT	NT	NT	NT	NT	NT	ND
Nitrogen	mg/l	0.1	NE	NT	NT	NT	NT	NT	NT	ND
Total Nitrogen, Kjeldahl	mg/l	100	NE	NT	NT	NT	NT	NT	NT	NT
Sulfate	mg/l	500	NE	NT	NT	NT	NT	NT	NT	**1940**
Biochemical Oxygen Demand	mg/l	2	NE	NT	NT	NT	NT	NT	NT	**741**
Chemical Oxygen Demand	mg/l	100	NE	NT	NT	NT	NT	NT	NT	**1620**
Total Dissolved Solids	mg/l	20	NE	NT	NT	NT	NT	NT	NT	NT
Cyanide	µg/l	2	5	NT	NT	NT	NT	NT	NT	NT
Total Antimony (Sb)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
Total Arsenic (As)	µg/l	5	10	ND	ND	ND	ND	ND	ND	**9.5**
Total Barium (Ba)	µg/l	5	NE	**111**	**145**	**133**	**184**	**34.4**	**24.9**	**247**
Total Beryllium (Be)	µg/l	1	6.5	ND	ND	ND	ND	ND	ND	ND
Total Cadmium (Cd)	µg/l	1	0.4	ND	ND	ND	**1.5**	ND	ND	ND
Total Chromium (Cr)	µg/l	5	50	ND	ND	ND	**6.5**	ND	ND	**28.9**
Total Cobalt (Co)	µg/l	5	NE	ND	ND	ND	**11.2**	ND	ND	**9**
Total Copper (Cu)	µg/l	5	7	ND	ND	ND	ND	ND	ND	ND
Total Lead (Pb)	µg/l	5	25	ND	ND	ND	ND	ND	ND	ND
Total Nickel (Ni)	µg/l	5	88	ND	ND	ND	**7.6**	ND	ND	**51.3**
Total Selenium (Se)	µg/l	10	5	ND	ND	ND	ND	ND	ND	ND
Total Silver (Ag)	µg/l	5	0.06	ND	ND	ND	ND	ND	ND	ND
Total Thallium (Tl)	µg/l	5.5	NE	ND	ND	ND	ND	ND	ND	ND
Total Vanadium (V)	µg/l	5	NE	ND	ND	ND	**14.4**	ND	ND	**9.1**
Total Zinc (Zn)	µg/l	10	50	ND	**52.3**	**50.1**	**124**	ND	ND	**52.3**
Mercury	µg/l	0.2	0.012	NT	NT	NT	NT	NT	NT	NT
Acetone	µg/l	25	NE	ND	ND	ND	ND	ND	ND	**34.1**
Acrylonitrile	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND
Benzene	µg/l	1	51	ND	ND	ND	ND	ND	ND	ND
Bromochloromethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Bromoform	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	µg/l	2	NE	ND	ND	ND	ND	ND	ND	ND
Bromomethane (Methylbromide)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	µg/l	1	1.6	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene (mono)	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Chloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Chloroform	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Chloromethane (Methylchloride)	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	3	NE	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Dibromomethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
trans-1,4-Dichloro-2butene	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene (-ethylene)	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
2-Hexanone	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
Iodomethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
Dichloromethane (Methylene chloride)	µg/l	2	NE	ND	ND	ND	ND	ND	ND	ND
2-Butanone (Methyl ethyl ketone)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
Styrene	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	1	4	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	1	3.3	ND	ND	ND	ND	ND	ND	ND
Toluene	µg/l	1	0.36	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	1	30	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Vinyl acetate	µg/l	2	NE	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	µg/l	1	2.4	ND	ND	ND	ND	ND	ND	ND
Xylene	µg/l	2	NE	ND	ND	ND	ND	ND	ND	ND

Notes:

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NT = Not Tested

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White Oak Landfill - Haywood Co., NC
Surface Water Sampling Event (10-21-08)

TEST	UNITS	MRL	MCL	SW-1	SW-2	SW-3	SW-5	SW-6	SW-7	Leachate
pH	pH units (on-site)	-	<6.0; >9.0	**6.51**	**6.75**	**6.84**	**6.54**	**6.08**	**6.45**	**8.63**
Specific Conductance	µmhos/cm (on-site)	1	NE	**202**	**171**	**296**	**205.6**	**56.1**	**41**	**10780**
Temperature	°C (on-site)	-	29	**11.3**	**10.2**	**7.9**	**12.5**	**10.8**	**9.6**	**22.2**
Turbidity	NTU (on-site)	NT	50	NT	NT	NT	NT	NT	NT	NT
Nitrate as N	mg/l	0.1	NE	NT	NT	NT	NT	NT	NT	ND
Nitrate/Nitrite as N	mg/l	0.1	NE	NT	NT	NT	NT	NT	NT	NT
Nitrite as N	mg/l	0.1	NE	NT	NT	NT	NT	NT	NT	**0.14**
Nitrogen	mg/l	0.1	NE	NT	NT	NT	NT	NT	NT	**0.14**
Total Nitrogen, Kjeldahl	mg/l	100	NE	NT	NT	NT	NT	NT	NT	NT
Sulfate	mg/l	500	NE	NT	NT	NT	NT	NT	NT	**58.3**
Biochemical Oxygen Dema	mg/l	2	NE	NT	NT	NT	NT	NT	NT	**198**
Chemical Oxygen Dema	mg/l	100	NE	NT	NT	NT	NT	NT	NT	**1190**
Total Dissolved Solids	mg/l	20	NE	NT	NT	NT	NT	NT	NT	NT
Cyanide	µg/l	2	5	NT	NT	NT	NT	NT	NT	NT
Total Antimony (Sb)	µg/l	5	NE	ND	ND	ND	**6**	**6.7**	ND	ND
Total Arsenic (As)	µg/l	5	10	ND	ND	ND	ND	ND	ND	**11.4**
Total Barium (Ba)	µg/l	5	NE	**285**	**126**	**137**	**289**	**145**	**25.2**	**317**
Total Beryllium (Be)	µg/l	1	6.5	ND	ND	ND	ND	ND	ND	ND
Total Cadmium (Cd)	µg/l	1	0.4	ND	ND	ND	ND	ND	ND	ND
Total Chromium (Cr)	µg/l	5	50	ND	ND	ND	**17.9**	ND	ND	**34.5**
Total Cobalt (Co)	µg/l	5	NE	**7.9**	**5**	**6.4**	**34.4**	**21.1**	ND	**14.4**
Total Copper (Cu)	µg/l	5	7	ND	ND	ND	**15.8**	**10.1**	ND	ND
Total Lead (Pb)	µg/l	5	25	ND	ND	ND	**5.4**	ND	ND	ND
Total Nickel (Ni)	µg/l	5	88	ND	ND	ND	**12.1**	**6**	ND	**57.6**
Total Selenium (Se)	µg/l	10	5	ND	ND	ND	**14**	**13.2**	ND	ND
Total Silver (Ag)	µg/l	5	0.06	ND	ND	ND	ND	ND	ND	ND
Total Thallium (Tl)	µg/l	5.4	NE	ND	ND	ND	**7.2**	ND	ND	ND
Total Vanadium (V)	µg/l	5	NE	**9.9**	ND	ND	**43.5**	**17.5**	ND	**12**
Total Zinc (Zn)	µg/l	10	50	**19**	**75.4**	**39.4**	**116**	**29.5**	**16.7**	**27.6**
Mercury	µg/l	0.2	0.012	NT	NT	NT	NT	NT	NT	NT
Acetone	µg/l	25	NE	ND	ND	ND	ND	ND	ND	**37.2**
Acrylonitrile	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND
Benzene	µg/l	1	51	ND	ND	ND	ND	ND	ND	ND
Bromochloromethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Bromoform	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	µg/l	2	NE	ND	ND	ND	ND	ND	ND	ND
Bromomethane (Methylbromide)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	µg/l	1	1.6	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene (mono)	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Chloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Chloroform	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Chloromethane (Methylchloride)	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	3	NE	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Dibromomethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
trans-1,4-Dichloro-2butene	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene (-ethylene)	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
2-Hexanone	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
Iodomethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
Dichloromethane (Methylene chloride)	µg/l	2	NE	ND	ND	ND	ND	ND	ND	ND
2-Butanone (Methyl ethyl ketone)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
Styrene	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	1	4	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	1	3.3	ND	ND	ND	ND	ND	ND	ND
Toluene	µg/l	1	0.36	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	1	30	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Vinyl acetate	µg/l	2	NE	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	µg/l	1	2.4	ND	ND	ND	ND	ND	ND	ND
Xylene	µg/l	2	NE	ND	ND	ND	ND	ND	ND	ND

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NT = Not Tested

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White Oak Landfill - Haywood Co., NC
Surface Water Sampling Event (4-22-09)

TEST	UNITS	MRL	MCL	SW-1	SW-2	SW-3	SW-5	SW-6	SW-7	Leachate
pH	pH units (on-site)	-	<6.0; >9.0	**6.29**	**6.47**	**6.79**	**6.75**	**5.83**	**5.97**	**8.24**
Specific Conductance	µmhos/cm (on-site)	1	NE	**139**	**208**	**319**	**366**	**40**	**52**	**7620**
Temperature	°C (on-site)	-	29	**11.1**	**10.8**	**9.8**	**12.2**	**11.9**	**12.6**	**19.6**
Turbidity	NTU (on-site)	NT	50	NT	NT	NT	NT	NT	NT	NT
Nitrate as N	mg/l	0.1	NE	NT	NT	NT	NT	NT	NT	**0.16**
Nitrate/Nitrite as N	mg/l	0.1	NE	NT	NT	NT	NT	NT	NT	**0.29**
Nitrite as N	mg/l	0.1	NE	NT	NT	NT	NT	NT	NT	**0.12**
Nitrogen	mg/l	0.1	NE	NT	NT	NT	NT	NT	NT	NT
Total Nitrogen, Kjeldahl	mg/l	100	NE	NT	NT	NT	NT	NT	NT	NT
Sulfate	mg/l	500	NE	NT	NT	NT	NT	NT	NT	**1570**
Biochemical Oxygen Demand	mg/l	2	NE	NT	NT	NT	NT	NT	NT	**55.8**
Chemical Oxygen Demand	mg/l	100	NE	NT	NT	NT	NT	NT	NT	**694**
Total Dissolved Solids	mg/l	20	NE	NT	NT	NT	NT	NT	NT	NT
Cyanide	µg/l	2	5	NT	NT	NT	NT	NT	NT	NT
Total Antimony (Sb)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
Total Arsenic (As)	µg/l	5	10	ND	ND	ND	ND	ND	ND	**11.3**
Total Barium (Ba)	µg/l	5	NE	**108**	**167**	**133**	**70.1**	**35.9**	**41.1**	**181**
Total Beryllium (Be)	µg/l	1	6.5	ND	ND	ND	ND	ND	ND	ND
Total Cadmium (Cd)	µg/l	1	0.4	ND	ND	ND	ND	ND	ND	ND
Total Chromium (Cr)	µg/l	5	50	ND	ND	ND	ND	ND	ND	**16.7**
Total Cobalt (Co)	µg/l	5	NE	ND	ND	ND	**14.9**	**6.5**	**6.6**	**9.8**
Total Copper (Cu)	µg/l	5	7	ND	ND	ND	ND	ND	ND	ND
Total Lead (Pb)	µg/l	5	25	ND	ND	ND	ND	ND	ND	ND
Total Nickel (Ni)	µg/l	5	88	ND	ND	ND	**5.6**	ND	ND	**48.2**
Total Selenium (Se)	µg/l	10	5	ND	ND	ND	ND	ND	ND	ND
Total Silver (Ag)	µg/l	5	0.06	ND	ND	ND	ND	ND	ND	ND
Total Thallium (Tl)	µg/l	5.4	NE	ND	ND	ND	ND	ND	ND	ND
Total Vanadium (V)	µg/l	5	NE	ND	ND	ND	**8.1**	ND	ND	**11.2**
Total Zinc (Zn)	µg/l	10	50	ND	**50**	**36.6**	**80**	ND	ND	**10.9**
Mercury	µg/l	0.2	0.012	NT	NT	NT	NT	NT	NT	NT
Acetone	µg/l	25	NE	ND	ND	ND	ND	ND	ND	**38.4**
Acrylonitrile	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND
Benzene	µg/l	1	51	ND	ND	ND	ND	ND	ND	**5.2**
Bromochloromethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Bromoform	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	µg/l	2	NE	ND	ND	ND	ND	ND	ND	ND
Bromomethane (Methylbromide)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	µg/l	1	1.6	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene (mono)	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Chloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Chloroform	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Chloromethane (Methylchloride)	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	3	NE	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Dibromomethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
trans-1,4-Dichloro-2-butene	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene (-ethylene)	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	µg/l	1	NE	ND	ND	ND	ND	ND	ND	**13.7**
2-Hexanone	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
Iodomethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
Dichloromethane (Methylene chloride)	µg/l	2	NE	ND	ND	ND	ND	ND	ND	ND
2-Butanone (Methyl ethyl ketone)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone	µg/l	5	NE	ND	ND	ND	ND	ND	ND	**11.3**
Styrene	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	1	4	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	1	3.3	ND	ND	ND	ND	ND	ND	ND
Toluene	µg/l	1	0.36	ND	ND	ND	ND	ND	ND	**7.3**
1,1,1-Trichloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	1	30	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Vinyl acetate	µg/l	2	NE	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	µg/l	1	2.4	ND	ND	ND	ND	ND	ND	ND
Xylenes	µg/l	2	NE	ND	ND	ND	ND	ND	ND	**65.1**
Methyl-tert-butyl-ether (MTBE)	µg/l	1	NE	NT	NT	NT	NT	NT	NT	**9.0**
Naphthalene	µg/l	1	NE	NT	NT	NT	NT	NT	NT	**6.7**
Phosphorus	mg/l	0.1	NE	NT	NT	NT	NT	NT	NT	**0.75**

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Shaded cells indicate exceedances of MCLs.

White Oak Landfill - Haywood Co., NC
Surface Water Sampling Event (10-26-09)

TEST	UNITS	MRL	MCL	SW-1	SW-2	SW-3	SW-5	SW-6	SW-7	Leachate
pH	pH units (on-site)	-	<6.0; >9.0	**6.41**	Dry	**6.49**	Dry	**6.07**	**6.26**	**7.8**
Specific Conductance	µmhos/cm (on-site)	1	NE	**192**	Dry	**291**	Dry	**60**	**58**	NT
Temperature	°C (on-site)	-	29	**11.5**	Dry	**11.0**	Dry	**13.6**	**12.4**	NT
Turbidity	NTU (on-site)	NT	50	NT	Dry	NT	Dry	NT	NT	NT
Nitrate as N	mg/l	0.1	NE	NT	Dry	NT	Dry	NT	NT	NT
Nitrate/Nitrite as N	mg/l	0.1	NE	NT	Dry	NT	Dry	NT	NT	NT
Nitrite as N	mg/l	0.1	NE	NT	Dry	NT	Dry	NT	NT	NT
Nitrogen	mg/l	0.1	NE	NT	Dry	NT	Dry	NT	NT	NT
Total Nitrogen, Kjeldahl	mg/l	100	NE	NT	Dry	NT	Dry	NT	NT	NT
Sulfate	mg/l	500	NE	NT	Dry	NT	Dry	NT	NT	NT
Biochemical Oxygen Demand	mg/l	2	NE	NT	Dry	NT	Dry	NT	NT	**4.8**
Chemical Oxygen Demand	mg/l	100	NE	NT	Dry	NT	Dry	NT	NT	**212**
Total Dissolved Solids	mg/l	20	NE	NT	Dry	NT	Dry	NT	NT	NT
Cyanide	µg/l	2	5	NT	Dry	NT	Dry	NT	NT	NT
Total Antimony (Sb)	µg/l	5	NE	ND	Dry	ND	Dry	ND	ND	ND
Total Arsenic (As)	µg/l	5	10	ND	Dry	ND	Dry	ND	ND	ND
Total Barium (Ba)	µg/l	5	NE	**228**	Dry	**285**	Dry	**48.4**	**30.9**	**305**
Total Beryllium (Be)	µg/l	1	6.5	ND	Dry	ND	Dry	ND	ND	ND
Total Cadmium (Cd)	µg/l	1	0.4	ND	Dry	ND	Dry	ND	ND	ND
Total Chromium (Cr)	µg/l	5	50	ND	Dry	**8.9**	Dry	ND	ND	ND
Total Cobalt (Co)	µg/l	5	NE	ND	Dry	**5.7**	Dry	**6.5**	ND	**12.5**
Total Copper (Cu)	µg/l	5	7	ND	Dry	**5.5**	Dry	ND	ND	ND
Total Lead (Pb)	µg/l	5	25	ND	Dry	ND	Dry	ND	ND	ND
Total Nickel (Ni)	µg/l	5	88	ND	Dry	**10.1**	Dry	ND	ND	**20.4**
Total Selenium (Se)	µg/l	10	5	ND	Dry	ND	Dry	ND	ND	ND
Total Silver (Ag)	µg/l	5	0.06	ND	Dry	ND	Dry	ND	ND	ND
Total Thallium (Tl)	µg/l	5.4	NE	ND	Dry	ND	Dry	ND	ND	ND
Total Vanadium (V)	µg/l	5	NE	ND	Dry	**16.0**	Dry	ND	ND	**8.5**
Total Zinc (Zn)	µg/l	10	50	ND	Dry	**151**	Dry	ND	ND	**48.1**
Mercury	µg/l	0.2	0.012	NT	Dry	NT	Dry	NT	NT	NT
Acetone	µg/l	25	NE	ND	Dry	ND	Dry	ND	ND	ND
Acrylonitrile	µg/l	10	NE	ND	Dry	ND	Dry	ND	ND	ND
Benzene	µg/l	1	51	ND	Dry	ND	Dry	ND	ND	ND
Bromochloromethane	µg/l	1	NE	ND	Dry	ND	Dry	ND	ND	ND
Bromodichloromethane	µg/l	1	NE	ND	Dry	ND	Dry	ND	ND	ND
Bromoform	µg/l	1	NE	ND	Dry	ND	Dry	ND	ND	ND
Carbon Disulfide	µg/l	2	NE	ND	Dry	ND	Dry	ND	ND	ND
Bromomethane (Methylbromide)	µg/l	5	NE	ND	Dry	ND	Dry	ND	ND	ND
Carbon tetrachloride	µg/l	1	1.6	ND	Dry	ND	Dry	ND	ND	ND
Chlorobenzene (mono)	µg/l	1	NE	ND	Dry	ND	Dry	ND	ND	ND
Chloroethane	µg/l	1	NE	ND	Dry	ND	Dry	ND	ND	ND
Chloroform	µg/l	1	NE	ND	Dry	ND	Dry	ND	ND	ND
Chloromethane (Methylchloride)	µg/l	1	NE	ND	Dry	ND	Dry	ND	ND	ND
Dibromochloromethane	µg/l	1	NE	ND	Dry	ND	Dry	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	3	NE	ND	Dry	ND	Dry	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	1	NE	ND	Dry	ND	Dry	ND	ND	ND
Dibromomethane	µg/l	1	NE	ND	Dry	ND	Dry	ND	ND	ND
1,2-Dichlorobenzene	µg/l	1	NE	ND	Dry	ND	Dry	ND	ND	ND
1,4-Dichlorobenzene	µg/l	1	NE	ND	Dry	ND	Dry	ND	ND	ND
trans-1,4-Dichloro-2-butene	µg/l	1	NE	ND	Dry	ND	Dry	ND	ND	ND
1,1-Dichloroethane	µg/l	1	NE	ND	Dry	ND	Dry	ND	ND	ND
1,2-Dichloroethane	µg/l	1	NE	ND	Dry	ND	Dry	ND	ND	ND
1,1-Dichloroethene (-ethylene)	µg/l	1	NE	ND	Dry	ND	Dry	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	1	NE	ND	Dry	ND	Dry	ND	ND	ND
trans-1,2-Dichloroethene (-ethylene)	µg/l	1	NE	ND	Dry	ND	Dry	ND	ND	ND
1,2-Dichloropropane	µg/l	1	NE	ND	Dry	ND	Dry	ND	ND	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	1	NE	ND	Dry	ND	Dry	ND	ND	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	1	NE	ND	Dry	ND	Dry	ND	ND	ND
Ethylbenzene	µg/l	1	NE	ND	Dry	ND	Dry	ND	ND	ND
2-Hexanone	µg/l	5	NE	ND	Dry	ND	Dry	ND	ND	ND
Iodomethane	µg/l	5	NE	ND	Dry	ND	Dry	ND	ND	ND
Dichloromethane (Methylene chloride)	µg/l	2	NE	ND	Dry	ND	Dry	ND	ND	ND
2-Butanone (Methyl ethyl ketone)	µg/l	5	NE	ND	Dry	ND	Dry	ND	ND	ND
4-Methyl-2-Pentanone	µg/l	5	NE	ND	Dry	ND	Dry	ND	ND	ND
Styrene	µg/l	1	NE	ND	Dry	ND	Dry	ND	ND	ND
1,1,1,2-Tetrachloroethane	µg/l	1	NE	ND	Dry	ND	Dry	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	1	4	ND	Dry	ND	Dry	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	1	3.3	ND	Dry	ND	Dry	ND	ND	ND
Toluene	µg/l	1	0.36	ND	Dry	ND	Dry	ND	ND	ND
1,1,1-Trichloroethane	µg/l	1	NE	ND	Dry	ND	Dry	ND	ND	ND
1,1,2-Trichloroethane	µg/l	1	NE	ND	Dry	ND	Dry	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	1	30	ND	Dry	ND	Dry	ND	ND	ND
Trichlorofluoromethane	µg/l	1	NE	ND	Dry	ND	Dry	ND	ND	ND
1,2,3-Trichloropropane	µg/l	1	NE	ND	Dry	ND	Dry	ND	ND	ND
Vinyl acetate	µg/l	2	NE	ND	Dry	ND	Dry	ND	ND	ND
Vinyl chloride	µg/l	1	2.4	ND	Dry	ND	Dry	ND	ND	ND
Xylenes	µg/l	2	NE	ND	Dry	ND	Dry	ND	ND	ND
Methyl-tert-butyl-ether (MTBE)	µg/l	5	NE	NT	Dry	NT	Dry	NT	NT	ND
Naphthalene	µg/l	5	NE	NT	Dry	NT	Dry	NT	NT	ND
Phosphorus	mg/l	0.1	NE	NT	Dry	NT	Dry	NT	NT	NT

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White Oak Landfill - Haywood Co., NC
Surface Water Sampling Event (4-21-10)

TEST	UNITS	MRL	MCL	SW-1	SW-2	SW-3	SW-5	SW-6	SW-7	Leachate
pH	pH units (on-site)	-	<6.0; >9.0	**6.72**	**7.29**	**7.14**	NP	**6.06**	**6.04**	**7.69**
Specific Conductance	µmhos/cm (on-site)	1	NE	**189**	**213**	**273**	NP	**94**	**106**	**310**
Temperature	°C (on-site)	-	29	**13.9**	**12.3**	**15.9**	NP	**15.7**	**14**	**13.3**
Turbidity	NTU (on-site)	NT	50	NT	NT	NT	NP	NT	NT	NT
Nitrate as N	mg/l	0.1	NE	NT	NT	NT	NP	NT	NT	ND
Nitrate/Nitrite as N	mg/l	0.1	NE	NT	NT	NT	NP	NT	NT	ND
Nitrite as N	mg/l	0.1	NE	NT	NT	NT	NP	NT	NT	ND
Nitrogen	mg/l	0.1	NE	NT	NT	NT	NP	NT	NT	NT
Total Nitrogen, Kjeldahl	mg/l	100	NE	NT	NT	NT	NP	NT	NT	NT
Sulfate	mg/l	75	NE	NT	NT	NT	NP	NT	NT	**477**
Biochemical Oxygen Demand	mg/l	2	NE	NT	NT	NT	NP	NT	NT	**54**
Chemical Oxygen Demand	mg/l	25	NE	NT	NT	NT	NP	NT	NT	**203**
Total Dissolved Solids	mg/l	20	NE	NT	NT	NT	NP	NT	NT	NT
Cyanide	µg/l	2	5	NT	NT	NT	NP	NT	NT	NT
Total Antimony (Sb)	µg/l	5	NE	ND	ND	ND	NP	ND	ND	ND
Total Arsenic (As)	µg/l	5	10	ND	ND	ND	NP	ND	ND	**8.6**
Total Barium (Ba)	µg/l	5	NE	**123**	**178**	**172**	NP	**34.3**	**41.4**	**124**
Total Beryllium (Be)	µg/l	1	6.5	ND	ND	ND	NP	ND	ND	ND
Total Cadmium (Cd)	µg/l	1	0.4	ND	ND	ND	NP	ND	ND	ND
Total Chromium (Cr)	µg/l	5	50	ND	ND	ND	NP	ND	ND	**8**
Total Cobalt (Co)	µg/l	5	NE	ND	ND	ND	NP	ND	ND	**11.7**
Total Copper (Cu)	µg/l	5	7	ND	ND	ND	NP	ND	ND	**6.8**
Total Lead (Pb)	µg/l	5	25	ND	ND	ND	NP	ND	ND	ND
Total Nickel (Ni)	µg/l	5	88	ND	ND	ND	NP	ND	ND	**35.3**
Total Selenium (Se)	µg/l	10	5	ND	ND	ND	NP	ND	ND	ND
Total Silver (Ag)	µg/l	5	0.06	ND	ND	ND	NP	ND	ND	ND
Total Thallium (Tl)	µg/l	5.4	NE	ND	ND	ND	NP	ND	ND	ND
Total Vanadium (V)	µg/l	5	NE	ND	ND	ND	NP	ND	ND	**6.8**
Total Zinc (Zn)	µg/l	10	50	ND	**49.8**	**32.9**	NP	ND	ND	**12.1**
Mercury	µg/l	0.2	0.012	NT	NT	NT	NP	NT	NT	NT
Acetone	µg/l	25	NE	ND	ND	ND	NP	ND	ND	ND
Acrylonitrile	µg/l	10	NE	ND	ND	ND	NP	ND	ND	NT
Benzene	µg/l	1	51	ND	ND	ND	NP	ND	ND	ND
Bromochloromethane	µg/l	1	NE	ND	ND	ND	NP	ND	ND	ND
Bromodichloromethane	µg/l	1	NE	ND	ND	ND	NP	ND	ND	ND
Bromoform	µg/l	1	NE	ND	ND	ND	NP	ND	ND	ND
Carbon Disulfide	µg/l	2	NE	ND	ND	ND	NP	ND	ND	NT
Bromomethane (Methylbromide)	µg/l	5	NE	ND	ND	ND	NP	ND	ND	ND
Carbon tetrachloride	µg/l	1	1.6	ND	ND	ND	NP	ND	ND	ND
Chlorobenzene (mono)	µg/l	1	NE	ND	ND	ND	NP	ND	ND	ND
Chloroethane	µg/l	1	NE	ND	ND	ND	NP	ND	ND	ND
Chloroform	µg/l	1	NE	ND	ND	ND	NP	ND	ND	ND
Chloromethane (Methylchloride)	µg/l	1	NE	ND	ND	ND	NP	ND	ND	ND
Dibromochloromethane	µg/l	1	NE	ND	ND	ND	NP	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	3	NE	ND	ND	ND	NP	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	1	NE	ND	ND	ND	NP	ND	ND	ND
Dibromomethane	µg/l	1	NE	ND	ND	ND	NP	ND	ND	ND
1,2-Dichlorobenzene	µg/l	1	NE	ND	ND	ND	NP	ND	ND	ND
1,4-Dichlorobenzene	µg/l	1	NE	ND	ND	ND	NP	ND	ND	ND
trans-1,4-Dichloro-2-butene	µg/l	1	NE	ND	ND	ND	NP	ND	ND	NT
1,1-Dichloroethane	µg/l	1	NE	ND	ND	ND	NP	ND	ND	ND
1,2-Dichloroethane	µg/l	1	NE	ND	ND	ND	NP	ND	ND	ND
1,1-Dichloroethene (-ethylene)	µg/l	1	NE	ND	ND	ND	NP	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	1	NE	ND	ND	ND	NP	ND	ND	**2**
trans-1,2-Dichloroethene (-ethylene)	µg/l	1	NE	ND	ND	ND	NP	ND	ND	ND
1,2-Dichloropropane	µg/l	1	NE	ND	ND	ND	NP	ND	ND	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	1	NE	ND	ND	ND	NP	ND	ND	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	1	NE	ND	ND	ND	NP	ND	ND	ND
Ethylbenzene	µg/l	1	NE	ND	ND	ND	NP	ND	ND	ND
2-Hexanone	µg/l	5	NE	ND	ND	ND	NP	ND	ND	ND
Iodomethane	µg/l	5	NE	ND	ND	ND	NP	ND	ND	NT
Dichloromethane (Methylene chloride)	µg/l	2	NE	ND	ND	ND	NP	ND	ND	ND
2-Butanone (Methyl ethyl ketone)	µg/l	5	NE	ND	ND	ND	NP	ND	ND	ND
4-Methyl-2-Pentanone	µg/l	5	NE	ND	ND	ND	NP	ND	ND	ND
Styrene	µg/l	1	NE	ND	ND	ND	NP	ND	ND	ND
1,1,1,2-Tetrachloroethane	µg/l	1	NE	ND	ND	ND	NP	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	1	4	ND	ND	ND	NP	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	1	3.3	ND	ND	ND	NP	ND	ND	ND
Toluene	µg/l	1	0.36	ND	ND	ND	NP	ND	ND	**1.1**
1,1,1-Trichloroethane	µg/l	1	NE	ND	ND	ND	NP	ND	ND	ND
1,1,2-Trichloroethane	µg/l	1	NE	ND	ND	ND	NP	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	1	30	ND	ND	ND	NP	ND	ND	ND
Trichlorofluoromethane	µg/l	1	NE	ND	ND	ND	NP	ND	ND	ND
1,2,3-Trichloropropane	µg/l	1	NE	ND	ND	ND	NP	ND	ND	ND
Vinyl acetate	µg/l	2	NE	ND	ND	ND	NP	ND	ND	ND
Vinyl chloride	µg/l	1	2.4	ND	ND	ND	NP	ND	ND	ND
Xylenes	µg/l	2	NE	ND	ND	ND	NP	ND	ND	NT
Methyl-tert-butyl-ether (MTBE)	µg/l	1	NE	NT	NT	NT	NP	NT	NT	ND
Naphthalene	µg/l	1	NE	NT	NT	NT	NP	NT	NT	ND
Phosphorus	mg/l	0.1	NE	NT	NT	NT	NP	NT	NT	**0.26**

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White Oak Landfill - Haywood Co., NC
Surface Water Sampling Event (10-26-10)

TEST	UNITS	MRL	MCL	SW-1	SW-2	SW-3	SW-5	SW-6	SW-7	Leachate
pH	pH units (on-site)	-	<6.0; >9.0	**6.31**	**6.14**	**7.15**	**6.11**	**5.7**	**6.39**	**7.31**
Specific Conductance	µmhos/cm (on-site)	1	NE	**203**	**250**	**287**	**158**	**50**	**53**	**20400**
Temperature	°C (on-site)	-	29	**15.8**	**15.2**	**16.6**	**17.5**	**14.7**	**13.4**	**18.2**
Turbidity	NTU (on-site)	NT	50	NT	NT	NT	NT	NT	NT	NT
Nitrate as N	mg/l	0.1	NE	NT	NT	NT	NT	NT	NT	**5.5**
Nitrate/Nitrite as N	mg/l	0.1	NE	NT	NT	NT	NT	NT	NT	**6**
Nitrite as N	mg/l	0.1	NE	NT	NT	NT	NT	NT	NT	**0.51**
Nitrogen	mg/l	0.1	NE	NT	NT	NT	NT	NT	NT	NT
Total Nitrogen, Kjeldahl	mg/l	100	NE	NT	NT	NT	NT	NT	NT	NT
Sulfate	mg/l	75	NE	NT	NT	NT	NT	NT	NT	**7670**
Biochemical Oxygen Demand	mg/l	2	NE	NT	NT	NT	NT	NT	NT	**40**
Chemical Oxygen Demand	mg/l	25	NE	NT	NT	NT	NT	NT	NT	**96**
Total Dissolved Solids	mg/l	20	NE	NT	NT	NT	NT	NT	NT	NT
Cyanide	µg/l	2	5	NT	NT	NT	NT	NT	NT	NT
Total Antimony (Sb)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	**13.9**
Total Arsenic (As)	µg/l	5	10	ND	ND	ND	ND	ND	ND	**29.4**
Total Barium (Ba)	µg/l	5	NE	**209**	**180**	**350**	**126**	**40.1**	**32.9**	**172**
Total Beryllium (Be)	µg/l	1	6.5	ND	ND	ND	ND	ND	ND	**1.3**
Total Cadmium (Cd)	µg/l	1	0.4	ND	ND	ND	ND	ND	ND	ND
Total Chromium (Cr)	µg/l	5	50	ND	ND	**13.2**	ND	ND	ND	**10.7**
Total Cobalt (Co)	µg/l	5	NE	ND	ND	**17.7**	**48.8**	ND	ND	ND
Total Copper (Cu)	µg/l	5	7	ND	ND	**9**	ND	ND	ND	ND
Total Lead (Pb)	µg/l	5	25	ND	ND	ND	ND	ND	ND	ND
Total Nickel (Ni)	µg/l	5	88	ND	ND	**9**	**5**	ND	ND	**44.4**
Total Selenium (Se)	µg/l	10	5	ND	ND	ND	ND	ND	ND	**29.6**
Total Silver (Ag)	µg/l	5	0.06	ND	ND	ND	ND	ND	ND	ND
Total Thallium (Tl)	µg/l	5.4	NE	ND	ND	ND	ND	ND	ND	ND
Total Vanadium (V)	µg/l	5	NE	ND	ND	**27.9**	ND	ND	ND	**21**
Total Zinc (Zn)	µg/l	10	50	ND	**31.2**	**60.6**	ND	ND	ND	ND
Mercury	µg/l	0.2	0.012	NT	NT	NT	ND	NT	NT	NT
Acetone	µg/l	25	NE	ND	ND	ND	ND	ND	ND	ND
Acrylonitrile	µg/l	10	NE	ND	ND	ND	ND	ND	ND	NT
Benzene	µg/l	1	51	ND	ND	ND	ND	ND	ND	**1**
Bromochloromethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Bromoform	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	µg/l	2	NE	ND	ND	ND	ND	ND	ND	NT
Bromomethane (Methylbromide)	µg/l	2	NE	ND	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	µg/l	1	1.6	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene (mono)	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Chloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Chloroform	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Chloromethane (Methylchloride)	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Dibromomethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	µg/l	1	NE	ND	ND	ND	ND	ND	ND	**3.4**
trans-1,4-Dichloro-2-butene	µg/l	1	NE	ND	ND	ND	ND	ND	ND	NT
1,1-Dichloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene (-ethylene)	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	1	NE	ND	ND	ND	ND	ND	ND	**1.2**
trans-1,2-Dichloroethene (-ethylene)	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	µg/l	1	NE	ND	ND	ND	ND	ND	ND	**6.8**
2-Hexanone	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
Iodomethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	NT
Dichloromethane (Methylene chloride)	µg/l	2	NE	ND	ND	ND	ND	ND	ND	ND
2-Butanone (Methyl ethyl ketone)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
Styrene	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	1	4	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	1	3.3	ND	ND	ND	ND	ND	ND	ND
Toluene	µg/l	1	0.36	ND	ND	ND	ND	ND	ND	**8.4**
1,1,1-Trichloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	1	30	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Vinyl acetate	µg/l	2	NE	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	µg/l	1	2.4	ND	ND	ND	ND	ND	ND	ND
Xylenes	µg/l	2	NE	ND	ND	ND	ND	ND	ND	NT
m&p-Xylenes	µg/l	2	NE	ND	ND	ND	ND	ND	ND	**10.9**
o-Xylenes	µg/l	1	NE	ND	ND	ND	ND	ND	ND	**5.7**
Methyl-tert-butyl-ether (MTBE)	µg/l	1	NE	NT	NT	NT	NT	NT	NT	**2.9**
Naphthalene	µg/l	1	NE	NT	NT	NT	NT	NT	NT	**6.5**
p-isopropyltoluene	µg/l	1	NE	NT	NT	NT	NT	NT	NT	**2.9**
Phosphorus	mg/l	0.1	NE	NT	NT	NT	NT	NT	NT	**1.40**

Notes:

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NS = Not Sampled

NT = Not Tested

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Shaded cells indicate exceedances of MCLs.

White Oak Landfill - Haywood Co., NC
Surface Water Sampling Event (4-28-11)

TEST	UNITS	MRL	MCL	SW-1	SW-2	SW-3	SW-5	SW-6	SW-7	Leachate
pH	pH units (on-site)	-	<6.0; >9.0	**6.3**	**6.2**	**6.8**	**6**	**5.8**	**6.1**	**7.4**
Specific Conductance	µmhos/cm (on-site)	1	NE	**174**	**225**	**304**	**212**	**45**	**65**	**14,320**
Temperature	°C (on-site)	-	29	**15.9**	**14.9**	**18.5**	**13.5**	**15.1**	**13.3**	**18.3**
Turbidity	NTU (on-site)	NT	50	NT	NT	NT	NT	NT	NT	NT
Nitrate as N	mg/l	0.1	NE	NT	NT	NT	NT	NT	NT	**8.5**
Nitrate/Nitrite as N	mg/l	0.1	NE	NT	NT	NT	NT	NT	NT	**9.6**
Nitrite as N	mg/l	0.1	NE	NT	NT	NT	NT	NT	NT	**1.1**
Nitrogen	mg/l	0.1	NE	NT	NT	NT	NT	NT	NT	NT
Total Nitrogen, Kjeldahl	mg/l	100	NE	NT	NT	NT	NT	NT	NT	NT
Sulfate	mg/l	75	NE	NT	NT	NT	NT	NT	NT	**4360**
Biochemical Oxygen Demand	mg/l	2	NE	NT	NT	NT	NT	NT	NT	**55.2**
Chemical Oxygen Demand	mg/l	25	NE	NT	NT	NT	NT	NT	NT	**762**
Total Dissolved Solids	mg/l	20	NE	NT	NT	NT	NT	NT	NT	NT
Cyanide	µg/l	2	5	NT	NT	NT	NT	NT	NT	NT
Total Antimony (Sb)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
Total Arsenic (As)	µg/l	5	10	ND	ND	ND	ND	ND	ND	**13.5**
Total Barium (Ba)	µg/l	5	NE	**238**	**204**	**130**	**156**	**38.7**	**43.6**	**243**
Total Beryllium (Be)	µg/l	1	6.5	ND	ND	ND	ND	ND	ND	ND
Total Cadmium (Cd)	µg/l	1	0.4	ND	ND	ND	ND	ND	ND	ND
Total Chromium (Cr)	µg/l	5	50	**5.2**	ND	ND	ND	ND	ND	**27.1**
Total Cobalt (Co)	µg/l	5	NE	ND	**5.4**	ND	**22.6**	ND	ND	**32.6**
Total Copper (Cu)	µg/l	5	7	ND	ND	ND	ND	ND	ND	ND
Total Lead (Pb)	µg/l	5	25	ND	ND	ND	ND	ND	ND	ND
Total Nickel (Ni)	µg/l	5	88	ND	ND	ND	ND	ND	ND	**159**
Total Selenium (Se)	µg/l	10	5	ND	ND	ND	ND	ND	ND	ND
Total Silver (Ag)	µg/l	5	0.06	ND	ND	ND	ND	ND	ND	ND
Total Thallium (Tl)	µg/l	5.4	NE	ND	ND	ND	ND	ND	ND	ND
Total Vanadium (V)	µg/l	5	NE	**11**	ND	ND	ND	ND	ND	**9.4**
Total Zinc (Zn)	µg/l	10	50	**15.8**	**46.1**	**61.7**	ND	ND	ND	**32.1**
Mercury	µg/l	0.2	0.012	NT	NT	NT	ND	NT	NT	NT
Acetone	µg/l	25	NE	ND	ND	ND	ND	ND	ND	**40.6**
Acrylonitrile	µg/l	10	NE	ND	ND	ND	ND	ND	ND	NT
Benzene	µg/l	1	51	ND	ND	ND	ND	ND	ND	ND
Bromochloromethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Bromoform	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	µg/l	2	NE	ND	ND	ND	ND	ND	ND	NT
Bromomethane (Methylbromide)	µg/l	2	NE	ND	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	µg/l	1	1.6	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene (mono)	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Chloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Chloroform	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Chloromethane (Methylchloride)	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Dibromomethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	µg/l	1	NE	ND	ND	ND	ND	ND	ND	**2.7**
trans-1,4-Dichloro-2-butene	µg/l	1	NE	ND	ND	ND	ND	ND	ND	NT
1,1-Dichloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene (-ethylene)	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene (-ethylene)	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	µg/l	1	NE	ND	ND	ND	ND	ND	ND	**6**
2-Hexanone	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
Iodomethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	NT
Dichloromethane (Methylene chloride)	µg/l	2	NE	ND	ND	ND	ND	ND	ND	ND
2-Butanone (Methyl ethyl ketone)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
Styrene	µg/l	1	NE	ND	ND	ND	ND	ND	ND	**1.2**
1,1,1,2-Tetrachloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	1	4	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	1	3.3	ND	ND	ND	ND	ND	ND	ND
Toluene	µg/l	1	0.36	ND	ND	ND	ND	ND	ND	**4.5**
1,1,1-Trichloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	*ND*
1,1,2-Trichloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	1	30	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Vinyl acetate	µg/l	2	NE	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	µg/l	1	2.4	ND	ND	ND	ND	ND	ND	ND
Xylenes	µg/l	2	NE	ND	ND	ND	ND	ND	ND	NT
m&p-Xylenes	µg/l	2	NE	ND	ND	ND	ND	ND	ND	**3.5**
o-Xylenes	µg/l	1	NE	ND	ND	ND	ND	ND	ND	**3.8**
Methyl-tert-butyl-ether (MTBE)	µg/l	1	NE	NT	NT	NT	NT	NT	NT	**1.6**
Naphthalene	µg/l	1	NE	NT	NT	NT	NT	NT	NT	**5.3**
p-isopropyltoluene	µg/l	1	NE	NT	NT	NT	NT	NT	NT	**1.8**
Phosphorus	mg/l	0.05	NE	NT	NT	NT	NT	NT	NT	**0.85**

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Shaded cells indicate exceedances of MCLs.

White Oak Landfill - Haywood Co., NC
Surface Water Sampling Event (10-25-11)

TEST	UNITS	MRL	MCL	SW-1	SW-2	SW-3	SW-5	SW-6	SW-7	Leachate
pH	pH units (on-site)	-	<6.0; >9.0	**6.2**	**6.7**	**7.2**	**6**	**5.7**	**6.2**	**6.9**
Specific Conductance	µmhos/cm (on-site)	1	NE	**207**	**208**	**275**	**241**	**42**	**17**	**272**
Temperature	°C (on-site)	-	29	**10.4**	**11.9**	**11.7**	**17.2**	**15.8**	**13**	**11.7**
Turbidity	NTU (on-site)	NT	50	**7.92**	**19.0**	**8.08**	**15.5**	**5.52**	**6.19**	**6.35**
Nitrate as N	mg/l	0.1	NE	NT	NT	NT	NT	NT	NT	**0.85**
Nitrate/Nitrite as N	mg/l	0.1	NE	NT	NT	NT	NT	NT	NT	NT
Nitrite as N	mg/l	0.1	NE	NT	NT	NT	NT	NT	NT	**0.17**
Nitrogen	mg/l	0.1	NE	NT	NT	NT	NT	NT	NT	**1**
Total Nitrogen, Kjeldahl	mg/l	100	NE	NT	NT	NT	NT	NT	NT	NT
Sulfate	mg/l	75	NE	NT	NT	NT	NT	NT	NT	**5170**
Biochemical Oxygen Demand	mg/l	2	NE	NT	NT	NT	NT	NT	NT	**63.9**
Chemical Oxygen Demand	mg/l	25	NE	NT	NT	NT	NT	NT	NT	**908**
Total Dissolved Solids	mg/l	20	NE	NT	NT	NT	NT	NT	NT	NT
Cyanide	µg/l	2	5	NT	NT	NT	NT	NT	NT	NT
Total Antimony (Sb)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
Total Arsenic (As)	µg/l	5	10	ND	ND	ND	ND	ND	ND	**7.2**
Total Barium (Ba)	µg/l	5	NE	**170**	**168**	**126**	**140**	**32.7**	**30.7**	**261**
Total Beryllium (Be)	µg/l	1	6.5	ND	ND	ND	ND	ND	ND	ND
Total Cadmium (Cd)	µg/l	1	0.4	ND	ND	ND	ND	ND	ND	ND
Total Chromium (Cr)	µg/l	5	50	ND	ND	ND	ND	ND	ND	**35.4**
Total Cobalt (Co)	µg/l	5	NE	ND	**5**	**5**	**28.8**	ND	ND	**19.7**
Total Copper (Cu)	µg/l	5	7	ND	ND	ND	ND	ND	ND	ND
Total Lead (Pb)	µg/l	5	25	ND	ND	ND	ND	ND	ND	ND
Total Nickel (Ni)	µg/l	5	88	ND	ND	ND	ND	ND	ND	**170**
Total Selenium (Se)	µg/l	10	5	ND	ND	ND	ND	ND	ND	ND
Total Silver (Ag)	µg/l	5	0.06	ND	ND	ND	ND	ND	ND	ND
Total Thallium (Tl)	µg/l	5.4	NE	ND	ND	ND	ND	ND	ND	ND
Total Vanadium (V)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	**14.0**
Total Zinc (Zn)	µg/l	10	50	ND	**33.6**	**56.1**	ND	ND	ND	**18.0**
Mercury	µg/l	0.2	0.012	NT	NT	NT	NT	NT	NT	NT
Acetone	µg/l	25	NE	ND	ND	ND	ND	ND	ND	**43.9**
Acrylonitrile	µg/l	10	NE	ND	ND	ND	ND	ND	ND	NT
Benzene	µg/l	1	51	ND	ND	ND	ND	ND	ND	ND
Bromochloromethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Bromoform	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	µg/l	2	NE	ND	ND	ND	ND	ND	ND	NT
Bromomethane (Methylbromide)	µg/l	2	NE	ND	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	µg/l	1	1.6	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene (mono)	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Chloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Chloroform	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Chloromethane (Methylchloride)	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Dibromomethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
trans-1,4-Dichloro-2-butene	µg/l	1	NE	ND	ND	ND	ND	ND	ND	NT
1,1-Dichloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene (-ethylene)	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene (-ethylene)	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	µg/l	1	NE	ND	ND	ND	ND	ND	ND	**1.0**
2-Hexanone	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
Iodomethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	NT
Dichloromethane (Methylene chloride)	µg/l	2	NE	ND	ND	ND	ND	ND	ND	ND
2-Butanone (Methyl ethyl ketone)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
Styrene	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	1	4	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	1	3.3	ND	ND	ND	ND	ND	ND	ND
Toluene	µg/l	1	0.36	ND	ND	ND	ND	ND	ND	**1.5**
1,1,1-Trichloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	*ND*
1,1,2-Trichloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	1	30	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Vinyl acetate	µg/l	2	NE	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	µg/l	1	2.4	ND	ND	ND	ND	ND	ND	ND
Xylenes	µg/l	2	NE	ND	ND	ND	ND	ND	ND	NT
m&p-Xylenes	µg/l	2	NE	ND	ND	ND	ND	ND	ND	**3.5**
o-Xylenes	µg/l	1	NE	ND	ND	ND	ND	ND	ND	**2.3**
Methyl-tert-butyl-ether (MTBE)	µg/l	1	NE	NT	NT	NT	NT	NT	NT	**1.5**
Naphthalene	µg/l	1	NE	NT	NT	NT	NT	NT	NT	**1.6**
p-isopropyltoluene	µg/l	1	NE	NT	NT	NT	NT	NT	NT	ND
Phosphorus	mg/l	0.05	NE	NT	NT	NT	NT	NT	NT	**1.20**

Notes:

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ND = Not Detected at the Method Reporting Limit

NS = Not Sampled

NT = Not Tested

NE = Not Established; North Carolina has not established a MCL

Shaded cells indicate exceedances of MCLs.

White Oak Landfill - Haywood Co., NC
Surface Water Sampling Event (4-20-12)

TEST	UNITS	MRL	MCL	SW-1	SW-2	SW-3	SW-5	SW-6	SW-7	Leachate
pH	pH units (on-site)	-	<6.0; >9.0	**7.0**	**6.8**	**7.8**	**6.3**	**6.4**	**7.0**	**7.6**
Specific Conductance	µmhos/cm (on-site)	1	NE	**146**	**218.4**	**261.2**	**111**	**41.3**	**65.8**	**260.4**
Temperature	°C (on-site)	-	29	**15.1**	**14.2**	**16.8**	**15.3**	**14.9**	**13.5**	**16.5**
Turbidity	NTU (on-site)	NT	50	**12.5**	**6.1**	**15.9**	**4.84**	**4.06**	**6.43**	**5.71**
Nitrate as N	mg/l	0.1	NE	NT	NT	NT	NT	NT	NT	**8.6**
Nitrate/Nitrite as N	mg/l	0.1	NE	NT	NT	NT	NT	NT	NT	NT
Nitrite as N	mg/l	0.1	NE	NT	NT	NT	NT	NT	NT	**0.52**
Nitrogen	mg/l	0.1	NE	NT	NT	NT	NT	NT	NT	**8.6**
Total Nitrogen, Kjeldahl	mg/l	100	NE	NT	NT	NT	NT	NT	NT	NT
Sulfate	mg/l	75	NE	NT	NT	NT	NT	NT	NT	**299**
Biochemical Oxygen Demand	mg/l	2	NE	NT	NT	NT	NT	NT	NT	**20.5**
Chemical Oxygen Demand	mg/l	25	NE	NT	NT	NT	NT	NT	NT	**154**
Total Dissolved Solids	mg/l	20	NE	NT	NT	NT	NT	NT	NT	NT
Cyanide	µg/l	2	5	NT	NT	NT	NT	NT	NT	NT
Total Antimony (Sb)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
Total Arsenic (As)	µg/l	5	10	ND	ND	ND	ND	ND	ND	ND
Total Barium (Ba)	µg/l	5	NE	**103**	**177**	**90.8**	**121**	**35.2**	**40.5**	**85.2**
Total Beryllium (Be)	µg/l	1	6.5	ND	ND	ND	ND	ND	ND	ND
Total Cadmium (Cd)	µg/l	1	0.4	ND	ND	ND	ND	ND	ND	ND
Total Chromium (Cr)	µg/l	5	50	ND	ND	ND	ND	ND	ND	**6**
Total Cobalt (Co)	µg/l	5	NE	ND	ND	ND	**14.4**	ND	ND	**7.6**
Total Copper (Cu)	µg/l	5	7	ND	ND	ND	ND	ND	ND	**7.7**
Total Lead (Pb)	µg/l	5	25	ND	ND	ND	ND	ND	ND	ND
Total Nickel (Ni)	µg/l	5	88	ND	ND	ND	ND	ND	ND	**33.3**
Total Selenium (Se)	µg/l	10	5	ND	ND	ND	ND	ND	ND	ND
Total Silver (Ag)	µg/l	5	0.06	ND	ND	ND	ND	ND	ND	ND
Total Thallium (Tl)	µg/l	5.4	NE	ND	ND	ND	ND	ND	ND	ND
Total Vanadium (V)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
Total Zinc (Zn)	µg/l	10	50	ND	**37.6**	**15**	ND	ND	ND	**21.5**
Mercury	µg/l	0.2	0.012	NT	NT	NT	NT	NT	NT	NT
Acetone	µg/l	25	NE	ND	ND	ND	ND	ND	ND	ND
Acrylonitrile	µg/l	10	NE	ND	ND	ND	ND	ND	ND	NT
Benzene	µg/l	1	51	ND	ND	ND	ND	ND	ND	ND
Bromochloromethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Bromoform	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	µg/l	2	NE	ND	ND	ND	ND	ND	ND	NT
Bromomethane (Methylbromide)	µg/l	2	NE	ND	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	µg/l	1	1.6	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene (mono)	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Chloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Chloroform	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Chloromethane (Methylchloride)	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Dibromomethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
trans-1,4-Dichloro-2-butene	µg/l	1	NE	ND	ND	ND	ND	ND	ND	NT
1,1-Dichloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene (-ethylene)	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene (-ethylene)	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
2-Hexanone	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
Iodomethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	NT
Dichloromethane (Methylene chloride)	µg/l	2	NE	ND	ND	ND	ND	ND	ND	ND
2-Butanone (Methyl ethyl ketone)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
Styrene	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	1	4	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	1	3.3	ND	ND	ND	ND	ND	ND	ND
Toluene	µg/l	1	0.36	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	*ND*
1,1,2-Trichloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	1	30	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Vinyl acetate	µg/l	2	NE	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	µg/l	1	2.4	ND	ND	ND	ND	ND	ND	ND
Xylenes	µg/l	2	NE	ND	ND	ND	ND	ND	ND	NT
m&p-Xylenes	µg/l	2	NE	ND	ND	ND	ND	ND	ND	ND
o-Xylenes	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Methyl-tert-butyl-ether (MTBE)	µg/l	NT	NE	NT	NT	NT	NT	NT	NT	NT
Naphthalene	µg/l	NT	NE	NT	NT	NT	NT	NT	NT	NT
p-isopropyltoluene	µg/l	NT	NE	NT	NT	NT	NT	NT	NT	NT
Phosphorus	mg/l	0.05	NE	NT	NT	NT	NT	NT	NT	**0.28**

Notes:

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ND = Not Detected at the Method Reporting Limit

NS = Not Sampled

NT = Not Tested

NE = Not Established; North Carolina has not established a MCL

Shaded cells indicate exceedances of MCLs.

White Oak Landfill - Haywood Co., NC
Surface Water Sampling Event (10-24-12)

TEST	UNITS	MRL	MCL	SW-1	SW-2	SW-3	SW-5	SW-6	SW-7	Leachate
pH	pH units (on-site)	-	<6.0; >9.0	**7.1**	**6.9**	**7.9**	**6.2**	**6.1**	**7.2**	**7.5**
Specific Conductance	µmhos/cm (on-site)	1	NE	**217**	**272**	**329**	**227**	**39**	**54**	**16,940.0**
Temperature	°C (on-site)	-	29	**13.6**	**14.5**	**13.9**	**17.5**	**13.1**	**11.9**	**19.9**
Turbidity	NTU (on-site)	NT	50	**7.38**	**3.6**	**6.16**	**30.5**	**1.97**	**3.39**	**19.6**
Nitrate as N	mg/l	0.1	NE	NT	NT	NT	NT	NT	NT	**0.18**
Nitrate/Nitrite as N	mg/l	0.1	NE	NT	NT	NT	NT	NT	NT	NT
Nitrite as N	mg/l	0.1	NE	NT	NT	NT	NT	NT	NT	**0.075**
Nitrogen	mg/l	0.1	NE	NT	NT	NT	NT	NT	NT	**0.26**
Total Nitrogen, Kjeldahl	mg/l	100	NE	NT	NT	NT	NT	NT	NT	NT
Sulfate	mg/l	75	NE	NT	NT	NT	NT	NT	NT	**5100**
Biochemical Oxygen Demand	mg/l	2	NE	NT	NT	NT	NT	NT	NT	**53.3**
Chemical Oxygen Demand	mg/l	25	NE	NT	NT	NT	NT	NT	NT	**860**
Total Dissolved Solids	mg/l	20	NE	NT	NT	NT	NT	NT	NT	NT
Cyanide	µg/l	2	5	NT	NT	NT	NT	NT	NT	NT
Total Antimony (Sb)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
Total Arsenic (As)	µg/l	5	10	ND	ND	ND	ND	ND	ND	**14**
Total Barium (Ba)	µg/l	5	NE	**172**	**175**	**124**	**164**	**38.7**	**31.2**	**390**
Total Beryllium (Be)	µg/l	1	6.5	ND	ND	ND	ND	ND	ND	ND
Total Cadmium (Cd)	µg/l	1	0.4	ND	ND	ND	ND	ND	ND	ND
Total Chromium (Cr)	µg/l	5	50	ND	ND	ND	ND	ND	ND	**32.6**
Total Cobalt (Co)	µg/l	5	NE	ND	ND	ND	**20.2**	ND	ND	**19**
Total Copper (Cu)	µg/l	5	7	ND	ND	ND	ND	ND	ND	ND
Total Lead (Pb)	µg/l	5	25	ND	ND	ND	ND	ND	ND	ND
Total Nickel (Ni)	µg/l	5	88	ND	ND	ND	ND	ND	ND	**166**
Total Selenium (Se)	µg/l	10	5	ND	ND	ND	ND	ND	ND	ND
Total Silver (Ag)	µg/l	5	0.06	ND	ND	ND	ND	ND	ND	ND
Total Thallium (Tl)	µg/l	5.4	NE	ND	ND	ND	ND	ND	ND	ND
Total Vanadium (V)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	**16.0**
Total Zinc (Zn)	µg/l	10	50	ND	**28.5**	**10.7**	ND	ND	ND	ND
Mercury	µg/l	0.2	0.012	ND	ND	ND	ND	ND	ND	ND
Acetone	µg/l	25	NE	ND	ND	ND	ND	ND	ND	ND
Acrylonitrile	µg/l	10	NE	ND	ND	ND	ND	ND	ND	ND
Benzene	µg/l	1	51	ND	ND	ND	ND	ND	ND	ND
Bromochloromethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Bromoform	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	µg/l	2	NE	ND	ND	ND	ND	ND	ND	ND
Bromomethane (Methylbromide)	µg/l	2	NE	ND	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	µg/l	1	1.6	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene (mono)	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Chloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Chloroform	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Chloromethane (Methylchloride)	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Dibromomethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	µg/l	1	NE	ND	ND	ND	ND	ND	ND	**1.8**
trans-1,4-Dichloro-2-butene	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene (-ethylene)	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene (-ethylene)	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
2-Hexanone	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
Iodomethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
Dichloromethane (Methylene chloride)	µg/l	2	NE	ND	ND	ND	ND	ND	ND	ND
2-Butanone (Methyl ethyl ketone)	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone	µg/l	5	NE	ND	ND	ND	ND	ND	ND	ND
Styrene	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	1	4	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	1	3.3	ND	ND	ND	ND	ND	ND	ND
Toluene	µg/l	1	0.36	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	1	30	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	µg/l	1	NE	ND	ND	ND	ND	ND	ND	ND
Vinyl acetate	µg/l	2	NE	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	µg/l	1	2.4	ND	ND	ND	ND	ND	ND	ND
Xylenes	µg/l	2	NE	ND	ND	ND	ND	ND	ND	**3.1**
m&p-Xylenes	µg/l	2	NE	ND	ND	ND	ND	ND	ND	ND
o-Xylenes	µg/l	1	NE	NT	NT	NT	NT	NT	NT	**1.4**
Methyl-tert-butyl-ether (MTBE)	µg/l	NT	NE	NT	NT	NT	NT	NT	NT	NT
Naphthalene	µg/l	NT	NE	NT	NT	NT	NT	NT	NT	NT
p-isopropyltoluene	µg/l	NT	NE	NT	NT	NT	NT	NT	NT	NT
Phosphorus	mg/l	0.05	NE	NT	NT	NT	NT	NT	NT	**0.87**

Notes:

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NE = Not Established; North Carolina has not established a MCL

Shaded cells indicate exceedances of MCLs.

APPENDIX C

LABORATORY ANALYTICAL RESULTS

Pace Analytical Services, Inc.
Report Form
for
~~Buncombe County~~ Solid Waste Field Monitoring

Haywood White Oak

SW's

~~Facility Permit #~~	~~Waste Unit #~~	Sample ID	Sampler(s)	Date of Sampling	Time of Sampling	Water Level Depth (Ft.)	Temperature (degrees C)	pH (units)	Specific Conductance (uhmos)	Turbidity (NTU)
		SW-1	MAS	10-24-12	1140		13.6	7.1	217	2.38
		SW-2			1200		14.5	6.9	272	3.58
		SW-3			1230		13.9	7.9	329	6.16
		SW-5			1245		17.5	6.2	227	30.5
		SW-6			1100		13.1	6.1	39	1.97
		SW-7			1115		11.9	7.2	54	3.39
		Leachate			1310		19.9	7.5	16940	19.6
		Sett. Pond			1215		13.8	7.1	330	6.32
				Leachate	second	Diluted	50/100	~~[illegible]~~		

Recommended Field Data Template for NC DENR EDD Reporting

Pace Analytical Services, Inc.
Report Form
for
~~Buncombe County~~ Solid Waste Field Monitoring

HAYWOOD White Oak

Facility Permit #	Waste Unit #	Sample ID	Sampler(s)	Date of Sampling	Time of Sampling	Water Level Depth (Ft.)	Temperature (degrees C)	pH (units)	Specific Conductance (uhmos)	Turbidity (NTU)
		MW-1A	MAS	10-13-12	1400	22.09	16.5	6.3	122	8.64
		MW 2			1410	30.93	15.3	6.1	1200	5.54
		MW 2D			1425	30.89	15.2	6.0	1332	2.67
		3 R			1445	33.42	15.6	5.6	540	6.39
		3 DR			1500	37.55	15.2	5.7	395	4.52
		4 A			1515	46.32	15.3	8.1	140	10.31
		8			1350	31.14	15.4	5.3	867	2.50
		11S			1100	81.57	14.4	6.3	28	921
		11D			1110	82.34	13.3	6.8	49	3.24
		14			1025	100.80	12.5	6.3	49	9.19
		15			1045	9.69	16.1	5.6	50	56
		16			1335	35.35	15.9	5.9	260	2.82
		17			1315	56.76	15.7	5.8	171	2.23

Recommended Field Data Template for NC DENR EDD Reporting

Pace Analytical Services, Inc.
205 East Meadow Road - Suite A
Eden, NC 27288
(336)623-8921

Pace Analytical Services, Inc.
2225 Riverside Dr.
Asheville, NC 28804
(828)254-7176

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

December 06, 2012

Mr. Will Martin
Santek Environmental Inc.
650 25th St, NW Suite 100
Cleveland, TN 37311

RE: Project: White Oak LF Fall 2012
Pace Project No.: 92136195

Dear Mr. Martin:
Enclosed are the analytical results for sample(s) received by the laboratory between October 23, 2012 and October 24, 2012. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Analyses were performed at the Pace Analytical Services location indicated on the sample analyte page for analysis unless otherwise footnoted.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Tom Williams

tom.williams@pacelabs.com
Project Manager

Enclosures

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
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Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

CERTIFICATIONS

Project: White Oak LF Fall 2012
Pace Project No.: 92136195

Charlotte Certification IDs

9800 Kincey Ave. Ste 100, Huntersville, NC 28078
North Carolina Drinking Water Certification #: 37706
North Carolina Field Services Certification #: 5342
North Carolina Wastewater Certification #: 12
South Carolina Certification #: 99006001
Florida/NELAP Certification #: E87627
Kentucky UST Certification #: 84
West Virginia Certification #: 357
Virginia/VELAP Certification #: 460221

Asheville Certification IDs

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Florida/NELAP Certification #: E87648
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SAMPLE ANALYTE COUNT

Project: White Oak LF Fall 2012
Pace Project No.: 92136195

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92136195001	**MW-1A**	EPA 6010	JMW	15	PASI-A
		EPA 8260	KJM	53	PASI-C
92136195002	**MW-2**	EPA 6010	JMW	15	PASI-A
		EPA 8260	KJM	53	PASI-C
92136195003	**MW-2D**	EPA 6010	JMW	15	PASI-A
		EPA 8260	KJM	53	PASI-C
92136195004	**MW-3R**	EPA 6010	JMW	15	PASI-A
		EPA 8260	KJM	53	PASI-C
92136195005	**MW-3DR**	EPA 6010	JMW	15	PASI-A
		EPA 8260	KJM	53	PASI-C
92136195006	**MW-4A**	EPA 6010	JMW	15	PASI-A
		EPA 8260	KJM	53	PASI-C
92136195007	**MW-8**	EPA 6010	JMW	15	PASI-A
		EPA 8260	KJM	53	PASI-C
92136195008	**MW-11S**	EPA 6010	JMW	15	PASI-A
		EPA 8260	KJM	53	PASI-C
92136195009	**MW-11D**	EPA 6010	JMW	15	PASI-A
		EPA 8260	KJM	53	PASI-C
92136195010	**MW-14**	EPA 6010	JMW	15	PASI-A
		EPA 8260	KJM	53	PASI-C
92136195011	**MW-15**	EPA 6010	JMW	15	PASI-A
		EPA 8260	KJM	53	PASI-C
92136195012	**MW-16**	EPA 6010	JMW	15	PASI-A
		EPA 8260	KJM	53	PASI-C
92136195013	**MW-17**	EPA 6010	JMW	15	PASI-A
		EPA 8260	KJM	53	PASI-C
92136195014	**Leachate**	EPA 6010	JMW	15	PASI-A
		EPA 8260	MCK	53	PASI-C
		SM 5210B	JTM	1	PASI-A
		EPA 300.0	AES	1	PASI-A
		EPA 353.2	EWS	3	PASI-A
		EPA 365.1	EWS	1	PASI-A
		SM 5220D	AES	1	PASI-A
92136195016	**SW-1**	EPA 6010	JMW	15	PASI-A
		EPA 8260	MCK	53	PASI-C
92136195017	**SW-2**	EPA 6010	JMW	15	PASI-A
		EPA 8260	MCK	53	PASI-C

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SAMPLE ANALYTE COUNT

Project: White Oak LF Fall 2012
Pace Project No.: 92136195

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92136195018	**SW-3**	EPA 6010	JMW	15	PASI-A
		EPA 8260	MCK	53	PASI-C
92136195019	**SW-5**	EPA 6010	JMW	15	PASI-A
		EPA 8260	MCK	53	PASI-C
92136195020	**SW-6**	EPA 6010	JMW	15	PASI-A
		EPA 8260	MCK	53	PASI-C
92136195021	**SW-7**	EPA 6010	JMW	15	PASI-A
		EPA 8260	MCK	53	PASI-C
92136195022	**Equip Blank**	EPA 6010	JMW	15	PASI-A
		EPA 8260	MCK	53	PASI-C
92136195023	**Travel Blank**	EPA 8260	MCK	53	PASI-C

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ANALYTICAL RESULTS

Project: White Oak LF Fall 2012
Pace Project No.: 92136195

Sample: MW-1A **Lab ID: 92136195001** Collected: 10/23/12 14:00 Received: 10/23/12 16:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:							
Collected By	**MPS**			1		11/09/12 16:56		
Collected Date	**10/23/12**			1		11/09/12 16:56		
Collected Time	**14:00**			1		11/09/12 16:56		
Field pH	**6.3**	Std. Units	0.10	1		11/09/12 16:56		
Field Temperature	**16.5**	deg C	0.50	1		11/09/12 16:56		
Static Water Level	**22.09**	feet		1		11/09/12 16:56		
Field Specific Conductance	**122**	umhos/cm	1.0	1		11/09/12 16:56		
Turbidity	**8.64**	NTU	1.0	1		11/09/12 16:56		
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Antimony	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 05:50	7440-36-0	
Arsenic	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 05:50	7440-38-2	
Barium	**167**	ug/L	5.0	1	10/25/12 18:55	10/31/12 05:50	7440-39-3	
Beryllium	ND	ug/L	1.0	1	10/25/12 18:55	10/31/12 05:50	7440-41-7	
Cadmium	ND	ug/L	1.0	1	10/25/12 18:55	10/31/12 05:50	7440-43-9	
Chromium	**6.4**	ug/L	5.0	1	10/25/12 18:55	10/31/12 05:50	7440-47-3	
Cobalt	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 05:50	7440-48-4	
Copper	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 05:50	7440-50-8	
Lead	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 05:50	7439-92-1	
Nickel	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 05:50	7440-02-0	
Selenium	ND	ug/L	10.0	1	10/25/12 18:55	10/31/12 05:50	7782-49-2	
Silver	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 05:50	7440-22-4	
Thallium	ND	ug/L	5.4	1	10/25/12 18:55	10/31/12 05:50	7440-28-0	
Vanadium	**5.9**	ug/L	5.0	1	10/25/12 18:55	10/31/12 05:50	7440-62-2	
Zinc	**22.4**	ug/L	10.0	1	10/25/12 18:55	10/31/12 05:50	7440-66-6	
8260 MSV Low Level	Analytical Method: EPA 8260							
Acetone	ND	ug/L	25.0	1		11/02/12 05:59	67-64-1	
Acrylonitrile	ND	ug/L	10.0	1		11/02/12 05:59	107-13-1	
Benzene	ND	ug/L	1.0	1		11/02/12 05:59	71-43-2	
Bromochloromethane	ND	ug/L	1.0	1		11/02/12 05:59	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		11/02/12 05:59	75-27-4	
Bromoform	ND	ug/L	1.0	1		11/02/12 05:59	75-25-2	
Bromomethane	ND	ug/L	2.0	1		11/02/12 05:59	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		11/02/12 05:59	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1		11/02/12 05:59	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	1		11/02/12 05:59	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		11/02/12 05:59	108-90-7	
Chloroethane	ND	ug/L	1.0	1		11/02/12 05:59	75-00-3	
Chloroform	ND	ug/L	1.0	1		11/02/12 05:59	67-66-3	
Chloromethane	ND	ug/L	1.0	1		11/02/12 05:59	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	1		11/02/12 05:59	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		11/02/12 05:59	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		11/02/12 05:59	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		11/02/12 05:59	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		11/02/12 05:59	95-50-1	

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ANALYTICAL RESULTS

Project: White Oak LF Fall 2012
Pace Project No.: 92136195

Sample: MW-1A **Lab ID: 92136195001** Collected: 10/23/12 14:00 Received: 10/23/12 16:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260							
1,4-Dichlorobenzene	ND	ug/L	1.0	1		11/02/12 05:59	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1		11/02/12 05:59	110-57-6	
1,1-Dichloroethane	ND	ug/L	1.0	1		11/02/12 05:59	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		11/02/12 05:59	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		11/02/12 05:59	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		11/02/12 05:59	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		11/02/12 05:59	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		11/02/12 05:59	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		11/02/12 05:59	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		11/02/12 05:59	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	1		11/02/12 05:59	100-41-4	
2-Hexanone	ND	ug/L	5.0	1		11/02/12 05:59	591-78-6	
Iodomethane	ND	ug/L	5.0	1		11/02/12 05:59	74-88-4	
Methylene Chloride	ND	ug/L	2.0	1		11/02/12 05:59	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		11/02/12 05:59	108-10-1	
Styrene	ND	ug/L	1.0	1		11/02/12 05:59	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		11/02/12 05:59	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		11/02/12 05:59	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		11/02/12 05:59	127-18-4	
Toluene	ND	ug/L	1.0	1		11/02/12 05:59	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		11/02/12 05:59	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		11/02/12 05:59	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		11/02/12 05:59	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		11/02/12 05:59	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		11/02/12 05:59	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		11/02/12 05:59	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		11/02/12 05:59	75-01-4	
Xylene (Total)	ND	ug/L	2.0	1		11/02/12 05:59	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		11/02/12 05:59	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		11/02/12 05:59	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	94	%	70-130	1		11/02/12 05:59	460-00-4	
Dibromofluoromethane (S)	124	%	70-130	1		11/02/12 05:59	1868-53-7	
1,2-Dichloroethane-d4 (S)	130	%	70-130	1		11/02/12 05:59	17060-07-0	
Toluene-d8 (S)	105	%	70-130	1		11/02/12 05:59	2037-26-5	

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ANALYTICAL RESULTS

Project: White Oak LF Fall 2012
Pace Project No.: 92136195

Sample: MW-2 **Lab ID: 92136195002** Collected: 10/23/12 14:10 Received: 10/23/12 16:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:							
Collected By	**MPS**			1		11/09/12 16:58		
Collected Date	**10/23/12**			1		11/09/12 16:58		
Collected Time	**14:10**			1		11/09/12 16:58		
Field pH	**6.1**	Std. Units	0.10	1		11/09/12 16:58		
Field Temperature	**15.3**	deg C	0.50	1		11/09/12 16:58		
Static Water Level	**30.93**	feet		1		11/09/12 16:58		
Field Specific Conductance	**1200**	umhos/cm	1.0	1		11/09/12 16:58		
Turbidity	**5.54**	NTU	1.0	1		11/09/12 16:58		
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Antimony	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 05:54	7440-36-0	
Arsenic	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 05:54	7440-38-2	
Barium	**889**	ug/L	5.0	1	10/25/12 18:55	10/31/12 05:54	7440-39-3	
Beryllium	ND	ug/L	1.0	1	10/25/12 18:55	10/31/12 05:54	7440-41-7	
Cadmium	ND	ug/L	1.0	1	10/25/12 18:55	10/31/12 05:54	7440-43-9	
Chromium	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 05:54	7440-47-3	
Cobalt	**5.6**	ug/L	5.0	1	10/25/12 18:55	10/31/12 05:54	7440-48-4	
Copper	**6.0**	ug/L	5.0	1	10/25/12 18:55	10/31/12 05:54	7440-50-8	
Lead	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 05:54	7439-92-1	
Nickel	**10.1**	ug/L	5.0	1	10/25/12 18:55	10/31/12 05:54	7440-02-0	
Selenium	ND	ug/L	10.0	1	10/25/12 18:55	10/31/12 05:54	7782-49-2	
Silver	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 05:54	7440-22-4	
Thallium	ND	ug/L	5.4	1	10/25/12 18:55	10/31/12 05:54	7440-28-0	
Vanadium	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 05:54	7440-62-2	
Zinc	**23.8**	ug/L	10.0	1	10/25/12 18:55	10/31/12 05:54	7440-66-6	
8260 MSV Low Level	Analytical Method: EPA 8260							
Acetone	ND	ug/L	25.0	1		11/02/12 06:17	67-64-1	
Acrylonitrile	ND	ug/L	10.0	1		11/02/12 06:17	107-13-1	
Benzene	ND	ug/L	1.0	1		11/02/12 06:17	71-43-2	
Bromochloromethane	ND	ug/L	1.0	1		11/02/12 06:17	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		11/02/12 06:17	75-27-4	
Bromoform	ND	ug/L	1.0	1		11/02/12 06:17	75-25-2	
Bromomethane	ND	ug/L	2.0	1		11/02/12 06:17	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		11/02/12 06:17	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1		11/02/12 06:17	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	1		11/02/12 06:17	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		11/02/12 06:17	108-90-7	
Chloroethane	**4.4**	ug/L	1.0	1		11/02/12 06:17	75-00-3	
Chloroform	ND	ug/L	1.0	1		11/02/12 06:17	67-66-3	
Chloromethane	ND	ug/L	1.0	1		11/02/12 06:17	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	1		11/02/12 06:17	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		11/02/12 06:17	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		11/02/12 06:17	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		11/02/12 06:17	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		11/02/12 06:17	95-50-1	

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ANALYTICAL RESULTS

Project: White Oak LF Fall 2012
Pace Project No.: 92136195

Sample: MW-2 **Lab ID: 92136195002** Collected: 10/23/12 14:10 Received: 10/23/12 16:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260							
1,4-Dichlorobenzene	ND	ug/L	1.0	1		11/02/12 06:17	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1		11/02/12 06:17	110-57-6	
1,1-Dichloroethane	ND	ug/L	1.0	1		11/02/12 06:17	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		11/02/12 06:17	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		11/02/12 06:17	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		11/02/12 06:17	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		11/02/12 06:17	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		11/02/12 06:17	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		11/02/12 06:17	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		11/02/12 06:17	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	1		11/02/12 06:17	100-41-4	
2-Hexanone	ND	ug/L	5.0	1		11/02/12 06:17	591-78-6	
Iodomethane	ND	ug/L	5.0	1		11/02/12 06:17	74-88-4	
Methylene Chloride	ND	ug/L	2.0	1		11/02/12 06:17	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		11/02/12 06:17	108-10-1	
Styrene	ND	ug/L	1.0	1		11/02/12 06:17	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		11/02/12 06:17	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		11/02/12 06:17	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		11/02/12 06:17	127-18-4	
Toluene	ND	ug/L	1.0	1		11/02/12 06:17	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		11/02/12 06:17	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		11/02/12 06:17	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		11/02/12 06:17	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		11/02/12 06:17	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		11/02/12 06:17	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		11/02/12 06:17	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		11/02/12 06:17	75-01-4	
Xylene (Total)	ND	ug/L	2.0	1		11/02/12 06:17	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		11/02/12 06:17	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		11/02/12 06:17	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	95	%	70-130	1		11/02/12 06:17	460-00-4	
Dibromofluoromethane (S)	124	%	70-130	1		11/02/12 06:17	1868-53-7	
1,2-Dichloroethane-d4 (S)	128	%	70-130	1		11/02/12 06:17	17060-07-0	
Toluene-d8 (S)	104	%	70-130	1		11/02/12 06:17	2037-26-5	

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ANALYTICAL RESULTS

Project: White Oak LF Fall 2012
Pace Project No.: 92136195

Sample: MW-2D **Lab ID: 92136195003** Collected: 10/23/12 14:25 Received: 10/23/12 16:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:							
Collected By	**MPS**			1		11/09/12 16:58		
Collected Date	**10/23/12**			1		11/09/12 16:58		
Collected Time	**14:25**			1		11/09/12 16:58		
Field pH	**6.0**	Std. Units	0.10	1		11/09/12 16:58		
Field Temperature	**15.2**	deg C	0.50	1		11/09/12 16:58		
Static Water Level	**30.89**	feet		1		11/09/12 16:58		
Field Specific Conductance	**1332**	umhos/cm	1.0	1		11/09/12 16:58		
Turbidity	**2.67**	NTU	1.0	1		11/09/12 16:58		
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Antimony	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 05:58	7440-36-0	
Arsenic	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 05:58	7440-38-2	
Barium	**1030**	ug/L	5.0	1	10/25/12 18:55	10/31/12 05:58	7440-39-3	
Beryllium	ND	ug/L	1.0	1	10/25/12 18:55	10/31/12 05:58	7440-41-7	
Cadmium	ND	ug/L	1.0	1	10/25/12 18:55	10/31/12 05:58	7440-43-9	
Chromium	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 05:58	7440-47-3	
Cobalt	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 05:58	7440-48-4	
Copper	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 05:58	7440-50-8	
Lead	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 05:58	7439-92-1	
Nickel	**8.9**	ug/L	5.0	1	10/25/12 18:55	10/31/12 05:58	7440-02-0	
Selenium	ND	ug/L	10.0	1	10/25/12 18:55	10/31/12 05:58	7782-49-2	
Silver	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 05:58	7440-22-4	
Thallium	ND	ug/L	5.4	1	10/25/12 18:55	10/31/12 05:58	7440-28-0	
Vanadium	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 05:58	7440-62-2	
Zinc	ND	ug/L	10.0	1	10/25/12 18:55	10/31/12 05:58	7440-66-6	
8260 MSV Low Level	Analytical Method: EPA 8260							
Acetone	ND	ug/L	25.0	1		11/02/12 06:35	67-64-1	
Acrylonitrile	ND	ug/L	10.0	1		11/02/12 06:35	107-13-1	
Benzene	ND	ug/L	1.0	1		11/02/12 06:35	71-43-2	
Bromochloromethane	ND	ug/L	1.0	1		11/02/12 06:35	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		11/02/12 06:35	75-27-4	
Bromoform	ND	ug/L	1.0	1		11/02/12 06:35	75-25-2	
Bromomethane	ND	ug/L	2.0	1		11/02/12 06:35	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		11/02/12 06:35	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1		11/02/12 06:35	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	1		11/02/12 06:35	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		11/02/12 06:35	108-90-7	
Chloroethane	ND	ug/L	1.0	1		11/02/12 06:35	75-00-3	
Chloroform	ND	ug/L	1.0	1		11/02/12 06:35	67-66-3	
Chloromethane	ND	ug/L	1.0	1		11/02/12 06:35	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	1		11/02/12 06:35	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		11/02/12 06:35	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		11/02/12 06:35	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		11/02/12 06:35	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		11/02/12 06:35	95-50-1	

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ANALYTICAL RESULTS

Project: White Oak LF Fall 2012
Pace Project No.: 92136195

Sample: MW-2D **Lab ID: 92136195003** Collected: 10/23/12 14:25 Received: 10/23/12 16:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260							
1,4-Dichlorobenzene	ND	ug/L	1.0	1		11/02/12 06:35	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1		11/02/12 06:35	110-57-6	
1,1-Dichloroethane	ND	ug/L	1.0	1		11/02/12 06:35	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		11/02/12 06:35	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		11/02/12 06:35	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		11/02/12 06:35	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		11/02/12 06:35	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		11/02/12 06:35	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		11/02/12 06:35	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		11/02/12 06:35	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	1		11/02/12 06:35	100-41-4	
2-Hexanone	ND	ug/L	5.0	1		11/02/12 06:35	591-78-6	
Iodomethane	ND	ug/L	5.0	1		11/02/12 06:35	74-88-4	
Methylene Chloride	ND	ug/L	2.0	1		11/02/12 06:35	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		11/02/12 06:35	108-10-1	
Styrene	ND	ug/L	1.0	1		11/02/12 06:35	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		11/02/12 06:35	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		11/02/12 06:35	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		11/02/12 06:35	127-18-4	
Toluene	ND	ug/L	1.0	1		11/02/12 06:35	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		11/02/12 06:35	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		11/02/12 06:35	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		11/02/12 06:35	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		11/02/12 06:35	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		11/02/12 06:35	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		11/02/12 06:35	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		11/02/12 06:35	75-01-4	
Xylene (Total)	ND	ug/L	2.0	1		11/02/12 06:35	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		11/02/12 06:35	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		11/02/12 06:35	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	93	%	70-130	1		11/02/12 06:35	460-00-4	
Dibromofluoromethane (S)	123	%	70-130	1		11/02/12 06:35	1868-53-7	
1,2-Dichloroethane-d4 (S)	131	%	70-130	1		11/02/12 06:35	17060-07-0	S3
Toluene-d8 (S)	104	%	70-130	1		11/02/12 06:35	2037-26-5	

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ANALYTICAL RESULTS

Project: White Oak LF Fall 2012
Pace Project No.: 92136195

Sample: MW-3R **Lab ID: 92136195004** Collected: 10/23/12 14:45 Received: 10/23/12 16:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:							
Collected By	**MPS**			1		11/09/12 16:59		
Collected Date	**10/23/12**			1		11/09/12 16:59		
Collected Time	**14:45**			1		11/09/12 16:59		
Field pH	**5.6**	Std. Units	0.10	1		11/09/12 16:59		
Field Temperature	**15.6**	deg C	0.50	1		11/09/12 16:59		
Static Water Level	**33.42**	feet		1		11/09/12 16:59		
Field Specific Conductance	**540**	umhos/cm	1.0	1		11/09/12 16:59		
Turbidity	**6.39**	NTU	1.0	1		11/09/12 16:59		
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Antimony	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:02	7440-36-0	
Arsenic	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:02	7440-38-2	
Barium	**393**	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:02	7440-39-3	
Beryllium	ND	ug/L	1.0	1	10/25/12 18:55	10/31/12 06:02	7440-41-7	
Cadmium	ND	ug/L	1.0	1	10/25/12 18:55	10/31/12 06:02	7440-43-9	
Chromium	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:02	7440-47-3	
Cobalt	**6.5**	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:02	7440-48-4	
Copper	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:02	7440-50-8	
Lead	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:02	7439-92-1	
Nickel	**20.0**	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:02	7440-02-0	
Selenium	ND	ug/L	10.0	1	10/25/12 18:55	10/31/12 06:02	7782-49-2	
Silver	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:02	7440-22-4	
Thallium	ND	ug/L	5.4	1	10/25/12 18:55	10/31/12 06:02	7440-28-0	
Vanadium	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:02	7440-62-2	
Zinc	**10.3**	ug/L	10.0	1	10/25/12 18:55	10/31/12 06:02	7440-66-6	
8260 MSV Low Level	Analytical Method: EPA 8260							
Acetone	ND	ug/L	25.0	1		11/02/12 06:54	67-64-1	
Acrylonitrile	ND	ug/L	10.0	1		11/02/12 06:54	107-13-1	
Benzene	ND	ug/L	1.0	1		11/02/12 06:54	71-43-2	
Bromochloromethane	ND	ug/L	1.0	1		11/02/12 06:54	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		11/02/12 06:54	75-27-4	
Bromoform	ND	ug/L	1.0	1		11/02/12 06:54	75-25-2	
Bromomethane	ND	ug/L	2.0	1		11/02/12 06:54	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		11/02/12 06:54	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1		11/02/12 06:54	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	1		11/02/12 06:54	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		11/02/12 06:54	108-90-7	
Chloroethane	ND	ug/L	1.0	1		11/02/12 06:54	75-00-3	
Chloroform	ND	ug/L	1.0	1		11/02/12 06:54	67-66-3	
Chloromethane	ND	ug/L	1.0	1		11/02/12 06:54	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	1		11/02/12 06:54	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		11/02/12 06:54	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		11/02/12 06:54	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		11/02/12 06:54	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		11/02/12 06:54	95-50-1	

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ANALYTICAL RESULTS

Project: White Oak LF Fall 2012
Pace Project No.: 92136195

Sample: MW-3R **Lab ID: 92136195004** Collected: 10/23/12 14:45 Received: 10/23/12 16:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260							
1,4-Dichlorobenzene	ND	ug/L	1.0	1		11/02/12 06:54	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1		11/02/12 06:54	110-57-6	
1,1-Dichloroethane	ND	ug/L	1.0	1		11/02/12 06:54	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		11/02/12 06:54	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		11/02/12 06:54	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		11/02/12 06:54	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		11/02/12 06:54	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		11/02/12 06:54	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		11/02/12 06:54	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		11/02/12 06:54	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	1		11/02/12 06:54	100-41-4	
2-Hexanone	ND	ug/L	5.0	1		11/02/12 06:54	591-78-6	
Iodomethane	ND	ug/L	5.0	1		11/02/12 06:54	74-88-4	
Methylene Chloride	ND	ug/L	2.0	1		11/02/12 06:54	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		11/02/12 06:54	108-10-1	
Styrene	ND	ug/L	1.0	1		11/02/12 06:54	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		11/02/12 06:54	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		11/02/12 06:54	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		11/02/12 06:54	127-18-4	
Toluene	ND	ug/L	1.0	1		11/02/12 06:54	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		11/02/12 06:54	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		11/02/12 06:54	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		11/02/12 06:54	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		11/02/12 06:54	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		11/02/12 06:54	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		11/02/12 06:54	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		11/02/12 06:54	75-01-4	
Xylene (Total)	ND	ug/L	2.0	1		11/02/12 06:54	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		11/02/12 06:54	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		11/02/12 06:54	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	92	%	70-130	1		11/02/12 06:54	460-00-4	
Dibromofluoromethane (S)	123	%	70-130	1		11/02/12 06:54	1868-53-7	
1,2-Dichloroethane-d4 (S)	130	%	70-130	1		11/02/12 06:54	17060-07-0	
Toluene-d8 (S)	104	%	70-130	1		11/02/12 06:54	2037-26-5	

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ANALYTICAL RESULTS

Project: White Oak LF Fall 2012
Pace Project No.: 92136195

Sample: MW-3DR **Lab ID: 92136195005** Collected: 10/23/12 15:00 Received: 10/23/12 16:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:							
Collected By	**MPS**			1		11/09/12 17:00		
Collected Date	**10/23/12**			1		11/09/12 17:00		
Collected Time	**15:00**			1		11/09/12 17:00		
Field pH	**5.7**	Std. Units	0.10	1		11/09/12 17:00		
Field Temperature	**15.2**	deg C	0.50	1		11/09/12 17:00		
Static Water Level	**37.55**	feet		1		11/09/12 17:00		
Field Specific Conductance	**395**	umhos/cm	1.0	1		11/09/12 17:00		
Turbidity	**4.52**	NTU	1.0	1		11/09/12 17:00		
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Antimony	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:06	7440-36-0	
Arsenic	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:06	7440-38-2	
Barium	**229**	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:06	7440-39-3	
Beryllium	ND	ug/L	1.0	1	10/25/12 18:55	10/31/12 06:06	7440-41-7	
Cadmium	ND	ug/L	1.0	1	10/25/12 18:55	10/31/12 06:06	7440-43-9	
Chromium	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:06	7440-47-3	
Cobalt	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:06	7440-48-4	
Copper	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:06	7440-50-8	
Lead	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:06	7439-92-1	
Nickel	**25.3**	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:06	7440-02-0	
Selenium	ND	ug/L	10.0	1	10/25/12 18:55	10/31/12 06:06	7782-49-2	
Silver	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:06	7440-22-4	
Thallium	ND	ug/L	5.4	1	10/25/12 18:55	10/31/12 06:06	7440-28-0	
Vanadium	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:06	7440-62-2	
Zinc	**16.1**	ug/L	10.0	1	10/25/12 18:55	10/31/12 06:06	7440-66-6	
8260 MSV Low Level	Analytical Method: EPA 8260							
Acetone	ND	ug/L	25.0	1		11/02/12 07:12	67-64-1	
Acrylonitrile	ND	ug/L	10.0	1		11/02/12 07:12	107-13-1	
Benzene	ND	ug/L	1.0	1		11/02/12 07:12	71-43-2	
Bromochloromethane	ND	ug/L	1.0	1		11/02/12 07:12	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		11/02/12 07:12	75-27-4	
Bromoform	ND	ug/L	1.0	1		11/02/12 07:12	75-25-2	
Bromomethane	ND	ug/L	2.0	1		11/02/12 07:12	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		11/02/12 07:12	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1		11/02/12 07:12	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	1		11/02/12 07:12	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		11/02/12 07:12	108-90-7	
Chloroethane	ND	ug/L	1.0	1		11/02/12 07:12	75-00-3	
Chloroform	ND	ug/L	1.0	1		11/02/12 07:12	67-66-3	
Chloromethane	ND	ug/L	1.0	1		11/02/12 07:12	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	1		11/02/12 07:12	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		11/02/12 07:12	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		11/02/12 07:12	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		11/02/12 07:12	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		11/02/12 07:12	95-50-1	

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ANALYTICAL RESULTS

Project: White Oak LF Fall 2012
Pace Project No.: 92136195

Sample: MW-3DR **Lab ID: 92136195005** Collected: 10/23/12 15:00 Received: 10/23/12 16:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260							
1,4-Dichlorobenzene	ND	ug/L	1.0	1		11/02/12 07:12	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1		11/02/12 07:12	110-57-6	
1,1-Dichloroethane	ND	ug/L	1.0	1		11/02/12 07:12	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		11/02/12 07:12	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		11/02/12 07:12	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		11/02/12 07:12	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		11/02/12 07:12	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		11/02/12 07:12	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		11/02/12 07:12	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		11/02/12 07:12	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	1		11/02/12 07:12	100-41-4	
2-Hexanone	ND	ug/L	5.0	1		11/02/12 07:12	591-78-6	
Iodomethane	ND	ug/L	5.0	1		11/02/12 07:12	74-88-4	
Methylene Chloride	ND	ug/L	2.0	1		11/02/12 07:12	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		11/02/12 07:12	108-10-1	
Styrene	ND	ug/L	1.0	1		11/02/12 07:12	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		11/02/12 07:12	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		11/02/12 07:12	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		11/02/12 07:12	127-18-4	
Toluene	ND	ug/L	1.0	1		11/02/12 07:12	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		11/02/12 07:12	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		11/02/12 07:12	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		11/02/12 07:12	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		11/02/12 07:12	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		11/02/12 07:12	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		11/02/12 07:12	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		11/02/12 07:12	75-01-4	
Xylene (Total)	ND	ug/L	2.0	1		11/02/12 07:12	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		11/02/12 07:12	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		11/02/12 07:12	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	92	%	70-130	1		11/02/12 07:12	460-00-4	
Dibromofluoromethane (S)	126	%	70-130	1		11/02/12 07:12	1868-53-7	
1,2-Dichloroethane-d4 (S)	133	%	70-130	1		11/02/12 07:12	17060-07-0	S3
Toluene-d8 (S)	103	%	70-130	1		11/02/12 07:12	2037-26-5	

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ANALYTICAL RESULTS

Project: White Oak LF Fall 2012
Pace Project No.: 92136195

Sample: MW-4A **Lab ID: 92136195006** Collected: 10/23/12 15:15 Received: 10/23/12 16:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:							
Collected By	**MPS**			1		11/09/12 17:01		
Collected Date	**10/23/12**			1		11/09/12 17:01		
Collected Time	**15:15**			1		11/09/12 17:01		
Field pH	**8.1**	Std. Units	0.10	1		11/09/12 17:01		
Field Temperature	**15.3**	deg C	0.50	1		11/09/12 17:01		
Static Water Level	**46.32**	feet		1		11/09/12 17:01		
Field Specific Conductance	**140**	umhos/cm	1.0	1		11/09/12 17:01		
Turbidity	**10.31**	NTU	1.0	1		11/09/12 17:01		
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Antimony	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:10	7440-36-0	
Arsenic	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:10	7440-38-2	
Barium	**26.1**	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:10	7440-39-3	
Beryllium	ND	ug/L	1.0	1	10/25/12 18:55	10/31/12 06:10	7440-41-7	
Cadmium	ND	ug/L	1.0	1	10/25/12 18:55	10/31/12 06:10	7440-43-9	
Chromium	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:10	7440-47-3	
Cobalt	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:10	7440-48-4	
Copper	**5.1**	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:10	7440-50-8	
Lead	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:10	7439-92-1	
Nickel	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:10	7440-02-0	
Selenium	ND	ug/L	10.0	1	10/25/12 18:55	10/31/12 06:10	7782-49-2	
Silver	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:10	7440-22-4	
Thallium	ND	ug/L	5.4	1	10/25/12 18:55	10/31/12 06:10	7440-28-0	
Vanadium	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:10	7440-62-2	
Zinc	**14.9**	ug/L	10.0	1	10/25/12 18:55	10/31/12 06:10	7440-66-6	
8260 MSV Low Level	Analytical Method: EPA 8260							
Acetone	ND	ug/L	25.0	1		11/02/12 07:31	67-64-1	
Acrylonitrile	ND	ug/L	10.0	1		11/02/12 07:31	107-13-1	
Benzene	ND	ug/L	1.0	1		11/02/12 07:31	71-43-2	
Bromochloromethane	ND	ug/L	1.0	1		11/02/12 07:31	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		11/02/12 07:31	75-27-4	
Bromoform	ND	ug/L	1.0	1		11/02/12 07:31	75-25-2	
Bromomethane	ND	ug/L	2.0	1		11/02/12 07:31	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		11/02/12 07:31	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1		11/02/12 07:31	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	1		11/02/12 07:31	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		11/02/12 07:31	108-90-7	
Chloroethane	ND	ug/L	1.0	1		11/02/12 07:31	75-00-3	
Chloroform	ND	ug/L	1.0	1		11/02/12 07:31	67-66-3	
Chloromethane	ND	ug/L	1.0	1		11/02/12 07:31	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	1		11/02/12 07:31	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		11/02/12 07:31	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		11/02/12 07:31	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		11/02/12 07:31	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		11/02/12 07:31	95-50-1	

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ANALYTICAL RESULTS

Project: White Oak LF Fall 2012
Pace Project No.: 92136195

Sample: MW-4A **Lab ID: 92136195006** Collected: 10/23/12 15:15 Received: 10/23/12 16:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260							
1,4-Dichlorobenzene	ND	ug/L	1.0	1		11/02/12 07:31	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1		11/02/12 07:31	110-57-6	
1,1-Dichloroethane	ND	ug/L	1.0	1		11/02/12 07:31	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		11/02/12 07:31	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		11/02/12 07:31	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		11/02/12 07:31	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		11/02/12 07:31	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		11/02/12 07:31	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		11/02/12 07:31	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		11/02/12 07:31	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	1		11/02/12 07:31	100-41-4	
2-Hexanone	ND	ug/L	5.0	1		11/02/12 07:31	591-78-6	
Iodomethane	ND	ug/L	5.0	1		11/02/12 07:31	74-88-4	
Methylene Chloride	ND	ug/L	2.0	1		11/02/12 07:31	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		11/02/12 07:31	108-10-1	
Styrene	ND	ug/L	1.0	1		11/02/12 07:31	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		11/02/12 07:31	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		11/02/12 07:31	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		11/02/12 07:31	127-18-4	
Toluene	ND	ug/L	1.0	1		11/02/12 07:31	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		11/02/12 07:31	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		11/02/12 07:31	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		11/02/12 07:31	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		11/02/12 07:31	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		11/02/12 07:31	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		11/02/12 07:31	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		11/02/12 07:31	75-01-4	
Xylene (Total)	ND	ug/L	2.0	1		11/02/12 07:31	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		11/02/12 07:31	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		11/02/12 07:31	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	92	%	70-130	1		11/02/12 07:31	460-00-4	
Dibromofluoromethane (S)	123	%	70-130	1		11/02/12 07:31	1868-53-7	
1,2-Dichloroethane-d4 (S)	131	%	70-130	1		11/02/12 07:31	17060-07-0	S3
Toluene-d8 (S)	103	%	70-130	1		11/02/12 07:31	2037-26-5	

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ANALYTICAL RESULTS

Project: White Oak LF Fall 2012
Pace Project No.: 92136195

Sample: MW-8 **Lab ID: 92136195007** Collected: 10/23/12 13:50 Received: 10/23/12 16:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:							
Collected By	**MPS**			1		11/09/12 17:02		
Collected Date	**10/23/12**			1		11/09/12 17:02		
Collected Time	**13:50**			1		11/09/12 17:02		
Field pH	**5.3**	Std. Units	0.10	1		11/09/12 17:02		
Field Temperature	**15.4**	deg C	0.50	1		11/09/12 17:02		
Static Water Level	**31.14**	feet		1		11/09/12 17:02		
Field Specific Conductance	**867**	umhos/cm	1.0	1		11/09/12 17:02		
Turbidity	**2.50**	NTU	1.0	1		11/09/12 17:02		
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Antimony	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:13	7440-36-0	
Arsenic	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:13	7440-38-2	
Barium	**235**	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:13	7440-39-3	
Beryllium	ND	ug/L	1.0	1	10/25/12 18:55	10/31/12 06:13	7440-41-7	
Cadmium	ND	ug/L	1.0	1	10/25/12 18:55	10/31/12 06:13	7440-43-9	
Chromium	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:13	7440-47-3	
Cobalt	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:13	7440-48-4	
Copper	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:13	7440-50-8	
Lead	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:13	7439-92-1	
Nickel	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:13	7440-02-0	
Selenium	ND	ug/L	10.0	1	10/25/12 18:55	10/31/12 06:13	7782-49-2	
Silver	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:13	7440-22-4	
Thallium	ND	ug/L	5.4	1	10/25/12 18:55	10/31/12 06:13	7440-28-0	
Vanadium	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:13	7440-62-2	
Zinc	**12.2**	ug/L	10.0	1	10/25/12 18:55	10/31/12 06:13	7440-66-6	
8260 MSV Low Level	Analytical Method: EPA 8260							
Acetone	ND	ug/L	25.0	1		11/02/12 07:50	67-64-1	
Acrylonitrile	ND	ug/L	10.0	1		11/02/12 07:50	107-13-1	
Benzene	ND	ug/L	1.0	1		11/02/12 07:50	71-43-2	
Bromochloromethane	ND	ug/L	1.0	1		11/02/12 07:50	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		11/02/12 07:50	75-27-4	
Bromoform	ND	ug/L	1.0	1		11/02/12 07:50	75-25-2	
Bromomethane	ND	ug/L	2.0	1		11/02/12 07:50	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		11/02/12 07:50	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1		11/02/12 07:50	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	1		11/02/12 07:50	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		11/02/12 07:50	108-90-7	
Chloroethane	ND	ug/L	1.0	1		11/02/12 07:50	75-00-3	
Chloroform	ND	ug/L	1.0	1		11/02/12 07:50	67-66-3	
Chloromethane	ND	ug/L	1.0	1		11/02/12 07:50	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	1		11/02/12 07:50	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		11/02/12 07:50	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		11/02/12 07:50	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		11/02/12 07:50	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		11/02/12 07:50	95-50-1	

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ANALYTICAL RESULTS

Project: White Oak LF Fall 2012
Pace Project No.: 92136195

Sample: MW-8 **Lab ID: 92136195007** Collected: 10/23/12 13:50 Received: 10/23/12 16:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260							
1,4-Dichlorobenzene	ND	ug/L	1.0	1		11/02/12 07:50	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1		11/02/12 07:50	110-57-6	
1,1-Dichloroethane	ND	ug/L	1.0	1		11/02/12 07:50	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		11/02/12 07:50	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		11/02/12 07:50	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		11/02/12 07:50	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		11/02/12 07:50	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		11/02/12 07:50	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		11/02/12 07:50	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		11/02/12 07:50	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	1		11/02/12 07:50	100-41-4	
2-Hexanone	ND	ug/L	5.0	1		11/02/12 07:50	591-78-6	
Iodomethane	ND	ug/L	5.0	1		11/02/12 07:50	74-88-4	
Methylene Chloride	ND	ug/L	2.0	1		11/02/12 07:50	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		11/02/12 07:50	108-10-1	
Styrene	ND	ug/L	1.0	1		11/02/12 07:50	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		11/02/12 07:50	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		11/02/12 07:50	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		11/02/12 07:50	127-18-4	
Toluene	ND	ug/L	1.0	1		11/02/12 07:50	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		11/02/12 07:50	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		11/02/12 07:50	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		11/02/12 07:50	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		11/02/12 07:50	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		11/02/12 07:50	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		11/02/12 07:50	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		11/02/12 07:50	75-01-4	
Xylene (Total)	ND	ug/L	2.0	1		11/02/12 07:50	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		11/02/12 07:50	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		11/02/12 07:50	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	93	%	70-130	1		11/02/12 07:50	460-00-4	
Dibromofluoromethane (S)	126	%	70-130	1		11/02/12 07:50	1868-53-7	
1,2-Dichloroethane-d4 (S)	129	%	70-130	1		11/02/12 07:50	17060-07-0	
Toluene-d8 (S)	105	%	70-130	1		11/02/12 07:50	2037-26-5	

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ANALYTICAL RESULTS

Project: White Oak LF Fall 2012
Pace Project No.: 92136195

Sample: MW-11S **Lab ID: 92136195008** Collected: 10/23/12 11:00 Received: 10/23/12 16:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:							
Collected By	**MPS**			1		11/09/12 17:02		
Collected Date	**10/23/12**			1		11/09/12 17:02		
Collected Time	**11:00**			1		11/09/12 17:02		
Field pH	**6.3**	Std. Units	0.10	1		11/09/12 17:02		
Field Temperature	**14.4**	deg C	0.50	1		11/09/12 17:02		
Static Water Level	**81.57**	feet		1		11/09/12 17:02		
Field Specific Conductance	**28**	umhos/cm	1.0	1		11/09/12 17:02		
Turbidity	**921**	NTU	1.0	1		11/09/12 17:02		
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Antimony	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:28	7440-36-0	
Arsenic	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:28	7440-38-2	
Barium	**389**	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:28	7440-39-3	
Beryllium	ND	ug/L	1.0	1	10/25/12 18:55	10/31/12 06:28	7440-41-7	
Cadmium	ND	ug/L	1.0	1	10/25/12 18:55	10/31/12 06:28	7440-43-9	
Chromium	**30.4**	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:28	7440-47-3	
Cobalt	**15.7**	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:28	7440-48-4	
Copper	**22.7**	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:28	7440-50-8	
Lead	**5.9**	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:28	7439-92-1	
Nickel	**18.5**	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:28	7440-02-0	
Selenium	ND	ug/L	10.0	1	10/25/12 18:55	10/31/12 06:28	7782-49-2	
Silver	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:28	7440-22-4	
Thallium	ND	ug/L	5.4	1	10/25/12 18:55	10/31/12 06:28	7440-28-0	
Vanadium	**59.0**	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:28	7440-62-2	
Zinc	**93.4**	ug/L	10.0	1	10/25/12 18:55	10/31/12 06:28	7440-66-6	
8260 MSV Low Level	Analytical Method: EPA 8260							
Acetone	ND	ug/L	25.0	1		11/02/12 08:09	67-64-1	
Acrylonitrile	ND	ug/L	10.0	1		11/02/12 08:09	107-13-1	
Benzene	ND	ug/L	1.0	1		11/02/12 08:09	71-43-2	
Bromochloromethane	ND	ug/L	1.0	1		11/02/12 08:09	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		11/02/12 08:09	75-27-4	
Bromoform	ND	ug/L	1.0	1		11/02/12 08:09	75-25-2	
Bromomethane	ND	ug/L	2.0	1		11/02/12 08:09	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		11/02/12 08:09	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1		11/02/12 08:09	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	1		11/02/12 08:09	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		11/02/12 08:09	108-90-7	
Chloroethane	ND	ug/L	1.0	1		11/02/12 08:09	75-00-3	
Chloroform	ND	ug/L	1.0	1		11/02/12 08:09	67-66-3	
Chloromethane	ND	ug/L	1.0	1		11/02/12 08:09	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	1		11/02/12 08:09	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		11/02/12 08:09	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		11/02/12 08:09	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		11/02/12 08:09	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		11/02/12 08:09	95-50-1	

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ANALYTICAL RESULTS

Project: White Oak LF Fall 2012
Pace Project No.: 92136195

Sample: MW-11S **Lab ID: 92136195008** Collected: 10/23/12 11:00 Received: 10/23/12 16:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260							
1,4-Dichlorobenzene	ND	ug/L	1.0	1		11/02/12 08:09	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1		11/02/12 08:09	110-57-6	
1,1-Dichloroethane	ND	ug/L	1.0	1		11/02/12 08:09	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		11/02/12 08:09	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		11/02/12 08:09	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		11/02/12 08:09	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		11/02/12 08:09	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		11/02/12 08:09	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		11/02/12 08:09	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		11/02/12 08:09	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	1		11/02/12 08:09	100-41-4	
2-Hexanone	ND	ug/L	5.0	1		11/02/12 08:09	591-78-6	
Iodomethane	ND	ug/L	5.0	1		11/02/12 08:09	74-88-4	
Methylene Chloride	ND	ug/L	2.0	1		11/02/12 08:09	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		11/02/12 08:09	108-10-1	
Styrene	ND	ug/L	1.0	1		11/02/12 08:09	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		11/02/12 08:09	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		11/02/12 08:09	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		11/02/12 08:09	127-18-4	
Toluene	ND	ug/L	1.0	1		11/02/12 08:09	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		11/02/12 08:09	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		11/02/12 08:09	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		11/02/12 08:09	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		11/02/12 08:09	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		11/02/12 08:09	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		11/02/12 08:09	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		11/02/12 08:09	75-01-4	
Xylene (Total)	ND	ug/L	2.0	1		11/02/12 08:09	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		11/02/12 08:09	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		11/02/12 08:09	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	93	%	70-130	1		11/02/12 08:09	460-00-4	
Dibromofluoromethane (S)	125	%	70-130	1		11/02/12 08:09	1868-53-7	
1,2-Dichloroethane-d4 (S)	133	%	70-130	1		11/02/12 08:09	17060-07-0	S3
Toluene-d8 (S)	104	%	70-130	1		11/02/12 08:09	2037-26-5	

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ANALYTICAL RESULTS

Project: White Oak LF Fall 2012
Pace Project No.: 92136195

Sample: MW-11D **Lab ID: 92136195009** Collected: 10/23/12 11:10 Received: 10/23/12 16:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:							
Collected By	**MPS**			1		11/09/12 17:03		
Collected Date	**10/23/12**			1		11/09/12 17:03		
Collected Time	**11:10**			1		11/09/12 17:03		
Field pH	**6.8**	Std. Units	0.10	1		11/09/12 17:03		
Field Temperature	**13.3**	deg C	0.50	1		11/09/12 17:03		
Static Water Level	**82.34**	feet		1		11/09/12 17:03		
Field Specific Conductance	**49**	umhos/cm	1.0	1		11/09/12 17:03		
Turbidity	**3.24**	NTU	1.0	1		11/09/12 17:03		
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Antimony	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:32	7440-36-0	
Arsenic	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:32	7440-38-2	
Barium	**19.0**	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:32	7440-39-3	
Beryllium	ND	ug/L	1.0	1	10/25/12 18:55	10/31/12 06:32	7440-41-7	
Cadmium	ND	ug/L	1.0	1	10/25/12 18:55	10/31/12 06:32	7440-43-9	
Chromium	**6.0**	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:32	7440-47-3	
Cobalt	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:32	7440-48-4	
Copper	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:32	7440-50-8	
Lead	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:32	7439-92-1	
Nickel	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:32	7440-02-0	
Selenium	ND	ug/L	10.0	1	10/25/12 18:55	10/31/12 06:32	7782-49-2	
Silver	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:32	7440-22-4	
Thallium	ND	ug/L	5.4	1	10/25/12 18:55	10/31/12 06:32	7440-28-0	
Vanadium	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:32	7440-62-2	
Zinc	**10.4**	ug/L	10.0	1	10/25/12 18:55	10/31/12 06:32	7440-66-6	
8260 MSV Low Level	Analytical Method: EPA 8260							
Acetone	ND	ug/L	25.0	1		11/02/12 08:27	67-64-1	
Acrylonitrile	ND	ug/L	10.0	1		11/02/12 08:27	107-13-1	
Benzene	ND	ug/L	1.0	1		11/02/12 08:27	71-43-2	
Bromochloromethane	ND	ug/L	1.0	1		11/02/12 08:27	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		11/02/12 08:27	75-27-4	
Bromoform	ND	ug/L	1.0	1		11/02/12 08:27	75-25-2	
Bromomethane	ND	ug/L	2.0	1		11/02/12 08:27	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		11/02/12 08:27	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1		11/02/12 08:27	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	1		11/02/12 08:27	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		11/02/12 08:27	108-90-7	
Chloroethane	ND	ug/L	1.0	1		11/02/12 08:27	75-00-3	
Chloroform	ND	ug/L	1.0	1		11/02/12 08:27	67-66-3	
Chloromethane	ND	ug/L	1.0	1		11/02/12 08:27	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	1		11/02/12 08:27	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		11/02/12 08:27	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		11/02/12 08:27	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		11/02/12 08:27	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		11/02/12 08:27	95-50-1	

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ANALYTICAL RESULTS

Project: White Oak LF Fall 2012
Pace Project No.: 92136195

Sample: MW-11D **Lab ID: 92136195009** Collected: 10/23/12 11:10 Received: 10/23/12 16:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260							
1,4-Dichlorobenzene	ND	ug/L	1.0	1		11/02/12 08:27	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1		11/02/12 08:27	110-57-6	
1,1-Dichloroethane	ND	ug/L	1.0	1		11/02/12 08:27	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		11/02/12 08:27	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		11/02/12 08:27	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		11/02/12 08:27	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		11/02/12 08:27	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		11/02/12 08:27	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		11/02/12 08:27	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		11/02/12 08:27	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	1		11/02/12 08:27	100-41-4	
2-Hexanone	ND	ug/L	5.0	1		11/02/12 08:27	591-78-6	
Iodomethane	ND	ug/L	5.0	1		11/02/12 08:27	74-88-4	
Methylene Chloride	ND	ug/L	2.0	1		11/02/12 08:27	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		11/02/12 08:27	108-10-1	
Styrene	ND	ug/L	1.0	1		11/02/12 08:27	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		11/02/12 08:27	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		11/02/12 08:27	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		11/02/12 08:27	127-18-4	
Toluene	ND	ug/L	1.0	1		11/02/12 08:27	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		11/02/12 08:27	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		11/02/12 08:27	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		11/02/12 08:27	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		11/02/12 08:27	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		11/02/12 08:27	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		11/02/12 08:27	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		11/02/12 08:27	75-01-4	
Xylene (Total)	ND	ug/L	2.0	1		11/02/12 08:27	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		11/02/12 08:27	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		11/02/12 08:27	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	92	%	70-130	1		11/02/12 08:27	460-00-4	
Dibromofluoromethane (S)	125	%	70-130	1		11/02/12 08:27	1868-53-7	
1,2-Dichloroethane-d4 (S)	133	%	70-130	1		11/02/12 08:27	17060-07-0	S3
Toluene-d8 (S)	104	%	70-130	1		11/02/12 08:27	2037-26-5	

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ANALYTICAL RESULTS

Project: White Oak LF Fall 2012
Pace Project No.: 92136195

Sample: MW-14 **Lab ID: 92136195010** Collected: 10/23/12 10:15 Received: 10/23/12 16:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:							
Collected By	**MPS**			1		11/09/12 17:04		
Collected Date	**10/23/12**			1		11/09/12 17:04		
Collected Time	**10:25**			1		11/09/12 17:04		
Field pH	**6.3**	Std. Units	0.10	1		11/09/12 17:04		
Field Temperature	**12.5**	deg C	0.50	1		11/09/12 17:04		
Static Water Level	**100.80**	feet		1		11/09/12 17:04		
Field Specific Conductance	**49**	umhos/cm	1.0	1		11/09/12 17:04		
Turbidity	**9.19**	NTU	1.0	1		11/09/12 17:04		
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Antimony	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:35	7440-36-0	
Arsenic	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:35	7440-38-2	
Barium	**124**	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:35	7440-39-3	
Beryllium	ND	ug/L	1.0	1	10/25/12 18:55	10/31/12 06:35	7440-41-7	
Cadmium	ND	ug/L	1.0	1	10/25/12 18:55	10/31/12 06:35	7440-43-9	
Chromium	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:35	7440-47-3	
Cobalt	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:35	7440-48-4	
Copper	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:35	7440-50-8	
Lead	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:35	7439-92-1	
Nickel	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:35	7440-02-0	
Selenium	ND	ug/L	10.0	1	10/25/12 18:55	10/31/12 06:35	7782-49-2	
Silver	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:35	7440-22-4	
Thallium	ND	ug/L	5.4	1	10/25/12 18:55	10/31/12 06:35	7440-28-0	
Vanadium	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:35	7440-62-2	
Zinc	**11.3**	ug/L	10.0	1	10/25/12 18:55	10/31/12 06:35	7440-66-6	
8260 MSV Low Level	Analytical Method: EPA 8260							
Acetone	ND	ug/L	25.0	1		11/02/12 08:46	67-64-1	
Acrylonitrile	ND	ug/L	10.0	1		11/02/12 08:46	107-13-1	
Benzene	ND	ug/L	1.0	1		11/02/12 08:46	71-43-2	
Bromochloromethane	ND	ug/L	1.0	1		11/02/12 08:46	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		11/02/12 08:46	75-27-4	
Bromoform	ND	ug/L	1.0	1		11/02/12 08:46	75-25-2	
Bromomethane	ND	ug/L	2.0	1		11/02/12 08:46	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		11/02/12 08:46	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1		11/02/12 08:46	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	1		11/02/12 08:46	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		11/02/12 08:46	108-90-7	
Chloroethane	ND	ug/L	1.0	1		11/02/12 08:46	75-00-3	
Chloroform	ND	ug/L	1.0	1		11/02/12 08:46	67-66-3	
Chloromethane	ND	ug/L	1.0	1		11/02/12 08:46	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	1		11/02/12 08:46	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		11/02/12 08:46	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		11/02/12 08:46	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		11/02/12 08:46	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		11/02/12 08:46	95-50-1	

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ANALYTICAL RESULTS

Project: White Oak LF Fall 2012
Pace Project No.: 92136195

Sample: MW-14 **Lab ID: 92136195010** Collected: 10/23/12 10:15 Received: 10/23/12 16:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260							
1,4-Dichlorobenzene	ND	ug/L	1.0	1		11/02/12 08:46	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1		11/02/12 08:46	110-57-6	
1,1-Dichloroethane	ND	ug/L	1.0	1		11/02/12 08:46	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		11/02/12 08:46	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		11/02/12 08:46	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		11/02/12 08:46	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		11/02/12 08:46	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		11/02/12 08:46	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		11/02/12 08:46	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		11/02/12 08:46	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	1		11/02/12 08:46	100-41-4	
2-Hexanone	ND	ug/L	5.0	1		11/02/12 08:46	591-78-6	
Iodomethane	ND	ug/L	5.0	1		11/02/12 08:46	74-88-4	
Methylene Chloride	ND	ug/L	2.0	1		11/02/12 08:46	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		11/02/12 08:46	108-10-1	
Styrene	ND	ug/L	1.0	1		11/02/12 08:46	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		11/02/12 08:46	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		11/02/12 08:46	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		11/02/12 08:46	127-18-4	
Toluene	ND	ug/L	1.0	1		11/02/12 08:46	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		11/02/12 08:46	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		11/02/12 08:46	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		11/02/12 08:46	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		11/02/12 08:46	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		11/02/12 08:46	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		11/02/12 08:46	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		11/02/12 08:46	75-01-4	
Xylene (Total)	ND	ug/L	2.0	1		11/02/12 08:46	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		11/02/12 08:46	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		11/02/12 08:46	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	93	%	70-130	1		11/02/12 08:46	460-00-4	
Dibromofluoromethane (S)	125	%	70-130	1		11/02/12 08:46	1868-53-7	
1,2-Dichloroethane-d4 (S)	132	%	70-130	1		11/02/12 08:46	17060-07-0	
Toluene-d8 (S)	105	%	70-130	1		11/02/12 08:46	2037-26-5	

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ANALYTICAL RESULTS

Project: White Oak LF Fall 2012
Pace Project No.: 92136195

Sample: MW-15 **Lab ID: 92136195011** Collected: 10/23/12 10:45 Received: 10/23/12 16:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:							
Collected By	**MPS**			1		11/09/12 17:05		
Collected Date	**10/23/12**			1		11/09/12 17:05		
Collected Time	**10:45**			1		11/09/12 17:05		
Field pH	**5.6**	Std. Units	0.10	1		11/09/12 17:05		
Field Temperature	**16.1**	deg C	0.50	1		11/09/12 17:05		
Static Water Level	**9.69**	feet		1		11/09/12 17:05		
Field Specific Conductance	**50**	umhos/cm	1.0	1		11/09/12 17:05		
Turbidity	**56**	NTU	1.0	1		11/09/12 17:05		
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Antimony	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:39	7440-36-0	
Arsenic	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:39	7440-38-2	
Barium	**43.2**	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:39	7440-39-3	
Beryllium	ND	ug/L	1.0	1	10/25/12 18:55	10/31/12 06:39	7440-41-7	
Cadmium	ND	ug/L	1.0	1	10/25/12 18:55	10/31/12 06:39	7440-43-9	
Chromium	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:39	7440-47-3	
Cobalt	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:39	7440-48-4	
Copper	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:39	7440-50-8	
Lead	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:39	7439-92-1	
Nickel	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:39	7440-02-0	
Selenium	ND	ug/L	10.0	1	10/25/12 18:55	10/31/12 06:39	7782-49-2	
Silver	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:39	7440-22-4	
Thallium	ND	ug/L	5.4	1	10/25/12 18:55	10/31/12 06:39	7440-28-0	
Vanadium	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:39	7440-62-2	
Zinc	**15.7**	ug/L	10.0	1	10/25/12 18:55	10/31/12 06:39	7440-66-6	
8260 MSV Low Level	Analytical Method: EPA 8260							
Acetone	ND	ug/L	25.0	1		11/02/12 09:04	67-64-1	
Acrylonitrile	ND	ug/L	10.0	1		11/02/12 09:04	107-13-1	
Benzene	ND	ug/L	1.0	1		11/02/12 09:04	71-43-2	
Bromochloromethane	ND	ug/L	1.0	1		11/02/12 09:04	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		11/02/12 09:04	75-27-4	
Bromoform	ND	ug/L	1.0	1		11/02/12 09:04	75-25-2	
Bromomethane	ND	ug/L	2.0	1		11/02/12 09:04	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		11/02/12 09:04	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1		11/02/12 09:04	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	1		11/02/12 09:04	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		11/02/12 09:04	108-90-7	
Chloroethane	ND	ug/L	1.0	1		11/02/12 09:04	75-00-3	
Chloroform	ND	ug/L	1.0	1		11/02/12 09:04	67-66-3	
Chloromethane	ND	ug/L	1.0	1		11/02/12 09:04	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	1		11/02/12 09:04	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		11/02/12 09:04	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		11/02/12 09:04	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		11/02/12 09:04	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		11/02/12 09:04	95-50-1	

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ANALYTICAL RESULTS

Project: White Oak LF Fall 2012
Pace Project No.: 92136195

Sample: MW-15 **Lab ID: 92136195011** Collected: 10/23/12 10:45 Received: 10/23/12 16:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260							
1,4-Dichlorobenzene	ND	ug/L	1.0	1		11/02/12 09:04	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1		11/02/12 09:04	110-57-6	
1,1-Dichloroethane	ND	ug/L	1.0	1		11/02/12 09:04	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		11/02/12 09:04	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		11/02/12 09:04	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		11/02/12 09:04	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		11/02/12 09:04	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		11/02/12 09:04	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		11/02/12 09:04	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		11/02/12 09:04	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	1		11/02/12 09:04	100-41-4	
2-Hexanone	ND	ug/L	5.0	1		11/02/12 09:04	591-78-6	
Iodomethane	ND	ug/L	5.0	1		11/02/12 09:04	74-88-4	
Methylene Chloride	ND	ug/L	2.0	1		11/02/12 09:04	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		11/02/12 09:04	108-10-1	
Styrene	ND	ug/L	1.0	1		11/02/12 09:04	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		11/02/12 09:04	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		11/02/12 09:04	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		11/02/12 09:04	127-18-4	
Toluene	ND	ug/L	1.0	1		11/02/12 09:04	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		11/02/12 09:04	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		11/02/12 09:04	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		11/02/12 09:04	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		11/02/12 09:04	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		11/02/12 09:04	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		11/02/12 09:04	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		11/02/12 09:04	75-01-4	
Xylene (Total)	ND	ug/L	2.0	1		11/02/12 09:04	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		11/02/12 09:04	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		11/02/12 09:04	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	93	%	70-130	1		11/02/12 09:04	460-00-4	
Dibromofluoromethane (S)	124	%	70-130	1		11/02/12 09:04	1868-53-7	
1,2-Dichloroethane-d4 (S)	133	%	70-130	1		11/02/12 09:04	17060-07-0	S3
Toluene-d8 (S)	104	%	70-130	1		11/02/12 09:04	2037-26-5	

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ANALYTICAL RESULTS

Project: White Oak LF Fall 2012
Pace Project No.: 92136195

Sample: MW-16 **Lab ID: 92136195012** Collected: 10/23/12 13:35 Received: 10/23/12 16:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:							
Collected By	**MPS**			1		11/09/12 17:06		
Collected Date	**10/23/12**			1		11/09/12 17:06		
Collected Time	**13:35**			1		11/09/12 17:06		
Field pH	**5.9**	Std. Units	0.10	1		11/09/12 17:06		
Field Temperature	**15.9**	deg C	0.50	1		11/09/12 17:06		
Static Water Level	**35.35**	feet		1		11/09/12 17:06		
Field Specific Conductance	**260**	umhos/cm	1.0	1		11/09/12 17:06		
Turbidity	**2.82**	NTU	1.0	1		11/09/12 17:06		
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Antimony	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:42	7440-36-0	
Arsenic	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:42	7440-38-2	
Barium	**177**	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:42	7440-39-3	
Beryllium	ND	ug/L	1.0	1	10/25/12 18:55	10/31/12 06:42	7440-41-7	
Cadmium	**1.0**	ug/L	1.0	1	10/25/12 18:55	10/31/12 06:42	7440-43-9	
Chromium	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:42	7440-47-3	
Cobalt	**48.5**	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:42	7440-48-4	
Copper	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:42	7440-50-8	
Lead	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:42	7439-92-1	
Nickel	**9.6**	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:42	7440-02-0	
Selenium	ND	ug/L	10.0	1	10/25/12 18:55	10/31/12 06:42	7782-49-2	
Silver	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:42	7440-22-4	
Thallium	ND	ug/L	5.4	1	10/25/12 18:55	10/31/12 06:42	7440-28-0	
Vanadium	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:42	7440-62-2	
Zinc	**15.8**	ug/L	10.0	1	10/25/12 18:55	10/31/12 06:42	7440-66-6	
8260 MSV Low Level	Analytical Method: EPA 8260							
Acetone	ND	ug/L	25.0	1		11/02/12 09:23	67-64-1	
Acrylonitrile	ND	ug/L	10.0	1		11/02/12 09:23	107-13-1	
Benzene	ND	ug/L	1.0	1		11/02/12 09:23	71-43-2	
Bromochloromethane	ND	ug/L	1.0	1		11/02/12 09:23	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		11/02/12 09:23	75-27-4	
Bromoform	ND	ug/L	1.0	1		11/02/12 09:23	75-25-2	
Bromomethane	ND	ug/L	2.0	1		11/02/12 09:23	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		11/02/12 09:23	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1		11/02/12 09:23	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	1		11/02/12 09:23	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		11/02/12 09:23	108-90-7	
Chloroethane	ND	ug/L	1.0	1		11/02/12 09:23	75-00-3	
Chloroform	ND	ug/L	1.0	1		11/02/12 09:23	67-66-3	
Chloromethane	ND	ug/L	1.0	1		11/02/12 09:23	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	1		11/02/12 09:23	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		11/02/12 09:23	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		11/02/12 09:23	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		11/02/12 09:23	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		11/02/12 09:23	95-50-1	

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ANALYTICAL RESULTS

Project: White Oak LF Fall 2012
Pace Project No.: 92136195

Sample: MW-16 **Lab ID: 92136195012** Collected: 10/23/12 13:35 Received: 10/23/12 16:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260							
1,4-Dichlorobenzene	ND	ug/L	1.0	1		11/02/12 09:23	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1		11/02/12 09:23	110-57-6	
1,1-Dichloroethane	ND	ug/L	1.0	1		11/02/12 09:23	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		11/02/12 09:23	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		11/02/12 09:23	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		11/02/12 09:23	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		11/02/12 09:23	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		11/02/12 09:23	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		11/02/12 09:23	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		11/02/12 09:23	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	1		11/02/12 09:23	100-41-4	
2-Hexanone	ND	ug/L	5.0	1		11/02/12 09:23	591-78-6	
Iodomethane	ND	ug/L	5.0	1		11/02/12 09:23	74-88-4	
Methylene Chloride	ND	ug/L	2.0	1		11/02/12 09:23	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		11/02/12 09:23	108-10-1	
Styrene	ND	ug/L	1.0	1		11/02/12 09:23	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		11/02/12 09:23	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		11/02/12 09:23	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		11/02/12 09:23	127-18-4	
Toluene	ND	ug/L	1.0	1		11/02/12 09:23	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		11/02/12 09:23	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		11/02/12 09:23	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		11/02/12 09:23	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		11/02/12 09:23	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		11/02/12 09:23	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		11/02/12 09:23	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		11/02/12 09:23	75-01-4	
Xylene (Total)	ND	ug/L	2.0	1		11/02/12 09:23	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		11/02/12 09:23	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		11/02/12 09:23	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	92	%	70-130	1		11/02/12 09:23	460-00-4	
Dibromofluoromethane (S)	125	%	70-130	1		11/02/12 09:23	1868-53-7	
1,2-Dichloroethane-d4 (S)	132	%	70-130	1		11/02/12 09:23	17060-07-0	S3
Toluene-d8 (S)	104	%	70-130	1		11/02/12 09:23	2037-26-5	

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ANALYTICAL RESULTS

Project: White Oak LF Fall 2012
Pace Project No.: 92136195

Sample: MW-17 **Lab ID: 92136195013** Collected: 10/23/12 13:15 Received: 10/23/12 16:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:							
Collected By	**MPS**			1		11/09/12 17:07		
Collected Date	**10/23/12**			1		11/09/12 17:07		
Collected Time	**13:15**			1		11/09/12 17:07		
Field pH	**5.8**	Std. Units	0.10	1		11/09/12 17:07		
Field Temperature	**15.7**	deg C	0.50	1		11/09/12 17:07		
Static Water Level	**56.76**	feet		1		11/09/12 17:07		
Field Specific Conductance	**171**	umhos/cm	1.0	1		11/09/12 17:07		
Turbidity	**2.23**	NTU	1.0	1		11/09/12 17:07		
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Antimony	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:46	7440-36-0	
Arsenic	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:46	7440-38-2	
Barium	**181**	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:46	7440-39-3	
Beryllium	ND	ug/L	1.0	1	10/25/12 18:55	10/31/12 06:46	7440-41-7	
Cadmium	ND	ug/L	1.0	1	10/25/12 18:55	10/31/12 06:46	7440-43-9	
Chromium	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:46	7440-47-3	
Cobalt	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:46	7440-48-4	
Copper	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:46	7440-50-8	
Lead	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:46	7439-92-1	
Nickel	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:46	7440-02-0	
Selenium	ND	ug/L	10.0	1	10/25/12 18:55	10/31/12 06:46	7782-49-2	
Silver	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:46	7440-22-4	
Thallium	ND	ug/L	5.4	1	10/25/12 18:55	10/31/12 06:46	7440-28-0	
Vanadium	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 06:46	7440-62-2	
Zinc	ND	ug/L	10.0	1	10/25/12 18:55	10/31/12 06:46	7440-66-6	
8260 MSV Low Level	Analytical Method: EPA 8260							
Acetone	ND	ug/L	25.0	1		11/02/12 09:41	67-64-1	
Acrylonitrile	ND	ug/L	10.0	1		11/02/12 09:41	107-13-1	
Benzene	ND	ug/L	1.0	1		11/02/12 09:41	71-43-2	
Bromochloromethane	ND	ug/L	1.0	1		11/02/12 09:41	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		11/02/12 09:41	75-27-4	
Bromoform	ND	ug/L	1.0	1		11/02/12 09:41	75-25-2	
Bromomethane	ND	ug/L	2.0	1		11/02/12 09:41	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		11/02/12 09:41	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1		11/02/12 09:41	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	1		11/02/12 09:41	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		11/02/12 09:41	108-90-7	
Chloroethane	ND	ug/L	1.0	1		11/02/12 09:41	75-00-3	
Chloroform	ND	ug/L	1.0	1		11/02/12 09:41	67-66-3	
Chloromethane	ND	ug/L	1.0	1		11/02/12 09:41	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	1		11/02/12 09:41	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		11/02/12 09:41	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		11/02/12 09:41	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		11/02/12 09:41	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		11/02/12 09:41	95-50-1	

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ANALYTICAL RESULTS

Project: White Oak LF Fall 2012
Pace Project No.: 92136195

Sample: MW-17 **Lab ID: 92136195013** Collected: 10/23/12 13:15 Received: 10/23/12 16:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260							
1,4-Dichlorobenzene	ND	ug/L	1.0	1		11/02/12 09:41	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1		11/02/12 09:41	110-57-6	
1,1-Dichloroethane	ND	ug/L	1.0	1		11/02/12 09:41	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		11/02/12 09:41	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		11/02/12 09:41	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		11/02/12 09:41	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		11/02/12 09:41	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		11/02/12 09:41	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		11/02/12 09:41	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		11/02/12 09:41	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	1		11/02/12 09:41	100-41-4	
2-Hexanone	ND	ug/L	5.0	1		11/02/12 09:41	591-78-6	
Iodomethane	ND	ug/L	5.0	1		11/02/12 09:41	74-88-4	
Methylene Chloride	ND	ug/L	2.0	1		11/02/12 09:41	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		11/02/12 09:41	108-10-1	
Styrene	ND	ug/L	1.0	1		11/02/12 09:41	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		11/02/12 09:41	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		11/02/12 09:41	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		11/02/12 09:41	127-18-4	
Toluene	ND	ug/L	1.0	1		11/02/12 09:41	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		11/02/12 09:41	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		11/02/12 09:41	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		11/02/12 09:41	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		11/02/12 09:41	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		11/02/12 09:41	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		11/02/12 09:41	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		11/02/12 09:41	75-01-4	
Xylene (Total)	ND	ug/L	2.0	1		11/02/12 09:41	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		11/02/12 09:41	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		11/02/12 09:41	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	93	%	70-130	1		11/02/12 09:41	460-00-4	
Dibromofluoromethane (S)	126	%	70-130	1		11/02/12 09:41	1868-53-7	
1,2-Dichloroethane-d4 (S)	133	%	70-130	1		11/02/12 09:41	17060-07-0	S3
Toluene-d8 (S)	103	%	70-130	1		11/02/12 09:41	2037-26-5	

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ANALYTICAL RESULTS

Project: White Oak LF Fall 2012
Pace Project No.: 92136195

Sample: Leachate **Lab ID: 92136195014** Collected: 10/24/12 13:10 Received: 10/24/12 15:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:							
Collected By	**MPS**			1		11/09/12 17:12		
Collected Date	**10/24/12**			1		11/09/12 17:12		
Collected Time	**13:10**			1		11/09/12 17:12		
Field pH	**7.5**	Std. Units	0.10	1		11/09/12 17:12		
Field Temperature	**19.9**	deg C	0.50	1		11/09/12 17:12		
Field Specific Conductance	**16940**	umhos/cm	1.0	1		11/09/12 17:12		
Turbidity	**19.6**	NTU	1.0	1		11/09/12 17:12		
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Antimony	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 04:18	7440-36-0	
Arsenic	**14.0**	ug/L	5.0	1	10/25/12 18:55	10/31/12 04:18	7440-38-2	
Barium	**390**	ug/L	5.0	1	10/25/12 18:55	10/31/12 04:18	7440-39-3	
Beryllium	ND	ug/L	1.0	1	10/25/12 18:55	10/31/12 04:18	7440-41-7	
Cadmium	ND	ug/L	1.0	1	10/25/12 18:55	10/31/12 04:18	7440-43-9	
Chromium	**32.6**	ug/L	5.0	1	10/25/12 18:55	10/31/12 04:18	7440-47-3	
Cobalt	**19.0**	ug/L	5.0	1	10/25/12 18:55	10/31/12 04:18	7440-48-4	
Copper	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 04:18	7440-50-8	
Lead	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 04:18	7439-92-1	
Nickel	**166**	ug/L	5.0	1	10/25/12 18:55	10/31/12 04:18	7440-02-0	
Selenium	ND	ug/L	10.0	1	10/25/12 18:55	10/31/12 04:18	7782-49-2	
Silver	ND	ug/L	5.0	1	10/25/12 18:55	10/31/12 04:18	7440-22-4	
Thallium	ND	ug/L	5.4	1	10/25/12 18:55	10/31/12 04:18	7440-28-0	
Vanadium	**16.0**	ug/L	5.0	1	10/25/12 18:55	10/31/12 04:18	7440-62-2	
Zinc	ND	ug/L	10.0	1	10/25/12 18:55	10/31/12 04:18	7440-66-6	
8260 MSV Low Level	Analytical Method: EPA 8260							
Acetone	ND	ug/L	25.0	1		11/03/12 14:25	67-64-1	
Acrylonitrile	ND	ug/L	10.0	1		11/03/12 14:25	107-13-1	
Benzene	ND	ug/L	1.0	1		11/03/12 14:25	71-43-2	
Bromochloromethane	ND	ug/L	1.0	1		11/03/12 14:25	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		11/03/12 14:25	75-27-4	
Bromoform	ND	ug/L	1.0	1		11/03/12 14:25	75-25-2	
Bromomethane	ND	ug/L	2.0	1		11/03/12 14:25	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		11/03/12 14:25	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1		11/03/12 14:25	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	1		11/03/12 14:25	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		11/03/12 14:25	108-90-7	
Chloroethane	ND	ug/L	1.0	1		11/03/12 14:25	75-00-3	
Chloroform	ND	ug/L	1.0	1		11/03/12 14:25	67-66-3	
Chloromethane	ND	ug/L	1.0	1		11/03/12 14:25	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	1		11/03/12 14:25	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		11/03/12 14:25	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		11/03/12 14:25	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		11/03/12 14:25	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		11/03/12 14:25	95-50-1	
1,4-Dichlorobenzene	**1.8**	ug/L	1.0	1		11/03/12 14:25	106-46-7	

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ANALYTICAL RESULTS

Project: White Oak LF Fall 2012
Pace Project No.: 92136195

Sample: Leachate **Lab ID: 92136195014** Collected: 10/24/12 13:10 Received: 10/24/12 15:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260							
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1		11/03/12 14:25	110-57-6	
1,1-Dichloroethane	ND	ug/L	1.0	1		11/03/12 14:25	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		11/03/12 14:25	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		11/03/12 14:25	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		11/03/12 14:25	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		11/03/12 14:25	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		11/03/12 14:25	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		11/03/12 14:25	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		11/03/12 14:25	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	1		11/03/12 14:25	100-41-4	
2-Hexanone	ND	ug/L	5.0	1		11/03/12 14:25	591-78-6	
Iodomethane	ND	ug/L	5.0	1		11/03/12 14:25	74-88-4	
Methylene Chloride	ND	ug/L	2.0	1		11/03/12 14:25	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		11/03/12 14:25	108-10-1	
Styrene	ND	ug/L	1.0	1		11/03/12 14:25	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		11/03/12 14:25	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		11/03/12 14:25	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		11/03/12 14:25	127-18-4	
Toluene	ND	ug/L	1.0	1		11/03/12 14:25	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		11/03/12 14:25	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		11/03/12 14:25	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		11/03/12 14:25	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		11/03/12 14:25	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		11/03/12 14:25	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		11/03/12 14:25	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		11/03/12 14:25	75-01-4	
Xylene (Total)	**3.1**	ug/L	2.0	1		11/03/12 14:25	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		11/03/12 14:25	179601-23-1	
o-Xylene	**1.4**	ug/L	1.0	1		11/03/12 14:25	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	91	%	70-130	1		11/03/12 14:25	460-00-4	
Dibromofluoromethane (S)	107	%	70-130	1		11/03/12 14:25	1868-53-7	
1,2-Dichloroethane-d4 (S)	107	%	70-130	1		11/03/12 14:25	17060-07-0	
Toluene-d8 (S)	96	%	70-130	1		11/03/12 14:25	2037-26-5	
5210B BOD, 5 day	Analytical Method: SM 5210B							
BOD, 5 day	**53.3**	mg/L	2.0	1	10/25/12 14:45	10/30/12 09:30		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Sulfate	**5100**	mg/L	400	200		11/02/12 15:43	14808-79-8	
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2							
Nitrogen, Nitrate	**0.18**	mg/L	0.020	1		10/25/12 13:33		
Nitrogen, Nitrite	**0.075**	mg/L	0.020	1		10/25/12 13:33		
Nitrogen, NO2 plus NO3	**0.26**	mg/L	0.020	1		10/25/12 13:33		

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ANALYTICAL RESULTS

Project: White Oak LF Fall 2012
Pace Project No.: 92136195

Sample: Leachate **Lab ID: 92136195014** Collected: 10/24/12 13:10 Received: 10/24/12 15:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
365.1 Phosphorus, Total	Analytical Method: EPA 365.1							
Phosphorus	**0.87**	mg/L	0.050	1		11/08/12 15:16	7723-14-0	
5220D COD	Analytical Method: SM 5220D							
Chemical Oxygen Demand	**860**	mg/L	50.0	1		11/08/12 11:15		

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ANALYTICAL RESULTS

Project: White Oak LF Fall 2012
Pace Project No.: 92136195

Sample: SW-1 **Lab ID: 92136195016** Collected: 10/24/12 11:40 Received: 10/24/12 15:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:							
Collected By	**MPS**			1		11/09/12 17:08		
Collected Date	**10/24/12**			1		11/09/12 17:08		
Collected Time	**11:40**			1		11/09/12 17:08		
Field pH	**7.1**	Std. Units	0.10	1		11/09/12 17:08		
Field Temperature	**13.6**	deg C	0.50	1		11/09/12 17:08		
Field Specific Conductance	**217**	umhos/cm	1.0	1		11/09/12 17:08		
Turbidity	**7.38**	NTU	1.0	1		11/09/12 17:08		
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Antimony	ND	ug/L	5.0	1	10/25/12 18:55	11/01/12 00:11	7440-36-0	
Arsenic	ND	ug/L	5.0	1	10/25/12 18:55	11/01/12 00:11	7440-38-2	
Barium	**172**	ug/L	5.0	1	10/25/12 18:55	11/01/12 00:11	7440-39-3	
Beryllium	ND	ug/L	1.0	1	10/25/12 18:55	11/01/12 00:11	7440-41-7	
Cadmium	ND	ug/L	1.0	1	10/25/12 18:55	11/01/12 00:11	7440-43-9	
Chromium	ND	ug/L	5.0	1	10/25/12 18:55	11/01/12 00:11	7440-47-3	
Cobalt	ND	ug/L	5.0	1	10/25/12 18:55	11/01/12 00:11	7440-48-4	
Copper	ND	ug/L	5.0	1	10/25/12 18:55	11/01/12 00:11	7440-50-8	
Lead	ND	ug/L	5.0	1	10/25/12 18:55	11/01/12 00:11	7439-92-1	
Nickel	ND	ug/L	5.0	1	10/25/12 18:55	11/01/12 00:11	7440-02-0	
Selenium	ND	ug/L	10.0	1	10/25/12 18:55	11/01/12 00:11	7782-49-2	
Silver	ND	ug/L	5.0	1	10/25/12 18:55	11/01/12 00:11	7440-22-4	
Thallium	ND	ug/L	5.4	1	10/25/12 18:55	11/01/12 16:13	7440-28-0	
Vanadium	ND	ug/L	5.0	1	10/25/12 18:55	11/01/12 00:11	7440-62-2	
Zinc	ND	ug/L	10.0	1	10/25/12 18:55	11/01/12 00:11	7440-66-6	
8260 MSV Low Level	Analytical Method: EPA 8260							
Acetone	ND	ug/L	25.0	1		11/03/12 14:56	67-64-1	
Acrylonitrile	ND	ug/L	10.0	1		11/03/12 14:56	107-13-1	
Benzene	ND	ug/L	1.0	1		11/03/12 14:56	71-43-2	
Bromochloromethane	ND	ug/L	1.0	1		11/03/12 14:56	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		11/03/12 14:56	75-27-4	
Bromoform	ND	ug/L	1.0	1		11/03/12 14:56	75-25-2	
Bromomethane	ND	ug/L	2.0	1		11/03/12 14:56	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		11/03/12 14:56	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1		11/03/12 14:56	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	1		11/03/12 14:56	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		11/03/12 14:56	108-90-7	
Chloroethane	ND	ug/L	1.0	1		11/03/12 14:56	75-00-3	
Chloroform	ND	ug/L	1.0	1		11/03/12 14:56	67-66-3	
Chloromethane	ND	ug/L	1.0	1		11/03/12 14:56	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	1		11/03/12 14:56	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		11/03/12 14:56	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		11/03/12 14:56	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		11/03/12 14:56	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		11/03/12 14:56	95-50-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		11/03/12 14:56	106-46-7	

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ANALYTICAL RESULTS

Project: White Oak LF Fall 2012
Pace Project No.: 92136195

Sample: SW-1 **Lab ID: 92136195016** Collected: 10/24/12 11:40 Received: 10/24/12 15:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260							
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1		11/03/12 14:56	110-57-6	
1,1-Dichloroethane	ND	ug/L	1.0	1		11/03/12 14:56	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		11/03/12 14:56	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		11/03/12 14:56	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		11/03/12 14:56	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		11/03/12 14:56	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		11/03/12 14:56	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		11/03/12 14:56	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		11/03/12 14:56	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	1		11/03/12 14:56	100-41-4	
2-Hexanone	ND	ug/L	5.0	1		11/03/12 14:56	591-78-6	
Iodomethane	ND	ug/L	5.0	1		11/03/12 14:56	74-88-4	
Methylene Chloride	ND	ug/L	2.0	1		11/03/12 14:56	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		11/03/12 14:56	108-10-1	
Styrene	ND	ug/L	1.0	1		11/03/12 14:56	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		11/03/12 14:56	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		11/03/12 14:56	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		11/03/12 14:56	127-18-4	
Toluene	ND	ug/L	1.0	1		11/03/12 14:56	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		11/03/12 14:56	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		11/03/12 14:56	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		11/03/12 14:56	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		11/03/12 14:56	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		11/03/12 14:56	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		11/03/12 14:56	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		11/03/12 14:56	75-01-4	
Xylene (Total)	ND	ug/L	2.0	1		11/03/12 14:56	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		11/03/12 14:56	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		11/03/12 14:56	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	97	%	70-130	1		11/03/12 14:56	460-00-4	
Dibromofluoromethane (S)	109	%	70-130	1		11/03/12 14:56	1868-53-7	
1,2-Dichloroethane-d4 (S)	110	%	70-130	1		11/03/12 14:56	17060-07-0	
Toluene-d8 (S)	98	%	70-130	1		11/03/12 14:56	2037-26-5	

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ANALYTICAL RESULTS

Project: White Oak LF Fall 2012
Pace Project No.: 92136195

Sample: SW-2 **Lab ID: 92136195017** Collected: 10/24/12 12:00 Received: 10/24/12 15:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:							
Collected By	**MPS**			1		11/09/12 17:08		
Collected Date	**10/24/12**			1		11/09/12 17:08		
Collected Time	**12:00**			1		11/09/12 17:08		
Field pH	**6.9**	Std. Units	0.10	1		11/09/12 17:08		
Field Temperature	**14.5**	deg C	0.50	1		11/09/12 17:08		
Field Specific Conductance	**272**	umhos/cm	1.0	1		11/09/12 17:08		
Turbidity	**3.58**	NTU	1.0	1		11/09/12 17:08		
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Antimony	ND	ug/L	5.0	1	10/25/12 18:55	11/01/12 00:17	7440-36-0	
Arsenic	ND	ug/L	5.0	1	10/25/12 18:55	11/01/12 00:17	7440-38-2	
Barium	**175**	ug/L	5.0	1	10/25/12 18:55	11/01/12 00:17	7440-39-3	
Beryllium	ND	ug/L	1.0	1	10/25/12 18:55	11/01/12 00:17	7440-41-7	
Cadmium	ND	ug/L	1.0	1	10/25/12 18:55	11/01/12 00:17	7440-43-9	
Chromium	ND	ug/L	5.0	1	10/25/12 18:55	11/01/12 00:17	7440-47-3	
Cobalt	ND	ug/L	5.0	1	10/25/12 18:55	11/01/12 00:17	7440-48-4	
Copper	ND	ug/L	5.0	1	10/25/12 18:55	11/01/12 00:17	7440-50-8	
Lead	ND	ug/L	5.0	1	10/25/12 18:55	11/01/12 00:17	7439-92-1	
Nickel	ND	ug/L	5.0	1	10/25/12 18:55	11/01/12 00:17	7440-02-0	
Selenium	ND	ug/L	10.0	1	10/25/12 18:55	11/01/12 00:17	7782-49-2	
Silver	ND	ug/L	5.0	1	10/25/12 18:55	11/01/12 00:17	7440-22-4	
Thallium	ND	ug/L	5.4	1	10/25/12 18:55	11/01/12 16:20	7440-28-0	
Vanadium	ND	ug/L	5.0	1	10/25/12 18:55	11/01/12 00:17	7440-62-2	
Zinc	**28.5**	ug/L	10.0	1	10/25/12 18:55	11/01/12 00:17	7440-66-6	
8260 MSV Low Level	Analytical Method: EPA 8260							
Acetone	ND	ug/L	25.0	1		11/03/12 15:12	67-64-1	
Acrylonitrile	ND	ug/L	10.0	1		11/03/12 15:12	107-13-1	
Benzene	ND	ug/L	1.0	1		11/03/12 15:12	71-43-2	
Bromochloromethane	ND	ug/L	1.0	1		11/03/12 15:12	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		11/03/12 15:12	75-27-4	
Bromoform	ND	ug/L	1.0	1		11/03/12 15:12	75-25-2	
Bromomethane	ND	ug/L	2.0	1		11/03/12 15:12	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		11/03/12 15:12	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1		11/03/12 15:12	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	1		11/03/12 15:12	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		11/03/12 15:12	108-90-7	
Chloroethane	ND	ug/L	1.0	1		11/03/12 15:12	75-00-3	
Chloroform	ND	ug/L	1.0	1		11/03/12 15:12	67-66-3	
Chloromethane	ND	ug/L	1.0	1		11/03/12 15:12	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	1		11/03/12 15:12	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		11/03/12 15:12	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		11/03/12 15:12	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		11/03/12 15:12	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		11/03/12 15:12	95-50-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		11/03/12 15:12	106-46-7	

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ANALYTICAL RESULTS

Project: White Oak LF Fall 2012
Pace Project No.: 92136195

Sample: SW-2 **Lab ID: 92136195017** Collected: 10/24/12 12:00 Received: 10/24/12 15:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260							
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1		11/03/12 15:12	110-57-6	
1,1-Dichloroethane	ND	ug/L	1.0	1		11/03/12 15:12	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		11/03/12 15:12	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		11/03/12 15:12	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		11/03/12 15:12	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		11/03/12 15:12	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		11/03/12 15:12	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		11/03/12 15:12	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		11/03/12 15:12	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	1		11/03/12 15:12	100-41-4	
2-Hexanone	ND	ug/L	5.0	1		11/03/12 15:12	591-78-6	
Iodomethane	ND	ug/L	5.0	1		11/03/12 15:12	74-88-4	
Methylene Chloride	ND	ug/L	2.0	1		11/03/12 15:12	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		11/03/12 15:12	108-10-1	
Styrene	ND	ug/L	1.0	1		11/03/12 15:12	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		11/03/12 15:12	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		11/03/12 15:12	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		11/03/12 15:12	127-18-4	
Toluene	ND	ug/L	1.0	1		11/03/12 15:12	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		11/03/12 15:12	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		11/03/12 15:12	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		11/03/12 15:12	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		11/03/12 15:12	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		11/03/12 15:12	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		11/03/12 15:12	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		11/03/12 15:12	75-01-4	
Xylene (Total)	ND	ug/L	2.0	1		11/03/12 15:12	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		11/03/12 15:12	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		11/03/12 15:12	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	95	%	70-130	1		11/03/12 15:12	460-00-4	
Dibromofluoromethane (S)	106	%	70-130	1		11/03/12 15:12	1868-53-7	
1,2-Dichloroethane-d4 (S)	107	%	70-130	1		11/03/12 15:12	17060-07-0	
Toluene-d8 (S)	99	%	70-130	1		11/03/12 15:12	2037-26-5	

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ANALYTICAL RESULTS

Project: White Oak LF Fall 2012
Pace Project No.: 92136195

Sample: SW-3 **Lab ID: 92136195018** Collected: 10/24/12 12:30 Received: 10/24/12 15:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:							
Collected By	**MPS**			1		11/09/12 17:09		
Collected Date	**10/24/12**			1		11/09/12 17:09		
Collected Time	**12:30**			1		11/09/12 17:09		
Field pH	**7.9**	Std. Units	0.10	1		11/09/12 17:09		
Field Temperature	**13.9**	deg C	0.50	1		11/09/12 17:09		
Field Specific Conductance	**329**	umhos/cm	1.0	1		11/09/12 17:09		
Turbidity	**6.16**	NTU	1.0	1		11/09/12 17:09		
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Antimony	ND	ug/L	5.0	1	10/25/12 18:55	11/01/12 00:24	7440-36-0	
Arsenic	ND	ug/L	5.0	1	10/25/12 18:55	11/01/12 00:24	7440-38-2	
Barium	**124**	ug/L	5.0	1	10/25/12 18:55	11/01/12 00:24	7440-39-3	
Beryllium	ND	ug/L	1.0	1	10/25/12 18:55	11/01/12 00:24	7440-41-7	
Cadmium	ND	ug/L	1.0	1	10/25/12 18:55	11/01/12 00:24	7440-43-9	
Chromium	ND	ug/L	5.0	1	10/25/12 18:55	11/01/12 00:24	7440-47-3	
Cobalt	ND	ug/L	5.0	1	10/25/12 18:55	11/01/12 00:24	7440-48-4	
Copper	ND	ug/L	5.0	1	10/25/12 18:55	11/01/12 00:24	7440-50-8	
Lead	ND	ug/L	5.0	1	10/25/12 18:55	11/01/12 00:24	7439-92-1	
Nickel	ND	ug/L	5.0	1	10/25/12 18:55	11/01/12 00:24	7440-02-0	
Selenium	ND	ug/L	10.0	1	10/25/12 18:55	11/01/12 00:24	7782-49-2	
Silver	ND	ug/L	5.0	1	10/25/12 18:55	11/01/12 00:24	7440-22-4	
Thallium	ND	ug/L	5.4	1	10/25/12 18:55	11/01/12 16:27	7440-28-0	
Vanadium	ND	ug/L	5.0	1	10/25/12 18:55	11/01/12 00:24	7440-62-2	
Zinc	**10.7**	ug/L	10.0	1	10/25/12 18:55	11/01/12 00:24	7440-66-6	
8260 MSV Low Level	Analytical Method: EPA 8260							
Acetone	ND	ug/L	25.0	1		11/03/12 15:28	67-64-1	
Acrylonitrile	ND	ug/L	10.0	1		11/03/12 15:28	107-13-1	
Benzene	ND	ug/L	1.0	1		11/03/12 15:28	71-43-2	
Bromochloromethane	ND	ug/L	1.0	1		11/03/12 15:28	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		11/03/12 15:28	75-27-4	
Bromoform	ND	ug/L	1.0	1		11/03/12 15:28	75-25-2	
Bromomethane	ND	ug/L	2.0	1		11/03/12 15:28	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		11/03/12 15:28	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1		11/03/12 15:28	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	1		11/03/12 15:28	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		11/03/12 15:28	108-90-7	
Chloroethane	ND	ug/L	1.0	1		11/03/12 15:28	75-00-3	
Chloroform	ND	ug/L	1.0	1		11/03/12 15:28	67-66-3	
Chloromethane	ND	ug/L	1.0	1		11/03/12 15:28	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	1		11/03/12 15:28	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		11/03/12 15:28	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		11/03/12 15:28	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		11/03/12 15:28	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		11/03/12 15:28	95-50-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		11/03/12 15:28	106-46-7	

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ANALYTICAL RESULTS

Project: White Oak LF Fall 2012
Pace Project No.: 92136195

Sample: SW-3 **Lab ID: 92136195018** Collected: 10/24/12 12:30 Received: 10/24/12 15:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260							
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1		11/03/12 15:28	110-57-6	
1,1-Dichloroethane	ND	ug/L	1.0	1		11/03/12 15:28	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		11/03/12 15:28	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		11/03/12 15:28	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		11/03/12 15:28	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		11/03/12 15:28	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		11/03/12 15:28	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		11/03/12 15:28	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		11/03/12 15:28	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	1		11/03/12 15:28	100-41-4	
2-Hexanone	ND	ug/L	5.0	1		11/03/12 15:28	591-78-6	
Iodomethane	ND	ug/L	5.0	1		11/03/12 15:28	74-88-4	
Methylene Chloride	ND	ug/L	2.0	1		11/03/12 15:28	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		11/03/12 15:28	108-10-1	
Styrene	ND	ug/L	1.0	1		11/03/12 15:28	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		11/03/12 15:28	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		11/03/12 15:28	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		11/03/12 15:28	127-18-4	
Toluene	ND	ug/L	1.0	1		11/03/12 15:28	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		11/03/12 15:28	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		11/03/12 15:28	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		11/03/12 15:28	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		11/03/12 15:28	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		11/03/12 15:28	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		11/03/12 15:28	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		11/03/12 15:28	75-01-4	
Xylene (Total)	ND	ug/L	2.0	1		11/03/12 15:28	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		11/03/12 15:28	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		11/03/12 15:28	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	98	%	70-130	1		11/03/12 15:28	460-00-4	
Dibromofluoromethane (S)	110	%	70-130	1		11/03/12 15:28	1868-53-7	
1,2-Dichloroethane-d4 (S)	107	%	70-130	1		11/03/12 15:28	17060-07-0	
Toluene-d8 (S)	94	%	70-130	1		11/03/12 15:28	2037-26-5	

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ANALYTICAL RESULTS

Project: White Oak LF Fall 2012
Pace Project No.: 92136195

Sample: SW-5 **Lab ID: 92136195019** Collected: 10/24/12 12:45 Received: 10/24/12 15:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:							
Collected By	**MPS**			1		11/09/12 17:10		
Collected Date	**10/24/12**			1		11/09/12 17:10		
Collected Time	**12:45**			1		11/09/12 17:10		
Field pH	**6.2**	Std. Units	0.10	1		11/09/12 17:10		
Field Temperature	**17.5**	deg C	0.50	1		11/09/12 17:10		
Field Specific Conductance	**227**	umhos/cm	1.0	1		11/09/12 17:10		
Turbidity	**30.5**	NTU	1.0	1		11/09/12 17:10		
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Antimony	ND	ug/L	5.0	1	10/25/12 18:55	11/01/12 00:37	7440-36-0	
Arsenic	ND	ug/L	5.0	1	10/25/12 18:55	11/01/12 00:37	7440-38-2	
Barium	**164**	ug/L	5.0	1	10/25/12 18:55	11/01/12 00:37	7440-39-3	
Beryllium	ND	ug/L	1.0	1	10/25/12 18:55	11/01/12 00:37	7440-41-7	
Cadmium	ND	ug/L	1.0	1	10/25/12 18:55	11/01/12 00:37	7440-43-9	
Chromium	ND	ug/L	5.0	1	10/25/12 18:55	11/01/12 00:37	7440-47-3	
Cobalt	**20.2**	ug/L	5.0	1	10/25/12 18:55	11/01/12 00:37	7440-48-4	
Copper	ND	ug/L	5.0	1	10/25/12 18:55	11/01/12 00:37	7440-50-8	
Lead	ND	ug/L	5.0	1	10/25/12 18:55	11/01/12 00:37	7439-92-1	
Nickel	ND	ug/L	5.0	1	10/25/12 18:55	11/01/12 00:37	7440-02-0	
Selenium	ND	ug/L	10.0	1	10/25/12 18:55	11/01/12 00:37	7782-49-2	
Silver	ND	ug/L	5.0	1	10/25/12 18:55	11/01/12 00:37	7440-22-4	
Thallium	ND	ug/L	5.4	1	10/25/12 18:55	11/01/12 00:37	7440-28-0	
Vanadium	ND	ug/L	5.0	1	10/25/12 18:55	11/01/12 00:37	7440-62-2	
Zinc	ND	ug/L	10.0	1	10/25/12 18:55	11/01/12 00:37	7440-66-6	
8260 MSV Low Level	Analytical Method: EPA 8260							
Acetone	ND	ug/L	25.0	1		11/03/12 15:44	67-64-1	
Acrylonitrile	ND	ug/L	10.0	1		11/03/12 15:44	107-13-1	
Benzene	ND	ug/L	1.0	1		11/03/12 15:44	71-43-2	
Bromochloromethane	ND	ug/L	1.0	1		11/03/12 15:44	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		11/03/12 15:44	75-27-4	
Bromoform	ND	ug/L	1.0	1		11/03/12 15:44	75-25-2	
Bromomethane	ND	ug/L	2.0	1		11/03/12 15:44	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		11/03/12 15:44	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1		11/03/12 15:44	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	1		11/03/12 15:44	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		11/03/12 15:44	108-90-7	
Chloroethane	ND	ug/L	1.0	1		11/03/12 15:44	75-00-3	
Chloroform	ND	ug/L	1.0	1		11/03/12 15:44	67-66-3	
Chloromethane	ND	ug/L	1.0	1		11/03/12 15:44	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	1		11/03/12 15:44	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		11/03/12 15:44	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		11/03/12 15:44	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		11/03/12 15:44	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		11/03/12 15:44	95-50-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		11/03/12 15:44	106-46-7	

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ANALYTICAL RESULTS

Project: White Oak LF Fall 2012
Pace Project No.: 92136195

Sample: SW-5 **Lab ID: 92136195019** Collected: 10/24/12 12:45 Received: 10/24/12 15:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260							
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1		11/03/12 15:44	110-57-6	
1,1-Dichloroethane	ND	ug/L	1.0	1		11/03/12 15:44	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		11/03/12 15:44	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		11/03/12 15:44	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		11/03/12 15:44	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		11/03/12 15:44	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		11/03/12 15:44	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		11/03/12 15:44	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		11/03/12 15:44	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	1		11/03/12 15:44	100-41-4	
2-Hexanone	ND	ug/L	5.0	1		11/03/12 15:44	591-78-6	
Iodomethane	ND	ug/L	5.0	1		11/03/12 15:44	74-88-4	
Methylene Chloride	ND	ug/L	2.0	1		11/03/12 15:44	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		11/03/12 15:44	108-10-1	
Styrene	ND	ug/L	1.0	1		11/03/12 15:44	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		11/03/12 15:44	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		11/03/12 15:44	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		11/03/12 15:44	127-18-4	
Toluene	ND	ug/L	1.0	1		11/03/12 15:44	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		11/03/12 15:44	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		11/03/12 15:44	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		11/03/12 15:44	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		11/03/12 15:44	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		11/03/12 15:44	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		11/03/12 15:44	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		11/03/12 15:44	75-01-4	
Xylene (Total)	ND	ug/L	2.0	1		11/03/12 15:44	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		11/03/12 15:44	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		11/03/12 15:44	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	96	%	70-130	1		11/03/12 15:44	460-00-4	
Dibromofluoromethane (S)	106	%	70-130	1		11/03/12 15:44	1868-53-7	
1,2-Dichloroethane-d4 (S)	103	%	70-130	1		11/03/12 15:44	17060-07-0	
Toluene-d8 (S)	96	%	70-130	1		11/03/12 15:44	2037-26-5	

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ANALYTICAL RESULTS

Project: White Oak LF Fall 2012
Pace Project No.: 92136195

Sample: SW-6 **Lab ID: 92136195020** Collected: 10/24/12 11:00 Received: 10/24/12 15:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:							
Collected By	**MPS**			1		11/09/12 17:11		
Collected Date	**10/24/12**			1		11/09/12 17:11		
Collected Time	**11:00**			1		11/09/12 17:11		
Field pH	**6.1**	Std. Units	0.10	1		11/09/12 17:11		
Field Temperature	**13.1**	deg C	0.50	1		11/09/12 17:11		
Field Specific Conductance	**39**	umhos/cm	1.0	1		11/09/12 17:11		
Turbidity	**1.97**	NTU	1.0	1		11/09/12 17:11		
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Antimony	ND	ug/L	5.0	1	10/25/12 18:55	11/01/12 00:41	7440-36-0	
Arsenic	ND	ug/L	5.0	1	10/25/12 18:55	11/01/12 00:41	7440-38-2	
Barium	**38.7**	ug/L	5.0	1	10/25/12 18:55	11/01/12 00:41	7440-39-3	
Beryllium	ND	ug/L	1.0	1	10/25/12 18:55	11/01/12 00:41	7440-41-7	
Cadmium	ND	ug/L	1.0	1	10/25/12 18:55	11/01/12 00:41	7440-43-9	
Chromium	ND	ug/L	5.0	1	10/25/12 18:55	11/01/12 00:41	7440-47-3	
Cobalt	ND	ug/L	5.0	1	10/25/12 18:55	11/01/12 00:41	7440-48-4	
Copper	ND	ug/L	5.0	1	10/25/12 18:55	11/01/12 00:41	7440-50-8	
Lead	ND	ug/L	5.0	1	10/25/12 18:55	11/01/12 00:41	7439-92-1	
Nickel	ND	ug/L	5.0	1	10/25/12 18:55	11/01/12 00:41	7440-02-0	
Selenium	ND	ug/L	10.0	1	10/25/12 18:55	11/01/12 00:41	7782-49-2	
Silver	ND	ug/L	5.0	1	10/25/12 18:55	11/01/12 00:41	7440-22-4	
Thallium	ND	ug/L	5.4	1	10/25/12 18:55	11/01/12 00:41	7440-28-0	
Vanadium	ND	ug/L	5.0	1	10/25/12 18:55	11/01/12 00:41	7440-62-2	
Zinc	ND	ug/L	10.0	1	10/25/12 18:55	11/01/12 00:41	7440-66-6	
8260 MSV Low Level	Analytical Method: EPA 8260							
Acetone	ND	ug/L	25.0	1		11/03/12 16:00	67-64-1	
Acrylonitrile	ND	ug/L	10.0	1		11/03/12 16:00	107-13-1	
Benzene	ND	ug/L	1.0	1		11/03/12 16:00	71-43-2	
Bromochloromethane	ND	ug/L	1.0	1		11/03/12 16:00	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		11/03/12 16:00	75-27-4	
Bromoform	ND	ug/L	1.0	1		11/03/12 16:00	75-25-2	
Bromomethane	ND	ug/L	2.0	1		11/03/12 16:00	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		11/03/12 16:00	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1		11/03/12 16:00	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	1		11/03/12 16:00	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		11/03/12 16:00	108-90-7	
Chloroethane	ND	ug/L	1.0	1		11/03/12 16:00	75-00-3	
Chloroform	ND	ug/L	1.0	1		11/03/12 16:00	67-66-3	
Chloromethane	ND	ug/L	1.0	1		11/03/12 16:00	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	1		11/03/12 16:00	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		11/03/12 16:00	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		11/03/12 16:00	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		11/03/12 16:00	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		11/03/12 16:00	95-50-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		11/03/12 16:00	106-46-7	

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ANALYTICAL RESULTS

Project: White Oak LF Fall 2012
Pace Project No.: 92136195

Sample: SW-6 **Lab ID: 92136195020** Collected: 10/24/12 11:00 Received: 10/24/12 15:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260							
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1		11/03/12 16:00	110-57-6	
1,1-Dichloroethane	ND	ug/L	1.0	1		11/03/12 16:00	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		11/03/12 16:00	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		11/03/12 16:00	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		11/03/12 16:00	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		11/03/12 16:00	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		11/03/12 16:00	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		11/03/12 16:00	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		11/03/12 16:00	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	1		11/03/12 16:00	100-41-4	
2-Hexanone	ND	ug/L	5.0	1		11/03/12 16:00	591-78-6	
Iodomethane	ND	ug/L	5.0	1		11/03/12 16:00	74-88-4	
Methylene Chloride	ND	ug/L	2.0	1		11/03/12 16:00	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		11/03/12 16:00	108-10-1	
Styrene	ND	ug/L	1.0	1		11/03/12 16:00	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		11/03/12 16:00	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		11/03/12 16:00	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		11/03/12 16:00	127-18-4	
Toluene	ND	ug/L	1.0	1		11/03/12 16:00	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		11/03/12 16:00	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		11/03/12 16:00	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		11/03/12 16:00	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		11/03/12 16:00	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		11/03/12 16:00	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		11/03/12 16:00	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		11/03/12 16:00	75-01-4	
Xylene (Total)	ND	ug/L	2.0	1		11/03/12 16:00	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		11/03/12 16:00	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		11/03/12 16:00	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	95	%	70-130	1		11/03/12 16:00	460-00-4	
Dibromofluoromethane (S)	108	%	70-130	1		11/03/12 16:00	1868-53-7	
1,2-Dichloroethane-d4 (S)	105	%	70-130	1		11/03/12 16:00	17060-07-0	
Toluene-d8 (S)	99	%	70-130	1		11/03/12 16:00	2037-26-5	

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ANALYTICAL RESULTS

Project: White Oak LF Fall 2012
Pace Project No.: 92136195

Sample: SW-7 **Lab ID: 92136195021** Collected: 10/24/12 11:15 Received: 10/24/12 15:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:							
Collected By	**MPS**			1		11/09/12 17:11		
Collected Date	**10/24/12**			1		11/09/12 17:11		
Collected Time	**11:15**			1		11/09/12 17:11		
Field pH	**7.2**	Std. Units	0.10	1		11/09/12 17:11		
Field Temperature	**11.9**	deg C	0.50	1		11/09/12 17:11		
Field Specific Conductance	**54**	umhos/cm	1.0	1		11/09/12 17:11		
Turbidity	**3.39**	NTU	1.0	1		11/09/12 17:11		
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Antimony	ND	ug/L	5.0	1	10/25/12 18:55	11/01/12 00:44	7440-36-0	
Arsenic	ND	ug/L	5.0	1	10/25/12 18:55	11/01/12 00:44	7440-38-2	
Barium	**31.2**	ug/L	5.0	1	10/25/12 18:55	11/01/12 00:44	7440-39-3	
Beryllium	ND	ug/L	1.0	1	10/25/12 18:55	11/01/12 00:44	7440-41-7	
Cadmium	ND	ug/L	1.0	1	10/25/12 18:55	11/01/12 00:44	7440-43-9	
Chromium	ND	ug/L	5.0	1	10/25/12 18:55	11/01/12 00:44	7440-47-3	
Cobalt	ND	ug/L	5.0	1	10/25/12 18:55	11/01/12 00:44	7440-48-4	
Copper	ND	ug/L	5.0	1	10/25/12 18:55	11/01/12 00:44	7440-50-8	
Lead	ND	ug/L	5.0	1	10/25/12 18:55	11/01/12 00:44	7439-92-1	
Nickel	ND	ug/L	5.0	1	10/25/12 18:55	11/01/12 00:44	7440-02-0	
Selenium	ND	ug/L	10.0	1	10/25/12 18:55	11/01/12 00:44	7782-49-2	
Silver	ND	ug/L	5.0	1	10/25/12 18:55	11/01/12 00:44	7440-22-4	
Thallium	ND	ug/L	5.4	1	10/25/12 18:55	11/01/12 00:44	7440-28-0	
Vanadium	ND	ug/L	5.0	1	10/25/12 18:55	11/01/12 00:44	7440-62-2	
Zinc	ND	ug/L	10.0	1	10/25/12 18:55	11/01/12 00:44	7440-66-6	
8260 MSV Low Level	Analytical Method: EPA 8260							
Acetone	ND	ug/L	25.0	1		11/03/12 16:16	67-64-1	
Acrylonitrile	ND	ug/L	10.0	1		11/03/12 16:16	107-13-1	
Benzene	ND	ug/L	1.0	1		11/03/12 16:16	71-43-2	
Bromochloromethane	ND	ug/L	1.0	1		11/03/12 16:16	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		11/03/12 16:16	75-27-4	
Bromoform	ND	ug/L	1.0	1		11/03/12 16:16	75-25-2	
Bromomethane	ND	ug/L	2.0	1		11/03/12 16:16	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		11/03/12 16:16	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1		11/03/12 16:16	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	1		11/03/12 16:16	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		11/03/12 16:16	108-90-7	
Chloroethane	ND	ug/L	1.0	1		11/03/12 16:16	75-00-3	
Chloroform	ND	ug/L	1.0	1		11/03/12 16:16	67-66-3	
Chloromethane	ND	ug/L	1.0	1		11/03/12 16:16	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	1		11/03/12 16:16	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		11/03/12 16:16	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		11/03/12 16:16	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		11/03/12 16:16	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		11/03/12 16:16	95-50-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		11/03/12 16:16	106-46-7	

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ANALYTICAL RESULTS

Project: White Oak LF Fall 2012
Pace Project No.: 92136195

Sample: SW-7 **Lab ID: 92136195021** Collected: 10/24/12 11:15 Received: 10/24/12 15:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260							
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1		11/03/12 16:16	110-57-6	
1,1-Dichloroethane	ND	ug/L	1.0	1		11/03/12 16:16	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		11/03/12 16:16	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		11/03/12 16:16	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		11/03/12 16:16	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		11/03/12 16:16	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		11/03/12 16:16	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		11/03/12 16:16	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		11/03/12 16:16	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	1		11/03/12 16:16	100-41-4	
2-Hexanone	ND	ug/L	5.0	1		11/03/12 16:16	591-78-6	
Iodomethane	ND	ug/L	5.0	1		11/03/12 16:16	74-88-4	
Methylene Chloride	ND	ug/L	2.0	1		11/03/12 16:16	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		11/03/12 16:16	108-10-1	
Styrene	ND	ug/L	1.0	1		11/03/12 16:16	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		11/03/12 16:16	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		11/03/12 16:16	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		11/03/12 16:16	127-18-4	
Toluene	ND	ug/L	1.0	1		11/03/12 16:16	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		11/03/12 16:16	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		11/03/12 16:16	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		11/03/12 16:16	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		11/03/12 16:16	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		11/03/12 16:16	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		11/03/12 16:16	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		11/03/12 16:16	75-01-4	
Xylene (Total)	ND	ug/L	2.0	1		11/03/12 16:16	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		11/03/12 16:16	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		11/03/12 16:16	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	98	%	70-130	1		11/03/12 16:16	460-00-4	
Dibromofluoromethane (S)	104	%	70-130	1		11/03/12 16:16	1868-53-7	
1,2-Dichloroethane-d4 (S)	109	%	70-130	1		11/03/12 16:16	17060-07-0	
Toluene-d8 (S)	98	%	70-130	1		11/03/12 16:16	2037-26-5	

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ANALYTICAL RESULTS

Project: White Oak LF Fall 2012
Pace Project No.: 92136195

Sample: Equip Blank **Lab ID: 92136195022** Collected: 10/22/12 00:00 Received: 10/24/12 15:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Antimony	ND	ug/L	5.0	1	10/25/12 18:55	11/01/12 00:47	7440-36-0	
Arsenic	ND	ug/L	5.0	1	10/25/12 18:55	11/01/12 00:47	7440-38-2	
Barium	ND	ug/L	5.0	1	10/25/12 18:55	11/01/12 00:47	7440-39-3	
Beryllium	ND	ug/L	1.0	1	10/25/12 18:55	11/01/12 00:47	7440-41-7	
Cadmium	ND	ug/L	1.0	1	10/25/12 18:55	11/01/12 00:47	7440-43-9	
Chromium	ND	ug/L	5.0	1	10/25/12 18:55	11/01/12 00:47	7440-47-3	
Cobalt	ND	ug/L	5.0	1	10/25/12 18:55	11/01/12 00:47	7440-48-4	
Copper	ND	ug/L	5.0	1	10/25/12 18:55	11/01/12 00:47	7440-50-8	
Lead	ND	ug/L	5.0	1	10/25/12 18:55	11/01/12 00:47	7439-92-1	
Nickel	ND	ug/L	5.0	1	10/25/12 18:55	11/01/12 00:47	7440-02-0	
Selenium	ND	ug/L	10.0	1	10/25/12 18:55	11/01/12 00:47	7782-49-2	
Silver	ND	ug/L	5.0	1	10/25/12 18:55	11/01/12 00:47	7440-22-4	
Thallium	ND	ug/L	5.4	1	10/25/12 18:55	11/01/12 00:47	7440-28-0	
Vanadium	ND	ug/L	5.0	1	10/25/12 18:55	11/01/12 00:47	7440-62-2	
Zinc	ND	ug/L	10.0	1	10/25/12 18:55	11/01/12 00:47	7440-66-6	
8260 MSV Low Level	Analytical Method: EPA 8260							
Acetone	ND	ug/L	25.0	1		11/03/12 16:31	67-64-1	
Acrylonitrile	ND	ug/L	10.0	1		11/03/12 16:31	107-13-1	
Benzene	ND	ug/L	1.0	1		11/03/12 16:31	71-43-2	
Bromochloromethane	ND	ug/L	1.0	1		11/03/12 16:31	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		11/03/12 16:31	75-27-4	
Bromoform	ND	ug/L	1.0	1		11/03/12 16:31	75-25-2	
Bromomethane	ND	ug/L	2.0	1		11/03/12 16:31	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		11/03/12 16:31	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1		11/03/12 16:31	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	1		11/03/12 16:31	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		11/03/12 16:31	108-90-7	
Chloroethane	ND	ug/L	1.0	1		11/03/12 16:31	75-00-3	
Chloroform	ND	ug/L	1.0	1		11/03/12 16:31	67-66-3	
Chloromethane	ND	ug/L	1.0	1		11/03/12 16:31	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	1		11/03/12 16:31	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		11/03/12 16:31	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		11/03/12 16:31	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		11/03/12 16:31	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		11/03/12 16:31	95-50-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		11/03/12 16:31	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1		11/03/12 16:31	110-57-6	
1,1-Dichloroethane	ND	ug/L	1.0	1		11/03/12 16:31	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		11/03/12 16:31	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		11/03/12 16:31	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		11/03/12 16:31	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		11/03/12 16:31	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		11/03/12 16:31	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		11/03/12 16:31	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		11/03/12 16:31	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	1		11/03/12 16:31	100-41-4	

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ANALYTICAL RESULTS

Project: White Oak LF Fall 2012
Pace Project No.: 92136195

Sample: Equip Blank **Lab ID: 92136195022** Collected: 10/22/12 00:00 Received: 10/24/12 15:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260							
2-Hexanone	ND	ug/L	5.0	1		11/03/12 16:31	591-78-6	
Iodomethane	ND	ug/L	5.0	1		11/03/12 16:31	74-88-4	
Methylene Chloride	ND	ug/L	2.0	1		11/03/12 16:31	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		11/03/12 16:31	108-10-1	
Styrene	ND	ug/L	1.0	1		11/03/12 16:31	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		11/03/12 16:31	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		11/03/12 16:31	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		11/03/12 16:31	127-18-4	
Toluene	ND	ug/L	1.0	1		11/03/12 16:31	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		11/03/12 16:31	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		11/03/12 16:31	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		11/03/12 16:31	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		11/03/12 16:31	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		11/03/12 16:31	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		11/03/12 16:31	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		11/03/12 16:31	75-01-4	
Xylene (Total)	ND	ug/L	2.0	1		11/03/12 16:31	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		11/03/12 16:31	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		11/03/12 16:31	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	98	%	70-130	1		11/03/12 16:31	460-00-4	
Dibromofluoromethane (S)	108	%	70-130	1		11/03/12 16:31	1868-53-7	
1,2-Dichloroethane-d4 (S)	104	%	70-130	1		11/03/12 16:31	17060-07-0	
Toluene-d8 (S)	96	%	70-130	1		11/03/12 16:31	2037-26-5	

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ANALYTICAL RESULTS

Project: White Oak LF Fall 2012
Pace Project No.: 92136195

Sample: Travel Blank **Lab ID: 92136195023** Collected: 10/22/12 00:00 Received: 10/24/12 15:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260							
Acetone	ND	ug/L	25.0	1		11/03/12 16:47	67-64-1	
Acrylonitrile	ND	ug/L	10.0	1		11/03/12 16:47	107-13-1	
Benzene	ND	ug/L	1.0	1		11/03/12 16:47	71-43-2	
Bromochloromethane	ND	ug/L	1.0	1		11/03/12 16:47	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		11/03/12 16:47	75-27-4	
Bromoform	ND	ug/L	1.0	1		11/03/12 16:47	75-25-2	
Bromomethane	ND	ug/L	2.0	1		11/03/12 16:47	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		11/03/12 16:47	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1		11/03/12 16:47	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	1		11/03/12 16:47	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		11/03/12 16:47	108-90-7	
Chloroethane	ND	ug/L	1.0	1		11/03/12 16:47	75-00-3	
Chloroform	ND	ug/L	1.0	1		11/03/12 16:47	67-66-3	
Chloromethane	ND	ug/L	1.0	1		11/03/12 16:47	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	1		11/03/12 16:47	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		11/03/12 16:47	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		11/03/12 16:47	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		11/03/12 16:47	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		11/03/12 16:47	95-50-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		11/03/12 16:47	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1		11/03/12 16:47	110-57-6	
1,1-Dichloroethane	ND	ug/L	1.0	1		11/03/12 16:47	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		11/03/12 16:47	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		11/03/12 16:47	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		11/03/12 16:47	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		11/03/12 16:47	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		11/03/12 16:47	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		11/03/12 16:47	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		11/03/12 16:47	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	1		11/03/12 16:47	100-41-4	
2-Hexanone	ND	ug/L	5.0	1		11/03/12 16:47	591-78-6	
Iodomethane	ND	ug/L	5.0	1		11/03/12 16:47	74-88-4	
Methylene Chloride	ND	ug/L	2.0	1		11/03/12 16:47	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		11/03/12 16:47	108-10-1	
Styrene	ND	ug/L	1.0	1		11/03/12 16:47	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		11/03/12 16:47	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		11/03/12 16:47	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		11/03/12 16:47	127-18-4	
Toluene	ND	ug/L	1.0	1		11/03/12 16:47	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		11/03/12 16:47	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		11/03/12 16:47	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		11/03/12 16:47	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		11/03/12 16:47	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		11/03/12 16:47	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		11/03/12 16:47	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		11/03/12 16:47	75-01-4	
Xylene (Total)	ND	ug/L	2.0	1		11/03/12 16:47	1330-20-7	

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ANALYTICAL RESULTS

Project: White Oak LF Fall 2012
Pace Project No.: 92136195

Sample: Travel Blank **Lab ID: 92136195023** Collected: 10/22/12 00:00 Received: 10/24/12 15:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260							
m&p-Xylene	ND	ug/L	2.0	1		11/03/12 16:47	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		11/03/12 16:47	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	94	%	70-130	1		11/03/12 16:47	460-00-4	
Dibromofluoromethane (S)	107	%	70-130	1		11/03/12 16:47	1868-53-7	
1,2-Dichloroethane-d4 (S)	107	%	70-130	1		11/03/12 16:47	17060-07-0	
Toluene-d8 (S)	99	%	70-130	1		11/03/12 16:47	2037-26-5	

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QUALITY CONTROL DATA

Project: White Oak LF Fall 2012
Pace Project No.: 92136195

QC Batch: MPRP/11810 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET NC Groundwater
Associated Lab Samples: 92136195001, 92136195002, 92136195003, 92136195004, 92136195005, 92136195006, 92136195007, 92136195008, 92136195009, 92136195010, 92136195011, 92136195012, 92136195013

METHOD BLANK: 860121 Matrix: Water
Associated Lab Samples: 92136195001, 92136195002, 92136195003, 92136195004, 92136195005, 92136195006, 92136195007, 92136195008, 92136195009, 92136195010, 92136195011, 92136195012, 92136195013

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Antimony	ug/L	ND	5.0	10/31/12 05:03	
Arsenic	ug/L	ND	5.0	10/31/12 05:03	
Barium	ug/L	ND	5.0	10/31/12 05:03	
Beryllium	ug/L	ND	1.0	10/31/12 05:03	
Cadmium	ug/L	ND	1.0	10/31/12 05:03	
Chromium	ug/L	ND	5.0	10/31/12 05:03	
Cobalt	ug/L	ND	5.0	10/31/12 05:03	
Copper	ug/L	ND	5.0	10/31/12 05:03	
Lead	ug/L	ND	5.0	10/31/12 05:03	
Nickel	ug/L	ND	5.0	10/31/12 05:03	
Selenium	ug/L	ND	10.0	10/31/12 05:03	
Silver	ug/L	ND	5.0	10/31/12 05:03	
Thallium	ug/L	ND	5.4	10/31/12 05:03	
Vanadium	ug/L	ND	5.0	10/31/12 05:03	
Zinc	ug/L	ND	10.0	10/31/12 05:03	

LABORATORY CONTROL SAMPLE: 860122

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	500	512	102	80-120	
Arsenic	ug/L	500	508	102	80-120	
Barium	ug/L	500	494	99	80-120	
Beryllium	ug/L	500	520	104	80-120	
Cadmium	ug/L	500	522	104	80-120	
Chromium	ug/L	500	536	107	80-120	
Cobalt	ug/L	500	516	103	80-120	
Copper	ug/L	500	511	102	80-120	
Lead	ug/L	500	498	100	80-120	
Nickel	ug/L	500	510	102	80-120	
Selenium	ug/L	500	495	99	80-120	
Silver	ug/L	250	259	104	80-120	
Thallium	ug/L	500	484	97	80-120	
Vanadium	ug/L	500	517	103	80-120	
Zinc	ug/L	500	515	103	80-120	

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QUALITY CONTROL DATA

Project: White Oak LF Fall 2012
Pace Project No.: 92136195

MATRIX SPIKE SAMPLE: 860123

Parameter	Units	92136190003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	ND	500	508	101	75-125	
Arsenic	ug/L	ND	500	514	103	75-125	
Barium	ug/L	59.2J	500	543	97	75-125	
Beryllium	ug/L	ND	500	515	103	75-125	
Cadmium	ug/L	ND	500	510	102	75-125	
Chromium	ug/L	ND	500	527	105	75-125	
Cobalt	ug/L	169	500	674	101	75-125	
Copper	ug/L	ND	500	512	102	75-125	
Lead	ug/L	ND	500	478	95	75-125	
Nickel	ug/L	ND	500	500	100	75-125	
Selenium	ug/L	ND	500	498	99	75-125	
Silver	ug/L	ND	250	258	103	75-125	
Thallium	ug/L	ND	500	466	93	75-125	
Vanadium	ug/L	ND	500	514	103	75-125	
Zinc	ug/L	ND	500	518	102	75-125	

SAMPLE DUPLICATE: 860124

Parameter	Units	92136190004 Result	Dup Result	RPD	Qualifiers
Antimony	ug/L	ND	ND		
Arsenic	ug/L	ND	ND		
Barium	ug/L	14.5J	14.5	0	
Beryllium	ug/L	ND	ND		
Cadmium	ug/L	ND	ND		
Chromium	ug/L	ND	ND		
Cobalt	ug/L	6.8J	6.8	0	
Copper	ug/L	ND	ND		
Lead	ug/L	ND	ND		
Nickel	ug/L	ND	ND		
Selenium	ug/L	ND	ND		
Silver	ug/L	ND	ND		
Thallium	ug/L	ND	ND		
Vanadium	ug/L	ND	ND		
Zinc	ug/L	22.2	25.4	13	

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QUALITY CONTROL DATA

Project: White Oak LF Fall 2012
Pace Project No.: 92136195

QC Batch: MPRP/11811
QC Batch Method: EPA 3010
Analysis Method: EPA 6010
Analysis Description: 6010 MET NC Groundwater
Associated Lab Samples: 92136195014

METHOD BLANK: 860125
Matrix: Water
Associated Lab Samples: 92136195014

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Antimony	ug/L	ND	5.0	10/31/12 03:18	
Arsenic	ug/L	ND	5.0	10/31/12 03:18	
Barium	ug/L	ND	5.0	10/31/12 03:18	
Beryllium	ug/L	ND	1.0	10/31/12 03:18	
Cadmium	ug/L	ND	1.0	10/31/12 03:18	
Chromium	ug/L	ND	5.0	10/31/12 03:18	
Cobalt	ug/L	ND	5.0	10/31/12 03:18	
Copper	ug/L	ND	5.0	10/31/12 03:18	
Lead	ug/L	ND	5.0	10/31/12 03:18	
Nickel	ug/L	ND	5.0	10/31/12 03:18	
Selenium	ug/L	ND	10.0	10/31/12 03:18	
Silver	ug/L	ND	5.0	10/31/12 03:18	
Thallium	ug/L	ND	5.4	10/31/12 03:18	
Vanadium	ug/L	ND	5.0	10/31/12 03:18	
Zinc	ug/L	ND	10.0	10/31/12 03:18	

LABORATORY CONTROL SAMPLE: 860126

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	500	504	101	80-120	
Arsenic	ug/L	500	506	101	80-120	
Barium	ug/L	500	487	97	80-120	
Beryllium	ug/L	500	513	103	80-120	
Cadmium	ug/L	500	514	103	80-120	
Chromium	ug/L	500	527	105	80-120	
Cobalt	ug/L	500	508	102	80-120	
Copper	ug/L	500	505	101	80-120	
Lead	ug/L	500	491	98	80-120	
Nickel	ug/L	500	503	101	80-120	
Selenium	ug/L	500	493	99	80-120	
Silver	ug/L	250	255	102	80-120	
Thallium	ug/L	500	478	96	80-120	
Vanadium	ug/L	500	509	102	80-120	
Zinc	ug/L	500	510	102	80-120	

MATRIX SPIKE SAMPLE: 860341

Parameter	Units	92136248002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	ND	500	524	105	75-125	
Arsenic	ug/L	10.8	500	545	107	75-125	

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QUALITY CONTROL DATA

Project: White Oak LF Fall 2012
Pace Project No.: 92136195

MATRIX SPIKE SAMPLE: 860341

Parameter	Units	92136248002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	168	500	648	96	75-125	
Beryllium	ug/L	ND	500	516	103	75-125	
Cadmium	ug/L	ND	500	503	101	75-125	
Chromium	ug/L	ND	500	522	104	75-125	
Cobalt	ug/L	ND	500	501	99	75-125	
Copper	ug/L	ND	500	525	105	75-125	
Lead	ug/L	ND	500	479	96	75-125	
Nickel	ug/L	ND	500	489	98	75-125	
Selenium	ug/L	ND	500	510	102	75-125	
Silver	ug/L	ND	250	262	104	75-125	
Thallium	ug/L	ND	500	462	92	75-125	
Vanadium	ug/L	ND	500	517	103	75-125	
Zinc	ug/L	ND	500	510	102	75-125	

SAMPLE DUPLICATE: 860342

Parameter	Units	92136248003 Result	Dup Result	RPD	Qualifiers
Antimony	ug/L	ND	ND		
Arsenic	ug/L	ND	ND		
Barium	ug/L	ND	ND		
Beryllium	ug/L	ND	ND		
Cadmium	ug/L	ND	ND		
Chromium	ug/L	ND	ND		
Cobalt	ug/L	ND	ND		
Copper	ug/L	ND	ND		
Lead	ug/L	ND	ND		
Nickel	ug/L	ND	ND		
Selenium	ug/L	ND	ND		
Silver	ug/L	ND	ND		
Thallium	ug/L	ND	ND		
Vanadium	ug/L	ND	ND		
Zinc	ug/L	ND	ND		

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QUALITY CONTROL DATA

Project: White Oak LF Fall 2012
Pace Project No.: 92136195

QC Batch: MPRP/11813 — Analysis Method: EPA 6010
QC Batch Method: EPA 3010 — Analysis Description: 6010 MET NC Groundwater
Associated Lab Samples: 92136195016, 92136195017, 92136195018, 92136195019, 92136195020, 92136195021, 92136195022

METHOD BLANK: 860134 — Matrix: Water
Associated Lab Samples: 92136195016, 92136195017, 92136195018, 92136195019, 92136195020, 92136195021, 92136195022

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Antimony	ug/L	ND	5.0	11/01/12 00:04	
Arsenic	ug/L	ND	5.0	11/01/12 00:04	
Barium	ug/L	ND	5.0	11/01/12 00:04	
Beryllium	ug/L	ND	1.0	11/01/12 00:04	
Cadmium	ug/L	ND	1.0	11/01/12 00:04	
Chromium	ug/L	ND	5.0	11/01/12 00:04	
Cobalt	ug/L	ND	5.0	11/01/12 00:04	
Copper	ug/L	ND	5.0	11/01/12 00:04	
Lead	ug/L	ND	5.0	11/01/12 00:04	
Nickel	ug/L	ND	5.0	11/01/12 00:04	
Selenium	ug/L	ND	10.0	11/01/12 00:04	
Silver	ug/L	ND	5.0	11/01/12 00:04	
Thallium	ug/L	ND	5.4	11/01/12 00:04	
Vanadium	ug/L	ND	5.0	11/01/12 00:04	
Zinc	ug/L	ND	10.0	11/01/12 00:04	

LABORATORY CONTROL SAMPLE: 860135

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	500	512	102	80-120	
Arsenic	ug/L	500	508	102	80-120	
Barium	ug/L	500	506	101	80-120	
Beryllium	ug/L	500	510	102	80-120	
Cadmium	ug/L	500	509	102	80-120	
Chromium	ug/L	500	518	104	80-120	
Cobalt	ug/L	500	502	100	80-120	
Copper	ug/L	500	514	103	80-120	
Lead	ug/L	500	503	101	80-120	
Nickel	ug/L	500	511	102	80-120	
Selenium	ug/L	500	507	101	80-120	
Silver	ug/L	250	254	102	80-120	
Thallium	ug/L	500	483	97	80-120	
Vanadium	ug/L	500	514	103	80-120	
Zinc	ug/L	500	511	102	80-120	

MATRIX SPIKE SAMPLE: 860357

Parameter	Units	92136195016 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	ND	500	515	103	75-125	
Arsenic	ug/L	ND	500	506	101	75-125	

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QUALITY CONTROL DATA

Project: White Oak LF Fall 2012
Pace Project No.: 92136195

MATRIX SPIKE SAMPLE: 860357

Parameter	Units	92136195016 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	172	500	672	100	75-125	
Beryllium	ug/L	ND	500	507	101	75-125	
Cadmium	ug/L	ND	500	498	100	75-125	
Chromium	ug/L	ND	500	511	102	75-125	
Cobalt	ug/L	ND	500	495	99	75-125	
Copper	ug/L	ND	500	515	103	75-125	
Lead	ug/L	ND	500	491	98	75-125	
Nickel	ug/L	ND	500	501	100	75-125	
Selenium	ug/L	ND	500	500	100	75-125	
Silver	ug/L	ND	250	252	101	75-125	
Thallium	ug/L	ND	500	466	93	75-125	
Vanadium	ug/L	ND	500	514	102	75-125	
Zinc	ug/L	ND	500	507	100	75-125	

SAMPLE DUPLICATE: 860358

Parameter	Units	92136195017 Result	Dup Result	RPD	Qualifiers
Antimony	ug/L	ND	ND		
Arsenic	ug/L	ND	ND		
Barium	ug/L	175	177	1	
Beryllium	ug/L	ND	ND		
Cadmium	ug/L	ND	ND		
Chromium	ug/L	ND	ND		
Cobalt	ug/L	ND	ND		
Copper	ug/L	ND	ND		
Lead	ug/L	ND	ND		
Nickel	ug/L	ND	7.9		
Selenium	ug/L	ND	ND		
Silver	ug/L	ND	ND		
Thallium	ug/L	ND	ND		
Vanadium	ug/L	ND	ND		
Zinc	ug/L	28.5	30.0	5	

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QUALITY CONTROL DATA

Project: White Oak LF Fall 2012
Pace Project No.: 92136195

QC Batch: MSV/20931 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV Low Level
Associated Lab Samples: 92136195001, 92136195002, 92136195003, 92136195004, 92136195005, 92136195006, 92136195007, 92136195008, 92136195009, 92136195010, 92136195011, 92136195012, 92136195013

METHOD BLANK: 864514 Matrix: Water
Associated Lab Samples: 92136195001, 92136195002, 92136195003, 92136195004, 92136195005, 92136195006, 92136195007, 92136195008, 92136195009, 92136195010, 92136195011, 92136195012, 92136195013

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	1.0	11/02/12 03:14	
1,1,1-Trichloroethane	ug/L	ND	1.0	11/02/12 03:14	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	11/02/12 03:14	
1,1,2-Trichloroethane	ug/L	ND	1.0	11/02/12 03:14	
1,1-Dichloroethane	ug/L	ND	1.0	11/02/12 03:14	
1,1-Dichloroethene	ug/L	ND	1.0	11/02/12 03:14	
1,2,3-Trichloropropane	ug/L	ND	1.0	11/02/12 03:14	
1,2-Dibromo-3-chloropropane	ug/L	ND	5.0	11/02/12 03:14	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	11/02/12 03:14	
1,2-Dichlorobenzene	ug/L	ND	1.0	11/02/12 03:14	
1,2-Dichloroethane	ug/L	ND	1.0	11/02/12 03:14	
1,2-Dichloropropane	ug/L	ND	1.0	11/02/12 03:14	
1,4-Dichlorobenzene	ug/L	ND	1.0	11/02/12 03:14	
2-Butanone (MEK)	ug/L	ND	5.0	11/02/12 03:14	
2-Hexanone	ug/L	ND	5.0	11/02/12 03:14	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	5.0	11/02/12 03:14	
Acetone	ug/L	ND	25.0	11/02/12 03:14	
Acrylonitrile	ug/L	ND	10.0	11/02/12 03:14	
Benzene	ug/L	ND	1.0	11/02/12 03:14	
Bromochloromethane	ug/L	ND	1.0	11/02/12 03:14	
Bromodichloromethane	ug/L	ND	1.0	11/02/12 03:14	
Bromoform	ug/L	ND	1.0	11/02/12 03:14	
Bromomethane	ug/L	ND	2.0	11/02/12 03:14	
Carbon disulfide	ug/L	ND	2.0	11/02/12 03:14	
Carbon tetrachloride	ug/L	ND	1.0	11/02/12 03:14	
Chlorobenzene	ug/L	ND	1.0	11/02/12 03:14	
Chloroethane	ug/L	ND	1.0	11/02/12 03:14	
Chloroform	ug/L	ND	1.0	11/02/12 03:14	
Chloromethane	ug/L	ND	1.0	11/02/12 03:14	
cis-1,2-Dichloroethene	ug/L	ND	1.0	11/02/12 03:14	
cis-1,3-Dichloropropene	ug/L	ND	1.0	11/02/12 03:14	
Dibromochloromethane	ug/L	ND	1.0	11/02/12 03:14	
Dibromomethane	ug/L	ND	1.0	11/02/12 03:14	
Ethylbenzene	ug/L	ND	1.0	11/02/12 03:14	
Iodomethane	ug/L	ND	5.0	11/02/12 03:14	
m&p-Xylene	ug/L	ND	2.0	11/02/12 03:14	
Methylene Chloride	ug/L	ND	2.0	11/02/12 03:14	
o-Xylene	ug/L	ND	1.0	11/02/12 03:14	
Styrene	ug/L	ND	1.0	11/02/12 03:14	
Tetrachloroethene	ug/L	ND	1.0	11/02/12 03:14	
Toluene	ug/L	ND	1.0	11/02/12 03:14	

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QUALITY CONTROL DATA

Project: White Oak LF Fall 2012
Pace Project No.: 92136195

METHOD BLANK: 864514 Matrix: Water

Associated Lab Samples: 92136195001, 92136195002, 92136195003, 92136195004, 92136195005, 92136195006, 92136195007, 92136195008, 92136195009, 92136195010, 92136195011, 92136195012, 92136195013

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
trans-1,2-Dichloroethene	ug/L	ND	1.0	11/02/12 03:14	
trans-1,3-Dichloropropene	ug/L	ND	1.0	11/02/12 03:14	
trans-1,4-Dichloro-2-butene	ug/L	ND	1.0	11/02/12 03:14	
Trichloroethene	ug/L	ND	1.0	11/02/12 03:14	
Trichlorofluoromethane	ug/L	ND	1.0	11/02/12 03:14	
Vinyl acetate	ug/L	ND	2.0	11/02/12 03:14	
Vinyl chloride	ug/L	ND	1.0	11/02/12 03:14	
Xylene (Total)	ug/L	ND	2.0	11/02/12 03:14	
1,2-Dichloroethane-d4 (S)	%	119	70-130	11/02/12 03:14	
4-Bromofluorobenzene (S)	%	94	70-130	11/02/12 03:14	
Dibromofluoromethane (S)	%	116	70-130	11/02/12 03:14	
Toluene-d8 (S)	%	101	70-130	11/02/12 03:14	

LABORATORY CONTROL SAMPLE: 864515

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	50	49.7	99	70-130	
1,1,1-Trichloroethane	ug/L	50	53.5	107	70-130	
1,1,2,2-Tetrachloroethane	ug/L	50	49.7	99	70-130	
1,1,2-Trichloroethane	ug/L	50	51.8	104	70-130	
1,1-Dichloroethane	ug/L	50	51.4	103	70-130	
1,1-Dichloroethene	ug/L	50	52.2	104	70-132	
1,2,3-Trichloropropane	ug/L	50	50.0	100	70-130	
1,2-Dibromo-3-chloropropane	ug/L	50	56.6	113	70-130	
1,2-Dibromoethane (EDB)	ug/L	50	52.4	105	70-130	
1,2-Dichlorobenzene	ug/L	50	54.3	109	70-130	
1,2-Dichloroethane	ug/L	50	48.7	97	70-130	
1,2-Dichloropropane	ug/L	50	51.8	104	70-130	
1,4-Dichlorobenzene	ug/L	50	50.5	101	70-130	
2-Butanone (MEK)	ug/L	100	108	108	70-145	
2-Hexanone	ug/L	100	99.0	99	70-144	
4-Methyl-2-pentanone (MIBK)	ug/L	100	97.9	98	70-140	
Acetone	ug/L	100	88.7	89	50-175	
Acrylonitrile	ug/L	250	263	105	70-143	
Benzene	ug/L	50	52.3	105	70-130	
Bromochloromethane	ug/L	50	52.0	104	70-130	
Bromodichloromethane	ug/L	50	50.7	101	70-130	
Bromoform	ug/L	50	40.2	80	70-130	
Bromomethane	ug/L	50	52.2	104	54-130	
Carbon disulfide	ug/L	50	43.8	88	70-131	
Carbon tetrachloride	ug/L	50	51.8	104	70-132	
Chlorobenzene	ug/L	50	50.8	102	70-130	
Chloroethane	ug/L	50	60.5	121	64-134	
Chloroform	ug/L	50	51.3	103	70-130	

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QUALITY CONTROL DATA

Project: White Oak LF Fall 2012
Pace Project No.: 92136195

LABORATORY CONTROL SAMPLE: 864515

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloromethane	ug/L	50	61.6	123	64-130	
cis-1,2-Dichloroethene	ug/L	50	53.1	106	70-131	
cis-1,3-Dichloropropene	ug/L	50	49.0	98	70-130	
Dibromochloromethane	ug/L	50	50.4	101	70-130	
Dibromomethane	ug/L	50	49.9	100	70-131	
Ethylbenzene	ug/L	50	53.5	107	70-130	
Iodomethane	ug/L	100	110	110	49-180	
m&p-Xylene	ug/L	100	115	115	70-130	
Methylene Chloride	ug/L	50	53.9	108	63-130	
o-Xylene	ug/L	50	49.5	99	70-130	
Styrene	ug/L	50	50.5	101	70-130	
Tetrachloroethene	ug/L	50	53.0	106	70-130	
Toluene	ug/L	50	51.6	103	70-130	
trans-1,2-Dichloroethene	ug/L	50	49.1	98	70-130	
trans-1,3-Dichloropropene	ug/L	50	47.6	95	70-132	
trans-1,4-Dichloro-2-butene	ug/L	50	45.2	90	70-141	
Trichloroethene	ug/L	50	52.6	105	70-130	
Trichlorofluoromethane	ug/L	50	54.9	110	62-133	
Vinyl acetate	ug/L	100	105	105	66-157	
Vinyl chloride	ug/L	50	58.4	117	69-130	
Xylene (Total)	ug/L	150	164	109	70-130	
1,2-Dichloroethane-d4 (S)	%			98	70-130	
4-Bromofluorobenzene (S)	%			100	70-130	
Dibromofluoromethane (S)	%			100	70-130	
Toluene-d8 (S)	%			99	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 864516 864517

Parameter	Units	92136195001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
1,1-Dichloroethene	ug/L	ND	50	50	42.7	49.7	85	99	70-166	15	
Benzene	ug/L	ND	50	50	43.0	47.4	86	95	70-148	10	
Chlorobenzene	ug/L	ND	50	50	48.4	52.8	97	106	70-146	9	
Toluene	ug/L	ND	50	50	48.9	54.0	98	108	70-155	10	
Trichloroethene	ug/L	ND	50	50	47.9	53.6	96	107	69-151	11	
1,2-Dichloroethane-d4 (S)	%						105	101	70-130		
4-Bromofluorobenzene (S)	%						100	99	70-130		
Dibromofluoromethane (S)	%						105	104	70-130		
Toluene-d8 (S)	%						100	101	70-130		

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QUALITY CONTROL DATA

Project: White Oak LF Fall 2012
Pace Project No.: 92136195

QC Batch: MSV/20954 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV Low Level
Associated Lab Samples: 92136195014, 92136195016, 92136195017, 92136195018, 92136195019, 92136195020, 92136195021, 92136195022, 92136195023

METHOD BLANK: 865397 Matrix: Water
Associated Lab Samples: 92136195014, 92136195016, 92136195017, 92136195018, 92136195019, 92136195020, 92136195021, 92136195022, 92136195023

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	1.0	11/03/12 13:53	
1,1,1-Trichloroethane	ug/L	ND	1.0	11/03/12 13:53	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	11/03/12 13:53	
1,1,2-Trichloroethane	ug/L	ND	1.0	11/03/12 13:53	
1,1-Dichloroethane	ug/L	ND	1.0	11/03/12 13:53	
1,1-Dichloroethene	ug/L	ND	1.0	11/03/12 13:53	
1,2,3-Trichloropropane	ug/L	ND	1.0	11/03/12 13:53	
1,2-Dibromo-3-chloropropane	ug/L	ND	5.0	11/03/12 13:53	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	11/03/12 13:53	
1,2-Dichlorobenzene	ug/L	ND	1.0	11/03/12 13:53	
1,2-Dichloroethane	ug/L	ND	1.0	11/03/12 13:53	
1,2-Dichloropropane	ug/L	ND	1.0	11/03/12 13:53	
1,4-Dichlorobenzene	ug/L	ND	1.0	11/03/12 13:53	
2-Butanone (MEK)	ug/L	ND	5.0	11/03/12 13:53	
2-Hexanone	ug/L	ND	5.0	11/03/12 13:53	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	5.0	11/03/12 13:53	
Acetone	ug/L	ND	25.0	11/03/12 13:53	
Acrylonitrile	ug/L	ND	10.0	11/03/12 13:53	
Benzene	ug/L	ND	1.0	11/03/12 13:53	
Bromochloromethane	ug/L	ND	1.0	11/03/12 13:53	
Bromodichloromethane	ug/L	ND	1.0	11/03/12 13:53	
Bromoform	ug/L	ND	1.0	11/03/12 13:53	
Bromomethane	ug/L	ND	2.0	11/03/12 13:53	
Carbon disulfide	ug/L	ND	2.0	11/03/12 13:53	
Carbon tetrachloride	ug/L	ND	1.0	11/03/12 13:53	
Chlorobenzene	ug/L	ND	1.0	11/03/12 13:53	
Chloroethane	ug/L	ND	1.0	11/03/12 13:53	
Chloroform	ug/L	ND	1.0	11/03/12 13:53	
Chloromethane	ug/L	ND	1.0	11/03/12 13:53	
cis-1,2-Dichloroethene	ug/L	ND	1.0	11/03/12 13:53	
cis-1,3-Dichloropropene	ug/L	ND	1.0	11/03/12 13:53	
Dibromochloromethane	ug/L	ND	1.0	11/03/12 13:53	
Dibromomethane	ug/L	ND	1.0	11/03/12 13:53	
Ethylbenzene	ug/L	ND	1.0	11/03/12 13:53	
Iodomethane	ug/L	ND	5.0	11/03/12 13:53	
m&p-Xylene	ug/L	ND	2.0	11/03/12 13:53	
Methylene Chloride	ug/L	ND	2.0	11/03/12 13:53	
o-Xylene	ug/L	ND	1.0	11/03/12 13:53	
Styrene	ug/L	ND	1.0	11/03/12 13:53	
Tetrachloroethene	ug/L	ND	1.0	11/03/12 13:53	
Toluene	ug/L	ND	1.0	11/03/12 13:53	

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QUALITY CONTROL DATA

Project: White Oak LF Fall 2012
Pace Project No.: 92136195

METHOD BLANK: 865397 Matrix: Water

Associated Lab Samples: 92136195014, 92136195016, 92136195017, 92136195018, 92136195019, 92136195020, 92136195021, 92136195022, 92136195023

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
trans-1,2-Dichloroethene	ug/L	ND	1.0	11/03/12 13:53	
trans-1,3-Dichloropropene	ug/L	ND	1.0	11/03/12 13:53	
trans-1,4-Dichloro-2-butene	ug/L	ND	1.0	11/03/12 13:53	
Trichloroethene	ug/L	ND	1.0	11/03/12 13:53	
Trichlorofluoromethane	ug/L	ND	1.0	11/03/12 13:53	
Vinyl acetate	ug/L	ND	2.0	11/03/12 13:53	
Vinyl chloride	ug/L	ND	1.0	11/03/12 13:53	
Xylene (Total)	ug/L	ND	2.0	11/03/12 13:53	
1,2-Dichloroethane-d4 (S)	%	107	70-130	11/03/12 13:53	
4-Bromofluorobenzene (S)	%	95	70-130	11/03/12 13:53	
Dibromofluoromethane (S)	%	107	70-130	11/03/12 13:53	
Toluene-d8 (S)	%	98	70-130	11/03/12 13:53	

LABORATORY CONTROL SAMPLE: 865398

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	50	50.1	100	70-130	
1,1,1-Trichloroethane	ug/L	50	51.5	103	70-130	
1,1,2,2-Tetrachloroethane	ug/L	50	49.1	98	70-130	
1,1,2-Trichloroethane	ug/L	50	51.3	103	70-130	
1,1-Dichloroethane	ug/L	50	50.4	101	70-130	
1,1-Dichloroethene	ug/L	50	44.7	89	70-132	
1,2,3-Trichloropropane	ug/L	50	48.7	97	70-130	
1,2-Dibromo-3-chloropropane	ug/L	50	55.3	111	70-130	
1,2-Dibromoethane (EDB)	ug/L	50	52.9	106	70-130	
1,2-Dichlorobenzene	ug/L	50	51.8	104	70-130	
1,2-Dichloroethane	ug/L	50	50.0	100	70-130	
1,2-Dichloropropane	ug/L	50	51.2	102	70-130	
1,4-Dichlorobenzene	ug/L	50	50.7	101	70-130	
2-Butanone (MEK)	ug/L	100	90.9	91	70-145	
2-Hexanone	ug/L	100	101	101	70-144	
4-Methyl-2-pentanone (MIBK)	ug/L	100	99.8	100	70-140	
Acetone	ug/L	100	89.6	90	50-175	
Acrylonitrile	ug/L	250	266	106	70-143	
Benzene	ug/L	50	49.2	98	70-130	
Bromochloromethane	ug/L	50	47.4	95	70-130	
Bromodichloromethane	ug/L	50	49.9	100	70-130	
Bromoform	ug/L	50	54.4	109	70-130	
Bromomethane	ug/L	50	54.2	108	54-130	
Carbon disulfide	ug/L	50	42.6	85	70-131	
Carbon tetrachloride	ug/L	50	49.3	99	70-132	
Chlorobenzene	ug/L	50	51.8	104	70-130	
Chloroethane	ug/L	50	55.3	111	64-134	
Chloroform	ug/L	50	48.7	97	70-130	

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QUALITY CONTROL DATA

Project: White Oak LF Fall 2012
Pace Project No.: 92136195

LABORATORY CONTROL SAMPLE: 865398

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloromethane	ug/L	50	55.2	110	64-130	
cis-1,2-Dichloroethene	ug/L	50	49.0	98	70-131	
cis-1,3-Dichloropropene	ug/L	50	51.2	102	70-130	
Dibromochloromethane	ug/L	50	52.2	104	70-130	
Dibromomethane	ug/L	50	50.3	101	70-131	
Ethylbenzene	ug/L	50	52.1	104	70-130	
Iodomethane	ug/L	100	93.3	93	49-180	
m&p-Xylene	ug/L	100	102	102	70-130	
Methylene Chloride	ug/L	50	45.7	91	63-130	
o-Xylene	ug/L	50	50.0	100	70-130	
Styrene	ug/L	50	53.0	106	70-130	
Tetrachloroethene	ug/L	50	49.9	100	70-130	
Toluene	ug/L	50	50.2	100	70-130	
trans-1,2-Dichloroethene	ug/L	50	43.9	88	70-130	
trans-1,3-Dichloropropene	ug/L	50	50.0	100	70-132	
trans-1,4-Dichloro-2-butene	ug/L	50	51.5	103	70-141	
Trichloroethene	ug/L	50	48.0	96	70-130	
Trichlorofluoromethane	ug/L	50	51.0	102	62-133	
Vinyl acetate	ug/L	100	104	104	66-157	
Vinyl chloride	ug/L	50	53.5	107	69-130	
Xylene (Total)	ug/L	150	153	102	70-130	
1,2-Dichloroethane-d4 (S)	%			105	70-130	
4-Bromofluorobenzene (S)	%			98	70-130	
Dibromofluoromethane (S)	%			101	70-130	
Toluene-d8 (S)	%			99	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 866031 866032

Parameter	Units	92136195021 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
1,1-Dichloroethene	ug/L	ND	50	50	56.7	64.5	113	129	70-166	13	
Benzene	ug/L	ND	50	50	49.9	49.6	100	99	70-148	1	
Chlorobenzene	ug/L	ND	50	50	61.1	61.5	122	123	70-146	1	
Toluene	ug/L	ND	50	50	59.3	59.0	119	118	70-155	0	
Trichloroethene	ug/L	ND	50	50	58.4	58.2	117	116	69-151	0	
1,2-Dichloroethane-d4 (S)	%						108	109	70-130		
4-Bromofluorobenzene (S)	%						95	95	70-130		
Dibromofluoromethane (S)	%						107	110	70-130		
Toluene-d8 (S)	%						101	97	70-130		

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QUALITY CONTROL DATA

Project: White Oak LF Fall 2012
Pace Project No.: 92136195

QC Batch: WET/22888
QC Batch Method: SM 5210B
Analysis Method: SM 5210B
Analysis Description: 5210B BOD, 5 day
Associated Lab Samples: 92136195014

METHOD BLANK: 859867
Matrix: Water
Associated Lab Samples: 92136195014

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
BOD, 5 day	mg/L	ND	2.0	10/30/12 09:30	

LABORATORY CONTROL SAMPLE: 859868

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	222	112	84.5-115.4	

SAMPLE DUPLICATE: 859869

Parameter	Units	92136280005 Result	Dup Result	RPD	Qualifiers
BOD, 5 day	mg/L	ND	ND		

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QUALITY CONTROL DATA

Project: White Oak LF Fall 2012
Pace Project No.: 92136195

QC Batch: WETA/13634
QC Batch Method: EPA 300.0
Analysis Method: EPA 300.0
Analysis Description: 300.0 IC Anions
Associated Lab Samples: 92136195014

METHOD BLANK: 864418
Matrix: Water
Associated Lab Samples: 92136195014

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfate	mg/L	ND	2.0	11/01/12 19:46	

LABORATORY CONTROL SAMPLE: 864419

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	20	18.6	93	90-110	

MATRIX SPIKE SAMPLE: 864420

Parameter	Units	92136235016 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	6.2	20	26.6	102	90-110	

MATRIX SPIKE SAMPLE: 864422

Parameter	Units	92136192008 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	3260J ug/L	20	26.6	117	90-110	M1

SAMPLE DUPLICATE: 864421

Parameter	Units	92136235016 Result	Dup Result	RPD	Qualifiers
Sulfate	mg/L	6.2	6.3	3	

SAMPLE DUPLICATE: 864423

Parameter	Units	92136192008 Result	Dup Result	RPD	Qualifiers
Sulfate	mg/L	3260J ug/L	3.3	2	

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QUALITY CONTROL DATA

Project: White Oak LF Fall 2012
Pace Project No.: 92136195

QC Batch: WETA/13570
QC Batch Method: EPA 353.2
Analysis Method: EPA 353.2
Analysis Description: 353.2 Nitrate + Nitrite, Unpres.
Associated Lab Samples: 92136195014

METHOD BLANK: 859862
Matrix: Water
Associated Lab Samples: 92136195014

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Nitrate	mg/L	ND	0.020	10/25/12 13:18	
Nitrogen, Nitrite	mg/L	ND	0.020	10/25/12 13:18	
Nitrogen, NO2 plus NO3	mg/L	ND	0.020	10/25/12 13:18	

LABORATORY CONTROL SAMPLE: 859863

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Nitrate	mg/L	2.5	2.5	100	90-110	
Nitrogen, Nitrite	mg/L	1	1.0	103	90-110	
Nitrogen, NO2 plus NO3	mg/L	2.5	2.5	100	90-110	

MATRIX SPIKE SAMPLE: 859864

Parameter	Units	92136280005 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Nitrate	mg/L	0.56	2.5	3.2	106	90-110	
Nitrogen, Nitrite	mg/L	ND	1	1.0	101	90-110	
Nitrogen, NO2 plus NO3	mg/L	0.56	2.5	3.2	106	90-110	

MATRIX SPIKE SAMPLE: 859948

Parameter	Units	92136436001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Nitrate	mg/L	0.47	2.5	2.9	98	90-110	
Nitrogen, Nitrite	mg/L	ND	1	1.0	101	90-110	
Nitrogen, NO2 plus NO3	mg/L	0.47	2.5	2.9	98	90-110	

SAMPLE DUPLICATE: 859865

Parameter	Units	92136280006 Result	Dup Result	RPD	Qualifiers
Nitrogen, Nitrate	mg/L	4.0	3.9	0	
Nitrogen, Nitrite	mg/L	ND	ND		
Nitrogen, NO2 plus NO3	mg/L	4.0	3.9	0	

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QUALITY CONTROL DATA

Project: White Oak LF Fall 2012
Pace Project No.: 92136195

SAMPLE DUPLICATE: 859949

Parameter	Units	92136436002 Result	Dup Result	RPD	Qualifiers
Nitrogen, Nitrate	mg/L	0.98	1.0	5	
Nitrogen, Nitrite	mg/L	0.049	0.050	1	
Nitrogen, NO2 plus NO3	mg/L	1.0	1.0	0	

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QUALITY CONTROL DATA

Project: White Oak LF Fall 2012
Pace Project No.: 92136195

QC Batch: WETA/13649
QC Batch Method: EPA 365.1
Analysis Method: EPA 365.1
Analysis Description: 365.1 Phosphorus, Total
Associated Lab Samples: 92136195014

METHOD BLANK: 865104
Matrix: Water
Associated Lab Samples: 92136195014

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Phosphorus	mg/L	ND	0.050	11/08/12 15:06	

LABORATORY CONTROL SAMPLE: 865105

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Phosphorus	mg/L	2.5	2.7	107	90-110	

MATRIX SPIKE SAMPLE: 865107

Parameter	Units	92136932001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Phosphorus	mg/L	49.2	2.5	47.6	-64	90-110	M6

MATRIX SPIKE SAMPLE: 865109

Parameter	Units	92136380001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Phosphorus	mg/L	2.0	2.5	4.6	102	90-110	

SAMPLE DUPLICATE: 865106

Parameter	Units	92136932001 Result	Dup Result	RPD	Qualifiers
Phosphorus	mg/L	49.2	45.3	8	

SAMPLE DUPLICATE: 865108

Parameter	Units	92136380001 Result	Dup Result	RPD	Qualifiers
Phosphorus	mg/L	2.0	2.0	0	

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QUALITY CONTROL DATA

Project: White Oak LF Fall 2012
Pace Project No.: 92136195

QC Batch: WETA/13687
QC Batch Method: SM 5220D
Analysis Method: SM 5220D
Analysis Description: 5220D COD
Associated Lab Samples: 92136195014

METHOD BLANK: 868087
Matrix: Water
Associated Lab Samples: 92136195014

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	ND	25.0	11/08/12 11:15	

LABORATORY CONTROL SAMPLE: 868088

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	750	777	104	90-110	

MATRIX SPIKE SAMPLE: 868089

Parameter	Units	92136932002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	20400	15000	53300	219	75-125	M1

MATRIX SPIKE SAMPLE: 868091

Parameter	Units	92136195014 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	860	1500	2410	103	75-125	

SAMPLE DUPLICATE: 868090

Parameter	Units	92136932002 Result	Dup Result	RPD	Qualifiers
Chemical Oxygen Demand	mg/L	20400	20000	2	

SAMPLE DUPLICATE: 868092

Parameter	Units	92136195014 Result	Dup Result	RPD	Qualifiers
Chemical Oxygen Demand	mg/L	860	996	15	

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QUALIFIERS

Project: White Oak LF Fall 2012
Pace Project No.: 92136195

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Acid preservation may not be appropriate for 2-Chloroethylvinyl ether, Styrene, and Vinyl chloride.

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TNI - The NELAC Institute.

LABORATORIES

PASI-A	Pace Analytical Services - Asheville
PASI-C	Pace Analytical Services - Charlotte

ANALYTE QUALIFIERS

M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
M6	Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.
S3	Surrogate recovery exceeded laboratory control limits. Analyte presence below reporting limits in associated samples. Results unaffected by high bias.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: White Oak LF Fall 2012
Pace Project No.: 92136195

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92136195001	**MW-1A**		FLD/		
92136195002	**MW-2**		FLD/		
92136195003	**MW-2D**		FLD/		
92136195004	**MW-3R**		FLD/		
92136195005	**MW-3DR**		FLD/		
92136195006	**MW-4A**		FLD/		
92136195007	**MW-8**		FLD/		
92136195008	**MW-11S**		FLD/		
92136195009	**MW-11D**		FLD/		
92136195010	**MW-14**		FLD/		
92136195011	**MW-15**		FLD/		
92136195012	**MW-16**		FLD/		
92136195013	**MW-17**		FLD/		
92136195014	**Leachate**		FLD/		
92136195016	**SW-1**		FLD/		
92136195017	**SW-2**		FLD/		
92136195018	**SW-3**		FLD/		
92136195019	**SW-5**		FLD/		
92136195020	**SW-6**		FLD/		
92136195021	**SW-7**		FLD/		
92136195001	**MW-1A**	EPA 3010	MPRP/11810	EPA 6010	ICP/10822
92136195002	**MW-2**	EPA 3010	MPRP/11810	EPA 6010	ICP/10822
92136195003	**MW-2D**	EPA 3010	MPRP/11810	EPA 6010	ICP/10822
92136195004	**MW-3R**	EPA 3010	MPRP/11810	EPA 6010	ICP/10822
92136195005	**MW-3DR**	EPA 3010	MPRP/11810	EPA 6010	ICP/10822
92136195006	**MW-4A**	EPA 3010	MPRP/11810	EPA 6010	ICP/10822
92136195007	**MW-8**	EPA 3010	MPRP/11810	EPA 6010	ICP/10822
92136195008	**MW-11S**	EPA 3010	MPRP/11810	EPA 6010	ICP/10822
92136195009	**MW-11D**	EPA 3010	MPRP/11810	EPA 6010	ICP/10822
92136195010	**MW-14**	EPA 3010	MPRP/11810	EPA 6010	ICP/10822
92136195011	**MW-15**	EPA 3010	MPRP/11810	EPA 6010	ICP/10822
92136195012	**MW-16**	EPA 3010	MPRP/11810	EPA 6010	ICP/10822
92136195013	**MW-17**	EPA 3010	MPRP/11810	EPA 6010	ICP/10822
92136195014	**Leachate**	EPA 3010	MPRP/11811	EPA 6010	ICP/10821
92136195016	**SW-1**	EPA 3010	MPRP/11813	EPA 6010	ICP/10820
92136195017	**SW-2**	EPA 3010	MPRP/11813	EPA 6010	ICP/10820
92136195018	**SW-3**	EPA 3010	MPRP/11813	EPA 6010	ICP/10820
92136195019	**SW-5**	EPA 3010	MPRP/11813	EPA 6010	ICP/10820
92136195020	**SW-6**	EPA 3010	MPRP/11813	EPA 6010	ICP/10820
92136195021	**SW-7**	EPA 3010	MPRP/11813	EPA 6010	ICP/10820
92136195022	**Equip Blank**	EPA 3010	MPRP/11813	EPA 6010	ICP/10820
92136195001	**MW-1A**	EPA 8260	MSV/20931		
92136195002	**MW-2**	EPA 8260	MSV/20931		
92136195003	**MW-2D**	EPA 8260	MSV/20931		
92136195004	**MW-3R**	EPA 8260	MSV/20931		
92136195005	**MW-3DR**	EPA 8260	MSV/20931		
92136195006	**MW-4A**	EPA 8260	MSV/20931		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: White Oak LF Fall 2012
Pace Project No.: 92136195

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92136195007	**MW-8**	EPA 8260	MSV/20931		
92136195008	**MW-11S**	EPA 8260	MSV/20931		
92136195009	**MW-11D**	EPA 8260	MSV/20931		
92136195010	**MW-14**	EPA 8260	MSV/20931		
92136195011	**MW-15**	EPA 8260	MSV/20931		
92136195012	**MW-16**	EPA 8260	MSV/20931		
92136195013	**MW-17**	EPA 8260	MSV/20931		
92136195014	**Leachate**	EPA 8260	MSV/20954		
92136195016	**SW-1**	EPA 8260	MSV/20954		
92136195017	**SW-2**	EPA 8260	MSV/20954		
92136195018	**SW-3**	EPA 8260	MSV/20954		
92136195019	**SW-5**	EPA 8260	MSV/20954		
92136195020	**SW-6**	EPA 8260	MSV/20954		
92136195021	**SW-7**	EPA 8260	MSV/20954		
92136195022	**Equip Blank**	EPA 8260	MSV/20954		
92136195023	**Travel Blank**	EPA 8260	MSV/20954		
92136195014	**Leachate**	SM 5210B	WET/22888	SM 5210B	WET/22889
92136195014	**Leachate**	EPA 300.0	WETA/13634		
92136195014	**Leachate**	EPA 353.2	WETA/13570		
92136195014	**Leachate**	EPA 365.1	WETA/13649		
92136195014	**Leachate**	SM 5220D	WETA/13687		

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CHAIN-OF-CUSTODY / Analytical Request Document

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1555771

Section A
Required Client Information:

Company: SANTEK	
Address:	
Email To:	
Phone:	Fax:
Requested Due Date/TAT:	

Section B
Required Project Information:

Report To: SANTEK Will Martin	
Copy To:	
Purchase Order No.:	
Project Name: HAYWOOD Waste OAK LF	
Project Number:	

Section C
Invoice Information:

Attention:	
Company Name:	
Address:	
Pace Quote Reference:	
Pace Project Manager:	
Pace Profile #:	

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER _____

Site Location STATE: NC

Section D
Required Client Information

Matrix Codes
MATRIX / CODE

Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Tissue	TS
Other	OT

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test (Y/N): FLD	Alk IVDA	Alk Imehll			BOD	TS Cod	NO_2 NO_3 N	SO4			Residual Chlorine (Y/N)	Pace Project No./ Lab I.D. 92136195
1	Leachate					10.24	1310		8			1	3					X	X	X			X	X	X	X				014
2	Settling Pond					10.24	1215		4			1	3					X	X	X										015
3	SW-1					10.24	1140		4			1	3					X	X	X										016
4	SW-2					10.24	1200		4			1	3					X	X	X										017
5	SW-3					10.24	1230		4			1	3					X	X	X										018
6	SW-5					10.24	1245		4			1	3					X	X	X										019
7	SW-6					10.24	1100		4			1	3					X	X	X										020
8	SW 7					10.24	1115		4			1	3					X	X	X										021
9																														
10	TVC BLK					10.22			2				2						X											022
11	EQUIP BLK					10.22			3			1	2						X	X										023
12																														

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
		10.24.12	1340	[signature]	10.24.12	1340				
	[signature]	10.24.12	1525	[signature]	10/24	1525				

ORIGINAL

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: MARK A. SWANN

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 10-24-12

Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

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CHAIN-OF-CUSTODY / Analytical Request Document

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Page: 1 of 3

1633329

Section A
Required Client Information:

Company: SANTEK / HAYWOOD Co	
Address:	
Email To:	
Phone:	Fax:
Requested Due Date/TAT:	

Section B
Required Project Information:

Report To: SANTEK (WILL MARTIN)	
Copy To:	
Purchase Order No.:	
Project Name:	
Project Number:	

Section C
Invoice Information:

Attention:	
Company Name:	
Address:	
Pace Quote Reference:	
Pace Project Manager:	
Pace Profile #:	

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER _____

Site Location
STATE: NC

Section D
Required Client Information

Matrix Codes
MATRIX / CODE

Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Tissue	TS
Other	OT

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED: COMPOSITE START DATE	COLLECTED: COMPOSITE START TIME	COLLECTED: COMPOSITE END/GRAB DATE	COLLECTED: COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test (Y/N): FID	Sta. fir. H_2O	Appr. Ewa	Appr. Fmetals	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D. 92136195
1	MW-1A					10-23-12	1400		4			1	3					X	X	X	X		001
2	MW-2					10-23-12	1410		4			1	3					X	X	X	X		
3	MW-2D					10-23	1425		4			1	3					X	X	X	X		
4	MW-3R					10-23	1445		4			1	3					X	X	X	X		
5	MW-3Da					10-23	1500		4			1	3					X	X	X	X		
6	MW-4A					10-23	1515		4			1	3					X	X	X	X		
7	MW-8					10-23	1350		4			1	3					X	X	X	X		
8	MW-11S						1100		4			1	3					X	X	X	X		
9	MW-11D						1110		4			1	3					X	X	X	X		
10	MW-14						1015		4			1	3					X	X	X	X		
11	MW 15						1045		4			1	3					X	X	X	X		
12																							

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
		10-23-12	1540	[signature] Cole	10-23-12	1540	
	[signature] Pace	10-23-12	1630				

ORIGINAL

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: MARK P. SWANN

SIGNATURE of SAMPLER: [signature] Pace

DATE Signed (MM/DD/YY): 10-23-12

Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

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Page: 2 of 3

1633330

Section A Required Client Information:

Company: SANTEK / HARWOOD CO
Address:
Email To:
Phone: Fax:
Requested Due Date/TAT:

Section B Required Project Information:

Report To: SANTEK (WALL MARTIN)
Copy To:
Purchase Order No.:
Project Name: White OAK LF ~~WOLF~~ W.O.L.F.
Project Number: W

Section C Invoice Information:

Attention:
Company Name:
Address:
Pace Quote Reference:
Pace Project Manager:
Pace Profile #:

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER _____

Site Location STATE: NC

Section D Required Client Information

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Matrix Codes (MATRIX / CODE): Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Tissue TS; Other OT

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED Composite Start DATE	COLLECTED Composite Start TIME	COLLECTED Composite End/Grab DATE	COLLECTED Composite End/Grab TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test (Y/N): FLD	STATE H_2O	Aqu Fuel	Aqu Inert II	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D. 92156195
1	MW-16					10-23-12	1335		4			1	3					X	X	X	X		
2	MW-17					10-23	1315		4			1	3					X	X	X	X		
3																							
4																							
5																							
6																							
7																							
8																							
9																							
10																							
11																							
12																							

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
		10-23-12	1540	[signature]	10-23-12	1540
	[signature]	10-23-12	1630			

SAMPLE CONDITIONS: Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

ORIGINAL

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: MARK E. SWANN

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 10-23-12

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

APPENDIX D

STATISTICAL CALCULATIONS

White Oak Landfill
Haywood County, North Carolina
BLE Project Number J12-1957-31

Compound: **Total Antimony**
MCL (µg/l): Not Established
Method: Poisson Prediction Limits
Background: MW-11S, MW-11D, & MW-14

	MW-11S	MW-11D	MW-14	MW-1A	MW-2	MW-2D	MW-3	MW-3D	MW-4A	MW-8	MW-15	MW-16	MW-17	MDL
04/24/00	ND	NS	NS	ND	ND	ND	ND	ND	ND	ND	NS	NP	NP	**10**
06/26/00	ND	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	**10**
07/26/00	ND	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	**10**
09/18/00	NS	NS	NS	NT	NT	NS	NS	NS	NT	NS	NS	NP	NP	**30**
04/09/01	ND	ND	NS	ND	ND	ND	ND	ND	ND	ND	NS	NP	NP	**10**
09/18/01	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	**10**
10/29/01	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	**10**
01/30/02	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	**10**
02/28/02	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	**30**
04/15/02	**15**	ND	NS	ND	ND	ND	NT	ND	ND	**11**	NS	NP	NP	**10**
09/26/02	ND	ND	ND	**12**	ND	ND	ND	ND	ND	ND	**98**	NP	NP	**10**
04/28/03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**10**
10/30/03	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**5**
04/20/04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**5**
10/21/04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**5**
04/18/05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**12**	NP	NP	**5**
10/13/05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**5**
04/25/06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**30**
10/20/06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**5**
04/25/07	ND	ND	ND	ND	ND	**20**	ND	ND	ND	ND	ND	NP	NP	**6**
10/31/07	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**5**
04/23/08	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**5**
10/20/08	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**5**
04/22/09	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NP	NP	**5**
10/26/09	ND	ND	ND	ND	ND	ND	NS	NS	NS	ND	ND	NP	NP	**5**
04/22/10	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND	NP	NP	**5**
10/27/10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**5**
04/29/11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**5**
10/25/11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**5**
04/20/12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**5**
10/24/12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**5**

1) If not detected (ND), use half of the detection limit.

04/24/00	5	-	-	5	5	5	5	5	5	5	-	-	-
06/26/00	5	5	-	-	-	-	-	-	-	-	-	-	-
07/26/00	5	5	-	-	-	-	-	-	-	-	-	-	-
09/18/00	-	-	-	-	-	-	-	-	-	-	-	-	-
04/09/01	5	5	-	5	5	5	5	5	5	5	-	-	-
09/18/01	-	-	-	-	-	-	-	-	-	-	-	-	-
10/29/01	-	-	-	-	-	-	-	-	-	-	-	-	-
01/30/02	-	-	-	-	-	-	-	-	-	-	-	-	-
02/28/02	-	-	-	-	-	-	-	-	-	-	-	-	-
04/15/02	15	5	-	5	5	5	-	5	5	11	-	-	-
09/26/02	5	5	5	12	5	5	5	5	5	5	98	-	-
04/28/03	5	5	5	5	5	5	5	5	5	5	5	-	-
10/30/03	2.5	2.5	-	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	-	-
04/20/04	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	-	-
10/21/04	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	-	-
04/18/05	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	12	-	-
10/13/05	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	-	-
04/25/06	15	15	15	15	15	15	15	15	15	15	15	-	-
10/20/06	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	-	-
04/25/07	3	3	3	3	3	20	3	3	3	3	3	-	-
10/31/07	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	-	-
04/23/08	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	-	-
10/20/08	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	-	-
04/22/09	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	-	-	-
10/26/09	2.5	2.5	2.5	2.5	2.5	2.5	-	-	-	2.5	2.5	-	-
04/22/10	2.5	2.5	2.5	2.5	2.5	2.5	-	-	2.5	2.5	2.5	-	-
10/27/10	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
04/29/11	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
10/25/11	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
04/20/12	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
10/24/12				2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5

2) Set the total number of data values for background wells (through the previous sampling event) equal to 'n' = 25.
Use 1/2 of the method detection limit to calculate the Total Poisson Count of the Sum (T_n).

$n = 68$
$T_{n1} = 256.5$

3) Using Gibbons' formula, calculate the upper Poisson Prediction Limit T^*_k:

$$T^*_k = cT_{n1} + ct^2/2 + ct[T_{n1}(1+1/c) + t^2/4]^{0.5}$$

where $c = k/n$
and where k = the number of future predicted measurements (one per well during the current sampling event)
and where t = the upper 99th percentile of the t-distribution with (n-1) degrees of freedom (Table 6 of the IFG).

$k = 10$
$n = 68$
$T_{n1} = 256.5$
$t\,[67,.01] = 2.3863$
$c = 0.1471$
$T_{n2} = 25$
$T^*_k = 53.8$

4) Compare the *Poisson Prediction Limit* (T^*_k) to the *Sum of the Concentrations Detected* (T_{n2}) in the wells during the most recent sampling event.
Since the Poisson Prediction Limit was not exceeded, there is no evidence of contamination.

White Oak Landfill
Haywood County, North Carolina
BLE Project Number J12-1957-31

Compound: **Total Arsenic**
NC MCL (µg/l): 10
Method: Kruskal-Wallis
Background: MW-11S, MW-11D, & MW-14

	MW-11S	MW-11D	MW-14	MW-1A	MW-2	MW-2D	MW-3	MW-3D	MW-4A	MW-8	MW-15	MW-16	MW-17	MDL
04/24/00	ND	NS	NS	ND	ND	ND	ND	ND	ND	ND	NS	NP	NP	**10**
06/26/00	ND	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	**10**
07/26/00	ND	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	**10**
09/18/00	NS	NS	NS	NT	NT	NS	NS	NS	NT	NS	NS	NP	NP	**10**
04/09/01	ND	ND	NS	ND	ND	ND	ND	ND	ND	ND	NS	NP	NP	**10**
09/18/01	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	**10**
10/29/01	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	**10**
01/30/02	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	**10**
02/28/02	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	**10**
04/15/02	ND	ND	NS	ND	ND	ND	NT	ND	ND	ND	NS	NP	NP	**10**
09/26/02	ND	**5.7**	ND	ND	ND	ND	ND	ND	**27**	ND	**68**	NP	NP	**5**
04/28/03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**24**	NP	NP	**5**
10/30/03	ND	ND	NT	ND	ND	ND	ND	ND	ND	**5.3**	**81**	NP	NP	**5**
04/20/04	ND	ND	ND	ND	ND	ND	ND	ND	ND	**7.4**	**30**	NP	NP	**5**
10/21/04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**59**	NP	NP	**5**
04/18/05	ND	ND	ND	**10**	ND	ND	ND	ND	ND	**5.2**	**65**	NP	NP	**5**
10/13/05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**44**	NP	NP	**5**
04/25/06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**42**	NP	NP	**10**
10/20/06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**13**	NP	NP	**5**
04/25/07	ND	ND	ND	ND	ND	**280**	ND	ND	ND	ND	**12**	NP	NP	**5**
10/31/07	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**21.4**	NP	NP	**5**
04/23/08	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**10.2**	NP	NP	**5**
10/20/08	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**6.6**	NP	NP	**5**
04/22/09	ND	ND	**5.4**	ND	ND	**5.6**	ND	ND	ND	ND	NS	NP	NP	**5**
10/26/09	ND	ND	ND	ND	**6**	ND	NS	NS	NS	ND	ND	NP	NP	**5**
04/22/10	ND	ND	ND	ND	**7.4**	**9.8**	NS	NS	ND	ND	ND	NP	NP	**5**
10/27/10	ND	ND	ND	ND	**5.4**	**5.9**	ND	ND	ND	ND	ND	ND	ND	**5**
04/29/11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**5**
10/25/11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**5**
04/20/12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**5**
10/24/12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**5**
N_i	26	25	20	24	24	24	21	22	23	24	20	5	5	
sum of rank values (R_i)	3081.0	3086.0	2491.0	2974.5	3218.5	3365.0	2488.5	2607.0	2862.0	3210.0	4147.5	592.5	592.5	
avg rank value (Rbar)	118.5	123.4	124.6	123.9	134.1	140.2	118.5	118.5	124.4	133.8	207.4	118.5	118.5	

	Number of each rank value													Rank Value
rank value of NDs =	26	24	19	23	21	20	21	22	22	21	7	5	5	118.5
rank value of 5.2s =	0	0	0	0	0	0	0	0	0	1	0	0	0	237
rank value of 5.3s =	0	0	0	0	0	0	0	0	0	1	0	0	0	238
rank value of 5.4s =	0	0	1	0	1	0	0	0	0	0	0	0	0	239.5
rank value of 5.6s =	0	0	0	0	0	1	0	0	0	0	0	0	0	241
rank value of 5.7s =	0	1	0	0	0	0	0	0	0	0	0	0	0	242
rank value of 5.9s =	0	0	0	0	0	1	0	0	0	0	0	0	0	243
rank value of 6s =	0	0	0	0	1	0	0	0	0	0	0	0	0	244
rank value of 6.6s =	0	0	0	0	0	0	0	0	0	0	1	0	0	245
rank value of 7.4s =	0	0	0	0	1	0	0	0	0	1	0	0	0	246.5
rank value of 9.8s =	0	0	0	0	0	1	0	0	0	0	0	0	0	248
rank value of 10s =	0	0	0	1	0	0	0	0	0	0	0	0	0	249
rank value of 10.2s =	0	0	0	0	0	0	0	0	0	0	1	0	0	250
rank value of 12s =	0	0	0	0	0	0	0	0	0	0	1	0	0	251

rank value of 13s =	0	0	0	0	0	0	0	0	0	0	1	0	0	252
rank value of 21.4s =	0	0	0	0	0	0	0	0	0	0	1	0	0	253
rank value of 24s =	0	0	0	0	0	0	0	0	0	0	1	0	0	254
rank value of 27s =	0	0	0	0	0	0	0	0	1	0	0	0	0	255
rank value of 30s =	0	0	0	0	0	0	0	0	0	0	1	0	0	256
rank value of 42s =	0	0	0	0	0	0	0	0	0	0	1	0	0	257
rank value of 44s =	0	0	0	0	0	0	0	0	0	0	1	0	0	258
rank value of 59s =	0	0	0	0	0	0	0	0	0	0	1	0	0	259
rank value of 65s =	0	0	0	0	0	0	0	0	0	0	1	0	0	260
rank value of 68s =	0	0	0	0	0	0	0	0	0	0	1	0	0	261
rank value of 81s =	0	0	0	0	0	0	0	0	0	0	1	0	0	262
rank value of 280s =	0	0	0	0	0	1	0	0	0	0	0	0	0	263
n =	**26**	**25**	**20**	**24**	**24**	**24**	**21**	**22**	**23**	**24**	**20**	**5**	**5**	

Sum of rank value calculations

3081	2844	2251.5	2725.5	2488.5	2370	2488.5	2607	2607	2488.5	829.5	592.5	592.5
0	0	0	0	0	0	0	0	0	237	0	0	0
0	0	0	0	0	0	0	0	0	238	0	0	0
0	0	239.5	0	239.5	0	0	0	0	0	0	0	0
0	0	0	0	0	241	0	0	0	0	0	0	0
0	242	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	243	0	0	0	0	0	0	0
0	0	0	0	244	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	245	0	0
0	0	0	0	246.5	0	0	0	0	246.5	0	0	0
0	0	0	0	0	248	0	0	0	0	0	0	0
0	0	0	249	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	250	0	0
0	0	0	0	0	0	0	0	0	0	251	0	0
0	0	0	0	0	0	0	0	0	0	252	0	0
0	0	0	0	0	0	0	0	0	0	253	0	0
0	0	0	0	0	0	0	0	0	0	254	0	0
0	0	0	0	0	0	0	0	255	0	0	0	0
0	0	0	0	0	0	0	0	0	0	256	0	0
0	0	0	0	0	0	0	0	0	0	257	0	0
0	0	0	0	0	0	0	0	0	0	258	0	0
0	0	0	0	0	0	0	0	0	0	259	0	0
0	0	0	0	0	0	0	0	0	0	260	0	0
0	0	0	0	0	0	0	0	0	0	261	0	0
0	0	0	0	0	0	0	0	0	0	262	0	0
0	0	0	0	0	263	0	0	0	0	0	0	0

sum of rank values (R_i)	**3081**	**3086**	**2491**	**2974.5**	**3218.5**	**3365**	**2488.5**	**2607**	**2862**	**3210**	**4147.5**	**592.5**	**592.5**

Compute the Kruskal-Wallis statistic:

$$H = \{[12/N(N+1)] * [\Sigma^{K}_{i=1} (R_i^2)/N_i]\} -3(N+1)$$

Well =	**Background**	**MW-1A**	**MW-2**	**MW-2D**	**MW-3**	**MW-3D**	**MW-4A**	**MW-8**	**MW-15**	**MW-16**	**MW-17**
Ri^2/N_i =	1055788.2	368652	431614	471801	294887	308930	356132	429338	860088	70211	70211

$N_{i\,bg}$ = 71
N = 263
H = 23.36

Adjust H for ties:

T_i = 1E+07 sum of T1..T3

$H' = H/(1-(T_i/(N^3-N)))$
H' = 84.18
Chi-square = 18.31

Compare the calculated value H' to the tabulated Chi-square value with K-1 = # groups -1 = 17df at the 5% significance level from Table 1 of the IFG. The value is 18.31 which is less than H' =84.18.
Therefore, there is evidence of significant differences between the well groups.
Post-hoc pairwise comparisons are necessary (see below).

Calculate the critical values to compare each compliance well to the background wells:

Critical Value (C_x) = $P(N(N+1)/12)^{0.5} * (1/N_{i\,bg}+1/N_x)^{0.5}$
P = 2.33 Percentile of Standard Normal Distribution
from Table 4 of IFG
N = total sample size
$N_{i\,bg}$ = total samples (N_i) of background data
N_x = total samples (N_i) of well x

Difference between average ranks (Dx) = Rbar (well x) - avg Rbar (background)

Well =	MW-1A	MW-2	MW-2D	MW-3	MW-3D	MW-4A	MW-8	**MW-15**	MW-16	MW-17
Rbar (well x) =	123.9	134.1	140.2	118.5	118.5	124.4	133.8	207.4	118.5	118.5
avg Rbar (background) =	121.9	121.9	121.9	121.9	121.9	121.9	121.9	121.9	121.9	121.9
Dx =	2.0	12.2	18.3	-3.4	-3.4	2.5	11.8	85.4	-3.4	-3.4
Cx =	41.8	41.8	41.8	44.0	43.2	42.5	41.8	44.9	82.0	82.0
Statistical Significance ?	No	No	No	No	No	No	No	**Yes**	No	No
If SSI, is current event above MCL?	-	-	-	-	-	-	-	No	-	-

Compare each difference (Dx) with the corresponding critical value (Cx).
The Dx value for the above indicated wells do exceed the corresponding Cx value.
Therefore, we conclude that the concentration of Total Arsenic averaged over these compliance wells are significantly greater than that of the background wells.
Shewart-CUSUM Control Charts should be performed for each failing well to check for statistical significance.

White Oak Landfill
Haywood County, North Carolina
BLE Project Number J12-1957-31

Compound: **Total Arsenic**
NC MCL (µg/l): 10
Method: Shewhart-CUSUM Control Chart

Part 1: Check for Normality

	MW-15	MDL
9/26/2002	**68**	**5**
4/28/2003	**24**	**5**
10/30/2003	**81**	**5**
4/20/2004	**30**	**5**
10/21/2004	**59**	**5**
4/18/2005	**65**	**5**
10/13/2005	**44**	**5**
4/25/2006	**42**	**10**
10/20/2006	**13**	**5**
4/25/2007	**12**	**5**
10/31/2007	**21.4**	**5**
4/23/2008	**10.2**	**5**
10/20/2008	**6.6**	**5**
4/22/2009	NS	**5**
10/26/2009	ND	**5**
4/22/2010	ND	**5**
10/27/2010	ND	**5**
4/29/2011	ND	**5**
10/25/2011	ND	**5**
4/20/2012	ND	**5**
10/24/2012	ND	**5**

If not detected (ND), use half of the detection limit.

	X_i values =
68	81267.136
24	-0.321419
81	178596.22
30	150.14463
59	40406.572
65	65523.938
44	7205.8321
42	5191.1967
13	-1595.461
12	-2041.134
21.4	-35.44917
10.2	-3039.174
6.6	-5915.011
2.5	-10918.89
2.5	-10918.89
2.5	-10918.89
2.5	-10918.89
2.5	-10918.89
2.5	-10918.89
2.5	-10918.89

X_{bar} = 24.685
SD = 25.998305
N = 20
$1/N\Sigma_i(X_i-X_{bar})^3$ = 14464.115
γ_1= 0.8889377

Since the Coefficient of Skewness of 0.89 is less than 1.0, the data appear not to be significantly skewed.
Proceed with further statistical tests using the real detected values shown above.

ln =	X_i values =
4.2195077	5.2166121
3.1780538	0.3326213
4.3944492	6.9598036
3.4011974	0.7686025
4.0775374	4.0375351
4.1743873	4.8199636
3.7841896	2.1919494
3.7376696	1.9647874
2.5649494	0.0005075
2.4849066	-2.19E-11
3.0633909	0.1933054
2.3223877	-0.004315
1.8870696	-0.213973
0.9162907	-3.861734
0.9162907	-3.861734
0.9162907	-3.861734
0.9162907	-3.861734
0.9162907	-3.861734
0.9162907	-3.861734

0.9162907	-3.861734

X_{bar} = 2.4851866
SD = 1.3489248
N = 20
$1/N\Sigma_i(X_i-X_{bar})^3$ = -0.038237
γ_1= 0.0168241

Use the real values (not log-transformed) indicated in the previous section.

Part 2: Shewhart-CUSUM Control Chart

Date	MW-15	MDL	Data for Testing
9/26/2002	**68**	5	68
4/28/2003	**24**	5	24
10/30/2003	**81**	5	81
4/20/2004	**30**	5	30
10/21/2004	**59**	5	59
4/18/2005	**65**	5	65
10/13/2005	**44**	5	44
4/25/2006	**42**	10	42
10/20/2006	**13**	5	13
4/25/2007	**12**	5	12
10/31/2007	**21.4**	5	21.4
4/23/2008	**10.2**	5	10.2
10/20/2008	**6.6**	5	6.6
4/22/2009	NS	5	-
10/26/2009	ND	5	2.5
4/22/2010	ND	5	2.5
10/27/2010	ND	5	2.5
4/29/2011	ND	5	2.5
10/25/2011	ND	5	2.5
4/20/2012	ND	5	2.5
10/24/2012	ND	5	2.5

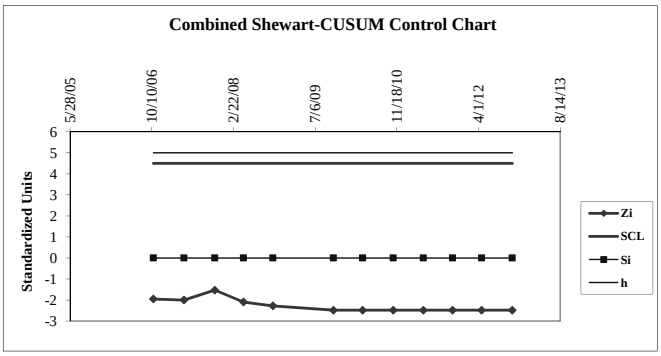
Compute the mean and standard deviation of the historical data:

51.625 = x_{mean} (Mean of N1-N8 historical data)
19.805753 = s (Standard Deviation of N1-N8 historical data)
1 = k (constant, reference value)
5 = h (constant, upper control limit for the CUSUM scheme)
4.5 = SCL (Constant, upper Shewhart Control Limit)

Compute the standardized mean (Z_i) and the cumulative sum (S_i) for each concentration.

Date	x_i	Z_i	S_i	h	SCL
			0		
10/20/2006	13	-1.9501909	0	5	4.5
4/25/2007	12	-2.0006813	0	5	4.5
10/31/2007	21.4	-1.5260717	0	5	4.5
4/23/2008	10.2	-2.091564	0	5	4.5
10/20/2008	6.6	-2.2733294	0	5	4.5
10/26/2009	2.5	-2.4803399	0	5	4.5
4/22/2010	2.5	-2.4803399	0	5	4.5
10/27/2010	2.5	-2.4803399	0	5	4.5
4/29/2011	2.5	-2.4803399	0	5	4.5
10/25/2011	2.5	-2.4803399	0	5	4.5
4/20/2012	2.5	-2.4803399	0	5	4.5
10/24/2012	2.5	-2.4803399	0	5	4.5

Plot Z_i and S_i versus time:



Compare the Z_i and S_i values to their respective control limits of SCL and h.

The limits were not exceeded and do not indicate statistically significant evidence of contamination at the site.

White Oak Landfill
Haywood County, North Carolina
BLE Project Number J12-1957-31

Compound: **Total Barium**
NC MCL (µg/l): 700
Method: Kruskal-Wallis
Background: MW-11S, MW-11D, & MW-14

	MW-11S	MW-11D	MW-14	MW-1A	MW-2	MW-2D	MW-3	MW-3D	MW-4A	MW-8	MW-15	MW-16	MW-17	MDL
04/24/00	250	NS	NS	240	420	200	63	300	93	230	NS	NP	NP	5
06/26/00	300	67	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	5
07/26/00	330	30	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	5
09/18/00	NS	NS	NS	330	92	NS	NS	NS	NT	NS	NS	NP	NP	500
04/09/01	1300	380	NS	180	330	120	80	290	360	970	NS	NP	NP	5
09/18/01	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	5
10/29/01	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	5
01/30/02	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	5
02/28/02	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	500
04/15/02	1300	41	NS	ND	ND	160	23	190	460	1400	NS	NP	NP	5
09/26/02	330	500	750	4200	120	230	93	410	910	1400	11000	NP	NP	5
04/28/03	600	66	220	1800	160	140	110	92	360	800	2800	NP	NP	5
10/30/03	320	100	NT	210	310	130	95	110	1200	270	4900	NP	NP	5
04/20/04	320	56	120	410	460	170	140	210	62	940	2000	NP	NP	5
10/21/04	320	40	200	300	310	140	140	130	12	900	4900	NP	NP	5
04/18/05	480	55	160	7200	610	180	160	140	12	1000	3700	NP	NP	5
10/13/05	770	37	160	1700	870	250	160	140	27	810	2700	NP	NP	5
04/25/06	650	ND	ND	ND	1100	ND	ND	ND	ND	750	2700	NP	NP	500
10/20/06	410	22	180	470	1100	ND	ND	ND	160	ND	650	NP	NP	5
04/25/07	290	ND	200	240	1300	1500	130	180	ND	ND	600	NP	NP	100
10/31/07	501	31.5	223	198	1350	591	184	208	62.4	516	872	NP	NP	5
04/23/08	194	30.8	253	168	1230	661	216	202	61.8	151	361	NP	NP	5
10/20/08	474	66	313	224	1210	894	164	216	41.1	182	245	NP	NP	5
04/22/09	126	47.2	591	309	1300	817	230	216	77	163	NS	NP	NP	5
10/26/09	131	16.8	144	188	1720	987	NS	NS	NS	209	178	NP	NP	5
04/22/10	208	43.5	153	157	1920	1380	NS	NS	20.9	150	74.8	NP	NP	5
10/27/10	147	15.8	162	178	1760	1550	531	234	20	190	111	191	84.4	5
04/29/11	191	16.3	188	182	1620	1390	428	173	13.6	196	125	201	133	5
10/25/11	185	19.7	120	332	1200	1300	945	205	8.2	238	123	161	154	5
04/20/12	304	17.5	129	153	1020	1140	442	215	9.5	232	65	249	169	5
10/24/12	389	19	124	167	889	1030	393	229	26.1	235	43	177	181	5
N_i	26	25	20	25	25	24	22	22	23	24	20	5	5	
sum of rank values (R_i)	4414.0	1194.0	2328.0	3752.5	4945.0	3881.0	2311.0	2552.5	1653.5	3847.5	3539.5	636.5	456.0	
avg rank value (Rbar)	169.8	47.8	116.4	150.1	197.8	161.7	105.0	116.0	71.9	160.3	177.0	127.3	91.2	

	Number of each rank value													Rank Value
rank value of NDs =	0	2	1	2	1	2	2	2	2	2	0	0	0	8.5
rank value of 8.2s =	0	0	0	0	0	0	0	0	1	0	0	0	0	17
rank value of 9.5s =	0	0	0	0	0	0	0	0	1	0	0	0	0	18
rank value of 12s =	0	0	0	0	0	0	0	0	2	0	0	0	0	19.5
rank value of 13.6s =	0	0	0	0	0	0	0	0	1	0	0	0	0	21
rank value of 15.8s =	0	1	0	0	0	0	0	0	0	0	0	0	0	22
rank value of 16.3s =	0	1	0	0	0	0	0	0	0	0	0	0	0	23
rank value of 16.8s =	0	1	0	0	0	0	0	0	0	0	0	0	0	24
rank value of 17.5s =	0	1	0	0	0	0	0	0	0	0	0	0	0	25
rank value of 19s =	0	1	0	0	0	0	0	0	0	0	0	0	0	26
rank value of 19.7s =	0	1	0	0	0	0	0	0	0	0	0	0	0	27
rank value of 20s =	0	0	0	0	0	0	0	0	1	0	0	0	0	28
rank value of 20.9s =	0	0	0	0	0	0	0	0	1	0	0	0	0	29
rank value of 22s =	0	1	0	0	0	0	0	0	0	0	0	0	0	30
rank value of 23s =	0	0	0	0	0	0	1	0	0	0	0	0	0	31
rank value of 26.1s =	0	0	0	0	0	0	0	0	1	0	0	0	0	32
rank value of 27s =	0	0	0	0	0	0	0	0	1	0	0	0	0	33
rank value of 30s =	0	1	0	0	0	0	0	0	0	0	0	0	0	34
rank value of 30.8s =	0	1	0	0	0	0	0	0	0	0	0	0	0	35
rank value of 31.5s =	0	1	0	0	0	0	0	0	0	0	0	0	0	36
rank value of 37s =	0	1	0	0	0	0	0	0	0	0	0	0	0	37
rank value of 40s =	0	1	0	0	0	0	0	0	0	0	0	0	0	38
rank value of 41s =	0	1	0	0	0	0	0	0	0	0	0	0	0	39
rank value of 41.1s =	0	0	0	0	0	0	0	0	1	0	0	0	0	40
rank value of 43.2s =	0	0	0	0	0	0	0	0	0	0	1	0	0	41
rank value of 43.5s =	0	1	0	0	0	0	0	0	0	0	0	0	0	42
rank value of 47.2s =	0	1	0	0	0	0	0	0	0	0	0	0	0	43
rank value of 55s =	0	1	0	0	0	0	0	0	0	0	0	0	0	44
rank value of 56s =	0	1	0	0	0	0	0	0	0	0	0	0	0	45
rank value of 61.8s =	0	0	0	0	0	0	0	0	1	0	0	0	0	46
rank value of 62s =	0	0	0	0	0	0	0	0	1	0	0	0	0	47
rank value of 62.4s =	0	0	0	0	0	0	0	0	1	0	0	0	0	48
rank value of 63s =	0	0	0	0	0	0	1	0	0	0	0	0	0	49
rank value of 64.8s =	0	0	0	0	0	0	0	0	0	0	1	0	0	50
rank value of 66s =	0	2	0	0	0	0	0	0	0	0	0	0	0	51.5
rank value of 67s =	0	1	0	0	0	0	0	0	0	0	0	0	0	53
rank value of 74.8s =	0	0	0	0	0	0	0	0	0	0	1	0	0	54
rank value of 77s =	0	0	0	0	0	0	0	0	1	0	0	0	0	55
rank value of 80s =	0	0	0	0	0	0	1	0	0	0	0	0	0	56
rank value of 84.4s =	0	0	0	0	0	0	0	0	0	0	0	0	1	57
rank value of 92s =	0	0	0	0	1	0	0	1	0	0	0	0	0	58.5
rank value of 93s =	0	0	0	0	0	0	1	0	1	0	0	0	0	60.5
rank value of 95s =	0	0	0	0	0	0	1	0	0	0	0	0	0	62
rank value of 100s =	0	1	0	0	0	0	0	0	0	0	0	0	0	63
rank value of 110s =	0	0	0	0	0	0	1	1	0	0	0	0	0	64.5
rank value of 111s =	0	0	0	0	0	0	0	0	0	0	1	0	0	66
rank value of 120s =	0	0	2	0	1	1	0	0	0	0	0	0	0	68.5

rank value of 123s =	0	0	0	0	0	0	0	0	0	0	1	0	0	71
rank value of 124s =	0	0	1	0	0	0	0	0	0	0	0	0	0	72
rank value of 125s =	0	0	0	0	0	0	0	0	0	0	1	0	0	73
rank value of 126s =	1	0	0	0	0	0	0	0	0	0	0	0	0	74
rank value of 129s =	0	0	1	0	0	0	0	0	0	0	0	0	0	75
rank value of 130s =	0	0	0	0	0	1	1	1	0	0	0	0	0	77
rank value of 131s =	1	0	0	0	0	0	0	0	0	0	0	0	0	79
rank value of 133s =	0	0	0	0	0	0	0	0	0	0	0	0	1	80
rank value of 140s =	0	0	0	0	0	2	2	2	0	0	0	0	0	83.5
rank value of 144s =	0	0	1	0	0	0	0	0	0	0	0	0	0	87
rank value of 147s =	1	0	0	0	0	0	0	0	0	0	0	0	0	88
rank value of 150s =	0	0	0	0	0	0	0	0	0	1	0	0	0	89
rank value of 151s =	0	0	0	0	0	0	0	0	0	1	0	0	0	90
rank value of 153s =	0	0	1	1	0	0	0	0	0	0	0	0	0	91.5
rank value of 154s =	0	0	0	0	0	0	0	0	0	0	0	0	1	93
rank value of 157s =	0	0	0	1	0	0	0	0	0	0	0	0	0	94
rank value of 160s =	0	0	2	0	1	1	2	0	1	0	0	0	0	98
rank value of 161s =	0	0	0	0	0	0	0	0	0	0	0	1	0	102
rank value of 162s =	0	0	1	0	0	0	0	0	0	0	0	0	0	103
rank value of 163s =	0	0	0	0	0	0	0	0	0	1	0	0	0	104
rank value of 164s =	0	0	0	0	0	0	1	0	0	0	0	0	0	105
rank value of 167s =	0	0	0	1	0	0	0	0	0	0	0	0	0	106
rank value of 168s =	0	0	0	1	0	0	0	0	0	0	0	0	0	107
rank value of 169s =	0	0	0	0	0	0	0	0	0	0	0	0	1	108
rank value of 170s =	0	0	0	0	0	1	0	0	0	0	0	0	0	109
rank value of 173s =	0	0	0	0	0	0	0	1	0	0	0	0	0	110
rank value of 177s =	0	0	0	0	0	0	0	0	0	0	0	1	0	111
rank value of 178s =	0	0	0	1	0	0	0	0	0	0	1	0	0	112.5
rank value of 180s =	0	0	1	1	0	1	0	1	0	0	0	0	0	115.5
rank value of 181s =	0	0	0	0	0	0	0	0	0	0	0	0	1	118
rank value of 182s =	0	0	0	1	0	0	0	0	0	1	0	0	0	119.5
rank value of 184s =	0	0	0	0	0	0	1	0	0	0	0	0	0	121
rank value of 185s =	1	0	0	0	0	0	0	0	0	0	0	0	0	122
rank value of 188s =	0	0	1	1	0	0	0	0	0	0	0	0	0	123.5
rank value of 190s =	0	0	0	0	0	0	0	1	0	1	0	0	0	125.5
rank value of 191s =	1	0	0	0	0	0	0	0	0	0	0	1	0	127.5
rank value of 194s =	1	0	0	0	0	0	0	0	0	0	0	0	0	129
rank value of 196s =	0	0	0	0	0	0	0	0	0	1	0	0	0	130
rank value of 198s =	0	0	0	1	0	0	0	0	0	0	0	0	0	131
rank value of 200s =	0	0	2	0	0	1	0	0	0	0	0	0	0	133
rank value of 201s =	0	0	0	0	0	0	0	0	0	0	0	1	0	135
rank value of 202s =	0	0	0	0	0	0	0	1	0	0	0	0	0	136
rank value of 205s =	0	0	0	0	0	0	0	1	0	0	0	0	0	137
rank value of 208s =	1	0	0	0	0	0	0	1	0	0	0	0	0	138.5
rank value of 209s =	0	0	0	0	0	0	0	0	0	1	0	0	0	140
rank value of 210s =	0	0	0	1	0	0	0	1	0	0	0	0	0	141.5
rank value of 215s =	0	0	0	0	0	0	0	1	0	0	0	0	0	143
rank value of 216s =	0	0	0	0	0	0	1	2	0	0	0	0	0	145
rank value of 220s =	0	0	1	0	0	0	0	0	0	0	0	0	0	147
rank value of 223s =	0	0	1	0	0	0	0	0	0	0	0	0	0	148
rank value of 224s =	0	0	0	1	0	0	0	0	0	0	0	0	0	149
rank value of 229s =	0	0	0	0	0	0	0	1	0	0	0	0	0	150
rank value of 230s =	0	0	0	0	0	1	1	0	0	1	0	0	0	152
rank value of 232s =	0	0	0	0	0	0	0	0	0	1	0	0	0	154
rank value of 234s =	0	0	0	0	0	0	0	1	0	0	0	0	0	155
rank value of 235s =	0	0	0	0	0	0	0	0	0	1	0	0	0	156
rank value of 238s =	0	0	0	0	0	0	0	0	0	1	0	0	0	157
rank value of 240s =	0	0	0	2	0	0	0	0	0	0	0	0	0	158.5
rank value of 245s =	0	0	0	0	0	0	0	0	0	0	1	0	0	160
rank value of 249s =	0	0	0	0	0	0	0	0	0	0	0	1	0	161
rank value of 250s =	1	0	0	0	0	1	0	0	0	0	0	0	0	162.5
rank value of 253s =	0	0	1	0	0	0	0	0	0	0	0	0	0	164
rank value of 270s =	0	0	0	0	0	0	0	0	0	1	0	0	0	165
rank value of 290s =	1	0	0	0	0	0	0	1	0	0	0	0	0	166.5
rank value of 300s =	1	0	0	1	0	0	0	1	0	0	0	0	0	169
rank value of 304s =	1	0	0	0	0	0	0	0	0	0	0	0	0	171
rank value of 309s =	0	0	0	1	0	0	0	0	0	0	0	0	0	172
rank value of 310s =	0	0	0	0	2	0	0	0	0	0	0	0	0	173.5
rank value of 313s =	0	0	1	0	0	0	0	0	0	0	0	0	0	175
rank value of 320s =	3	0	0	0	0	0	0	0	0	0	0	0	0	177
rank value of 330s =	2	0	0	1	1	0	0	0	0	0	0	0	0	180.5
rank value of 332s =	0	0	0	1	0	0	0	0	0	0	0	0	0	183
rank value of 360s =	0	0	0	0	0	0	0	0	2	0	0	0	0	184.5
rank value of 361s =	0	0	0	0	0	0	0	0	0	0	1	0	0	186
rank value of 380s =	0	1	0	0	0	0	0	0	0	0	0	0	0	187
rank value of 389s =	1	0	0	0	0	0	0	0	0	0	0	0	0	188
rank value of 393s =	0	0	0	0	0	0	1	0	0	0	0	0	0	189
rank value of 410s =	1	0	0	1	0	0	0	1	0	0	0	0	0	191
rank value of 420s =	0	0	0	0	1	0	0	0	0	0	0	0	0	193
rank value of 428s =	0	0	0	0	0	0	1	0	0	0	0	0	0	194
rank value of 442s =	0	0	0	0	0	0	1	0	0	0	0	0	0	195
rank value of 460s =	0	0	0	0	1	0	0	0	1	0	0	0	0	196.5
rank value of 470s =	0	0	0	1	0	0	0	0	0	0	0	0	0	198
rank value of 474s =	1	0	0	0	0	0	0	0	0	0	0	0	0	199
rank value of 480s =	1	0	0	0	0	0	0	0	0	0	0	0	0	200
rank value of 500s =	0	1	0	0	0	0	0	0	0	0	0	0	0	201
rank value of 501s =	1	0	0	0	0	0	0	0	0	0	0	0	0	202
rank value of 516s =	0	0	0	0	0	0	0	0	0	1	0	0	0	203
rank value of 531s =	0	0	0	0	0	0	1	0	0	0	0	0	0	204
rank value of 591s =	0	0	1	0	0	1	0	0	0	0	0	0	0	205.5
rank value of 600s =	1	0	0	0	0	0	0	0	0	0	1	0	0	207.5
rank value of 610s =	0	0	0	0	1	0	0	0	0	0	0	0	0	209
rank value of 650s =	1	0	0	0	0	0	0	0	0	0	1	0	0	210.5
rank value of 661s =	0	0	0	0	0	1	0	0	0	0	0	0	0	212
rank value of 750s =	0	0	1	0	0	0	0	0	0	1	0	0	0	213.5
rank value of 770s =	1	0	0	0	0	0	0	0	0	0	0	0	0	215
rank value of 800s =	0	0	0	0	0	0	0	0	0	1	0	0	0	216

rank value of 810s =	0	0	0	0	0	0	0	0	0	1	0	0	0	217
rank value of 817s =	0	0	0	0	0	1	0	0	0	0	0	0	0	218
rank value of 870s =	0	0	0	0	1	0	0	0	0	0	0	0	0	219
rank value of 872s =	0	0	0	0	0	0	0	0	0	0	1	0	0	220
rank value of 889s =	0	0	0	0	1	0	0	0	0	0	0	0	0	221
rank value of 894s =	0	0	0	0	0	1	0	0	0	0	0	0	0	222
rank value of 900s =	0	0	0	0	0	0	0	0	0	1	0	0	0	223
rank value of 910s =	0	0	0	0	0	0	0	0	1	0	0	0	0	224
rank value of 940s =	0	0	0	0	0	0	0	0	0	1	0	0	0	225
rank value of 945s =	0	0	0	0	0	0	1	0	0	0	0	0	0	226
rank value of 970s =	0	0	0	0	0	0	0	0	0	1	0	0	0	227
rank value of 987s =	0	0	0	0	0	1	0	0	0	0	0	0	0	228
rank value of 1000s =	0	0	0	0	0	0	0	0	0	1	0	0	0	229
rank value of 1020s =	0	0	0	0	1	0	0	0	0	0	0	0	0	230
rank value of 1030s =	0	0	0	0	0	1	0	0	0	0	0	0	0	231
rank value of 1100s =	0	0	0	0	2	0	0	0	0	0	0	0	0	232.5
rank value of 1140s =	0	0	0	0	0	1	0	0	0	0	0	0	0	234
rank value of 1200s =	0	0	0	0	1	0	0	0	1	0	0	0	0	235.5
rank value of 1210s =	0	0	0	0	1	0	0	0	0	0	0	0	0	237
rank value of 1230s =	0	0	0	0	1	0	0	0	0	0	0	0	0	238
rank value of 1300s =	2	0	0	0	2	1	0	0	0	0	0	0	0	241
rank value of 1350s =	0	0	0	0	1	0	0	0	0	0	0	0	0	244
rank value of 1380s =	0	0	0	0	0	1	0	0	0	0	0	0	0	245
rank value of 1390s =	0	0	0	0	0	1	0	0	0	0	0	0	0	246
rank value of 1400s =	0	0	0	0	0	0	0	0	0	2	0	0	0	247.5
rank value of 1500s =	0	0	0	0	0	1	0	0	0	0	0	0	0	249
rank value of 1550s =	0	0	0	0	0	1	0	0	0	0	0	0	0	250
rank value of 1620s =	0	0	0	0	1	0	0	0	0	0	0	0	0	251
rank value of 1700s =	0	0	0	1	0	0	0	0	0	0	0	0	0	252
rank value of 1720s =	0	0	0	0	1	0	0	0	0	0	0	0	0	253
rank value of 1760s =	0	0	0	0	1	0	0	0	0	0	0	0	0	254
rank value of 1800s =	0	0	0	1	0	0	0	0	0	0	0	0	0	255
rank value of 1920s =	0	0	0	0	1	0	0	0	0	0	0	0	0	256
rank value of 2000s =	0	0	0	0	0	0	0	0	0	0	1	0	0	257
rank value of 2700s =	0	0	0	0	0	0	0	0	0	0	2	0	0	258.5
rank value of 2800s =	0	0	0	0	0	0	0	0	0	0	1	0	0	260
rank value of 3700s =	0	0	0	0	0	0	0	0	0	0	1	0	0	261
rank value of 4200s =	0	0	0	1	0	0	0	0	0	0	0	0	0	262
rank value of 4900s =	0	0	0	0	0	0	0	0	0	0	2	0	0	263.5
rank value of 7200s =	0	0	0	1	0	0	0	0	0	0	0	0	0	265
rank value of 11000s =	0	0	0	0	0	0	0	0	0	0	1	0	0	266
n =	**26**	**25**	**20**	**25**	**25**	**24**	**22**	**22**	**23**	**24**	**20**	**5**	**5**	

Sum of rank value calculations

0	17	8.5	17	8.5	17	17	17	17	17	0	0	0
0	0	0	0	0	0	0	0	17	0	0	0	0
0	0	0	0	0	0	0	0	18	0	0	0	0
0	0	0	0	0	0	0	0	39	0	0	0	0
0	0	0	0	0	0	0	0	21	0	0	0	0
0	22	0	0	0	0	0	0	0	0	0	0	0
0	23	0	0	0	0	0	0	0	0	0	0	0
0	24	0	0	0	0	0	0	0	0	0	0	0
0	25	0	0	0	0	0	0	0	0	0	0	0
0	26	0	0	0	0	0	0	0	0	0	0	0
0	27	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	28	0	0	0	0
0	0	0	0	0	0	0	0	29	0	0	0	0
0	30	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	31	0	0	0	0	0	0
0	0	0	0	0	0	0	0	32	0	0	0	0
0	0	0	0	0	0	0	0	33	0	0	0	0
0	34	0	0	0	0	0	0	0	0	0	0	0
0	35	0	0	0	0	0	0	0	0	0	0	0
0	36	0	0	0	0	0	0	0	0	0	0	0
0	37	0	0	0	0	0	0	0	0	0	0	0
0	38	0	0	0	0	0	0	0	0	0	0	0
0	39	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	40	0	0	0	0
0	0	0	0	0	0	0	0	0	0	41	0	0
0	42	0	0	0	0	0	0	0	0	0	0	0
0	43	0	0	0	0	0	0	0	0	0	0	0
0	44	0	0	0	0	0	0	0	0	0	0	0
0	45	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	46	0	0	0	0
0	0	0	0	0	0	0	0	47	0	0	0	0
0	0	0	0	0	0	0	0	48	0	0	0	0
0	0	0	0	0	0	49	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	50	0	0
0	103	0	0	0	0	0	0	0	0	0	0	0
0	53	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	54	0	0
0	0	0	0	0	0	0	0	55	0	0	0	0
0	0	0	0	0	0	56	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	57
0	0	0	0	58.5	0	0	58.5	0	0	0	0	0
0	0	0	0	0	0	60.5	0	60.5	0	0	0	0
0	0	0	0	0	0	62	0	0	0	0	0	0
0	63	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	64.5	64.5	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	66	0	0
0	0	137	0	68.5	68.5	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	71	0	0
0	0	72	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	73	0	0
74	0	0	0	0	0	0	0	0	0	0	0	0

0	0	75	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	77	77	77	0	0	0	0	0
79	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	80
0	0	0	0	0	167	167	167	0	0	0	0	0
0	0	87	0	0	0	0	0	0	0	0	0	0
88	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	89	0	0	0
0	0	0	0	0	0	0	0	0	90	0	0	0
0	0	91.5	91.5	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	93
0	0	0	94	0	0	0	0	0	0	0	0	0
0	0	196	0	98	98	196	0	98	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	102	0
0	0	103	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	104	0	0	0
0	0	0	0	0	0	105	0	0	0	0	0	0
0	0	0	106	0	0	0	0	0	0	0	0	0
0	0	0	107	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	108
0	0	0	0	0	109	0	0	0	0	0	0	0
0	0	0	0	0	0	0	110	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	111	0
0	0	0	112.5	0	0	0	0	0	0	112.5	0	0
0	0	115.5	115.5	0	115.5	0	115.5	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	118
0	0	0	119.5	0	0	0	0	0	119.5	0	0	0
0	0	0	0	0	0	121	0	0	0	0	0	0
122	0	0	0	0	0	0	0	0	0	0	0	0
0	0	123.5	123.5	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	125.5	0	125.5	0	0	0
127.5	0	0	0	0	0	0	0	0	0	0	127.5	0
129	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	130	0	0	0
0	0	0	131	0	0	0	0	0	0	0	0	0
0	0	266	0	0	133	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	135	0
0	0	0	0	0	0	0	136	0	0	0	0	0
0	0	0	0	0	0	0	137	0	0	0	0	0
138.5	0	0	0	0	0	0	138.5	0	0	0	0	0
0	0	0	0	0	0	0	0	0	140	0	0	0
0	0	0	141.5	0	0	0	141.5	0	0	0	0	0
0	0	0	0	0	0	0	143	0	0	0	0	0
0	0	0	0	0	0	145	290	0	0	0	0	0
0	0	147	0	0	0	0	0	0	0	0	0	0
0	0	148	0	0	0	0	0	0	0	0	0	0
0	0	0	149	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	150	0	0	0	0	0
0	0	0	0	0	152	152	0	0	152	0	0	0
0	0	0	0	0	0	0	0	0	154	0	0	0
0	0	0	0	0	0	0	155	0	0	0	0	0
0	0	0	0	0	0	0	0	0	156	0	0	0
0	0	0	0	0	0	0	0	0	157	0	0	0
0	0	0	317	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	160	0	0
0	0	0	0	0	0	0	0	0	0	0	161	0
162.5	0	0	0	0	162.5	0	0	0	0	0	0	0
0	0	164	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	165	0	0	0
166.5	0	0	0	0	0	0	166.5	0	0	0	0	0
169	0	0	169	0	0	0	169	0	0	0	0	0
171	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	172	0	0	0	0	0	0	0	0	0
0	0	0	0	347	0	0	0	0	0	0	0	0
0	0	175	0	0	0	0	0	0	0	0	0	0
531	0	0	0	0	0	0	0	0	0	0	0	0
361	0	0	180.5	180.5	0	0	0	0	0	0	0	0
0	0	0	183	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	369	0	0	0	0
0	0	0	0	0	0	0	0	0	0	186	0	0
0	187	0	0	0	0	0	0	0	0	0	0	0
188	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	189	0	0	0	0	0	0
191	0	0	191	0	0	0	191	0	0	0	0	0
0	0	0	0	193	0	0	0	0	0	0	0	0
0	0	0	0	0	0	194	0	0	0	0	0	0
0	0	0	0	0	0	195	0	0	0	0	0	0
0	0	0	0	196.5	0	0	0	196.5	0	0	0	0
0	0	0	198	0	0	0	0	0	0	0	0	0
199	0	0	0	0	0	0	0	0	0	0	0	0
200	0	0	0	0	0	0	0	0	0	0	0	0
0	201	0	0	0	0	0	0	0	0	0	0	0
202	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	203	0	0	0
0	0	0	0	0	0	204	0	0	0	0	0	0
0	0	205.5	0	0	205.5	0	0	0	0	0	0	0
207.5	0	0	0	0	0	0	0	0	0	207.5	0	0
0	0	0	0	209	0	0	0	0	0	0	0	0
210.5	0	0	0	0	0	0	0	0	0	210.5	0	0
0	0	0	0	0	212	0	0	0	0	0	0	0
0	0	213.5	0	0	0	0	0	0	213.5	0	0	0
215	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	216	0	0	0
0	0	0	0	0	0	0	0	0	217	0	0	0
0	0	0	0	0	218	0	0	0	0	0	0	0
0	0	0	0	219	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	220	0	0

0	0	0	0	221	0	0	0	0	0	0	0	0
0	0	0	0	0	222	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	223	0	0	0
0	0	0	0	0	0	0	0	224	0	0	0	0
0	0	0	0	0	0	0	0	0	225	0	0	0
0	0	0	0	0	0	226	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	227	0	0	0
0	0	0	0	0	228	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	229	0	0	0
0	0	0	0	230	0	0	0	0	0	0	0	0
0	0	0	0	0	231	0	0	0	0	0	0	0
0	0	0	0	465	0	0	0	0	0	0	0	0
0	0	0	0	0	234	0	0	0	0	0	0	0
0	0	0	0	235.5	0	0	0	235.5	0	0	0	0
0	0	0	0	237	0	0	0	0	0	0	0	0
0	0	0	0	238	0	0	0	0	0	0	0	0
482	0	0	0	482	241	0	0	0	0	0	0	0
0	0	0	0	244	0	0	0	0	0	0	0	0
0	0	0	0	0	245	0	0	0	0	0	0	0
0	0	0	0	0	246	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	495	0	0	0
0	0	0	0	0	249	0	0	0	0	0	0	0
0	0	0	0	0	250	0	0	0	0	0	0	0
0	0	0	0	251	0	0	0	0	0	0	0	0
0	0	0	252	0	0	0	0	0	0	0	0	0
0	0	0	0	253	0	0	0	0	0	0	0	0
0	0	0	0	254	0	0	0	0	0	0	0	0
0	0	0	255	0	0	0	0	0	0	0	0	0
0	0	0	0	256	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	257	0	0
0	0	0	0	0	0	0	0	0	0	517	0	0
0	0	0	0	0	0	0	0	0	0	260	0	0
0	0	0	0	0	0	0	0	0	0	261	0	0
0	0	0	262	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	527	0	0
0	0	0	265	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	266	0	0
sum of rank values (R_i)	**4414**	**1194**	**2328**	**3752.5**	**4945**	**3881**	**2311**	**2552.5**	**1653.5**	**3847.5**	**3539.5**	**636.5**	**456**

Compute the Kruskal-Wallis statistic:

$$H = \{[12/N(N+1)] * [\Sigma^{K}_{i=1} (R_i^2/N_i]\} -3(N+1)$$

Well =	**Background**	**MW-1A**	**MW-2**	**MW-2D**	**MW-3**	**MW-3D**	**MW-4A**	**MW-8**	**MW-15**	**MW-16**	**MW-17**
Ri^2/N_i =	887043.6	563250	978121	627590	242760	296148	118872	616802	626403	81026	41587

$N_{i\,bg}$ = 71
N = 266
H = 57.26

Adjust H for ties:

T_t = 5262 sum of T1..T2

$H' = H/(1-(T_t/(N^3-N)))$
H' = 57.27
Chi-square = 18.31

Compare the calculated value H' to the tabulated Chi-square value with K-1 = # groups -1 = 17df at the 5% significance level from Table 1 of the IFG. The value is 18.31 which is less than H' =57.27.
Therefore, there is evidence of significant differences between the well groups.
Post-hoc pairwise comparisons are necessary (see below).

Calculate the critical values to compare each compliance well to the background wells:

Critical Value (C_x) = $P(N(N+1)/12)^{0.5} * (1/N_{i\,bg}+1/N_x)^{0.5}$
P = 2.33 Percentile of Standard Normal Distribution
from Table 4 of IFG
N = total sample size
$N_{i\,bg}$ = total samples (N_i) of background data
N_x = total samples (N_i) of well x

Difference between average ranks (Dx) = Rbar (well x) - avg Rbar (background)

Well =	MW-1A	**MW-2**	**MW-2D**	MW-3	MW-3D	MW-4A	**MW-8**	**MW-15**	MW-16	MW-17
Rbar (well x) =	150.1	197.8	161.7	105.0	116.0	71.9	160.3	177.0	127.3	91.2
avg Rbar (background) =	111.8	111.8	111.8	111.8	111.8	111.8	111.8	111.8	111.8	111.8
Dx =	38.3	86.0	49.9	-6.7	4.2	-39.9	48.5	65.2	15.5	-20.6
Cx =	41.7	41.7	42.3	43.7	43.7	43.0	42.3	45.4	82.9	82.9
Statistical Significance ?	No	**Yes**	**Yes**	No	No	No	**Yes**	**Yes**	No	No
If SSI, is current event above MCL?	-	**Yes**	**Yes**	-	-	-	No	No	-	-

Compare each difference (Dx) with the corresponding critical value (Cx).
The Dx value for the above indicated wells do exceed the corresponding Cx value.
Therefore, we conclude that the concentration of Total Barium averaged over these compliance wells are significantly greater than that of the background wells.
Shewart-CUSUM Control Charts should be performed for each failing well to check for statistical significance.

White Oak Landfill
Haywood County, North Carolina
BLE Project Number J12-1957-31

Compound: **Total Barium**
NC MCL (µg/l): 700
Method: Levene's Test for Homogeneity
Background: MW-11S, MW-11D, & MW-14

	MW-11S	MW-11D	MW-14	MW-1A	MW-2	MW-2D	MW-3	MW-3D	MW-4A	MW-8	MW-15	MW-16	MW-17	MDL
4/24/00	250	NS	NS	240	420	200	63	300	93	230	NS	NP	NP	5
6/26/00	300	67	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	5
7/26/00	330	30	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	5
9/18/00	NS	NS	NS	330	92	NS	NS	NS	NT	NS	NS	NP	NP	500
4/9/01	1300	380	NS	180	330	120	80	290	360	970	NS	NP	NP	5
9/18/01	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	5
10/29/01	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	5
1/30/02	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	5
2/28/02	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	500
4/15/02	1300	41	NS	ND	ND	160	23	190	460	1400	NS	NP	NP	5
9/26/02	330	500	750	4200	120	230	93	410	910	1400	11000	NP	NP	5
4/28/03	600	66	220	1800	160	140	110	92	360	800	2800	NP	NP	5
10/30/03	320	100	NT	210	310	130	95	110	1200	270	4900	NP	NP	5
4/20/04	320	56	120	410	460	170	140	210	62	940	2000	NP	NP	5
10/21/04	320	40	200	300	310	140	140	130	12	900	4900	NP	NP	5
4/18/05	480	55	160	7200	610	180	160	140	12	1000	3700	NP	NP	5
10/13/05	770	37	160	1700	870	250	160	140	27	810	2700	NP	NP	5
4/25/06	650	ND	ND	ND	1100	ND	ND	ND	ND	750	2700	NP	NP	500
10/20/06	410	22	180	470	1100	ND	ND	ND	160	ND	650	NP	NP	5
4/25/07	290	ND	200	240	1300	1500	130	180	ND	ND	600	NP	NP	100
10/31/07	501	31.5	223	198	1350	591	184	208	62.4	516	872	NP	NP	5
4/23/08	194	30.8	253	168	1230	661	216	202	61.8	151	361	NP	NP	5
10/20/08	474	66	313	224	1210	894	164	216	41.1	182	245	NP	NP	5
4/22/09	126	47.2	591	309	1300	817	230	216	77	163	NS	NP	NP	5
10/26/09	131	16.8	144	188	1720	987	NS	NS	NS	209	178	NP	NP	5
4/22/10	208	43.5	153	157	1920	1380	NS	NS	20.9	150	74.8	NP	NP	5
10/27/10	147	15.8	162	178	1760	1550	531	234	20	190	111	191	84.4	5
4/29/11	191	16.3	188	182	1620	1390	428	173	13.6	196	125	201	133	5
10/25/11	185	19.7	120	332	1200	1300	945	205	8.2	238	123	161	154	5
4/20/12	304	17.5	129	153	1020	1140	442	215	9.5	232	64.8	249	169	5
10/24/12	389	19	124	167	889	1030	393	229	26.1	235	43.2	177	181	5

If not detected (ND), use half of the detection limit.

250			240	420	200	63	300	93	230		
300	67										
330	30										
			330	92							
1300	380		180	330	120	80	290	360	970		
1300	41		2.5	2.5	160	23	190	460	1400		
330	500	750	4200	120	230	93	410	910	1400	11000	
600	66	220	1800	160	140	110	92	360	800	2800	
320	100		210	310	130	95	110	1200	270	4900	
320	56	120	410	460	170	140	210	62	940	2000	
320	40	200	300	310	140	140	130	12	900	4900	
480	55	160	7200	610	180	160	140	12	1000	3700	
770	37	160	1700	870	250	160	140	27	810	2700	
650	250	250	250	1100	250	250	250	250	750	2700	
410	22	180	470	1100	2.5	2.5	2.5	160	2.5	650	
290	50	200	240	1300	1500	130	180	50	50	600	
501	31.5	223	198	1350	591	184	208	62.4	516	872	
194	30.8	253	168	1230	661	216	202	61.8	151	361	
474	66	313	224	1210	894	164	216	41.1	182	245	
126	47.2	591	309	1300	817	230	216	77	163		
131	16.8	144	188	1720	987				209	178	
208	43.5	153	157	1920	1380			20.9	150	74.8	
147	15.8	162	178	1760	1550	531	234	20	190	111	191	84.4
191	16.3	188	182	1620	1390	428	173	13.6	196	125	201	133

	185	19.7	120	332	1200	1300	945	205	8.2	238	123	161	154
	304	17.5	129	153	1020	1140	442	215	9.5	232	64.8	249	169
	389	19	124	167	889	1030	393	229	26.1	235	43.2	177	181
n =	26	25	20	25	25	24	22	22	23	24	20	5	5
bar x_i =	416.15	80.724	232	791.54	896.14	633.85	226.34	197.39	186.81	499.35	1907.4	195.8	144.28
z_{ij} =	166.15			551.54	476.14	433.85	163.34	102.61	93.809	269.35			
	116.15	13.724											
	86.154	50.724											
				461.54	804.14								
	883.85	299.28		611.54	566.14	513.85	146.34	92.614	173.19	470.65			
	883.85	39.724		789.04	893.64	473.85	203.34	7.3864	273.19	900.65			
	86.154	419.28	518	3408.5	776.14	403.85	133.34	212.61	723.19	900.65	9092.6		
	183.85	14.724	12	1008.5	736.14	493.85	116.34	105.39	173.19	300.65	892.61		
	96.154	19.276		581.54	586.14	503.85	131.34	87.386	1013.2	229.35	2992.6		
	96.154	24.724	112	381.54	436.14	463.85	86.341	12.614	124.81	440.65	92.61		
	96.154	40.724	32	491.54	586.14	493.85	86.341	67.386	174.81	400.65	2992.6		
	63.846	25.724	72	6408.5	286.14	453.85	66.341	57.386	174.81	500.65	1792.6		
	353.85	43.724	72	908.46	26.14	383.85	66.341	57.386	159.81	310.65	792.61		
	233.85	169.28	18	541.54	203.86	383.85	23.659	52.614	63.191	250.65	792.61		
	6.1538	58.724	52	321.54	203.86	631.35	223.84	194.89	26.809	496.85	1257.4		
	126.15	30.724	32	551.54	403.86	866.15	96.341	17.386	136.81	449.35	1307.4		
	84.846	49.224	9	593.54	453.86	42.854	42.341	10.614	124.41	16.646	1035.4		
	222.15	49.924	21	623.54	333.86	27.146	10.341	4.6136	125.01	348.35	1546.4		
	57.846	14.724	81	567.54	313.86	260.15	62.341	18.614	145.71	317.35	1662.4		
	290.15	33.524	359	482.54	403.86	183.15	3.6591	18.614	109.81	336.35			
	285.15	63.924	88	603.54	823.86	353.15				290.35	1729.4		
	208.15	37.224	79	634.54	1023.9	746.15			165.91	349.35	1832.6		
	269.15	64.924	70	613.54	863.86	916.15	304.66	36.614	166.81	309.35	1796.4	4.8	59.88
	225.15	64.424	44	609.54	723.86	756.15	201.66	24.386	173.21	303.35	1782.4	5.2	11.28
	231.15	61.024	112	459.54	303.86	666.15	718.66	7.6136	178.61	261.35	1784.4	34.8	9.72
	112.15	63.224	103	638.54	123.86	506.15	215.66	17.614	177.31	267.35	1842.6	53.2	24.72
	27.154	61.724	108	624.54	7.14	396.15	166.66	31.614	160.71	264.35	1864.2	18.8	36.72
bar z_i =	211.21	72.568	99.7	938.71	494.41	473.05	148.6	56.271	210.36	374.37	1944.1	23.36	28.464
n_i * bar z_i^2 =	1E+06	131654	198802	2E+07	6E+06	5E+06	485811	69661	1E+06	3E+06	8E+07	2728.4	4051

bar z = 390.4
N = 266

	SS	df	MS	F_{Ratio}	$F_{critical}$
Between Wells	7E+07	12	6E+06	8.25	1.67
Error	2E+08	253	757210		
Total	3E+08	265			

Since the F-ratio = 8.25 exceeds the tabulated value of F-critical = 1.67 (see Table 2 of IFG) with 12 and 253 df, the assumption of equal variances should be rejected.
Re-test the data set using the natural log of the above values.

	MW-11S	**MW-11D**	**MW-14**	**MW-1A**	**MW-2**	**MW-2D**	**MW-3**	**MW-3D**	**MW-4A**	**MW-8**	**MW-15**	**MW-16**	**MW-17**
ln=	5.5215			5.4806	6.0403	5.2983	4.1431	5.7038	4.5326	5.4381			
	5.7038	4.2047											
	5.7991	3.4012											
				5.7991	4.5218								
	7.1701	5.9402		5.193	5.7991	4.7875	4.382	5.6699	5.8861	6.8773			
	7.1701	3.7136		0.9163	0.9163	5.0752	3.1355	5.247	6.1312	7.2442			
	5.7991	6.2146	6.6201	8.3428	4.7875	5.4381	4.5326	6.0162	6.8134	7.2442	9.3057		
	6.3969	4.1897	5.3936	7.4955	5.0752	4.9416	4.7005	4.5218	5.8861	6.6846	7.9374		

	5.7683	4.6052		5.3471	5.7366	4.8675	4.5539	4.7005	7.0901	5.5984	8.497		
	5.7683	4.0254	4.7875	6.0162	6.1312	5.1358	4.9416	5.3471	4.1271	6.8459	7.6009		
	5.7683	3.6889	5.2983	5.7038	5.7366	4.9416	4.9416	4.8675	2.4849	6.8024	8.497		
	6.1738	4.0073	5.0752	8.8818	6.4135	5.193	5.0752	4.9416	2.4849	6.9078	8.2161		
	6.6464	3.6109	5.0752	7.4384	6.7685	5.5215	5.0752	4.9416	3.2958	6.697	7.901		
	6.477	5.5215	5.5215	5.5215	7.0031	5.5215	5.5215	5.5215	5.5215	6.6201	7.901		
	6.0162	3.091	5.193	6.1527	7.0031	0.9163	0.9163	0.9163	5.0752	0.9163	6.477		
	5.6699	3.912	5.2983	5.4806	7.1701	7.3132	4.8675	5.193	3.912	3.912	6.3969		
	6.2166	3.45	5.4072	5.2883	7.2079	6.3818	5.2149	5.3375	4.1336	6.2461	6.7708		
	5.2679	3.4275	5.5334	5.124	7.1148	6.4938	5.3753	5.3083	4.1239	5.0173	5.8889		
	6.1612	4.1897	5.7462	5.4116	7.0984	6.7957	5.0999	5.3753	3.716	5.204	5.5013		
	4.8363	3.8544	6.3818	5.7333	7.1701	6.7056	5.4381	5.3753	4.3438	5.0938			
	4.8752	2.8214	4.9698	5.2364	7.4501	6.8947				5.3423	5.1818		
	5.3375	3.7728	5.0304	5.0562	7.5601	7.2298			3.0397	5.0106	4.3148		
	4.9904	2.76	5.0876	5.1818	7.4731	7.346	6.2748	5.4553	2.9957	5.247	4.7095	5.2523	4.4356
	5.2523	2.7912	5.2364	5.204	7.3902	7.2371	6.0591	5.1533	2.6101	5.2781	4.8283	5.3033	4.8903
	5.2204	2.9806	4.7875	5.8051	7.0901	7.1701	6.8512	5.323	2.1041	5.4723	4.8122	5.0814	5.037
	5.717	2.8622	4.8598	5.0304	6.9276	7.0388	6.0913	5.3706	2.2513	5.4467	4.1713	5.5175	5.1299
	5.9636	2.9444	4.8203	5.118	6.7901	6.9373	5.9738	5.4337	3.2619	5.4596	3.7658	5.1761	5.1985
n =	26	25	20	25	25	24	22	22	23	24	20	5	5
bar x_i =	5.8341	3.8392	5.3062	5.6783	6.335	5.8826	4.962	5.0782	4.1661	5.6919	6.4337	5.2661	4.9383
z_{ij} =	0.3127			0.1977	0.2947	0.5843	0.8189	0.6256	0.3665	0.2538			
	0.1303	0.3655											
	0.035	0.438											
				0.1207	1.8132								
	1.336	2.101		0.4854	0.5359	1.0951	0.58	0.5917	1.72	1.1854			
	1.336	0.1256		4.7621	5.4187	0.8074	1.8265	0.1688	1.9651	1.5523			
	0.035	2.3754	1.3139	2.6645	1.5475	0.4445	0.4294	0.938	2.6473	1.5523	2.8719		
	0.5628	0.3504	0.0875	1.8172	1.2598	0.9409	0.2616	0.5564	1.72	0.9927	1.5036		
	0.0658	0.766		0.3312	0.5984	1.015	0.4082	0.3777	2.9239	0.0935	2.0633		
	0.0658	0.1861	0.5187	0.3378	0.2038	0.7468	0.0204	0.2689	0.039	1.154	1.1672		
	0.0658	0.1503	0.0078	0.0254	0.5984	0.9409	0.0204	0.2107	1.6812	1.1105	2.0633		
	0.3397	0.1681	0.231	3.2035	0.0785	0.6896	0.1131	0.1365	1.6812	1.2158	1.7824		
	0.8123	0.2283	0.231	1.76	0.4335	0.3611	0.1131	0.1365	0.8703	1.0051	1.4673		
	0.6429	1.6823	0.2153	0.1569	0.6681	0.3611	0.5594	0.4433	1.3553	0.9281	1.4673		
	0.182	0.7482	0.1132	0.4744	0.6681	4.9663	4.0457	4.1619	0.909	4.7756	0.0432		
	0.1642	0.0728	0.0078	0.1977	0.8351	1.4306	0.0945	0.1148	0.2541	1.7799	0.0368		
	0.3825	0.3892	0.101	0.3901	0.8729	0.4992	0.2529	0.2594	0.0326	0.5542	0.3371		
	0.5663	0.4117	0.2272	0.5544	0.7798	0.6112	0.4132	0.2301	0.0422	0.6746	0.5449		
	0.3271	0.3504	0.4401	0.2667	0.7634	0.9131	0.1378	0.2971	0.4501	0.4879	0.9325		
	0.9978	0.0152	1.0757	0.055	0.8351	0.8231	0.476	0.2971	0.1777	0.5982			
	0.9589	1.0178	0.3363	0.4419	1.1151	1.0121				0.3496	1.2519		
	0.4966	0.0664	0.2757	0.6221	1.2251	1.3473			1.1264	0.6813	2.1189		
	0.8437	1.0792	0.2186	0.4966	1.1381	1.4634	1.3127	0.3771	1.1704	0.4449	1.7242	0.0138	0.5027
	0.5818	1.048	0.0697	0.4743	1.0552	1.3545	1.0971	0.0751	1.5561	0.4138	1.6054	0.0372	0.0479
	0.6138	0.8586	0.5187	0.1268	0.7551	1.2875	1.8891	0.2448	2.062	0.2197	1.6215	0.1847	0.0987
	0.1171	0.977	0.4463	0.6479	0.5926	1.1562	1.1293	0.2925	1.9148	0.2452	2.2624	0.2513	0.1916
	0.1295	0.8948	0.4859	0.5604	0.4551	1.0547	1.0118	0.3555	0.9042	0.2323	2.6679	0.09	0.2602
bar z_i =	0.4654	0.6747	0.3461	0.8468	0.9816	1.0794	0.7732	0.5072	1.1987	0.9375	1.4766	0.1154	0.2202
n_i * bar z_i^2 =	5.6324	11.379	2.3953	17.928	24.09	27.964	13.154	5.6606	33.047	21.095	43.61	0.0666	0.2425

bar z = 0.7402
N = 266

	SS	df	MS	F_{Ratio}	$F_{critical}$
Between Wells	60.51	12	5.04	5.26	1.67
Error	242.68	253	0.96		
Total	303.19	265			

Since the F-ratio = 5.26 exceeds the tabulated value of F-critical = 1.67 (see Table 2 of IFG) with 12 and 253 df, the assumption of equal variances should be rejected.
A non-parametric testing procedure should be used on the data set.

White Oak Landfill
Haywood County, North Carolina
BLE Project Number J12-1957-31

Compound: **Total Barium**
NC MCL (µg/l): 700
Method: Skewness Test for Normality
Background: MW-11S, MW-11D, & MW-14

	MW-11S	MW-11D	MW-14	MW-1A	MW-2	MW-2D	MW-3	MW-3D	MW-4A	MW-8	MW-15	MW-16	MW-17	MDL
4/24/00	250	NS	NS	240	420	200	63	300	93	230	NS	NP	NP	5
6/26/00	300	67	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	5
7/26/00	330	30	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	5
9/18/00	NS	NS	NS	330	92	NS	NS	NS	NT	NS	NS	NP	NP	500
4/9/01	1300	380	NS	180	330	120	80	290	360	970	NS	NP	NP	5
9/18/01	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	5
10/29/01	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	5
1/30/02	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	5
2/28/02	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	500
4/15/02	1300	41	NS	ND	ND	160	23	190	460	1400	NS	NP	NP	5
9/26/02	330	500	750	4200	120	230	93	410	910	1400	11000	NP	NP	5
4/28/03	600	66	220	1800	160	140	110	92	360	800	2800	NP	NP	5
10/30/03	320	100	NT	210	310	130	95	110	1200	270	4900	NP	NP	5
4/20/04	320	56	120	410	460	170	140	210	62	940	2000	NP	NP	5
10/21/04	320	40	200	300	310	140	140	130	12	900	4900	NP	NP	5
4/18/05	480	55	160	7200	610	180	160	140	12	1000	3700	NP	NP	5
10/13/05	770	37	160	1700	870	250	160	140	27	810	2700	NP	NP	5
4/25/06	650	ND	ND	ND	1100	ND	ND	ND	ND	750	2700	NP	NP	500
10/20/06	410	22	180	470	1100	ND	ND	ND	160	ND	650	NP	NP	5
4/25/07	290	ND	200	240	1300	1500	130	180	ND	ND	600	NP	NP	100
10/31/07	501	31.5	223	198	1350	591	184	208	62.4	516	872	NP	NP	5
4/23/08	194	30.8	253	168	1230	661	216	202	61.8	151	361	NP	NP	5
10/20/08	474	66	313	224	1210	894	164	216	41.1	182	245	NP	NP	5
4/22/09	126	47.2	591	309	1300	817	230	216	77	163	NS	NP	NP	5
10/26/09	131	16.8	144	188	1720	987	NS	NS	NS	209	178	NP	NP	5
4/22/10	208	43.5	153	157	1920	1380	NS	NS	20.9	150	74.8	NP	NP	5
10/27/10	147	15.8	162	178	1760	1550	531	234	20	190	111	191	84.4	5
4/29/11	191	16.3	188	182	1620	1390	428	173	13.6	196	125	201	133	5
10/25/11	185	19.7	120	332	1200	1300	945	205	8.2	238	123	161	154	5
4/20/12	304	17.5	129	153	1020	1140	442	215	9.5	232	64.8	249	169	5
10/24/12	389	19	124	167	889	1030	393	229	26.1	235	43.2	177	181	5

If not detected (ND), use half of the detection limit.

250			240	420	200	63	300	93	230	
300	67									
330	30									
			330	92						
1300	380		180	330	120	80	290	360	970	
1300	41		2.5	2.5	160	23	190	460	1400	
330	500	750	4200	120	230	93	410	910	1400	11000
600	66	220	1800	160	140	110	92	360	800	2800
320	100		210	310	130	95	110	1200	270	4900
320	56	120	410	460	170	140	210	62	940	2000
320	40	200	300	310	140	140	130	12	900	4900
480	55	160	7200	610	180	160	140	12	1000	3700
770	37	160	1700	870	250	160	140	27	810	2700
650	250	250	250	1100	250	250	250	250	750	2700
410	22	180	470	1100	2.5	2.5	2.5	160	2.5	650
290	50	200	240	1300	1500	130	180	50	50	600
501	31.5	223	198	1350	591	184	208	62.4	516	872
194	30.8	253	168	1230	661	216	202	61.8	151	361

474	66	313	224	1210	894	164	216	41.1	182	245		
126	47.2	591	309	1300	817	230	216	77	163			
131	16.8	144	188	1720	987				209	178		
208	43.5	153	157	1920	1380			20.9	150	74.8		
147	15.8	162	178	1760	1550	531	234	20	190	111	191	84.4
191	16.3	188	182	1620	1390	428	173	13.6	196	125	201	133
185	19.7	120	332	1200	1300	945	205	8.2	238	123	161	154
304	17.5	129	153	1020	1140	442	215	9.5	232	64.8	249	169
389	19	124	167	889	1030	393	229	26.1	235	43.2	177	181

X_i values =

-2E+07			-2E+07	-1E+06	-4E+07	-1E+08	-1E+07	-8E+07	-3E+07			
-1E+07	-1E+08											
-8E+06	-1E+08											
			-8E+06	-8E+07								
5E+08	-3E+06		-4E+07	-8E+06	-7E+07	-9E+07	-1E+07	-5E+06	9E+07			
5E+08	-1E+08		-1E+08	-1E+08	-5E+07	-1E+08	-4E+07	-3E+05	7E+08			
-8E+06	-20958	1E+07	5E+10	-7E+07	-3E+07	-8E+07	-2E+06	6E+07	7E+08	1E+12		
379959	-1E+08	-3E+07	2E+09	-5E+07	-6E+07	-7E+07	-8E+07	-5E+06	2E+07	1E+10		
-9E+06	-8E+07		-3E+07	-1E+07	-6E+07	-8E+07	-7E+07	3E+08	-2E+07	8E+10		
-9E+06	-1E+08	-7E+07	-2E+06	-3E+05	-5E+07	-6E+07	-3E+07	-1E+08	7E+07	3E+09		
-9E+06	-1E+08	-4E+07	-1E+07	-1E+07	-6E+07	-6E+07	-6E+07	-1E+08	5E+07	8E+10		
-1E+05	-1E+08	-5E+07	3E+11	560066	-4E+07	-5E+07	-6E+07	-1E+08	1E+08	3E+10		
1E+07	-1E+08	-5E+07	2E+09	4E+07	-2E+07	-5E+07	-6E+07	-1E+08	2E+07	1E+10		
2E+06	-2E+07	-2E+07	-2E+07	2E+08	-2E+07	-2E+07	-2E+07	-2E+07	1E+07	1E+10		
-2E+06	-1E+08	-4E+07	-2E+05	2E+08	-1E+08	-1E+08	-1E+08	-5E+07	-1E+08	2E+06		
-1E+07	-1E+08	-4E+07	-2E+07	5E+08	9E+08	-6E+07	-4E+07	-1E+08	-1E+08	379959		
-18760	-1E+08	-3E+07	-4E+07	6E+08	255189	-4E+07	-3E+07	-1E+08	-1549	4E+07		
-4E+07	-1E+08	-2E+07	-5E+07	3E+08	2E+06	-3E+07	-3E+07	-1E+08	-5E+07	-5E+06		
-2E+05	-1E+08	-1E+07	-3E+07	3E+08	5E+07	-5E+07	-3E+07	-1E+08	-4E+07	-2E+07		
-6E+07	-1E+08	255189	-1E+07	5E+08	2E+07	-3E+07	-3E+07	-9E+07	-5E+07			
-6E+07	-1E+08	-6E+07	-4E+07	2E+09	1E+08				-3E+07	-4E+07		
-3E+07	-1E+08	-5E+07	-5E+07	3E+09	6E+08			-1E+08	-5E+07	-9E+07		
-6E+07	-1E+08	-5E+07	-4E+07	2E+09	1E+09	40.316	-3E+07	-1E+08	-4E+07	-7E+07	-4E+07	-9E+07
-4E+07	-1E+08	-4E+07	-4E+07	1E+09	6E+08	-1E+06	-4E+07	-1E+08	-4E+07	-7E+07	-3E+07	-6E+07
-4E+07	-1E+08	-7E+07	-7E+06	3E+08	5E+08	7E+07	-3E+07	-1E+08	-2E+07	-7E+07	-5E+07	-5E+07
-1E+07	-1E+08	-6E+07	-5E+07	1E+08	2E+08	-6E+05	-3E+07	-1E+08	-3E+07	-1E+08	-2E+07	-5E+07
-3E+06	-1E+08	-7E+07	-5E+07	5E+07	1E+08	-2E+06	-3E+07	-1E+08	-3E+07	-1E+08	-4E+07	-4E+07

X_{bar} = 527.57
SD = 1034.2
N = 266
$1/N\Sigma_i(X_i-X_{bar})^3$ = 7E+09
γ_1= 5.9464

Since the Coefficient of Skewness of 5.95 is greater than 1.0, the data appear to be significantly skewed.
Do not assume that the data follow a Normal distribution.
Perform the Skewness Test on the natural log of the values.

ln =

MW-11S	MW-11D	MW-14	MW-1A	MW-2	MW-2D	MW-3	MW-3D	MW-4A	MW-8	MW-15	MW-16	MW-17
5.5215			5.4806	6.0403	5.2983	4.1431	5.7038	4.5326	5.4381			
5.7038	4.2047											
5.7991	3.4012											
			5.7991	4.5218								
7.1701	5.9402		5.193	5.7991	4.7875	4.382	5.6699	5.8861	6.8773			
7.1701	3.7136		0.9163	0.9163	5.0752	3.1355	5.247	6.1312	7.2442			

5.7991	6.2146	6.6201	8.3428	4.7875	5.4381	4.5326	6.0162	6.8134	7.2442	9.3057		
6.3969	4.1897	5.3936	7.4955	5.0752	4.9416	4.7005	4.5218	5.8861	6.6846	7.9374		
5.7683	4.6052		5.3471	5.7366	4.8675	4.5539	4.7005	7.0901	5.5984	8.497		
5.7683	4.0254	4.7875	6.0162	6.1312	5.1358	4.9416	5.3471	4.1271	6.8459	7.6009		
5.7683	3.6889	5.2983	5.7038	5.7366	4.9416	4.9416	4.8675	2.4849	6.8024	8.497		
6.1738	4.0073	5.0752	8.8818	6.4135	5.193	5.0752	4.9416	2.4849	6.9078	8.2161		
6.6464	3.6109	5.0752	7.4384	6.7685	5.5215	5.0752	4.9416	3.2958	6.697	7.901		
6.477	5.5215	5.5215	5.5215	7.0031	5.5215	5.5215	5.5215	5.5215	6.6201	7.901		
6.0162	3.091	5.193	6.1527	7.0031	0.9163	0.9163	0.9163	5.0752	0.9163	6.477		
5.6699	3.912	5.2983	5.4806	7.1701	7.3132	4.8675	5.193	3.912	3.912	6.3969		
6.2166	3.45	5.4072	5.2883	7.2079	6.3818	5.2149	5.3375	4.1336	6.2461	6.7708		
5.2679	3.4275	5.5334	5.124	7.1148	6.4938	5.3753	5.3083	4.1239	5.0173	5.8889		
6.1612	4.1897	5.7462	5.4116	7.0984	6.7957	5.0999	5.3753	3.716	5.204	5.5013		
4.8363	3.8544	6.3818	5.7333	7.1701	6.7056	5.4381	5.3753	4.3438	5.0938			
4.8752	2.8214	4.9698	5.2364	7.4501	6.8947				5.3423	5.1818		
5.3375	3.7728	5.0304	5.0562	7.5601	7.2298			3.0397	5.0106	4.3148		
4.9904	2.76	5.0876	5.1818	7.4731	7.346	6.2748	5.4553	2.9957	5.247	4.7095	5.2523	4.4356
5.2523	2.7912	5.2364	5.204	7.3902	7.2371	6.0591	5.1533	2.6101	5.2781	4.8283	5.3033	4.8903
5.2204	2.9806	4.7875	5.8051	7.0901	7.1701	6.8512	5.323	2.1041	5.4723	4.8122	5.0814	5.037
5.717	2.8622	4.8598	5.0304	6.9276	7.0388	6.0913	5.3706	2.2513	5.4467	4.1713	5.5175	5.1299
5.9636	2.9444	4.8203	5.118	6.7901	6.9373	5.9738	5.4337	3.2619	5.4596	3.7658	5.1761	5.1985

X_i values =

0.0035			0.0014	0.3016	-4E-04	-1.845	0.0373	-0.586	0.0003		
0.0373	-1.581										
0.0792	-7.627										
			0.0792	-0.609							
5.837	0.1857		-0.006	0.0792	-0.197	-0.963	0.0271	0.1378	3.4272		
5.837	-4.542		-88.32	-88.32	-0.026	-11.15	-0.002	0.4418	6.5878		
0.0792	0.6034	1.9553	26.284	-0.197	0.0003	-0.586	0.2703	3.0099	6.5878	60.979	
1.0842	-1.643	1E-05	9.6084	-0.026	-0.078	-0.3	-0.609	0.1378	2.274	16.93	
0.0634	-0.447		-1E-05	0.0494	-0.127	-0.543	-0.3	5.0926	0.012	30.588	
0.0634	-2.429	-0.197	0.2703	0.4418	-0.013	-0.078	-1E-05	-1.918	3.2174	11.109	
0.0634	-4.748	-4E-04	0.0373	0.0494	-0.078	-0.078	-0.127	-24	2.9414	30.588	
0.5201	-2.528	-0.026	43.326	1.1374	-0.006	-0.026	-0.078	-24	3.6391	23.064	
2.0814	-5.44	-0.026	8.8541	2.7375	0.0035	-0.026	-0.078	-8.918	2.339	16.221	
1.3579	0.0035	0.0035	0.0035	4.3584	0.0035	0.0035	0.0035	0.0035	1.9553	16.221	
0.2703	-11.83	-0.006	0.4803	4.3584	-88.32	-88.32	-88.32	-0.026	-88.32	1.3579	
0.0271	-3.097	-4E-04	0.0014	5.837	7.3423	-0.127	-0.006	-3.097	-3.097	1.0842	
0.6077	-7.074	5E-05	-5E-04	6.2118	1.0371	-0.004	-3E-05	-1.888	0.6734	2.751	
-0.001	-7.325	0.0044	-0.015	5.3151	1.4206	2E-07	-2E-04	-1.933	-0.044	0.14	
0.496	-1.643	0.0534	7E-05	5.1667	2.9004	-0.02	2E-07	-4.522	-0.005	0.0023	
-0.152	-3.479	1.0371	0.0481	5.837	2.3848	0.0003	2E-07	-1.079	-0.021		
-0.121	-16.55	-0.064	-0.002	9.0051	3.547				-2E-05	-0.007	
-3E-05	-4.072	-0.039	-0.031	10.51	6.4373			-12.65	-0.046	-1.174	
-0.055	-17.77	-0.022	-0.007	9.3069	7.7202	0.7416	0.0006	-13.38	-0.002	-0.288	-0.002	-0.815
-0.002	-17.14	-0.002	-0.005	8.2495	6.5125	0.3278	-0.01	-21.01	-8E-04	-0.159	-3E-04	-0.11
-0.003	-13.63	-0.197	0.0826	5.0926	5.837	3.2522	-1E-04	-34.82	0.0011	-0.173	-0.024	-0.037
0.0419	-15.76	-0.132	-0.039	3.7815	4.6506	0.3759	1E-09	-30.32	0.0005	-1.721	0.0032	-0.014
0.2096	-14.26	-0.166	-0.016	2.8663	3.853	0.2206	0.0003	-9.363	0.0007	-4.125	-0.007	-0.005

X_{bar} = 5.3696
SD = 1.4249
N = 266
$1/N\Sigma_i(X_i-X_{bar})^3$ = -1.522
γ_1= 0.529

Since the Coefficient of Skewness of 0.53 is less than 1.0, the data appear not to be significantly skewed.
Proceed with further statistical tests using the log-transformed values shown above.

White Oak Landfill
Haywood County, North Carolina
BLE Project Number J12-1957-31

Compound: **Total Barium**
NC MCL (µg/l): 700
Method: Shewhart-CUSUM Control Chart

Part 1: Check for Normality

	MW-2	MDL
9/26/2002	**120**	**5**
4/28/2003	**160**	**5**
10/30/2003	**310**	**5**
4/20/2004	**460**	**5**
10/21/2004	**310**	**5**
4/18/2005	**610**	**5**
10/13/2005	**870**	**5**
4/25/2006	**1100**	**500**
10/20/2006	**1100**	**5**
4/25/2007	**1300**	**100**
10/31/2007	**1350**	**5**
4/23/2008	**1230**	**5**
10/20/2008	**1210**	**5**
4/22/2009	**1300**	**5**
10/26/2009	**1720**	**5**
4/22/2010	**1920**	**5**
10/27/2010	**1760**	**5**
4/29/2011	**1620**	**5**
10/25/2011	**1200**	**5**
4/20/2012	**1020**	**5**
10/24/2012	**889**	**5**

If not detected (ND), use half of the detection limit.

	X_i values =
120	-745202868
160	-650855667
310	-368014595
460	-181917094
310	-368014595
610	-72313164
870	-3841791
1100	395139.12
1100	395139.12
1300	20431712
1350	33817641
1230	8412611.4
1210	6166839.9
1300	20431712
1720	333361715
1920	713033716
1760	394447201
1620	208930000
1200	5211996.9
1020	-289.99233
889	-2606367.5

X_{bar} = 1026.619
SD = 532.77298
N = 21
$1/N\Sigma_i(X_i-X_{bar})^3$ = -30844334
γ_1 = 0.2194486

Since the Coefficient of Skewness of 0.22 is less than 1.0, the data appear not to be significantly skewed.
Proceed with further statistical tests using the real detected values shown above.

ln =	X_i values =
4.7874917	-7.2051284
5.0751738	-4.4413122
5.7365723	-0.9479981
6.1312265	-0.2029889
5.7365723	-0.9479981
6.413459	-0.028504
6.7684932	0.0001218
7.0030655	0.0229394
7.0030655	0.0229394
7.1701195	0.0918502
7.2078599	0.1168807
7.1147694	0.0620242
7.0983756	0.0546327
7.1701195	0.0918502
7.4500796	0.3908595
7.5600805	0.595145
7.4730691	0.4289003
7.3901814	0.302453
7.0900768	0.0511259
6.9275579	0.0090808

6.7900972	0.0003605

X_{bar} = 6.7189289
SD = 0.78612
N = 21
$1/N\Sigma_i(X_i-X_{bar})^3$ = -0.5491793
γ_1 = 1.2162743

Use the real values (not log-transformed) indicated in the previous section.

Part 2: Shewhart-CUSUM Control Chart

Date	MW-2	MDL	Data for Testing
9/26/2002	**120**	5	120
4/28/2003	**160**	5	160
10/30/2003	**310**	5	310
4/20/2004	**460**	5	460
10/21/2004	**310**	5	310
4/18/2005	**610**	5	610
10/13/2005	**870**	5	870
4/25/2006	**1100**	500	1100
10/20/2006	**1100**	5	1100
4/25/2007	**1300**	100	1300
10/31/2007	**1350**	5	1350
4/23/2008	**1230**	5	1230
10/20/2008	**1210**	5	1210
4/22/2009	**1300**	5	1300
10/26/2009	**1720**	5	1720
4/22/2010	**1920**	5	1920
10/27/2010	**1760**	5	1760
4/29/2011	**1620**	5	1620
10/25/2011	**1200**	5	1200
4/20/2012	**1020**	5	1020
10/24/2012	**889**	5	889

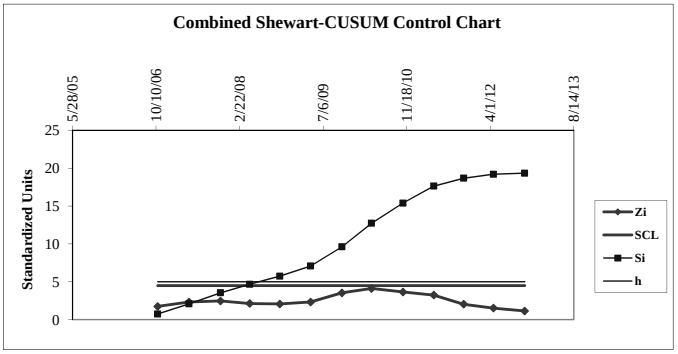
Compute the mean and standard deviation of the historical data:

492.5 = x_{mean} (Mean of N1-N8 historical data)
346.89438 = s (Standard Deviation of N1-N8 historical data)
1 = k (constant, reference value)
5 = h (constant, upper control limit for the CUSUM scheme)
4.5 = SCL (Constant, upper Shewhart Control Limit)

Compute the standardized mean (Z_i) and the cumulative sum (S_i) for each concentration.

Date	x_i	Z_i	S_i	h	SCL
			0		
10/20/2006	1100	1.7512535	0.7512535	5	4.5
4/25/2007	1300	2.3277978	2.0790513	5	4.5
10/31/2007	1350	2.4719339	3.5509853	5	4.5
4/23/2008	1230	2.1260073	4.6769926	5	4.5
10/20/2008	**1210**	2.0683529	**5.7453454**	5	4.5
4/22/2009	**1300**	2.3277978	**7.0731433**	5	4.5
10/26/2009	**1720**	3.538541	**9.6116843**	5	4.5
4/22/2010	**1920**	4.1150853	**12.72677**	5	4.5
10/27/2010	**1760**	3.6538499	**15.380619**	5	4.5
4/29/2011	**1620**	3.2502688	**17.630888**	5	4.5
10/25/2011	**1200**	2.0395257	**18.670414**	5	4.5
4/20/2012	**1020**	1.5206357	**19.19105**	5	4.5
10/24/2012	**889**	1.1429992	**19.334049**	5	4.5

Plot Z_i and S_i versus time:



Compare the Z_i and S_i values to their respective control limits of SCL and h.

One, or both, of the control limits was exceeded. Therefore, there is statistically significant evidence of contamination in this well at the concentrations indicated above.

White Oak Landfill
Haywood County, North Carolina
BLE Project Number J12-1957-31

Compound: **Total Barium**
NC MCL (µg/l): 700
Method: Shewhart-CUSUM Control Chart

Part 1: Check for Normality

	MW-2D	MDL
9/26/2002	**230**	**5**
4/28/2003	**140**	**5**
10/30/2003	**130**	**5**
4/20/2004	**170**	**5**
10/21/2004	**140**	**5**
4/18/2005	**180**	**5**
10/13/2005	**250**	**5**
4/25/2006	ND	**500**
10/20/2006	ND	**5**
4/25/2007	**1500**	**100**
10/31/2007	**591**	**5**
4/23/2008	**661**	**5**
10/20/2008	**894**	**5**
4/22/2009	**817**	**5**
10/26/2009	**987**	**5**
4/22/2010	**1380**	**5**
10/27/2010	**1550**	**5**
4/29/2011	**1390**	**5**
10/25/2011	**1300**	**5**
4/20/2012	**1140**	**5**
10/24/2012	**1030**	**5**

If not detected (ND), use half of the detection limit.

	X_i values =
230	-104851988
140	-177076028
130	-186705564
170	-150184991
140	-177076028
180	-141867169
250	-92068416
250	-92068416
2.5	-341601904
1500	509034316
591	-1350977.7
661	-66664.722
894	7128035.7
817	1538893.9
987	23259534
1380	312290025
1550	610776640
1390	326303490
1300	214332879
1140	84288301
1030	35433760

X_{bar} = 701.54762
SD = 535.08653
N = 21
$1/N\Sigma_i(X_i-X_{bar})^3$ = 31403225
γ_1 = 0.2205394

Since the Coefficient of Skewness of 0.22 is less than 1.0, the data appear not to be significantly skewed.
Proceed with further statistical tests using the real detected values shown above.

ln =	X_i values =
5.4380793	-0.1783689
4.9416424	-1.1888193
4.8675345	-1.4561759
5.1357984	-0.6476454
4.9416424	-1.1888193
5.1929569	-0.5275797
5.5214609	-0.110267
5.5214609	-0.110267
0.9162907	-131.46069
7.3132204	2.2595916
6.381816	0.0552305
6.4937538	0.1196508
6.7957058	0.5019205
6.7056391	0.3498792
6.89467	0.7137493
7.2298388	1.8556454
7.3460102	2.4332466
7.237059	1.8885471
7.1701195	1.5980396
7.0387835	1.1177186

6.9373141	0.8208771

X_{bar} = 6.0009903
SD = 1.4792856
N = 21
$1/N\Sigma_i(X_i-X_{bar})^3$ = -5.8645016
γ_1 = 1.9492114

Use the real values (not log-transformed) indicated in the previous section.

Part 2: Shewhart-CUSUM Control Chart

Date	MW-2D	MDL	Data for Testing
9/26/2002	**230**	5	230
4/28/2003	**140**	5	140
10/30/2003	**130**	5	130
4/20/2004	**170**	5	170
10/21/2004	**140**	5	140
4/18/2005	**180**	5	180
10/13/2005	**250**	5	250
4/25/2006	ND	500	250
10/20/2006	ND	5	2.5
4/25/2007	**1500**	100	1500
10/31/2007	**591**	5	591
4/23/2008	**661**	5	661
10/20/2008	**894**	5	894
4/22/2009	**817**	5	817
10/26/2009	**987**	5	987
4/22/2010	**1380**	5	1380
10/27/2010	**1550**	5	1550
4/29/2011	**1390**	5	1390
10/25/2011	**1300**	5	1300
4/20/2012	**1140**	5	1140
10/24/2012	**1030**	5	1030

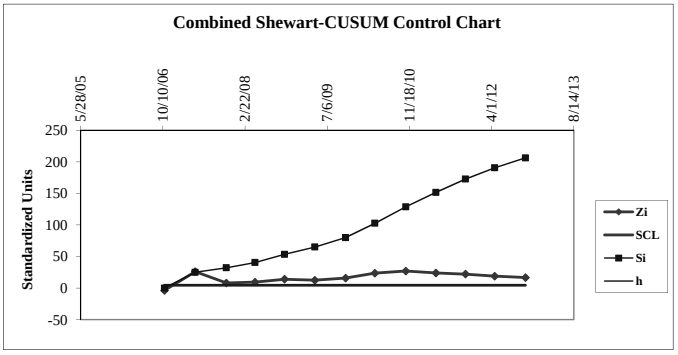
Compute the mean and standard deviation of the historical data:

186.25 = x_{mean} (Mean of N1-N8 historical data)
50.409041 = s (Standard Deviation of N1-N8 historical data)
1 = k (constant, reference value)
5 = h (constant, upper control limit for the CUSUM scheme)
4.5 = SCL (Constant, upper Shewhart Control Limit)

Compute the standardized mean (Z_i) and the cumulative sum (S_i) for each concentration.

Date	x_i	Z_i	S_i	h	SCL
			0		
10/20/2006	2.5	-3.6451794	0	5	4.5
4/25/2007	**1500**	**26.061793**	**25.061793**	5	4.5
10/31/2007	**591**	**8.0293136**	**32.091107**	5	4.5
4/23/2008	**661**	**9.4179534**	**40.50906**	5	4.5
10/20/2008	**894**	**14.04014**	**53.5492**	5	4.5
4/22/2009	**817**	**12.512636**	**65.061837**	5	4.5
10/26/2009	**987**	**15.885047**	**79.946884**	5	4.5
4/22/2010	**1380**	**23.681268**	**102.62815**	5	4.5
10/27/2010	**1550**	**27.053679**	**128.68183**	5	4.5
4/29/2011	**1390**	**23.879645**	**151.56148**	5	4.5
10/25/2011	**1300**	**22.094251**	**172.65573**	5	4.5
4/20/2012	**1140**	**18.920217**	**190.57594**	5	4.5
10/24/2012	**1030**	**16.738069**	**206.31401**	5	4.5

Plot Z_i and S_i versus time:



Compare the Z_i and S_i values to their respective control limits of SCL and h.

One, or both, of the control limits was exceeded. Therefore, there is statistically significant evidence of contamination in this well at the concentrations indicated above.

White Oak Landfill
Haywood County, North Carolina
BLE Project Number J12-1957-31

Compound: **Total Barium**
NC MCL (µg/l): 700
Method: Shewhart-CUSUM Control Chart

Part 1: Check for Normality

	MW-8	MDL
4/15/2002	**1400**	**5**
9/26/2002	**1400**	**5**
4/28/2003	**800**	**5**
10/30/2003	**270**	**5**
4/20/2004	**940**	**5**
10/21/2004	**900**	**5**
4/18/2005	**1000**	**5**
10/13/2005	**810**	**5**
4/25/2006	**750**	**500**
10/20/2006	ND	**5**
4/25/2007	ND	**100**
10/31/2007	**516**	**5**
4/23/2008	**151**	**5**
10/20/2008	**182**	**5**
4/22/2009	**163**	**5**
10/26/2009	**209**	**5**
4/22/2010	**150**	**5**
10/27/2010	**190**	**5**
4/29/2011	**196**	**5**
10/25/2011	**238**	**5**
4/20/2012	**232**	**5**
10/24/2012	**235**	**5**

If not detected (ND), use half of the detection limit.

	X_i values =
1400	753062962
1400	753062962
800	29732068
270	-10677728
940	91000795
900	68817899
1000	132491457
810	32705204
750	17534551
2.5	-116003318
50	-85302855
516	17164.437
151	-39028781
182	-29276363
163	-35031440
209	-22236530
150	-39374979
190	-27055265
196	-25465261
238	-16042008
232	-17214390
235	-16621309

X_{bar} = 490.20455
SD = 431.83635
N = 22
$1/N\Sigma_i(X_i-X_{bar})^3$ = 63595220
γ_1 = 0.8467827

Since the Coefficient of Skewness of 0.85 is less than 1.0, the data appear not to be significantly skewed.
Proceed with further statistical tests using the real detected values shown above.

ln =	X_i values =
7.2442275	4.0550216
7.2442275	4.0550216
6.6846117	1.1088162
5.598422	-0.0001339
6.8458799	1.7120598
6.8023948	1.5320654
6.9077553	1.9916924
6.6970342	1.1492216
6.6200732	0.9140627
0.9162907	-106.04482
3.912023	-5.2458762
6.2461068	0.2122694
5.0172798	-0.2527972
5.2040067	-0.0884628
5.0937502	-0.1717229
5.3423343	-0.0290043
5.0106353	-0.2608508
5.2470241	-0.0652353
5.2781147	-0.0512577
5.4722707	-0.0055745
5.4467374	-0.0083461

5.4595855	-0.0068585

X_{bar} = 5.6495811
SD = 1.3825353
N = 22
$1/N\Sigma_i(X_i-X_{bar})^3$ = -4.3409413
γ_1= 1.7614096

Use the real values (not log-transformed) indicated in the previous section.

Part 2: Shewhart-CUSUM Control Chart

Date	MW-8	MDL	Data for Testing
4/15/2002	**1400**	5	1400
9/26/2002	**1400**	5	1400
4/28/2003	**800**	5	800
10/30/2003	**270**	5	270
4/20/2004	**940**	5	940
10/21/2004	**900**	5	900
4/18/2005	**1000**	5	1000
10/13/2005	**810**	5	810
4/25/2006	**750**	500	750
10/20/2006	ND	5	2.5
4/25/2007	ND	100	50
10/31/2007	**516**	5	516
4/23/2008	**151**	5	151
10/20/2008	**182**	5	182
4/22/2009	**163**	5	163
10/26/2009	**209**	5	209
4/22/2010	**150**	5	150
10/27/2010	**190**	5	190
4/29/2011	**196**	5	196
10/25/2011	**238**	5	238
4/20/2012	**232**	5	232
10/24/2012	**235**	5	235

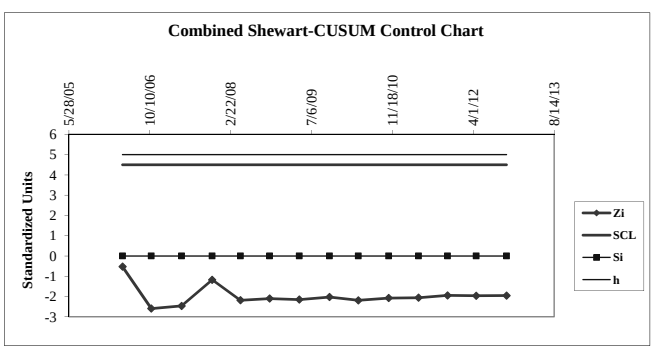
Compute the mean and standard deviation of the historical data:

940 = x_{mean} (Mean of N1-N8 historical data)
361.30715 = s (Standard Deviation of N1-N8 historical data)
1 = k (constant, reference value)
5 = h (constant, upper control limit for the CUSUM scheme)
4.5 = SCL (Constant, upper Shewhart Control Limit)

Compute the standardized mean (Z_i) and the cumulative sum (S_i) for each concentration.

Date	x_i	Z_i	S_i	h	SCL
			0		
4/25/2006	750	-0.5258684	0	5	4.5
10/20/2006	2.5	-2.5947452	0	5	4.5
4/25/2007	50	-2.4632781	0	5	4.5
10/31/2007	516	-1.1735168	0	5	4.5
4/23/2008	151	-2.1837376	0	5	4.5
10/20/2008	182	-2.097938	0	5	4.5
4/22/2009	163	-2.1505248	0	5	4.5
10/26/2009	209	-2.0232093	0	5	4.5
4/22/2010	150	-2.1865053	0	5	4.5
10/27/2010	190	-2.0757962	0	5	4.5
4/29/2011	196	-2.0591898	0	5	4.5
10/25/2011	238	-1.9429452	0	5	4.5
4/20/2012	232	-1.9595516	0	5	4.5
10/24/2012	235	-1.9512484	0	5	4.5

Plot Z_i and S_i versus time:



Compare the Z_i and S_i values to their respective control limits of SCL and h.
The limits were not exceeded and do not indicate statistically significant evidence of contamination at the site.

White Oak Landfill
Haywood County, North Carolina
BLE Project Number J12-1957-31

Compound: **Total Barium**
NC MCL (µg/l): 700
Method: Shewhart-CUSUM Control Chart

Part 1: Check for Normality

	MW-15	MDL
9/26/2002	**11000**	**5**
4/28/2003	**2800**	**5**
10/30/2003	**4900**	**5**
4/20/2004	**2000**	**5**
10/21/2004	**4900**	**5**
4/18/2005	**3700**	**5**
10/13/2005	**2700**	**5**
4/25/2006	**2700**	**500**
10/20/2006	**650**	**5**
4/25/2007	**600**	**100**
10/31/2007	**872**	**5**
4/23/2008	**361**	**5**
10/20/2008	**245**	**5**
4/22/2009	NS	**5**
10/26/2009	**178**	**5**
4/22/2010	**74.8**	**5**
10/27/2010	**111**	**5**
4/29/2011	**125**	**5**
10/25/2011	**123**	**5**
4/20/2012	**64.8**	**5**
10/24/2012	**43.2**	**5**

If not detected (ND), use half of the detection limit.

	X_i values =
11000	7.517E+11
2800	711189349
4900	2.68E+10
2000	794280.05
4900	2.68E+10
3700	5.76E+09
2700	497941865
2700	497941865
650	-1.988E+09
600	-2.235E+09
872	-1.11E+09
361	-3.698E+09
245	-4.594E+09
178	-5.172E+09
74.8	-6.155E+09
111	-5.797E+09
125	-5.662E+09
123	-5.682E+09
64.8	-6.256E+09
43.2	-6.478E+09

X_{bar} = 1907.39
SD = 2696.8492
N = 20
$1/N\Sigma_i(X_i-X_{bar})^3$ = 3.79E+10
γ_1 = 2.0867595

Since the Coefficient of Skewness of 2.09 is greater than 1.0, the real data appear to be significantly skewed.
Do not assume that the data follow a Normal distribution.
Perform the Skewness Test on the natural log of the values.

	X_i values =
ln = 9.3056506	23.687375
7.9373747	3.3996567
8.4969905	8.7833812
7.6009025	1.5900263
8.4969905	8.7833812
8.2160881	5.6621891
7.9010071	3.158899
7.9010071	3.158899
6.4769724	8.085E-05
6.3969297	-4.984E-05
6.7707894	0.0382928
5.888878	-0.1617475
5.5012582	-0.8107895
5.1817836	-1.9622666
4.3148179	-9.513477
4.7095302	-5.1258195
4.8283137	-4.1377434
4.8121844	-4.2637144
4.1713056	-11.580375

3.7658405	-18.989077

X_{bar} = 6.4337307
SD = 1.7110177
N = 20
$1/N\Sigma_i(X_i-X_{bar})^3$ = 0.085856
γ_1 = 0.0185107

Since the Coefficient of Skewness of 0.02 is less than 1.0, the data appear not to be significantly skewed.
Proceed with further statistical tests using the log-transformed values shown above.

Part 2: Shewhart-CUSUM Control Chart

Date	MW-15	MDL	Data for Testing
9/26/2002	**11000**	5	9.3056506
4/28/2003	**2800**	5	7.9373747
10/30/2003	**4900**	5	8.4969905
4/20/2004	**2000**	5	7.6009025
10/21/2004	**4900**	5	8.4969905
4/18/2005	**3700**	5	8.2160881
10/13/2005	**2700**	5	7.9010071
4/25/2006	**2700**	500	7.9010071
10/20/2006	**650**	5	6.4769724
4/25/2007	**600**	100	6.3969297
10/31/2007	**872**	5	6.7707894
4/23/2008	**361**	5	5.888878
10/20/2008	**245**	5	5.5012582
4/22/2009	NS	5	-
10/26/2009	**178**	5	5.1817836
4/22/2010	**74.8**	5	4.3148179
10/27/2010	**111**	5	4.7095302
4/29/2011	**125**	5	4.8283137
10/25/2011	**123**	5	4.8121844
4/20/2012	**64.8**	5	4.1713056
10/24/2012	**43.2**	5	3.7658405

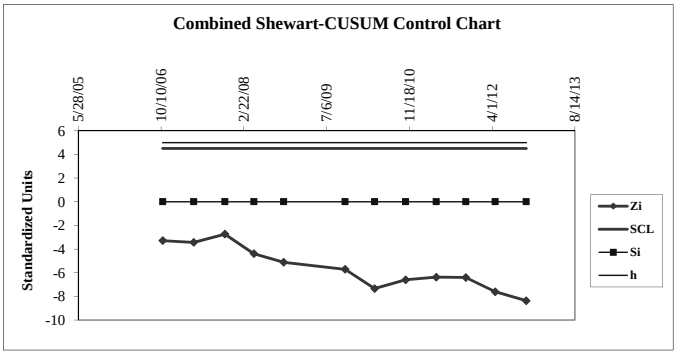
Compute the mean and standard deviation of the historical data:

8.2320014 = x_{mean} (Mean of N1-N8 historical data)
0.5342043 = s (Standard Deviation of N1-N8 historical data)
1 = k (constant, reference value)
5 = h (constant, upper control limit for the CUSUM scheme)
4.5 = SCL (Constant, upper Shewhart Control Limit)

Compute the standardized mean (Z_i) and the cumulative sum (S_i) for each concentration.

Date	x_i	Z_i	S_i	h	SCL
			0		
10/20/2006	6.4769724	-3.2853144	0	5	4.5
4/25/2007	6.3969297	-3.4351498	0	5	4.5
10/31/2007	6.7707894	-2.7353056	0	5	4.5
4/23/2008	5.888878	-4.3861937	0	5	4.5
10/20/2008	5.5012582	-5.1117958	0	5	4.5
10/26/2009	5.1817836	-5.7098342	0	5	4.5
4/22/2010	4.3148179	-7.3327445	0	5	4.5
10/27/2010	4.7095302	-6.5938655	0	5	4.5
4/29/2011	4.8283137	-6.3715095	0	5	4.5
10/25/2011	4.8121844	-6.4017028	0	5	4.5
4/20/2012	4.1713056	-7.6013914	0	5	4.5
10/24/2012	3.7658405	-8.360399	0	5	4.5

Plot Z_i and S_i versus time:



Compare the Z_i and S_i values to their respective control limits of SCL and h.
The limits were not exceeded and do not indicate statistically significant evidence of contamination at the site.

White Oak Landfill
Haywood County, North Carolina
BLE Project Number J12-1957-31

Compound: **Total Beryllium**
NC MCL (µg/l): Not Established
Method: Kruskal-Wallis
Background: MW-11S, MW-11D, & MW-14

	MW-11S	MW-11D	MW-14	MW-1A	MW-2	MW-2D	MW-3	MW-3D	MW-4A	MW-8	MW-15	MW-16	MW-17	MDL
04/24/00	**4.4**	NS	NS	ND	**2**	ND	**2.2**	ND	ND	ND	NS	NP	NP	**2**
06/26/00	ND	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	**2**
07/26/00	ND	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	**2**
09/18/00	NS	NS	NS	NT	NT	NS	NS	NS	NT	NS	NS	NP	NP	**2**
04/09/01	**2.3**	**7**	NS	ND	ND	ND	ND	ND	**2.4**	**4.8**	NS	NP	NP	**2**
09/18/01	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	**2**
10/29/01	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	**2**
01/30/02	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	**2**
02/28/02	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	**2**
04/15/02	**2.1**	ND	NS	ND	ND	ND	ND	ND	**2.5**	**5**	NS	NP	NP	**2**
09/26/02	ND	**7**	**2.1**	**5.1**	ND	ND	ND	ND	**8.5**	**4.7**	**95**	NP	NP	**2**
04/28/03	ND	ND	ND	ND	ND	ND	ND	ND	**2**	**2.2**	**20**	NP	NP	**2**
10/30/03	ND	ND	NT	ND	ND	ND	ND	ND	**2.4**	ND	**33**	NP	NP	**1**
04/20/04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**21**	NP	NP	**1**
10/21/04	ND	ND	ND	ND	ND	ND	ND	ND	ND	**1.4**	**28**	NP	NP	**1**
04/18/05	ND	ND	ND	**7.2**	ND	ND	ND	ND	ND	**3.8**	**26**	NP	NP	**1**
10/13/05	ND	ND	ND	**3**	ND	ND	ND	ND	ND	**3.4**	**21**	NP	NP	**1**
04/25/06	ND	ND	ND	ND	ND	ND	ND	ND	**2.1**	ND	**17**	NP	NP	**2**
10/20/06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**5.7**	NP	NP	**1**
04/25/07	ND	ND	ND	ND	ND	**14**	ND	ND	ND	ND	**4.9**	NP	NP	**1**
10/31/07	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**6**	NP	NP	**1**
04/23/08	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**3**	NP	NP	**1**
10/20/08	ND	**1.2**	ND	ND	ND	ND	ND	ND	ND	ND	**1.9**	NP	NP	**1**
04/22/09	ND	ND	**1.5**	ND	ND	ND	ND	ND	ND	ND	NS	NP	NP	**1**
10/26/09	ND	ND	ND	ND	ND	ND	NS	NS	NS	ND	**1.7**	NP	NP	**1**
04/22/10	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND	NP	NP	**1**
10/27/10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**1**
04/29/11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**1.1**	ND	ND	**1**
10/25/11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**1.6**	ND	ND	**1**
04/20/12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**1**
10/24/12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**1**
N_i	26	25	20	24	24	24	22	22	23	24	20	5	5	
sum of rank values (R_i)	3265.0	3170.0	2455.0	3074.5	2782.5	2809.0	2565.5	2442.0	3317.5	3568.5	4420.5	555.0	555.0	
avg rank value (Rbar)	125.6	126.8	122.8	128.1	115.9	117.0	116.6	111.0	144.2	148.7	221.0	111.0	111.0	

	Number of each rank value													Rank Value
rank value of NDs =	23	22	18	21	23	23	21	22	17	17	4	5	5	111
rank value of 1.1s =	0	0	0	0	0	0	0	0	0	0	1	0	0	222
rank value of 1.2s =	0	1	0	0	0	0	0	0	0	0	0	0	0	223
rank value of 1.4s =	0	0	0	0	0	0	0	0	0	1	0	0	0	224
rank value of 1.5s =	0	0	1	0	0	0	0	0	0	0	0	0	0	225
rank value of 1.6s =	0	0	0	0	0	0	0	0	0	0	1	0	0	226
rank value of 1.7s =	0	0	0	0	0	0	0	0	0	0	1	0	0	227
rank value of 1.9s =	0	0	0	0	0	0	0	0	0	0	1	0	0	228
rank value of 2s =	0	0	0	0	1	0	0	0	1	0	0	0	0	229.5
rank value of 2.1s =	1	0	1	0	0	0	0	0	1	0	0	0	0	232
rank value of 2.2s =	0	0	0	0	0	0	1	0	0	1	0	0	0	234.5
rank value of 2.3s =	1	0	0	0	0	0	0	0	0	0	0	0	0	236
rank value of 2.4s =	0	0	0	0	0	0	0	0	2	0	0	0	0	237.5
rank value of 2.5s =	0	0	0	0	0	0	0	0	1	0	0	0	0	239
rank value of 3s =	0	0	0	1	0	0	0	0	0	0	1	0	0	240.5
rank value of 3.4s =	0	0	0	0	0	0	0	0	0	1	0	0	0	242
rank value of 3.8s =	0	0	0	0	0	0	0	0	0	1	0	0	0	243
rank value of 4.4s =	1	0	0	0	0	0	0	0	0	0	0	0	0	244

rank value of 4.5s =	0	0	0	0	0	0	0	0	0	1	0	0	0	245
rank value of 4.7s =	0	0	0	0	0	0	0	0	0	1	0	0	0	246
rank value of 4.8s =	0	0	0	0	0	0	0	0	0	1	0	0	0	247
rank value of 4.9s =	0	0	0	0	0	0	0	0	0	0	1	0	0	248
rank value of 5.1s =	0	0	0	1	0	0	0	0	0	0	0	0	0	249
rank value of 5.7s =	0	0	0	0	0	0	0	0	0	0	1	0	0	250
rank value of 6s =	0	0	0	0	0	0	0	0	0	0	1	0	0	251
rank value of 7s =	0	2	0	0	0	0	0	0	0	0	0	0	0	252.5
rank value of 7.2s =	0	0	0	1	0	0	0	0	0	0	0	0	0	254
rank value of 8.5s =	0	0	0	0	0	0	0	0	1	0	0	0	0	255
rank value of 14s =	0	0	0	0	0	1	0	0	0	0	0	0	0	256
rank value of 17s =	0	0	0	0	0	0	0	0	0	0	1	0	0	257
rank value of 20s =	0	0	0	0	0	0	0	0	0	0	1	0	0	258
rank value of 21s =	0	0	0	0	0	0	0	0	0	0	2	0	0	259.5
rank value of 26s =	0	0	0	0	0	0	0	0	0	0	1	0	0	261
rank value of 28s =	0	0	0	0	0	0	0	0	0	0	1	0	0	262
rank value of 33s =	0	0	0	0	0	0	0	0	0	0	1	0	0	263
rank value of 95s =	0	0	0	0	0	0	0	0	0	0	1	0	0	264
n =	**26**	**25**	**20**	**24**	**24**	**24**	**22**	**22**	**23**	**24**	**20**	**5**	**5**	

Sum of rank value calculations

2553	2442	1998	2331	2553	2553	2331	2442	1887	1887	444	555	555
0	0	0	0	0	0	0	0	0	0	222	0	0
0	223	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	224	0	0	0
0	0	225	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	226	0	0
0	0	0	0	0	0	0	0	0	0	227	0	0
0	0	0	0	0	0	0	0	0	0	228	0	0
0	0	0	0	229.5	0	0	0	229.5	0	0	0	0
232	0	232	0	0	0	0	0	232	0	0	0	0
0	0	0	0	0	0	234.5	0	0	234.5	0	0	0
236	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	475	0	0	0	0
0	0	0	0	0	0	0	0	239	0	0	0	0
0	0	0	240.5	0	0	0	0	0	0	240.5	0	0
0	0	0	0	0	0	0	0	0	242	0	0	0
0	0	0	0	0	0	0	0	0	243	0	0	0
244	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	245	0	0	0
0	0	0	0	0	0	0	0	0	246	0	0	0
0	0	0	0	0	0	0	0	0	247	0	0	0
0	0	0	0	0	0	0	0	0	0	248	0	0
0	0	0	249	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	250	0	0
0	0	0	0	0	0	0	0	0	0	251	0	0
0	505	0	0	0	0	0	0	0	0	0	0	0
0	0	0	254	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	255	0	0	0	0
0	0	0	0	0	256	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	257	0	0
0	0	0	0	0	0	0	0	0	0	258	0	0
0	0	0	0	0	0	0	0	0	0	519	0	0
0	0	0	0	0	0	0	0	0	0	261	0	0
0	0	0	0	0	0	0	0	0	0	262	0	0

	0	0	0	0	0	0	0	0	0	0	263	0	0
	0	0	0	0	0	0	0	0	0	0	264	0	0
sum of rank values (R_i)	**3265**	**3170**	**2455**	**3074.5**	**2782.5**	**2809**	**2565.5**	**2442**	**3317.5**	**3568.5**	**4420.5**	**555**	**555**

Compute the Kruskal-Wallis statistic:

$$H = \{[12/N(N+1)] * [\Sigma^{K}_{i=1} (R_i^2)/N_i]\} -3(N+1)$$

Well =	**Background**	**MW-1A**	**MW-2**	**MW-2D**	**MW-3**	**MW-3D**	**MW-4A**	**MW-8**	**MW-15**	**MW-16**	**MW-17**
Ri^2/N_i =	1113128.2	393856	322596	328770	299172	271062	478513	530591	977041	61605	61605

$N_{i\,bg}$ = 71
N = 264
H = 34.84

Adjust H for ties:

T_i = 1E+07 sum of T1..T6

$H' = H/(1-(T_i/(N^3-N)))$
H' = 84.27
Chi-square = 18.31

Compare the calculated value H' to the tabulated Chi-square value with K-1 = # groups -1 = 17df at the 5% significance level from Table 1 of the IFG. The value is 18.31 which is less than H' =84.27.
Therefore, there is evidence of significant differences between the well groups.
Post-hoc pairwise comparisons are necessary (see below).

Calculate the critical values to compare each compliance well to the background wells:

Critical Value (C_x) = $P(N(N+1)/12)^{0.5} * (1/N_{i\,bg}+1/N_x)^{0.5}$
P = 2.33 Percentile of Standard Normal Distribution
from Table 4 of IFG
N = total sample size
$N_{i\,bg}$ = total samples (N_i) of background data
N_x = total samples (N_i) of well x

Difference between average ranks (Dx) = Rbar (well x) - avg Rbar (background)

Well =	MW-1A	MW-2	MW-2D	MW-3	MW-3D	MW-4A	MW-8	**MW-15**	MW-16	MW-17
Rbar (well x) =	128.1	115.9	117.0	116.6	111.0	144.2	148.7	221.0	111.0	111.0
avg Rbar (background) =	125.2	125.2	125.2	125.2	125.2	125.2	125.2	125.2	125.2	125.2
Dx =	2.9	-9.3	-8.2	-8.6	-14.2	19.0	23.5	95.8	-14.2	-14.2
Cx =	42.0	42.0	42.0	43.4	43.4	42.7	42.0	45.0	82.3	82.3
Statistical Significance ?	No	No	No	No	No	No	No	**Yes**	No	No
If SSI, is current event above MCL?	-	-	-	-	-	-	-	NE	-	-

Compare each difference (Dx) with the corresponding critical value (Cx).
The Dx value for the above indicated wells do exceed the corresponding Cx value.
Therefore, we conclude that the concentration of Total Beryllium averaged over these compliance wells are significantly greater than that of the background wells.
Shewart-CUSUM Control Charts should be performed for each failing well to check for statistical significance.

White Oak Landfill
Haywood County, North Carolina
BLE Project Number J12-1957-31

Compound: **Total Beryllium**
NC MCL (µg/l): Not Established
Method: Shewhart-CUSUM Control Chart

Part 1: Check for Normality

	MW-15	MDL
9/26/2002	**95**	**2**
4/28/2003	**20**	**2**
10/30/2003	**33**	**1**
4/20/2004	**21**	**1**
10/21/2004	**28**	**1**
4/18/2005	**26**	**1**
10/13/2005	**21**	**1**
4/25/2006	**17**	**2**
10/20/2006	**5.7**	**1**
4/25/2007	**4.9**	**1**
10/31/2007	**6**	**1**
4/23/2008	**3**	**1**
10/20/2008	**1.9**	**1**
4/22/2009	NS	**1**
10/26/2009	**1.7**	**1**
4/22/2010	ND	**1**
10/27/2010	ND	**1**
4/29/2011	**1.1**	**1**
10/25/2011	**1.6**	**1**
4/20/2012	ND	**1**
10/24/2012	ND	**1**

If not detected (ND), use half of the detection limit.

95	X_i values =	522730.1
20		171.41633
33		6388.2643
21		281.6554
28		2490.5689
26		1542.8008
21		281.6554
17		16.679104
5.7		-668.7741
4.9		-869.6166
6		-602.2807
3		-1499.158
1.9		-1974.295
1.7		-2070.234
0.5		-2711.787
0.5		-2711.787
1.1		-2376.598
1.6		-2119.348
0.5		-2711.787
0.5		-2711.787

X_{bar} = 14.445
SD = 21.866352
N = 20
$1/N\Sigma_i(X_i-X_{bar})^3$ = 25543.784
γ_1= 2.6385835

Since the Coefficient of Skewness of 2.64 is greater than 1.0, the real data appear to be significantly skewed.
Do not assume that the data follow a Normal distribution.
Perform the Skewness Test on the natural log of the values.

ln = 4.5538769	X_i values =	26.110291
2.9957323		2.7944891
3.4965076		6.9603194
3.0445224		3.0950588
3.3322045		5.3136298
3.2580965		4.6649864
3.0445224		3.0950588
2.8332133		1.9345073
1.7404662		0.0036005
1.5892352		8.457E-09
1.7917595		0.00856
1.0986123		-0.116633
0.6418539		-0.84483
0.5306283		-1.17949
-0.693147		-11.85773
-0.693147		-11.85773
0.0953102		-3.320537
0.4700036		-1.394396
-0.693147		-11.85773

-0.693147	-11.85773

X_{bar} = 1.5871978
SD = 1.6647353
N = 20
$1/N\Sigma_i(X_i-X_{bar})^3$ = -0.015316
γ_1= 0.0035853

Since the Coefficient of Skewness of 0.00 is less than 1.0, the data appear not to be significantly skewed. Proceed with further statistical tests using the log-transformed values shown above.

Part 2: Shewhart-CUSUM Control Chart

Date	MW-15	MDL	Data for Testing
9/26/2002	**95**	2	4.5538769
4/28/2003	**20**	2	2.9957323
10/30/2003	**33**	1	3.4965076
4/20/2004	**21**	1	3.0445224
10/21/2004	**28**	1	3.3322045
4/18/2005	**26**	1	3.2580965
10/13/2005	**21**	1	3.0445224
4/25/2006	**17**	2	2.8332133
10/20/2006	**5.7**	1	1.7404662
4/25/2007	**4.9**	1	1.5892352
10/31/2007	**6**	1	1.7917595
4/23/2008	**3**	1	1.0986123
10/20/2008	**1.9**	1	0.6418539
4/22/2009	NS	1	-
10/26/2009	**1.7**	1	0.5306283
4/22/2010	ND	1	-0.693147
10/27/2010	ND	1	-0.693147
4/29/2011	**1.1**	1	0.0953102
10/25/2011	**1.6**	1	0.4700036
4/20/2012	ND	1	-0.693147
10/24/2012	ND	1	-0.693147

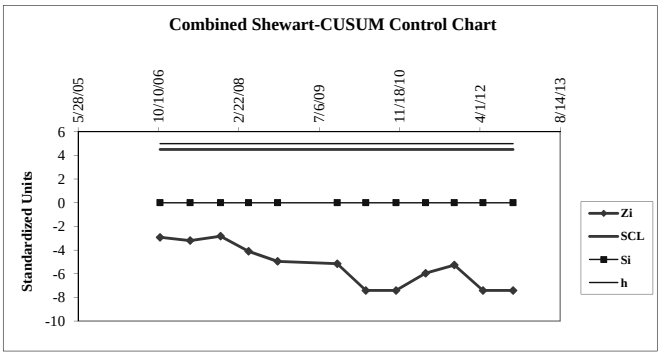
Compute the mean and standard deviation of the historical data:

3.3198345 = x_{mean} (Mean of N1-N8 historical data)
0.5413573 = s (Standard Deviation of N1-N8 historical data)
1 = k (constant, reference value)
5 = h (constant, upper control limit for the CUSUM scheme)
4.5 = SCL (Constant, upper Shewhart Control Limit)

Compute the standardized mean (Z_i) and the cumulative sum (S_i) for each concentration.

Date	x_i	Z_i	S_i	h	SCL
			0		
10/20/2006	1.7404662	-2.9174229	0	5	4.5
4/25/2007	1.5892352	-3.1967781	0	5	4.5
10/31/2007	1.7917595	-2.8226735	0	5	4.5
4/23/2008	1.0986123	-4.103061	0	5	4.5
10/20/2008	0.6418539	-4.9467891	0	5	4.5
10/26/2009	0.5306283	-5.152246	0	5	4.5
4/22/2010	-0.693147	-7.4128146	0	5	4.5
10/27/2010	-0.693147	-7.4128146	0	5	4.5
4/29/2011	0.0953102	-5.9563693	0	5	4.5
10/25/2011	0.4700036	-5.2642324	0	5	4.5
4/20/2012	-0.693147	-7.4128146	0	5	4.5
10/24/2012	-0.693147	-7.4128146	0	5	4.5

Plot Z_i and S_i versus time:



Compare the Z_i and S_i values to their respective control limits of SCL and h.

The limits were not exceeded and do not indicate statistically significant evidence of contamination at the site.

White Oak Landfill
Haywood County, North Carolina
BLE Project Number J12-1957-31

Compound: **Total Cadmium**
NC MCL (µg/l): 2
Method: Kruskal-Wallis
Background: MW-11S, MW-11D, & MW-14

	MW-11S	MW-11D	MW-14	MW-1A	MW-2	MW-2D	MW-3	MW-3D	MW-4A	MW-8	MW-15	MW-16	MW-17	MDL
04/24/00	**2**	NS	NS	ND	**1.3**	**1.2**	**1.3**	**2.1**	ND	**5.4**	NS	NP	NP	**1**
06/26/00	**1.6**	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	**1**
07/26/00	**1.1**	**3.2**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	**1**
09/18/00	NS	NS	NS	NT	NT	NS	NS	NS	NT	NS	NS	NP	NP	**1**
04/09/01	**130**	**2**	NS	ND	ND	ND	**1.7**	**1.8**	**2.7**	**19**	NS	NP	NP	**1**
09/18/01	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	**1**
10/29/01	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	**1**
01/30/02	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	**1**
02/28/02	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	**1**
04/15/02	**13**	ND	NS	ND	ND	ND	**4**	ND	**5.5**	**19**	NS	NP	NP	**10**
09/26/02	ND	ND	**4.2**	**21**	ND	**10**	ND	**2.3**	**4.2**	**19**	**180**	NP	NP	**1**
04/28/03	**3.6**	ND	ND	**6**	ND	ND	ND	ND	**2.9**	**16**	**20**	NP	NP	**1**
10/30/03	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**1**
04/20/04	ND	ND	ND	ND	ND	ND	ND	ND	ND	**8.8**	**8.9**	NP	NP	**1**
10/21/04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**1**
04/18/05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**1**
10/13/05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**1**
04/25/06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**1**
10/20/06	**3.8**	ND	ND	ND	ND	ND	ND	ND	**1.5**	ND	**5.2**	NP	NP	**1**
04/25/07	ND	ND	ND	ND	ND	**2.2**	ND	ND	ND	ND	ND	NP	NP	**1**
10/31/07	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**1**
04/23/08	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**1.6**	NP	NP	**1**
10/20/08	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**1**
04/22/09	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NP	NP	**1**
10/26/09	ND	ND	ND	ND	ND	ND	NS	NS	NS	ND	ND	NP	NP	**1**
04/22/10	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND	NP	NP	**1**
10/27/10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**1**
04/29/11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**1**
10/25/11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**1**
04/20/12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**4.8**	ND	**1**
10/24/12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**1**	ND	**1**
N_i	26	25	20	24	24	24	22	22	23	24	20	5	5	
sum of rank values (R_i)	3836.5	3065.0	2384.0	2989.0	2816.0	3082.5	2844.0	2847.5	3233.5	3562.0	2947.0	810.5	562.5	
avg rank value (Rbar)	147.6	122.6	119.2	124.5	117.3	128.4	129.3	129.4	140.6	148.4	147.4	162.1	112.5	

	Number of each rank value													Rank Value
rank value of NDs =	19	23	19	22	23	21	19	19	18	18	15	3	5	112.5
rank value of 1s =	0	0	0	0	0	0	0	0	0	0	0	1	0	225
rank value of 1.1s =	1	0	0	0	0	0	0	0	0	0	0	0	0	226
rank value of 1.2s =	0	0	0	0	0	1	0	0	0	0	0	0	0	227
rank value of 1.3s =	0	0	0	0	1	0	1	0	0	0	0	0	0	228.5
rank value of 1.5s =	0	0	0	0	0	0	0	0	1	0	0	0	0	230
rank value of 1.6s =	1	0	0	0	0	0	0	0	0	0	1	0	0	231.5
rank value of 1.7s =	0	0	0	0	0	0	1	0	0	0	0	0	0	233

rank value of 1.8s =	0	0	0	0	0	0	0	1	0	0	0	0	0	234
rank value of 2s =	1	1	0	0	0	0	0	0	0	0	0	0	0	235.5
rank value of 2.1s =	0	0	0	0	0	0	0	1	0	0	0	0	0	237
rank value of 2.2s =	0	0	0	0	0	1	0	0	0	0	0	0	0	238
rank value of 2.3s =	0	0	0	0	0	0	0	1	0	0	0	0	0	239
rank value of 2.7s =	0	0	0	0	0	0	0	0	1	0	0	0	0	240
rank value of 2.9s =	0	0	0	0	0	0	0	0	1	0	0	0	0	241
rank value of 3.2s =	0	1	0	0	0	0	0	0	0	0	0	0	0	242
rank value of 3.6s =	1	0	0	0	0	0	0	0	0	0	0	0	0	243
rank value of 3.8s =	1	0	0	0	0	0	0	0	0	0	0	0	0	244
rank value of 4s =	0	0	0	0	0	0	1	0	0	0	0	0	0	245
rank value of 4.2s =	0	0	1	0	0	0	0	0	1	0	0	0	0	246.5
rank value of 4.8s =	0	0	0	0	0	0	0	0	0	0	0	1	0	248
rank value of 5.2s =	0	0	0	0	0	0	0	0	0	0	1	0	0	249
rank value of 5.4s =	0	0	0	0	0	0	0	0	0	1	0	0	0	250
rank value of 5.5s =	0	0	0	0	0	0	0	0	1	0	0	0	0	251
rank value of 6s =	0	0	0	1	0	0	0	0	0	0	0	0	0	252
rank value of 8.8s =	0	0	0	0	0	0	0	0	0	1	0	0	0	253
rank value of 8.9s =	0	0	0	0	0	0	0	0	0	0	1	0	0	254
rank value of 10s =	0	0	0	0	0	1	0	0	0	0	0	0	0	255
rank value of 13s =	1	0	0	0	0	0	0	0	0	0	0	0	0	256
rank value of 16s =	0	0	0	0	0	0	0	0	0	1	0	0	0	257
rank value of 19s =	0	0	0	0	0	0	0	0	0	3	0	0	0	259
rank value of 20s =	0	0	0	0	0	0	0	0	0	0	1	0	0	261
rank value of 21s =	0	0	0	1	0	0	0	0	0	0	0	0	0	262
rank value of 130s =	1	0	0	0	0	0	0	0	0	0	0	0	0	263
rank value of 180s =	0	0	0	0	0	0	0	0	0	0	1	0	0	264
n =	**26**	**25**	**20**	**24**	**24**	**24**	**22**	**22**	**23**	**24**	**20**	**5**	**5**	

Sum of rank value calculations

2137.5	2587.5	2137.5	2475	2587.5	2362.5	2137.5	2137.5	2025	2025	1687.5	337.5	562.5
0	0	0	0	0	0	0	0	0	0	0	225	0
226	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	227	0	0	0	0	0	0	0
0	0	0	0	228.5	0	228.5	0	0	0	0	0	0
0	0	0	0	0	0	0	0	230	0	0	0	0
231.5	0	0	0	0	0	0	0	0	0	231.5	0	0
0	0	0	0	0	0	233	0	0	0	0	0	0
0	0	0	0	0	0	0	234	0	0	0	0	0
235.5	235.5	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	237	0	0	0	0	0
0	0	0	0	0	238	0	0	0	0	0	0	0
0	0	0	0	0	0	0	239	0	0	0	0	0
0	0	0	0	0	0	0	0	240	0	0	0	0
0	0	0	0	0	0	0	0	241	0	0	0	0
0	242	0	0	0	0	0	0	0	0	0	0	0

243	0	0	0	0	0	0	0	0	0	0	0	0
244	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	245	0	0	0	0	0	0
0	0	246.5	0	0	0	0	0	246.5	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	248	0
0	0	0	0	0	0	0	0	0	0	249	0	0
0	0	0	0	0	0	0	0	0	250	0	0	0
0	0	0	0	0	0	0	0	251	0	0	0	0
0	0	0	252	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	253	0	0	0
0	0	0	0	0	0	0	0	0	0	254	0	0
0	0	0	0	0	255	0	0	0	0	0	0	0
256	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	257	0	0	0
0	0	0	0	0	0	0	0	0	777	0	0	0
0	0	0	0	0	0	0	0	0	0	261	0	0
0	0	0	262	0	0	0	0	0	0	0	0	0
263	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	264	0	0
sum of rank values (R_i)	**3836.5**	**3065**	**2384**	**2989**	**2816**	**3082.5**	**2844**	**2847.5**	**3233.5**	**3562**	**2947**	**810.5**	**562.5**

Compute the Kruskal-Wallis statistic:

$$H = \{[12/N(N+1)] * [\Sigma^{K}_{i=1} (R_i^2)/N_i]\} -3(N+1)$$

Well =	**Background**	**MW-1A**	**MW-2**	**MW-2D**	**MW-3**	**MW-3D**	**MW-4A**	**MW-8**	**MW-15**	**MW-16**	**MW-17**
Ri^2/N_i =	1214373.4	372255	330411	395909	367652	368557	454588	528660	434240	131382	63281

$N_{i\ bg}$ = 71
N = 264
H = 4.54

Adjust H for ties:

T_i = 1E+07 sum of T1..T4

$H' = H/(1-(T_i/(N^3-N)))$
H' = 11.66
Chi-square = 18.31

Compare the calculated value H' to the tabulated Chi-square value with K-1 = # groups -1 = 17df at the 5% significance level from Table 1 of the IFG. The value is 18.31 which is greater than H' =11.66. Therefore, the null hypothesis of no contamination at the 5% level holds true and significant evidence of contamination does not exist.

White Oak Landfill
Haywood County, North Carolina
BLE Project Number J12-1957-31

Compound: **Total Chromium**
NC MCL (µg/l): 10
Method: Kruskal-Wallis
Background: MW-11S, MW-11D, & MW-14

	MW-11S	MW-11D	MW-14	MW-1A	MW-2	MW-2D	MW-3	MW-3D	MW-4A	MW-8	MW-15	MW-16	MW-17	MDL
04/24/00	15	NS	NS	18	17	11	ND	26	5.4	50	NS	NP	NP	5
06/26/00	22	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	5
07/26/00	29	20	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	5
09/18/00	NS	NS	NS	NT	NT	NS	NS	NS	NT	NS	NS	NP	NP	10
04/09/01	130	ND	NS	11	8.4	ND	ND	20	27	160	NS	NP	NP	5
09/18/01	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	5
10/29/01	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	5
01/30/02	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	5
02/28/02	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	10
04/15/02	170	ND	NS	ND	ND	5.7	7	10	56	180	NS	NP	NP	5
09/26/02	33	5.4	33	510	ND	5.2	ND	37	36	230	770	NP	NP	5
04/28/03	ND	ND	ND	89	ND	ND	ND	ND	ND	110	27	NP	NP	5
10/30/03	30	ND	NT	ND	6.2	ND	ND	ND	31	4.6	140	NP	NP	2
04/20/04	33	ND	2.1	45	13	ND	ND	11	3.5	190	68	NP	NP	2
10/21/04	21	ND	2.8	16	2	ND	ND	ND	ND	120	140	NP	NP	2
04/18/05	49	12	8.3	680	2.9	ND	ND	3.2	ND	210	100	NP	NP	2
10/13/05	52	ND	3.7	230	4.7	ND	ND	ND	ND	150	88	NP	NP	2
04/25/06	65	ND	16	ND	ND	ND	ND	ND	16	100	93	NP	NP	10
10/20/06	50	ND	11	24	ND	ND	ND	ND	17	ND	27	NP	NP	5
04/25/07	20	ND	ND	16	ND	410	ND	ND	ND	ND	17	NP	NP	10
10/31/07	40.9	ND	11.9	10.9	7.8	ND	ND	ND	5.1	75.5	33.7	NP	NP	5
04/23/08	10.7	ND	16.8	7.8	ND	ND	ND	ND	7.6	7.3	14.9	NP	NP	5
10/20/08	38.6	ND	29.4	12.7	ND	ND	ND	ND	ND	ND	6.8	NP	NP	5
04/22/09	12.3	ND	28.9	19.7	5.1	ND	ND	ND	7.3	ND	NS	NP	NP	5
10/26/09	10	ND	8.1	ND	18.7	ND	NS	NS	NS	10.9	8.1	NP	NP	5
04/22/10	14.3	10.9	13.1	ND	ND	ND	NS	NS	ND	ND	ND	NP	NP	5
10/27/10	10.1	ND	6.6	7.1	ND	ND	12	9.2	ND	ND	5.2	ND	ND	5
04/29/11	8	ND	8.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
10/25/11	15	ND	ND	21.1	ND	ND	8.1	ND	ND	9.2	5.1	ND	ND	5
04/20/12	24.5	ND	ND	5.1	ND	ND	7.9	ND	ND	ND	ND	12.3	ND	5
10/24/12	30.4	6	ND	6.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
N_i	26	25	20	24	24	24	22	22	23	24	20	5	5	
sum of rank values (R_i)	5421.5	2216.0	3036.0	4070.0	2581.0	2082.0	1880.5	2328.5	2871.0	4014.5	3687.5	456.5	335.0	
avg rank value (Rbar)	208.5	88.6	151.8	169.6	107.5	86.8	85.5	105.8	124.8	167.3	184.4	91.3	67.0	

	Number of each rank value													Rank Value
rank value of NDs =	1	20	5	6	14	20	18	15	12	9	4	4	5	67
rank value of 2s =	0	0	0	0	1	0	0	0	0	0	0	0	0	134
rank value of 2.1s =	0	0	1	0	0	0	0	0	0	0	0	0	0	135
rank value of 2.8s =	0	0	1	0	0	0	0	0	0	0	0	0	0	136
rank value of 2.9s =	0	0	0	0	1	0	0	0	0	0	0	0	0	137
rank value of 3.2s =	0	0	0	0	0	0	0	1	0	0	0	0	0	138
rank value of 3.5s =	0	0	0	0	0	0	0	0	1	0	0	0	0	139
rank value of 3.7s =	0	0	1	0	0	0	0	0	0	0	0	0	0	140
rank value of 4.6s =	0	0	0	0	0	0	0	0	0	1	0	0	0	141
rank value of 4.7s =	0	0	0	0	1	0	0	0	0	0	0	0	0	142
rank value of 5.1s =	0	0	0	1	1	0	0	0	1	0	1	0	0	144.5
rank value of 5.2s =	0	0	0	0	0	1	0	0	0	0	1	0	0	147.5
rank value of 5.4s =	0	1	0	0	0	0	0	0	1	0	0	0	0	149.5
rank value of 5.7s =	0	0	0	0	0	1	0	0	0	0	0	0	0	151
rank value of 6s =	0	1	0	0	0	0	0	0	0	0	0	0	0	152
rank value of 6.2s =	0	0	0	0	1	0	0	0	0	0	0	0	0	153
rank value of 6.4s =	0	0	0	1	0	0	0	0	0	0	0	0	0	154
rank value of 6.6s =	0	0	1	0	0	0	0	0	0	0	0	0	0	155
rank value of 6.8s =	0	0	0	0	0	0	0	0	0	0	1	0	0	156
rank value of 7s =	0	0	0	0	0	0	1	0	0	0	0	0	0	157
rank value of 7.1s =	0	0	0	1	0	0	0	0	0	0	0	0	0	158
rank value of 7.3s =	0	0	0	0	0	0	0	0	1	1	0	0	0	159.5
rank value of 7.6s =	0	0	0	0	0	0	0	0	1	0	0	0	0	161
rank value of 7.8s =	0	0	0	1	1	0	0	0	0	0	0	0	0	162.5
rank value of 7.9s =	0	0	0	0	0	0	1	0	0	0	0	0	0	164
rank value of 8s =	1	0	0	0	0	0	0	0	0	0	0	0	0	165
rank value of 8.1s =	0	0	1	0	0	0	1	0	0	0	1	0	0	167

rank value of 8.3s =	0	0	1	0	0	0	0	0	0	0	0	0	0	169
rank value of 8.4s =	0	0	0	0	1	0	0	0	0	0	0	0	0	170
rank value of 8.6s =	0	0	1	0	0	0	0	0	0	0	0	0	0	171
rank value of 9.2s =	0	0	0	0	0	0	0	1	0	1	0	0	0	172.5
rank value of 10s =	1	0	0	0	0	0	0	1	0	0	0	0	0	174.5
rank value of 10.1s =	1	0	0	0	0	0	0	0	0	0	0	0	0	176
rank value of 10.7s =	1	0	0	0	0	0	0	0	0	0	0	0	0	177
rank value of 10.9s =	0	1	0	1	0	0	0	0	0	1	0	0	0	179
rank value of 11s =	0	0	1	1	0	1	0	1	0	0	0	0	0	182.5
rank value of 11.9s =	0	0	1	0	0	0	0	0	0	0	0	0	0	185
rank value of 12s =	0	1	0	0	0	0	1	0	0	0	0	0	0	186.5
rank value of 12.3s =	1	0	0	0	0	0	0	0	0	0	0	1	0	188.5
rank value of 12.7s =	0	0	0	1	0	0	0	0	0	0	0	0	0	190
rank value of 13s =	0	0	0	0	1	0	0	0	0	0	0	0	0	191
rank value of 13.1s =	0	0	1	0	0	0	0	0	0	0	0	0	0	192
rank value of 14.3s =	1	0	0	0	0	0	0	0	0	0	0	0	0	193
rank value of 14.9s =	0	0	0	0	0	0	0	0	0	0	1	0	0	194
rank value of 15s =	2	0	0	0	0	0	0	0	0	0	0	0	0	195.5
rank value of 16s =	0	0	1	2	0	0	0	0	1	0	0	0	0	198.5
rank value of 16.8s =	0	0	1	0	0	0	0	0	0	0	0	0	0	201
rank value of 17s =	0	0	0	0	1	0	0	0	1	0	1	0	0	203
rank value of 18s =	0	0	0	1	0	0	0	0	0	0	0	0	0	205
rank value of 18.7s =	0	0	0	0	1	0	0	0	0	0	0	0	0	206
rank value of 19.7s =	0	0	0	1	0	0	0	0	0	0	0	0	0	207
rank value of 20s =	1	1	0	0	0	0	0	1	0	0	0	0	0	209
rank value of 21s =	1	0	0	0	0	0	0	0	0	0	0	0	0	211
rank value of 21.1s =	0	0	0	1	0	0	0	0	0	0	0	0	0	212
rank value of 22s =	1	0	0	0	0	0	0	0	0	0	0	0	0	213
rank value of 24s =	0	0	0	1	0	0	0	0	0	0	0	0	0	214
rank value of 24.5s =	1	0	0	0	0	0	0	0	0	0	0	0	0	215
rank value of 26s =	0	0	0	0	0	0	0	1	0	0	0	0	0	216
rank value of 27s =	0	0	0	0	0	0	0	0	1	0	2	0	0	218
rank value of 28.9s =	0	0	1	0	0	0	0	0	0	0	0	0	0	220
rank value of 29s =	1	0	0	0	0	0	0	0	0	0	0	0	0	221
rank value of 29.4s =	0	0	1	0	0	0	0	0	0	0	0	0	0	222
rank value of 30s =	1	0	0	0	0	0	0	0	0	0	0	0	0	223
rank value of 30.4s =	1	0	0	0	0	0	0	0	0	0	0	0	0	224
rank value of 31s =	0	0	0	0	0	0	0	0	1	0	0	0	0	225
rank value of 33s =	2	0	1	0	0	0	0	0	0	0	0	0	0	227
rank value of 33.7s =	0	0	0	0	0	0	0	0	0	0	1	0	0	229
rank value of 36s =	0	0	0	0	0	0	0	0	1	0	0	0	0	230
rank value of 37s =	0	0	0	0	0	0	0	1	0	0	0	0	0	231
rank value of 38.6s =	1	0	0	0	0	0	0	0	0	0	0	0	0	232
rank value of 40.9s =	1	0	0	0	0	0	0	0	0	0	0	0	0	233
rank value of 45s =	0	0	0	1	0	0	0	0	0	0	0	0	0	234
rank value of 49s =	1	0	0	0	0	0	0	0	0	0	0	0	0	235
rank value of 50s =	1	0	0	0	0	0	0	0	0	1	0	0	0	236.5
rank value of 52s =	1	0	0	0	0	0	0	0	0	0	0	0	0	238
rank value of 56s =	0	0	0	0	0	0	0	0	1	0	0	0	0	239
rank value of 65s =	1	0	0	0	0	0	0	0	0	0	0	0	0	240
rank value of 68s =	0	0	0	0	0	0	0	0	0	0	1	0	0	241
rank value of 75.5s =	0	0	0	0	0	0	0	0	0	1	0	0	0	242
rank value of 88s =	0	0	0	0	0	0	0	0	0	0	1	0	0	243
rank value of 89s =	0	0	0	1	0	0	0	0	0	0	0	0	0	244
rank value of 93s =	0	0	0	0	0	0	0	0	0	0	1	0	0	245
rank value of 100s =	0	0	0	0	0	0	0	0	0	1	1	0	0	246.5
rank value of 110s =	0	0	0	0	0	0	0	0	0	1	0	0	0	248
rank value of 120s =	0	0	0	0	0	0	0	0	0	1	0	0	0	249
rank value of 130s =	1	0	0	0	0	0	0	0	0	0	0	0	0	250
rank value of 140s =	0	0	0	0	0	0	0	0	0	0	2	0	0	251.5
rank value of 150s =	0	0	0	0	0	0	0	0	0	1	0	0	0	253
rank value of 160s =	0	0	0	0	0	0	0	0	0	1	0	0	0	254
rank value of 170s =	1	0	0	0	0	0	0	0	0	0	0	0	0	255
rank value of 180s =	0	0	0	0	0	0	0	0	0	1	0	0	0	256
rank value of 190s =	0	0	0	0	0	0	0	0	0	1	0	0	0	257
rank value of 210s =	0	0	0	0	0	0	0	0	0	1	0	0	0	258
rank value of 230s =	0	0	0	1	0	0	0	0	0	1	0	0	0	259.5
rank value of 410s =	0	0	0	0	0	1	0	0	0	0	0	0	0	261
rank value of 510s =	0	0	0	1	0	0	0	0	0	0	0	0	0	262
rank value of 680s =	0	0	0	1	0	0	0	0	0	0	0	0	0	263
rank value of 770s =	0	0	0	0	0	0	0	0	0	0	1	0	0	264
n =	**26**	**25**	**20**	**24**	**24**	**24**	**22**	**22**	**23**	**24**	**20**	**5**	**5**	
						Sum of rank value calculations								
	67	1340	335	402	938	1340	1206	1005	804	603	268	268	335	

0	0	0	0	134	0	0	0	0	0	0	0	0
0	0	135	0	0	0	0	0	0	0	0	0	0
0	0	136	0	0	0	0	0	0	0	0	0	0
0	0	0	0	137	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	138	0	0	0	0	0
0	0	0	0	0	0	0	0	139	0	0	0	0
0	0	140	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	141	0	0	0
0	0	0	0	142	0	0	0	0	0	0	0	0
0	0	0	144.5	144.5	0	0	0	144.5	0	144.5	0	0
0	0	0	0	0	147.5	0	0	0	0	147.5	0	0
0	149.5	0	0	0	0	0	0	149.5	0	0	0	0
0	0	0	0	0	151	0	0	0	0	0	0	0
0	152	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	153	0	0	0	0	0	0	0	0
0	0	0	154	0	0	0	0	0	0	0	0	0
0	0	155	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	156	0	0
0	0	0	0	0	0	157	0	0	0	0	0	0
0	0	0	158	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	159.5	159.5	0	0	0
0	0	0	0	0	0	0	0	161	0	0	0	0
0	0	0	162.5	162.5	0	0	0	0	0	0	0	0
0	0	0	0	0	0	164	0	0	0	0	0	0
165	0	0	0	0	0	0	0	0	0	0	0	0
0	0	167	0	0	0	167	0	0	0	167	0	0
0	0	169	0	0	0	0	0	0	0	0	0	0
0	0	0	0	170	0	0	0	0	0	0	0	0
0	0	171	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	172.5	0	172.5	0	0	0
174.5	0	0	0	0	0	0	174.5	0	0	0	0	0
176	0	0	0	0	0	0	0	0	0	0	0	0
177	0	0	0	0	0	0	0	0	0	0	0	0
0	179	0	179	0	0	0	0	0	179	0	0	0
0	0	182.5	182.5	0	182.5	0	182.5	0	0	0	0	0
0	0	185	0	0	0	0	0	0	0	0	0	0
0	186.5	0	0	0	0	186.5	0	0	0	0	0	0
188.5	0	0	0	0	0	0	0	0	0	0	188.5	0
0	0	0	190	0	0	0	0	0	0	0	0	0
0	0	0	0	191	0	0	0	0	0	0	0	0
0	0	192	0	0	0	0	0	0	0	0	0	0
193	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	194	0	0
391	0	0	0	0	0	0	0	0	0	0	0	0
0	0	198.5	397	0	0	0	0	198.5	0	0	0	0
0	0	201	0	0	0	0	0	0	0	0	0	0
0	0	0	0	203	0	0	0	203	0	203	0	0
0	0	0	205	0	0	0	0	0	0	0	0	0
0	0	0	0	206	0	0	0	0	0	0	0	0
0	0	0	207	0	0	0	0	0	0	0	0	0
209	209	0	0	0	0	0	209	0	0	0	0	0
211	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	212	0	0	0	0	0	0	0	0	0
213	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	214	0	0	0	0	0	0	0	0	0
215	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	216	0	0	0	0	0
0	0	0	0	0	0	0	0	218	0	436	0	0
0	0	220	0	0	0	0	0	0	0	0	0	0
221	0	0	0	0	0	0	0	0	0	0	0	0
0	0	222	0	0	0	0	0	0	0	0	0	0
223	0	0	0	0	0	0	0	0	0	0	0	0
224	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	225	0	0	0	0
454	0	227	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	229	0	0
0	0	0	0	0	0	0	0	230	0	0	0	0
0	0	0	0	0	0	0	231	0	0	0	0	0
232	0	0	0	0	0	0	0	0	0	0	0	0
233	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	234	0	0	0	0	0	0	0	0	0
235	0	0	0	0	0	0	0	0	0	0	0	0
236.5	0	0	0	0	0	0	0	0	236.5	0	0	0
238	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	239	0	0	0	0
240	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	241	0	0

	0	0	0	0	0	0	0	0	0	242	0	0	0
	0	0	0	0	0	0	0	0	0	0	243	0	0
	0	0	0	244	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	245	0	0
	0	0	0	0	0	0	0	0	0	246.5	246.5	0	0
	0	0	0	0	0	0	0	0	0	248	0	0	0
	0	0	0	0	0	0	0	0	0	249	0	0	0
	250	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	503	0	0
	0	0	0	0	0	0	0	0	0	253	0	0	0
	0	0	0	0	0	0	0	0	0	254	0	0	0
	255	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	256	0	0	0
	0	0	0	0	0	0	0	0	0	257	0	0	0
	0	0	0	0	0	0	0	0	0	258	0	0	0
	0	0	0	259.5	0	0	0	0	0	259.5	0	0	0
	0	0	0	0	0	261	0	0	0	0	0	0	0
	0	0	0	262	0	0	0	0	0	0	0	0	0
	0	0	0	263	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	264	0	0
sum of rank values (R_i)	**5421.5**	**2216**	**3036**	**4070**	**2581**	**2082**	**1880.5**	**2328.5**	**2871**	**4014.5**	**3687.5**	**456.5**	**335**

Compute the Kruskal-Wallis statistic:

$$H = \{[12/N(N+1)] * [\Sigma^{K}_{i=1} (R_i^2)/N_i]\} -3(N+1)$$

Well =	**Background**	**MW-1A**	**MW-2**	**MW-2D**	**MW-3**	**MW-3D**	**MW-4A**	**MW-8**	**MW-15**	**MW-16**	**MW-17**
Ri^2/N_i =	1604557.8	690204	277565	180614	160740	246451	358376	671509	679883	41678	22445

$N_{i\,bg}$ = 71
N = 264
H = 51.32

Adjust H for ties:

T_i = 2E+06 sum of T1..T4

$H' = H/(1-(T_i/(N^3-N)))$
H' = 58.84
Chi-square = 18.31

Compare the calculated value H' to the tabulated Chi-square value with K-1 = # groups -1 = 17df at the 5% significance level from Table 1 of the IFG. The value is 18.31 which is less than H' =58.84.
Therefore, there is evidence of significant differences between the well groups.
Post-hoc pairwise comparisons are necessary (see below).

Calculate the critical values to compare each compliance well to the background wells:

Critical Value (C_x) = $P(N(N+1)/12)^{0.5} * (1/N_{i\,bg}+1/N_x)^{0.5}$
P = 2.33 Percentile of Standard Normal Distribution
from Table 4 of IFG
N = total sample size
$N_{i\,bg}$ = total samples (N_i) of background data
N_x = total samples (N_i) of well x

Difference between average ranks (Dx) = Rbar (well x) - avg Rbar (background)

Well =	MW-1A	MW-2	MW-2D	MW-3	MW-3D	MW-4A	MW-8	MW-15	MW-16	MW-17
Rbar (well x) =	169.6	107.5	86.8	85.5	105.8	124.8	167.3	184.4	91.3	67.0
avg Rbar (background) =	150.3	150.3	150.3	150.3	150.3	150.3	150.3	150.3	150.3	150.3
Dx =	19.3	-42.8	-63.6	-64.9	-44.5	-25.5	16.9	34.0	-59.0	-83.3
Cx =	42.0	42.0	42.0	43.4	43.4	42.7	42.0	45.0	82.3	82.3
Statistical Significance ?	No	No	No	No	No	No	No	No	No	No
If SSI, is current event above MCL?	-	-	-	-	-	-	-	-	-	-

Compare each difference (Dx) with the corresponding critical value (Cx).
No compliance well's difference between average ranks exceeded its corresponding critical value at a 5% significance level. Therefore, we conclude that significant evidence of contamination does not exist at the 5% significance level.

White Oak Landfill
Haywood County, North Carolina
BLE Project Number J12-1957-31

Compound: **Total Cobalt**
NC MCL (µg/l): Not Established
Method: Kruskal-Wallis
Background: MW-11S, MW-11D, & MW-14

	MW-11S	MW-11D	MW-14	MW-1A	MW-2	MW-2D	MW-3	MW-3D	MW-4A	MW-8	MW-15	MW-16	MW-17	MDL
04/24/00	ND	NS	NS	ND	**8.2**	**5.4**	ND	**14**	ND	**16**	NS	NP	NP	**5**
06/26/00	**10**	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	**5**
07/26/00	**9.9**	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	**5**
09/18/00	NS	NS	NS	NT	NT	NS	NS	NS	NT	NS	NS	NP	NP	**10**
04/09/01	**54**	ND	NS	ND	ND	ND	**13**	**12**	**13**	**59**	NS	NP	NP	**5**
09/18/01	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	**5**
10/29/01	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	**5**
01/30/02	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	**5**
02/28/02	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	**10**
04/15/02	**58**	ND	NS	ND	ND	ND	**18**	**8**	**21**	**82**	NS	NP	NP	**5**
09/26/02	**13**	**5.4**	**16**	**100**	ND	**16**	**7.4**	**21**	**19**	**85**	**560**	NP	NP	**5**
04/28/03	**21**	ND	ND	**37**	ND	ND	**6.9**	ND	**17**	**50**	**81**	NP	NP	**5**
10/30/03	**9**	ND	NT	ND	ND	ND	**5.7**	ND	**52**	**8.8**	**110**	NP	NP	**5**
04/20/04	**9.5**	ND	ND	**7.7**	**5.2**	ND	**13**	**6.4**	ND	**43**	**50**	NP	NP	**5**
10/21/04	**6.2**	ND	ND	ND	ND	ND	ND	ND	ND	**31**	**120**	NP	NP	**5**
04/18/05	**12**	ND	ND	**110**	ND	ND	ND	ND	ND	**36**	**70**	NP	NP	**5**
10/13/05	**21**	ND	ND	**32**	ND	ND	**5.1**	ND	ND	**29**	**56**	NP	NP	**5**
04/25/06	**16**	ND	ND	ND	ND	ND	ND	ND	ND	**25**	**57**	NP	NP	**10**
10/20/06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**5**
04/25/07	ND	ND	ND	ND	ND	**260**	ND	ND	ND	ND	ND	NP	NP	**10**
10/31/07	**16.8**	ND	ND	ND	**10.6**	ND	ND	ND	ND	ND	**17.6**	NP	NP	**5**
04/23/08	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**22.3**	NP	NP	**5**
10/20/08	**27**	**10.4**	**19.5**	**9.4**	**7.7**	ND	**12.6**	**5.3**	**7.1**	ND	**18.4**	NP	NP	**5**
04/22/09	**5**	**6.3**	**17.1**	**8.5**	**5.7**	ND	**7**	ND	**6.4**	ND	NS	NP	NP	**5**
10/26/09	ND	ND	ND	ND	**6**	ND	NS	NS	NS	ND	**6**	NP	NP	**5**
04/22/10	**5.6**	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND	NP	NP	**5**
10/27/10	ND	ND	ND	ND	ND	ND	**17.3**	**5.6**	ND	ND	**7.8**	**29.6**	ND	**5**
04/29/11	ND	ND	ND	ND	**6.9**	ND	**8.9**	ND	ND	ND	ND	**26.3**	ND	**5**
10/25/11	**5.3**	ND	ND	**6.4**	**6.3**	ND	**21**	ND	ND	ND	ND	**42.4**	ND	**5**
04/20/12	**6.9**	ND	ND	ND	ND	ND	**6.4**	ND	ND	ND	ND	**134**	ND	**5**
10/24/12	**15.7**	ND	ND	ND	**5.6**	ND	**6.5**	ND	ND	ND	ND	**48.5**	ND	**5**
N_i	26	25	20	24	24	24	22	22	23	24	20	5	5	
sum of rank values (R_i)	4502.5	2344.0	2050.0	3072.5	2863.0	2359.5	3422.0	2585.5	2809.0	3680.5	3661.0	1223.0	407.5	
avg rank value (Rbar)	173.2	93.8	102.5	128.0	119.3	98.3	155.5	117.5	122.1	153.4	183.1	244.6	81.5	

	Number of each rank value													Rank Value
rank value of NDs =	7	22	17	16	15	21	8	15	16	13	7	0	5	81.5
rank value of 5s =	1	0	0	0	0	0	0	0	0	0	0	0	0	163
rank value of 5.1s =	0	0	0	0	0	0	1	0	0	0	0	0	0	164
rank value of 5.2s =	0	0	0	0	1	0	0	0	0	0	0	0	0	165
rank value of 5.3s =	1	0	0	0	0	0	0	1	0	0	0	0	0	166.5
rank value of 5.4s =	0	1	0	0	0	1	0	0	0	0	0	0	0	168.5
rank value of 5.6s =	1	0	0	0	1	0	0	1	0	0	0	0	0	171
rank value of 5.7s =	0	0	0	0	1	0	1	0	0	0	0	0	0	173.5
rank value of 6s =	0	0	0	0	1	0	0	0	0	0	1	0	0	175.5
rank value of 6.2s =	1	0	0	0	0	0	0	0	0	0	0	0	0	177
rank value of 6.3s =	0	1	0	0	1	0	0	0	0	0	0	0	0	178.5
rank value of 6.4s =	0	0	0	1	0	0	1	1	1	0	0	0	0	181.5
rank value of 6.5s =	0	0	0	0	0	0	1	0	0	0	0	0	0	184
rank value of 6.9s =	1	0	0	0	1	0	1	0	0	0	0	0	0	186
rank value of 7s =	0	0	0	0	0	0	1	0	0	0	0	0	0	188
rank value of 7.1s =	0	0	0	0	0	0	0	0	1	0	0	0	0	189
rank value of 7.4s =	0	0	0	0	0	0	1	0	0	0	0	0	0	190
rank value of 7.7s =	0	0	0	1	1	0	0	0	0	0	0	0	0	191.5
rank value of 7.8s =	0	0	0	0	0	0	0	0	0	0	1	0	0	193
rank value of 8.2s =	0	0	0	0	1	0	0	1	0	0	0	0	0	194.5
rank value of 8.5s =	0	0	0	1	0	0	0	0	0	0	0	0	0	196
rank value of 8.8s =	0	0	0	0	0	0	0	0	0	1	0	0	0	197
rank value of 8.9s =	0	0	0	0	0	0	1	0	0	0	0	0	0	198
rank value of 9s =	1	0	0	0	0	0	0	0	0	0	0	0	0	199
rank value of 9.4s =	0	0	0	1	0	0	0	0	0	0	0	0	0	200
rank value of 9.5s =	1	0	0	0	0	0	0	0	0	0	0	0	0	201

rank value of 9.9s =	1	0	0	0	0	0	0	0	0	0	0	0	0	202
rank value of 10s =	1	0	0	0	0	0	0	0	0	0	0	0	0	203
rank value of 10.4s =	0	1	0	0	0	0	0	0	0	0	0	0	0	204
rank value of 10.6s =	0	0	0	0	1	0	0	0	0	0	0	0	0	205
rank value of 12s =	1	0	0	0	0	0	0	1	0	0	0	0	0	206.5
rank value of 12.6s =	0	0	0	0	0	0	1	0	0	0	0	0	0	208
rank value of 13s =	1	0	0	0	0	0	2	0	1	0	0	0	0	210.5
rank value of 14s =	0	0	0	0	0	0	0	1	0	0	0	0	0	213
rank value of 15.7s =	1	0	0	0	0	0	0	0	0	0	0	0	0	214
rank value of 16s =	1	0	1	0	0	1	0	0	0	1	0	0	0	216.5
rank value of 16.8s =	1	0	0	0	0	0	0	0	0	0	0	0	0	219
rank value of 17s =	0	0	0	0	0	0	0	0	1	0	0	0	0	220
rank value of 17.1s =	0	0	1	0	0	0	0	0	0	0	0	0	0	221
rank value of 17.3s =	0	0	0	0	0	0	1	0	0	0	0	0	0	222
rank value of 17.6s =	0	0	0	0	0	0	0	0	0	0	1	0	0	223
rank value of 18s =	0	0	0	0	0	0	1	0	0	0	0	0	0	224
rank value of 18.4s =	0	0	0	0	0	0	0	0	0	0	1	0	0	225
rank value of 19s =	0	0	0	0	0	0	0	0	1	0	0	0	0	226
rank value of 19.5s =	0	0	1	0	0	0	0	0	0	0	0	0	0	227
rank value of 21s =	2	0	0	0	0	0	1	1	1	0	0	0	0	230
rank value of 22.3s =	0	0	0	0	0	0	0	0	0	0	1	0	0	233
rank value of 25s =	0	0	0	0	0	0	0	0	0	1	0	0	0	234
rank value of 26.3s =	0	0	0	0	0	0	0	0	0	0	0	1	0	235
rank value of 27s =	1	0	0	0	0	0	0	0	0	0	0	0	0	236
rank value of 29s =	0	0	0	0	0	0	0	0	0	1	0	0	0	237
rank value of 29.6s =	0	0	0	0	0	0	0	0	0	0	0	1	0	238
rank value of 31s =	0	0	0	0	0	0	0	0	0	1	0	0	0	239
rank value of 32s =	0	0	0	1	0	0	0	0	0	0	0	0	0	240
rank value of 36s =	0	0	0	0	0	0	0	0	0	1	0	0	0	241
rank value of 37s =	0	0	0	1	0	0	0	0	0	0	0	0	0	242
rank value of 42.4s =	0	0	0	0	0	0	0	0	0	0	0	1	0	243
rank value of 43s =	0	0	0	0	0	0	0	0	0	1	0	0	0	244
rank value of 48.5s =	0	0	0	0	0	0	0	0	0	0	0	1	0	245
rank value of 50s =	0	0	0	0	0	0	0	0	0	1	1	0	0	246.5
rank value of 52s =	0	0	0	0	0	0	0	0	1	0	0	0	0	248
rank value of 54s =	1	0	0	0	0	0	0	0	0	0	0	0	0	249
rank value of 56s =	0	0	0	0	0	0	0	0	0	0	1	0	0	250
rank value of 57s =	0	0	0	0	0	0	0	0	0	0	1	0	0	251
rank value of 58s =	1	0	0	0	0	0	0	0	0	0	0	0	0	252
rank value of 59s =	0	0	0	0	0	0	0	0	0	1	0	0	0	253
rank value of 70s =	0	0	0	0	0	0	0	0	0	0	1	0	0	254
rank value of 81s =	0	0	0	0	0	0	0	0	0	0	1	0	0	255
rank value of 82s =	0	0	0	0	0	0	0	0	0	1	0	0	0	256
rank value of 85s =	0	0	0	0	0	0	0	0	0	1	0	0	0	257
rank value of 100s =	0	0	0	1	0	0	0	0	0	0	0	0	0	258
rank value of 110s =	0	0	0	1	0	0	0	0	0	0	1	0	0	259.5
rank value of 120s =	0	0	0	0	0	0	0	0	0	0	1	0	0	261
rank value of 134s =	0	0	0	0	0	0	0	0	0	0	0	1	0	262
rank value of 260s =	0	0	0	0	0	1	0	0	0	0	0	0	0	263
rank value of 560s =	0	0	0	0	0	0	0	0	0	0	1	0	0	264
n =	**26**	**25**	**20**	**24**	**24**	**24**	**22**	**22**	**23**	**24**	**20**	**5**	**5**	

Sum of rank value calculations

570.5	1793	1385.5	1304	1222.5	1711.5	652	1222.5	1304	1059.5	570.5	0	407.5
163	0	0	0	0	0	0	0	0	0	0	0	0

0	0	0	0	0	0	164	0	0	0	0	0	0
0	0	0	0	165	0	0	0	0	0	0	0	0
166.5	0	0	0	0	0	0	166.5	0	0	0	0	0
0	168.5	0	0	0	168.5	0	0	0	0	0	0	0
171	0	0	0	171	0	0	171	0	0	0	0	0
0	0	0	0	173.5	0	173.5	0	0	0	0	0	0
0	0	0	0	175.5	0	0	0	0	0	175.5	0	0
177	0	0	0	0	0	0	0	0	0	0	0	0
0	178.5	0	0	178.5	0	0	0	0	0	0	0	0
0	0	0	181.5	0	0	181.5	181.5	181.5	0	0	0	0
0	0	0	0	0	0	184	0	0	0	0	0	0
186	0	0	0	186	0	186	0	0	0	0	0	0
0	0	0	0	0	0	188	0	0	0	0	0	0
0	0	0	0	0	0	0	0	189	0	0	0	0
0	0	0	0	0	0	190	0	0	0	0	0	0
0	0	0	191.5	191.5	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	193	0	0
0	0	0	0	194.5	0	0	194.5	0	0	0	0	0
0	0	0	196	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	197	0	0	0
0	0	0	0	0	0	198	0	0	0	0	0	0
199	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	200	0	0	0	0	0	0	0	0	0
201	0	0	0	0	0	0	0	0	0	0	0	0
202	0	0	0	0	0	0	0	0	0	0	0	0
203	0	0	0	0	0	0	0	0	0	0	0	0
0	204	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	205	0	0	0	0	0	0	0	0
206.5	0	0	0	0	0	0	206.5	0	0	0	0	0
0	0	0	0	0	0	208	0	0	0	0	0	0
210.5	0	0	0	0	0	421	0	210.5	0	0	0	0
0	0	0	0	0	0	0	213	0	0	0	0	0
214	0	0	0	0	0	0	0	0	0	0	0	0
216.5	0	216.5	0	0	216.5	0	0	0	216.5	0	0	0
219	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	220	0	0	0	0
0	0	221	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	222	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	223	0	0
0	0	0	0	0	0	224	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	225	0	0
0	0	0	0	0	0	0	0	226	0	0	0	0
0	0	227	0	0	0	0	0	0	0	0	0	0
460	0	0	0	0	0	230	230	230	0	0	0	0
0	0	0	0	0	0	0	0	0	0	233	0	0
0	0	0	0	0	0	0	0	0	234	0	0	0
0	0	0	0	0	0	0	0	0	0	0	235	0
236	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	237	0	0	0
0	0	0	0	0	0	0	0	0	0	0	238	0
0	0	0	0	0	0	0	0	0	239	0	0	0
0	0	0	240	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	241	0	0	0
0	0	0	242	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	243	0
0	0	0	0	0	0	0	0	0	244	0	0	0
0	0	0	0	0	0	0	0	0	0	0	245	0
0	0	0	0	0	0	0	0	0	246.5	246.5	0	0
0	0	0	0	0	0	0	0	248	0	0	0	0
249	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	250	0	0
0	0	0	0	0	0	0	0	0	0	251	0	0
252	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	253	0	0	0
0	0	0	0	0	0	0	0	0	0	254	0	0
0	0	0	0	0	0	0	0	0	0	255	0	0
0	0	0	0	0	0	0	0	0	256	0	0	0
0	0	0	0	0	0	0	0	0	257	0	0	0
0	0	0	258	0	0	0	0	0	0	0	0	0
0	0	0	259.5	0	0	0	0	0	0	259.5	0	0
0	0	0	0	0	0	0	0	0	0	261	0	0
0	0	0	0	0	0	0	0	0	0	0	262	0
0	0	0	0	0	263	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	264	0	0

sum of rank values (R_i)	**4502.5**	**2344**	**2050**	**3072.5**	**2863**	**2359.5**	**3422**	**2585.5**	**2809**	**3680.5**	**3661**	**1223**	**407.5**

Compute the Kruskal-Wallis statistic:

$$H = \{[12/N(N+1)] * [\Sigma^{K}_{i=1} (R_i^2)/N_i]\} -3(N+1)$$

Well =	**Background**	**MW-1A**	**MW-2**	**MW-2D**	**MW-3**	**MW-3D**	**MW-4A**	**MW-8**	**MW-15**	**MW-16**	**MW-17**
Ri^2/N_i =	1114756.5	393344	341532	231968	532277	303855	343064	564420	670146	299146	33211

$N_{i\,bg}$ = 71
N = 264
H = 33.08

Adjust H for ties:

T_i = 4E+06 sum of T1..T9

$H' = H/(1-(T_i/(N^3-N)))$
H' = 43.02
Chi-square = 18.31

Compare the calculated value H' to the tabulated Chi-square value with K-1 = # groups -1 = 17df at the 5% significance level from Table 1 of the IFG. The value is 18.31 which is less than H' =43.02.
Therefore, there is evidence of significant differences between the well groups.
Post-hoc pairwise comparisons are necessary (see below).

Calculate the critical values to compare each compliance well to the background wells:

Critical Value (C_x) = $P(N(N+1)/12)^{0.5} * (1/N_{i\,bg}+1/N_x)^{0.5}$
P = 2.33 Percentile of Standard Normal Distribution
from Table 4 of IFG
N = total sample size
$N_{i\,bg}$ = total samples (N_i) of background data
N_x = total samples (N_i) of well x

Difference between average ranks (Dx) = Rbar (well x) - avg Rbar (background)

Well =	MW-1A	MW-2	MW-2D	MW-3	MW-3D	MW-4A	MW-8	**MW-15**	**MW-16**	MW-17
Rbar (well x) =	128.0	119.3	98.3	155.5	117.5	122.1	153.4	183.1	244.6	81.5
avg Rbar (background) =	125.3	125.3	125.3	125.3	125.3	125.3	125.3	125.3	125.3	125.3
Dx =	2.7	-6.0	-27.0	30.2	-7.8	-3.2	28.1	57.7	119.3	-43.8
Cx =	42.0	42.0	42.0	43.4	43.4	42.7	42.0	45.0	82.3	82.3
Statistical Significance ?	No	No	No	No	No	No	No	**Yes**	**Yes**	No
If SSI, is current event above MCL?	-	-	-	-	-	-	-	NE	NE	-

Compare each difference (Dx) with the corresponding critical value (Cx).
The Dx value for the above indicated wells do exceed the corresponding Cx value.
Therefore, we conclude that the concentration of Total Cobalt averaged over these compliance wells are significantly greater than that of the background wells.
Shewart-CUSUM Control Charts should be performed for each failing well to check for statistical significance.

White Oak Landfill
Haywood County, North Carolina
BLE Project Number J12-1957-31

Compound: **Total Cobalt**
NC MCL (µg/l): Not Established
Method: Shewhart-CUSUM Control Chart

Part 1: Check for Normality

	MW-15	MDL
9/26/2002	**560**	**5**
4/28/2003	**81**	**5**
10/30/2003	**110**	**5**
4/20/2004	**50**	**5**
10/21/2004	**120**	**5**
4/18/2005	**70**	**5**
10/13/2005	**56**	**5**
4/25/2006	**57**	**10**
10/20/2006	ND	**5**
4/25/2007	ND	**10**
10/31/2007	**17.6**	**5**
4/23/2008	**22.3**	**5**
10/20/2008	**18.4**	**5**
4/22/2009	NS	**5**
10/26/2009	**6**	**5**
4/22/2010	ND	**5**
10/27/2010	**7.8**	**5**
4/29/2011	ND	**5**
10/25/2011	ND	**5**
4/20/2012	ND	**5**
10/24/2012	ND	**5**

If not detected (ND), use half of the detection limit.

	X_i values =
560	125146307
81	9521.388
110	126468.21
50	-942.6333
120	218112.85
70	1059.6482
56	-55.08889
57	-22.06981
2.5	-188181.8
5	-164611.6
17.6	-75178.16
22.3	-52755.47
18.4	-70983.66
6	-155764.3
2.5	-188181.8
7.8	-140648.6
2.5	-188181.8
2.5	-188181.8
2.5	-188181.8
2.5	-188181.8

X_{bar} = 59.805
SD = 123.59062
N = 20
$1/N\Sigma_i(X_i-X_{bar})^3$ = 6185570.8
γ_1= 3.5386518

Since the Coefficient of Skewness of 3.54 is greater than 1.0, the real data appear to be significantly skewed.
Do not assume that the data follow a Normal distribution.
Perform the Skewness Test on the natural log of the values.

ln =	X_i values =
6.3279368	43.39444
4.3944492	3.9487331
4.7004804	6.7151267
3.912023	1.3243463
4.7874917	7.6877454
4.2484952	2.952741
4.0253517	1.7781252
4.0430513	1.8572031
0.9162907	-6.832699
1.6094379	-1.74717
2.8678989	0.0001578
3.1045867	0.024573
2.9123507	0.0009554
1.7917595	-1.067775
0.9162907	-6.832699
2.0541237	-0.438518
0.9162907	-6.832699
0.9162907	-6.832699
0.9162907	-6.832699

0.9162907	-6.832699

X_{bar} = 2.8138591
SD = 1.6751842
N = 20
$1/N\Sigma_i(X_i-X_{bar})^3$ = 1.2717247
γ_1= 0.2921595

Since the Coefficient of Skewness of 0.29 is less than 1.0, the data appear not to be significantly skewed. Proceed with further statistical tests using the log-transformed values shown above.

Part 2: Shewhart-CUSUM Control Chart

Date	MW-15	MDL	Data for Testing
9/26/2002	**560**	5	6.3279368
4/28/2003	**81**	5	4.3944492
10/30/2003	**110**	5	4.7004804
4/20/2004	**50**	5	3.912023
10/21/2004	**120**	5	4.7874917
4/18/2005	**70**	5	4.2484952
10/13/2005	**56**	5	4.0253517
4/25/2006	**57**	10	4.0430513
10/20/2006	ND	5	0.9162907
4/25/2007	ND	10	1.6094379
10/31/2007	**17.6**	5	2.8678989
4/23/2008	**22.3**	5	3.1045867
10/20/2008	**18.4**	5	2.9123507
4/22/2009	NS	5	-
10/26/2009	**6**	5	1.7917595
4/22/2010	ND	5	0.9162907
10/27/2010	**7.8**	5	2.0541237
4/29/2011	ND	5	0.9162907
10/25/2011	ND	5	0.9162907
4/20/2012	ND	5	0.9162907
10/24/2012	ND	5	0.9162907

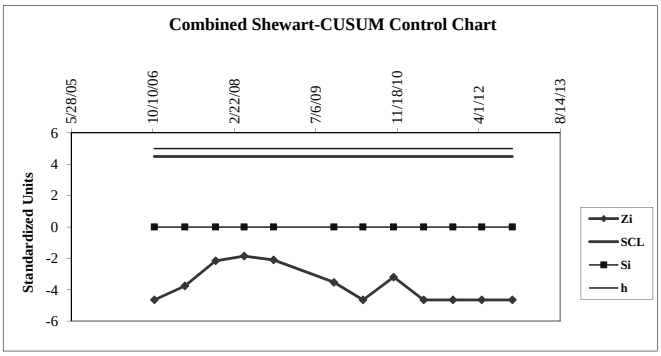
Compute the mean and standard deviation of the historical data:

4.5549099 = x_{mean} (Mean of N1-N8 historical data)
0.7832425 = s (Standard Deviation of N1-N8 historical data)
1 = k (constant, reference value)
5 = h (constant, upper control limit for the CUSUM scheme)
4.5 = SCL (Constant, upper Shewhart Control Limit)

Compute the standardized mean (Z_i) and the cumulative sum (S_i) for each concentration.

Date	x_i	Z_i	S_i	h	SCL
			0		
10/20/2006	0.9162907	-4.6455844	0	5	4.5
4/25/2007	1.6094379	-3.7606131	0	5	4.5
10/31/2007	2.8678989	-2.1538808	0	5	4.5
4/23/2008	3.1045867	-1.8516912	0	5	4.5
10/20/2008	2.9123507	-2.0971273	0	5	4.5
10/26/2009	1.7917595	-3.5278352	0	5	4.5
4/22/2010	0.9162907	-4.6455844	0	5	4.5
10/27/2010	2.0541237	-3.1928632	0	5	4.5
4/29/2011	0.9162907	-4.6455844	0	5	4.5
10/25/2011	0.9162907	-4.6455844	0	5	4.5
4/20/2012	0.9162907	-4.6455844	0	5	4.5
10/24/2012	0.9162907	-4.6455844	0	5	4.5

Plot Z_i and S_i versus time:



Compare the Z_i and S_i values to their respective control limits of SCL and h.

The limits were not exceeded and do not indicate statistically significant evidence of contamination at the site.

White Oak Landfill
Haywood County, North Carolina
BLE Project Number J12-1957-31

Compound: **Total Copper**
NC MCL (µg/l): 1000
Method: Kruskal-Wallis
Background: MW-11S, MW-11D, & MW-14

	MW-11S	MW-11D	MW-14	MW-1A	MW-2	MW-2D	MW-3	MW-3D	MW-4A	MW-8	MW-15	MW-16	MW-17	MDL
04/24/00	12	NS	NS	ND	ND	13	ND	27	ND	22	NS	NP	NP	5
06/26/00	17	6	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	5
07/26/00	12	6.1	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	5
09/18/00	NS	NS	NS	NT	NT	NS	NS	NS	NT	NS	NS	NP	NP	200
04/09/01	77	8.4	NS	ND	ND	5.4	ND	26	38	110	NS	NP	NP	5
09/18/01	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	5
10/29/01	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	5
01/30/02	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	5
02/28/02	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	200
04/15/02	69	ND	NS	ND	ND	ND	ND	13	68	120	NS	NP	NP	2
09/26/02	20	10	31	220	ND	ND	2.6	42	88	150	450	NP	NP	2
04/28/03	24	ND	2.6	40	ND	ND	ND	ND	28	94	71	NP	NP	2
10/30/03	18	ND	NT	ND	2.3	2.6	ND	3	85	4.4	150	NP	NP	2
04/20/04	18	ND	2.8	12	5.3	2.3	4.3	13	7.4	100	89	NP	NP	2
10/21/04	11	ND	ND	2	ND	ND	ND	ND	ND	63	140	NP	NP	2
04/18/05	29	ND	ND	240	ND	ND	ND	3.8	ND	120	130	NP	NP	2
10/13/05	31	2.6	3.5	70	ND	ND	ND	ND	3	82	96	NP	NP	2
04/25/06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	200
10/20/06	26	ND	ND	9.6	ND	ND	ND	ND	20	ND	25	NP	NP	5
04/25/07	15	ND	ND	ND	ND	330	ND	ND	ND	ND	26	NP	NP	10
10/31/07	29.2	ND	ND	ND	ND	ND	ND	ND	6.3	40.3	47.4	NP	NP	5
04/23/08	7.2	ND	ND	ND	ND	ND	ND	ND	7.2	ND	17	NP	NP	5
10/20/08	26.5	ND	8.3	ND	ND	ND	ND	ND	ND	ND	9.7	NP	NP	5
04/22/09	5.1	ND	22.6	6	ND	ND	ND	ND	8.8	ND	NS	NP	NP	5
10/26/09	5.8	ND	ND	ND	6.4	ND	NS	NS	NS	ND	7.1	NP	NP	5
04/22/10	9.9	ND	ND	ND	ND	5.9	NS	NS	ND	ND	ND	NP	NP	5
10/27/10	6.7	ND	ND	ND	ND	ND	ND	12.4	ND	ND	53.9	ND	ND	5
04/29/11	6.4	ND	ND	ND	6.7	6.1	ND	ND	ND	ND	5.2	ND	ND	5
10/25/11	9.6	ND	ND	9.4	6.8	11.2	7.6	ND	ND	5.1	6.9	ND	ND	5
04/20/12	15.6	ND	ND	ND	5.8	5.2	ND	ND	ND	ND	ND	6.5	ND	5
10/24/12	22.7	ND	ND	ND	6	ND	ND	ND	5.1	ND	ND	ND	ND	5
N_i	26	25	20	24	24	24	22	22	23	24	20	5	5	
sum of rank values (R_i)	5365.0	2430.0	2190.0	3073.5	2522.0	2823.0	1957.5	2708.5	3345.5	3717.5	3979.5	488.0	380.0	
avg rank value (Rbar)	206.3	97.2	109.5	128.1	105.1	117.6	89.0	123.1	145.5	154.9	199.0	97.6	76.0	

	Number of each rank value													Rank Value
rank value of NDs =	1	20	14	15	17	15	19	14	11	12	4	4	5	76
rank value of 2s =	0	0	0	1	0	0	0	0	0	0	0	0	0	152
rank value of 2.3s =	0	0	0	0	1	1	0	0	0	0	0	0	0	153.5
rank value of 2.6s =	0	1	1	0	0	1	1	0	0	0	0	0	0	156.5
rank value of 2.8s =	0	0	1	0	0	0	0	0	0	0	0	0	0	159
rank value of 3s =	0	0	0	0	0	0	0	1	1	0	0	0	0	160.5
rank value of 3.5s =	0	0	1	0	0	0	0	0	0	0	0	0	0	162
rank value of 3.8s =	0	0	0	0	0	0	0	1	0	0	0	0	0	163
rank value of 4.3s =	0	0	0	0	0	0	1	0	0	0	0	0	0	164
rank value of 4.4s =	0	0	0	0	0	0	0	0	0	1	0	0	0	165
rank value of 5.1s =	1	0	0	0	0	0	0	0	1	1	0	0	0	167
rank value of 5.2s =	0	0	0	0	0	1	0	0	0	0	1	0	0	169.5
rank value of 5.3s =	0	0	0	0	1	0	0	0	0	0	0	0	0	171
rank value of 5.4s =	0	0	0	0	0	1	0	0	0	0	0	0	0	172
rank value of 5.8s =	1	0	0	0	1	0	0	0	0	0	0	0	0	173.5
rank value of 5.9s =	0	0	0	0	0	1	0	0	0	0	0	0	0	175
rank value of 6s =	0	1	0	1	1	0	0	0	0	0	0	0	0	177
rank value of 6.1s =	0	1	0	0	0	1	0	0	0	0	0	0	0	179.5
rank value of 6.3s =	0	0	0	0	0	0	0	0	1	0	0	0	0	181
rank value of 6.4s =	1	0	0	0	1	0	0	0	0	0	0	0	0	182.5
rank value of 6.5s =	0	0	0	0	0	0	0	0	0	0	0	1	0	184
rank value of 6.7s =	1	0	0	0	1	0	0	0	0	0	0	0	0	185.5
rank value of 6.8s =	0	0	0	0	1	0	0	0	0	0	0	0	0	187
rank value of 6.9s =	0	0	0	0	0	0	0	0	0	0	1	0	0	188
rank value of 7.1s =	0	0	0	0	0	0	0	0	0	0	1	0	0	189
rank value of 7.2s =	1	0	0	0	0	0	0	0	1	0	0	0	0	190.5

rank value of 7.4s =	0	0	0	0	0	0	0	0	1	0	0	0	0	192
rank value of 7.6s =	0	0	0	0	0	0	1	0	0	0	0	0	0	193
rank value of 8.3s =	0	0	1	0	0	0	0	0	0	0	0	0	0	194
rank value of 8.4s =	0	1	0	0	0	0	0	0	0	0	0	0	0	195
rank value of 8.8s =	0	0	0	0	0	0	0	0	1	0	0	0	0	196
rank value of 9.4s =	0	0	0	1	0	0	0	0	0	0	0	0	0	197
rank value of 9.6s =	1	0	0	1	0	0	0	0	0	0	0	0	0	198.5
rank value of 9.7s =	0	0	0	0	0	0	0	0	0	0	1	0	0	200
rank value of 9.9s =	1	0	0	0	0	0	0	0	0	0	0	0	0	201
rank value of 10s =	0	1	0	0	0	0	0	0	0	0	0	0	0	202
rank value of 11s =	1	0	0	0	0	0	0	0	0	0	0	0	0	203
rank value of 11.2s =	0	0	0	0	0	1	0	0	0	0	0	0	0	204
rank value of 12s =	2	0	0	1	0	0	0	0	0	0	0	0	0	206
rank value of 12.4s =	0	0	0	0	0	0	0	1	0	0	0	0	0	208
rank value of 13s =	0	0	0	0	0	1	0	2	0	0	0	0	0	210
rank value of 15s =	1	0	0	0	0	0	0	0	0	0	0	0	0	212
rank value of 15.6s =	1	0	0	0	0	0	0	0	0	0	0	0	0	213
rank value of 17s =	1	0	0	0	0	0	0	0	0	0	1	0	0	214.5
rank value of 18s =	2	0	0	0	0	0	0	0	0	0	0	0	0	216.5
rank value of 20s =	1	0	0	0	0	0	0	0	1	0	0	0	0	218.5
rank value of 22s =	0	0	0	0	0	0	0	0	0	1	0	0	0	220
rank value of 22.6s =	0	0	1	0	0	0	0	0	0	0	0	0	0	221
rank value of 22.7s =	1	0	0	0	0	0	0	0	0	0	0	0	0	222
rank value of 24s =	1	0	0	0	0	0	0	0	0	0	0	0	0	223
rank value of 25s =	0	0	0	0	0	0	0	0	0	0	1	0	0	224
rank value of 26s =	1	0	0	0	0	0	0	1	0	0	1	0	0	226
rank value of 26.5s =	1	0	0	0	0	0	0	0	0	0	0	0	0	228
rank value of 27s =	0	0	0	0	0	0	0	1	0	0	0	0	0	229
rank value of 28s =	0	0	0	0	0	0	0	0	1	0	0	0	0	230
rank value of 29s =	1	0	0	0	0	0	0	0	0	0	0	0	0	231
rank value of 29.2s =	1	0	0	0	0	0	0	0	0	0	0	0	0	232
rank value of 31s =	1	0	1	0	0	0	0	0	0	0	0	0	0	233.5
rank value of 38s =	0	0	0	0	0	0	0	0	1	0	0	0	0	235
rank value of 40s =	0	0	0	1	0	0	0	0	0	0	0	0	0	236
rank value of 40.3s =	0	0	0	0	0	0	0	0	0	1	0	0	0	237
rank value of 42s =	0	0	0	0	0	0	0	1	0	0	0	0	0	238
rank value of 47.4s =	0	0	0	0	0	0	0	0	0	0	1	0	0	239
rank value of 53.9s =	0	0	0	0	0	0	0	0	0	0	1	0	0	240
rank value of 63s =	0	0	0	0	0	0	0	0	0	1	0	0	0	241
rank value of 68s =	0	0	0	0	0	0	0	0	1	0	0	0	0	242
rank value of 69s =	1	0	0	0	0	0	0	0	0	0	0	0	0	243
rank value of 70s =	0	0	0	1	0	0	0	0	0	0	0	0	0	244
rank value of 71s =	0	0	0	0	0	0	0	0	0	0	1	0	0	245
rank value of 77s =	1	0	0	0	0	0	0	0	0	0	0	0	0	246
rank value of 82s =	0	0	0	0	0	0	0	0	0	1	0	0	0	247
rank value of 85s =	0	0	0	0	0	0	0	0	1	0	0	0	0	248
rank value of 88s =	0	0	0	0	0	0	0	0	1	0	0	0	0	249
rank value of 89s =	0	0	0	0	0	0	0	0	0	0	1	0	0	250
rank value of 94s =	0	0	0	0	0	0	0	0	0	1	0	0	0	251
rank value of 96s =	0	0	0	0	0	0	0	0	0	0	1	0	0	252
rank value of 100s =	0	0	0	0	0	0	0	0	0	1	0	0	0	253
rank value of 110s =	0	0	0	0	0	0	0	0	0	1	0	0	0	254
rank value of 120s =	0	0	0	0	0	0	0	0	0	2	0	0	0	255.5
rank value of 130s =	0	0	0	0	0	0	0	0	0	0	1	0	0	257
rank value of 140s =	0	0	0	0	0	0	0	0	0	0	1	0	0	258
rank value of 150s =	0	0	0	0	0	0	0	0	0	1	1	0	0	259.5
rank value of 220s =	0	0	0	1	0	0	0	0	0	0	0	0	0	261
rank value of 240s =	0	0	0	1	0	0	0	0	0	0	0	0	0	262
rank value of 330s =	0	0	0	0	0	1	0	0	0	0	0	0	0	263
rank value of 450s =	0	0	0	0	0	0	0	0	0	0	1	0	0	264
n =	**26**	**25**	**20**	**24**	**24**	**24**	**22**	**22**	**23**	**24**	**20**	**5**	**5**	

Sum of rank value calculations

76	1520	1064	1140	1292	1140	1444	1064	836	912	304	304	380
0	0	0	152	0	0	0	0	0	0	0	0	0

0	0	0	0	153.5	153.5	0	0	0	0	0	0	0
0	156.5	156.5	0	0	156.5	156.5	0	0	0	0	0	0
0	0	159	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	160.5	160.5	0	0	0	0
0	0	162	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	163	0	0	0	0	0
0	0	0	0	0	0	164	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	165	0	0	0
167	0	0	0	0	0	0	0	167	167	0	0	0
0	0	0	0	0	169.5	0	0	0	0	169.5	0	0
0	0	0	0	171	0	0	0	0	0	0	0	0
0	0	0	0	0	172	0	0	0	0	0	0	0
173.5	0	0	0	173.5	0	0	0	0	0	0	0	0
0	0	0	0	0	175	0	0	0	0	0	0	0
0	177	0	177	177	0	0	0	0	0	0	0	0
0	179.5	0	0	0	179.5	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	181	0	0	0	0
182.5	0	0	0	182.5	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	184	0
185.5	0	0	0	185.5	0	0	0	0	0	0	0	0
0	0	0	0	187	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	188	0	0
0	0	0	0	0	0	0	0	0	0	189	0	0
190.5	0	0	0	0	0	0	0	190.5	0	0	0	0
0	0	0	0	0	0	0	0	192	0	0	0	0
0	0	0	0	0	0	193	0	0	0	0	0	0
0	0	194	0	0	0	0	0	0	0	0	0	0
0	195	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	196	0	0	0	0
0	0	0	197	0	0	0	0	0	0	0	0	0
198.5	0	0	198.5	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	200	0	0
201	0	0	0	0	0	0	0	0	0	0	0	0
0	202	0	0	0	0	0	0	0	0	0	0	0
203	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	204	0	0	0	0	0	0	0
412	0	0	206	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	208	0	0	0	0	0
0	0	0	0	0	210	0	420	0	0	0	0	0
212	0	0	0	0	0	0	0	0	0	0	0	0
213	0	0	0	0	0	0	0	0	0	0	0	0
214.5	0	0	0	0	0	0	0	0	0	214.5	0	0
433	0	0	0	0	0	0	0	0	0	0	0	0
218.5	0	0	0	0	0	0	0	218.5	0	0	0	0
0	0	0	0	0	0	0	0	0	220	0	0	0
0	0	221	0	0	0	0	0	0	0	0	0	0
222	0	0	0	0	0	0	0	0	0	0	0	0
223	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	224	0	0
226	0	0	0	0	0	0	226	0	0	226	0	0
228	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	229	0	0	0	0	0
0	0	0	0	0	0	0	0	230	0	0	0	0
231	0	0	0	0	0	0	0	0	0	0	0	0
232	0	0	0	0	0	0	0	0	0	0	0	0
233.5	0	233.5	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	235	0	0	0	0
0	0	0	236	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	237	0	0	0
0	0	0	0	0	0	0	238	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	239	0	0
0	0	0	0	0	0	0	0	0	0	240	0	0
0	0	0	0	0	0	0	0	0	241	0	0	0
0	0	0	0	0	0	0	0	242	0	0	0	0
243	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	244	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	245	0	0
246	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	247	0	0	0
0	0	0	0	0	0	0	0	248	0	0	0	0
0	0	0	0	0	0	0	0	249	0	0	0	0
0	0	0	0	0	0	0	0	0	0	250	0	0
0	0	0	0	0	0	0	0	0	251	0	0	0
0	0	0	0	0	0	0	0	0	0	252	0	0
0	0	0	0	0	0	0	0	0	253	0	0	0

	0	0	0	0	0	0	0	0	0	254	0	0	0
	0	0	0	0	0	0	0	0	0	511	0	0	0
	0	0	0	0	0	0	0	0	0	0	257	0	0
	0	0	0	0	0	0	0	0	0	0	258	0	0
	0	0	0	0	0	0	0	0	0	259.5	259.5	0	0
	0	0	0	261	0	0	0	0	0	0	0	0	0
	0	0	0	262	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	263	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	264	0	0
sum of rank values (R_i)	**5365**	**2430**	**2190**	**3073.5**	**2522**	**2823**	**1957.5**	**2708.5**	**3345.5**	**3717.5**	**3979.5**	**488**	**380**

Compute the Kruskal-Wallis statistic:

$$H = \{[12/N(N+1)] * [\Sigma^{K}_{i=1} (R_i^2)/N_i]\} -3(N+1)$$

Well =	**Background**	**MW-1A**	**MW-2**	**MW-2D**	**MW-3**	**MW-3D**	**MW-4A**	**MW-8**	**MW-15**	**MW-16**	**MW-17**
Ri^2/N_i =	1404228.5	393600	265020	332055	174173	333453	486625	575825	791821	47629	28880

$N_{i\,bg}$ = 71
N = 264
H = 34.04

Adjust H for ties:

T_i = 3E+06 sum of T1..T7

$H' = H/(1-(T_i/(N^3-N)))$
H' = 41.88
Chi-square = 18.31

Compare the calculated value H' to the tabulated Chi-square value with K-1 = # groups -1 = 17df at the 5% significance level from Table 1 of the IFG. The value is 18.31 which is less than H' =41.88.
Therefore, there is evidence of significant differences between the well groups.
Post-hoc pairwise comparisons are necessary (see below).

Calculate the critical values to compare each compliance well to the background wells:

Critical Value (C_x) = $P(N(N+1)/12)^{0.5} * (1/N_{i\,bg}+1/N_x)^{0.5}$
P = 2.33 Percentile of Standard Normal Distribution
from Table 4 of IFG
N = total sample size
$N_{i\,bg}$ = total samples (N_i) of background data
N_x = total samples (N_i) of well x

Difference between average ranks (Dx) = Rbar (well x) - avg Rbar (background)

Well =	MW-1A	MW-2	MW-2D	MW-3	MW-3D	MW-4A	MW-8	**MW-15**	MW-16	MW-17
Rbar (well x) =	128.1	105.1	117.6	89.0	123.1	145.5	154.9	199.0	97.6	76.0
avg Rbar (background) =	140.6	140.6	140.6	140.6	140.6	140.6	140.6	140.6	140.6	140.6
Dx =	-12.6	-35.6	-23.0	-51.7	-17.5	4.8	14.3	58.3	-43.0	-64.6
Cx =	42.0	42.0	42.0	43.4	43.4	42.7	42.0	45.0	82.3	82.3
Statistical Significance ?	No	No	No	No	No	No	No	**Yes**	No	No
If SSI, is current event above MCL?	-	-	-	-	-	-	-	No	-	-

Compare each difference (Dx) with the corresponding critical value (Cx).
The Dx value for the above indicated wells do exceed the corresponding Cx value.
Therefore, we conclude that the concentration of Total Copper averaged over these compliance wells are significantly greater than that of the background wells.
Shewart-CUSUM Control Charts should be performed for each failing well to check for statistical significance.

White Oak Landfill
Haywood County, North Carolina
BLE Project Number J12-1957-31

Compound: **Total Copper**
NC MCL (µg/l): 1000
Method: Shewhart-CUSUM Control Chart

Part 1: Check for Normality

	MW-15	MDL
9/26/2002	**450**	**2**
4/28/2003	**71**	**2**
10/30/2003	**150**	**2**
4/20/2004	**89**	**2**
10/21/2004	**140**	**2**
4/18/2005	**130**	**2**
10/13/2005	**96**	**2**
4/25/2006	ND	**200**
10/20/2006	**25**	**5**
4/25/2007	**26**	**10**
10/31/2007	**47.4**	**5**
4/23/2008	**17**	**5**
10/20/2008	**9.7**	**5**
4/22/2009	NS	**5**
10/26/2009	**7.1**	**5**
4/22/2010	ND	**5**
10/27/2010	**53.9**	**5**
4/29/2011	**5.2**	**5**
10/25/2011	**6.9**	**5**
4/20/2012	ND	**5**
10/24/2012	ND	**5**

If not detected (ND), use half of the detection limit.

450	X_i values =	54188238
71		-0.200202
150		482166.95
89		5281.6599
140		320224.09
130		199330.22
96		14553.592
100		22942.618
25		-101097
26		-94725.28
47.4		-14146.15
17		-162637.2
9.7		-237004.3
7.1		-268149
2.5		-329724.6
53.9		-5531.147
5.2		-292556.6
6.9		-270651.7
2.5		-329724.6
2.5		-329724.6

X_{bar} = 71.585
SD = 102.12727
N = 20
$1/N\Sigma_i(X_i-X_{bar})^3$ = 2639853.2
γ_1= 2.6765117

Since the Coefficient of Skewness of 2.68 is greater than 1.0, the real data appear to be significantly skewed.
Do not assume that the data follow a Normal distribution.
Perform the Skewness Test on the natural log of the values.

ln =	6.1092476	X_i values =	21.505647
	4.2626799		0.8156303
	5.0106353		4.7609635
	4.4886364		1.562031
	4.9416424		4.198895
	4.8675345		3.646427
	4.5643482		1.8881997
	4.6051702		2.0815355
	3.2188758		-0.001312
	3.2580965		-0.000347
	3.8586222		0.1491021
	2.8332133		-0.121392
	2.2721259		-1.178351
	1.9600948		-2.561571
	0.9162907		-14.03353
	3.9871305		0.2858984
	1.6486586		-4.739064
	1.9315214		-2.725425
	0.9162907		-14.03353

0.9162907	-14.03353

X_{bar} = 3.3283553
SD = 1.574535
N = 20
$1/N\Sigma_i(X_i-X_{bar})^3$ = -0.626685
γ_1 = 0.1733833

Since the Coefficient of Skewness of 0.17 is less than 1.0, the data appear not to be significantly skewed.
Proceed with further statistical tests using the log-transformed values shown above.

Part 2: Shewhart-CUSUM Control Chart

Date	MW-15	MDL	Data for Testing
9/26/2002	**450**	2	6.1092476
4/28/2003	**71**	2	4.2626799
10/30/2003	**150**	2	5.0106353
4/20/2004	**89**	2	4.4886364
10/21/2004	**140**	2	4.9416424
4/18/2005	**130**	2	4.8675345
10/13/2005	**96**	2	4.5643482
4/25/2006	ND	200	4.6051702
10/20/2006	**25**	5	3.2188758
4/25/2007	**26**	10	3.2580965
10/31/2007	**47.4**	5	3.8586222
4/23/2008	**17**	5	2.8332133
10/20/2008	**9.7**	5	2.2721259
4/22/2009	NS	5	-
10/26/2009	**7.1**	5	1.9600948
4/22/2010	ND	5	0.9162907
10/27/2010	**53.9**	5	3.9871305
4/29/2011	**5.2**	5	1.6486586
10/25/2011	**6.9**	5	1.9315214
4/20/2012	ND	5	0.9162907
10/24/2012	ND	5	0.9162907

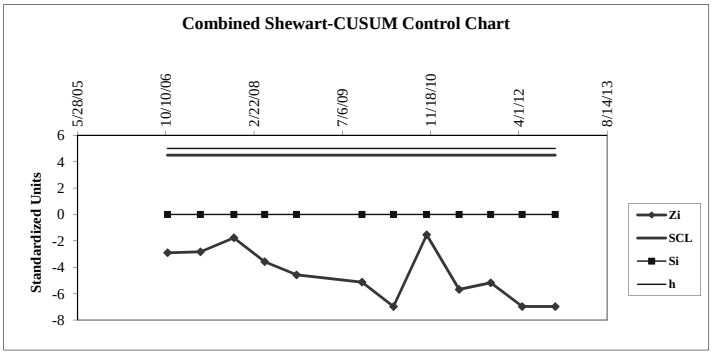
Compute the mean and standard deviation of the historical data:

4.8562368 = x_{mean} (Mean of N1-N8 historical data)
0.5653027 = s (Standard Deviation of N1-N8 historical data)
1 = k (constant, reference value)
5 = h (constant, upper control limit for the CUSUM scheme)
4.5 = SCL (Constant, upper Shewhart Control Limit)

Compute the standardized mean (Z_i) and the cumulative sum (S_i) for each concentration.

Date	x_i	Z_i	S_i	h	SCL
			0		
10/20/2006	3.2188758	-2.8964323	0	5	4.5
4/25/2007	3.2580965	-2.8270522	0	5	4.5
10/31/2007	3.8586222	-1.764744	0	5	4.5
4/23/2008	2.8332133	-3.5786552	0	5	4.5
10/20/2008	2.2721259	-4.5711986	0	5	4.5
10/26/2009	1.9600948	-5.1231703	0	5	4.5
4/22/2010	0.9162907	-6.9696219	0	5	4.5
10/27/2010	3.9871305	-1.5374176	0	5	4.5
4/29/2011	1.6486586	-5.6740896	0	5	4.5
10/25/2011	1.9315214	-5.1737156	0	5	4.5
4/20/2012	0.9162907	-6.9696219	0	5	4.5
10/24/2012	0.9162907	-6.9696219	0	5	4.5

Plot Z_i and S_i versus time:



Compare the Z_i and S_i values to their respective control limits of SCL and h.
The limits were not exceeded and do not indicate statistically significant evidence of contamination at the site.

White Oak Landfill
Haywood County, North Carolina
BLE Project Number J12-1957-31

Compound: **Total Lead**
NC MCL (µg/l): 15
Method: Kruskal-Wallis
Background: MW-11S, MW-11D, & MW-14

	MW-11S	MW-11D	MW-14	MW-1A	MW-2	MW-2D	MW-3	MW-3D	MW-4A	MW-8	MW-15	MW-16	MW-17	MDL
04/24/00	**35**	NS	NS	ND	ND	ND	ND	**11**	ND	ND	NS	NP	NP	**10**
06/26/00	ND	**10**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	**10**
07/26/00	ND	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	**10**
09/18/00	NS	NS	NS	NT	NT	NS	NS	NS	ND	NS	NS	NP	NP	**10**
04/09/01	ND	**59**	NS	ND	ND	ND	ND	ND	**18**	**2.5**	NS	NP	NP	**10**
09/18/01	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	**10**
10/29/01	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	**10**
01/30/02	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	**10**
02/28/02	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	**10**
04/15/02	**13**	ND	NS	ND	ND	ND	ND	ND	**13**	**29**	NS	NP	NP	**10**
09/26/02	ND	**76**	**29**	ND	ND	ND	ND	ND	**150**	**20**	**740**	NP	NP	**10**
04/28/03	ND	ND	ND	ND	ND	ND	ND	ND	**25**	ND	**300**	NP	NP	**10**
10/30/03	**8.7**	**12**	NT	ND	ND	ND	ND	ND	**39**	**7.4**	**640**	NP	NP	**5**
04/20/04	**7.2**	**7**	**5.2**	**6.4**	**5.4**	ND	ND	ND	**12**	**39**	**250**	NP	NP	**5**
10/21/04	**7.2**	**5.6**	**5.7**	ND	ND	ND	ND	ND	ND	**24**	**430**	NP	NP	**5**
04/18/05	**13**	**8**	**5.2**	**73**	ND	ND	ND	ND	ND	**39**	**380**	NP	NP	**5**
10/13/05	**14**	**6.9**	ND	**20**	ND	ND	ND	ND	ND	**29**	**290**	NP	NP	**5**
04/25/06	**15**	ND	ND	ND	ND	ND	ND	ND	**53**	**19**	**300**	NP	NP	**10**
10/20/06	**20**	ND	ND	ND	ND	ND	ND	ND	**32**	ND	**89**	NP	NP	**5**
04/25/07	ND	ND	ND	ND	ND	**96**	ND	ND	ND	ND	**69**	NP	NP	**10**
10/31/07	**17.5**	**8.1**	ND	ND	ND	ND	ND	ND	ND	**12.3**	**123**	NP	NP	**5**
04/23/08	ND	ND	**8.4**	ND	ND	ND	ND	ND	**5.8**	ND	**50.2**	NP	NP	**5**
10/20/08	ND	**13.5**	**7.6**	ND	ND	ND	ND	ND	ND	ND	**25.9**	NP	NP	**5**
04/22/09	ND	**8.7**	**24.4**	ND	ND	ND	ND	ND	**9.8**	ND	NS	NP	NP	**5**
10/26/09	ND	ND	ND	ND	ND	ND	NS	NS	NS	ND	**24.7**	NP	NP	**5**
04/22/10	ND	**10.5**	ND	ND	ND	ND	NS	NS	ND	ND	**9.2**	NP	NP	**5**
10/27/10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**16**	ND	ND	**5**
04/29/11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**11**	ND	ND	**5**
10/25/11	ND	ND	ND	ND	ND	ND	**6.3**	ND	ND	ND	**14.6**	ND	ND	**5**
04/20/12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**6.4**	ND	ND	**5**
10/24/12	**5.9**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**5**
N_i	26	25	20	24	24	24	22	22	24	24	20	5	5	
sum of rank values (R_i)	3841.5	3832.0	2705.0	2679.5	2378.0	2440.0	2193.0	2211.5	3642.5	3618.0	4754.0	475.0	475.0	
avg rank value (Rbar)	147.8	153.3	135.3	111.6	99.1	101.7	99.7	100.5	151.8	150.8	237.7	95.0	95.0	

	Number of each rank value													Rank Value
rank value of NDs =	15	13	13	21	23	23	21	21	14	14	1	5	5	95
rank value of 2.5s =	0	0	0	0	0	0	0	0	0	1	0	0	0	190
rank value of 5.2s =	0	0	2	0	0	0	0	0	0	0	0	0	0	191.5
rank value of 5.4s =	0	0	0	0	1	0	0	0	0	0	0	0	0	193
rank value of 5.6s =	0	1	0	0	0	0	0	0	0	0	0	0	0	194
rank value of 5.7s =	0	0	1	0	0	0	0	0	0	0	0	0	0	195
rank value of 5.8s =	0	0	0	0	0	0	0	0	1	0	0	0	0	196
rank value of 5.9s =	1	0	0	0	0	0	0	0	0	0	0	0	0	197
rank value of 6.3s =	0	0	0	0	0	0	1	0	0	0	0	0	0	198
rank value of 6.4s =	0	0	0	1	0	0	0	0	0	0	1	0	0	199.5
rank value of 6.9s =	0	1	0	0	0	0	0	0	0	0	0	0	0	201
rank value of 7s =	0	1	0	0	0	0	0	0	0	0	0	0	0	202
rank value of 7.2s =	2	0	0	0	0	0	0	0	0	0	0	0	0	203.5
rank value of 7.4s =	0	0	0	0	0	0	0	0	0	1	0	0	0	205
rank value of 7.6s =	0	0	1	0	0	0	0	0	0	0	0	0	0	206

rank value of 8s =	0	1	0	0	0	0	0	0	0	0	0	0	0	207
rank value of 8.1s =	0	1	0	0	0	0	0	0	0	0	0	0	0	208
rank value of 8.4s =	0	0	1	0	0	0	0	0	0	0	0	0	0	209
rank value of 8.7s =	1	1	0	0	0	0	0	0	0	0	0	0	0	210.5
rank value of 9.2s =	0	0	0	0	0	0	0	0	0	0	1	0	0	212
rank value of 9.8s =	0	0	0	0	0	0	0	0	1	0	0	0	0	213
rank value of 10s =	0	1	0	0	0	0	0	0	0	0	0	0	0	214
rank value of 10.5s =	0	1	0	0	0	0	0	0	0	0	0	0	0	215
rank value of 11s =	0	0	0	0	0	0	0	1	0	0	1	0	0	216.5
rank value of 12s =	0	1	0	0	0	0	0	0	1	0	0	0	0	218.5
rank value of 12.3s =	0	0	0	0	0	0	0	0	0	1	0	0	0	220
rank value of 13s =	2	0	0	0	0	0	0	0	1	0	0	0	0	222
rank value of 13.5s =	0	1	0	0	0	0	0	0	0	0	0	0	0	224
rank value of 14s =	1	0	0	0	0	0	0	0	0	0	0	0	0	225
rank value of 14.6s =	0	0	0	0	0	0	0	0	0	0	1	0	0	226
rank value of 15s =	1	0	0	0	0	0	0	0	0	0	0	0	0	227
rank value of 16s =	0	0	0	0	0	0	0	0	0	0	1	0	0	228
rank value of 17.5s =	1	0	0	0	0	0	0	0	0	0	0	0	0	229
rank value of 18s =	0	0	0	0	0	0	0	0	1	0	0	0	0	230
rank value of 19s =	0	0	0	0	0	0	0	0	0	1	0	0	0	231
rank value of 20s =	1	0	0	1	0	0	0	0	0	1	0	0	0	233
rank value of 24s =	0	0	0	0	0	0	0	0	0	1	0	0	0	235
rank value of 24.4s =	0	0	1	0	0	0	0	0	0	0	0	0	0	236
rank value of 24.7s =	0	0	0	0	0	0	0	0	0	0	1	0	0	237
rank value of 25s =	0	0	0	0	0	0	0	0	1	0	0	0	0	238
rank value of 25.9s =	0	0	0	0	0	0	0	0	0	0	1	0	0	239
rank value of 29s =	0	0	1	0	0	0	0	0	0	2	0	0	0	241
rank value of 32s =	0	0	0	0	0	0	0	0	1	0	0	0	0	243
rank value of 35s =	1	0	0	0	0	0	0	0	0	0	0	0	0	244
rank value of 39s =	0	0	0	0	0	0	0	0	1	2	0	0	0	246
rank value of 50.2s =	0	0	0	0	0	0	0	0	0	0	1	0	0	248
rank value of 53s =	0	0	0	0	0	0	0	0	1	0	0	0	0	249
rank value of 59s =	0	1	0	0	0	0	0	0	0	0	0	0	0	250
rank value of 69s =	0	0	0	0	0	0	0	0	0	0	1	0	0	251
rank value of 73s =	0	0	0	1	0	0	0	0	0	0	0	0	0	252
rank value of 76s =	0	1	0	0	0	0	0	0	0	0	0	0	0	253
rank value of 89s =	0	0	0	0	0	0	0	0	0	0	1	0	0	254
rank value of 96s =	0	0	0	0	0	1	0	0	0	0	0	0	0	255
rank value of 123s =	0	0	0	0	0	0	0	0	0	0	1	0	0	256
rank value of 150s =	0	0	0	0	0	0	0	0	1	0	0	0	0	257
rank value of 250s =	0	0	0	0	0	0	0	0	0	0	1	0	0	258
rank value of 290s =	0	0	0	0	0	0	0	0	0	0	1	0	0	259
rank value of 300s =	0	0	0	0	0	0	0	0	0	0	2	0	0	260.5
rank value of 380s =	0	0	0	0	0	0	0	0	0	0	1	0	0	262
rank value of 430s =	0	0	0	0	0	0	0	0	0	0	1	0	0	263
rank value of 640s =	0	0	0	0	0	0	0	0	0	0	1	0	0	264
rank value of 740s =	0	0	0	0	0	0	0	0	0	0	1	0	0	265
n =	**26**	**25**	**20**	**24**	**24**	**24**	**22**	**22**	**24**	**24**	**20**	**5**	**5**	
Sum of rank value calculations	1425	1235	1235	1995	2185	2185	1995	1995	1330	1330	95	475	475	

0	0	0	0	0	0	0	0	0	190	0	0	0
0	0	383	0	0	0	0	0	0	0	0	0	0
0	0	0	0	193	0	0	0	0	0	0	0	0
0	194	0	0	0	0	0	0	0	0	0	0	0
0	0	195	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	196	0	0	0	0
197	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	198	0	0	0	0	0	0
0	0	0	199.5	0	0	0	0	0	0	199.5	0	0
0	201	0	0	0	0	0	0	0	0	0	0	0
0	202	0	0	0	0	0	0	0	0	0	0	0
407	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	205	0	0	0
0	0	206	0	0	0	0	0	0	0	0	0	0
0	207	0	0	0	0	0	0	0	0	0	0	0
0	208	0	0	0	0	0	0	0	0	0	0	0
0	0	209	0	0	0	0	0	0	0	0	0	0
210.5	210.5	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	212	0	0
0	0	0	0	0	0	0	0	213	0	0	0	0
0	214	0	0	0	0	0	0	0	0	0	0	0
0	215	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	216.5	0	0	216.5	0	0
0	218.5	0	0	0	0	0	0	218.5	0	0	0	0
0	0	0	0	0	0	0	0	0	220	0	0	0
444	0	0	0	0	0	0	0	222	0	0	0	0
0	224	0	0	0	0	0	0	0	0	0	0	0
225	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	226	0	0
227	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	228	0	0
229	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	230	0	0	0	0
0	0	0	0	0	0	0	0	0	231	0	0	0
233	0	0	233	0	0	0	0	0	233	0	0	0
0	0	0	0	0	0	0	0	0	235	0	0	0
0	0	236	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	237	0	0
0	0	0	0	0	0	0	0	238	0	0	0	0
0	0	0	0	0	0	0	0	0	0	239	0	0
0	0	241	0	0	0	0	0	0	482	0	0	0
0	0	0	0	0	0	0	0	243	0	0	0	0
244	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	246	492	0	0	0
0	0	0	0	0	0	0	0	0	0	248	0	0
0	0	0	0	0	0	0	0	249	0	0	0	0
0	250	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	251	0	0
0	0	0	252	0	0	0	0	0	0	0	0	0
0	253	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	254	0	0
0	0	0	0	0	255	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	256	0	0
0	0	0	0	0	0	0	0	257	0	0	0	0
0	0	0	0	0	0	0	0	0	0	258	0	0
0	0	0	0	0	0	0	0	0	0	259	0	0
0	0	0	0	0	0	0	0	0	0	521	0	0
0	0	0	0	0	0	0	0	0	0	262	0	0
0	0	0	0	0	0	0	0	0	0	263	0	0
0	0	0	0	0	0	0	0	0	0	264	0	0
0	0	0	0	0	0	0	0	0	0	265	0	0

sum of rank values (R_i)	**3841.5**	**3832**	**2705**	**2679.5**	**2378**	**2440**	**2193**	**2211.5**	**3642.5**	**3618**	**4754**	**475**	**475**

Compute the Kruskal-Wallis statistic:

$$H = \{[12/N(N+1)] * [\Sigma^{K}_{i=1} (R_i^2)/N_i]\} -3(N+1)$$

Well =	**Background**	**MW-1A**	**MW-2**	**MW-2D**	**MW-3**	**MW-3D**	**MW-4A**	**MW-8**	**MW-15**	**MW-16**	**MW-17**
Ri^2/N_i =	1517088.2	299155	235620	248067	218602	222306	552825	545414	1E+06	45125	45125

$N_{i\,bg}$ = 71
N = 265
H = 63.29

Adjust H for ties:

T_i = 7E+06 sum of T1..T4

$H' = H/(1-(T_i/(N^3-N)))$
H' = 99.32
Chi-square = 18.31

Compare the calculated value H' to the tabulated Chi-square value with K-1 = # groups -1 = 17df at the 5% significance level from Table 1 of the IFG. The value is 18.31 which is less than H' =99.32.
Therefore, there is evidence of significant differences between the well groups.
Post-hoc pairwise comparisons are necessary (see below).

Calculate the critical values to compare each compliance well to the background wells:

Critical Value (C_x) = $P(N(N+1)/12)^{0.5} * (1/N_{i\,bg}+1/N_x)^{0.5}$
P = 2.33 Percentile of Standard Normal Distribution
from Table 4 of IFG
N = total sample size
$N_{i\,bg}$ = total samples (N_i) of background data
N_x = total samples (N_i) of well x

Difference between average ranks (Dx) = Rbar (well x) - avg Rbar (background)

Well =	MW-1A	MW-2	MW-2D	MW-3	MW-3D	MW-4A	MW-8	**MW-15**	MW-16	MW-17
Rbar (well x) =	111.6	99.1	101.7	99.7	100.5	151.8	150.8	237.7	95.0	95.0
avg Rbar (background) =	146.2	146.2	146.2	146.2	146.2	146.2	146.2	146.2	146.2	146.2
Dx =	-34.5	-47.1	-44.5	-46.5	-45.7	5.6	4.6	91.5	-51.2	-51.2
Cx =	42.2	42.2	42.2	43.6	43.6	42.2	42.2	45.2	82.6	82.6
Statistical Significance ?	No	No	No	No	No	No	No	**Yes**	No	No
If SSI, is current event above MCL?	-	-	-	-	-	-	-	No	-	-

Compare each difference (Dx) with the corresponding critical value (Cx).
The Dx value for the above indicated wells do exceed the corresponding Cx value.
Therefore, we conclude that the concentration of Total Lead averaged over these compliance wells are significantly greater than that of the background wells.
Shewart-CUSUM Control Charts should be performed for each failing well to check for statistical significance.

White Oak Landfill
Haywood County, North Carolina
BLE Project Number J12-1957-31

Compound: **Total Lead**
NC MCL (µg/l): 15
Method: Shewhart-CUSUM Control Chart

Part 1: Check for Normality

	MW-15	MDL
9/26/2002	**740**	**10**
4/28/2003	**300**	**10**
10/30/2003	**640**	**5**
4/20/2004	**250**	**5**
10/21/2004	**430**	**5**
4/18/2005	**380**	**5**
10/13/2005	**290**	**5**
4/25/2006	**300**	**10**
10/20/2006	**89**	**5**
4/25/2007	**69**	**10**
10/31/2007	**123**	**5**
4/23/2008	**50.2**	**5**
10/20/2008	**25.9**	**5**
4/22/2009	NS	**5**
10/26/2009	**24.7**	**5**
4/22/2010	**9.2**	**5**
10/27/2010	**16**	**5**
4/29/2011	**11**	**5**
10/25/2011	**14.6**	**5**
4/20/2012	**6.4**	**5**
10/24/2012	ND	**5**

If not detected (ND), use half of the detection limit.

	X_i values =
740	167671541
300	1383400.5
640	91993432
250	231758.41
430	14071705
380	7014487.8
290	1043362.1
300	1383400.5
89	-987304.1
69	-1709705
123	-281977.8
50.2	-2649555
25.9	-4304894
24.7	-4400866
9.2	-5771461
16	-5139651
11	-5599451
14.6	-5265754
6.4	-6045975
2.5	-6442643

X_{bar} = 188.575
SD = 221.7423
N = 20
$1/N\Sigma_i(X_i-X_{bar})^3$ = 11809693
γ_1= 1.169789

Since the Coefficient of Skewness of 1.17 is greater than 1.0, the real data appear to be significantly skewed.
Do not assume that the data follow a Normal distribution.
Perform the Skewness Test on the natural log of the values.

ln =	X_i values =
6.6066502	13.572165
5.7037825	3.2580439
6.4614682	11.241754
5.5214609	2.197748
6.0637852	6.2546435
5.9401713	5.078318
5.6698809	3.0395986
5.7037825	3.2580439
4.4886364	0.0191033
4.2341065	2.094E-06
4.8121844	0.2062899
3.916015	-0.028456
3.254243	-0.904429
3.2068032	-1.044165
2.2192035	-8.025346
2.7725887	-3.040588
2.3978953	-6.062598
2.6810215	-3.654341
1.856298	-13.22824

0.9162907	-36.10134

X_{bar} = 4.2213134
SD = 1.7174177
N = 20
$1/N\Sigma_i(X_i-X_{bar})^3$ = -1.198189
γ_1= 0.2554537

Since the Coefficient of Skewness of 0.26 is less than 1.0, the data appear not to be significantly skewed. Proceed with further statistical tests using the log-transformed values shown above.

Part 2: Shewhart-CUSUM Control Chart

Date	MW-15	MDL	Data for Testing
9/26/2002	**740**	10	6.6066502
4/28/2003	**300**	10	5.7037825
10/30/2003	**640**	5	6.4614682
4/20/2004	**250**	5	5.5214609
10/21/2004	**430**	5	6.0637852
4/18/2005	**380**	5	5.9401713
10/13/2005	**290**	5	5.6698809
4/25/2006	**300**	10	5.7037825
10/20/2006	**89**	5	4.4886364
4/25/2007	**69**	10	4.2341065
10/31/2007	**123**	5	4.8121844
4/23/2008	**50.2**	5	3.916015
10/20/2008	**25.9**	5	3.254243
4/22/2009	NS	5	-
10/26/2009	**24.7**	5	3.2068032
4/22/2010	**9.2**	5	2.2192035
10/27/2010	**16**	5	2.7725887
4/29/2011	**11**	5	2.3978953
10/25/2011	**14.6**	5	2.6810215
4/20/2012	**6.4**	5	1.856298
10/24/2012	ND	5	0.9162907

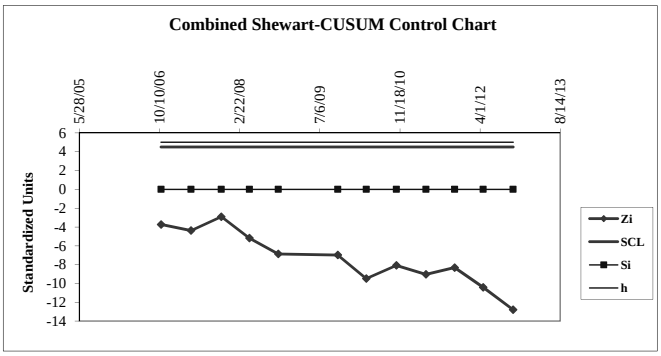
Compute the mean and standard deviation of the historical data:

5.9588727 = x_{mean} (Mean of N1-N8 historical data)
0.394346 = s (Standard Deviation of N1-N8 historical data)
1 = k (constant, reference value)
5 = h (constant, upper control limit for the CUSUM scheme)
4.5 = SCL (Constant, upper Shewhart Control Limit)

Compute the standardized mean (Z_i) and the cumulative sum (S_i) for each concentration.

Date	x_i	Z_i	S_i	h	SCL
			0		
10/20/2006	4.4886364	-3.7282898	0	5	4.5
4/25/2007	4.2341065	-4.3737378	0	5	4.5
10/31/2007	4.8121844	-2.9078226	0	5	4.5
4/23/2008	3.916015	-5.1803681	0	5	4.5
10/20/2008	3.254243	-6.8585187	0	5	4.5
10/26/2009	3.2068032	-6.9788185	0	5	4.5
4/22/2010	2.2192035	-9.4832172	0	5	4.5
10/27/2010	2.7725887	-8.0799187	0	5	4.5
4/29/2011	2.3978953	-9.0300828	0	5	4.5
10/25/2011	2.6810215	-8.3121188	0	5	4.5
4/20/2012	1.856298	-10.403489	0	5	4.5
10/24/2012	0.9162907	-12.787201	0	5	4.5

Plot Z_i and S_i versus time:



Compare the Z_i and S_i values to their respective control limits of SCL and h.

The limits were not exceeded and do not indicate statistically significant evidence of contamination at the site.

White Oak Landfill
Haywood County, North Carolina
BLE Project Number J12-1957-31

Compound: **Total Nickel**
NC MCL (µg/l): 100
Method: Kruskal-Wallis
Background: MW-11S, MW-11D, & MW-14

	MW-11S	MW-11D	MW-14	MW-1A	MW-2	MW-2D	MW-3	MW-3D	MW-4A	MW-8	MW-15	MW-16	MW-17	MDL
04/24/00	15	NS	NS	17	12	8.3	ND	24	6.7	22	NS	NP	NP	5
06/26/00	15	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	5
07/26/00	16	9.7	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	5
09/18/00	NS	NS	NS	8.8	NT	NS	NS	NS	NT	NS	NS	NP	NP	50
04/09/01	76	7.2	NS	9.6	5.3	ND	ND	18	28	6.1	NS	NP	NP	5
09/18/01	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	5
10/29/01	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	5
01/30/02	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	5
02/28/02	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	50
04/15/02	74	ND	NS	ND	ND	ND	6	9	44	68	NS	NP	NP	5
09/26/02	16	6.8	31	400	ND	ND	ND	27	40	78	430	NP	NP	5
04/28/03	ND	ND	ND	90	ND	ND	ND	ND	ND	26	70	NP	NP	5
10/30/03	19	ND	NT	6.9	6.9	ND	ND	ND	48	ND	190	NP	NP	5
04/20/04	20	ND	ND	30	7.3	ND	ND	12	5.3	49	110	NP	NP	5
10/21/04	12	ND	ND	13	ND	ND	ND	ND	ND	35	160	NP	NP	5
04/18/05	29	9.6	17	460	ND	ND	5.5	5.4	ND	59	170	NP	NP	5
10/13/05	29	ND	ND	160	6.8	ND	ND	6.1	ND	46	100	NP	NP	5
04/25/06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	88	NP	NP	50
10/20/06	22	ND	8.3	25	ND	ND	ND	ND	13	ND	24	NP	NP	5
04/25/07	ND	ND	ND	ND	ND	330	ND	ND	ND	ND	ND	NP	NP	50
10/31/07	24	ND	8	8.4	13.8	ND	5.8	9.8	ND	20.2	36.2	NP	NP	5
04/23/08	7.3	ND	12.9	6.3	10.8	5.7	ND	11.3	5.3	ND	19	NP	NP	5
10/20/08	23	ND	21	11.1	10.7	7.5	ND	14	ND	ND	8.5	NP	NP	5
04/22/09	5.6	7.2	19.7	16.7	10.9	6	5.1	14	6	ND	NS	NP	NP	5
10/26/09	6.7	ND	5.2	6	18	7.5	NS	NS	NS	6	8.4	NP	NP	5
04/22/10	8.6	9.6	7.6	ND	6.2	ND	NS	NS	ND	ND	ND	NP	NP	5
10/27/10	7	ND	ND	ND	7.4	ND	21.5	19	ND	ND	7.5	10.8	ND	5
04/29/11	ND	ND	ND	ND	10.5	8.6	19.5	15.2	ND	ND	ND	10.3	ND	5
10/25/11	6.9	ND	ND	14.7	8.8	7.5	20.8	19.9	ND	ND	ND	8	ND	5
04/20/12	12.2	ND	ND	ND	9.4	9.4	23.8	24.6	ND	ND	ND	19.3	ND	5
10/24/12	18.5	ND	ND	ND	10.1	8.9	20	25.3	ND	ND	ND	9.6	ND	5
N_i	26	25	20	25	24	24	22	22	23	24	20	5	5	
sum of rank values (R_i)	4614.5	2130.5	2350.5	3919.5	3196.5	2516.5	2417.0	3520.0	2542.5	3224.5	3593.5	914.5	305.0	
avg rank value (Rbar)	177.5	85.2	117.5	156.8	133.2	104.9	109.9	160.0	110.5	134.4	179.7	182.9	61.0	

	Number of each rank value													Rank Value
rank value of NDs =	4	19	11	8	8	14	13	6	14	13	6	0	5	61
rank value of 5.1s =	0	0	0	0	0	0	1	0	0	0	0	0	0	122
rank value of 5.2s =	0	0	1	0	0	0	0	0	0	0	0	0	0	123
rank value of 5.3s =	0	0	0	0	1	0	0	0	2	0	0	0	0	125
rank value of 5.4s =	0	0	0	0	0	0	0	1	0	0	0	0	0	127
rank value of 5.5s =	0	0	0	0	0	0	1	0	0	0	0	0	0	128
rank value of 5.6s =	1	0	0	0	0	0	0	0	0	0	0	0	0	129
rank value of 5.7s =	0	0	0	0	0	1	0	0	0	0	0	0	0	130
rank value of 5.8s =	0	0	0	0	0	0	1	0	0	0	0	0	0	131
rank value of 6s =	0	0	0	1	0	1	0	0	1	1	0	0	0	133.5
rank value of 6.1s =	0	0	0	0	0	0	0	1	0	1	0	0	0	136.5
rank value of 6.2s =	0	0	0	0	1	0	1	0	0	0	0	0	0	138.5
rank value of 6.3s =	0	0	0	1	0	0	0	0	0	0	0	0	0	140
rank value of 6.7s =	1	0	0	0	0	0	0	0	1	0	0	0	0	141.5
rank value of 6.8s =	0	1	0	0	1	0	0	0	0	0	0	0	0	143.5
rank value of 6.9s =	1	0	0	1	1	0	0	0	0	0	0	0	0	146
rank value of 7s =	1	0	0	0	0	0	0	0	0	0	0	0	0	148
rank value of 7.2s =	0	2	0	0	0	0	0	0	0	0	0	0	0	149.5
rank value of 7.3s =	1	0	0	0	1	0	0	0	0	0	0	0	0	151.5
rank value of 7.4s =	0	0	0	0	1	0	0	0	0	0	0	0	0	153
rank value of 7.5s =	0	0	0	0	0	3	0	0	0	0	1	0	0	155.5
rank value of 7.6s =	0	0	1	0	0	0	0	0	0	0	0	0	0	158
rank value of 8s =	0	0	1	0	0	0	0	0	0	0	0	1	0	159.5
rank value of 8.3s =	0	0	1	0	0	1	0	0	0	0	0	0	0	161.5
rank value of 8.4s =	0	0	0	1	0	0	0	0	0	0	1	0	0	163.5
rank value of 8.5s =	0	0	0	0	0	0	0	0	0	0	1	0	0	165
rank value of 8.6s =	1	0	0	0	0	1	0	0	0	0	0	0	0	166.5
rank value of 8.8s =	0	0	0	1	1	0	0	0	0	0	0	0	0	168.5
rank value of 8.9s =	0	0	0	0	0	1	0	0	0	0	0	0	0	170
rank value of 9.2s =	0	0	0	0	0	0	0	1	0	0	0	0	0	171

rank value of 9.4s =	0	0	0	0	1	1	0	0	0	0	0	0	0	172.5
rank value of 9.6s =	0	2	0	1	0	0	0	0	0	0	0	1	0	175.5
rank value of 9.7s =	0	1	0	0	0	0	0	0	0	0	0	0	0	178
rank value of 9.8s =	0	0	0	0	0	0	0	1	0	0	0	0	0	179
rank value of 10.1s =	0	0	0	0	1	0	0	0	0	0	0	0	0	180
rank value of 10.3s =	0	0	0	0	0	0	0	0	0	0	0	1	0	181
rank value of 10.5s =	0	0	0	0	1	0	0	0	0	0	0	0	0	182
rank value of 10.7s =	0	0	0	0	1	0	0	0	0	0	0	0	0	183
rank value of 10.8s =	0	0	0	0	1	0	0	0	0	0	0	1	0	184.5
rank value of 10.9s =	0	0	0	0	1	0	0	0	0	0	0	0	0	186
rank value of 11.1s =	0	0	0	1	0	0	0	0	0	0	0	0	0	187
rank value of 11.3s =	0	0	0	0	0	0	0	1	0	0	0	0	0	188
rank value of 12s =	1	0	0	0	1	0	0	1	0	0	0	0	0	190
rank value of 12.2s =	1	0	0	0	0	0	0	0	0	0	0	0	0	192
rank value of 12.9s =	0	0	1	0	0	0	0	0	0	0	0	0	0	193
rank value of 13s =	0	0	0	1	0	0	0	0	1	0	0	0	0	194.5
rank value of 13.8s =	0	0	0	0	1	0	0	0	0	0	0	0	0	196
rank value of 14s =	0	0	0	0	0	0	0	2	0	0	0	0	0	197.5
rank value of 14.7s =	0	0	0	1	0	0	0	0	0	0	0	0	0	199
rank value of 15s =	2	0	0	0	0	0	0	0	0	0	0	0	0	200.5
rank value of 15.2s =	0	0	0	0	0	0	0	1	0	0	0	0	0	202
rank value of 16s =	2	0	0	0	0	0	0	0	0	0	0	0	0	203.5
rank value of 16.7s =	0	0	0	1	0	0	0	0	0	0	0	0	0	205
rank value of 17s =	0	0	1	1	0	0	0	0	0	0	0	0	0	206.5
rank value of 18s =	0	0	0	0	1	0	0	1	0	0	0	0	0	208.5
rank value of 18.5s =	1	0	0	0	0	0	0	0	0	0	0	0	0	210
rank value of 19s =	1	0	0	0	0	0	0	1	0	0	1	0	0	212
rank value of 19.3s =	0	0	0	0	0	0	0	0	0	0	0	1	0	214
rank value of 19.5s =	0	0	0	0	0	0	1	0	0	0	0	0	0	215
rank value of 19.7s =	0	0	1	0	0	0	0	0	0	0	0	0	0	216
rank value of 19.9s =	0	0	0	0	0	0	0	1	0	0	0	0	0	217
rank value of 20s =	1	0	0	0	0	0	1	0	0	0	0	0	0	218.5
rank value of 20.2s =	0	0	0	0	0	0	0	0	0	1	0	0	0	220
rank value of 20.8s =	0	0	0	0	0	0	1	0	0	0	0	0	0	221
rank value of 21s =	0	0	1	0	0	0	0	0	0	0	0	0	0	222
rank value of 21.5s =	0	0	0	0	0	0	1	0	0	0	0	0	0	223
rank value of 22s =	1	0	0	0	0	0	0	0	0	1	0	0	0	224.5
rank value of 23s =	1	0	0	0	0	0	0	0	0	0	0	0	0	226
rank value of 23.8s =	0	0	0	0	0	0	1	0	0	0	0	0	0	227
rank value of 24s =	1	0	0	0	0	0	0	1	0	0	1	0	0	229
rank value of 24.6s =	0	0	0	0	0	0	0	1	0	0	0	0	0	231
rank value of 25s =	0	0	0	1	0	0	0	0	0	0	0	0	0	232
rank value of 25.3s =	0	0	0	0	0	0	0	1	0	0	0	0	0	233
rank value of 26s =	0	0	0	0	0	0	0	0	0	1	0	0	0	234
rank value of 27s =	0	0	0	0	0	0	0	1	0	0	0	0	0	235
rank value of 28s =	0	0	0	0	0	0	0	0	1	0	0	0	0	236
rank value of 29s =	2	0	0	0	0	0	0	0	0	0	0	0	0	237.5
rank value of 30s =	0	0	0	1	0	0	0	0	0	0	0	0	0	239
rank value of 31s =	0	0	1	0	0	0	0	0	0	0	0	0	0	240
rank value of 35s =	0	0	0	0	0	0	0	0	0	1	0	0	0	241
rank value of 36.2s =	0	0	0	0	0	0	0	0	0	0	1	0	0	242
rank value of 40s =	0	0	0	0	0	0	0	0	1	0	0	0	0	243
rank value of 44s =	0	0	0	0	0	0	0	0	1	0	0	0	0	244
rank value of 46s =	0	0	0	0	0	0	0	0	0	1	0	0	0	245
rank value of 48s =	0	0	0	0	0	0	0	0	1	0	0	0	0	246
rank value of 49s =	0	0	0	0	0	0	0	0	0	1	0	0	0	247
rank value of 59s =	0	0	0	0	0	0	0	0	0	1	0	0	0	248
rank value of 68s =	0	0	0	0	0	0	0	0	0	1	0	0	0	249
rank value of 70s =	0	0	0	0	0	0	0	0	0	0	1	0	0	250
rank value of 74s =	1	0	0	0	0	0	0	0	0	0	0	0	0	251
rank value of 76s =	1	0	0	0	0	0	0	0	0	0	0	0	0	252
rank value of 78s =	0	0	0	0	0	0	0	0	0	1	0	0	0	253
rank value of 88s =	0	0	0	0	0	0	0	0	0	0	1	0	0	254
rank value of 90s =	0	0	0	1	0	0	0	0	0	0	0	0	0	255
rank value of 100s =	0	0	0	0	0	0	0	0	0	0	1	0	0	256
rank value of 110s =	0	0	0	0	0	0	0	0	0	0	1	0	0	257
rank value of 160s =	0	0	0	1	0	0	0	0	0	0	1	0	0	258.5
rank value of 170s =	0	0	0	0	0	0	0	0	0	0	1	0	0	260
rank value of 190s =	0	0	0	0	0	0	0	0	0	0	1	0	0	261
rank value of 330s =	0	0	0	0	0	1	0	0	0	0	0	0	0	262
rank value of 400s =	0	0	0	1	0	0	0	0	0	0	0	0	0	263
rank value of 430s =	0	0	0	0	0	0	0	0	0	0	1	0	0	264
rank value of 460s =	0	0	0	1	0	0	0	0	0	0	0	0	0	265
n =	**26**	**25**	**20**	**25**	**24**	**24**	**22**	**22**	**23**	**24**	**20**	**5**	**5**	
Sum of rank value calculations	244	1159	671	488	488	854	793	366	854	793	366	0	305	

0	0	0	0	0	0	122	0	0	0	0	0	0
0	0	123	0	0	0	0	0	0	0	0	0	0
0	0	0	0	125	0	0	0	250	0	0	0	0
0	0	0	0	0	0	0	127	0	0	0	0	0
0	0	0	0	0	0	128	0	0	0	0	0	0
129	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	130	0	0	0	0	0	0	0
0	0	0	0	0	0	131	0	0	0	0	0	0
0	0	0	133.5	0	133.5	0	0	133.5	133.5	0	0	0
0	0	0	0	0	0	0	136.5	0	136.5	0	0	0
0	0	0	0	138.5	0	138.5	0	0	0	0	0	0
0	0	0	140	0	0	0	0	0	0	0	0	0
141.5	0	0	0	0	0	0	0	141.5	0	0	0	0
0	143.5	0	0	143.5	0	0	0	0	0	0	0	0
146	0	0	146	146	0	0	0	0	0	0	0	0
148	0	0	0	0	0	0	0	0	0	0	0	0
0	299	0	0	0	0	0	0	0	0	0	0	0
151.5	0	0	0	151.5	0	0	0	0	0	0	0	0
0	0	0	0	153	0	0	0	0	0	0	0	0
0	0	0	0	0	466.5	0	0	0	0	155.5	0	0
0	0	158	0	0	0	0	0	0	0	0	0	0
0	0	159.5	0	0	0	0	0	0	0	0	159.5	0
0	0	161.5	0	0	161.5	0	0	0	0	0	0	0
0	0	0	163.5	0	0	0	0	0	0	163.5	0	0
0	0	0	0	0	0	0	0	0	0	165	0	0
166.5	0	0	0	0	166.5	0	0	0	0	0	0	0
0	0	0	168.5	168.5	0	0	0	0	0	0	0	0
0	0	0	0	0	170	0	0	0	0	0	0	0
0	0	0	0	0	0	0	171	0	0	0	0	0
0	0	0	0	172.5	172.5	0	0	0	0	0	0	0
0	351	0	175.5	0	0	0	0	0	0	0	175.5	0
0	178	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	179	0	0	0	0	0
0	0	0	0	180	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	181	0
0	0	0	0	182	0	0	0	0	0	0	0	0
0	0	0	0	183	0	0	0	0	0	0	0	0
0	0	0	0	184.5	0	0	0	0	0	0	184.5	0
0	0	0	0	186	0	0	0	0	0	0	0	0
0	0	0	187	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	188	0	0	0	0	0
190	0	0	0	190	0	0	190	0	0	0	0	0
192	0	0	0	0	0	0	0	0	0	0	0	0
0	0	193	0	0	0	0	0	0	0	0	0	0
0	0	0	194.5	0	0	0	0	194.5	0	0	0	0
0	0	0	0	196	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	395	0	0	0	0	0
0	0	0	199	0	0	0	0	0	0	0	0	0
401	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	202	0	0	0	0	0
407	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	205	0	0	0	0	0	0	0	0	0
0	0	206.5	206.5	0	0	0	0	0	0	0	0	0
0	0	0	0	208.5	0	0	208.5	0	0	0	0	0
210	0	0	0	0	0	0	0	0	0	0	0	0
212	0	0	0	0	0	0	212	0	0	212	0	0
0	0	0	0	0	0	0	0	0	0	0	214	0
0	0	0	0	0	0	215	0	0	0	0	0	0
0	0	216	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	217	0	0	0	0	0
218.5	0	0	0	0	0	218.5	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	220	0	0	0
0	0	0	0	0	0	221	0	0	0	0	0	0
0	0	222	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	223	0	0	0	0	0	0
224.5	0	0	0	0	0	0	0	0	224.5	0	0	0
226	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	227	0	0	0	0	0	0
229	0	0	0	0	0	0	229	0	0	229	0	0
0	0	0	0	0	0	0	231	0	0	0	0	0
0	0	0	232	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	233	0	0	0	0	0
0	0	0	0	0	0	0	0	0	234	0	0	0
0	0	0	0	0	0	0	235	0	0	0	0	0
0	0	0	0	0	0	0	0	236	0	0	0	0
475	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	239	0	0	0	0	0	0	0	0	0
0	0	240	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	241	0	0	0

	0	0	0	0	0	0	0	0	0	0	242	0	0
	0	0	0	0	0	0	0	0	243	0	0	0	0
	0	0	0	0	0	0	0	0	244	0	0	0	0
	0	0	0	0	0	0	0	0	0	245	0	0	0
	0	0	0	0	0	0	0	0	246	0	0	0	0
	0	0	0	0	0	0	0	0	0	247	0	0	0
	0	0	0	0	0	0	0	0	0	248	0	0	0
	0	0	0	0	0	0	0	0	0	249	0	0	0
	0	0	0	0	0	0	0	0	0	0	250	0	0
	251	0	0	0	0	0	0	0	0	0	0	0	0
	252	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	253	0	0	0
	0	0	0	0	0	0	0	0	0	0	254	0	0
	0	0	0	255	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	256	0	0
	0	0	0	0	0	0	0	0	0	0	257	0	0
	0	0	0	258.5	0	0	0	0	0	0	258.5	0	0
	0	0	0	0	0	0	0	0	0	0	260	0	0
	0	0	0	0	0	0	0	0	0	0	261	0	0
	0	0	0	0	0	262	0	0	0	0	0	0	0
	0	0	0	263	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	264	0	0
	0	0	0	265	0	0	0	0	0	0	0	0	0
sum of rank values (R_i)	**4614.5**	**2130.5**	**2350.5**	**3919.5**	**3196.5**	**2516.5**	**2417**	**3520**	**2542.5**	**3224.5**	**3593.5**	**914.5**	**305**

Compute the Kruskal-Wallis statistic:

$$H = \{[12/N(N+1)] * [\ \Sigma^{K}_{i=1}\ (R_i^2)/N_i]\} -3(N+1)$$

Well =	**Background**	**MW-1A**	**MW-2**	**MW-2D**	**MW-3**	**MW-3D**	**MW-4A**	**MW-8**	**MW-15**	**MW-16**	**MW-17**
Ri^2/N_i =	1165184.8	614499	425734	263866	265540	563200	281057	433225	645662	167262	18605

$N_{i\ bg}$ = 71
N = 265
H = 26.60

Adjust H for ties:

T_i = 2E+06 sum of T1..T7

$H' = H/(1-(T_i/(N^3-N)))$
H' = 29.40
Chi-square = 18.31

Compare the calculated value H' to the tabulated Chi-square value with K-1 = # groups -1 = 17df at the 5% significance level from Table 1 of the IFG. The value is 18.31 which is less than H' =29.40.
Therefore, there is evidence of significant differences between the well groups.
Post-hoc pairwise comparisons are necessary (see below).

Calculate the critical values to compare each compliance well to the background wells:

Critical Value (C_x) = $P(N(N+1)/12)^{0.5} * (1/N_{i\ bg}+1/N_x)^{0.5}$
P = 2.33 Percentile of Standard Normal Distribution
from Table 4 of IFG
N = total sample size
$N_{i\ bg}$ = total samples (N_i) of background data
N_x = total samples (N_i) of well x

Difference between average ranks (Dx) = Rbar (well x) - avg Rbar (background)

Well =	MW-1A	MW-2	MW-2D	MW-3	MW-3D	MW-4A	MW-8	**MW-15**	MW-16	MW-17
Rbar (well x) =	156.8	133.2	104.9	109.9	160.0	110.5	134.4	179.7	182.9	61.0
avg Rbar (background) =	128.1	128.1	128.1	128.1	128.1	128.1	128.1	128.1	128.1	128.1
Dx =	28.7	5.1	-23.3	-18.2	31.9	-17.6	6.2	51.6	54.8	-67.1
Cx =	41.5	42.2	42.2	43.6	43.6	42.8	42.2	45.2	82.6	82.6
Statistical Significance ?	No	No	No	No	No	No	No	**Yes**	No	No
If SSI, is current event above MCL?	-	-	-	-	-	-	-	No	-	-

Compare each difference (Dx) with the corresponding critical value (Cx).
The Dx value for the above indicated wells do exceed the corresponding Cx value.
Therefore, we conclude that the concentration of Total Nickel averaged over these compliance wells are significantly greater than that of the background wells.
Shewart-CUSUM Control Charts should be performed for each failing well to check for statistical significance.

White Oak Landfill
Haywood County, North Carolina
BLE Project Number J12-1957-31

Compound: **Total Nickel**
NC MCL (µg/l): 100
Method: Shewhart-CUSUM Control Chart

Part 1: Check for Normality

	MW-15	MDL
9/26/2002	**430**	**5**
4/28/2003	**70**	**5**
10/30/2003	**190**	**5**
4/20/2004	**110**	**5**
10/21/2004	**160**	**5**
4/18/2005	**170**	**5**
10/13/2005	**100**	**5**
4/25/2006	**88**	**50**
10/20/2006	**24**	**5**
4/25/2007	ND	**50**
10/31/2007	**36.2**	**5**
4/23/2008	**19**	**5**
10/20/2008	**8.5**	**5**
4/22/2009	NS	**5**
10/26/2009	**8.4**	**5**
4/22/2010	ND	**5**
10/27/2010	**7.5**	**5**
4/29/2011	ND	**5**
10/25/2011	ND	**5**
4/20/2012	ND	**5**
10/24/2012	ND	**5**

If not detected (ND), use half of the detection limit.

	X_i values =
430	45516501
70	-25.80313
190	1603461.7
110	50838.04
160	659525.34
170	913943.8
100	19781.579
88	3405.4662
24	-117325.2
25	-110281.3
36.2	-49653.43
19	-157070.7
8.5	-267774.9
8.4	-269023.2
2.5	-349732.1
7.5	-280432.6
2.5	-349732.1
2.5	-349732.1
2.5	-349732.1
2.5	-349732.1

X_{bar} = 72.955
SD = 104.35216
N = 20
$1/N\Sigma_i(X_i-X_{bar})^3$ = 2288360.5
γ_1 = 2.1748767

Since the Coefficient of Skewness of 2.17 is greater than 1.0, the real data appear to be significantly skewed.
Do not assume that the data follow a Normal distribution.
Perform the Skewness Test on the natural log of the values.

ln =	X_i values =
6.0637852	24.297477
4.2484952	1.2634876
5.2470241	8.9938089
4.7004804	3.6031309
5.0751738	6.9433462
5.1357984	7.6265403
4.6051702	2.9720268
4.4773368	2.2476765
3.1780538	1.203E-06
3.2188758	0.0001363
3.5890591	0.0749602
2.944439	-0.011086
2.1400662	-1.084318
2.1282317	-1.122224
0.9162907	-11.40774
2.014903	-1.530872
0.9162907	-11.40774
0.9162907	-11.40774
0.9162907	-11.40774
0.9162907	-11.40774

X_{bar} = 3.1674173
SD = 1.7253767
N = 20
$1/N\Sigma_i(X_i-X_{bar})^3$ = -0.138231
γ_1 = 0.0290649

Since the Coefficient of Skewness of 0.03 is less than 1.0, the data appear not to be significantly skewed. Proceed with further statistical tests using the log-transformed values shown above.

Part 2: Shewhart-CUSUM Control Chart

Date	MW-15	MDL	Data for Testing
9/26/2002	**430**	5	6.0637852
4/28/2003	**70**	5	4.2484952
10/30/2003	**190**	5	5.2470241
4/20/2004	**110**	5	4.7004804
10/21/2004	**160**	5	5.0751738
4/18/2005	**170**	5	5.1357984
10/13/2005	**100**	5	4.6051702
4/25/2006	**88**	50	4.4773368
10/20/2006	**24**	5	3.1780538
4/25/2007	ND	50	3.2188758
10/31/2007	**36.2**	5	3.5890591
4/23/2008	**19**	5	2.944439
10/20/2008	**8.5**	5	2.1400662
4/22/2009	NS	5	-
10/26/2009	**8.4**	5	2.1282317
4/22/2010	ND	5	0.9162907
10/27/2010	**7.5**	5	2.014903
4/29/2011	ND	5	0.9162907
10/25/2011	ND	5	0.9162907
4/20/2012	ND	5	0.9162907
10/24/2012	ND	5	0.9162907

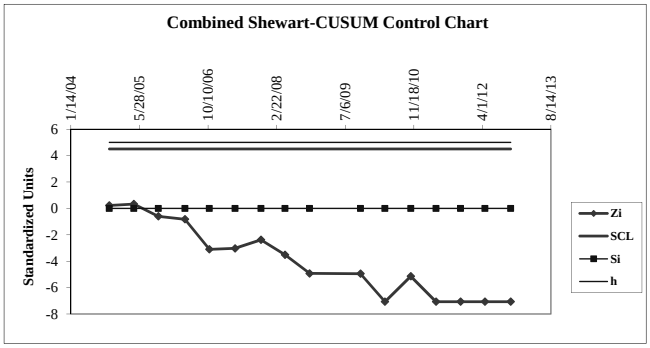
Compute the mean and standard deviation of the historical data:

4.944158 = x_{mean} (Mean of N1-N8 historical data)
0.5701309 = s (Standard Deviation of N1-N8 historical data)
1 = k (constant, reference value)
5 = h (constant, upper control limit for the CUSUM scheme)
4.5 = SCL (Constant, upper Shewhart Control Limit)

Compute the standardized mean (Z_i) and the cumulative sum (S_i) for each concentration.

Date	x_i	Z_i	S_i	h	SCL
			0		
10/21/2004	5.0751738	0.2297995	0	5	4.5
4/18/2005	5.1357984	0.3361341	0	5	4.5
10/13/2005	4.6051702	-0.594579	0	5	4.5
4/25/2006	4.4773368	-0.8187966	0	5	4.5
10/20/2006	3.1780538	-3.0977172	0	5	4.5
4/25/2007	3.2188758	-3.0261161	0	5	4.5
10/31/2007	3.5890591	-2.3768208	0	5	4.5
4/23/2008	2.944439	-3.5074738	0	5	4.5
10/20/2008	2.1400662	-4.9183303	0	5	4.5
10/26/2009	2.1282317	-4.9390877	0	5	4.5
4/22/2010	0.9162907	-7.0648119	0	5	4.5
10/27/2010	2.014903	-5.1378643	0	5	4.5
4/29/2011	0.9162907	-7.0648119	0	5	4.5
10/25/2011	0.9162907	-7.0648119	0	5	4.5
4/20/2012	0.9162907	-7.0648119	0	5	4.5
10/24/2012	0.9162907	-7.0648119	0	5	4.5

Plot Z_i and S_i versus time:



Compare the Z_i and S_i values to their respective control limits of SCL and h.
The limits were not exceeded and do not indicate statistically significant evidence of contamination at the site.

White Oak Landfill
Haywood County, North Carolina
BLE Project Number J12-1957-31

Compound: **Total Selenium**
MCL (µg/l): 20
Method: Poisson Prediction Limits
Background: MW-11S, MW-11D, & MW-14

	MW-11S	MW-11D	MW-14	MW-1A	MW-2	MW-2D	MW-3	MW-3D	MW-4A	MW-8	MW-15	MW-16	MW-17	MDL
04/24/00	ND	NS	NS	ND	ND	ND	ND	ND	ND	ND	NS	NP	NP	**20**
06/26/00	ND	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	**20**
07/26/00	ND	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	**20**
09/18/00	NS	NS	NS	NT	NT	NS	NS	NS	NT	NS	NS	NP	NP	**20**
04/09/01	ND	ND	NS	ND	ND	ND	ND	ND	ND	ND	NS	NP	NP	**20**
09/18/01	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	**20**
10/29/01	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	**20**
01/30/02	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	**20**
02/28/02	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	**20**
04/15/02	ND	ND	NS	ND	ND	ND	ND	ND	ND	ND	NS	NP	NP	**20**
09/26/02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**20**
04/28/03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**20**
10/30/03	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**5**
04/20/04	ND	ND	ND	ND	ND	**5**	ND	ND	ND	ND	ND	NP	NP	**5**
10/21/04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**5**
04/18/05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**5**
10/13/05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**5**
04/25/06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**20**
10/20/06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**10**
04/25/07	**12**	ND	ND	ND	ND	**460**	ND	ND	ND	ND	**18**	NP	NP	**10**
10/31/07	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**10**
04/23/08	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**10**
10/20/08	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**10**
04/22/09	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NP	NP	**10**
10/26/09	ND	ND	ND	ND	ND	ND	NS	NS	NS	ND	ND	NP	NP	**10**
04/22/10	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND	NP	NP	**10**
10/27/10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**10**
04/29/11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**10**
10/25/11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**10**
04/20/12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**10**
10/24/12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**10**

1) If not detected (ND), use half of the detection limit.

04/24/00	10	-	-	10	10	10	10	10	10	10	-	-	-
06/26/00	10	10	-	-	-	-	-	-	-	-	-	-	-
07/26/00	10	10	-	-	-	-	-	-	-	-	-	-	-
09/18/00	-	-	-	-	-	-	-	-	-	-	-	-	-
04/09/01	10	10	-	10	10	10	10	10	10	10	-	-	-
09/18/01	-	-	-	-	-	-	-	-	-	-	-	-	-
10/29/01	-	-	-	-	-	-	-	-	-	-	-	-	-
01/30/02	-	-	-	-	-	-	-	-	-	-	-	-	-
02/28/02	-	-	-	-	-	-	-	-	-	-	-	-	-
04/15/02	10	10	-	10	10	10	10	10	10	10	-	-	-
09/26/02	10	10	10	10	10	10	10	10	10	10	10	-	-
04/28/03	10	10	10	10	10	10	10	10	10	10	10	-	-
10/30/03	2.5	2.5	-	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	-	-
04/20/04	2.5	2.5	2.5	2.5	2.5	5	2.5	2.5	2.5	2.5	2.5	-	-
10/21/04	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	-	-
04/18/05	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	-	-
10/13/05	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	-	-
04/25/06	10	10	10	10	10	10	10	10	10	10	10	-	-
10/20/06	5	5	5	5	5	5	5	5	5	5	5	-	-
04/25/07	12	5	5	5	5	460	5	5	5	5	18	-	-
10/31/07	5	5	5	5	5	5	5	5	5	5	5	-	-
04/23/08	5	5	5	5	5	5	5	5	5	5	5	-	-
10/20/08	5	5	5	5	5	5	5	5	5	5	5	-	-
04/22/09	5	5	5	5	5	5	5	5	5	5	-	-	-
10/26/09	5	5	5	5	5	5	-	-	-	5	5	-	-
04/22/10	5	5	5	5	5	5	-	-	5	5	5	-	-
10/27/10	5	5	5	5	5	5	5	5	5	5	5	5	5
04/29/11	5	5	5	5	5	5	5	5	5	5	5	5	5
10/25/11	5	5	5	5	5	5	5	5	5	5	5	5	5
04/20/12	5	5	5	5	5	5	5	5	5	5	5	5	5
10/24/12				5	5	5	5	5	5	5	5	5	5

2) Set the total number of data values for background wells (through the previous sampling event) equal to 'n' = 25.
Use 1/2 of the method detection limit to calculate the Total Poisson Count of the Sum (T_n).

$n = 68$
$T_{n1} = 402$

3) Using Gibbons' formula, calculate the upper Poisson Prediction limit T^*_k:

$$T^*_k = cT_{n1} + ct^2/2 + ct[T_{n1}(1+1/c) + t^2/4]^{0.5}$$

where c = k/n
and where k = the number of future predicted measurements (one per well during the current sampling event)
and where t = the upper 99th percentile of the t-distribution with (n-1) degrees of freedom (Table 6 of the IFG).

$k = 10$
$n = 68$
$T_{n1} = 402$
$t[67,.01] = 2.3863$
$c = 0.1471$
$T_{n2} = 50$
$T^*_k = 79.2$

4) Compare the *Poisson Prediction Limit* (T^*_k) to the *Sum of the Concentrations Detected* (T_{n2}) in the wells during the most recent sampling event.
Since the Poisson Prediction Limit was not exceeded, there is no evidence of contamination.

White Oak Landfill
Haywood County, North Carolina
BLE Project Number J12-1957-31

Compound: **Total Silver**
MCL (µg/l): 20
Method: Poisson Prediction Limits
Background: MW-11S, MW-11D, & MW-14

	MW-11S	MW-11D	MW-14	MW-1A	MW-2	MW-2D	MW-3	MW-3D	MW-4A	MW-8	MW-15	MW-16	MW-17	MDL
04/24/00	**3.7**	NS	NS	ND	ND	ND	**6.9**	ND	ND	ND	NS	NP	NP	**2**
06/26/00	ND	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	**2**
07/26/00	ND	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	**2**
09/18/00	NS	NS	NS	NT	NT	NS	NS	NS	NT	NS	NS	NP	NP	**10**
04/09/01	ND	ND	NS	ND	ND	ND	ND	ND	ND	ND	NS	NP	NP	**2**
09/18/01	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	**2**
10/29/01	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	**2**
01/30/02	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	**2**
02/28/02	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	**10**
04/15/02	ND	ND	NS	ND	ND	ND	ND	ND	ND	ND	NS	NP	NP	**2**
09/26/02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**2**
04/28/03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**2**
10/30/03	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**2**
04/20/04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**2**
10/21/04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**2**
04/18/05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**2**
10/13/05	**2.9**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**2**
04/25/06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**10**
10/20/06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**5**
04/25/07	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**10**
10/31/07	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**5**
04/23/08	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**5**
10/20/08	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**5**
04/22/09	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NP	NP	**5**
10/26/09	ND	ND	ND	ND	ND	ND	NS	NS	NS	ND	ND	NP	NP	**5**
04/22/10	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND	NP	NP	**5**
10/27/10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**5**
04/29/11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**5**
10/25/11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**5**
04/20/12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**5**
10/24/12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**5**

1) If not detected (ND), use half of the detection limit.

04/24/00	3.7	-	-	1	1	1	6.9	1	1	1	-	-	-
06/26/00	1	1	-	-	-	-	-	-	-	-	-	-	-
07/26/00	1	1	-	-	-	-	-	-	-	-	-	-	-
09/18/00	-	-	-	-	-	-	-	-	-	-	-	-	-
04/09/01	1	1	-	1	1	1	1	1	1	1	-	-	-
09/18/01	-	-	-	-	-	-	-	-	-	-	-	-	-
10/29/01	-	-	-	-	-	-	-	-	-	-	-	-	-
01/30/02	-	-	-	-	-	-	-	-	-	-	-	-	-
02/28/02	-	-	-	-	-	-	-	-	-	-	-	-	-
04/15/02	1	1	-	1	1	1	1	1	1	1	-	-	-
09/26/02	1	1	1	1	1	1	1	1	1	1	1	-	-
04/28/03	1	1	1	1	1	1	1	1	1	1	1	-	-
10/30/03	1	1	-	1	1	1	1	1	1	1	1	-	-
04/20/04	1	1	1	1	1	1	1	1	1	1	1	-	-
10/21/04	1	1	1	1	1	1	1	1	1	1	1	-	-
04/18/05	1	1	1	1	1	1	1	1	1	1	1	-	-
10/13/05	2.9	1	1	1	1	1	1	1	1	1	1	-	-
04/25/06	5	5	5	5	5	5	5	5	5	5	5	-	-
10/20/06	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	-	-
04/25/07	5	5	5	5	5	5	5	5	5	5	5	-	-
10/31/07	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	-	-
04/23/08	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	-	-
10/20/08	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	-	-
04/22/09	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	-	-	-
10/26/09	2.5	2.5	2.5	2.5	2.5	2.5	-	-	-	2.5	2.5	-	-
04/22/10	2.5	2.5	2.5	2.5	2.5	2.5	-	-	2.5	2.5	2.5	-	-
10/27/10	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
04/29/11	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
10/25/11	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
04/20/12	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
10/24/12				2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5

2) Set the total number of data values for background wells (through the previous sampling event) equal to 'n' = 25.
Use 1/2 of the method detection limit to calculate the Total Poisson Count of the Sum (T_n).

$n = 68$
$T_{n1} = 146.1$

3) Using Gibbons' formula, calculate the upper Poisson Prediction limit T^*_k:

$$T^*_k = cT_{n1} + ct^2/2 + ct[T_{n1}(1+1/c) + t^2/4]^{0.5}$$

where c = k/n
and where k = the number of future predicted measurements (one per well during the current sampling event)
and where t = the upper 99th percentile of the t-distribution with (n-1) degrees of freedom (Table 6 of the IFG).

$k = 10$
$n = 68$
$T_{n1} = 146.1$
$t[67,.01] = 2.3863$
$c = 0.1471$
$T_{n2} = 25$
$T^*_k = 33.8$

4) Compare the *Poisson Prediction Limit* (T^*_k) to the *Sum of the Concentrations Detected* (T_{n2}) in the wells during the most recent sampling event.
Since the Poisson Prediction Limit was not exceeded, there is no evidence of contamination.

White Oak Landfill
Haywood County, North Carolina
BLE Project Number J12-1957-31

Compound: **Total Thallium**
MCL (µg/l): Not Established
Method: Poisson Prediction Limits
Background: MW-11S, MW-11D, & MW-14

	MW-11S	MW-11D	MW-14	MW-1A	MW-2	MW-2D	MW-3	MW-3D	MW-4A	MW-8	MW-15	MW-16	MW-17	MDL
04/24/00	**2**	NS	NS	ND	**3**	**2**	**4**	ND	**2**	**5**	NS	NP	NP	**2**
06/26/00	ND	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	**2**
07/26/00	ND	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	**2**
09/18/00	NS	NS	NS	NT	NT	NS	NS	NS	NT	NS	NS	NP	NP	**20**
04/09/01	**40**	ND	NS	ND	ND	ND	ND	ND	ND	ND	NS	NP	NP	**2**
09/18/01	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	**2**
10/29/01	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	**2**
01/30/02	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	**2**
02/28/02	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	**20**
04/15/02	**40**	ND	NS	ND	ND	ND	ND	ND	ND	ND	NS	NP	NP	**2**
09/26/02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**65**	NP	NP	**2**
04/28/03	ND	ND	ND	**1.6**	ND	ND	ND	ND	**1.4**	ND	**15**	NP	NP	**1**
10/30/03	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**10**
04/20/04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**10**
10/21/04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**10**
04/18/05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**10**
10/13/05	**22**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**10**
04/25/06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**10**
10/20/06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**10**
04/25/07	ND	ND	ND	ND	ND	**35**	ND	ND	ND	ND	ND	NP	NP	**5.5**
10/31/07	**11.6**	ND	ND	ND	ND	ND	ND	ND	ND	**9.5**	ND	NP	NP	**5.5**
04/23/08	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**5.5**
10/20/08	**7.2**	ND	ND	ND	ND	ND	ND	**6.1**	ND	ND	ND	NP	NP	**5.4**
04/22/09	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NP	NP	**5.4**
10/26/09	ND	ND	ND	ND	ND	ND	NS	NS	NS	ND	ND	NP	NP	**5.4**
04/22/10	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND	NP	NP	**5.4**
10/27/10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**5.4**
04/29/11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**5.4**
10/25/11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**5.4**
04/20/12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**5.4**
10/24/12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**5.4**

1) If not detected (ND), use half of the detection limit.

04/24/00	2	-	-	1	3	2	4	1	2	5	-	-	-
06/26/00	1	1	-	-	-	-	-	-	-	-	-	-	-
07/26/00	1	1	-	-	-	-	-	-	-	-	-	-	-
09/18/00	-	-	-	-	-	-	-	-	-	-	-	-	-
04/09/01	40	1	-	1	1	1	1	1	1	1	-	-	-
09/18/01	-	-	-	-	-	-	-	-	-	-	-	-	-
10/29/01	-	-	-	-	-	-	-	-	-	-	-	-	-
01/30/02	-	-	-	-	-	-	-	-	-	-	-	-	-
02/28/02	-	-	-	-	-	-	-	-	-	-	-	-	-
04/15/02	40	1	-	1	1	1	1	1	1	1	-	-	-
09/26/02	1	1	1	1	1	1	1	1	1	1	65	-	-
04/28/03	0.5	0.5	0.5	1.6	0.5	0.5	0.5	0.5	1.4	0.5	15	-	-
10/30/03	5	5	-	5	5	5	5	5	5	5	5	-	-
04/20/04	5	5	5	5	5	5	5	5	5	5	5	-	-
10/21/04	5	5	5	5	5	5	5	5	5	5	5	-	-
04/18/05	5	5	5	5	5	5	5	5	5	5	5	-	-
10/13/05	22	5	5	5	5	5	5	5	5	5	5	-	-
04/25/06	5	5	5	5	5	5	5	5	5	5	5	-	-
10/20/06	5	5	5	5	5	5	5	5	5	5	5	-	-
04/25/07	2.75	2.75	2.75	2.75	2.75	35	2.75	2.75	2.75	2.75	2.75	-	-
10/31/07	11.6	2.75	2.75	2.75	2.75	2.75	2.75	2.75	2.75	9.5	2.75	-	-
04/23/08	2.75	2.75	2.75	2.75	2.75	2.75	2.75	2.75	2.75	2.75	2.75	-	-
10/20/08	7.2	2.7	2.7	2.7	2.7	2.7	2.7	6.1	2.7	2.7	2.7	-	-
04/22/09	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	-	-	-
10/26/09	2.7	2.7	2.7	2.7	2.7	2.7	-	-	-	2.7	2.7	-	-
04/22/10	2.7	2.7	2.7	2.7	2.7	2.7	-	-	2.7	2.7	2.7	-	-
10/27/10	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
04/29/11	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
10/25/11	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
04/20/12	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
10/24/12				2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7

2) Set the total number of data values for background wells (through the previous sampling event) equal to 'n' = 25.
Use 1/2 of the method detection limit to calculate the Total Poisson Count of the Sum (T_n).

$n = 68$
$T_{n1} = 312.4$

3) Using Gibbons' formula, calculate the upper Poisson Prediction limit T^*_k:

$$T^*_k = cT_{n1} + ct^2/2 + ct[T_{n1}(1+1/c) + t^2/4]^{0.5}$$

where c = k/n
and where k = the number of future predicted measurements (one per well during the current sampling event)
and where t = the upper 99th percentile of the t-distribution with (n-1) degrees of freedom (Table 6 of the IFG).

$k = 10$
$n = 68$
$T_{n1} = 312.4$
$t[67,.01] = 2.3863$
$c = 0.1471$
$T_{n2} = 27$
$T^*_k = 63.7$

4) Compare the *Poisson Prediction Limit* (T^*_k) to the *Sum of the Concentrations Detected* (T_{n2}) in the wells during the most recent sampling event.
Since the Poisson Prediction Limit was not exceeded, there is no evidence of contamination.

White Oak Landfill
Haywood County, North Carolina
BLE Project Number J12-1957-31

Compound: **Total Vanadium**
NC MCL (µg/l): Not Established
Method: Kruskal-Wallis
Background: MW-11S, MW-11D, & MW-14

	MW-11S	MW-11D	MW-14	MW-1A	MW-2	MW-2D	MW-3	MW-3D	MW-4A	MW-8	MW-15	MW-16	MW-17	MDL
04/24/00	**17**	NS	NS	**19**	**32**	**21**	ND	**29**	**8.9**	**78**	NS	NP	NP	**5**
06/26/00	**40**	**6.3**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	**5**
07/26/00	**45**	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	**5**
09/18/00	NS	NS	NS	NT	NT	NS	NS	NS	NT	NS	NS	NP	NP	**40**
04/09/01	**250**	**1.4**	NS	**13**	**19**	**9.3**	ND	**24**	**41**	**230**	NS	NP	NP	**5**
09/18/01	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	**5**
10/29/01	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	**5**
01/30/02	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	**5**
02/28/02	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	**40**
04/15/02	**240**	ND	NS	ND	ND	**11**	**21**	**14**	**69**	**260**	NS	NP	NP	**5**
09/26/02	**58**	**16**	**44**	**640**	ND	ND	ND	**42**	**50**	**310**	**1000**	NP	NP	**5**
04/28/03	**89**	ND	**9.6**	**170**	**6.8**	**6.8**	ND	ND	**37**	**230**	**130**	NP	NP	**5**
10/30/03	**54**	ND	NT	**6.6**	**16**	ND	ND	ND	**92**	**14**	**200**	NP	NP	**5**
04/20/04	**55**	ND	ND	**45**	**25**	ND	ND	**13**	**5.1**	**240**	**88**	NP	NP	**5**
10/21/04	**41**	ND	ND	**18**	ND	ND	ND	ND	ND	**160**	**210**	NP	NP	**5**
04/18/05	**85**	ND	ND	**680**	**5.4**	ND	ND	ND	ND	**240**	**110**	NP	NP	**5**
10/13/05	**82**	ND	ND	**210**	**8.9**	ND	ND	ND	ND	**170**	**82**	NP	NP	**5**
04/25/06	**110**	ND	ND	ND	ND	ND	ND	ND	ND	**120**	**85**	NP	NP	**40**
10/20/06	**79**	ND	ND	**28**	ND	ND	ND	ND	**23**	ND	**30**	NP	NP	**5**
04/25/07	**43**	ND	ND	ND	ND	**300**	ND	ND	ND	ND	**26**	NP	NP	**25**
10/31/07	**89**	ND	**8.8**	**14.7**	**20**	ND	ND	ND	**8.6**	**103**	**48.2**	NP	NP	**5**
04/23/08	**26.1**	ND	**11.4**	**9.7**	**10.1**	ND	ND	**5.1**	**9.7**	**10**	**23.1**	NP	NP	**5**
10/20/08	**79**	ND	**15.1**	**15.8**	ND	ND	ND	ND	**5.4**	ND	**14.8**	NP	NP	**5**
04/22/09	**16**	ND	**32.7**	**19.8**	**7.7**	ND	ND	ND	**13.3**	ND	NS	NP	NP	**5**
10/26/09	**17.9**	ND	ND	**5.3**	**33.6**	ND	NS	NS	NS	**12.2**	**11.9**	NP	NP	**5**
04/22/10	**27.9**	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND	NP	NP	**5**
10/27/10	**17.4**	ND	ND	**6.9**	ND	ND	**14.2**	**7.1**	ND	ND	**5.9**	ND	ND	**5**
04/29/11	**15.8**	ND	**5.1**	ND	ND	ND	ND	ND	ND	ND	**5.5**	**7.3**	ND	**5**
10/25/11	**25.6**	ND	ND	**23**	ND	ND	**15.1**	ND	ND	**9.7**	**6.3**	ND	ND	**5**
04/20/12	**44.3**	ND	ND	ND	ND	ND	**10**	ND	ND	ND	ND	**15**	ND	**5**
10/24/12	**59**	ND	ND	**5.9**	ND	ND	ND	ND	ND	ND	ND	ND	ND	**5**
N_i	26	25	20	24	24	24	22	22	23	24	20	5	5	
sum of rank values (R_i)	5735.0	1991.5	2141.5	3942.0	2879.0	2250.0	1966.5	2308.0	3024.0	4052.5	3802.0	543.0	345.0	
avg rank value (Rbar)	220.6	79.7	107.1	164.3	120.0	93.8	89.4	104.9	131.5	168.9	190.1	108.6	69.0	

	Number of each rank value													Rank Value
rank value of NDs =	0	22	13	6	13	19	18	15	11	9	3	3	5	69
rank value of 1.4s =	0	1	0	0	0	0	0	0	0	0	0	0	0	138
rank value of 5.1s =	0	0	1	0	0	0	0	1	1	0	0	0	0	140
rank value of 5.3s =	0	0	0	1	0	0	0	0	0	0	0	0	0	142
rank value of 5.4s =	0	0	0	0	1	0	0	0	1	0	0	0	0	143.5
rank value of 5.5s =	0	0	0	0	0	0	0	0	0	0	1	0	0	145
rank value of 5.9s =	0	0	0	1	0	0	0	0	0	0	1	0	0	146.5
rank value of 6.3s =	0	1	0	0	0	0	0	0	0	0	1	0	0	148.5
rank value of 6.6s =	0	0	0	1	0	0	0	0	0	0	0	0	0	150
rank value of 6.8s =	0	0	0	0	1	1	0	0	0	0	0	0	0	151.5
rank value of 6.9s =	0	0	0	1	0	0	0	0	0	0	0	0	0	153
rank value of 7.1s =	0	0	0	0	0	0	0	1	0	0	0	0	0	154
rank value of 7.3s =	0	0	0	0	0	0	0	0	0	0	0	1	0	155
rank value of 7.7s =	0	0	0	0	1	0	0	0	0	0	0	0	0	156
rank value of 8.6s =	0	0	0	0	0	0	0	0	1	0	0	0	0	157
rank value of 8.8s =	0	0	1	0	0	0	0	0	0	0	0	0	0	158
rank value of 8.9s =	0	0	0	0	1	0	0	0	1	0	0	0	0	159.5
rank value of 9.3s =	0	0	0	0	0	1	0	0	0	0	0	0	0	161
rank value of 9.6s =	0	0	1	0	0	0	0	0	0	0	0	0	0	162
rank value of 9.7s =	0	0	0	1	0	0	0	0	1	1	0	0	0	164
rank value of 10s =	0	0	0	0	0	0	1	0	0	1	0	0	0	166.5
rank value of 10.1s =	0	0	0	0	1	0	0	0	0	0	0	0	0	168
rank value of 11s =	0	0	0	0	0	1	0	0	0	0	0	0	0	169
rank value of 11.4s =	0	0	1	0	0	0	0	0	0	0	0	0	0	170
rank value of 11.9s =	0	0	0	0	0	0	0	0	0	0	1	0	0	171
rank value of 12.2s =	0	0	0	0	0	0	0	0	0	1	0	0	0	172
rank value of 13s =	0	0	0	1	0	0	0	1	0	0	0	0	0	173.5

rank value of 13.3s =	0	0	0	0	0	0	0	0	1	0	0	0	0	175
rank value of 14s =	0	0	0	0	0	0	0	1	0	1	0	0	0	176.5
rank value of 14.2s =	0	0	0	0	0	0	1	0	0	0	0	0	0	178
rank value of 14.7s =	0	0	0	1	0	0	0	0	0	0	0	0	0	179
rank value of 14.8s =	0	0	0	0	0	0	0	0	0	0	1	0	0	180
rank value of 15s =	0	0	0	0	0	0	0	0	0	0	0	1	0	181
rank value of 15.1s =	0	0	1	0	0	0	1	0	0	0	0	0	0	182.5
rank value of 15.8s =	1	0	0	1	0	0	0	0	0	0	0	0	0	184.5
rank value of 16s =	1	1	0	0	1	0	0	0	0	0	0	0	0	187
rank value of 17s =	1	0	0	0	0	0	0	0	0	0	0	0	0	189
rank value of 17.4s =	1	0	0	0	0	0	0	0	0	0	0	0	0	190
rank value of 17.9s =	1	0	0	0	0	0	0	0	0	0	0	0	0	191
rank value of 18s =	0	0	0	1	0	0	0	0	0	0	0	0	0	192
rank value of 19s =	0	0	0	1	1	0	0	0	0	0	0	0	0	193.5
rank value of 19.8s =	0	0	0	1	0	0	0	0	0	0	0	0	0	195
rank value of 20s =	0	0	0	0	1	0	0	0	0	0	0	0	0	196
rank value of 21s =	0	0	0	0	0	1	1	0	0	0	0	0	0	197.5
rank value of 23s =	0	0	0	1	0	0	0	0	1	0	0	0	0	199.5
rank value of 23.1s =	0	0	0	0	0	0	0	0	0	0	1	0	0	201
rank value of 24s =	0	0	0	0	0	0	0	1	0	0	0	0	0	202
rank value of 25s =	0	0	0	0	1	0	0	0	0	0	0	0	0	203
rank value of 25.6s =	1	0	0	0	0	0	0	0	0	0	0	0	0	204
rank value of 26s =	0	0	0	0	0	0	0	0	0	0	1	0	0	205
rank value of 26.1s =	1	0	0	0	0	0	0	0	0	0	0	0	0	206
rank value of 27.9s =	1	0	0	0	0	0	0	0	0	0	0	0	0	207
rank value of 28s =	0	0	0	1	0	0	0	0	0	0	0	0	0	208
rank value of 29s =	0	0	0	0	0	0	0	1	0	0	0	0	0	209
rank value of 30s =	0	0	0	0	0	0	0	0	0	0	1	0	0	210
rank value of 32s =	0	0	0	0	1	0	0	0	0	0	0	0	0	211
rank value of 32.7s =	0	0	1	0	0	0	0	0	0	0	0	0	0	212
rank value of 33.6s =	0	0	0	0	1	0	0	0	0	0	0	0	0	213
rank value of 37s =	0	0	0	0	0	0	0	0	1	0	0	0	0	214
rank value of 40s =	1	0	0	0	0	0	0	0	0	0	0	0	0	215
rank value of 41s =	1	0	0	0	0	0	0	0	1	0	0	0	0	216.5
rank value of 42s =	0	0	0	0	0	0	0	1	0	0	0	0	0	218
rank value of 43s =	1	0	0	0	0	0	0	0	0	0	0	0	0	219
rank value of 44s =	0	0	1	0	0	0	0	0	0	0	0	0	0	220
rank value of 44.3s =	1	0	0	0	0	0	0	0	0	0	0	0	0	221
rank value of 45s =	1	0	0	1	0	0	0	0	0	0	0	0	0	222.5
rank value of 48.2s =	0	0	0	0	0	0	0	0	0	0	1	0	0	224
rank value of 50s =	0	0	0	0	0	0	0	0	1	0	0	0	0	225
rank value of 54s =	1	0	0	0	0	0	0	0	0	0	0	0	0	226
rank value of 55s =	1	0	0	0	0	0	0	0	0	0	0	0	0	227
rank value of 58s =	1	0	0	0	0	0	0	0	0	0	0	0	0	228
rank value of 59s =	1	0	0	0	0	0	0	0	0	0	0	0	0	229
rank value of 69s =	0	0	0	0	0	0	0	0	1	0	0	0	0	230
rank value of 78s =	0	0	0	0	0	0	0	0	0	1	0	0	0	231
rank value of 79s =	2	0	0	0	0	0	0	0	0	0	0	0	0	232.5
rank value of 82s =	1	0	0	0	0	0	0	0	0	0	1	0	0	234.5
rank value of 85s =	1	0	0	0	0	0	0	0	0	0	1	0	0	236.5
rank value of 88s =	0	0	0	0	0	0	0	0	0	0	1	0	0	238
rank value of 89s =	2	0	0	0	0	0	0	0	0	0	0	0	0	239.5
rank value of 92s =	0	0	0	0	0	0	0	0	1	0	0	0	0	241
rank value of 103s =	0	0	0	0	0	0	0	0	0	1	0	0	0	242
rank value of 110s =	1	0	0	0	0	0	0	0	0	0	1	0	0	243.5
rank value of 120s =	0	0	0	0	0	0	0	0	0	1	0	0	0	245
rank value of 130s =	0	0	0	0	0	0	0	0	0	0	1	0	0	246
rank value of 160s =	0	0	0	0	0	0	0	0	0	1	0	0	0	247
rank value of 170s =	0	0	0	1	0	0	0	0	0	1	0	0	0	248.5
rank value of 200s =	0	0	0	0	0	0	0	0	0	0	1	0	0	250
rank value of 210s =	0	0	0	1	0	0	0	0	0	0	1	0	0	251.5
rank value of 230s =	0	0	0	0	0	0	0	0	0	2	0	0	0	253.5
rank value of 240s =	1	0	0	0	0	0	0	0	0	2	0	0	0	256
rank value of 250s =	1	0	0	0	0	0	0	0	0	0	0	0	0	258
rank value of 260s =	0	0	0	0	0	0	0	0	0	1	0	0	0	259
rank value of 300s =	0	0	0	0	0	1	0	0	0	0	0	0	0	260
rank value of 310s =	0	0	0	0	0	0	0	0	0	1	0	0	0	261
rank value of 640s =	0	0	0	1	0	0	0	0	0	0	0	0	0	262
rank value of 680s =	0	0	0	1	0	0	0	0	0	0	0	0	0	263
rank value of 1000s =	0	0	0	0	0	0	0	0	0	0	1	0	0	264
n =	**26**	**25**	**20**	**24**	**24**	**24**	**22**	**22**	**23**	**24**	**20**	**5**	**5**	

Sum of rank value calculations

0	1518	897	414	897	1311	1242	1035	759	621	207	207	345
0	138	0	0	0	0	0	0	0	0	0	0	0

0	0	140	0	0	0	0	140	140	0	0	0	0
0	0	0	142	0	0	0	0	0	0	0	0	0
0	0	0	0	143.5	0	0	0	143.5	0	0	0	0
0	0	0	0	0	0	0	0	0	0	145	0	0
0	0	0	146.5	0	0	0	0	0	0	146.5	0	0
0	148.5	0	0	0	0	0	0	0	0	148.5	0	0
0	0	0	150	0	0	0	0	0	0	0	0	0
0	0	0	0	151.5	151.5	0	0	0	0	0	0	0
0	0	0	153	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	154	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	155	0
0	0	0	0	156	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	157	0	0	0	0
0	0	158	0	0	0	0	0	0	0	0	0	0
0	0	0	0	159.5	0	0	0	159.5	0	0	0	0
0	0	0	0	0	161	0	0	0	0	0	0	0
0	0	162	0	0	0	0	0	0	0	0	0	0
0	0	0	164	0	0	0	0	164	164	0	0	0
0	0	0	0	0	0	166.5	0	0	166.5	0	0	0
0	0	0	0	168	0	0	0	0	0	0	0	0
0	0	0	0	0	169	0	0	0	0	0	0	0
0	0	170	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	171	0	0
0	0	0	0	0	0	0	0	0	172	0	0	0
0	0	0	173.5	0	0	0	173.5	0	0	0	0	0
0	0	0	0	0	0	0	0	175	0	0	0	0
0	0	0	0	0	0	0	176.5	0	176.5	0	0	0
0	0	0	0	0	0	178	0	0	0	0	0	0
0	0	0	179	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	180	0	0
0	0	0	0	0	0	0	0	0	0	0	181	0
0	0	182.5	0	0	0	182.5	0	0	0	0	0	0
184.5	0	0	184.5	0	0	0	0	0	0	0	0	0
187	187	0	0	187	0	0	0	0	0	0	0	0
189	0	0	0	0	0	0	0	0	0	0	0	0
190	0	0	0	0	0	0	0	0	0	0	0	0
191	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	192	0	0	0	0	0	0	0	0	0
0	0	0	193.5	193.5	0	0	0	0	0	0	0	0
0	0	0	195	0	0	0	0	0	0	0	0	0
0	0	0	0	196	0	0	0	0	0	0	0	0
0	0	0	0	0	197.5	197.5	0	0	0	0	0	0
0	0	0	199.5	0	0	0	0	199.5	0	0	0	0
0	0	0	0	0	0	0	0	0	0	201	0	0
0	0	0	0	0	0	0	202	0	0	0	0	0
0	0	0	0	203	0	0	0	0	0	0	0	0
204	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	205	0	0
206	0	0	0	0	0	0	0	0	0	0	0	0
207	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	208	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	209	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	210	0	0
0	0	0	0	211	0	0	0	0	0	0	0	0
0	0	212	0	0	0	0	0	0	0	0	0	0
0	0	0	0	213	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	214	0	0	0	0
215	0	0	0	0	0	0	0	0	0	0	0	0
216.5	0	0	0	0	0	0	0	216.5	0	0	0	0
0	0	0	0	0	0	0	218	0	0	0	0	0
219	0	0	0	0	0	0	0	0	0	0	0	0
0	0	220	0	0	0	0	0	0	0	0	0	0
221	0	0	0	0	0	0	0	0	0	0	0	0
222.5	0	0	222.5	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	224	0	0
0	0	0	0	0	0	0	0	225	0	0	0	0
226	0	0	0	0	0	0	0	0	0	0	0	0
227	0	0	0	0	0	0	0	0	0	0	0	0
228	0	0	0	0	0	0	0	0	0	0	0	0
229	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	230	0	0	0	0
0	0	0	0	0	0	0	0	0	231	0	0	0
465	0	0	0	0	0	0	0	0	0	0	0	0
234.5	0	0	0	0	0	0	0	0	0	234.5	0	0
236.5	0	0	0	0	0	0	0	0	0	236.5	0	0
0	0	0	0	0	0	0	0	0	0	238	0	0
479	0	0	0	0	0	0	0	0	0	0	0	0

	0	0	0	0	0	0	0	0	241	0	0	0	0
	0	0	0	0	0	0	0	0	0	242	0	0	0
	243.5	0	0	0	0	0	0	0	0	0	243.5	0	0
	0	0	0	0	0	0	0	0	0	245	0	0	0
	0	0	0	0	0	0	0	0	0	0	246	0	0
	0	0	0	0	0	0	0	0	0	247	0	0	0
	0	0	0	248.5	0	0	0	0	0	248.5	0	0	0
	0	0	0	0	0	0	0	0	0	0	250	0	0
	0	0	0	251.5	0	0	0	0	0	0	251.5	0	0
	0	0	0	0	0	0	0	0	0	507	0	0	0
	256	0	0	0	0	0	0	0	0	512	0	0	0
	258	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	259	0	0	0
	0	0	0	0	0	260	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	261	0	0	0
	0	0	0	262	0	0	0	0	0	0	0	0	0
	0	0	0	263	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	264	0	0
sum of rank values (R_i)	**5735**	**1991.5**	**2141.5**	**3942**	**2879**	**2250**	**1966.5**	**2308**	**3024**	**4052.5**	**3802**	**543**	**345**

Compute the Kruskal-Wallis statistic:

$$H = \{[12/N(N+1)] * [\Sigma^{K}_{i=1} (R_i^2)/N_i]\} -3(N+1)$$

Well =	**Background**	**MW-1A**	**MW-2**	**MW-2D**	**MW-3**	**MW-3D**	**MW-4A**	**MW-8**	**MW-15**	**MW-16**	**MW-17**
Ri^2/N_i =	1371513.0	647474	345360	210938	175778	242130	397590	684282	722760	58970	23805

$N_{i\ bg}$ = 71
N = 264
H = 42.15

Adjust H for ties:

T_i = 3E+06 sum of T1..T6

$H' = H/(1-(T_i/(N^3-N)))$
H' = 49.00
Chi-square = 18.31

Compare the calculated value H' to the tabulated Chi-square value with K-1 = # groups -1 = 17df at the 5% significance level from Table 1 of the IFG. The value is 18.31 which is less than H' =49.00.
Therefore, there is evidence of significant differences between the well groups.
Post-hoc pairwise comparisons are necessary (see below).

Calculate the critical values to compare each compliance well to the background wells:

Critical Value (C_x) = $P(N(N+1)/12)^{0.5} * (1/N_{i\ bg}+1/N_x)^{0.5}$
P = 2.33 Percentile of Standard Normal Distribution
from Table 4 of IFG
N = total sample size
$N_{i\ bg}$ = total samples (N_i) of background data
N_x = total samples (N_i) of well x

Difference between average ranks (Dx) = Rbar (well x) - avg Rbar (background)

Well =	MW-1A	MW-2	MW-2D	MW-3	MW-3D	MW-4A	MW-8	**MW-15**	MW-16	MW-17
Rbar (well x) =	164.3	120.0	93.8	89.4	104.9	131.5	168.9	190.1	108.6	69.0
avg Rbar (background) =	139.0	139.0	139.0	139.0	139.0	139.0	139.0	139.0	139.0	139.0
Dx =	25.3	-19.0	-45.2	-49.6	-34.1	-7.5	29.9	51.1	-30.4	-70.0
Cx =	42.0	42.0	42.0	43.4	43.4	42.7	42.0	45.0	82.3	82.3
Statistical Significance ?	No	No	No	No	No	No	No	**Yes**	No	No
If SSI, is current event above MCL?	-	-	-	-	-	-	-	NE	-	-

Compare each difference (Dx) with the corresponding critical value (Cx).
The Dx value for the above indicated wells do exceed the corresponding Cx value.
Therefore, we conclude that the concentration of Total Vanadium averaged over these compliance wells are significantly greater than that of the background wells.
Shewart-CUSUM Control Charts should be performed for each failing well to check for statistical significance.

White Oak Landfill
Haywood County, North Carolina
BLE Project Number J12-1957-31

Compound: **Total Vanadium**
NC MCL (µg/l): Not Established
Method: Shewhart-CUSUM Control Chart

Part 1: Check for Normality

	MW-15	MDL
9/26/2002	**1000**	**5**
4/28/2003	**130**	**5**
10/30/2003	**200**	**5**
4/20/2004	**88**	**5**
10/21/2004	**210**	**5**
4/18/2005	**110**	**5**
10/13/2005	**82**	**5**
4/25/2006	**85**	**40**
10/20/2006	**30**	**5**
4/25/2007	**26**	**25**
10/31/2007	**48.2**	**5**
4/23/2008	**23.1**	**5**
10/20/2008	**14.8**	**5**
4/22/2009	NS	**5**
10/26/2009	**11.9**	**5**
4/22/2010	ND	**5**
10/27/2010	**5.9**	**5**
4/29/2011	**5.5**	**5**
10/25/2011	**6.3**	**5**
4/20/2012	ND	**5**
10/24/2012	ND	**5**

If not detected (ND), use half of the detection limit.

1000	X_i values =	718817480
130		17153.551
200		878942.61
88		-4259.406
210		1183951.3
110		194.10454
82		-10955.84
85		-7088.953
30		-408683.7
26		-478395.2
48.2		-175710.1
23.1		-533609.1
14.8		-714756.8
11.9		-786586.1
2.5		-1052182
5.9		-950152
5.5		-961797.1
6.3		-938601.3
2.5		-1052182
2.5		-1052182

X_{bar} = 104.21
SD = 220.34847
N = 20
$1/N\Sigma_i(X_i-X_{bar})^3$ = 35588529
γ_1= 3.5924813

Since the Coefficient of Skewness of 3.59 is greater than 1.0, the real data appear to be significantly skewed.
Do not assume that the data follow a Normal distribution.
Perform the Skewness Test on the natural log of the values.

ln = 6.9077553	X_i values =	44.347636
4.8675345		3.3709561
5.2983174		7.1911087
4.4773368		1.3646873
5.3471075		7.7503283
4.7004804		2.3651116
4.4067192		1.1202803
4.4426513		1.2406248
3.4011974		3.615E-05
3.2580965		-0.001332
3.875359		0.1304976
3.1398326		-0.011899
2.6946272		-0.30551
2.4765384		-0.708767
0.9162907		-14.73934
1.7749524		-4.043856
1.7047481		-4.602342
1.8405496		-3.564638
0.9162907		-14.73934

0.9162907	-14.73934

X_{bar} = 3.3681338
SD = 1.6998784
N = 20
$1/N\Sigma_i(X_i-X_{bar})^3$ = 0.5712453
γ_1= 0.1255983

Since the Coefficient of Skewness of 0.13 is less than 1.0, the data appear not to be significantly skewed. Proceed with further statistical tests using the log-transformed values shown above.

Part 2: Shewhart-CUSUM Control Chart

Date	MW-15	MDL	Data for Testing
9/26/2002	**1000**	5	6.9077553
4/28/2003	**130**	5	4.8675345
10/30/2003	**200**	5	5.2983174
4/20/2004	**88**	5	4.4773368
10/21/2004	**210**	5	5.3471075
4/18/2005	**110**	5	4.7004804
10/13/2005	**82**	5	4.4067192
4/25/2006	**85**	40	4.4426513
10/20/2006	**30**	5	3.4011974
4/25/2007	**26**	25	3.2580965
10/31/2007	**48.2**	5	3.875359
4/23/2008	**23.1**	5	3.1398326
10/20/2008	**14.8**	5	2.6946272
4/22/2009	NS	5	-
10/26/2009	**11.9**	5	2.4765384
4/22/2010	ND	5	0.9162907
10/27/2010	**5.9**	5	1.7749524
4/29/2011	**5.5**	5	1.7047481
10/25/2011	**6.3**	5	1.8405496
4/20/2012	ND	5	0.9162907
10/24/2012	ND	5	0.9162907

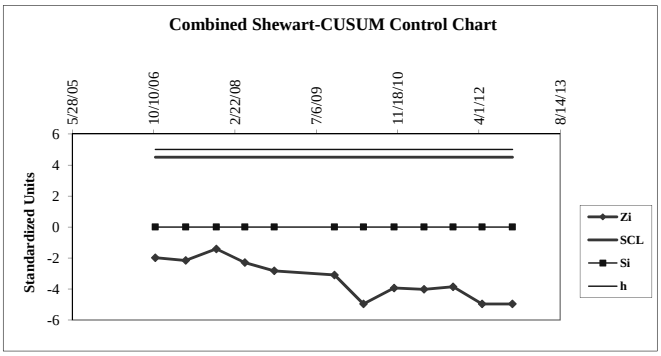
Compute the mean and standard deviation of the historical data:

5.0559878 = x_{mean} (Mean of N1-N8 historical data)
0.8338367 = s (Standard Deviation of N1-N8 historical data)
1 = k (constant, reference value)
5 = h (constant, upper control limit for the CUSUM scheme)
4.5 = SCL (Constant, upper Shewhart Control Limit)

Compute the standardized mean (Z_i) and the cumulative sum (S_i) for each concentration.

Date	x_i	Z_i	S_i	h	SCL
			0		
10/20/2006	3.4011974	-1.9845497	0	5	4.5
4/25/2007	3.2580965	-2.1561671	0	5	4.5
10/31/2007	3.875359	-1.4158992	0	5	4.5
4/23/2008	3.1398326	-2.2979981	0	5	4.5
10/20/2008	2.6946272	-2.8319221	0	5	4.5
10/26/2009	2.4765384	-3.0934706	0	5	4.5
4/22/2010	0.9162907	-4.9646376	0	5	4.5
10/27/2010	1.7749524	-3.9348656	0	5	4.5
4/29/2011	1.7047481	-4.0190599	0	5	4.5
10/25/2011	1.8405496	-3.8561964	0	5	4.5
4/20/2012	0.9162907	-4.9646376	0	5	4.5
10/24/2012	0.9162907	-4.9646376	0	5	4.5

Plot Z_i and S_i versus time:



Compare the Z_i and S_i values to their respective control limits of SCL and h.

The limits were not exceeded and do not indicate statistically significant evidence of contamination at the site.

White Oak Landfill
Haywood County, North Carolina
BLE Project Number J12-1957-31

Compound: **Total Zinc**
NC MCL (µg/l): 1000
Method: Kruskal-Wallis
Background: MW-11S, MW-11D, & MW-14

	MW-11S	MW-11D	MW-14	MW-1A	MW-2	MW-2D	MW-3	MW-3D	MW-4A	MW-8	MW-15	MW-16	MW-17	MDL
04/24/00	150	NS	NS	35	48	36	12	43	28	68	NS	NP	NP	10
06/26/00	37	12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	10
07/26/00	65	66	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	10
09/18/00	NS	NS	NS	NT	NT	NS	NS	NS	NT	NS	NS	NP	NP	50
04/09/01	230	130	NS	12	24	18	17	33	75	200	NS	NP	NP	10
09/18/01	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	10
10/29/01	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	10
01/30/02	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	10
02/28/02	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	50
04/15/02	230	16	NS	ND	ND	13	33	38	120	230	NS	NP	NP	10
09/26/02	57	120	110	580	ND	20	ND	56	250	280	4800	NP	NP	10
04/28/03	86	14	31	160	16	ND	ND	ND	81	190	800	NP	NP	10
10/30/03	55	22	NT	17	26	10	ND	ND	140	26	1800	NP	NP	10
04/20/04	55	10	ND	44	30	11	14	19	23	220	770	NP	NP	10
10/21/04	29	ND	ND	17	ND	14	ND	12	15	70	1200	NP	NP	10
04/18/05	83	ND	ND	780	ND	30	13	10	ND	240	1200	NP	NP	10
10/13/05	92	13	12	230	19	25	ND	ND	14	170	800	NP	NP	10
04/25/06	130	ND	88	ND	ND	ND	ND	ND	110	120	780	NP	NP	50
10/20/06	74	ND	20	37	ND	ND	ND	ND	55	ND	200	NP	NP	10
04/25/07	55	21	30	30	22	830	22	15	10	12	200	NP	NP	10
10/31/07	86	ND	66.2	14	37.4	33.3	12	ND	11.6	91.1	336	NP	NP	10
04/23/08	27.3	ND	50.3	12.2	24.4	36.9	ND	10.3	17.5	38.8	138	NP	NP	10
10/20/08	66.5	19.9	59.2	15.3	10.6	29.1	ND	12.4	ND	17.4	71.5	NP	NP	10
04/22/09	23.1	43.5	99.9	25.3	17.9	17.6	10.5	ND	35.2	ND	NS	NP	NP	10
10/26/09	19.6	ND	14.8	ND	37.8	ND	NS	NS	NS	ND	63.8	NP	NP	10
04/22/10	22.2	14.2	ND	ND	ND	ND	NS	NS	ND	ND	24.6	NP	NP	10
10/27/10	19.1	ND	12.3	15	ND	ND	32.4	16.3	ND	ND	60.7	ND	ND	10
04/29/11	25.7	ND	21.9	ND	11.8	23.9	13.7	ND	ND	ND	42.9	20.5	21.5	10
10/25/11	34.5	ND	11.6	23.7	12.8	10.1	32.5	ND	ND	17.7	49.9	15.1	ND	10
04/20/12	47.6	ND	12.5	ND	11.6	10.1	21.1	ND	ND	11.1	30.7	50.8	ND	10
10/24/12	93.4	10.4	11.3	22.4	23.8	ND	10.3	16.1	14.9	12.2	15.7	15.8	ND	10
N_i	26	25	20	24	24	24	22	22	23	24	20	5	5	
sum of rank values (R_i)	5199.5	2424.5	2679.5	3232.5	2602.0	2679.5	1971.0	2002.0	2998.5	3731.5	4539.5	625.0	295.0	
avg rank value (Rbar)	200.0	97.0	134.0	134.7	108.4	111.6	89.6	91.0	130.4	155.5	227.0	125.0	59.0	

	Number of each rank value												Rank Value
rank value of NDs =	0	11	4	6	8	7	9	10	7	6	0	1	4	37
rank value of 10s =	0	1	0	0	0	1	0	1	1	0	0	0	0	75.5
rank value of 10.1s =	0	0	0	0	0	2	0	0	0	0	0	0	0	78.5
rank value of 10.3s =	0	0	0	0	0	0	1	1	0	0	0	0	0	80.5
rank value of 10.4s =	0	1	0	0	0	0	0	0	0	0	0	0	0	82
rank value of 10.5s =	0	0	0	0	0	0	1	0	0	0	0	0	0	83
rank value of 10.6s =	0	0	0	0	1	0	0	0	0	0	0	0	0	84
rank value of 11s =	0	0	0	0	0	1	0	0	0	0	0	0	0	85
rank value of 11.1s =	0	0	0	0	0	0	0	0	0	1	0	0	0	86
rank value of 11.3s =	0	0	1	0	0	0	0	0	0	0	0	0	0	87
rank value of 11.6s =	0	0	1	0	1	0	0	0	1	0	0	0	0	89
rank value of 11.8s =	0	0	0	0	1	0	0	0	0	0	0	0	0	91
rank value of 12s =	0	1	1	1	0	0	2	1	0	1	0	0	0	95
rank value of 12.2s =	0	0	0	1	0	0	0	0	0	1	0	0	0	99.5
rank value of 12.3s =	0	0	1	0	0	0	0	0	0	0	0	0	0	101
rank value of 12.4s =	0	0	0	0	0	0	0	1	0	0	0	0	0	102
rank value of 12.5s =	0	0	1	0	0	0	0	0	0	0	0	0	0	103
rank value of 12.8s =	0	0	0	0	1	0	0	0	0	0	0	0	0	104
rank value of 13s =	0	1	0	0	0	1	1	0	0	0	0	0	0	106
rank value of 13.7s =	0	0	0	0	0	0	1	0	0	0	0	0	0	108
rank value of 14s =	0	1	0	1	0	1	1	0	1	0	0	0	0	111
rank value of 14.2s =	0	1	0	0	0	0	0	0	0	0	0	0	0	114
rank value of 14.8s =	0	0	1	0	0	0	0	0	0	0	0	0	0	115
rank value of 14.9s =	0	0	0	0	0	0	0	0	1	0	0	0	0	116
rank value of 15s =	0	0	0	1	0	0	0	1	1	0	0	0	0	118
rank value of 15.1s =	0	0	0	0	0	0	0	0	0	0	0	1	0	120
rank value of 15.3s =	0	0	0	1	0	0	0	0	0	0	0	0	0	121
rank value of 15.7s =	0	0	0	0	0	0	0	0	0	0	1	0	0	122
rank value of 15.8s =	0	0	0	0	0	0	0	0	0	0	0	1	0	123
rank value of 16s =	0	1	0	0	1	0	0	0	0	0	0	0	0	124.5
rank value of 16.1s =	0	0	0	0	0	0	0	1	0	0	0	0	0	126
rank value of 16.3s =	0	0	0	0	0	0	0	1	0	0	0	0	0	127
rank value of 17s =	0	0	0	2	0	0	1	0	0	0	0	0	0	129
rank value of 17.4s =	0	0	0	0	0	0	0	0	0	1	0	0	0	131
rank value of 17.5s =	0	0	0	0	0	0	0	0	1	0	0	0	0	132
rank value of 17.6s =	0	0	0	0	0	1	0	0	0	0	0	0	0	133
rank value of 17.7s =	0	0	0	0	0	0	0	0	0	1	0	0	0	134
rank value of 17.9s =	0	0	0	0	1	0	0	0	0	0	0	0	0	135
rank value of 18s =	0	0	0	0	0	1	0	0	0	0	0	0	0	136
rank value of 19s =	0	0	0	0	1	0	0	1	0	0	0	0	0	137.5
rank value of 19.1s =	1	0	0	0	0	0	0	0	0	0	0	0	0	139
rank value of 19.6s =	1	0	0	0	0	0	0	0	0	0	0	0	0	140
rank value of 19.9s =	0	1	0	0	0	0	0	0	0	0	0	0	0	141
rank value of 20s =	0	0	1	0	0	1	0	0	0	0	0	0	0	142.5
rank value of 20.5s =	0	0	0	0	0	0	0	0	0	0	0	1	0	144
rank value of 21s =	0	1	0	0	0	0	0	0	0	0	0	0	0	145
rank value of 21.1s =	0	0	0	0	0	0	1	0	0	0	0	0	0	146
rank value of 21.5s =	0	0	0	0	0	0	0	0	0	0	0	0	1	147
rank value of 21.9s =	0	0	1	0	0	0	0	0	0	0	0	0	0	148

rank value of 22s =	0	1	0	0	1	0	1	0	0	0	0	0	0	150
rank value of 22.2s =	1	0	0	0	0	0	0	0	0	0	0	0	0	152
rank value of 22.4s =	0	0	0	1	0	0	0	0	0	0	0	0	0	153
rank value of 23s =	0	0	0	0	0	0	0	0	1	0	0	0	0	154
rank value of 23.1s =	1	0	0	0	0	0	0	0	0	0	0	0	0	155
rank value of 23.7s =	0	0	0	1	0	0	0	0	0	0	0	0	0	156
rank value of 23.8s =	0	0	0	0	1	0	0	0	0	0	0	0	0	157
rank value of 23.9s =	0	0	0	0	0	1	0	0	0	0	0	0	0	158
rank value of 24s =	0	0	0	0	1	0	0	0	0	0	0	0	0	159
rank value of 24.4s =	0	0	0	0	1	0	0	0	0	0	0	0	0	160
rank value of 24.6s =	0	0	0	0	0	0	0	0	0	0	1	0	0	161
rank value of 25s =	0	0	0	0	0	1	0	0	0	0	0	0	0	162
rank value of 25.3s =	0	0	0	1	0	0	0	0	0	0	0	0	0	163
rank value of 25.7s =	1	0	0	0	0	0	0	0	0	0	0	0	0	164
rank value of 26s =	0	0	0	0	1	0	0	0	0	1	0	0	0	165.5
rank value of 27.3s =	1	0	0	0	0	0	0	0	0	0	0	0	0	167
rank value of 28s =	0	0	0	0	0	0	0	0	1	0	0	0	0	168
rank value of 29s =	1	0	0	0	0	0	0	0	0	0	0	0	0	169
rank value of 29.1s =	0	0	0	0	0	1	0	0	0	0	0	0	0	170
rank value of 30s =	0	0	1	1	1	1	0	0	0	0	0	0	0	172.5
rank value of 30.7s =	0	0	0	0	0	0	0	0	0	0	1	0	0	175
rank value of 31s =	0	0	1	0	0	0	0	0	0	0	0	0	0	176
rank value of 32.4s =	0	0	0	0	0	0	1	0	0	0	0	0	0	177
rank value of 32.5s =	0	0	0	0	0	0	1	0	0	0	0	0	0	178
rank value of 33s =	0	0	0	0	0	0	1	1	0	0	0	0	0	179.5
rank value of 33.3s =	0	0	0	0	0	1	0	0	0	0	0	0	0	181
rank value of 34.5s =	1	0	0	0	0	0	0	0	0	0	0	0	0	182
rank value of 35s =	0	0	0	1	0	0	0	0	0	0	0	0	0	183
rank value of 35.2s =	0	0	0	0	0	0	0	0	1	0	0	0	0	184
rank value of 36s =	0	0	0	0	0	1	0	0	0	0	0	0	0	185
rank value of 36.9s =	0	0	0	0	0	1	0	0	0	0	0	0	0	186
rank value of 37s =	1	0	0	1	0	0	0	0	0	0	0	0	0	187.5
rank value of 37.4s =	0	0	0	0	1	0	0	0	0	0	0	0	0	189
rank value of 37.8s =	0	0	0	0	1	0	0	0	0	0	0	0	0	190
rank value of 38s =	0	0	0	0	0	0	0	1	0	0	0	0	0	191
rank value of 38.8s =	0	0	0	0	0	0	0	0	0	1	0	0	0	192
rank value of 42.9s =	0	0	0	0	0	0	0	0	0	0	1	0	0	193
rank value of 43s =	0	0	0	0	0	0	0	1	0	0	0	0	0	194
rank value of 43.5s =	0	1	0	0	0	0	0	0	0	0	0	0	0	195
rank value of 44s =	0	0	0	1	0	0	0	0	0	0	0	0	0	196
rank value of 47.6s =	1	0	0	0	0	0	0	0	0	0	0	0	0	197
rank value of 48s =	0	0	0	0	1	0	0	0	0	0	0	0	0	198
rank value of 49.9s =	0	0	0	0	0	0	0	0	0	0	1	0	0	199
rank value of 50.3s =	0	0	1	0	0	0	0	0	0	0	0	0	0	200
rank value of 50.8s =	0	0	0	0	0	0	0	0	0	0	0	1	0	201
rank value of 55s =	3	0	0	0	0	0	0	0	1	0	0	0	0	203.5
rank value of 56s =	0	0	0	0	0	0	0	1	0	0	0	0	0	206
rank value of 57s =	1	0	0	0	0	0	0	0	0	0	0	0	0	207
rank value of 59.2s =	0	0	1	0	0	0	0	0	0	0	0	0	0	208
rank value of 60.7s =	0	0	0	0	0	0	0	0	0	0	1	0	0	209
rank value of 63.8s =	0	0	0	0	0	0	0	0	0	0	1	0	0	210
rank value of 65s =	1	0	0	0	0	0	0	0	0	0	0	0	0	211
rank value of 66s =	0	1	0	0	0	0	0	0	0	0	0	0	0	212
rank value of 66.2s =	0	0	1	0	0	0	0	0	0	0	0	0	0	213
rank value of 66.5s =	1	0	0	0	0	0	0	0	0	0	0	0	0	214
rank value of 68s =	0	0	0	0	0	0	0	0	0	1	0	0	0	215
rank value of 70s =	0	0	0	0	0	0	0	0	0	1	0	0	0	216
rank value of 71.5s =	0	0	0	0	0	0	0	0	0	0	1	0	0	217
rank value of 74s =	1	0	0	0	0	0	0	0	0	0	0	0	0	218
rank value of 75s =	0	0	0	0	0	0	0	0	1	0	0	0	0	219
rank value of 81s =	0	0	0	0	0	0	0	0	1	0	0	0	0	220
rank value of 83s =	1	0	0	0	0	0	0	0	0	0	0	0	0	221
rank value of 86s =	2	0	0	0	0	0	0	0	0	0	0	0	0	222.5
rank value of 88s =	0	0	1	0	0	0	0	0	0	0	0	0	0	224
rank value of 91.1s =	0	0	0	0	0	0	0	0	0	1	0	0	0	225
rank value of 92s =	1	0	0	0	0	0	0	0	0	0	0	0	0	226
rank value of 93.4s =	1	0	0	0	0	0	0	0	0	0	0	0	0	227
rank value of 99.9s =	0	0	1	0	0	0	0	0	0	0	0	0	0	228
rank value of 110s =	0	0	1	0	0	0	0	0	1	0	0	0	0	229.5
rank value of 120s =	0	1	0	0	0	0	0	0	1	1	0	0	0	232
rank value of 130s =	1	1	0	0	0	0	0	0	0	0	0	0	0	234.5
rank value of 138s =	0	0	0	0	0	0	0	0	0	0	1	0	0	236
rank value of 140s =	0	0	0	0	0	0	0	0	1	0	0	0	0	237
rank value of 150s =	1	0	0	0	0	0	0	0	0	0	0	0	0	238
rank value of 160s =	0	0	0	1	0	0	0	0	0	0	0	0	0	239
rank value of 170s =	0	0	0	0	0	0	0	0	0	1	0	0	0	240
rank value of 190s =	0	0	0	0	0	0	0	0	0	1	0	0	0	241
rank value of 200s =	0	0	0	0	0	0	0	0	0	1	2	0	0	243
rank value of 220s =	0	0	0	0	0	0	0	0	0	1	0	0	0	245
rank value of 230s =	2	0	0	1	0	0	0	0	0	1	0	0	0	247.5
rank value of 240s =	0	0	0	0	0	0	0	0	0	1	0	0	0	250
rank value of 250s =	0	0	0	0	0	0	0	0	1	0	0	0	0	251
rank value of 280s =	0	0	0	0	0	0	0	0	0	1	0	0	0	252
rank value of 336s =	0	0	0	0	0	0	0	0	0	0	1	0	0	253
rank value of 580s =	0	0	0	1	0	0	0	0	0	0	0	0	0	254
rank value of 770s =	0	0	0	0	0	0	0	0	0	0	1	0	0	255
rank value of 780s =	0	0	0	1	0	0	0	0	0	0	1	0	0	256.5
rank value of 800s =	0	0	0	0	0	0	0	0	0	0	2	0	0	258.5
rank value of 830s =	0	0	0	0	0	1	0	0	0	0	0	0	0	260
rank value of 1200s =	0	0	0	0	0	0	0	0	0	0	2	0	0	261.5
rank value of 1800s =	0	0	0	0	0	0	0	0	0	0	1	0	0	263
rank value of 4800s =	0	0	0	0	0	0	0	0	0	0	1	0	0	264
n =	**26**	**25**	**20**	**24**	**24**	**24**	**22**	**22**	**23**	**24**	**20**	**5**	**5**	

Sum of rank value calculations

0	407	148	222	296	259	333	370	259	222	0	37	148
0	75.5	0	0	0	75.5	0	75.5	75.5	0	0	0	0

0	0	0	0	0	157	0	0	0	0	0	0	0
0	0	0	0	0	0	80.5	80.5	0	0	0	0	0
0	82	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	83	0	0	0	0	0	0
0	0	0	0	84	0	0	0	0	0	0	0	0
0	0	0	0	0	85	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	86	0	0	0
0	0	87	0	0	0	0	0	0	0	0	0	0
0	0	89	0	89	0	0	0	89	0	0	0	0
0	0	0	0	91	0	0	0	0	0	0	0	0
0	95	95	95	0	0	190	95	0	95	0	0	0
0	0	0	99.5	0	0	0	0	0	99.5	0	0	0
0	0	101	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	102	0	0	0	0	0
0	0	103	0	0	0	0	0	0	0	0	0	0
0	0	0	0	104	0	0	0	0	0	0	0	0
0	106	0	0	0	106	106	0	0	0	0	0	0
0	0	0	0	0	0	108	0	0	0	0	0	0
0	111	0	111	0	111	111	0	111	0	0	0	0
0	114	0	0	0	0	0	0	0	0	0	0	0
0	0	115	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	116	0	0	0	0
0	0	0	118	0	0	0	118	118	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	120	0
0	0	0	121	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	122	0	0
0	0	0	0	0	0	0	0	0	0	0	123	0
0	124.5	0	0	124.5	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	126	0	0	0	0	0
0	0	0	0	0	0	0	127	0	0	0	0	0
0	0	0	258	0	0	129	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	131	0	0	0
0	0	0	0	0	0	0	0	132	0	0	0	0
0	0	0	0	0	133	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	134	0	0	0
0	0	0	0	135	0	0	0	0	0	0	0	0
0	0	0	0	0	136	0	0	0	0	0	0	0
0	0	0	0	137.5	0	0	137.5	0	0	0	0	0
139	0	0	0	0	0	0	0	0	0	0	0	0
140	0	0	0	0	0	0	0	0	0	0	0	0
0	141	0	0	0	0	0	0	0	0	0	0	0
0	0	142.5	0	0	142.5	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	144	0
0	145	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	146	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	147
0	0	148	0	0	0	0	0	0	0	0	0	0
0	150	0	0	150	0	150	0	0	0	0	0	0
152	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	153	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	154	0	0	0	0
155	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	156	0	0	0	0	0	0	0	0	0
0	0	0	0	157	0	0	0	0	0	0	0	0
0	0	0	0	0	158	0	0	0	0	0	0	0
0	0	0	0	159	0	0	0	0	0	0	0	0
0	0	0	0	160	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	161	0	0
0	0	0	0	0	162	0	0	0	0	0	0	0
0	0	0	163	0	0	0	0	0	0	0	0	0
164	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	165.5	0	0	0	0	165.5	0	0	0
167	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	168	0	0	0	0
169	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	170	0	0	0	0	0	0	0
0	0	172.5	172.5	172.5	172.5	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	175	0	0
0	0	176	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	177	0	0	0	0	0	0
0	0	0	0	0	0	178	0	0	0	0	0	0
0	0	0	0	0	0	179.5	179.5	0	0	0	0	0
0	0	0	0	0	181	0	0	0	0	0	0	0
182	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	183	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	184	0	0	0	0
0	0	0	0	0	185	0	0	0	0	0	0	0
0	0	0	0	0	186	0	0	0	0	0	0	0
187.5	0	0	187.5	0	0	0	0	0	0	0	0	0
0	0	0	0	189	0	0	0	0	0	0	0	0
0	0	0	0	190	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	191	0	0	0	0	0
0	0	0	0	0	0	0	0	0	192	0	0	0
0	0	0	0	0	0	0	0	0	0	193	0	0
0	0	0	0	0	0	0	194	0	0	0	0	0
0	195	0	0	0	0	0	0	0	0	0	0	0
0	0	0	196	0	0	0	0	0	0	0	0	0
197	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	198	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	199	0	0
0	0	200	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	201	0
610.5	0	0	0	0	0	0	0	203.5	0	0	0	0
0	0	0	0	0	0	0	206	0	0	0	0	0
207	0	0	0	0	0	0	0	0	0	0	0	0
0	0	208	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	209	0	0
0	0	0	0	0	0	0	0	0	0	210	0	0
211	0	0	0	0	0	0	0	0	0	0	0	0

0	212	0	0	0	0	0	0	0	0	0	0	0
0	0	213	0	0	0	0	0	0	0	0	0	0
214	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	215	0	0	0
0	0	0	0	0	0	0	0	0	216	0	0	0
0	0	0	0	0	0	0	0	0	0	217	0	0
218	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	219	0	0	0	0
0	0	0	0	0	0	0	0	220	0	0	0	0
221	0	0	0	0	0	0	0	0	0	0	0	0
445	0	0	0	0	0	0	0	0	0	0	0	0
0	0	224	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	225	0	0	0
226	0	0	0	0	0	0	0	0	0	0	0	0
227	0	0	0	0	0	0	0	0	0	0	0	0
0	0	228	0	0	0	0	0	0	0	0	0	0
0	0	229.5	0	0	0	0	0	229.5	0	0	0	0
0	232	0	0	0	0	0	0	232	232	0	0	0
234.5	234.5	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	236	0	0
0	0	0	0	0	0	0	0	237	0	0	0	0
238	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	239	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	240	0	0	0
0	0	0	0	0	0	0	0	0	241	0	0	0
0	0	0	0	0	0	0	0	0	243	486	0	0
0	0	0	0	0	0	0	0	0	245	0	0	0
495	0	0	247.5	0	0	0	0	0	247.5	0	0	0
0	0	0	0	0	0	0	0	0	250	0	0	0
0	0	0	0	0	0	0	0	251	0	0	0	0
0	0	0	0	0	0	0	0	0	252	0	0	0
0	0	0	0	0	0	0	0	0	0	253	0	0
0	0	0	254	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	255	0	0
0	0	0	256.5	0	0	0	0	0	0	256.5	0	0
0	0	0	0	0	0	0	0	0	0	517	0	0
0	0	0	0	0	260	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	523	0	0
0	0	0	0	0	0	0	0	0	0	263	0	0
0	0	0	0	0	0	0	0	0	0	264	0	0
sum of rank values (R_i)	**5199.5**	**2424.5**	**2679.5**	**3232.5**	**2602**	**2679.5**	**1971**	**2002**	**2998.5**	**3731.5**	**4539.5**	**625**	**295**

Compute the Kruskal-Wallis statistic:

$$H = \{[12/N(N+1)] * [\Sigma^{K}_{i=1} (R_i^2)/N_i]\} -3(N+1)$$

Well =	**Background**	**MW-1A**	**MW-2**	**MW-2D**	**MW-3**	**MW-3D**	**MW-4A**	**MW-8**	**MW-15**	**MW-16**	**MW-17**
Ri^2/N_i =	1495241.0	435377	282100	299155	176584	182182	390913	580171	1E+06	78125	17405

$N_{i\,bg}$ = 71
N = 264
H = 57.08

Adjust H for ties:

T_i = 389898 sum of T1..T7

$H' = H/(1-(T_i/(N^3-N)))$
H' = 58.31
Chi-square = 18.31

Compare the calculated value H' to the tabulated Chi-square value with K-1 = # groups -1 = 17df at the 5% significance level from Table 1 of the IFG. The value is 18.31 which is less than H' =58.31.
Therefore, there is evidence of significant differences between the well groups.
Post-hoc pairwise comparisons are necessary (see below).

Calculate the critical values to compare each compliance well to the background wells:

Critical Value (C_x) = $P(N(N+1)/12)^{0.5} * (1/N_{i\,bg}+1/N_x)^{0.5}$
P = 2.33 Percentile of Standard Normal Distribution
from Table 4 of IFG
N = total sample size
$N_{i\,bg}$ = total samples (N_i) of background data
N_x = total samples (N_i) of well x

Difference between average ranks (Dx) = Rbar (well x) - avg Rbar (background)

Well =	MW-1A	MW-2	MW-2D	MW-3	MW-3D	MW-4A	MW-8	**MW-15**	MW-16	MW-17
Rbar (well x) =	134.7	108.4	111.6	89.6	91.0	130.4	155.5	227.0	125.0	59.0
avg Rbar (background) =	145.1	145.1	145.1	145.1	145.1	145.1	145.1	145.1	145.1	145.1
Dx =	-10.4	-36.7	-33.5	-55.5	-54.1	-14.8	10.4	81.9	-20.1	-86.1
Cx =	42.0	42.0	42.0	43.4	43.4	42.7	42.0	45.0	82.3	82.3
Statistical Significance ?	No	No	No	No	No	No	No	**Yes**	No	No
If SSI, is current event above MCL?	-	-	-	-	-	-	-	No	-	-

Compare each difference (Dx) with the corresponding critical value (Cx).
The Dx value for the above indicated wells do exceed the corresponding Cx value.
Therefore, we conclude that the concentration of Total Zinc averaged over these compliance wells are significantly greater than that of the background wells.
Shewart-CUSUM Control Charts should be performed for each failing well to check for statistical significance.

White Oak Landfill
Haywood County, North Carolina
BLE Project Number J12-1957-31

Compound: **Total Zinc**
NC MCL (µg/l): 1000
Method: Shewhart-CUSUM Control Chart

Part 1: Check for Normality

	MW-15	MDL
9/26/2002	**4800**	**10**
4/28/2003	**800**	**10**
10/30/2003	**1800**	**10**
4/20/2004	**770**	**10**
10/21/2004	**1200**	**10**
4/18/2005	**1200**	**10**
10/13/2005	**800**	**10**
4/25/2006	**780**	**50**
10/20/2006	**200**	**10**
4/25/2007	**200**	**10**
10/31/2007	**336**	**10**
4/23/2008	**138**	**10**
10/20/2008	**71.5**	**10**
4/22/2009	NS	**10**
10/26/2009	**63.8**	**10**
4/22/2010	**24.6**	**10**
10/27/2010	**60.7**	**10**
4/29/2011	**42.9**	**10**
10/25/2011	**49.9**	**10**
4/20/2012	**30.7**	**10**
10/24/2012	**15.7**	**10**

If not detected (ND), use half of the detection limit.

	X_i values =
4800	7.049E+10
800	2238323.4
1800	1.446E+09
770	1024497.4
1200	149560631
1200	149560631
800	2238323.4
780	1360620
200	-1.03E+08
200	-1.03E+08
336	-36989280
138	-1.5E+08
71.5	-2.14E+08
63.8	-2.22E+08
24.6	-2.68E+08
60.7	-2.25E+08
42.9	-2.46E+08
49.9	-2.38E+08
30.7	-2.6E+08
15.7	-2.79E+08

X_{bar} = 669.19
SD = 1098.2265
N = 20
$1/N\Sigma_i(X_i-X_{bar})^3$ = 3.495E+09
γ_1= 2.8493674

Since the Coefficient of Skewness of 2.85 is greater than 1.0, the real data appear to be significantly skewed.
Do not assume that the data follow a Normal distribution.
Perform the Skewness Test on the natural log of the values.

ln =	X_i values =
8.4763712	29.472837
6.6846117	2.1826587
7.4955419	9.3685153
6.6463905	1.9953505
7.0900768	4.9358398
7.0900768	4.9358398
6.6846117	2.1826587
6.6592939	2.0573348
5.2983174	-0.000708
5.2983174	-0.000708
5.8171112	0.0793211
4.9272537	-0.097458
4.2696974	-1.396474
4.1557532	-1.868563
3.2027464	-10.42739
4.1059437	-2.104548
3.7588718	-4.319397
3.910021	-3.224904
3.4242627	-7.56629

2.7536607	-18.27012

X_{bar} = 5.3874466
SD = 1.6475031
N = 20
$1/N\Sigma_i(X_i-X_{bar})^3$ = 0.3966899
γ_1= 0.0958047

Since the Coefficient of Skewness of 0.10 is less than 1.0, the data appear not to be significantly skewed. Proceed with further statistical tests using the log-transformed values shown above.

Part 2: Shewhart-CUSUM Control Chart

Date	MW-15	MDL	Data for Testing
9/26/2002	**4800**	10	8.4763712
4/28/2003	**800**	10	6.6846117
10/30/2003	**1800**	10	7.4955419
4/20/2004	**770**	10	6.6463905
10/21/2004	**1200**	10	7.0900768
4/18/2005	**1200**	10	7.0900768
10/13/2005	**800**	10	6.6846117
4/25/2006	**780**	50	6.6592939
10/20/2006	**200**	10	5.2983174
4/25/2007	**200**	10	5.2983174
10/31/2007	**336**	10	5.8171112
4/23/2008	**138**	10	4.9272537
10/20/2008	**71.5**	10	4.2696974
4/22/2009	NS	10	-
10/26/2009	**63.8**	10	4.1557532
4/22/2010	**24.6**	10	3.2027464
10/27/2010	**60.7**	10	4.1059437
4/29/2011	**42.9**	10	3.7588718
10/25/2011	**49.9**	10	3.910021
4/20/2012	**30.7**	10	3.4242627
10/24/2012	**15.7**	10	2.7536607

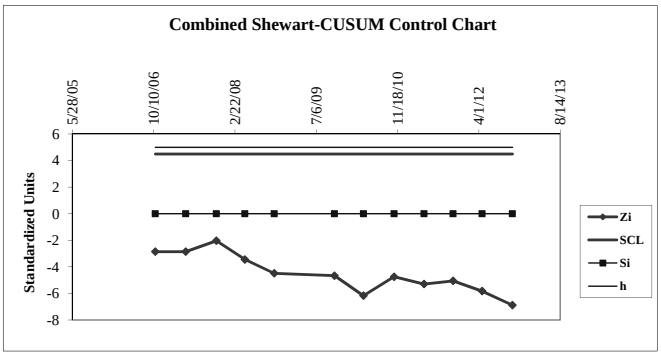
Compute the mean and standard deviation of the historical data:

7.1033718 = x_{mean} (Mean of N1-N8 historical data)
0.6320076 = s (Standard Deviation of N1-N8 historical data)
1 = k (constant, reference value)
5 = h (constant, upper control limit for the CUSUM scheme)
4.5 = SCL (Constant, upper Shewhart Control Limit)

Compute the standardized mean (Z_i) and the cumulative sum (S_i) for each concentration.

Date	x_i	Z_i	S_i	h	SCL
			0		
10/20/2006	5.2983174	-2.8560645	0	5	4.5
4/25/2007	5.2983174	-2.8560645	0	5	4.5
10/31/2007	5.8171112	-2.0351981	0	5	4.5
4/23/2008	4.9272537	-3.4431835	0	5	4.5
10/20/2008	4.2696974	-4.483608	0	5	4.5
10/26/2009	4.1557532	-4.6638974	0	5	4.5
4/22/2010	3.2027464	-6.1718013	0	5	4.5
10/27/2010	4.1059437	-4.7427089	0	5	4.5
4/29/2011	3.7588718	-5.2918667	0	5	4.5
10/25/2011	3.910021	-5.0527095	0	5	4.5
4/20/2012	3.4242627	-5.8213052	0	5	4.5
10/24/2012	2.7536607	-6.8823714	0	5	4.5

Plot Z_i and S_i versus time:



Compare the Z_i and S_i values to their respective control limits of SCL and h.

The limits were not exceeded and do not indicate statistically significant evidence of contamination at the site.

White Oak Landfill
Haywood County, North Carolina
BLE Project Number J12-1957-31

Compound: **Acetone**
MCL (µg/l): 6000
Method: Poisson Prediction Limits
Background: MW-11S, MW-11D, & MW-14

	MW-11S	MW-11D	MW-14	MW-1A	MW-2	MW-2D	MW-3	MW-3D	MW-4A	MW-8	MW-15	MW-16	MW-17	MDL
04/24/00	NT	NS	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	**100**
06/26/00	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	**100**
07/26/00	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	**100**
09/18/00	NS	NS	NS	NT	NT	NS	NS	NS	NT	NS	NS	NP	NP	**100**
04/09/01	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	**100**
09/18/01	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	**100**
10/29/01	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	**100**
01/30/02	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	**100**
02/28/02	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	**100**
04/15/02	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	**100**
09/26/02	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	**100**
04/28/03	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	**100**
10/30/03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**10**
04/20/04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**10**
10/21/04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**10**
04/18/05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**25**
10/13/05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**25**
04/25/06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**25**
10/20/06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**25**
04/25/07	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**25**
10/31/07	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**25**
04/23/08	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**25**
10/20/08	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**140**	NP	NP	**25**
04/22/09	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NP	NP	**25**
10/26/09	ND	ND	ND	ND	ND	ND	NS	NS	NS	ND	ND	NP	NP	**25**
04/22/10	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND	NP	NP	**25**
10/27/10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**25**
04/29/11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**25**
10/25/11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**25**
04/20/12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**25**
10/24/12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**25**

1) If not detected (ND), use half of the detection limit.

04/24/00	-	-	-	-	-	-	-	-	-	-	-	-	-
06/26/00	-	-	-	-	-	-	-	-	-	-	-	-	-
07/26/00	-	-	-	-	-	-	-	-	-	-	-	-	-
09/18/00	-	-	-	-	-	-	-	-	-	-	-	-	-
04/09/01	-	-	-	-	-	-	-	-	-	-	-	-	-
09/18/01	-	-	-	-	-	-	-	-	-	-	-	-	-
10/29/01	-	-	-	-	-	-	-	-	-	-	-	-	-
01/30/02	-	-	-	-	-	-	-	-	-	-	-	-	-
02/28/02	-	-	-	-	-	-	-	-	-	-	-	-	-
04/15/02	-	-	-	-	-	-	-	-	-	-	-	-	-
09/26/02	-	-	-	-	-	-	-	-	-	-	-	-	-
04/28/03	-	-	-	-	-	-	-	-	-	-	-	-	-
10/30/03	5	5	5	5	5	5	5	5	5	5	5	-	-
04/20/04	5	5	5	5	5	5	5	5	5	5	5	-	-
10/21/04	5	5	5	5	5	5	5	5	5	5	5	-	-
04/18/05	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	-	-
10/13/05	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	-	-
04/25/06	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	-	-
10/20/06	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	-	-
04/25/07	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	-	-
10/31/07	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	-	-
04/23/08	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	-	-
10/20/08	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	140	-	-
04/22/09	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	-	-	-
10/26/09	12.5	12.5	12.5	12.5	12.5	12.5	-	-	-	12.5	12.5	-	-
04/22/10	12.5	12.5	12.5	12.5	12.5	12.5	-	-	12.5	12.5	12.5	-	-
10/27/10	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5
04/29/11	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5
10/25/11	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5
04/20/12	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5
10/24/12				12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5

2) Set the total number of data values for background wells (through the previous sampling event) equal to 'n' = 18.
Use 1/2 of the method detection limit to calculate the Total Poisson Count of the Sum (T_n).

$n = 54$
$T_{n1} = 607.5$

3) Using Gibbons' formula, calculate the upper Poisson Prediction limit T^*_k:

$$T^*_k = cT_{n1} + ct^2/2 + ct[T_{n1}(1+1/c) + t^2/4]^{0.5}$$

where c = k/n
and where k = the number of future predicted measurements (one per well during the current sampling event)
and where t = the upper 99th percentile of the t-distribution with (n-1) degrees of freedom (Table 6 of the IFG).

$k = 10$
$n = 54$
$T_{n1} = 607.5$
$t[53,.01] = 2.4016$
$c = 0.1852$
$T_{n2} = 125$
$T^*_k = 140.8$

4) Compare the *Poisson Prediction Limit* (T^*_k) to the *Sum of the Concentrations Detected* (T_{n2}) in the wells during the most recent sampling event.
Since the Poisson Prediction Limit was not exceeded, there is no evidence of contamination.

White Oak Landfill
Haywood County, North Carolina
BLE Project Number J12-1957-31

Compound: **Carbon Disulfide**
MCL (µg/l): 700
Method: Poisson Prediction Limits
Background: MW-11S, MW-11D, & MW-14

	MW-11S	MW-11D	MW-14	MW-1A	MW-2	MW-2D	MW-3	MW-3D	MW-4A	MW-8	MW-15	MW-16	MW-17	MDL
04/24/00	NT	NS	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	**100**
06/26/00	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	**100**
07/26/00	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	**100**
09/18/00	NS	NS	NS	NT	NT	NS	NS	NS	NT	NS	NS	NP	NP	**100**
04/09/01	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	**100**
09/18/01	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	**100**
10/29/01	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	**100**
01/30/02	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	**100**
02/28/02	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	**100**
04/15/02	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	**100**
09/26/02	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	**100**
04/28/03	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	**100**
10/30/03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**10**
04/20/04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**10**
10/21/04	ND	**24**	ND	ND	ND	ND	ND	ND	**15**	ND	ND	NP	NP	**10**
04/18/05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**10**
10/13/05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**10**
04/25/06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**10**
10/20/06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**10**
04/25/07	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**10**
10/31/07	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**2**
04/23/08	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**2**
10/20/08	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**2**
04/22/09	ND	ND	ND	ND	ND	ND	ND	ND	**4.5**	ND	NS	NP	NP	**2**
10/26/09	ND	ND	ND	ND	ND	ND	NS	NS	NS	ND	ND	NP	NP	**2**
04/22/10	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND	NP	NP	**2**
10/27/10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**2**
04/29/11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**2**
10/25/11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**2**
04/20/12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**2**
10/24/12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**2**

1) If not detected (ND), use half of the detection limit.

04/24/00	-	-	-	-	-	-	-	-	-	-	-	-	-
06/26/00	-	-	-	-	-	-	-	-	-	-	-	-	-
07/26/00	-	-	-	-	-	-	-	-	-	-	-	-	-
09/18/00	-	-	-	-	-	-	-	-	-	-	-	-	-
04/09/01	-	-	-	-	-	-	-	-	-	-	-	-	-
09/18/01	-	-	-	-	-	-	-	-	-	-	-	-	-
10/29/01	-	-	-	-	-	-	-	-	-	-	-	-	-
01/30/02	-	-	-	-	-	-	-	-	-	-	-	-	-
02/28/02	-	-	-	-	-	-	-	-	-	-	-	-	-
04/15/02	-	-	-	-	-	-	-	-	-	-	-	-	-
09/26/02	-	-	-	-	-	-	-	-	-	-	-	-	-
04/28/03	-	-	-	-	-	-	-	-	-	-	-	-	-
10/30/03	5	5	5	5	5	5	5	5	5	5	5	-	-
04/20/04	5	5	5	5	5	5	5	5	5	5	5	-	-
10/21/04	5	24	5	5	5	5	5	5	15	5	5	-	-
04/18/05	5	5	5	5	5	5	5	5	5	5	5	-	-
10/13/05	5	5	5	5	5	5	5	5	5	5	5	-	-
04/25/06	5	5	5	5	5	5	5	5	5	5	5	-	-
10/20/06	5	5	5	5	5	5	5	5	5	5	5	-	-
04/25/07	5	5	5	5	5	5	5	5	5	5	5	-	-
10/31/07	1	1	1	1	1	1	1	1	1	1	1	-	-
04/23/08	1	1	1	1	1	1	1	1	1	1	1	-	-
10/20/08	1	1	1	1	1	1	1	1	1	1	1	-	-
04/22/09	1	1	1	1	1	1	1	1	4.5	1	-	-	-
10/26/09	1	1	1	1	1	1	-	-	-	1	1	-	-
04/22/10	1	1	1	1	1	1	-	-	1	1	1	-	-
10/27/10	1	1	1	1	1	1	1	1	1	1	1	1	1
04/29/11	1	1	1	1	1	1	1	1	1	1	1	1	1
10/25/11	1	1	1	1	1	1	1	1	1	1	1	1	1
04/20/12	1	1	1	1	1	1	1	1	1	1	1	1	1
10/24/12				1	1	1	1	1	1	1	1	1	1

2) Set the total number of data values for background wells (through the previous sampling event) equal to 'n' = 18.
Use 1/2 of the method detection limit to calculate the Total Poisson Count of the Sum (T_n).

$n = 54$
$T_{n1} = 169$

3) Using Gibbons' formula, calculate the upper Poisson Prediction limit T^*_k:

$$T^*_k = cT_{n1} + ct^2/2 + ct[T_{n1}(1+1/c) + t^2/4]^{0.5}$$

where c = k/n
and where k = the number of future predicted measurements (one per well during the current sampling event)
and where t = the upper 99th percentile of the t-distribution with (n-1) degrees of freedom (Table 6 of the IFG).

$k = 10$
$n = 54$
$T_{n1} = 169$
$t[53,.01] = 2.4016$
$c = 0.1852$
$T_{n2} = 10$
$T^*_k = 46.5$

4) Compare the *Poisson Prediction Limit* (T^*_k) to the *Sum of the Concentrations Detected* (T_{n2}) in the wells during the most recent sampling event.
Since the Poisson Prediction Limit was not exceeded, there is no evidence of contamination.

White Oak Landfill
Haywood County, North Carolina
BLE Project Number J12-1957-31

Compound: **Chloroethane**
MCL (µg/l): 3000
Method: Poisson Prediction Limits
Background: MW-11S, MW-11D, & MW-14

	MW-11S	MW-11D	MW-14	MW-1A	MW-2	MW-2D	MW-3	MW-3D	MW-4A	MW-8	MW-15	MW-16	MW-17	MDL
04/24/00	NT	NS	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	**10**
06/26/00	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	**10**
07/26/00	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	**10**
09/18/00	NS	NS	NS	NT	NT	NS	NS	NS	NT	NS	NS	NP	NP	**10**
04/09/01	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	**10**
09/18/01	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	**10**
10/29/01	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	**10**
01/30/02	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	**10**
02/28/02	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	**10**
04/15/02	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	**10**
09/26/02	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	**10**
04/28/03	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	**10**
10/30/03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**10**
04/20/04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**10**
10/21/04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**10**
04/18/05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**10**
10/13/05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**10**
04/25/06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**10**
10/20/06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**10**
04/25/07	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**10**
10/31/07	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**1**
04/23/08	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**1**
10/20/08	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**1**
04/22/09	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NP	NP	**1**
10/26/09	ND	ND	ND	ND	ND	ND	NS	NS	NS	ND	ND	NP	NP	**1**
04/22/10	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND	NP	NP	**1**
10/27/10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**1**
04/29/11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**1**
10/25/11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**1**
04/20/12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**1**
10/24/12	ND	ND	ND	ND	**4.4**	ND	ND	ND	ND	ND	ND	ND	ND	**1**

1) If not detected (ND), use half of the detection limit.

04/24/00	-	-	-	-	-	-	-	-	-	-	-	-	-
06/26/00	-	-	-	-	-	-	-	-	-	-	-	-	-
07/26/00	-	-	-	-	-	-	-	-	-	-	-	-	-
09/18/00	-	-	-	-	-	-	-	-	-	-	-	-	-
04/09/01	-	-	-	-	-	-	-	-	-	-	-	-	-
09/18/01	-	-	-	-	-	-	-	-	-	-	-	-	-
10/29/01	-	-	-	-	-	-	-	-	-	-	-	-	-
01/30/02	-	-	-	-	-	-	-	-	-	-	-	-	-
02/28/02	-	-	-	-	-	-	-	-	-	-	-	-	-
04/15/02	-	-	-	-	-	-	-	-	-	-	-	-	-
09/26/02	-	-	-	-	-	-	-	-	-	-	-	-	-
04/28/03	-	-	-	-	-	-	-	-	-	-	-	-	-
10/30/03	5	5	5	5	5	5	5	5	5	5	5	-	-
04/20/04	5	5	5	5	5	5	5	5	5	5	5	-	-
10/21/04	5	5	5	5	5	5	5	5	5	5	5	-	-
04/18/05	5	5	5	5	5	5	5	5	5	5	5	-	-
10/13/05	5	5	5	5	5	5	5	5	5	5	5	-	-
04/25/06	5	5	5	5	5	5	5	5	5	5	5	-	-
10/20/06	5	5	5	5	5	5	5	5	5	5	5	-	-
04/25/07	5	5	5	5	5	5	5	5	5	5	5	-	-
10/31/07	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	-	-
04/23/08	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	-	-
10/20/08	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	-	-
04/22/09	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	-	-	-
10/26/09	0.5	0.5	0.5	0.5	0.5	0.5	-	-	-	0.5	0.5	-	-
04/22/10	0.5	0.5	0.5	0.5	0.5	0.5	-	-	0.5	0.5	0.5	-	-
10/27/10	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
04/29/11	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
10/25/11	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
04/20/12	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
10/24/12				0.5	4.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5

2) Set the total number of data values for background wells (through the previous sampling event) equal to 'n' = 18.
Use 1/2 of the method detection limit to calculate the Total Poisson Count of the Sum (T_n).

$n = 54$
$T_{n1} = 135$

3) Using Gibbons' formula, calculate the upper Poisson Prediction limit T^*_k:

$$T^*_k = cT_{n1} + ct^2/2 + ct[T_{n1}(1+1/c) + t^2/4]^{0.5}$$

where c = k/n
and where k = the number of future predicted measurements (one per well during the current sampling event)
and where t = the upper 99th percentile of the t-distribution with (n-1) degrees of freedom (Table 6 of the IFG).

$k = 10$
$n = 54$
$T_{n1} = 135$
$t[53,.01] = 2.4016$
$c = 0.1852$
$T_{n2} = 8.9$
$T^*_k = 38.6$

4) Compare the *Poisson Prediction Limit* (T^*_k) to the *Sum of the Concentrations Detected* (T_{n2}) in the wells during the most recent sampling event.
Since the Poisson Prediction Limit was not exceeded, there is no evidence of contamination.

White Oak Landfill
Haywood County, North Carolina
BLE Project Number J12-1957-31

Compound: **2-Butanone**
MCL (µg/l): 4000
Method: Poisson Prediction Limits
Background: MW-11S, MW-11D, & MW-14

	MW-11S	MW-11D	MW-14	MW-1A	MW-2	MW-2D	MW-3	MW-3D	MW-4A	MW-8	MW-15	MW-16	MW-17	MDL
04/24/00	NT	NS	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	**100**
06/26/00	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	**100**
07/26/00	NT	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	**100**
09/18/00	NS	NS	NS	NT	NT	NS	NS	NS	NT	NS	NS	NP	NP	**100**
04/09/01	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	**100**
09/18/01	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	**100**
10/29/01	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	**100**
01/30/02	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	**100**
02/28/02	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	**100**
04/15/02	NT	NT	NS	NT	NT	NT	NT	NT	NT	NT	NS	NP	NP	**100**
09/26/02	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	**100**
04/28/03	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NP	**100**
10/30/03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**10**
04/20/04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**10**
10/21/04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**10**
04/18/05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**10**
10/13/05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**10**
04/25/06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**10**
10/20/06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**10**
04/25/07	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**10**
10/31/07	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**5**
04/23/08	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	NP	**5**
10/20/08	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**54.4**	NP	NP	**5**
04/22/09	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NP	NP	**5**
10/26/09	ND	ND	ND	ND	ND	ND	NS	NS	NS	ND	ND	NP	NP	**5**
04/22/10	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND	NP	NP	**5**
10/27/10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**5**
04/29/11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**5**
10/25/11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**5**
04/20/12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**5**
10/24/12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**5**

1) If not detected (ND), use half of the detection limit.

04/24/00	-	-	-	-	-	-	-	-	-	-	-	-	-
06/26/00	-	-	-	-	-	-	-	-	-	-	-	-	-
07/26/00	-	-	-	-	-	-	-	-	-	-	-	-	-
09/18/00	-	-	-	-	-	-	-	-	-	-	-	-	-
04/09/01	-	-	-	-	-	-	-	-	-	-	-	-	-
09/18/01	-	-	-	-	-	-	-	-	-	-	-	-	-
10/29/01	-	-	-	-	-	-	-	-	-	-	-	-	-
01/30/02	-	-	-	-	-	-	-	-	-	-	-	-	-
02/28/02	-	-	-	-	-	-	-	-	-	-	-	-	-
04/15/02	-	-	-	-	-	-	-	-	-	-	-	-	-
09/26/02	-	-	-	-	-	-	-	-	-	-	-	-	-
04/28/03	-	-	-	-	-	-	-	-	-	-	-	-	-
10/30/03	5	5	5	5	5	5	5	5	5	5	5	-	-
04/20/04	5	5	5	5	5	5	5	5	5	5	5	-	-
10/21/04	5	5	5	5	5	5	5	5	5	5	5	-	-
04/18/05	5	5	5	5	5	5	5	5	5	5	5	-	-
10/13/05	5	5	5	5	5	5	5	5	5	5	5	-	-
04/25/06	5	5	5	5	5	5	5	5	5	5	5	-	-
10/20/06	5	5	5	5	5	5	5	5	5	5	5	-	-
04/25/07	5	5	5	5	5	5	5	5	5	5	5	-	-
10/31/07	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	-	-
04/23/08	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	-	-
10/20/08	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	54.4	-	-
04/22/09	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	-	-	-
10/26/09	2.5	2.5	2.5	2.5	2.5	2.5	-	-	-	2.5	2.5	-	-
04/22/10	2.5	2.5	2.5	2.5	2.5	2.5	-	-	2.5	2.5	2.5	-	-
10/27/10	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
04/29/11	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
10/25/11	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
04/20/12	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
10/24/12				2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5

2) Set the total number of data values for background wells (through the previous sampling event) equal to 'n' = 18.
Use 1/2 of the method detection limit to calculate the Total Poisson Count of the Sum (T_n).

$n = 54$
$T_{n1} = 195$

3) Using Gibbons' formula, calculate the upper Poisson Prediction limit T^*_k:

$$T^*_k = cT_{n1} + ct^2/2 + ct[T_{n1}(1+1/c) + t^2/4]^{0.5}$$

where c = k/n
and where k = the number of future predicted measurements (one per well during the current sampling event)
and where t = the upper 99th percentile of the t-distribution with (n-1) degrees of freedom (Table 6 of the IFG).

$k = 10$
$n = 54$
$T_{n1} = 195$
$t[53,.01] = 2.4016$
$c = 0.1852$
$T_{n2} = 25$
$T^*_k = 52.4$

4) Compare the *Poisson Prediction Limit* (T^*_k) to the *Sum of the Concentrations Detected* (T_{n2}) in the wells during the most recent sampling event.
Since the Poisson Prediction Limit was not exceeded, there is no evidence of contamination.