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Waste Industry Experts

Joyce Engineering, Inc
2211 W. Meadowview Road
Suite 101
Greensboro, NC 27407

tel: 336/323-0092
fax: 336/323-0093

www.JoyceEngineering.com

September 15, 2010

Ms. Jackie Drummond
North Carolina Department of Environment and Natural Resources
Division of Waste Management, Solid Waste Section
1646 Mail Service Center
Raleigh, North Carolina 27699-1646



**RE: Notification of Appendix II Constituent Detections and
Notification of NC-2L Groundwater Standard Exceedances
First Semiannual Sampling Event of 2010
Granville County – Closed Butner Landfill
Permit No. 39-02
JEI Project No. 00660.0900.11, Task 11**

Dear Ms. Drummond:

On behalf of Granville County, Joyce Engineering, Inc. is submitting this notification of exceedances of 15A-NCAC-2L (NC-2L) groundwater standards at the Granville County – Butner Landfill, Permit No. 39-02 in accordance with Title 15A, Chapter 13, Subchapter 13B, Section .1634 (g) of the North Carolina Solid Waste Management Regulations. The first semiannual sampling event of 2010 at the Butner Landfill took place on June 24, 2010. The samples were sent to Pace Analytical Services, Inc., where the groundwater samples were analyzed for all constituents listed in NCSWMR Appendix II constituents.

Organic compounds 1,4-dichlorobenzene, chlorobenzene, methylene chloride, and 2-methylnaphthalene were detected in one or more monitoring wells at quantifiable concentrations above the NC SWSL during the June 2010 event. Inorganic constituents detected at quantifiable concentrations during the June 2010 event include arsenic, cobalt, and nickel. The June 2010 results indicated exceedances of NC-2L standards for arsenic, methylene chloride, and 2-methylnaphthalene in monitoring well MW-2R and gamma-BHC in MW-3.

A resampling event was conducted on August 12, 2010 MW-2R was resampled and analyzed for fluorene, methylene chloride, and 2-methylnaphthalene and MW-3R was resampled for arsenic and gamma-BHC. On August 31, 2010, a second resampling event was conducted on MW-2R for arsenic. The resample results for all of the organic parameters were non-detect; therefore, the exceedances for methylene chloride, and 2-methylnaphthalene in monitoring well MW-2R and gamma-BHC in MW-3 were not confirmed. The resample results for arsenic

yielded similar results to the June 2010 samples; therefore, the NC-2L exceedance for arsenic in MW-2R was confirmed.

The attached table summarizes the detected constituents and NC-2L exceedances from the first semiannual sampling event of 2010 and subsequent resampling events. Based on preliminary statistical evaluation, neither the detection of arsenic in MW-2R nor any of the other quantified detections of inorganic constituents appear to represent statistically significant increases above background.

The results of the first semiannual sampling event of 2010, after resampling, are generally consistent with previous results for this facility. Full quality reviews of all laboratory data have not yet been completed, nor have the initial statistical analyses been validated, so these results are considered preliminary. A complete groundwater monitoring and statistical analysis report will follow. We anticipate submitting an Alternate Source Demonstration for arsenic within 90 days of confirmation of the exceedance in MW-2R. If you have any questions or need additional information, please feel free to contact me or Kim Benson at (336) 323-0092.

Sincerely,
JOYCE ENGINEERING, INC.



Van Burbach, Ph.D., P.G.
Technical Consultant

Attachment: Detected Constituents Table

Copy: Jason Falls, Granville County

TABLE 1: Detected Constituents - First Semiannual Sampling Event of 2010

Parameter	Sample Date:		SWSL	NC-2L	06/24/2010										Blanks	
	SWSL	NC-2L			3902-MW1R	3902-MW2R	3902-MW3R	3902-MW4	3902-MW5	3902-MW6	3902-SW1	3902-SW2				
Antimony	6	1.4*	ND	ND	ND	2.9 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	10	10	ND	ND	8.1 J (7.2 J)	8.2 J	3.3 J	3.1 J	4.3 J	4.3 J	2.9 J	ND	ND	ND	ND	ND
Barium	100	700	2.5 B	11.8 (15.4)	61.1 B	1.6 B	93.5 B	1.4 J	34.5 J	34.5 J	71.3 B	ND	ND	ND	ND	27.3 J
Beryllium	1	4*	ND	ND	0.27 J	0.16 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	10	10	1.1 B	3.5 B	2.8 B	2.4 J	1.2 B	1.4 B	3.3 J	3.3 J	7.3 J	ND	ND	ND	ND	0.71 J
Cobalt	10	70*	ND	16.3	ND	ND	25.0	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper	10	1000	ND	ND	10	1.2 J	5.1 J	ND	ND	ND	3.1 J	ND	ND	ND	ND	ND
Nickel	50	100	ND	76.3	19.7 J	9.0 J	7.0 J	4.5 J	ND	ND	2.0 J	ND	ND	ND	ND	ND
Silver	10	20	ND	0.38 J	0.33 J	0.35 J	ND	ND	ND	ND	0.26 J	ND	ND	ND	ND	ND
Thallium	5.5	0.28*	ND	ND	5.2 J	3.1 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tin	100	2100*	ND	23.4 J	10.7 J	3.2 J	2.2 J	1.9 J	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	25	3.5*	1.8 J	4.4 J	1.5 J	13.3 J	2.2 J	1.3 J	5.8 J	5.8 J	2.6 J	ND	ND	ND	ND	ND
Zinc	10	1000	0.58 J	ND	ND	ND	ND	1.3 J	14.9	14.9	ND	ND	ND	ND	ND	ND
Acetone	100	6000	ND	18.5 B	6.5 B	ND	2.2 B	ND	2.8 B	2.8 B	ND	ND	ND	ND	ND	7.7 J
Benzene	1	1	ND	0.77 J	0.49 J	0.33 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	3	50	ND	8.3	15.7	6.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	10	3000	ND	ND	2.1 J	2.0 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	1	3	ND	ND	ND	ND	ND	0.11 J	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	5	20	ND	0.96 J	1.7 J	0.31 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	1	6	ND	1.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	5	6	ND	ND	ND	0.53 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isobutanol	100	-	ND	59.0 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	1	5	ND	19 (ND)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	10	6	ND	2.8 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	1	0.03	ND	ND	0.77 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (Total)	5	500	ND	0.73 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluorene	10	300	ND	4.3 J (ND)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Methylnaphthalene	10	30	ND	38.9 (ND)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
gamma-BHC	0.05	0.03	ND	ND	0.052 (ND)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

SWSL = NC Solid Waste Section Reporting Limit
 NC2L = North Carolina Groundwater Standard (15A-NCAC-2L).
 * = No listed NC2L standard, listed value is the GWPS.
 GWPS = groundwater protection standard determined by DENR-SWS.
 Results in parentheses () are from reampling events conducted on Aug. 12 or Aug. 31, 2010.
Yellow Shaded = Initial Result > NC2L or GWPS, and CONFIRMED by resampling.

All results in µg/L (ppb).
 ND = Not detected above the laboratory detection limit.
 J = Estimated concentration above the laboratory detection limit but below the SWSL.
 B = Blank-qualified detection.
Blue Shaded = Initial Result > NCZL or GWPS, but NOT confirmed by resampling.
Bold = Quantified Result > SWSL