



North Carolina Department of Environment and Natural Resources

Dexter Matthews, Director

Division of Waste Management

Beverly Eaves Perdue, Governor
Dee Freeman, Secretary

October 28, 2010

Sent Via US Mail and Email – majones@hendersoncountync.org

Mr. Marcus Jones
Henderson County
Director of Engineering
802 Stoney Mountain Road
Hendersonville, NC 28791

Re: *Leachate Seep Sampling Investigation* and
Surface Water Assessment Monitoring Plan In Response to Leachate Seeps
Henderson County C&D and MSW Landfills, Permit #45-01

Dear Mr. Jones:

The North Carolina Solid Waste Section has completed a review of the *Leachate Seep Sampling Investigation* dated July 8, 2010 and the *Surface Water Assessment Monitoring Plan In Response to Leachate Seeps* dated October 18, 2010 both submitted on behalf of Henderson County by Golder Associates NC, Inc. for the closed Henderson County C&D and MSW Landfills. The document were submitted in response to the Notice of Violation within the March 10, 2010 Facility Compliance Audit Report.

The *Leachate Seep Sampling Investigation* was submitted to the Solid Waste Section to discuss the evaluation of the extent of any environmental impacts from the seven leachate seeps. The *Leachate Seep Sampling Investigation* consisted of surface water and soil sampling which was conducted on June 3, 2010. Per the *Leachate Seep Sampling Investigation*, of the seven discovered leachate seeps, four (C&D-1, MSW-1, MSW-2, and MSW-3) were determined to have been unlikely to have traveled outside the limits of waste based upon topography, staining from the releases, and the amount of flow observed by County personnel. However, two leachate seeps (MSW-4 and MSW-5) were determined to have potentially migrated outside the limits of waste, and one leachate seep (MSW-6) was observed flowing into a sediment trap. Flow from MSW-4 and MSW-5 may have also entered the same sediment trap. Surface water samples were collected from the sediment trap (Sample 4), the sediment pond (Sample 3) into which the aforementioned sediment trap discharges, and the receiving stream (downstream of the sediment pond (Sample 1) and further downstream at the property line (Sample 2).

Surface water samples were analyzed for the following parameters: BOD, COD, and Appendix I volatile organic compounds. Field parameters were also measured during the sample collection. The surface water sampling results indicated that acetone was detected in three of the surface water samples (Sample 1, Sample 3, and Sample 4) at estimated concentrations, but did not exceed the 2B Surface Water Standards. Acetone was not detected within the property line sample (Sample 2). BOD was only detected in Sample 3, and COD was detected in all four surface water samples. The concentration of COD was similar in Sample 1, Sample 2, and Sample 4, but had a higher concentration within Sample 3.

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Soil samples were analyzed for Appendix I volatile organic compounds, and the soil sampling results indicated that no volatile organic compounds exceeded the NCDENR's Inactive Hazardous Sites Branch Soil Remediation Goals Updated October 2009. However, acetone, 2-butanone, and toluene were detected within the soil samples at quantifiable concentrations, and carbon disulfide was detected at an estimated concentration.

The volatile organic compounds detected within the surface water samples and soil samples are common liquid leachate constituents. Therefore, there appears to be residual contamination of the leachate releases within the surface waters and soils at the facility. The Solid Waste Section does not know how long these conditions have existed prior to Ms. Andrea Keller visiting the facility and observing the single day leachate seeps.

Even though the concentrations of the volatile organic compounds are low and are below the surface water and soil standards, the sampling results indicate that additional and continued surface water monitoring for Appendix I volatile organic compounds is necessary in this area of the facility. Based upon a discussion with Golder Associates NC, Inc. on October 1, 2010, the *Surface Water Assessment Monitoring Plan In Response to Leachate Seeps* dated October 18, 2010 was submitted to the Solid Waste Section. Henderson County proposes that two additional surface water monitoring locations be sampled during the routine semiannual water quality monitoring events. The two locations include the pond near the western property boundary (TSW-1) and the stream downgradient of the pond outfall (TSW-2). Per the *Surface Water Assessment Monitoring Plan In Response to Leachate Seeps*, the County proposes to continue sampling the surface water monitoring points until clean for two consecutive events or up to five years from the date of the first sampling event. The County will begin sampling the two additional surface water monitoring points during the next routine semiannual water quality monitoring event that is scheduled for March 2011.

As a result, the surface water locations of TSW-1 and TSW-2 shall be sampled on a semiannual basis for Appendix I volatile organic compounds and incorporated into the facility's routine semiannual water quality monitoring events for a minimum of five years. Monitoring TSW-1 and TSW-2 for two consecutive semiannual water quality monitoring events (one year total) as proposed by the County is not a long enough period of time to ascertain the environmental impacts of the leachate seeps at the facility.

Also, based upon the ongoing routine groundwater monitoring results, surface water monitoring results, and the TSW-1 and TSW-2 monitoring results, additional assessment, the installation of groundwater monitoring wells, and/or corrective action may be necessary within this area of the facility in the future. If you have any questions or concerns regarding this letter, please contact me at 919-508-8500 or jaclynne.drummond@ncdenr.gov.

Sincerely,



Jaclynne Drummond
Hydrogeologist
Environmental Compliance
Solid Waste Section

cc via email: Natalie Berry, Henderson County Assistant Engineer
Mark Poindexter, Field Operations Supervisor
Deb Aja, Western District Supervisor
Andrea Keller, Environmental Senior Specialist