



North Carolina Department of Environment and Natural Resources

Division of Waste Management

Beverly Eaves Perdue  
Governor

Dexter R. Matthews  
Director

Dee Freeman  
Secretary

October 30, 2012

Gwen Matthews, Director  
Halifax County Dept of Public Utilities  
26 North King Street  
Halifax, NC 27839

Re: Halifax County active C&D over closed MSW Landfill  
921 Liles Road, Aurelian Springs, NC  
Permit # 42-04 DIN 17539

The NC Solid Waste Section has completed a review of the following documents: 1) March 2012 Corrective Action Parameter Reduction Request (DIN 16342); 2) June 2012 Corrective Action Evaluation Report (DIN 16760); and 3) the August 2012 semi-annual Groundwater Monitoring Report (DIN 17530). These reports were submitted by Smith + Gardner on behalf of Halifax County Landfill for the active C&D over closed MSW Landfill facility.

The CAER was submitted pursuant to the County's Corrective Action Plan (CAP) approved by the Solid Waste Section on June 8, 2009. The approved corrective action program consists of Monitored Natural Attenuation (MNA) with an active landfill gas (LFG) blower assisted flare system. The constituents of concern (COC) identified in the Assessment of Corrective Measures and the Corrective Action Plan for this site are: benzene, methylene chloride, toluene, tetrachloroethene, trichloroethene and vinyl chloride. MNA sampling has been conducted at the site semi-annually since August 2009.

The most recent groundwater sampling results from August 2012 reported the following constituents above the NC 2L groundwater standards: benzene (MW-3AD, MW-6D, MW-16A); 1,1-dichloroethane (MW-3A, MW-16A); tetrachloroethene (MW-3D, MW-16A, MW-17); trichloroethene (MW-16A); vinyl chloride (MW-2A); and iron (MW-2A, MW-2AD, MW-3AS, MW-6D, MW-17, MW-18S, G-13).

Per the CAER report, the baseline MNA sampling results, and the Biochlor modeling, there is adequate evidence that natural attenuation is occurring in the groundwater at the landfill site. The detection of vinyl chloride in downgradient well MW-2A may be further evidence of the occurrence of natural attenuation mechanisms.

Halifax County has requested to change the frequency from semi-annual to annual for sampling of designated MNA parameters in wells MW-2A, MW-6D, MW-17, and MW-18S due to no or low detections of organic constituents over the baseline sampling period. The change is

approved for wells MW-6D, MW-17, and MW-18S but is **not** approved for MW-2A due to the detection of 3.7 ug/L vinyl chloride in that well during the August 2012 sampling event.

Halifax County has also requested monitoring well MW-7D be analyzed for Appendix I parameters semi-annually due to no recent and low historical detections. This request is approved with the condition that MW-7D be sampled and analyzed for Appendix II parameters every 3<sup>rd</sup> year. Halifax County's request to modify the frequency of analysis for the following MNA parameters: hydrogen, volatile fatty acids, dissolved methane, ethane and ethene, BOD, and carbon dioxide from semi-annual to every 3<sup>rd</sup> year is approved. For convenience, this schedule should coincide with the sampling of MW-7D for Appendix II parameters every 3<sup>rd</sup> year. All other MNA parameters will continue to be sampled semi-annually.

Halifax County has proposed to remove methylene chloride and toluene as constituents of concern due to their historical lack of detection in wells at the facility. This request is approved as methylene chloride has been detected below the NC 2L standard for the past 5 years and toluene has not been detected since 2009. 1,1-dichlorethane will be **added** to the list of constituents of concern due to historical detections in monitoring well MW-2AD above the NC 2L standard since 2004.

All other semi-annual sampling and analysis for detection, assessment, and MNA parameters of other wells in the monitoring well network will remain the same. Please submit a revised Water Quality Monitoring Plan to the NC Solid Waste Section to reflect the above sampling frequency changes and parameter reduction changes.

If you have any questions regarding this letter, please contact me at (919) 707-8254 or by email at [Christine.ritter@ncdenr.gov](mailto:Christine.ritter@ncdenr.gov).

Sincerely,



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Hydrogeologist  
NC Solid Waste Section

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