



August 26, 2010

Ms. Jaclynne Drummond
Solid Waste Section - Compliance
Division of Waste Management
North Carolina Department of Environment and Natural Resources
401 Oberlin Road, Suite 150
Raleigh, NC 27605

Re: Potentially Impacted Soil and Groundwater Assessment
Wayne County C&D Landfill on top of Closed MSWLF
Permit No. 96-01

Ms. Drummond:

Municipal Engineering Services Co., P.A. (MESCO), on behalf of Wayne County, appreciates the opportunity to present this potentially impacted soil and groundwater assessment. This assessment has been prepared in response to a compliance order received June 21, 2010 from North Carolina Department of Environment and Natural Resources (NCDENR), Solid Waste Section (SWS) regarding potentially impacted soils, groundwater and surface water associated with a breakout reported in a Facility Compliance Audit Report performed by Mr. Wes Hare on March 18, 2010 at the Wayne County Municipal Solid Waste Landfill Facility (MSWLF), located in Dudley, NC.

BACKGROUND AND OBJECTIVE

On March 18, 2010, as part of a comprehensive field audit, Mr. Hare reported: "Untreated leachate was flowing from the working face and entering a drainage ditch in the low area North of the C&DLF. Several leachate break-outs were noted along the Western slope. Another large break-out was found on the Southwest corner of the landfill. A collection pipe had been installed and periodically pumped to prevent releases, however, it was full and leachate was flowing down and along the Southern slope."

The following tasks are designed to address the concerns identified above:

- **Task 1 – Identify Potentially Impacted Soil**
- **Task 2 – Identify Potentially Impacted Groundwater – Surface Water**
- **Task 3 – Excavate Impacted Soil (if necessary)**
- **Task 4 – Remediate Impacted Groundwater (if necessary)**
- **Task 5 – Summary Report**

SCOPE OF WORK

Task 1 – Identify Potentially Impacted Soil

Confirmation soil samples will be collected from the areas most likely impacted by the breakouts. Multiple boring soil samples will be field screened with a photo-ionization detector (PID). The total number of borings will be determined in the field, dependent upon the PID readings and upon

encountered groundwater elevation. Hand auger borings will be driven until the water table is reached. Static groundwater levels, measured below ground surface, will be noted in the field log. At most locations, hand auger borings will be advanced to approximately five feet bgs. At some locations, borings might be terminated prior to reaching five feet due to encountering debris or soil density (refusal).

Collected soil samples will be field screened in the following manner:

1. Collection of soil in Ziploc® bag, sealing the bag upon collection.
2. Allow for headspace development ~ 10-15 minutes.
3. Unzip the corner of the bag and insert PID sampling probe.
4. Record maximum meter response.

Depth vs. PID readings will be recorded for each boring on the field log.

Soil samples will be collected from the auger barrel. Field equipment decontamination between each boring will be conducted according to the procedure prescribed in the EPA RCRA Ground-Water Monitoring Draft Technical Guidance:

1. Phosphate-free soap and tap water wash using a brush if necessary to remove particulate matter.
2. Tap water rinse.
3. Deionized or distilled water rinse.
4. Isopropyl alcohol rinse.
5. Deionized or distilled water rinse.
6. Air dry.

Sampling Locations

An initial background soil sample will be collected with a stainless steel hand auger to establish baseline PID readings. The background sample will be collected from an upgradient location, determined in the field. A background location soil sample will also be collected for laboratory analysis.

According to the Facility Compliance Audit Report issued by Mr. Hare there are three areas of concern: “the low area North of the C&DLF”, “the Western slope”, and “the Southwest corner of the landfill”. In the area north of the C&D landfill, near MW-3, hand auger borings are proposed 25’ and 50’ from MW-3 to the north, east and west; as well as immediately adjacent to the well. If elevated PID readings are detected, additional samples collected every 5’ will determine the extent of the impacted area. One sample from the boring with the highest PID will be collected for laboratory analysis. If no elevated PID readings are detected, one sample will be collected adjacent to MW-3 for laboratory submittal.

Along the western slope soil samples collected from multiple hand auger borings will be subjected to PID analysis. Sample boring locations are proposed 50’ and 100’ north of MW-7 along the western slope, followed by additional borings every 250’ until reaching MW-5. If elevated PID readings are observed, hand auger borings will be continued at 5’ intervals until PID readings are not detected above background levels, to determine the extent of impact. A sample for laboratory analysis will be collected from the area of highest PID reading. If PID readings are not elevated a soil sample will be collected slightly north of MW-7, along the western slope, for laboratory submittal.

Along the southern slope, including the southwestern corner, soil samples collected from multiple hand auger borings will be subjected to PID analysis. Four sample boring locations are proposed 10’, 25’ and 50’ east of MW-7 along the southern slope, as well as adjacent to MW-7. Two additional borings will be

sampled at 100' spacing along the southern slope. Additional samples may be collected at 5' intervals, if elevated PID readings are observed. A sample for laboratory analysis will be collected from the area of highest PID reading. If PID readings are not elevated a soil sample will be collected slightly east of MW-7, along the southern slope, for laboratory submittal.

Proposed hand auger boring locations are depicted on **Plate 1**.

Soil samples collected for laboratory analysis will be analyzed for EPA Test Method 8260 Appendix I Organics and EPA Test Method 6010 Appendix I Metals.

Soil Sampling Containers

Upon identifying the locations for laboratory soil samples, soils will be collected in laboratory provided sample jars. Each sample container will be labeled providing: site name, county location, sample identification number, parameters for analysis, preservative added, sample date, time and sampler initials. Samples for both inorganic and organic analysis will be collected in 4-oz glass jars; filled completely to create zero head space.

Task 2 – Identify Potentially Impacted Groundwater-Surface Water

Groundwater samples will be collected from monitoring wells MW-2, MW-3, MW-5 and MW-7. Surface water samples will be collected from SW-1, SW-2 and the surface water feature near MW-3, north of the C&D landfill. Groundwater and surface water sampling will be conducted in accordance with the procedures outlined in the facility's Sampling and Analysis Plan.

Water samples collected for laboratory analysis will be analyzed for EPA Test Method 8260 Appendix I Organics and EPA Test Method 6010 Appendix I Metals.

Groundwater Sampling Containers

Groundwater samples collected for laboratory analysis will be collected in laboratory-provided sample jars. Each sample container will be labeled providing: site name, county location, sample identification number, parameters for analysis, preservative added, sample date and time and sampler initials. The samples to be analyzed for organic contents will be collected in three 40-ml glass vials with Teflon caps. The sample vials will be completely filled to create zero head space. Samples collected for inorganic analysis will be collected in a quart/1-liter polyethylene container.

Task 3 – Excavate Impacted Soil (if necessary)

If laboratory results identify impacted soils, soil excavation will be performed to the approximate extent of impact, as identified with elevated PID readings. Excavation will be continued until PID readings are below background levels or groundwater is encountered. Confirmation soil samples will be collected from the excavation sidewalls and bottoms, as detailed above, and submitted for the aforementioned laboratory analysis. If sample analysis indicates the surrounding soils have not been impacted, no additional activities will be performed.

Task 4 – Remediate Impacted Groundwater (if necessary)

If impacted groundwater is detected, groundwater will be remediated as prescribed in the approved Corrective Action Plan for Wayne County. If sample analysis indicates no change from the most recent sampling results, additional activities will not be necessary.

Task 5 – Summary Report

Sample results and subsequent actions taken will be submitted in a summary report. A vicinity map with boring locations, soil lithological descriptions, a chart of boring depths with PID readings will be provided in addition to field and laboratory sampling results. If you have any questions, please contact us at (919) 772-5393.

Sincerely,

MUNICIPAL ENGINEERING SERVICES CO., P.A.



Madeline German
Geoscientist



Mark Brown, LG, PG
Sr. Professional Geologist

Enclosures

cc: Tim Rogers, Wayne County
Wayne Sullivan, MESCO

LEGEND

- EXISTING CONTOURS
- - - PROPERTY LINE
- == EXISTING UNPAVED ROAD
- EXISTING CREEK, STREAM, ETC.
- EXISTING DIVERSION DITCHES
- CLOSED MSWLF SANITARY UNIT
- P3-17 PIEZOMETER LOCATION
- MW5 MONITORING WELLS C&D LANDFILL
- MW-1 MONITORING WELLS SUBTITLE D
- P1-3 ABANDONED PIEZOMETER
- SW-5 SURFACE WATER SAMPLING SUBTITLE D
- SW-1 SURFACE WATER SAMPLING C&D
- WETLANDS
- PROPOSED HAND AUGER BORING

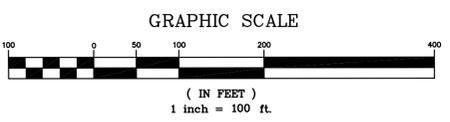
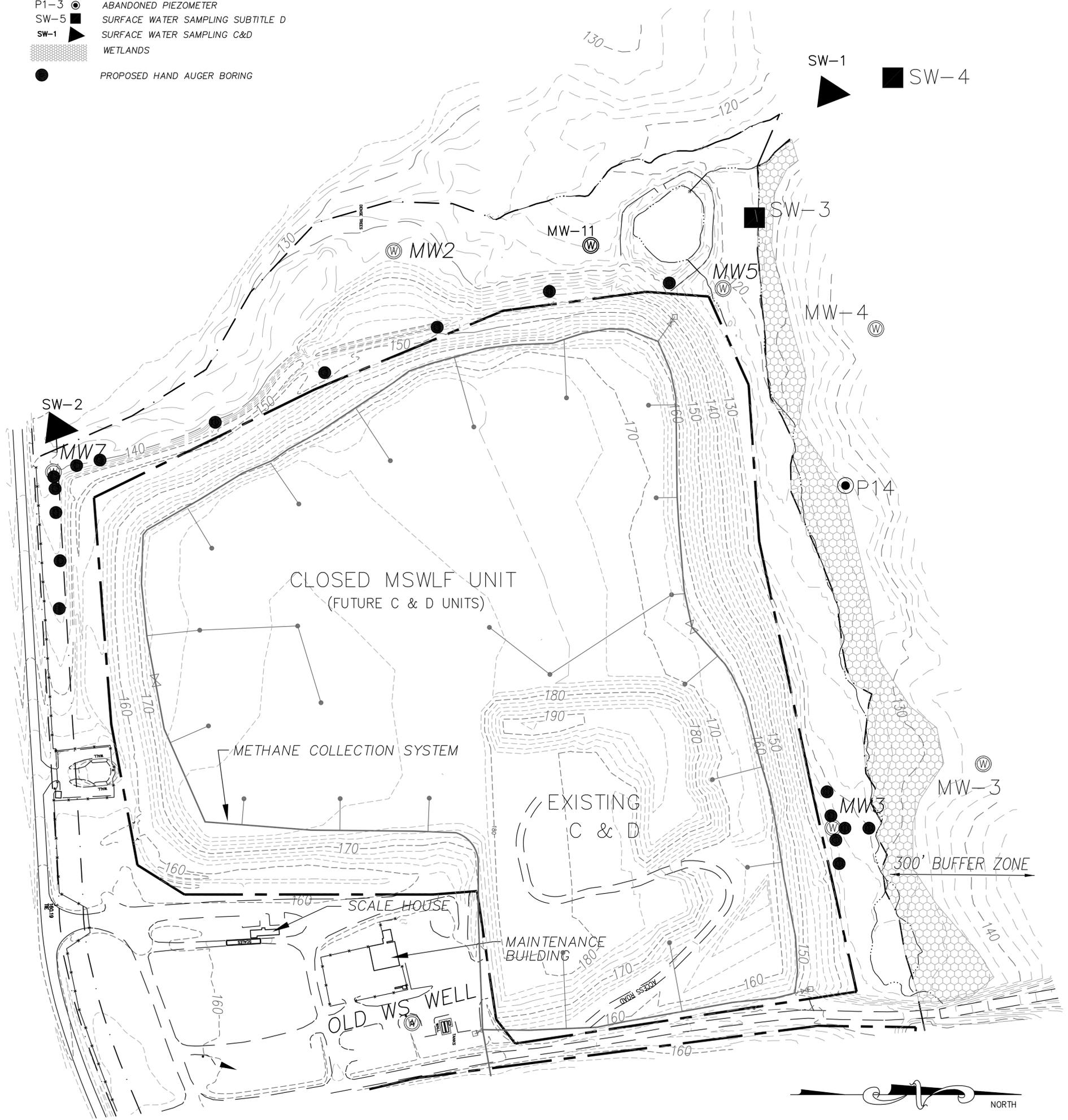


PLATE 1

DRAWING NO. PLATE 1	SHEET NO. 1 OF 1	DATE 8/20/2010	BY M. GERMAN	REV.	DESCRIPTION
PROJECT NUMBER G10114.0					
PROPOSED HAND AUGER BORING LOCATIONS					

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 NORTH CAROLINA

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