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July 22, 2014

Ms. Jaclynne Drummond, Hydrogeologist
North Carolina Department of Environment and Natural Resources
Environmental Compliance Solid Waste Section
1646 Mail Service Center
Raleigh, North Carolina 27699-1646

Subject: Buncombe County Landfill – Permit # 11-07
MW-3 Gas Issue

Dear Ms. Drummond:

On behalf of the Buncombe County Solid Waste Management Program, CDM Smith is pleased to submit the landfill gas (LFG) migration trench design drawing for your review. As detailed in your letter dated August 22, 2013 titled *Buncombe County Landfill – Permit # 11-07 MW-3 Gas Issue*, the County is proposing to install a trench along the liner limits within the area where the methane gas appears to be migrating as evidenced by stressed vegetation. Perforated pipe will be installed in a rock trench that will be in direct contact with the rock drainage layer of the base liner system. The perforated pipe will be connected to the active gas collection system to allow a vacuum to be induced in the trench. A 30-mil LLDPE geomembrane will be installed around the trench to increase effectiveness of migration control.

The tentative schedule is for construction to begin on September 8, 2014 pending your approval. If you have any questions, or need any additional information, please contact me at 919-325-3574.

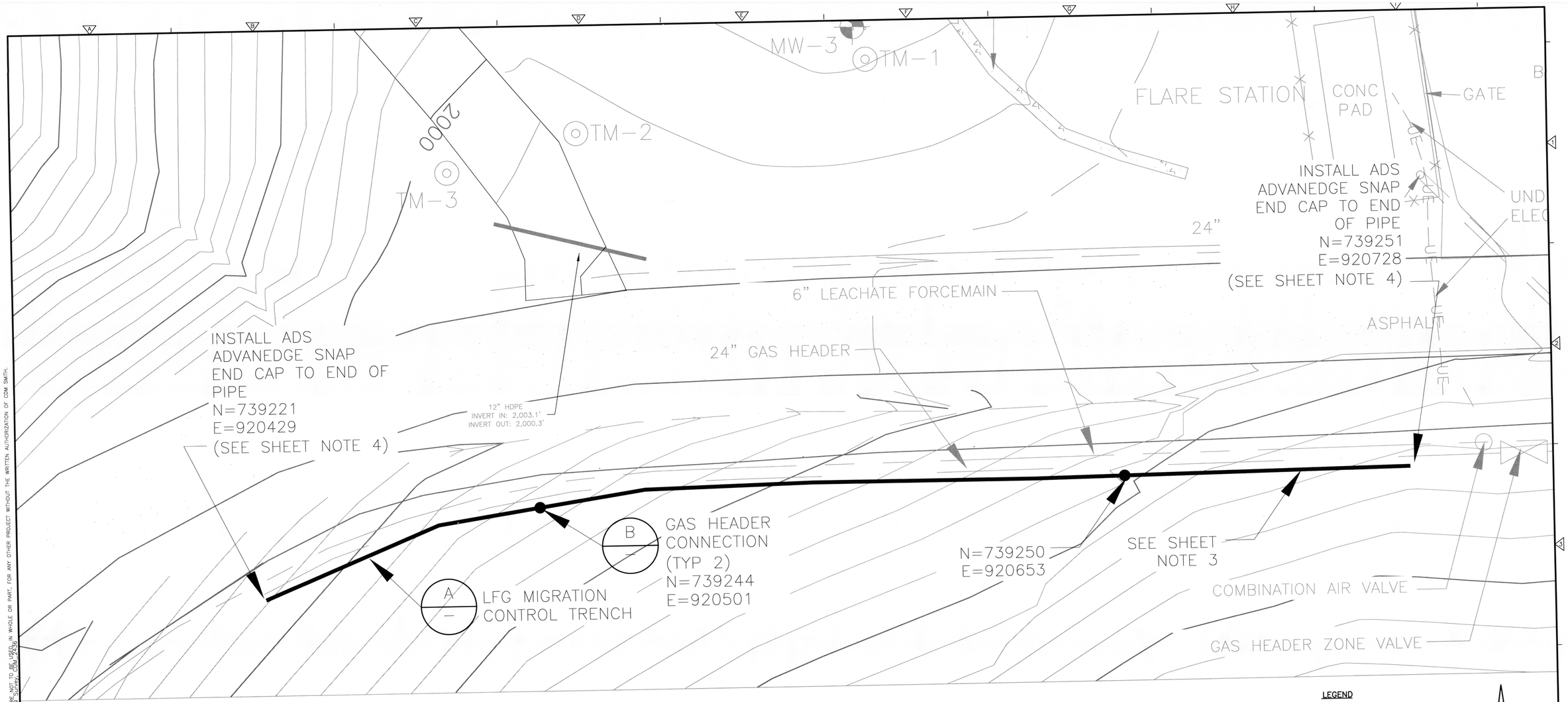
Very truly yours,

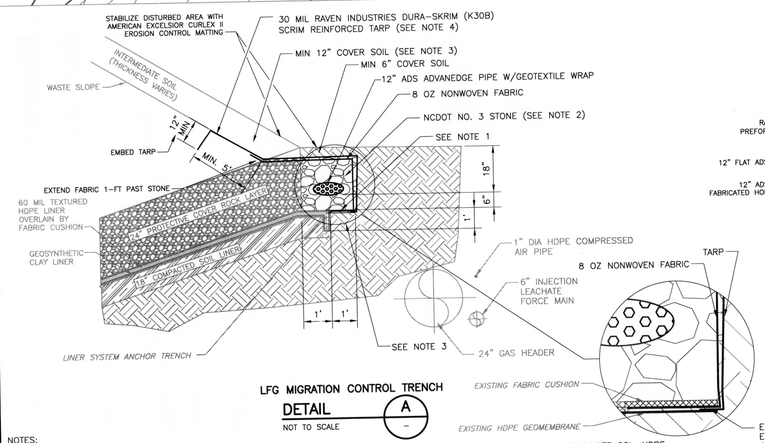
NORTH CAROLINA PROFESSIONAL SEAL 029928 ENGINEER KENTON J. YANG
07/22/2014

Kenton J. Yang
CDM Smith

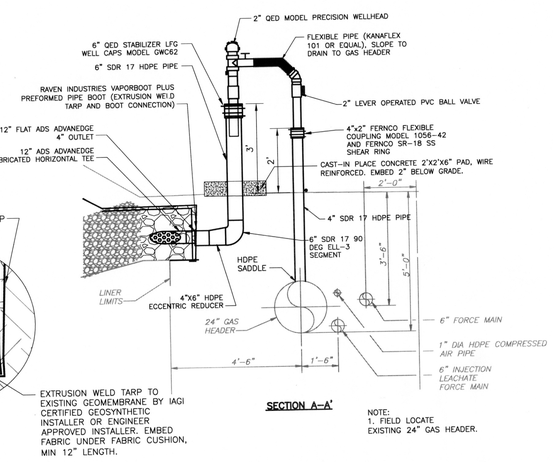
CC: J. Creighton/D. Cottrell/D. Brigman/S. Hunter/K. Smith/A. McKinzie – Buncombe County
C.Gabel/M. Colone/D. Morris – CDM Smith

Att: LFG Migration Control Drawing



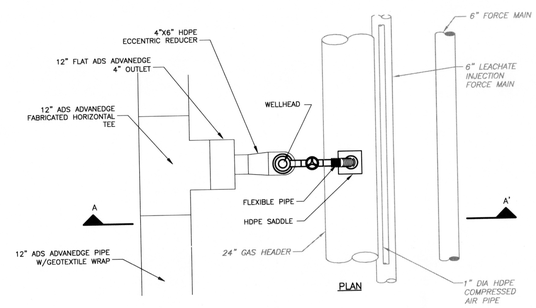


LFG MIGRATION CONTROL TRENCH
DETAIL A
NOT TO SCALE



SECTION A-A'

NOTE:
1. FIELD LOCATE EXISTING 24" GAS HEADER.



GAS HEADER CONNECTION
DETAIL B
NTS

LEGEND

MW-10 EXISTING GROUNDWATER MONITORING WELL

N

1" = 10'
5 0 10

SHEET NOTES:

1. TOPOGRAPHIC SURVEY OF MSW LANDFILL BY ED HOLMES AND ASSOCIATES DATED MARCH 2007.
2. TOPOGRAPHIC SURVEY OF FLARE STATION AND SURROUNDING AREA BY ED HOLMES AND ASSOCIATES DATED MARCH 2009.
3. ALIGNMENT IS APPROXIMATE. FIELD LOCATE ANCHOR TRENCH AND CENTER LFG MIGRATION CONTROL TRENCH OVER EXCAVATED LINER ANCHOR AS SHOWN IN DETAIL A. ESTIMATED LENGTH IS 310 LF.
4. EXTEND ROCK TRENCH AND STONE 1 FOOT BEYOND END OF ADS ADVANEDGE PIPE. CLOSE TARP AT THE ENDS OF ROCK TRENCH BY EXTRUSION WELDING EDGES.
5. CONTRACTOR SHALL STAFF PROJECT TO COMPLETE CONSTRUCTION IN 5 WORKING DAYS DURING NORMAL LANDFILL HOURS.
6. CONTRACTOR TO SURVEY EXISTING PIPING INFRASTRUCTURE THAT IS EXPOSED WHEN CONNECTING TO THE 24" GAS HEADER AND TO PROVIDE AN AS-BUILT SURVEY INCLUDING ADVANEDGE PIPE ALIGNMENT, TARP LIMITS, ETC.

NOTES:

1. EXCAVATE WITH A SMOOTH BUCKET (NO TEETH) TO NO MORE THAN 12" TO ANCHOR TRENCH AND THEN HAND SHOVEL EXCAVATE GCL, HDPE GEOMEMBRANE AND FABRIC CUSHION FROM ANCHOR TRENCH AND LAY FLAT AS SHOWN.
2. REMOVE COMMON FILL AND INSTALL NCDOT NO. 3 STONE TRENCH. STONE TRENCH TO BE IN DIRECT CONTACT WITH EXISTING CELL 1 STONE PROTECTIVE COVER LAYER.
3. BACKFILL SHALL BE PLACED IN MAXIMUM 8-INCH-THICK LIFTS AND COMPACTED TO 95% OF THE STANDARD PROCTOR (ASTM D698) MAXIMUM DRY DENSITY. QUALITY CONTROL FIELD DENSITY TESTING SHALL BE CONDUCTED AT A MINIMUM TESTING FREQUENCY OF ONE TEST PER LIFT PER 50 LINEAR FEET OF TRENCH. CONTRACTOR SHALL BE RESPONSIBLE FOR CONDUCTING AND PAYING FOR THE TESTING AND MAKING THE RESULTS AVAILABLE TO THE ENGINEER.
4. TARP TO BE CUSTOM FABRICATED AT THE FACTORY TO THE REQUIRED DIMENSIONS FOR THE PROJECT. NO FIELD WELDING WILL BE PERFORMED WITH THE EXCEPTION OF PIPE BOOTS, TARP AND EXISTING GEOMEMBRANE CONNECTION, AND THE ROCK TRENCH ENDS. APPROXIMATE SIZE OF TARP IS 325'X15'.

NORTH CAROLINA PROFESSIONAL SEAL 029626 ENGINEER NELTON J. YANG
07/14/2014

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: C. GABEL
DRAWN BY: K. YANG
SHEET CHK'D BY: D. MORRIS
CROSS CHK'D BY: J. CURRO
APPROVED BY: C. GABEL
DATE: JULY 2014

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BUNCOMBE COUNTY
NORTH CAROLINA
BUNCOMBE COUNTY SOLID WASTE MANAGEMENT FACILITY

LANDFILL GAS TRENCH PLAN AND DETAILS

PROJECT NO. 6447-104670
FILE NAME:
SHEET NO.
C-1

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