



FACILITY COMPLIANCE INSPECTION REPORT
Division of Waste Management
Solid Waste Section

UNIT TYPE:										
Lined MSWLF		LCID		YW		Transfer		Compost	SLAS	COUNTY: Durham PERMIT NO.: 32-01 Closed FILE TYPE: COMPLIANCE
Closed MSWLF	X	HHW		White goods		Incineration		T&P	FIRM	
CDLF		Tire T&P / Collection		Tire Monofill		Industrial Landfill		DEMO	SDTF	

Date of Site Inspection: February 10, 2015

Date of Last Inspection: February 22, 2012

FACILITY NAME AND ADDRESS:

City of Durham Closed MSW Landfill
 2115 East Club Boulevard
 Durham, NC 27704

GPS COORDINATES: N: 36.03265 E: -78.85495

FACILITY CONTACT NAME AND PHONE NUMBER:

Simon Lobdell, Civil Engineer III
 City of Durham Department of Water Management, Utility Engineering Division
 w. 919-560-4381 x35201
 c. 919-200-8870
 f. 919-560-4479
simon.lobdell@durhamnc.gov

FACILITY CONTACT ADDRESS:

Simon Lobdell, Civil Engineer III
 City of Durham Department of Water Management
 Utility Engineering Division
 1600 Mist Lake Drive
 Durham, NC 27704

PARTICIPANTS

John Patrone, Environmental Senior Specialist - Solid Waste Section (SWS)
 Ervin Lane, Compliance Hydrogeologist – SWS
 Simon Lobdell, Civil Engineer III - City of Durham Department of Water Management, Utility Engineering Division
 David Yates Reedy II, Senior Project Hydrogeologist – Golder Associates NC, Inc.

STATUS OF PERMIT:

Closed

PURPOSE OF SITE VISIT:

Post Closure Inspection

STATUS OF PAST NOTED VIOLATIONS

None

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OBSERVED VIOLATIONS

None

The item(s) listed above were observed by Section staff and require action on behalf of the facility in order to come into or maintain compliance with the Statutes, Rules, and/or other regulatory requirements applicable to this facility. Be advised that pursuant to N.C.G.S. 130A-22, an administrative penalty of up to \$15,000 per day may be assessed for each violation of the Solid Waste Laws, Regulations, Conditions of a Permit, or Order under Article 9 of Chapter 130A of the N.C. General Statutes. Further, the facility and/or all responsible parties may also be subject to enforcement actions including penalties, injunction from operation of a solid waste management facility or a solid waste collection service and any such further relief as may be necessary to achieve compliance with the North Carolina Solid Waste Management Act and Rules.

ADDITIONAL COMMENTS

On February 10, 2015, John Patrone and Ervin Lane met with Simon Lobdell and David Yates Reedy to conduct a post closure inspection of the City of Durham Closed MSW Landfill located on East Club Boulevard in Durham, Durham County.

1. The facility is located behind the City of Durham Transfer Facility (32-12T), via service road. The service road also provides access to the City of Durham Large, Type 1 Solid Waste Compost (SWC) Facility (32-04) and the City of Durham Temporary Disaster Debris Staging Site (TDDSS, DS32-004). Both 32-04 and DS32-004 are located behind the landfill. The service road used is atop the landfill.
2. The facility ceased operation by December 31, 1997 as stated in the SWS record of communication, dated January 14, 1998 and in accordance with the January 1, 1998 requirement to cease operation as stated in the transition plan approval letter, dated July 29, 1996. The facility [initial] transition plan was submitted to SWS dated April 1994.
3. The revised closure schedule approval letter issued by the SWS, dated June 9, 1998, approved the completion of closure activities by December 16, 1998.
4. The facility maintains semiannual groundwater and surface water monitoring records. Monitoring is conducted by Golder Associates NC, Inc. Records were verified for May 22&23, 2012, November 26, 2012, May 21&22, 2013, November 6, 2013, May 21, 2014, and November 24&25, 2014. An exceedance is noted for each monitoring event.
5. The facility conducted a nature and extent study due to increased volatile organic compounds (VOCs) in groundwater monitoring well MW-10. The facility removed MW-10 from the monitoring schedule and replaced it with a new well, NES-3.
6. The facility will continue with detection monitoring on the assumption that the removal of MW-10 and the installation of NES-3 demonstrates a decrease in VOCs. Contact Ervin Lane, Compliance Hydrogeologist – SWS (w. 919-707-8288) for further discussion.
7. Mr. Lane stated that an exceedance of vinyl chloride is noted in groundwater monitoring well MW-2 and that it will be discussed further if noted in the next semi-annual monitoring event.
8. The facility currently uses six groundwater monitoring wells: MW-2, MW-3R, MW-4R, MW-5, MW-9R, and NES-3.
9. Groundwater monitoring wells MW-2, MW-3R, MW-5, and MW-9R were inspected. Groundwater monitoring wells MW-4R and NES-3 were not inspected due to inclement weather. Monitoring well NES-3 was recently constructed and digital pictures [etc.] were submitted to SWS.
10. The facility maintains quarterly methane monitoring records, reviewed by Mr. Lane. Monitoring is conducted by Methane Power Operations LLC. Records were verified for 2nd quarter 2012 through 4th quarter 2014.
11. Methane Power Operations LLC uses two GEM 2000 monitoring units. Unit GM07090 was calibrated 04/17/14 and unit GM05742 was calibrated 06/09/14.
12. Methane monitoring wells GP-4, GP-5, GP-9, GP-14, and GP-20 were inspected.
13. Mr. Lane stated that methane monitoring well GP-14 is not required to be monitored due to groundwater saturation and may be left in place. If site specific conditions change future monitoring may be required.

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14. The facility has a landfill gas collection and control (LFGCC) system. The LFGCC system is maintained and operated by Methane Power Operations LLC. The LFGCC system is used to provide energy for three generators. The flare operates if required.
15. Mr. Lobdell stated that the generators are continuously run [per schedule] and that the flare would automatically operate during an unscheduled shut down event. If the flare were to fail Methane Power Operations LLC personnel would have to shut down the blowers manually.
16. The LFGCC system uses 66 methane extraction wells.
17. Landfill gas condensate is gravity-fed from a storage tank to the (adjacent) North Durham Water Reclamation Facility. Mr. Lobdell stated that the North Durham Water Reclamation Facility receives ~ 500 gallons of condensate a day.
18. At the time of the inspection the LFGCC system operated as follows: flare not in operation, system flow standard cubic feet/minute (SCFM) 756.6, blower discharge gas temperature 142.8 °F, gas dew point 42.5 °F, oxygen 0.7%, methane 46.1%, carbon dioxide 35.0%, and vacuum 21.8 inches water column (W.C.).
19. Methane Power Operations LLC personnel obtain oxygen, methane, and carbon dioxide data manually with a GEM 2000 monitoring unit at the LFGCC system conditioning and control area.
20. Ensure the LFGCC system outdoor monitor panel is repaired to properly display flare temperature.
21. The facility has been approved to install 16 additional extraction wells as part of the LFGCC system and replace/repair an existing well. It is expected that 2,850 feet of header pipe will be installed.
22. Construction began February 2015 and is expected to be completed mid-March 2015.
23. During construction 200 feet, maximum, of trench may be open in advance of pipe installation. Solid waste generated either from well installation or trench excavation shall be disposed of off-site (at a permitted solid waste management facility).
24. During the inspection the LFGCC system expansion project was not in operation. A small number of extraction wells have been installed. An open trench was not observed. Containers were available for the [off site] disposal of solid waste. Asbestos work area signage was posted.
25. The LFGCC system extraction well drilling machine and an assembled extraction well (laterally atop the landfill cap) were observed.
26. Ensure SWS has approved the LFGCC system modification prior to operation.
27. The facility has a Division of Air Quality (DAQ) permit No. 08456R04 issued on June 26, 2012, expiration date May 31, 2017.
28. A foam-like substance was observed at a stormwater pipe outlet on the southwest side of the landfill. On February 22, 2013, the facility had a discharge of a foam-like substance during the stormwater pipe repair. SWS determined in a letter dated 07/29/13 that the constituents present are thought to be naturally occurring.
29. During the inspection the stormwater pipe inlet and adjacent area were inspected. The source of the foam-like substance could not be verified. The inspection was conducted during inclement weather. The stormwater entering the stormwater pipe inlet appeared to be surface runoff. Mr. Lobdell was asked to take a sample of the liquid at the stormwater pipe outlet to confirm results from the 2013 event and provide the results to Ervin Lane, Compliance Hydrogeologist - SWS.
30. The stormwater pipe inlet and surrounding area and the stormwater pipe outlet should be routinely inspected.
31. It is suggested that the grass along the northwest side of the landfill service road is routinely mowed and vehicle ruts filled-in/graded accordingly.
32. Ensure rill erosion along a section of the north side of the landfill is repaired and erosion control installed.
33. A foam-like substance was observed in one of the rills. The source of the foam-like substance could not be verified. The inspection was conducted during inclement weather. Mr. Lobdell was asked to take a sample of the liquid and provide results to Ervin Lane, Compliance Hydrogeologist - SWS.
34. On February 12, 2015, Mr. Patrone received an email from Mr. Lobdell stating that a sample of the liquid was taken and that preliminary results indicate no detectable VOCs. Mr. Lobdell stated that the rill contained non-flowing liquid when the sample was taken. Contact Ervin Lane, Compliance Hydrogeologist – SWS for further discussion.

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- 35. In a letter dated October 29, 1996 the facility requested the use of wood mulch as daily cover material [to be covered with soil weekly] due to Hurricane Fran storm debris. The SWS approved the request. The facility used wood mulch as daily cover material from late-fall 1996 through the late-fall of 1997.
- 36. The facility submitted fiscal year end 2014 financial assurance – currently under review by SWS.
- 37. Edge of waste markers have been installed. The edge of waste markers are white PVC pipe placed over metal fence stakes.
- 38. Mr. Lobdell stated that the edge of waste markers are set ~ 5 to 10 feet off of waste.
- 39. Mr. Lobdell stated that the landfill cap is mowed twice a year, last mowed December 2014.
- 40. The facility sign adjacent to the service road was recently replaced. Ensure the sign includes the facility permit number and contact information.
- 41. Access roads are of all-weather construction.
- 42. The site is secured by a locked gate. Facility personnel are in the area during operating hours.

Please contact me if you have any questions or concerns regarding this inspection report.

Phone: 336-776-9673

John Patrone, Environmental Senior Specialist
 Division of Waste Management, NCDENR

Sent on: <u>February 18, 2015</u>	X	Email		Hand delivery		US Mail	Certified No. []
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Electronic Copies: Deb Aja, Western District Supervisor - SWS
 Sarah Rice, Compliance Officer - SWS
 Ervin Lane, Compliance Hydrogeologist – SWS
 Ming-Tai Chao, Environmental Engineer - SWS
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Digital pictures taken February 10, 2015
by John Patrone, DWM-SWS

Right front of landfill



LFGCC system extraction well drilling machine



Edge of waste marker – representative



Right side of landfill



Right rear of landfill



Rear of landfill



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Erosion rills on north external side slope/rear of landfill



Erosion rill to be repaired accordingly - representative



Left rear side of landfill



Left side of landfill



Stormwater pipe outlet -foam like substance



Stormwater pipe inlet



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Left side of landfill – area in proximity to stormwater pipe



Top of landfill – left side



LFGCC system extraction well (to be installed)



Newly installed LFGCC system extraction well



LFGCC system extraction well drilling machine – drill head



Groundwater monitoring well MW-2

