2013 Leachate Quantity Analysis Report Tomoka Farms Road Landfill Class I North Cell

Volusia County
FLORIDA

Presented To:

Florida Department of Environmental Protection

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The following report is provided to satisfy Section 2 – Specific Conditions, (C) (12) (g) of the permit to operate the Tomoka Farms Road Landfill, North Cell Class I disposal area. Permit Number 0078767-030-SO-01.

g. Leachate Quantity Analysis Report. The permittee shall annually provide the Department a graphical representation of the monthly leachate generation rate for each of the 6 pumps and an analysis of the data. Any significant drop in leachate generation shall be explained or the root cause determined. The report must be submitted not later than January 31 following the reporting year.

Summary and Analysis

The leachate generation rates for the North Cell of the Tomoka Farms Road Landfill and the leachate collection system are monitored on a daily basis and flows are recorded weekly. Daily inspections consists of a visual inspection looking for any alarm lights, physical damage to the panel or riser, and check the liquid level insuring that the readings are within the set parameters. If any damage is noticed or the system is not operating properly, troubleshooting and repairs are initiated. If the riser will be down for greater than 24 hours for repairs, a temporary pump is set up and leachate is pumped to the closest riser or cleanout. See the maintenance and repair log section later in this report for specific dates and repairs made to the leachate system during 2013.

The weekly readings are gathered in the field, then entered into a spreadsheet, tracked throughout the year, compared to the recent rainfall, and analyzed. If the analysis shows an unusual rise or drop in leachate generation as compared to the rainfall for that period, troubleshooting and subsequent repairs to the system are made and documented. Rainfall is recorded daily directly adjacent to the North Cell at the leachate treatment facility. During the reporting period, January 2013 through December 2013, the leachate generation rates tracked very closely with the rainfall trending up with an increase in rain and trending down with a decrease in rainfall. Riser one specifically sees a significant increase in leachate production during rainy periods due to the open toe-drain on the south side, which is connected through a cleanout riser to the leachate collection system for riser one. The toe-drain appears to be working effectively, it is typically dry within two or three days after a heavy rain and there have been limited leachate seeps in the area of the toe-drain. Figure 1 is provided as a graphical representation of leachate generation rates vs. rainfall for the period of January 2013 through December 2013.

Figure 1 (Leachate Flow vs. Rainfall)

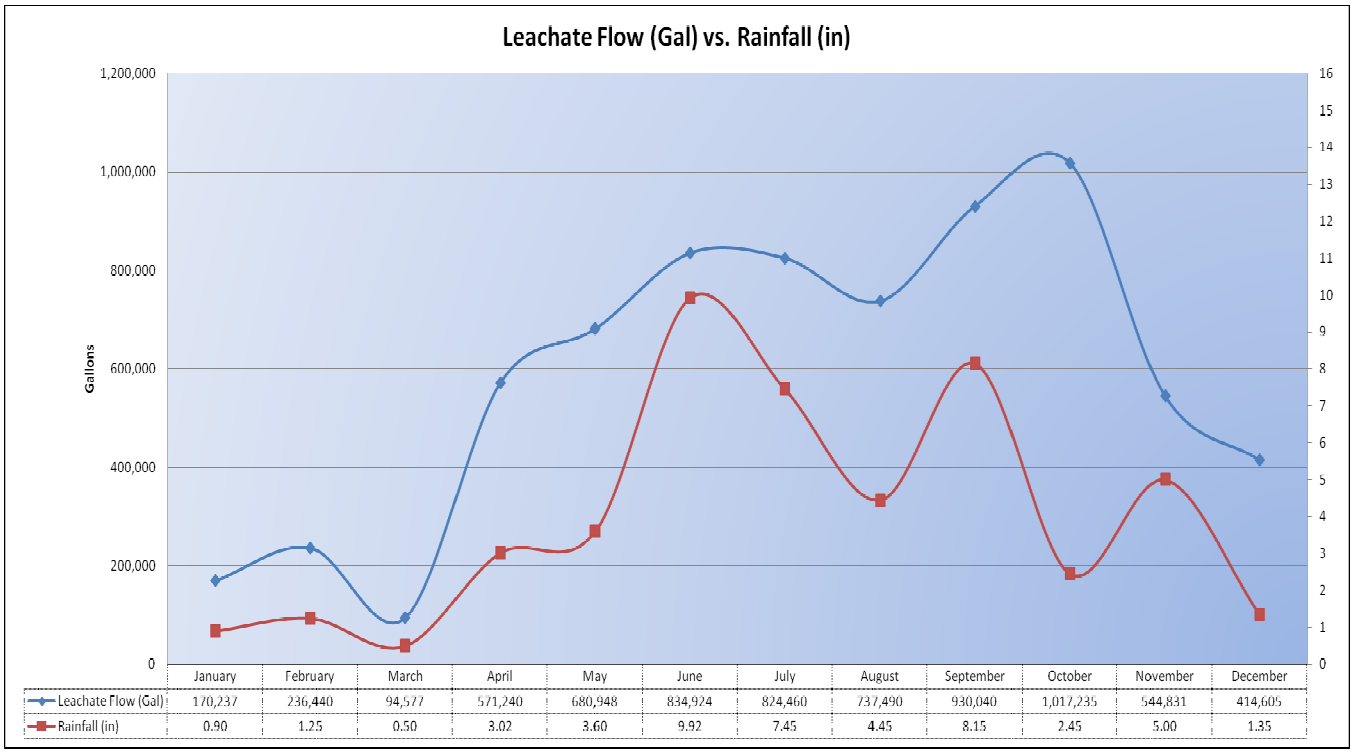

Table 1 (monthly leachate flow)

	Riser 1	Riser 2	Riser 3	Riser 4	Riser 5	Riser 6	Total
Month	Flow	Flow	Flow	Flow	Flow	Flow	Flow
January	39,205	23,932	28,800	27,900	27,900	22,500	170,237
February	54,451	33,239	40,000	38,750	38,750	31,250	236,440
March	21,781	13,296	16,000	15,500	15,500	12,500	94,577
April	131,555	80,305	96,640	93,620	93,620	75,500	571,240
May	156,820	95,728	115,200	111,600	111,600	90,000	680,948
June	301,626	101,400	131,976	62,322	116,100	121,500	834,924
July	223,860	93,600	89,700	222,300	135,000	140,400	904,860
August	193,050	124,800	109,200	171,600	18,900	111,540	729,090
September	303,420	145,000	195,000	0	220,320	66,300	930,040
October	347,085	172,614	206,466	0	169,410	121,660	1,017,235
November	218,240	41,886	122,325	94,700	88,240	74,140	544,831
December	102,890	62,400	67,275	93,250	109,740	72,300	414,605

No flow at Riser 4 for September and October was due to a pump and panel replacement. See maintenance and repair log for details.

2013 Maintenance & Repair Log

6-10-13 – Riser 6 pump pulled for inspection when pump could not keep up with leachate generation. Upon inspection it was found that the pump shaft had sheared and the impeller was found shredded in the pump body. A possible cause was a malfunctioning level transducer causing the pump to run nonstop. The pump was sent to the manufacturer and they were unable to provide a reason for the failure. A new pump was ordered, and a temporary pump was set up to pump from riser six to riser five. A new pump was installed on 7-18-13.

8-1-13 – Riser's 1 & 6. As part of regular maintenance the sumps and collection systems were flushed, pressure cleaned and vacuumed. Flushing was achieved by dumping clean water from the water wagon into the cleanout risers. Approximately 15,000 gallons was flushed through the system for riser 1 and approximately 5,000 gallons was flushed through the system for riser 6.

8-2-13 – Riser 5. It was notice during daily rounds that the motor over load had tripped causing pump not to run. Upon troubleshooting it was determined that the motor had gone bad due to a short in the electrical system. A temporary pump was set up to pump from riser 5 to the cleanout for riser 4. A new pump was ordered and was installed on 8-26-13.

8-24-13 – Riser 4. The control panel for riser four failed due to excessive corrosion of the copper connections and components within the panel. It was determined that the panel was not repairable therefore a new panel was ordered. We also decided to order a new pump for this riser due to excessive hours on the existing pump. A temporary pump was set up to pump leachate from riser 4 to riser 3. The new pump and panel were installed and riser 4 was fully operational on 11-21-13.

10-4-13 – Riser 5. Pump was pulled, inspected, and cleaned due to false readings on the pressure transducer. An electrician was called to assist with the trouble shooting of the electrical system. A faulty splice was found in the electrical pull box adjacent to riser five. The electrician re-spliced the connection, replaced some bad wires, and the electrical issues were fixed.

12-1-13 – Riser's 1, 4, & 5. As part of regular maintenance the sumps and collection systems were flushed, pressure cleaned and vacuumed. Flushing was achieved by dumping clean water from the water wagon into the cleanout risers. Approximately 10,000 gallons was flushed through the system for riser's 1 & 5 and approximately 5,000 gallons was flushed through the system for riser 4.

12-9-13 – Riser 1. Transducer failed causing pump to run for 49 hours with the sump empty. Pump was pulled and inspected for damage. There was damage found to the power lead presumably caused by the heat of the pump running continuously. The power lead and the transducer were replaced with spares and re-installed and was fully operational on 12-10-13.

Flow Meter Installation Project

During September and October the County purchased and installed flow meters for Riser's 1, 4, 5, and 6 in order to more accurately track leachate generation. Meters were not installed on riser's 2 and 3 because the County will be replacing these risers, including the sumps, pumps, panels, and piping for these risers in early 2014. Meters will be included in the project which is currently at the 90% design stage.