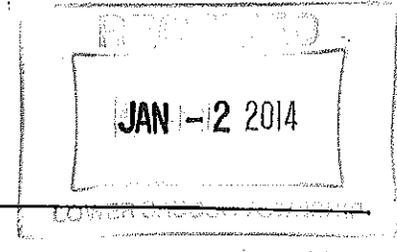


Hanover

Engineering Associates Inc



March 27, 2013

Mr. Jack Cahalan, Manager
Lower Saucon Township
3700 Old Philadelphia Pike
Bethlehem, PA 18015

RE: Joint Municipal Landfill Committee
Minutes of March 21, 2013 Meeting
Hanover Project LS90-07

Dear Mr. Cahalan:

The Joint Municipal Committee between IESI Bethlehem Landfill and Lower Saucon Township met at the Landfill Office at 1:00 PM on March 21, 2013.

Attending the meeting were:

Ms. Priscilla deLeon
Ms. Donna Louder
Mr. Hazem Hijazi, PE
Mr. Allen Schleyer
Mr. Christopher Taylor, PG, HMI

AGENDA ITEMS

I. Status of Waste Activities

Monthly Tonnages:

	<u>December</u>	<u>January</u>	<u>February</u>
Municipal Solid Waste (total)	24,220.20	23,938.40	22,168.30
Construction and Demo (total)	11,598.80	9,671.00	8,677.90
Residual Waste (total)	2,015.30	2,068.10	1,944.90
Asbestos	[107.90]	[96.40]	[45.30]
Out of state-total (percentage)	[25,251.40](67%)	22,936.90(64%)	22,682.50(69%)
TOTAL	37,834.30	35,677.50	32,791.10
Recycled Tonnage (percent from Lower Saucon Twp.)	0.00 (81%)	23.30 (79%)	0.00 (77%)

ROUTING

- Council
- Manager *orig*
- Asst. Mgr.
- Zoning
- Finance
- Police
- P. Works
- P/C
- P & R
- EAC
- Engineer
- Solicitor
- Planner
- Landfill
- EMC
- Other

NOTES:

1. The tonnage for 'Asbestos' is included in the tonnage for 'Residual Waste (total)' and is therefore shown in brackets.
2. The 'Out of state - total' tonnage figure has now been consolidated to include total tonnage from all waste categories, and is shown in brackets because it is included in the tonnage for the other categories.

website jml 03-21-13

<u>Form U Submittals</u>	<u>Waste</u>	<u>Approval Date</u>
Fitzpatrick	Plant Trash	02/05/13
S. Beach Psych. Center	ACM	02/05/13
Hatsco Minerals	Sand Blast Grit	03/07/13
ATEK Remediation	ACM	03/20/13

Mr. Hijazi asked about the sand blast grit. Mr. Schleyer provided an explanation of the source of the material, stating that it was new (unused), but had been spilled on the ground during handling and rejected for use for this reason. Mr. Hijazi asked if the landfill accepts used grit. Mr. Schleyer responded yes, they can. Ms. deLeon asked if used grit contains both the grit material and some amount of the material that was being removed. Mr. Schleyer responded yes.

II. Annual Groundwater Trend Analysis

- The 1st Quarter 2013 Quarterly Groundwater Report sampling began during the week of March 18, 2013.

(See "Well Sampling" for discussion.)

III. Correspondence and Reports

- Form U Submittals to PADEP and Lower Saucon Township
- Abatement System Report
- 4Q12 Groundwater Report
- LFG well construction notice
- Minor Permit Modification – re-grade final contours
- Title V Draft Permit renewal
- AIMS Annual Report

There was a general discussion on the minor permit modification application and on the Title V permit application. Ms. deLeon asked if any of these reports trigger any concerns. Mr. Schleyer responded no, there are no violations reported in any of them.

IV. Landfill Operations

- Department of Environmental Protection Inspections
 - February 14, 2013 – S. French: Engineers meeting
 - February 27, 2013 – W. Govern: site inspection
 - March 14, 2013 – S. French, D. Evans: Engineers meeting
 - March 19, 2013 – B. Bham: groundwater monitoring
 - March 21, 2013 – B. Bham: groundwater monitoring
- Host Municipal Inspection
 - February 1, 2013 – Chris Taylor
 - February 21, 2013 – Chris Taylor
 - March 8, 2013 – Chris Taylor

- Bethlehem Renewable Energy (BRE) and Flare Operations

The following is an update to the Bethlehem LFG Flare activity. We had the following LFG flare shutdowns at Bethlehem Landfill. The auto-valve closed as designed for each shutdown of the flare. No odors were noted or odor complaints received by Bethlehem Landfill during the outage events. The BRE power plant is currently shut down.

Jan 13, 2013	Flare shutdown	01:16	Power outage
	Flare startup	08:39	Duration 7 hr 23 min
Jan 14, 2013	Flare shutdown	10:32	Power outage
	Flare startup	11:39	Duration 1 hr 6 min
Feb 8, 2013	Flare shutdown	14:40	Power outage
	Flare startup	16:32	Duration 1 hr 52 min

All shutdown information is provided to the PADEP.

Mr. Schleyer stated that the power outages were short in duration, just enough to shut the flare down. Mr. Taylor asked for clarification that the power itself wasn't out for the durations indicated, just the flare. Mr. Schleyer stated that was correct.

- Gas Collection

- The Bethlehem Renewable Energy Plant is currently shut down for further pretreatment evaluation. The flare is the primary landfill gas collection and control system. Additional LFG horizontal wells were constructed in the 4-F area.

A general discussion on the state of the BRE plant, its past discharges to the Wastewater Treatment Plant (WWTP), and the future disposition of the waste generated took place. Ms. deLeon asked what is the landfill sending to the WWTP? Mr. Schleyer responded they are sending groundwater from the abatement wells, leachate, and landfill gas condensate. He explained that the process used at the BRE plant to burn the landfill gas involved compressing it to about 200 pounds per square inch (psi), which is necessary to run the turbine engines. He stated that this produces much more condensate than compressing it to a low pressure, as the landfill does to burn it in the flare. Ms. deLeon asked if what the landfill sends is more diluted. Mr. Schleyer responded yes. Ms. deLeon questioned if the chemistry of the discharge from the BRE plant was tested, and a general discussion followed. Mr. Taylor asked where the gas condensate was occurring. Mr. Schleyer responded throughout the collection system. Mr. Taylor asked what is done with it. Mr. Schleyer responded that it goes into the leachate collection system.

During the inspection following the meeting, Mr. Taylor confirmed that the landfill flare was operating at 2,412 scfm at 1629 degrees F.

- Well Sampling

- The 1st Quarter 2013 Quarterly Groundwater Monitoring sampling began during the week of March 18, 2013.

Mr. Schleyer stated that the groundwater sampling finished up today. He stated that Earth Res does the sampling at the landfill, and that Benchmark sampled at the two (2) residences.

- North Slope
 - The North Slope sedimentation traps are functional.
 - The North Slope perimeter road is accessible.
- Abatement System Operations
 - The abatement system continues to operate and discharge to the Bethlehem Waste Water Treatment Plant. Intermittent malfunctions of the well pumps and controls are repaired or replaced as needed.

- Leachate Collection

Flow rates continue to be monitored and reported.

Following is a summary of the work history and developments:

- IESI submitted the report from Meiser and Earl, Inc. on December 23, 2008, to DEP and Lower Saucon Township evaluating the various tests that were performed to locate the source of the elevated detection zone flows as outlined in their May 7, 2008 Work Plan. Lower Saucon Township has forwarded their comments on the December 23, 2008 report to DEP.
- IESI has completed welding of approximately 1,200 L.F. of the secondary line to the primary liner along the northern end of Cell 3-D while the anchor trench was open and prior to completing the weld, a 2½-inch rain event occurred. A spike in the leachate collection/detection flow may be observed.
- IESI will retest the gabion stormwater channel over Cell 3-C and discharging into sedimentation Pond 4 for possible infiltration into the detection zone by flooding the channel on September 24, 2009.
- The capping of the remaining five (5) acres of Phase III has been completed.
- IESI provided an updated report on their LMC investigation to DEP and Lower Saucon Township November 2009. The reports in part indicated that:
 1. LMC 7 does not appear to be affected by rainfall since the northern Cell 3 anchor trench cap/liner welding occurred.
 2. LMC 8 still spiking from rainfall events.
- The next investigation will be to the integrity of the liner under gabion channel in Cell 3-C which will occur in the 1st Quarter 2010. IESI is looking for a seven to ten (7-10) day window with no rain for a meaningful evaluation. IESI received authorization for the Gabion Channel Work Plan from DEP on December 22, 2009.
- The investigation of the integrity of the liner under the gabion downchannel located in Cell 3C began April 10, 2010. The southern-most end of the gabion channel was excavated down to the anchor trench as well as to the east and west of the channel along the anchor trench. Toe drains above the primary liner were replaced and the primary and secondary liners were welded together in the excavated areas. The gabion channel and piping leading to Basin 4 were reconstructed. IESI will continue to monitor the LMC flows and prepare a report on the latest work performed.
- To date the flows into LMC-8 appear to have been substantially reduced since the repair in the first week of April 2010.
- As of this date the data appears to indicate that the repairs to the southern end of the gabion downchannel leading to Sedimentation Pond 4 and the toe drains running

- east/west at the southern most end of the gabion channel have caused a substantial reduction in the detection zone of LMC-8.
- The LMC-8 Detection Zone flow rate continues to be monitored. Existing data continues to show a substantial reduction in the flow rate.
 - September/October 2010 -- the recent rain events have shown influence on LMC-8. The committee is recommending that IESI investigate and consider extending the toe-drain, which was replaced in April along the toe of the southern slope and above Sedimentation Pond 4, to the east and west. Mr. Schleyer provided a summary of the remedial work completed to date to alleviate the high leachate flows being recorded in LMC-8. He reviewed the recent flow data, and stated his opinion that the remedial work has helped to reduce the overall flows. He stated his opinion that the flow data for 2010 indicates that the "response time" between a storm event and high flows observed in LMC-8 is less, and that the flows are of a shorter duration, since the work has been completed. He stated that he is monitoring the flow data and planning out the next step in the process, but is currently concentrating his efforts on the methane gas problem experienced at the residence at 2293 Applebutter Road. Ms. deLeon stated that Lower Saucon Township is very concerned about the high leachate flows, since these could indicate a tear in the landfill liner or other serious problem.
 - February 2011: Discussion regarding monitoring results, as provided in the Third Quarter 2010 Quarterly Facility Report, revealed that samples taken from the leachate detection zone provided very similar chemical analyses to samples taken from the leachate collection zone. Mr. Schleyer indicated that IESI had recognized this correlation, and noted it in their cover letter for the report. Mr. Schleyer provided further explanation with regard to how the report is prepared, and noted that the drainage area for LMC-8 is Phase 3, Cell C, which was completed prior to IESI's ownership of the facility.
 - March 2011: Mr. Schleyer stated that rainy weather is necessitating working on erosion control, but that the toe-drain work is still at the forefront of his work plan. Ms. deLeon asked "What's going on there" in reference to the high leachate flows documented in the leachate demand report. Mr. Schleyer stated that "stormwater is still getting in" and that they have an "open cell; rainwater is going directly in there". Ms. deLeon stated that leachate flows jumped up starting February 11, 2011. Mr. Schleyer attributed this to a neighboring cell "filling up and overtopping" the short barrier between cells. He stated that LMC-8 serves Phase 3 Cell C, and that when this cell "fills up" with leachate, it causes the high flows documented in LMC-8, but also causes leachate to overspill to the adjacent Phase IV, causing high flows there also.
 - April 2011: Mr. Schleyer noted that flows recorded in LMC 6 increased starting March 18, 2011, but that he is not sure exactly why other than to say it is stormwater-related. Mr. Schleyer stated that it is "the same scenario" as last month, with heavy rains every week that has his crews busy repairing leachate seeps and erosion rills.
 - May 2011: Additional toe-drain drainage piping was constructed during the beginning of May. A final report will be completed and submitted to the PADEP and Township.
 - June 2011: Mr. Taylor asked if the toe drains have been carrying water to daylight (i.e. -- has water been flowing out of the new outlets installed in May). Mr. Schleyer responded that there have been a few flowing out.
 - July 2011: Ms. deLeon asked what the PADEP says about the LMC 8 work that was completed. Mr. Schleyer stated that they're okay with it, and that it's "everything we

- said we'd do". Mr. Taylor commented that we'll probably need up to one (1) year of data to evaluate the effectiveness of the work.
- August 2011: Mr. Schleyer confirmed that that he is still collecting leachate flow data. He stated that he is taking LMC 8 detection zone readings every other day to see if the recent heavy rain causes a "bump" in the data. He indicated that the flow data during rain events should be a good tell-tale sign of whether the toe drains are working. He stated that he wants to collect more data, through the wet season.
 - September 2011: Mr. Schleyer acknowledged higher detection zone flows during the monitoring period reported herein. He stated that the toe drains are functioning, because he has seen water flowing from them, and noted the extreme rainfall conditions that occurred during this monitoring period.
 - October 2011: Mr. Schleyer stated that the flows in LMC 8 still bounce up when it rains. Ms. deLeon asked if anyone has any other ideas (to remediate this problem). Mr. Schleyer responded no. During the inspection following the meeting, I observed water flowing from each of the toe drain outlets. It had just rained in the last twenty-four (24) hours preceding the inspection.
 - November 2011: Mr. Taylor asked what specific steps IESI is taking to identify the source of the inflow creating high flows in LMC 8. Mr. Schleyer responded that they are monitoring flow rates versus rainfall.
 - December 2011: Mr. Schleyer stated that, as part of the construction of new cell 4F, the anchor trench along the north side of adjacent Cell 4B was exposed in order to "attach" the old cell to the new cell. He stated that this exposure allowed water from rain events at that time to run right into the collection and detection zones, which caused a spike in the flow numbers for those zones in both LMC 7 and LMC 8. He stated that he expects the numbers to come down. Mr. Taylor asked if everything was buttoned up now (i.e. – no continuing exposure to stormwater). Mr. Schleyer responded that, yes, it was.
 - January 2012: Mr. Taylor noted that secondary leachate flows continue to exceed 100 gallons per acre per day (G/A/D) through LMC-8, and are also elevated above normal levels for LMC-6 and LMC-7. Mr. Taylor asked Mr. Schleyer if he is still attributing these higher leachate flows to Cell F being open. Mr. Schleyer stated that, yes, he was.
 - February 2012: Mr. Schleyer stated that the high leachate flow numbers are, in his opinion, still due to Cell F being open.
 - March 2012: Mr. Schleyer stated that there was a misunderstanding between himself and Mr. Taylor, and that what he meant to say was that there was only one (1) week where the connection between Cell 4F and the adjacent cells were open, in order to fuse the liners together, and that there was a large rain event that week. He stated that in no way did he mean this condition was the continuous cause of high flows in LMC-8 (over many weeks).
 - April 2012: Mr. Taylor noted that leachate flows are down overall, including secondary flows in LMC-8. Ms. deLeon asked if, regarding the leachate totals, did it help that it didn't rain much lately. Mr. Schleyer responded yes, and noted that LMC-8 is now down to 15 gallons per acre per day (secondary flows).
 - May 2012: Mr. Taylor addressed the issue of secondary leachate flows in LMC-8 as one of the issues that is being tracked by him at the monthly landfill committee meetings, and reminded Mr. Schleyer that this is still an issue of concern with the Township. Mr. Taylor noted that flows were up in the last two (2) weeks due to

- increased rainfall, but still just under one-hundred gallons per acre per day in the last week of reporting.
- July 2012: Mr. Schleyer provided a description, using landfill plans, of which areas LMC 6, 7, and 8 drain. Mr. Schleyer stated that, in regard to LMC 8, that they've significantly reduced the infiltration into it, but it's not one-hundred percent. He stated that they've determined that stormwater is getting into the system, but that it still all gets collected and sent to the Wastewater Treatment Plant. Mr. Schleyer provided an explanation of work completed to date, including the toe drain work, re-sealing the liner and cap system, and installing clay as a sealer. He stated that a quick rain will give a little bump in the flow numbers, and that a soaking rain will cause a broad increase. Mr. Taylor stated that elevated secondary leachate flows in LMC-8 is an issue that is being tracked by him, and is still an issue of concern with the Township.
 - August 2012: In accordance with direction received at the technical committee meeting on August 21, 2012, Mr. Taylor advised Mr. Schleyer that the Township Council had authorized the issuance of a letter to the PADEP documenting the Township's concerns with elevated flows in the leachate detection zone.
 - September 2012: The recent secondary flow readings in LMC-8 were reviewed and found to be generally higher than for the previous month.
 - October 2012: The recent secondary flow readings in LMC-8 were reviewed and the last two (2) weeks reported were found to be significantly higher, apparently due to higher rainfall amounts.
 - November 2012: The recent secondary flow readings in LMC-8 were reviewed and the last four (4) weeks were found to be very high, apparently due to high rainfall amounts. Mr. Schleyer stated that there were still spikes in the LMC-8 detection zone, which drop off after a rain.
 - December 2012: The recent secondary flow readings in LMC-8 were reviewed and the last four (4) weeks were found to be high, apparently due to high rainfall amounts.
 - January 2013: The recent secondary flow readings in LMC-8 were reviewed and the last four (4) readings were found to be very high, apparently due to high rainfall amounts. Mr. Schleyer noted that the reported flow rates jumped up for several weeks. Ms. deLeon asked were there storms? Mr. Schleyer responded yes, several rain events.
 - February 2013: The recent secondary flow readings in LMC-8 were reviewed and found to be very high. Mr. Taylor noted that there currently was a very long stretch of readings well in excess of 100 gallons per acre per day, dating back to October 5, 2012, and stated that the Township was not happy about this situation.

The recent secondary flow readings in LMC-8 were reviewed and found to be very high, continuing the unbroken stretch of readings well in excess of 100 gallons per acre per day (g/a/d) which began October 5, 2012. Mr. Schleyer stated that LMC-8 hasn't changed much, and is still holding in the 300 to 400 g/a/d range.

- Radiation Monitoring

- February 2, 2013: Tc-99M
- February 22, 2013: Driver had a medical stress test 02/21/13.
- February 22, 2013: Tc-99M

All are Level 1 isotopes and disposed of on site.

- Phase IV Construction Activities

- Cell 4-E Stage 1/Cell 4-D Stage 1 is the current active disposal area.

During the inspection following the meeting, Mr. Taylor observed garbage being disposed of in this area, with two (2) trucks dumping and one (1) truck waiting.

- Complaints

- February 6, 2013 – A Steel City resident called in an odor complaint at approximately 3:49 PM. IESI responded to the call and arrived at the Steel City resident's house that called in the complaint at approximately 4:00 PM. Sam conducted an odor patrol and also spoke to the resident. At that time no landfill odors were detected at the residence or throughout the Steel City area; only smoke and odor from wood burning stoves/fireplaces could be detected. A Lower Saucon Township Police Officer was also on patrol in the Steel City area and Sam asked him if he detected any landfill odors. The Officer stated that he only detected odors from wood burning stoves. IESI conducted an on-site odor inspection at 3:00 PM prior to the call and again specifically in the north and west area at 4:00 PM (in response to the complaint) and no odors were detected. IESI discussed the complaint with Susan French PADEP during the routine meeting that occurred on Thursday 2/7/13.
- February 19, 2013 – A resident on Skyline Drive complained of a contractor around their house on Tuesday and startled their daughter and caregiver. The contractor was setting up and collecting seismic equipment used for checking areas resulting from the on-site blasting. The contractor was instructed to stay away from local residential homes and if there was a need to be there then IESI should be informed to provide at least a 24 hour notice to the residences.
- February 25, 2013 – A resident on Applebutter Road called Lower Saucon Township about tractor trailers on Applebutter Road east of the landfill. After IESI researched the issue, it was determined that a hauling contractor that also disposed of waste at IESI uses that route to access a mulch pile on Island Park Road. All waste trucks exiting the landfill follow the designated entry/exit route toward Shimersville Road. Lower Saucon Township determined that Applebutter Road is a viable route for the trucks accessing the mulch pile, provided they follow speed limits and other public highway regulations.

Mr. Schleyer previously provided an explanation of the IESI response to the February 6 and February 9 complaints during the February committee meeting. Mr. Schleyer discussed the February 25 complaint and expanded on the narrative provided above.

- Miscellaneous

- Ms. deLeon expressed concern with the lack of Township involvement/oversight with BRE's Title V Permit and with air quality issues related to the operation of the BRE plant.

- Regarding the blasting of bedrock, Ms. deLeon asked if there is a report of seismograph readings. Mr. Schleyer responded that it is not an issued report, but there is a record of it. Ms. Louder asked if the blasts are moving the ground in the Narrows, and noted that the ground there is "breaking down". Mr. Taylor asked Ms. Louder for clarification. Ms. Louder and Ms. deLeon explained how the road is being undermined in areas as material is lost down the slope. Mr. Taylor stated that he would be driving through the Narrows as part of his regular inspection routine and would stop to examine the situation. Mr. Taylor stated that strong enough vibrations probably would affect an unstable bank, but that he didn't know if vibrations from blasting were travelling that far. He asked Mr. Schleyer to find out where seismographs are stationed for blasts to see if any data was available in this direction.
- During the inspection following the meeting, a patrol of Steel City was performed. The wind was blowing from the north/northeast at approximately 10 to 20 miles per hour. No landfill-related odors or noises were observed. An inspection of the roadway in the Narrows was conducted per Ms. Louder's request. It was observed that the area of roadbed instability begins about one hundred fifty feet (150') east of where the power lines cross and extends for several hundred feet eastward. On the upslope side, the area where earth and rock material routinely falls into the roadway corresponds with a large soil seam in the bedrock. On the downslope side, retention of the roadbed is accomplished with a mix of fieldstone walls, concrete walls, metal posts, and bare sloped areas.
- During the inspection following the meeting, no vultures were observed at the landfill.

V. Commercial Waste Vehicles

	<u>Dec 2012</u>	<u>Jan 2013</u>	<u>Feb 2013</u>
Total Trucks	2,852	2,870	2,542
Overweight	61	35	35
Warnings	37	23	23
Suspensions	324 (5>3%)	12 (3>3%)	12 (4>3%)
	5-TT	3-TT	4-TT

FL = front loader, RO = roll off, TT = tractor trailer, RL = rear loader,
DT = triaxle dump truck

VI. Correspondence

- Correspondence from Department of Environmental Protection
 - No discussion
- Correspondence to Department of Environmental Protection
 - Ms. deLeon stated that the Township had sent a comment letter to the DEP regarding the Title V permit application.

- Other Correspondences
 - No discussion.

VII. Township Activities/Township Staff Meeting Update

- Township correspondence to the Department of Environmental Protection
 - No discussion.
- Council Meeting IESI Issues
 - No discussion.
- Miscellaneous
 - Ms. deLeon stated that the Township did not take action on the minor permit modification application regarding revisions to the final cap grading/elevations. She stated that a meeting was held, that the consultant was revising details, and that a new submission with a new review deadline was forthcoming. A general discussion of the stormwater runoff aspects of the proposed regrading followed.

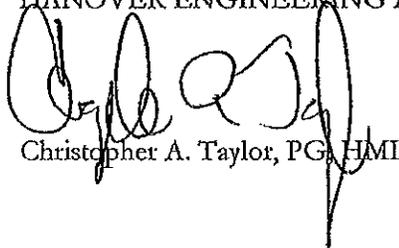
VIII. Establish Time for Next Meeting

1:00PM April 18, 2013 at the Landfill Facility Office.

END OF MINUTES

Respectfully,

HANOVER ENGINEERING ASSOCIATES, INC.



Christopher A. Taylor, PG, HMI

cat:cat/dad

S:\Projects\Municipal\LowerSauconTwp\F-99-07-BethLandfill\Docs\IESI landfill report of March 21, 2013 mtg.doc

Enclosure(s)

cc: Ms. Priscilla deLeon (via e-mail)
Mr. Hazem Hijazi, PE (via e-mail)
Ms. Donna Louder (via e-mail)
Mr. Allen Schleyer (via e-mail)
Ms. Laurressa J. McNemar, PE (via e-mail)
Mr. James B. Birdsall, PE (via e-mail)
Mr. Scott J. Brown, HMI (via e-mail)
Mr. Jacob A. Schray, HMI (via e-mail)
Mr. Rich Sichler (via e-mail)
Ms. Leslie Huhn (via e-mail)
Ms. Diane Palik (via e-mail)
Ms. Susan French (via e-mail)

BETHLEHEM LANDFILL
LEACHATE DEMAND REPORT

February 2013

<u>Location</u>	<u>Total gallons</u>
LMC-6	10,871
LMC-7	46,050
LMC-8	39,625
LMC-10	1,834,000
PS-1	306,273
PS-2	88,670
PS-3	46,653
Phase-IV	441,596

Total LMC-10 Flow = LMC-6, 7, 8, Abatement Well System, Phase I and II, and LFG condensate. Phase-IV total from PS-1, PS-2 and PS-3.

Total Discharge

LMC-10	1,834,000
<u>Phase IV</u>	<u>441,596</u>
TOTAL	2,225,596 gallons

Total Leachate

Leachate	300,458
<u>Phase IV</u>	<u>441,596</u>
TOTAL	742,054 gallons

LMC-10 Flow - Abatement System Flow = Leachate System Flow (gallons).
Abatement System Flow = 1,533,542 gallons (Neptune Flow meters)

