OPERATION AND MAINTENANCE ANNUAL REPORT JULY 2017 THROUGH JUNE 2018

REFUSE HIDEAWAY LANDFILL
7562 U.S. HIGHWAY 14
MIDDLETON, WISCONSIN 53562

WISCONSIN DEPARTMENT OF NATURAL RESOURCES

PROJECT NO.: 771017.DNRRHL.00
DATE: AUGUST 2018

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SIGNATURES

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1 INTRODUCTION

The following Operation and Maintenance (O&M) Annual Report was prepared by WSP USA Inc. (WSP) on behalf of the Wisconsin Department of Natural Resources (WDNR) for the Refuse Hideaway Landfill (RHL) located at 7562 U.S. Highway 14 in Middleton, Wisconsin (Site). This O&M Annual Report summarizes activities conducted by WSP during the July 2017 through June 2018 contract period. The report includes project background information, a summary of the leachate collection system operational data, a synopsis of landfill gas (LFG) extraction and combustion system operations, landfill perimeter gas probe monitoring results, and an evaluation of landfill surface cover and drainage way conditions. Recommendations for future Site activities are also presented.

The 23-acre RHL, located in the Town of Middleton, Dane County, Wisconsin, was filled with approximately 1.3 million cubic yards of municipal, commercial, and industrial waste. A Site map is included as Figure 1. The landfill was closed in May 1988 and covered in October 1988 with a minimum of two feet of clay, 18 inches of general soil, and six inches of topsoil. The State of Wisconsin, through the Environmental Repair Program, constructed an active gas extraction and combustion system and a leachate recovery system, which became operational on September 1, 1991. System O&M activities and landfill surface inspections have been conducted since operation began through June 2018.

The LFG recovery system consists of a blower/flare station, a LFG collection network, and gas monitoring locations. The blower/flare station includes one centrifugal LFG blower, an enclosed flare (currently off-line), a pedestal flare (previously used as a backup combustion unit but put into service in July 2013 in lieu of the enclosed flare), and associated controls and appurtenances. The LFG collection network consists of 13 extraction wells, 4 drip legs, and associated gas header piping. Eleven monitoring wells are located throughout the Site and an ambient air monitoring location has been designated in a nearby Speedway building. The LFG recovery system was installed to withdraw gas from the landfill to control surface emissions and subsurface migration. Odors and emissions were controlled by combusting the gas at the flare.

The leachate collection system was upgraded in 1996 and currently consists of pneumatic pumps installed in nine of the extraction wells. The purpose of leachate extraction was to lower leachate head levels and reduce the potential for groundwater contamination. A compressor (currently off-line) located near the blower/flare station supplied air to the pneumatic pumps. Leachate is stored onsite in a 25,000-gallon underground storage tank (UST). Leachate is subsequently removed from the tank and transported to the Madison Metropolitan Sewerage District (MMSD) for treatment and disposal.

2 LEACHATE RECOVERY SYSTEM

2.1 LEACHATE LEVELS

Leachate levels were measured monthly in the gas extraction wells using an electric water level indicator. The leachate head measurements in the gas extraction wells are summarized on Table 1. Leachate levels in the various extraction wells ranged from approximately 3.1 feet (GW11) to 41.3 feet (GW12) above well bottom during the contract period and were generally consistent with measurements from the previous contract year. On August 29, 2017, the compressor failed and the leachate collection system remained non-operational for the rest of the contract period. At extraction wells with historically consistent pumping operations (GW4, GW10, and GW11), an initial increase and subsequent stabilization in leachate head was observed.

2.2 LEACHATE QUANTITY

The volume of recovered leachate is influenced by numerous factors including, but not limited to, interruptions to compressor operations, the number of operational pneumatic pumps, the severity of blockages in the leachate piping network (i.e. freezing wellhead conditions, biological fouling, natural scaling), seasonal weather variations, the condition of the clay cap, the frequency and duration of precipitation events, and the corresponding leachate elevation within the landfill.

Due to the non-operational status of the compressor system for much of the contract period, the volume of recovered leachate was the substantially lower than during past contract periods (Figure 2). The compressor system was functional during July 2017 and August 2017. The annual rainfall total for the current contract period was 1.03 inches above average when compared to the last 11 contract periods.

Approximately 53,679 gallons of leachate were recovered and removed from RHL from July 2017 through June 2018 (Table 2). Liquid accumulating in the tank during May and June 2018 has been attributed to stormwater draining into the tank from a catch basin located on the concrete loadout pad adjacent to the UST area, since the leachate system was off-line at that time. The volume of liquid recovered and the corresponding annual rainfall total is documented on the table below. For the current contract period, the University of Wisconsin – Madison Atmospheric, Oceanic and Space Sciences weather station precipitation data were obtained from Weather Underground (www.wunderground.com).

Contract Period	Leachate Volume Recovered (gallons)	Annual Rainfall Total (inches)	O&M Contractor
July 2017-June 2018	53,679	40.21	WSP (LBG)
July 2016-June 2017	201,223	52.81	LBG
July 2015-June 2016	148,645	41.06	LBG
July 2014-June 2015	97,736	27.68	LBG
July 2013-June 2014	190,229	35.73	LBG
July 2012-June 2013	275,061	45.92	LBG
July 2011-June 2012	304,143	22.28	LBG
July 2010-June 2011	563,145	36.67	LBG
July 2009-June 2010	469,239	36.25	LBG
July 2008-June 2009	214,360	37.13	Other Consultant
July 2007-June 2008	226,606	55.24	Other Consultant
Average	--	**39.18**	--

During the current contract period, monthly leachate recovery volumes ranged from no recovery to 15,139 gallons. A graph of the monthly leachate recovery volumes is included in Figure 3.

2.3 LEACHATE QUALITY

Leachate samples were collected on a quarterly basis for laboratory analysis. On September 27, 2017, December 28, 2017, March 21, 2018 and June 21, 2018, leachate samples were collected by WSP personnel by lowering a disposable bailer into the UST. The samples were placed in appropriate containers, packaged on ice in a cooler, and sent via FedEx to Test America, Inc. (Wisconsin Certification No. 999580010) for laboratory analysis of 12 inorganic parameters. Pursuant to the MMSD Wastewater Discharge Permit (Permit) NTO-5.12 and the WDNR's request for proposal, the samples were analyzed for cadmium, chromium, hexavalent chromium, copper, lead, mercury, molybdenum, nickel, selenium, silver, zinc, and total cyanide. As indicated on Table 3, concentrations of the inorganic compounds were less than the discharge permit effluent limitations. The laboratory analytical reports are included in Appendix A.

2.4 LEACHATE DISCHARGE PERMIT COMPLIANCE

Leachate is pumped on an as-needed basis from the UST by A-1 Sewer Service and is transported to a MMSD facility for treatment and disposal as allowed by the Permit. As stated above, concentrations of the analyzed parameters did not exceed any discharge permit limits. On June 9, 2014, the MMSD issued Permit NTO-5.12 which will expire on June 30, 2019. A copy of Permit NTO-5.12 is included as Appendix B. To fulfill the reporting requirements of Permit NTO-5.12 Part 3, Section 3.01, monitoring results were submitted to the MMSD within sixty days of the end of each quarterly monitoring period.

2.5 OPERATIONAL DURATION AND MAINTENANCE ACTIVITIES

On August 29, 2017, WSP personnel discovered that the compressor was non-operational. Active leachate pumps were turned off, the system was decompressed, and the electricity to the compressor room was turned off. WSP informed the WDNR and contacted the compressor manufacturer's service vendor to coordinate a Site visit to investigate the failure. WSP also notified the leachate hauling contractor that leachate would not be recovered while the system was off-line. On September 6, 2017, WSP personnel met with a representative from Energetics (Division of EMS Industrial, Inc.) to inspect and troubleshoot the compressor. Energetics removed the compressor's motor and transported it to their maintenance facility for further diagnosis. Energetics notified WSP that several internal components of the compressor's motor were damaged or experienced failure. Energetics provided information with regard to repair and replacement options as well as information with regard to the installation of a temporary compressor and flow meter to more accurately determine the leachate collection system air demands. WSP contracted with Energetics to conduct a leachate collection system air demand test from November 28, 2017 through December 1, 2017. Over the course of the demand test, a data logger recorded airflow through the distribution lines in standard cubic feet per minute (scfm). The leachate collection system operated with a demand of approximately 1.0 scfm with all leachate pumps turned off, and approximately 6.0 scfm with all functional pumps at the time of the air demand test (GW4, GW10, and GW11) turned on. The desiccant dryer was bypassed during the air demand test. Results of the test and options for replacing the compressor were submitted to the WDNR.

While the compressor was operational during the months of July 2017 and August 2017, the operation of select leachate pumps was cyclic. Duty cycle limitations of the compressor required leachate pumps to be cycled on and off line to minimize the demand on the compressor. Furthermore, the combination of reliability issues with select pumps and the volume of airflow required by the desiccant dryer system restricted the number of pumps that could be operated at a given time. Pumps in wells GW4, GW10, and GW11 ran consistently; however, they were not operated simultaneously to keep the compressor duty cycle in the recommended range. Following the failure of the compressor system on August 29, 2017 and through the remainder of the current contract period, all leachate pumps remained off-line.

The annual removal and cleaning of the leachate extraction pumps was completed on June 14, 2018. Well pumps in GW4, GW5, GW8, GW9, GW10, GW11, and GW12 were pulled and cleaned during the annual event. The pumps were cleaned with soapy water and the internal components (i.e. magnet spacing, airline and leachate line connections) were inspected.

Above ground well components such as the air and leachate lines, valves, and well casings were also inspected. Due to the non-operational status of the compressor, the pumps could not be tested out of the well before being placed back into the well.

The following observations were made during the cleaning event. Excess slack in the GW5 suspension cable and airlines were observed when the pump comes to rest in the well casing, which may indicate that an obstruction or landfill settlement is not allowing the pump to remain in a vertical position in the well. After pulling the pump in GW9, the leachate discharge line had a crack near its connection to the pump. The airline at the connection to the pump was also damaged. The pump does not currently have a regulator and a repair is needed near the above ground airline on/off valve due to damage suffered during a landfill mowing event. At pump GW8, a brass fitting that connects the air discharge line at the pump fell off during pump cleaning activities. The pump's leachate discharge line and airlines were disconnected and the pump was removed from the well casing to allow for future repairs. The pump was sealed in a plastic bag and placed in the compressor room for storage. The associated leachate and airlines at GW8 were returned down the well casing. An attempt was made to pull the pumps in wells GW7 and GW13; however, the pumps could not be removed. Landfill settlement may have impacted the well casing above the pumps in such a manner that the pumps can no longer be pulled up to the landfill surface for cleaning and troubleshooting. Pumps were never installed in wells GW1, GW2, GW3, and GW6.

A component of the annual inspection is having a contractor jet the leachate lines, driplegs and cleanouts. Due to the non-operational status of the leachate collection system during the contract year, the jet cleaning activities were not conducted. Annual maintenance of the air compressor was not conducted as the compressor was previously removed from the Site.

3 LFG EXTRACTION SYSTEM

3.1 COLLECTION NETWORK

The gas extraction system consists of a network of 13 vertical extraction wells. The wells, which connect to a header pipe, are grouped together in "branches." The header pipe from each of the branches is connected to the blower to draw the LFG from the wells.

The header piping system is divided into three branches: North, Central, and South. The branches are also connected by header segments at their extremities to provide redundancy. The pipe segment connecting the Central and North branches at their extremities contains control valve CV2 (Figure 1). During the 2014-2015 contract period, a new pipe segment was installed to connect the Central branch to GW4, GW5 and the GW5 laterals to re-establish vacuum to these wells on the South branch. Control valves were installed at GW4 and GW5, consisting of a butterfly valve with a geared actuator extending above the ground surface. Piping from the branches enters the blower station and each pipe has an individual control valve. The branch headers are then combined before entering the blower.

When the system is in operation, vacuum is applied to the wells connected to the North and Central branches. Vacuum measurements are recorded on Table 4. Vacuum cannot be applied to wellheads GW1 through GW3 on the South branch when the blower is operational due to low points on the South branch header. After LFG system upgrades were completed in September 2014 vacuum was applied to GW4, GW5 and the GW5 laterals via the Central branch.

In September 2015, sewer balls were placed in the solid piping of the GW5 laterals upstream of the perforated screens to prevent a vacuum from being applied to the laterals. The sewer balls were installed because monitoring data indicated that elevated methane concentrations and low oxygen levels could not be sustained in the lateral wells. The integrity of the sewer balls has been monitored by WSP personnel.

No changes or upgrades to the LFG collection system were made during the current reporting period.

3.2 OPERATIONAL DURATION

The blower has been off-line since August 2016 due to operational issues with the flare and its electrical components. The combustion system issues resulted in the extraction blower being non-operational for the entire contract period (Table 5). Periodic visual inspections of the blower were completed throughout the reporting period. Due to the age of the blower and the extended duration of it being off-line, the blower may experience some operational issues if the WDNR allocates resources to restart the combustion system at a later time.

3.3 LFG RECOVERY FLOW RATES

When the LFG collection system is operational, flow rates can vary considerably due to the number of operational extraction wells and other Site factors (i.e. leachate head levels). As previously mentioned, the LFG collection system did not operate during the current contract period.

4 LFG COMBUSTION SYSTEM

4.1 OPERATIONAL DURATION

During July 2013, WSP rehabilitated the existing pedestal flare for reuse at the Site. The enclosed flare was permanently taken off-line. The pedestal flare is designed to operate at a lower flow rate and methane concentration than the enclosed flare; therefore, the reuse of the pedestal flare resulted in a higher operational percentage and less direct emissions of LFG to the atmosphere compared to the enclosed flare at that time. However, the LFG combustion system was off-line during the contract period (Table 5). The valves at each well head and the valves in the blower building remained closed to prevent direct venting of LFG through the non-operational flare system.

4.2 TROUBLESHOOTING ACTIVITIES

During the contract period, LFG combustion system troubleshooting activities were not authorized by the WDNR pending an internal evaluation of the necessity of combusting future LFG. During December 2017, WSP obtained information on Solar Spark® LFG vent flares from LSC Environmental Products, LLC. The information was provided to the WDNR for review. Similar to the LFG blower system, due to the age of the flare system and the extended duration of it being off-line, the system may experience additional operational issues if the WDNR allocates resources to restart the system at a later time.

5 LANDFILL PERIMETER GAS PROBE MONITORING RESULTS

5.1 MONTHLY MONITORING

During the contract period, methane was detected in four perimeter gas probe nests (G-1S/G-1D, G-2S, GP-11S/GP-11D, and GP-12S/GP-12D) at concentrations at or above the lower explosive limit (LEL) of 5 percent by volume. Elevated methane concentrations have occasionally been detected at these wells in previous years. The methane concentrations at these four nests ranged from non-detect to 30.5 percent by volume (G-1S) (Table 6).

The nests exhibiting occasional elevated methane concentrations are located within approximately 125 feet of the landfill limits (Figure 1). The G-1 nest is located near the Speedway buildings; however, ambient methane was not detected at or above the LEL inside the closest Speedway building during the contract period. The G-2, GP-11, and GP-12 nests are located near the southwestern property boundary. Extraction/gas well GW5 is the closest well to the G-2, GP-11, and GP-12 nests.

5.2 WELLHEAD UPDATES

During the contract year, WSP replaced port connections, tubing, and valves at gas probe monitoring wells G-2S, G-5, G-6, G-10, and GP-12D. In addition to specific gas probe repair activities, a significant amount of small brush and tree clearing was completed by WSP during Spring 2018 around G-5, GP-8, and the GP-11 nest. The brush and tree clearing was completed because downed trees and small saplings were obstructing the path to complete the monthly monitoring activities. A map of the network is included as Figure 4.

6 LANDFILL SURFACE COVER AND DRAINAGE INSPECTION

6.1 LANDFILL SURFACE

The landfill surface was inspected monthly from July 2017 through November 2017 and from April 2018 through June 2018 to evaluate cap integrity, determine the condition of the drainage ways, and to assess the extent of vegetative cover. Limited areas of the landfill cover have experienced settlement resulting in pools of stormwater collecting on the landfill surface, particularly between GW6 and GW7 and in a centralized area between GW10, GW12, and GW13. Although some small areas of limited vegetative growth have been noted on the southern portion of the landfill in the area of GW1 through GW5, the majority of the landfill became severely overgrown with vegetation during the summer and fall. At the close of the current contract period, a mowing event had not been conducted and the extent of overgrown vegetation was beginning to envelope the mechanical and pneumatic components inside the fenced areas of the leachate extraction and LFG wells. In addition, the vegetation blocks sunlight from reaching the solar panels located on the landfill cap.

Several erosion rills exist along the southeastern and western slope of the landfill. Two significant dips on the landfill access road near GW6 have made entering and exiting the landfill difficult for maintenance vehicles and allows for stormwater to accumulate and remain on the landfill surface. Several groves of saplings exist on the landfill which may impact the clay cap as the tree roots advance below the surface of the landfill cover.

6.2 SEDIMENTATION BASIN

The sedimentation basin was inspected during June 2018 to evaluate the distance between the invert of the outlet pipe and the top of the sediment in the pond. Approximately 14 inches of clearance existed between the outlet pipe and the sediment surface below. During Spring 2018, WSP observed an integrity issue with the sedimentation basin outlet pipe. Near a downstream fitting on the outlet pipe, deterioration of an elbow has resulted in a significant volume of water escaping from the discharge pipe prior to its intended outlet. The water flowing out of the side of the compromised elbow is causing noticeable erosion on the pond's southern berm. WSP notified the WDNR of the issue when it was discovered. Through the remainder of the reporting period, snow melt and significant rain events resulted in a similar situation. As the pipe continues to release water before its designatedd discharge point, continued erosion and wash-out may result in the failure of the sediment pond's southern berm.

7 CONCLUSIONS AND RECOMMENDATIONS

7.1 CONCLUSIONS

Based on the information presented above, the following conclusions have been made:

- Leachate levels in the various extraction wells ranged from approximately 3.1 feet (GW11) to 41.3 feet (GW12) feet above well bottom.
- 53,679 gallons of leachate were removed from RHL. Monthly leachate recovery volumes ranged from zero gallons to 15,139 gallons.
- Concentrations of inorganic compounds in the quarterly leachate samples were less than the discharge permit effluent limitations.
- In September 2016, the LFG flare system succumbed to reoccurring electrical issues, which rendered the system non-operational. The system has remained non-operational as the WDNR internally evaluates the necessity of a LFG combustion system at the Site.
- Leachate pumps GW4, GW10, and GW11 were cycled during the months of July and August 2017 to prevent the compressor from operating above the manufacturer's recommended duty cycle. On August 29, 2017, WSP personnel discovered that the compressor was non-operational. On September 6, 2017, WSP personnel met with a representative from Energetics to inspect and troubleshoot the compressor. Energetics notified WSP that several internal components of the compressor's motor were damaged or experienced failure. WSP contracted with Energetics to conduct a leachate collection system air demand test from November 28, 2017 through December 1, 2017. Results from the air demand test and options for replacing the compressor were submitted to the WDNR. The leachate collection system remained non-operational since its failure on August 29, 2017.
- Pumps from wells GW4, GW5, GW8, GW9, GW10, GW11, and GW12 were cleaned and inspected during the annual event. Due to the non-operational status of the compressor, the pumps could not be tested before being placed back into the well. The pump at GW8 was removed from the well and put into storage for future repairs. Select leachate pumps could not be removed from wells for maintenance during the annual pump cleaning event due to apparent issues with well casings (GW7 and GW13).
- The LFG blower and flare system was non-operational for the duration of the reporting period.
- Sewer balls were previously installed in the GW5 laterals (GW5-LWSP, GW5-LWMSP, and GW5-LESP) to prevent a vacuum on the laterals when methane concentrations are low and oxygen concentrations are elevated.
- Methane was detected in four perimeter gas probe nests at concentrations greater than the LEL. One nest is located near the Speedway buildings and three nests are near the southwestern property boundary. Ambient methane was not detected above the LEL inside the nearest Speedway building.
- Limited areas of the landfill cover have experienced settlement resulting in pools of stormwater collecting on the landfill surface. Small areas of limited vegetation have been observed on select portions of the landfill. Across the landfill surface, unimpeded vegetation growth may impact leachate extraction and LFG well components. Excessive vegetation may also impact the functionality of the Site's solar panels. Several erosion rills exist along the southeastern and western slope of the landfill. Two significant dips exist on the landfill access road near GW6. Several groves of saplings exist on the landfill which may impact the clay cap as the tree roots advance.
- The distance between the outlet pipe invert and the top of sediment in the sedimentation basin was 14 inches. The allowable storm water storage volume of the sedimentation basin appears to have diminished over time. Structural issues with the sediment basin's discharge piping have been observed.

7.2 RECOMMENDATIONS

WSP recommends that the WDNR complete an internal evaluation of the Site's O&M needs to develop a prioritized list of capital expenditures so that funding can be procured to restore system operations as warranted. Should the WDNR choose to suspend a formal O&M schedule, WSP recommends that the WDNR project manager or their designee complete periodic Site visits to evaluate the condition of the landfill, buildings, sedimentation basin, and UST and to monitor for signs of unauthorized entry/use of the Site for hunting or other activities. In addition to routine landfill visits, the following tasks are being recommended for implementation:

- Complete mowing activities on the landfill surface and within the fenced-in areas (i.e. wellheads, blower/flare station, UST area);
- Seed areas of sparse vegetation on the landfill cap;
- Address the leak in the sediment pond's discharge piping;
- Notify the MMSD if quarterly leachate sampling and reporting under the discharge permit have been suspended;
- Apply for a re-issuance of leachate discharge permit NTO-5.12 by June 30, 2019 should pumping activities resume;
- Refurbish the landfill cap access road; and
- Monitor fluid levels in the UST due to stormwater drainage.

REFERENCES

- Weather Underground - University of Wisconsin – Madison Atmospheric, Oceanic and Space Sciences Weather Station Precipitation Data, www.wunderground.com

ACRONYMS

LEL	lower explosive limit
LFG	landfill gas
MMSD	Madison Metropolitan Sewerage District
O&M	operations & maintenance
RHL	Refuse Hideaway Landfill
scfm	standard cubic feet per minute
UST	underground storage tank
WDNR	Wisconsin Department of Natural Resources
WSP	WSP USA Inc.

FIGURES

875 FEET
NORTH-NORTHEAST
TO GPW-1

G-8

GP-22 GP-23 GP-24

G-10

GP-21

G-3

GW13

GP-20

GP-19

G-6

GP-16

GP-18

GW12

GW10

GROUND FLARE

LEACHATE COLLECTION
HOLDING TANK

GP-1

GP-17

GW11

CV2

G-1

G-7

GP-16

GW8

GW7

GW6

GP-2

GW9

GP-3

GW1

GW2

GW5-LWSP

CV1

GW3

G-9

GW5-LESP

GW4

GP-4

G-2

GW5-LWMSP

GW5

SOLAR PANELS

GP-13

GP-5

GP-12

G-5

GP-11 GP-10 GP-9 GP-8 GP-7 GP-6

N

0 160 320
SCALE IN FEET

B

THE ORIGINAL VERSION OF THIS DRAWING IS IN COLOR. BLACK AND WHITE COPIES MAY NOT ACCURATELY DEPICT CERTAIN INFORMATION.

LEGEND

- GW9 — LEACHATE/GAS EXTRACTION WELL LOCATION
- G-8 — GAS PROBE LOCATION ("G" SERIES)
- GP-16 — GAS PROBE LOCATION ("GP" SERIES)
- GW5-LWSP — LATERAL WELL SAMPLE PORT LOCATION
- CV2 — CONTROL VALVE LOCATION
- PROPERTY BOUNDARY
- FILL LIMITS
- GAS HEADER PIPE
- LEACHATE CONVEYANCE PIPE
- LEACHATE CONVEYANCE PIPE (NEVER PUT IN SERVICE)
- FENCE LINE
- ACCESS ROAD
- ELECTRICAL
- AIR LINE
- NEW GAS HEADER PIPING
- PIPING NO LONGER CONNECTED TO LFG COLLECTION NETWORK

NOTE: ALL LOCATIONS ARE APPROXIMATE.

Drawn By: LS 6/28/2018
Checked:
Approved:
DWG Name: 77M1018.17-002

REFUSE HIDEAWAY LANDFILL
MIDDLETON, WISCONSIN
PREPARED FOR
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MADISON, WISCONSIN

Figure 1

SITE MAP

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Figure 2

Wisconsin Department of Natural Resources
Refuse Hideaway Landfill
Middleton, Wisconsin

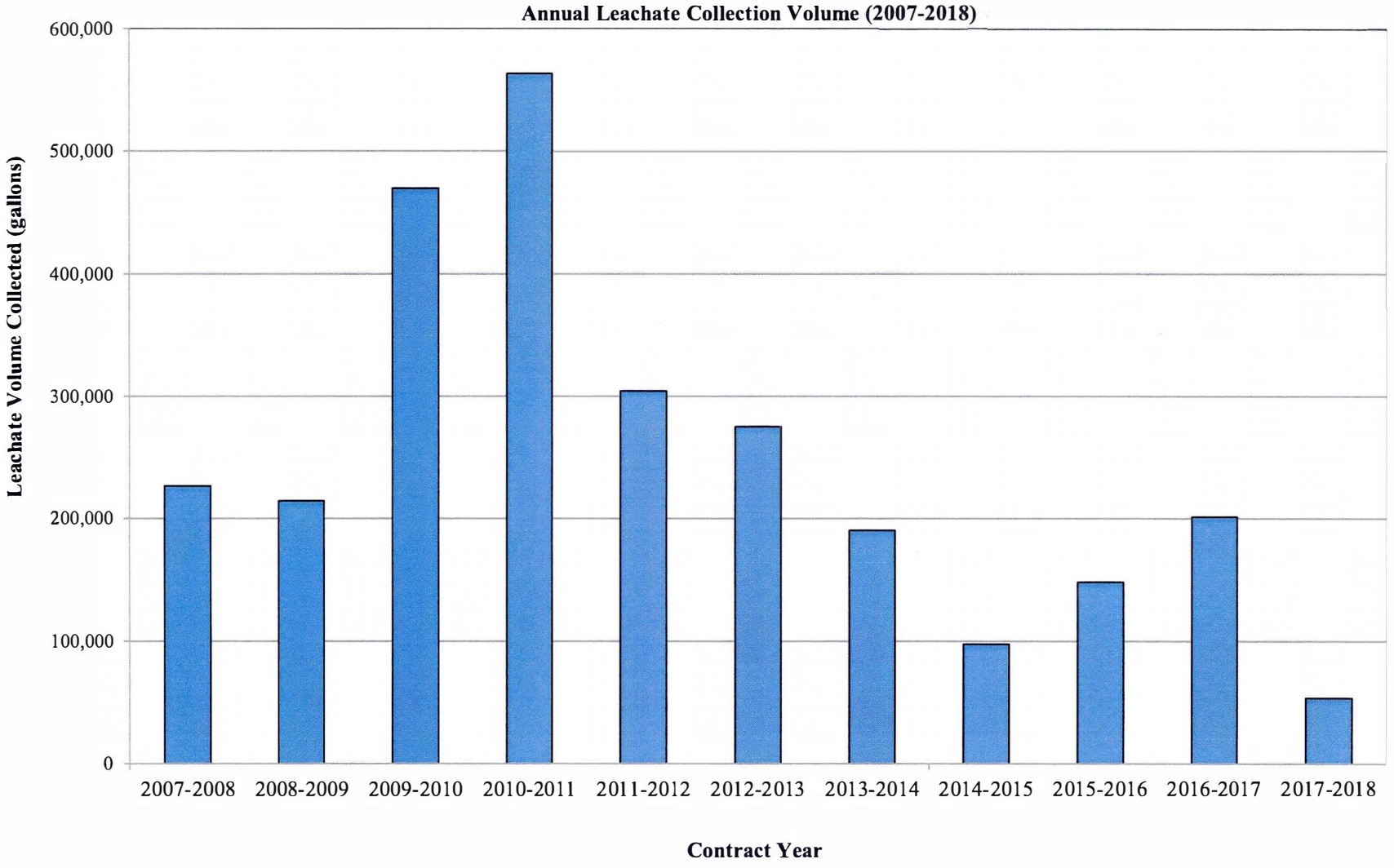
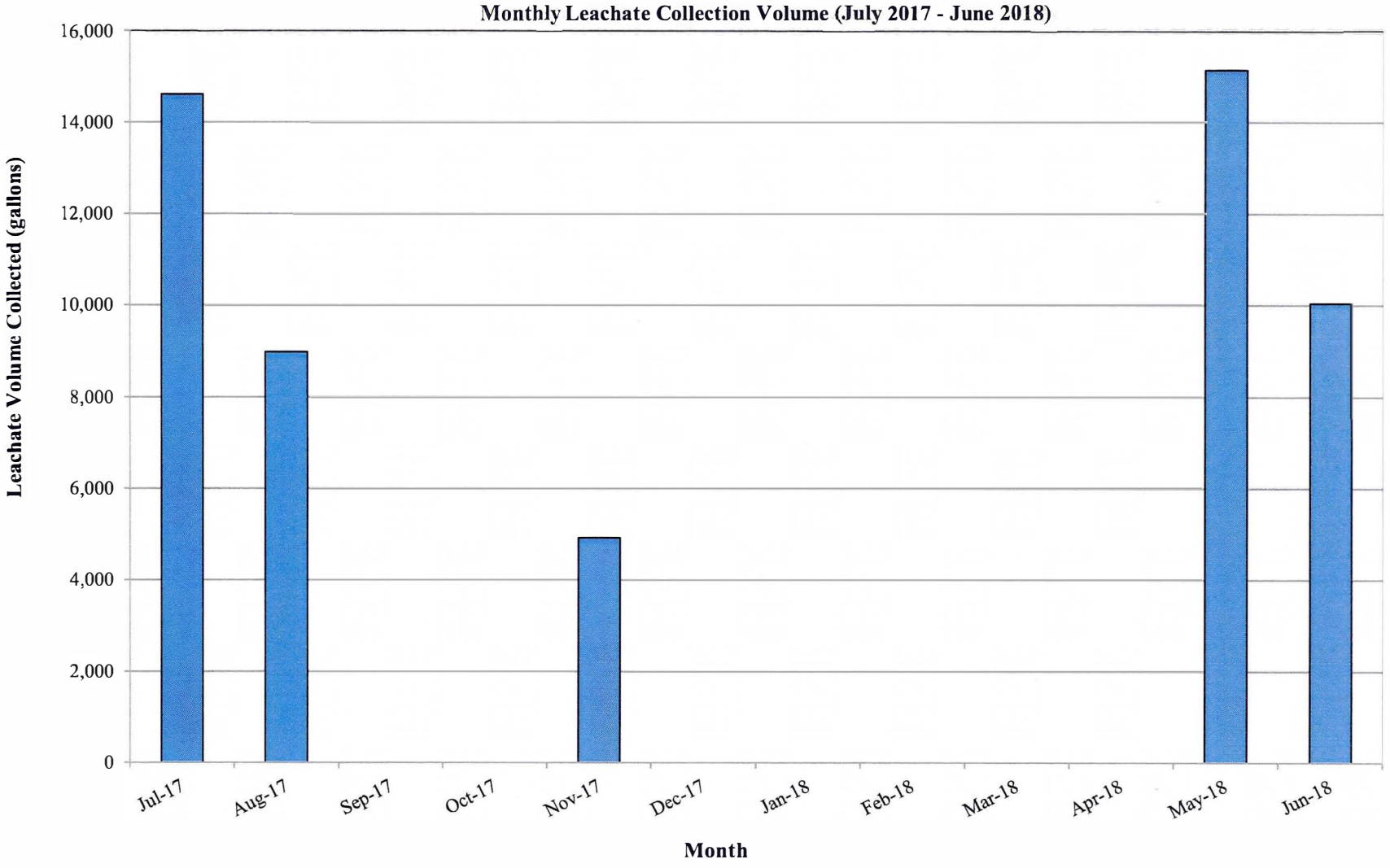
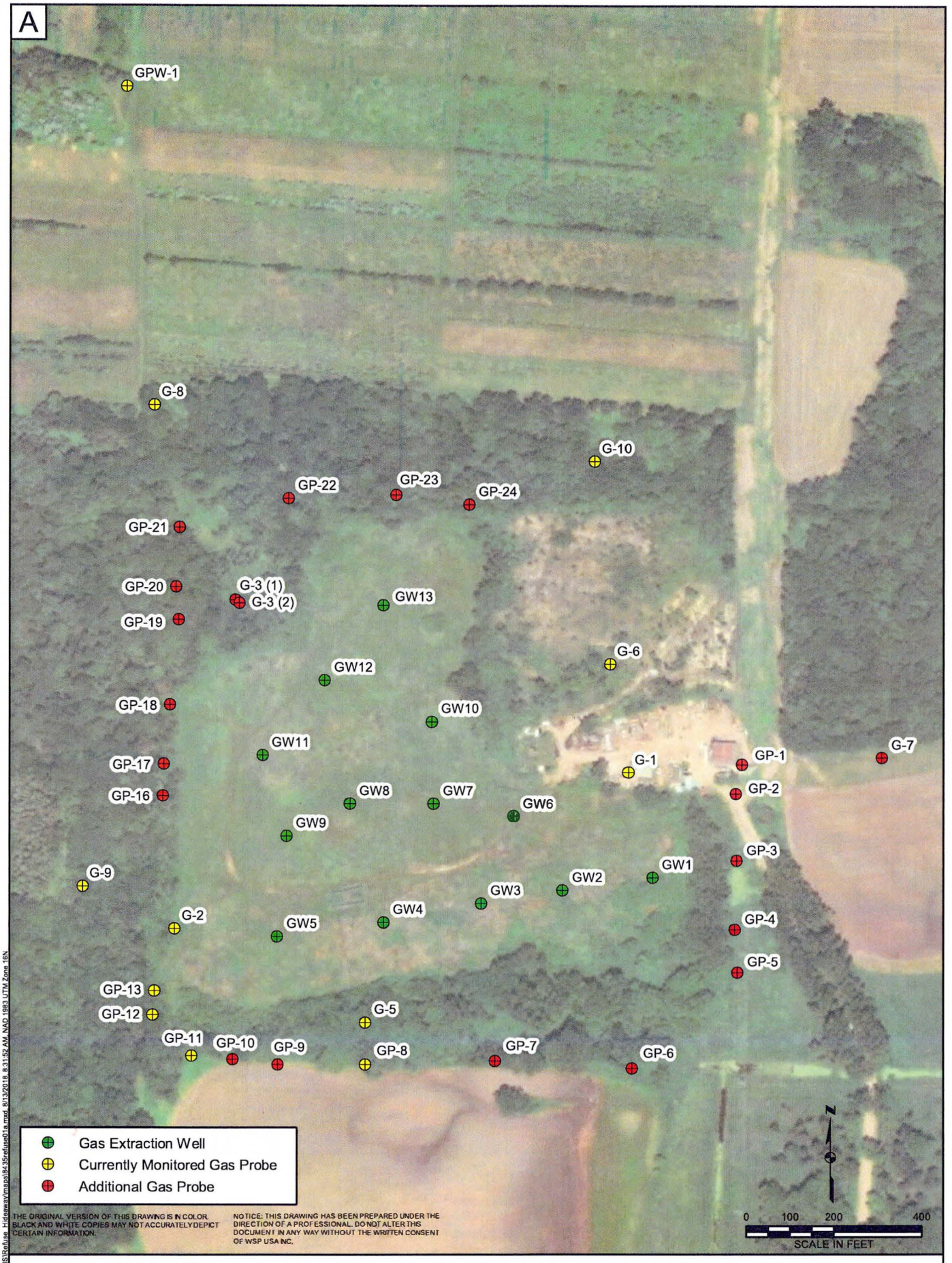


Figure 3

Wisconsin Department of Natural Resources
Refuse Hideaway Landfill
Middleton, Wisconsin





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REFUSE HIDEAWAY LANDFILL
MIDDLETON, WISCONSIN

PREPARED FOR

WISCONSIN DEPARTMENT OF NATURAL RESOURCES

FIGURE 4

GAS PROBE AND GAS EXTRACTION WELL LOCATIONS

TABLES

Table 1

Wisconsin Department of Natural Resources

Refuse Hideaway Landfill

Middleton, Wisconsin

Leachate Extraction Well Summary

Well	Date	Well Depth[a] (feet)	Depth to Leachate (feet)	Leachate Level (feet above well bottom)	Wellhead Pressure (psi)	Primary Counter			Secondary Counter			Comments
						Pump Cycle Reading	Cycles Per Period	Cycles Per Hour	Pump Cycle Reading	Cycles Per Period	Cycles Per Hour	
GW1	7/26/2017	53.70	35.72	18.0								The well does not have a pump.
GW1	8/21/2017	53.70	35.89	17.8								
GW1	9/27/2017	53.70	36.52	17.2								
GW1	10/26/2017	53.70	36.93	16.8								
GW1	11/20/2017	53.70	37.41	16.3								
GW1	12/28/2017	53.70	38.02	15.7								
GW1	1/30/2018	53.70	38.49	15.2								
GW1	2/27/2018	53.70	40.22	13.5								
GW1	3/26/2018	53.70	40.25	13.5								
GW1	4/20/2018	53.70	42.05	11.7								
GW1	5/25/2018	53.70	36.52	17.2								
GW1	6/29/2018	53.70	35.45	18.3								
GW2	7/26/2017	53.90	35.07	18.8								The well does not have a pump.
GW2	8/21/2017	53.90	35.52	18.4								
GW2	9/27/2017	53.90	35.82	18.1								
GW2	10/26/2017	53.90	35.89	18.0								
GW2	11/20/2017	53.90	36.10	17.8								
GW2	12/28/2017	53.90	36.41	17.5								
GW2	1/30/2018	53.90	36.56	17.3								
GW2	2/27/2018	53.90	36.61	17.3								

Table 1

Wisconsin Department of Natural Resources

Refuse Hideaway Landfill

Middleton, Wisconsin

Leachate Extraction Well Summary

Well	Date	Well Depth[a] (feet)	Depth to Leachate (feet)	Leachate Level (feet above well bottom)	Wellhead Pressure (psi)	Primary Counter			Secondary Counter			Comments
						Pump Cycle Reading	Cycles Per Period	Cycles Per Hour	Pump Cycle Reading	Cycles Per Period	Cycles Per Hour	
GW2	3/26/2018	53.90	36.58	17.3								
GW2	4/20/2018	53.90	37.00	16.9								
GW2	5/25/2018	53.90	35.31	18.6								
GW2	6/29/2018	53.90	34.73	19.2								
GW3	7/26/2017	59.70	55.06	4.6								The well does not have a pump.
GW3	8/21/2017	59.70	55.06	4.6								
GW3	9/27/2017	59.70	55.09	4.6								
GW3	10/26/2017	59.70	55.10	4.6								
GW3	11/20/2017	59.70	55.11	4.6								
GW3	12/28/2017	59.70	55.18	4.5								
GW3	1/30/2018	59.70	55.21	4.5								
GW3	2/27/2018	59.70	55.21	4.5								
GW3	3/26/2018	59.70	55.19	4.5								
GW3	4/20/2018	59.70	55.35	4.4								
GW3	5/25/2018	59.70	55.42	4.3								
GW3	6/29/2018	59.70	55.08	4.6								
GW4	7/26/2017	65	33.40	31.6	40	537,538	10,696	9				The pump was on upon arrival; however, the air-out line was continuously discharging air. The pump was turned off.
GW4	8/21/2017	65	33.60	31.4	70	561,880	24,342	39				The pump was on upon arrival and was confirmed to cycle with flowing leachate. The pump was left on.

Table 1

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Refuse Hideaway Landfill

Middleton, Wisconsin

Leachate Extraction Well Summary

Well	Date	Well Depth[a] (feet)	Depth to Leachate (feet)	Leachate Level (feet above well bottom)	Wellhead Pressure (psi)	Primary Counter			Secondary Counter			Comments
						Pump Cycle Reading	Cycles Per Period	Cycles Per Hour	Pump Cycle Reading	Cycles Per Period	Cycles Per Hour	
GW4	9/27/2017	65	36.32	28.7	--	562,091	211	0				The pump was off upon arrival. The pump remained off due to the compressor being non-operational.
GW4	10/26/2017	65	38.01	27.0	--	562,091	0	0				The pump was off upon arrival. The pump remained off due to the compressor being non-operational.
GW4	11/20/2017	65	39.38	25.6	--	562,091	0	0				The pump was off upon arrival. The pump remained off due to the compressor being non-operational.
GW4	12/28/2017	65	42.50	22.5	--	569,965	7,874	9				The pump was off upon arrival. The pump remained off due to the compressor being non-operational. The pump briefly operated during the leachate collection system, air demand test from 11/28/2017-12/1/2017.
GW4	1/30/2018	65	43.48	21.5	--	569,965	0	0				The pump was off upon arrival. The pump remained off due to the compressor being non-operational.
GW4	2/27/2018	65	43.45	21.6	--	569,965	0	0				The pump was off upon arrival. The pump remained off due to the compressor being non-operational.

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Middleton, Wisconsin

Leachate Extraction Well Summary

Well	Date	Well Depth[a] (feet)	Depth to Leachate (feet)	Leachate Level (feet above well bottom)	Wellhead Pressure (psi)	Primary Counter			Secondary Counter			Comments
						Pump Cycle Reading	Cycles Per Period	Cycles Per Hour	Pump Cycle Reading	Cycles Per Period	Cycles Per Hour	
GW1	7/26/2017	53.70	35.72	18.0								The well does not have a pump.
GW1	8/21/2017	53.70	35.89	17.8								
GW1	9/27/2017	53.70	36.52	17.2								
GW1	10/26/2017	53.70	36.93	16.8								
GW1	11/20/2017	53.70	37.41	16.3								
GW1	12/28/2017	53.70	38.02	15.7								
GW1	1/30/2018	53.70	38.49	15.2								
GW1	2/27/2018	53.70	40.22	13.5								
GW1	3/26/2018	53.70	40.25	13.5								
GW1	4/20/2018	53.70	42.05	11.7								
GW1	5/25/2018	53.70	36.52	17.2								
GW1	6/29/2018	53.70	35.45	18.3								
GW2	7/26/2017	53.90	35.07	18.8								The well does not have a pump.
GW2	8/21/2017	53.90	35.52	18.4								
GW2	9/27/2017	53.90	35.82	18.1								
GW2	10/26/2017	53.90	35.89	18.0								
GW2	11/20/2017	53.90	36.10	17.8								
GW2	12/28/2017	53.90	36.41	17.5								
GW2	1/30/2018	53.90	36.56	17.3								
GW2	2/27/2018	53.90	36.61	17.3								

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Middleton, Wisconsin

Leachate Extraction Well Summary

Well	Date	Well Depth[a] (feet)	Depth to Leachate (feet)	Leachate Level (feet above well bottom)	Wellhead Pressure (psi)	Primary Counter			Secondary Counter			Comments
						Pump Cycle Reading	Cycles Per Period	Cycles Per Hour	Pump Cycle Reading	Cycles Per Period	Cycles Per Hour	
GW4	9/27/2017	65	36.32	28.7	--	562,091	211	0				The pump was off upon arrival. The pump remained off due to the compressor being non-operational.
GW4	10/26/2017	65	38.01	27.0	--	562,091	0	0				The pump was off upon arrival. The pump remained off due to the compressor being non-operational.
GW4	11/20/2017	65	39.38	25.6	--	562,091	0	0				The pump was off upon arrival. The pump remained off due to the compressor being non-operational.
GW4	12/28/2017	65	42.50	22.5	--	569,965	7,874	9				The pump was off upon arrival. The pump remained off due to the compressor being non-operational. The pump briefly operated during the leachate collection system, air demand test from 11/28/2017-12/1/2017.
GW4	1/30/2018	65	43.48	21.5	--	569,965	0	0				The pump was off upon arrival. The pump remained off due to the compressor being non-operational.
GW4	2/27/2018	65	43.45	21.6	--	569,965	0	0				The pump was off upon arrival. The pump remained off due to the compressor being non-operational.

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Wisconsin Department of Natural Resources
Refuse Hideaway Landfill
Middleton, Wisconsin

Leachate Extraction Well Summary

Well	Date	Well Depth[a] (feet)	Depth to Leachate (feet)	Leachate Level (feet above well bottom)	Wellhead Pressure (psi)	Primary Counter			Secondary Counter			Comments
						Pump Cycle Reading	Cycles Per Period	Cycles Per Hour	Pump Cycle Reading	Cycles Per Period	Cycles Per Hour	
GW4	3/26/2018	65	44.25	20.8	--	569,965	0	0				The pump was off upon arrival. The pump remained off due to the compressor being non-operational.
GW4	4/20/2018	65	45.25	19.8	--	569,965	0	0				The pump was off upon arrival. The pump remained off due to the compressor being non-operational.
GW4	5/25/2018	65	37.14	27.9	--	569,965	0	0				The pump was off upon arrival. The pump remained off due to the compressor being non-operational.
GW4	6/29/2018	65	32.11	32.9	--	569,965	0	0				The pump was off upon arrival. The pump remained off due to the compressor being non-operational. During the annual pump cleaning event, the pump was pulled and cleaned; however, the pump could not be tested out of the well due to the compressor being non-operational.
GW5	7/26/2017	70	39.17	30.8	45	435,620	0	0	17,972	0	0	The pump was turned on and air cycled through the system; however, no flowing leachate was observed. The pump was left off.
GW5	8/21/2017	70	39.20	30.8	50	435,620	0	0	17,972	0	0	The pump was turned on and no cycle or flowing leachate was observed. The pump was left off.
GW5	9/27/2017	70	40.68	29.3	--	435,620	0	0	17,972	0	0	The pump was off upon arrival. The pump remained off due to the compressor being non-operational.

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Middleton, Wisconsin

Leachate Extraction Well Summary

Well	Date	Well Depth[a] (feet)	Depth to Leachate (feet)	Leachate Level (feet above well bottom)	Wellhead Pressure (psi)	Primary Counter			Secondary Counter			Comments
						Pump Cycle Reading	Cycles Per Period	Cycles Per Hour	Pump Cycle Reading	Cycles Per Period	Cycles Per Hour	
GW5	10/26/2017	70	40.86	29.1	--	435,620	0	0	17,972	0	0	The pump was off upon arrival. The pump remained off due to the compressor being non-operational.
GW5	11/20/2017	70	41.46	28.5	--	435,620	0	0	17,972	0	0	The pump was off upon arrival. The pump remained off due to the compressor being non-operational.
GW5	12/28/2017	70	43.36	26.6	--	435,620	0	0	17,972	0	0	The pump was off upon arrival. The pump remained off due to the compressor being non-operational.
GW5	1/30/2018	70	43.54	26.5	--	435,620	0	0	17,972	0	0	The pump was off upon arrival. The pump remained off due to the compressor being non-operational.
GW5	2/27/2018	70	43.42	26.6	--	435,620	0	0	17,972	0	0	The pump was off upon arrival. The pump remained off due to the compressor being non-operational.
GW5	3/26/2018	70	43.70	26.3	--	435,620	0	0	17,972	0	0	The pump was off upon arrival. The pump remained off due to the compressor being non-operational.
GW5	4/20/2018	70	44.63	25.4	--	435,620	0	0	17,972	0	0	The pump was off upon arrival. The pump remained off due to the compressor being non-operational.
GW5	5/25/2018	70	40.41	29.6	--	435,620	0	0	17,972	0	0	The pump was off upon arrival. The pump remained off due to the compressor being non-operational.

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Middleton, Wisconsin

Leachate Extraction Well Summary

Well	Date	Well Depth[a] (feet)	Depth to Leachate (feet)	Leachate Level (feet above well bottom)	Wellhead Pressure (psi)	Primary Counter			Secondary Counter			Comments
						Pump Cycle Reading	Cycles Per Period	Cycles Per Hour	Pump Cycle Reading	Cycles Per Period	Cycles Per Hour	
GW5	10/26/2017	70	40.86	29.1	--	435,620	0	0	17,972	0	0	The pump was off upon arrival. The pump remained off due to the compressor being non-operational.
GW5	11/20/2017	70	41.46	28.5	--	435,620	0	0	17,972	0	0	The pump was off upon arrival. The pump remained off due to the compressor being non-operational.
GW5	12/28/2017	70	43.36	26.6	--	435,620	0	0	17,972	0	0	The pump was off upon arrival. The pump remained off due to the compressor being non-operational.
GW5	1/30/2018	70	43.54	26.5	--	435,620	0	0	17,972	0	0	The pump was off upon arrival. The pump remained off due to the compressor being non-operational.
GW5	2/27/2018	70	43.42	26.6	--	435,620	0	0	17,972	0	0	The pump was off upon arrival. The pump remained off due to the compressor being non-operational.
GW5	3/26/2018	70	43.70	26.3	--	435,620	0	0	17,972	0	0	The pump was off upon arrival. The pump remained off due to the compressor being non-operational.
GW5	4/20/2018	70	44.63	25.4	--	435,620	0	0	17,972	0	0	The pump was off upon arrival. The pump remained off due to the compressor being non-operational.
GW5	5/25/2018	70	40.41	29.6	--	435,620	0	0	17,972	0	0	The pump was off upon arrival. The pump remained off due to the compressor being non-operational.

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Middleton, Wisconsin

Leachate Extraction Well Summary

Well	Date	Well Depth[a] (feet)	Depth to Leachate (feet)	Leachate Level (feet above well bottom)	Wellhead Pressure (psi)	Primary Counter			Secondary Counter			Comments
						Pump Cycle Reading	Cycles Per Period	Cycles Per Hour	Pump Cycle Reading	Cycles Per Period	Cycles Per Hour	
GW5	6/29/2018	70	38.05	32.0	--	435,620	0	0	17,972	0	0	The pump was off upon arrival. The pump remained off due to the compressor being non-operational. During the annual pump cleaning event, the pump was pulled and cleaned; however, the pump could not be tested out of the well due to the compressor being non-operational.
GW6	7/26/2017	40	34.94	5.1								The well does not have a pump.
GW6	8/21/2017	40	35.06	4.9								
GW6	9/27/2017	40	35.25	4.8								
GW6	10/26/2017	40	35.26	4.7								
GW6	11/20/2017	40	35.34	4.7								
GW6	12/28/2017	40	35.68	4.3								
GW6	1/30/2018	40	35.78	4.2								
GW6	2/27/2018	40	35.82	4.2								
GW6	3/26/2018	40	35.87	4.1								
GW6	4/20/2018	40	35.80	4.2								
GW6	5/25/2018	40	35.05	5.0								
GW6	6/29/2018	40	35.02	5.0								
GW7	7/26/2017	60	42.47	17.5	--	--	--	--	--	--	--	The pump is stuck in the well and does not operate. An attempt was made to pull, clean, and inspect the pump during the annual pump cleaning event in June 2018; however, the pump could not be removed.
GW7	8/21/2017	60	42.23	17.8	--	--	--	--	--	--	--	
GW7	9/27/2017	60	43.81	16.2	--	--	--	--	--	--	--	
GW7	10/26/2017	60	43.87	16.1	--	--	--	--	--	--	--	

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Leachate Extraction Well Summary

Well	Date	Well Depth[a] (feet)	Depth to Leachate (feet)	Leachate Level (feet above well bottom)	Wellhead Pressure (psi)	Primary Counter			Secondary Counter			Comments
						Pump Cycle Reading	Cycles Per Period	Cycles Per Hour	Pump Cycle Reading	Cycles Per Period	Cycles Per Hour	
GW7	11/20/2017	60	44.59	15.4	--	--	--	--	--	--	--	
GW7	12/28/2017	60	46.72	13.3	--	--	--	--	--	--	--	
GW7	1/30/2018	60	46.88	13.1	--	--	--	--	--	--	--	
GW7	2/27/2018	60	46.79	13.2	--	--	--	--	--	--	--	
GW7	3/26/2018	60	47.32	12.7	--	--	--	--	--	--	--	
GW7	4/20/2018	60	48.45	11.6	--	--	--	--	--	--	--	
GW7	5/25/2018	60	42.55	17.5	--	--	--	--	--	--	--	
GW7	6/29/2018	60	41.00	19.0	--	--	--	--	--	--	--	
GW8	7/26/2017	69	39.62	29.4	70	656,127	2	0	654,918	2	0	The pump was turned on and was observed to cycle once with no flowing leachate. Following the initial cycle, no additional cycles were observed. The pump was left off.
GW8	8/21/2017	69	39.72	29.3	66	656,129	2	0	654,919	1	0	The pump was turned on and was observed to cycle once with no flowing leachate. Following the initial cycle, no additional cycles were observed. The pump was left off.
GW8	9/27/2017	69	40.35	28.7	--	656,129	0	0	654,919	0	0	The pump was off upon arrival. The pump remained off due to the compressor being non-operational.

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Middleton, Wisconsin

Leachate Extraction Well Summary

Well	Date	Well Depth[a] (feet)	Depth to Leachate (feet)	Leachate Level (feet above well bottom)	Wellhead Pressure (psi)	Primary Counter			Secondary Counter			Comments
						Pump Cycle Reading	Cycles Per Period	Cycles Per Hour	Pump Cycle Reading	Cycles Per Period	Cycles Per Hour	
GW8	10/26/2017	69	40.47	28.5	--	656,129	0	0	654,919	0	0	The pump was off upon arrival. The pump remained off due to the compressor being non-operational.
GW8	11/20/2017	69	40.88	28.1	--	656,129	0	0	654,919	0	0	The pump was off upon arrival. The pump remained off due to the compressor being non-operational.
GW8	12/28/2017	69	44.28	24.7	--	656,132	3	0	654,921	2	0	The pump was off upon arrival. The pump remained off due to the compressor being non-operational. The pump briefly operated during the leachate collection system, air demand test from 11/28/2017-12/1/2017.
GW8	1/30/2018	69	42.74	26.3	--	656,132	0	0	654,921	0	0	The pump was off upon arrival. The pump remained off due to the compressor being non-operational.
GW8	2/27/2018	69	42.39	26.6	--	656,132	0	0	654,921	0	0	The pump was off upon arrival. The pump remained off due to the compressor being non-operational.
GW8	3/26/2018	69	43.16	25.8	--	656,132	0	0	654,921	0	0	The pump was off upon arrival. The pump remained off due to the compressor being non-operational.
GW8	4/20/2018	69	43.72	25.3	--	656,132	0	0	654,921	0	0	The pump was off upon arrival. The pump remained off due to the compressor being non-operational.
GW8	5/25/2018	69	42.30	26.7	--	656,132	0	0	654,921	0	0	The pump was off upon arrival. The pump remained off due to the compressor being non-operational.

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Leachate Extraction Well Summary

Well	Date	Well Depth[a] (feet)	Depth to Leachate (feet)	Leachate Level (feet above well bottom)	Wellhead Pressure (psi)	Primary Counter			Secondary Counter			Comments
						Pump Cycle Reading	Cycles Per Period	Cycles Per Hour	Pump Cycle Reading	Cycles Per Period	Cycles Per Hour	
GW8	10/26/2017	69	40.47	28.5	--	656,129	0	0	654,919	0	0	The pump was off upon arrival. The pump remained off due to the compressor being non-operational.
GW8	11/20/2017	69	40.88	28.1	--	656,129	0	0	654,919	0	0	The pump was off upon arrival. The pump remained off due to the compressor being non-operational.
GW8	12/28/2017	69	44.28	24.7	--	656,132	3	0	654,921	2	0	The pump was off upon arrival. The pump remained off due to the compressor being non-operational. The pump briefly operated during the leachate collection system, air demand test from 11/28/2017-12/1/2017.
GW8	1/30/2018	69	42.74	26.3	--	656,132	0	0	654,921	0	0	The pump was off upon arrival. The pump remained off due to the compressor being non-operational.
GW8	2/27/2018	69	42.39	26.6	--	656,132	0	0	654,921	0	0	The pump was off upon arrival. The pump remained off due to the compressor being non-operational.
GW8	3/26/2018	69	43.16	25.8	--	656,132	0	0	654,921	0	0	The pump was off upon arrival. The pump remained off due to the compressor being non-operational.
GW8	4/20/2018	69	43.72	25.3	--	656,132	0	0	654,921	0	0	The pump was off upon arrival. The pump remained off due to the compressor being non-operational.
GW8	5/25/2018	69	42.30	26.7	--	656,132	0	0	654,921	0	0	The pump was off upon arrival. The pump remained off due to the compressor being non-operational.

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Leachate Extraction Well Summary

Well	Date	Well Depth[a] (feet)	Depth to Leachate (feet)	Leachate Level (feet above well bottom)	Wellhead Pressure (psi)	Primary Counter			Secondary Counter			Comments
						Pump Cycle Reading	Cycles Per Period	Cycles Per Hour	Pump Cycle Reading	Cycles Per Period	Cycles Per Hour	
GW8	6/29/2018	69	41.34	27.7	--	656,132	0	0	654,921	0	0	The pump was off upon arrival. The pump remained off due to the compressor being non-operational. During the annual pump cleaning event, the pump was pulled and cleaned; however, the pump could not be tested out of the well due to the compressor being non-operational.
GW9	7/26/2017	65	42.51	22.5	--	--	--	--	--	--	--	The pump's airline was severed during a mowing event in 2017 and the pump does not have a regulator. The pump was not in use during the contract year. During the annual pump cleaning event, the pump was pulled and cleaned; however, the pump could not be tested out of the well due to the airline issues and the compressor being non-operational.
GW9	8/21/2017	65	42.44	22.6	--	--	--	--	--	--	--	
GW9	9/27/2017	65	42.63	22.4	--	--	--	--	--	--	--	
GW9	10/26/2017	65	42.13	22.9	--	--	--	--	--	--	--	
GW9	11/20/2017	65	42.56	22.4	--	--	--	--	--	--	--	
GW9	12/28/2017	65	44.34	20.7	--	--	--	--	--	--	--	
GW9	1/30/2018	65	44.50	20.5	--	--	--	--	--	--	--	

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Leachate Extraction Well Summary

Well	Date	Well Depth[a] (feet)	Depth to Leachate (feet)	Leachate Level (feet above well bottom)	Wellhead Pressure (psi)	Primary Counter			Secondary Counter			Comments
						Pump Cycle Reading	Cycles Per Period	Cycles Per Hour	Pump Cycle Reading	Cycles Per Period	Cycles Per Hour	
GW9	2/27/2018	65	44.60	20.4	--	--	--	--	--	--	--	
GW9	3/26/2018	65	45.48	19.5	--	--	--	--	--	--	--	
GW9	4/20/2018	65	43.65	21.4	--	--	--	--	--	--	--	
GW9	5/25/2018	65	46.11	18.9	--	--	--	--	--	--	--	
GW9	6/29/2018	65	45.96	19.0	--	--	--	--	--	--	--	
GW10	7/26/2017	70	53.06	16.9	50	767,060	5,755	5				The pump was off upon arrival and was subsequently turned on. The pump was confirmed cycling and was left on.
GW10	8/21/2017	70	54.07	15.9	46	774,269	7,209	12				The pump was on upon arrival; however no cycling or flowing leachate was observed. The pump was turned off upon departure to allow for the well to recover.
GW10	9/27/2017	70	54.51	15.5	--	774,270	1	0				The pump was off upon arrival. The pump remained off due to the compressor being non-operational.

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Leachate Extraction Well Summary

Well	Date	Well Depth[a] (feet)	Depth to Leachate (feet)	Leachate Level (feet above well bottom)	Wellhead Pressure (psi)	Primary Counter			Secondary Counter			Comments
						Pump Cycle Reading	Cycles Per Period	Cycles Per Hour	Pump Cycle Reading	Cycles Per Period	Cycles Per Hour	
GW10	10/26/2017	70	54.41	15.6	--	774,270	0	0				The pump was off upon arrival. The pump remained off due to the compressor being non-operational.
GW10	11/20/2017	70	54.80	15.2	--	774,270	0	0				The pump was off upon arrival. The pump remained off due to the compressor being non-operational.
GW10	12/28/2017	70	56.61	13.4	--	776,496	2,226	2				The pump was off upon arrival. The pump remained off due to the compressor being non-operational. The pump briefly operated during the leachate collection system, air demand test from 11/28/2017-12/1/2017.
GW10	1/30/2018	70	56.67	13.3	--	776,496	0	0				The pump was off upon arrival. The pump remained off due to the compressor being non-operational.
GW10	2/27/2018	70	56.55	13.5	--	776,496	0	0				The pump was off upon arrival. The pump remained off due to the compressor being non-operational.
GW10	3/26/2018	70	57.11	12.9	--	776,496	0	0				The pump was off upon arrival. The pump remained off due to the compressor being non-operational.
GW10	4/20/2018	70	57.61	12.4	--	776,496	0	0				The pump was off upon arrival. The pump remained off due to the compressor being non-operational.

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Leachate Extraction Well Summary

Well	Date	Well Depth[a] (feet)	Depth to Leachate (feet)	Leachate Level (feet above well bottom)	Wellhead Pressure (psi)	Primary Counter			Secondary Counter			Comments
						Pump Cycle Reading	Cycles Per Period	Cycles Per Hour	Pump Cycle Reading	Cycles Per Period	Cycles Per Hour	
GW10	5/25/2018	70	53.60	16.4	--	776,496	0	0				The pump was off upon arrival. The pump remained off due to the compressor being non-operational.
GW10	6/29/2018	70	54.00	16.0	--	776,496	0	0				The pump was off upon arrival. The pump remained off due to the compressor being non-operational. During the annual pump cleaning event, the pump was pulled and cleaned; however, the pump could not be tested out of the well due to the compressor being non-operational.
GW11	7/26/2017	65	61.87	3.1	75	352,559	25,870	22				The pump was on upon arrival and confirmed to cycle with flowing leachate. The pump was left on.
GW11	8/21/2017	65	61.94	3.1	67	378,506	25,947	42				The pump was on upon arrival and confirmed to cycle with flowing leachate. The pump was left on.
GW11	9/27/2017	65	44.63	20.4	--	383,368	4,862	5				The pump was off upon arrival. The pump remained off due to the compressor being non-operational.
GW11	10/26/2017	65	43.73	21.3	--	383,368	0	0				The pump was off upon arrival. The pump remained off due to the compressor being non-operational.
GW11	11/20/2017	65	44.11	20.9	--	383,368	0	0				The pump was off upon arrival. The pump remained off due to the compressor being non-operational. A gurgling sound was heard emanating from the well head.

Table 1

Wisconsin Department of Natural Resources

Refuse Hideaway Landfill

Middleton, Wisconsin

Leachate Extraction Well Summary

Well	Date	Well Depth[a] (feet)	Depth to Leachate (feet)	Leachate Level (feet above well bottom)	Wellhead Pressure (psi)	Primary Counter			Secondary Counter			Comments
						Pump Cycle Reading	Cycles Per Period	Cycles Per Hour	Pump Cycle Reading	Cycles Per Period	Cycles Per Hour	
GW11	12/28/2017	65	46.11	18.9	--	387,896	4,528	5				The pump was off upon arrival. The pump remained off due to the compressor being non-operational. The pump briefly operated during the leachate collection system, air demand test from 11/28/2017-12/1/2017.
GW11	1/30/2018	65	46.00	19.0	--	387,896	0	0				The pump was off upon arrival. The pump remained off due to the compressor being non-operational.
GW11	2/27/2018	65	45.95	19.1	--	387,896	0	0				The pump was off upon arrival. The pump remained off due to the compressor being non-operational.
GW11	3/26/2018	65	46.76	18.2	--	387,896	0	0				The pump was off upon arrival. The pump remained off due to the compressor being non-operational.
GW11	4/20/2018	65	47.13	17.9	--	387,896	0	0				The pump was off upon arrival. The pump remained off due to the compressor being non-operational.
GW11	5/25/2018	65	46.29	18.7	--	387,896	0	0				The pump was off upon arrival. The pump remained off due to the compressor being non-operational.
GW11	6/29/2018	65	40.31	24.7	--	387,896	0	0				The pump was off upon arrival. The pump remained off due to the compressor being non-operational. During the annual pump cleaning event, the pump was pulled and cleaned; however, the pump could not be tested out of the well due to the compressor being non-operational.

Table 1

Wisconsin Department of Natural Resources

Refuse Hideaway Landfill

Middleton, Wisconsin

Leachate Extraction Well Summary

Well	Date	Well Depth[a] (feet)	Depth to Leachate (feet)	Leachate Level (feet above well bottom)	Wellhead Pressure (psi)	Primary Counter			Secondary Counter			Comments
						Pump Cycle Reading	Cycles Per Period	Cycles Per Hour	Pump Cycle Reading	Cycles Per Period	Cycles Per Hour	
GW12	7/26/2017	81	41.62	39.4	40	54,484	1	0	437,537	2	0	The pump appeared to be cycling upon arrival; however, no flowing leachate was observed and the pump was turned off.
GW12	8/21/2017	81	39.71	41.3	48	54,485	1	0	437,539	2	0	The pump was turned on upon arrival and appeared to cycle; however, no flowing leachate was observed and the regulator did not appear to be regulating air flow/counting cycles. The pump was turned off.
GW12	9/27/2017	81	41.37	39.6	--	54,485	0	0	437,540	1	0	The pump was off upon arrival. The pump remained off due to the compressor being non-operational.
GW12	10/26/2017	81	41.86	39.1	--	54,485	0	0	437,540	0	0	The pump was off upon arrival. The pump remained off due to the compressor being non-operational.
GW12	11/20/2017	81	42.57	38.4	--	54,485	0	0	437,540	0	0	The pump was off upon arrival. The pump remained off due to the compressor being non-operational.
GW12	12/28/2017	81	44.04	37.0	--	54,486	1	0	437,542	2	0	The pump was off upon arrival. The pump remained off due to the compressor being non-operational. The pump briefly operated during the leachate collection system, air demand test from 11/28/2017-12/1/2017.
GW12	1/30/2018	81	44.63	36.4	--	54,486	0	0	437,542	0	0	The pump was off upon arrival. The pump remained off due to the compressor being non-operational.

Table 1

Wisconsin Department of Natural Resources

Refuse Hideaway Landfill

Middleton, Wisconsin

Leachate Extraction Well Summary

Well	Date	Well Depth[a] (feet)	Depth to Leachate (feet)	Leachate Level (feet above well bottom)	Wellhead Pressure (psi)	Primary Counter			Secondary Counter			Comments
						Pump Cycle Reading	Cycles Per Period	Cycles Per Hour	Pump Cycle Reading	Cycles Per Period	Cycles Per Hour	
GW12	2/27/2018	81	44.79	36.2	--	54,486	0	0	437,542	0	0	The pump was off upon arrival. The pump remained off due to the compressor being non-operational.
GW12	3/26/2018	81	45.37	35.6	--	54,486	0	0	437,542	0	0	The pump was off upon arrival. The pump remained off due to the compressor being non-operational.
GW12	4/20/2018	81	46.22	34.8	--	54,486	0	0	437,542	0	0	The pump was off upon arrival. The pump remained off due to the compressor being non-operational.
GW12	5/25/2018	81	42.65	38.4	--	54,486	0	0	437,542	0	0	The pump was off upon arrival. The pump remained off due to the compressor being non-operational.
GW12	6/29/2018	81	43.42	37.6	--	54,486	0	0	437,542	0	0	The pump was off upon arrival. The pump remained off due to the compressor being non-operational. During the annual pump cleaning event, the pump was pulled and cleaned; however, the pump could not be tested out of the well due to the compressor being non-operational.
GW13	7/26/2017	69	47.80	21.2	65	561,382	1	0	843,700	2	0	The pump is stuck in the well. The pump was turned on; however, no functional cycle was noted and the pump was left off.
GW13	8/21/2017	69	46.68	22.3	64	561,383	1	0	843,701	1	0	The pump is stuck in the well. The pump was turned on; however, no functional cycle was observed and the pump was left off.

Table 1

Wisconsin Department of Natural Resources
Refuse Hideaway Landfill
Middleton, Wisconsin

Leachate Extraction Well Summary

Well	Date	Well Depth[a] (feet)	Depth to Leachate (feet)	Leachate Level (feet above well bottom)	Wellhead Pressure (psi)	Primary Counter			Secondary Counter			Comments
						Pump Cycle Reading	Cycles Per Period	Cycles Per Hour	Pump Cycle Reading	Cycles Per Period	Cycles Per Hour	
GW13	9/27/2017	69	48.00	21.0	--	561,383	0	0	843,701	0	0	The pump is stuck in the well. The pump was off upon arrival and remained off due to the compressor being non-operational.
GW13	10/26/2017	69	48.28	20.7	--	561,383	0	0	843,701	0	0	The pump is stuck in the well. The pump was off upon arrival and remained off due to the compressor being non-operational.
GW13	11/20/2017	69	49.01	20.0	--	561,383	0	0	843,701	0	0	The pump is stuck in the well. The pump was off upon arrival and remained off due to the compressor being non-operational.
GW13	12/28/2017	69	51.33	17.7	--	561,470	87	0	843,703	2	0	The pump is stuck in the well. The pump was off upon arrival. The pump remained off due to the compressor being non-operational. The pump briefly operated during the leachate collection system, air demand test from 11/28/2017-12/1/2017.
GW13	1/30/2018	69	51.63	17.4	--	561,470	0	0	843,703	0	0	The pump is stuck in the well. The pump was off upon arrival and remained off due to the compressor being non-operational.
GW13	2/27/2018	69	51.37	17.6	--	561,470	0	0	843,703	0	0	The pump is stuck in the well. The pump was off upon arrival and remained off due to the compressor being non-operational.
GW13	3/26/2018	69	52.15	16.9	--	561,470	0	0	843,703	0	0	The pump is stuck in the well. The pump was off upon arrival and remained off due to the compressor being non-operational.

Table 1

Wisconsin Department of Natural Resources
Refuse Hideaway Landfill
Middleton, Wisconsin

Leachate Extraction Well Summary

Well	Date	Well Depth[a] (feet)	Depth to Leachate (feet)	Leachate Level (feet above well bottom)	Wellhead Pressure (psi)	Primary Counter			Secondary Counter			Comments
						Pump Cycle Reading	Cycles Per Period	Cycles Per Hour	Pump Cycle Reading	Cycles Per Period	Cycles Per Hour	
GW13	4/20/2018	69	53.95	15.1	--	561,470	0	0	843,703	0	0	The pump is stuck in the well. The pump was off upon arrival and remained off due to the compressor being non-operational.
GW13	5/25/2018	69	51.10	17.9	--	561,470	0	0	843,703	0	0	The pump is stuck in the well. The pump was off upon arrival and remained off due to the compressor being non-operational.
GW13	6/29/2018	69	46.92	22.1	--	561,470	0	0	843,703	0	0	The pump is stuck in the well. The pump was off upon arrival and remained off due to the compressor being non-operational. An attempt was made to pull, clean, and inspect the pump during the annual pump cleaning event; however, the pump could not be removed.

[a] : Value approximated in wells GW4, GW5, GW7, GW8, GW9, GW10, GW11, GW12, and GW13.
psi : Pounds per square inch.

Table 2

Wisconsin Department of Natural Resources

Refuse Hideaway Landfill

Middleton, Wisconsin

Monthly Leachate Collection Volume

Month	Reported Volume Hauled (gallons)	Cumulative Volume Hauled (gallons)
July 2017	14,607	14,607
August 2017	8,976	23,583
September 2017	0	23,583
October 2017	0	23,583
November 2017	4,919	28,502
December 2017	0	28,502
January 2018	0	28,502
February 2018	0	28,502
March 2018	0	28,502
April 2018	0	28,502
May 2018	15,139	43,641
June 2018	10,038	53,679
Total	**53,679**	

Table 3

Wisconsin Department of Natural Resources

Refuse Hideaway Landfill

Middleton, Wisconsin

Quarterly Leachate Effluent Analytical Results - Inorganic

(all results are in milligrams per liter (mg/L))

Date	Cadmium	Chromium	Chromium Hexavalent	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Zinc	Cyanide (Total)
Local Ordinance Effluent Limitations[1] (daily maximum)	**0.25**	**10.0**	**0.5**	**1.5**	**5**	**0.02**	**--**	**2.0**	**0.3**	**3**	**8**	**0.1**
9/27/2017	0.0018 J B	0.029	< 0.0032 F1	0.0036 J	< 0.0027	0.00013 J	< 0.0038	0.060	0.0069 J	< 0.0015	0.013 J	0.0060 J
12/28/2017	0.00080 J B	0.021	< 0.016	0.0095 J B	< 0.0027	< 0.000098	< 0.0038	0.041	< 0.0053	< 0.0015	0.019 J	0.0039 J
3/21/2018	0.0010 J B	0.018	< 0.016	0.016 B	< 0.0027	< 0.000098	< 0.0038	0.038	< 0.0053	< 0.0015	0.018 J B	0.0057 J
6/21/2018	0.0013 J B	0.014	< 0.0032 F1	0.0048 J	< 0.0027	< 0.000098	< 0.0038	0.029	< 0.0053	< 0.0015	0.017 J	0.0057 J

1 : Madison Metropolitan Sewerage District Use Ordinance - Wastewater Discharge Permit NTO-5.12.

F1 : MS and/or MSD recovery is outside acceptance limits.

J : Result is less than the reporting limit but greater than or equal to the method detection limit and the concentration is an approximate value.

B : Compound was found in the blank and sample.

-- : Effluent limitation not set.

< : Less than laboratory method detection limit.

Table 4

Wisconsin Department of Natural Resources

Refuse Hideaway Landfill

Middleton, Wisconsin

Gas Well Monitoring Results

Location	Date	CH_4	O_2	CO_2	Balance Gas[a]	Well Pressure	Valve Position		Gas Velocity	Gas Flow[b]	Gas Temp
		(%)	(%)	(%)	(%)	(in WC)	Initial (%)	After (%)	(fpm)	(cfm)	(deg F)
GW1	7/26/2017	46.0	3.5	32.4	18.1	--	0	0	--	--	--
GW1	8/21/2017	46.0	3.4	31.6	19.0	--	0	0	--	--	--
GW1	9/27/2017	46.0	5.8	31.8	16.4	--	0	0	--	--	--
GW1	10/26/2017	46.5	5.7	30.8	17.0	--	0	0	--	--	--
GW1	11/20/2017	47.0	5.7	31.8	15.5	--	0	0	--	--	--
GW1	12/28/2017	45.5	3.0	29.8	21.7	--	0	0	--	--	--
GW1	1/30/2018	52.5	5.9	37.2	4.4	--	0	0	--	--	--
GW1	2/27/2018	54.5	5.5	36.8	3.2	--	0	0	--	--	--
GW1	3/26/2018	55.0	5.7	35.4	3.9	--	0	0	--	--	--
GW1	4/20/2018	53.0	3.1	36.0	7.9	--	0	0	--	--	--
GW1	5/25/2018	51.5	3.2	37.8	7.5	--	0	0	--	--	--
GW1	6/29/2018	41.5	5.3	28.6	24.6	--	0	0	--	--	--
GW2	7/26/2017	48.0	3.1	33.4	15.5	--	0	0	--	--	--
GW2	8/21/2017	46.0	5.8	32.0	16.2	--	0	0	--	--	--
GW2	9/27/2017	46.5	5.4	31.8	16.3	--	0	0	--	--	--
GW2	10/26/2017	47.0	5.3	30.6	17.1	--	0	0	--	--	--
GW2	11/20/2017	45.5	5.9	33.0	15.6	--	0	0	--	--	--
GW2	12/28/2017	44.0	3.1	31.0	21.9	--	0	0	--	--	--
GW2	1/30/2018	52.0	6.0	38.0	4.0	--	0	0	--	--	--
GW2	2/27/2018	54.0	5.6	37.0	3.4	--	0	0	--	--	--

Table 4

Wisconsin Department of Natural Resources

Refuse Hideaway Landfill

Middleton, Wisconsin

Gas Well Monitoring Results

Location	Date	CH_4	O_2	CO_2	Balance Gas[a]	Well Pressure	Valve Position		Gas Velocity	Gas Flow[b]	Gas Temp
		(%)	(%)	(%)	(%)	(in WC)	Initial (%)	After (%)	(fpm)	(cfm)	(deg F)
GW2	3/26/2018	53.5	5.9	37.0	3.6	--	0	0	--	--	--
GW2	4/20/2018	53.5	6.9	37.0	2.6	--	0	0	--	--	--
GW2	5/25/2018	53.5	3.5	37.4	5.6	--	0	0	--	--	--
GW2	6/29/2018	49.0	5.6	32.2	13.2	--	0	0	--	--	--
GW3	7/26/2017	53.0	3.0	29.6	14.4	--	0	0	--	--	--
GW3	8/21/2017	56.0	3.3	23.6	17.1	--	0	0	--	--	--
GW3	9/27/2017	57.0	3.2	24.2	15.6	--	0	0	--	--	--
GW3	10/26/2017	56.5	5.2	23.2	15.1	--	0	0	--	--	--
GW3	11/20/2017	52.0	3.9	28.4	15.7	--	0	0	--	--	--
GW3	12/28/2017	48.0	3.2	26.6	22.2	--	0	0	--	--	--
GW3	1/30/2018	59.0	5.1	31.4	4.5	--	0	0	--	--	--
GW3	2/27/2018	60.5	5.5	32.0	2.0	--	0	0	--	--	--
GW3	3/26/2018	61.5	4.9	29.2	4.4	--	0	0	--	--	--
GW3	4/20/2018	57.5	3.7	38.0	0.8	--	0	0	--	--	--
GW3	5/25/2018	60.0	5.9	32.2	1.9	--	0	0	--	--	--
GW3	6/29/2018	53.0	3.4	29.2	14.4	--	0	0	--	--	--
GW4	7/26/2017	57.0	3.0	24.8	15.2	--	0	0	--	--	--
GW4	8/21/2017	46.5	5.5	20.4	27.6	--	0	0	--	--	--
GW4	9/27/2017	9.5	17.0	4.6	68.9	--	0	0	--	--	--
GW4	10/26/2017	48.5	4.1	23.0	24.4	--	0	0	--	--	--

Table 4

Wisconsin Department of Natural Resources

Refuse Hideaway Landfill

Middleton, Wisconsin

Gas Well Monitoring Results

Location	Date	CH_4	O_2	CO_2	Balance Gas[a]	Well Pressure	Valve Position		Gas Velocity	Gas Flow[b]	Gas Temp
		(%)	(%)	(%)	(%)	(in WC)	Initial (%)	After (%)	(fpm)	(cfm)	(deg F)
GW4	11/20/2017	47.5	5.0	21.8	25.7	--	0	0	--	--	--
GW4	12/28/2017	45.0	3.1	28.0	23.9	--	0	0	--	--	--
GW4	1/30/2018	54.0	4.5	25.8	15.7	--	0	0	--	--	--
GW4	2/27/2018	62.0	5.3	27.4	5.3	--	0	0	--	--	--
GW4	3/26/2018	62.5	5.3	25.4	6.8	--	0	0	--	--	--
GW4	4/20/2018	59.5	5.2	27.0	8.3	--	0	0	--	--	--
GW4	5/25/2018	62.0	3.3	29.8	4.9	--	0	0	--	--	--
GW4	6/29/2018	58.5	3.3	27.4	10.8	--	0	0	--	--	--
GW5	7/26/2017	54.0	3.0	28.6	14.4	--	100	0	--	--	--
GW5	8/21/2017	53.5	3.0	25.2	18.3	--	0	0	--	--	--
GW5	9/27/2017	53.5	3.3	25.0	18.2	--	0	0	--	--	--
GW5	10/26/2017	49.0	4.9	23.8	22.3	--	0	0	--	--	--
GW5	11/20/2017	51.5	4.1	25.8	18.6	--	0	0	--	--	--
GW5	12/28/2017	49.5	3.1	23.4	24.0	--	0	0	--	--	--
GW5	1/30/2018	59.5	4.8	31.2	4.5	--	0	0	--	--	--
GW5	2/27/2018	60.0	5.5	29.8	4.7	--	0	0	--	--	--
GW5	3/26/2018	60.5	5.2	29.4	4.9	--	0	0	--	--	--
GW5	4/20/2018	60.5	3.1	29.8	6.6	--	0	0	--	--	--
GW5	5/25/2018	62.5	3.3	29.8	4.4	--	0	0	--	--	--
GW5	6/29/2018	50.5	4.6	22.6	22.3	--	0	0	--	--	--

Table 4

Wisconsin Department of Natural Resources

Refuse Hideaway Landfill

Middleton, Wisconsin

Gas Well Monitoring Results

Location	Date	CH_4	O_2	CO_2	Balance Gas[a]	Well Pressure	Valve Position		Gas Velocity	Gas Flow[b]	Gas Temp
		(%)	(%)	(%)	(%)	(in WC)	Initial (%)	After (%)	(fpm)	(cfm)	(deg F)
GW5 - Lat East	7/26/2017	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]
GW5 - Lat East	8/21/2017	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]
GW5 - Lat East	9/27/2017	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]
GW5 - Lat East	10/26/2017	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]
GW5 - Lat East	11/20/2017	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]
GW5 - Lat East	12/28/2017	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]
GW5 - Lat East	1/30/2018	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]
GW5 - Lat East	2/27/2018	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]
GW5 - Lat East	3/26/2018	4.25	15.7	3.8	76.3	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]
GW5 - Lat East	4/20/2018	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]
GW5 - Lat East	5/25/2018	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]
GW5 - Lat East	6/29/2018	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]
GW5 - Lat West	7/26/2017	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]
GW5 - Lat West	8/21/2017	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]
GW5 - Lat West	9/27/2017	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]
GW5 - Lat West	10/26/2017	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]
GW5 - Lat West	11/20/2017	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]
GW5 - Lat West	12/28/2017	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]
GW5 - Lat West	1/30/2018	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]
GW5 - Lat West	2/27/2018	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]

Table 4

Wisconsin Department of Natural Resources

Refuse Hideaway Landfill

Middleton, Wisconsin

Gas Well Monitoring Results

Location	Date	CH_4	O_2	CO_2	Balance Gas[a]	Well Pressure	Valve Position		Gas Velocity	Gas Flow[b]	Gas Temp
		(%)	(%)	(%)	(%)	(in WC)	Initial (%)	After (%)	(fpm)	(cfm)	(deg F)
GW5 - Lat West	3/26/2018	28.0	4.3	19.4	48.3	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]
GW5 - Lat West	4/20/2018	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]
GW5 - Lat West	5/25/2018	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]
GW5 - Lat West	6/29/2018	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]
GW5 - Lat West Mid	7/26/2017	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]
GW5 - Lat West Mid	8/21/2017	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]
GW5 - Lat West Mid	9/27/2017	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]
GW5 - Lat West Mid	10/26/2017	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]
GW5 - Lat West Mid	11/20/2017	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]
GW5 - Lat West Mid	12/28/2017	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]
GW5 - Lat West Mid	1/30/2018	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]
GW5 - Lat West Mid	2/27/2018	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]
GW5 - Lat West Mid	3/26/2018	17.0	10.2	11.8	61.0	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]
GW5 - Lat West Mid	4/20/2018	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]
GW5 - Lat West Mid	5/25/2018	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]
GW5 - Lat West Mid	6/29/2018	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]
GW6	7/26/2017	51.0	5.4	31.4	12.2	--	100	0	--	--	--
GW6	8/21/2017	53.0	3.6	26.0	17.4	--	0	0	--	--	--
GW6	9/27/2017	51.5	4.9	27.4	16.2	--	0	0	--	--	--
GW6	10/26/2017	51.0	5.4	26.0	17.6	--	0	0	--	--	--

Table 4

Wisconsin Department of Natural Resources

Refuse Hideaway Landfill

Middleton, Wisconsin

Gas Well Monitoring Results

Location	Date	CH_4	O_2	CO_2	Balance Gas[a]	Well Pressure	Valve Position		Gas Velocity	Gas Flow[b]	Gas Temp
		(%)	(%)	(%)	(%)	(in WC)	Initial (%)	After (%)	(fpm)	(cfm)	(deg F)
GW6	11/20/2017	52.0	4.9	27.0	16.1	--	0	0	--	--	--
GW6	12/28/2017	46.5	3.2	25.2	25.1	--	0	0	--	--	--
GW6	1/30/2018	56.0	5.0	31.4	7.6	--	0	0	--	--	--
GW6	2/27/2018	57.5	5.6	33.0	3.9	--	0	0	--	--	--
GW6	3/26/2018	57.5	5.6	32.8	4.1	--	0	0	--	--	--
GW6	4/20/2018	56.5	3.8	31.4	8.3	--	0	0	--	--	--
GW6	5/25/2018	64.0	2.9	27.8	5.3	--	0	0	--	--	--
GW6	6/29/2018	55.5	5.7	28.2	10.6	--	0	0	--	--	--
GW7	7/26/2017	54.0	3.3	28.2	14.5	--	100	0	--	--	--
GW7	8/21/2017	57.0	2.9	22.4	17.7	--	0	0	--	--	--
GW7	9/27/2017	57.0	3.4	21.4	18.2	--	0	0	--	--	--
GW7	10/26/2017	57.5	5.2	20.4	16.9	--	0	0	--	--	--
GW7	11/20/2017	60.5	3.9	20.2	15.4	--	0	0	--	--	--
GW7	12/28/2017	56.0	3.2	17.0	23.8	--	0	0	--	--	--
GW7	1/30/2018	68.0	4.3	21.0	6.7	--	0	0	--	--	--
GW7	2/27/2018	70.0	3.2	21.6	5.2	--	0	0	--	--	--
GW7	3/26/2018	70.0	4.6	21.2	4.2	--	0	0	--	--	--
GW7	4/20/2018	58.5	3.2	20.0	18.3	--	0	0	--	--	--
GW7	5/25/2018	67.5	3.0	24.4	5.1	--	0	0	--	--	--
GW7	6/29/2018	59.5	5.1	21.8	13.6	--	0	0	--	--	--

Table 4

Wisconsin Department of Natural Resources

Refuse Hideaway Landfill

Middleton, Wisconsin

Gas Well Monitoring Results

Location	Date	CH_4	O_2	CO_2	Balance Gas[a]	Well Pressure	Valve Position		Gas Velocity	Gas Flow[b]	Gas Temp
		(%)	(%)	(%)	(%)	(in WC)	Initial (%)	After (%)	(fpm)	(cfm)	(deg F)
GW8	7/26/2017	59.0	3.0	24.0	14.0	--	100	0	--	--	--
GW8	8/21/2017	59.5	3.0	20.0	17.5	--	0	0	--	--	--
GW8	9/27/2017	60.0	3.0	20.4	16.6	--	0	0	--	--	--
GW8	10/26/2017	59.0	4.7	20.2	16.1	--	0	0	--	--	--
GW8	11/20/2017	59.5	3.0	20.4	17.1	--	0	0	--	--	--
GW8	12/28/2017	56.0	4.0	18.4	21.6	--	0	0	--	--	--
GW8	1/30/2018	66.0	4.2	22.4	7.4	--	0	0	--	--	--
GW8	2/27/2018	68.0	3.2	23.0	5.8	--	0	0	--	--	--
GW8	3/26/2018	66.0	4.3	21.8	7.9	--	0	0	--	--	--
GW8	4/20/2018	66.5	3.0	23.0	7.5	--	0	0	--	--	--
GW8	5/25/2018	68.5	3.2	23.4	4.9	--	0	0	--	--	--
GW8	6/29/2018	51.0	6.1	16.0	26.9	--	0	0	--	--	--
GW9	7/26/2017	64.0	3.4	15.0	17.6	--	0	0	--	--	--
GW9	8/21/2017	67.5	3.0	10.0	19.5	--	0	0	--	--	--
GW9	9/27/2017	67.5	2.8	9.6	20.1	--	0	0	--	--	--
GW9	10/26/2017	67.0	3.0	9.6	20.4	--	0	0	--	--	--
GW9	11/20/2017	66.0	2.8	9.8	21.4	--	0	0	--	--	--
GW9	12/28/2017	59.5	3.7	9.0	27.8	--	0	0	--	--	--
GW9	1/30/2018	76.5	3.4	10.0	10.1	--	0	0	--	--	--
GW9	2/27/2018	77.0	3.2	11.4	8.4	--	0	0	--	--	--

Table 4

Wisconsin Department of Natural Resources

Refuse Hideaway Landfill

Middleton, Wisconsin

Gas Well Monitoring Results

Location	Date	CH_4	O_2	CO_2	Balance Gas[a]	Well Pressure	Valve Position		Gas Velocity	Gas Flow[b]	Gas Temp
		(%)	(%)	(%)	(%)	(in WC)	Initial (%)	After (%)	(fpm)	(cfm)	(deg F)
GW9	3/26/2018	77.0	2.9	11.6	8.5	--	0	0	--	--	--
GW9	4/20/2018	76.0	3.0	11.2	9.8	--	0	0	--	--	--
GW9	5/25/2018	77.0	3.2	11.6	8.2	--	0	0	--	--	--
GW9	6/29/2018	67.5	3.6	9.8	19.1	--	0	0	--	--	--
GW10	7/26/2017	53.0	3.1	29.4	14.5	--	100	0	--	--	--
GW10	8/21/2017	58.5	3.0	20.2	18.3	--	0	0	--	--	--
GW10	9/27/2017	60.0	3.2	19.2	17.6	--	0	0	--	--	--
GW10	10/26/2017	59.5	4.4	19.2	16.9	--	0	0	--	--	--
GW10	11/20/2017	60.0	4.3	18.8	16.9	--	0	0	--	--	--
GW10	12/28/2017	55.5	3.6	20.0	20.9	--	0	0	--	--	--
GW10	1/30/2018	67.0	4.3	20.4	8.3	--	0	0	--	--	--
GW10	2/27/2018	68.5	3.2	21.4	6.9	--	0	0	--	--	--
GW10	3/26/2018	68.5	4.4	21.6	5.5	--	0	0	--	--	--
GW10	4/20/2018	66.5	3.1	20.8	9.6	--	0	0	--	--	--
GW10	5/25/2018	69.0	3.7	21.4	5.9	--	0	0	--	--	--
GW10	6/29/2018	57.5	3.7	17.2	21.6	--	0	0	--	--	--
GW11	7/26/2017	59.0	3.0	23.4	14.6	--	100	0	--	--	--
GW11	8/21/2017	62.5	3.0	15.6	18.9	--	0	0	--	--	--
GW11	9/27/2017	64.0	3.0	15.4	17.6	--	0	0	--	--	--
GW11	10/26/2017	64.0	4.0	14.6	17.4	--	0	0	--	--	--

Table 4

Wisconsin Department of Natural Resources

Refuse Hideaway Landfill

Middleton, Wisconsin

Gas Well Monitoring Results

Location	Date	CH_4	O_2	CO_2	Balance Gas[a]	Well Pressure	Valve Position		Gas Velocity	Gas Flow[b]	Gas Temp
		(%)	(%)	(%)	(%)	(in WC)	Initial (%)	After (%)	(fpm)	(cfm)	(deg F)
GW11	11/20/2017	65.0	3.0	13.4	18.6	--	0	0	--	--	--
GW11	12/28/2017	59.0	3.2	10.8	27.0	--	0	0	--	--	--
GW11	1/30/2018	69.0	4.5	11.2	15.3	--	0	0	--	--	--
GW11	2/27/2018	76.0	3.2	12.8	8.0	--	0	0	--	--	--
GW11	3/26/2018	76.5	3.0	13.0	7.5	--	0	0	--	--	--
GW11	4/20/2018	67.0	3.0	12.0	18.0	--	0	0	--	--	--
GW11	5/25/2018	75.0	3.2	15.0	6.8	--	0	0	--	--	--
GW11	6/29/2018	57.0	4.5	23.4	15.1	--	0	0	--	--	--
GW12	7/26/2017	54.5	4.9	27.6	13.0	--	100	0	--	--	--
GW12	8/21/2017	55.0	3.0	23.8	18.2	--	0	0	--	--	--
GW12	9/27/2017	56.5	3.1	23.8	16.6	--	0	0	--	--	--
GW12	10/26/2017	54.5	4.6	24.0	16.9	--	0	0	--	--	--
GW12	11/20/2017	56.0	4.9	24.0	15.1	--	0	0	--	--	--
GW12	12/28/2017	51.5	3.3	21.8	23.4	--	0	0	--	--	--
GW12	1/30/2018	61.5	5.2	26.4	6.9	--	0	0	--	--	--
GW12	2/27/2018	61.0	3.2	28.2	7.6	--	0	0	--	--	--
GW12	3/26/2018	62.0	4.7	28.0	5.3	--	0	0	--	--	--
GW12	4/20/2018	56.0	4.8	26.8	12.4	--	0	0	--	--	--
GW12	5/25/2018	63.5	3.0	28.2	5.3	--	0	0	--	--	--
GW12	6/29/2018	68.0	3.3	12.0	16.7	--	0	0	--	--	--

Table 4

Wisconsin Department of Natural Resources

Refuse Hideaway Landfill

Middleton, Wisconsin

Gas Well Monitoring Results

Location	Date	CH_4	O_2	CO_2	Balance Gas[a]	Well Pressure	Valve Position		Gas Velocity	Gas Flow[b]	Gas Temp
		(%)	(%)	(%)	(%)	(in WC)	Initial (%)	After (%)	(fpm)	(cfm)	(deg F)
GW13	7/26/2017	55.0	3.6	27.0	14.4	--	100	0	--	--	--
GW13	8/21/2017	55.0	3.0	23.4	18.6	--	0	0	--	--	--
GW13	9/27/2017	56.0	3.5	22.2	18.3	--	0	0	--	--	--
GW13	10/26/2017	55.5	4.0	21.6	18.9	--	0	0	--	--	--
GW13	11/20/2017	57.0	4.8	22.4	15.8	--	0	0	--	--	--
GW13	12/28/2017	38.5	4.1	13.4	44.0	--	0	0	--	--	--
GW13	1/30/2018	63.5	4.7	23.6	8.2	--	0	0	--	--	--
GW13	2/27/2018	65.0	3.3	25.6	6.1	--	0	0	--	--	--
GW13	3/26/2018	65.0	4.2	25.4	5.4	--	0	0	--	--	--
GW13	4/20/2018	63.5	4.2	25.0	7.3	--	0	0	--	--	--
GW13	5/25/2018	63.4	4.9	25.8	5.9	--	0	0	--	--	--
GW13	6/29/2018	46.0	7.1	19.8	27.1	--	0	0	--	--	--

[a] : Balance gas calculated as 100% - ($\%CH_4$+$\%CO_2$+$\%O_2$).

[b] : Gas Flow (cfm) calculated by multiplying gas velocity (fpm) by pipe area 0.045 (3" diameter).

-- : Not measured.

fpm : Feet per minute.

cfm : Cubic feet per minute.

in WC : Inches of water column.

deg F : Degrees Fahrenheit.

--[s] : Not Measured. Sewer ball in place.

Table 5

Wisconsin Department of Natural Resources

Refuse Hideaway Landfill

Middleton, Wisconsin

Blower, Flare, and Compressor Station Operational Duration

Date	Blower				Flare			Compressor					Comments
	Hour Counter (hours)	Operational Hours Per Period (hours)	Percent Operational (%)	Motor Current (amps)	Hours Per Period (hours)	Operational Hours Per Period (hours)	Percent Operational (%)	Hour Counter (hours)	Operational Hours Per Period (hours)	Percent Operational (%)	Fraction of Oil in Viewport	Add Oil (Y/N)	
7/6/17 2:30 PM	66,534.0	0.0	0%	--	222.0	0.0	0%	12,175.5	106	48%	1/4	Y	Blower and flare non-operational due to electrical and transformer issues at the flare. System down upon arrival and departure.
7/14/17 9:10 AM	66,534.0	0.0	0%	--	186.7	0.0	0%	12,270.7	95	51%	1/2	N	Blower and flare non-operational due to electrical and transformer issues at the flare. System down upon arrival and departure.
7/21/17 2:30 PM	66,534.0	0.0	0%	--	173.3	0.0	0%	12,359.5	89	51%	<1/2	N	Blower and flare non-operational due to electrical and transformer issues at the flare. System down upon arrival and departure.
7/27/17 12:00 PM	66,534.0	0.0	0%	--	141.5	0.0	0%	12,481.4	122	86%	3/4	N	Oil filled on 7/26/2017 during leachate head monthly activities. Blower and flare non-operational due to electrical and transformer issues at the flare. System down upon arrival and departure.
Monthly Summary		**0.0**	**0%**		**723.5**	**0**	**0%**		**412**	**57%**			
8/3/17 1:00 PM	66,534.0	0.0	0%	--	169.0	0.0	0%	12,563.8	82	49%	1/4	Y	Blower and flare non-operational due to electrical and transformer issues at the flare. System down upon arrival and departure.
8/10/17 4:04 PM	66,534.0	0.0	0%	--	171.1	0.0	0%	12,694.8	131	77%	1/4	Y	Blower and flare non-operational due to electrical and transformer issues at the flare. System down upon arrival and departure.

Table 5

Wisconsin Department of Natural Resources

Refuse Hideaway Landfill

Middleton, Wisconsin

Blower, Flare, and Compressor Station Operational Duration

Date	Blower				Flare			Compressor					Comments
	Hour Counter (hours)	Operational Hours Per Period (hours)	Percent Operational (%)	Motor Current (amps)	Hours Per Period (hours)	Operational Hours Per Period (hours)	Percent Operational (%)	Hour Counter (hours)	Operational Hours Per Period (hours)	Percent Operational (%)	Fraction of Oil in Viewport	Add Oil (Y/N)	
8/18/17 3:55 PM	66,534.0	0.0	0%	--	191.9	0.0	0%	12,790.1	95	50%	3/4	N	Blower and flare non-operational due to electrical and transformer issues at the flare. System down upon arrival and departure.
8/22/17 10:00 AM	66,534.0	0.0	0%	--	90.1	0.0	0%	12,843.6	54	59%	1/2	Y	Blower and flare non-operational due to electrical and transformer issues at the flare. System down upon arrival and departure.
8/29/17 1:15 PM	66,534.0	0.0	0%	--	171.3	0.0	0%	12,892.3	49	28%	0/4	N	Blower and flare non-operational due to electrical and transformer issues at the flare. System down upon arrival and departure. Compressor was observed down upon arrival for the weekly activities. The compressor remained down upon departure.
Monthly Summary		**0.0**	**0%**		**793.3**	**0**	**0%**		**411**	**52%**			
9/6/17 8:00 AM	66,534.0	0.0	0%	--	186.8	0.0	0%	--	0	0%	--	N	Blower and flare non-operational due to electrical and transformer issues at the flare. Compressor down due to failure of the system. Systems down upon arrival and departure.
9/15/17 1:20 PM	66,534.0	0.0	0%	--	221.3	0.0	0%	--	0	0%	--	N	Blower and flare non-operational due to electrical and transformer issues at the flare. Compressor down due to failure of the system. Systems down upon arrival and departure.
9/21/17 2:13 PM	66,534.0	0.0	0%	--	144.9	0.0	0%	--	0	0%	--	N	Blower and flare non-operational due to electrical and transformer issues at the flare. Compressor down due to failure of the system. Systems down upon arrival and departure.

Table 5

Wisconsin Department of Natural Resources

Refuse Hideaway Landfill

Middleton, Wisconsin

Blower, Flare, and Compressor Station Operational Duration

Date	Blower				Flare			Compressor					Comments
	Hour Counter (hours)	Operational Hours Per Period (hours)	Percent Operational (%)	Motor Current (amps)	Hours Per Period (hours)	Operational Hours Per Period (hours)	Percent Operational (%)	Hour Counter (hours)	Operational Hours Per Period (hours)	Percent Operational (%)	Fraction of Oil in Viewport	Add Oil (Y/N)	
9/27/17 3:03 PM	66,534.0	0.0	0%	--	144.8	0.0	0%	--	0	0%	--	N	Blower and flare non-operational due to electrical and transformer issues at the flare. Compressor down due to failure of the system. Systems down upon arrival and departure.
Monthly Summary		**0.0**	**0%**		**697.8**	**0**	**0%**		**0**	**0%**			
10/5/17 10:30 AM	66,534.0	0.0	0%	--	187.5	0.0	0%	--	0	0%	--	N	Blower and flare non-operational due to electrical and transformer issues at the flare. Compressor down due to failure of the system. Systems down upon arrival and departure.
10/13/17 2:15 PM	66,534.0	0.0	0%	--	195.8	0.0	0%	--	0	0%	--	N	Blower and flare non-operational due to electrical and transformer issues at the flare. Compressor down due to failure of the system. Systems down upon arrival and departure.
10/19/17 3:30 PM	66,534.0	0.0	0%	--	145.3	0.0	0%	--	0	0%	--	N	Blower and flare non-operational due to electrical and transformer issues at the flare. Compressor down due to failure of the system. Systems down upon arrival and departure.
10/26/17 1:10 PM	66,534.0	0.0	0%	--	165.7	0.0	0%	--	0	0%	--	N	Blower and flare non-operational due to electrical and transformer issues at the flare. Compressor down due to failure of the system. Systems down upon arrival and departure.
Monthly Summary		**0.0**	**0%**		**694.1**	**0**	**0%**		**0**	**0%**			
11/3/17 2:57 PM	66,534.0	0.0	0%	--	193.8	0.0	0%	--	0	0%	--	N	Blower and flare non-operational due to electrical and transformer issues at the flare. Compressor down due to failure of the system. Systems down upon arrival and departure.

Table 5

Wisconsin Department of Natural Resources

Refuse Hideaway Landfill

Middleton, Wisconsin

Blower, Flare, and Compressor Station Operational Duration

Date	Blower				Flare			Compressor					Comments
	Hour Counter (hours)	Operational Hours Per Period (hours)	Percent Operational (%)	Motor Current (amps)	Hours Per Period (hours)	Operational Hours Per Period (hours)	Percent Operational (%)	Hour Counter (hours)	Operational Hours Per Period (hours)	Percent Operational (%)	Fraction of Oil in Viewport	Add Oil (Y/N)	
11/9/17 12:45 PM	66,534.0	0.0	0%	--	141.8	0.0	0%	--	0	0%	--	N	Blower and flare non-operational due to electrical and transformer issues at the flare. Compressor down due to failure of the system. Systems down upon arrival and departure.
11/16/17 3:16 PM	66,534.0	0.0	0%	--	170.5	0.0	0%	--	0	0%	--	N	Blower and flare non-operational due to electrical and transformer issues at the flare. Compressor down due to failure of the system. Systems down upon arrival and departure.
11/20/17 12:53 PM	66,534.0	0.0	0%	--	93.6	0.0	0%	--	0	0%	--	N	Blower and flare non-operational due to electrical and transformer issues at the flare. Compressor down due to failure of the system. Systems down upon arrival and departure.
Monthly Summary		**0.0**	**0%**		**599.7**	**0**	**0%**		**0**	**0%**			
12/1/17 8:50 AM	66,534.0	0.0	0%	--	259.9	0.0	0%	--	0	0%	--	N	Blower and flare non-operational due to electrical and transformer issues at the flare. Compressor down due to failure of the system. Systems down upon arrival and departure.
12/8/17 12:20 PM	66,534.0	0.0	0%	--	171.5	0.0	0%	--	0	0%	--	N	Blower and flare non-operational due to electrical and transformer issues at the flare. Compressor down due to failure of the system. Systems down upon arrival and departure.
12/15/17 9:40 AM	66,534.0	0.0	0%	--	165.3	0.0	0%	--	0	0%	--	N	Blower and flare non-operational due to electrical and transformer issues at the flare. Compressor down due to failure of the system. Systems down upon arrival and departure.

Table 5

Wisconsin Department of Natural Resources

Refuse Hideaway Landfill

Middleton, Wisconsin

Blower, Flare, and Compressor Station Operational Duration

Date	Blower				Flare			Compressor					Comments
	Hour Counter (hours)	Operational Hours Per Period (hours)	Percent Operational (%)	Motor Current (amps)	Hours Per Period (hours)	Operational Hours Per Period (hours)	Percent Operational (%)	Hour Counter (hours)	Operational Hours Per Period (hours)	Percent Operational (%)	Fraction of Oil in Viewport	Add Oil (Y/N)	
12/20/17 2:15 PM	66,534.0	0.0	0%	--	124.6	0.0	0%	--	0	0%	--	N	Blower and flare non-operational due to electrical and transformer issues at the flare. Compressor down due to failure of the system. Systems down upon arrival and departure.
12/28/17 4:45 PM	66,534.0	0.0	0%	--	194.5	0.0	0%	--	0	0%	--	N	Blower and flare non-operational due to electrical and transformer issues at the flare. Compressor down due to failure of the system. Systems down upon arrival and departure.
Monthly Summary		**0.0**	**0%**		**915.9**	**0**	**0%**		**0**	**0%**			
1/5/18 12:50 PM	66,534.0	0.0	0%	--	188.1	0.0	0%	--	0	0%	--	N	Blower and flare non-operational due to electrical and transformer issues at the flare. Compressor down due to failure of the system. Systems down upon arrival and departure.
1/11/18 11:00 AM	66,534.0	0.0	0%	--	142.2	0.0	0%	--	0	0%	--	N	Blower and flare non-operational due to electrical and transformer issues at the flare. Compressor down due to failure of the system. Systems down upon arrival and departure.
1/18/18 2:15 PM	66,534.0	0.0	0%	--	171.2	0.0	0%	--	0	0%	--	N	Blower and flare non-operational due to electrical and transformer issues at the flare. Compressor down due to failure of the system. Systems down upon arrival and departure.
1/25/18 12:00 PM	66,534.0	0.0	0%	--	165.8	0.0	0%	--	0	0%	--	N	Blower and flare non-operational due to electrical and transformer issues at the flare. Compressor down due to failure of the system. Systems down upon arrival and departure.

Table 5

Wisconsin Department of Natural Resources

Refuse Hideaway Landfill

Middleton, Wisconsin

Blower, Flare, and Compressor Station Operational Duration

Date	Blower				Flare			Compressor					Comments
	Hour Counter (hours)	Operational Hours Per Period (hours)	Percent Operational (%)	Motor Current (amps)	Hours Per Period (hours)	Operational Hours Per Period (hours)	Percent Operational (%)	Hour Counter (hours)	Operational Hours Per Period (hours)	Percent Operational (%)	Fraction of Oil in Viewport	Add Oil (Y/N)	
1/30/18 2:15 PM	66,534.0	0.0	0%	--	122.3	0.0	0%	--	0	0%	--	N	Blower and flare non-operational due to electrical and transformer issues at the flare. Compressor down due to failure of the system. Systems down upon arrival and departure.
Monthly Summary		**0.0**	**0%**		**789.5**	**0**	**0%**		**0**	**0%**			
2/8/18 1:00 PM	66,534.0	0.0	0%	--	214.7	0.0	0%	--	0	0%	--	N	Blower and flare non-operational due to electrical and transformer issues at the flare. Compressor down due to failure of the system. Systems down upon arrival and departure.
2/15/18 2:30 PM	66,534.0	0.0	0%	--	169.5	0.0	0%	--	0	0%	--	N	Blower and flare non-operational due to electrical and transformer issues at the flare. Compressor down due to failure of the system. Systems down upon arrival and departure.
2/23/18 12:15 PM	66,534.0	0.0	0%	--	189.8	0.0	0%	--	0	0%	--	N	Blower and flare non-operational due to electrical and transformer issues at the flare. Compressor down due to failure of the system. Systems down upon arrival and departure.
2/27/18 12:50 PM	66,534.0	0.0	0%	--	96.6	0.0	0%	--	0	0%	--	N	Blower and flare non-operational due to electrical and transformer issues at the flare. Compressor down due to failure of the system. Systems down upon arrival and departure.
Monthly Summary		**0.0**	**0%**		**670.6**	**0**	**0%**		**0**	**0%**			
3/5/18 1:00 PM	66,534.0	0.0	0%	--	144.2	0.0	0%	--	0	0%	--	N	Blower and flare non-operational due to electrical and transformer issues at the flare. Compressor down due to failure of the system. Systems down upon arrival and departure.

Table 5

Wisconsin Department of Natural Resources

Refuse Hideaway Landfill

Middleton, Wisconsin

Blower, Flare, and Compressor Station Operational Duration

Date	Blower				Flare			Compressor					Comments
	Hour Counter (hours)	Operational Hours Per Period (hours)	Percent Operational (%)	Motor Current (amps)	Hours Per Period (hours)	Operational Hours Per Period (hours)	Percent Operational (%)	Hour Counter (hours)	Operational Hours Per Period (hours)	Percent Operational (%)	Fraction of Oil in Viewport	Add Oil (Y/N)	
3/16/18 12:00 PM	66,534.0	0.0	0%	--	263.0	0.0	0%	--	0	0%	--	N	Blower and flare non-operational due to electrical and transformer issues at the flare. Compressor down due to failure of the system. Systems down upon arrival and departure.
3/21/18 4:08 PM	66,534.0	0.0	0%	--	124.1	0.0	0%	--	0	0%	--	N	Blower and flare non-operational due to electrical and transformer issues at the flare. Compressor down due to failure of the system. Systems down upon arrival and departure.
3/26/18 1:00 PM	66,534.0	0.0	0%	--	116.9	0.0	0%	--	0	0%	--	N	Blower and flare non-operational due to electrical and transformer issues at the flare. Compressor down due to failure of the system. Systems down upon arrival and departure.
Monthly Summary		**0.0**	**0%**		**648.2**	**0**	**0%**		**0**	**0%**			
4/5/18 12:00 PM	66,534.0	0.0	0%	--	239.0	0.0	0%	--	0	0%	--	N	Blower and flare non-operational due to electrical and transformer issues at the flare. Compressor down due to failure of the system. Systems down upon arrival and departure.
4/12/18 1:00 PM	66,534.0	0.0	0%	--	169.0	0.0	0%	--	0	0%	--	N	Blower and flare non-operational due to electrical and transformer issues at the flare. Compressor down due to failure of the system. Systems down upon arrival and departure.
4/20/18 2:15 PM	66,534.0	0.0	0%	--	193.3	0.0	0%	--	0	0%	--	N	Blower and flare non-operational due to electrical and transformer issues at the flare. Compressor down due to failure of the system. Systems down upon arrival and departure.

Table 5

Wisconsin Department of Natural Resources

Refuse Hideaway Landfill

Middleton, Wisconsin

Blower, Flare, and Compressor Station Operational Duration

Date	Blower				Flare			Compressor					Comments
	Hour Counter (hours)	Operational Hours Per Period (hours)	Percent Operational (%)	Motor Current (amps)	Hours Per Period (hours)	Operational Hours Per Period (hours)	Percent Operational (%)	Hour Counter (hours)	Operational Hours Per Period (hours)	Percent Operational (%)	Fraction of Oil in Viewport	Add Oil (Y/N)	
4/27/18 1:00 PM	66,534.0	0.0	0%	--	166.7	0.0	0%	--	0	0%	--	N	Blower and flare non-operational due to electrical and transformer issues at the flare. Compressor down due to failure of the system. Systems down upon arrival and departure.
Monthly Summary		**0.0**	**0%**		**768.0**	**0**	**0%**		**0**	**0%**			
5/4/18 7:30 AM	66,534.0	0.0	0%	--	162.5	0.0	0%	--	0	0%	--	N	Blower and flare non-operational due to electrical and transformer issues at the flare. Compressor down due to failure of the system. Systems down upon arrival and departure.
5/11/18 2:00 PM	66,534.0	0.0	0%	--	174.5	0.0	0%	--	0	0%	--	N	Blower and flare non-operational due to electrical and transformer issues at the flare. Compressor down due to failure of the system. Systems down upon arrival and departure.
5/18/18 11:00 AM	66,534.0	0.0	0%	--	165.0	0.0	0%	--	0	0%	--	N	Blower and flare non-operational due to electrical and transformer issues at the flare. Compressor down due to failure of the system. Systems down upon arrival and departure.
5/25/18 3:20 PM	66,534.0	0.0	0%	--	172.3	0.0	0%	--	0	0%	--	N	Blower and flare non-operational due to electrical and transformer issues at the flare. Compressor down due to failure of the system. Systems down upon arrival and departure.
5/29/18 12:10 PM	66,534.0	0.0	0%	--	92.8	0.0	0%	--	0	0%	--	N	Blower and flare non-operational due to electrical and transformer issues at the flare. Compressor down due to failure of the system. Systems down upon arrival and departure.
Monthly Summary		**0.0**	**0%**		**767.2**	**0**	**0%**		**0**	**0%**			

Table 5

Wisconsin Department of Natural Resources

Refuse Hideaway Landfill

Middleton, Wisconsin

Blower, Flare, and Compressor Station Operational Duration

Date	Blower				Flare			Compressor					Comments
	Hour Counter (hours)	Operational Hours Per Period (hours)	Percent Operational (%)	Motor Current (amps)	Hours Per Period (hours)	Operational Hours Per Period (hours)	Percent Operational (%)	Hour Counter (hours)	Operational Hours Per Period (hours)	Percent Operational (%)	Fraction of Oil in Viewport	Add Oil (Y/N)	
6/7/18 12:30 PM	66,534.0	0.0	0%	--	216.3	0.0	0%	--	0	0%	--	N	Blower and flare non-operational due to electrical and transformer issues at the flare. Compressor down due to failure of the system. Systems down upon arrival and departure.
6/14/18 9:45 AM	66,534.0	0.0	0%	--	165.2	0.0	0%	--	0	0%	--	N	Blower and flare non-operational due to electrical and transformer issues at the flare. Compressor down due to failure of the system. Systems down upon arrival and departure.
6/21/18 3:50 PM	66,534.0	0.0	0%	--	174.1	0.0	0%	--	0	0%	--	N	Blower and flare non-operational due to electrical and transformer issues at the flare. Compressor down due to failure of the system. Systems down upon arrival and departure.
6/29/18 12:20 PM	66,534.0	0.0	0%	--	188.5	0.0	0%	--	0	0%	--	N	Blower and flare non-operational due to electrical and transformer issues at the flare. Compressor down due to failure of the system. Systems down upon arrival and departure.
Monthly Summary		**0.0**	**0%**		**744.2**	**0**	**0%**		**0**	**0%**			
Annual Sumary		**0.0**	**0%**		**8811.8**	**0**	**0%**		**823**	**9%**			

--: No Measurement.

Table 6

Wisconsin Department of Natural Resources

Refuse Hideaway Landfill

Middleton, Wisconsin

Monthly Gas Probe Monitoring Results

Location	Date	Pressure	CH_4[a]		O_2	CO_2	Balance Gas[b]	Comments
		(in. WC)	(% LEL)	(% Vol)	(% Vol)	(% Vol)	(% Vol)	
G-1S	7/27/17	0.00	--	**27.0**	3.1	22.4	47.5	
G-1S	8/22/17	0.00	--	**24.0**	4.9	22.0	49.1	
G-1S	9/21/17	0.05	--	**21.0**	4.9	21.0	53.1	
G-1S	10/19/17	0.06	--	**20.5**	4.6	19.8	55.1	
G-1S	11/28/17	-0.02	2.0	0.1	19.9	2.6	77.4	
G-1S	12/20/17	-0.03	0.0	0.0	20.9	0.0	79.1	
G-1S	1/25/18	0.00	0.0	0.0	20.9	0.0	79.1	
G-1S	2/26/18	-0.02	0.0	0.0	20.9	0.0	79.1	
G-1S	3/21/18	0.00	0.0	0.0	20.9	0.0	79.1	
G-1S	4/27/18	-0.03	--	**17.5**	4.1	16.6	61.8	
G-1S	5/18/18	0.02	--	**29.0**	5.3	22.8	42.9	
G-1S	6/25/18	0.04	--	**30.5**	4.6	25.2	39.7	
G-1D	7/27/17	0.00	--	**15.5**	4.2	18.6	61.7	
G-1D	8/22/17	0.03	--	**12.5**	4.4	17.6	65.5	
G-1D	9/21/17	0.06	--	**12.0**	3.0	17.4	67.6	
G-1D	10/19/17	0.05	--	**9.5**	3.8	15.8	70.9	
G-1D	11/28/17	-0.05	1.0	0.1	20.9	0.0	79.1	
G-1D	12/20/17	-0.02	0.0	0.0	20.9	0.0	79.1	
G-1D	1/25/18	0.01	0.0	0.0	20.9	0.0	79.1	
G-1D	2/26/18	-0.03	0.0	0.0	20.9	0.0	79.1	
G-1D	3/21/18	0.00	0.0	0.0	20.9	0.0	79.1	
G-1D	4/27/18	-0.02	--	**16.0**	4.6	17.8	61.6	
G-1D	5/18/18	0.04	--	**17.5**	3.5	19.4	59.6	
G-1D	6/25/18	0.03	--	**18.5**	3.3	20.8	57.4	
G-2S	7/27/17	0.00	--	**6.0**	3.5	14.0	76.5	
G-2S	8/22/17	0.00	--	**6.5**	3.3	14.2	76.0	
G-2S	9/21/17	0.00	--	**6.0**	3.3	14.2	76.5	
G-2S	10/19/17	0.00	36.0	1.8	17.3	3.2	77.7	
G-2S	11/28/17	0.00	4.0	0.2	20.6	1.2	78.0	
G-2S	12/20/17	0.00	0.0	0.0	20.9	0.0	79.1	
G-2S	1/25/18	0.00	0.0	0.0	20.9	0.0	79.1	
G-2S	2/26/18	0.00	0.0	0.0	20.9	0.0	79.1	
G-2S	3/21/18	0.00	0.0	0.0	20.9	0.0	79.1	
G-2S	4/27/18	0.00	0.0	0.0	20.9	0.0	79.1	
G-2S	5/18/18	0.00	8.0	0.4	20.6	1.8	77.2	
G-2S	6/25/18	0.00	--	**6.5**	4.8	13.6	75.1	
G-2D	7/27/17	0.00	3.0	0.2	15.9	4.2	79.8	
G-2D	8/22/17	0.00	0.0	0.0	16.6	3.6	79.8	
G-2D	9/21/17	0.00	0.0	0.0	19.1	2.6	78.3	
G-2D	10/19/17	0.00	10.0	0.5	15.0	5.8	78.7	
G-2D	11/28/17	0.00	0.0	0.0	15.5	1.2	83.3	

Table 6

Wisconsin Department of Natural Resources

Refuse Hideaway Landfill

Middleton, Wisconsin

Monthly Gas Probe Monitoring Results

Location	Date	Pressure	CH_4[a]		O_2	CO_2	Balance Gas[b]	Comments
		(in. WC)	(% LEL)	(% Vol)	(% Vol)	(% Vol)	(% Vol)	
G-2D	12/20/17	0.00	0.0	0.0	20.9	0.0	79.1	
G-2D	1/25/18	0.00	0.0	0.0	20.9	0.0	79.1	
G-2D	2/26/18	0.00	0.0	0.0	20.9	0.0	79.1	
G-2D	3/21/18	0.00	0.0	0.0	20.9	0.0	79.1	
G-2D	4/27/18	0.00	0.0	0.0	18.0	0.6	81.4	
G-2D	5/18/18	0.00	0.0	0.0	19.2	2.2	78.6	
G-2D	6/25/18	0.00	0.0	0.0	17.9	3.2	78.9	
G-5	7/27/17	--	0.0	0.0	20.9	0.0	79.1	No Port.
G-5	8/22/17	--	0.0	0.0	20.9	0.0	79.1	No Port.
G-5	9/21/17	--	0.0	0.0	20.7	0.4	78.9	No Port.
G-5	10/19/17	--	0.0	0.0	20.9	0.0	79.1	No Port.
G-5	11/28/17	--	0.0	0.0	20.9	0.2	78.9	No Port.
G-5	12/20/17	--	0.0	0.0	20.9	0.2	78.9	No Port.
G-5	1/25/18	--	0.0	0.0	20.9	0.2	78.9	No Port.
G-5	2/26/18	0.00	0.0	0.0	8.8	3.6	87.6	Port Installed.
G-5	3/21/18	0.00	0.0	0.0	3.9	3.4	92.7	
G-5	4/27/18	0.00	0.0	0.0	18.7	2.4	78.9	
G-5	5/18/18	0.00	0.0	0.0	16.4	3.6	80.0	
G-5	6/25/18	0.00	0.0	0.0	15.2	4.4	80.4	
G-6	7/27/17	--	0.0	0.0	20.9	0.2	78.9	No Port.
G-6	8/22/17	--	0.0	0.0	20.9	0.0	79.1	No Port.
G-6	9/21/17	--	0.0	0.0	19.3	1.0	79.7	No Port.
G-6	10/19/17	--	0.0	0.0	20.6	0.4	79.0	No Port.
G-6	11/28/17	--	0.0	0.0	20.9	0.0	79.1	No Port.
G-6	12/20/17	--	0.0	0.0	20.9	0.0	79.1	No Port.
G-6	1/25/18	--	0.0	0.0	20.9	0.6	78.5	No Port.
G-6	2/26/18	0.00	0.0	0.0	20.9	0.0	79.1	Port Installed.
G-6	3/21/18	0.00	0.0	0.0	20.9	0.4	78.7	
G-6	4/27/18	-0.07	0.0	0.0	20.9	0.4	78.7	
G-6	5/18/18	0.01	0.0	0.0	20.9	0.2	78.9	
G-6	6/25/18	0.00	0.0	0.0	20.9	0.6	78.5	
G-8	7/27/17	0.00	0.0	0.0	20.9	0.0	79.1	
G-8	8/22/17	0.00	0.0	0.0	20.9	0.0	79.1	
G-8	9/21/17	0.00	0.0	0.0	20.9	0.0	79.1	
G-8	10/19/17	0.00	0.0	0.0	20.9	0.0	79.1	
G-8	11/28/17	0.00	1.0	0.1	17.9	0.0	82.1	
G-8	12/20/17	0.00	0.0	0.0	20.9	0.0	79.1	
G-8	1/25/18	0.00	0.0	0.0	20.9	0.0	79.1	
G-8	2/26/18	0.00	0.0	0.0	20.9	0.0	79.1	
G-8	3/21/18	0.00	0.0	0.0	20.8	0.0	79.2	
G-8	4/27/18	0.00	0.0	0.0	18.8	0.0	81.2	

Table 6

Wisconsin Department of Natural Resources

Refuse Hideaway Landfill

Middleton, Wisconsin

Monthly Gas Probe Monitoring Results

Location	Date	Pressure	CH_4[a]		O_2	CO_2	Balance Gas[b]	Comments
		(in. WC)	(% LEL)	(% Vol)	(% Vol)	(% Vol)	(% Vol)	
G-8	5/18/18	0.00	0.0	0.0	17.3	0.0	82.7	
G-8	6/25/18	0.00	0.0	0.0	17.5	0.0	82.5	
G-9	7/27/17	0.00	0.0	0.0	20.9	0.0	79.1	
G-9	8/22/17	0.00	0.0	0.0	20.9	0.0	79.1	
G-9	9/21/17	0.00	0.0	0.0	20.9	0.0	79.1	
G-9	10/19/17	0.00	0.0	0.0	20.9	0.0	79.1	
G-9	11/28/17	0.00	0.0	0.0	19.8	1.0	79.2	
G-9	12/20/17	0.00	0.0	0.0	18.9	1.2	79.9	
G-9	1/25/18	0.00	0.0	0.0	20.1	0.6	79.3	
G-9	2/26/18	0.00	0.0	0.0	19.8	0.8	79.4	
G-9	3/21/18	0.00	1.0	0.1	18.8	1.8	79.4	
G-9	4/27/18	0.00	0.0	0.0	19.3	0.8	79.9	
G-9	5/18/18	0.00	0.0	0.0	20.9	0.0	79.1	
G-9	6/25/18	0.00	0.0	0.0	20.9	0.0	79.1	
G-10	7/27/17	--	0.0	0.0	20.9	0.0	79.1	No Port.
G-10	8/22/17	--	0.0	0.0	20.9	0.0	79.1	No Port.
G-10	9/21/17	--	0.0	0.0	20.9	0.0	79.1	No Port.
G-10	10/19/17	--	0.0	0.0	20.9	0.0	79.1	No Port.
G-10	11/28/17	--	1.0	0.1	20.9	0.0	79.1	No Port.
G-10	12/20/17	--	0.0	0.0	20.9	0.0	79.1	No Port.
G-10	1/25/18	--	0.0	0.0	20.9	0.0	79.1	No Port.
G-10	2/26/18	-0.41	0.0	0.0	20.9	0.0	79.1	Port Installed.
G-10	3/21/18	-0.42	0.0	0.0	20.9	0.0	79.1	
G-10	4/27/18	-0.80	0.0	0.0	18.3	1.2	80.5	
G-10	5/18/18	0.06	0.0	0.0	20.9	0.0	79.1	
G-10	6/25/18	-0.30	0.0	0.0	20.9	0.0	79.1	
GP-8	7/27/17	0.00	0.0	0.0	19.4	1.8	78.8	
GP-8	8/22/17	0.00	0.0	0.0	18.6	3.0	78.4	
GP-8	9/21/17	0.00	0.0	0.0	17.5	3.2	79.3	
GP-8	10/19/17	0.00	0.0	0.0	19.3	2.6	78.1	
GP-8	11/28/17	0.00	0.0	0.0	20.9	1.4	77.7	
GP-8	12/20/17	0.00	0.0	0.0	20.7	1.2	78.1	
GP-8	1/25/18	0.00	0.0	0.0	19.7	1.4	78.9	
GP-8	2/26/18	0.00	0.0	0.0	17.3	1.8	80.9	
GP-8	3/21/18	0.00	0.0	0.0	19.0	1.8	79.2	
GP-8	4/27/18	0.00	0.0	0.0	20.7	0.8	78.5	
GP-8	5/18/18	0.00	0.0	0.0	19.6	0.6	79.8	
GP-8	6/25/18	0.00	0.0	0.0	18.1	2.2	79.7	
GP-11S	7/27/17	0.00	--	**7.5**	4.1	12.2	76.2	
GP-11S	8/22/17	0.00	--	**6.0**	5.1	11.8	77.1	
GP-11S	9/21/17	0.00	--	**6.0**	4.2	13.0	76.8	

Table 6

Wisconsin Department of Natural Resources

Refuse Hideaway Landfill

Middleton, Wisconsin

Monthly Gas Probe Monitoring Results

Location	Date	Pressure	CH_4[a]		O_2	CO_2	Balance Gas[b]	Comments
		(in. WC)	(% LEL)	(% Vol)	(% Vol)	(% Vol)	(% Vol)	
GP-11S	10/19/17	0.00	14.0	0.7	14.9	5.0	79.4	
GP-11S	11/28/17	0.00	0.0	0.0	20.9	0.4	78.7	
GP-11S	12/20/17	0.00	0.0	0.0	20.9	0.0	79.1	
GP-11S	1/25/18	0.00	0.0	0.0	20.9	0.0	79.1	
GP-11S	2/26/18	0.00	0.0	0.0	20.9	0.0	79.1	
GP-11S	3/21/18	0.00	0.0	0.0	20.9	0.0	79.1	
GP-11S	4/27/18	0.00	0.0	0.0	20.1	1.2	78.7	
GP-11S	5/18/18	0.00	0.0	0.0	10.5	4.0	85.5	
GP-11S	6/25/18	0.00	--	**5.0**	6.3	10.0	78.7	
GP-11D	7/27/17	0.00	--	**8.0**	3.8	13.2	75.0	
GP-11D	8/22/17	0.00	--	**6.5**	5.0	12.2	76.3	
GP-11D	9/21/17	0.00	--	**6.5**	5.1	12.4	76.0	
GP-11D	10/19/17	0.00	--	**5.0**	8.0	10.4	76.6	
GP-11D	11/28/17	0.00	1.0	0.1	20.8	0.8	78.4	
GP-11D	12/20/17	0.00	2.0	0.1	20.9	0.2	78.8	
GP-11D	1/25/18	0.00	0.0	0.0	20.9	0.0	79.1	
GP-11D	2/26/18	0.00	0.0	0.0	20.9	0.0	79.1	
GP-11D	3/21/18	0.00	0.0	0.0	20.9	0.0	79.1	
GP-11D	4/27/18	0.00	0.0	0.0	19.4	1.4	79.2	
GP-11D	5/18/18	0.03	28.0	1.4	6.9	8.0	83.7	
GP-11D	6/25/18	0.00	--	**6.0**	5.9	11.8	76.3	
GP-12S	7/27/17	0.00	--	**15.0**	13.6	6.2	65.2	
GP-12S	8/22/17	0.00	27.0	1.4	14.4	6.6	77.7	
GP-12S	9/21/17	0.00	--	**5.0**	11.9	8.6	74.5	
GP-12S	10/19/17	0.00	53.0	2.7	16.1	4.6	76.7	
GP-12S	11/28/17	0.00	43.0	2.2	17.9	4.2	75.8	
GP-12S	12/20/17	0.00	1.0	0.1	20.9	1.0	78.1	
GP-12S	1/25/18	0.00	1.0	0.1	20.9	0.4	78.7	
GP-12S	2/26/18	0.00	0.0	0.0	20.9	0.0	79.1	
GP-12S	3/21/18	0.00	0.0	0.0	20.9	0.0	79.1	
GP-12S	4/27/18	0.00	0.0	0.0	19.6	1.6	78.8	
GP-12S	5/18/18	0.00	0.0	0.0	19.4	1.8	78.8	
GP-12S	6/25/18	0.00	1.0	0.1	16.6	2.6	80.8	
GP-12D	7/27/17	0.00	--	**6.0**	9.2	11.4	73.4	
GP-12D	8/22/17	0.00	--	**12.0**	3.2	18.1	66.7	
GP-12D	9/21/17	0.00	--	**11.0**	3.0	17.6	68.4	
GP-12D	10/19/17	0.00	--	**11.0**	3.1	17.4	68.5	
GP-12D	11/28/17	0.00	3.0	0.2	20.9	0.2	78.8	
GP-12D	12/20/17	0.00	1.0	0.1	20.9	0.0	79.1	
GP-12D	1/25/18	0.00	0.0	0.0	20.9	0.0	79.1	
GP-12D	2/26/18	0.00	0.0	0.0	20.9	0.0	79.1	Replaced Valve.

Table 6

Wisconsin Department of Natural Resources

Refuse Hideaway Landfill

Middleton, Wisconsin

Monthly Gas Probe Monitoring Results

Location	Date	Pressure	CH_4[a]		O_2	CO_2	Balance Gas[b]	Comments
		(in. WC)	(% LEL)	(% Vol)	(% Vol)	(% Vol)	(% Vol)	
GP-12D	3/21/18	-0.03	0.0	0.0	20.9	0.0	79.1	
GP-12D	4/27/18	-0.03	0.0	0.0	18.0	2.2	79.8	
GP-12D	5/18/18	0.00	27.0	1.4	18.4	2.8	77.5	
GP-12D	6/25/18	0.04	61.0	3.1	14.8	5.4	76.8	
GP-13S	7/27/17	0.00	58.0	2.9	5.9	8.8	82.4	
GP-13S	8/22/17	0.00	27.0	1.4	8.4	8.8	81.5	
GP-13S	9/21/17	0.00	3.0	0.2	12.5	5.0	82.4	
GP-13S	10/19/17	0.00	1.0	0.1	17.7	3.4	78.9	
GP-13S	11/28/17	0.00	0.0	0.0	20.1	1.6	78.3	
GP-13S	12/20/17	0.00	1.0	0.1	20.9	0.2	78.9	
GP-13S	1/25/18	0.00	0.0	0.0	20.9	0.0	79.1	
GP-13S	2/26/18	0.00	0.0	0.0	20.9	0.0	79.1	
GP-13S	3/21/18	0.00	0.0	0.0	20.9	0.0	79.1	
GP-13S	4/27/18	0.00	0.0	0.0	19.9	1.0	79.1	
GP-13S	5/18/18	0.00	0.0	0.0	15.8	1.6	82.6	
GP-13S	6/25/18	0.00	0.0	0.0	9.7	5.0	85.3	
GP-13D	7/27/17	0.00	55.0	2.8	9.7	7.8	79.8	
GP-13D	8/22/17	0.00	44.0	2.2	12.3	7.0	78.5	
GP-13D	9/21/17	0.00	45.0	2.3	13.0	7.3	77.5	
GP-13D	10/19/17	0.00	21.0	1.1	16.8	3.6	78.6	
GP-13D	11/28/17	0.00	8.0	0.4	19.8	1.2	78.6	
GP-13D	12/20/17	0.00	1.0	0.1	20.9	0.0	79.1	
GP-13D	1/25/18	0.00	0.0	0.0	20.9	0.0	79.1	
GP-13D	2/26/18	-0.01	0.0	0.0	20.9	0.0	79.1	
GP-13D	3/21/18	0.00	0.0	0.0	20.9	0.0	79.1	
GP-13D	4/27/18	-0.05	0.0	0.0	19.0	1.8	79.2	
GP-13D	5/18/18	0.00	0.0	0.0	18.3	1.8	79.9	
GP-13D	6/25/18	0.00	0.0	0.0	13.0	3.8	83.2	
GPW-1S	7/27/17	0.00	0.0	0.0	19.8	1.2	79.0	
GPW-1S	8/22/17	0.00	0.0	0.0	19.3	1.4	79.3	
GPW-1S	9/21/17	0.00	0.0	0.0	19.8	1.0	79.2	
GPW-1S	10/19/17	0.00	0.0	0.0	20.2	1.2	78.6	
GPW-1S	11/28/17	0.00	0.0	0.0	20.9	0.0	79.1	
GPW-1S	12/20/17	0.00	0.0	0.0	20.2	1.2	78.6	
GPW-1S	1/25/18	0.01	0.0	0.0	18.9	2.8	78.3	
GPW-1S	2/26/18	0.00	0.0	0.0	20.9	0.0	79.1	
GPW-1S	3/21/18	0.00	0.0	0.0	20.9	1.0	78.1	
GPW-1S	4/27/18	0.00	0.0	0.0	19.9	1.2	78.9	
GPW-1S	5/18/18	0.00	0.0	0.0	20.0	1.2	78.8	
GPW-1S	6/25/18	0.00	0.0	0.0	20.3	0.8	78.9	
GPW-1M	7/27/17	0.30	0.0	0.0	20.9	0.0	79.1	

Table 6

Wisconsin Department of Natural Resources

Refuse Hideaway Landfill

Middleton, Wisconsin

Monthly Gas Probe Monitoring Results

Location	Date	Pressure	CH_4[a]		O_2	CO_2	Balance Gas[b]	Comments
		(in. WC)	(% LEL)	(% Vol)	(% Vol)	(% Vol)	(% Vol)	
GPW-1M	8/22/17	-0.15	0.0	0.0	20.9	0.0	79.1	
GPW-1M	9/21/17	0.10	0.0	0.0	20.7	0.4	78.9	
GPW-1M	10/19/17	0.00	0.0	0.0	20.9	0.0	79.1	
GPW-1M	11/28/17	-0.38	0.0	0.0	20.9	0.0	79.1	
GPW-1M	12/20/17	0.00	0.0	0.0	20.9	0.0	79.1	
GPW-1M	1/25/18	0.38	0.0	0.0	20.9	0.0	79.1	
GPW-1M	2/26/18	-0.40	0.0	0.0	20.9	0.0	79.1	
GPW-1M	3/21/18	-0.23	0.0	0.0	20.9	0.0	79.1	
GPW-1M	4/27/18	-0.60	0.0	0.0	18.8	1.2	80.0	
GPW-1M	5/18/18	0.11	0.0	0.0	20.9	0.0	79.1	
GPW-1M	6/25/18	-0.14	0.0	0.0	20.9	0.0	79.1	
GPW-1D	7/27/17	0.35	0.0	0.0	18.6	1.8	79.6	
GPW-1D	8/22/17	-0.25	0.0	0.0	20.9	0.0	79.1	
GPW-1D	9/21/17	0.12	0.0	0.0	18.5	1.8	79.7	
GPW-1D	10/19/17	-0.05	0.0	0.0	20.9	0.8	78.3	
GPW-1D	11/28/17	-0.40	0.0	0.0	20.9	0.6	78.5	
GPW-1D	12/20/17	0.00	0.0	0.0	19.1	1.8	79.1	
GPW-1D	1/25/18	0.41	0.0	0.0	19.3	2.0	78.7	
GPW-1D	2/26/18	-0.45	0.0	0.0	20.9	0.0	79.1	
GPW-1D	3/21/18	-0.25	0.0	0.0	20.9	0.0	79.1	
GPW-1D	4/27/18	-0.75	0.0	0.0	18.8	1.4	79.8	
GPW-1D	5/18/18	0.10	0.0	0.0	19.0	1.8	79.2	
GPW-1D	6/25/18	-0.21	0.0	0.0	20.9	0.0	79.1	
Speedway Buildings	7/27/17		0.0	0.0	20.9	0.0	79.1	
Speedway Buildings	8/22/17		0.0	0.0	20.9	0.0	79.1	
Speedway Buildings	9/21/17		0.0	0.0	20.9	0.0	79.1	
Speedway Buildings	10/19/17		0.0	0.0	20.9	0.0	79.1	
Speedway Buildings	11/28/17		0.0	0.0	20.9	0.0	79.1	
Speedway Buildings	12/20/17		0.0	0.0	20.9	0.0	79.1	
Speedway Buildings	1/25/18		0.0	0.0	20.9	0.0	79.1	
Speedway Buildings	2/26/18		0.0	0.0	20.9	0.0	79.1	
Speedway Buildings	3/21/18		0.0	0.0	20.9	0.0	79.1	
Speedway Buildings	4/27/18		0.0	0.0	20.1	0.0	79.9	
Speedway Buildings	5/18/18		0.0	0.0	20.9	0.0	79.1	
Speedway Buildings	6/25/18		0.0	0.0	20.9	0.0	79.1	

[a] : Percent volume calculated as % LEL/20.

[b] : Balance gas calculated as 100% - ($\%CH_4+\%CO_2+\%O_2$).

Bold: Methane concentration reported at or above the lower explosive limit (LEL).

-- : No value recorded.

in. WC : Inches of water column.

APPENDIX

A LEACHATE LABORATORY ANALYTICAL REPORTS AND CHAIN-OF-CUSTODY DOCUMENTS

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

TestAmerica Job ID: 500-134702-1
Client Project/Site: Refuse Hideaway Landfill

For:
Leggette, Brashears & Graham, Inc.
5957 McKee Road,
Suite 7
Madison, Wisconsin 53719

Attn: Jennifer Shelton

Sandie Fredrick

Authorized for release by:
10/9/2017 5:40:49 PM

Sandie Fredrick, Project Manager II
(920)261-1660
sandie.fredrick@testamericainc.com

Table of Contents

Job ID: 500-134702-1

Laboratory: TestAmerica Chicago

Narrative

Job Narrative
500-134702-1

Comments
No additional comments.

Receipt
The sample was received on 9/28/2017 10:15 AM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 4.0° C.

Metals
Method(s) 6010B: The method blank for preparation batch 500-403171 contained Molybdenum above the reporting limit (RL). None of the samples associated with this method blank contained the target compound; therefore, re-extraction and/or re-analysis of samples were not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Leggette, Brashears & Graham, Inc.
Project/Site: Refuse Hideaway Landfill

TestAmerica Job ID: 500-134702-1

Client Sample ID: Leachate

Lab Sample ID: 500-134702-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cadmium	0.0018	J B	0.0020	0.00043	mg/L	1		6010B	Total/NA
Chromium	0.029		0.010	0.0017	mg/L	1		6010B	Total/NA
Copper	0.0036	J	0.010	0.0018	mg/L	1		6010B	Total/NA
Nickel	0.060		0.010	0.0019	mg/L	1		6010B	Total/NA
Selenium	0.0069	J	0.010	0.0053	mg/L	1		6010B	Total/NA
Zinc	0.013	J	0.020	0.0050	mg/L	1		6010B	Total/NA
Mercury	0.13	J	0.20	0.098	ug/L	1		7470A	Total/NA
Cyanide, Total	0.0060	J	0.010	0.0030	mg/L	1		SM 4500 CN E	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: Leggette, Brashears & Graham, Inc.
Project/Site: Refuse Hideaway Landfill

TestAmerica Job ID: 500-134702-1

Method	Method Description	Protocol	Laboratory
6010B	Metals (ICP)	SW846	TAL CHI
7470A	Mercury (CVAA)	SW846	TAL CHI
SM 3500 CR B	Chromium, Hexavalent	SM	TAL CHI
SM 4500 CN E	Cyanide, Total	SM	TAL CHI

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater",
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Sample Summary

Client: Leggette, Brashears & Graham, Inc.
Project/Site: Refuse Hideaway Landfill

TestAmerica Job ID: 500-134702-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-134702-1	Leachate	Leachate	09/27/17 15:30	09/28/17 10:15

Client Sample ID: Leachate

Date Collected: 09/27/17 15:30
Date Received: 09/28/17 10:15

Lab Sample ID: 500-134702-1
Matrix: Leachate

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.0018	J B	0.0020	0.00043	mg/L		09/28/17 14:41	09/30/17 00:24	1
Chromium	0.029		0.010	0.0017	mg/L		09/28/17 14:41	09/30/17 00:24	1
Copper	0.0036	J	0.010	0.0018	mg/L		09/28/17 14:41	09/30/17 00:24	1
Lead	<0.0027		0.0050	0.0027	mg/L		09/28/17 14:41	09/30/17 00:24	1
Molybdenum	<0.0038		0.010	0.0038	mg/L		09/28/17 14:41	09/30/17 00:24	1
Nickel	0.060		0.010	0.0019	mg/L		09/28/17 14:41	09/30/17 00:24	1
Selenium	0.0069	J	0.010	0.0053	mg/L		09/28/17 14:41	09/30/17 00:24	1
Silver	<0.0015		0.0050	0.0015	mg/L		09/28/17 14:41	09/30/17 00:24	1
Zinc	0.013	J	0.020	0.0050	mg/L		09/28/17 14:41	09/30/17 00:24	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.13	J	0.20	0.098	ug/L		10/02/17 11:20	10/03/17 10:28	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	<0.0032	F1	0.010	0.0032	mg/L			09/28/17 13:31	1
Cyanide, Total	0.0060	J	0.010	0.0030	mg/L		10/06/17 13:06	10/06/17 17:10	1

Qualifiers

Metals

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

QC Association Summary

Client: Leggette, Brashears & Graham, Inc.
Project/Site: Refuse Hideaway Landfill

TestAmerica Job ID: 500-134702-1

Metals

Prep Batch: 403171

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-134702-1	Leachate	Total/NA	Leachate	3010A	
MB 500-403171/1-A	Method Blank	Total/NA	Water	3010A	
LCS 500-403171/2-A	Lab Control Sample	Total/NA	Water	3010A	

Analysis Batch: 403447

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-134702-1	Leachate	Total/NA	Leachate	6010B	403171
MB 500-403171/1-A	Method Blank	Total/NA	Water	6010B	403171
LCS 500-403171/2-A	Lab Control Sample	Total/NA	Water	6010B	403171

Prep Batch: 403549

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-134702-1	Leachate	Total/NA	Leachate	7470A	
MB 500-403549/12-A	Method Blank	Total/NA	Water	7470A	
LCS 500-403549/13-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 403704

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-134702-1	Leachate	Total/NA	Leachate	7470A	403549
MB 500-403549/12-A	Method Blank	Total/NA	Water	7470A	403549
LCS 500-403549/13-A	Lab Control Sample	Total/NA	Water	7470A	403549

General Chemistry

Analysis Batch: 403432

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-134702-1	Leachate	Total/NA	Leachate	SM 3500 CR B	
MB 500-403432/3	Method Blank	Total/NA	Water	SM 3500 CR B	
LCS 500-403432/4	Lab Control Sample	Total/NA	Water	SM 3500 CR B	
500-134702-1 MS	Leachate	Total/NA	Leachate	SM 3500 CR B	
500-134702-1 MSD	Leachate	Total/NA	Leachate	SM 3500 CR B	

Prep Batch: 404280

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-134702-1	Leachate	Total/NA	Leachate	Distill/CN	
MB 500-404280/1-A	Method Blank	Total/NA	Water	Distill/CN	
LCS 500-404280/2-A	Lab Control Sample	Total/NA	Water	Distill/CN	

Analysis Batch: 404596

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-134702-1	Leachate	Total/NA	Leachate	SM 4500 CN E	404280
MB 500-404280/1-A	Method Blank	Total/NA	Water	SM 4500 CN E	404280
LCS 500-404280/2-A	Lab Control Sample	Total/NA	Water	SM 4500 CN E	404280

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 500-403171/1-A
Matrix: Water
Analysis Batch: 403447

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 403171

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.000607	J	0.0020	0.00043	mg/L		09/28/17 14:41	09/29/17 23:03	1
Chromium	<0.0017		0.010	0.0017	mg/L		09/28/17 14:41	09/29/17 23:03	1
Copper	<0.0018		0.010	0.0018	mg/L		09/28/17 14:41	09/29/17 23:03	1
Lead	<0.0027		0.0050	0.0027	mg/L		09/28/17 14:41	09/29/17 23:03	1
Molybdenum	0.0185		0.010	0.0038	mg/L		09/28/17 14:41	09/29/17 23:03	1
Nickel	<0.0019		0.010	0.0019	mg/L		09/28/17 14:41	09/29/17 23:03	1
Selenium	<0.0053		0.010	0.0053	mg/L		09/28/17 14:41	09/29/17 23:03	1
Silver	<0.0015		0.0050	0.0015	mg/L		09/28/17 14:41	09/29/17 23:03	1
Zinc	<0.0050		0.020	0.0050	mg/L		09/28/17 14:41	09/29/17 23:03	1

Lab Sample ID: LCS 500-403171/2-A
Matrix: Water
Analysis Batch: 403447

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 403171

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cadmium	0.0500	0.0476		mg/L		95	80 - 120
Chromium	0.200	0.195		mg/L		97	80 - 120
Copper	0.250	0.246		mg/L		98	80 - 120
Lead	0.100	0.0914		mg/L		91	80 - 120
Molybdenum	1.00	0.990		mg/L		99	80 - 120
Nickel	0.500	0.485		mg/L		97	80 - 120
Selenium	0.100	0.0892		mg/L		89	80 - 120
Silver	0.0500	0.0473		mg/L		95	80 - 120
Zinc	0.500	0.481		mg/L		96	80 - 120

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 500-403549/12-A
Matrix: Water
Analysis Batch: 403704

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 403549

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.098		0.20	0.098	ug/L		10/02/17 11:20	10/03/17 09:40	1

Lab Sample ID: LCS 500-403549/13-A
Matrix: Water
Analysis Batch: 403704

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 403549

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	2.00	2.24		ug/L		112	80 - 120

Method: SM 3500 CR B - Chromium, Hexavalent

Lab Sample ID: MB 500-403432/3
Matrix: Water
Analysis Batch: 403432

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	<0.0032		0.010	0.0032	mg/L			09/28/17 13:30	1

Lab Sample ID: LCS 500-403432/4
Matrix: Water
Analysis Batch: 403432

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium, hexavalent	0.250	0.256		mg/L		103	85 - 115

Lab Sample ID: 500-134702-1 MS
Matrix: Leachate
Analysis Batch: 403432

Client Sample ID: Leachate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium, hexavalent	<0.0032	F1	0.250	0.180	F1	mg/L		72	85 - 115

Lab Sample ID: 500-134702-1 MSD
Matrix: Leachate
Analysis Batch: 403432

Client Sample ID: Leachate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chromium, hexavalent	<0.0032	F1	0.250	0.191	F1	mg/L		76	85 - 115	6	20

Method: SM 4500 CN E - Cyanide, Total

Lab Sample ID: MB 500-404280/1-A
Matrix: Water
Analysis Batch: 404596

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 404280

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	<0.0030		0.010	0.0030	mg/L		10/06/17 13:06	10/06/17 16:50	1

Lab Sample ID: LCS 500-404280/2-A
Matrix: Water
Analysis Batch: 404596

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 404280

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	0.100	0.0941		mg/L		94	80 - 120

Lab Chronicle

Client: Leggette, Brashears & Graham, Inc.
Project/Site: Refuse Hideaway Landfill

TestAmerica Job ID: 500-134702-1

Client Sample ID: Leachate

Date Collected: 09/27/17 15:30
Date Received: 09/28/17 10:15

Lab Sample ID: 500-134702-1

Matrix: Leachate

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			403171	09/28/17 14:41	BDE	TAL CHI
Total/NA	Analysis	6010B		1	403447	09/30/17 00:24	KML	TAL CHI
Total/NA	Prep	7470A			403549	10/02/17 11:20	EEN	TAL CHI
Total/NA	Analysis	7470A		1	403704	10/03/17 10:28	EEN	TAL CHI
Total/NA	Analysis	SM 3500 CR B		1	403432		RMP	TAL CHI
					(Start)	09/28/17 13:31		
					(End)	09/28/17 13:32		
Total/NA	Prep	Distill/CN			404280	10/06/17 13:06	MAN	TAL CHI
Total/NA	Analysis	SM 4500 CN E		1	404596		MAN	TAL CHI
					(Start)	10/06/17 17:10		
					(End)	10/06/17 17:11		

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Accreditation/Certification Summary

Client: Leggette, Brashears & Graham, Inc.
Project/Site: Refuse Hideaway Landfill

TestAmerica Job ID: 500-134702-1

Laboratory: TestAmerica Chicago

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Wisconsin	State Program	5	999580010	08-31-18

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

2417 Bond Street, University Park, IL 60484
Phone: 708.534.5200 Fax: 708.534.5211

Chain of Custody Record

Lab Job #: 580-134702

Chain of Custody Number:

Page _____ of _____

Temperature °C of Cooler: 3.7=4.0

(optional)

Report To
Contact: Jennifer Shelton
Company: LBG
Address:
Address:
Phone:
Fax:
E-Mail: JShelton@lbgmail.com

(optional)

Bill To
Contact:
Company:
Address:
Address:
Phone:
Fax:
PO#/Reference#

Client: LBG
Client Project #:
Project Name: Refuse Hideaway Landfill
Project Location/State: WI
Lab Project #:
Sampler: Brad DalSanto
Lab PM:

Preservative Key
1. HCL, Cool to 4°
2. H2SO4, Cool to 4°
3. HNO3, Cool to 4°
to 4°
cool to 4°

500-134702 COC

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	Preservative	Parameter: Hex Chrome	Parameter: Cyanide	Parameter: Metals/Mercury	Comments
1		Leachate	9/27	1530	3	L		X	X	X	

Turnaround Time Required (Business Days): Standard
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days _____ Other
Requested Due Date: _____

Sample Disposal: ☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
BSD	LBG	9/27/17	1610	FedEx			
					TA CHI	09/28/17	1015

Lab Courier:
Shipped: FX Priority
Hand Delivered:

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
OL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments: Metals: Cadmium, Chromium, Copper, Lead, Selenium, Silver, Zinc, Molybdenum, Nickel

Lab Comments:

Login Sample Receipt Checklist

Client: Leggette, Brashears & Graham, Inc.

Job Number: 500-134702-1

Login Number: 134702
List Number: 1
Creator: Sanchez, Ariel M

List Source: TestAmerica Chicago

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	4.0
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica

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ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

TestAmerica Job ID: 500-139174-1
Client Project/Site: Refuse Hideaway Landfill

For:
Leggette, Brashears & Graham, Inc.
5957 McKee Road,
Suite 7
Madison, Wisconsin 53719

Attn: Jennifer Shelton

Sandie Fredrick

Authorized for release by:
1/4/2018 3:07:48 PM

Sandie Fredrick, Project Manager II
(920)261-1660
sandie.fredrick@testamericainc.com

Table of Contents

Case Narrative

Client: Leggette, Brashears & Graham, Inc.
Project/Site: Refuse Hideaway Landfill

TestAmerica Job ID: 500-139174-1

Job ID: 500-139174-1

Laboratory: TestAmerica Chicago

Narrative

Job Narrative
500-139174-1

Comments
No additional comments.

Receipt
The sample was received on 12/29/2017 9:50 AM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 5.4° C.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
Method(s) SM 3500 CR B: Please note that the following hexavalent chromium sample has been diluted due to the matrix of the sample and has been reported as a non-detect with an elevated reporting limit Leachate (500-139174-1)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Leggette, Brashears & Graham, Inc.
Project/Site: Refuse Hideaway Landfill

TestAmerica Job ID: 500-139174-1

Client Sample ID: Leachate

Lab Sample ID: 500-139174-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cadmium	0.00080	J B	0.0020	0.00043	mg/L	1		6010B	Total/NA
Chromium	0.021		0.010	0.0017	mg/L	1		6010B	Total/NA
Copper	0.0095	J B	0.010	0.0018	mg/L	1		6010B	Total/NA
Nickel	0.041		0.010	0.0019	mg/L	1		6010B	Total/NA
Zinc	0.019	J	0.020	0.0050	mg/L	1		6010B	Total/NA
Cyanide, Total	0.0039	J	0.010	0.0030	mg/L	1		SM 4500 CN E	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: Leggette, Brashears & Graham, Inc.
Project/Site: Refuse Hideaway Landfill

TestAmerica Job ID: 500-139174-1

Method	Method Description	Protocol	Laboratory
6010B	Metals (ICP)	SW846	TAL CHI
7470A	Mercury (CVAA)	SW846	TAL CHI
SM 3500 CR B	Chromium, Hexavalent	SM	TAL CHI
SM 4500 CN E	Cyanide, Total	SM	TAL CHI

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater",
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Sample Summary

Client: Leggette, Brashears & Graham, Inc.
Project/Site: Refuse Hideaway Landfill

TestAmerica Job ID: 500-139174-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-139174-1	Leachate	Leachate	12/28/17 17:01	12/29/17 09:50

Client Sample ID: Leachate

Lab Sample ID: 500-139174-1

Date Collected: 12/28/17 17:01

Matrix: Leachate

Date Received: 12/29/17 09:50

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.00080	J B	0.0020	0.00043	mg/L		12/29/17 14:45	12/31/17 15:51	1
Chromium	0.021		0.010	0.0017	mg/L		12/29/17 14:45	12/31/17 15:51	1
Copper	0.0095	J B	0.010	0.0018	mg/L		12/29/17 14:45	12/31/17 15:51	1
Lead	<0.0027		0.0050	0.0027	mg/L		12/29/17 14:45	12/31/17 15:51	1
Molybdenum	<0.0038		0.010	0.0038	mg/L		12/29/17 14:45	12/31/17 15:51	1
Nickel	0.041		0.010	0.0019	mg/L		12/29/17 14:45	12/31/17 15:51	1
Selenium	<0.0053		0.010	0.0053	mg/L		12/29/17 14:45	12/31/17 15:51	1
Silver	<0.0015		0.0050	0.0015	mg/L		12/29/17 14:45	12/31/17 15:51	1
Zinc	0.019	J	0.020	0.0050	mg/L		12/29/17 14:45	12/31/17 15:51	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.098		0.20	0.098	ug/L		01/02/18 11:15	01/03/18 08:56	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	<0.016		0.050	0.016	mg/L			12/29/17 12:21	5
Cyanide, Total	0.0039	J	0.010	0.0030	mg/L		01/03/18 10:10	01/03/18 15:51	1

Definitions/Glossary

Client: Leggette, Brashears & Graham, Inc.
Project/Site: Refuse Hideaway Landfill

TestAmerica Job ID: 500-139174-1

Qualifiers

Metals

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

QC Association Summary

Client: Leggette, Brashears & Graham, Inc.
Project/Site: Refuse Hideaway Landfill

TestAmerica Job ID: 500-139174-1

Metals

Prep Batch: 415654

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-139174-1	Leachate	Total/NA	Leachate	3010A	
MB 500-415654/1-A	Method Blank	Total/NA	Water	3010A	
LCS 500-415654/2-A	Lab Control Sample	Total/NA	Water	3010A	

Analysis Batch: 415710

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-139174-1	Leachate	Total/NA	Leachate	6010B	415654
MB 500-415654/1-A	Method Blank	Total/NA	Water	6010B	415654
LCS 500-415654/2-A	Lab Control Sample	Total/NA	Water	6010B	415654

Prep Batch: 415737

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-139174-1	Leachate	Total/NA	Leachate	7470A	
MB 500-415737/12-A	Method Blank	Total/NA	Water	7470A	
LCS 500-415737/13-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 415824

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-139174-1	Leachate	Total/NA	Leachate	7470A	415737
MB 500-415737/12-A	Method Blank	Total/NA	Water	7470A	415737
LCS 500-415737/13-A	Lab Control Sample	Total/NA	Water	7470A	415737

General Chemistry

Analysis Batch: 415637

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-139174-1	Leachate	Total/NA	Leachate	SM 3500 CR B	
MB 500-415637/3	Method Blank	Total/NA	Water	SM 3500 CR B	
LCS 500-415637/4	Lab Control Sample	Total/NA	Water	SM 3500 CR B	
LCSD 500-415637/5	Lab Control Sample Dup	Total/NA	Water	SM 3500 CR B	

Prep Batch: 415834

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-139174-1	Leachate	Total/NA	Leachate	Distill/CN	
MB 500-415834/1-A	Method Blank	Total/NA	Water	Distill/CN	
LCS 500-415834/2-A	Lab Control Sample	Total/NA	Water	Distill/CN	

Analysis Batch: 415875

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-139174-1	Leachate	Total/NA	Leachate	SM 4500 CN E	415834
MB 500-415834/1-A	Method Blank	Total/NA	Water	SM 4500 CN E	415834
LCS 500-415834/2-A	Lab Control Sample	Total/NA	Water	SM 4500 CN E	415834

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 500-415654/1-A
Matrix: Water
Analysis Batch: 415710

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 415654

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.000482	J	0.0020	0.00043	mg/L		12/29/17 14:45	12/31/17 15:13	1
Chromium	<0.0017		0.010	0.0017	mg/L		12/29/17 14:45	12/31/17 15:13	1
Copper	0.00212	J	0.010	0.0018	mg/L		12/29/17 14:45	12/31/17 15:13	1
Lead	<0.0027		0.0050	0.0027	mg/L		12/29/17 14:45	12/31/17 15:13	1
Molybdenum	<0.0038		0.010	0.0038	mg/L		12/29/17 14:45	12/31/17 15:13	1
Nickel	<0.0019		0.010	0.0019	mg/L		12/29/17 14:45	12/31/17 15:13	1
Selenium	<0.0053		0.010	0.0053	mg/L		12/29/17 14:45	12/31/17 15:13	1
Silver	<0.0015		0.0050	0.0015	mg/L		12/29/17 14:45	12/31/17 15:13	1
Zinc	<0.0050		0.020	0.0050	mg/L		12/29/17 14:45	12/31/17 15:13	1

Lab Sample ID: LCS 500-415654/2-A
Matrix: Water
Analysis Batch: 415710

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 415654

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cadmium	0.0500	0.0523		mg/L		105	80 - 120
Chromium	0.200	0.207		mg/L		104	80 - 120
Copper	0.250	0.265		mg/L		106	80 - 120
Lead	0.100	0.0968		mg/L		97	80 - 120
Molybdenum	1.00	1.02		mg/L		102	80 - 120
Nickel	0.500	0.514		mg/L		103	80 - 120
Selenium	0.100	0.102		mg/L		102	80 - 120
Silver	0.0500	0.0521		mg/L		104	80 - 120
Zinc	0.500	0.504		mg/L		101	80 - 120

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 500-415737/12-A
Matrix: Water
Analysis Batch: 415824

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 415737

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.098		0.20	0.098	ug/L		01/02/18 11:15	01/03/18 08:44	1

Lab Sample ID: LCS 500-415737/13-A
Matrix: Water
Analysis Batch: 415824

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 415737

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	2.00	2.09		ug/L		105	80 - 120

Method: SM 3500 CR B - Chromium, Hexavalent

Lab Sample ID: MB 500-415637/3
Matrix: Water
Analysis Batch: 415637

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	<0.0032		0.010	0.0032	mg/L			12/29/17 12:19	1

Lab Sample ID: LCS 500-415637/4
Matrix: Water
Analysis Batch: 415637

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium, hexavalent	0.250	0.243		mg/L		97	85 - 115

Lab Sample ID: LCSD 500-415637/5
Matrix: Water
Analysis Batch: 415637

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chromium, hexavalent	0.250	0.245		mg/L		98	85 - 115	1	20

Method: SM 4500 CN E - Cyanide, Total

Lab Sample ID: MB 500-415834/1-A
Matrix: Water
Analysis Batch: 415875

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 415834

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	<0.0030		0.010	0.0030	mg/L		01/03/18 10:10	01/03/18 15:45	1

Lab Sample ID: LCS 500-415834/2-A
Matrix: Water
Analysis Batch: 415875

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 415834

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	0.100	0.109		mg/L		109	80 - 120

Lab Chronicle

Client: Leggette, Brashears & Graham, Inc.
Project/Site: Refuse Hideaway Landfill

TestAmerica Job ID: 500-139174-1

Client Sample ID: Leachate

Date Collected: 12/28/17 17:01
Date Received: 12/29/17 09:50

Lab Sample ID: 500-139174-1

Matrix: Leachate

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			415654	12/29/17 14:45	BDE	TAL CHI
Total/NA	Analysis	6010B		1	415710	12/31/17 15:51	PJ1	TAL CHI
Total/NA	Prep	7470A			415737	01/02/18 11:15	EEN	TAL CHI
Total/NA	Analysis	7470A		1	415824	01/03/18 08:56	EEN	TAL CHI
Total/NA	Analysis	SM 3500 CR B		5	415637		RMP	TAL CHI
					(Start)	12/29/17 12:21		
					(End)	12/29/17 12:21		
Total/NA	Prep	Distill/CN			415834	01/03/18 10:10	EAT	TAL CHI
Total/NA	Analysis	SM 4500 CN E		1	415875		EAT	TAL CHI
					(Start)	01/03/18 15:51		
					(End)	01/03/18 15:52		

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Accreditation/Certification Summary

Client: Leggette, Brashears & Graham, Inc.
Project/Site: Refuse Hideaway Landfill

TestAmerica Job ID: 500-139174-1

Laboratory: TestAmerica Chicago

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Wisconsin	State Program	5	999580010	08-31-18

TestAmerica

THE LEADER IN ENVIRONMENTAL

2417 Bond Street, University Park, IL 604
Phone: 708.534.5200 Fax: 708.534.

500-139174 COC

(optional)
Report To
Contact: Jennifer Shelton
Company: LBG
Address:
Address:
Phone:
Fax:
E-Mail: JShelton@lbgmail.com

(optional)
Bill To
Contact:
Company:
Address:
Address:
Phone:
Fax:
PO#/Reference#

Chain of Custody Record

Lab Job #: 500-139174
Chain of Custody Number:
Page ____ of ____
Temperature °C of Cooler: 5.4

Client: LBG
Client Project #:
Project Name: Refuse Hideaway Landfill
Project Location/State: WI
Lab Project #:
Sampler: Brad DalSanto
Lab PM:

Preservative / Parameter

Preservative Key
1. HCL, Cool to 4°
2. H2SO4, Cool to 4°
3. HNO3, Cool to 4°
4. NaOH, Cool to 4°
5. NaOH/Zn, Cool to 4°
6. NaHSO4
7. Cool to 4°
8. None
9. Other

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	Hex Chrome	Cyanide	Metals/Mercury	Comments
1		Leachate	12/28	1701	3	L	X	X	X	

Turnaround Time Required (Business Days): Standard
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days _____ Other
Requested Due Date: _____

Sample Disposal: ☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
BJD	LBG	12/28/17	1745	FedEx			
				Athena Scott	TA-CHI	12/29/17	0950

Lab Courier:
Shipped: Fed-x
Hand Delivered:

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
OL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments: Metals: Cadmium, Chromium, Copper, Lead, Selenium, Silver, Zinc, Molybdenum, Nickel

Lab Comments:

Login Sample Receipt Checklist

Client: Leggette, Brashears & Graham, Inc.

Job Number: 500-139174-1

Login Number: 139174
List Number: 1
Creator: Scott, Sherri L

List Source: TestAmerica Chicago

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	5.4
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

TestAmerica Job ID: 500-142613-1
Client Project/Site: Refuse Hideaway Landfill

For:
WSP USA Inc (formerly LB&G)
5957 McKee Road,
Suite 7
Madison, Wisconsin 53719

Attn: Jennifer Shelton

Authorized for release by:
3/27/2018 8:29:52 AM
Eric Lang, Manager of Project Management
(708)534-5200
eric.lang@testamericainc.com

Designee for

Sandie Fredrick, Project Manager II
(920)261-1660
sandie.fredrick@testamericainc.com

Table of Contents

Job ID: 500-142613-1

Laboratory: TestAmerica Chicago

Narrative

Job Narrative
500-142613-1

Comments
No additional comments.

Receipt
The sample was received on 3/22/2018 9:25 AM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.1° C.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
Method(s) SM 3500 CR B: Please note that the following hexavalent chromium sample was diluted due to the matrix of the sample and has been reported as a non-detect with an elevated reporting limit. Leachate (500-142613-1)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: WSP USA Inc (formerly LB&G)
Project/Site: Refuse Hideaway Landfill

TestAmerica Job ID: 500-142613-1

Client Sample ID: Leachate

Lab Sample ID: 500-142613-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cadmium	0.0010	J B	0.0020	0.00043	mg/L	1		6010B	Total/NA
Chromium	0.018		0.010	0.0017	mg/L	1		6010B	Total/NA
Copper	0.016	B	0.010	0.0018	mg/L	1		6010B	Total/NA
Nickel	0.038		0.010	0.0019	mg/L	1		6010B	Total/NA
Zinc	0.018	J B	0.020	0.0050	mg/L	1		6010B	Total/NA
Cyanide, Total	0.0057	J	0.010	0.0030	mg/L	1		SM 4500 CN E	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: WSP USA Inc (formerly LB&G)
Project/Site: Refuse Hideaway Landfill

TestAmerica Job ID: 500-142613-1

Method	Method Description	Protocol	Laboratory
6010B	Metals (ICP)	SW846	TAL CHI
7470A	Mercury (CVAA)	SW846	TAL CHI
SM 3500 CR B	Chromium, Hexavalent	SM	TAL CHI
SM 4500 CN E	Cyanide, Total	SM	TAL CHI

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Sample Summary

Client: WSP USA Inc (formerly LB&G)
Project/Site: Refuse Hideaway Landfill

TestAmerica Job ID: 500-142613-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-142613-1	Leachate	Leachate	03/21/18 16:20	03/22/18 09:25

Client Sample ID: Leachate

Date Collected: 03/21/18 16:20
Date Received: 03/22/18 09:25

Lab Sample ID: 500-142613-1

Matrix: Leachate

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.0010	J B	0.0020	0.00043	mg/L		03/24/18 14:25	03/26/18 01:23	1
Chromium	0.018		0.010	0.0017	mg/L		03/24/18 14:25	03/26/18 01:23	1
Copper	0.016	B	0.010	0.0018	mg/L		03/24/18 14:25	03/26/18 01:23	1
Lead	<0.0027		0.0050	0.0027	mg/L		03/24/18 14:25	03/26/18 01:23	1
Molybdenum	<0.0038		0.010	0.0038	mg/L		03/24/18 14:25	03/26/18 01:23	1
Nickel	0.038		0.010	0.0019	mg/L		03/24/18 14:25	03/26/18 01:23	1
Selenium	<0.0053		0.010	0.0053	mg/L		03/24/18 14:25	03/26/18 01:23	1
Silver	<0.0015		0.0050	0.0015	mg/L		03/24/18 14:25	03/26/18 01:23	1
Zinc	0.018	J B	0.020	0.0050	mg/L		03/24/18 14:25	03/26/18 01:23	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.098		0.20	0.098	ug/L		03/23/18 14:05	03/24/18 11:22	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	<0.016		0.050	0.016	mg/L			03/22/18 15:22	5
Cyanide, Total	0.0057	J	0.010	0.0030	mg/L		03/23/18 13:40	03/24/18 14:55	1

Qualifiers

Metals

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Metals

Prep Batch: 424807

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-142613-1	Leachate	Total/NA	Leachate	7470A	
MB 500-424807/12-A	Method Blank	Total/NA	Water	7470A	
LCS 500-424807/13-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 424913

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-142613-1	Leachate	Total/NA	Leachate	7470A	424807
MB 500-424807/12-A	Method Blank	Total/NA	Water	7470A	424807
LCS 500-424807/13-A	Lab Control Sample	Total/NA	Water	7470A	424807

Prep Batch: 424917

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-142613-1	Leachate	Total/NA	Leachate	3010A	
MB 500-424917/1-A	Method Blank	Total/NA	Water	3010A	
LCS 500-424917/2-A	Lab Control Sample	Total/NA	Water	3010A	

Analysis Batch: 425003

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-142613-1	Leachate	Total/NA	Leachate	6010B	424917
MB 500-424917/1-A	Method Blank	Total/NA	Water	6010B	424917
LCS 500-424917/2-A	Lab Control Sample	Total/NA	Water	6010B	424917

General Chemistry

Analysis Batch: 424675

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-142613-1	Leachate	Total/NA	Leachate	SM 3500 CR B	
MB 500-424675/3	Method Blank	Total/NA	Water	SM 3500 CR B	
LCS 500-424675/4	Lab Control Sample	Total/NA	Water	SM 3500 CR B	

Prep Batch: 424817

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-142613-1	Leachate	Total/NA	Leachate	Distill/CN	
MB 500-424817/1-A	Method Blank	Total/NA	Water	Distill/CN	
LCS 500-424817/2-A	Lab Control Sample	Total/NA	Water	Distill/CN	
500-142613-1 MS	Leachate	Total/NA	Leachate	Distill/CN	
500-142613-1 MSD	Leachate	Total/NA	Leachate	Distill/CN	

Analysis Batch: 424922

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-142613-1	Leachate	Total/NA	Leachate	SM 4500 CN E	424817
MB 500-424817/1-A	Method Blank	Total/NA	Water	SM 4500 CN E	424817
LCS 500-424817/2-A	Lab Control Sample	Total/NA	Water	SM 4500 CN E	424817
500-142613-1 MS	Leachate	Total/NA	Leachate	SM 4500 CN E	424817
500-142613-1 MSD	Leachate	Total/NA	Leachate	SM 4500 CN E	424817

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 500-424917/1-A
Matrix: Water
Analysis Batch: 425003

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 424917

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.000546	J	0.0020	0.00043	mg/L		03/24/18 14:25	03/26/18 00:44	1
Chromium	<0.0017		0.010	0.0017	mg/L		03/24/18 14:25	03/26/18 00:44	1
Copper	0.00278	J	0.010	0.0018	mg/L		03/24/18 14:25	03/26/18 00:44	1
Lead	<0.0027		0.0050	0.0027	mg/L		03/24/18 14:25	03/26/18 00:44	1
Molybdenum	<0.0038		0.010	0.0038	mg/L		03/24/18 14:25	03/26/18 00:44	1
Nickel	<0.0019		0.010	0.0019	mg/L		03/24/18 14:25	03/26/18 00:44	1
Selenium	<0.0053		0.010	0.0053	mg/L		03/24/18 14:25	03/26/18 00:44	1
Silver	<0.0015		0.0050	0.0015	mg/L		03/24/18 14:25	03/26/18 00:44	1
Zinc	0.0154	J	0.020	0.0050	mg/L		03/24/18 14:25	03/26/18 00:44	1

Lab Sample ID: LCS 500-424917/2-A
Matrix: Water
Analysis Batch: 425003

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 424917

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cadmium	0.0500	0.0493		mg/L		99	80 - 120
Chromium	0.200	0.195		mg/L		98	80 - 120
Copper	0.250	0.257		mg/L		103	80 - 120
Lead	0.100	0.0940		mg/L		94	80 - 120
Molybdenum	1.00	0.981		mg/L		98	80 - 120
Nickel	0.500	0.490		mg/L		98	80 - 120
Selenium	0.100	0.0966		mg/L		97	80 - 120
Silver	0.0500	0.0488		mg/L		98	80 - 120
Zinc	0.500	0.480		mg/L		96	80 - 120

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 500-424807/12-A
Matrix: Water
Analysis Batch: 424913

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 424807

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.098		0.20	0.098	ug/L		03/23/18 14:05	03/24/18 11:16	1

Lab Sample ID: LCS 500-424807/13-A
Matrix: Water
Analysis Batch: 424913

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 424807

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	2.00	2.12		ug/L		106	80 - 120

Method: SM 3500 CR B - Chromium, Hexavalent

Lab Sample ID: MB 500-424675/3
Matrix: Water
Analysis Batch: 424675

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	<0.0032		0.010	0.0032	mg/L			03/22/18 15:19	1

Lab Sample ID: LCS 500-424675/4
Matrix: Water
Analysis Batch: 424675

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium, hexavalent	0.250	0.265		mg/L		106	85 - 115

Method: SM 4500 CN E - Cyanide, Total

Lab Sample ID: MB 500-424817/1-A
Matrix: Water
Analysis Batch: 424922

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 424817

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	<0.0030		0.010	0.0030	mg/L		03/23/18 13:40	03/24/18 14:55	1

Lab Sample ID: LCS 500-424817/2-A
Matrix: Water
Analysis Batch: 424922

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 424817

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	0.100	0.111		mg/L		111	80 - 120

Lab Sample ID: 500-142613-1 MS
Matrix: Leachate
Analysis Batch: 424922

Client Sample ID: Leachate
Prep Type: Total/NA
Prep Batch: 424817

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	0.0057	J	0.0400	0.0479		mg/L		106	75 - 125

Lab Sample ID: 500-142613-1 MSD
Matrix: Leachate
Analysis Batch: 424922

Client Sample ID: Leachate
Prep Type: Total/NA
Prep Batch: 424817

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cyanide, Total	0.0057	J	0.0400	0.0517		mg/L		115	75 - 125	8	20

Lab Chronicle

Client: WSP USA Inc (formerly LB&G)
Project/Site: Refuse Hideaway Landfill

TestAmerica Job ID: 500-142613-1

Client Sample ID: Leachate

Date Collected: 03/21/18 16:20
Date Received: 03/22/18 09:25

Lab Sample ID: 500-142613-1

Matrix: Leachate

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			424917	03/24/18 14:25	BDE	TAL CHI
Total/NA	Analysis	6010B		1	425003	03/26/18 01:23	PJ1	TAL CHI
Total/NA	Prep	7470A			424807	03/23/18 14:05	EEN	TAL CHI
Total/NA	Analysis	7470A		1	424913	03/24/18 11:22	EEN	TAL CHI
Total/NA	Analysis	SM 3500 CR B		5	424675		RMP	TAL CHI
					(Start)	03/22/18 15:22		
					(End)	03/22/18 15:22		
Total/NA	Prep	Distill/CN			424817	03/23/18 13:40	EAT	TAL CHI
Total/NA	Analysis	SM 4500 CN E		1	424922	03/24/18 14:55	EAT	TAL CHI

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Accreditation/Certification Summary

Client: WSP USA Inc (formerly LB&G)
Project/Site: Refuse Hideaway Landfill

TestAmerica Job ID: 500-142613-1

Laboratory: TestAmerica Chicago

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Wisconsin	State Program	5	999580010	08-31-18

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

2417 Bond Street, University Park, IL 60484
Phone: 708.534.5200 Fax: 708.534.5211

Chain of Custody Record

Lab Job #: 500-142613

Chain of Custody Number:

Page _____ of _____

Temperature °C of Cooler: -1.4 ~~-0.0~~ 0.1 AS 3/22/18

(optional) Report To	(optional) Bill To
Contact: Jennifer Shelton	Contact:
Company: WSP	Company:
Address:	Address:
Address:	Address:
Phone:	Phone:
Fax:	Fax:
E-Mail: Jennifer.Shelton@wsp.com	PO#/Reference#

Client: WSP | Client Project #:

Project Name: Refuse Hideaway Landfill

Project Location/State: WI | Lab Project #:

Sampler: Brad DalSanto | Lab PM:

Preservative Key
1. HCL, Cool to 4°
2. H2SO4, Cool to 4°
3. HNO3, Cool to 4°
4. NaOH, Cool to 4°
5. NaOH/Zn, Cool to 4°
6. NaHSO4
7. Cool to 4°
8. None
9. Other

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	Parameter: Hex Chrome	Cyanide	Metals/Mercury	Comments
1		Leachate	3/21	1620	3	L	X	X	X	

3/22/18

500-142613 COC

Turnaround Time Required (Business Days): Standard

___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days _____ Other

Requested Due Date _____

Sample Disposal: ☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
B.D	WSP	3/21/18	1700	Fed Ex			
Relinquished By	Company	Date	Time	Received By	Company	Date	Time
				David Sandy	TAL-IRV	03/22/18	0925
Relinquished By	Company	Date	Time	Received By	Company	Date	Time

Lab Courier: ☐

Shipped: FX Priority

Hand Delivered: ☐

Matrix Key

WW – Wastewater	SE – Sediment
W – Water	SO – Soil
S – Soil	L – Leachate
SL – Sludge	WI – Wipe
MS – Miscellaneous	DW – Drinking Water
OL – Oil	O – Other
A – Air	

Client Comments:

Lab Comments:

TAL-4124 (0707)

3/27/2018

Login Sample Receipt Checklist

Client: WSP USA Inc (formerly LB&G)

Job Number: 500-142613-1

Login Number: 142613
List Number: 1
Creator: Sanchez, Ariel M

List Source: TestAmerica Chicago

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.1
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

TestAmerica Job ID: 500-147365-1
Client Project/Site: Refuse Hideaway Landfill

For:
WSP USA Inc (formerly LB&G)
5957 McKee Road,
Suite 7
Madison, Wisconsin 53719

Attn: Jennifer Shelton

Authorized for release by:
7/3/2018 4:24:45 PM
Eric Lang, Manager of Project Management
(708)534-5200
eric.lang@testamericainc.com

Designee for

Sandie Fredrick, Project Manager II
(920)261-1660
sandie.fredrick@testamericainc.com

Table of Contents

Case Narrative

Client: WSP USA Inc (formerly LB&G)
Project/Site: Refuse Hideaway Landfill

TestAmerica Job ID: 500-147365-1

Job ID: 500-147365-1

Laboratory: TestAmerica Chicago

Narrative

Job Narrative
500-147365-1

Comments
No additional comments.

Receipt
The sample was received on 6/22/2018 9:25 AM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.8° C.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: WSP USA Inc (formerly LB&G)
Project/Site: Refuse Hideaway Landfill

TestAmerica Job ID: 500-147365-1

Client Sample ID: Leachate

Lab Sample ID: 500-147365-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cadmium	0.0013	J B	0.0020	0.00043	mg/L	1		6010B	Total/NA
Chromium	0.014		0.010	0.0017	mg/L	1		6010B	Total/NA
Copper	0.0048	J	0.010	0.0018	mg/L	1		6010B	Total/NA
Nickel	0.029		0.010	0.0019	mg/L	1		6010B	Total/NA
Zinc	0.017	J	0.020	0.0050	mg/L	1		6010B	Total/NA
Cyanide, Total	0.0057	J	0.010	0.0030	mg/L	1		SM 4500 CN E	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: WSP USA Inc (formerly LB&G)
Project/Site: Refuse Hideaway Landfill

TestAmerica Job ID: 500-147365-1

Method	Method Description	Protocol	Laboratory
6010B	Metals (ICP)	SW846	TAL CHI
7470A	Mercury (CVAA)	SW846	TAL CHI
SM 3500 CR B	Chromium, Hexavalent	SM	TAL CHI
SM 4500 CN E	Cyanide, Total	SM	TAL CHI
3010A	Preparation, Total Metals	SW846	TAL CHI
7470A	Preparation, Mercury	SW846	TAL CHI
Distill/CN	Distillation, Cyanide	None	TAL CHI

Protocol References:

None = None

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Sample Summary

Client: WSP USA Inc (formerly LB&G)
Project/Site: Refuse Hideaway Landfill

TestAmerica Job ID: 500-147365-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-147365-1	Leachate	Leachate	06/21/18 16:20	06/22/18 09:25

Client Sample Results

Client: WSP USA Inc (formerly LB&G)
Project/Site: Refuse Hideaway Landfill

TestAmerica Job ID: 500-147365-1

Client Sample ID: Leachate
Date Collected: 06/21/18 16:20
Date Received: 06/22/18 09:25

Lab Sample ID: 500-147365-1
Matrix: Leachate

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.0013	J B	0.0020	0.00043	mg/L		06/22/18 15:34	06/25/18 14:15	1
Chromium	0.014		0.010	0.0017	mg/L		06/22/18 15:34	06/25/18 14:15	1
Copper	0.0048	J	0.010	0.0018	mg/L		06/22/18 15:34	06/25/18 14:15	1
Lead	<0.0027		0.0050	0.0027	mg/L		06/22/18 15:34	06/25/18 14:15	1
Molybdenum	<0.0038		0.010	0.0038	mg/L		06/22/18 15:34	06/25/18 14:15	1
Nickel	0.029		0.010	0.0019	mg/L		06/22/18 15:34	06/25/18 14:15	1
Selenium	<0.0053		0.010	0.0053	mg/L		06/22/18 15:34	06/25/18 14:15	1
Silver	<0.0015		0.0050	0.0015	mg/L		06/22/18 15:34	06/25/18 14:15	1
Zinc	0.017	J	0.020	0.0050	mg/L		06/22/18 15:34	06/25/18 14:15	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.098		0.20	0.098	ug/L		06/23/18 13:35	06/25/18 09:31	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	<0.0032	F1	0.010	0.0032	mg/L			06/22/18 13:42	1
Cyanide, Total	0.0057	J	0.010	0.0030	mg/L		06/26/18 12:40	06/27/18 17:20	1

Qualifiers

Metals

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
F1	MS and/or MSD Recovery is outside acceptance limits.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

QC Association Summary

Client: WSP USA Inc (formerly LB&G)
Project/Site: Refuse Hideaway Landfill

TestAmerica Job ID: 500-147365-1

Metals

Prep Batch: 438184

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-147365-1	Leachate	Total/NA	Leachate	3010A	
MB 500-438184/1-A	Method Blank	Total/NA	Water	3010A	
LCS 500-438184/2-A	Lab Control Sample	Total/NA	Water	3010A	

Prep Batch: 438271

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-147365-1	Leachate	Total/NA	Leachate	7470A	
MB 500-438271/12-A	Method Blank	Total/NA	Water	7470A	
LCS 500-438271/13-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 438407

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-147365-1	Leachate	Total/NA	Leachate	7470A	438271
MB 500-438271/12-A	Method Blank	Total/NA	Water	7470A	438271
LCS 500-438271/13-A	Lab Control Sample	Total/NA	Water	7470A	438271

Analysis Batch: 438483

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-147365-1	Leachate	Total/NA	Leachate	6010B	438184
MB 500-438184/1-A	Method Blank	Total/NA	Water	6010B	438184
LCS 500-438184/2-A	Lab Control Sample	Total/NA	Water	6010B	438184

General Chemistry

Prep Batch: 438675

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-147365-1	Leachate	Total/NA	Leachate	Distill/CN	
MB 500-438675/1-A	Method Blank	Total/NA	Water	Distill/CN	
LCS 500-438675/2-A	Lab Control Sample	Total/NA	Water	Distill/CN	

Analysis Batch: 439102

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-147365-1	Leachate	Total/NA	Leachate	SM 4500 CN E	438675
MB 500-438675/1-A	Method Blank	Total/NA	Water	SM 4500 CN E	438675
LCS 500-438675/2-A	Lab Control Sample	Total/NA	Water	SM 4500 CN E	438675

Analysis Batch: 439650

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-147365-1	Leachate	Total/NA	Leachate	SM 3500 CR B	
MB 500-439650/3	Method Blank	Total/NA	Water	SM 3500 CR B	
LCS 500-439650/4	Lab Control Sample	Total/NA	Water	SM 3500 CR B	
LCSD 500-439650/5	Lab Control Sample Dup	Total/NA	Water	SM 3500 CR B	
500-147365-1 MS	Leachate	Total/NA	Leachate	SM 3500 CR B	

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 500-438184/1-A
Matrix: Water
Analysis Batch: 438483

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 438184

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.000585	J	0.0020	0.00043	mg/L		06/22/18 15:34	06/25/18 14:07	1
Chromium	<0.0017		0.010	0.0017	mg/L		06/22/18 15:34	06/25/18 14:07	1
Copper	<0.0018		0.010	0.0018	mg/L		06/22/18 15:34	06/25/18 14:07	1
Lead	<0.0027		0.0050	0.0027	mg/L		06/22/18 15:34	06/25/18 14:07	1
Molybdenum	<0.0038		0.010	0.0038	mg/L		06/22/18 15:34	06/25/18 14:07	1
Nickel	<0.0019		0.010	0.0019	mg/L		06/22/18 15:34	06/25/18 14:07	1
Selenium	0.00565	J	0.010	0.0053	mg/L		06/22/18 15:34	06/25/18 14:07	1
Silver	<0.0015		0.0050	0.0015	mg/L		06/22/18 15:34	06/25/18 14:07	1
Zinc	<0.0050		0.020	0.0050	mg/L		06/22/18 15:34	06/25/18 14:07	1

Lab Sample ID: LCS 500-438184/2-A
Matrix: Water
Analysis Batch: 438483

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 438184

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cadmium	0.0500	0.0481		mg/L		96	80 - 120
Chromium	0.200	0.201		mg/L		100	80 - 120
Copper	0.250	0.252		mg/L		101	80 - 120
Lead	0.100	0.0982		mg/L		98	80 - 120
Molybdenum	1.00	0.978		mg/L		98	80 - 120
Nickel	0.500	0.497		mg/L		99	80 - 120
Selenium	0.100	0.0858		mg/L		86	80 - 120
Silver	0.0500	0.0485		mg/L		97	80 - 120
Zinc	0.500	0.500		mg/L		100	80 - 120

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 500-438271/12-A
Matrix: Water
Analysis Batch: 438407

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 438271

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.098		0.20	0.098	ug/L		06/23/18 13:35	06/25/18 09:10	1

Lab Sample ID: LCS 500-438271/13-A
Matrix: Water
Analysis Batch: 438407

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 438271

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	2.00	1.94		ug/L		97	80 - 120

Method: SM 3500 CR B - Chromium, Hexavalent

Lab Sample ID: MB 500-439650/3
Matrix: Water
Analysis Batch: 439650

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	<0.0032		0.010	0.0032	mg/L			06/22/18 13:41	1

Lab Sample ID: LCS 500-439650/4
Matrix: Water
Analysis Batch: 439650

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium, hexavalent	0.250	0.252		mg/L		101	85 - 115

Lab Sample ID: LCSD 500-439650/5
Matrix: Water
Analysis Batch: 439650

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chromium, hexavalent	0.250	0.249		mg/L		100	85 - 115	1	20

Lab Sample ID: 500-147365-1 MS
Matrix: Leachate
Analysis Batch: 439650

Client Sample ID: Leachate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium, hexavalent	<0.0032	F1	0.250	0.125	F1	mg/L		50	85 - 115

Method: SM 4500 CN E - Cyanide, Total

Lab Sample ID: MB 500-438675/1-A
Matrix: Water
Analysis Batch: 439102

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 438675

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	<0.0030		0.010	0.0030	mg/L		06/26/18 12:40	06/27/18 17:10	1

Lab Sample ID: LCS 500-438675/2-A
Matrix: Water
Analysis Batch: 439102

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 438675

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	0.100	0.103		mg/L		103	80 - 120

Lab Chronicle

Client: WSP USA Inc (formerly LB&G)
Project/Site: Refuse Hideaway Landfill

TestAmerica Job ID: 500-147365-1

Client Sample ID: Leachate

Date Collected: 06/21/18 16:20
Date Received: 06/22/18 09:25

Lab Sample ID: 500-147365-1

Matrix: Leachate

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			438184	06/22/18 15:34	BDE	TAL CHI
Total/NA	Analysis	6010B		1	438483	06/25/18 14:15	JEF	TAL CHI
Total/NA	Prep	7470A			438271	06/23/18 13:35	MJG	TAL CHI
Total/NA	Analysis	7470A		1	438407	06/25/18 09:31	MJG	TAL CHI
Total/NA	Analysis	SM 3500 CR B		1	439650		IEL	TAL CHI
					(Start)	06/22/18 13:42		
					(End)	06/22/18 13:43		
Total/NA	Prep	Distill/CN			438675	06/26/18 12:40	MAN	TAL CHI
Total/NA	Analysis	SM 4500 CN E		1	439102		MAN	TAL CHI
					(Start)	06/27/18 17:20		
					(End)	06/27/18 17:20		

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Accreditation/Certification Summary

Client: WSP USA Inc (formerly LB&G)
Project/Site: Refuse Hideaway Landfill

TestAmerica Job ID: 500-147365-1

Laboratory: TestAmerica Chicago

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Wisconsin	State Program	5	999580010	08-31-18 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

2417 Bond Street, University Park, IL 60484
Phone: 708.534.5200 Fax: 708.534.5211

Chain of Custody Record

Lab Job #: 500 - 147365

Chain of Custody Number:

Page _____ of _____

Temperature °C of Cooler: 2-B

(optional) Report To		(optional) Bill To	
Contact:	Jennifer Shelton	Contact:	
Company:	WSP	Company:	
Address:		Address:	
Address:		Address:	
Phone:		Phone:	
Fax:		Fax:	
E-Mail:	Jennifer.shelton@wsp.com	PO#/Reference#	

Client	WSP	Client Project #	
Project Name	Refuse Hideaway Landfill	Lab Project #	
Project Location/State	WI	Lab PM	
Sampler	Brad DalSanto		

Preservative Key
1. HCL, Cool to 4°
2. H2SO4, Cool to 4°
3. HNO3, Cool to 4°
4. NaOH, Cool to 4°
5. NaOH/Zn, Cool to 4°
6. NaHSO4
7. Cool to 4°
8. None
9. Other

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	Preservative	Parameter: Hex Chrome	Parameter: Cyanide	Parameter: Metals/Mercury	Comments
1		Leachate	6/21	16:20	3	L		X	X	X	

Turnaround Time Required (Business Days): Standard
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days _____ Other
Requested Due Date _____

Sample Disposal: ☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
	WSP	6/21	1647	FedEx			
					TA	01/22/18	0925

Lab Courier: ☐
Shipped: ✓
Hand Delivered: ☐

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
OL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments

500-147365 COC

Login Sample Receipt Checklist

Client: WSP USA Inc (formerly LB&G)

Job Number: 500-147365-1

Login Number: 147365
List Number: 1
Creator: Kelsey, Shawn M

List Source: TestAmerica Chicago

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.8
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	True	

APPENDIX

B

MMSD WASTEWATER DISCHARGE PERMIT NTO-5.12

Madison Metropolitan Sewerage District

1610 Moorland Road · Madison, WI 53713-3398 · Telephone (608) 222-1201 · Fax (608) 222-2703 · madsewer.org

June 18, 2014

Mr. Charles Burgis
Leggette, Brashears, & Graham, Inc.
6409 Odana Road, Suite 11
Madison, WI 53719

Mr. Burgis:

Enclosed is the permit that allows continued hauling of leachate from the Refuse Hideaway Landfill to the Nine Springs Wastewater Treatment Plant. The permit is valid for five years.

We appreciate when O&M managers provide us updates on atypical circumstances that they encounter and resolve; please include such narrative data when appropriate in your reports.

You can reach me at extension 362; I'd be glad to discuss these permit matters with you.

Sincerely,

Ralph Erickson
Pretreatment and Waste Acceptance Coordinator

Enclosure:

Cc: Hank Kuehling, WDNR

WASTEWATER DISCHARGE PERMIT NTO-5.11

In compliance with the provisions of section 66.24(1)(d) and 66.25(3) of the Wisconsin Statutes, Articles 5 and 6 of the Madison Metropolitan Sewerage District Sewer Use Ordinance, and the District's Policy on Acceptance of Wastewater Containing Non-Typical Organic and Inorganic Constituents,

Wisconsin Department of Natural Resources
BOX 7921 Madison, WI 53707,
for the site,
Refuse Hideaway Landfill,
located at,
US Highway 14, Middleton, WI,
with wastewater O&M provided by,
Leggette, Brashears, & Graham, Inc of Madison

is hereby authorized to discharge leachate from the **Refuse Hideaway Landfill** located at the above address, via a permitted waste hauler, to the Nine Springs Wastewater Treatment Plant in accordance with the effluent limitations, monitoring requirements, and other conditions set forth in this permit.

All discharges authorized herein shall be consistent with the terms and conditions of this permit. The discharge of any pollutant identified in this permit more frequently than or at a level in excess of that authorized shall constitute a violation of the permit.

This permit shall be effective for five years. It shall become effective on July 1, 2014 and shall expire at midnight, June 30, 2019. Any appeals to the conditions of this permit must be made to the Chief Engineer and Director within thirty days of the signature date.

The Permittee shall not discharge after the date of expiration. If the Permittee wishes to continue to discharge after this expiration date an application shall be filed for reissuance of this permit in accordance with the requirements of Article 5 of the Madison Metropolitan Sewerage District Sewer Use Ordinance, at least 90-days prior to the expiration date.

In accordance with Articles 5 and 6 of the Madison Metropolitan Sewerage District Sewer Use Ordinance, the District reserves the right to amend this permit from time to time.

By _____
D. Michael Mucha
Chief Engineer and Director

Dated this 9 day of June 2014.

Permit: NTO-5.12 Table of Contents

Part 1 - LIMITS

1.01 INTRODUCTION

(1) Discharges from the outfalls regulated by this permit are subject to the local limits established by the District in the Sewer Use Ordinance 84-001 (Revised June 14, 2010). Based upon these requirements, the District has established the pretreatment standards set forth in secs. 1.02 to 1.03 of this permit.

(2) The Permittee shall comply with all requirements imposed by federal, state, and local municipal governments relating to operation of the licensed landfill.

1.02 OUTFALL NTO-5A

(1) Outfall NTO-5A is the discharge point of the leachate collection system serving the Refuse Hideaway Landfill. The Permittee has constructed facilities to allow for collection of a representative sample from the on-site 25,000 gallon storage tank. Grab samples will be collected from the discharge point per the requirements of sec. 2.04. Outfall NTO-5A shall contain only leachate.

(2) The Refuse Hideaway Landfill is located outside of the District's sewer service area. Therefore, all leachate from the site must be hauled to the Nine Springs Wastewater Treatment Plant. The waste hauler shall have a Septage Disposal Permit, as issued annually by the District.

(3) The following MMSD limits apply to discharges from Outfall NTO-5A:

Outfall NTO-5A
Applicable Local Limits

Parameter	Local Ordinance Effluent Limitations (daily maximum) (mg/L)	POTW maximum allowance per landfill site
Cadmium (T)	0.25	
Chromium (T)	10.0	
Copper (T)	1.5	
Lead (T)	5.0	
Nickel (T)	2.0	
Selenium (T)	0.3	
Silver (T)	3.0	
Zinc (T)	8.0	
Molybdenum (T)	None set	
Mercury (T)	0.02	

1.03 OTHER OUTFALLS

The Permittee may not discharge groundwater to any location other than as described for the outfalls listed in sub.(1.02). Domestic wastewater shall only flow into any outfalls after the sampling points for process wastewater.

Part 2 - SAMPLING

2.01 SAMPLING FREQUENCY PER MMSD REQUIREMENTS

The Permittee shall sample (self-monitor) for the pollutants shown in the following table.

Outfall	Required Parameters/Measurements & Frequency	
Outfall NTO-5A	Volume	Recorded per load
	ICP metals (9)	Quarterly
	Mercury	Quarterly

2.02 REPRESENTATIVE SAMPLES

The Permittee's self-monitoring shall represent discharges normally occurring during the reporting period.

2.03 SAMPLE COLLECTION AND ANALYSIS

(1) The Permittee shall use the following primary devices for flow measurement:

Outfall	Primary Device
NTO-5A	In-line meter or Pumping runtime records

(2) The Permittee shall collect, preserve, and analyze samples using techniques that provide sufficient precision and accuracy to measure the regulated pollutants at or below the applicable limit to a reasonable degree of scientific certainty, using analytical methods included in 40 CFR Part 136 or ch. NR 219, Wis. Adm. Code, or other methods approved by the Department of Natural Resources. For analysis, the Permittee, whenever possible, shall use a laboratory certified or registered by the Department of Natural Resources, according ch. NR 149, Wis. Adm. Code, for the parameter being analyzed. With prior District approval, per NR 211.15(8), the Permittee may be allowed to use a laboratory not certified or registered in Wisconsin.

(3) The District will randomly collect and analyze samples of leachate, taken from the hauling vehicle, to verify leachate quality and treatability.

(4) Samples collected by the Permittee shall be independent of samples collected by the District. The Permittee is allowed split samples from District sampling events; however the Permittee must collect its own independent samples on a different date per sub. (2.01).

Part 3 - REPORTING

3.01 SELF-MONITORING REPORTS

All self-monitoring results must be submitted to the District within sixty (60) days of the end of a quarterly monitoring period.

(1) All monitoring data is to be reported if the Permittee monitors a pollutant more frequently than required by this permit using the sample type and the sample collection, preservation, and the analytical techniques set forth in sec. 2.03 to 2.04.

(2) Self-monitoring Reporting Format

(a) The Permittee shall report to the District the results of all sampling required by sec. 2.01 to 2.04.

(b) Reports shall include:

1. The place, date, type, and time of the sample or sub-samples;
2. The names of the persons collecting the samples, the persons doing the analyses, and the laboratory performing the analyses;
3. The dates the analyses were performed;
4. The analytical techniques used; and
5. The analytical results.

3.02 REPORT OF VIOLATION AND RESAMPLING

(1) If sampling performed by the Permittee identifies a violation of any applicable pretreatment standard or requirement, the Permittee shall:

(a) Notify the District within 24-hours of becoming aware of the violation,

(b) Provide a written report with sample results to the District within five (5) days after becoming aware of the violation, and

(c) Repeat the sampling and analysis of the violation-parameter(s) and submit the results of the repeat analysis to the District within thirty (30) days after becoming aware of the violation.

(2) The reports required by sub. (1) shall be signed by the responsible corporate officer according to sub. (3.04) and sec. (2.1)(44) of the District Sewer Use Ordinance.

3.03 NOTICE OF INTENT TO CHANGE DISCHARGE

Before any activity that would result in a 25 percent long-term increase or decrease in the volume of non-domestic wastewater discharged by the Permittee or that would significantly change the characteristics of the discharge, the Permittee shall submit a written Notice of Intent to the District (sec. 5.13).

3.04 SIGNATURE BY RESPONSIBLE CORPORATE OFFICER

All reports shall be signed and sworn by a principal executive officer, or his/her designee.

3.05 REPORTING ADDRESSES

The Permittee shall submit all reports required by this permit to the District and the City of Madison Engineering Department at the following addresses:

Madison Metropolitan Sewerage District
1610 Moorland Road
Madison, Wisconsin 53713-3398

Part 4 - SPECIAL CONDITIONS

4.01 DISTRICT RATE DETERMINATIONS AND BILLING

(1) The District will track each load delivered and will prepare quarterly bills for treatment costs. The rate for disposal is based on samples drawn at the Nine Springs Wastewater Treatment Plant for the parameters CBOD, TSS, TKN, and TP. The rate is adjusted annually, in December, based on service charge rates set for the following year. Outside-the-District surcharges apply to this site and are capped at 100% per District policy. Leachate treatment charges have typically been set at two times the minimum hauled wastewater rate, based on historical analytical data for the billing parameters.

(2) The primary contact for the Refuse Hideaway Landfill is Leggette, Brashears, & Graham, Inc. of Madison. Discharges made to the Nine Springs Wastewater Treatment Plant under the provisions of this permit, will be billed quarterly to:

Mr. Charles Burgis
Leggette, Brashears, & Graham, Inc.
6409 Odana Road, Suite C
Madison, WI 53719

Part 5 - GENERAL CONDITIONS

5.01 COMPLIANCE WITH ALL LOCAL, STATE, AND FEDERAL REQUIREMENTS

The Permittee shall comply with all applicable pretreatment standards and requirements set forth in the District Sewer Use Ordinance, the Wisconsin Administrative Code, and the Code of Federal Regulations, regardless of their enumeration in this permit.

5.02 SEVERABILITY

The provisions of this permit are severable, and if any provision of this permit or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

5.03 DUTY TO COMPLY

The Permittee must comply with all conditions of this permit. Failure to comply with the requirements of this permit may be grounds for administrative action, or enforcement proceedings including civil or criminal penalties, injunctive relief, and summary abatements.

5.04 DUTY TO MITIGATE

The Permittee shall take all reasonable actions necessary to minimize and correct any adverse impacts to the sewerage system or the environment resulting from noncompliance with this permit. The Permittee shall notify the District within 24-hours of its first awareness of the commencement of the adverse impact (upset) in accordance with sec. 5.6.5 of the District Sewer Use Ordinance.

5.05 DUTY TO REAPPLY

If the Permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the Permittee must submit an application for a new permit at least 90-days before the expiration date of this permit.

5.06 CONTINUATION OF EXPIRED PERMIT

An expired permit will continue to be effective and enforceable until the permit is reissued if:

(1) The Permittee has submitted a complete permit application at least 90-days prior to the expiration date of the user's existing permit.

(2) The failure to reissue the permit, prior to expiration of the previous permit, is not due to any act or failure to act on the part of the Permittee.

5.07 PERMIT MODIFICATION

The District may modify this wastewater discharge permit at any time to reflect changes in federal, state, or local law, to incorporate the terms of an order, or to reflect changed circumstances. Any modifications which result in new conditions in the permit shall include a reasonable time schedule for compliance if necessary.

5.08 PERMIT TRANSFER

Wastewater discharge permits are issued to a specific user for a specific operation and are not assignable to another user or transferable to any other location without prior written approval of the District. Sale of a user shall obligate the purchaser to seek prior written approval of the District for continued discharge to the District sewerage system. If an owner or operator changes without the prior approval of the District, then this permit is void.

5.09 SAMPLING LOCATION

The Permittee may change sampling locations only after receiving approval from the District. The District shall ensure that any change in the Permittee's sampling location will not allow the Permittee to substitute dilution for adequate treatment.

5.10 SAMPLING FACILITIES

(1) The Permittee shall provide sampling facilities that will be accessible and that will provide representative samples of the process wastewater.

(2) The Permittee shall allow the District access to all sampling facilities according to the requirements of sub. (5.11).

5.11 RIGHT OF ENTRY

The Permittee consents to inspection and sampling by the District according to the requirements and limitations set forth in sec. 11.1 of the Sewer Use Ordinance. The Permittee shall, after reasonable notification by the District, allow the District or its representatives, exhibiting proper credentials and identification, to enter upon the premises of the Permittee at all reasonable hours, for the purposes of inspection, sampling, or records inspection. Reasonable hours in the context of inspection and sampling includes any time the Permittee is operating any process which results in a process wastewater discharge to the District sewerage system.

5.12 NO PROPERTY RIGHTS CREATED

The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any invasion of personal rights, nor any infringement of federal, state, or local laws or regulations.

5.13 NOTICE OF INTENT

If the Permittee is planning to alter or change any activity at the Permittee's facility that would significantly increase or decrease the volume or alter the content of any existing source of wastewater discharge into the District sewerage system must file a written Request to Discharge Form in accordance with Article 5 of the District Sewer Use Ordinance. A significant increase or decrease shall be defined as a 25 percent increase or decrease in the volume of industrial wastewater currently being discharged by a Permittee.

5.14 REVIEW OF PROPOSED TREATMENT FACILITIES

(1) If the Permittee is planning to install or modify treatment facilities or operations to comply with a categorical pretreatment standard, a pretreatment standard set forth in sec. 5.2.2 of the District Sewer Use Ordinance, a permit condition, or an order of the District, then the Permittee

shall provide the District with plans, specifications, and operating procedures for the proposed facilities. The District may approve, conditionally approve, or disapprove the plans, specifications, and operating procedures. The Permittee may not begin discharging from the treatment facilities until the Permittee has satisfied the requirements of the District.

(2) The Wisconsin Department of Natural Resources has separate requirements for the review of plans, specifications, and operating procedures of proposed pretreatment facilities, such as the requirements set forth in sec. 144.04, Wis. Stats., and ch. NR 108, Wis. Admin. Code. The Permittee shall comply with these requirements before commencing discharges to the sewerage system.

5.15 ADDITIONAL REPORTS

In addition to the reports required by this permit and the reports specifically required by the District Sewer Use Ordinance, the District may require other reports, management plans, or other information whenever the District finds that such a requirement is necessary to fulfill the District's responsibilities under the Sewer Use Ordinance, or any other local, state, or federal law.

5.16 HAZARDOUS WASTE NOTIFICATION

The Permittee shall notify the District, the Department of Natural Resources, and the EPA Regional Waste Management Division Director in writing of any discharge to the sanitary sewer system of a substance which, if otherwise disposed of, would be a hazardous water under 40 CFR Part 261. Such notification must include the name of the hazardous waste as set forth in 40 CFR Part 261, the EPA hazardous waste number, and the type of discharge. If the Permittee discharges to the sanitary sewer more than 100 kilograms of such waste per calendar month, the additional notification requirements of 40 CFR sec. 403.12(p) apply. In the case of any notification made under this section, the Permittee shall certify that it has a program in place to reduce the volume and toxicity of hazardous wastes generated to the degree it has determined to be economically practical.

5.17 PUBLIC INFORMATION

All written information submitted to the District shall be available upon request to any person for public inspection at the headquarters of the District, according to sec. 19.35, Wis. Stats., unless:

(1) The Permittee provides, at the time the Permittee submits the information, a written notice to the District that the Permittee claims that all or part of the information is exempt from disclosure according to sec. 19.36(5), Wis. Stats.; and

(2) The Permittee demonstrates to the District's satisfaction that the information is a trade secret according to sec. 134.90(1)(c), Wis. Stats.

WASTEWATER DISCHARGE PERMIT NTO-5.12

In compliance with the provisions of section 66.24(1)(d) and 66.25(3) of the Wisconsin Statutes, Articles 5 and 6 of the Madison Metropolitan Sewerage District Sewer Use Ordinance, and the District's Policy on Acceptance of Wastewater Containing Non-Typical Organic and Inorganic Constituents,

Wisconsin Department of Natural Resources
BOX 7921 Madison, WI 53707,
for the site,
Refuse Hideaway Landfill,
located at,
US Highway 14, Middleton, WI,
with wastewater O&M provided by,
Leggette, Brashears, & Graham, Inc of Madison

is hereby authorized to discharge leachate from the **Refuse Hideaway Landfill** located at the above address, via a permitted waste hauler, to the Nine Springs Wastewater Treatment Plant in accordance with the effluent limitations, monitoring requirements, and other conditions set forth in this permit.

All discharges authorized herein shall be consistent with the terms and conditions of this permit. The discharge of any pollutant identified in this permit more frequently than or at a level in excess of that authorized shall constitute a violation of the permit.

This permit shall be effective for five years. It shall become effective on July 1, 2014 and shall expire at midnight, June 30, 2019. Any appeals to the conditions of this permit must be made to the Chief Engineer and Director within thirty days of the signature date.

The Permittee shall not discharge after the date of expiration. If the Permittee wishes to continue to discharge after this expiration date an application shall be filed for reissuance of this permit in accordance with the requirements of Article 5 of the Madison Metropolitan Sewerage District Sewer Use Ordinance, at least 90-days prior to the expiration date.

In accordance with Articles 5 and 6 of the Madison Metropolitan Sewerage District Sewer Use Ordinance, the District reserves the right to amend this permit from time to time.

By _____
D. Michael Mucha
Chief Engineer and Director

Dated this ____ day of _____ 2014.