

June 18, 2019

Ms. Aubrey Proctor  
Environmental Engineer  
Michigan Department of Environment, Great Lakes and Energy (EGLE)  
Materials Management Division  
301 East Louis Glick Highway  
Jackson, MI 49201-1556

Subject: **Advanced Disposal Services – Arbor Hills Landfill, Inc.**  
Response to Third Quarter Inspection FY 2019 – Violation Notice (VN)  
Arbor Hills West Expanded Sanitary Landfill; Facility ID 475946

Dear Ms. Proctor:

This letter responds to the Violation Notice (“VN”) dated May 24, 2019 as a result of the Third Quarter Inspection FY2019 conducted on May 9, 2019. The VN alleges that ADS is in violation of the provision of Part 115 and the administrative rules, citing certain exceedances of leachate levels in Cell 3 over the months of January to Mid-April, in addition to continued exceedances in Cell 4.

In addition to the above mentioned violation, The Department of Environment, Great Lakes, and Energy (EGLE) Materials Management Division (MMD) request a status update following the evaluation of the Operating Record. As stated in the VN, EGLE is requesting:

1. A status update for ongoing corrective actions implemented to reduce leachate levels and attain/maintain compliance with the leachate head requirements of the Part 115 administrative rules.
2. An updated liquids management plan for Cell 4 leak detection system that meets the requirements of Part 115 administrative rules.
3. Documentation that any necessary changes have been made at the leachate sump/pump control panels to accurately monitor and control; leachate head levels based on the as-built sump depths.
4. A revised form of recordkeeping for leachate levels and volumes that includes updated compliance levels, precipitation data, and relevant notes.
5. A proposed schedule for inspecting and cleaning leachate collection/transmission system components to assure proper operation.
6. Documentation/confirmation based on as-built information as to the fate of leachate from the Cell 1 primary liner system.

### **Corrective Action to Reduce Leachate Levels**

The current primary collection leachate levels in Cell 4 are primarily due to excessive leachate generation attributed to an active Cell 4E. ADS instituted a multi-tiered approach in order to reduce the leachate head levels. ADS currently utilizes a grinder pump to aid in extracting liquid that contains an abnormal amount of solids from the sump. Previous pumps used in Cell 4 would accumulate excessive solid particles on the screen, thus becoming impaired and reducing the pumping capacity. ADS also has a back-up grinder pump to quickly swap out pumps should the one being utilized in the Cell sump become impaired. As stated in a VN response, dated March 1, 2019, ADS has also reevaluated the capacity of the existing system to extract leachate at the rate necessary to achieve compliance during high flow periods. ADS upgraded the pump capacity of the on-site leachate lift station in conjunction with the upgrade to the sideslope riser pumps to mitigate this situation in the future.

ADS has also regraded areas around the active area to reduce the storm water impact in Cell 4.

ADS has installed an additional pump to the on-site lift station to allow further increased capacity.

### **Secondary Collection Flow Rates and Liquid Management Plan**

ADS has initiated a Liquids Management Plan (please see Attachment 1) to address the measured flow in the Cell 4 secondary collection system (SCS) above the action flow rate. Documentation showing the implementation of this LMP has been placed in the operating record in accordance with R299.4432. Actions taken in response to an exceedance of the Cell 4 AFR include:

1. ADS has taken active steps to increase the extraction rate in the Cell 4 primary system to reduce levels as quickly as possible.
2. Identification of potential outside sources of excess liquid in the SCS (e.g., liner defects, anchor trench, pooling/ponding of water along perimeter of landfill). These investigations have indicated that stormwater diversion is warranted. Stormwater diversion has been implemented to reduce surface water infiltration into Cell 4, as noted in the above Section, titled, corrective actions to reduce leachate levels.
3. Verification of liquid pumping data for the primary and secondary sumps to assess the accuracy of the data. ADS has contracted Miller Brothers Construction to complete this work. Parts and panels have been ordered and installation is anticipated to commence by August 1, 2019.
4. Cell 4 sump has had a grinder pump installed, which is better equipped for handling liquids with abnormal amounts of solids.
5. Assessment of the liquid chemistry in the SCS has been done by sampling the liquid in accordance with the schedule presented in R299.4437. The results of the

analytical testing have been evaluated and compared with the leachate chemistry to determine if it is characteristic of leachate or other water source. Results of analytical testing did not establish a direct correlation between the chemistry of the leachate and secondary liquids, indicating other sources of liquid may be entering the SCS. ADS will continue to sample the SCS and analyze the results on a monthly basis as long as the Cell 4 AFR is exceeded.

### **Sump/Pump Control Panels**

ADS conducted a thorough investigation of the control panels and set-points based on approved Cell construction reports. The panel set points and sump design depths for each Cell are as follows:

Cell ID	Primary Pump ON Level (inches)	Primary Pump OFF Level (inches)	Secondary Pump ON Level (inches)	Secondary Pump OFF Level (inches)	Sump Design Depth Primary (inches)
Cell 1*			42	6	
Cell 2	42	20	42	20	42.24
Cell 3	36	8	36	12	43.32
Cell 4	26	13	26	13	39.6
Cell 5	42	20	42	20	42.6

\*Cell 1 Primary drains into Cell 3 Primary, as indicated on Attachment 2.

### **Revised Record Keeping Form**

ADS has revised the Cell record keeping form to include precipitation information on a daily basis along with a comment section to include any relevant information that indicates any status changes or significant events to the leachate extraction/pumping system at each Cell. A revised Cell Record Keeping Form can be found as Attachment 3.

### **Inspection and Cleaning Schedule for Leachate Transmission System**

Leachate transmission systems are monitored daily, Monday-Friday. ADS will schedule cleanings on a semi-annual basis or as needed depending on pumping data collected daily. If increased head levels are not mitigated by pump cleaning or pump replacement, then ADS will clean the transmission lines. Record keeping of cleaning, pump maintenance, or power outages will be recorded in the comments section of the Revised Cell Record Keeping Form.

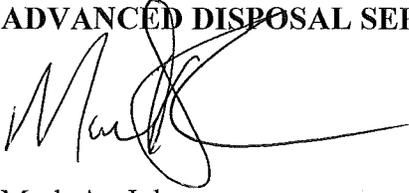
### **Cell 1 Primary Leachate Information**

As depicted and noted on Attachment 2, Existing Leachate Collection System drawing, an 8" diameter solid pipe from Cell 1 secondary collection system and an 8" diameter perforated pipe from Cell 1 primary leachate collection both go to the Cell 3 sump. The secondary remains a separate and continues upslope while the primary Cell 1 leachate discharges into Cell 3 primary sump.

If you have additional questions, please contact me at 248-412-0704.

Sincerely,

**ADVANCED DISPOSAL SERVICES ARBOR HILLS LANDFILL, INC.**



Mark A. Johnson  
Arbor Hills Landfill - General Manager

Attachments:

- Attachment 1 - Liquids Management Plan
- Attachment 2 - Existing Leachate Collection System Drawing
- Attachment 3 - Cell Record Keeping Form

cc: (via e-mail)

- Mr. Jay Warzinski, Advanced Disposal Services
- Mr. Todd Whittle, Advanced Disposal Services
- Mr. Anthony Testa, Advanced Disposal Services
- Mr. Larry Bean, EGLE
- Ms. Diane Kavanaugh Vetort, DEQ
- Mr. Theo Eggermont, Washtenaw County Public Works Manager



**GOLDER**

REPORT

# Site-Wide Liquids Management Plan

*Arbor Hills Sanitary Landfill*

*WDS #475946*

Submitted to:

**Advanced Disposal, Inc.**

10690 West Six Mile Road, Northville, Michigan 48167

Submitted by:

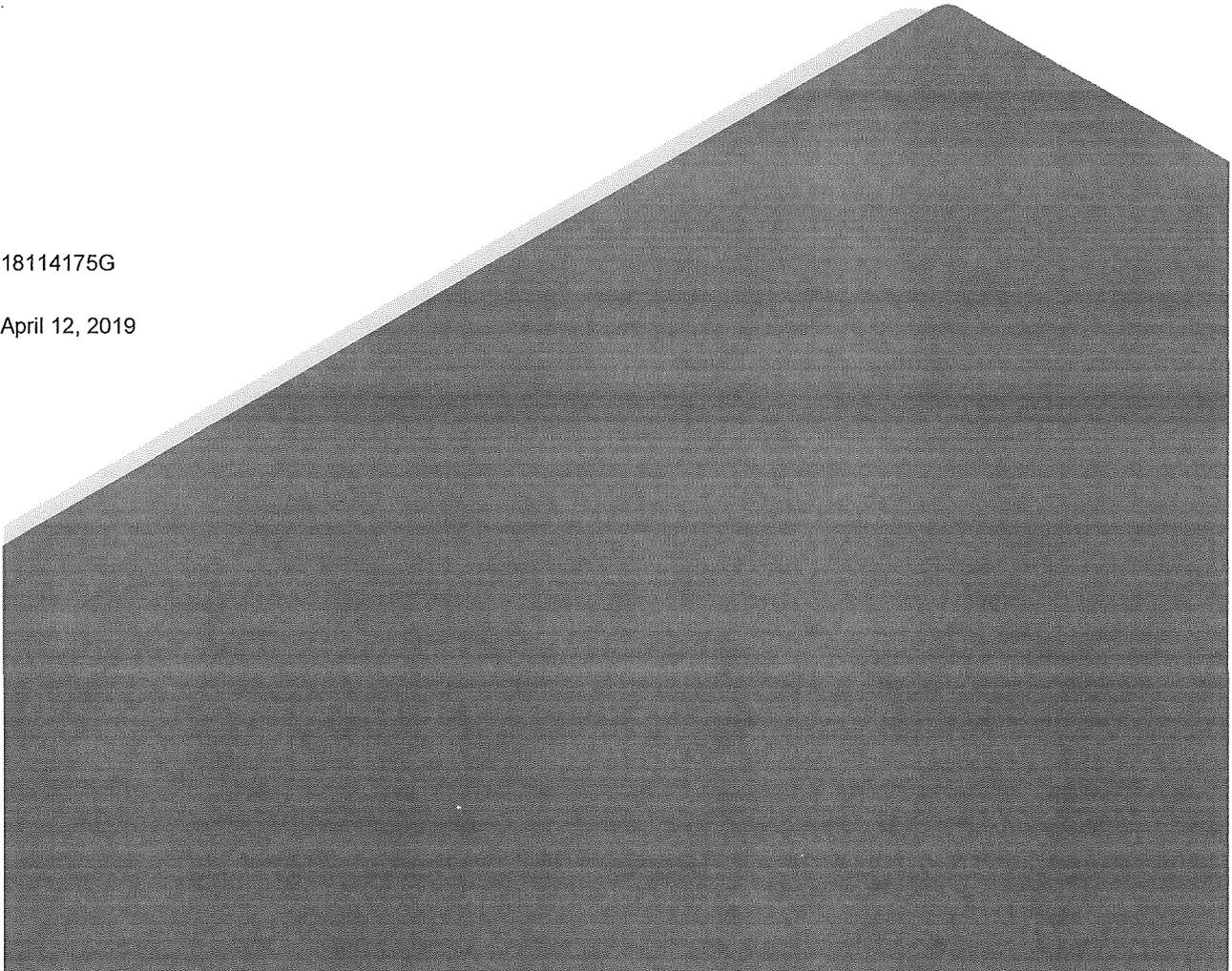
**Golder Associates Inc.**

27200 Haggerty Road, Suite B-12, Farmington Hills, Michigan, USA 48331-5719

+1 248 295-0135

18114175G

April 12, 2019



# Distribution List

Arbor Hills Landfill

Michigan Department of Environmental Quality

Mr. Mark Johnson - Arbor Hills Landfill (electronic only)

Mr. Anthony Testa - Arbor Hills Landfill (electronic only)

## Liquids Management Plan

Arbor Hills West Expanded Sanitary Landfill (Arbor Hills) has prepared this Site-Wide Liquids Management Plan (LMP) to be implemented in the event that the action flow rate (AFR) is exceeded in any of the individual secondary collection sumps, pursuant to Part 115 of the Michigan Natural Resources and Environmental Protection Act (PA 451). Specifically, Arbor Hills is considered an unmonitorable unit as defined by the Part 115 rules [see R299.4103(u), R299.4104(c), R299.4105(d), and R299.4105(t)].

If the calculated average daily flow rate removed from the sump of a secondary collection system (SCS) during any month more than the allowed action flow rate for that specific sump, Arbor Hills will:

- Initiate this LMP to reduce the flow in the secondary collection system and the potential impact of this flow and place documentation showing the implementation of this LMP in the operating record in accordance with R299.4432. Actions taken in response to an exceedance of the AFR will include:
  - 1) Increase the frequency or rate of leachate removal from the primary collection systems to reduce head levels in the primary.
  - 2) Identify potential outside sources of excess liquid in the SCS (e.g., liner defects, anchor trench, pooling/ponding of water along end of landfill).
  - 3) Verify liquid pumping data for the primary and secondary sumps to assess the accuracy of the data.
  - 4) Verify leachate pumping rates and head levels in the primary sump to confirm leachate is being effectively and efficiently removed.
  - 5) Assess the need for cleaning of the primary sump.
- Because Arbor Hills is an unmonitorable unit, comply with the leak detection requirement of R299.4437, if applicable.

Because Arbor Hills is considered unmonitorable, in accordance with R299.4105(t), liquids in the SCS will be sampled according to the schedule presented in R299.4437. The samples will be analyzed for primary and secondary inorganic indicator parameters, primary volatile organics, heavy metals, and secondary organics, as specified in R.299.4450 through R299.4454.

The results of the analytical testing described above will be evaluated and compared with leachate chemistry to determine if it is characteristic of leachate or another source. If, based on analytical results, SCS liquids are not characteristic of leachate, Arbor Hills will document this fact and propose actions to determine the source of liquid entering the SCS.

In the event that liquids from the SCS are indicative of leachate, and the average daily flow rate exceeds the Response Flow Rate (RFR), a Response Action Plan will be developed and submitted to the MDEQ. The Response Action Plan will be certified by a registered professional engineer. The Response Action Plan will follow the requirements of R299.4437(5). If the RFR is not exceeded, no additional response is necessary and monitoring will continue on a monthly basis in accordance with R299.4437(2).

Arbor Hills will discontinue actions under the LMP when the average daily flow rate in a subsequent month no longer exceeds the action flow rate which initiated the action.

## Signature Page

This LMP should be placed in the Operating Record for Arbor Hills. Let us know if you have any questions or need any additional information with respect to this LMP.

### Golder Associates Inc.



Dawn L. Prell, CPG  
*Senior Hydrogeologist*



Sean C. Paulsen, PG  
*Associate, Senior Consultant*

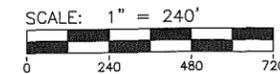
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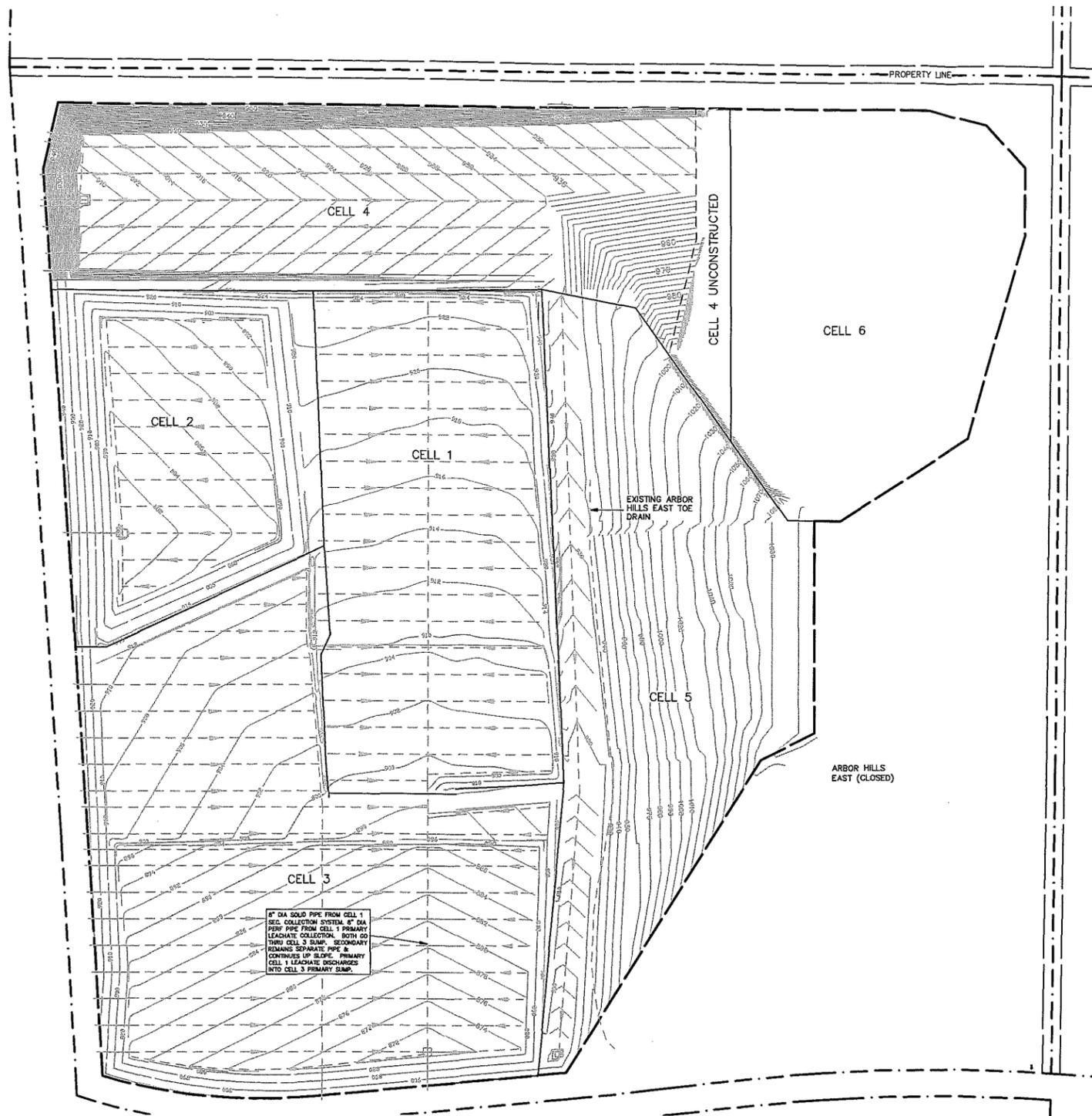
**LEGEND**

- LANDFILL BASE CONTOURS
- EXISTING 8" PERF. LEACHATE COLLECTION PIPE

Cell ID	Bottom of Pri Sump Elevation	Cell Floor Elevation-top of sump	Top of 18" pipe in Sump	Liner elev at Refuse Limit Bdry	Top of Riser Pipe
Cell 1	drains into cell 3 primary	n/a	n/a	n/a	n/a
Cell 2	876.7	880.22	881.97	944.37	948
Cell 3	867.1	870.71	872.46	906.15	912
Cell 4	904.5	907.8	909.55	950.52	954
Cell 5	888.4	891.95	893.7	908.15	912

Cell ID	Primary Pump ON Level (inches)	Primary Pump OFF Level (inches)	Secondary Pump ON Level (inches)	Secondary Pump OFF Level (inches)	Sump Design Depth Primary (inches)
Cell 1*			42	6	
Cell 2	42	20	42	20	42.24
Cell 3	36	8	36	12	43.32
Cell 4	26	13	26	13	39.6
Cell 5	42	20	42	20	42.6

\*Cell 1 Primary drains into Cell 3 Primary



**MIDWESTERN CONSULTING**  
 Civil, Environmental and Transportation Engineers  
 Planners, Surveyors  
 Landscape Architects

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**CLIENT**  
 ADVANCED ARBOR HILLS LANDFILL  
 1/4 FIVE MILE ROAD  
 NORTHVILLE, MI 48168  
 248-349-7330

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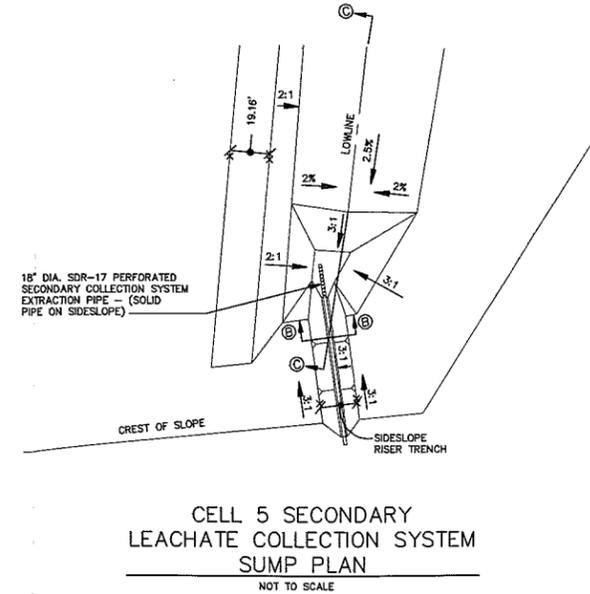
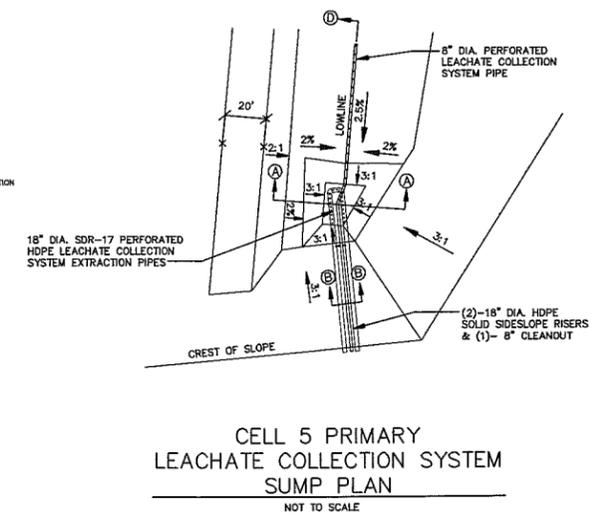
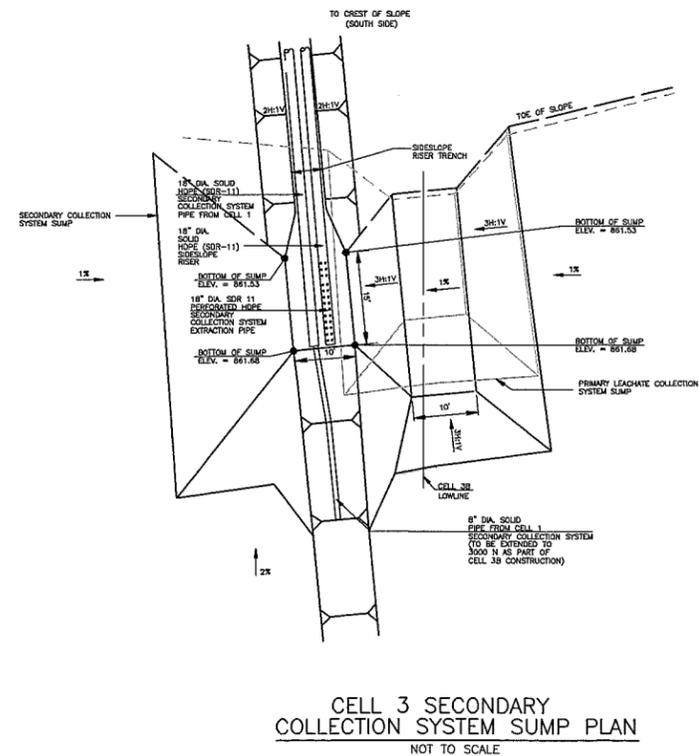
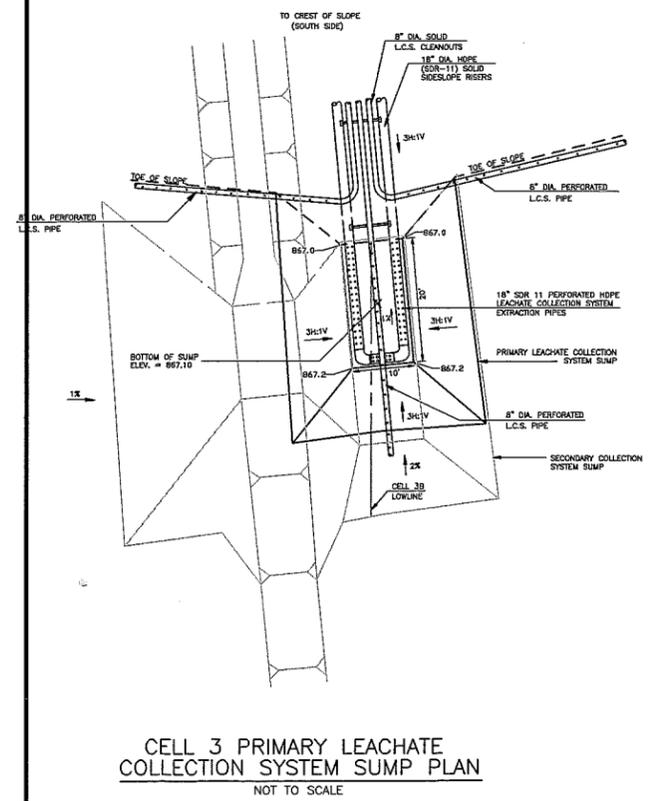
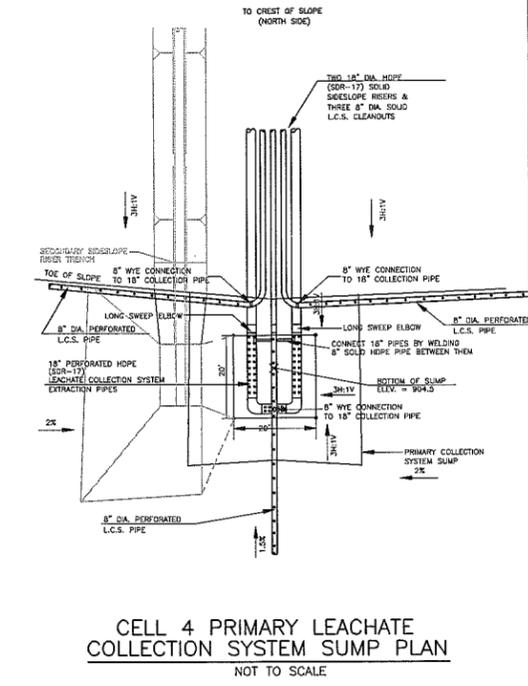
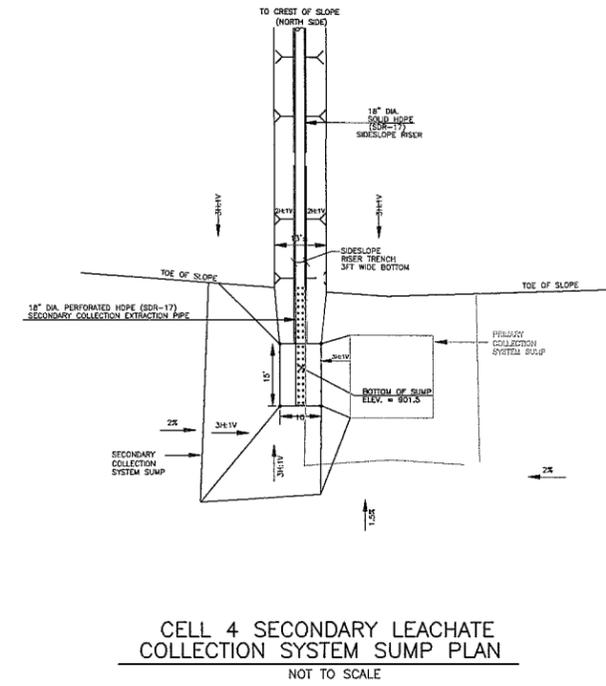
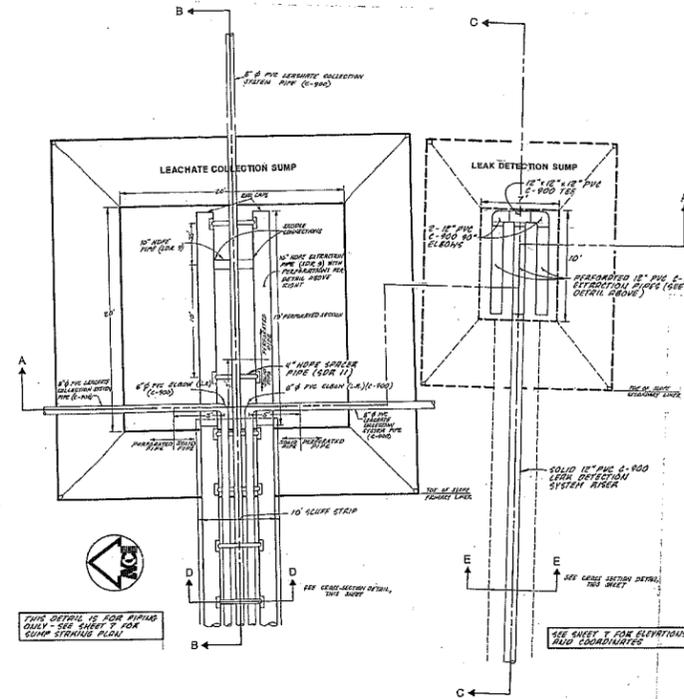
**ADVANCED ARBOR HILLS LANDFILL**  
 SALEM TOWNSHIP, WASHTENAW COUNTY, MICHIGAN  
 EXISTING LEACHATE COLLECTION SYSTEM

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**1**

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JOB No.	01418
DATE	6/19/19
SHEET	1 OF 2
REV.	DATE
CADE	BAC
ENG.	BAC
PH.	AG
TECH.	
DESIGNER	
DRAWN	



**MIDWESTERN CONSULTING**  
Civil, Environmental and Transportation Engineers  
Planners, Surveyors  
Landscape Architects

CLIENT  
ADVANCED ARBOR HILLS LANDFILL  
W. FIVE MILE ROAD  
NORTHVILLE, MI 48168  
248-349-7230

ADVANCED ARBOR HILLS LANDFILL  
SALEM TOWNSHIP, WASHTENAW COUNTY, MICHIGAN  
LEACHATE COLLECTION SUMP PLANS

**2**

DATE	9/19/19
SHEET	2 OF 2
REV. DATE	
REV. NO.	
REV. BY	
REV. DATE	
REV. NO.	
REV. BY	
REV. DATE	
REV. NO.	
REV. BY	

JOB No. **09043**

Month: \_\_\_\_\_

### DAILY PRECIPITATION RECORD

Date	Arbor Hills Landfill		
	Precipitation (YES/NO)	Rainfall (inches)	Snow (inches)
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
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19			
20			
21			
22			
23			
24			
25			
26			
27			
28			
29			
30			
31			

Month: \_\_\_\_\_

### METERING MANHOLE - SANITARY SEWER METER READINGS

Date	% Flow	Manhole Totalizer	Sewer Leachate Gallons	Discharge Tank Farm	
				Yes	No
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
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16					
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22					
23					
24					
25					
26					
27					
28					
29					
30					
31					

Month: \_\_\_\_\_

### TANK FARM METER READINGS

Date	Flow Meter GPM	South Tank Feet Level	Tank Farm Totalizer	Tank Farm Gallons Pumped
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
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19				
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21				
22				
23				
24				
25				
26				
27				
28				
29				
30				
31				

Month: \_\_\_\_\_

### LEACHATE - PRIMARY / SECONDARY DATA RECORD

Cell #1 Secondary Data Record			
Date	Feet	Hour Meter (GPM= )	Comments
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
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22			
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26			
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28			
29			
30			
31			

SITE WATER METERS	
Pump House	
Site Office	
Shop	
CTR	
Area Office	
<b>TO BE READ AT THE END OF EACH MONTH</b>	
Date Read:	

Secondary Pump ON Level = 42"

Secondary Pump OFF Level = 6"

Cell 2 Primary Pump ON/OFF = 42" / 20"

Month: \_\_\_\_\_

Cell 2 Secondary Pump ON/ OFF = 42" / 20"

### LEACHATE - PRIMARY / SECONDARY DATA RECORD

Date	Cell #2 SCS		Cell #2 PCS Pump #1		Cell #2 PCS Pump #2		Comments
	Inches	Minute Meter (GPM= )	Inches	Minute Meter (GPM= )	Inches	Minute Meter (GPM= )	
1							
2							
3							
4							
5							
6							
7							
8							
9							
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31							

Cell 3 Primary Pump ON/OFF = 36" / 8"

Month: \_\_\_\_\_

Cell 3 Secondary Pump ON/OFF = 36" / 12"

### LEACHATE - PRIMARY / SECONDARY DATA RECORD

Date	Cell #3 SCS		Cell #3 PCS Pump #1		Cell #3 PCS Pump #2		Comments
	Feet	Hour Meter (GPM= )	Feet	Hour Meter (GPM= )	Feet	Hour Meter (GPM= )	
1							
2							
3							
4							
5							
6							
7							
8							
9							
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31							



Cell 5 Primary Pump ON/OFF = 42" / 20"  
 Cell 5 Secondary Pump ON/ OFF = 42"/ 20"

Month: \_\_\_\_\_

**LEACHATE - PRIMARY / SECONDARY DATA RECORD**

Date	Cell #5 SCS		Cell #5 PCS Pump #1		Cell #5 PCS Pump #2		Comments
	Inches	Minute Meter (GPM= )	Inches	Minute Meter (GPM= )	Inches	Minute Meter (GPM= )	
1							
2							
3							
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6							
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