

April 29, 2026

Mr. Brad Davison
Environmental Specialist
Iowa Department of Natural Resources
6200 Park Avenue, Suite 200
Des Moines, Iowa 50321



**RE: Continuation of the Reduction/Termination Plan (RTP)
Leachate Collection System Shut-Down
Chickasaw County Sanitary Landfill (rescinded 19-SDP-01-72C)**

Dear Mr. Davison:

On behalf of the Chickasaw County, Iowa, we are seeking a means to end water/leachate collection at the closed Chickasaw County Sanitary Landfill (rescinded 19-SDP-01-72C) as allowed and in general conformance with the IDNR guidance document "*Request to Reduce or End Post-Closure Care and Preparation of Post-Closure Care Reduction/Termination Plan*" dated April, 2023.

An Environmental Covert was recorded with the Chickasaw County Recorder's Office as Instrument #2024-1306 and August 13, 2024 (Doc #110832). As a result, the former IDNR SDP Permit (19-SDP-01-72C) was rescinded on September 16, 2024 (Doc 110876) and the regulated post-closure care period for the Chickasaw County Landfill terminated. All monitoring wells at the facility were properly plugged and abandoned in February 2025 (Doc #112592). The water/leachate continues to be managed under the Environmental Covenant (Doc #110832). The site is also provided on-going care and maintenance by the County under the conditions set forth in the Environmental Covenant. Figure 1 illustrates the site features and layout.

The goal of the proposed water/leachate collection system shut-down is to further reduce active management and maintenance tasks at the site, but moreover, to promote the on-set of a low-impact and self-sustaining site that perpetually demonstrates an environmentally benign character.

History

In 1986 a series of perforated tile lines were installed in eastern and northern portions of the landfill (Doc #7241 and Doc #7242) to collect shallow groundwater and/or leachate seeps near the waste boundary. As described in the IDNR Letter dated September 2, 2021, the tile lines were strategically placed to address seeps that were persistent (presumably in 1986). The site stopped receiving waste in 1990 (see Special Provision X.B of the Closure Permit dated March 15, 1998 (Doc #39798)). The closure permit (Doc #39798) also acknowledges that the tile line collection system does not constitute a Leachate Control System as defined by rule (1998 IAC 567, Chapter 103.2(2)). Figure 2 is attached and illustrates the tile line collection system and the 3,000-gallon storage tank



The site was closed under the Closure Permit issued March 15, 1998 (Doc #39798). The closure cap was then completed October 30, 1998, and was approved by Permit Amendment #3 dated December 31, 1998 (Doc #39771). Operation of the leachate collection system was initiated in the late 1980's during the operational phases of the landfill, prior to closure of the site.

Leachate Management

Since the late 1980's leachate has been collected by the tile line system and stored in a 3,000-gallon precast concrete tank. The leachate is pumped from the tank and hauled to a Publicly Owned Treatment Works (POTW) for treatment (most recently to the Fredericksburg POTW).

The August 17, 2021, request to End Post-Closure (Doc #101061) states that an average of 50,000 gallons per year of leachate was hauled to treatment between 2016 and 2021. The same plan indicated that the volume of leachate disposal would be reduced to an as-needed basis.

In 2023, 2024, and 2025 leachate collection and disposal were reduced to approximately one (1) load per month (2,100 gallons per load), or approximately 25,200 gallons per year. The monthly leachate transport of 2,100 gallons per month (1 load per month) has continued thus far in 2026.

Hauled Leachate/Water Quality

The leachate testing data for 2023, 2024, and 2025 were reviewed and the Landfill Testing Parameters (IAC 567-113, Appendix I) analytes are summarized below from the annual leachate testing data. All other Appendix I compounds tested were reported as below Reporting Limits. The Groundwater Protection Standards (GWPS) included in IAC 567, Chapter 137, Statewide Standards - Protected Groundwater Source are also included in the Table below.

Compound (ug/L)	2023	2024	2025	GWPS (ug/L)
Benzene	1.38	1.25	0.981	5.0
Chlorobenzene	2.52	2.13	1.33	100.0
Arsenic	3.12	2.77	<2.0	10.0
Barium	311.	329.	239.	2,000.
Lead	0.922	4.02	0.954	15.0
Nickel	14.3	14.2	7.87	100.0

Review of the data indicates that although the water/leachate quality is not without impact, there are no Appendix I compounds in the collected water/leachate that have exceeded a GWPS (equivalent to the EPA Drinking Water Standards) for the past 3 years.

Leachate Seep Monitoring

Review of Figure 2 and Figure 3 illustrate the location of the tile line collection system. The location of this system is observed to be primarily located along the east side of the site and

along the northeast side of the site (approximately the east one-third of the north side of the site).

Historic leachate seeps identified from the historic records (2015 to 2025) were in the southeast corner of Area 5 in 2016 (Doc #90485 and Doc #90580) and three (3) along the north side of the site in 2022 located west of the leachate tank (north side of Area 4). The record includes documentation of repair of the cited leachate seeps. The Area 5 seep was repaired in 2017 (Doc #90833) while the three (3) seeps in Area 4 were repaired in 2023 (Doc #107529).

The August 17, 2021, request to End Post-Closure (Doc #101061) indicated that seeps had not been observed at the site since 2018. Based on the IDNR Field Office Inspection on November 2, 2021 (Doc #101621), no leachate seeps were observed at the site. Based on HLW review and observation of the site in April of 2025 (Doc #112907), no leachate seeps were noted at the site.

The conclusions that are drawn from the seep observation data (2015 to 2025) are that seeps are not common at the site, have only been documented in areas distant from the tile line collection system, and are well managed and repaired by Chickasaw County staff.

Leachate System Shut-Down Options Established

The August 17, 2021, request to End Post-Closure (Doc #101061) indicated a desire to reduce the volume of leachate transported for one year and then to cease the collection of leachate the following year altogether if no obvious issues resulted from the reduced hauling.

IDNR responded on September 2, 2021 (Doc #101153), providing two (2) options related to the leachate system shutdown. The first option was to install leachate piezometers to monitor leachate head, shut down the collection system, and track changes for a period to sufficiently account for annual precipitation variability. The second option was to continue to operate the collection system and transport leachate on an as-needed basis as a condition of the Environmental Covenant.

In the end, Chickasaw County chose to implement both options by continuing to transport leachate at a reduced volume under the Environmental Covenant while installing leachate piezometers to gather sufficient data to phase out the system over time.

Leachate System Monitoring

In January of 2025, five (5) leachate head piezometers were constructed in the landfill along the extent of the tile line collection system (Figure 2 and Figure 3) in accordance with the option provided by IDNR (Doc #101153). Construction information for the five (5) leachate piezometers (designated LPZ 25-1 through LPZ 25-5) is included in Attachment A.

The leachate head in the leachate holding tank has been monitored monthly in 2022, 2023, 2025, and thus far in 2026, before and after a leachate transport event (Attachment B). The monitoring data is also graphed over time (Attachment B).

Monitoring of the leachate piezometers was initiated in April 2025. The head measurements in the five (5) leachate piezometers has been performed monthly over a 13-month period (April 2025 to April 2026 – Attachment C) while the leachate transport continued at a reduced volume under the Environmental Covenant.

Review of the tank monitoring data in Attachment B indicates that the drawdown observed in the tank rebounds very quickly (within a few hours, typically). It is also noted that the tank level demonstrates about a 5-foot to 6-foot drop in tank level during leachate removal from the tank. The leachate levels measured in the tank also demonstrate an apparent seasonal variation over time and that graphed variation is interpreted to be tied to the seasonal groundwater level changes over time each year.

Review of the leachate piezometer data is also reviewed. Piezometer measurements are collected in the morning hours before pumping any leachate from the tank (gray square symbol on the graph in Attachment C), again approximately 20 to 40 minutes after pumping leachate from the tank (red triangle symbol on the graph in Attachment C), and again on the morning after the leachate was pumped from the tank (red triangle symbol on the graph in Attachment C).

The effects of drawdown related to pumping from the tank is indiscernible in the leachate piezometers located along the tile collection lines. In fact, many times the groundwater levels are recorded to be increasing following leachate extraction from the tank. The recorded piezometer measurements clearly demonstrate seasonal variations in water levels over time.

The conclusion drawn from the leachate head monitoring data (Attachments B and C) is that the leachate extraction and transport does not appear to affect any control over the water level/leachate levels in the east (and northeast) portion of the site. If the cause-and-effect of the tile line collection system is null, then continuation of the system into the future is unwarranted.

Water/Leachate Elevations vs. Ground Surface Elevations vs. Tile Flowline Elevations

At each leachate piezometer (LPZ25-1 to LPZ25-5) the leachate level is generally between 5 to 11 feet below the ground surface during monthly monitoring episodes. Review of the closure cap contours (Doc 39772 -Attachment D) concurrent with the recorded leachate elevations suggests that the leachate level is sufficiently below ground surface so that seeps will not occur at the ground surface near the site perimeter based on the record contour surface (Attachment D).

The placement of the closure cap in 1998 not only raised the ground surface above the 1990 fill area and along the site the perimeter immediately outside the waste boundary, but the cap has

also reduced water/leachate generation, allowing the static water level/leachate level to equilibrate within the capped landfill. Large variations in water/leachate surface elevation are not recorded in the 2025-2026 LPZ data.

The collection tile system flows by gravity to the leachate holding tank (Figure 3). The highest point in the perforated leachate line is at a flowline elevation of 1077.9 at the highpoint of Lateral "A" (Doc #7241 and Doc #7242 – Attachment E). The rim of the leachate holding tank is at elevation 1077.35. In theory, based on elevations alone, the tank could overflow.

To date, there are no records reviewed that indicate that the tank has overflowed onto the ground surface. It is noted that the upper extents of Lateral "A" are above the normal leachate surface in the fill area. The water elevations recorded in LPZ25-4 (1068.8 +/-) and LPZ25-5 (1072.3 +/-) support this interpretation that the leachate surface elevations recorded at the monitoring points are well below flowlines constructed in most of Lateral "A". The remaining portions of the collection tile system have flowline elevations that are below the rim of the leachate holding tank.

Conclusions and Recommendations

Conclusions from this evaluation are:

- 1) The site is actively managed and well maintained by Chickasaw County under the Environmental Covenant.
- 2) The water/leachate volume collected under the Environmental Covenant has been reduced to approximately 25,200 gallons per year since 2022. No adverse effects have been noted to date.
- 3) Water/leachate quality is good and does not demonstrate Appendix I compound concentrations that exceed a GWPS (IAC567-137 Statewide Standards for Protected Groundwater).
- 4) Seeps are not recorded as common at the site, especially in the east and northeast boundaries since the closure cap was completed in 1998. The recorded seeps over the past decade have been at locations distant from the 1986 Collection Tile System.
- 5) The IDNR has previously established methods and a pathway to a successful water/leachate system shutdown and Chickasaw County is actively participating in the established methods.
- 6) Five (5) leachate piezometers were installed at the site along the 1986 Collection Tile System and have been monitored since April 2025. The continued water/leachate extraction activities in 2025/2026 have no apparent impact on water/leachate levels along the 1986 Collection Tile System.
- 7) Based on available data, leachate seeps are not anticipated based on the future discontinuation of water/leachate collection and transport.
- 8) It is recommended that the water/leachate collection and transport cease and that monitoring of the tank level and the five (5) LPZ continue until April, 2028.

Proposed Shutdown & Schedule

It is proposed that the routine water/leachate collection and transport at the site cease upon receipt of authorization from the IDNR to do so. It is proposed that monthly monitoring of the tank level and the five (5) leachate piezometers continue for two (2) more years (until April 2028).

If water elevations in the tank indicate an overflow is eminent during the shutdown monitoring period, water/leachate hauling and disposal will commence until appropriate levels are again recorded in the tank.

It is also proposed that concurrent with the proposed monthly leachate piezometer measurements, that the east and northeast side of the site downslope from the collection tiles be observed for signs of any leachate seeps. The monthly inspections are also proposed to continue until April, 2028.

The period as proposed correlates to a 3-year monitoring period (2025-2028) to accommodate variations in annual precipitation. A three 3-year monitoring and inspection period has been approved at the Iowa County Sanitary Landfill when the leachate extraction wells were shut down in the closed landfill (Doc #103760 and Doc #103762). The 3-year monitoring period is deemed sufficient at this facility as well.

Future Tasks

Given that the monitoring wells no longer exist at the site and given that the testing of transported leachate indicates the leachate does not exceed the GWPS for the Appendix I compounds tested, fate and transport modeling is not proposed at this facility related to the shutdown. *It is deemed sufficient to limit the demonstration to the absence of seeps along the east and northeast ground surface.*

If the shut-down is successful and seeps are not recorded in the east and northeast portion of the landfill during the monitoring period, Chickasaw County will determine how to permanently decommission the 1986 Collection Tile System and Tank System. It is anticipated that system components will be removed, filled, or capped to ensure the site remains safe for human health and the environment.

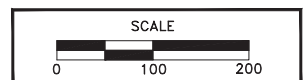
Thank you for your consideration of this request, and please let me know if you have any questions or desire additional information in support of this request.

Respectfully submitted,
HLW Engineering Group, LLC



Todd Whipple, CPG.
Project Manager

cc: *Chad Humpal, Chickasaw County Conservation*



AERIAL DATED SEPTEMBER 8, 2025

AERIAL PROVIDED BY THE IOWA STATE UNIVERSITY GEOGRAPHIC INFORMATION SYSTEMS SUPPORT AND RESEARCH FACILITY IN COOPERATION WITH THE IOWA DEPARTMENT OF NATURAL RESOURCES, THE USDA NATURAL RESOURCES CONSERVATION SERVICES, AND THE MASSACHUSETTS INSTITUTE OF TECHNOLOGY.



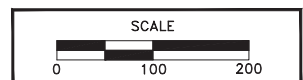
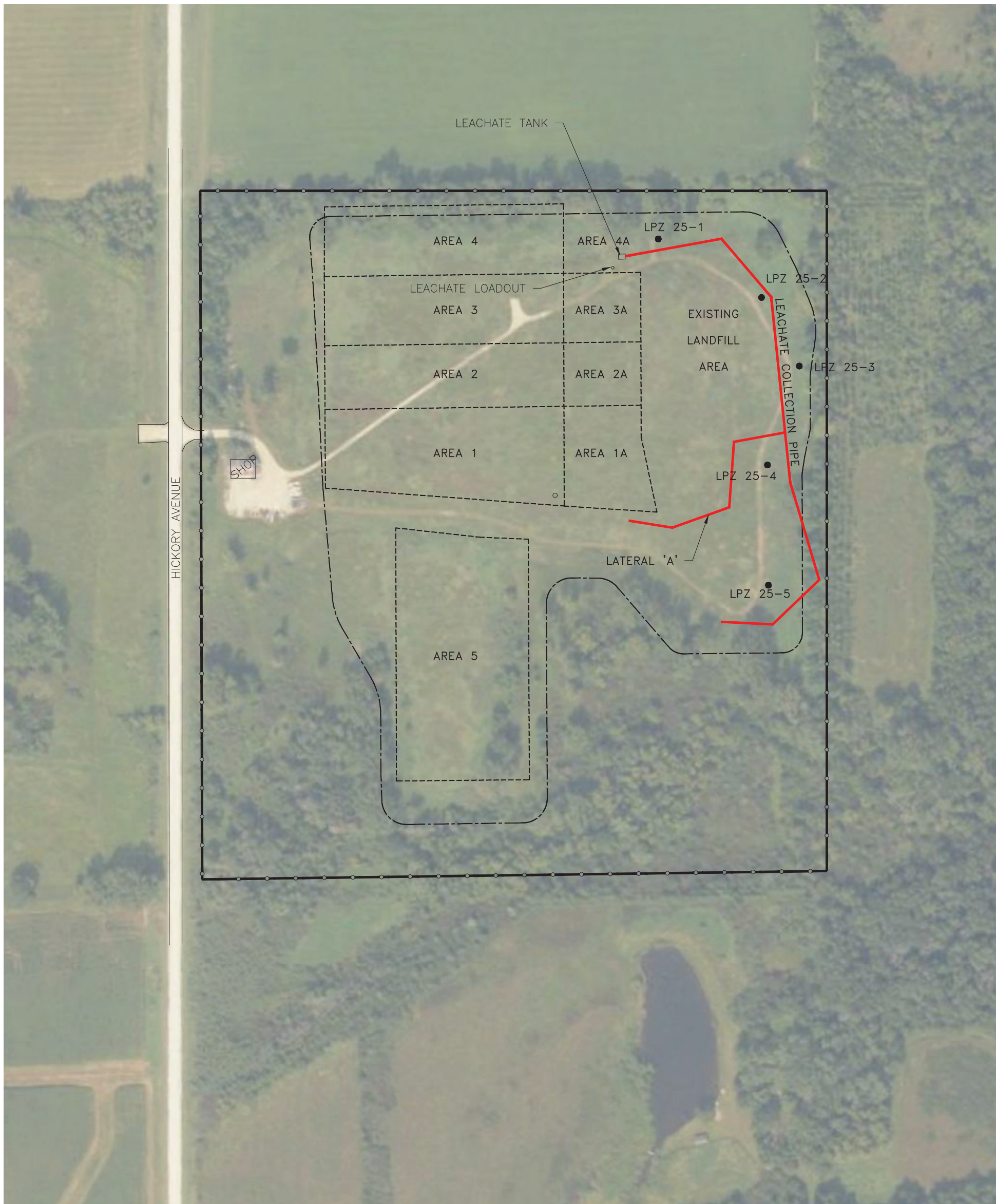
HLW Engineering Group
 204 West Broad Street, P.O. Box 314
 Story City, Iowa 50248
 Phone: (515) 733-4144
 FAX: (515) 733-4146

SITE MAP

CHICKASAW COUNTY SANITARY LANDFILL
 IONIA, IOWA

FIGURE: 1

REVISION	NO.	DATE
DRAWN JGH	PROJECT NO. 6054-25A	DATE 02/25/26



AERIAL DATED SEPTEMBER 8, 2025

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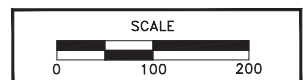
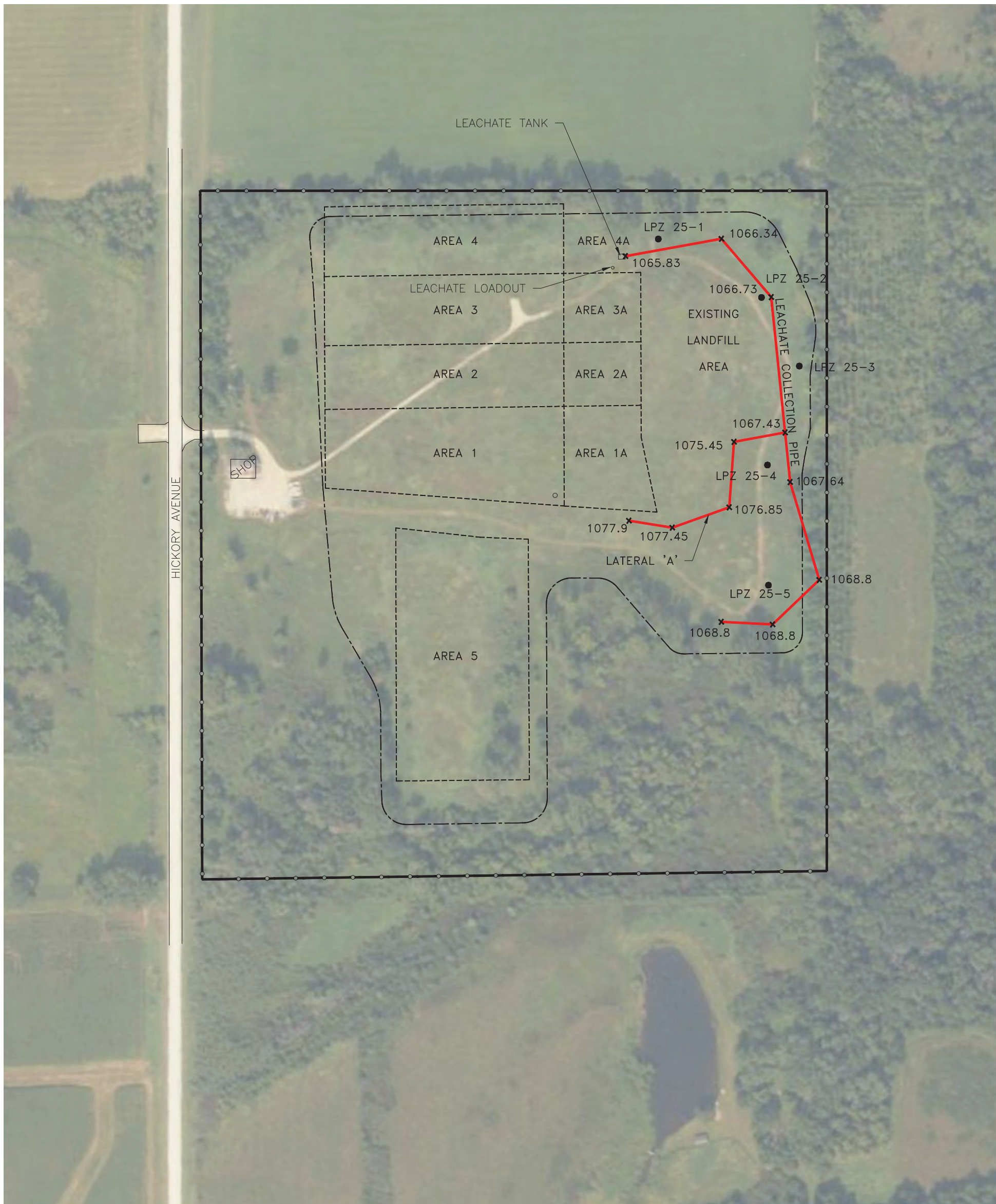
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LEACHATE SYSTEM

CHICKASAW COUNTY SANITARY LANDFILL
 IONIA, IOWA

FIGURE: 2

REVISION	NO.	DATE
DRAWN JGH	PROJECT NO. 6054-25A	DATE 02/25/26



AERIAL DATED SEPTEMBER 8, 2025

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LEACHATE TILE COLLECTION SYSTEM FLOWLINE ELEVATIONS

CHICKASAW COUNTY SANITARY LANDFILL
 IONIA, IOWA

FIGURE: 3

REVISION	NO.	DATE
DRAWN JGH	PROJECT NO. 6054-25A	DATE 02/25/26

ATTACHMENT A

CONSTRUCTION DOCUMENTATION LPZ25-1 THROUGH LPZ25-5



HLW Engineering Group
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HLW Engineering Group

LOG OF TEST BORING

Drillers Team Services Boring No. LPZ 1 HLW Observer JGH
 HLW Project No. 6054-23A

Date Drilled 1/15/25 Project Chickasaw County SLF
 Surface Elevation 1069.3 ft 19-SDP-01-72C
 Depth Drilled 15 ft
 Drilling Method HOLLOW STEM AUGER
 Depth to Water _____ ft @ completion (▽), 14.30 ft @ 24 hrs. (▼), _____ ft @ _____ hrs.

DEPTH FT	WELL DETAIL	SAMPLE		COLOR	MC %	CONSISTENCY	ELEV	SOIL DESCRIPTION
		NO.	TYPE					
0								Top PVC Casing EI = 1072.55 Bottom PVC Screen EI = 1055.20
0 - 4.5	Bentonite Chips			Brown	Moist	Medium		Landfill Cap - Clay Till
4.5 - 7	2" Sch 80 PVC Pipe			Black			4.5	Solid Waste and Daily Cover Soil
7 - 15	2" Sch 80 PVC Screen Sand				Wet		7	
15								
								E.O.B @ 15'
20								

Site Coordinates:
 N - 5359.7
 E - 5945.8



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LOG OF TEST BORING

Drillers Team Services Boring No. LPZ 2 HLW Observer JGH
 HLW Project No. 6054-23A

Date Drilled 1/15/25 Project Chickasaw County SLF
 Surface Elevation 1073.6 ft 19-SDP-01-72C
 Depth Drilled 14.5 ft
 Drilling Method HOLLOW STEM AUGER
 Depth to Water _____ ft @ completion (▽), 11.35 ft @ 24 hrs.(▼), _____ ft @ _____ hrs.

DEPTH FT	WELL DETAIL	SAMPLE		COLOR	MC %	CONSISTENCY	ELEV	SOIL DESCRIPTION
		NO.	TYPE					
0								Top PVC Casing EI = 1077.45 Bottom PVC Screen EI = 1059.40
0				Brown	Moist	Medium		Landfill Cap - Clay Till
3.5								
5				Black				Solid Waste and Daily Cover Soil
6.5					Wet			
10								
15								E.O.B @ 14.5'
20								

Site Coordinates:
 N - 5241.1
 E - 6155.2



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HLW Engineering Group

LOG OF TEST BORING

Drillers Team Services Boring No. LPZ 3 HLW Observer JGH
 HLW Project No. 6054-23A

Date Drilled 1/16/25 Project Chickasaw County SLF
 Surface Elevation 1069.7 ft 19-SDP-01-72C
 Depth Drilled 15 ft
 Drilling Method HOLLOW STEM AUGER
 Depth to Water _____ ft @ completion (▽), 14.80 ft @ 4 hrs. (▼), _____ ft @ _____ hrs.

DEPTH FT	WELL DETAIL	SAMPLE		COLOR	MC %	CONSISTENCY	ELEV	SOIL DESCRIPTION
		NO.	TYPE					
0								Top PVC Casing El = 1073.43 Bottom PVC Screen El = 1055.23
0				Brown	Moist	Medium		Landfill Cap - Clay Till
3								Mostly Daily Cover Soil with Some Solid Waste
5								
10								
15								
15	E.O.B @ 15'							
20	Site Coordinates: N - 5101.9 E - 6231.9							



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HLW Engineering Group

LOG OF TEST BORING

Drillers Team Services Boring No. LPZ 4 HLW Observer JGH
 HLW Project No. 6054-23A

Date Drilled 1/16/25 Project Chickasaw County SLF
 Surface Elevation 1079.2 ft 19-SDP-01-72C
 Depth Drilled 17 ft
 Drilling Method HOLLOW STEM AUGER
 Depth to Water _____ ft @ completion (▽), 14.95 ft @ 3 hrs.(▼), _____ ft @ _____ hrs.

DEPTH FT	WELL DETAIL	SAMPLE		COLOR	MC %	CONSISTENCY	ELEV	SOIL DESCRIPTION
		NO.	TYPE					
0								Top PVC Casing El = 1083.94 Bottom PVC Screen El = 1063.44
0 - 2.5				Brown	Moist	Medium		Landfill Cap - Clay Till
2.5 - 17				Black				Solid Waste and Daily Cover Soil
17								

E.O.B @ 17'

Site Coordinates:
 N - 4901.1
 E - 6167.3



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HLW Engineering Group

LOG OF TEST BORING

Drillers Team Services Boring No. LPZ 5 HLW Observer JGH
 HLW Project No. 6054-23A

Date Drilled 1/16/25 Project Chickasaw County SLF
 Surface Elevation 1081.1 ft 19-SDP-01-72C
 Depth Drilled 15 ft
 Drilling Method HOLLOW STEM AUGER
 Depth to Water _____ ft @ completion (▽), 15.25 ft @ 3 hrs.(▼), _____ ft @ _____ hrs.

DEPTH FT	WELL DETAIL	SAMPLE		COLOR	MC %	CONSISTENCY	ELEV	SOIL DESCRIPTION
		NO.	TYPE					
0								Top PVC Casing EI = 1086.75 Bottom PVC Screen EI = 1066.25
0 - 3				Brown	Moist	Medium		Landfill Cap - Clay Till
3 - 5				Black			3	Solid Waste and Daily Cover Soil
5 - 15	<p>Bentonite Chips</p> <p>2" Sch 80 PVC Pipe</p> <p>2" Sch 80 PVC Screen</p> <p>Sand</p>							
15	E.O.B @ 15'							
20	Site Coordinates: N - 4657.3 E - 6169.3							

ATTACHMENT B

LEACHATE HEAD MONITORING - LEACHATE TANK

2022-2026

Landfill Leachate Records

Date	Time	Measurement in Inches from top of manhole	Water Depth in Inches	
4/4/22	8:28 AM	81	132	Before Pumping
4/4/22	9:14 AM	140	73	After Pumping - Alarm at 9:27
4/4/22	10:10 AM	91	122	Before Pumping
4/4/22	10:53 AM	140	73	After Pumping - Alarm at 11:12
4/5/22	10:30 AM	86	127	Before Pumping
4/7/22	12:30 PM	84	129	Before Pumping
4/11/22	7:00 AM	89	124	Before Pumping
4/12/22	10:30 AM	92	121	Before Pumping
4/12/22	11:12 AM	143	70	After Pumping - Alarm at 11:54
4/13/22	7:50 AM	84	129	Before Pumping
4/19/22	7:45 AM	90	123	Before Pumping
4/19/22	9:00 AM	116	97	After Pumping - Alarm at 9:17
4/19/22	10:00 AM	97	116	Before Pumping
4/19/22	10:45 AM	142	71	After Pumping - Alarm at 11:36
4/19/22	2:15 PM	98	115	Before Pumping
4/20/22	7:30 AM	94	119	Before Pumping
4/26/22	9:45 AM	82	131	Before Pumping
4/26/22	10:25 AM	108	105	After Pumping - Alarm at 10:31
4/26/22	11:37 AM	91	122	Before Pumping
4/26/22	12:25 PM	133	80	After Pumping - Alarm at 12:45
5/4/22	8:01 AM	73	140	Before Pumping
5/4/22	8:41 AM	98	115	After Pumping - Alarm at 11:36
5/4/22	9:45 AM	84	147	Before Pumping
5/4/22	10:28 AM	113	100	After Pumping - Alarm at 11:36
5/5/22	8:00 AM	79	134	Before Pumping
5/11/22	9:12 AM	78	135	Before Pumping
5/11/22	9:54 AM	116	97	After Pumping - Alarm at 10:01
5/11/22	10:57 AM	90	123	Before Pumping
5/11/22	11:41 AM	134	79	After Pumping - Alarm at 11:57
5/12/22	7:40 AM	85	128	Before Pumping
5/18/22	9:39 AM	95	118	Before Pumping
5/18/22	10:27 AM	144	69	After Pumping
5/18/22	11:53 AM	106	110	Before Pumping
5/18/22	12:26 PM	147	66	After Pumping
5/25/22	9:41 AM	85	128	Before Pumping
5/25/22	10:26 AM	113	100	After Pumping

Landfill Leachate Records

Date	Time	Measurement in Inches from top of manhole	Water Depth in Inches	
5/25/22 11:25 AM	11:25	90	123	Before Pumping
5/25/22 12:12 PM	12:12	122	91	After Pumping
5/26/22 9:00 AM	9:00	78	135	Before Pumping
6/1/22 8:15 AM	8:15	95	118	Before Pumping
6/1/22 9:00 AM	9:00	142	71	After Pumping
6/1/22 12:10 PM	12:10	99	114	Before Pumping
6/1/22 1:00 PM	1:00	143	70	After Pumping
6/2/22 7:30 AM	7:30	102	111	Before Pumping
6/8/22 10:12 AM	10:12	101	112	Before Pumping
6/8/22 11:02 AM	11:02	146	67	After Pumping
6/8/22 12:06 PM	12:06	111	102	Before Pumping
6/8/22 1:03 PM	1:03	148	65	After Pumping
6/9/22 8:00 AM	8:00	107	106	Before Pumping
6/15/22 9:26 AM	9:26	105	108	Before Pumping
6/15/22 10:17 AM	10:17	149	64	After Pumping
6/15/22 11:20 AM	11:20	117	96	Before Pumping
6/15/22 12:15 PM	12:15	154	59	After Pumping
6/16/22 7:55 AM	7:55	114	99	Before Pumping
6/23/22 2:15 PM	2:15	113	100	Before Pumping
6/23/22 3:15 PM	3:15	155	58	After Pumping
6/23/22 4:15 PM	4:15	142	70	Before Pumping
6/23/22 5:27 PM	5:27	168	45	After Pumping
6/24/22 9:00 AM	9:00	129	84	Before Pumping
6/30/22 1:30 PM	1:30	114	99	Before Pumping
6/30/22 2:33 PM	2:33	158	55	After Pumping
6/30/22 3:34 PM	3:34	148	65	Before Pumping
6/30/22 4:39 PM	4:39	170	43	After Pumping
7/1/22 10:00 AM	10:00	130	83	Before Pumping
7/6/22 8:21 AM	8:21	122	91	Before Pumping
7/6/22 9:32 AM	9:32	162	51	After Pumping
7/6/22 10:45 AM	10:45	155	58	Before Pumping
7/6/22 11:45 AM	11:45	171	42	After Pumping
7/7/22 11:00 AM	11:00	135	78	Before Pumping
7/14/22 9:34 AM	9:34	126	87	Before Pumping
7/14/22 10:51 AM	10:51	168	45	After Pumping
7/15/22 8:30 AM	8:30	151	62	Before Pumping

Landfill Leachate Records

Date	Time	Measurement in Inches from top of manhole	Water Depth in Inches	
7/20/22 1:54 PM	1:54	129	84	Before Pumping
7/20/22 3:11 PM	3:11	170	43	After Pumping
7/28/22 4:42 PM	4:42	133	80	Before Pumping
7/28/22 5:53 PM	5:53	171	42	After Pumping
7/29/22 9:00 AM	9:00	158	55	Before Pumping
8/3/22 7:24 AM	7:24	137	76	Before Pumping
8/3/22 8:37 AM	8:37	171	42	After Pumping
8/4/22 8:00 AM	8:00	163	50	Before Pumping
8/11/22 2:42 PM	2:42	141	72	Before Pumping
8/11/22 3:45 PM	3:45	173	40	After Pumping
8/12/22 8:00 AM	8:00	167	46	Before Pumping
8/19/22 2:46 PM	2:46	146	67	Before Pumping
8/19/22 2:50 PM	2:50	174	39	After Pumping
8/21/22 2:15 PM	2:15	165	48	Before Pumping
8/27/22 8:39 AM	8:39	155	58	Before Pumping
8/27/22 9:36 AM	9:36	174	39	After Pumping
8/29/22 2:10 PM	2:10	112	101	Before Pumping
8/31/22 9:41 AM	9:41	111	102	Before Pumping
8/31/22 10:39 AM	10:39	155	58	After Pumping
9/1/22 8:30 AM	8:30	118	95	Before Pumping
9/7/22 8:30 AM	8:30	119	94	Before Pumping
9/7/22 9:30 AM	9:30	160	53	After Pumping
9/9/22 2:20 PM	2:20	123	90	Before Pumping
9/15/22 10:29 AM	10:29	122	91	Before Pumping
9/15/22 11:33 AM	11:33	165	48	After Pumping
9/16/22 8:00 AM	8:00	130	83	Before Pumping
9/23/22 2:00 PM	2:00	128	85	Before Pumping
9/23/22 3:10 PM	3:10	168	45	After Pumping
9/24/22 9:10 AM	9:10	139	74	Before Pumping
9/26/22 9:20 AM	9:20	134	79	Before Pumping
9/26/22 10:35 AM	10:35	174	39	After Pumping
9/27/22 8:00 AM	8:00	158	55	Before Pumping
10/4/22 6:53 AM	6:53	140	73	Before Pumping
10/4/22 11:58 AM	11:58	172	41	After Pumping
10/7/22 1:30 PM	1:30	161	52	Before Pumping
10/14/22 12:30 PM	12:30	149	64	Before Pumping

Landfill Leachate Records

Date	Time	Measurement in Inches from top of manhole	Water Depth in Inches	
10/21/22	12:00 PM	145	68	Before Pumping
10/27/22	1:30 PM	143	70	Before Pumping
11/1/22	7:38 AM	142	71	Before Pumping
11/1/22	8:48 AM	170	43	After Pumping
11/2/22	9:00 AM	168	45	Before Pumping
11/8/22	3:00 PM	165	48	Before Pumping
11/15/22	7:30 AM	159	54	Before Pumping
11/23/22	7:30 AM	154	59	Before Pumping
11/29/22	11:15 AM	148	65	Before Pumping
12/6/22	10:05 AM	147	66	Before Pumping
12/6/22	11:03 AM	171	42	After Pumping
12/7/22	8:20 AM	169	44	Before Pumping
12/15/22	10:00 AM	158	55	Before Pumping
12/22/22	11:00 AM	142	71	Before Pumping
12/29/22	10:00 AM	136	77	Before Pumping
1/3/23	11:30 AM	136	77	Before Pumping
1/4/23	9:48 AM	134	74	Before Pumping
1/4/23	10:53 AM	170	43	After Pumping
1/17/23	11:45 AM	111	102	Before Pumping
1/26/23	12:30 PM	106	107	Before Pumping
1/31/23	3:00 PM	107	106	Before Pumping
2/1/23	9:35 AM	108	105	Before Pumping
2/1/23	10:27 AM	149	64	After Pumping
2/10/23	2:00 PM	112	101	Before Pumping
2/17/23	10:45 AM	96	117	Before Pumping
2/24/23	1:00 PM	103	110	Before Pumping
3/1/23	1:19 PM	90	123	Before Pumping
3/1/23	2:04 PM	142	71	After Pumping
3/2/23	2:00 PM	95	118	Before Pumping
3/9/23	2:00 PM	94	119	Before Pumping
3/16/23	2:00 PM	86	127	Before Pumping
3/24/23	10:00 AM	93	120	Before Pumping
3/31/23	10:00 AM	84	129	Before Pumping
4/4/23	9:06 AM	85	128	Before Pumping
4/4/23	9:51 AM	141	72	After Pumping
4/7/23	8:15 AM	90	123	Before Pumping

Landfill Leachate Records

Date	Time	Measurement in Inches from top of manhole	Water Depth in Inches	
5/2/23 2:28 PM	2:28	97	116	Before Pumping
5/2/23 3:28 PM	3:28	146	67	After Pumping
5/4/23 2:00 PM	2:00	94	119	Before Pumping
6/6/23 10:53 AM	10:53	109	104	Before Pumping
6/6/23 11:45 AM	11:45	149	64	After Pumping
7/3/23 7:11 AM	7:11	122	91	Before Pumping
7/3/23 8:15 AM	8:15	159	54	After Pumping
8/1/23 7:40 AM	7:40	127	86	Before Pumping
8/1/23 8:47 AM	8:47	162	51	After Pumping
9/5/23 8:37 AM	8:37	139	74	Before Pumping
9/5/23 9:39 AM	9:39	169	44	After Pumping
10/3/23 8:10 AM	8:10	119	94	Before Pumping
10/3/23 9:10 AM	9:10	154	59	After Pumping
11/10/23 10:12 AM	10:12	130	83	Before Pumping
11/10/23 11:23 AM	11:23	164	49	After Pumping
12/5/23 8:57 AM	8:57	132	81	Before Pumping
12/5/23 10:02 AM	10:02	168	45	After Pumping
4/9/25 10:00 AM	10:00	93.6	119.4	Before Pumping
5/6/25 7:30 AM	7:30	95.4	117.6	Before Pumping
5/6/25 8:20 AM	8:20	145.2	67.8	After Pumping
5/6/25 8:21 AM	8:21	144	69	After Pumping
5/6/25 8:22 AM	8:22	142.8	70.2	After Pumping
5/6/25 8:23 AM	8:23	141.6	71.4	After Pumping
5/6/25 8:24 AM	8:24	141	72	After Pumping
5/6/25 8:25 AM	8:25	140.4	72.6	After Pumping
5/6/25 8:26 AM	8:26	130.2	82.8	After Pumping
5/6/25 8:31 AM	8:31	115.2	97.8	After Pumping
5/6/25 8:36 AM	8:36	109.8	103.2	After Pumping
5/6/25 8:46 AM	8:46	106.8	106.2	After Pumping
5/6/25 9:04 AM	9:04	103.8	109.2	After Pumping
5/6/25 9:21 AM	9:21	102.6	110.4	After Pumping
5/7/25 8:00 AM	8:00	98.4	114.6	After Pumping
6/17/25 8:36 AM	8:36	85.2	127.8	Before Pumping
6/17/25 9:19 AM	9:19	144	69	After Pumping
6/17/25 9:20 AM	9:20	139.2	73.8	After Pumping
6/17/25 9:21 AM	9:21	139.2	73.8	After Pumping

Landfill Leachate Records

Date	Time	Measurement in Inches from top of manhole	Water Depth in Inches	
6/17/25 9:22 AM	9:22	138.6	74.4	After Pumping
6/17/25 9:23 AM	9:23	135	78	After Pumping
6/17/25 9:24 AM	9:24	127.2	85.8	After Pumping
6/17/25 9:29 AM	9:29	110.4	102.6	After Pumping
6/17/25 9:34 AM	9:34	106.8	106.2	After Pumping
6/17/25 9:39 AM	9:39	103.8	109.2	After Pumping
6/17/25 9:44 AM	9:44	102	111	After Pumping
6/17/25 10:04 AM	10:04	99.6	113.4	After Pumping
6/17/25 10:19 AM	10:19	99	114	After Pumping
6/18/25 8:00 AM	8:00	76.8	136.2	After Pumping
7/8/25 8:03 AM	8:03	106.2	106.8	Before Pumping
7/8/25 8:54 AM	8:54	148.8	64.2	After Pumping
7/8/25 8:55 AM	8:55	144.6	68.4	After Pumping
7/8/25 8:56 AM	8:56	143.4	69.6	After Pumping
7/8/25 8:57 AM	8:57	143.4	69.6	After Pumping
7/8/25 8:58 AM	8:58	142.8	70.2	After Pumping
7/8/25 8:03 AM	8:59	142.8	70.2	After Pumping
7/8/25 9:04 AM	9:04	142.22	70.78	After Pumping
7/8/25 9:09 AM	9:09	140.4	72.6	After Pumping
7/8/25 9:14 AM	9:14	132	81	After Pumping
7/8/25 9:19 AM	9:19	121.8	91.2	After Pumping
7/8/25 9:39 AM	9:39	118.8	94.2	After Pumping
7/8/25 9:54 AM	9:54	117.6	95.4	After Pumping
7/9/25 7:51 AM	7:51	111	102	After Pumping
8/5/25 8:07 AM	8:07	103.2	109.8	Before Pumping
8/5/25 8:52 AM	8:52	146.76	66.24	After Pumping
8/5/25 8:53 AM	8:53	144	69	After Pumping
8/5/25 8:54 AM	8:54	142.8	70.2	After Pumping
8/5/25 8:55 AM	8:55	142.8	70.2	After Pumping
8/5/25 8:56 AM	8:56	142.8	70.2	After Pumping
8/5/25 8:57 AM	8:57	142.2	70.8	After Pumping
8/5/25 9:02 AM	9:02	139.8	73.2	After Pumping
8/5/25 9:07 AM	9:07	127.2	85.8	After Pumping
8/5/25 9:12 AM	9:12	117.6	95.4	After Pumping
8/5/25 9:17 AM	9:17	114.6	98.4	After Pumping
8/5/25 9:37 AM	9:37	113.4	99.6	After Pumping

Landfill Leachate Records

Date	Time	Measurement in Inches from top of manhole	Water Depth in Inches	
8/5/25	9:52 AM	112.8	100.2	After Pumping
8/6/25	10:05 AM	106.8	106.2	After Pumping
9/3/25	7:54 AM	111	102	Before Pumping
9/3/25	8:47 AM	152.4	60.6	After Pumping
9/3/25	8:48 AM	150	63	After Pumping
9/3/25	8:49 AM	149.4	63.6	After Pumping
9/3/25	8:50 AM	148.8	64.2	After Pumping
9/3/25	8:51 AM	148.8	64.2	After Pumping
9/3/25	8:52 AM	148.2	64.8	After Pumping
9/3/25	8:57 AM	147	66	After Pumping
9/3/25	9:02 AM	145.2	67.8	After Pumping
9/3/25	9:07 AM	144	69	After Pumping
9/3/25	9:12 AM	142.2	70.8	After Pumping
9/3/25	9:32 AM	128.4	84.6	After Pumping
9/3/25	9:47 AM	124.8	88.2	After Pumping
9/4/25	7:48 AM	117	96	After Pumping
10/6/25	8:07 AM	128.4	84.6	Before Pumping
10/6/25	9:19 AM	168	45	After Pumping
10/6/25	9:20 AM	164.4	48.6	After Pumping
10/6/25	9:21 AM	164.4	48.6	After Pumping
10/6/25	9:22 AM	164.4	48.6	After Pumping
10/6/25	9:23 AM	164.4	48.6	After Pumping
10/6/25	9:24 AM	163.8	49.2	After Pumping
10/6/25	9:25 AM	163.2	49.8	After Pumping
10/6/25	9:30 AM	163.2	49.8	After Pumping
10/6/25	9:35 AM	162.6	50.4	After Pumping
10/6/25	9:40 AM	162	51	After Pumping
10/6/25	10:05 AM	160.8	52.2	After Pumping
10/6/25	10:20 AM	159.6	53.4	After Pumping
10/7/25	9:00 AM	141.6	71.4	After Pumping
11/4/25	8:08 AM	133.2	79.8	Before Pumping
11/4/25	9:30 AM	172.8	40.2	After Pumping
11/4/25	9:31 AM	170.4	42.6	After Pumping
11/4/25	9:32 AM	169.2	43.8	After Pumping
11/4/25	9:33 AM	169.2	43.8	After Pumping
11/4/25	9:34 AM	169.2	43.8	After Pumping

Landfill Leachate Records

Date	Time	Measurement in Inches from top of manhole	Water Depth in Inches	
11/4/25 9:35 AM	9:35	169.2	43.8	After Pumping
11/4/25 9:40 AM	9:40	169.2	43.8	After Pumping
11/4/25 9:45 AM	9:45	169.2	43.8	After Pumping
11/4/25 9:50 AM	9:50	169.2	43.8	After Pumping
11/4/25 9:55 AM	9:55	169.2	43.8	After Pumping
11/4/25 10:15 AM	10:15	169.2	43.8	After Pumping
11/4/25 10:30 AM	10:30	169.2	43.8	After Pumping
11/5/25 9:00 AM	9:00	158.4	54.6	After Pumping
12/9/25 9:33 AM	9:33	134.4	78.6	Before Pumping
12/9/25 11:02 AM	11:02	173.4	39.6	After Pumping
12/9/25 11:03 AM	11:03	171	42	After Pumping
12/9/25 11:04 AM	11:04	171	42	After Pumping
12/9/25 11:05 AM	11:05	170.4	42.6	After Pumping
12/9/25 1:06 AM	11:06	170.4	42.6	After Pumping
12/9/25 11:07 AM	11:07	170.4	42.6	After Pumping
12/9/25 11:12 AM	11:12	170.4	42.6	After Pumping
12/9/25 11:17 AM	11:17	170.4	42.6	After Pumping
12/9/25 11:22 AM	11:22	170.4	42.6	After Pumping
12/9/25 11:27 AM	11:27	170.4	42.6	After Pumping
12/9/25 11:47 AM	11:47	169.8	43.2	After Pumping
12/9/25 12:02 AM	12:02	169.2	43.8	After Pumping
12/10/25 11:33 AM	11:33	161.4	51.6	After Pumping
1/13/26 9:00 AM	9:00	96	117	Before Pumping
1/13/26 10:37 AM	10:37	139.2	73.8	After Pumping
1/13/26 10:38 AM	10:38	140.2	72.8	After Pumping
1/13/26 10:39 AM	10:39	139.8	73.2	After Pumping
1/13/26 10:40 AM	10:40	139.2	73.8	After Pumping
1/13/26 10:41 AM	10:41	138.6	74.4	After Pumping
1/13/26 10:42 AM	10:42	129.6	83.4	After Pumping
1/13/26 10:47 AM	10:47	115.8	97.2	After Pumping
1/13/26 10:52 AM	10:52	107.4	105.6	After Pumping
1/13/26 10:57 AM	10:57	103.2	109.8	After Pumping
1/13/26 11:02 AM	11:02	102	111	After Pumping
1/13/26 11:22 AM	11:22	100.8	112.2	After Pumping
1/13/26 11:37 AM	11:37	99.6	113.4	After Pumping
1/14/26 7:25 AM	7:25	99.6	113.4	After Pumping

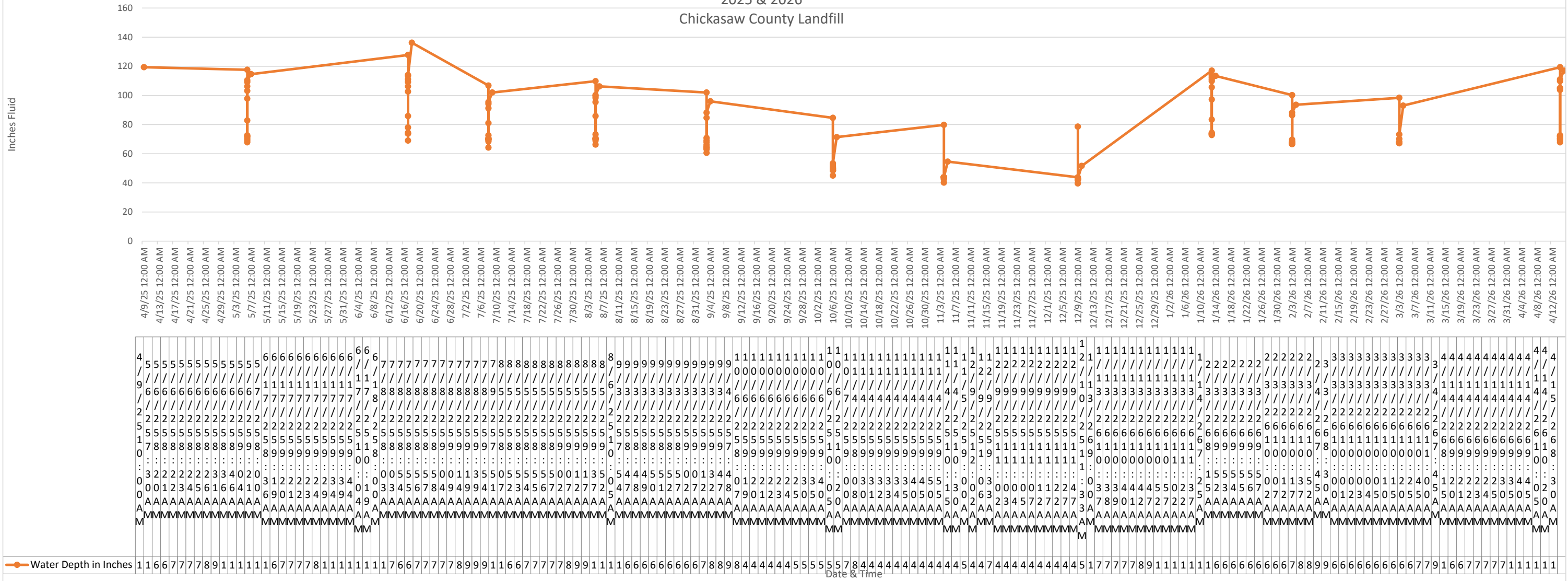
Landfill Leachate Records

Date	Time	Measurement in Inches from top of manhole	Water Depth in Inches	
2/3/26 8:15 AM	8:15	112.8	100.2	Before Pumping
2/3/26 9:52 AM	9:52	146.4	66.6	After Pumping
2/3/26 9:53 AM	9:53	146.4	66.6	After Pumping
2/3/26 9:54 AM	9:54	145.8	67.2	After Pumping
2/3/26 9:55 AM	9:55	145.8	67.2	After Pumping
2/3/26 9:56 AM	9:56	146.4	66.6	After Pumping
2/3/26 9:57 AM	9:57	145.2	67.8	After Pumping
2/3/26 10:02 AM	10:02	145.2	67.8	After Pumping
2/3/26 10:07 AM	10:07	145.8	67.2	After Pumping
2/3/26 10:12 AM	10:12	144.6	68.4	After Pumping
2/3/26 10:17 AM	10:17	143.4	69.6	After Pumping
2/3/26 10:37 AM	10:37	126.6	86.4	After Pumping
2/3/26 10:52 AM	10:52	124.8	88.2	After Pumping
2/4/26 7:45 AM	7:45	119.4	93.6	After Pumping
3/3/26 8:30 AM	8:30	114.6	98.4	Before Pumping
3/3/26 10:00 AM	10:00	145.8	67.2	After Pumping
3/3/26 10:01 AM	10:01	145.8	67.2	After Pumping
3/3/26 10:02 AM	10:02	145.2	67.8	After Pumping
3/3/26 10:03 AM	10:03	145.2	67.8	After Pumping
3/3/26 10:04 AM	10:04	145.2	67.8	After Pumping
3/3/26 10:05 AM	10:05	145.2	67.8	After Pumping
3/3/26 10:10 AM	10:10	145.2	67.8	After Pumping
3/3/26 10:15 AM	10:15	145.2	67.8	After Pumping
3/3/26 10:20 AM	10:20	145.2	67.8	After Pumping
3/3/26 10:25 AM	10:25	145.2	67.8	After Pumping
3/3/26 10:45 AM	10:45	142.8	70.2	After Pumping
3/3/26 11:00 AM	11:00	139.8	73.2	After Pumping
3/4/26 7:45 AM	7:45	120	93	After Pumping
4/14/26 8:15 AM	8:15	93.6	119.4	Before Pumping
4/14/26 9:20 AM	9:20	145.2	67.8	After Pumping
4/14/26 9:21 AM	9:21	144	69	After Pumping
4/14/26 9:22 AM	9:22	142.8	70.2	After Pumping
4/14/26 9:23 AM	9:23	142.8	70.2	After Pumping
4/14/26 9:24 AM	9:24	141.6	71.4	After Pumping
4/14/26 9:25 AM	9:25	141	72	After Pumping
4/14/26 9:30 AM	9:30	140.4	72.6	After Pumping

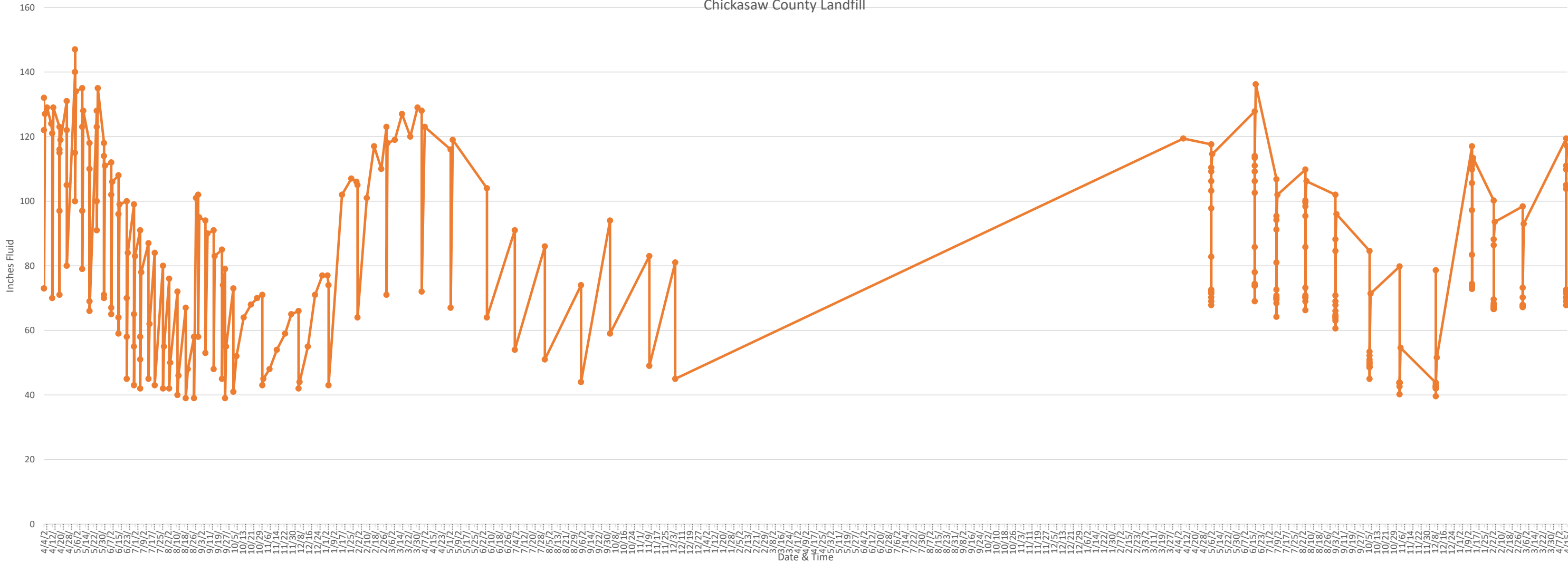
Landfill Leachate Records

Date	Time	Measurement in Inches from top of manhole	Water Depth in Inches	
4/14/26 9:35 AM	9:35	108	105	After Pumping
4/14/26 9:40 AM	9:40	109.2	103.8	After Pumping
4/14/26 9:45 AM	9:45	108	105	After Pumping
4/14/26 10:05 AM	10:05	103.2	109.8	After Pumping
4/14/26 10:20 AM	10:20	102	111	After Pumping
4/15/26 8:30 AM	8:30	96	117	After Pumping

Fluid Level in Leachate Tank 2025 & 2026 Chickasaw County Landfill



Fluid Level in Leachate Tank
2022-2026
Chickasaw County Landfill



ATTACHMENT C

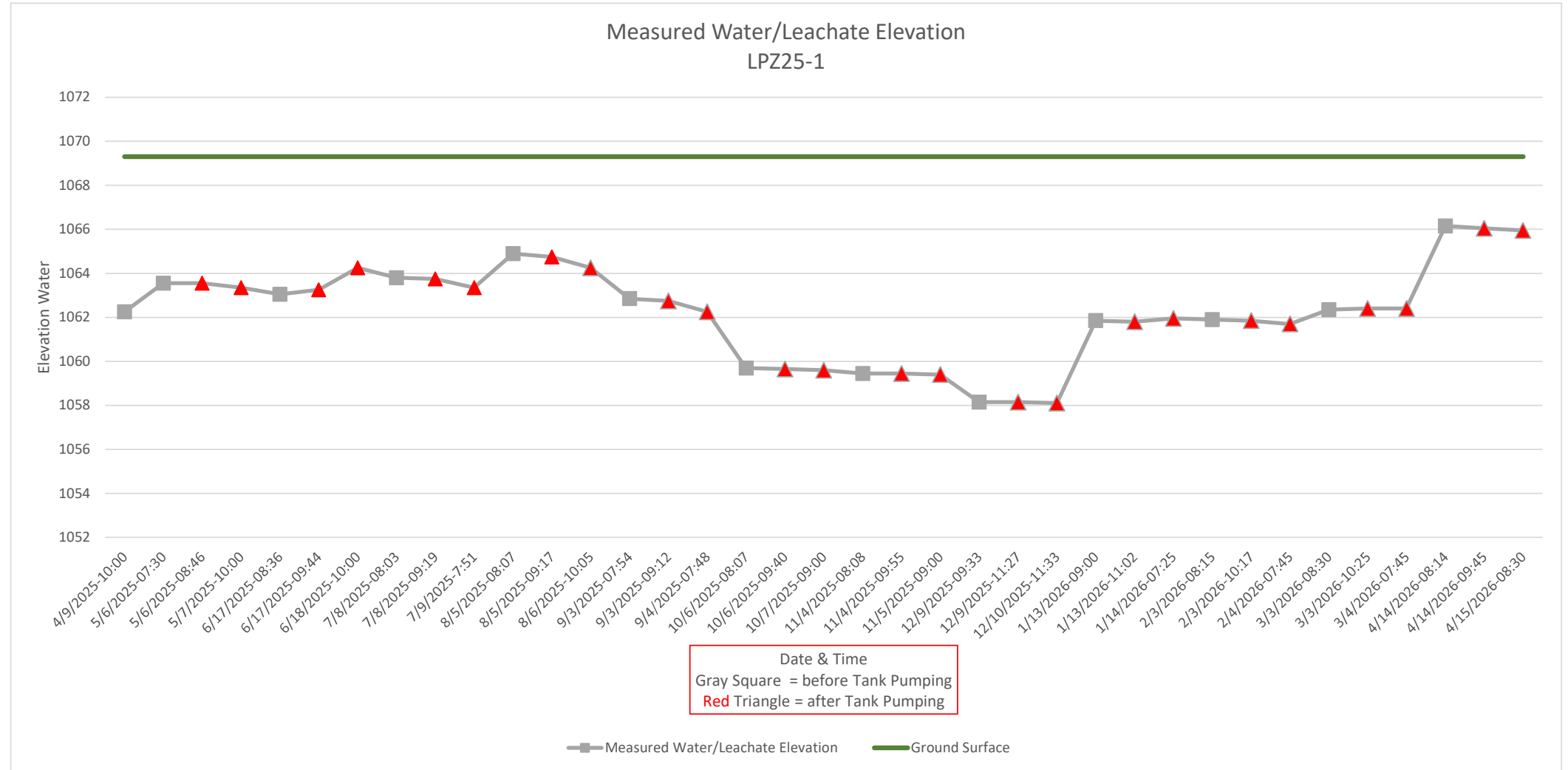
LEACHATE HEAD MONITORING LPZ25-1 THROUGH LPZ25-5

APRIL 2025 THROUGH APRIL 2026

Leachate Level Monitoring Summary
Chickasaw County Landfill - CLOSED
19-SDP-01-72C (Rescinded 2024)

Ground = 1069.3

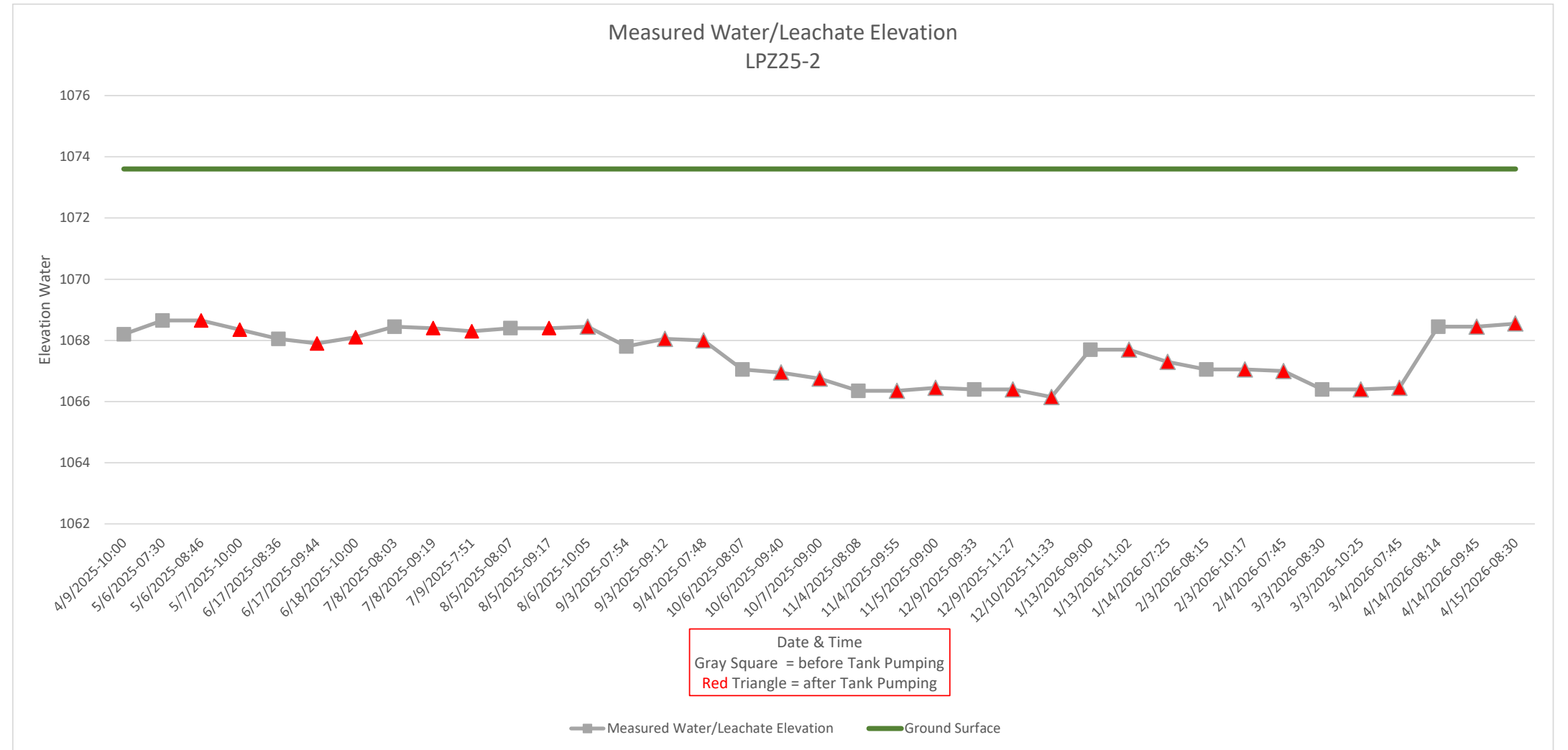
Date	LPZ 25-1		
	Top of Casing (TOC) Elevation	Measured Depth to Water (ft below TOC)	Water/Leachate Elevation
4/9/2025-10:00	1072.55	10.30	1062.25
5/6/2025-07:30	1072.55	9.00	1063.55
5/6/2025-08:46	1072.55	9.00	1063.55
5/7/2025-10:00	1072.55	9.20	1063.35
6/17/2025-08:36	1072.55	9.50	1063.05
6/17/2025-09:44	1072.55	9.30	1063.25
6/18/2025-10:00	1072.55	8.30	1064.25
7/8/2025-08:03	1072.55	8.75	1063.8
7/8/2025-09:19	1072.55	8.80	1063.75
7/9/2025-7:51	1072.55	9.20	1063.35
8/5/2025-08:07	1072.55	7.65	1064.9
8/5/2025-09:17	1072.55	7.80	1064.75
8/6/2025-10:05	1072.55	8.30	1064.25
9/3/2025-07:54	1072.55	9.70	1062.85
9/3/2025-09:12	1072.55	9.80	1062.75
9/4/2025-07:48	1072.55	10.30	1062.25
10/6/2025-08:07	1072.55	12.85	1059.7
10/6/2025-09:40	1072.55	12.90	1059.65
10/7/2025-09:00	1072.55	12.95	1059.6
11/4/2025-08:08	1072.55	13.10	1059.45
11/4/2025-09:55	1072.55	13.10	1059.45
11/5/2025-09:00	1072.55	13.15	1059.4
12/9/2025-09:33	1072.55	14.40	1058.15
12/9/2025-11:27	1072.55	14.40	1058.15
12/10/2025-11:33	1072.55	14.45	1058.1
1/13/2026-09:00	1072.55	10.70	1061.85
1/13/2026-11:02	1072.55	10.75	1061.8
1/14/2026-07:25	1072.55	10.60	1061.95
2/3/2026-08:15	1072.55	10.65	1061.896
2/3/2026-10:17	1072.55	10.70	1061.85
2/4/2026-07:45	1072.55	10.85	1061.7
3/3/2026-08:30	1072.55	10.20	1062.35
3/3/2026-10:25	1072.55	10.15	1062.4
3/4/2026-07:45	1072.55	10.15	1062.4
4/14/2026-08:14	1072.55	6.40	1066.15
4/14/2026-09:45	1072.55	6.50	1066.05
4/15/2026-08:30	1072.55	6.60	1065.95
Average			1062.27
Maximum			1066.15
Minimum			1058.10



Leachate Level Monitoring Summary
Chickasaw County Landfill - CLOSED
19-SDP-01-72C (Rescinded 2024)

Ground = 1073.6

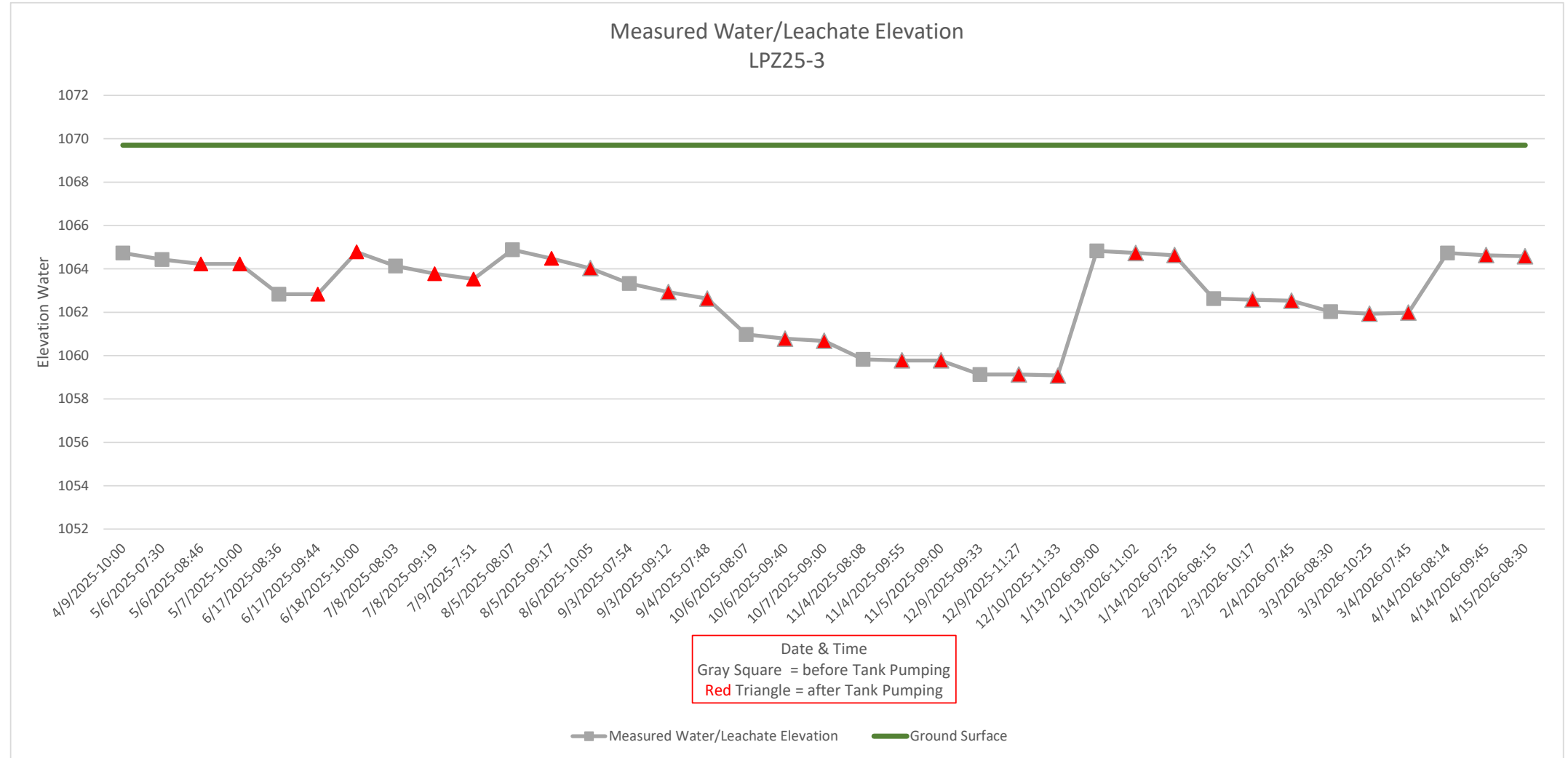
Date	LPZ 25-2		
	Top of Casing (TOC) Elevation	Measured Depth to Water (ft below TOC)	Water/Leachate Elevation
4/9/2025-10:00	1077.45	9.25	1068.2
5/6/2025-07:30	1077.45	8.80	1068.65
5/6/2025-08:46	1077.45	8.80	1068.65
5/7/2025-10:00	1077.45	9.10	1068.35
6/17/2025-08:36	1077.45	9.40	1068.05
6/17/2025-09:44	1077.45	9.55	1067.9
6/18/2025-10:00	1077.45	9.35	1068.1
7/8/2025-08:03	1077.45	9.00	1068.45
7/8/2025-09:19	1077.45	9.05	1068.4
7/9/2025-7:51	1077.45	9.15	1068.3
8/5/2025-08:07	1077.45	9.05	1068.4
8/5/2025-09:17	1077.45	9.05	1068.4
8/6/2025-10:05	1077.45	9.00	1068.45
9/3/2025-07:54	1077.45	9.65	1067.8
9/3/2025-09:12	1077.45	9.40	1068.05
9/4/2025-07:48	1077.45	9.45	1068
10/6/2025-08:07	1077.45	10.40	1067.05
10/6/2025-09:40	1077.45	10.50	1066.95
10/7/2025-09:00	1077.45	10.70	1066.75
11/4/2025-08:08	1077.45	11.10	1066.35
11/4/2025-09:55	1077.45	11.10	1066.35
11/5/2025-09:00	1077.45	11.00	1066.45
12/9/2025-09:33	1077.45	11.05	1066.4
12/9/2025-11:27	1077.45	11.05	1066.4
12/10/2025-11:33	1077.45	11.30	1066.15
1/13/2026-09:00	1077.45	9.75	1067.7
1/13/2026-11:02	1077.45	9.75	1067.7
1/14/2026-07:25	1077.45	10.15	1067.3
2/3/2026-08:15	1077.45	10.40	1067.05
2/3/2026-10:17	1077.45	10.40	1067.05
2/4/2026-07:45	1077.45	10.45	1067
3/3/2026-08:30	1077.45	11.05	1066.4
3/3/2026-10:25	1077.45	11.05	1066.4
3/4/2026-07:45	1077.45	11.00	1066.45
4/14/2026-08:14	1077.45	9.00	1068.45
4/14/2026-09:45	1077.45	9.00	1068.45
4/15/2026-08:30	1077.45	8.90	1068.55
Average			1067.55
Maximum			1068.65
Minimum			1066.15



Leachate Level Monitoring Summary
Chickasaw County Landfill - CLOSED
19-SDP-01-72C (Rescinded 2024)

Ground = 1069.7

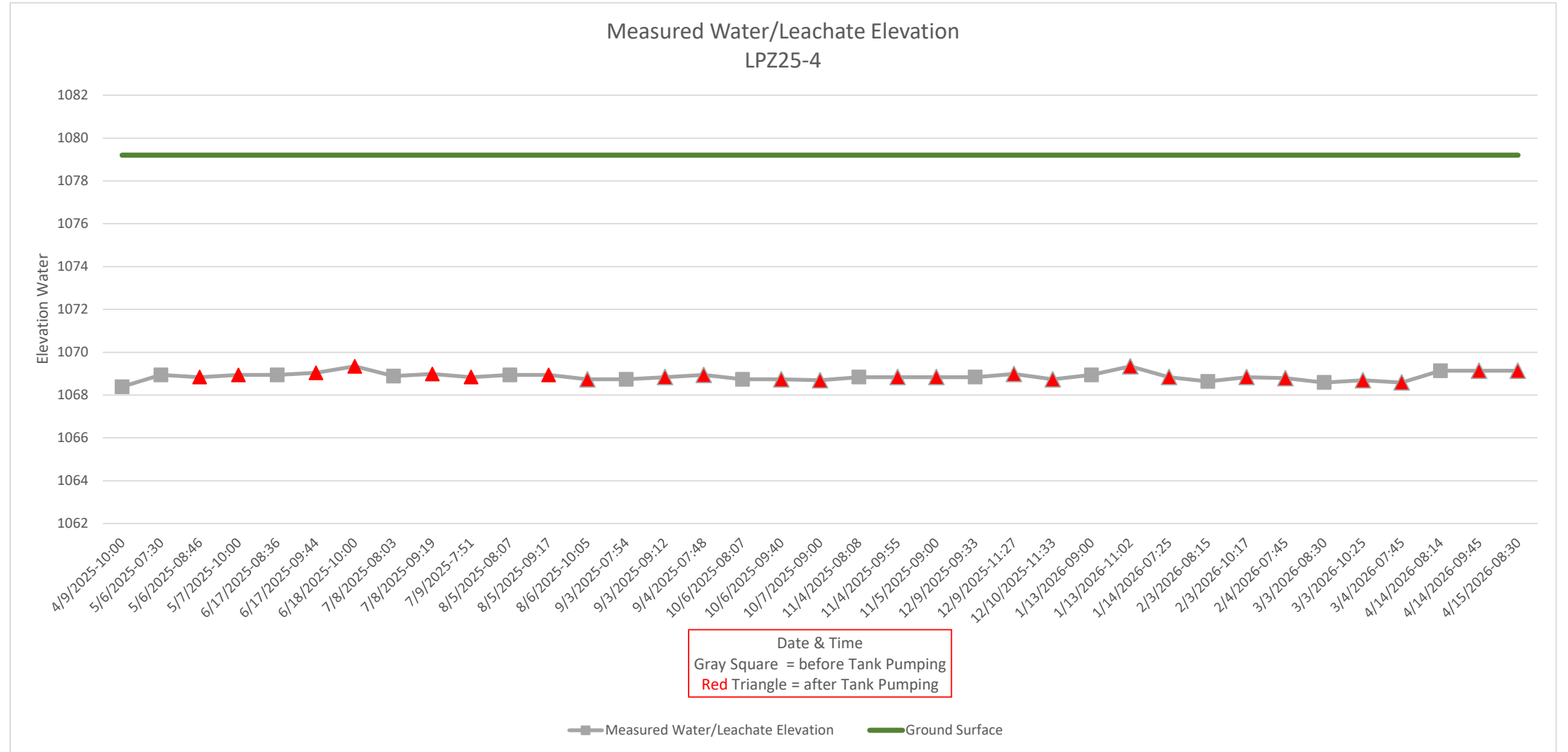
Date	LPZ 25-3		
	Top of Casing (TOC) Elevation	Measured Depth to Water (ft below TOC)	Water/Leachate Elevation
4/9/2025-10:00	1073.43	8.70	1064.73
5/6/2025-07:30	1073.43	9.00	1064.43
5/6/2025-08:46	1073.43	9.20	1064.23
5/7/2025-10:00	1073.43	9.20	1064.23
6/17/2025-08:36	1073.43	10.60	1062.83
6/17/2025-09:44	1073.43	10.60	1062.83
6/18/2025-10:00	1073.43	8.65	1064.78
7/8/2025-08:03	1073.43	9.30	1064.13
7/8/2025-09:19	1073.43	9.65	1063.78
7/9/2025-7:51	1073.43	9.90	1063.53
8/5/2025-08:07	1073.43	8.55	1064.88
8/5/2025-09:17	1073.43	8.95	1064.48
8/6/2025-10:05	1073.43	9.40	1064.03
9/3/2025-07:54	1073.43	10.10	1063.33
9/3/2025-09:12	1073.43	10.50	1062.93
9/4/2025-07:48	1073.43	10.80	1062.63
10/6/2025-08:07	1073.43	12.45	1060.98
10/6/2025-09:40	1073.43	12.65	1060.78
10/7/2025-09:00	1073.43	12.75	1060.68
11/4/2025-08:08	1073.43	13.60	1059.83
11/4/2025-09:55	1073.43	13.65	1059.78
11/5/2025-09:00	1073.43	13.65	1059.78
12/9/2025-09:33	1073.43	14.30	1059.13
12/9/2025-11:27	1073.43	14.30	1059.13
12/10/2025-11:33	1073.43	14.35	1059.08
1/13/2026-09:00	1073.43	8.60	1064.83
1/13/2026-11:02	1073.43	8.70	1064.73
1/14/2026-07:25	1073.43	8.80	1064.63
2/3/2026-08:15	1073.43	10.80	1062.63
2/3/2026-10:17	1073.43	10.85	1062.58
2/4/2026-07:45	1073.43	10.90	1062.53
3/3/2026-08:30	1073.43	11.40	1062.03
3/3/2026-10:25	1073.43	11.50	1061.93
3/4/2026-07:45	1073.43	11.45	1061.98
4/14/2026-08:14	1073.43	8.70	1064.73
4/14/2026-09:45	1073.43	8.80	1064.63
4/15/2026-08:30	1073.43	8.85	1064.58
Average			1062.78
Maximum			1064.88
Minimum			1059.08



Leachate Level Monitoring Summary
Chickasaw County Landfill - CLOSED
19-SDP-01-72C (Rescinded 2024)

Ground = 1079.2

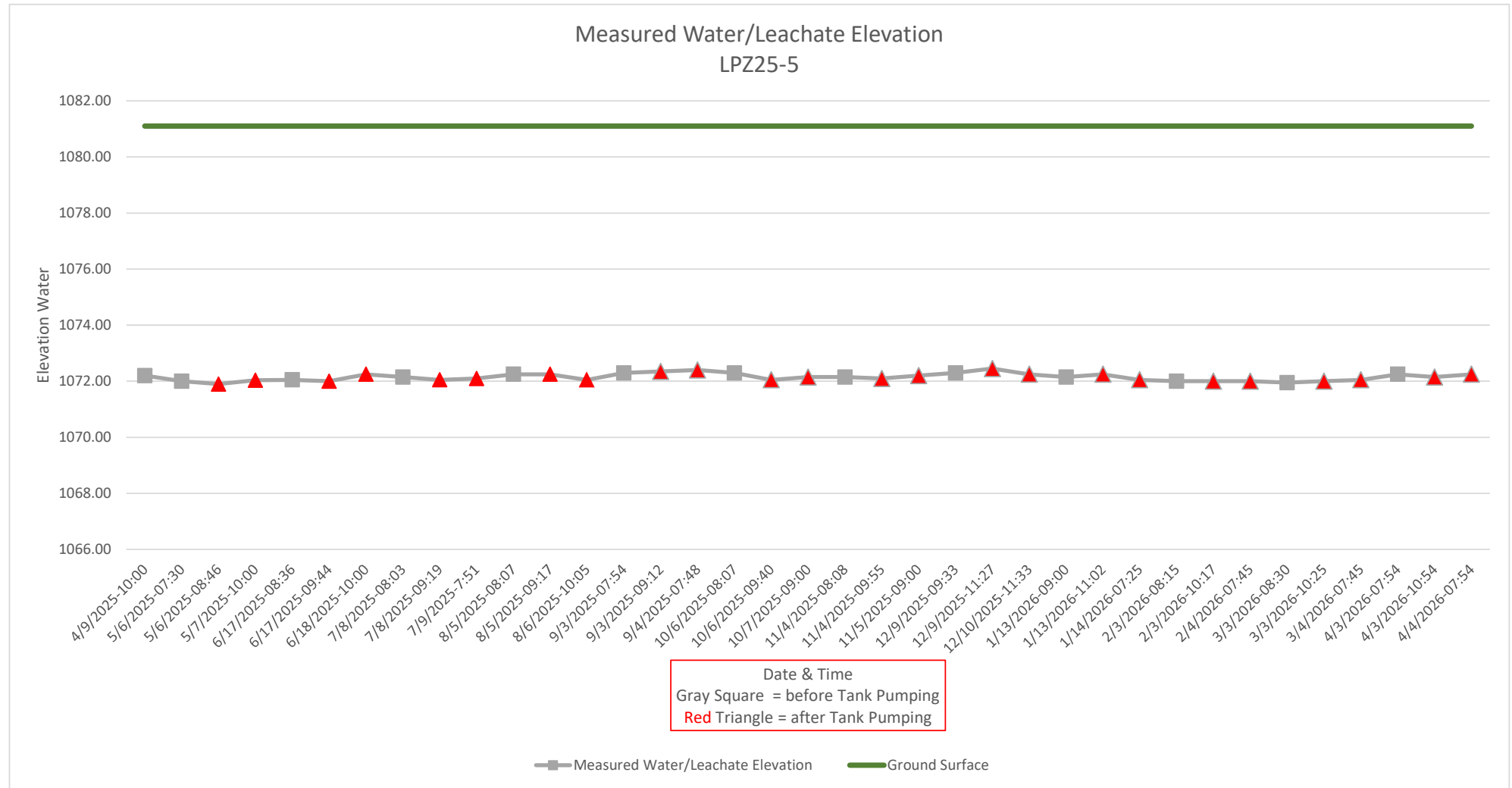
Date	LPZ 25-4		
	Top of Casing (TOC) Elevation	Measured Depth to Water (ft below TOC)	Water/Leachate Elevation
4/9/2025-10:00	1083.94	15.55	1068.39
5/6/2025-07:30	1083.94	15.00	1068.94
5/6/2025-08:46	1083.94	15.10	1068.84
5/7/2025-10:00	1083.94	15.00	1068.94
6/17/2025-08:36	1083.94	15.00	1068.94
6/17/2025-09:44	1083.94	14.90	1069.04
6/18/2025-10:00	1083.94	14.60	1069.34
7/8/2025-08:03	1083.94	15.05	1068.89
7/8/2025-09:19	1083.94	14.95	1068.99
7/9/2025-7:51	1083.94	15.10	1068.84
8/5/2025-08:07	1083.94	15.00	1068.94
8/5/2025-09:17	1083.94	15.00	1068.94
8/6/2025-10:05	1083.94	15.20	1068.74
9/3/2025-07:54	1083.94	15.20	1068.74
9/3/2025-09:12	1083.94	15.10	1068.84
9/4/2025-07:48	1083.94	15.00	1068.94
10/6/2025-08:07	1083.94	15.20	1068.74
10/6/2025-09:40	1083.94	15.20	1068.74
10/7/2025-09:00	1083.94	15.25	1068.69
11/4/2025-08:08	1083.94	15.10	1068.84
11/4/2025-09:55	1083.94	15.10	1068.84
11/5/2025-09:00	1083.94	15.10	1068.84
12/9/2025-09:33	1083.94	15.10	1068.84
12/9/2025-11:27	1083.94	14.95	1068.99
12/10/2025-11:33	1083.94	15.20	1068.74
1/13/2026-09:00	1083.94	15.00	1068.94
1/13/2026-11:02	1083.94	14.60	1069.34
1/14/2026-07:25	1083.94	15.10	1068.84
2/3/2026-08:15	1083.94	15.30	1068.64
2/3/2026-10:17	1083.94	15.10	1068.84
2/4/2026-07:45	1083.94	15.15	1068.79
3/3/2026-08:30	1083.94	15.35	1068.59
3/3/2026-10:25	1083.94	15.25	1068.69
3/4/2026-07:45	1083.94	15.35	1068.59
4/14/2026-08:14	1083.94	14.80	1069.14
4/14/2026-09:45	1083.94	14.80	1069.14
4/15/2026-08:30	1083.94	14.80	1069.14
Average			1068.87
Maximum			1069.34
Minimum			1068.39



Leachate Level Monitoring Summary
Chickasaw County Landfill - CLOSED
19-SDP-01-72C (Rescinded 2024)

Ground = 1081.1

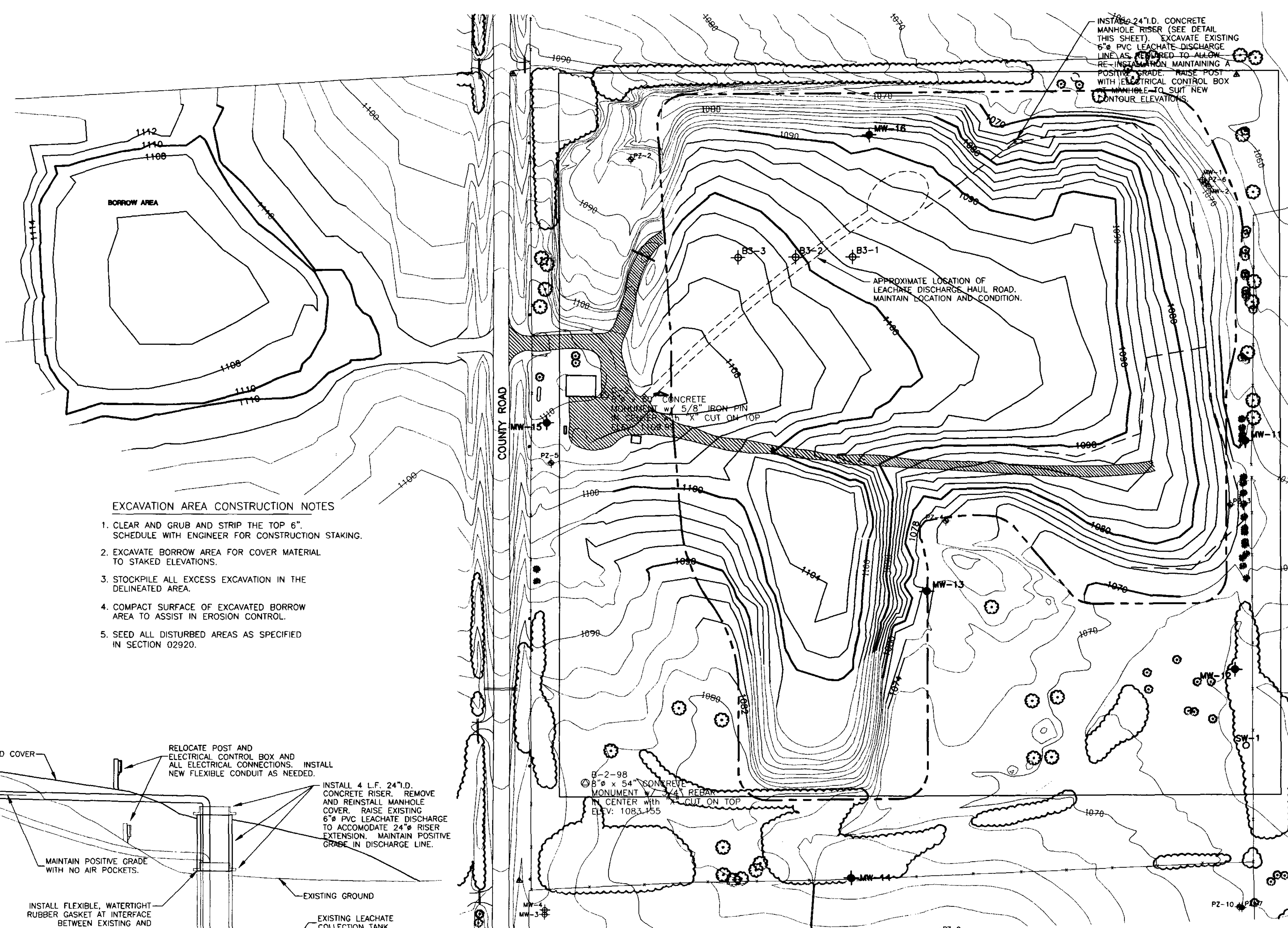
Date	LPZ 25-5		
	Top of Casing (TOC) Elevation	Measured Depth to Water (ft below TOC)	Water/Leachate Elevation
4/9/2025-10:00	1086.75	14.55	1072.20
5/6/2025-07:30	1086.75	14.75	1072.00
5/6/2025-08:46	1086.75	14.85	1071.90
5/7/2025-10:00	1086.75	14.90	1072.04
6/17/2025-08:36	1086.75	14.70	1072.05
6/17/2025-09:44	1086.75	14.75	1072.00
6/18/2025-10:00	1086.75	14.50	1072.25
7/8/2025-08:03	1086.75	14.60	1072.15
7/8/2025-09:19	1086.75	14.70	1072.05
7/9/2025-7:51	1086.75	14.65	1072.10
8/5/2025-08:07	1086.75	14.50	1072.25
8/5/2025-09:17	1086.75	14.50	1072.25
8/6/2025-10:05	1086.75	14.70	1072.05
9/3/2025-07:54	1086.75	14.45	1072.30
9/3/2025-09:12	1086.75	14.40	1072.35
9/4/2025-07:48	1086.75	14.35	1072.40
10/6/2025-08:07	1086.75	14.45	1072.30
10/6/2025-09:40	1086.75	14.70	1072.05
10/7/2025-09:00	1086.75	14.60	1072.15
11/4/2025-08:08	1086.75	14.60	1072.15
11/4/2025-09:55	1086.75	14.65	1072.10
11/5/2025-09:00	1086.75	14.55	1072.20
12/9/2025-09:33	1086.75	14.45	1072.30
12/9/2025-11:27	1086.75	14.30	1072.45
12/10/2025-11:33	1086.75	14.50	1072.25
1/13/2026-09:00	1086.75	14.60	1072.15
1/13/2026-11:02	1086.75	14.50	1072.25
1/14/2026-07:25	1086.75	14.70	1072.05
2/3/2026-08:15	1086.75	14.75	1072.00
2/3/2026-10:17	1086.75	14.75	1072.00
2/4/2026-07:45	1086.75	14.75	1072.00
3/3/2026-08:30	1086.75	14.80	1071.95
3/3/2026-10:25	1086.75	14.75	1072.00
3/4/2026-07:45	1086.75	14.70	1072.05
4/3/2026-07:54	1086.75	14.50	1072.25
4/3/2026-10:54	1086.75	14.60	1072.15
4/4/2026-07:54	1086.75	14.50	1072.25
Average			1072.15
Maximum			1072.45
Minimum			1071.90



ATTACHMENT D

1998 CLOSURE CAP CONTOUR MAP

(CLEAN & MARK-UP VERSION)



LEGEND

- LEACHATE COLLECTION LINE
- LEACHATE COLLECTION TANK
- FIELD DEFINED WASTE BOUNDARY
- ▲ SURVEY CONTROL POINT
- ⊙ MONUMENT SET BY HRG
- MW-4 ⊕ EXISTING MONITORING WELL
- PZ-6 ⊕ EXISTING LEACHATE PIEZOMETER
- BS-1 ⊕ SOIL BORING
- MW-11 ⊕ GROUNDWATER MONITORING WELL
- SW-1 SURFACE WATER MONITORING POINT
- ⊕ MW-11 WATER TABLE ELEVATION ON 2/13/98

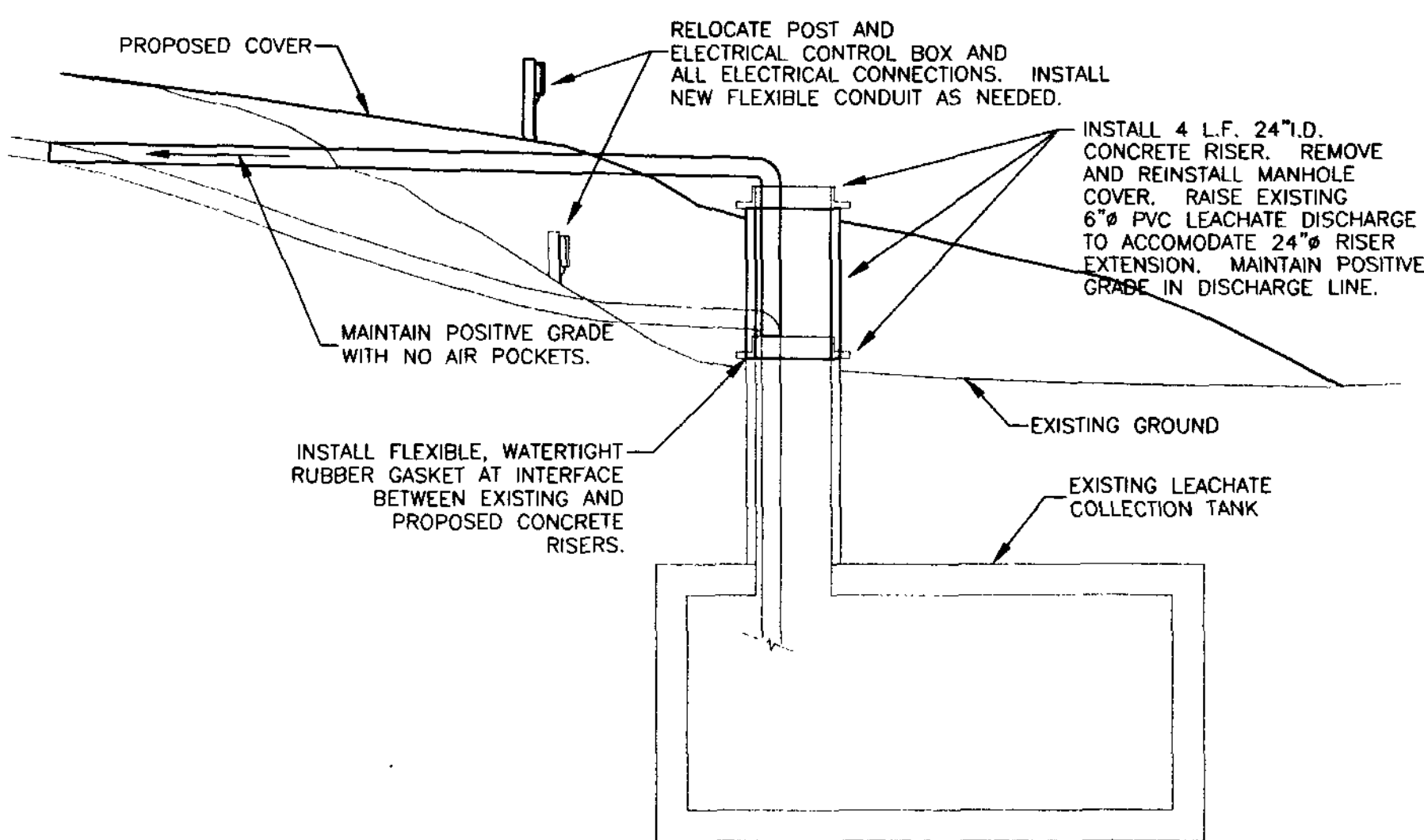
EXCAVATION AREA CONSTRUCTION NOTES

1. CLEAR AND GRUB AND STRIP THE TOP 6". SCHEDULE WITH ENGINEER FOR CONSTRUCTION STAKING.
2. EXCAVATE BORROW AREA FOR COVER MATERIAL TO STAKED ELEVATIONS.
3. STOCKPILE ALL EXCESS EXCAVATION IN THE DELINEATED AREA.
4. COMPACT SURFACE OF EXCAVATED BORROW AREA TO ASSIST IN EROSION CONTROL.
5. SEED ALL DISTURBED AREAS AS SPECIFIED IN SECTION 02920.

COVER AREA CONSTRUCTION NOTES

1. CLEAR AND GRUB APPROXIMATELY 6" OR TO THE TOP OF THE REFUSE AND STOCKPILE IN THE DELINEATED AREA. REMOVE AND PLACE ALL SURFACE REFUSE ENCOUNTERED AS FOLLOWS:
 - A) STOCKPILE ALL RECYCLABLE METAL MATERIAL IN ONE PILE AND ALL WOOD PRODUCTS IN ANOTHER PILE ON THE SOUTH SIDE OF THE METAL ON-SITE BUILDING.
 - B) ALL NON-RECYCLABLE METAL ITEMS AND OTHER REFUSE SHALL BE PLACED IN THE PROVIDED DUMPSTER. THE OWNER IS RESPONSIBLE FOR THE DISPOSAL OF ALL COLLECTED MATERIALS.
2. SCHEDULE WITH ENGINEER FOR CONSTRUCTION STAKING.
3. PLACE AND COMPACT COVER MATERIAL IN 8 INCH LIFTS TO THE SPECIFIED FINAL ELEVATIONS. A MINIMUM 90% STANDARD PROCTOR IS REQUIRED FOR ALL COMPACTED MATERIAL. ANY AREAS TESTED THAT FAIL TO MEET THE REQUIRED 90% COMPACTION WILL BE RECOMPACTED UNTIL THE MINIMUM SPECIFICATION IS ACHIEVED.
4. SPREAD A NOMINAL 4 INCH VEGETATIVE LAYER FROM THE CLEARING AND GRUBBING STOCKPILE OVER THE COMPACTED FILL AREA.
5. GRADE EXCESS STOCKPILE MATERIAL AS DIRECTED BY THE ENGINEER.
6. SEED ALL DISTURBED AREAS AS SPECIFIED IN 02920.

Records Pass Copy



LEACHATE MANHOLE RISER EXTENSION DETAIL
SCALE: NO SCALE

I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

Brian K. Hartman
BRIAN K. HARTMAN, P.E.
License Number: 14049
My license renewal date is DECEMBER 31, 1998.
Pages or sheets covered by this seal:

AMENDMENT # 3
Date: 12/31/98

PLANS AND SPECIFICATIONS APPURTENANT TO
PERMIT FOR SANITARY DISPOSAL PROJECT
NO. 19-SDP-1-72C
DATED 3/5/98

FRANCIS L. HALLADA
7527
IOWA DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION

FINAL PLAN
BASED ON BEST RECORDED KNOWLEDGE
OCTOBER 5, 1998
HOWARD R. GREEN COMPANY, CONSULTING ENGINEERS

NOTE 1
TOPOGRAPHY COMPILED BY STEROPHOTOGRAMMETRIC METHODS FROM AERIAL PHOTOGRAPHY. DATE OF PHOTOGRAPHY: APRIL 28, 1993. CONTOUR INTERVAL: 2 FEET. ELEVATIONS BASED ON MEAN SEA LEVEL.
FINAL COVER CONTOURS BASED ON SURVEY DATA BY HOWARD R. GREEN COMPANY, OCTOBER 5, 1998.

NOTE 2
THE LOCATIONS OF THE LANDFILL AREAS, LEACHATE COLLECTION SYSTEM, AND EXISTING WELLS ARE APPROXIMATE. THESE WERE PLOTTED FROM MAPS BY OTHERS, AND THEIR EXISTENCE AND LOCATIONS WILL BE VERIFIED BY FIELD SURVEY.

DRAWN BY: JEG	JOB DATE: APRIL, 1998
APPROVED: GHF/GJB	JOB NUMBER: 720990J
CAD DATE: October 07, 1998 12:53:38 p.m.	
CAD FILE: 720990J\DWGS\AB-98.DWG (JGALL)	

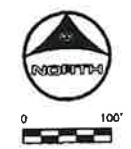
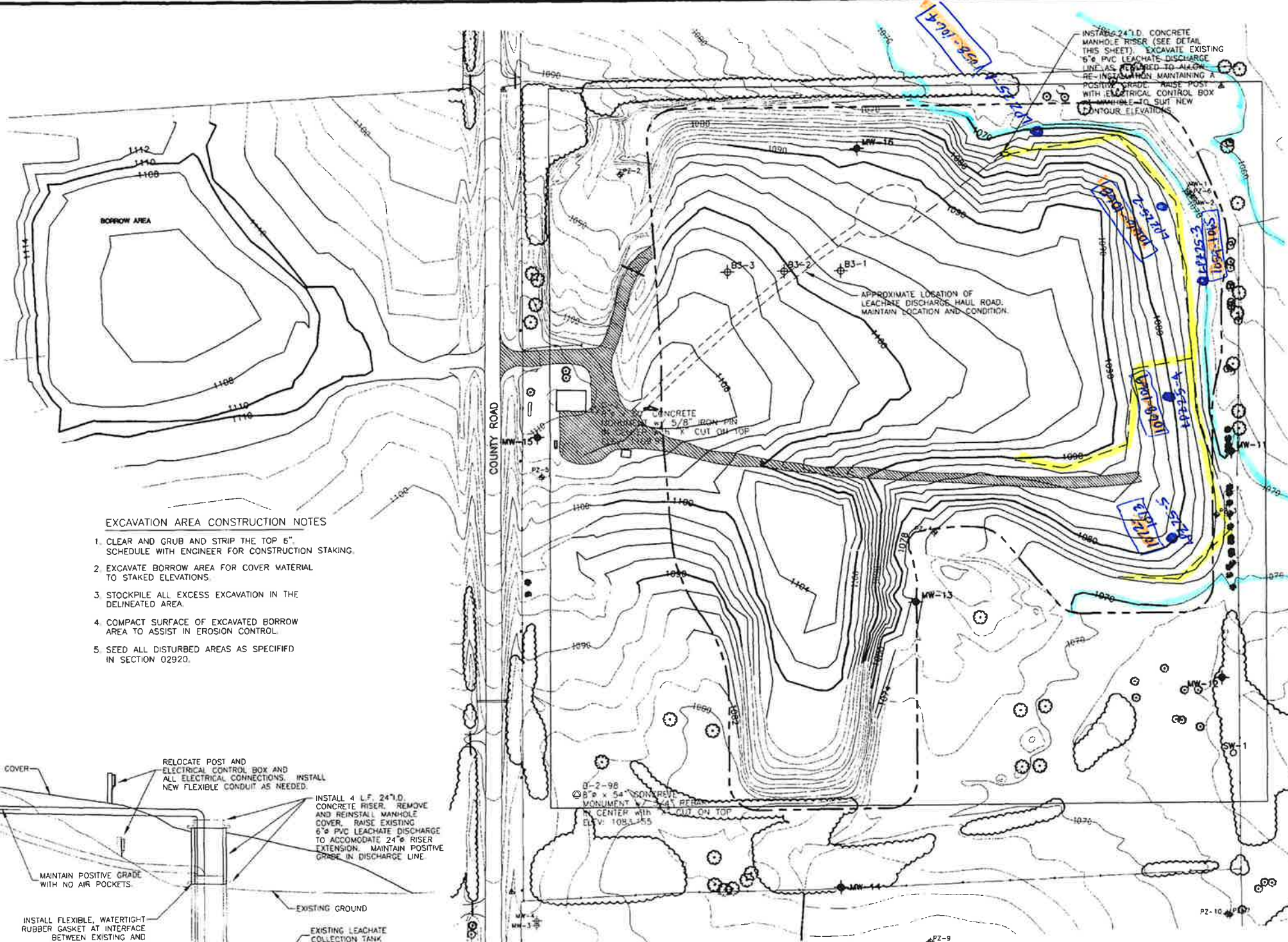
NO.	DATE	BY	REVISION DESCRIPTION
1	3/1/96	JEG	ADD NOTE 2.
2	11/3/97	JEG	ADD NOTE 3, WASTE BOUNDARY.
3	4/21/98	JEG	ADD BORROW AREA CONTOURS, NOTES.
4	10/7/98	JEG	ADD SURVEYED FINAL CONTOURS, WELL LOCATIONS



CHICKASAW COUNTY SANITARY LANDFILL
FINAL COVER CONSTRUCTION
1998

BORROW and COVER AREA
PROPOSED FINAL CONTOURS

SHEET NO.
2A



LEGEND

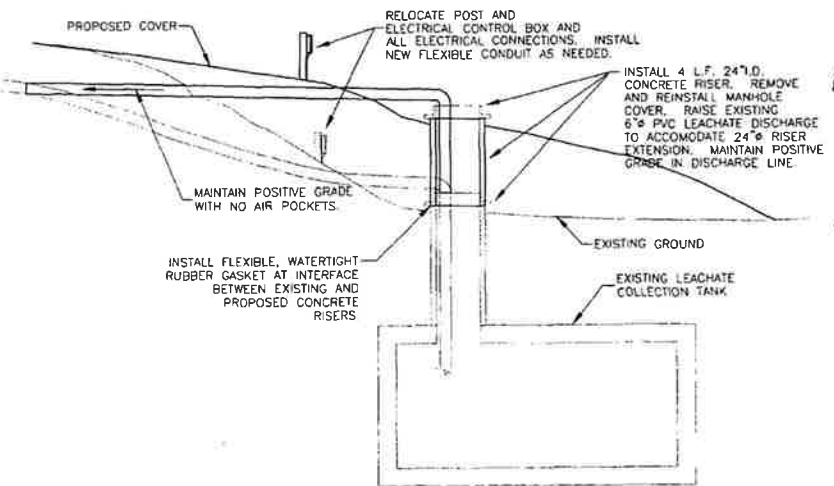
- LEACHATE COLLECTION LINE
- LEACHATE COLLECTION TANK
- FIELD DEFINED WASTE BOUNDARY
- ▲ SURVEY CONTROL POINT
- ⊙ MONUMENT SET BY HRG
- MW-4 ▲ EXISTING MONITORING WELL
- PZ-6 ▲ EXISTING LEACHATE PIEZOMETER
- B3-1 ▲ SOIL BORING
- MW-11 ▲ GROUNDWATER MONITORING WELL
- SW-1 ○ SURFACE WATER MONITORING POINT
- MW-11 ▲ WATER TABLE ELEVATION ON 2/13/98

EXCAVATION AREA CONSTRUCTION NOTES

1. CLEAR AND GRUB AND STRIP THE TOP 6" SCHEDULE WITH ENGINEER FOR CONSTRUCTION STAKING.
2. EXCAVATE BORROW AREA FOR COVER MATERIAL TO STAKED ELEVATIONS.
3. STOCKPILE ALL EXCESS EXCAVATION IN THE DELINEATED AREA.
4. COMPACT SURFACE OF EXCAVATED BORROW AREA TO ASSIST IN EROSION CONTROL.
5. SEED ALL DISTURBED AREAS AS SPECIFIED IN SECTION 02920.

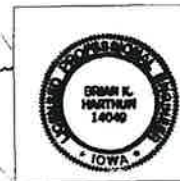
COVER AREA CONSTRUCTION NOTES

1. CLEAR AND GRUB APPROXIMATELY 6" OR TO THE TOP OF THE REFUSE AND STOCKPILE IN THE DELINEATED AREA. REMOVE AND PLACE ALL SURFACE REFUSE ENCOUNTERED AS FOLLOWS:
A) STOCKPILE ALL RECYCLABLE METAL MATERIAL IN ONE PILE AND ALL WOOD PRODUCTS IN ANOTHER PILE ON THE SOUTH SIDE OF THE METAL ON-SITE BUILDING.
B) ALL NON-RECYCLABLE METAL ITEMS AND OTHER REFUSE SHALL BE PLACED IN THE PROVIDED DUMPSTER. THE OWNER IS RESPONSIBLE FOR THE DISPOSAL OF ALL COLLECTED MATERIALS.
2. SCHEDULE WITH ENGINEER FOR CONSTRUCTION STAKING.
3. PLACE AND COMPACT COVER MATERIAL IN 8 INCH LIFTS TO THE SPECIFIED FINAL ELEVATIONS. A MINIMUM 90% STANDARD PROCTOR IS REQUIRED FOR ALL COMPACTED MATERIAL. ANY AREAS TESTED THAT FAIL TO MEET THE REQUIRED 90% COMPACTION WILL BE RECOMPACTED UNTIL THE MINIMUM SPECIFICATION IS ACHIEVED.
4. SPREAD A NOMINAL 4 INCH VEGETATIVE LAYER FROM THE CLEARING AND GRUBBING STOCKPILE OVER THE COMPACTED FILL AREA.
5. GRADE EXCESS STOCKPILE MATERIAL AS DIRECTED BY THE ENGINEER.
6. SEED ALL DISTURBED AREAS AS SPECIFIED IN 02920.



LEACHATE MANHOLE RISER EXTENSION DETAIL

SCALE: NO SCALE



I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

Brian L. Hutton
Brian L. Hutton, P.E.
License Number 14049
My license renewal date is DECEMBER 31, 1998
Pages or sheets covered by this seal

DATE: 10/20/98
APP AMENDMENT # 3
Date: 12/31/98

*Records
p15
copy*

PLANS AND SPECIFICATIONS APPURTENANT TO PERMIT FOR SANITARY DISPOSAL PROJECT NO. 19-SOL-1-72C DATED 3/5/98

IOWA DEPARTMENT OF NATURAL RESOURCES ENVIRONMENTAL PROTECTION DIVISION

[Signature]

FINAL PLAN

BASED ON BEST RECORDED KNOWLEDGE
OCTOBER 5, 1998
HOWARD R. GREEN COMPANY, CONSULTING ENGINEERS

NOTE 1
TOPOGRAPHY COMPILED BY STEREOPHOTOGRAMMETRIC METHODS FROM AERIAL PHOTOGRAPHY. DATE OF PHOTOGRAPHY: APRIL 28, 1993. CONTOUR INTERVAL: 2 FEET. ELEVATIONS BASED ON MEAN SEA LEVEL.
FINAL COVER CONTOURS BASED ON SURVEY DATA BY HOWARD R. GREEN COMPANY, OCTOBER 5, 1998.

NOTE 2
THE LOCATIONS OF THE LANDFILL AREAS, LEACHATE COLLECTION SYSTEM, AND EXISTING WELLS ARE APPROXIMATE. THESE WERE PLOTTED FROM MAPS BY OTHERS, AND THEIR EXISTENCE AND LOCATIONS WILL BE VERIFIED BY FIELD SURVEY.

DRAWN BY: JEG	JOB DATE: APRIL, 1998
APPROVED: GHF/GJB	JOB NUMBER: 720990J
CAD DATE: October 07, 1998 12:53:38 p.m.	
CAD FILE: 720990J\DWG\548-98.DWG (JGALL)	

NO.	DATE	BY	REVISION DESCRIPTION
1	3/1/96	JEG	ADD NOTE 2.
2	11/3/97	JEG	ADD NOTE 3, WASTE BOUNDARY.
3	4/21/98	JEG	ADD BORROW AREA CONTOURS, NOTES.
4	10/7/98	JEG	ADD SURVEYED FINAL CONTOURS, WELL LOCATIONS

Howard R. Green Company
CONSULTING ENGINEERS

CHICKASAW COUNTY SANITARY LANDFILL
FINAL COVER CONSTRUCTION
1998

BORROW and COVER AREA
PROPOSED FINAL CONTOURS

SHEET NO.
2A

ATTACHMENT E

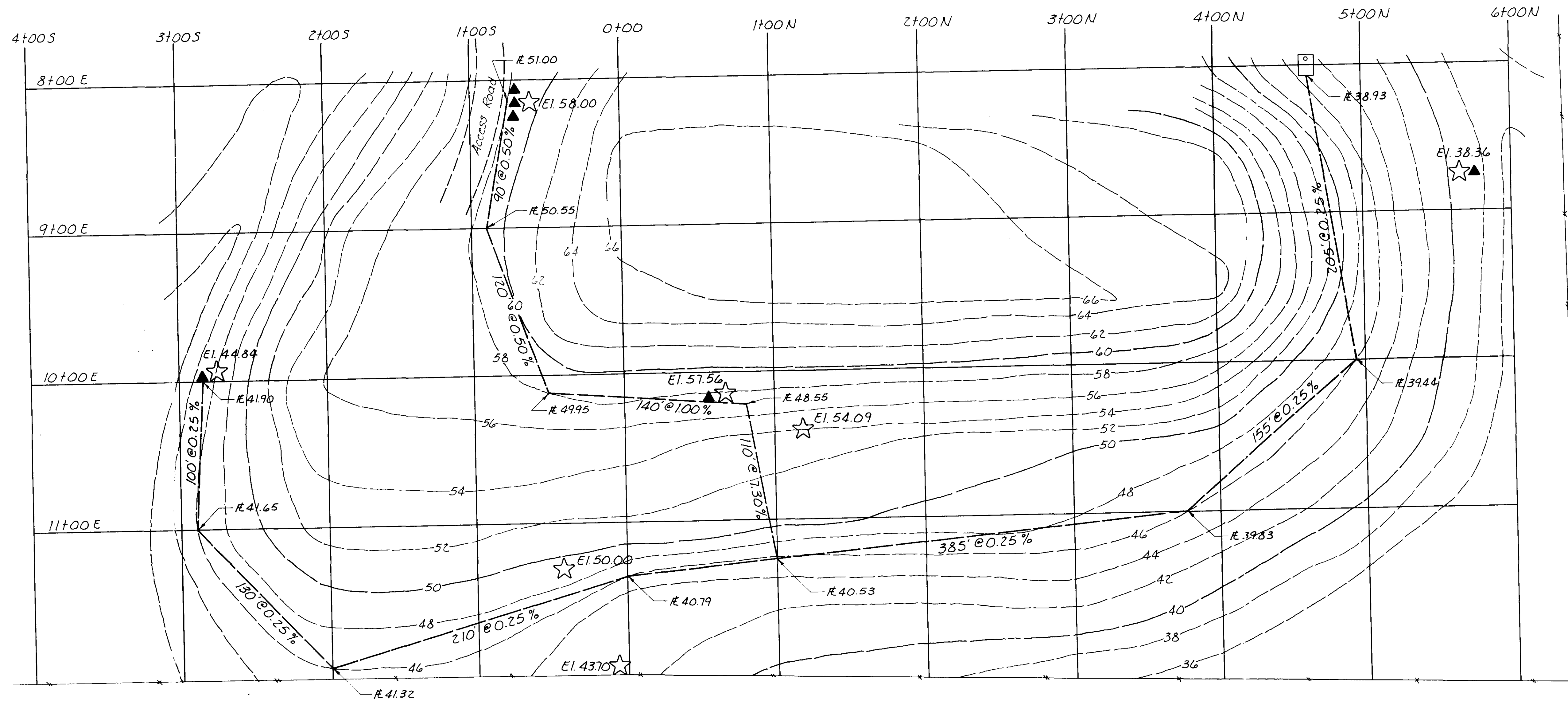
1986 TILE COLLECTION LINE DRAWINGS

(CLEAN & MARK-UP VERSION)

LEACHATE TILE COLLECTION SYSTEM

FINLAN SANITARY LANDFILL
1986

PROJECT NO. 10-1-86
DATE: 10-7-86



PLANS AND SPECIFICATIONS
APPURTENANT TO
PERMIT FOR SANITARY DISPOSAL PROJECT
NO. 19-SDP-1-72P
DATED July 21, 1983
IOWA DEPARTMENT OF
NATURAL RESOURCES
ENVIRONMENTAL PROTECTION
DIVISION
By *Bruce E. Hennig*

AMENDMENT # 2
DATE: November 19, 1986

LEGEND

- ▲ Existing Leachate Collection Sump (Approx. Location)
- ☆ Elevation as Surveyed 8-29-86 (Approx. Location)

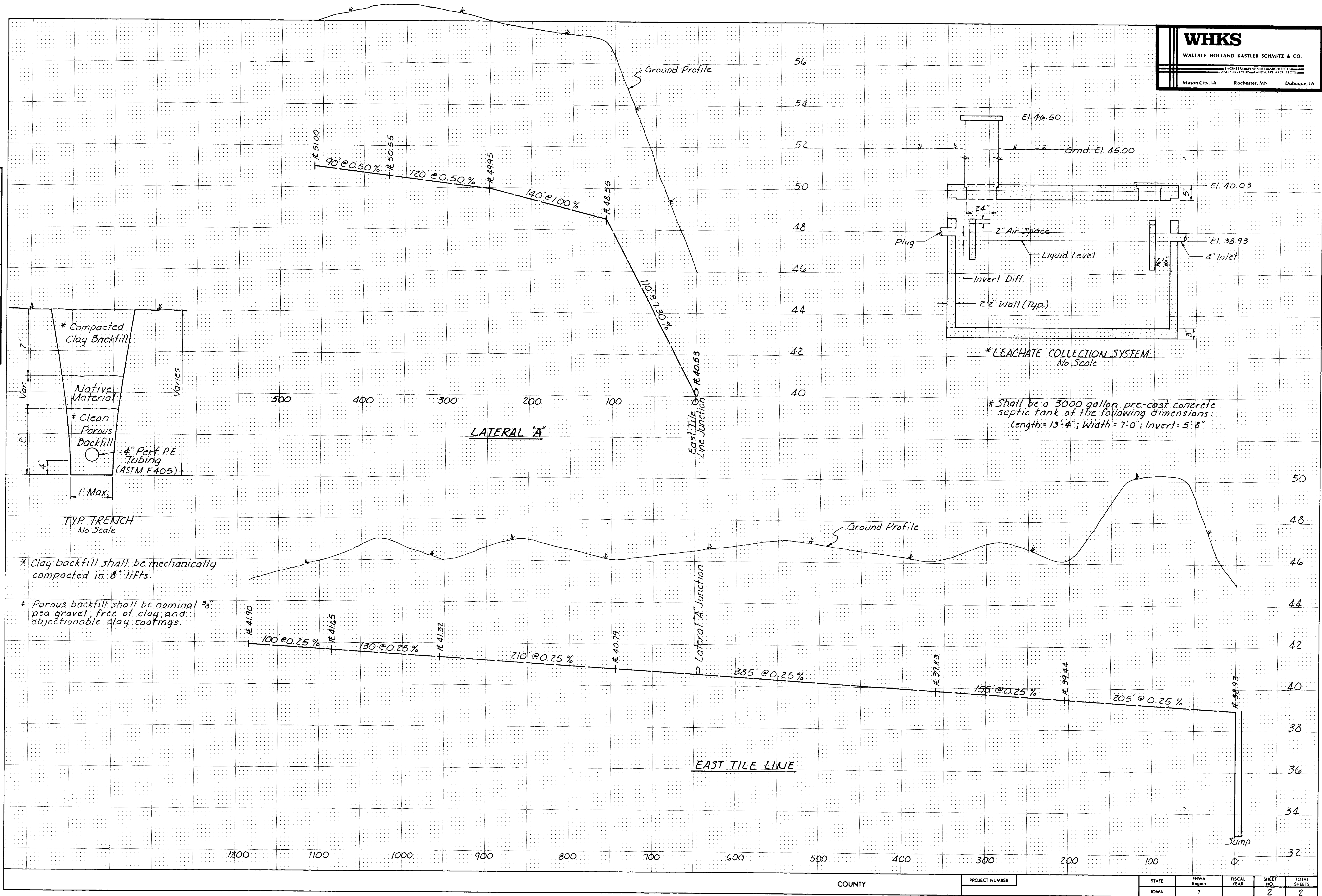
I hereby certify that this plan specification or report was prepared by me or under my direct personal supervision and that I am a duly Registered Professional Engineer under the laws of the State of Iowa.
Wallace Holland Kastler Schmitz & Co.
Date 10-7-86 Reg. No. 7347

Con 12-1-1
Doc # 7241

WHKS			SCALE 1" = 40'
WALLACE HOLLAND KASTLER SCHMITZ & CO.			DATE Sept. 1986
INCORPORATED ARCHITECTS (LAND SURVEYORS) LANDSCAPE ARCHITECTS			DATE REVISION
Mason City, IA	Rochester, MN	Dubuque, IA	JOB 4186.2
DRAWN BY BD	CHECKED BY JL		SHEET 1 of 2

FINAL SURVEY	DATE
PLOTTED	BY
NOTE BOOK	
NO.	
AREAS CHECKED	

ORIGINAL SURVEY	DATE
TRIMMED	BY
AREAS CHECKED	
NO.	
AREAS CHECKED	

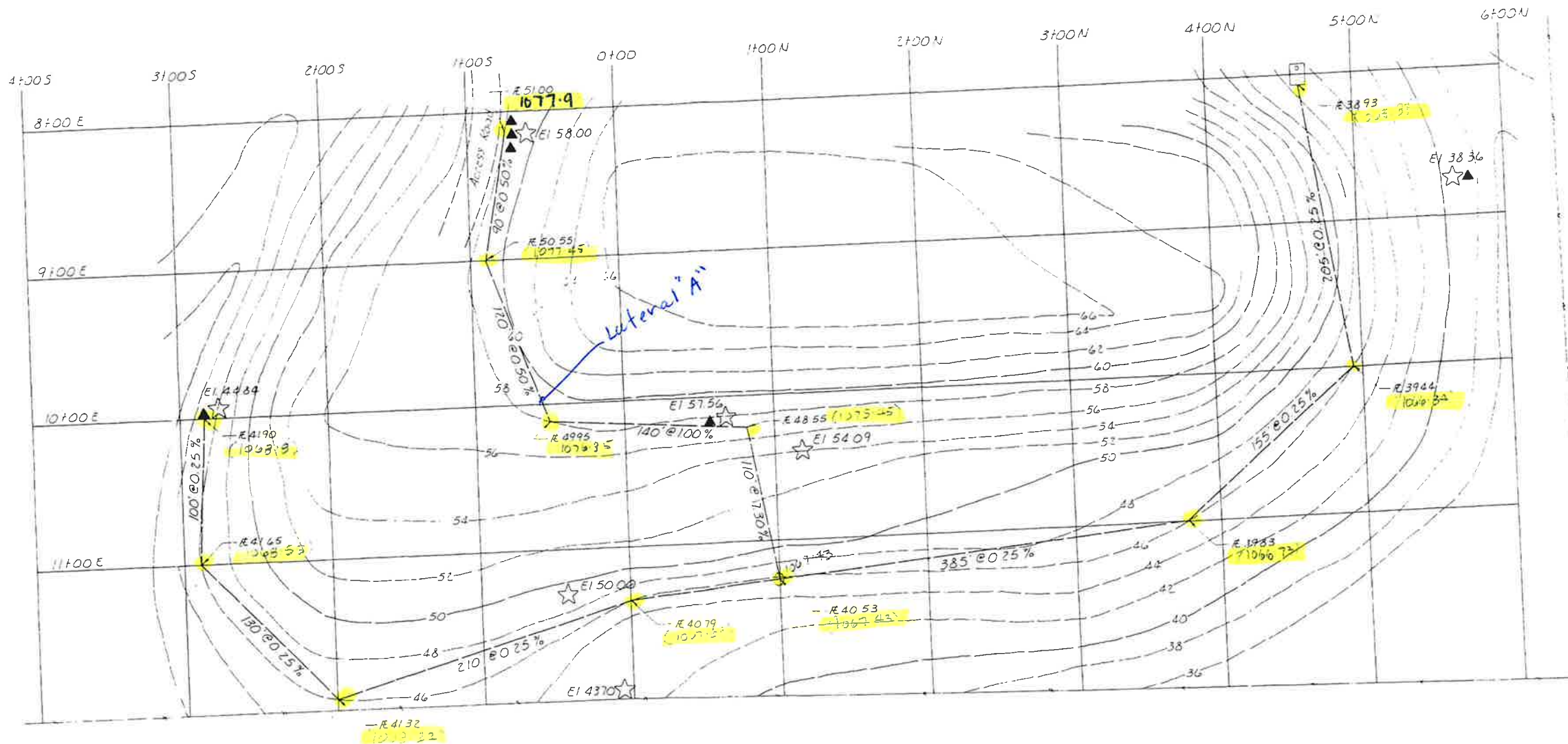


* Clay backfill shall be mechanically compacted in 8" lifts.
 * Porous backfill shall be nominal 3/8" pea gravel, free of clay and objectionable clay coatings.

* Shall be a 3000 gallon pre-cast concrete septic tank of the following dimensions: Length = 13'-4"; Width = 7'-0"; Invert = 5'-8"

LEACHATE TILE COLLECTION SYSTEM

FINLAN SANITARY LANDFILL
1986



PLANS AND SPECIFICATIONS
APPLIED TO
PROJECT FOR FINLAN SANITARY LANDFILL
NO. 13-552-1-22
DATED July 21, 1983

IOWA DEPARTMENT OF
NATURAL RESOURCES
ENVIRONMENTAL PROTECTION
DIVISION

By *[Signature]*
DATE # 2
November 17, 1986

LEGEND

- ▲ Existing Leachate Collection Sump (Approx Location)
- ☆ Elevation as Surveyed 8-29-86 (Approx Location)

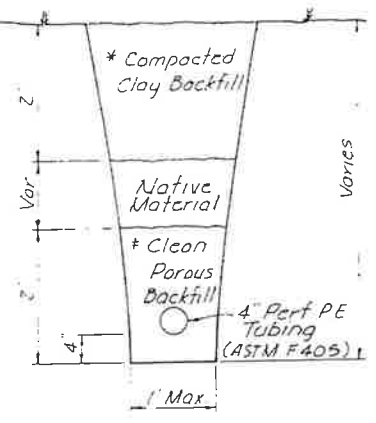
I hereby certify that this plan specification or report was prepared by me or under my direct personal supervision and that I am a duly Registered Professional Engineer under the laws of the State of Iowa.
Date: O. T. 86 Reg No. 1347

Con 12-1-1
Doc # 7241

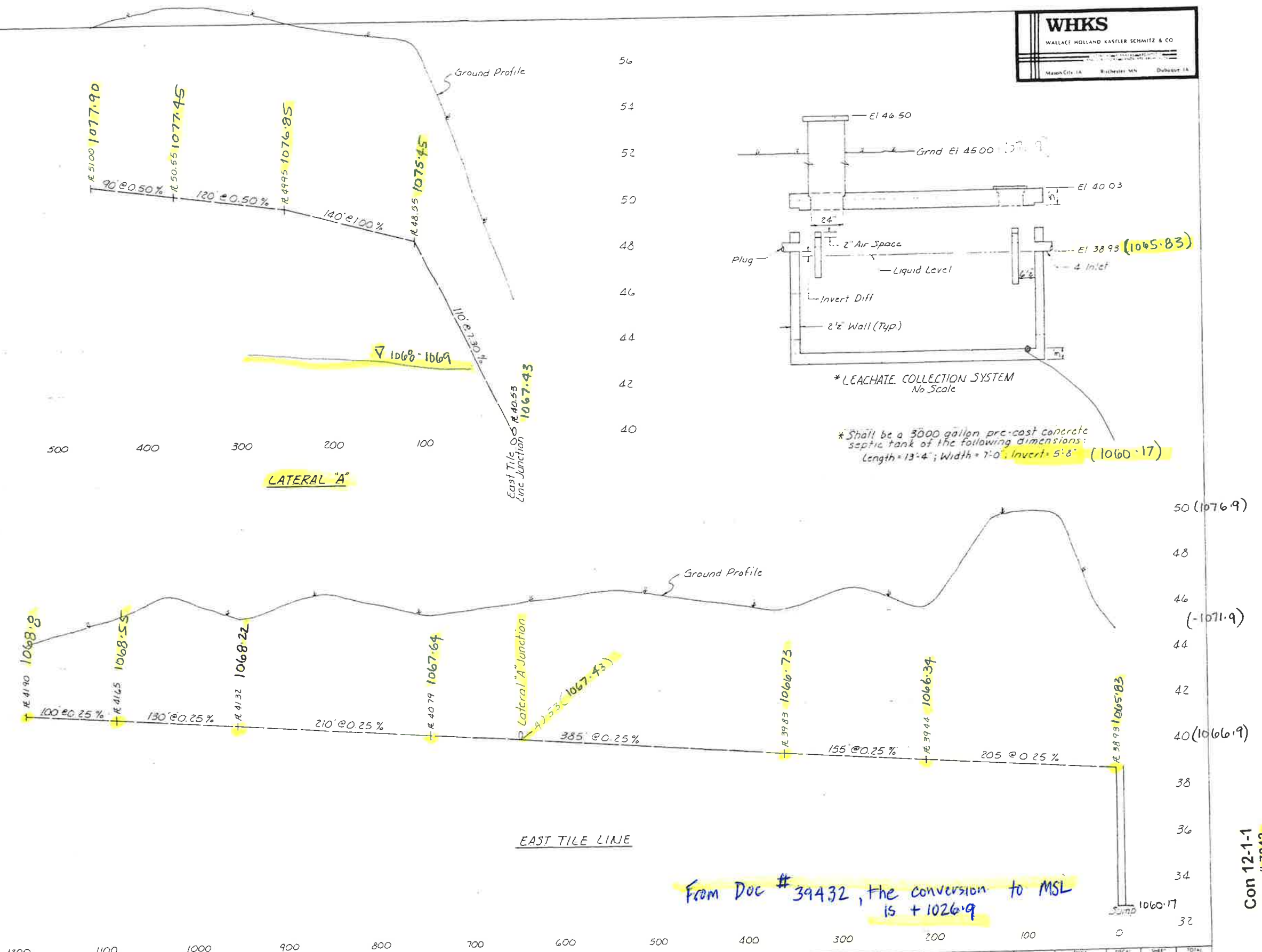
WHKS		SCALE	1" = 40'
WALLACE HOLLAND KASTLER SCHMITZ & CO		DATE	Sept 1986
100 WEST 10TH STREET MASON CITY, IOWA 50450		DATE RECEIVED	
Mason City, IA	Rochester, MN	NO.	4186.2
Dubuque, IA		SHEET	1 of 2
DRAWN BY	BD	CHECKED BY	JL

FINAL SURVEY
 REVISIONS
 DATE BOOK
 DRAWN BY
 CHECKED BY
 PLOTTED BY

ORIGINAL SURVEY
 REVISIONS
 DATE BOOK
 DRAWN BY
 CHECKED BY
 PLOTTED BY



* Clay backfill shall be mechanically compacted in 8" lifts.
 * Porous backfill shall be nominal 3/8" size gravel, free of clay and objectionable clay coatings.



COUNTY	PROJECT NUMBER	STATE	Region	FISCAL YEAR	SHEET NO	TOTAL SHEETS
		IOWA	1		2	2

Con 12-1-1
 Doc # 7242