Stantec Consulting Services Inc.
One Carlson Parkway North, Suite 100
Plymouth MN 55447-4440

June 17, 2025

Project/File: 227702549

Mr. Mike Smith - Senior Environmental Engineer
Iowa Department of Natural Resources
Solid Waste Section
Wallace State Building
502 East 9th Street
Des Moines, Iowa 50319

Dear Mr. Smith,

Reference: Central Disposal Landfill (95-SDP-01-72) – 2025 Monitoring Well Replacement Work Plan

On behalf of Central Disposal Systems, Inc., this letter and its attachments detail the scope of work for the replacement of monitoring well MW-11 at the Central Disposal Landfill located at 21265 430th Street, Lake Mills, Iowa (the Landfill). **Figure 1** illustrates the Landfill location and **Figure 2** provides an aerial view of the facility and its existing monitoring network. **Figure 3** provides a topographic map of the facility including the layout of existing landfill phases, the existing monitoring network, and groundwater flow contours from the most recent annual monitoring event (July 2024).

Monitoring well MW-11 was damaged during the winter of 2023-2024. An attempt was made to repair the well in December 2024; however, the attempt was ultimately unsuccessful. Therefore, MW-11 will need to be sealed and a new monitoring well, MW-11R, will need to be installed to replace MW-11. MW-11R will be installed in the vicinity of, approximately ten-feet from, MW-11 and at approximately the same depth in order to monitor the same hydrogeologic unit. The location of MW-11 and the proposed location of MW-11R are shown in **Figure 4**. A copy of the monitoring well/piezometer construction documentation form for MW-11 is included as **Attachment 1**.

This letter details the proposed monitoring well sealing work, new monitoring well installation work, and background monitoring schedule for the new monitoring well. Existing monitoring well construction details are provided on **Table 1**. The current monitoring program, as defined in the November 2023 Hydrologic Monitoring System Plan and associated addendums (2023 HMSP), is described on **Table 2**. The sections below provide further detail on the proposed MW-11 sealing and replacement work. It is noted that the site's HMSP will require updates following completion of the MW-11 sealing and replacement work; an addendum to the 2023 HMSP, in the form of a letter report, will be submitted to the IDNR under separate cover.

Monitoring Well Sealing

Monitoring well MW-11 will be sealed by a certified well contractor as stipulated in Iowa Administrative Code (IAC) 567 Chapter 82. Monitoring well sealing activities will follow the requirements identified in IAC 567 Chapter 113.10(2).d. which specify that all well materials shall be removed via over-drilling. The borehole will then be filled in accordance with IAC 567 Chapter 39, by pressure grouting via a tremie line that is submerged as the borehole is filled from bottom to top with impermeable bentonite grout. Well construction information for MW-11 is provided below, and additional information is provided on **Table 1**.

MW-11 Well Construction Information

Well ID	Depth (Ft. from TOC)	Well Materials	Well Screen Construction	Slot Size	Boring Depth (ft)
MW-11 (PZ-11)	73.8	2" PVC	10' PVC	#10 slot	75

Monitoring Well Installation

Replacement monitoring well MW-11R is proposed to be installed at a similar depth to MW-11, which is screened in the “Monitorable Zone”. The Monitorable Zone has been previously identified and discussed in detail during previous investigations that have been reported to the IDNR. The Monitorable Zone occurs at ± 1215 feet NGVD and has been identified to consist of a laterally extensive clayey sand layer within the unweathered glacial till. The Monitorable Zone has been identified at all drilling locations at the site that were advanced to sufficient depth and has been observed to range between 5-10 feet in thickness.

The proposed location of MW-11R is shown on the attached **Figure 4**. MW-11R is proposed to be located in the immediate vicinity of the existing monitoring well MW-11 (within approximately 10 feet), remaining downgradient of the Landfill footprint relative to the southerly groundwater flow direction. Estimated construction details are provided in the table below. It should be noted that the actual boring and well depth will be determined at the time of drilling by the Landfill or their representatives.

Proposed MW-11R Well Construction Information

Well ID	Depth (Ft. from TOC)	Well Materials	Well Screen Construction	Slot Size	Boring Depth (ft)
MW-11R	72*	2" PVC	10' PVC	#10 slot	73*

Notes:

* - Denotes estimated value

The replacement monitoring well will be constructed by a certified well contractor, within a borehole that is advanced through hollow stem auger (HSA) or roto-sonic methods, and constructed in similar fashion as the existing monitoring wells at the Landfill. A soil boring will be advanced at the proposed monitoring well location, and soil samples will be collected at a minimum five-foot sampling interval. The boring for MW-11R

will be advanced to approximately 10 feet below the top of the Monitorable Zone. Previous investigations at the Landfill indicate that the hydraulic head pressure of the Monitorable Zone may inhibit the placement of an effective sand filter pack. Because of these conditions, a pre-packed well screen is proposed for the construction of MW-11R. A two-inch diameter well will be constructed in the borehole as follows.

- 10 feet of factory slotted 10-slot (0.010-inch) schedule 40 PVC, pre-packed screen (screen length consistent with other monitoring wells at the site; slot size designated to minimize possible sediment infiltration into the well based on existing information).
- Schedule 40 PVC riser to approximately two to three feet above grade (all joints threaded); 20/40 silica sand filter pack (for 10-slot screen) to 2-feet above top of screen and one foot below bottom of screen. The well screen may be equipped with two centralizers placed within two feet of the bottom and top of the screen to ensure centering of the well in the borehole;;
- A minimum 3-foot granular bentonite seal placed above the sand filter pack with cement-bentonite grout emplaced above the bentonite seal via tremie-line in one continuous operation. Due to anticipated hydraulic head pressure, coated bentonite pellets (e.g., Pel-Plug TR30, or similar) are proposed to be utilized for the placement of the bentonite seal;
- A lockable steel protective casing, set in concrete to a minimum of one foot below the frost line. The concrete plug must extend a minimum of 3 inches above the ground surface and slope away from the monitoring well. The inside of the protective casing shall be sealed with bentonite grout from the frostline to the ground surface;
- A set of three brightly colored barrier posts (bollards) are to be installed equidistant from the monitoring well; and,
- Well development will be completed by surging and/or pumping to remove fines to the extent possible.

Following installation of MW-11R, the well will be surveyed for vertical and horizontal location and incorporated into the Landfill's existing conditions map. Top of casing, top of riser, and ground surface elevations will be collected and memorialized into the Landfill's well construction summary table (see **Table 1**).

Dedicated Sampling Pumps

Consistent with other monitoring wells at the Landfill utilized for water quality sampling, MW-11R will be equipped with a QED Well-Wizard bladder pump to facilitate collection of groundwater quality samples. It is anticipated that the pump will be installed by Alliance Technical Group (Alliance) during the first sampling event for the new monitoring well.

Background Monitoring

The 2023 HMSP provides an optimized sampling frequency for selected annual parameters (intrawell statistical detection parameters and supplemental parameters). The 2023 HMSP monitoring program is summarized on **Table 2** and will be updated to reflect the revised monitoring network following completion

of the monitoring well sealing and installation work outlined above. The 2023 HMSP as it pertains to the Landfill's monitoring wells is briefly described below.

Annual monitoring events include testing for the selected annual parameters identified in the 2023 HMSP on a seasonally rotating schedule. The 2023 HMSP also includes testing for detection monitoring parameters (metals and volatile organic compounds [VOCs]) on a periodic, once per three-year, schedule to supplement the selected annual parameters list. Detection monitoring parameters consist of those which are found in Appendix I of IAC 567 Chapter 113.15.

Consistent with the statistical procedures implemented for the site, eight sets of background groundwater quality data for detection monitoring and supplemental annual parameters will be collected at MW-11R. Background monitoring events will occur on a semi-annual basis, as is the case for three recently installed monitoring wells at the Landfill. Sample collection and laboratory analysis will follow the established procedures implemented by Alliance and Pace Analytical National Laboratories (PAN), respectively. Once eight sets of background groundwater quality data have been collected for MW-11R, it will be incorporated into the monitoring program and seasonally rotating annual monitoring schedule as defined by the 2023 HMSP.

Schedule and Reporting

Monitoring well sealing and construction work will be scheduled upon IDNR approval of this work plan and completed as soon as schedules allow. An *Abandoned Water Well Plugging Record* (form 542-1226) will be completed as documentation of the sealing of monitoring well MW-11, and the *Monitoring Well / Piezometer Construction Documentation Form* (Form 542-1277) will be completed as documentation of construction for the new monitoring well MW-11R. A soil boring log will also be prepared for the soil boring completed at the new monitoring well location. These records will be maintained in the Landfill electronic record, and copies of the documents will be provided to the IDNR. A monitoring well installation documentation letter will be prepared and submitted to the IDNR within 30 days of completing this workplan.

The results of each semi-annual background monitoring event will be provided to the IDNR within the Landfill's annual water quality reports. Data analysis and statistical data evaluation will occur once MW-11R has been incorporated into the Landfill's regular monitoring schedule, which will occur once the eight sets of background groundwater quality data have been collected at the new monitoring well. An addendum to the 2023 HMSP, in the form of a letter report, documenting the sealing of monitoring well MW-11, installation of replacement monitoring well MW-11R, and an updated monitoring schedule accounting for background monitoring at MW-11R will be prepared once the new monitoring well has been installed.

We appreciate your assistance with this project. If you have any questions, please contact me (763-479-5185) at your convenience.

Reference: Central Disposal Landfill (95-SDP-01-72) – 2025 Monitoring Well Replacement Work Plan

Regards,

Stantec Consulting Services Inc.

Cory Anderson
Senior Associate, Project Manager
Phone: (763) 479-5185
cory.anderson2@stantec.com

Attachments: MW-11 Well Construction Documentation Form
Table 1 – Well Construction Summary
Table 2 – Monitoring Schedule (November 2023 HMSP)
Figure 1 – Site Location Map
Figure 2 – Landfill Monitoring Network (Aerial)
Figure 3 – Existing Monitoring Network and Groundwater Flow
Figure 4 – Proposed Monitoring Network Revisions

cc. Becky Jolly, Madelynn Austin, and Jeremy Klatt – IDNR
Terry Johnson; Tyler Field; Erin Bulson, Trent Kohl, and John Reynolds – WM
Aaron Rebmann and Kim Olson – Central Disposal
Chris Kaiser – Stantec

Attachment 1 – MW-11 Well Construction Documentation Form

MONITORING WELL / PIEZOMETER CONSTRUCTION DOCUMENTATION FORM

Disposal site name Winnebago County Sanitary Landfill Permit # 95-SDP-1-72 P
Well or Piezometer # MW-11 Date started 12-6-89 Date completed 12-6-89

A. Surveyed Locations and Elevations

Locations (± 0.5 ft.):
Specify corner of site SE
Distance and direction along boundary
Distance and direction from boundary to well 124' east and 39' south of SE corner of open trench

Elevations (± 0.01 ft. MSL):
Ground surface 1270.50
Top of protective casing 1273.25
Top of well casing 1273.08
Benchmark elevation 1339.09
Benchmark description Spike in power pole in NW corner of site

B. Soil Boring Information

Name and address of construction company J & R Drilling
7922 N. W. 114th
Grimes, Iowa 50011
Name of driller Jeff Stoy
Drilling method Continuous Flight Auger
Drilling fluid -
Bore hole diameter 7 7/8"
Soil sampling method Continuous Sampler
Depth of boring 75

C. Monitoring Well Installation

Casing material PVC
Length of casing 73.42
Outside casing diameter 2 1/2"
Inside casing diameter 2"
Casing joint type Threaded
Casing/screen joint type Threaded
Screen material PVC
Screen opening size .010
Screen length 10'
Depth of well 70.84

Well Installation, continued:

Filter pack:
Material Muscatine Sand
Grain size #1
Volume 144 lbs

Seal (minimum 3 ft. length above filter pack):
Material Bentonite Pellets
Placement method Tremie Tube
Volume 25 lbs

Backfill (if different from seal):
Material Neat Cement
Placement Method Tremie Tube
Volume

Surface seal design:
Material of protective casing: Steel
Material of grout between protective casing and well casing: Kwikcrete
Protective cap:
Material Steel
Vented? Y/N Y Locking? Y/N Y
Well cap:
Material PVC
Vented? Y/N Y

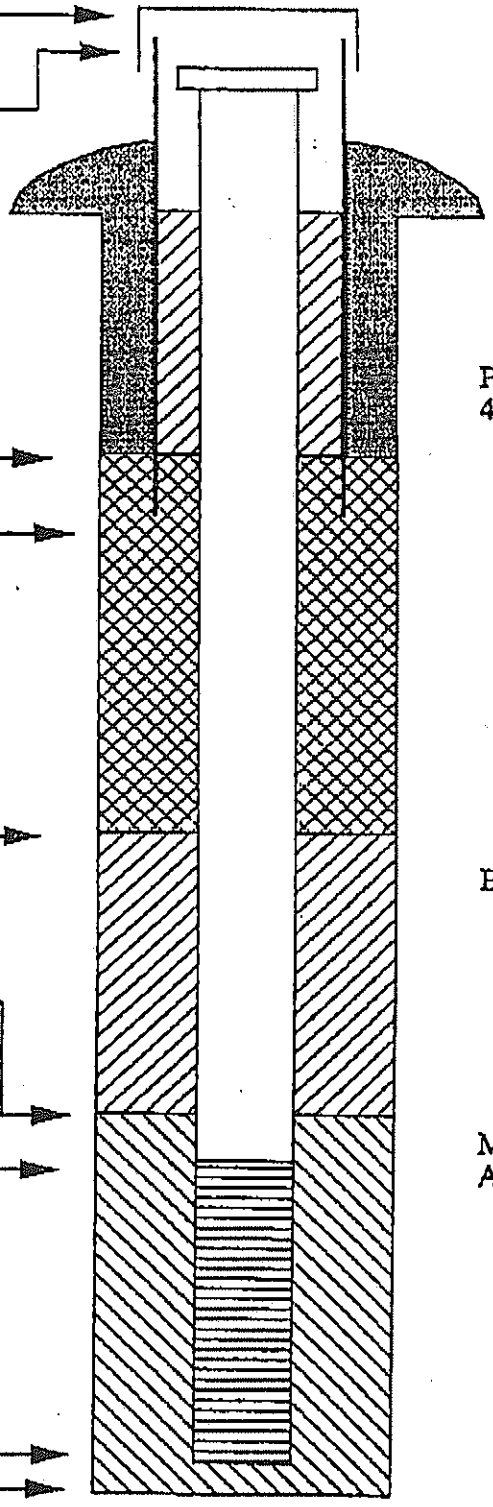
D. Groundwater Measurement

Water level (± 0.01 ft. below top of inner well casing) 1218.45
Stabilization time 24 hours
Well development method Air Jetting

Upgradient or downgradient well? (see piezometric map from Hydrogeologic study) Downgradient
Average depth of frostline 3.0

WASTE SYSTEMS CORPORATION	JAMES M. MONTGOMERY CONSULTING ENGINEERS, INC. DES MOINES, IOWA	MARCH, 199

MW-11



Top of Protective Casing Elevation 1273.25

Top of Well Casing Elevation 1273.08

Ground Surface Elevation 1270.50

PROTECTIVE CASING
4' MINIMUM DEPTH

Top of Backfill
Base of Concrete Plug and Bentonite Grout
Elevation 1266.35
Depth 4.15'

Base of Protective Casing
Elevation 1268.25
Depth 2.25'

Base of Backfill
Top of Seal
Elevation 1215.20
Depth 55.30'

BENTONITE SEAL

Top of Filter Pack
Base of Seal
Elevation 1211.67
Depth 58.83'

Top of Screen
Elevation 1209.66
Depth 60.84'

MUSCATINE FILTER PACK
ABOVE TOP OF SCREEN

Bottom of Screen
Elevation 1199.66
Depth 70.84'

Base of Filter Pack
Elevation 1198.66
Depth 71.84'

BOTTOM OF WELL HOLE

James M. Montgomery
Consulting Engineers, Inc.

WASTE SYSTEMS CORPORATION

MONITORING WELL CONSTRUCTION DETAIL

JAMES M. MONTGOMERY
CONSULTING ENGINEERS, INC.
11107 AURORA AVENUE
DES MOINES, IOWA 50322

LOCATION
Winnebago County Sanitary Landfill
LOCATION OF DRILL HOLE
Southeast Corner of Landfill

HOLE NO.	JOB NO.	DATE	ELEVATION	DATUM	DRILLER	INSPECTOR
SB-11	2387.0050	12/6/89			J&R Drilling	S. L. Howe

WATER LEVEL OBSERVATIONS				TYPE OF SURFACE	DRILL RIG
WHILE DRILLING	END OF DRILLING	24 HOURS AFTER	___ HOURS	Dirt	Diedrich D-50
				DRILLING METHOD	TOTAL DEPTH
				Hollow Stem Auger	75'

DEPTH (ft.)	SAMPLE DESCRIPTION: COLOR	MOISTURE	CONSISTENCY	BASIC SOIL TYPE	GEOLOGIC DESCRIPTION & OTHER REMARKS	SAMPLE DATA: NUMBER & TYPE	OVA/H-NU READING (ppm) 0 500 1000	DEPTH (ft.)
	Dark Brown	Damp	Hard Tight	Silty, Sandy Clay				
	Brown		Soft Tight		Sand Seams Rust Staining			
5	Light Brown			Silty Clay (Loam)	Lots of Rust Staining			
					Sand & Gravel Seams			
			Soft Tight Loose in Part	Sandy, Silty Clay	Pebbles Rust Staining			
	Dark Gray		Soft Tight		Sand Seams Pebbles Slight Rust Staining around Pebbles			
					Thin Sand Seams More Pebbles			
					Sand Seams in Top 1'-No Noticeable			

HOLE NO.	JOB NO.	DATE	ELEVATION	DATUM	DRILLER	INSPECTOR
SB-11	2387.0050	12/6/89			J&R Drilling	S. L. Howe

DEPTH (ft.)	SAMPLE DESCRIPTION					SAMPLE DATA		DEPTH (ft.)
	COLOR	MOISTURE	CONSISTENCY	BASIC SOIL TYPE	GEOLOGIC DESCRIPTION & OTHER REMARKS	NUMBER & TYPE	OVA/H•NU READING (ppm) 0 500 1000	
0	Dark Gray	Damp	Soft Tight	Sandy Silty Clay	Rust Nodules			
5					More Rust Staining			
0					Sandy Clay Seams			
5								
0					Sand Semas Increase in Sand Content			

HOLE NO.	JOB NO.	DATE	ELEVATION	DATUM	DRILLER	INSPECTOR
SB-11	2387.0050	12/6/89			J&R Drilling	S. L. Howe

DEPTH (ft.)	SAMPLE DESCRIPTION: COLOR	MOISTURE	CONSISTENCY	BASIC SOIL TYPE	GEOLOGIC DESCRIPTION & OTHER REMARKS	SAMPLE DATA: NUMBER & TYPE	OVA/H•NU READING (ppm) 0 500 1000	DEPTH (ft.)
0	Dark Gray	Moist to Wet	Soft Tight	Sandy, Silty Clay	Slight Rust Staining			
			Soft Tight Loose in Part	Silty Sandy Clay	Pebbles Slight Rust Staining			
5					Sand Seams Smaller Pebbles Throughout Slight Rust Staining			
0			Soft Tight		Slight Rust Staining Sand Seams			
5		Bottom	of Boring at 75'					

Tables

Table 1 - Groundwater Monitoring Network (Updated January 2025)

Central Disposal Landfill - Lake Mills, Iowa

Permit No. 95-SDP-01-72

Well ID	Date Installed	Date Sealed	Drilling Company	Well Status	Well Position (Relative to waste)	Dedicated Bladder Pump (Yes/No)	Ground Elevation (Ft. NGVD)	TOC Elevation (Ft. NGVD)	Well Depth (Ft. from TOC)	Well Diameter / Material	Screen Length / Material	Slot Size	Approximate Depth to Water (ft. below TOC)	Approximate Boring Depth (ft)
MW-2A	1995	N/A	AET	WQ / Detection	Upgradient	Yes	1,278.3	1,281.05	78.4	2" / PVC	10' / PVC	#10 slot	37.5	75.4
MW-7A	1998	N/A	AET	WQ / Detection	Downgradient	Yes	1,292.4	1,294.94	97.5	2" / PVC	10' / PVC	#10 slot	62.0	99.0
MW-11 (PZ-11)*	1989	N/A	J&R	WQ / Detection	Downgradient	Yes	1,274.9*	1,277.65*	73.8*	2" / PVC	10' / PVC	#10 slot	48*	73
MW-101	1995	N/A	AET	SWL	Up- to Side-gradient	No	1,289.4	1,292.09	82.5	2" / PVC	10' / PVC	#10 slot	59.0	80.5
MW-104	1995	N/A	AET	SWL	Down- to Side-gradient	No	1,270.4	1,272.16	82.5	2" / PVC	10' / PVC	#10 slot	41.5	80.0
MW-110	1995	N/A	AET	WQ / Detection	Upgradient	Yes	1,288.9	1,291.32	75.6	2" / PVC	10' / PVC	#10 slot	56.5	75
MW-112	1996	N/A	AET	SWL	Down- to Side-gradient	No	1,286.0	1,287.89	82.1	2" / PVC	10' / PVC	#10 slot	57.8	79.8
MW-117	1999	N/A	Braun Intertec	WQ / Detection	Upgradient	Yes	1,277.4	1,279.84	76.9	2" / PVC	10' / PVC	#10 slot	53.1	74.5
MW-118	1999	N/A	Braun Intertec	WQ / Detection	Upgradient	Yes	1,281.6	1,284.56	95.4	2" / PVC	5' / PVC	#6 slot	58.8	92.0
MW-120	1999	N/A	Braun Intertec	SWL	Downgradient	No	1,276.4	1,278.86	62.5	2" / PVC	5' / PVC	#6 slot	49.9	72.0
MW-121	1999	N/A	Braun Intertec	SWL	Downgradient	No	1,272.5	1,275.65	105.2	2" / PVC	5' / PVC	#6 slot	48.5	102.0
MW-123	2003	N/A	Bergerson-Casewell	WQ / Detection	Upgradient	Yes	1,294.7	1,297.30	82.9	2" / PVC	5' / PVC	#6 slot	66.5	80.0
MW-132	2009	N/A	Traut Wells	WQ / Detection	Downgradient	Yes	1,256.0	1,259.32	42.5	2" / PVC	15' / PVC	#6 slot	28.0	60.0
MW-133	2009	N/A	Traut Wells	WQ / Detection	Downgradient	Yes	1,252.0	1,254.95	53.3	2" / PVC	15' / PVC	#6 slot	20.0	50.0
MW-134	2023	N/A	Midwestern	Background	Downgradient	Yes	1,259.5	1,261.83	59.8	2" / PVC	10' / PVC	#10 slot	32.0	58.0
MW-135	2023	N/A	Midwestern	Background	Downgradient	Yes	1,274.9	1,277.32	72.4	2" / PVC	10' / PVC	#10 slot	47.5	70.0
MW-136	2023	N/A	Midwestern	Background	Downgradient	Yes	1,272.1	1,274.63	80.5	2" / PVC	10' / PVC	#10 slot	18.0	78.0
P-15	1999	N/A	Braun Intertec	SWL	Upgradient	No	1,293.9	1,297.40	18.4	2" / PVC	10' / PVC	#6 slot	11.2	15.0
P-16	2003	N/A	Bergerson-Casewell	SWL	Upgradient	No	1,292.3	1,294.87	17.9	2" / PVC	10' / PVC	#6 slot	6.6	15.0
P-17	2003	N/A	Bergerson-Casewell	SWL	Upgradient	No	1,293.6	1,296.32	18.1	2" / PVC	10' / PVC	#6 slot	5.0	15.0
P-18	2003	N/A	Bergerson-Casewell	SWL	Upgradient	No	1,291.9	1,294.48	17.7	2" / PVC	10' / PVC	#6 slot	6.7	15.0
P-120S	1999	N/A	Braun Intertec	SWL	Downgradient	No	1,276.6	1,278.76	17.2	2" / PVC	10' / PVC	#6 slot	7.2	15.0
P-121S	1999	N/A	Braun Intertec	SWL	Downgradient	No	1,272.5	1,275.75	33.3	2" / PVC	10' / PVC	#6 slot	17.3	31.0

Notes:

WQ: Monitoring well utilized for groundwater quality monitoring, as required by Solid Waste Permit, its amendments, and the 2023 Hydrologic Monitoring System Plan (2023 HMSP)

- Detection = Monitoring well is in Detection status, per the 2023 HMSP
- Assessment = Monitoring well is in Assessment status, per 2023 HMSP
- Background = Monitoring well is in Background status, per 2023 HMSP

* - MW-11 casing and riser repaired 12-27-24 due to damge sustained earlier in the year. Well to be resurveyed and elevation information will be updated herin accoringly

SWL: Monitoring location utilized for static water level measurements only

N/A = Not Applicable

TOC = Top of Casing

NGVD = National Geodetic Vertical Datum

Table 2
Central Disposal Landfill
Annual Monitoring Schedule
2023 HMSP - Updated April 2025

Location	Well Status (as of August 2023)	Location / Description	Annual Groundwater Event (rotating seasonal schedule)***	Semi Annual Background Monitoring Events (2023-2026)	GU-VIII-1 Semi Annual Background Monitoring Events (2025-2028)	Annual NPDES (Spring)	Leachate (per WWTP permts) Months (1,4,7,10)
MW-2A	Detection	Upgradient	Selected Annual Parameters	--	--	--	--
MW-7A	Detection	downgradient	Selected Annual Parameters	--	--	--	--
MW-11*	Detection	downgradient	Selected Annual Parameters	--	--	--	--
MW-110	Detection	Upgradient	Selected Annual Parameters	--	--	--	--
MW-117 *	Detection	distant downgradient	Selected Annual Parameters	--	--	--	--
MW-118 *	Detection	distant downgradient	Selected Annual Parameters	--	--	--	--
MW-123 *	Detection	Upgradient	Selected Annual Parameters	--	--	--	--
MW-132	Detection	downgradient	Selected Annual Parameters	--	--	--	--
MW-133	Detection	downgradient	Selected Annual Parameters	--	--	--	--
MW-134 [1]	Background	downgradient	-- [2]	Appendix I & Selected Annual Parameters	--	--	--
MW-135 [1]	Background	downgradient	-- [2]	Appendix I & Selected Annual Parameters	--	--	--
MW-136 [1]	Backround	downgradient	-- [2]	Appendix I & Selected Annual Parameters	--	--	--
GU-V-2	groundwater underdrain	groundwater underdrain	Selected Annual Parameters	--	--	--	--
GU-VIII-1[3]	groundwater underdrain	groundwater underdrain	-- [4]	--	Appendix I & Selected Annual Parameters	--	--
Other wells **	WL only	various	WL	--	--	--	--
Outfall 1	NPDES	stormwater pond outlet	--	--	--	NPDES	--
Leachate (4 ponds)	--	--	Selected Annual Parameters	--	--	--	WWTP parameters

Explanation

• **Selected Annual Parameters (Optimized parameter list per July 2018 HMSP)**

-- **Intrawell Statistical Detection Parameters** = Ammonia, Chloride, Sodium, Alkalinity.

-- **Supplemental Parameters** = calcium, iron, magnesium, potassium, sulfate, Total dissolved solids (TDS) and Total Suspended Solids (TSS).

• **Appendix I Metals & VOCs** once per 3 years (completed in May 2020 and May 2023, next event 2026)

• **Appendix II** parameters per IDNR rules: (includes all Appendix I parameters *plus* pesticides, herbicides, PCBs, Semi-volatiles, & cyanide, mercury, sulfide and tin).

* = Well added to detection schedule beginning fall 2014 in accordance with Permit Amendment #5

** **Other wells** available for collecion of water elevation: MW-101, MW-104, MW-112, MW-112, MW-120, P120S, MW-121, P121S, P-15, P-16, P-17 and P-18

*** **Annual events** on a seasonal rotating schedule: 2023 April-May; 2024 June-July; 2025 Oct-Nov. Winter excluded. 2026 April-May; 2027 June-July; 2028 Oct-Nov. Winter Excluded. 2029 April-May; and so on

Appendix I inorganics (metals) and VOCs, every third year (Completed May 2023, next event 2026)

[1] = Monitoring wells MW-134, MW-135, and MW-136 installed May-June 2023

[2] = Monitoring wells MW-134, MW-135, and MW-136 to be incorporated into Annual Groundwater Event (rotating seasonal schedule) once the 8 rounds of background monitoirng have been completed (anticipated 2027)

[3] = New groundwater underdrain GU-VIII-1

[4] = GU-VIII-1 to be incorporated into the seasonally rotating annual monitoring schedule once the 8 rounds of background monitoring data required by the statistical program have been collected and evaluated (anticipated 2029)

Leachate management system includes 4 ponds (Ponds 1, 2, 3 and 4); sample collection and analyses per wastewater treatment plant agreements on quarterly basis (List 1-quarterly parameters 4X per year) (List 2-semi-annual parameters 2X per year). Sample collection required during first month of given quarter per Mason City agreement.
Leachate samples may also be collected for selected annual parameters concurrent with Annual GW events (for statistical comparison as needed).

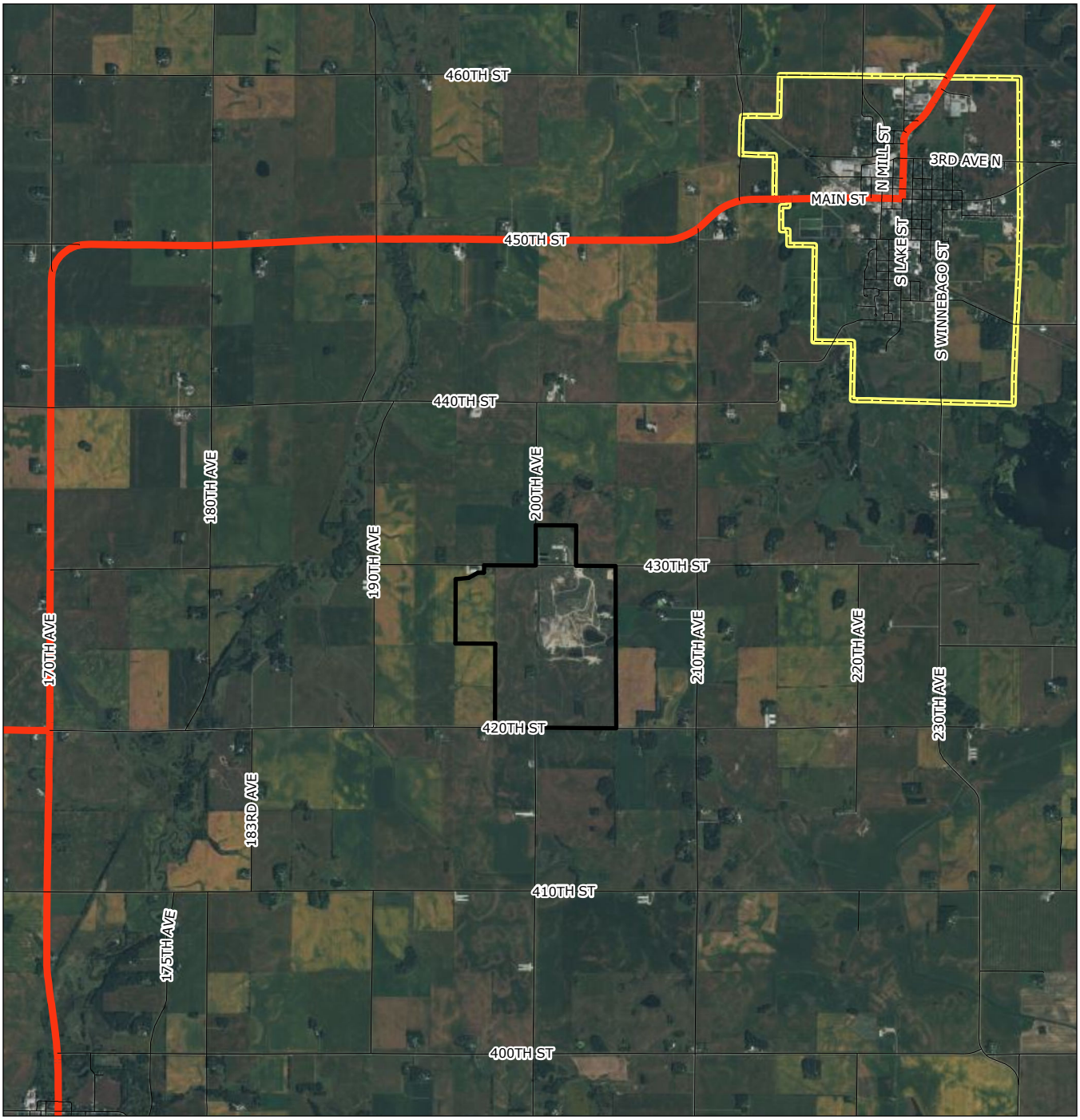
Current WWTP Agreements:

- Mason City, Iowa - Issued: 05/29/2024; Expires: 05/29/2027
- Northwood, Iowa - Issued: 10/01/2020; Expires: 2030
- Albert Lea, Minnesota - Issued: 01/01/2023; Expires: 12/31/2027

2023 HMSP

Updated April 2025 to include GU-VIII-1 & updated leachate WWTP agreement requirements

Figures



Minnesota	Freeborn County
Iowa	
Winnebago County	Worth County
Hancock County	

Legend
- City of Lake Mills
- Landfill Property Boundary
- State Highway
- Local Road

0 2,500 5,000 Feet
(At original document size of 8.5x11)
1:60,000

N

Notes
1. Coordinate System: NAD 1983 UTM Zone 15N
2. Data Sources: Bing Maps
3. Background: Bing Aerial Imagery

Stantec

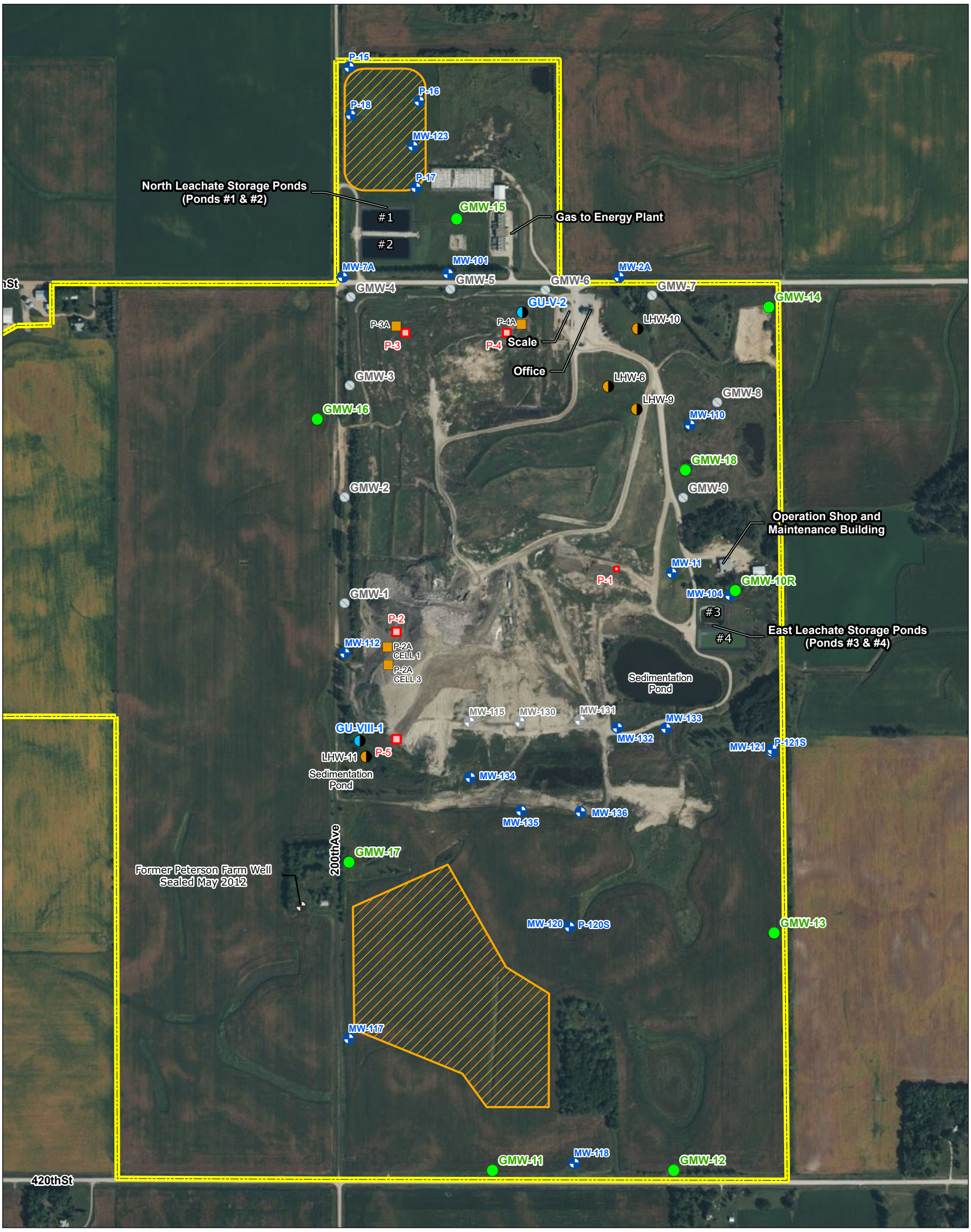
Project Location
T99N, R23W, S21
Lake Mills, Winnebago Co., IA

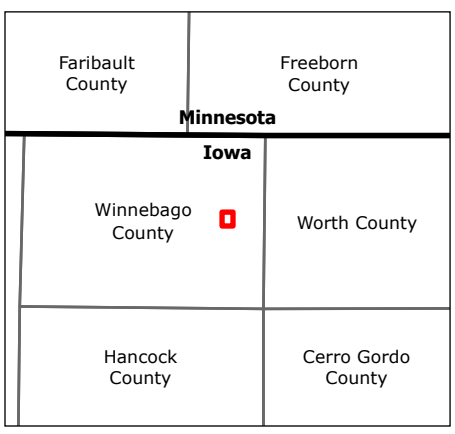
Prepared by BS on 2025-05-29

Client/Project 227702549
Waste Management Inc.
WM Central Disposal Landfill
Proposed Groundwater Monitoring Network Revisions

Figure No.
1

Title
Site Location Map





Notes
1. Coordinate System: NAD 1983 StatePlane Iowa North FIPS 1401 Feet
2. Data Sources: Bing Maps
3. Background: Bing Aerial Imagery

Legend

- Property Line
- Monitorable Well
- Sealed Monitorable Well
- Sealed Private Well
- Leachate Head Well
- Alternate Leachate Head Well
- Sealed Gas Monitoring Probe
- Groundwater Underdrain
- Subsurface Gas Monitoring Probe
- Leachate Sump
- Former Spray Irrigation Site (Permit Terminated 2017)

0 300 600 Feet

(At original document size of 11x17)
1:7,200

N

Stantec

Project Location
T99N, R23W, S21
Lake Mills, Winnebago Co., IA

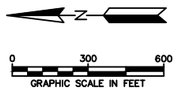
Prepared by JCS on 2025-06-04

Client/Project
227702549
Waste Management Inc.
WM Central Disposal Landfill
2024 Annual Report

Figure No.
2

Title
Landfill Monitoring Network

Plot Date & Time: 3 June 2025 12:51 PM



LEGEND

- FENCE LINE
- APPROXIMATE PROPERTY LINE
- ROAD
- SECONDARY ROAD
- BUILDING
- CULVERT
- EXISTING CONTOUR
- MONITORABLE WELL
- SEALED MONITORABLE WELL
- GAS MONITORING WELL
- LEACHATE HEAD WELL
- GROUNDWATER UNDERDRAIN
- PHASE/CELL BOUNDARY
- GROUNDWATER CONTOUR
- INFERRED GROUNDWATER CONTOUR
- GROUNDWATER FLOW DIRECTION

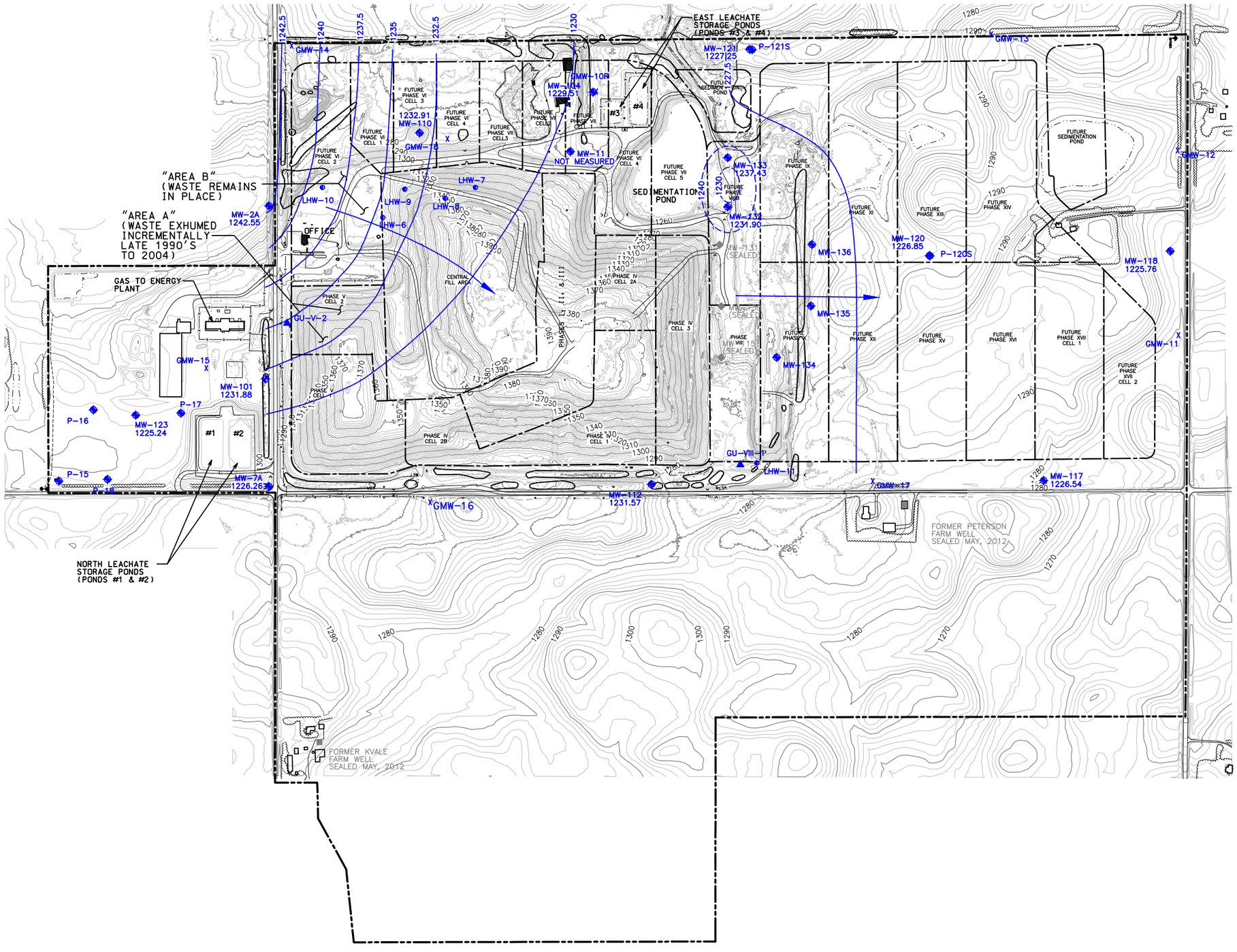
NOTES:

TOPOGRAPHY AND PLANIMETRIC FEATURES FOR A PORTION OF NORTH 40 ACRES, A PORTION OF SOUTH 160 ACRES, AND WEST PROPERTY BASED ON AERIAL PHOTO BY AEROMETRIC, INC. APRIL, 2014.

TOPOGRAPHY AND PLANIMETRIC FEATURES FOR NORTH 160 ACRES BASED ON AERIAL PHOTO BY WILLIAMS AERIAL & MAPPING, INC. APRIL 11, 2015. MOST RECENTLY UPDATED FEBRUARY 14, 2024.

ALL ON-SITE FACILITY AND MONITORING POINT ELEVATIONS ARE 0.92' LOWER THAN USGS BENCHMARKS.

PROPERTY LINE INFORMATION OBTAINED FROM CDS, INC.



REV	REVISION DESCRIPTION	DWN	APP	REV DATE

SEAL

PRIME CONSULTANT

Stantec

PROJECT TITLE
PROPOSED GROUNDWATER MONITORING NETWORK REVISIONS

CENTRAL DISPOSAL LANDFILL
CENTRAL DISPOSAL SYSTEMS

WINNEBAGO COUNTY, IOWA

SHEET TITLE
GROUNDWATER CONTOURS
JULY 19, 2024

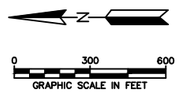
DWN BY	CHK'D	APP'D	DWG DATE
JJT	GLS	CJA	JUNE 2025

SCALE AS SHOWN

PROJECT NO.	SHEET NO.	REV NO.
227702549	FIGURE 3	0

I:\227702549\technical\Annual Reports\2024\drafting\cad\cia\Figure 3_Fall GW Contours.dwg

Plot Date & Time: 3 June 2025 11:15 AM



LEGEND

- FENCE LINE
- APPROXIMATE PROPERTY LINE
- ROAD
- SECONDARY ROAD
- BUILDING
- CULVERT
- EXISTING CONTOUR
- MW-104 MONITORABLE WELL
- MW-115 SEALED MONITORABLE WELL
- GMW-8 GAS MONITORING WELL
- LHW-9 LEACHATE HEAD WELL
- GU-V-2 GROUNDWATER UNDERDRAIN
- PHASE/CELL BOUNDARY
- MW-104 PROPOSED MONITORABLE WELL
- MW-115 PROPOSED SEALED WELL

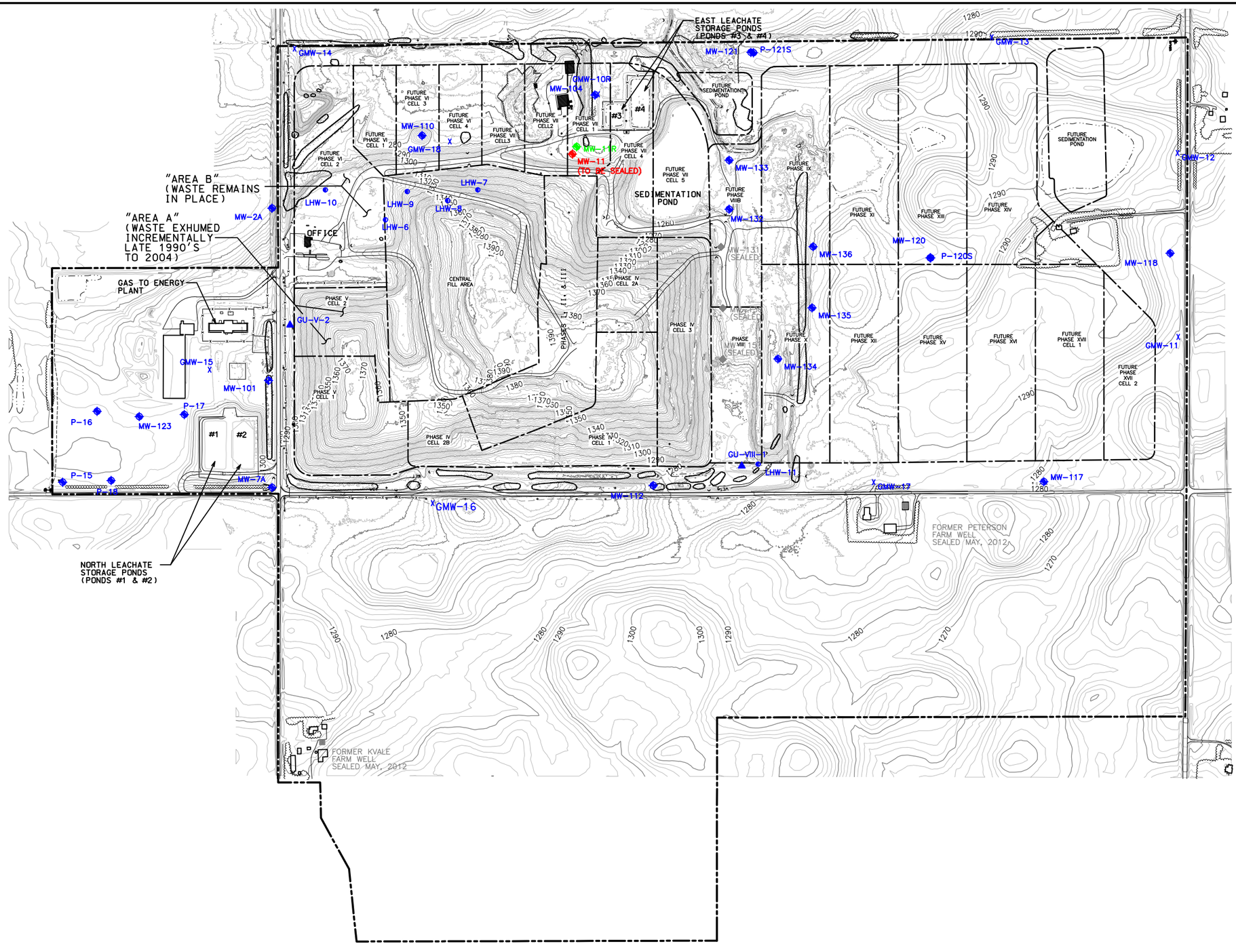
NOTES:

TOPOGRAPHY AND PLANIMETRIC FEATURES FOR A PORTION OF NORTH 40 ACRES, A PORTION OF SOUTH 160 ACRES, AND WEST PROPERTY BASED ON AERIAL PHOTO BY AEROMETRIC, INC. APRIL, 2014.

TOPOGRAPHY AND PLANIMETRIC FEATURES FOR NORTH 160 ACRES BASED ON AERIAL PHOTO BY WILLIAMS AERIAL & MAPPING, INC. APRIL 11, 2015. MOST RECENTLY UPDATED FEBRUARY 14, 2024.

ALL ON-SITE FACILITY AND MONITORING POINT ELEVATIONS ARE 0.92' LOWER THAN USGS BENCHMARKS.

PROPERTY LINE INFORMATION OBTAINED FROM CDS, INC.



REV	REVISION DESCRIPTION	DWN	APP	REV DATE

SEAL

PRIME CONSULTANT

Stantec

PROJECT TITLE
PROPOSED GROUNDWATER MONITORING NETWORK REVISIONS

CENTRAL DISPOSAL LANDFILL
CENTRAL DISPOSAL SYSTEMS

WINNEBAGO COUNTY, IOWA

SHEET TITLE
PROPOSED MONITORING NETWORK

DWN BY	CHK'D	APP'D	DWG DATE
JJT	GLS	CJA	JUNE 2025

SCALE AS SHOWN

PROJECT NO.	SHEET NO.	REV NO.
227702549	FIGURE 4	0

I:\227702549\technical\Annual Reports\2023\drafting\cad\ref\x-existing and future boundaries.dwg