

February 9, 2026

Ms. Alexis Slade, Environmental Engineer  
Iowa Department of Natural Resources  
6200 Park Avenue, Suite 200  
Des Moines, Iowa 50321



**RE: Request for Modification of the HMSP  
Cass County Sanitary Landfill  
15-SDP-01-75P**

Dear Ms. Slade:

On behalf of the Cass County Sanitary Landfill, we request that the currently approved Hydrologic Monitoring System Plan (HMSP) dated March 21, 2016 (Doc # 85734), revised August 8, 2016 (Doc #86898), October 12, 2016 (Doc #87408), and October 31, 2024 (Doc #111241) be amended.

The 2025 Annual Water Quality Report submitted January 30, 2026 (Doc # 115968), indicates that water quality evaluation over the past two (2) years has identified components of the current HMSP that warrant evaluation and reconsideration moving forward.

Based on information presented in Attachment A, the HMSP for the site is recommended to be changed as follows:

- 1) The number of monitoring points included in the HMSP should be reduced and should include the following:

Water Table Monitoring Wells: MW-15R, MW-12, MW-19, MW-20, MW-21, MW-24, MW37R, MW-38R, MW-39, and MW-43.

Dakota Sandstone Wells: MW-11

Underdrains: UD-0 and UD-1

- 2) The Statistical Evaluations for the site shall be as follows:

Water Table Monitoring Wells: **Interwell** (up to down) Statistical Evaluations should be performed.

**Intrawell** Statistical Evaluations should be performed in addition, as the water table system has only one (1) monitoring well (MW-15R) in the background system. Using both statistical evaluation methods is deemed appropriate to an accurate assessment of the site.

Dakota Sandstone Wells: **Intrawell** Statistical Evaluation of MW-11 should be performed, as this is the single well recommended to be monitored in the Dakota Sandstone System.

Underdrains: **Intrawell** Statistical Evaluations should be performed, as the underdrains do not have any appropriate background system available.

Please indicate whether the HMSP can be amended as recommended above.

Respectfully Submitted,  
**HLW Engineering Group**

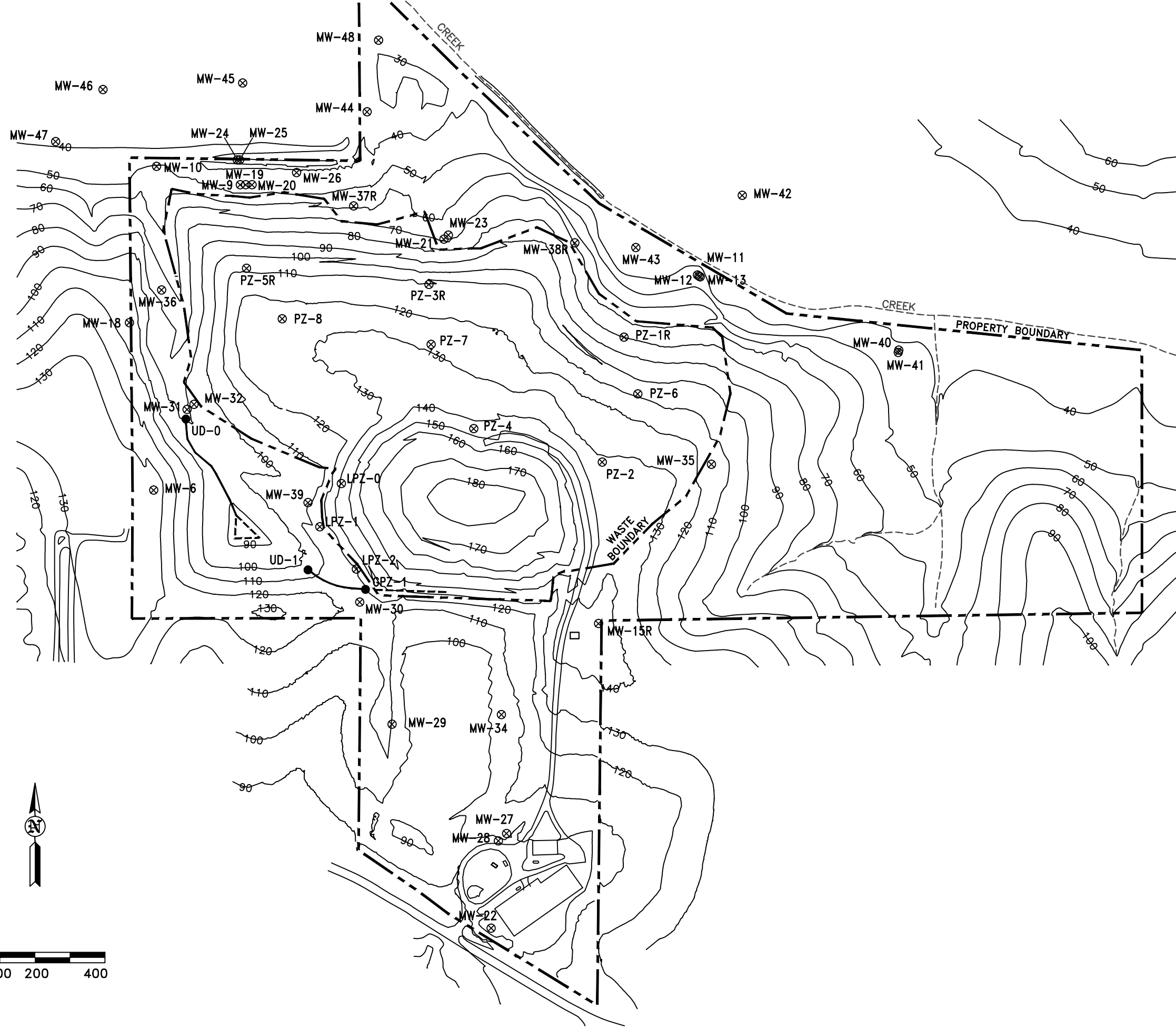
A handwritten signature in blue ink, appearing to read 'Todd Whipple', is written over the company name.

Todd Whipple, CPG  
Project Manager

cc: Mr. Chris Jahnke, Cass County

## Figures

0 100 200 400



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**SITE PLAN**  
CASS COUNTY SANITARY LANDFILL  
ATLANTIC, IOWA

**FIGURE:**

**1**

REVISION	NO.	DATE
DRAWN	PROJECT NO.	DATE
DRA	6055	2-3-26



0 100 200 400

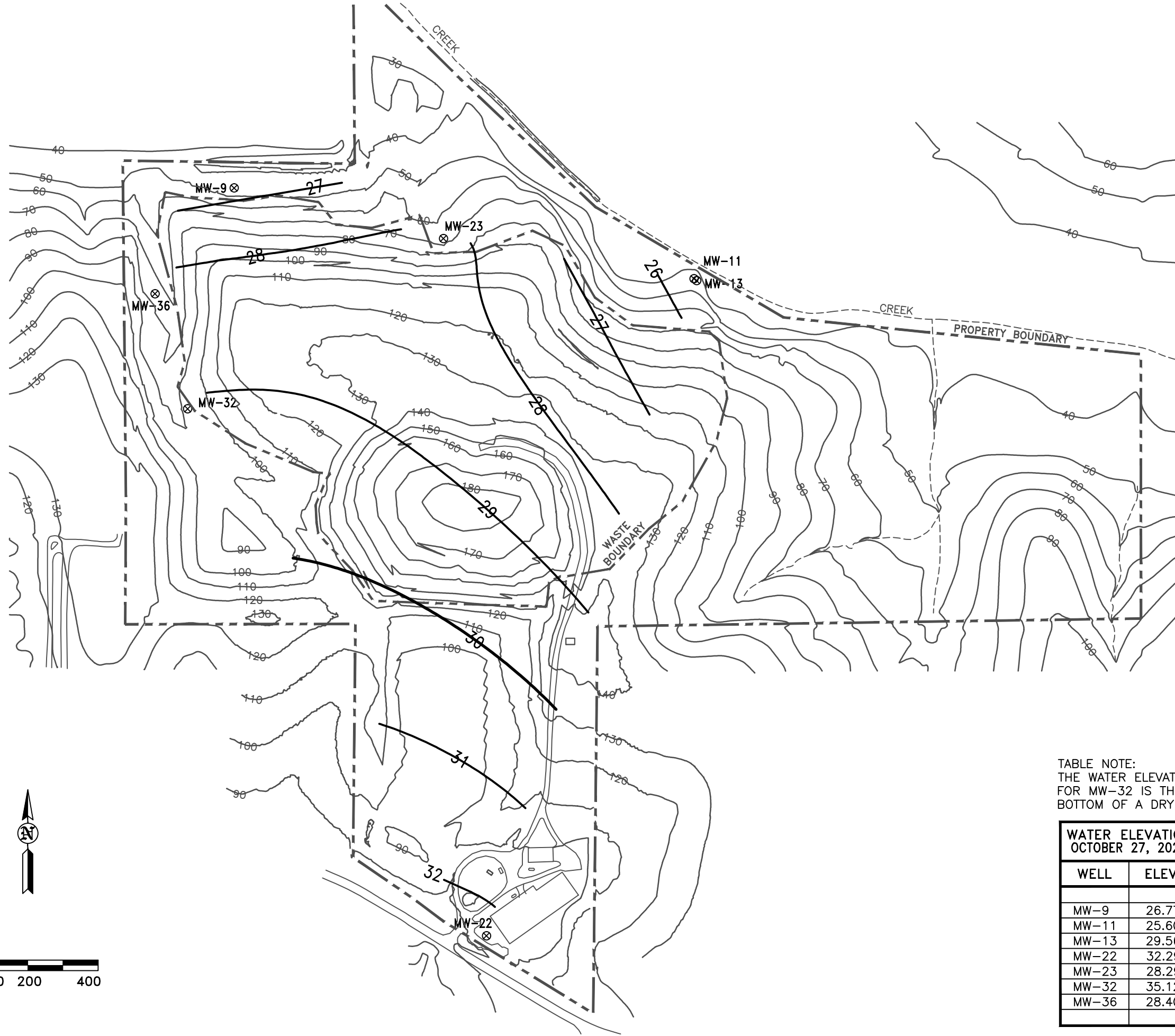


TABLE NOTE:  
THE WATER ELEVATION  
FOR MW-32 IS THE  
BOTTOM OF A DRY WELL.

WATER ELEVATION OCTOBER 27, 2025	
WELL	ELEV.
MW-9	26.77
MW-11	25.60
MW-13	29.56
MW-22	32.29
MW-23	28.29
MW-32	35.12
MW-36	28.40

GROUNDWATER CONTOURS  
DAKOTA SANDSTONE  
CASS COUNTY SANITARY LANDFILL  
ATLANTIC, IOWA

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FIGURE: 3		NO.	DATE
REVISION	DRAWN	PROJECT NO.	DATE
	DRA	6055	2-3-26

## Attachment A



## **SUPPORTING EVALUATION FOR PROPOSED HMSP CHANGES**

### **Water Quality Data Reviewed**

Water quality reviewed and evaluated herein is limited to data collected since February of 2008 under the current Iowa Administrative Code (IAC) 567-113. Water quality data collected under the previous sections of code are not included in the current database and varied from those compounds required by current code.

### **Dakota Sandstone Formation**

The Dakota Sandstone is a regional water supply aquifer in Cass County. The Dakota Sandstone is documented under the site (or portions of the site). The Dakota Sandstone Aquifer is documented to lie below the glacial till soils across the landfill property and some properties to the north. The thickness of the glacial till soils are reported as being between 60 feet in the south and 10 feet in the north.

The 1991 Hydrogeologic Report (**Doc #114253**), the 2009 Revised HMSP (**Doc #41187**), and the 2016 Revised HMSP (**Doc #87408**) each include a discussion of the thinned glacial till soils to the north, downward vertical gradients in the till soils, and upward vertical gradients in the Dakota Sandstone (confined aquifer) with concern for groundwater impact.

The 2016 HMSP (page 2-3 Doc #87408) states *“The downward gradient from the water table and the upward gradient from the Dakota Sandstone aquifer could result in commingling of aquifer water flows along the north portion of the North Area where the separation distance between the two aquifers decreases to less than ten feet.”*

The Dakota Sandstone has been included in the site HMSP since 1993 (**Doc #41818**).

Dakota Sandstone monitoring wells at the site include MW-19, MW-11, MW-13, MW-22, MW-23, MW-32, MW-36, and MW-41. Historically, MW-22 (background), MW-11, MW-13, MW-23, and MW-36 have been monitored. MW-32 is typically dry. In 2025 MW-41 was added to the sampling program to provide supplemental background data to the background system.

### **Water Quality Findings – VOC – Dakota Sandstone Formation**

Review of Volatile Organic Compound (VOC) concentrations reported (since 2008) in Dakota monitoring wells is informative (Attached at the end of this section). There have been no confirmed detections of VOC in the reported Dakota Sandstone wells, except MW-11. At MW-11, there are confirmed detections of benzene, chlorobenzene, and cis-1,2-dichloroethylene that occurred in 2008 and 2009. Following, there was a single verified detection of cis-1,2-dichloroethylene in April of 2014. There has been no additional confirmed VOC detection at MW-11 since 2014, and no VOC compound reported at MW-11 since 2017. The reported VOC concentrations at MW-11 did not exceed the Groundwater Protection Standard (GWPS) (IAC 567-137 Protected Groundwater Limit). Based on the potential historic VOC impacts to MW-11, this well is the single well proposed to be retained in the HMSP related to the Dakota Sandstone System.

## **Water Quality Findings – Inorganic Compounds – Dakota Sandstone Formation**

Review of the inorganic compound concentrations reported in the Dakota Sandstone System is recognized to be problematic given the long-term use of a single point (MW-22) as the background for the Dakota Sandstone system. Comparison of water quality data from any single given well to any other single given well will result in compound concentrations that vary between wells. This natural variability in water quality (in compound concentrations) should not be itemized as compound concentration exceedance between one well and another, rather the natural variability in water quality needs to be quantified using several wells that are spatially separate from each other (and not impacted). The variability in background water quality is of utmost importance when establishing the normal range for compound concentrations and when establishing the Prediction Limits. To date this has not been accomplished at this site.

Review of the inorganic compound data for all Dakota Sandstone wells indicates that MW-11 and MW-36 are the only two (2) monitoring wells in the Dakota System that have inorganic compound concentrations that exceed those recorded at MW-22. In the past, these were recorded as Statistically Significant Increases (SSI) in compound concentrations above background, but it is apparent that this is an unfair assessment since the background limits (based on MW-22 alone) are insufficient.

When MW-11 and MW-36 are evaluated by intrawell methods (where site wide background comparisons are not required), there are no exceedances of the control limits established by intrawell statistical methods at MW-36. A single SSI was recorded at MW-11 (copper) based on the 2025 Annual Water Quality Report submitted January 30, 2026 (Doc # 115968). Based on the potential inorganic compound (copper) impact to MW-11, this well is the single well proposed to be retained in the HMSP related to the Dakota Sandstone System.

### **Planned HMSP Reevaluation (Now & Future)**

The 2009 Revised HMSP (**Doc #41187 – page 3-10**), and the 2016 Revised HMSP (**Doc #87408 – page 3-9**) each include a discussion on the periodic review of the monitoring system. The more recent document states *“The hydrologic monitoring system network will be reviewed periodically to determine if the installation of additional monitoring points is appropriate or if sufficient data has been collected to recommend sampling frequency alteration, sampling discontinuance, or the abandonment of one or more monitoring points.”*

Further, the Dakota System was correctly added to the original HMPSP in 1993 in order to confirm that the unit was free of impact from the landfill facility, especially to the north where the glacial till formation was thin.

Based on the data presented above, all monitoring wells completed in the Dakota Sandstone are determined to be free of impact, with the possible exception of MW-11. Annual water quality assessments have been completed since 1993 (33 years) which is considered to be sufficient data to determine that sampling discontinuance in the Dakota Sandstone system is acceptable (with the exception that MW-11 will be retained in the HMSP). The on-going water quality monitoring in the overlying glacial till system will provide a means to evaluate whether future water quality impacts exist in the till formation overlying the Dakota Sandstone, whether any impacts to the glacial till system are significant impacts, and whether impacts to the till system are increasing or decreasing over time. If impact in the till system is determined to change in the future, monitoring of the Dakota can be implemented again at that time.



Table 1

## Historical Volatile Organic Compound Detections

Constituent	Well	Date	Identifier	Result	Limit	Units
Acetone	MW-11	5/12/2015		16.5	10.0	ug/L
Benzene	MW-11	2/11/2008		.290	.001	ug/L
Benzene	MW-11	4/30/2008		.180	.100	ug/L
Benzene	MW-11	7/09/2008		.340	.001	ug/L
Benzene	MW-11	3/03/2009		.830	.001	ug/L
Chlorobenzene	MW-11	2/11/2008		.380	.001	ug/L
Chlorobenzene	MW-11	4/30/2008		.210	.001	ug/L
Chlorodibromomethane	MW-11	2/11/2008		.300	.001	ug/L
cis-1,2-Dichloroethene	MW-11	2/11/2008		1.12	1.00	ug/L
cis-1,2-Dichloroethene	MW-11	7/09/2008		1.36	1.00	ug/L
cis-1,2-Dichloroethene	MW-11	12/10/2008		1.28	1.00	ug/L
cis-1,2-Dichloroethene	MW-11	3/03/2009		2.36	1.00	ug/L
cis-1,2-Dichloroethene	MW-11	10/03/2013		1.18	1.00	ug/L
cis-1,2-Dichloroethene	MW-11	10/03/2013		1.07	1.00	ug/L
cis-1,2-Dichloroethene	MW-11	4/22/2014		1.24	1.00	ug/L
cis-1,2-Dichloroethene	MW-11	11/13/2017		1.02	1.00	ug/L
Methylene Chloride	MW-11	7/09/2008		.50	.45	ug/L
Tetrachloroethene	MW-11	2/11/2008		.76	.38	ug/L
Vinyl Chloride	MW-11	2/11/2008		.390	.001	ug/L
Vinyl Chloride	MW-11	7/09/2008		.280	.001	ug/L
Methylene Chloride	MW-22	7/09/2008		.80	.45	ug/L
Tetrachloroethene	MW-22	2/11/2008		.58	.38	ug/L
Bromomethane	MW-23	10/03/2013		4.02	1.00	ug/L
Carbon Tetrachloride	MW-23	4/30/2008		.370	.001	ug/L
Tetrachloroethene	MW-23	2/11/2008		.52	.38	ug/L
Chlorobenzene	MW-24	8/23/2022		1.04	1.00	ug/L
Carbon Disulfide	MW-36	10/27/2025		1.1	1.0	ug/L
PCB-1260	MW-36	10/09/2012		.965	.001	ug/L
Carbon Disulfide	MW-37R	10/27/2025		4.2	1.0	ug/L
Toluene	MW-37R	11/17/2020		1.21	1.00	ug/L
Xylenes, total	MW-37R	11/17/2020		5.25	1.00	ug/L
Toluene	MW-38R	11/17/2020		2.12	1.00	ug/L
Xylenes, total	MW-38R	11/17/2020		10.2	1.0	ug/L

Detections are shown for the constituents and sample points selected for the analysis  
The Limit column refers to the laboratory reporting limit