Technical Memo

WENCK ASSOCIATES

Responsive partner.
Exceptional outcomes.

To: **Geoff Strack, SKB Environmental, Inc.**

From: Dave Parenteau, PE (MN), Wenck Associates, Inc.

Date: January 9, 2018

Subject: Annual Inspection SKB Rosemount Industrial Waste Facility - Report of CCR Landfill Inspection
Wenck Project # B3053-0096

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

David M. Parenteau _____ Jan 9, 2018
PE # 41243

Purpose

This memorandum fulfills the requirements of 40 CFR § 257.84 Inspection Requirements for CCR Surface Landfills, Part b, regarding annual inspection by a qualified professional engineer.

Background and Applicability

SKB Environmental, Inc. owns and operates the SKB Rosemount Industrial Waste Facility, an industrial waste disposal facility operating under MPCA Solid Waste Permit SW-383, originally issued in January of 1992.

The site is located on a 236 acre parcel in Sections 19, 20 and 25 of Township 115 North, Range 18 West, in the city of Rosemount Minnesota, which is in Dakota County. The site is located between Minnesota State Highway 55 and Dakota County Road 38. The attached Figure 1 presents an overview of the site.

There are 6 permitted disposal cells in the Landfill. Past operating records indicate that CCR Material is contained in Cells 1, 2 and 3.

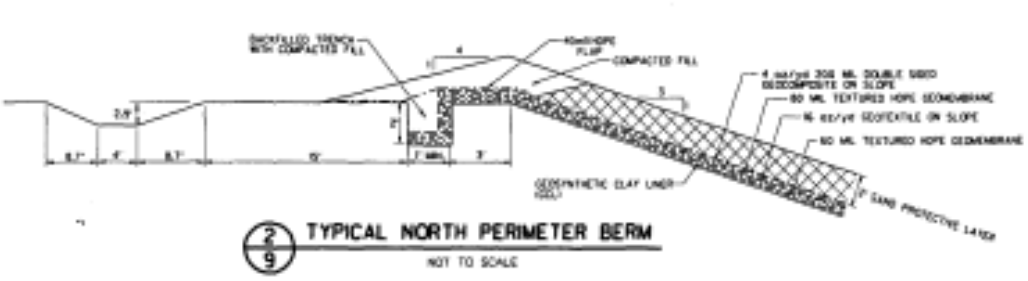
CCR Landfill Inspection (40 CFR § 257.84)

On November 13, 2017, Dave Parenteau conducted the on-site inspection the CCR Landfill. During the inspection the following activities were performed.

- Available information regarding status and condition of the CCR unit, including, but not limited to, files available in the operating record were reviewed. Past inspection reports were reviewed on site, and SKB Environmental, Inc. provided copies of cell construction documentation reports for review in preparing this report. There were no new cells for CCR disposal since the 2017 inspection, therefore no additional construction documentation reports were reviewed for this inspection.

- The documentation reviewed covered the following topics
  - CCR unit design and construction information required by § 257.73(c)(1);
  - Previous periodic structural stability assessments required under § 257.73(d); It should be noted that §257.74 does not apply as the site is not new, nor is it a lateral expansion of an existing impoundment/landfill, therefore this is not addressed.
  - The results of inspections by a qualified person (contained below);
  - Results of previous annual inspections;

  In general, most landfill cell embankments were constructed using granular soils and placed as engineered fill, compacted to 95% of Standard Proctor Dry Density in lift thicknesses ranging from 8 inches to 12 inches. A typical perimeter section, taken from the Cell 3A Construction Documentation Report, prepared by Foth & Van Dyke in October, 2005 is shown below.



- A visual inspection of the CCR units to identify signs of distress or malfunction of the CCR unit and appurtenant structures; and

  There were no observed signs of distress or malfunction on the CCR Landfill and their corresponding appurtenant structures.

  Photos taken during the inspection are provided in Attachment 1 and Figure 2 shows where the photos were taken.

CCR Landfill Inspection Report

40 CFR § 257.84, Subpart b.2 requires the following topics in italics be addressed within this report. The requirements are shown in italics with the response immediately afterwards for each item.

(i) *Any changes in geometry of the impounding structure since the previous annual inspection;*

There were no apparent changes from the geometry of the impoundment when compared to the permit drawings or the past construction documentation reports.

(ii) The approximate volume of CCR contained in the unit at the time of the inspection;

The approximate volume of CCR material contained in the landfill at the time of the inspection is 573,500 cubic yards.

(iii) Any appearances of an actual or potential structural weakness of the CCR unit, in addition to any existing conditions that are disrupting or have the potential to disrupt the operation and safety of the CCR unit and appurtenant structures; and

None of the following were observed that could indicate structural weakness;

- Signs of slumping or rotational movement.
- Lateral or vertical distortion of the embankment crest
- Seepage on the outboard slope;
- Burrowing activity of varmints;

(iv) Any other change(s) which may have affected the stability or operation of the impounding structure since the previous annual inspection.

There were no changes noted that may could potentially affect the stability or operation of the impoundment. Observations were consistent with those noted in that report.

Notification Requirements

SKB Environmental, Inc. will comply with the recordkeeping requirements specified in § 257.105(g), the notification requirements specified in § 257.106(g), and the internet requirements specified in § 257.107(g).

Conclusions and recommendations

Wenck continues to recommend that the trees rooted in the southern perimeter berms be monitored as part of future annual inspections. Observations requiring action would be signs of the tops of the trees leaning away from the slope. This leaning can cause concentrated stresses in the slope that, in some cases, can induce slumping of the slope's fill materials.

During this inspection there were no signs of this occurring.

The soils used for embankment construction have been granular in nature, and not subject to consolidation or softening with moisture. The cells are lined with a geomembrane ensuring that there is no leachate seeping through the embankment from the waste material. The landfill embankment crests are wide in width, have slopes no steeper than 3H:1V, and are relatively short in height, ranging from zero to approximately 20 feet in height. The slopes are well vegetated and the site is well run and maintained.

40 CFR § 257.83, Subpart b.5 and 40 CFR § 257.84, Subpart b.5 each require that if a deficiency or release is identified during an inspection, the owner or operator must remedy the deficiency or release as soon as feasible and prepare documentation detailing the corrective measures taken.

There were no deficiencies or releases identified during the inspection that require remedy as soon as possible.

Attachment 1

Photos

Waste Connections
SKB Rosemount Landfill
2018 Site Inspection Report Photo List

Photo Location	Photo #	Cell	Side of Cell (1)	Slope	View Orientation (1)	Photo Location	Photo #	Phase	Side of Cell (1)	Slope	View Orientation (1)
1	1	3B	North	LF Face	West	10	39	2C	South	LF Face	West
1	2	3A/3B	North	LF Face	East	10	40	2C/2D	South	LF Face	East
1	3	3A/3B	North	Perim Road/Toe LF	East	10	41	2C/2D	South	Perim Road/Toe LF	East
2	4	3A	North	LF Face	West	10	42	2C	South	Perim Road/Toe LF	West
2	5	3A	North	LF Face	East	11	43	2C	South	Perim Berm	West
2	6	3A	North	Perim Road/Toe LF	East	11	44	2C	South	Perim Berm	East
2	7	3A	North	Perim Road/Toe LF	West	11	45	2C	South	Perim Road/Toe LF	East
3	8	3A	North	Perim Road/Toe LF	West	11	46	2C	South	Perim Road/Toe LF	West
3	9	3A	North	LF Face	West	11	47	2C	South	LF Face	East
3	10	3A	East	LF Face	South	11	48	2C	South	LF Face	West
3	11	3A	East	Perim Road/Toe LF	South	12	49	2A/2B	South	Perim Berm	West
4	12	3A	East	Perim Road/Toe LF	North	12	50	2B/2C	South	Perim Berm	East
4	13	3A	East	Perim Road/Toe LF	South	12	51	2B/2C	South	Perim Road/Toe LF	East
4	14	3A	East	LF Face	North	12	52	2A/2B	South	Perim Road/Toe LF	West
4	15	3A	East	LF Face	South	12	53	2B/2C	South	LF Face	East
5	16	3A	East	Perim Road/Toe LF	North	12	54	2A/2B	South	LF Face	West
5	17	3A	East	Perim Road/Toe LF	South	13	55	2A/2B	South	Perim Berm	East
5	18	3A	East	LF Face	North	13	56	2A	South	Perim Berm	West
5	19	3A	East	LF Face	South	13	57	2A/2B	South	Perim Road/Toe LF	East
6	20	3A	East	Perim Road/Toe LF	North	13	58	2A	South	Perim Road/Toe LF	West
6	21	3C	East	Perim Road/Toe LF	South	13	59	2A/2B	South	LF Face	East
6	22	3A	East	LF Face	North	13	60	2A	South	LF Face	West
6	23	3C	East	LF Face	South	14	61	2A	South	LF Face	East
7	24	3C	East	Perim Road/Toe LF	North	14	62	2A	South	Perim Road/Toe LF	East
7	25	3C	East	Perim Road/Toe LF	South	14	63	2A	South	Perim Berm	East
7	26	3C	East	LF Face	North	14	64	2A	West	LF Face	North
7	27	3C	East	LF Face	South	14	65	2A	West	Perim Road/Toe LF	North
8	28	3C	East	Perim Road/Toe LF	North	14	66	2A	West	Perim Berm	North
8	29	2D	East	Perim Road/Toe LF	South	15	67	2A	West	LF Face	South
8	30	3C	East	LF Face	North	15	68	2A	West	Perim Road/Toe LF	South
8	31	2D	East	LF Face	South	15	69	2A	West	Perimeter Berm	South
9	32	2D	East	Perim Road/Toe LF	North	15	70	2A	North	LF Face	East
9	33	2D	East	LF Face	North	16	71	1	West	LF Face	North
9	34	2D	South	Perim Berm	West	16	72	1	South	LF Face	East
9	35	2D	South	Perim Road/Toe LF	West	17	73	1	West	LF Face	South
9	36	2D	South	LF Face	West	17	74	1	West	Perim Road/Toe LF	South
10	37	2C	South	Perim Berm	West	17	75	1	West	Perim Berm	South
10	38	2C/2D	South	Perim Berm	East						

(1) Side of Cell and View Orientation are based on Site North rather than True North

2018 Dike Integrity Inspection Report Photos SKB Rosemount Landfill

WENCK

Responsive partner.
Exceptional outcomes.

Photo 1 - Cell 3A North Landfill Face

Photo 2 - Cell 3A/3B North Landfill Face

Photo 3 - Cell 3A/3B North Perim Rd/LF Toe

Photo 4 - Cell A North Landfill Face

Photo 5 - Cell 3A North Landfill Face

Photo 6- Cell 3A North Perimeter Rd/LF Toe

Photo 7 - Cell 3A North Perimeter Rd/LF Toe

Photo 8 - Cell 3A North Perimeter Rd/LF Toe

Photo 9 - Cell 3A North Landfill Face

Photo 10 - Cell 3A East Landfill Face

Photo 11 - Cell 3A East Perimeter Rd/LF Toe

Photo 12 - Cell 3A East Perimeter Rd/LF Toe

Photo 13 - Cell 3A East Perimeter Rd/LF Toe

Photo 14 - Cell 3A East Landfill Face

Photo 15 - Cell 3A East Landfill Face

Photo 16 - Cell 3A East Perim RD/LF Toe

Photo 17 - Cell 3A East Perim RD/LF Toe

Photo 18 - Cell 3A East Landfill Face

Photo 19 - Cell 3A East Landfill Face

Photo 20 - Cell 3A Perim Rd/LF Toe

Photo 21 - Cell 3C East Perim RD/LF Toe

Photo 22 – Cell 3A East Landfill Face

Photo 23 - Cell 3C East Landfill Face

Photo 24 - Cell 3C East Perim RD/LF Toe

Photo 25 - Cell 3C East Perim RD/LF Toe

Photo 26 - Cell 3C East Landfill Face

Photo 27 - Cell 3C East Landfill Face

Photo 28 - Cell 3C East Perim RD/LF Toe

Photo 29 - Cell 2D East Perim Rd/LF Toe

Photo 30 - Cell 3C East Landfill Face

Photo 31 - Cell 2D East Landfill Face

Photo 32 - Cell 2D East Perim Rd/LF Toe

Photo 33 - Cell 2D East Landfill Face

Photo 34 - Cell 2D South Perimeter Berm

Photo 35 - Cell 2D South Perim Rd/LF Toe

Photo 36 - Cell 2D South Landfill Face

Photo 37 - Cell 2C South Perimeter Berm

Photo 38 - Cell 2C/2D South Perimeter Berm

Photo 39 - Cell 2C South Landfill Face

Photo 40 - Cell 2C/2D South Landfill Face

Photo 41 - Cell 2C/2D South Perim Rd/LF Toe

Photo 42 - Cell 2C East Perim Rd/LF Toe

Photo 43 Cell 2C South Perimeter Berm

Photo 44 Cell 2C South Perimeter Berm

Photo 45 - Cell 2C South Perim Rd/LF Toe

Photo 46 - Cell 2C South Perim Rd/LF Toe

Photo 47 - Cell 2C South Landfill Face

Photo 48 - Cell 2C South Landfill Face

Photo 49 - Cell 2A/2B South Perimeter Berm

Photo 50 - Cell 2B/2C South Perimeter Berm

Photo 51 - Cell 2B/2C South Perim Rd/LF Toe

Photo 52 - Cell 2A/2B South Perim Rd/LF Toe

Photo 53 - Cell 2B/2C South Landfill Face

Photo 54 - Cell 2A/2B South Landfill Face

Photo 55 - Cell 2A/2B South Perimeter Berm

Photo 56 - Cell 2A South Perimeter Berm

Photo 57 - Cell 2A/2B South Perim Rd/LF Toe

Photo 58 - Cell 2A South Perim Rd/LF Toe

Photo 59 – Cell 2A/2B South Landfill Face

Photo 60 - Cell 2A South Landfill Face

Photo 61 – Cell 2A South Landfill Face

Photo 62 - Cell 2A South Perim Rd/LF Toe

Photo 63 - Cell 2A South Perimeter Berm

Photo 64 - Cell 2A West Landfill Face

Photo 65 - Cell 2A West Perim Rd/LF Toe

Photo 66 - Cell 2A West Perimeter Berm

Photo 67- Cell 2A West Landfill Face

Photo 68 - Cell 2A West Perim RD/LF Toe

Photo 69 - Cell 2A West Perimeter Berm

Photo 70 - Cell 2A North Landfill Face

Photo 71 - Cell 1 West Landfill Face

Photo 72 - Cell 1 South Landfill Face

Photo 73 - Cell 1 West Landfill Face

Photo 74 - Cell 1 West Perimeter Rd/LF Toe

Photo 75 - Cell 1 West Perimeter Berm

Figures

Plot Date & Time: 12 January 2018 8:24 AM

955,000E 955,500E 956,000E 956,500E 957,000E 957,500E 958,000E 958,500E

23,500N
23,000N
22,500N
22,000N
21,500N
21,000N
20,500N
20,000N

SITE ENTRANCE

CELL 4A (ASH)
CELL 4B (ASH)
CELL 4C (ASH)
CELL 4D (ASH)
4E CELL
3M CELL
CELL 3B (INDUSTRIAL)
CELL 3A (INDUSTRIAL)
CELL 3D (INDUSTRIAL)
CELL 1 (INDUSTRIAL)
CELL 2A (INDUSTRIAL)
CELL 2B (INDUSTRIAL)
CELL 2C (INDUSTRIAL)
CELL 2D (INDUSTRIAL)
CELL 3C (INDUSTRIAL)
CELL 5A (C&D)
CELL 5B (C&D)
CELL 5C (C&D)
CELL 6A (INDUSTRIAL)
CELL 6B (INDUSTRIAL)
CELL 6C (INDUSTRIAL)
CELL 6D (INDUSTRIAL)

APPROXIMATE AREA SUBJECT TO CCR INSPECTION AND REPORTING REQUIREMENTS

N
TRUE NORTH
PLAN NORTH

0 200 400
GRAPHIC SCALE IN FEET

NOTE:
BASE MAPPING HAS BEEN UPDATED BY ARIEAL SURVEY PROVIDED BY CONTINENTAL MAPPING COMPLETED ON NOVEMBER 7, 2017

REV	REVISION DESCRIPTION	DWN	APP	REV DATE
0	ISSUED FOR FINAL	JVB	DMP	12/29/17

SEAL

SUB CONSULTANT

PRIME CONSULTANT

WENCK ASSOCIATES
Responsive partner. Exceptional outcomes.
1800 PIONEER CREEK CENTER MAPLE PLAIN, MINNESOTA
763-479-4242 763-749-4200

PROJECT TITLE
JAN. 2018 INSPECTION REPORT

SKB ROSEMOUNT LANDFILL
ROSEMOUNT, MINNESOTA

SHEET TITLE
SITE MAP

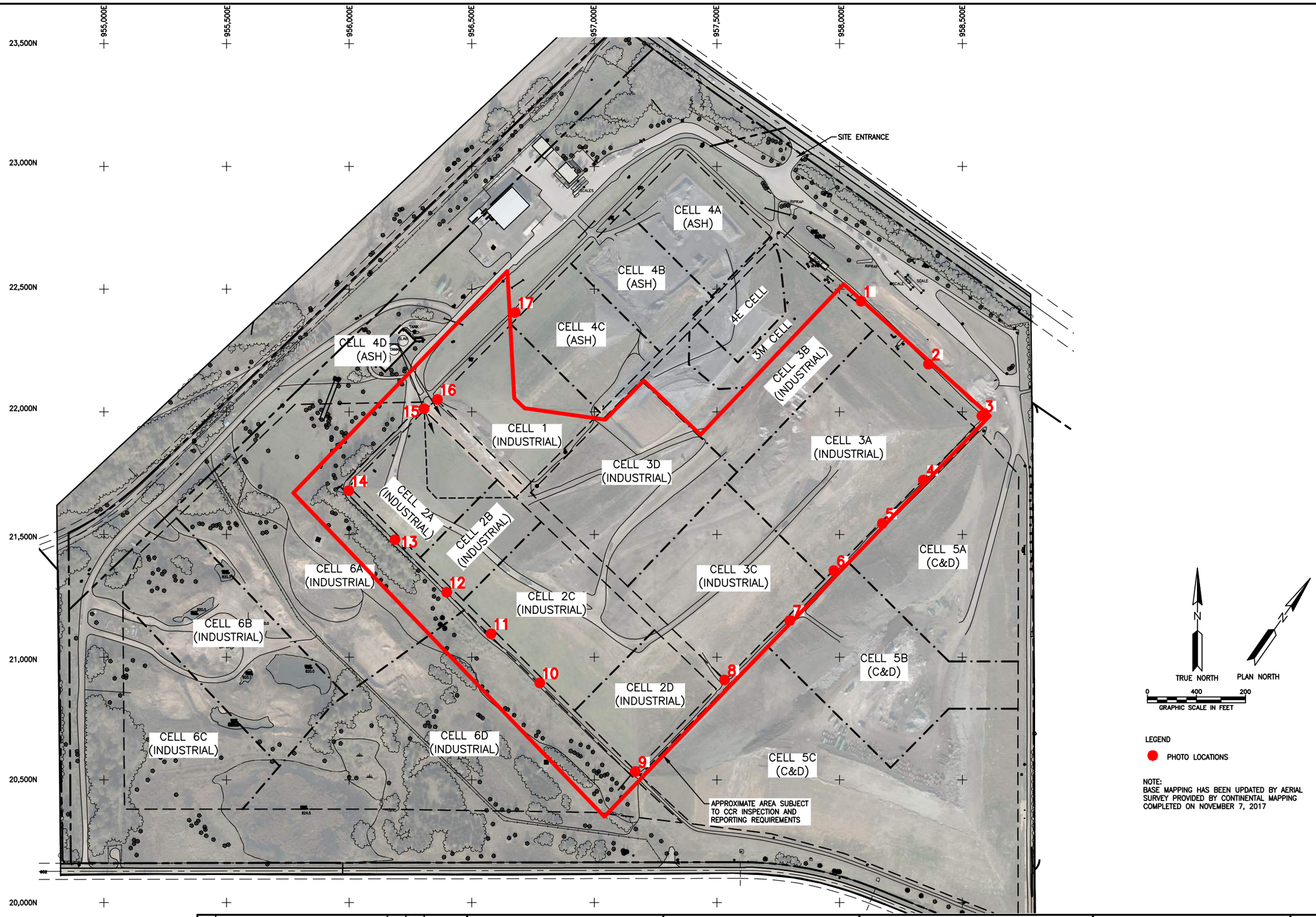
DWN BY	CHK'D	APP'D	DWG DATE
JVB	DMP	DMP	DEC. 2017

SCALE AS NOTED

PROJECT NO.	SHEET NO.	REV NO.
3053-0096	FIGURE 1	0

M:\3053\0096\cad\figures\figure 1_Site map.dwg

Plot Date & Time: 12 January 2018 8:24 AM



TRUE NORTH

PLAN NORTH

0 400 200

GRAPHIC SCALE IN FEET

LEGEND

● PHOTO LOCATIONS

NOTE:
BASE MAPPING HAS BEEN UPDATED BY AERIAL SURVEY PROVIDED BY CONTINENTAL MAPPING COMPLETED ON NOVEMBER 7, 2017

REV	REVISION DESCRIPTION	DWN	APP	REV DATE
0	ISSUED FOR FINAL	JVB	DMP	12/29/17

SEAL

SUB CONSULTANT

PRIME CONSULTANT

WENCK ASSOCIATES

Responsive partner. Exceptional outcomes.

1800 PIONEER CREEK CENTER
MAPLE PLAIN, MINNESOTA
763-479-4242
763-749-4200

PROJECT TITLE
JANUARY 2018 INSPECTION REPORT

SKB ROSEMOUNT LANDFILL
ROSEMOUNT, MINNESOTA

SHEET TITLE
PHOTO LOCATIONS

DWN BY	CHK'D	APP'D	DWG DATE
JVB	DMP	DMP	DEC. 2017

SCALE AS NOTED

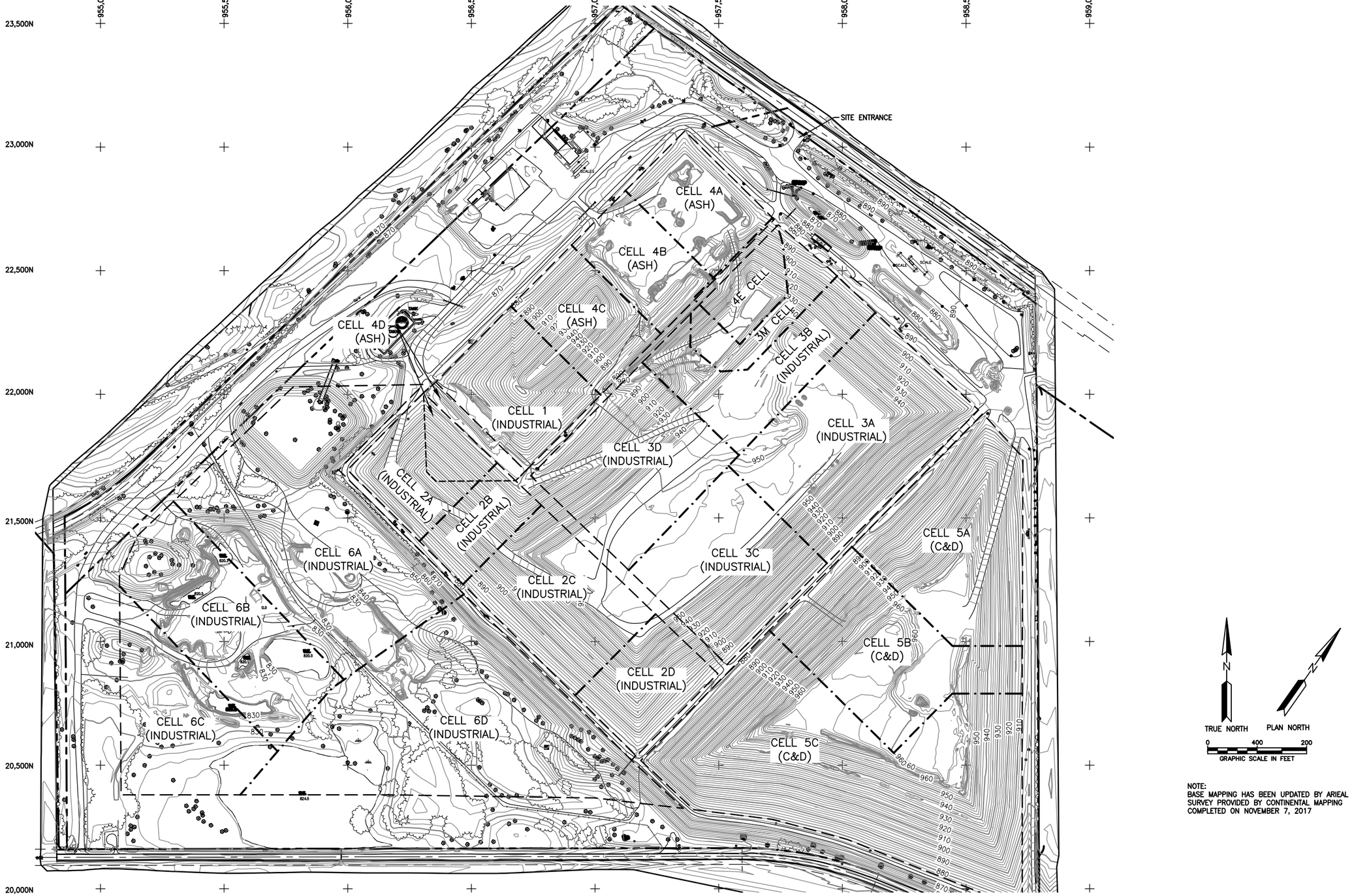
PROJECT NO. 3052-0096

SHEET NO. FIGURE 2

REV NO. 0

M:\3052\3096\cad\figures\figure 2_INSPECTION LOCATIONS.dwg

Plot Date & Time: 12 January 2018 8:24 AM



NOTE:
BASE MAPPING HAS BEEN UPDATED BY ARIEAL SURVEY PROVIDED BY CONTINENTAL MAPPING COMPLETED ON NOVEMBER 7, 2017

REV	REVISION DESCRIPTION	DWN	APP	REV DATE
0	ISSUED FOR FINAL	JVB	DMP	12/29/17

SEAL

SUB CONSULTANT

PRIME CONSULTANT

WENCK ASSOCIATES

Responsive partner. Exceptional outcomes.

1800 PIONEER CREEK CENTER
MAPLE PLAIN, MINNESOTA
763-479-4242
763-749-4200

PROJECT TITLE
JAN. 2018 INSPECTION REPORT

SKB ROSEMOUNT LANDFILL
ROSEMOUNT, MINNESOTA

SHEET TITLE
NOVEMBER 2017 TOPO

DWN BY	CHK'D	APP'D	DWG DATE
JVB	DMP	DMP	DEC. 2017

SCALE: AS NOTED

PROJECT NO.	SHEET NO.	REV NO.
3052-0096	FIGURE 3	0

M:\3053\0096\cad\figures\figure 3_NOVEMBER 2017 TOPOGRAPHY.dwg