

Technical Memo



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Exceptional outcomes.

To: Geoff Strack, SKB Environmental, Cloquet Landfill Inc., f/n/a Shamrock Landfill, Inc.

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

Date: January 13, 2017

Subject: Annual Inspection SKB Environmental, Cloquet Landfill Inc., f/n/a Shamrock Landfill, Inc.- Report of CCR Landfill Inspection
Wenck Project # B3053-0058

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
PE # 41243

A handwritten signature in blue ink, appearing to read 'David M. Parenteau', is written over a horizontal line.

Jan 13, 2017

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, Cloquet Landfill Inc., f/n/a Shamrock Landfill, Inc. owns and operates the Shamrock Environmental Landfill. The site is an industrial waste landfill located on an approximately 59 acre parcel of land located at Section 25, Township 49 North, Range 17 West, Carlton County with a street address of 761 MN Highway 45 in Cloquet, Minnesota. Approximately 9.5 acres of a total permitted 41.5 acres of the site are currently being utilized for landfill activities, with 5.4 acres of new disposal area recently constructed (Phases 3 and 4).

The facility is operated under the MPCA Solid Waste Permit SW-399, issued on December 21, 2010.

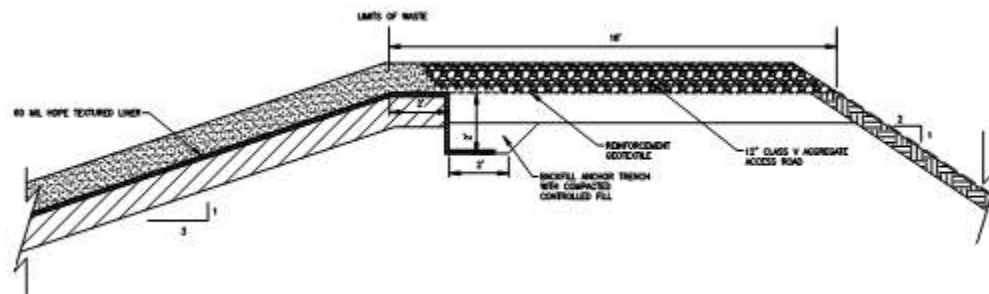
The attached Figure 1 presents a site layout.

CCR Landfill Inspection (40 CFR § 257.84)

On November 11, Dave Parenteau conducted the on-site inspection of 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. There has been no new construction since the 2016 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 on site borrow material, which consisted of silty clay and clayey sand type soils. The fill was placed as engineered fill, compacted to 95% of Standard Proctor Dry Density in lift thicknesses ranging from 8 inches to 12 inches, and the subgrade was proof rolled afterwards. A typical perimeter section, taken from the Phase 3 and 4 Construction Documentation Report, prepared by Wenck in September, 2015 is shown below.



Due to snow cover at the time of the 2016 inspection, it was recommended that the 2017 inspection was done earlier in the year to allow a more thorough inspection. During the 2017 inspection, there was no snow cover, allowing a more thorough, detailed, inspection.

- ▲ 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 were taken during the inspection. Figure 2 presents the photo locations, and Attachment 1 contains a photo log and the photos 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. Also, the recent aerial survey done in November, 2016 shows that the topography of the embankments has stayed straight and true. This is shown on Figure 3.

- (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 42,500 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;

- (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

Shamrock Landfill 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) by the January 18, 2016 deadline.

Conclusions and Recommendations

All recommendations presented in the 2016 inspection report were implemented and incorporated into this 2017 inspection report.

The soils used for embankment construction have been placed as engineered fill and 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 2H:1V, and are relatively short in height, ranging from zero to approximately 15 feet in height. The slopes appear to be 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
Cloquet Landfill Inc., f/n/a Shamrock Landfill, Inc.
2017 Site Inspection Report Photo List

Photo Location	Photo #	Phase	Side of Cell	Slope	View Orientation
1	1	1/2	Active Disposal Area		East
2	2	3/4	Active Disposal Area		Southwest
3	3	1/2	North	Exterior	East
3	4	1/2	North	Exterior	West
4	5	1/2	North	Exterior	West
4	6	1	East	Exterior	West
5	7	1	East	Exterior	North
5	8	1	Active Disposal Area		Northwest
6	9	3	East	Exterior	Northeast
6	10	3/4	East	Waste Face	Southwest
7	11	3	East	Exterior	North
7	12	3/4	South	Exterior	West
7	13	3/4	South	Waste Face	West
8	14	4	South	Waste Face	North
8	15	4	South	Exterior	North
9	16	1/2	Internal	Waste Face	East
9	17	2	West	Waste Face	North
10	18	4	West	Exterior	North
10	19	2	West	Waste Face	South
10	20	4	West	Exterior	South
10	21	1/2	North	Waste Face	East



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**2017 Dike Integrity Inspection
Report Photos
Cloquet Landfill Inc., f/n/a
Shamrock Landfill, Inc.**



Photo 1 - Phase 1 and 2 Upper Active Area



Photo 2 - Phase 3 and 4 Lower Active Area



Photo 3 - Phase 1 and 2 North Exterior Slope



Photo 4 - Phase 1 and 2 North Exterior Slope



Photo 5 - Phase 1 North Waste Slope



Photo 6 - Phase 1 East Waste Slope



Photo 7 - Phase 1 East Waste Slope



Photo 8 - Phase 1 Active Area



Photo 9 - Phase 3 East Slope



Photo 10 - Phase 3 East Working Face



Photo 11 - Phase 3 East Exterior Slope



Photo 12 - Phase 3 South Exterior Slope



Photo 13 - Phase 3 South Working Face



Photo 14 - Phase 3 and 4 South Working Face



Photo 15 - Phase 3 and 4 South Exterior Slope



Photo 16 - Phase 1 and 2 South Internal Working Slope



Photo 17 - Phase 2 West Waste Slope



Photo 18 - Phase 2 West Exterior Slope



Photo 19 - Phase 2 West Waste Slope

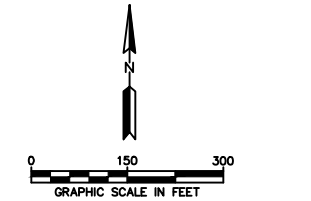
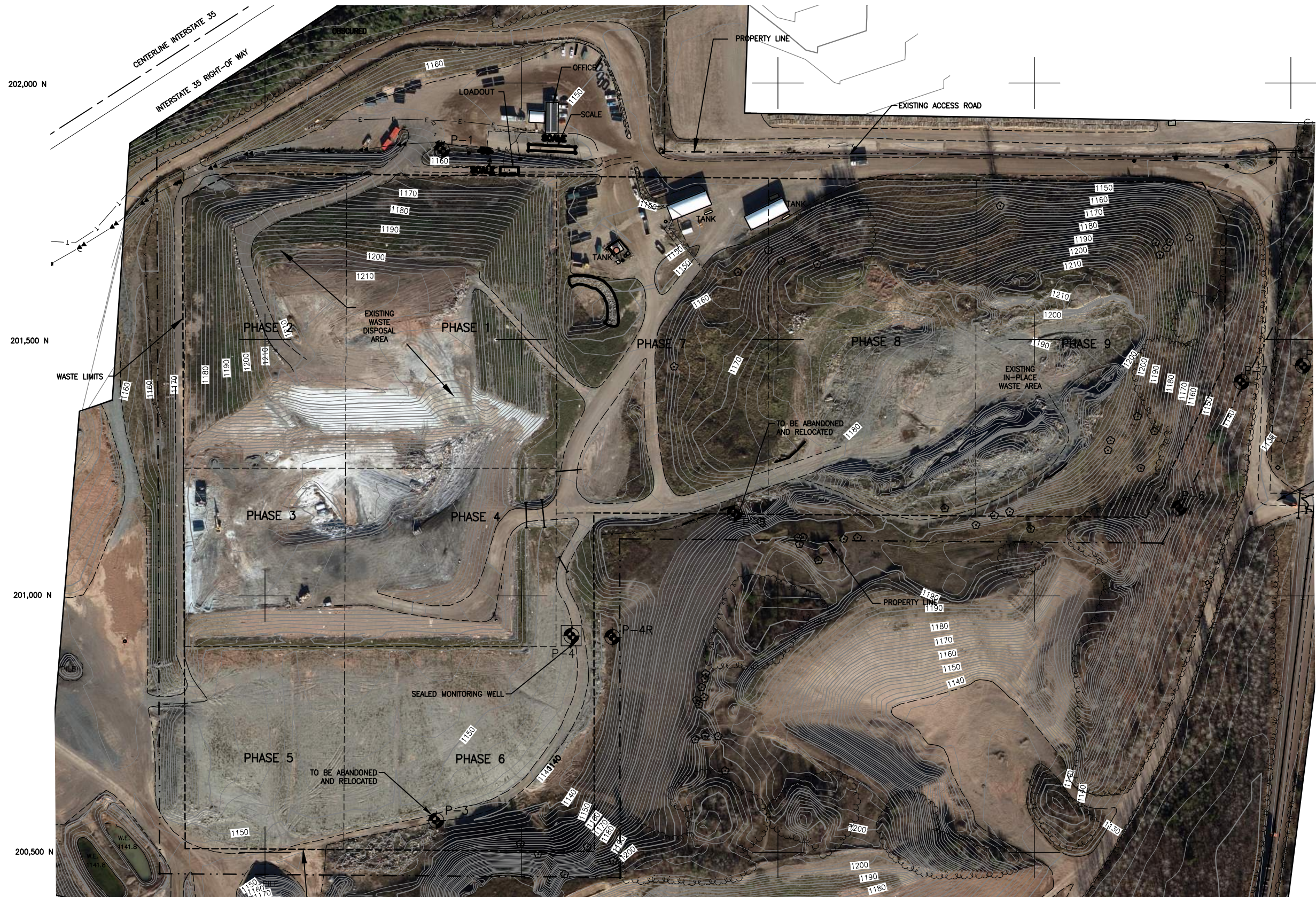


Photo 20 - Phase 2 West Exterior Slope



Photo 21 - Phase 1 and 2 North Waste Slope

Figures



LEGEND

	EXISTING CONTOURS
	EXISTING ROAD
	EXISTING MONITORING WELL
	PROPERTY LINE/ COMPLIANCE BOUNDARY
	PROPOSED WASTE LIMITS
	PHASE BOUNDARY
	EXISTING FORCEMAIN
	TELEPHONE
	ELECTRICAL
	RAILROAD
	TREES

- NOTES:**
- COORDINATES ARE BASED ON CARLTON COUNTY COORDINATE SYSTEM.
 - EXISTING CONTOURS BASED ON 2014 LIDAR DATA UPDATED FROM JAN. 2015 SURVEY BY WENCK ASSOCIATES.

REV	REVISION DESCRIPTION	DWN	APP	REV DATE

SEAL

SUB CONSULTANT

PRIME CONSULTANT

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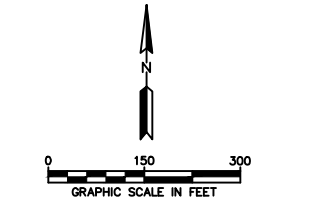
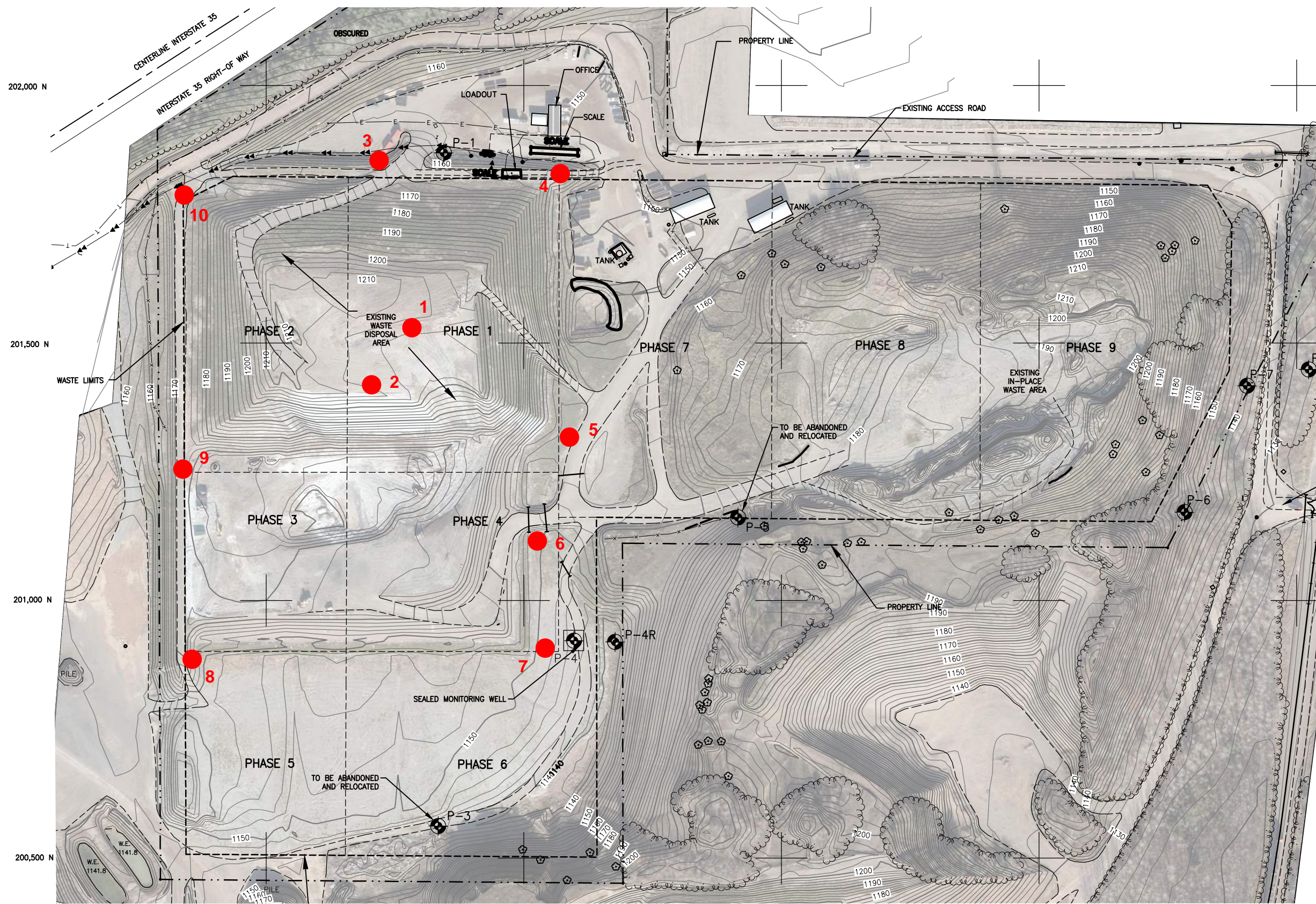
1800 PIONEER CREEK CENTER P 763-479-4294
 MAPLE PLAIN, MINNESOTA F 763-479-4242

PROJECT TITLE
JAN. 2017 INSPECTION REPORT

SKB ENVIRONMENTAL CLOQUET LANDFILL, INC.
 f/n/a SHAMROCK LANDFILL, INC

CLOQUET, MINNESOTA

SHEET TITLE			
SITE MAP			
DWN BY	CHK'D	APP'D	DWG DATE
JVB	SH	TJS	DEC. 2016
PROJECT NO.		SCALE	
3053-0058		AS NOTED	
SHEET NO.		REV NO.	
FIGURE 1			



LEGEND

	EXISTING CONTOURS
	EXISTING ROAD
	EXISTING MONITORING WELL
	PROPERTY LINE/ COMPLIANCE BOUNDARY
	PROPOSED WASTE LIMITS
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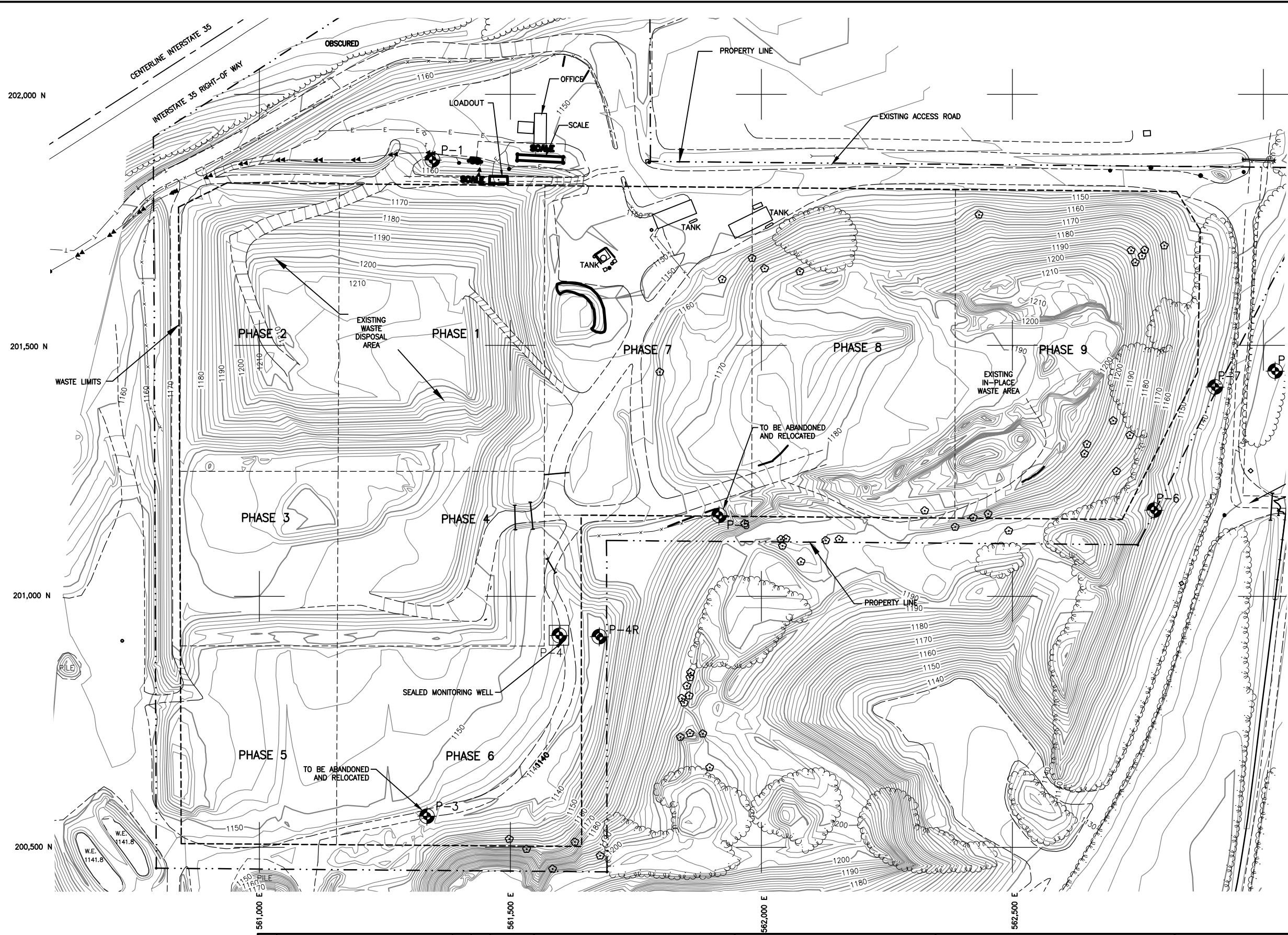
PROJECT TITLE
 JAN. 2017 INSPECTION REPORT

PROJECT NO.
 3053-0058

CLOQUET, MINNESOTA

SHEET TITLE
 PHOTO LOCATIONS

DWN BY	CHK'D	APP'D	DWG DATE	DEC. 2016
JVB	SH	TJS	SCALE	AS NOTED
PROJECT NO.	SHEET NO.	REV NO.		
3053-0058	FIGURE 2			



LEGEND

	EXISTING CONTOURS
	EXISTING ROAD
	EXISTING MONITORING WELL
	PROPERTY LINE/ COMPLIANCE BOUNDARY
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 MAPLE PLAIN, MINNESOTA F 763-479-4242

PROJECT TITLE
JAN. 2017 INSPECTION REPORT

SKB ENVIRONMENTAL CLOQUET LANDFILL, INC.
 f/n/a SHAMROCK LANDFILL, INC.

CLOQUET, MINNESOTA

SHEET TITLE NOVEMBER 2016 TOPOGRAPHY			
DWN BY JVB	CHK'D SH	APP'D TJS	DWG DATE DEC. 2016
PROJECT NO. 3053-0058		SHEET NO. SCALE AS NOTED	
		REV NO. FIGURE 3	