

2026 Fall Site Inspection

Keokuk Ferro-Sil Monofill (Closed)

Permit No. 56-SDP-17-91P

Engineers Project No. 7252-1/21-2007

Prepared for

Glencore, Ltd.

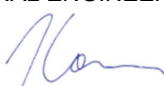
Prepared by

Klingner & Associates, P.C.

610 North 4th Street, Suite 100
Burlington, Iowa 52601

Date Prepared

September 10, 2026

 Jessica A. Coca I have reviewed this document 2026.09.10 12:01:33 -05'00'	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.  _____ Jessica A. Coca
	MY LICENSE RENEWAL DATE IS DEC. 31, 2026 IOWA REGISTRATION NUMBER: 25623
	PAGES OR SHEETS COVERED BY THIS SEAL: ALL
	DATE OF ISSUANCE: 9/10/2026

OWNER CONTACT INFO CHANGE

The owner's address has changed, please ensure that all future correspondence is directed to the following mailing address:

Glencore, Ltd.
90 Park Avenue
New York, NY 10016

LANDFILL GENERAL OBSERVATIONS

The inspection was conducted at the landfill on September 4, 2026. Conditions were clear and the temperature was around 90 degrees Fahrenheit. The landfill entrance gate was locked and access roads were well maintained with rock. Signage was installed at the entrance gate that provided the site and contact information. Groundwater well locations were accessible and in good condition. The most recent mowing was completed in May of 2026. The vegetative cover is in good condition. Observations were made around the slopes and base of the lagoon for any indication of leachate seepage. No evidence of leachate seeps or excessive moisture on the surface was observed. The site had not received appreciable rain for at least 2 weeks and was very dry on the surface.

The leachate pond level appeared to be normal. The area of the leachate line repair (2023) was walked. Some erosion is starting in the City right-of-way along Kindustry Park Road where stormwater flows come off of the road. No other areas of erosion were noted. Thick vegetation is present in the areas which were previously disturbed.

Permit Conditions

The site permit was issued on April 4, 2007, and permit amendments have been issued by letter. In a letter dated January 30th, 2018, the IDNR required a number of things including a) minor modifications to the sampling plan, b) regular sampling of the leachate pond, and c) a requirement to clean out the leachate collection lines every three years. These items were implemented in 2018.

The leachate collection lines were jetted in October of 2024 to confirm that the system is freely flowing into the leachate collection pond. Documentation of the jetting of the leachate collection lines was provided in the 2024 AWQR. Jetting of the lines is to be completed again in 2027.

Leachate System

An automatic pump system with a run timer and float system was installed on the site and has been operational since October 18th, 2017. The run time is checked periodically during site visits by CHEM-ECO Environmental and Klingner and recorded such that the leachate pumping quantities can be reported to the City of Keokuk and Iowa DNR in future reports.

The run time during the September 4, 2026 (Fall Inspection) visit was 5023 hours and 39 minutes. The pump hours on March 13, 2026 (Spring Inspection) were recorded to be 4924 Hours and 39 Minutes.

The total pumping between the Fall and Spring inspections was 380,160 gallons.

The run time readout is cumulative, so successive readings must be subtracted to find the difference at each period. The flow rate of the pump system is estimated to be approximately 64 GPM. Note that the estimated flow rate was decreased after flow measurements were taken using a doppler flow meter and additional flow calculations were performed at the request of the City of Keokuk during the Industrial Discharge Permitting process in 2023.

There currently is no plan to prepare a separate LCSPE report.

Month of Reading	Pump Hours	Elapsed Run Time (Hours)	Elapsed Run Time (Minutes)	Gallons Pumped (64 GPM)
March (as of 3/13/26)	4924.65	---	---	---
April	4958.98	34.3	2,059.8	131,827.2
May	4985.92	26.9	1,616.4	103,449.6
June	5000.28	14.4	861.6	55,142.4
July	5007.92	7.6	458.4	29,337.6
August	5023.65	15.7	943.8	60,403.2
Sept. (As of 9/4/2026)	5023.65	0	0	0
Total Estimated Pumping March 2026 – Sept 2026			5,940	380,160

CLOSED LANDFILL INSPECTION CHECKLIST

KEOKUK FERRO-SIL MONOFILL

LANDFILL CONTACT: STEVEN DEMASI, TWIN RIVERS HOLDING CO.

PERMIT NUMBER 56-SDP-17-91P

PERMIT ISSUED APRIL 4, 2007, EXPIRES 4/4/2037

Weather Conditions: 90F, Clear

GENERAL

1.) Landfill ID and contact info posted?	YES
2.) Is entrance gate locked?	YES
3.) Entrance Road Conditions	GOOD

COVER

4.) Condition of Final Cover: Vegetation	GOOD.
5.) Has topsoil been placed on the landfill?	YES.
6.) Has the landfill been properly graded and seeded?	YES.

EROSION

7.) Is drainage and erosion being controlled on the landfill?	YES
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LEACHATE

8.) Is there evidence of leachate on the surface of the landfill?	NO
9.) Are there any leachate flows leaving the site?	NONE OBSERVED
10.) Has the landfill submitted plans for a leachate collection/treatment system?	YES
11.) Has the approved leachate collection and treatment system been constructed?	YES
12.) Does the landfill have a permit to discharge leachate?	YES, TO SANITARY SEWER MANHOLE IN KINDUSTRY PARK. CITY OF KEOKUK.

LANDFILL GAS

13.) Is there evidence of landfill gas problems?	NO
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MONITORING WELLS

14.) Are monitoring wells in good condition?	YES
15.) Are monitoring wells marked and identified?	YES

MISCELLANEOUS

16.) Is there evidence of open burning?	NO
17.) Is there evidence of open dumping, litter?	NO
18.) Is there evidence of rodents or insects as a result of improper landfilling operations?	NO

Additional Comments:



Description	Manhole at Kindustry Park	1
Date	9/4/2026	



Description	Erosion at road where stormwater flows off of roadway at Kindustry Park	2
Date	9/4/2026	

		
Description	Air release manhole, north of Kindustry Park	3
Date	9/4/2026	
		
Description	Looking north along force main alignment, north of air release	4
Date	9/4/2026	

		
Description	Landfill entrance	5
Date	9/4/2026	
		
Description	Former tipping pad area	6
Date	9/4/2026	

		
Description	Looking east across landfill from west side	7
Date	9/4/2026	
		
Description	Looking east across southern end of landfill	8
Date	9/4/2026	

		
Description	Looking north-northwest across landfill from south	9
Date	9/4/2026	
		
Description	Leachate lagoon area	10
Date	9/4/2026	

		
Description	Stomrwater intakes near southeast side of landfill	11
Date	9/4/2026	
		
Description	Looking northwest from south side of landfill	12
Date	9/4/2026	

		
Description	MW-11	13
Date	9/4/2026	
		
Description	Looking south across landfill from north side	14
Date	9/4/2026	

		
Description	Looking towards west from north side of landfill	15
Date	9/4/2026	
		
Description	Leachate lagoon pump controller	16
Date	9/4/2026	

		
Description	Leachate lagoon	17
Date	9/4/2026	
		
Description	Dock and manhole at leachate lagoon	18
Date	9/4/2026	

		
Description	MW16, south of lagoon	19
Date	9/4/2026	
		
Description	Looking southeast across edge of lagoon and bottom of landfill slope	20
Date	9/4/2026	