



November 10, 2021

JAVIER GUEVARA
CLIMAX MOLYBDENUM COMPANY
2598 HIGHWAY 61
FORT MADISON, IA 52627

RE: Climax Molybdenum Company Industrial Landfill
Permit #56-SDP-06-80P

Dear Mr. Guevara:

Enclosed is a revised permit for the Climax Molybdenum Company Industrial Landfill. The permit incorporates approval of the documentation of manhole repair activities at the landfill (Special Provision #3j).

The permit and the approved plans must be kept at the sanitary disposal project in accordance with solid waste rule 567 IAC 115.26(2)"c". Please review the permit with your operators, as they must become familiar with it.

The permit may contain special provisions that may require a response or action by you, which, if not properly complied with, may prompt enforcement action by the DNR.

If you have any questions, please contact me at (515) 689-6548 or mick.leat@dnr.iowa.gov.

Sincerely,

Michael Leat Digitally signed by Michael Leat
Date: 2021.11.10 14:09:15 -06'00'

Michael B. "Mick" Leat
Land Quality Bureau

cc: Kevin Jensen
Evora Consulting
1801 Industrial Circle
West Des Moines, Iowa 50265

DNR Field Office #6

**IOWA DEPARTMENT OF NATURAL RESOURCES
SANITARY DISPOSAL PROJECT PERMIT
FOR INDUSTRIAL MONOFILLS**

I. Permit Number: 56-SDP-06-80P
Climax Molybdenum Company Industrial Landfill

II. Permitted Agency: Climax Molybdenum Company

III. Project Location: The NW¼ and the W½ of the NE¼ and South 150 feet of the E ½ of the NE ¼ of Section 32, T67N, R6W, Lee County, Iowa (approx. 244 acres).

IV. Responsible Official

Name: Javier Guevara
Address: Climax Molybdenum Company
2598 Highway 61
P.O. Box 220
Fort Madison, IA 52627
Phone: (319) 463-2201
FAX: (319) 463-7640

V. Licensed Design Engineer

Name: Matthew D. Corry, P.E.
Address: Evora Consulting
1801 Industrial Circle
West Des Moines, IA 50265
Phone: (515) 256-8814
FAX: (515) 256-0152

Iowa License Number: 25067

VI. Date Permit Issued: August 13, 2021
Date 1st Permit Revision: November 10, 2021

VII. Permit Expiration Date: August 13, 2024

VIII. Issued by: Michael Leat Digitally signed by Michael Leat
Date: 2021.11.10 14:05:53 -06'00'

Iowa Department of Natural Resources

IX. General Provisions

The above named permitted agency is hereby authorized to operate a sanitary disposal project at the described location in conformance with Iowa Code section 455B, the rules pursuant thereto existing at the time of issuance, and any subsequent new rules which may be duly adopted, and any provisions contained in Section X of this permit.

The issuance of this permit in no way relieves the applicant of the responsibility for complying with all other local, state, and federal statutes, ordinances, and rules or other requirements applicable to the establishment and operation of this sanitary disposal project.

No legal or financial responsibility arising from the construction or operation of the approved project shall attach to the State of Iowa or the Department of Natural Resources (DNR) due to the issuance of this permit.

If title to this project is transferred, the new owner must apply to the DNR for a transfer of this permit within thirty days of the date of title transfer pursuant to rule 115.9. This permit is void sixty days after the date of title transfer unless the DNR has transferred the permit.

The permit holder shall file a Quarterly Solid Waste Fee Schedule and Retained Fee Report utilizing the DNR's Form 542-3276 and tonnage fee payment, as applicable, for all wastes disposed at the sanitary disposal project in accordance with Iowa Code section 455B.310. The Reports will be due January 1, April 1, July 1 and October 1 for the quarters ending September 30, December 31, March 31 and June 30, respectively. The permit holder shall mail the completed report to the Solid Waste Section, Wallace State Office Building, 502 East Ninth Street, Des Moines, Iowa 50319. This reporting procedure supersedes any previous conflicting permit provisions.

The permit holder shall weigh all solid waste collection vehicles and solid waste transport vehicles on a scale certified by the Iowa Department of Agriculture and Land Stewardship. If conditions are such that make it impractical to provide an on-site scale, then off-site scale facilities or an alternative method of calculating the tonnage disposed, may be used if justified and approved by the DNR. The permit holder shall comply with the waste weighing, record keeping and tonnage fee reporting requirements defined in rule 101.14(455B,455D). The scale weighing facilities shall comply with the certification and licensing requirements of the Iowa Department of Agriculture and Land Stewardship at all times. The permit holder shall maintain a current copy of the weighing scale facility licensing certificate issued by the Iowa Department of Agriculture and Land Stewardship at all times.

This facility shall be staked as necessary and inspected on a semiannual basis by a professional engineer licensed in the State of Iowa. The engineer shall prepare a brief report describing the site's conformance and nonconformance with the permit and the approved plans and specifications during the inspections. These reports shall be submitted by April 30 and October 31 each year to the DNR's Main and local Field offices. The DNR shall be notified if any inspection reveals any nonconformance with the permit and approved plans and specifications.

The permit holder shall ensure that the sanitary disposal project does not (1) cause a discharge of pollutants into waters of the United States, including wetlands, that violates any requirements of the Clean Water Act, including, but not limited to, the National Pollutant Discharge Elimination System (NPDES) requirements, pursuant to Section 402 of the Clean Water Act, and (2) cause the discharge of a nonpoint source of pollution into waters of the United States, including wetlands, that violates any requirement of an areawide or statewide water quality management plan that has been approved under Section 208 or 319 of the Clean Water Act.

The permit holder shall submit an updated Sanitary Landfill Financial Assurance Report Form no later than April 1st, annually, pursuant to rule 115.31(455B). Use of this form provides permit holders a uniform means of submitting all required documentation to ensure that closure and postclosure cost estimates and applicable financial assurance instruments are updated as required.

Failure to comply with Iowa Code Chapter 455B, or any rule of order promulgated pursuant thereto, or any or all provisions of this permit may result in 1) a civil penalty of up to \$5000 for each day of violation, pursuant to Iowa Code section 455B.307, or 2) the suspension or revocation of this permit, pursuant to Iowa Code section 455B.305.

X. Special Provisions

1. The permit holder is authorized to accept synthetic gypsum sludge for disposal. Wastes disposed at this site shall not exhibit free liquids, toxic or hazardous properties. No hazardous wastes as defined by Iowa Code section 455B.411 may be disposed at this landfill.
2. The permit holder shall develop and operate the site in accordance with the 2021 Application for Permit Renewal (doc #100699), dated June 18, 2021, as prepared by Evora Consulting, and the following:
 - a. Waste disposal is limited to Phases 1, 2, and 3 of the expansion unit. The site vertical height shall not exceed a maximum waste elevation of 704 feet in the vicinity of N 4400 and E 2650. Any expansion beyond these phases shall require prior DNR approval.
 - b. The permit holder shall collect leachate from the leachate control system and properly dispose of the leachate either by treatment at the Climax Molybdenum Company's wastewater treatment facility under their NPDES permit; or by discharge to a publicly owned treatment works (POTW). If the discharge is to a POTW with a pretreatment program approved by the DNR, the discharge must comply with the terms and conditions of a local permit issued for the discharge by the POTW. If the discharge is to a POTW without an approved pretreatment program a completed treatment agreement form shall be submitted to the DNR's Wastewater Section. Copies of the local permit or treatment agreement shall be provided to the DNR's Solid Waste Section and the local Field office. The treatment agreement must be on DNR Form 31 (542-3221) and must comply with the requirements of subrule 64.3(5).

In addition, the permit holder shall semiannually measure leachate head levels and elevations at the closed cell piezometers LPZ-1 through LPZ-4, and at frequency of no less than monthly at the open cell piezometer LPZ-5. Records of leachate contaminants testing required by the treatment works and any NPDES permit for on-site treated leachate discharges shall be maintained.

The leachate control system shall be operated and maintained in accordance with the approved permit documents. After implementation of the leachate control system, the

permit holder shall routinely collect the necessary information and evaluate the effectiveness of the system in controlling the leachate. All documentation shall be summarized in a Leachate Control System Performance Evaluation (LCSPE) Report. Effective control shall be considered as maintaining compliance with maximum leachate head as defined in 567 IAC 115.26(11)“a”(1), achieving the lowest possible leachate head as required in 567 IAC 115.26(12)“b”(2), and maintaining surface and groundwater quality standards at compliance monitoring points.

The permit holder shall routinely measure the thickness of liquids in the leak detection riser and include these measurements in the LCSPER.

The permit holder shall annually submit the LCSPE Report, including record data, as a supplement to the facility Annual Water Quality Report, as defined in 567 IAC 115.26(8)“d”. The LCSPE Report shall include proposed additional leachate control measures and an implementation schedule in the event that the constructed system is not performing effectively.

- c. Solid waste deposited at the site shall be covered with six inches of compacted soil by the end of the last working day of each week. If an area is not going to be used for disposal of solid waste for more than two months, then a minimum of two feet of intermediate cover shall be applied and sloped to drain.
- d. Surface water shall be diverted around the fill area and surface drainage shall be provided at the toe of the working face.
- e. An all-weather fill area accessible during all weather conditions under which solid waste is received and disposed at the site shall be provided at all times.
- f. The review comments (doc #43162), dated May 13, 1996 from the DNR’s Conservation and Recreation Division relative to the comprehensive listing of plant and animal species for all development and soil borrow areas, is incorporated into the permit.
- g. The review comments (doc #43162), dated May 29, 1996 from the State Historical Society relative to the determination of the presence of and assessment of the impact on any archaeological, historical, or architecturally significant properties for all development and soil borrow areas on the proposed site is incorporated into the permit.
- h. The Emergency Response and Remedial Action Plan (ERRAP) as contained in Appendix 12 of the 2021 Application for Permit Renewal (doc #100699), dated June 18, 2021, in compliance with 567 IAC 115.30(455B) is incorporated into the permit. An updated ERRAP shall be submitted at the time of each permit renewal application. An updated ERRAP shall be included with any request for permit modification to incorporate a facility expansion or significant changes in facility operation that require modification of the currently approved ERRAP.

3. The permit holder shall construct future liner and leachate collection systems in accordance with the following:
 - a. Any construction beyond Phases 1, 2, and 3 shall require prior DNR approval.
 - b. The leachate collection system design for future cells shall include a composite liner consisting of a clay layer overlain by a geomembrane, and a more efficient leachate collection layer. This design shall be submitted to the DNR by December 31, 2023 unless an alternative date is approved.
 - c. In accordance with 567 IAC 115.26(11)“d”, the DNR shall be notified and the site inspected when the initial construction of each phase of the leachate control system has been completed. Prior to the inspection, construction certification reports shall be submitted to the DNR’s Main and local Field offices. No waste disposal shall commence in any newly constructed unit or portion thereof until it has been inspected and approved by the DNR.
 - d. The permit holder is responsible for providing adequate freeze-protection for all areas of each constructed liner unit. If any unit area is suspected of being impacted by freezing temperatures, then post-freeze permeability soil test results (one test per acre per liner lift) and an Iowa-licensed engineer re-certification of post-freeze permeability meeting criteria (1×10^{-7} cm/sec or less) shall be submitted to the DNR for review.
 - e. The Phase 1 Lateral Expansion Construction Documentation and Certification Report (docs #43142 and #43143), dated January 7, 1997, as submitted by Howard R. Green Company and approved on May 29, 1997, is incorporated into the permit.
 - f. The Phase 1 Liner re-Certification Report (doc #43106), dated July 20, 1999, as submitted by Howard R. Green Company and approved on September 22, 1999, is incorporated into the permit.
 - g. The Construction Certification Report for the Phase 2 and 3 Cell Construction (doc #38111), dated February 13, 2009, as submitted by Barker Lemar Environmental Consultants and approved on April 3, 2009, is incorporated into the permit. The Phase 2 and 3 Cell construction consists of a 4-foot compacted clay liner and leachate collection piping system.
 - h. The permit holder is conditionally authorized to deviate from the 5-foot separation requirement in 567 IAC 115.26(1)“m”(2) based on the rationale presented in the Revised Development Plan drawings (docs #43168-43175), dated May 18 and 19, 1993, respectively, and approved on April 11, 1995. The DNR may require the establishment of a 5-foot separation in the future, if deemed necessary based on hydrologic monitoring results and leachate control performance.

- i. The Construction Observation Report for the Leachate Lagoon and Forcemain Construction (doc #93668), dated November 5, 2018 and approved on November 8, 2018, is incorporated into the permit.
 - j. Repairs to the closed area and active area receiving sumps were documented in the Documentation of Groundwater Assessment Work Plan Activities (doc #101625), dated November 9, 2021, as submitted by Evora is incorporated into the permit. These actions were required by DNR in doc#99527, dated January 15, 2021, in response to groundwater contamination identified in MW-21.
4. Hydrologic monitoring at the site shall be conducted in accordance with the Hydrologic Monitoring System Plan (HMSP) referenced in Appendix 8 of the 2021 Application for Permit Renewal (doc #100699), dated June 18, 2021, as prepared by Evora Consulting; and the following provisions:
- a. The HMSP shall include upgradient groundwater monitoring points MW-7 and MW-18R; downgradient groundwater monitoring points MW-11, MW-15, MW-16, MW-17, MW-21, and TW-2.

Monitoring wells TW-3 and MW-19 shall be used in sequence as the waste boundary expands southward. The start of quarterly sampling at monitoring well MW-19 shall be scheduled to commence prior to disposal of waste in Phase 10 of the expansion area and abandonment of TW-3.

- b. Monitoring points MW-8, MW-9, MW-10, MW-12, MW-13, MW-14, MW-19, MW-20, MW-22, MW-23, and MW-24 shall be retained as water level measuring points used to prepare groundwater contour maps and calculate vertical gradients. These wells shall also be maintained in the case that DNR requires future sampling.
- c. DNR construction documentation form 542-1277 and boring logs for all monitoring wells and piezometers shall be submitted within 30 days of installation. DNR documentation form 542-1323 shall be submitted within 30 days of establishing surface water monitoring points.

The MW-18 well abandonment documentation and the MW-18R, MW-25, MW-26, and MW-27 well construction documentation (doc #81903), as submitted by Barker Lemar Engineering Consultants, dated November 24, 2014, are incorporated into the permit.

The boring log and well construction documentation for MW-28 (doc #84964), dated December 16, 2015, is incorporated into the permit.

- d. First year quarterly samples shall be collected from any designated new monitoring well, dewatering system, and any monitoring point which lacks four quarterly samplings and analyzed for the parameters listed in permit Special Provision #4e, except that dissolved iron analyses is not required in accordance with the approved variance dated April 30,

2019. Due to the composition of the waste and lack of detection of organic constituents during baseline quarterly testing, quarterly volatile organic compound and metals analyses in accordance with 567 IAC 115.26(4)d has been replaced with the #4e list; and annual monitoring for total organic halogens and phenols in accordance with 567 IAC 115.26(4)"f" is not required. All statistical evaluations shall include the updated baseline and subsequent sampling documentation.

- e. Continued routine semiannual sampling shall take place each year and samples shall be analyzed for the parameters listed in 567 IAC 115.26(4)"e", except that dissolved iron analysis is not required in accordance with the variance (doc #94810) dated April 1, 2019 and approved on April 30, 2019.

Supplemental semiannual sampling and analysis for **total** arsenic, cadmium, iron, lithium, manganese, molybdenum, selenium, sodium, strontium, and sulfate shall be conducted in addition to the routine test parameters. All supplemental metal/metalloid analyses shall not be filtered and the analytical results must be reported as totals. The supplemental testing for any parameter may be discontinued upon all of the following: **1)** A minimum of 4 sampling events have taken place that support discontinuation of sampling; **2)** a request for elimination of the additional sampling are submitted to the DNR; **and 3)** the DNR approves discontinuation of the additional sampling.

- f. The elevation of water in each monitoring well shall be measured and recorded during each sampling event.
- g. The Method Detection Limit (MDL) for the test parameters shall not exceed action levels as defined in 567 IAC Chapter 133 or Statewide Standards for a protected groundwater source as listed in 567 IAC 137. If the action levels cannot be feasibly achieved using procedures described in 567 IAC 115.26(5), then the MDL shall not exceed the lowest feasible level.
- h. Samples collected for total analyses shall not be filtered prior to laboratory analysis. Samples collected for dissolved metals analysis shall be field filtered, preserved, and promptly transferred to a certified laboratory for analysis.
- i. In accordance with the February 25, 1999 variance approval (doc #43111), the permit holder is authorized to reduce the frequency of groundwater level measurements from monthly, as required by 567 IAC 115.26(4)b IAC, to semiannual. The measurements shall be submitted in the corresponding semiannual monitoring reports.
- j. An Annual Water Quality Report (AWQR) summarizing the effects the facility is having on groundwater and surface water quality shall be submitted to the DNR by November 30 each year. The AWQR shall include the results of the routine groundwater measurements conducted at the monitoring points and all groundwater sampling analysis and the associated DNR sampling forms 542-1322 and 542-1324.

- k. Based on documented sulfate exceedances at monitoring points MW-12, MW-16, and MW-17, a Groundwater Quality Assessment Plan (GWQAP) was required in the DNR letter dated January 24, 2007 (doc #43077). As a result of the resultant assessment, monitoring wells MW-20, MW-23, and MW-24 were included in the routine monitoring program.

In the DNR letter dated January 29, 2015 (doc #82324), another Groundwater Quality Assessment was required to determine if routine groundwater monitoring of the east side of the lined area was necessary. The Groundwater Quality Assessment Report (doc #85358), dated January 28, 2016 and prepared by Barker Lemar Engineering Consultants, and data submitted subsequently, documented that elevated concentrations of sulfate, sodium, and other constituents in deeper site strata are likely naturally-occurring.

- l. Standard Operating Procedures for low-flow groundwater sampling of monitoring wells, submitted as Attachment 1 in the letter dated April 24, 2017 from the permit holder (doc #89255), was approved by the DNR on July 3, 2017 and is incorporated into the permit.
 - m. In accordance with the variance approved on April 30, 2019 (doc#95000), the facility's monitoring well maintenance and performance reevaluation plan is modified such that the permit holder shall perform biennial evaluations of well recharge rates and chemistry to determine if well deterioration is occurring, in lieu of in situ permeability testing described in 567 IAC 115.21(2)"d".
- 5. In accordance with the variance approval dated December 21, 1994 (under cover letter dated December 19, 1994 (doc #43124)), the permit holder is exempt from the monitoring and reporting of site methane concentrations as required by 567 IAC 115.26(15)"b". The variance was granted based on the waste stream consisting exclusively of inorganic industrial waste materials. The approved variance is applicable as long as the justification for the request remains the same.
 - 6. The permit holder shall close the landfill site in accordance with the Closure/Postclosure Plan as contained in Appendix 9 in the 2012 Application for Permit Renewal (doc #70589), dated June 15, 2018, as prepared by Barker Lemar Engineering Consultants, and the following:
 - a. The review comments (doc #43168), dated December 9, 1992 from the Lee County Soil & Water Conservation District relative to compliance with wind and soil loss limit regulations, in accordance with 567 IAC 115.26(1)"j" for all development areas, is incorporated into the permit.
 - b. The Completion Notification – 2013 Landfill Cap Remediation Plan (doc #78081), dated September 4, 2013, as submitted by Barker Lemar Engineering Consultants is incorporated into the permit. This information contained in this report and the report dated February 18, 2013 (doc #75966), as submitted by Barker Lemar Engineering Consultants, document that final cover has been constructed over the entirety of the original unlined landfill.