

Leachate Collection System Action Plan

**Continental Cement Davenport Plant CKD Landfill
301 E. Front Street, Buffalo, IA 52728
IDNR Landfill Permit No. 82-SDP-16-97P**

July 15, 2026

PROPOSED ACTION ITEMS

I. Action Items Proposed in the 2025 Groundwater Remedial Action Mitigation Plan Update

In Section 11.2 of the 2025 Groundwater Remedial Action Mitigation Plan Update (Doc. 116024), Continental proposed the following actions to expand on the investigation, mitigation, and/or remediation of groundwater at the facility:

Task 1: Pump out the lower leachate collection zone via one or more of the lower leachate collection zone monitoring wells to maintain maximum downward hydraulic gradients between the upper and lower leachate collection zones and better understand the source of the constituents of concern (COCs) measured in the lower leachate collection zone monitoring wells.

STATUS: Continental is preparing a work plan to drain the lower leachate collection zone, which will be submitted to the IDNR by September 30, 2026.

Task 2: Continue more frequent jetting of the upper leachate collection zone drain pipes on an as-needed basis to better maintain water levels in the upper leachate collection zone below the 1-foot threshold.

STATUS: Continental completed the first jetting of the leachate collection drainage pipes on June 26, 2026. Approximately 2,700 gallons of water and leachate were collected and sprayed on top of the Active Phase II Cell for dust control and/or evaporation. Continental will aim to jet the upper leachate collection zone drain pipes approximately four times per year depending on accessibility due to freezing conditions. The proposal to jet on a quarterly basis in the 2025 Groundwater Remedial Action Mitigation Plan was deemed impracticable due to freezing conditions that occur across a significant portion of the year. Additional jetting is scheduled to take place in the coming weeks.

In addition, Continental plans to purchase a video camera that can be used to view the drain pipes.

Task 3: Continue high frequency groundwater monitoring of all monitoring locations. This high frequency groundwater monitoring will aid in developing an understanding of groundwater and, therefore, contaminant transport pathways.

STATUS: Ongoing. As described in the 2025 Annual Water Quality Report (Doc. 115970), Continental installed groundwater monitoring devices at 26 groundwater monitoring locations, four In-Situ Aqua TROLL 500 parameter sondes (record temperature, pressure, conductivity, pH, Oxidation Reduction Potential, and Nitrate) and 22 In-Situ Level TROLL 400 transducers (record pressure and temperature). In addition, Continental installed In-Situ VuLink telemetry devices at the 26 groundwater monitoring locations to allow for remote monitoring of data on a real-time basis via In-Situ's HydroVu web-hosted software. Data is recorded at 30-minute intervals and uploaded every 24 hours. Hydrographs showing year-to-date trends and expanded

views of the previous 28-day periods will be included in Continental's quarterly and annual reports.

As described in the 2025 Leachate Collection System Performance Evaluation (Doc. 116023), Continental installed seven In-Situ Level TROLL 400 transducers that record pressure and temperature at the leachate sump, UL-1, LL-1, UL-2R, LL-2, UL-3R, and LL-3. In addition, Continental installed In-Situ VuLink telemetry devices at these seven locations, which allow for remote monitoring of data on a real-time basis. Data is recorded at 30-minute intervals and uploaded every 24 hours.

As with the groundwater elevation data, the leachate levels and leachate depths measured by the transducers will be incorporated into hydrographs.

Two sets of hydrographs are being developed:

- One set shows the leachate levels, i.e. the elevation of the leachate surface recorded by the transducers in the respective upper and lower leachate monitoring points.
- Another set shows the depth (thickness) of the leachate as recorded by the transducers in the respective upper and lower leachate monitoring points.

Hydrograph analyses will focus on the sets of upper and lower leachate monitoring points such that the direction and magnitude of the vertical hydraulic gradient between the upper and lower leachate monitoring zones can be identified. Additional monitoring point sets will be included such that the horizontal hydraulic gradient through the upper leachate collection zone to the leachate sump can be identified.

Both sets of hydrographs will show year-to-date trends and expanded views of the previous 28-day periods and will be included in Continental's quarterly and annual reports.

Task 4: Prepare more detailed and frequent mapping of groundwater flow patterns across the site within the three groundwater bearing zones (GBZs) by capitalizing on the automated depth to groundwater measurements collected from the transducers installed in 2025 to better understand the hydrogeologic conditions resulting from dewatering at the Quarry Sump, evapotranspiration from the Quarry Pond, Continental's pumping from the Deep Well, and, if possible, pumping activities at the Linwood operation.

STATUS: Ongoing. Continental will use the groundwater elevation data to generate monthly average groundwater elevation (potentiometric surface) maps for the middle and lower groundwater bearing zones depicting average groundwater flow directions for each month. The maps will be included in Continental's quarterly status reports and will be included in the 2026 Annual Water Quality Report to be submitted on or before November 30, 2026.

Task 5: Repair the well at BMW-24-03 such that groundwater levels and groundwater quality can be measured between the Original CKD Disposal Area and the Stope.

STATUS: As described in Continental’s 2025 Annual Water Quality Report, the well in BMW-24-03 failed due to the elevated air temperatures in the mine stope that Linwood Mining and Minerals Corp. (Linwood) uses as an air emissions control device. Bowman reconstructed BMW-24-03 in May 2026 using stainless steel. Bowman also reconnected the transducer and telemetry to BMW-24-03.

In May 2026, Bowman also converted MW-2CR from a borehole to a monitoring well using stainless steel. The monitoring well was screened below the bottom of the stope and, therefore, monitors the Middle GBZ at a point in the stope and just east of the Closed Phase I Cell.

Task 6: Developing a hydrostratigraphic model that will synthesize the available geologic, hydrologic, and contaminant data into a single internally consistent representation of the site conditions from which more effective mitigation and remediation strategies can be developed.

STATUS: This work is ongoing, and Continental anticipates completing the model by March 1, 2027.

II. Additional Proposed Action Items

Based on its ongoing investigations, Continental has identified the following action items to minimize the amount of leachate generated.

Task 7: Eliminate ponding at the base of the Active Phase II Cell.

STATUS: Continental is assessing options for eliminating the ponding at the base of the Active Phase II Cell and will let IDNR know what the selected option is by September 30, 2026.

Task 8: Evaluate areas of active face that may need to be covered with an interim layer of soil to minimize erosion and infiltration.

STATUS: Continental will determine where to apply an interim layer of soil by September 30, 2026, and will place the soil by end of Spring 2027 when the ground is no longer frozen.

PROPOSED SCHEDULE

TASK	SCHEDULE	STATUS
Drain the lower leachate collection zone and monitor recovery	Submit work plan to IDNR in Q3 2026.	In progress.
Continue more frequent jetting	Jetting will be performed four times during non-freezing conditions.	Jetting most recently completed in June 2026.
Continue high frequency groundwater monitoring	N/A	Ongoing. Transducers and telemetry installed and functioning at all monitoring points.
Prepare more detailed and frequent groundwater flow maps	To be submitted with Quarterly Status Reports and Annual Water Quality Reports.	Ongoing.
Repair BMW-24-03	N/A	Completed May 2026.
Develop hydrostratigraphic model	Complete by end of Spring 2027.	In progress.
Eliminate ponding at the base of the Active Phase II Cell	Assess options and notify IDNR of selected option in 3Q 2026.	In progress.
Place interim layer of soil to minimize the area of the active working face.	Identify areas to be covered in Q3 2026 and place soil by the end of Spring 2027.	In progress.