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CLIENT MEMORANDUM

21 November 2023
File No. 0202596-003

TO: Washington State Department of Ecology
Kailey Schrum, P.E., Site Manager- Toxics Cleanup Program

C: Kaiser Aluminum Investments Company
Brent Downey, Director of Corporate Environmental Engineering

FROM: Haley & Aldrich, Inc.
McKynzie A. Clark
Project Environmental Scientist

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Project Environmental Geologist

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SUBJECT: 2023 Heglar Kronquist Request for Supplemental Site Characterization

Introduction

Haley & Aldrich, Inc. (Haley & Aldrich) prepared this memorandum for Kaiser Aluminum Investments Corporation (Kaiser) with respect to the Heglar-Kronquist Landfill Site (Site) located near the intersection of East Heglar Road and East Kronquist Road in Mead, Washington. The Cleanup Site Identification (ID) Number is 1135, the Facility Site ID is Number 645, and the Site Spokane County Parcel Number is 46032.9022. This memo was prepared in response to the Washington State Department of Ecology's (Ecology's) letter, dated 28 September 2023, requesting Kaiser to complete a supplemental Site characterization and provide a status update with a proposed plan and timeline "to address the observed surface water and groundwater contamination" at the Site.

Response to Ecology's Letter

Based on the objectives listed in Ecology's letter, Kaiser and Haley & Aldrich completed a review of the Institutional Controls Plan (ICP) for the Site (Hart Crowser, 2013b), assessed the cap enhancement and current conditions, and prepared a proposed plan and schedule to resume quarterly monitoring at the Site in 2024. These are detailed further in the sections below.

STATUS OF THE INSTITUTIONAL CONTROLS PLAN

Institutional controls implemented at the Site are used to limit Site access and communicate hazards to potential human receptors and potential future property owners near the Site. Implemented institutional controls include perimeter fencing to limit access and restrict potential damage to the cap, environmental covenants recorded against the property, routine inspections and maintenance (as necessary) to maintain the effectiveness of the institutional controls, and signage to notify people about the characteristics of the Site (Hart Crowser, 2013b).

Monitoring post-construction initially was conducted quarterly then reduced to semiannually and then annually in accordance with the Feasibility Study (FS) (Exponent, 2012) and the Final Compliance Monitoring Plan (CMP) (Hart Crowser, 2013a). During each monitoring event, Haley & Aldrich completes an assessment of Site features as part of the routine inspections required by the ICP. Inspections include:

- Assessing the condition of the perimeter fence, gates, and associated locks to confirm they are intact and working as designed to restrict access to the capped area, and
- Assessing the integrity of the cap, existing gas vents, and monitoring wells to confirm that Site features are intact and working as designed.

When maintenance was required, Haley & Aldrich notified Kaiser and helped coordinate appropriate mitigation measures. For example, during the October 2018 monitoring event, Haley & Aldrich observed a small animal burrow at the eastern limit of the landfill (Hart Crowser, 2019). After discovering this burrow, we extended an inspection camera into the opening to assess the depth of the burrow and visually inspect the condition of the cap. During our initial scope, we observed that the burrow was shallow (less than two feet deep) and the protective liner was not exposed or damaged within the burrow. After our inspection, Kaiser contracted Sprague Pest Solutions to routinely monitor and mitigate burrowing animals if found burrowing into the topsoil of the cap. After burrowing animals were removed from the Site, Haley & Aldrich backfilled any burrows to protect the liner. Kaiser continues to contract Sprague Pest Solutions to routinely assess and mitigate burrowing animals at the site.

Kaiser also contracts a landscaping company as necessary to reduce thick vegetation around the perimeter and within the fenced area of the landfill to reduce the likelihood of animals to use the vegetation as a protective cover to enter and inhabit the capped area. Based on our observations, these continued mitigation methods have reduced the habitation of burrowing animals within the capped area.

In addition to our routine assessment of institutional controls, Haley & Aldrich conducted an additional Site visit on 25 October 2023 in response to Ecology's letter and conducted another Site visit on 3 November 2023 with Ecology representatives. During our October 2023 Site visit, Haley & Aldrich observed that the animal burrow location (originally observed in 2018) had been backfilled with borrowed topsoil adjacent to the burrow, basalt rubble, and additional miscellaneous backfill material. Kaiser plans to re-assess the burrow location and confirm that the liner of the cap at this location is intact and working as designed. Kaiser plans to repair this portion of the cap in 2024; the cap will be repaired by backfilling and re-seeding in a manner in alignment with the original 2014 construction.

REVIEW OF CAP ENHANCEMENT

Haley & Aldrich reviewed the Cleanup Action Construction Completion Report (CCR) (Hart Crowser, 2015) in November 2023. According to the CCR, Anderson Environmental Contracting (AEC), mobilized to the Site in June 2014 and initiated the cap enhancements by first clearing and grubbing onsite vegetation. After clearing and grubbing was complete, AEC re-graded the existing surface of the landfill (previously installed clay cap, referred to as the “Foundation Layer” in the CCR) to reshape the subgrade for improved drainage and to provide a stable foundation for subsequent layers of the multi-layer cap enhancement. The CCR states that no dross material was uncovered during grading. AEC then installed the enhanced cap with the following layers in order, bottom to top, above the Foundation Layer:

- a Geosynthetic Clay Liner (GCL), to act as a “secondary low-permeable barrier to infiltration above the Foundation Layer”;
- a 60-millimeter, welded, high-density polyethylene (HDPE) geomembrane;
- a non-woven geotextile fabric;
- 6-inches of 1-inch minus drain rock;
- 12-inches of granular fill; and
- 6-inches of topsoil.

After the enhanced cap layers were installed, AEC then covered the surface top fill material with a tackifier to prevent wind erosion before hydroseeding could commence during the fall of 2014. Subsequently, on 30 October 2014, Add-A Lawn Quality Hydroseeding, Inc., hydroseeded grass, fertilizer, mulch, and tackifier mixture to the surface to promote quick growth of seedlings and root structure (Hart Crowser, 2015). After the newly installed landfill surface was hydroseeded, AEC installed a 6-inch minus ballast rock along the perimeter to stabilize the hillside of the enhanced cap and to reduce sediment runoff during precipitation events before vegetation could stabilize the soil.

Based on our review of the CCR, the enhanced multi-layered cap was constructed as designed. Also, analytical results from pre-and post-construction monitoring events indicate that chloride concentrations at downgradient monitoring wells generally have decreased since the installation of the enhanced cap in 2014. Chloride concentrations in MW-1 and MW-4 have decreased to below MTCA cleanup levels; chloride concentrations at MW-3 remain greater than MTCA cleanup levels but generally are decreasing over time (see April 2023 Compliance Monitoring Report, Haley & Aldrich, 2023). Analytical results also indicate that nitrate levels generally have decreased at MW-1, MW-3, and MW-4 and SW-1, 3, and 5 post-construction of the enhanced cap.

2024 COMPLIANCE MONITORING

In response to Ecology’s letter and discussions with Ecology, virtually on 12 October 2023 and in-person on 3 November 2023, Kaiser will conduct quarterly monitoring events at the Site in 2024. These monitoring events will include measuring and recording water quality parameters in groundwater and

surface water; collecting groundwater and surface water samples from the Site and potentially upgradient of the Site; submitting samples for chemical analysis of COCs; inspecting institutional controls; and monitoring the integrity of the cap, associated features, and stormwater control system.

Haley & Aldrich will prepare an assessment plan detailing our proposed quarterly compliance monitoring activities for 2024 and submit the plan to Ecology for their review and concurrence prior to initiating monitoring activities. Prior to preparing the plan, Kaiser will review relevant portions of the Remedial Investigation (RI) (Exponent, 2011) and FS (Exponent, 2012), boring logs, geologic cross sections, historical data, water chemistry, and hydrogeologic data to update the conceptual site model and better inform monitoring activities.

Schedule

Kaiser will prepare the 2024 Heglar Kronquist Landfill Assessment Plan (Assessment Plan) and submit the plan to Ecology by 31 December 2023. We plan to conduct quarterly monitoring events at the Site in January, April, July, and October 2024 (see “2024 Heglar Kronquist Compliance Monitoring Schedule”, Table 1).

References

1. Exponent, 2012. Final Feasibility Study Heglar Kronquist Landfill, Mead, Washington. May 2012.
2. Exponent, 2011. Final Remedial Investigation Report, Heglar Kronquist Landfill, Mead, Washington. September 9, 2011.
3. Haley & Aldrich, Inc., 2023. Heglar Kronquist Landfill Compliance Monitoring-April 2023, 7 July 2023.
4. Hart Crowser, 2015. Cleanup Action Construction Completion Report Heglar Kronquist Landfill.
5. Hart Crowser, 2013a. Final Compliance Monitoring Plan Heglar Kronquist Site.
6. Hart Crowser, 2013b. Final Institutional Controls Plan Heglar Kronquist Site.
7. Hart Crowser, 2019. Heglar Kronquist Landfill Compliance Monitoring – October 2018.

https://haleyaldrich.sharepoint.com/sites/KaiserAluminumFabricatedProducts/Shared Documents/0202596.Heglar Kronquist/003-Heglar Kronquist SSC/Deliverables In-Basket/2023 HK Ecology Response Memo/2023_11_Heglar_Memo_HAI_Kaiser_D.docx