5 Cleanup Action Plan

This section presents the proposed CAP for implementing the preferred remedial action evaluated during the FS. A CAP is a required part of the Site cleanup process under MTCA. The following sections provide supplemental detail on the selected remedy, including points of compliance, and time frame for the cleanup.

5.1 Description of Selected Remedy

The selected remedial alternative for implementation during the cleanup action was developed through evaluation of the Site conditions and applicable remedial technologies in the FS (Section 4). This section provides a more detailed description of the selected remedial alternative. The selected cleanup action includes the following elements:

- Source removal, consisting of the excavation and removal of vadose zone soil containing concentrations of COCs exceeding the CULs for the Site in the vicinity of the historical sump in the basement of the north wing of the Building. Source removal will occur concurrently with the demolition of the Building as part of the planned redevelopment.
- *In-situ* treatment of groundwater and remaining contaminated soil below the vadose zone via application of chemical oxidizers (ISCO), upgradient of the former sump and along the Property line downgradient of the former sump. Treatment would occur after regrading the Property is completed as part of the planned redevelopment.
- MNA of contaminants in groundwater across the Site. MNA may begin during redevelopment construction or after construction is completed as part of the planned redevelopment.
- ECs and ICs implemented during redevelopment, including construction of a chemical vapor barrier under the New Building, modification of the existing environmental covenant to describe the revised Site use, and implementation of a long-term plan for long-term monitoring of the ECs.

A description of the cleanup elements is provided in the following sections.

5.1.1 Sump Removal and Remedial Excavation

The primary element of the cleanup action is source removal, consisting of the demolition of the primary release point identified on the Site (the sump in the basement of the north wing of the Building) and removal from the Site of contaminated soil in the vadose zone.

Sump removal will occur during demolition of subgrade structures under the north wing of the Building as part of the planned redevelopment. Before demolition commences, monitoring well AMW-5, which is located in the basement of the north wing of the Building, will be decommissioned in accordance with applicable state laws.

The extent of remedial excavation is shown on Figure 9a. During remedial excavation, the estimated total volume of soil to be removed containing concentrations of COCs above the CULs at the Site is approximately 74 cubic yards.

Confirmation soil sampling will be completed to document soil conditions at the limits of excavation. The number and location of confirmation soil samples will be determined in coordination with Ecology at the time of cleanup. Generally, the sampling is expected to consist of the collection of a minimum of one sidewall sample per 20 lineal feet from depths where contaminated soil has been identified or where field evidence of contamination is identified during excavation, and one bottom sample per 400 square feet of the remedial excavation. The soil samples will be analyzed for the COCs.

A Construction Monitoring and Management Plan (CMMP) will be developed to provide guidelines for field screening, segregation, sampling, and disposition of soil that will be excavated in the course of mass excavation for the New Building. If contaminated soil is encountered during mass excavation in areas outside of the planned remedial excavation, the contaminated soil will be excavated, sampled, and transported off the Property for disposal and soil samples will be collected and analyzed to confirm removal of the contaminated soil.

5.1.2 Regrading and In Situ Chemical Oxidation Injections

Following demolition of subgrade structures across the Property and remedial excavation, the Site will be regraded in preparation for construction of the New Building. Clean structural fill will be imported and used to fill the voids left by the removal of subgrade structures on the Site. The regrading and building construction effort will include excavation and off-Site disposal of approximately 648 cubic yards of contaminated historical fill soil from the vicinity of the north wing of the current Building. The planned regrading extent is shown on Figure 9b.

Confirmation soil sampling will be completed to document soil conditions at the limits of excavation. Generally, the sampling is expected to consist of the collection of a minimum of one sidewall sample per 50 lineal feet from depths where contaminated soil has been identified or where field evidence of contamination is identified during excavation, and one bottom sample per 1,000 square feet of the remedial excavation. The soil samples will be analyzed for the COCs.

Following regrading of the Site, ISCO treatment will be introduced to the shallow unconfined groundwater aquifer on-Site through direct-push injection points in a 10-foot treatment thickness in the contaminated saturated zone (approximate Elevations 8 to 18 feet; approximately 6 to 16 feet bgs). Proposed injection locations are shown on Figure 9b. Injected oxidants will react with the organic COCs, causing the rapid and complete chemical destruction of many organic chemicals and producing carbon dioxide and water. Oxidizing agents used during ISCO at the Site may include permanganate, peroxide, persulfate, percarbonate, and/or ozone. The composition and volume of oxidizing agents to be used during treatment will be determined prior to implementation of cleanup.

5.1.3 Monitored Natural Attenuation

Pursuant to MTCA, cleanup actions cannot rely primarily on monitoring where it is technically possible to implement a more permanent cleanup action for the Site. The

natural attenuation of dissolved-phase COCs in shallow groundwater is already occurring at the Site, and the attenuation rate will be enhanced by the more permanent removal of contaminated soil and targeted *in Situ* treatment of shallow groundwater. The concentrations of any residual chlorinated solvents comprising the shallow groundwater exceedances will continue to attenuate through natural processes.

Based on the nature and magnitude of COC concentrations in shallow groundwater, the proposed removal of contaminated soil coupled with the targeted *in Situ* treatment, the permanent cleanup actions followed by MNA are estimated to achieve the CULs and RAOs for shallow groundwater in approximately 5 years.

Following completion of ISCO injections, a summary Groundwater Compliance Monitoring Plan (GCMP) will be developed for Ecology's review. The GCMP will document the groundwater monitoring program and include the final locations of monitoring wells, monitoring frequency, location-specific monitoring analytes, analytical methods, and data evaluation and reporting protocols.

Prior to beginning groundwater monitoring, a replacement monitoring well will be installed near the former location of AMW-5. Groundwater wells expected to be monitored during MNA are shown on Figure 9c.

5.1.4 Engineering/Institutional Controls

After excavation and removal of contaminated soil and treatment of shallow groundwater, contaminated material will remain on Site in the areas that are capped. ECs and ICs in the form of an impervious cap and environmental covenant will be implemented to maintain the protectiveness of the remedy.

ECs will include construction of an engineered hard cap across the Site in areas where fill material has been placed or where the existing hard cap is damaged during demolition. The hard cap design will be developed by the redevelopment design team and reviewed by Aspect for compliance with hard cap requirements under the existing covenant. A chemical vapor barrier will be constructed beneath the foundation of the New Building to protect Site occupants from potential intrusion of contaminated volatile COCs. A summary Engineering Design Report will be developed describing the product, installation design, and inspection requirements.

ICs will include revision of the existing environmental covenant on the Property to describe the use of the Site following redevelopment, the nature and extent of remaining contamination following cleanup action, and monitoring requirements for maintenance of the ECs. Prohibitions on land use, groundwater use, and other restrictions currently in place for the Property will be reviewed and included in the revised covenant as appropriate.

5.2 Schedule for Implementation

ETS is currently working through the master use permitting and environmental review processes required to implement redevelopment of the Property. Implementation of the cleanup action is dependent on the redevelopment schedule.

The redevelopment schedule currently assumes demolition in the first to second quarter (Q1-Q2; January-June) of 2026, with regrading occurring in the second to third quarter (Q2-Q3; March to September) of 2026. Construction of the New Building would commence in the third or fourth quarter (Q3-Q4; July to December) of 2026. Construction of the New Building would be completed in 2027. Based on this estimated redevelopment schedule, the implementation schedule for the cleanup action is estimated as follows:

- Q1-Q2 2026: Sump Removal and Remedial Excavation
- Q2-Q3 2026: Regrading and ISCO Treatment
- Q3-Q4 2026: Implementation of ECs and ICs
- 2027 to 2031: MNA
- 2032: Revision of ICs with results of MNA.

Upon public recording of the final revised environmental covenant, it is anticipated that Ecology would be able to issue a Property or Site NFA opinion. A Site NFA will be possible provided residual impacted soil and/or groundwater located under the impervious cap of the Property and in the Airport Way South right-of-way remains in place in accordance with the ECs/ICs described above. Annual inspections to confirm land use has not changed and the cap remains in place will be a condition of the ICs, with periodic reviews from Ecology occurring on a 5-year review interval.

5.3 Restoration Timeframe

Complete restoration of the Site is not expected to be feasible due to the extent of contamination present in historical fill, and cleanup of contaminated historical fill on the Site would be complicated by the likely presence of contamination in historical fill on surrounding properties. However, cleanup of the chlorinated solvents likely released during historical operations on the Site is expected to be completed within 5 years, following remedial excavation, ISCO treatment, and MNA summarized in the estimated implementation schedule, above.

6 Conclusions

The RI has identified COCs in soil, groundwater, and soil gas on the Site related to historical fill and historical industrial operations. Based on the data collected in the RI, concentrations of certain COCs (metal and PAHs) in soil exceeding the MTCA CULs are present throughout the historical fill layer underlying the Site, which was placed throughout the vicinity of the Site during regrading activities early in Seattle's history. Concentration of chlorinated solvents have been identified in soil and groundwater around a sump located in the basement of the north wing of the current Building on-Site, which were likely released during historical industrial operations. The nature and extent of chlorinated solvents have been sufficiently characterized and delineated, as described in this report, to select a cleanup action for the Site.

The FS reviewed three cleanup alternatives for the Site, each with increasing cost and increasing benefit. The selected cleanup action for the Site is Alternative #3: Source Excavation, In Situ Treatment, and MNA. This remedy offers the greatest benefit/cost ratio, fastest restoration timeframe, and greatest permanence.

After documenting implementation of the cleanup action, it is expected that the Site will meet the standard for no further remedial action with the conditions described in the restrictive environmental covenant for the Property.