STATE OF WASHINGTON
KING COUNTY SUPERIOR COURT

STATE OF WASHINGTON, DEPARTMENT OF ECOLOGY,

Plaintiff,

v.

CITY INVESTORS IX L.L.C.,

Defendant.

NO. 25-2-01367-7 SEA

CONSENT DECREE

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I. INTRODUCTION

1. The mutual objective of the State of Washington, Department of Ecology (Ecology) and City Investors IX L.L.C. (Defendant) under this Decree is to provide for remedial action at a facility where there has been a release or threatened release of hazardous substances. This Decree requires Defendant to perform the remedial actions at the Block 38 West Site (Site) in Seattle, Washington, as depicted in Exhibit A, in accordance with the Cleanup Action Plan (CAP) attached as Exhibit B to this Decree.

2. Ecology has determined that these actions are necessary to protect human health and the environment.

3. The Complaint in this action is being filed simultaneously with this Decree. An Answer has not been filed, and there has not been a trial on any issue of fact or law in this case. However, the Parties wish to resolve the issues raised by Ecology's Complaint. In addition, the Parties agree that settlement of these matters without litigation is reasonable and in the public interest, and that entry of this Decree is the most appropriate means of resolving these matters.

4. By signing this Decree, the Parties agree to its entry and agree to be bound by its terms.

5. By entering into this Decree, the Parties do not intend to discharge non-settling parties from any liability they may have with respect to matters alleged in the Complaint. The Parties retain the right to seek reimbursement, in whole or in part, from any liable persons for sums expended under this Decree.

6. This Decree shall not be construed as proof of liability or responsibility for any releases of hazardous substances or cost for remedial action nor an admission of any facts; provided, however, that Defendant(s) shall not challenge the authority of the Attorney General and Ecology to enforce this Decree.

7. The Court is fully advised of the reasons for entry of this Decree, and good cause having been shown:

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Now, therefore, it is HEREBY ORDERED, ADJUDGED, AND DECREED as follows:

II. JURISDICTION

1. This Court has jurisdiction over the subject matter and over the Parties pursuant to the Model Toxics Control Act (MTCA), RCW 70A.305.

2. Authority is conferred upon the Washington State Attorney General by RCW 70A.305.040(4)(a) to agree to a settlement with any potentially liable person (PLP) if, after public notice and any required public meeting, Ecology finds the proposed settlement would lead to a more expeditious cleanup of hazardous substances. RCW 70A.305.040(4)(b) requires that such a settlement be entered as a consent decree issued by a court of competent jurisdiction.

3. Ecology has determined that a release or threatened release of hazardous substances has occurred at the Site that is the subject of this Decree.

4. Ecology has given notice to Defendant of Ecology's determination that Defendant is a PLP for the Site, as required by RCW 70A.305.020(26) and WAC 173-340-500.

5. The actions to be taken pursuant to this Decree are necessary to protect public health and the environment.

6. This Decree has been subject to public notice and comment.

7. Ecology finds that this Decree will lead to a more expeditious cleanup of hazardous substances at the Site in compliance with the cleanup standards established under RCW 70A.305.030(2)(e) and WAC 173-340.

8. Defendant has agreed to undertake the actions specified in this Decree and consents to the entry of this Decree under MTCA.

III. PARTIES BOUND

1. This Decree shall apply to and be binding upon the Parties to this Decree, their successors and assigns. The undersigned representative of each party hereby certifies that they are fully authorized to enter into this Decree and to execute and legally bind such party to comply

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with this Decree. Defendant agrees to undertake all actions required by the terms and conditions of this Decree. No change in ownership or corporate status shall alter Defendant's responsibility under this Decree. Defendant shall provide a copy of this Decree to all agents, contractors, and subcontractors retained to perform work required by this Decree, and shall ensure that all work undertaken by such agents, contractors, and subcontractors complies with this Decree.

IV. DEFINITIONS

1. Unless otherwise specified herein, all definitions in RCW 70A.305.020 and WAC 173-340 shall control the meanings of the terms in this Decree.

A. Site: The Site is referred to as Block 38 West, Facility Site ID No. 62773, Cleanup Site ID No. 15008. The Site constitutes a facility under RCW 70A.305.020(8). The Site is defined by where a hazardous substance, other than a consumer product in consumer use, has been deposited, stored, disposed of, or placed, or otherwise come to be located.

B. Consent Decree or Decree: Refers to this Consent Decree and each of the exhibits to this Decree. All exhibits are integral and enforceable parts of this Consent Decree.

C. Defendant: Refers to City Investors IX L.L.C.

D. Parties: Refers to the State of Washington, Department of Ecology and the Defendant.

V. FINDINGS OF FACT

1. Ecology makes the following findings of fact without any express or implied admissions of such facts by Defendant.

A. Based upon factors currently known to Ecology, the Site is generally located at 500 – 536 Westlake Avenue North, Seattle, Washington in the South Lake Union area (latitude 47.62396°, longitude -122.33810°, World Geodetic System 1984), as shown in the Site Location Diagram (Exhibit A). The Site includes the Block 38 West

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property comprising King County parcels 1983200170, 1983200180, and 1983200196 (Property) in addition to portions of the alley (City of Seattle public right-of-way) east-adjacent to the Property, and a portion of the Westlake Avenue North right-of-way adjacent to the northwest corner of the Property.

B. Until the late 1880s, the Site was undeveloped marshland that extended along the southern shore of Lake Union. From approximately the 1890s until 2019, the Site was used by various parties for commercial and retail activities. This included a lumber storage yard operating across the majority of the Site until approximately 1920. On the southern portion of the Property, blacksmith and wagon shops operated in pile-supported buildings in the early 1900s until approximately 1919. The pile-supported buildings were replaced by a two-story masonry building with a basement level that housed retail and commercial businesses (e.g., auto parts, appliances, school and office supplies, furniture storage, clothing, and outdoor equipment) operating from the 1920s to 2019. On the central portion of the Property, commercial operations from the early 1900s until the 1950s included a horse stable and wagon house, blacksmith and wagon shops, an auto repair facility, and a veterinary hospital. Those businesses were replaced with a two-story building with rooftop parking in 1964 that housed retail businesses until 2019. The northern portion of the Property was used for warehouse storage starting in the early 1920s, which then transitioned into commercial and retail operations, including a commercial printer, through 2019. A historical timber-framed trestle also previously extended north from Republican Street into the alley, which was constructed for support of a rail spur that extended out to the former southern shoreline of Lake Union.

C. Contamination at the Site has been attributed to the following sources: historical placement of contaminated fill soil on the Property and adjacent alley; historical lumber mill operations; former timber pilings associated with historical structures; releases of petroleum hydrocarbons from former bunker fuel underground

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storage tanks (USTs); and placement of a fill layer containing coal in the east-central and northern portions of the Property and in the southern and central portions of the alley. Oil was also encountered in a sanitary sewer line in the southeastern portion of the Property during redevelopment construction; however, efforts to evaluate the sewer line indicated no specific point of release or former feature to which the sanitary sewer line was connected.

D. A former heating oil underground storage tank was decommissioned on the southern portion of the Property in or about 1989. No releases were reported during the decommissioning.

E. All of the then existing structures on Block 38 West and the trestle in the alley were demolished in late 2019 and early 2020 as part of the redevelopment of the Property.

F. Property redevelopment included construction of a multi-story mixed-use building, with 12 stories above street level and four levels of underground parking.

G. Independent investigations at Block 38 West prior to commencement of the interim actions described below documented the release of hazardous substances to soil and groundwater at concentrations exceeding likely applicable cleanup levels under MTCA. Subsurface investigations were conducted from 1994 to 2019 by Dames & Moore, GeoEngineers, and Farallon Consulting, L.L.C. Hazardous substances confirmed to be present at the Site by these investigations—i.e., prior to the interim actions described below—include gasoline-range organics (GRO), total diesel-range and oil-range organics (total DRO+ORO), carcinogenic polycyclic aromatic hydrocarbons (cPAHs), napthalenes, benzene, barium, and mercury in soil, and GRO, total DRO+ORO, naphthalenes, and benzene in groundwater. Based upon the foregoing, there has been a release or threatened release of hazardous substances at the Site, which represents a threat to human health or the environment and requires remedial action.

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H. An independent interim action was performed at the Site between October 2019 and July 2021 in conjunction with redevelopment of the Property. After entry of Agreed Order No. DE 17963, the independent action was reviewed for technical sufficiency by Ecology. The independent interim action included excavation of impacted soil to eliminate source material, construction dewatering and treatment of contaminated groundwater, installation of a vapor barrier around the entire perimeter and below the building foundation, and construction of the exterior walls and floor slab for the underground portion of the building using waterproof concrete. A description of the independent interim action is more fully set forth in the *Final Interim Action Report, Block 38 West Site, 500 through 536 Westlake Avenue North, Seattle, Washington*, dated December 28, 2023, prepared by Farallon Consulting, L.L.C. A total of approximately 64,200 tons of soil containing detectable concentrations of hazardous substances and wood and organic debris was removed from the Property as a result of the independent interim action.

I. During excavation, a side sewer line with dark liquid was encountered on the southeastern portion of the Property. The side sewer line was breached when it was exposed, and sampling results of the liquid indicated the presence of total petroleum hydrocarbons. The side sewer line was capped at the eastern Property boundary and inspected over the length of the line to the maximum extent practicable. No source of the petroleum hydrocarbons contained within the side sewer line was identified during subsequent demolition and excavation activities. Additional field screening in the southeastern portion of Property did not indicate a release of petroleum hydrocarbons to soil or groundwater.

J. Two previously unidentified USTs containing bunker oil and an associated fuel product line were encountered in the northwestern portion of the Property. Both USTs were permanently decommissioned by excavation and removal in accordance

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with applicable regulations and guidance. All petroleum-impacted soil encountered was removed from within the limits of the Property. A summary of the UST decommissioning activities is provided in the *Final Interim Action Report, Block 38 West Site, 500 through 536 Westlake Avenue North, Seattle, Washington*, dated December 28, 2023, prepared by Farallon Consulting, L.L.C.

K. An interim action was performed in the alley area east of the Property in conjunction with redevelopment. The objective of the alley area interim action was to remove hazardous substances at concentrations exceeding applicable screening levels in order to reduce the threat to human health and environment. Approximately 2,382 tons of soil containing detectable concentrations of hazardous substances and wood and organic debris was removed from the alley area between March 1 and July 23, 2021. The soil was disposed of off-site at appropriately permitted facilities as detailed in the *Final Interim Action Report, Alley Area of Block 38 West Site Between Republican Street and Mercer Street, 500 through 536 Westlake Avenue North, Seattle, Washington*, dated January 5, 2024, prepared by Farallon Consulting, L.L.C.

L. Contemporaneously with the implementation of the above-described interim actions, remedial investigation activities at the Site were completed under Ecology supervision. Based on the results of the remedial investigation, a focused feasibility study was conducted to select the final remedy for the Site. The results of the remedial investigation and focused feasibility study are presented in the *Remedial Investigation/Focused Feasibility Study, Block 38 West Site, 500 through 536 Westlake Avenue North, Seattle, Washington*, dated December 20, 2024, prepared by Farallon Consulting L.L.C. (RI/FFS). The RI/FFS also included an evaluation of potential impacts to likely vulnerable populations and overburdened communities and the possible effects of climate change on the migration of hazardous substances and resilience of the cleanup action alternatives considered and selected.

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M. Releases and/or potential releases of hazardous substances occurred at the Site. Following completion of the interim actions described above, the following hazardous substances remain in soil at the Site at concentrations above MTCA cleanup levels: total DRO+ORO and cPAHs.

N. In October 2024, Ecology completed the Site Hazard Assessment and Rating Process (SHARP) for the Block 38 West Site. Based on the findings of this process, the Site received an overall "low" rating. Additional information is provided in Ecology's SHARP report.

O. As documented in the Cleanup Action Plan (CAP) (Exhibit B), Ecology has chosen a final cleanup action to be implemented at the Site.

VI. WORK TO BE PERFORMED

1. This Decree contains a program designed to protect human health and the environment from the known release, or threatened release, of hazardous substances at, on, or from the Site. All remedial actions conducted by Defendant at the Site shall be done in accordance with WAC 173-340.

2. The Defendant shall implement the CAP (Exhibit B) in accordance with the work described in this Decree and the implementation of institutional controls. Based on the interim actions taken on the Site, which have resulted in remediation of contamination to the maximum extent practicable, the CAP requires Defendant to implement institutional controls. The institutional controls will consist of recording an environmental covenant, as more fully discussed in Section VI.7 below.

3. All plans or other deliverables submitted by Defendant for Ecology's review and approval under the CAP (Exhibit B) shall, upon Ecology's approval, become integral and enforceable parts of this Decree.

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4. If Defendant learns of a significant change in conditions at the Site, including but not limited to a statistically significant increase in contaminant and/or chemical concentrations in soil, groundwater, or soil vapor, Defendant, within seven (7) days of learning of the change in condition, shall notify Ecology in writing of said change and provide Ecology with any reports or records (including laboratory analyses, sampling results) relating to the change in conditions.

5. Pursuant to WAC 173-340-440(11), Defendant shall maintain sufficient and adequate financial assurance mechanisms to cover all costs associated with the operation and maintenance of the remedial action at the Site, which is comprised of institutional controls, compliance monitoring (i.e., monitoring the previously installed cap), and corrective measures (if required).

A. Within sixty (60) days of the effective date of this Decree, Defendant(s) shall submit to Ecology for review and approval an estimate of the costs associated with the operation and maintenance of the remedial action at the Site that it will incur in carrying out the terms of this Decree. Within sixty (60) days after Ecology approves the aforementioned cost estimate, Defendant(s) shall provide proof of financial assurances sufficient to cover those costs in a form acceptable to Ecology.

B. Defendant(s) shall adjust the financial assurance coverage and provide Ecology's project coordinator with documentation of the updated financial assurance for:

i. Inflation, annually, within thirty (30) days of the anniversary date of the entry of this Decree; or if applicable, the modified anniversary date established in accordance with this section, or if applicable, ninety (90) days after the close of Defendant's fiscal year if the financial test or corporate guarantee is used.

ii. Changes in cost estimates, within thirty (30) days of issuance of Ecology's approval of a modification or revision to the CAP that result in increases to the cost or expected duration of remedial actions. Any adjustments

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for inflation since the most recent preceding anniversary date shall be made concurrent with adjustments for changes in cost estimates. The issuance of Ecology's approval of a revised or modified CAP will revise the anniversary date established under this section to become the date of issuance of such revised or modified CAP.

C. The Financial Assurance Officer for Ecology shall work with the project coordinators to review and approve financial assurance coverage pursuant to this Decree and make determinations on any adjustments necessary based on the annual reporting. As of the execution date of this Decree, Ecology's Financial Assurance Officer is Joanna Seymour, 360-485-5992 or Joanna.Seymour@ecy.wa.gov.

6. As detailed in the CAP, institutional controls are required at the Site. An Environmental (Restrictive) Covenant will be used to implement the institutional controls.

A. In consultation with Defendant, Ecology will prepare the Environmental (Restrictive) Covenant consistent with WAC 173-340-440, RCW 64.70, and any policies or procedures specified by Ecology. The Environmental (Restrictive) Covenant shall restrict future activities and uses of the Site as agreed to by Ecology and Defendant.

B. After approval by Ecology, Defendant shall record the Environmental (Restrictive) Covenant for affected properties it owns with the office of the King County Recorder as detailed in the Schedule (see Exhibit B). Defendant shall provide Ecology with the original recorded Environmental (Restrictive) Covenant within thirty (30) days of the recording date. A copy of the Environmental (Restrictive) Covenant is attached as Exhibit C to this Decree.

7. Unless otherwise directed by Ecology, Defendant shall submit to Ecology written annual Progress Reports that describe the actions taken during the previous year to implement the requirements of this Decree. All Progress Reports shall be submitted by January 31 of the year in which they are due after the effective date of this Decree. Unless otherwise specified in

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writing by Ecology, Progress Reports and any other documents submitted pursuant to this Decree shall be sent by electronic mail to Ecology's project coordinator. The Progress Reports shall include the following:

A. A list of on-site activities that have taken place during the year.

B. If applicable, a description of any sample results which deviate from the norm.

C. Detailed description of any deviations from required tasks not otherwise documented in project plans or amendment requests.

D. Description of all deviations from the Scope of Work and Schedule described in Exhibit B during the current year and any planned deviations in the upcoming year.

E. For any deviations in schedule, a plan for recovering lost time and maintaining compliance with the schedule.

F. If applicable, all raw data (including laboratory analyses) received during the previous year (if not previously submitted to Ecology), together with a detailed description of the underlying samples collected.

G. A list of planned activities for the upcoming year.

8. Except in the case of an emergency, Defendant agrees not to perform any remedial actions at the Site outside the scope of this Decree without prior written approval of Ecology. In the case of an emergency, Defendant must notify Ecology of the event and remedial action(s) as soon as practical, but no later than twenty-four (24) hours after discovery of the emergency.

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VII. DESIGNATED PROJECT COORDINATORS

1. The project coordinator for Ecology is:

Tena Seeds
Department of Ecology
Toxics Cleanup Program
Northwest Regional Office
15700 Dayton Avenue North
Shoreline, WA 98133
425-457-3143
Tena.Seeds@ecy.wa.gov

2. The project coordinator for Defendant is:

Corey Wilson
City Investors IX L.L.C.
505 – 5th Avenue South, Suite 900
Seattle, WA 98104
206-342-2645
coreyw@vulcan.com

3. Each project coordinator shall be responsible for overseeing the implementation of this Decree. Ecology's project coordinator will be Ecology's designated representative for the Site. To the maximum extent possible, communications between Ecology and Defendant and all documents, including reports, approvals, and other correspondence concerning the activities performed pursuant to the terms and conditions of this Decree shall be directed through the project coordinators. The project coordinators may designate, in writing, working level staff contacts for all or portions of the implementation of the work to be performed required by this Decree.

4. Any party may change its respective project coordinator. Written notification shall be given to the other party at least ten (10) calendar days prior to the change.

VIII. PERFORMANCE

1. Except as otherwise provided for by RCW 18.43 and 18.220, all geologic and hydrogeologic work performed pursuant to this Decree shall be under the supervision and direction of a geologist or hydrogeologist licensed by the State of Washington or under the direct supervision of an engineer registered by the State of Washington.

2. Except as otherwise provided for by RCW 18.43.130, all engineering work performed pursuant to this Decree shall be under the direct supervision of a professional engineer registered by the State of Washington.

3. Except as otherwise provided for by RCW 18.43.130, all construction work performed pursuant to this Decree shall be under the direct supervision of a professional engineer registered by the State of Washington or a qualified technician under the direct supervision of a professional engineer registered by the State of Washington.

4. As required by RCW 18.43 and 18.220, any documents submitted containing geologic, hydrogeologic, or engineering work shall be under the seal of an appropriately licensed professional.

5. Defendant shall notify Ecology in writing of the identity of any engineer(s) and geologist(s), contractor(s) and subcontractor(s), and other key personnel to be used in carrying out the terms of this Decree, in advance of their involvement at the Site.

IX. ACCESS

1. Ecology or any Ecology authorized representative shall have access to enter and freely move about all property at the Site that Defendant either owns, controls, or has access rights to at all reasonable times for the purposes of, *inter alia*: inspecting records, operation logs, and contracts related to the work being performed pursuant to this Decree; reviewing Defendant's progress in carrying out the terms of this Decree; conducting such tests or collecting such samples as Ecology may deem necessary; using a camera, sound recording, or other documentary type equipment to record work done pursuant to this Decree; and verifying the data submitted to Ecology by Defendant.

2. Nothing in this Decree is intended by the Defendant to waive any right it may have under applicable law to limit disclosure of documents protected by the attorney work-product privilege and/or the attorney-client privilege. If Defendant withholds any requested records based on an assertion of privilege, it shall provide Ecology with a privilege log specifying

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the records withheld and the applicable privilege. No Site-related data collected pursuant to this Decree shall be considered privileged.

3. Defendant shall make all reasonable efforts to secure access rights for those properties within the Site not owned or controlled by Defendant where remedial activities or investigations will be performed pursuant to this Decree.

4. Ecology or any Ecology authorized representative shall give reasonable notice before entering any Site property owned or controlled by Defendant unless an emergency prevents such notice. All Parties who access the Site pursuant to this section shall comply with any applicable health and safety plan(s). Ecology employees and their representatives shall not be required to sign any liability release or waiver as a condition of Site property access.

X. SAMPLING, DATA SUBMITTAL, AND AVAILABILITY

1. With respect to the implementation of this Decree, Defendant shall make the results of all sampling, laboratory reports, and/or test results generated by it or on its behalf available to Ecology by submitting data as detailed in this section. Pursuant to WAC 173-340-840(5), all sampling data shall be submitted to Ecology in both printed and electronic formats in accordance with paragraph 8 of Section VI (Work to be Performed), Ecology's Toxics Cleanup Program Policy 840 (Data Submittal Requirements), and/or any subsequent procedures specified by Ecology for data submittal.

2. If requested by Ecology, Defendant shall allow Ecology and/or its authorized representative to take split or duplicate samples of any samples collected by Defendant pursuant to the implementation of this Decree. Defendant shall notify Ecology seven (7) days in advance of any sample collection or work activity at the Site. Ecology shall, upon request, allow Defendant and/or its authorized representative to take split or duplicate samples of any samples collected by Ecology pursuant to the implementation of this Decree, provided that doing so does not interfere with Ecology's sampling. Without limitation on Ecology's rights under Section IX

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(Access), Ecology shall notify Defendant prior to any sample collection activity unless an emergency prevents such notice.

3. In accordance with WAC 173-340-830(2)(a), all hazardous substance analyses shall be conducted by a laboratory accredited under WAC 173-50 for the specific analyses to be conducted, unless otherwise approved by Ecology.

XI. ACCESS TO INFORMATION

1. City Investors IX L.L.C. shall provide to Ecology, upon request, copies of all records, reports, documents, and other information (including records, reports, documents, and other information in electronic form) (hereinafter referred to as "Records") within City Investors IX L.L.C.'s possession or control or that of their contractors or agents relating to activities at the Site or to the implementation of this Decree, including, but not limited to, sampling, analysis, chain of custody records, manifests, trucking logs, receipts, reports, sample traffic routing, correspondence, or other documents or information regarding the work. City Investors IX L.L.C. shall also make available to Ecology, for purposes of investigation, information gathering, or testimony, their employees, agents, or representatives with knowledge of relevant facts concerning the performance of the work.

2. Nothing in this Decree is intended to waive any right City Investors IX L.L.C. may have under applicable law to limit disclosure of Records protected by the attorney work-product privilege and/or the attorney-client privilege. If City Investors IX L.L.C. withholds any requested Records based on an assertion of privilege, City Investors IX L.L.C. shall provide Ecology with a privilege log specifying the Records withheld and the applicable privilege. No Site-related data collected pursuant to this Decree shall be considered privileged, including: (1) any data regarding the Site, including, but not limited to, all sampling, analytical, monitoring, hydrogeologic, scientific, chemical, radiological, biological, or engineering data, or the portion of any other record that evidences conditions at or around the Site; or (2) the portion of any Record that City Investors IX L.L.C. is required to create or generate pursuant to this Order.

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3. Notwithstanding any provision of this Order, Ecology retains all of its information gathering and inspection authorities and rights, including enforcement actions related thereto, under any other applicable statutes or regulations.

XII. RETENTION OF RECORDS

1. During the pendency of this Decree, and for ten (10) years from the date this Decree is no longer in effect as provided in Section XXVI (Duration of Decree), Defendant(shall preserve all records, reports, documents, and underlying data in its possession relevant to the implementation of this Decree and shall insert a similar record retention requirement into all contracts with project contractors and subcontractors. Upon request of Ecology, Defendant shall make all records available to Ecology and allow access for review within a reasonable time.

XIII. TRANSFER OF INTEREST IN PROPERTY

1. No voluntary conveyance or relinquishment of title, easement, leasehold, or other interest in any portion of the Site shall be consummated by Defendant without provision for continued operation and maintenance of any containment system, treatment system, and/or monitoring system installed or implemented pursuant to this Decree.

2. Prior to Defendant's transfer of any ownership interest in all or any portion of the Site, and during the effective period of this Decree, Defendant shall provide a copy of this Decree to any prospective purchaser, transferee, assignee, or other successor in said interest; and, at least thirty (30) days prior to any transfer, Defendant shall notify Ecology of said transfer. Upon its transfer of any interest, Defendant shall notify all transferees of the restrictions on the activities and uses of the property under this Decree and incorporate any such use restrictions into the transfer documents.

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XIV. RESOLUTION OF DISPUTES

1. In the event that Defendant elects to invoke dispute resolution, Defendant must utilize the procedure set forth below.

A. Upon the triggering event (receipt of Ecology's project coordinator's written decision or an itemized billing statement), Defendant has fourteen (14) calendar days within which to notify Ecology's project coordinator in writing of its dispute (Informal Dispute Notice).

B. The Parties' project coordinators shall then confer in an effort to resolve the dispute informally. The parties shall informally confer for up to fourteen (14) calendar days from receipt of the Informal Dispute Notice. If the project coordinators cannot resolve the dispute within those 14 calendar days, then within seven (7) calendar days Ecology's project coordinator shall issue a written decision (Informal Dispute Decision) stating: the nature of the dispute; the Defendant's position with regards to the dispute; Ecology's position with regards to the dispute; and the extent of resolution reached by informal discussion.

C. Defendant may then request regional management review of the dispute. Defendant must submit this request (Formal Dispute Notice) in writing to the Northwest Region Toxics Cleanup Section Manager within seven (7) calendar days of receipt of Ecology's Informal Dispute Decision. The Formal Dispute Notice shall include a written statement of dispute setting forth: the nature of the dispute; the disputing Party's position with respect to the dispute; and the information relied upon to support its position.

D. The Section Manager shall conduct a review of the dispute and shall issue a written decision regarding the dispute (Decision on Dispute) within thirty (30) calendar days of receipt of the Formal Dispute Notice.

E. If Defendant finds Ecology's Regional Section Manager's decision of the disputed matter unacceptable, Defendant may then request final management review of

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that decision. Defendant must submit this request (Final Review Request) in writing to the Toxics Cleanup Program Manager within seven (7) calendar days of Defendant's receipt of the Decision on Dispute. The Final Review Request shall include a written statement of dispute setting forth: the nature of the dispute; the disputing Defendant's position with respect to the dispute; and the information relied upon to support its position.

F. Ecology's Toxics Cleanup Program Manager shall conduct a review of the dispute and shall issue a written decision regarding the dispute (Final Decision on Dispute) within thirty (30) calendar days of receipt of the Final Review Request. The Toxics Cleanup Program Manager's decision shall be Ecology's final decision on the disputed matter.

2. If Ecology's Final Decision on Dispute is unacceptable to Defendant, Defendant has the right to submit the dispute to the Court for resolution. The Parties agree that one judge should retain jurisdiction over this case and shall, as necessary, resolve any dispute arising under this Decree. Under RCW 70A.305.070, Ecology's investigative and remedial decisions shall be upheld unless they are arbitrary and capricious.

3. The Parties agree to only utilize the dispute resolution process in good faith and agree to expedite, to the extent possible, the dispute resolution process whenever it is used. Where either party utilizes the dispute resolution process in bad faith or for purposes of delay, the other party may seek sanctions.

4. Implementation of these dispute resolution procedures shall not provide a basis for delay of any activities required in this Decree, unless Ecology agrees in writing to a schedule extension or the Court so orders.

5. In case of a dispute, failure to either proceed with the work required by this Decree or timely invoke dispute resolution may result in Ecology's determination that

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insufficient progress is being made in preparation of a deliverable, and may result in Ecology undertaking the work under Section XXIII (Implementation of Remedial Action).

XV. AMENDMENT OF DECREE

1. The Parties may agree to minor changes to the work to be performed without formally amending this Decree. Minor changes will be documented in writing by Ecology.

2. Substantial changes to the work to be performed shall require formal amendment of this Decree. This Decree may only be formally amended by a written stipulation among the Parties that is entered by the Court, or by order of the Court. Ecology will provide its written consent to a formal amendment only after public notice and opportunity to comment on the formal amendment. Such amendment shall become effective upon entry by the Court. Agreement to amend the Decree shall not be unreasonably withheld by any party.

3. When requesting a change to the Decree, Defendant shall submit a written request to Ecology for approval. Ecology shall indicate its approval or disapproval in writing and in a timely manner after the written request is received. If Ecology determines that the change is substantial, then the Decree must be formally amended. Reasons for the disapproval of a proposed change to this Decree shall be stated in writing. If Ecology does not agree to the requested change, the disagreement may be addressed through the dispute resolution procedures described in Section XIV (Resolution of Disputes).

XVI. EXTENSION OF SCHEDULE

1. Defendant's request for an extension of schedule shall be granted only when a request for an extension is submitted in a timely fashion, generally at least thirty (30) days prior to expiration of the deadline for which the extension is requested, and good cause exists for granting the extension. All extensions shall be requested in writing. The request shall specify:

A. The deadline that is sought to be extended.

B. The length of the extension sought.

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C. The reason(s) for the extension.

D. Any related deadline or schedule that would be affected if the extension were granted.

2. The burden shall be on Defendant to demonstrate to the satisfaction of Ecology that the request for such extension has been submitted in a timely fashion and that good cause exists for granting the extension. Good cause may include, but may not be limited to:

A. Circumstances beyond the reasonable control and despite the due diligence of Defendant including delays caused by unrelated third parties or Ecology, such as (but not limited to) delays by Ecology in reviewing, approving, or modifying documents submitted by Defendant.

B. A shelter in place or work stoppage mandated by state or local government order due to public health and safety emergencies.

C. Acts of God, including fire, flood, blizzard, extreme temperatures, storm, or other unavoidable casualty.

D. Endangerment as described in Section XVII (Endangerment).

3. However, neither increased costs of performance of the terms of this Decree nor changed economic circumstances shall be considered circumstances beyond the reasonable control of Defendant.

4. Ecology shall act upon any Defendant's written request for extension in a timely fashion. Ecology shall give Defendant written notification of any extensions granted pursuant to this Decree. A requested extension shall not be effective until approved by Ecology or, if required, by the Court. Unless the extension is a substantial change, it shall not be necessary to amend this Decree pursuant to Section XV (Amendment of Decree) when a schedule extension is granted.

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5. At Defendant's request an extension shall only be granted for such period of time as Ecology determines is reasonable under the circumstances. Ecology may grant schedule extensions exceeding ninety (90) days only as a result of one of the following:

A. Delays in the issuance of a necessary permit which was applied for in a timely manner.

B. Other circumstances deemed exceptional or extraordinary by Ecology.

C. Endangerment as described in Section XVII (Endangerment).

XVII. ENDANGERMENT

1. In the event Ecology determines that any activity being performed at the Site under this Decree is creating or has the potential to create a danger to human health or the environment, Ecology may direct Defendant to cease such activities for such period of time as it deems necessary to abate the danger. Defendant shall immediately comply with such direction.

2. In the event Defendant determines that any activity being performed at the Site under this Decree is creating or has the potential to create a danger to human health or the environment, Defendant may cease such activities. Defendant shall notify Ecology's project coordinator as soon as possible, but no later than twenty-four (24) hours after making such determination or ceasing such activities. Upon Ecology's direction, Defendant shall provide Ecology with documentation of the basis for the determination or cessation of such activities. If Ecology disagrees with Defendant's cessation of activities, it may direct Defendant to resume such activities.

3. If Ecology concurs with or orders a work stoppage pursuant to this section, Defendant's obligations with respect to the ceased activities shall be suspended until Ecology determines the danger is abated, and the time for performance of such activities, as well as the time for any other work dependent upon such activities, shall be extended, in accordance with Section XVI (Extension of Schedule), for such period of time as Ecology determines is reasonable under the circumstances.

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4. Nothing in this Decree shall limit the authority of Ecology, its employees, agents, or contractors to take or require appropriate action in the event of an emergency.

XVIII. COVENANT NOT TO SUE

1. Covenant Not to Sue: In consideration of Defendant's compliance with the terms and conditions of this Decree, Ecology covenants not to institute legal or administrative actions against Defendant regarding the release or threatened release of hazardous substances at the Site, as described in Section V (Findings of Fact). This Covenant Not to Sue does not cover any other hazardous substance(s) or area. Ecology retains all of its authority relative to any hazardous substance(s) or area not covered by this Decree.

This Covenant Not to Sue shall have no applicability whatsoever to:

A. Criminal liability.

B. Liability for damages to natural resources.

C. Any Ecology action, including cost recovery, against PLPs not a party to this Decree.

2. Pursuant to RCW 70A.305.040(4)(c), the Court shall amend this Covenant Not to Sue if factors not known at the time of entry of this Decree are discovered and present a previously unknown threat to human health or the environment.

3. Reopeners: Ecology specifically reserves the right to institute legal or administrative action against Defendant to require it to perform additional remedial actions at the Site and to pursue appropriate cost recovery, pursuant to RCW 70A.305.050, under any of the following circumstances:

A. Upon Defendant's failure to meet the requirements of this Decree.

B. Failure of the remedial action to meet the cleanup standards identified in the CAP (Exhibit B).

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C. Upon Ecology's determination that remedial action beyond the terms of this Decree is necessary to abate an imminent and substantial endangerment to human health or the environment.

D. Upon the availability of information previously unknown to Ecology regarding Site factors including the nature, quantity, migration, pathway, or mobility of hazardous substances, and Ecology's determination, in light of this information, that further remedial action is necessary at the Site to protect human health or the environment.

E. Upon Ecology's determination that additional remedial actions are necessary to achieve cleanup standards within the reasonable restoration time frame set forth in the CAP.

4. Except in the case of an emergency, prior to instituting legal or administrative action against Defendant pursuant to this section, Ecology shall provide Defendant with fifteen (15) calendar days' notice of such action.

XIX. CONTRIBUTION PROTECTION

1. With regard to claims for contribution against Defendant, the Parties agree that Defendant is entitled to protection against claims for contribution for matters addressed in this Decree as provided by RCW 70A.305.040(4)(d).

XX. INDEMNIFICATION

1. Defendant agrees to indemnify and save and hold the State of Washington, its employees, and agents harmless from any and all claims or causes of action (1) for death or injuries to persons, or (2) for loss or damage to property to the extent arising from or on account of acts or omissions of Defendant, its officers, employees, agents, or contractors in entering into and implementing this Decree. However, Defendant shall not indemnify the State of Washington nor save nor hold its employees and agents harmless from any claims or causes of action to the

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extent arising out of the negligent acts or omissions of the State of Washington, or the employees or agents of the State, in entering into or implementing this Decree.

XXI. COMPLIANCE WITH APPLICABLE LAWS

1. *Applicable Law.* All actions carried out by Defendant pursuant to this Decree shall be done in accordance with all applicable federal, state, and local requirements, including requirements to obtain necessary permits, except as provided in RCW 70A.305.090. At this time, no federal, state, or local requirements have been identified as being applicable to the actions required by this Decree. Defendant has a continuing obligation to identify additional applicable federal, state, and local requirements which apply to actions carried out pursuant to this Decree, and to comply with those requirements. As additional federal, state, and local requirements are identified by Ecology or the Defendant, Ecology will document in writing if they are applicable to actions carried out pursuant to this Decree, and the Defendant must implement those requirements.

2. *Relevant and Appropriate Requirements.* All actions carried out by Defendant(s) pursuant to this Decree shall be done in accordance with relevant and appropriate requirements identified by Ecology. At this time, no relevant and appropriate requirements have been identified as being applicable to the actions required by this Decree. If additional relevant and appropriate requirements are identified by Ecology or the Defendant, Ecology will document in writing if they are applicable to actions carried out pursuant to this Decree and the Defendant must implement those requirements.

3. Pursuant to RCW 70A.305.090(1), Defendant may be exempt from the procedural requirements of RCW 70A.15, 70A.205, 70A.300, 77.55, 90.48, and 90.58 and of any laws requiring or authorizing local government permits or approvals. However, Defendant shall comply with the substantive requirements of such permits or approvals. For permits and approvals covered under RCW 70A.305.090(1) that have been issued by local government, the Parties agree that Ecology has the non-exclusive ability under this Decree to enforce those local

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government permits and/or approvals. At this time, no state or local permits or approvals have been identified as being applicable but procedurally exempt under this section.

4. Defendant has a continuing obligation to determine whether additional permits or approvals addressed in RCW 70A.305.090(1) would otherwise be required for the remedial action under this Decree. In the event either Ecology or Defendant determines that additional permits or approvals addressed in RCW 70A.305.090(1) would otherwise be required for the remedial action under this Decree, it shall promptly notify the other party of its determination. Ecology shall determine whether Ecology or Defendant shall be responsible to contact the appropriate state and/or local agencies. If Ecology so requires, Defendant shall promptly consult with the appropriate state and/or local agencies and provide Ecology with written documentation from those agencies of the substantive requirements those agencies believe are applicable to the remedial action. Ecology shall make the final determination on the additional substantive requirements that must be met by Defendant and on how Defendant must meet those requirements. Ecology shall inform Defendant in writing of these requirements. Once established by Ecology, the additional requirements shall be enforceable requirements of this Decree. Defendant shall not begin or continue the remedial action potentially subject to the additional requirements until Ecology makes its final determination.

5. Pursuant to RCW 70A.305.090(2), in the event Ecology determines that the exemption from complying with the procedural requirements of the laws referenced in RCW 70A.305.090(1) would result in the loss of approval from a federal agency that is necessary for the state to administer any federal law, the exemption shall not apply and Defendant shall comply with both the procedural and substantive requirements of the laws referenced in RCW 70A.305.090(1), including any requirements to obtain permits or approvals.

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XXII. REMEDIAL ACTION COSTS

1. Defendant shall pay to Ecology costs incurred by Ecology pursuant to this Decree and consistent with WAC 173-340-550(2). These costs shall include work performed by Ecology or its contractors for, or on, the Site under RCW 70A.305, including remedial actions and Decree preparation, negotiation, oversight, and administration. These costs shall include work performed both prior to and subsequent to the entry of this Decree. Ecology's costs shall include costs of direct activities and support costs of direct activities as defined in WAC 173-340-550(2). For all costs incurred, Defendant shall pay the required amount within thirty (30) days of receiving from Ecology an itemized statement of costs that includes a summary of costs incurred, an identification of involved staff, and the amount of time spent by involved staff members on the project. A general statement of work performed will be provided upon request. Itemized statements shall be prepared quarterly. Pursuant to WAC 173-340-550(4), failure to pay Ecology's costs within ninety (90) days of receipt of the itemized statement of costs will result in interest charges at the rate of twelve percent (12%) per annum, compounded monthly.

2. In addition to other available relief, pursuant to RCW 19.16.500, Ecology may utilize a collection agency and/or, pursuant to RCW 70A.305.060, file a lien against real property subject to the remedial actions to recover unreimbursed remedial action costs.

XXIII. IMPLEMENTATION OF REMEDIAL ACTION

1. If Ecology determines that the Defendant has failed to make sufficient progress or failed to implement the remedial action, in whole or in part, Ecology may, after notice to Defendant, perform any or all portions of the remedial action or at Ecology's discretion allow the Defendant opportunity to correct. In an emergency, Ecology is not required to provide notice to Defendant, or an opportunity for dispute resolution. The Defendant(s) shall reimburse Ecology for the costs of doing such work in accordance with Section XXII (Remedial Action Costs).

2. Except where necessary to abate an emergency or where required by law, the Defendant shall not perform any remedial actions at the Site outside those remedial actions

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required by this Decree to address the contamination that is the subject of this Decree, unless Ecology concurs, in writing, with such additional remedial actions pursuant to Section XV (Amendment of Decree). In the event of an emergency, or where actions are taken as required by law, Defendant(s) must notify Ecology in writing of the event and remedial action(s) planned or taken as soon as practical but no later than within twenty-four (24) hours of the discovery of the event.

XXIV. PERIODIC REVIEW

1. So long as remedial action continues at the Site, the Parties agree to review the progress of remedial action at the Site, and to review the data accumulated as a result of monitoring the Site as often as is necessary and appropriate under the circumstances. Unless otherwise agreed to by Ecology, at least every five (5) years after the initiation of cleanup action at the Site the Parties shall confer regarding the status of the Site and the need, if any, for further remedial action at the Site. At least ninety (90) days prior to each periodic review, Defendant(s) shall submit a report to Ecology that documents whether human health and the environment are being protected based on the factors set forth in WAC 173-340-420(4). Under Section XVIII (Covenant Not to Sue), Ecology reserves the right to require further remedial action at the Site under appropriate circumstances. This provision shall remain in effect for the duration of this Decree.

XXV. PUBLIC PARTICIPATION

1. Ecology shall maintain the responsibility for public participation at the Site. However, Defendant shall cooperate with Ecology, and shall:

A. If agreed to by Ecology, develop appropriate mailing lists, prepare drafts of public notices and fact sheets at important stages of the remedial action, such as the submission of work plans, remedial investigation/feasibility study reports, cleanup action plans, and engineering design reports. As appropriate, Ecology will edit, finalize, and

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distribute such fact sheets and prepare and distribute public notices of Ecology's presentations and meetings.

B. Notify Ecology's project coordinator prior to the preparation of all press releases and fact sheets, and before meetings related to remedial action work to be performed at the Site with the interested public and/or local governments. Likewise, Ecology shall notify Defendant prior to the issuance of all press releases and fact sheets related to remedial action work to be performed at the Site, and before meetings related to remedial action work to be performed at the Site with the interested public and/or local governments. For all press releases, fact sheets, meetings, and other outreach efforts by Defendant that do not receive prior Ecology approval, Defendant shall clearly indicate to its audience that the press release, fact sheet, meeting, or other outreach effort was not sponsored or endorsed by Ecology.

C. When requested by Ecology, participate in public presentations on the progress of the remedial action at the Site. Participation may be through attendance at public meetings to assist in answering questions, or as a presenter.

D. When requested by Ecology, arrange and/or continue information repositories at the following locations:

i. Seattle Public Library
1000 4th Avenue
Seattle, WA 98104

ii. Ecology Northwest Regional Office
15700 Dayton Avenue North
Shoreline, WA 98133

At a minimum, copies of all public notices, fact sheets, and documents relating to public comment periods shall be promptly placed in this repository. A copy of all documents related to this Site shall be maintained at Ecology's Northwest Region Office in Shoreline, Washington.

XXVI. DURATION OF DECREE

1. The remedial program required pursuant to this Decree shall be maintained and continued until Defendant has received written notification from Ecology that the requirements of this Decree have been satisfactorily completed. This Decree shall remain in effect until dismissed by the Court. When dismissed, Section XII (Retention of Records), Section XVIII (Covenant Not to Sue), Section XIX (Contribution Protection), Section XX (Indemnification), and Section XXVII (Claims Against the State) shall survive.

XXVII. CLAIMS AGAINST THE STATE

1. Defendant hereby agrees that it will not seek to recover any costs accrued in implementing the remedial action required by this Decree from the State of Washington or any of its agencies; and further, that Defendant will make no claim against the State Toxics Control Account, the Local Toxics Control Account, the Environmental Legacy Stewardship Account, or a MTCA Cleanup Settlement Account for any costs incurred in implementing this Decree. Except as provided above, however, Defendant expressly reserves its right to seek to recover any costs incurred in implementing this Decree from any other PLP. This section does not limit or address funding that may be provided under WAC 173-322A.

XXVIII. EFFECTIVE DATE

1. This Decree is effective upon the date it is entered by the Court.

XXIX. WITHDRAWAL OF CONSENT

1. If the Court withholds or withdraws its consent to this Decree, it shall be null and void at the option of any party and the accompanying Complaint shall be dismissed without costs

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and without prejudice. In such an event, no party shall be bound by the requirements of this Decree.

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

BARRY ROGOWSKI
Program Manager
Toxics Cleanup Program
360-407-7226

Date: 1/14/2025

ROBERT W. FERGUSON
Attorney General

VICTORIA BANKS, WSBA #56373
Assistant Attorney General
360-586-6743

Date: 01/14/2025

CITY INVESTORS IX L.L.C.

ADA M. HEALEY
Vice President
505 – 5th Avenue South, Suite 900
Seattle, WA 98104
206-342-2000

Date: 01/13/2025

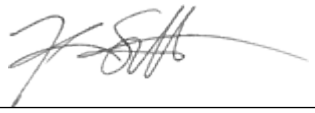
ENTERED this _____ day of January 2025.

JUDGE
King County Superior Court

ATTORNEY GENERAL OF WASHINGTON
Ecology Division
PO Box 40117
Olympia, WA 98504-0117
360-586-6770

King County Superior Court
Judicial Electronic Signature Page

Case Number:	25-2-01367-7 SEA
Case Title:	STATE OF WASHINGTON, DEPARTMENT OF ECOLOGY VS CITY INVESTORS IX L.L.C.
Document Title:	Decree
Date Signed:	01/17/2025

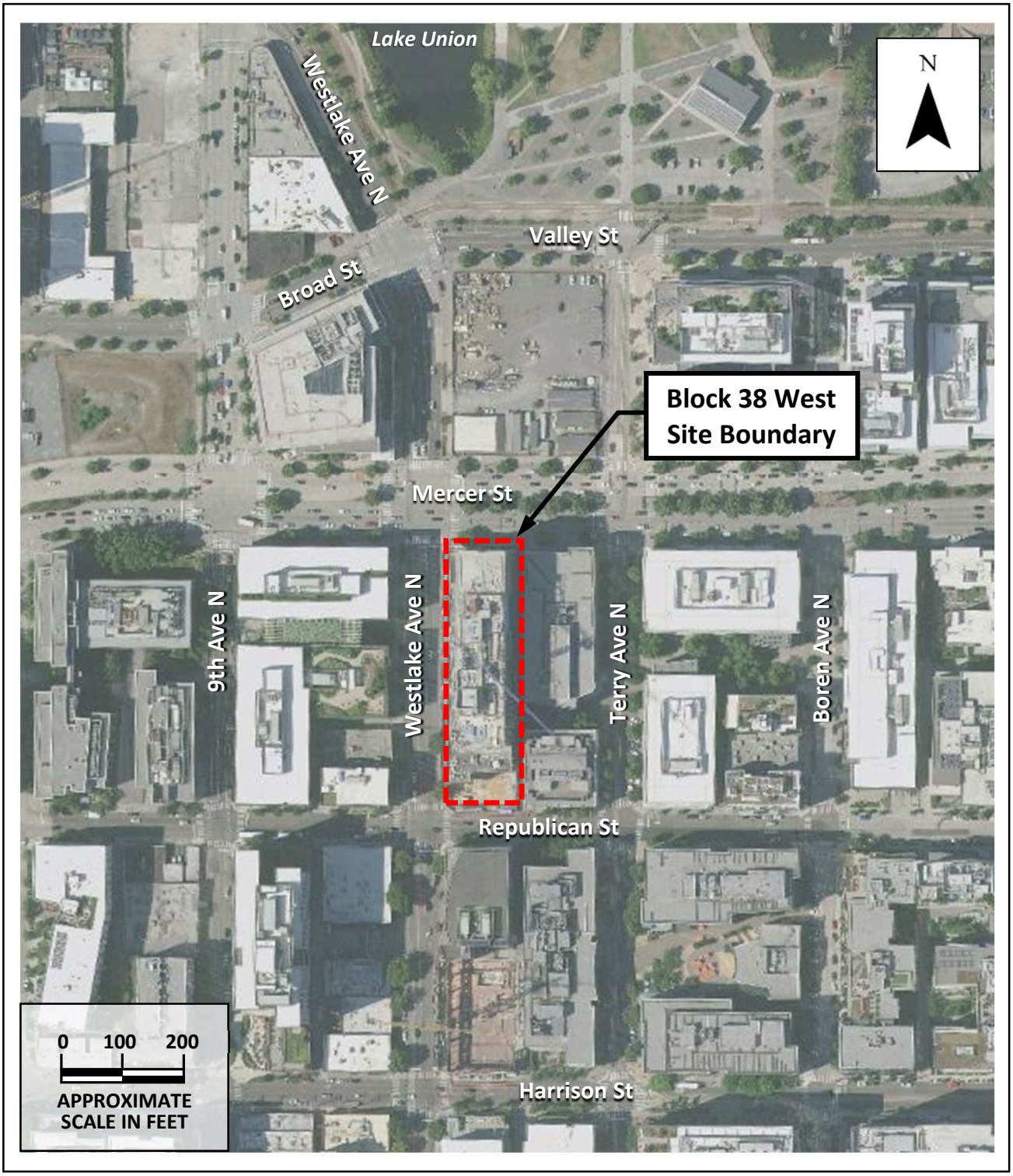


Judge: Ken Schubert

Key/ID Number:	*210153254*
Page Count:	This document contains 152 page(s) plus this signature page.

EXHIBIT A
SITE LOCATION DIAGRAM

EXHIBIT A – SITE LOCATION DIAGRAM



Map Source: TCP Maps, ESRI (2024)

EXHIBIT B
CLEANUP ACTION PLAN

Cleanup Action Plan
Block 38 West

500 through 536 Westlake Avenue North
Seattle, Washington

By

Washington State Department of Ecology
Shoreline, Washington

December 2024

Publication Information

This document is an attachment (Exhibit B) to the Consent Decree for the Block 38 West Site, available on the Department of Ecology's Block 38 West cleanup site page at: https://apps.ecology.wa.gov/publications/summarypages/15008.html

Related Information

- Clean-up site ID: 15008
- Facility site ID: 62773

Contact Information

Toxics Cleanup Program

Northwest Regional Office
P.O. Box 330316
Shoreline, WA 98133-9716
Phone: 206-594-0000
Website: https://ecology.wa.gov/contact

Tena Seeds, Site Manager
Phone: 425-457-3143
Email: tena.seeds@ecy.wa.gov

Kristen Forkeutis, Public Involvement Coordinator
Phone: 425-240-4353
Email: kristen.forkeutis@ecy.wa.gov

ADA Accessibility

The Department of Ecology is committed to providing people with disabilities access to information and services by meeting or exceeding the requirements of the Americans with Disabilities Act (ADA), Section 504 and 508 of the Rehabilitation Act, and Washington State Policy #188. To request an ADA accommodation, contact Ecology by phone at 360-407-6831 or email at ecyadacoordinator@ecy.wa.gov. For Washington Relay Service or TTY call 711 or 877-833-6341. Visit Ecology's website for more information.

Cleanup Action Plan
Block 38 West

500 through 536 Westlake Avenue North
Seattle, Washington

Toxics Cleanup Program
Washington State Department of Ecology
Northwest Regional Office

Shoreline, WA

December 2024

DEPARTMENT OF
ECOLOGY
State of Washington

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List of Figures, Tables, and Appendices

Figures

Tables

Appendices

Acronyms and Abbreviations

AO	Agreed Order No. DE 17963
ARARs	applicable or relevant and appropriate requirements
bgs	below ground surface
Block 38 West Site	the location where a hazardous substance, other than a consumer product in consumer use, has been deposited, stored, disposed of, placed, or otherwise come to be located
Block 38 West Property	500 through 536 Westlake Avenue North in Seattle, Washington
CAP	Cleanup Action Plan
cDCE	cis-1,2-dichloroethene
CFR	Code of Federal Regulations
City Investors IX	City Investors IX LLC
CMP	Compliance Monitoring Plan
COCs	constituents of concern
COPCs	constituents of potential concern
cPAHs	carcinogenic polycyclic aromatic hydrocarbons
CSWGP	Construction Stormwater General Permit
CVOC	chlorinated volatile organic compound
DAHP	Department of Archaeology and Historic Preservation
DRO	diesel-range organics
Ecology	Washington State Department of Ecology
EHD Map	Washington State Department of Health's Environmental Health Disparities Map
EIS	Environmental Impact Statement
EPA	U.S. Environmental Protection Agency
EJ Screening Tool	EPA Environmental Justice Screening and Mapping Tool
Farallon	Farallon Consulting, L.L.C.
FFS	Focused Feasibility Study
IAR	Interim Action Report
IAWP	Interim Action Work Plan

mg/kg	milligrams per kilogram
MTCA	Washington State Model Toxics Control Act Cleanup Regulation
NAVD88	North American Vertical Datum of 1988
ORO	oil range organics
RCW	Revised Code of Washington
RI	Remedial Investigation
RI/FFS	Remedial Investigation and Focused Feasibility Study
RIWP	Remedial Investigation Work Plan
SEPA	State Environmental Policy Act
TEC	Toxicity Equivalent Calculation per Ecology Implementation Memorandum #10
UST	underground storage tank
WAC	Washington Administrative Code

1.0 Introduction

This document presents the Cleanup Action Plan (CAP) for the Block 38 West Site located in Seattle, Washington (Figure 1). The CAP was prepared in accordance with the requirements of the Model Toxics Control Act, Chapter 70A.305 of the Revised Code of Washington, and its implementing regulations, Chapter 173-340 of the Washington Administrative Code (WAC) (collectively, MTCA)

1.1 General Facility Information and Site/Property Definitions

Site Name: Block 38 West Site

Facility Site ID No.: 62773

Cleanup Site ID No.: 15008

Property Address: 500–536 Westlake Avenue N., Seattle, WA 98109

Parcel Numbers: 1983200196, 1983200180, 1983200170

Owner: City Investors IX LLC

The Block 38 West **Site**, as defined under MTCA, is where a hazardous substance, other than a consumer product in consumer use, has been deposited, stored, disposed of, placed, or otherwise come to be located. The Block 38 West Site includes multiple parcels where hazardous substances were released or have come to be located from historical commercial and industrial operations.

The Block 38 West **Property** (Figure 2) comprises the western half of the block bounded by Mercer Street to the north, Westlake Avenue North to the west, Republican Street to the south, and a north-south-trending alley (City of Seattle public right-of-way) that bisects the block to the east. The eastern half of the same block is referred to as the Block 38 East Property; the whole block comprising the Block 38 West and Block 38 East Properties and the alley is referred to as Block 38.[1] The Block 38 West Site includes the Block 38 West Property, the north-south-trending alley that bisects Block 38, and portions of the surrounding public right-of-way.

1.2 Purpose and Objective

This document is a requirement of MTCA. The purpose of the CAP is to document the selected cleanup action for the Site and to specify the cleanup standards and other requirements the cleanup action must meet.

[1] "Block 38" and other block numbers used in this document were assigned for property development planning purposes and do not correspond to the block numbers designated by the City of Seattle (e.g., the property on which Block 38 is located is known as Block 94 by the City of Seattle).

Specific MTCA requirements for CAPs are set forth in WAC 173-340-380(5). Consistent with these requirements, this CAP provides the following:

- A general description of the cleanup action developed in accordance with WAC 173-340-350 through 173-340-390;
- A summary of the rationale for selecting the cleanup action;
- A summary of how impacts on likely vulnerable populations and overburdened communities were considered when selecting the cleanup action;
- Cleanup standards for each hazardous substance and for each medium of concern at the Block 38 West Site;
- The schedule for implementation of the cleanup action plan and restoration time frame;
- Institutional controls required as part of the cleanup action;
- Applicable state and federal laws for the cleanup action;
- A preliminary determination by the department that the cleanup action will comply with WAC 173-340-360; and
- Given that the cleanup action involves on-site containment, specification of the types, levels, and amounts of hazardous substances remaining on-site and the measures that will be used to prevent migration and contact with those substances.

In addition, this CAP includes a Compliance Monitoring Plan (CMP) as Appendix A, which provides procedures and locations for compliance monitoring at the Block 38 West Site.

1.3 Preliminary Determination

The Washington State Department of Ecology (Ecology) has made a preliminary determination that the cleanup action described in this CAP will comply with the requirements specified in WAC 173-340-360. Specifically, these requirements include a cleanup action that will be protective of human health and the environment (including likely vulnerable populations and overburdened communities), comply with applicable state and federal laws, comply with cleanup standards, prevent or minimize present and future releases and migration of hazardous substances in the environment, provide for compliance monitoring, use permanent solutions to the maximum extent practicable, provide for a reasonable restoration time frame, and consider public concerns and tribal rights and interests.

1.4 Project Background and Regulatory History

Contamination was discovered in soil and groundwater at the Block 38 West Property during investigations conducted by Farallon Consulting, L.L.C. (Farallon) on behalf of City Investors IX L.L.C. (City Investors IX) between 2014 and 2018 to support redevelopment of the Property. The results were documented in environmental reports submitted to the City of Seattle for the

redevelopment construction permit. Those reports were reviewed by Ecology through the State Environmental Policy Act (SEPA) process in July 2019. Based on the information provided in the reports, Ecology listed Block 38 West as a contaminated site in August 2019, with Facility Site ID No. 62773 and Cleanup Site ID No. 15008. Ecology issued an early notice letter with preliminary determination of liability on August 13, 2019 (Ecology 2019). City Investors IX accepted its status as a potentially liable person in a letter dated August 27, 2019. Subsequently, Ecology and City Investors IX negotiated Agreed Order No. DE 17963 (AO) for the Block 38 West Site. The AO became effective on April 20, 2020, and required City Investors IX to conduct a Remedial Investigation (RI) and Feasibility Study (FS), complete remaining elements of an interim cleanup action that began independently on the Block 38 West Property in 2019, and prepare a preliminary draft CAP for the Block 38 West Site.

Following execution of the AO, a work plan for additional interim action cleanup work within the Block 38 alley area was submitted to Ecology. The interim action work plan (IAWP) for the alley was finalized and approved by Ecology in February 2021 (Farallon 2021). Substantial cleanup of the Block 38 West Site was performed through the independent and formal interim actions from December 2019 through July 2021 in conjunction with redevelopment of the Block 38 West Property. The independent interim action performed on the Block 38 West Property is described in the *Final Interim Action Report, Block 38 West Site, 500 through 536 Westlake Avenue North, Seattle, Washington* dated December 28, 2023 (2023 IAR; Farallon 2023b). The interim action performed in the alley east of the Block 38 West Property is described in the *Final Interim Action Report, Alley Area of Block 38 West Site Between Republican Street and Mercer Street, 500 through 536 Westlake Avenue North, Seattle, Washington* dated January 5, 2024 (2024 Alley IAR; Farallon 2024a).

A draft RI Work Plan (RIWP) was submitted to Ecology in July 2020. Prior to submittal of the draft RIWP, technical memoranda containing scopes of work for installing wells on the Block 38 West Property and collecting soil samples within the east-adjacent alley were submitted to Ecology in May and June 2020. Ecology worked with City Investors IX and provided approvals for these scopes of work and other portions of the RI scope of work between June 2020 and February 2022 to facilitate data collection while specific areas of the Site were accessible during construction. The RIWP was finalized in April 2023 (Farallon 2023a) and approved by Ecology in correspondence dated May 1, 2023. Final RI field activities were performed between May 2023 and February 2024. The work included collection of soil and groundwater data to evaluate post-construction conditions and fill remaining data gaps necessary to complete the RI and Focused FS (FFS) for the Block 38 West Site. A draft RI/FFS report was submitted to Ecology in February 2024 and a final draft was submitted in August 2024 for public review and comment. The RI/FFS report was subsequently finalized in December 2024 (Farallon 2024b). A complete regulatory history of the Block 38 West Site is provided in the RI/FFS.

Based on the results from the RI and interim actions, isolated areas of petroleum hydrocarbons and PAHs remain at concentrations exceeding regulatory screening levels in soil at the Block 38 West Site. The RI/FFS prepared by Farallon is the technical basis for the cleanup action to be conducted at the Block 38 West Site.

2.0 Block 38 West Site Description and Background

This section provides the Block 38 West Site description, a summary of current and historical uses of the Block 38 West Property, the geology and hydrogeology of the South Lake Union region, summary information regarding vulnerable populations and overburdened communities, and climate change considerations.

2.1 Block 38 West Property Location and Description

The Block 38 West Property is in a commercial and light industrial area zoned as mixed residential and commercial in the South Lake Union area (SM-SLU 175/85-280) approximately 1 mile north of downtown Seattle. According to the King County GIS Center (2018), the Block 38 West Property comprises three tax parcels: King County Parcel No. 1983200196 on the northern portion (534 and 536 Westlake Avenue North), King County Parcel No. 1983200180 on the central portion (520 Westlake Avenue North), and King County Parcel No. 1983200170 on the southern portion (500 and 510 Westlake Avenue North) (Figure 2).

The Block 38 West Property totals approximately 1.06 acres of land developed with a multi-story mixed-use building from lot line to lot line. Adjacent street elevations vary from an approximate elevation of 41 feet relative to the North American Vertical Datum of 1988 (NAVD88) on Republican Street at the south end the Block 38 West Property, to an approximate elevation of 31 feet NAVD88 on Mercer Street at the north end of the Block 38 West Property (Figure 2). The alley bisecting Block 38 is accessed from Republican Street and Mercer Street and descends from street level at both ends to an approximate elevation of 25 feet NAVD88. The alley is used for vehicle access to parking garages on the Block 38 West Property and Block 38 East Property.

2.2 Block 38 West Property History

The Block 38 West Property historically was undeveloped marshland that extended along the southern shore of Lake Union and onto the north-adjacent property in the late 1880s (Farallon 2019a, Hart Crowser, Inc. 1999). Historical operations at the Block 38 West Property have included the following:

- A lumber storage yard across the majority of the Block 38 West Property from the 1890s until approximately 1920;
- Small commercial operations (e.g., a blacksmith shop, a wagon shop) in pile-supported buildings on the southern parcel in the early 1900s, which were replaced in 1919 by a two-story masonry building with a basement level at 500 and 510 Westlake Avenue North;
- Retail and commercial operations (e.g., auto parts, appliances, school and office supplies, furniture storage, clothing, and outdoor equipment) at 500 and 510 Westlake Avenue North from the 1920s to 2019;

- Commercial operations (e.g., a horse stable and wagon house, a blacksmith shop, a wagon shop, an auto repair facility, and a veterinary hospital) from the early 1900s until 1950s on the central parcel at 520 Westlake Avenue North, which were replaced in 1964 with a two-story building with rooftop parking through 2019;
- Retail operations at 520 Westlake Avenue from 1964 to 2019; and
- Warehouse storage starting in the early 1920s and transitioning into commercial and retail operations, including a commercial printer, on the northern parcel at 534 and 536 Westlake Avenue North through 2019.

The structures on the Block 38 West Property that were used as retail, temporary office space, storage, and parking remained unchanged from 1969 through August 2019. The structures were demolished in late 2019 and early 2020 as part of the redevelopment of the Block 38 West Property. A historical timber-framed trestle previously extended north from Republican Street into the alley approximately 120 feet; its constructed height was approximately 18 feet higher than the ground surface of the southern portion of the alley and it was removed during the independent interim action. The trestle was constructed for support of the rail spur that extended out to the former southern shoreline of Lake Union (Farallon 2018).

Historical operations resulted in the release of hazardous substances that caused contamination of soil and/or groundwater at the Block 38 West Property.

2.3 Block 38 West Property Current Land Use

The Block 38 West Property redevelopment included construction of a multi-story mixed-use building, with 12 stories above street level and four levels of underground parking. The finished floor elevation of the lowest level of parking is -3.25 feet NAVD88, with the bottom of footing elevation for the majority of the foundation at approximately -6.5 feet NAVD88. The excavation extended deeper in areas for footings or elevator pits. The mass excavation and installation of building superstructure has been completed. On May 6, 2022, the City of Seattle issued a certificate of occupancy for the new building.

2.4 Geology and Hydrogeology

The Puget Sound region is underlain by Quaternary sediments deposited by a number of glacial episodes. Deposition occurred prior to, during, and following glacial advances and retreats, creating the existing subsurface conditions. The naturally occurring sediments in the South Lake Union area consist primarily of interlayered and/or sequential deposits of alluvial clays, silts, and sands that typically are situated over deposits of glacial till that consist of silty sand to sandy silt with gravel. Outwash sediments consisting of sands, silts, clays, and gravels were deposited by rivers, streams, and post-glacial lakes during glacial advances and recessions. Advance outwash sediments have been largely over-consolidated by the overriding ice sheets. These advance outwash sediments are overlain by a till-like layer and/or recessional outwash sediments that are less consolidated (Galster and Laprade 1991).

The Block 38 West Property is approximately 600 feet south of Lake Union. According to a U.S. Geological Survey (1909) quadrangle map for Seattle, the original shoreline of Lake Union extended farther south than its current location, to as far as the current location of Mercer Street. In the late 1800s and the early 1900s, the southern end of Lake Union was filled with sawdust and wood waste generated by lumber mill operations and with other fill materials. The historical use of Block 38 as a lumber mill and for lumber storage resulted in deposition of wood waste across Block 38. Field observations made during subsurface investigations conducted by Farallon and others confirmed a wood debris layer was present beneath the Block 38 West Property prior to the redevelopment excavation.

A description of the general lithology and hydrogeology of the Block 38 West Property is provided below, based on field observations made during the subsurface investigations conducted by Farallon and others. According to Farallon observations during drilling and excavation at the Block 38 West Property and a review of boring logs from geotechnical drilling (GeoEngineers, Inc. [GeoEngineers] 2018), three general stratigraphic units were present at the Block 38 West Property and immediate vicinity prior to excavation:

- The shallowest unit consists of fill material with recent deposits, including lacustrine sediments, and comprises silt, sandy silt, and sand with variable gravel content. In some areas, this shallowest unit includes wood waste, peat, and organic silt.
- The fill and recent deposits are underlain by a dense stratum of heterogeneous glacially consolidated deposits comprising dense sand and variable silt and gravel content and very stiff to hard silt with variable sand and gravel content. According to GeoEngineers (2018), the recent glacially consolidated soil contact typically slopes down to the north toward Lake Union. Prior to remedial and mass excavations conducted as part of redevelopment activities at the Block 38 West Property, the contact between fill/recent deposits and glacially consolidated deposits occurred between approximate elevations of 11 to -6 feet NAVD88.
- A poorly graded dense advance glacial outwash sand with minor silt is encountered beneath the intermediate unit of glacially consolidated soil at elevations ranging from -30 to -40 feet NAVD88. The sand and gravel layer that was observed in the boring for monitoring well FMW-130 at an elevation of -22 feet NAVD88 is likely the transition zone between the intermediate unit of glacially consolidated soil and the poorly graded dense advance glacial outwash sand. In some areas where the intermediate glacially consolidated unit is thin or absent, the top of the outwash sand is encountered at shallower depths. The glacial outwash has been noted to be underlain by very dense fine-grained soil during drilling of borings several hundred feet northwest of the Block 38 West Property.

Mass excavation removed the entirety of the fill and the recent deposits from within the boundaries of the Block 38 West Property. The bottom of the mass excavation at elevation -7 feet NAVD88 was in glacially consolidated soils. Cross-sections depicting the post-excavation conditions of the Block 38 West Property are presented on Figures 4 through 6. The locations of

the cross-sections are shown on Figure 3, along with sampling locations from the subsurface investigations.

Three general water-bearing zones are present at the Block 38 West Property:

- The uppermost water-bearing zone encountered in the fill and underlying recent deposits is referred to as the Shallow Water-Bearing Zone. The Shallow Water-Bearing Zone at the Block 38 West Property varies in thickness from approximately 5 to 15 feet and was encountered at depths ranging from approximately 5 to 8 feet below ground surface (bgs). Monitoring wells formerly located on the Block 38 West Property were screened within the Shallow Water-Bearing Zone, with the exception of monitoring wells FMW-130, FMW-136, FMW-144 through FMW-147, and FMW-149, which were screened in glacially consolidated deposits comprising the Intermediate Water-Bearing Zone described below, and monitoring wells FMW-137 and FMW-138, which are screened in the outwash sand deposits comprising the Deep Outwash Aquifer that is also described below.

- A deeper water-bearing zone below the Shallow Water-Bearing Zone, referred to as the Intermediate Water-Bearing Zone, is present in the glacially consolidated soil at the Block 38 West Property encountered at approximate elevations of 5 to 10 feet NAVD88 (at depths of approximately 15 to 20 feet bgs). The Intermediate Water-Bearing Zone is continuous across the Block 38 West Property. Based on previous subsurface investigations, the Shallow Water-Bearing Zone at the Block 38 West Property (prior to removal during mass excavation) was in direct communication with the Intermediate Water-Bearing Zone (i.e., there is no aquitard separating these groundwater-bearing zones).

- The third water-bearing zone is referred to as the Deep Outwash Aquifer, the top of which is present at approximate elevations of -30 and -40 feet NAVD88 (approximately 55 to 65 feet bgs) in dense advance outwash sand deposits consisting of sand with minor silt. The Deep Outwash Aquifer is continuous across the Block 38 West Property. The thickness of the Deep Outwash Aquifer at the Block 38 West Site is not known. Based on previous subsurface investigations, the Intermediate Water-Bearing Zone at the Block 38 West Property is in direct communication with the Deep Outwash Aquifer (i.e., there is no aquitard separating these groundwater-bearing zones).

Mass excavation removed the entirety of the Shallow-Water Bearing Zone and the upper portion of the Intermediate Water-Bearing Zone within the boundaries of the Block 38 West Property.

2.5 Vulnerable Populations and Overburdened Communities

An evaluation of potential impacts to likely vulnerable populations and overburdened communities in the vicinity of the Block 38 West Site was conducted in accordance with *Implementation Memorandum No. 25: Identifying Likely Vulnerable Populations and Overburdened Communities under the Cleanup Regulations* dated January 2024, prepared by

Ecology (2024) (Implementation Memorandum No. 25). The complete evaluation is presented in the RI/FFS; primary findings are summarized below.

The Block 38 West Site appears likely to be in proximity to vulnerable populations and overburdened communities due primarily to the potential for environmental exposures (e.g., heavy vehicle traffic and proximity to major roadways), and less attributed to socioeconomic or demographic factors.

Vulnerable populations and overburdened communities are not more susceptible to exposure to contaminated media associated with the Block 38 West Site than the general population. Site-specific evaluation of the interim actions, redevelopment activities, and evaluation of potential human exposure pathways presented in the RI/FFS confirm that the proposed final cleanup action will be protective of human health and the environment. The site-specific evaluation of human exposure pathways for the Block 38 West Site meets the criteria for medium confidence specified in Implementation Memorandum No. 25 and supports making a final cleanup decision under WAC 173-340-350 through 173-340-390.

2.6 Climate Change

The evaluation of climatological characteristics is presented in the RI/FFS. In accordance with WAC 173-340-350(6)(f), an evaluation of current and projected local and regional climatological characteristics was conducted to determine whether these characteristics could affect the migration of hazardous substances or the resilience of cleanup action alternatives for the Block 38 West Site.

Based on the results of the evaluation and the location of the Block 38 West Site in a highly developed area in Seattle, current and projected local and regional changes in climate are not anticipated to affect the migration of hazardous substances or the resilience of the cleanup action at the Block 38 West Site.

3.0 Summary of Investigations and Remedial Actions

Subsurface investigations and/or remedial actions have been conducted at the Block 38 West Site since 1994. This section summarizes the activities and results from the subsurface investigations and remedial actions. The objectives of the subsurface investigations were to obtain lithologic, hydrogeologic, and analytical data to characterize environmental conditions.

Boring locations associated with these investigations are shown on Figure 3. A complete summary of subsurface investigations and remedial actions conducted at the Block 38 West Site is presented in the RI/FFS.

3.1 1994-2022 Subsurface Investigations

The following subsurface investigations were completed at the Block 38 West Site from 1994 to 2022. Sample locations are shown on Figure 3.

- 1994 Phase II soil investigation by Dames & Moore (as cited in Hart Crowser, Inc. 1999; sampling locations unknown) in the area of a former 1,500-gallon heating oil UST removed from the sidewalk north-adjacent to Republican Street along the southern portion of the Block 38 West Property.
- 2014 installation of monitoring well FMW-130 by Farallon, including collection and analysis of soil and groundwater samples from this location on the Block 38 West Property.
- 2017 sampling and analysis of groundwater from monitoring well FMW-130 by Farallon.
- 2018 advancement of six soil borings (FB-01 through FB-06) and seven groundwater monitoring wells (FMW-132 through FMW-138) by Farallon, including collection and analysis of soil and groundwater samples from these locations and evaluating groundwater flow conditions.
- 2018 geotechnical investigation by GeoEngineers summarizing lithologic conditions observed during advancement of borings FB-01 through FB-06 and the borings for monitoring wells FMW-132 through FMW-136.
- 2019 advancement of 10 utility potholes (NGas-1, NGas-2, PH-1, PH-2, PH-4, PH-11, PH-11A, PH-12, PH-13, and PH-13A), three soil borings (FB-07 through FB-09), and installation of five monitoring wells (FMW-144 through FMW-147 and FMW-149) by Farallon. This work included collection and analysis of soil samples from select locations and groundwater sampling and analysis from the wells during multiple monitoring events conducted throughout the year.
- 2019 to 2020 advancement of eighteen test pits (TP-1 through TP-18) by a City Investors IX subcontractor. Test pits were observed and sampled by Farallon for laboratory analysis.

- 2020 to 2021 installation of four monitoring wells (FMW-150 through FMW-153) through the basement slab of the P4 parking garage level of the recently constructed building and advancement of seven soil borings (FB-10 through FB-16) within the alley east of the Block 38 West Property and two soil borings (FB-18 and FB-19) west of former soil sample location TP-12 by Farallon. This work included collection and analysis of soil samples from the nine soil borings; no soil or groundwater samples were collected from the four well locations.
- 2022 installation of four monitoring wells (FMW-154 through FMW-157) in the alley east of the Block 38 West Property and advancement of soil borings FB-20 and FB-21 north of the northwest Block 38 West Property corner and north of the alley east of the Block 38 West Property, respectively. This work was performed by Farallon and included collection and analysis of soil samples from the two soil borings; no soil or groundwater samples were collected from the four well locations.

3.2 2019-2021 Independent Interim Action

An independent interim action was performed at the Block 38 West Site between October 2019 and July 2021 in conjunction with redevelopment of the Block 38 West Property. The objective of the independent interim action was to reduce the threat to human health and the environment at the Block 38 West Property. The independent interim action scope of work was presented in *Interim Action Work Plan, Block 38 West Property, 500 through 536 Westlake Avenue North, Seattle, Washington* dated November 8, 2019, prepared by Farallon (2019b). Implementation of the independent interim action is detailed in the 2023 IAR that was approved by Ecology on January 4, 2024. Components of the independent interim action included excavation of contaminated soil to eliminate source material, construction dewatering and treatment of contaminated groundwater, installation of a vapor barrier around the entire perimeter and below the building foundation, and construction of the exterior walls and floor slab for the underground portion of the building using waterproof concrete. The independent interim action was conducted to meet the requirements of MTCA as defined in WAC 173-340-430. The results of the independent interim action are summarized in this section.

3.2.1 Construction Dewatering and Treatment

Construction dewatering and treatment were performed in conjunction with redevelopment, resulting in draw-down of groundwater elevations to below the maximum excavation depth required for redevelopment design, temporarily eliminating the Shallow Water-Bearing Zone and a portion of the Intermediate Water-Bearing Zone at the Block 38 West Property. Water generated from construction dewatering and any stormwater impacted by construction activities was treated prior to discharge in accordance with Ecology's Administrative Order Docket No. 16629 for the National Pollutant Discharge Elimination System Construction Stormwater General Permit and King County Industrial Waste Discharge Authorization No. 4493-02. During the system operation between January 2020 and March 2021, a total of approximately 186,500,000 gallons of water from the construction dewatering system and stormwater was collected, treated, and discharged via a private stormwater lateral to the City

of Seattle stormwater system. In addition, approximately 2,545,000 gallons of water from the construction dewatering system and stormwater were also collected, treated, and discharged via the municipal sanitary sewer during operation of the system.

3.2.2 Monitoring Well Decommissioning

The monitoring wells installed on the Block 38 West Property during the 2014-2019 subsurface investigations (FMW-130, FMW-132 through FMW-136, FMW-148 through FMW-149) were decommissioned by a licensed well driller in accordance with the Washington State Water Well Construction Act (RCW 18.104) and WAC 173-160-460.

3.2.3 Excavation and Off-Property Disposal of Contaminated Soil

The mass excavation extended across the entire area of the Block 38 West Property to approximate elevation -6.5 feet NAVD88 or approximately 30 to 35 feet below existing grade. A total of approximately 64,200 tons of soil containing detectable concentrations of hazardous substances and wood and organic debris was removed from the Block 38 West Property between November 2019 and June 2020 and disposed of off-property at appropriately permitted facilities. Of this total, approximately 44,000 tons of soil contained hazardous substances at concentrations exceeding the applicable screening levels. Approximately 50 percent of the 44,000 tons (23,000 tons) of soil with hazardous substances at concentrations exceeding the screening levels was associated with wood and organic debris encountered across the Block 38 West Property. The final limits of the mass excavation and the locations of confirmation soil samples are shown on Figures 4 through 8. A complete summary of excavation activities on the Block 38 West Property is provided in the 2023 IAR.

3.2.4 Utility Decommissioning – Side Sewer Line

During excavation, a side sewer line with dark liquid was encountered on the southeastern portion of the Block 38 West Property (Figure 3). The line was observed to extend west onto the Block 38 West Property[2] from the adjacent alley and was not documented on Seattle Public Utilities maps. The line was breached when it was exposed and Farallon personnel collected a sample of the liquid for laboratory analysis. The sample result indicated the presence of total petroleum hydrocarbons (TPH) in the liquid. The side sewer line was cut and capped at the eastern Property boundary and inspected over the length of the line to the maximum extent practicable. No source of the petroleum hydrocarbons contained within the side sewer line was identified during subsequent demolition and excavation activities. Additional field screening in the southeastern portion of the Block 38 West Property did not indicate a release of petroleum hydrocarbons to soil or groundwater.

3.2.5 UST Decommissioning

Two previously unidentified underground storage tanks (USTs) containing bunker oil and a fuel product line were encountered in the northwestern corner of the Block 38 West Property. The

[2] This side sewer extended onto King County Parcel No. 1983200170 on the southern portion of the Block 38 West Property (500 and 510 Westlake Avenue North).

USTs ("UST01" and "UST02") and product line were associated with a former mechanical equipment area that had been located below grade within the Westlake Avenue North right-of-way, west-adjacent to the former building on the Block 38 West Property (Figure 3). The mechanical equipment area housed equipment servicing the former building utilities. As part of the Block 38 West Property redevelopment, the mechanical equipment area was decommissioned, removed, and backfilled with controlled-density fill.

UST01 was discovered on January 21, 2020, during the removal of the concrete foundation and was approximately 1,200 gallons in volume. UST02 was discovered on February 5, 2020, during mass excavation activities in the northwestern corner and was approximately 2,200 gallons in volume. UST02 was approximately 10 feet west of UST01, along the western shoring wall, and was approximately 5 feet below the former concrete foundation. The product line was discovered on January 31, 2020, in the western sidewall of the excavation directly west of UST02. The line extended north to the northwestern corner of the former building foundation (Figure 3).

Both USTs were permanently decommissioned by excavation and removal in accordance with Washington State *Underground Storage Tank Regulations* (WAC 173-360A) and Ecology's *Guidance for Remediation of Petroleum Contaminated Sites* (Ecology 2016). Soil samples were collected from the area and analyzed for TPH as diesel-range organics and heavy oil-range organics (DRO+ORO) and related compounds. The results for DRO+ORO are provided on Figure 7. Petroleum contaminated soil in this area was removed from within the limits of the Block 38 West Property boundary. A summary of the UST decommissioning and associated sampling activities at the Block 38 West Property is provided in the 2023 IAR.

3.2.6 Vapor Barrier Installation and Waterproof Foundation

A chemical resistant vapor barrier known as Drago Wrap, manufactured by Stego Industries, LLC of San Clemente, California[3], was installed around the entire building perimeter from the top of the shoring wall to the base of the mat slab foundation and horizontally across the entire building foundation (Figure 9). The Drago Wrap vapor barrier material was placed prior to the mat slab foundation concrete pour. The exterior foundation walls and floor slab of the underground portion of the building were constructed of waterproof concrete up to a maximum of 2 feet above the static water table. The waterproofing product installed for the building foundation was the Hycrete Endure WP System produced by Hycrete, Inc. of Fairfield, New Jersey. The purpose of the vapor barrier is to mitigate potential vapor intrusion exposures from contaminated groundwater and associated soil vapor that could come into contact with the building. In addition to the vapor barrier, the thickness of the mat slab foundation and high-performance waterproof concrete that reduces water vapor transmissivity will augment the attenuation of soil vapor, if present.

[3] The vapor barrier and Hycrete specifications were provided to Ecology in the Technical Memorandum regarding Supplemental Subsurface Investigation and Foundation Elements (Farallon 2020d).

Specifications for and a summary of the installation of the Drago Wrap and Hycrete concrete at the Block 38 West Property are provided in the 2023 IAR.

3.3 2021 Alley Area Interim Action

This section summarizes the results from the alley interim action conducted at the Block 38 West Site between February and July 2021. Additional details regarding the implementation of the alley interim action are summarized in the 2024 Alley IAR.

An interim action was performed in the alley area east of the Block 38 West Property in conjunction with redevelopment, specifically during utility upgrades and structural improvements to the alley. The objective of the alley area Interim Action was to remove soil containing hazardous substances at concentrations exceeding applicable screening levels in order to reduce the threat to human health and the environment. The construction excavation activities within the alley extended to a depth of approximately 5 feet bgs or an elevation of 25 to 18 feet NAVD88 (north to south) in order to place structural backfill to support the new concrete road surface and access utilities (Figure 6). Approximately 2,382 tons of soil containing detectable concentrations of hazardous substances and wood and organic debris were removed from the alley area between March 1 and July 23, 2021. The soil was disposed of offsite at appropriately permitted facilities as detailed in the 2024 Alley IAR. The final limits of the alley interim action excavation and the locations of confirmation soil samples are included on Figures 6 through 8.

3.4 2023-2024 Remedial Investigation Summary

RI activities were completed at the Block 38 West Site between 2023 and 2024 to characterize the distribution of constituents of potential concern (COPCs; see Section 3.5.1) remaining after interim actions were completed. The data from these activities were used to establish cleanup standards and support the evaluation of technically feasible cleanup alternatives in accordance with the provisions of WAC 173-340-350.

The previous subsurface investigations and interim actions conducted at the Block 38 West Site had defined the lateral and vertical extent of COPCs in soil and groundwater within the Block 38 West Property boundary. The 2023 to 2024 RI activities addressed remaining data gaps. This included evaluating groundwater conditions in the Shallow and Intermediate Water-Bearing Zones following the interim actions, and characterizing residual soil and groundwater contamination that may remain beyond the Block 38 West Property boundary. Soil and groundwater data gaps that were addressed during the 2023 to 2024 RI activities include:

- The lateral extent of COPC exceedances in soil west and north of UST01 and UST02 and the associated fuel product line.
- The vertical and lateral extents of COPC exceedances in soil at the southwestern Block 38 West Property corner in the vicinity of monitoring well FMW-134.

- The lateral extent of COPCs at concentrations exceeding the screening levels within the Shallow Water-Bearing Zone south and west of former monitoring well FMW-134; to the west of soil boring FB-03; and to the east of former monitoring well FMW-130.
- The presence of benzene in a reconnaissance groundwater sample collected from former monitoring well FMW-130.
- The lateral extent of COPCs at concentrations exceeding screening levels within the Intermediate Water-Bearing Zone to the west, south, and east.
- Post-excavation groundwater conditions beneath the new building.

A total of nine soil borings (FB-17 and FMW-158 through FMW-165), including those completed as monitoring wells, were advanced in May 2023:

- Monitoring wells FMW-158, FMW-160, FMW-161, and FMW-163 were installed within the Shallow Water-Bearing Zone.
- Monitoring wells FMW-159, FMW-162, and FMW-164 were installed within the Intermediate Water-Bearing Zone.
- Monitoring well FMW-165 was installed within the Deep Outwash Aquifer.

Groundwater monitoring events were conducted at the Block 38 West Site in May, August, and November 2023, and February 2024 using the newly installed and existing monitoring wells. The monitoring well network consisted of:

- Seven monitoring wells screened in the Shallow Water-Bearing Zone (FMW-154, FMW-155, FMW-156, FMW-158, FMW-160, FWM-161, and FMW-163);
- Eleven monitoring wells screened in the Intermediate Water-Bearing Zone (FMW-150 through FMW-153, FMW-157, FMW-159, FMW-162, FMW-164, OW-1 through OW-3, and OW-5); and
- Three monitoring wells screened in the Deep Outwash Aquifer (FMW-137, FMW-138, and FMW-165).

The soil boring and monitoring well locations are shown on Figure 3. The results of the 2023 to 2024 RI activities were used to determine the nature and extent of contamination at the Block 38 West Site presented in Section 3.5 below.

3.5 Nature and Extent of Contamination

Based on the results from the previous investigations, interim actions, and the RI, the nature and extent of contamination at the Block 38 West Site has been adequately characterized to establish cleanup standards and support the evaluation of technically feasible cleanup action alternatives. This section presents a brief discussion on the nature and extent of contamination by affected media at the Block 38 West Site following completion of interim actions.

3.5.1 Constituents of Potential Concern

Hazardous substances investigated during the RI, including investigations conducted prior to the interim actions, were based on historical uses of the Block 38 West Property and surrounding historical land use, historical fill known to have been placed in this area, USTs encountered during redevelopment, and the interim actions that were completed. Those hazardous substances that exceeded screening levels protective of human health and the environment were retained as constituents of potential concern (COPCs) for the Block 38 West Site (see Table 1).

The COPCs identified for soil at the Block 38 West Site included:

- Total petroleum hydrocarbons (TPH) as gasoline-range organics (GRO);
- TPH as diesel-range organics and oil-range organics (Total DRO+ORO);
- Benzene;
- Naphthalene;
- 1-Methylnaphthalene;
- 2-Methylnaphthalene;
- Benzo(a)pyrene;
- Carcinogenic polycyclic aromatic hydrocarbons (cPAHs); and
- Metals as barium and mercury.

The COPCs identified for groundwater at the Block 38 West Site included:

- GRO;
- Total DRO+ORO;
- Benzene;
- Naphthalene;
- 1-Methylnaphthalene; and
- Metals as barium and mercury.

Other hazardous substances were detected in groundwater at the Block 38 West Property boundary and in soil within the east-adjacent Block 38 alley at concentrations that exceed screening levels protective of human health and the environment but are not considered COPCS for the Block 38 West Site. Those substances include chlorinated volatile organic compounds (CVOCs) and arsenic, cadmium, and lead and are associated with other listed contaminated sites. These are further discussed in Section 3.5.5.

3.5.2 COPC Sources

Based on the results from the RI and the interim actions completed by Farallon and others, the following historical operations and/or features were confirmed as sources of soil and/or groundwater contamination at the Block 38 West Site:

- Historical placement of impacted fill soil;

- Impacted fill soil located within wood debris associated with the former lumber mill operations on Block 38;
- Former timber pilings associated with historical buildings;
- Oil encountered in a sanitary sewer line at the southeastern portion of the Block 38 West Property (efforts to evaluate the sanitary sewer line indicated no specific point of release or former feature to which the sanitary sewer line was connected);
- A coal fill layer ranging in thickness from 4 to 6 inches encountered across the east-central and northern portions of the Block 38 West Property and in the southern and central portions of the alley at approximate elevation 20 feet NAVD88;
- Localized impacts associated with bunker fuel oil USTs encountered in the northwestern portion of the Block 38 West Property; and
- Localized impacts associated with a former railroad trestle and former timber pilings within the alley.

3.5.3 Soil

Prior to interim actions, the majority of COPCs detected at concentrations exceeding applicable screening levels were encountered from approximate elevations of 23 to 15 feet NAVD88 (approximately 2.5 to 20 feet bgs compared to surrounding surface elevations), extending deeper to elevation 10 feet NAVD88 in localized areas and within the fill soil and/or organic debris material across the Block 38 West Property. The independent interim action conducted in conjunction with the redevelopment of the Block 38 West Property removed the fill soil, wood debris, and soil with COPCs detected at concentrations exceeding applicable screening levels from within the limits of the Block 38 West Property and to the maximum extent practicable in the adjacent alley. The new building required mass excavation across the entire Block 38 West Property to approximate elevation -6.5 feet NAVD88 or approximately 30 to 35 feet below existing grade (Figures 4 and 5).

The alley interim action removed soil containing detectable concentrations of COPCs to an approximate elevation of 17.5 to 15 feet NAVD88 (Figure 6). The construction excavation activities within the alley extended to a depth of approximately 5 feet bgs or an elevation of 25 to 18 feet NAVD88 (north to south) in order to place structural backfill to support the new concrete road surface and access utilities.

Following the interim actions and development of the Block 38 West Property, soil containing total DRO+ORO and cPAHs at concentrations greater than the cleanup levels identified in Section 4.2 remains in localized areas at the Block 38 West Site. Total DRO+ORO and cPAHs remain within the alley and in the Westlake Avenue North right-of-way near the northwestern boundary of the Block 38 West Property as shown on Figures 7 and 8. Exceedances of cPAHs in soil also extend beyond the alley into the Mercer Street right-of-way to the north. These remaining contaminants are present in soil at depths ranging from approximately 5 to 15 feet bgs.

3.5.4 Groundwater

Previous subsurface investigations documented localized petroleum hydrocarbon and naphthalene impacts to the Shallow and/or Intermediate Water-Bearing Zones at the Block 38 West Property. The nature and extent of groundwater impacts were evaluated following the interim actions to support the evaluation of cleanup alternatives for the Block 38 West Site. Groundwater quality in the Shallow Water-Bearing Zone was evaluated by monitoring a network of seven groundwater monitoring wells (FMW-154, FMW-155, FMW-156, FMW-158, FMW-160, FMW-161, and FMW-163) in the rights-of-way surrounding the Block 38 West Property (Figure 3). Groundwater quality in the Intermediate Water-Bearing Zone was evaluated by a monitoring network of 11 groundwater monitoring wells (FMW-150 through FMW-153, FMW-157, FMW-159, FMW-162, FMW-164, and OW-1 through OW-3) within the building foundation and in the rights-of-way surrounding the Block 38 West Property (Figure 3).

As documented in the RI/FFS, COPCs for the Block 38 West Site are no longer present at concentrations exceeding respective cleanup levels in the Shallow Water-Bearing Zone or Intermediate Water-Bearing Zone at the Block 38 West Site.

3.5.5 Contaminants from Other Sites

CVOCs are impacting groundwater in the Deep Outwash Aquifer near the northwest corner of the Block 38 West Property. These impacts are attributed to chlorinated solvent releases from historical laundry and dry-cleaning operations on the American Linen Supply Co Dexter Ave cleanup site (Cleanup Site ID 12004), originating approximately 1,000 feet northwest of Block 38 West at 700 Dexter Avenue North (PES 2022). The chlorinated solvent contamination migrated through the groundwater and has come to be located at the Block 38 West Property. The American Linen Site, and the associated CVOC plume is being addressed under a separate agreed order with Ecology (Agreed Order No. DE 14302) and includes ongoing remedial investigation and feasibility study activities as well as ongoing interim cleanup actions. The data collected on the Block 38 West Property indicate that no releases of CVOCs occurred as a result of previous operations on the Block 38 West Property and that the concentrations detected in the Deep Outwash Aquifer are not commingled with any COPCs identified for the Block 38 West Site.

Prior to the Block 38 West interim actions, arsenic was impacting shallow soil in a small, localized area within the alley, and cadmium and lead were impacting shallow soil along the eastern side of the alley. These metals were co-located with elevated levels of cPAHs and are attributed to environmental releases on the Rosen Property cleanup site (Cleanup Site ID 5123), also known as the Interurban Exchange 2 site, located east of the alley on the Block 38 East Property (GeoEngineers 2008). An independent interim action was conducted on the northern and central portions of the Block 38 East Property in 2008, which resulted in removal of the contaminated soil from that property. Compliance sampling from the west sidewall of the 2008 interim action excavation confirmed that cadmium, lead, and cPAHs remained in shallow soil along the Block 38 East Property boundary. Ecology issued a property-specific No Further Action determination for the Rosen Property cleanup site in 2009 under the Voluntary Cleanup Program. The arsenic, cadmium, and a portion of the lead impacts in the alley were

subsequently removed as a result of the Block 38 alley interim action conducted in 2021 under the Block 38 West AO. Lead remains in shallow soil along the eastern side of the alley at elevated concentrations. The data collected on the Block 38 West Property indicate that no releases of arsenic, cadmium, or lead occurred as a result of operations on the Block 38 West Property.

Based on the determinations that the above contaminants currently constitute separate sites pursuant to MTCA and have been or will be remediated under separate legal agreement(s), the CVOCs and metals are not included as COPCs at the Block 38 West Site.

4.0 Cleanup Standards

Cleanup standards apply to a release of hazardous substances at a Site and include 1) cleanup levels for hazardous substances present at the Site; 2) the location where these cleanup levels must be met (i.e., point of compliance); and 3) other regulatory requirements that apply to the Site because of the type of action and/or location of the Site (i.e., applicable state and federal laws). Cleanup standards are identified for each hazardous substance at a Site and the specific areas or pathways where humans and the environment can become exposed to these substances.

In accordance with WAC 173-340-700, this section provides the cleanup standards for the Block 38 West Site.

4.1 Constituents of Concern

Based on the results of the RI and evaluation of conditions following the interim actions, only soil remains impacted with hazardous substances at concentrations exceeding screening levels protective of human health and the environment. Those hazardous substances comprise the final constituents of concern (COCs) for the Block 38 West Site and include:

- Total DRO+ORO; and
- Total cPAHs by Toxicity Equivalent Calculation (TEC).

The results of the RI concluded that groundwater is no longer a medium of concern, and therefore, no COCs are identified for groundwater.

Additionally, based on the information and determinations discussed in Section 3.5.5, the CVOC impacts remaining in deeper groundwater and the lead impacts remaining in shallow soil will be addressed under separate legal agreements and are not retained as COCs for the Block 38 West Site.

4.2 Cleanup Levels

Cleanup levels for the Block 38 West Site have been developed in accordance with WAC 173-340-700 through 173-340-760 to be protective of human health and the environment and likely vulnerable populations and/or overburdened communities as identified in Section 2.6. The cleanup levels for the COCs in soil identified above are based on MTCA Method B cleanup levels protective of direct contact. MTCA Method A cleanup levels can be used as a surrogate for Method B for compounds, such as total petroleum hydrocarbons, that do not have established Method B cleanup levels. Based on the residual soil contamination present at the Block 38 West Site and the current engineering controls in place, it is unlikely that any human receptors, including those that are part of a vulnerable population or overburdened community, are at risk unless the existing engineering controls are breached or removed.

The cleanup levels for the COCs in soil at the Block 38 West Site are:

- Total DRO+ORO: 2,000 milligrams per kilogram (mg/kg) (based on MTCA Method A, unrestricted land uses); and
- Total cPAHs TEC: 0.19 mg/kg (based on MTCA Method B, direct contact).

4.3 Points of Compliance

The points of compliance are the locations at which cleanup levels for the COCs must be attained to meet the requirements of MTCA in accordance with WAC 173-340-740(6). For soil cleanup levels based on protection of direct contact exposures, the point of compliance for soil is throughout the Block 38 West Site from the ground surface to 15 feet bgs in accordance with WAC 173-340-740(6)(d).

4.4 Applicable or Relevant and Appropriate Requirements

The following section identifies ARARs for the selected cleanup action including both action-specific requirements and location specific requirements.

4.4.1 Applicable Local, State, and Federal Laws

Pursuant to MTCA, the cleanup action would be exempt from the procedural requirements of Chapter 70A.305.090 of the Revised Code of Washington, and of any laws requiring or authorizing state or local government permits or approvals. However, the cleanup action must still comply with the substantive requirements of such permits or approvals in accordance with WAC 173-340-520. The cleanup action must also comply with any applicable federal regulations and obtain any required federal permits as necessary. These requirements are often categorized as location-specific, action-specific, or chemical-specific.

The cleanup action complies with all applicable local, state, and federal laws that are presented in Table 2. Location-specific requirements will be met through compliance with all applicable state, federal, and local regulations in place for the specific location of the Block 38 West Property. Action-specific requirements have been met through implementation of construction activities and compliance with all construction-related requirements during performance of the interim actions. Chemical-specific requirements will be met through compliance with applicable MTCA cleanup levels.

4.4.2 Permitting and Substantive Requirements

The following section describes the permitting and substantive requirements applicable to the interim actions performed at the Block 38 West Site.

4.4.2.1 State Environmental Policy Act

SEPA (WAC 197-11) and the SEPA procedures (WAC 173-802) provide the framework for state agencies to evaluate the environmental consequences of a project and ensure appropriate measures are taken to mitigate environmental impacts. SEPA was applicable to the interim actions and the redevelopment project on the Block 38 West Property.

Block 38 is in the South Lake Union neighborhood of downtown Seattle, for which an Environmental Impact Statement (EIS) was previously prepared. The EIS, which was prepared by the City of Seattle and finalized in 2012, evaluated general environmental impacts and mitigation strategies for development projects within the South Lake Union neighborhood (City of Seattle 2012). City Investors IX prepared and submitted an addendum to the South Lake Union EIS in April 2019 that provided a site-specific analysis of environmental impacts and associated mitigation measures for the Block 38 West Property redevelopment project. The City of Seattle (2019) determined that the project will not have a significant adverse impact on the environment.

4.4.2.2 City of Seattle Master Use Permit

City Investors IX obtained a Master Use Permit from the City of Seattle for the Block 38 West Property redevelopment project on the Block 38 West Property, which also included the alley improvements.

4.4.2.3 City of Seattle Grading and Shoring Permits

City Investors IX obtained a grading permit from the City of Seattle. Substantive requirements of a grading permit included erosion control, which was addressed by implementation of best management practices in accordance with a project-specific temporary erosion and sediment control plan.

4.4.2.4 Construction Stormwater General Permit

City Investors IX received coverage under the Construction Stormwater General Permit (CSWGP) No. WAR307944 from Ecology on July 30, 2019. The CSWGP was associated with the construction dewatering activities associated with the redevelopment of the Block 38 West Property.

4.4.2.5 King County Industrial Waste Program Discharge Authorization

City Investors IX received authorization to discharge water generated by construction dewatering at the Block 38 West Site to the sanitary sewer system via the Issuance of Revised Wastewater Discharge Authorization No. 4493-02 from King County Industrial Waste Program dated August 29, 2019.

4.4.2.6 Historical and Cultural Resource Protection

As required by state law, appropriate measures were taken to evaluate the potential presence of historical, archaeological, or cultural resources. City Investors IX prepared a Cultural Resources Assessment, which was submitted to the Washington State Department of Archaeology and Historic Preservation (DAHP). DAHP concurred with the findings of the Cultural Resources Assessment requiring archeological monitoring during excavations with potential to intersect native soil. In addition, City Investors IX prepared a Monitoring and Inadvertent Discovery Plan for the Block 38 West Property redevelopment project. Monitoring conducted by the archeologist over the course of the Property cleanup and redevelopment did not yield any cultural resources of significance.

5.0 Cleanup Action Selection

This section presents the cleanup action requirements and goals for the Block 38 West Site, summarizes the selected cleanup action, and explains how the selected action meets the MTCA requirements for cleanup actions in WAC 173-340-360.

5.1 Cleanup Action Requirements and Goals

As specified in WAC 173-340-360(3)(a), a cleanup action must satisfy the following general requirements,:

- Protect human health and the environment, including likely vulnerable populations and overburdened communities;
- Comply with cleanup standards;
- Comply with applicable state and federal laws;
- Prevent or minimize present and future releases and migration of hazardous substances in the environment;
- Provide resilience to climate change impacts that have a high likelihood of occurring and severely compromising its long-term effectiveness;
- Provide for compliance monitoring;
- Not rely primarily on dilution and dispersion unless the incremental costs of any active remedial measures over the costs of dilution and dispersion grossly exceed the incremental degree of benefits;
- Provide for a reasonable restoration time frame; and
- Use permanent solutions to the maximum extent practicable.

In addition to the general requirements listed above, cleanup actions must meet action-specific requirements and media-specific requirements outlined in WAC 173-340-360(3)(b) and WAC 173-340-360(3)(c), respectively, and consider public concerns and tribal rights and interests as specified in WAC 173-340-360(3)(d).

Specific cleanup action goals were also identified for the Block 38 West Site in accordance with WAC 173-340-351(6)(a), and include the following:

- Achieve cleanup standards using a permanent solution as defined in WAC 173-340-200 that meets MTCA requirements and expectations for cleanup actions per WAC 173-340-360 and WAC 173-340-370;
- Eliminate the direct contact exposure pathway for COCs in soil; and

- Protect human health and the environment, including vulnerable populations and overburdened communities located near the Block 38 West Site.

The selected cleanup action will meet all of these goals.

5.2 Selected Cleanup Action

The selected cleanup action consists of the following elements:

- Complete removal and offsite disposal of affected soil and groundwater by mass excavation to an elevation of -6.5 feet NAVD88 on the Block 38 West Property (completed as a result of the independent interim action);
- Removal and offsite disposal of affected soil to the maximum extent practicable in the alley area to an elevation of 25 to 18 feet NAVD88 (completed as a result of the alley interim action);
- Compliance monitoring (completed during and following the interim actions);
- Installation of a protective cap over remaining soil contamination, consisting of new pavement within the alley and surrounding the new building (completed as a result of the interim actions); and
- Implementation of institutional controls to protect and maintain the cap and prevent direct contact with remaining contamination (not yet completed).

Based on the completed interim actions to date, only implementation of institutional controls remains. This component is further discussed in Section 6.1.2.

5.2.1 Considerations Related to Other Sites

The RI confirmed the presence of CVOCs in groundwater within the Deep Outwash Aquifer along the northwestern boundary of the Block 38 West Property at concentrations exceeding screening levels protective of human health and the environment. As noted in Section 3.5.5, those compounds are associated with the American Linen Site and associated CVOC plume, which is under an Agreed Order with Ecology as a part of the formalized cleanup process. As such, cleanup of the American Linen CVOC plume is not within the scope of this CAP.

To prevent potential vapor intrusion exposures associated with the CVOCs present in groundwater at the Block 38 West Property boundary, an Ecology-reviewed, contaminant-resistant vapor barrier was installed on the newly constructed building. The vapor barrier specifications are provided in Appendix B.

5.3 Explanation for Selected Cleanup Action

The selected cleanup action for the Block 38 West Site satisfies the MTCA general requirements in WAC 173-340-360(3)(a) and meets additional requirements specified in 173-340-360(3)(b), WAC 173-340-360(3)(c), and WAC 173-340-360(3)(d), and expectations specified in WAC 173-

340-370. The selected cleanup action will satisfy the following general requirements, as noted above in Section 5.1 and specifically in WAC 173-340-360(3)(a).

- **Protect human health and the environment**. The selected cleanup action, source removal and engineering and institutional controls, will protect human health and the environment, including vulnerable populations and overburdened communities identified in the vicinity of the Block 38 West Site, by permanently reducing the volume of hazardous substances in soil and eliminating the potential exposure pathway to residual soil contamination at the Block 38 West Site. As discussed above in Section 2.5, the vulnerable populations and overburdened communities in the vicinity of the Block 38 West Site are not more susceptible for exposure to contamination at this Site compared to the general population, and that interim actions completed to date have mitigated potential exposure to environmental harms.

- **Comply with cleanup standards.** Excavation, removal, and offsite disposal of soil containing hazardous substances resulted in the achievement of applicable MTCA cleanup levels (including soil cleanup levels for the identified COCs) in soil at the Block 38 West Property and to the maximum extent practicable in the northwestern portion and alley area of the Block 38 West Site. These actions have also resulted in the reduction of hazardous substances in Site groundwater such that all concentrations have achieved compliance with applicable MTCA cleanup levels and groundwater is no longer a medium of concern.

- **Comply with applicable state and federal laws**. Interim actions completed to date complied with applicable state and federal laws, as defined in WAC 173-340-710, and met requirements of other local, state, and federal laws related to environmental protection, health and safety, transportation, and disposal. The future cleanup action elements will also comply with all relevant and applicable local, state, and federal laws.

- **Prevent or minimize present and future releases and migration of hazardous substances in the environment.** Existing engineering controls will contain and eliminate the potential direct contact exposure pathway for the COCs remaining in shallow soil at the Site.

- **Provide resilience to climate change.** Based on the evaluation above in Section 2.8, the location of the Block 38 West Site in a highly developed area in Seattle, projected local and regional climatological characteristics are not anticipated to affect the migration of hazardous substances or the resilience of cleanup action alternatives at the Block 38 West Site.

- **Provide for compliance monitoring.** Compliance monitoring was performed consistent with WAC 173-340-410 during the interim actions that have already occurred. Implementation of institutional controls will ensure that engineering controls are maintained and allow for long-term compliance monitoring as needed.

- **Provide for a reasonable restoration time frame**. Cleanup of the Block 38 West Property is complete and cleanup of the adjacent alley and rights-of-way at the Block 38 West Site are complete to the maximum extent practicable as a result of the interim actions. The restoration time frame is considered reasonable and consistent with WAC 173-340-360(4)(c) and, based on the RI data, has proven to be effective in the long term by restoring groundwater quality and eliminating the potential exposure pathways to residual soil contamination.

- **Use permanent solutions to the maximum extent practicable**. The selected cleanup action is a permanent solution and has achieved applicable cleanup levels at the points of compliance for hazardous substances throughout the majority of the Site in the short term. The completed source removal and ongoing engineering and institutional controls will protect human health and the environment by permanently reducing the volume of hazardous substances in soil and eliminating the potential exposure pathway to residual soil contamination at the Block 38 West Site.

- **Consider public concerns and tribal rights and interests**. The interim actions were reviewed during the SEPA process for the independent interim action and a public comment period for the alley area interim action. Public concerns were taken into consideration with regard to limiting impacts to rush hour traffic and creating through access in the alley to improve access to below grade parking garages from Republican Street. Tribal rights and interests were considered during the development and implementation of the Monitoring and Inadvertent Discovery Plan for the interim actions and RI activities. Affected tribes were notified in advance of the work. In addition, a draft of this CAP document was presented to the public for review and comment. The draft RI/FFS was also presented for public comment. Comments were received, reviewed by Ecology, and addressed through direct responses to the commenting parties. Ecology determined that no changes to any of the documents were required.

The selected cleanup action will meet action-specific requirements applicable under WAC 173-340-360(3)(b) to allow for use of institutional controls, provide financial assurances, and allow for periodic reviews of annual cap inspections. The primary elements of the selected cleanup action were implemented in conjunction with redevelopment and were highly implementable.

6.0 Cleanup Action Plan

This section presents a description of the selected cleanup action for the Site, the restoration time frame, implementation schedule, public participation, and compliance monitoring requirements.

6.1 Description of Cleanup Action

As noted in Section 5.2, the selected cleanup action for the Block 38 West Site includes a combination of elements, predominantly excavation and offsite disposal of contaminated soil from the Block 38 West Property and the adjacent alley. The other elements include installation and maintenance of a protective cap and implementing institutional controls to contain remaining soil contamination and prevent direct contact exposures. Compliance monitoring was completed during the interim actions and the RI and is further discussed in Section 7.0.

6.1.1 Summary of Completed Cleanup Actions

The complete removal of affected soil and groundwater by mass excavation within the Block 38 West Property boundaries and removal of affected soil to the maximum extent practicable in the alley area were completed as interim actions during redevelopment of the Block 38 West Property. Interim actions completed are summarized in Sections 3.2 and 3.3 and described in detail in the 2023 IAR and 2024 Alley IAR.

6.1.2 Remaining Cleanup Action Elements

Due to the interim actions completed at the Block 38 West Site, the only remaining element of the selected cleanup action is the implementation of institutional controls. This will consist of implementing an environmental covenant that meets the requirements of WAC 173-340-440 (8), (9), and (10) and RCW 64.70 (Uniform Environmental Covenants Act). The Environmental Covenant will be prepared in cooperation with Ecology and consistent with the Toxics Cleanup Program Procedure 440A (Establishing Environmental Covenants under the Model Toxics Control Act).

The purpose of the covenant is to impose certain restrictions on the activities and uses of the Block 38 West Property and surrounding right-of-way to protect human health, the environment, and the integrity of the interim actions completed to date at the Block 38 West Site. The covenant will remain in place until concentrations of total DRO+ORO and cPAHs decrease to levels less than the cleanup levels. It is expected that inspections and maintenance of the protective cap will be conducted on an annual basis as part of the covenant, using an Ecology-approved inspection checklist.

6.2 Restoration Time Frame

The selected cleanup action provides for a reasonable restoration time frame in accordance with WAC 173-340-360(4)(c). The potential risks posed by the Block 38 West Site to human health and the environment, including likely vulnerable populations and overburdened communities, are summarized in Section 5.3. Given that the majority of the selected cleanup

action has already been implemented and resulted in complete removal of hazardous substances at the Block 38 West Site to the maximum extent practicable, it is not practicable for an alternate active remedial measure to achieve a shorter restoration time frame than the selected cleanup action.

Institutional controls remaining to be implemented at the Block 38 West Site in the form of an environmental covenant are considered effective and reliable in preventing disturbance of remaining residual soil contamination or engineering controls. Inspection of the engineering controls (i.e., the protective cap) as summarized in the CMP (Appendix A) will ensure that the integrity of engineering controls is maintained and that they remain effective and reliable.

The only element of the selected cleanup action remaining to be completed is implementation of institutional controls in the form of an environmental covenant. It is expected that an environmental covenant will be recorded for the Block 38 West Site within 12 months.

6.3 Implementation Schedule

The majority of the selected cleanup action has already been completed at the Block 38 West Property. Institutional controls in the form of an environmental covenant remain as the only element of the selected cleanup action yet to be implemented. It is expected that the environmental covenant will be recorded within 12 months. The initial monitoring period will be 5 years, at which time Ecology will conduct an initial 5-year review of the cleanup.

7.0 Compliance Monitoring

Compliance monitoring is required to ensure the protectiveness of the cleanup action performed in accordance with WAC 173-340-410.

7.1 Summary of Past Compliance Monitoring

Past compliance monitoring performed at the Block 38 West Site included collection of soil performance and compliance samples during the interim actions and four quarterly groundwater monitoring performed during the RI. Performance samples that meet cleanup levels may be used as compliance samples where appropriate.

7.1.1 Soil Compliance Monitoring

Performance soil samples were collected during previous investigations, UST decommissioning, and the excavation and offsite disposal of contaminated soil performed on the Block 38 West Property and within the east adjacent alley. Performance soil sampling points were used as confirmation soil sampling points where analytical results for performance soil samples confirmed that cleanup levels were attained before or at the final limits of the excavation.

As documented in the RI/FFS, analytical results of performance soil sampling indicates that soil containing total DRO+ORO and cPAHs at concentrations exceeding cleanup levels remains in localized areas within the alley area, a limited portion of the Mercer Street right-of-way, and near the northwestern boundary of the Block 38 West Property (Figures 4 through 8). Confirmation samples collected on the Block 38 West Property indicate all soil with detectable concentrations of COCs have been removed.

7.1.2 Groundwater Compliance Monitoring

Groundwater compliance monitoring included four consecutive quarterly groundwater monitoring events conducted at the Block 38 West Site in May, August, and November 2023, and February 2024. The monitoring well network for compliance monitoring consisted of:

- Seven monitoring wells screened in the Shallow Water-Bearing Zone (FMW-154, FMW-155, FMW-156, FMW-158, FMW-160, FWM-161, and FMW-163);
- Eleven monitoring wells screened in the Intermediate Water-Bearing Zone (FMW-150 through FMW-153, FMW-157, FMW-159, FMW-162, FMW-164, OW-1 through OW-3, and OW-5); and
- Three monitoring wells screened in the Deep Outwash Aquifer (FMW-137, FMW-138, and FMW-165).

As documented in the RI/FFS, compliance monitoring analytical results indicate that no hazardous substances are present in groundwater associated with the Block 38 West Site.

7.2 Proposed Compliance Monitoring

Proposed compliance monitoring pending completion of final remedial elements at the Block 38 West Site includes visual inspection of the impervious surfaces capping remaining soil contamination as detailed in the CMP (Appendix A). Visual inspections will be performed to ensure the integrity of the protective cap is maintained.

7.3 Contingency Actions

Contingency actions may be required if additional risk reduction measures are determined to be necessary based on observations made during future compliance monitoring, or otherwise. Contingency actions may include repair of protective caps preventing exposure to remaining contaminated soil or potentially removal of remaining contamination in the event of utility upgrades or future redevelopment.

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Figures

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Washington
Issaquah | Bellingham | Seattle

Oregon
Portland | Baker City

California
Oakland | Irvine

FIGURE 1

VICINITY MAP
BLOCK 38 WEST PROPERTY
SEATTLE, WASHINGTON

FARALLON PN: 397-019

Drawn By: lmurock | Checked By: JW | Date: 7/8/2024 | Disc Reference:

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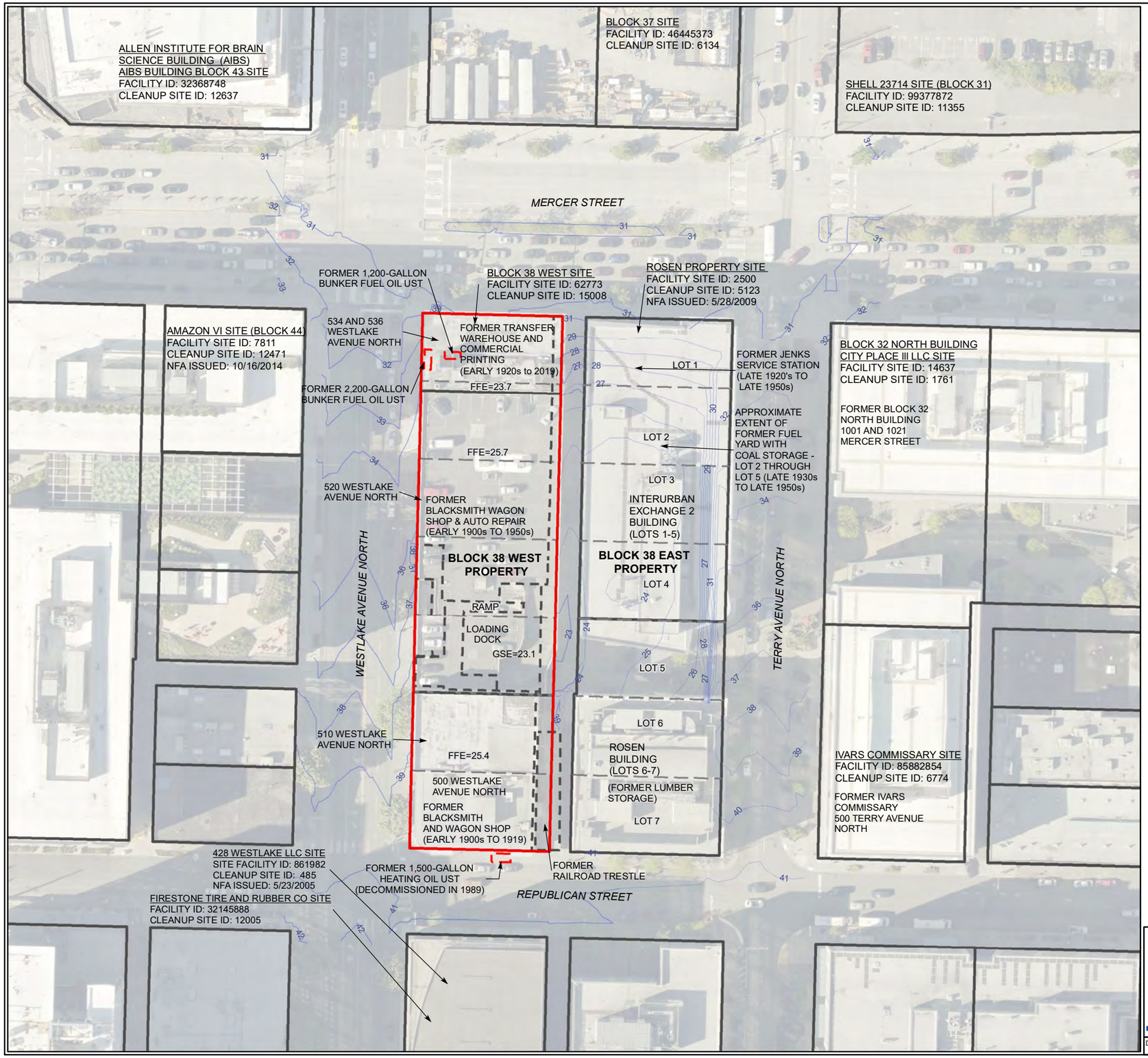

LEGEND

- PILE
- BUILDING FEATURES (BUILDINGS ON BLOCK 38 WEST PROPERTY DEMOLISHED IN 2019)
- LOT LINE
- 30 GROUND SURFACE ELEVATION CONTOUR
- PROPERTY BOUNDARY
- KING COUNTY PARCEL BOUNDARY

NOTES:
LOADING DOCK HIGHER THAN GSE
ELEVATION SOURCE: BUSH, ROED, & HITCHINGS, INC. (2014)
ELEVATION DATA PRESENTED IN FEET ABOVE MEAN SEA LEVEL IN THE NORTH AMERICAN VERTICAL DATUM OF 1988

FFE = APPROXIMATE FINISH FLOOR ELEVATIONS OF GROUND FLOOR OF FORMER BUILDING
GSE = APPROXIMATE GROUND SURFACE ELEVATION OF FORMER LOADING DOCK AREA
UST = UNDERGROUND STORAGE TANK

N

0 80
SCALE IN FEET

ALL LOCATIONS ARE APPROXIMATE.
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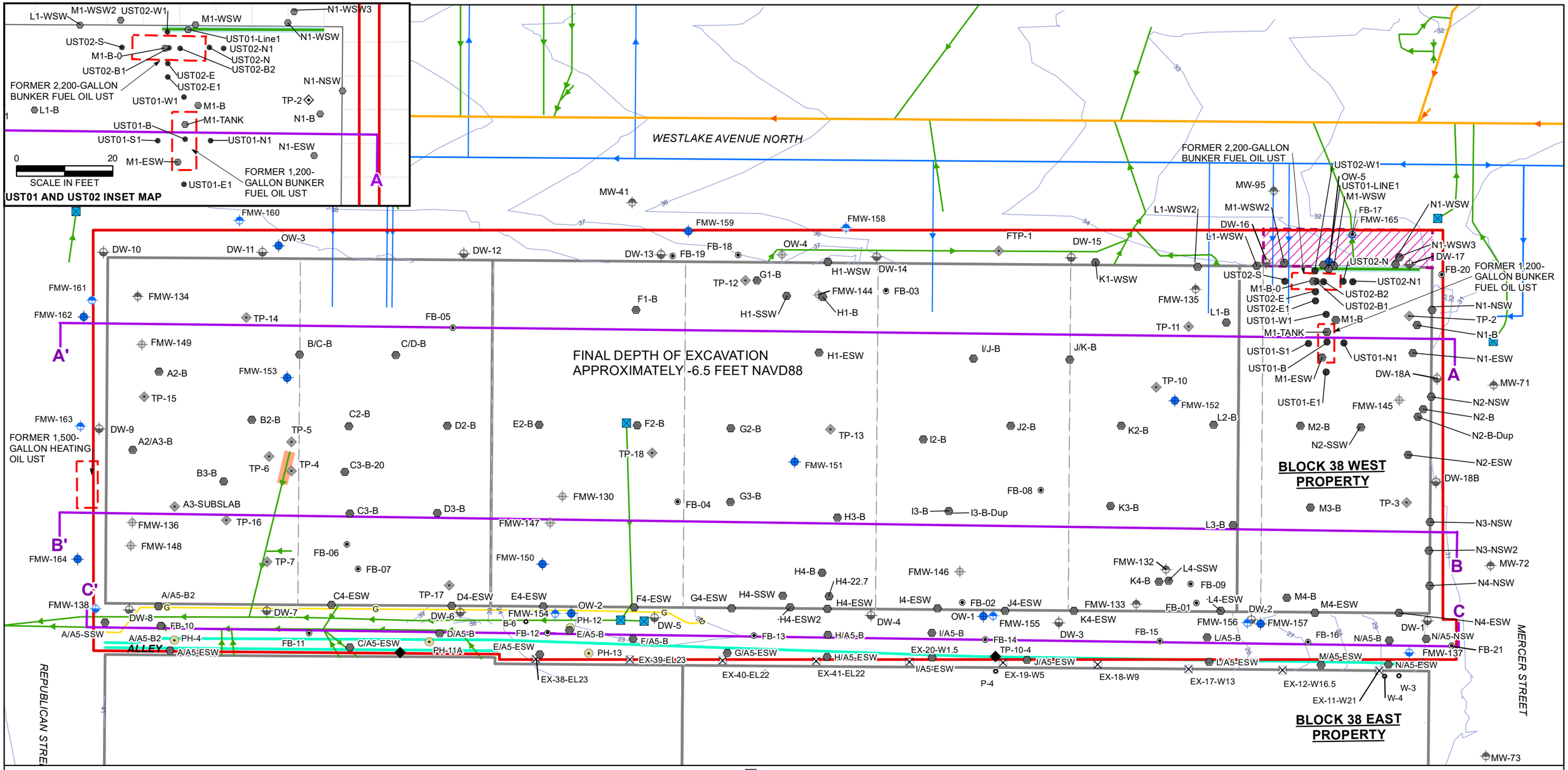
FIGURE 2

SITE PLAN WITH HISTORICAL FEATURES
BLOCK 38 WEST SITE
SEATTLE, WASHINGTON

FARALLON PN: 397-019

Drawn By: jjones | Checked By: SS | Date: 12/23/2023 | Disc Reference:
Document Path: Q:\Projects\397.VULCAN\019_Block38\Mapfiles\017D_RI-WP_2021-11\Figure-02_HistFeats.mxd



LEGEND

- SHALLOW WATER-BEARING ZONE MONITORING WELL
- DEWATERING WELL
- DEEP OUTWASH AQUIFER WELL
- DECOMMISSIONED SHALLOW WATER-BEARING ZONE MONITORING WELL
- INTERMEDIATE WATER-BEARING ZONE MONITORING WELL / OBSERVATION WELL
- DECOMMISSIONED INTERMEDIATE WATER-BEARING ZONE MONITORING WELL
- BORING (FARALLON)
- BORING (GEOENGINEERS)
- EXCAVATION BORING (FARALLON)
- TEST PIT (GEOENGINEERS)
- POTHOLE (FARALLON)
- UST SAMPLE LOCATION (FARALLON)
- EXCAVATION SAMPLE LOCATION (FARALLON)
- TEST PIT (FARALLON)

- PIPING DISCOVERED IN SIDEWALL [BELIEVED TO BE ASSOCIATED WITH DISCOVERED USTs]
- MTCA SITE BOUNDARY
- FORMER UNDERGROUND STORAGE TANKS (USTs)
- MECHANICAL EQUIPMENT AREA DECOMMISSIONED AND FILLED WITH CDF
- KING COUNTY PARCELS
- LOT LINE
- A A' LINE OF CROSS SECTION

- CATCH BASIN
- APPROXIMATE SECTION OF THE SIDE SEWER WHERE OILY SUBSTANCE OBSERVED
- COMBINED SEWER LATERAL
- WATER LINE
- COMBINED MAIN
- FIBER OPTIC LINE
- G NEW GAS LINE

NOTES:
1. ALL LOCATIONS ARE APPROXIMATE.
2. FIGURES WERE PRODUCED IN COLOR. GRAYSCALE COPIES MAY NOT REPRODUCE ALL ORIGINAL INFORMATION.
3. CDF = CONTROLLED DENSITY FILL
4. MTCA = WASHINGTON STATE MODEL TOXICS CONTROL ACT CLEANUP REGULATION
5. ELEVATION DATA PRESENTED IN FEET ABOVE MEAN SEA LEVEL IN THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) ELEVATION SOURCE: BUSH, ROED, & HITCHINGS, INC. (2014)

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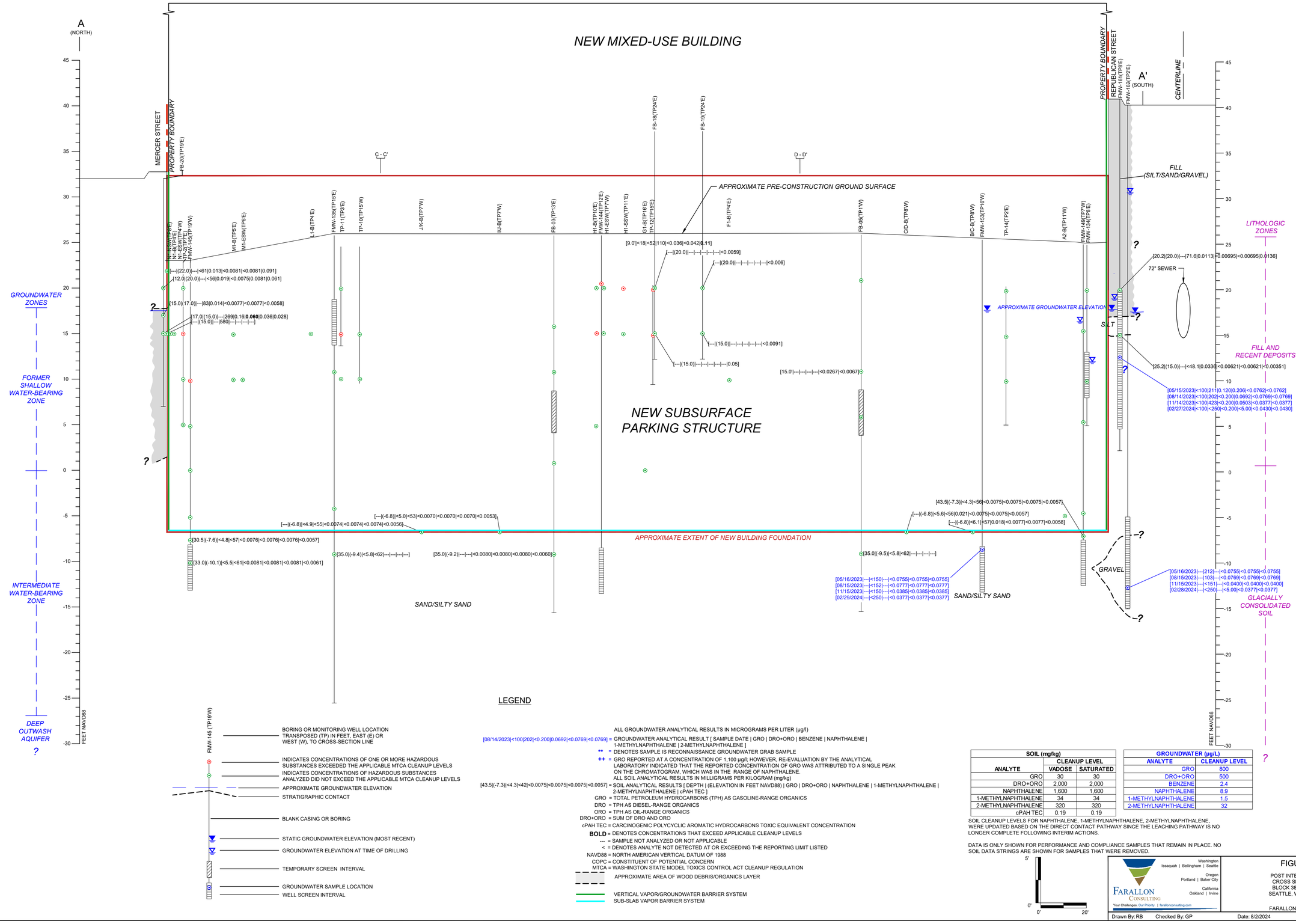
FIGURE 3

SITE PLAN WITH SAMPLE LOCATIONS
BLOCK 38 WEST SITE
SEATTLE, WASHINGTON

FARALLON PN: 397-019

Drawn By: jjones | Checked By: SS | Date: 7/19/2024 | Disc Reference: Q:\Projects\397 VULCAN\019_Block38\Mapfiles\17F_2024\Figure-03_SitePlan.mxd



LEGEND

FMW-145 (TP19'W)

BORING OR MONITORING WELL LOCATION TRANSPOSED (TP) IN FEET, EAST (E) OR WEST (W), TO CROSS-SECTION LINE

INDICATES CONCENTRATIONS OF ONE OR MORE HAZARDOUS SUBSTANCES EXCEEDED THE APPLICABLE MTCA CLEANUP LEVELS

INDICATES CONCENTRATIONS OF HAZARDOUS SUBSTANCES ANALYZED DID NOT EXCEED THE APPLICABLE MTCA CLEANUP LEVELS

APPROXIMATE GROUNDWATER ELEVATION

STRATIGRAPHIC CONTACT

BLANK CASING OR BORING

STATIC GROUNDWATER ELEVATION (MOST RECENT)

GROUNDWATER ELEVATION AT TIME OF DRILLING

TEMPORARY SCREEN INTERVAL

GROUNDWATER SAMPLE LOCATION

WELL SCREEN INTERVAL

ALL GROUNDWATER ANALYTICAL RESULTS IN MICROGRAMS PER LITER (µg/l)

[08/14/2023|<100|202|<0.200|0.0692|<0.0769|<0.0769] = GROUNDWATER ANALYTICAL RESULT [SAMPLE DATE | GRO | DRO+ORO | BENZENE | NAPHTHALENE | 1-METHYLNAPHTHALENE | 2-METHYLNAPHTHALENE]

** = DENOTES SAMPLE IS RECONNAISSANCE GROUNDWATER GRAB SAMPLE

++ = GRO REPORTED AT A CONCENTRATION OF 1,100 µg/l; HOWEVER, RE-EVALUATION BY THE ANALYTICAL LABORATORY INDICATED THAT THE REPORTED CONCENTRATION OF GRO WAS ATTRIBUTED TO A SINGLE PEAK ON THE CHROMATOGRAM, WHICH WAS IN THE RANGE OF NAPHTHALENE. ALL SOIL ANALYTICAL RESULTS IN MILLIGRAMS PER KILOGRAM (mg/kg)

[43.5|(-7.3)|<4.3|<42|<0.0075|<0.0075|<0.0075|<0.0057] = SOIL ANALYTICAL RESULTS [DEPTH | (ELEVATION IN FEET NAVD88) | GRO | DRO+ORO | NAPHTHALENE | 1-METHYLNAPHTHALENE | 2-METHYLNAPHTHALENE | cPAH TEC]

GRO = TOTAL PETROLEUM HYDROCARBONS (TPH) AS GASOLINE-RANGE ORGANICS

DRO = TPH AS DIESEL-RANGE ORGANICS

ORO = TPH AS OIL-RANGE ORGANICS

DRO+ORO = SUM OF DRO AND ORO

cPAH TEC = CARCINOGENIC POLYCYCLIC AROMATIC HYDROCARBONS TOXIC EQUIVALENT CONCENTRATION

BOLD = DENOTES CONCENTRATIONS THAT EXCEED APPLICABLE CLEANUP LEVELS

--- = SAMPLE NOT ANALYZED OR NOT APPLICABLE

< = DENOTES ANALYTE NOT DETECTED AT OR EXCEEDING THE REPORTING LIMIT LISTED

NAVD88 = NORTH AMERICAN VERTICAL DATUM OF 1988

COPC = CONSTITUENT OF POTENTIAL CONCERN

MTCA = WASHINGTON STATE MODEL TOXICS CONTROL ACT CLEANUP REGULATION

APPROXIMATE AREA OF WOOD DEBRIS/ORGANICS LAYER

VERTICAL VAPOR/GROUNDWATER BARRIER SYSTEM

SUB-SLAB VAPOR BARRIER SYSTEM

SOIL (mg/kg)		
ANALYTE	CLEANUP LEVEL	
	VADOSE	SATURATED
GRO	30	30
DRO+ORO	2,000	2,000
NAPHTHALENE	1,600	1,600
1-METHYLNAPHTHALENE	34	34
2-METHYLNAPHTHALENE	320	320
cPAH TEC	0.19	0.19

GROUNDWATER (µg/L)	
ANALYTE	CLEANUP LEVEL
GRO	800
DRO+ORO	500
BENZENE	2.4
NAPHTHALENE	8.9
1-METHYLNAPHTHALENE	1.5
2-METHYLNAPHTHALENE	32

SOIL CLEANUP LEVELS FOR NAPHTHALENE, 1-METHYLNAPHTHALENE, 2-METHYLNAPHTHALENE, WERE UPDATED BASED ON THE DIRECT CONTACT PATHWAY SINCE THE LEACHING PATHWAY IS NO LONGER COMPLETE FOLLOWING INTERIM ACTIONS.

DATA IS ONLY SHOWN FOR PERFORMANCE AND COMPLIANCE SAMPLES THAT REMAIN IN PLACE. NO SOIL DATA STRINGS ARE SHOWN FOR SAMPLES THAT WERE REMOVED.

5'
0'
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20'

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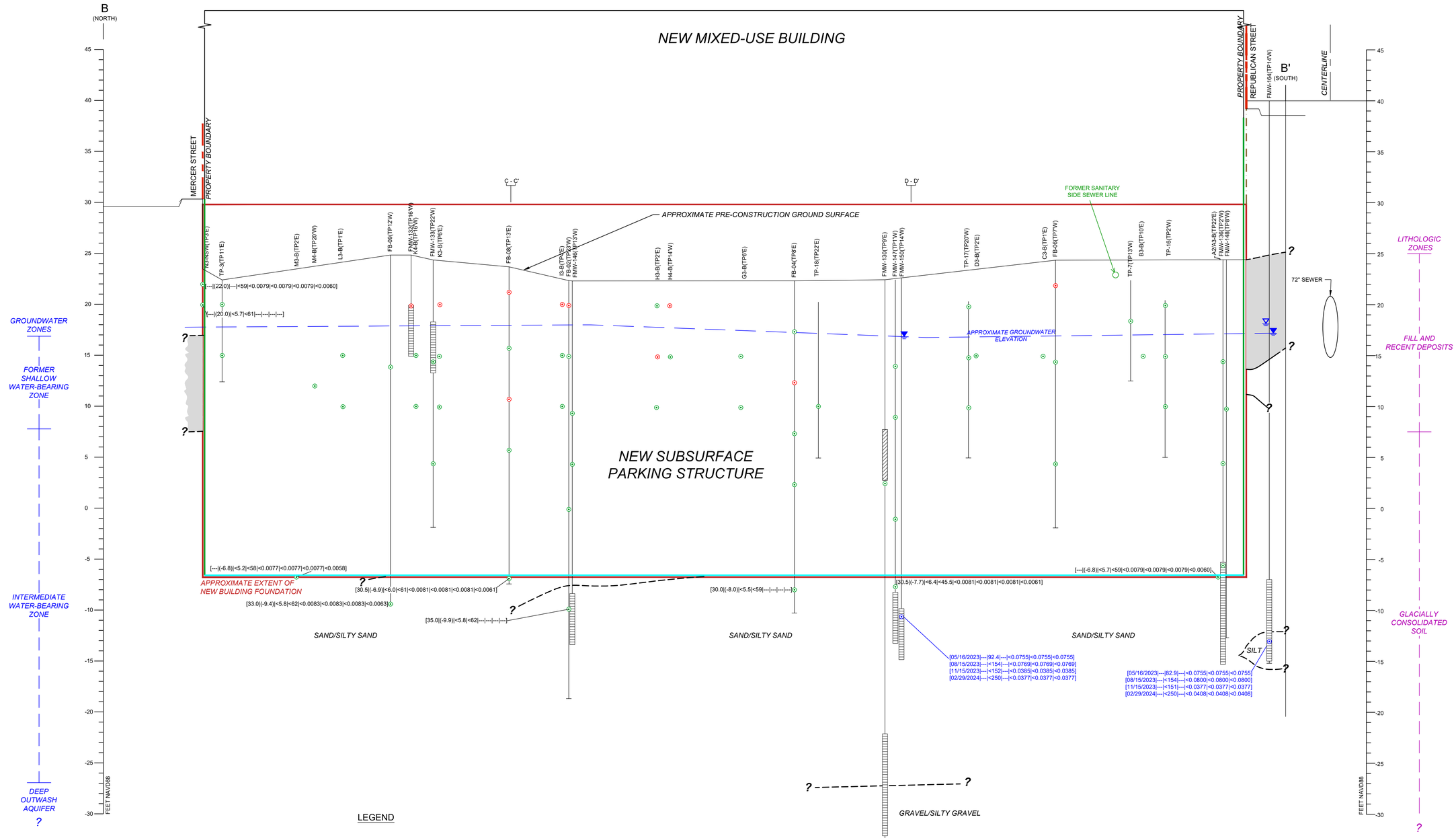
FIGURE 4

POST INTERIM ACTION
CROSS SECTION A-A'
BLOCK 38 WEST SITE
SEATTLE, WASHINGTON

FARALLON PN:397-019

Drawn By: RB Checked By: GP Date: 8/2/2024



LEGEND

- BORING OR MONITORING WELL LOCATION TRANSPOSED (TP) IN FEET, EAST (E) OR WEST (W), TO CROSS-SECTION LINE (TP-3 (TP11'E))
- INDICATES CONCENTRATIONS OF ONE OR MORE HAZARDOUS SUBSTANCES EXCEEDED THE APPLICABLE MTCA CLEANUP LEVELS
- INDICATES CONCENTRATIONS OF HAZARDOUS SUBSTANCES ANALYZED DID NOT EXCEED THE APPLICABLE MTCA CLEANUP LEVELS
- APPROXIMATE GROUNDWATER ELEVATION
- STRATIGRAPHIC CONTACT
- BLANK CASING OR BORING
- STATIC GROUNDWATER ELEVATION (MOST RECENT)
- GROUNDWATER ELEVATION AT TIME OF DRILLING
- TEMPORARY SCREEN INTERVAL
- GROUNDWATER SAMPLE LOCATION
- WELL SCREEN INTERVAL

ALL GROUNDWATER ANALYTICAL RESULTS IN MICROGRAMS PER LITER (µg/l)

[08/15/2023|---|58.9|---|<0.07`69|<0.0769|<0.0769] = GROUNDWATER ANALYTICAL RESULT [SAMPLE DATE | GRO | DRO+ORO | BENZENE | NAPHTHALENE | 1-METHYLNAPHTHALENE | 2-METHYLNAPHTHALENE]

** = DENOTES SAMPLE IS RECONNAISSANCE GROUNDWATER GRAB SAMPLE

++ = GRO REPORTED AT A CONCENTRATION OF 1,100 µg/l; HOWEVER, RE-EVALUATION BY THE ANALYTICAL LABORATORY INDICATED THAT THE REPORTED CONCENTRATION OF GRO WAS ATTRIBUTED TO A SINGLE PEAK ON THE CHROMATOGRAM, WHICH WAS IN THE RANGE OF NAPHTHALENE.

ALL SOIL ANALYTICAL RESULTS IN MILLIGRAMS PER KILOGRAM (mg/kg)

[33.0|(-9.4)|<5.8|<46.5|<0.0083|<0.0083|<0.0083|<0.0063] = SOIL ANALYTICAL RESULTS | DEPTH | (ELEVATION IN FEET NAVD88) | GRO | DRO+ORO | NAPHTHALENE | 1-METHYLNAPHTHALENE | 2-METHYLNAPHTHALENE | cPAH TEC]

GRO = TOTAL PETROLEUM HYDROCARBONS (TPH) AS GASOLINE-RANGE ORGANICS

DRO = TPH AS DIESEL-RANGE ORGANICS

ORO = TPH AS OIL-RANGE ORGANICS

DRO+ORO = SUM OF DRO AND ORO

cPAH TEC = CARCINOGENIC POLYCYCLIC AROMATIC HYDROCARBONS TOXIC EQUIVALENT CONCENTRATION

BOLD = DENOTES CONCENTRATIONS THAT EXCEED APPLICABLE CLEANUP LEVELS

--- = SAMPLE NOT ANALYZED OR NOT APPLICABLE

< = DENOTES ANALYTE NOT DETECTED AT OR EXCEEDING THE REPORTING LIMIT LISTED

NAVD88 = NORTH AMERICAN VERTICAL DATUM OF 1988

COPC = CONSTITUENT OF POTENTIAL CONCERN

MTCA = WASHINGTON STATE MODEL TOXICS CONTROL ACT CLEANUP REGULATION

- APPROXIMATE AREA OF WOOD DEBRIS/ORGANICS LAYER
- VERTICAL VAPOR/GROUNDWATER BARRIER SYSTEM
- SUB-SLAB VAPOR BARRIER SYSTEM
- ESTIMATED EXTENT OF COAL/CHARCOAL LAYER

SOIL (mg/kg)		
	CLEANUP LEVEL	
ANALYTE	VADOSE	SATURATED
GRO	30	30
DRO+ORO	2,000	2,000
NAPHTHALENE	1,600	1,600
1-METHYLNAPHTHALENE	34	34
2-METHYLNAPHTHALENE	320	320
cPAH TEC	0.19	0.19

GROUNDWATER (µg/L)	
ANALYTE	CLEANUP LEVEL
GRO	800
DRO+ORO	500
BENZENE	2.4
NAPHTHALENE	8.9
1-METHYLNAPHTHALENE	1.5
2-METHYLNAPHTHALENE	32

SOIL CLEANUP LEVELS FOR NAPHTHALENE, 1-METHYLNAPHTHALENE, 2-METHYLNAPHTHALENE, WERE UPDATED BASED ON THE DIRECT CONTACT PATHWAY SINCE THE LEACHING PATHWAY IS NO LONGER COMPLETE FOLLOWING INTERIM ACTIONS.

DATA IS ONLY SHOWN FOR PERFORMANCE AND COMPLIANCE SAMPLES THAT REMAIN IN PLACE. NO SOIL DATA STRINGS ARE SHOWN FOR SAMPLES THAT WERE REMOVED.

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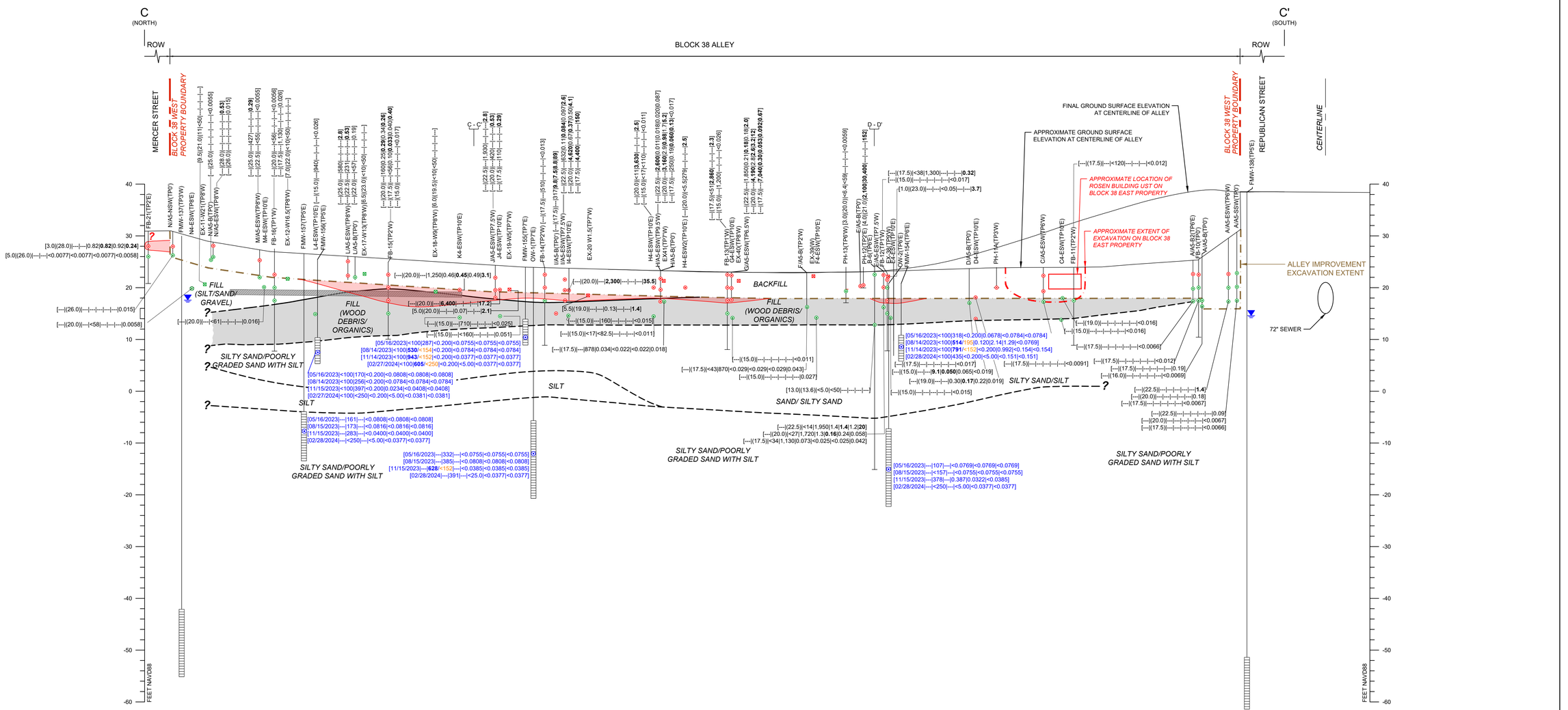
FIGURE 5

POST INTERIM ACTION
CROSS SECTION B-B'
BLOCK 38 WEST SITE
SEATTLE, WASHINGTON

FARALLON PN:397-019

Drawn By: RB Checked By: GP Date: 8/2/2024



LEGEND

- BORING OR MONITORING WELL LOCATION TRANSPOSED (TP) IN FEET, EAST (E) OR WEST (W), TO CROSS-SECTION LINE.
- INDICATES CONCENTRATIONS OF ONE OR MORE HAZARDOUS SUBSTANCES EXCEEDED THE APPLICABLE MTCA CLEANUP LEVELS
- INDICATES CONCENTRATIONS OF HAZARDOUS SUBSTANCES ANALYZED DID NOT EXCEED THE APPLICABLE MTCA CLEANUP LEVELS
- EXCAVATION AREA EXTENT
- APPROXIMATE GROUNDWATER ELEVATION
- STRATIGRAPHIC CONTACT
- BLANK CASING OR BORING
- STATIC GROUNDWATER ELEVATION (MOST RECENT)
- GROUNDWATER SAMPLE LOCATION
- WELL SCREEN INTERVAL

ALL GROUNDWATER ANALYTICAL RESULTS IN MICROGRAMS PER LITER (µg/l)

[11/15/2023]---|**628**/<152|---|<0.0385|<0.0385|<0.0385] = GROUNDWATER ANALYTICAL RESULT [SAMPLE DATE | GRO | DRO+ORO/DRO+ORO WITH SILICA GEL CLEANUP WHEN AVAILABLE | BENZENE | NAPHTHALENE | 1-METHYLNAPHTHALENE | 2-METHYLNAPHTHALENE]

ALL SOIL ANALYTICAL RESULTS IN MILLIGRAMS PER KILOGRAM (mg/kg)

{---|(15.0)|---|---|**9.1**|**0.050**|0.065|<0.019] = SOIL ANALYTICAL RESULT: [DEPTH | (ELEVATION IN FEET NAVD88) | GRO | DRO+ORO | NAPHTHALENE | 1-METHYLNAPHTHALENE | 2-METHYLNAPHTHALENE | cPAH TEC]

GRO = TOTAL PETROLEUM HYDROCARBONS (TPH) AS GASOLINE-RANGE ORGANICS
DRO = TPH AS DIESEL-RANGE ORGANICS
ORO = TPH AS OIL-RANGE ORGANICS
DRO+ORO = SUM OF DRO AND ORO
cPAH TEC = CARCINOGENIC POLYCYCLIC AROMATIC HYDROCARBONS TOXIC EQUIVALENT CONCENTRATION
BOLD = DENOTES CONCENTRATIONS THAT EXCEED APPLICABLE CLEANUP LEVELS
--- = SAMPLE NOT ANALYZED FOR CONSTITUENT
< = DENOTES ANALYTE NOT DETECTED AT OR EXCEEDING THE REPORTING LIMIT LISTED
NAVD88 = NORTH AMERICAN VERTICAL DATUM OF 1988
MTCA = WASHINGTON STATE MODEL TOXICS CONTROL ACT CLEANUP REGULATION

- APPROXIMATE AREA OF WOOD DEBRIS/ORGANICS LAYER
- ESTIMATED EXTENT OF SOIL EXCEEDING MTCA SCREENING LEVELS
- ESTIMATED EXTENT OF COAL/CHARCOAL LAYER

ORANGE SILICA GEL CLEANUP ANALYTICAL RESULTS
RED INDICATES CONCENTRATIONS OF HAZARDOUS SUBSTANCES EXCEEDING THE APPLICABLE MTCA SCREENING LEVELS
GREEN INDICATES HAZARDOUS SUBSTANCES ANALYZED DID NOT EXCEED THE APPLICABLE MTCA SCREENING LEVELS
⊠ EXCAVATION BORING (FARALLON)
● EXCAVATION SAMPLE (FARALLON)

SOIL (mg/kg)		
	CLEANUP LEVEL	
ANALYTE	VADOSE	SATURATED
GRO	30	30
DRO+ORO	2,000	2,000
NAPHTHALENE	1,600	1,600
1-METHYLNAPHTHALENE	34	34
2-METHYLNAPHTHALENE	320	320
cPAH TEC	0.19	0.19

GROUNDWATER (µg/L)	
ANALYTE	CLEANUP LEVEL
GRO	800
DRO+ORO	500
BENZENE	2.4
NAPHTHALENE	8.9
1-METHYLNAPHTHALENE	1.5
2-METHYLNAPHTHALENE	32

SOIL CLEANUP LEVELS FOR NAPHTHALENE, 1-METHYLNAPHTHALENE, 2-METHYLNAPHTHALENE, WERE BASED ON THE DIRECT CONTACT PATHWAY SINCE THE LEACHING PATHWAY IS NO LONGER COMPLETE FOLLOWING INTERIM ACTIONS.

DATA IS ONLY SHOWN FOR PERFORMANCE AND COMPLIANCE SAMPLES THAT REMAIN IN PLACE. NO SOIL DATA STRINGS ARE SHOWN FOR SAMPLES THAT WERE REMOVED.

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20'

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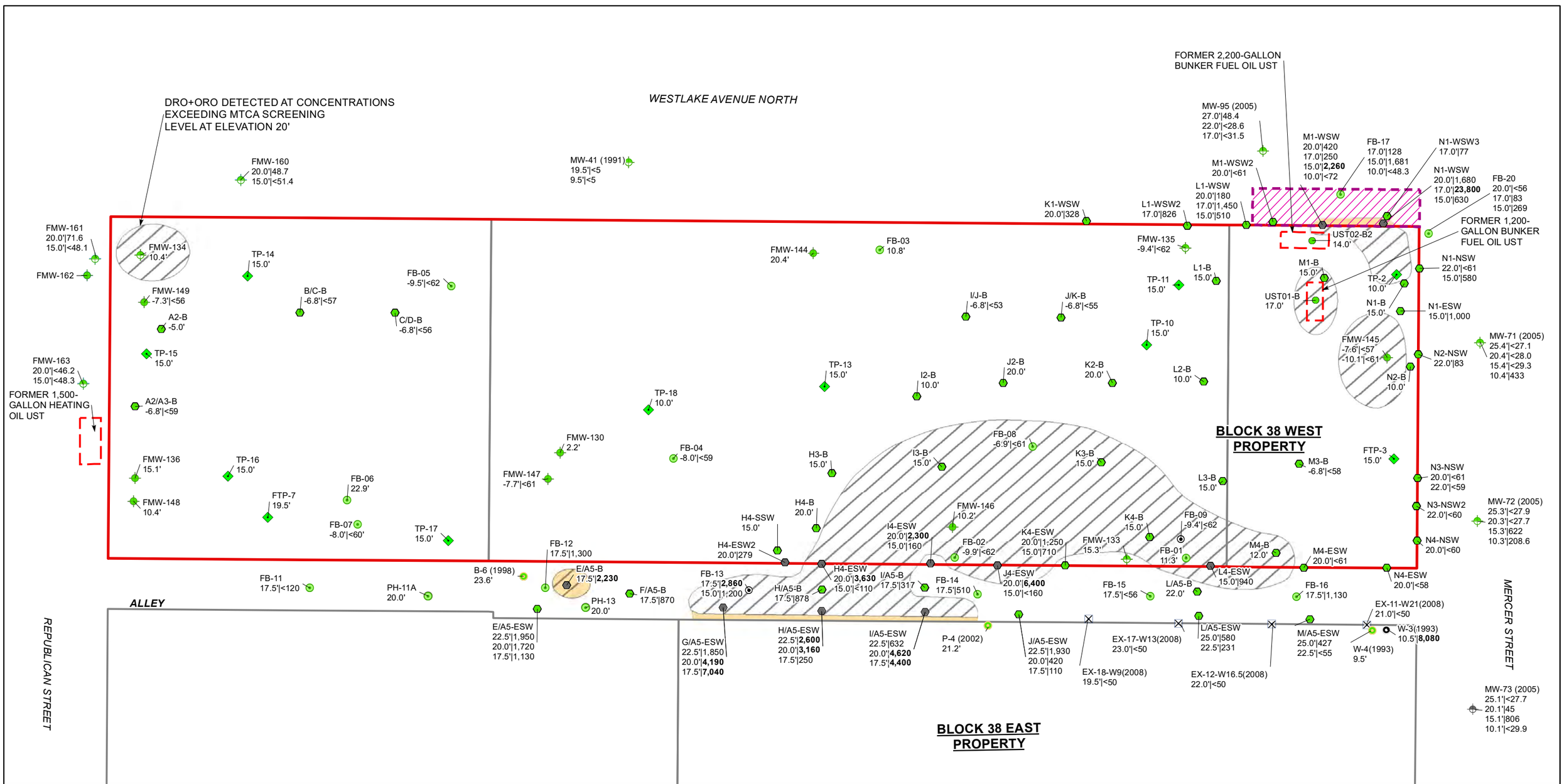
FIGURE 6

POST INTERIM ACTION
CROSS SECTION C-C'
BLOCK 38 ALLEY
SEATTLE, WASHINGTON

FARALLON PN:397-019

Drawn By: RB Checked By: GP Date: 8/2/2024



LEGEND

- SHALLOW WATER-BEARING ZONE MONITORING WELL
- INTERMEDIATE WATER-BEARING ZONE MONITORING WELL / OBSERVATION WELL
- DECOMMISSIONED SHALLOW WATER-BEARING ZONE MONITORING WELL
- DECOMMISSIONED INTERMEDIATE WATER-BEARING ZONE MONITORING WELL
- BORING (FARALLON)
- BORING (GEOENGINEERS)
- EXCAVATION SAMPLE (GEOENGINEERS)
- POTHOLE (FARALLON)
- UST SAMPLE LOCATION (FARALLON)
- EXCAVATION SAMPLE LOCATION (FARALLON)
- TEST PIT (FARALLON)

- DENOTES SAMPLE LOCATION AND ELEVATION IN FEET NAVD88 WHERE DRO+ORO RESULTS ARE LESS THAN THE CLEANUP LEVEL
- ESTIMATED EXTENT OF SOIL EXCEEDING THE CLEANUP LEVEL REMAINING IN PLACE POST INTERIM ACTIONS OR INACCESSIBLE DUE TO EXISTING UTILITY BANK
- ESTIMATED EXTENT OF SOIL EXCEEDING THE SCREENING LEVEL THAT WAS EXCAVATED AND REMOVED BY INTERIM ACTIONS
- MECHANICAL EQUIPMENT AREA DECOMMISSIONED AND FILLED WITH CDF
- PROPERTY BOUNDARY
- FORMER UNDERGROUND STORAGE TANKS (USTs)
- KING COUNTY PARCEL BOUNDARY

NOTES:
DATA SHOWN ARE FOR SAMPLES COLLECTED BETWEEN 2014 THROUGH 2023 UNLESS OTHERWISE NOTED.
DATA IS ONLY SHOWN FOR PERFORMANCE AND COMPLIANCE SAMPLES THAT REMAIN IN PLACE. NO SOIL DATA STRINGS ARE SHOWN FOR SAMPLES THAT WERE REMOVED.
FOR SOIL SAMPLES:
ELEVATION IN FEET NAVD88 | DRO+ORO
ANALYTICAL RESULTS IN MILLIGRAMS PER KILOGRAM (mg/kg)

BOLD = DENOTES CONCENTRATIONS THAT EXCEED THE SOIL CLEANUP LEVEL OF 2,000 mg/kg
< = DENOTES ANALYTE NOT DETECTED AT OR EXCEEDING THE REPORTING LIMIT LISTED
CDF = CONTROLLED DENSITY FILL
DRO = TOTAL PETROLEUM HYDROCARBONS (TPH) AS DIESEL-RANGE ORGANICS
ORO = TPH AS OIL-RANGE ORGANICS
MTCA = WASHINGTON STATE MODEL TOXICS CONTROL ACT CLEANUP REGULATION
NAVD88 = NORTH AMERICAN VERTICAL DATUM OF 1988

ALL LOCATIONS ARE APPROXIMATE.
FIGURES WERE PRODUCED IN COLOR. GRAYSCALE COPIES MAY NOT REPRODUCE ALL ORIGINAL INFORMATION.

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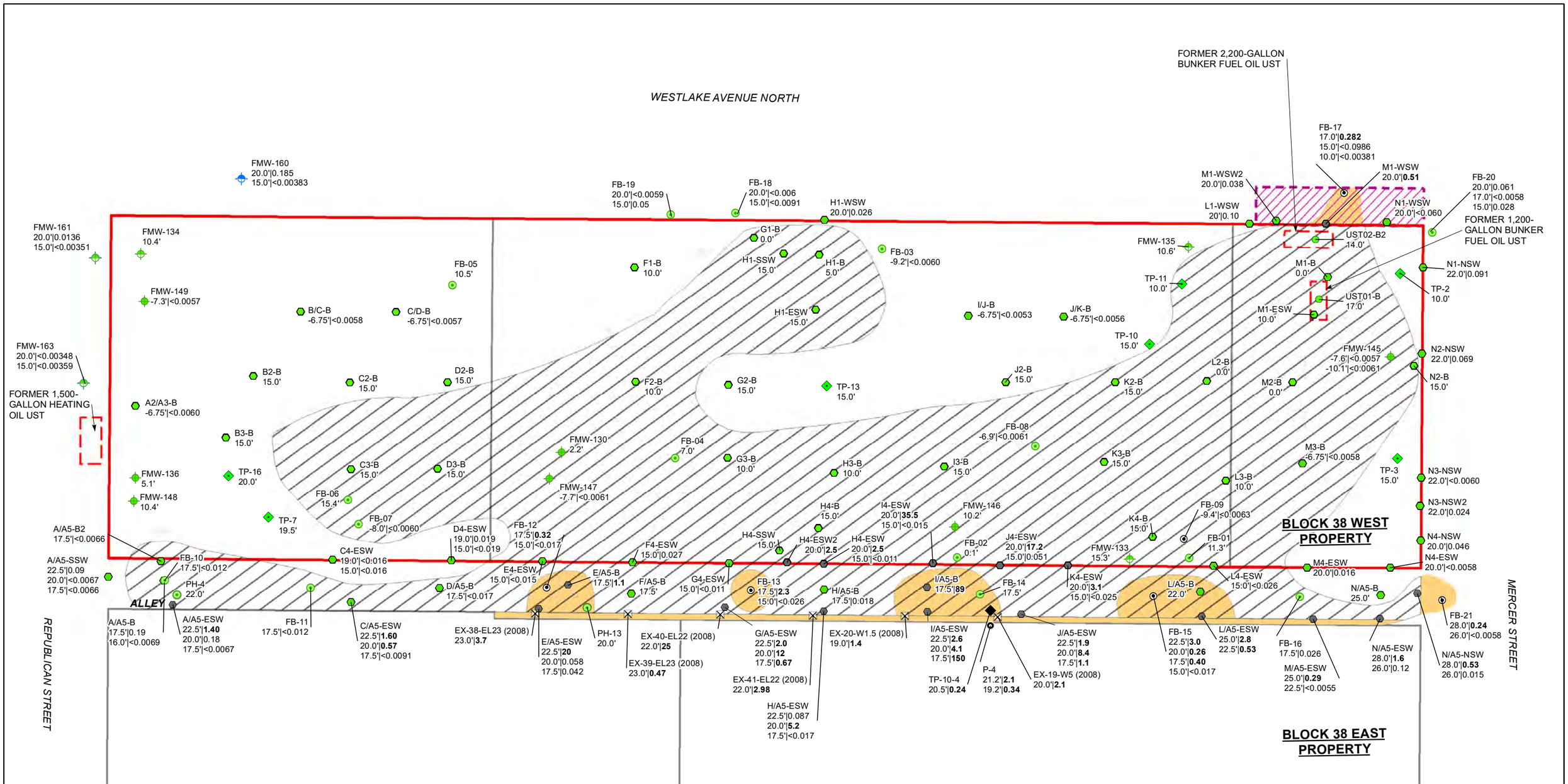
FIGURE 7
POST INTERIM ACTION SOIL ANALYTICAL RESULTS FOR DRO + ORO BLOCK 38 WEST SITE SEATTLE, WASHINGTON

FARALLON PN: 397-019

Drawn By: jjones | Checked By: JW | Date: 8/2/2024 | Disc Reference:
Document Path: Q:\Projects\397 VULCAN\019_Block38\Mapfiles\17F_2024\Figure-07_PIA_Soil-DRO+ORO.mxd



LEGEND

- SHALLOW WATER-BEARING ZONE MONITORING WELL
- DECOMMISSIONED SHALLOW WATER-BEARING ZONE MONITORING WELL
- DECOMMISSIONED INTERMEDIATE WATER-BEARING ZONE MONITORING WELL
- BORING (FARALLON)
- BORING (GEOENGINEERS)
- EXCAVATION SAMPLE (GEOENGINEERS)
- TEST PIT (GEOENGINEERS)
- POTHOLE (FARALLON)
- UST SAMPLE LOCATION (FARALLON)
- EXCAVATION SAMPLE LOCATION (FARALLON)
- TEST PIT (FARALLON)

- DENOTES SAMPLE LOCATION AND ELEVATION IN FEET NAVD88 WHERE cPAHs RESULTS ARE LESS THAN THE CLEANUP LEVEL
- ESTIMATED EXTENT OF SOIL EXCEEDING THE CLEANUP LEVEL REMAINING IN PLACE POST INTERIM ACTIONS OR INACCESSIBLE DUE TO EXISTING UTILITY BANK
- ESTIMATED EXTENT OF SOIL EXCEEDING THE SCREENING LEVEL THAT WAS EXCAVATED AND REMOVED BY INTERIM ACTIONS
- MECHANICAL EQUIPMENT AREA DECOMMISSIONED AND FILLED WITH CDF
- PROPERTY BOUNDARY
- FORMER UNDERGROUND STORAGE TANKS (USTs)
- KING COUNTY PARCEL BOUNDARY

NOTES:
DATA SHOWN ARE FOR SAMPLES COLLECTED BETWEEN 2014 THROUGH 2023 UNLESS OTHERWISE NOTED.
DATA IS ONLY SHOWN FOR PERFORMANCE AND COMPLIANCE SAMPLES THAT REMAIN IN PLACE. NO SOIL DATA STRINGS ARE SHOWN FOR SAMPLES THAT WERE REMOVED.

FOR SOIL SAMPLES:
DEPTH AND CONCENTRATIONS REPORTED AS:
ELEVATION IN FEET NAVD88 | cPAH TEC
ANALYTICAL RESULTS IN MILLIGRAMS PER KILOGRAM (mg/kg)

BOLD = DENOTES ELEVATION AND CONCENTRATIONS THAT EXCEED THE CLEANUP LEVEL OF 0.19 mg/kg
< = DENOTES ANALYTE NOT DETECTED AT OR EXCEEDING THE REPORTING LIMIT LISTED FOR TOTAL TOXIC EQUIVALENT CONCENTRATION OF BENZO(A)PYRENE (mg/kg)
CDF = CONTROLLED DENSITY FILL
cPAHs = CARCINOGENIC POLYCYCLIC AROMATIC HYDROCARBONS
TEC = TOXIC EQUIVALENT CONCENTRATION OF BENZO(A)PYRENE FOR cPAH MIXTURE
MTCA = WASHINGTON STATE MODEL TOXICS CONTROL ACT CLEANUP REGULATION
NAVD88 = NORTH AMERICAN VERTICAL DATUM OF 1988

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SCALE IN FEET

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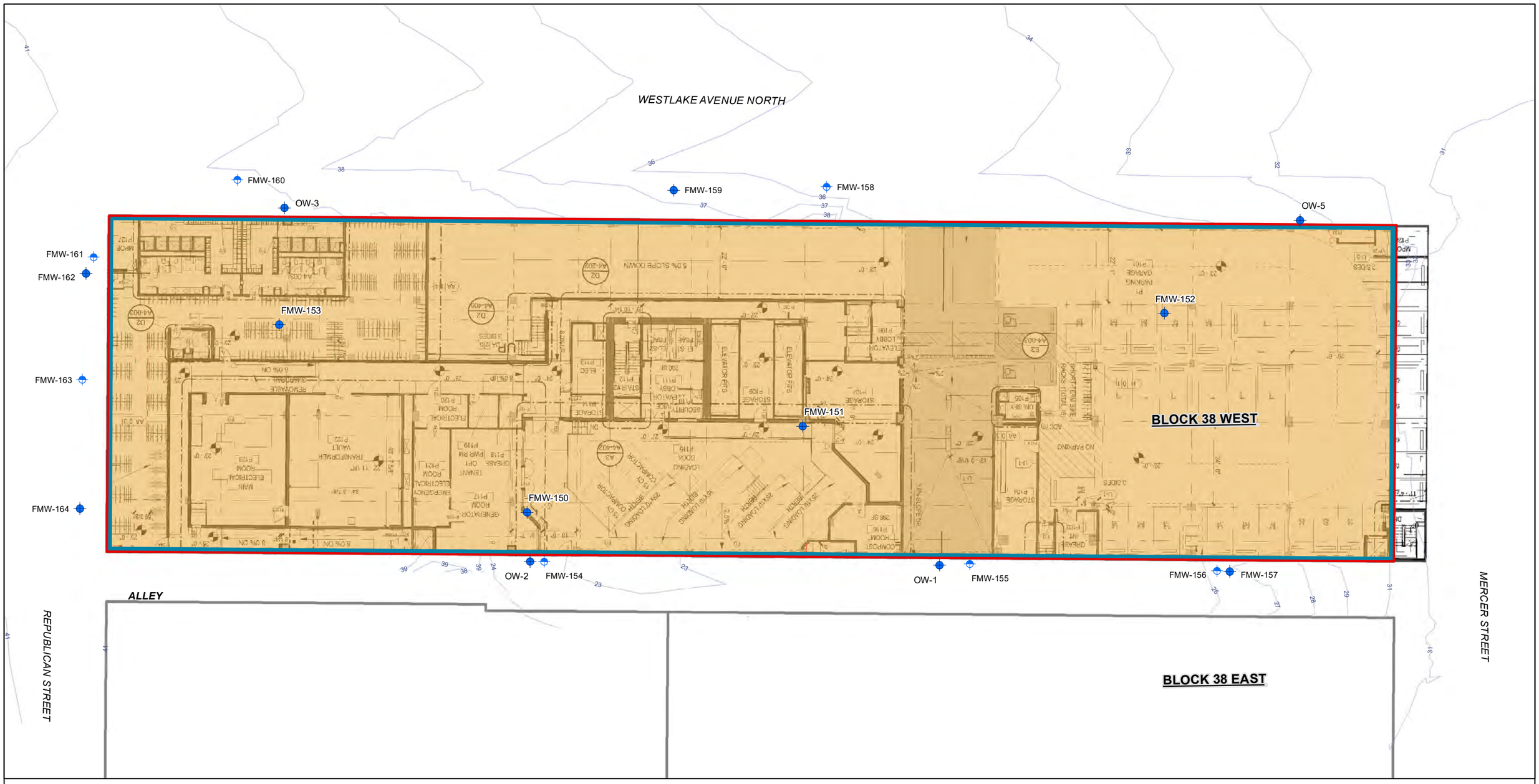
FIGURE 8
POST INTERIM ACTION SOIL ANALYTICAL RESULTS FOR cPAH TEC
BLOCK 38 WEST SITE
SEATTLE, WASHINGTON
FARALLON PN: 397-019

Drawn By: jjones | Checked By: JW | Date: 8/2/2024 | Disc Reference: Q:\Projects\397 VULCAN\019_Block38\Mapfiles\17F_2024\Figure-08_Soil-cPAHs.mxd



LEGEND

- SHALLOW WATER-BEARING ZONE MONITORING WELL
- INTERMEDIATE WATER-BEARING ZONE MONITORING WELL / OBSERVATION WELL
- VERTICAL EXTENT OF VAPOR BARRIER INSTALLED, FROM BASE TO TOP OF SHORING WALL; HYCRETE WATERPROOF CONCRETE EXTENDS TO ELEVATION 20.0 FEET NAVD88
- HORIZONTAL EXTENT OF VAPOR BARRIER INSTALLED ACROSS FOUNDATION; BARRIER PLACED ON TOP OF RAT SLAB FOUNDATION PRIOR TO POURING THE MAT SLAB FOUNDATION WITH TOP 12-INCHES CONSISTING OF HYCRETE WATERPROOF CONCRETE
- ELEVATION CONTOUR
- PROPERTY BOUNDARY
- KING COUNTY PARCEL BOUNDARY

N

0 30

SCALE IN FEET

NOTES:
1. ALL LOCATIONS ARE APPROXIMATE.
2. FIGURES WERE PRODUCED IN COLOR. GRAYSCALE COPIES MAY NOT REPRODUCE ALL ORIGINAL INFORMATION.
3. ELEVATION DATA PRESENTED IN FEET ABOVE MEAN SEA LEVEL IN THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) ELEVATION SOURCE: BUSH, ROED, & HITCHINGS, INC. (2014)

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FIGURE 9

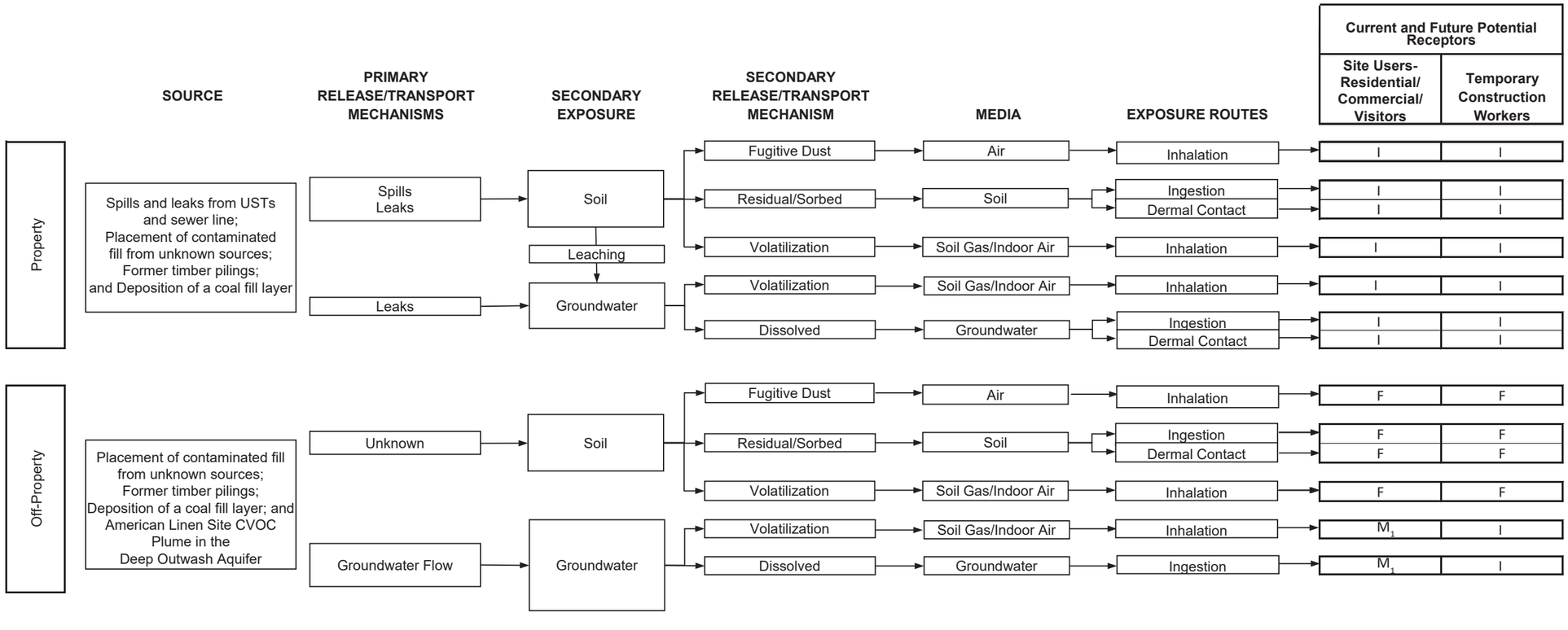
EXTENT OF VAPOR BARRIER
BLOCK 38 WEST SITE
SEATTLE, WASHINGTON

FARALLON PN: 397-019

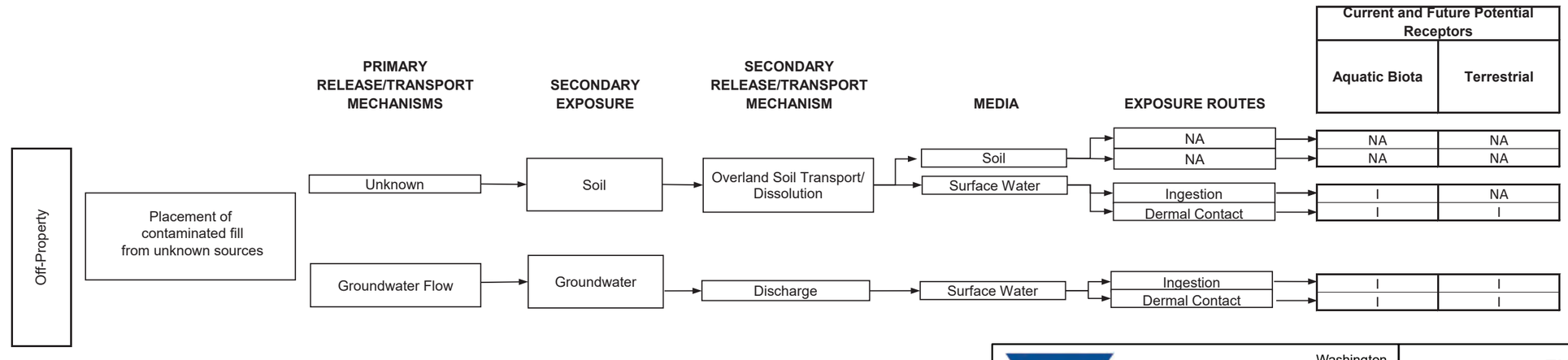
Drawn By: jjones | Checked By: JW | Date: 7/19/2024

Disc Reference: Q:\Projects\397 VULCAN\019_Block38\Mapfiles\17F_2024\Figure-09_VaporBarrier.mxd

HUMAN HEALTH RISK CONCEPTUAL SITE MODEL



ECOLOGICAL RISK CONCEPTUAL SITE MODEL



I = Incomplete Pathway
C = Complete Current Pathway
M = Complete pathway currently on Property mitigated by presence of vapor barrier and concrete floor
[1] = Pathway is incomplete based on the COCs for the Block 38 West Site.
However the pathway is potentially complete based on the presence of the American Linen Site CVOC Plume adjacent to the Block 38 West Site.
F = Currently Incomplete, Potentially Complete Pathway in Future
NA = not applicable

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FIGURE 10

EXPOSURE PATHWAY ANALYSIS
BLOCK 38 WEST SITE
SEATTLE, WASHINGTON

FARALLON PN: 397-019

Drawn By: lmurock | Checked By: JW | Date: 7/19/2024 | Disc Reference: Q:\Projects\397 VULCAN\019_Block38\Mapfiles\17F_2024\Figure-10_ExposurePathwayAnalysis.ai

Tables

Table 1
Post Interim Action Cleanup Levels
Block 38 West Site
Seattle, Washington
Farallon PN: 397-019

Chemical	Soil Screening Levels												Groundwater Screening Levels									Chemical Retained as COC (based on Soil or Groundwater)
	Method B Direct Contact	Protection of Groundwater				Adjustment Factors		FS/CAP Soil Cleanup Level (mg/kg)		Maximum Concentration Detected at Site Vadose | Saturated (mg/kg)	Retained as Soil COPC for RI Work Plan	Retained as Soil COC for FS/CAP (post Interim Action)	Groundwater		Protection of Indoor Air	Adjustment Factors		Groundwater Screening Level (µg/L)	Maximum Concentration Detected at Site (µg/L)	Retained as Groundwater COPC for RI Work Plan	Retained as Groundwater COC for FS/CAP (post Interim Action)	
		Vadose Zone		Saturated Zone		Natural Background (mg/kg)	Practical Quantitation Limits (mg/kg)	Vadose Zone	Saturated Zone				Level (µg/L)	Basis	Level (µg/L)	Natural Background (µg/L)	Practical Quantitation Limits (µg/L)					
	Level (mg/kg)	Level (mg/kg)	Basis	Level (mg/kg)	Basis																	
Petroleum Hydrocarbons																						
TPH, diesel- and oil-range organics	---	2,000	Method A#	2,000	Method A#	---	75	2,000	2,000	30,400 | 23,800	Yes	Yes	500	Method A	---	---	500	500	3,300	Yes	No	Yes
TPH, gasoline-range organics, benzene present	1,500*	30	Method A#	30	Method A#	---	5	30	30	2,100 | 83	Yes	No	800	Method A	---	---	100	800	2,100 [1]	Yes	No	No
TPH, gasoline-range organics, no detectable benzene	1,500*	100	Method A#	100	Method A#	---	5	100	100	2,100 | 83	Yes	No	1,000	Method A	---	---	100	1,000	2,100 [1]	Yes	No	No
Volatile Organic Compounds																						
Acetone	72,000	29	Leach	2.1	Leach	---	0.005	29	2.1	Not Analyzed	---	---	7,200	Method B	---	---	5.0	7,200	7.4	No	No	No
Benzene	18	0.027	Leach	0.0017	Leach	---	0.001	0.027	0.0017	0.12 | 0.0033	Yes	No	5.0	MCL	2.4	---	0.20	2.4	5.1 [2]	Yes	No	No
Chloroform	32	0.074	Leach	0.0048	Leach	---	0.001	0.074	0.0048	Not Analyzed	---	---	14	Method B/Adjusted MCL	1.2	---	0.20	1.2	2.7	No [3]	No [3]	No [3]
cis-1,2-Dichloroethene	160	0.078	Leach	0.0052	Leach	---	0.001	0.078	0.0052	Not Detected [6]	No	No	16	Method B	180	---	0.20	16	1.3	No	No	No [3]
Ethylbenzene	8,000	5.9	Leach	0.34	Leach	---	0.001	5.9	0.34	0.13 | 0.0075	No	No	700	MCL	2,800	---	0.20	700	2.2	No	No	No
Tetrachloroethene	480	0.05	Leach	0.0028	Leach	---	0.001	0.05	0.0028	0.0041 | ND	No	No	5.0	MCL	25	---	0.20	5.0	Not Detected	No	No	No
Toluene	6,400	4.5	Leach	0.27	Leach	---	0.005	4.5	0.27	0.49 | 0.018	No	No	640	Method B/Adjusted MCL	15,000	---	1.0	640	7.5	No	No	No
1,1,1-Trichloroethane	160,000	1.5	Leach	0.084	Leach	---	0.001	1.5	0.084	Not Analyzed	---	---	200	MCL	5,400	---	0.20	200	0.26	No	No	No
Xylenes	16,000	14	Leach	0.83	Leach	---	0.003	14	0.83	0.94 | 0.048	No	No	1,600	Method B/Adjusted MCL	320	---	0.60	320	6.7	No	No	No
Polycyclic Aromatic Hydrocarbons (PAHs)																						
Naphthalene	1,600	4.5	Leach	0.24	Leach	---	0.0067	1,600 [9]	1,600 [9]	22 | 9.8	Yes	No	160	Method B	8.9**	---	0.10	8.9**	650	Yes	No	No
1-Methylnaphthalene	34	0.082	Leach	0.0042	Leach	---	0.0067	34 [9]	34 [9]	14 | 7.5	Yes	No	1.5	Method B	---	---	0.10	1.5	10	Yes	No	No
2-Methylnaphthalene	320	1.7	Leach	0.088	Leach	---	0.0067	320 [9]	320 [9]	15 | 8.8	Yes	No	32	Method B	---	---	0.10	32	13	No	No	No
Acenaphthene	4,800	49	Leach	2.5	Leach	---	0.0067	49	2.5	1.5 | 0.049	No	No	480	Method B	---	---	0.10	480	8.3	No	No	No
Acenaphthylene	---	---	---	---	---	---	0.0067	---	---	0.45 | 0.045	No	No	---	---	---	---	0.10	---	0.12	No	No	No
Anthracene	24,000	1,100	Leach	57	Leach	---	0.0067	1,100	57	3.3 | 0.29	No	No	2,400	Method B	---	---	0.10	2,400	Not Detected	No	No	No
Benzo(g,h,i)Perylene	---	---	---	---	---	---	0.0067	---	---	8.5 | 0.21	No	No	---	---	---	---	0.010	---	Not Detected	No	No	No
Fluoranthene	3,200	630	Leach	32	Leach	---	0.0067	630	32	18 | 0.97	No	No	640	Method B	---	---	0.10	640	Not Detected	No	No	No
Fluorene	3,200	51	Leach	2.6	Leach	---	0.0067	51	2.6	1.3 | 0.22	No	No	320	Method B	---	---	0.10	320	1.6	No	No	No
Phenanthrene	---	---	---	---	---	---	0.0067	---	---	18 | 1.0	No	No	---	---	---	---	0.10	---	0.48	No	No	No
Pyrene	2,400	330	Leach	16	Leach	---	0.0067	330	16	27 | 1.1	No	No	240	Method B	---	---	0.10	240	Not Detected	No	No	No
Carcinogenic PAHs																						
Benzo(a)Pyrene	0.19	3.9	Leach	0.19	Leach	---	0.0067	0.19	0.19	120 | 120	Yes	Yes	0.2	MCL	---	---	0.010	0.2	0.023	No	No	Yes
Benzo(a)Anthracene	cPAH TEC	cPAH TEC	Leach	cPAH TEC	Leach	---	0.0067	cPAH TEC	cPAH TEC	110 | 91	Yes	Yes	cPAH TEC	cPAH TEC	---	---	0.010	cPAH TEC	0.043	No	No	Yes
Benzo(b)Fluoranthene	cPAH TEC	cPAH TEC	Leach	cPAH TEC	Leach	---	0.0067	cPAH TEC	cPAH TEC	100 | 120	Yes	Yes	cPAH TEC	cPAH TEC	---	---	0.010	cPAH TEC	0.031	No	No	Yes
Benzo(j,k)Fluoranthene	cPAH TEC	cPAH TEC	Leach	cPAH TEC	Leach	---	0.0067	cPAH TEC	cPAH TEC	31 | 24	Yes	Yes	cPAH TEC	cPAH TEC	---	---	0.010	cPAH TEC	Not Detected	No	No	Yes
Chrysene	cPAH TEC	cPAH TEC	Leach	cPAH TEC	Leach	---	0.0067	cPAH TEC	cPAH TEC	110 | 110	Yes	Yes	cPAH TEC	cPAH TEC	---	---	0.010	cPAH TEC	0.036	No	No	Yes
Dibenzo(a,h)Anthracene	cPAH TEC	cPAH TEC	Leach	cPAH TEC	Leach	---	0.0067	cPAH TEC	cPAH TEC	9.9 | 9.1	Yes	Yes	cPAH TEC	cPAH TEC	---	---	0.010	cPAH TEC	Not Detected	No	No	Yes
Indeno(1,2,3-cd)Pyrene	cPAH TEC	cPAH TEC	Leach	cPAH TEC	Leach	---	0.0067	cPAH TEC	cPAH TEC	63 | 69	Yes	Yes	cPAH TEC	cPAH TEC	---	---	0.010	cPAH TEC	0.014	No	No	Yes
cPAH TEC	0.19	3.9	Leach	0.19	Leach	---	NA	0.19	0.19	152 | 150	Yes	Yes	0.2	MCL	---	---	NA	0.2	0.033	No	No	Yes

Table 1
Post Interim Action Cleanup Levels
Block 38 West Site
Seattle, Washington
Farallon PN: 397-019

Chemical	Soil Screening Levels												Groundwater Screening Levels									Chemical Retained as COC (based on Soil or Groundwater)
	Method B Direct Contact	Protection of Groundwater				Adjustment Factors		FS/CAP Soil Cleanup Level (mg/kg)		Maximum Concentration Detected at Site Vadose | Saturated (mg/kg)	Retained as Soil COPC for RI Work Plan	Retained as Soil COC for FS/CAP (post Interim Action)	Groundwater		Protection of Indoor Air	Adjustment Factors		Groundwater Screening Level (µg/L)	Maximum Concentration Detected at Site (µg/L)	Retained as Groundwater COPC for RI Work Plan	Retained as Groundwater COC for FS/CAP (post Interim Action)	
		Vadose Zone		Saturated Zone																		
	Level (mg/kg)	Level (mg/kg)	Basis	Level (mg/kg)	Basis	Natural Background (mg/kg)	Practical Quantitation Limits (mg/kg)	Vadose Zone	Saturated Zone				Level (µg/L)	Basis	Level (µg/L)	Natural Background (µg/L)	Practical Quantitation Limits (µg/L)					
Metals																						
Arsenic	0.67	4.7	Leach	0.23	Leach	7.3	5	7.3	7.3	13 | ND	No[3]	No[3]	0.58	Method B/Adjusted MCL	---	8.0 [5]	3.3	8.0	Not Analyzed	No[3]	No[3]	No[3]
Barium	16,000	1,600	Leach	83	Leach	---	2.5	16,000 [9]	16,000 [9]	490 | 290	Yes	No	2,000	MCL	---	---	28	2,000	Not Analyzed	Yes	No	No
Cadmium	80	0.69	Leach	0.035	Leach	0.77 [4]	0.50	0.77 [4]	0.77 [4]	2.4 | ND	No[3]	No[3]	5.0	MCL	---	---	4.4	5.0	Not Analyzed	No[3]	No[3]	No[3]
Chromium[7]	120,000	480,000	Leach	24,000	Leach	48	0.50	120,000	24,000	48 | 100	No	No	100	MCL	---	---	2.0	100	Not Analyzed	No	No	No
Lead	250 [8]	3,000	Leach	150	Leach	16.83	5.0	250	150	21,000 | 240	No[3]	No[3]	15	MCL	---	---	1.1	15	Not Analyzed	No[3]	No[3]	No[3]
Mercury	---	2.1	Leach	0.1	Leach	0.07	0.25	2.1	2.1 [9]	ND | 1.2	Yes	No	2.0	MCL	1.1	---	0.50	1.1	Not Analyzed	Yes	No	No

NOTES:

Shading represents most stringent screening level, natural background concentration, or practical quanititaiton limit for vadose zone soil.

Shading represents most stringent screening level, natural background concentration, or practical quanititaiton limit for saturated zone soil.

Shading indicates the chemical or specific matrix is not a COPC for the FS/CAP after completion of the Remedial Investigation.

Shading indicates a change from information provided in the RI Work Plan screening level table (Table 13).

--- denotes no screening level established for this parameter.

CAP = Cleanup Action Plan
COC = contaminant of concern
COPC = contaminant of potential concern
FS = Feasibility Study
µg/L = micrograms per liter
mg/kg = milligrams per kilogram
NA = not applicable
ND = not detected
TPH = total petroleum hydrocarbons

cPAH TEC = Carcinogenic polycyclic aromatic hydrocarbon toxic equivalent concentration (cPAH TEC) calculated following the total toxicity equivalency method in Section 708(8) of Chapter 173-340 of the Washington Administrative Code.

Leach = Washington State Cleanup Levels and Risk Calculations (CLARC) under Washington State Model Toxics Control Act Cleanup Regulation (MTCA), default soil concentrations protective of groundwater from CLARC Master spreadsheet, https://ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Contamination-clean-up-tools/CLARC

MCL = Federal Maximum Contaminant Level (MCL), 40 Code of Federal Regulations (CFR) Part 141.

Method A = MTCA Method A Soil Cleanup Levels for Unrestricted Land Uses, Table 740-1 of Section 900 of Chapter 173-340 of the Washington Administrative Code, as revised 2013.

Method B = Washington State CLARC under Washington State MTCA, Standard Method B Formula Values from CLARC Master spreadsheet, https://ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Contamination-clean-up-tools/CLARC

[1] Result was derived from a reconnaissance groundwater sample. Analysis of reconnaissance groundwater samples can result in potentially biased data due to turbidity of the sample and greater presence of suspended solids that hazardous substances can sorb onto. This detection in groundwater was flagged by the laboratory because the sample chromatogram was not similar to a typical gas.

[2] Result was derived from a reconnaissance groundwater sample. Analysis of reconnaissance groundwater samples can result in potentially biased data due to turbidity of the sample and greater presence of suspended solids that hazardous substances can sorb onto.

[3] Section 6.4 of the Agency Review Draft-Remedial Investigation Work Plan provides additional information as to why the COPC was not retained for further evaluation for the Block 38 West Site. Arsenic, cadmium and lead are not retained as COPCs for Block 38 West based on historical data indicating that the source is likely associated with the adjacent Rosen Property Site.

[4] Arsenic and cadmium screening levels adjusted for natural background concentrations provided in *Natural Background Soil Metals Concentrations in Washington State*, Washington State Department of Ecology, Publication #94-115, October 1994.

[5] Puget Sound Lowland natural background concentration from *Natural Background Groundwater Arsenic Concentrations in Washington State, Study Results*, Washington State Department of Ecology, Publication No. 14-09-044, dated January 2022.

[6] Reporting limits for cis-1,2-dichloroethene in soil ranged from 0.00074 mg/kg to 0.0044 mg/kg.

[7] Values based on trivalent chromium risk-based values for soil SLs (120,000 mg/kg for direct contract, 480,000 mg/kg vadose leaching, 24,000 saturated leaching) since there is no known source of hexavalent chromium used on the Block 38 West Property. Background levels are based on total chromium. Total chromium groundwater screening level of 100 µg/L based on the MCL.

[8] Value based on Method A as a surrogate for Method B as no Method B direct contact value for soil has been established.

[9] Ecology approved the use of the direct contact soil screening level for this chemical.

* Source of this value is the generic TPH cleanup level from *Model Remedies for Sites with Petroleum Contaminated Soils*, Washington State Department of Ecology, Publication No. 15-09-043, Revised: December 2017.

** MTCA Method B vapor intrusion groundwater screening level for naphthalene is applicable for the Shallow Water-Bearing Zone and the Method B screening level for drinking water is applicable for the deeper Intermediate Water-Bearing Zone.

Method A is used as a surrogate for Method B because no Method B vadose or saturated leaching value has been established for TPH gasoline-, diesel- and oil-range mixtures.

Table 2
Applicable or Relevant and Appropriate Requirements
Block 38 West Site
Seattle, Washington
Farallon PN: 397-019

Standard, Requirement, or Limitation[1]	Applicability
Location-Specific ARARs[2]	
State Environmental Policy Act (RCW 43.21C; WAC 197-11 and WAC 173-802)	SEPA review is required for MTCA cleanup actions; Ecology will be the lead agency for this effort.
Native American Graves Protection and Repatriation Act (25 USC 3001 through 3013; 43 CFR 10) Washington's Indian Graves and Records Law (RCW 27.44)	These statutes prohibit the destruction or removal of Native American cultural items and require written notification of inadvertent discovery to the appropriate agencies and Native American tribe. These programs are applicable to the cleanup action if cultural items are found. The activities must cease in the area of the discovery; a reasonable effort must be made to protect the items discovered; and notice must be provided.
Archaeological Resources Protection Act(16 USC 470aa et seq.; 43 CFR 7)	This program sets forth requirements that are triggered when archaeological resources are discovered. These requirements only apply if archaeological items are discovered during implementation of the selected remedy.
National Historic Preservation Act (16 USC 470 et seq.; 36 CFR parts 60, 63, and 800)	This program sets forth a national policy of historic preservation and provides a process that must be followed to ensure that impacts of actions on archaeological, historic, and other cultural resources are protected.
ESA [16 USC §§ 1531-1544] and Implementing Regulations	The ESA protects species of fish, wildlife, and plants that are listed as threatened or endangered with extinction. It also protects designated critical habitat for listed species. The ESA outlines procedures for federal agencies to follow, including consultation with resource agencies, when taking actions that may jeopardize listed species. No threatened or endangered species or habitat areas are expected to be impacted by the planned cleanup action.

Table 2
Applicable or Relevant and Appropriate Requirements
Block 38 West Site
Seattle, Washington
Farallon PN: 397-019

Standard, Requirement, or Limitation[1]	Applicability
Location-Specific ARARs[2] (cont.)	
U.S. Archaeological and Historic Preservation Act [16 USC § 469, 470 et seq.; 36 CFR Parts 65 and 800] Washington Archaeological Sites and Resources [RCW 27.44, 27.48, and 27.53; Chapter 25-48 WAC]	Actions must be taken to preserve and recover significant artifacts, preserve historic and archaeological properties and resources, and minimize harm to national landmarks. There are no known historic or archaeological sites in the vicinity of the Site, but these regulations may be applicable if archaeological resources are discovered during construction.
Clarification of SEPA Historic Preservation Policy for Potential Archaeologically Significant Sites and Requirements for Archaeological Assessments (Director's Rule 2-98; SMC Chapter 25.05.675 H)	Provides guidance for the identification, protection, and treatment of archaeological sites on the City of Seattle's shorelines. The archaeological significance of a project site must be assessed for any proposed project involving excavation within 200 feet of the U.S. Government Meander line which approximates the historical shoreline. The Site is within 200 feet of the historical shoreline of Lake Union.
Shoreline Management Act of 1971 [RCW 90.58] and Implementing Regulations	Actions are prohibited within 200 feet of shorelines of statewide significance unless permitted. The Site is not within 200 feet of the current shoreline of Lake Union.
Shoreline Management Act of 1971 [RCW 90.58] and Implementing Regulations	The construction or management of property in wetlands is required to minimize potential harm, avoid adverse effects, and preserve and enhance wetlands. The Site is not within a wetland.

Table 2
Applicable or Relevant and Appropriate Requirements
Block 38 West Site
Seattle, Washington
Farallon PN: 397-019

Standard, Requirement, or Limitation[1]	Applicability
Action-Specific ARARs[3]	
State Environmental Policy Act (RCW 43.21C, WAC 197-11 and WAC 173-802)	Establishes the state's policy for protection and preservation of the natural environment. Applies to cleanup actions conducted under MTCA. A SEPA review is required for local permitting pursuant to MTCA and was completed for the interim actions.
Resource Conservation and Recovery Act (42 USC 6921-6949a; 40 CFR Part 268, Subtitles C and D)	Establishes requirements for the identification, handling, and disposal of hazardous and nonhazardous waste. These regulations establish guidelines and criteria from which states develop solid waste regulations. Subtitle C of RCRA pertains to the management of hazardous waste. These requirements are applicable for the interim actions completed and planned cleanup action since it involves off-Site disposal of impacted soil, groundwater, treatment media, and/or wastewater designated as hazardous waste. Subtitle D of RCRA establishes a framework for management of nonhazardous solid waste. These requirements are applicable for the interim actions completed and planned cleanup action since it involves off-Site disposal of impacted soil and/or groundwater designated as nonhazardous waste.
Dangerous Waste Regulations (RCW 70.105; WAC 173-303)	Establishes regulations that are the state equivalent of RCRA requirements for determining whether a solid waste is a state dangerous waste. This regulation also provides requirements for the management of dangerous wastes. These requirements are applicable for the interim actions completed and planned cleanup action since it involves off-Site disposal of impacted soil, groundwater, treatment media, and/or wastewater designated as hazardous waste.
Solid Waste Disposal Act (42 USC Sec. 6901-6992; 40 CFR 257-258) Federal Land Disposal Requirements (40 CFR 268)	Protects health and the environment and promotes conservation of valuable material and energy resources. The Solid Waste Disposal Act establishes a framework for regulation of solid waste disposal. Federal land disposal requirements promulgated under the authority of the Solid Waste Disposal Act set minimum safety requirements for landfills including limitations on storage and land disposal for hazardous substances.

Table 2
Applicable or Relevant and Appropriate Requirements
Block 38 West Site
Seattle, Washington
Farallon PN: 397-019

Standard, Requirement, or Limitation[1]	Applicability
Action-Specific ARARs[3] (cont.)	
Department of Transportation Hazardous Materials Regulations (49 CFR 172)	Regulates the safe and secure transportation of hazardous materials, including documentation and handling requirements for shipping. These requirements are applicable for the interim actions completed and planned cleanup action since it involves off-Site disposal of impacted soil, groundwater, treatment media, and/or wastewater designated as hazardous waste.
Washington Minimum Functional Standards for Solid Waste Handling (WAC 173-304)	Sets minimum functional standards for the proper handling of all solid waste materials originating from residences, commercial, agricultural, and industrial operations, as well as other sources.
Washington Solid Waste Handling Standards (RCW 70.95 and WAC 173-351 and 173-304)	Establishes minimum standards for handling and disposal of solid waste. Solid waste includes wastes that are likely to be generated as a result of site remediation, including contaminated soils, construction and demolition wastes, and garbage.
Noise Control Act of 1974 (RCW 70.107, WAC 173-60, SMC Chapter 25.08)	Establishes maximum noise levels.Construction activities will be limited to normal working hours, to the extent possible, to minimize noise impacts.
Accreditation of Environmental Laboratories (RCW 43.21A.230 and WAC 173-50)	Required persons or organizations submitting analytical data under the purview of Ecology, Department of Health, and other entities, to use environmental laboratories which are accredited.
City of Seattle Traffic Code (SMC 11.1)	The City of Seattle code regulates construction use and permitting in the right-of-way. Guidelines for grading activities, applicable since the interim actions completed and planned cleanup action involves an excavation and filling volume greater than 500 cubic yards.
City of Seattle Construction Codes for Grading (SMC 22.170)	Required for the excavation or addition of material within an Environmentally Critical Area, movement of more than 500 cubic yards of material, and in-place modification of the ground (soil remediation).
Seattle of Seattle Construction Codes for Demolition (Seattle Building Code Chapter 33)	Regulates the demolition of any structures within an Environmentally Critical Area or greater than 120 square feet in size.

Table 2
Applicable or Relevant and Appropriate Requirements
Block 38 West Site
Seattle, Washington
Farallon PN: 397-019

Standard, Requirement, or Limitation[1]	Applicability
Action-Specific ARARs[3] (cont.)	
National Electrical Code (NFPA 70) and the Seattle Electric Code Supplement for Class 1 Division 2 Environments.	Establishes restrictions and guidelines for temporary and/or permanent electrical installations.
King County Industrial Waste Program	The King County Industrial Waste Program monitors discharge of liquid waste to the wastewater (sanitary sewer) system. Any discharges during construction to the wastewater system must be approved by King County prior to discharge. The King County Industrial Waste Program monitors volume and water quality of liquid waste discharged to the system. Guidelines for erosion control and construction stormwater management. These regulations are applicable since the completed interim actions and planned cleanup action involves construction requiring dewatering and stormwater management.
U.S. Federal Water Pollution Control Act--NPDES [CWA; 33 USC § 1342, Section 402] and Implementing Regulations Washington Waste Discharge General Permit Program [RCW 90.48; Chapter 173-226 WAC]	The NPDES program establishes requirements for point source discharges, including stormwater runoff. These requirements are applicable to the planned cleanup action since the interim actions involved point source discharge of stormwater during construction or following cleanup.

Table 2
Applicable or Relevant and Appropriate Requirements
Block 38 West Site
Seattle, Washington
Farallon PN: 397-019

Standard, Requirement, or Limitation[1]	Applicability
Action-Specific ARARs[3] (cont.)	
Federal, State, and Local Air Quality Protection Programs State Implementation of Ambient Air Quality Standards Regional Standards for Fugitive Dust Emissions Toxic Air Pollutants	Regulations promulgated under the federal Clean Air Act (42 USC 7401) and the Washington State Clean Air Act (RCW 70.94) govern the release of airborne contaminants from point and non-point sources. Local air pollution control authorities such as PSCAA have also set forth regulations for implementing these air quality requirements. These requirements may be applicable to the Site for the purposes of demolition or dust control. PSCAA requires notification prior to demolition of any building with asbestos-containing material. Both PSCAA (under Regulation III) and WAC 173-460 establish ambient source impact levels for arsenic.
Clean Air Act and Implementing Regulations [RCW 70A.15; Chapter 173-400 WAC]	These regulations require the owner or operator of a source of fugitive dust to take reasonable precautions to prevent fugitive dust from becoming airborne and to maintain and operate the source to minimize emissions primarily during construction. These regulations are applicable for interim actions completed and the planned cleanup action due to active construction.
Regional Emission Standards for Toxic Air Pollutants [PSCAA Regulations I and III]	A source of toxic air contaminant requires a notice of construction. This is applicable for interim actions completed and the planned cleanup action due to active construction and construction dewatering treatment system.
U.S. OSHA [29 CFR Parts 1904, 1910, and 1926] WISHA [RCW 49.17; Title 296 WAC]	Site worker and visitor health and safety requirements established by OSHA/WISHA were met during implementation of the interim actions completed and are applicable to the planned cleanup action.
Minimum Standards for Construction and Maintenance of Wells [RCW 18.104; Chapter 173-160 WAC]	Washington State has developed minimum standards for constructing water and monitoring wells, and for the decommissioning of wells. These regulations are applicable since the planned cleanup action involves drilling or decommissioning wells.

Table 2
Applicable or Relevant and Appropriate Requirements
Block 38 West Site
Seattle, Washington
Farallon PN: 397-019

Standard, Requirement, or Limitation[1]	Applicability
Chemical-Specific ARARs[4]	
Model Toxics Control Act (RCW 70A.305 and WAC 173-340)	Establishes Washington administrative processes and standards to identify, investigate, and clean up facilities where hazardous substances have come to be located.
Drinking Water Standards—State MCLs (WAC 246-290-310)	Establishes standards for contaminant levels in drinking water for water system purveyors.
Water Quality Standards for Groundwaters of the State of Washington (WAC 173-200)	Implements the Water Pollution Control Act and the Water Resources Act of 1971 (90.54 RCW).
National Recommended Water Quality Standards (40 CFR 131) Washington Maximum Contaminant Levels (WAC 246-290-310)	These water quality standards define the water quality goals of the water body by designating the use or uses to be made of the water and by setting criteria necessary to protect the uses. States adopt water quality standards from 40 CFR 131 to protect public health or welfare, enhance the quality of water, and serve the purposes of the CWA. Washington water quality standards (MCLs) are presented in WAC.
MTCA [RCW 70A.305; Chapter 173- 340 WAC]	The MTCA soil cleanup levels are applicable.
MTCA [RCW 70A.305; Chapter 173- 340 WAC]	The MTCA groundwater cleanup levels are applicable.

Table 2
Applicable or Relevant and Appropriate Requirements
Block 38 West Site
Seattle, Washington
Farallon PN: 397-019

NOTES:

[1] Projects conducted under an agreed order or consent decree are exempt from the procedural requirements of most state and local permits (RCW 70.305D.090); however, the remedial actions must still comply with the substantive requirements of the exempt permits. Therefore, for exempt permits, the statutory review timelines do not apply; actual timelines will be based on negotiations with the jurisdiction or agency, which should result in an expedited review timeline.

[2] Location-specific ARARs are requirements that are applicable to the specific area where the Site is located, and can restrict the performance of activities, including cleanup actions, solely because they occur in specific locations.

[3] Action-specific ARARs are requirements that are applicable to certain types of activities that occur or technologies that are used during the implementation of cleanup actions.

[4] Chemical-specific ARARs are applicable to the types of contaminants present at the Site. The cleanup of contaminated media at the Site must meet the CULs developed under MTCA; these CULs are considered chemical-specific ARARs.

ABBREVIATIONS:

CFR = Code of Federal Regulations

CWA = Clean Water Act

Ecology = Washington State Department of Ecology

ESA = Endangered Species Act

MCL Maximum Contaminant Level

MTCA = Model Toxics Control Act Cleanup Regulation

NFPA = National Fire Protection Association

NPDES = National Pollutant Discharge Elimination System

OSHA = Occupational Safety and Health Act

PSCAA = Puget Sound Clean Air Agency

RCRA = Resource Conservation and Recovery Act

RCW = Revised Code of Washington

SEPA = State Environmental Policy Act

SMC = Seattle Municipal Code

USC = U.S. Code

WAC = Washington Administrative Code

WISHA = Washington Industrial Safety and Health Act

Appendix A. Draft Compliance Monitoring Plan

December 20, 2024

Tena Seeds, P.E.
Toxics Cleanup Program, NWRO
15700 Dayton Avenue North
Shoreline, Washington 98133

RE: COMPLIANCE MONITORING PLAN
BLOCK 38 WEST SITE
500 THROUGH 536 WESTLAKE AVENUE NORTH
SEATTLE, WASHINGTON
FARALLON PN: 397-019

Dear Tena Seeds:

Farallon Consulting, L.L.C. (Farallon) has prepared this Compliance Monitoring Plan (CMP) for City Investors IX L.L.C. (City Investors IX) to provide procedures and locations for compliance monitoring for the property located at 500 through 536 Westlake Avenue North in Seattle Washington (herein referred to as the Block 38 West Property) (Figure 1).

The Block 38 West Site, as defined under Agreed Order No. DE 17963 (AO) between the Washington State Department of Ecology (Ecology) and City Investors IX, is where a hazardous substance, other than a consumer product in consumer use, has been deposited, stored, disposed of, placed, or otherwise come to be located. The Site is generally located at 500 through 536 Westlake Avenue North in Seattle, Washington. The Block 38 West Property comprises the western half of the block bounded by Mercer Street to the north, Westlake Avenue North to the west, Republican Street to the south, and a north-south-trending alley (City of Seattle public right-of-way) that bisects the block to the east. The eastern half of the same block is referred to as the Block 38 East Property; the whole block comprising the Block 38 West and Block 38 East Properties and the alley is referred to as Block 38.

BACKGROUND

A comprehensive remedial investigation (RI) has been performed under the AO for the Block 38 West Site that included multiple phases of characterization between 1994 and 2024. These RI activities were performed to assess the Block 38 West Site for constituents of potential concern (COPCs) in soil and groundwater associated with historical operations at the Block 38 West Property. The results of the RI, and identification of the selected cleanup

action were published in the RI/Focused Feasibility Study Report (RI/FFS Report) prepared by Farallon in December 2024 under the AO.[1]

Cleanup of the Block 38 West Site was performed through interim actions from October 2019 through July 2021 in conjunction with redevelopment of the Block 38 West Property as described in the RI/FFS Report and Cleanup Action Plan (CAP).[2]

CONSTITUENTS OF CONCERN

As described in the DCAP, groundwater was eliminated as a medium of concern during the RI. The confirmed constituents of concern (COCs) for soil at the Block 38 West Site are:

- Total petroleum hydrocarbons (TPH) in the form of diesel range organics (DRO) and oil range organics (ORO); and
- Carcinogenic polycyclic aromatic hydrocarbons (cPAHs).

Based on the results from the RI and performance monitoring as part of the interim actions, isolated areas of total DRO+ORO and cPAHs remain in shallow soil at concentrations exceeding proposed cleanup levels for the Block 38 West Site.

SELECTED CLEANUP ACTION

The selected cleanup action for the Block 38 West Site consists of the following elements:

- Complete removal of affected soil and groundwater by mass excavation to an elevation of -6.5 feet NAVD88 on the Block 38 West Property;
- Removal of affected soil to the maximum extent practicable in the alley area to an elevation of 25 to 18 feet NAVD88;
- Installation of a protective cap over remaining soil contamination, consisting of new pavement within the alley and surrounding the new building; and
- Implementation of institutional controls to protect and maintain the cap and prevent direct contact with remaining contamination.

---

[1] Farallon Consulting, L.L.C. (Farallon). 2024. *Remedial Investigation/Focused Feasibility Study, Block 38 West Site, 500 through 536 Westlake Avenue North, Seattle, Washington. Agreed Order No. DE 17963, Facility Site Identification No. 62773, Cleanup Site Identification No. 15008.* Prepared for City Investors IX LLC. December 20.

[2] Washington State Department of Ecology. 2024. *Cleanup Action Plan, Block 38 West Site, 500 through 536 Westlake Avenue North, Seattle, Washington. Agreed Order No. DE 17963, Facility Site Identification No. 62773, Cleanup Site Identification No. 15008*. December 20.

The majority of the cleanup action was performed concurrent with redevelopment of the Block 38 West Property between 2019 and 2021. Implementation of institutional controls and long-term compliance monitoring are all that remain.

CAP MONITORING

To ensure the integrity of the cleanup action, periodic monitoring of the asphalt and/or concrete pavement overlying areas of remaining soil contamination in the alley and in the Westlake Avenue North right-of-way near the northwest corner of the Block 38 West Property will be conducted for an initial period of 5 years, to be re-evaluated at the 5-year review conducted by Ecology. This section summarizes the periodic monitoring activities. The areas of remaining soil contamination subject to periodic monitoring of the overlying asphalt and/or concrete pavement cap are depicted on Figures 2 and 3.

MONITORING FREQUENCY

Monitoring will be conducted annually for at least 5 years, beginning immediately after recording of the environmental covenant, until the first 5-year periodic review by Ecology, which is anticipated to be in 2030.

REPORTING

A 5-Year Periodic Monitoring Report will be submitted to Ecology prior to the 5-year periodic review. Following the 5-year periodic review, periodic monitoring will continue annually unless written approval of a reduction in frequency is received from Ecology. Inspections will be conducted by an Operations and Maintenance Professional (O&M Professional) under the direction of the Facility Manager or Owner's Consultant.

INSPECTION PROCEDURES

The inspection will consist of a walking survey of the exterior portion of the Block 38 West Site and within the alley separating Block 38 West and Block 38 East. The inspection will be documented on the Periodic Monitoring Form (Attachment A). If any of the following features are present, that feature will be noted on the Periodic Monitoring Form and in photographs:

- Cracking or ruts;
- Intersecting cracks;
- Spalling of surface;
- Buckling;

- Vegetation in cracks;
- Erosion damage; and
- Excessive or uneven settlement.

The Periodic Monitoring Form may include sketches and photographs to further document the inspection and will include a summary of repairs recommended and implemented, if any.

If the O&M Professional is of the opinion that the cap is not performing as intended, appropriate repairs will be recommended and documented. Upon approval by the Facility Manager or Owner's Consultant, repairs will be implemented by personnel and/or subcontractor(s) qualified to make the repairs as determined by the Facility Manager or Owner's Consultant.

For the asphalt and/or concrete-paved locations surrounding the newly constructed building, areas with numerous intersecting cracks, alligatored areas, or buckling will be regarded as deterioration requiring maintenance. Cracks will be repaired and conform to current Washington State Department of Transportation Standard Specifications 5-03.3. Alligatored areas greater than 100 square feet will be removed and replaced with 3 inches of new asphalt; areas smaller than 100 square feet may be repaired as cracks. Buckling of the asphalt and/or concrete cap with cracks will be regarded as requiring maintenance and that section of asphalt and/or concrete will be removed and replaced.

Inspection observations will be documented on the Periodic Monitoring Form (Attachment A). If a breach in the integrity of the asphalt and/or concrete cap is identified, the Facility Manager or Owner's Consultant will notify Ecology and promptly initiate repairs

CLOSING

Farallon appreciates the opportunity to provide environmental consulting services for this project. Please contact Suzy Stumpf at (425) 295-0800 if you have questions or need additional information.

Sincerely,

Farallon Consulting, L.L.C.

Glenn McKenney, L.G.
Project Geologist

Suzy Stumpf, P.E.
Principal Engineer

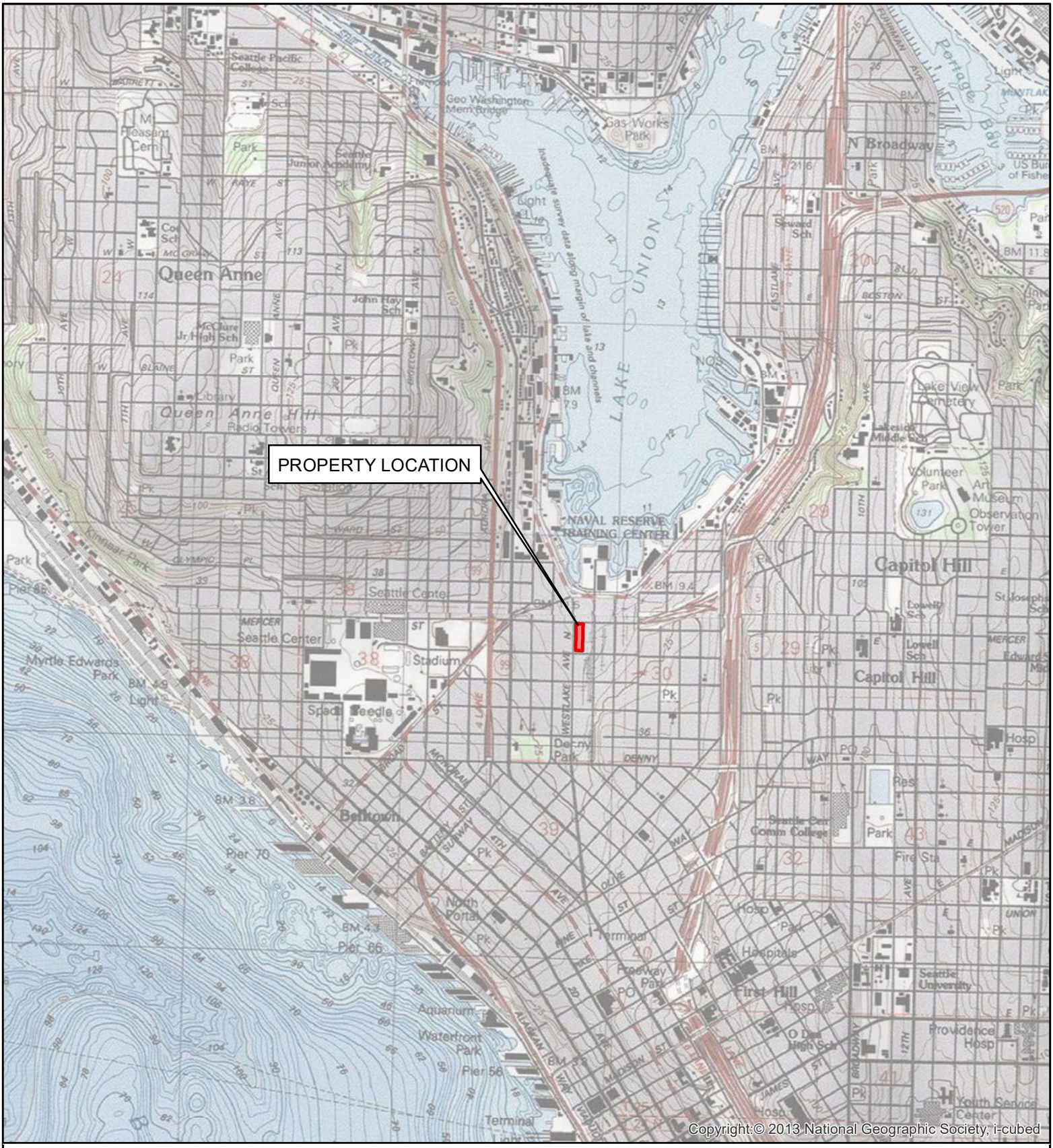
Attachments: Figure 1, *Vicinity Map*
Figure 2, *Post Interim Action Soil Analytical Results for DRO + ORO*
Figure 3, *Post Interim Action Soil Analytical Results for cPAH TEC*
Attachment A, Periodic Monitoring Form

GM/SS:ca

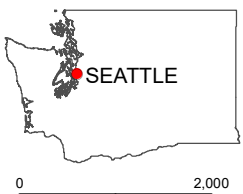
FIGURES

COMPLIANCE MONITORING PLAN
Block 38 West Site
500 through 536 Westlake Avenue North
Seattle, Washington

Farallon PN: 397-019



REFERENCE: 7.5 MINUTE USGS QUADRANGLE SEATTLE NORTH, WASHINGTON, DATED 1983



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Portland | Baker City

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FIGURE 1

VICINITY MAP
BLOCK 38 WEST PROPERTY
SEATTLE, WASHINGTON

FARALLON PN: 397-019

Drawn By: lmurock | Checked By: JW | Date: 7/8/2024 | Disc Reference:

Document Path: Q:\Projects\397 VULCAN\019_Block38\Mapfiles\004_Reporting\Figure-01_SiteVicinity.mxd

DRO+ORO DETECTED AT CONCENTRATIONS EXCEEDING MTCA SCREENING LEVEL AT ELEVATION 20'

WESTLAKE AVENUE NORTH

FORMER 2,200-GALLON BUNKER FUEL OIL UST

FORMER 1,200-GALLON BUNKER FUEL OIL UST

FORMER 1,500-GALLON HEATING OIL UST

BLOCK 38 WEST PROPERTY

BLOCK 38 EAST PROPERTY

ALLEY

REPUBLICAN STREET

MERCER STREET

FMW-160 20.0'|48.7 15.0'|<51.4

MW-41 (1991) 19.5'|<5 9.5'|<5

MW-95 (2005) 27.0'|48.4 22.0'|<28.6 17.0'|<31.5

M1-WSW 20.0'|420 17.0'|250 15.0'|**2,260** 10.0'|<72

FB-17 17.0'|128 15.0'|1,681 10.0'|<48.3

N1-WSW3 17.0'|77

M1-WSW2 20.0'|<61

L1-WSW 20.0'|180 17.0'|1,450 15.0'|510

N1-WSW 20.0'|1,680 17.0'|**23,800** 15.0'|630

FB-20 20.0'|<56 17.0'|83 15.0'|269

K1-WSW 20.0'|328

L1-WSW2 17.0'|826

FMW-161 20.0'|71.6 15.0'|<48.1

FMW-134 10.4'

FMW-162

TP-14 15.0'

FB-05 -9.5'|<62

FMW-149 -7.3'|<56

B/C-B -6.8'|<57

C/D-B -6.8'|<56

A2-B -5.0'

TP-15 15.0'

FMW-163 20.0'|<46.2 15.0'|<48.3

A2/A3-B -6.8'|<59

FMW-144 20.4'

FB-03 10.8'

FMW-135 -9.4'|<62

UST02-B2 14.0'

M1-B 15.0'

L1-B 15.0'

TP-11 15.0'

TP-2 10.0'

N1-NSW 22.0'|<61 15.0'|580

UST01-B 17.0'

I/J-B -6.8'|<53

J/K-B -6.8'|<55

N1-B 15.0'

N1-ESW 15.0'|1,000

TP-10 15.0'

FMW-145 -7.6'|<57 -10.1'|<61

MW-71 (2005) 25.4'|<27.1 20.4'|<28.0 15.4'|<29.3 10.4'|433

N2-NSW 22.0'|83

TP-13 15.0'

I2-B 10.0'

J2-B 20.0'

K2-B 20.0'

L2-B 10.0'

N2-B 10.0'

TP-18 10.0'

FMW-130 2.2'

FB-04 -8.0'|<59

FMW-147 -7.7'|<61

FB-08 -6.9'|<61

H3-B 15.0'

I3-B 15.0'

K3-B 15.0'

M3-B -6.8'|<58

FTP-3 15.0'

L3-B 15.0'

N3-NSW 20.0'|<61 22.0'|<59

FMW-136 15.1'

TP-16 15.0'

FB-06 22.9'

FMW-148 10.4'

FTP-7 19.5'

FB-07 -8.0'|<60'

TP-17 15.0'

H4-B 20.0'

FMW-146 10.2'

H4-SSW 15.0'

H4-ESW2 20.0'|279

I4-ESW 20.0'|**2,300** 15.0'|160

FB-02 -9.9'|<62

K4-ESW 20.0'|1,250 15.0'|710

K4-B 15.0'

FB-09 -9.4'|<62

FMW-133 15.3'

FB-01 11.3'

M4-B 12.0'

N3-NSW2 22.0'|<60

MW-72 (2005) 25.3'|<27.9 20.3'|<27.7 15.3'|622 10.3'|208.6

N4-NSW 20.0'|<60

FB-12 17.5'|1,300

E/A5-B 17.5'|**2,230**

F/A5-B 17.5'|870

PH-13 20.0'

B-6 (1998) 23.6'

FB-11 17.5'|<120

PH-11A 20.0'

H4-ESW 20.0'|**3,630** 15.0'|<110

I4-A5-B 17.5'|317

FB-13 17.5'|**2,860** 15.0'|1,200

H/A5-B 17.5'|878

FB-14 17.5'|510

J4-ESW 20.0'|**6,400** 15.0'|<160

M4-ESW 20.0'|<61

L4-ESW 15.0'|940

N4-ESW 20.0'|<58

FB-15 17.5'|<56

L/A5-B 22.0'

FB-16 17.5'|1,130

E/A5-ESW 22.5'|1,950 20.0'|1,720 17.5'|1,130

G/A5-ESW 22.5'|1,850 20.0'|**4,190** 17.5'|**7,040**

H/A5-ESW 22.5'|**2,600** 20.0'|**3,160** 17.5'|250

I/A5-ESW 22.5'|632 20.0'|**4,620** 17.5'|**4,400**

P-4 (2002) 21.2'

J/A5-ESW 22.5'|1,930 20.0'|420 17.5'|110

EX-17-W13(2008) 23.0'|<50

L/A5-ESW 25.0'|580 22.5'|231

M/A5-ESW 25.0'|427 22.5'|<55

EX-11-W21(2008) 21.0'|<50

W-3(1993) 10.5'|**8,080**

W-4(1993) 9.5'

EX-18-W9(2008) 19.5'|<50

EX-12-W16.5(2008) 22.0'|<50

MW-73 (2005) 25.1'|<27.7 20.1'|45 15.1'|806 10.1'|<29.9

LEGEND

- SHALLOW WATER-BEARING ZONE MONITORING WELL
- INTERMEDIATE WATER-BEARING ZONE MONITORING WELL / OBSERVATION WELL
- DECOMMISSIONED SHALLOW WATER-BEARING ZONE MONITORING WELL
- DECOMMISSIONED INTERMEDIATE WATER-BEARING ZONE MONITORING WELL
- BORING (FARALLON)
- BORING (GEOENGINEERS)
- EXCAVATION SAMPLE (GEOENGINEERS)
- POTHOLE (FARALLON)
- UST SAMPLE LOCATION (FARALLON)
- EXCAVATION SAMPLE LOCATION (FARALLON)
- TEST PIT (FARALLON)

- DENOTES SAMPLE LOCATION AND ELEVATION IN FEET NAVD88 WHERE DRO+ORO RESULTS ARE LESS THAN THE PROPOSED CLEANUP LEVEL
- ESTIMATED EXTENT OF SOIL EXCEEDING THE PROPOSED CLEAUNUP LEVEL REMAINING IN PLACE POST INTERIM ACTIONS OR INACCESSIBLE DUE TO EXISTING UTILITY BANK
- ESTIMATED EXTENT OF SOIL EXCEEDING THE SCREENING LEVEL THAT WAS EXCAVATED AND REMOVED BY INTERIM ACTIONS
- MECHANICAL EQUIPMENT AREA DECOMMISSIONED AND FILLED WITH CDF
- PROPERTY BOUNDARY
- FORMER UNDERGROUND STORAGE TANKS (USTs)
- KING COUNTY PARCEL BOUNDARY

NOTES:
DATA SHOWN ARE FOR SAMPLES COLLECTED BETWEEN 2014 THROUGH 2023 UNLESS OTHERWISE NOTED.
DATA IS ONLY SHOWN FOR PERFORMANCE AND COMPLIANCE SAMPLES THAT REMAIN IN PLACE. NO SOIL DATA STRINGS ARE SHOWN FOR SAMPLES THAT WERE REMOVED.
FOR SOIL SAMPLES:
ELEVATION IN FEET NAVD88 | DRO+ORO
ANALYTICAL RESULTS IN MILLIGRAMS PER KILOGRAM (mg/kg)

BOLD = DENOTES CONCENTRATIONS THAT EXCEED THE SOIL PROPOSED CLEANUP LEVEL OF 2,000 mg/kg
< = DENOTES ANALYTE NOT DETECTED AT OR EXCEEDING THE REPORTING LIMIT LISTED
CDF = CONTROLLED DENSITY FILL
DRO = TOTAL PETROLEUM HYDROCARBONS (TPH) AS DIESEL-RANGE ORGANICS
ORO = TPH AS OIL-RANGE ORGANICS
MTCA = WASHINGTON STATE MODEL TOXICS CONTROL ACT CLEANUP REGULATION
NAVD88 = NORTH AMERICAN VERTICAL DATUM OF 1988

ALL LOCATIONS ARE APPROXIMATE.
FIGURES WERE PRODUCED IN COLOR. GRAYSCALE COPIES MAY NOT REPRODUCE ALL ORIGINAL INFORMATION.

N

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SCALE IN FEET

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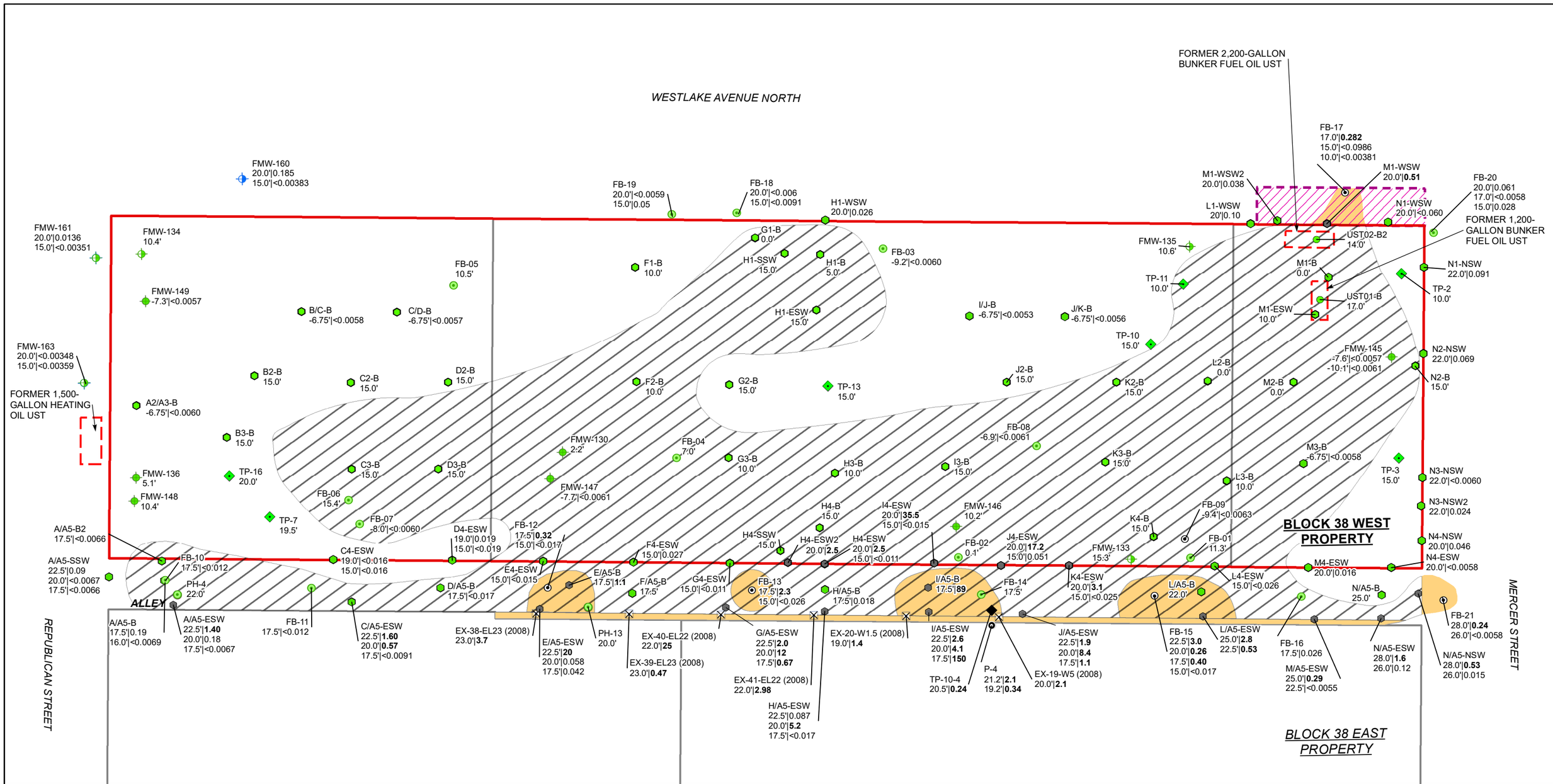
FIGURE 2
POST INTERIM ACTION SOIL ANALYTICAL RESULTS FOR DRO + ORO
BLOCK 38 WEST SITE
SEATTLE, WASHINGTON
FARALLON PN: 397-019

Drawn By: chartman | Checked By: SS | Date: 12/30/2024 | Disc Reference:
Document Path: Q:\Projects\397 VULCAN\019_Block38\Mapfiles\17H_DCAP\Figure-02_PIA_Soil-DRO+ORO.mxd



LEGEND

- SHALLOW WATER-BEARING ZONE MONITORING WELL
- DECOMMISSIONED SHALLOW WATER-BEARING ZONE MONITORING WELL
- DECOMMISSIONED INTERMEDIATE WATER-BEARING ZONE MONITORING WELL
- BORING (FARALLON)
- BORING (GEOENGINEERS)
- EXCAVATION SAMPLE (GEOENGINEERS)
- TEST PIT (GEOENGINEERS)
- POTHOLE (FARALLON)
- UST SAMPLE LOCATION (FARALLON)
- EXCAVATION SAMPLE LOCATION (FARALLON)
- TEST PIT (FARALLON)

- DENOTES SAMPLE LOCATION AND ELEVATION IN FEET NAVD88 WHERE cPAHs RESULTS ARE LESS THAN THE PROPOSED CLEANUP LEVEL
- ESTIMATED EXTENT OF SOIL EXCEEDING THE PROPOSED CLEANUP LEVEL REMAINING IN PLACE POST INTERIM ACTIONS OR INACCESSIBLE DUE TO EXISTING UTILITY BANK
- ESTIMATED EXTENT OF SOIL EXCEEDING THE SCREENING LEVEL THAT WAS EXCAVATED AND REMOVED BY INTERIM ACTIONS
- MECHANICAL EQUIPMENT AREA DECOMMISSIONED AND FILLED WITH CDF
- PROPERTY BOUNDARY
- FORMER UNDERGROUND STORAGE TANKS (USTs)
- KING COUNTY PARCEL BOUNDARY

NOTES:
DATA SHOWN ARE FOR SAMPLES COLLECTED BETWEEN 2014 THROUGH 2023 UNLESS OTHERWISE NOTED.
DATA IS ONLY SHOWN FOR PERFORMANCE AND COMPLIANCE SAMPLES THAT REMAIN IN PLACE. NO SOIL DATA STRINGS ARE SHOWN FOR SAMPLES THAT WERE REMOVED.

FOR SOIL SAMPLES:
DEPTH AND CONCENTRATIONS REPORTED AS:
ELEVATION IN FEET NAVD88 | cPAH TEC
ANALYTICAL RESULTS IN MILLIGRAMS PER KILOGRAM (mg/kg)

BOLD = DENOTES ELEVATION AND CONCENTRATIONS THAT EXCEED THE PROPOSED CLEANUP LEVEL OF 0.19 mg/kg
< = DENOTES ANALYTE NOT DETECTED AT OR EXCEEDING THE REPORTING LIMIT LISTED FOR TOTAL TOXIC EQUIVALENT CONCENTRATION OF BENZO(A)PYRENE (mg/kg)
CDF = CONTROLLED DENSITY FILL
cPAHs = CARCINOGENIC POLYCYCLIC AROMATIC HYDROCARBONS
TEC = TOXIC EQUIVALENT CONCENTRATION OF BENZO(A)PYRENE FOR cPAH MIXTURE
MTCA = WASHINGTON STATE MODEL TOXICS CONTROL ACT CLEANUP REGULATION
NAVD88 = NORTH AMERICAN VERTICAL DATUM OF 1988

N
0 30
SCALE IN FEET

ALL LOCATIONS ARE APPROXIMATE.
FIGURES WERE PRODUCED IN COLOR. GRAYSCALE COPIES MAY NOT REPRODUCE ALL ORIGINAL INFORMATION.

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FIGURE 3
POST INTERIM ACTION SOIL ANALYTICAL RESULTS FOR cPAH TEC BLOCK 38 WEST SITE SEATTLE, WASHINGTON

FARALLON PN: 397-019

Drawn By: chartman
Checked By: SS
Date: 12/30/2024
Disc Reference: Q:\Projects\397 VULCAN\019_Block38\Mapfiles\17H_DCAP\Figure-03_Soil-cPAHs.mxd

ATTACHMENT A
PERIODIC MONITORING FORM

COMPLIANCE MONITORING PLAN
Block 38 West Site
500 through 536 Westlake Avenue North
Seattle, Washington

Farallon PN: 397-019

FARALLON CONSULTING

PERIODIC MONITORING FORM

Preparer's Name: _____ Date/Time Prepared: _____

Site Name: _____ Farallon PN: _____

Site Information

Owner's Consultant/
Facility Manager: _____ Interviewed: ☐ Yes ☐ No

Mailing Address: _____

City: _____ State: _____ Zip Code: _____

Phone No.: _____ Email: _____

Current Land Use (Check appropriate boxes)

☐ Residential ☐ Commercial (office) ☐ Commercial (warehouse) ☐ Strip Mall ☐ Industrial
☐ Other, Describe: _____

Cap Material (Check all appropriate boxes that apply)

☐ Earthen/Soil ☐ Asphalt ☐ Concrete ☐ Other, Describe: _____

Inspection Scope:

To ensure the integrity of the completed remedial actions, periodic monitoring of the asphalt/concrete-paved areas outside the footprint of the newly constructed building and within the alley separating Block 38 West and Block 38 East will be conducted for the foreseeable future. The inspection will consist of a walking survey of the exterior portion of the Property in areas where COCs exceeded the preliminary screening levels for direct contact and/or the protection of terrestrial receptors.

Visual Inspection

Using the attached checklist, inspect the asphalt/concrete-paved areas outside the footprint of the newly constructed building and within the alley separating Block 38 West and Block 38 East. Summarize the results of the visual inspection below:

_____

_____

_____

_____

Site Inspection Sketch

In the area below, provide an appropriate sketch(s) indicating areas inspected and locations of problem areas with recommended repairs. Include additional pages and photographs of areas as appropriate.

General Comments

Provide any other information that may be of importance in understanding the recommendations for annual cap maintenance activities for the Site.

VISUAL INSPECTION CHECKLIST

ASPHALTIC OR CONCRETE CAPPED AREAS

Open cracks and/or ruts	None _____	Repair Needed _____
Differential settlement	None _____	Repair Needed _____
Spalling of surface	None _____	Repair Needed _____
Buckling	None _____	Repair Needed _____
Vegetation in cracks	None _____	Repair Needed _____

Recommended Repair Type/Location:

Appendix B. Vapor Barrier Specifications

DRAGO® WRAP VAPOR INTRUSION BARRIER
SUMMARY OF PERMEATION AND ATTENUATION TESTING

BACKGROUND

From October 2015 through August 2018, Drago Wrap Vapor Intrusion Barrier was subjected to a series of diffusion and sorption tests to obtain the film's diffusion, partitioning, and permeation characteristics. This testing was designed and overseen by an expert in the permeation of volatile organic compounds (VOCs) at a prominent university. The results of this testing, combined with further modeling and analysis, have been used to empirically determine the attenuation efficacy of Drago Wrap against various hydrocarbons and chlorinated solvents. The purpose of this document is to briefly discuss the theory behind diffusive vapor intrusion (VI); summarize and explain the robust testing protocol utilized; and relay the results of the testing and analysis.

CHEMICALS TESTED

Drago Wrap has been tested with regard to permeation of the following chemicals: Trichloroethylene (TCE); Perchloroethylene (PCE); the BTEX family: Benzene, Toluene, Ethylbenzene, Xylene; Dichloromethane; 1,4 Dichlorobenzene; Methyl tert-butyl ether (MTBE) and Naphthalene. This list was chosen based on a survey of the most often found chemicals on brownfield projects.

THEORY

The practical purpose behind obtaining permeation, diffusion, and partitioning coefficients is to apply them to the equations governing mass flux per Fick's laws during design of VI mitigation systems. The following briefly explains the theory and physics behind Fick's First Law.

The diffusion coefficient, D_g (units expressed in [m^2/s]), is the parameter defining the membrane's resistance to the diffusive mass flux [g/m^2s] transported within the membrane as governed by Fick's First Law:

$$f = -D_g \frac{dc_g}{d_z} \qquad \text{(Eq. 1)}$$

due to a concentration gradient dc_g/d_z [g/m^4] in the membrane layer. If the contaminant source is an aqueous solution adjacent to the membrane, the concentration of the contaminant in the membrane can be related to that in the fluid (at equilibrium) by the partitioning coefficient, S_{gf} (where S_{gf} is analogous to a Henry's coefficient). It is given by Equation 2 and depends on the solubility of the contaminant in the material:

$$S_{gf} = \frac{c_g}{c_f} \qquad \text{(Eq. 2)}$$

where c_f is the concentration of the contaminant in the fluid, adjacent to and in equilibrium with, the concentration, c_g, in the membrane.

Thus, the mass flux (f) from the fluid on one side of the membrane to the fluid on the other side (at steady state) is given by:

$$f = S_{gf} D_g \frac{dc_g}{d_z} = \frac{P_g}{l} \Delta C \qquad \text{(Eq. 3)}$$

where l is the thickness of the film/membrane, and ΔC is the difference in concentration between the two sides of the film/membrane at steady state, and the product of the two parameters (S_{gf} D_g) is called the permeation coefficient, P_g (m^2/s):

$$P_g = S_{gf} D_g \quad \text{(Eq. 4)}$$

It can be gleaned from Equations 1-4 that the diffusion coefficient, D_g, is not enough to characterize the film's mass transfer properties for contaminants moving from below the membrane to above it. Diffusive mass transfer through an intact geomembrane is a 3-step process: partitioning into the geomembrane; diffusion through the geomembrane; and partitioning out of the geomembrane. Both D_g and S_{gf} (or simply P_g) must be known in order to effectively utilize Fick's steady state mass transfer equations. Therefore, to allow for full and complete analysis, Drago Wrap's permeation was fully characterized with all three values (permeation, diffusion, and partitioning coefficients) for each chemical tested. Those values are contained in Table 2. It is also imperative to understand the differences in methodologies between lab and site-specific field-testing setups. If such differences exist, the addition of the phase transition coefficient between water and air, Henry's coefficient (H), may also be required in the analysis. A deeper discussion on accounting for these differences is beyond the scope of this summary. Please contact the Stego Industries' Technical Department for additional assistance.

TESTING METHODOLOGY

Two types of tests and subsequent modeling have been employed in characterizing Drago Wrap's relevant characteristics: diffusion testing, sorption testing, and the finite layer modeling and analysis program, POLLUTE v7 (Rowe and Booker 2004).

The diffusion testing setup used stainless steel double-compartment cells (Figure 1), such that source and receptor volumes were separated by the Drago Wrap membrane. The cell was screwed together, with the membrane secured using two Viton rings (Figure 2) to prevent the loss of contaminant at the connection between each compartment and the membrane. Both the source and receptor were filled with double deionized (DDI) water, and a septum was inserted into the sampling ports to prevent losses. A stock solution of contaminants was added to the source compartment to form a dilute aqueous solution with a known concentration. Before assembly, and after disassembly, the mass of the membrane was recorded.

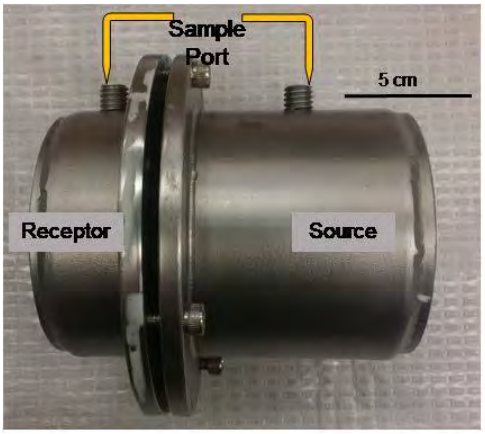


Figure 1: Double Compartment Cell

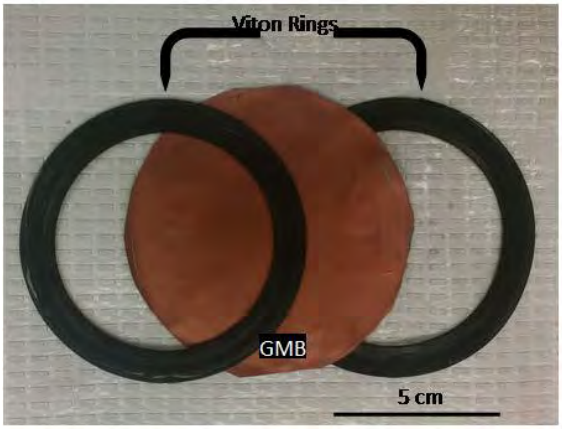


Figure 2: Membrane and Viton Rings

Sorption testing was also performed to directly measure the partitioning coefficients for each chemical. The sorption testing was conducted using 20-ml vials where a specimen was placed in double deionized water. The mass of the specimen was recorded beforehand. The vials were filled with double deionized water so that there was no airspace in the vial. Known masses of contaminants were added and 50 µl samples were taken daily from the vials for analysis and replaced with double deionized water until equilibrium was reached. The chemical analysis of these specimens was performed in the same manner as chemical analysis of the diffusion tests. This analysis is described in Appendix B.

The results from the diffusion and sorption tests were transduced and analyzed using the finite layer modeling and analysis program, POLLUTE v7, to create the results seen in Table 2.

In addition to whole-film testing, the discrete layers that make up Drago Wrap were tested to determine their respective permeation, diffusion and partitioning coefficients. The results obtained from the mathematical modeling of these tests do not necessarily equate to the values obtained from whole-film permeation testing. In other words, the full membrane benefits from a synergistic effect: the whole is greater than the sum of its parts. Due to its unique design, the testing demonstrated a very important feature to Drago Wrap: its ability to degrade chlorinated solvents like TCE. The results show about a 50-day half-life for TCE when the membrane is installed in its intended orientation. The results in Table 2 come from the most conservative approach to analyzing the results and do not consider these synergies.

RESULTS

As described earlier, the values displayed in Table 2 result from a conservative approach to the analysis of data generated from several phases and years of testing, and subsequent numerical modeling. The preferred methodology for obtaining accurate results requires an aqueous-to-aqueous testing scenario. Table 2 depicts these results. There exist scenarios where mass flux design with Drago Wrap requires additional consideration of phase-change analysis beyond what is offered in Table 2. Please contact the Stego Industries' Technical Department for assistance should the need arise.

Table 1 – Descriptions of the Tested Chemicals

Chemical	Abbreviation	Family	Use
Benzene	Btex	Aromatic Hydrocarbon	Gasoline byproduct
Toluene	bTex	Aromatic Hydrocarbon	Gasoline byproduct
Ethylbenzene	btEx	Aromatic Hydrocarbon	Gasoline byproduct
M&P-Xylenes	bteX	Aromatic Hydrocarbon	Gasoline byproduct
O-Xylene	bteX	Aromatic Hydrocarbon	Gasoline byproduct
Trichloroethylene	TCE	Chlorinated Hydrocarbon	Dry Cleaning and Solvent
Tetrachloroethylene	PCE	Chlorinated Hydrocarbon	Dry Cleaning and Solvent
Methyl tert-butyl ether	MTBE	Oxygenate	Octane-increasing additive to fuel
Dichloromethane	DCM	Chlorinated Hydrocarbon	Paint Stripper, Decaffeinate, Aerosol propellant
Naphthalene	Naphthalene	Polycyclic Aromatic Hydrocarbon	Fumigant, Pyrotechnics, Wetting Agent
1,4-Dichlorobenzne	1,4-DCB	Chlorinated Hydrocarbon	Pesticide, Disinfectant, Deodorant

Table 2 – Aqueous Coefficients

Chemical	Diffusion, D_g [x 10^{-15} m^2/s]	Partitioning, S_{gf} [-]	Permeation, P_g [x 10^{-13} m^2/s]
Benzene	2.6	171	4.5
Toluene	1.5	339	5.1
Ethylbenzene	0.41	764	3.1
M&P-Xylenes	0.4	743	2.9
O-Xylene	0.4	670	2.7
TCE	3.9	251	9.8
PCE	1.1	610	6.6
MTBE	1	1	0.01
DCM	0.95	475	4.5
Naphthalene	0.014	1710	0.25
1,4-DCB	0.94	760	7.1

CONCLUSION

Drago Wrap has proven to be a superior barrier to standard geomembranes like HDPE (by a factor of about 10 to 200 – See Appendix A) for all contaminants where comparisons could be made to HDPE and has remarkably low values for BTEX, TCE; PCE; MTBE; Naphthalene; DCM; and 1,4 DCB with permeation coefficients of the order of magnitude of 10^{-13} – 10^{-14} m^2/s. In addition, the testing has shown that chlorinated solvents experience degradation while permeating through the membrane with a half-life of 50 days for TCE when the film is correctly oriented relative to the contaminant source.

APPENDIX A – COMPARISON TO HDPE (WHERE AVAILABLE)

	Permeation Coefficients- 20-mil Drago Wrap			Permeation Coefficients – 80-mil HDPE[1]			
	D_g (m^2/s)	S_{gf} (-)	P_g (m^2/s)	D_g (m^2/s)	S_{gf} (-)	P_g (m^2/s)	Ratio (P_{gDrago}/P_{gHDPE})
Benzene	$2.6x10^{-15}$	171	$4.5x10^{-13}$	$3.5x10^{-13}$	30	$1.05 x10^{-11}$	23
Toluene	$1.5x10^{-15}$	339	$5.1x10^{-13}$	$3.0 x10^{-13}$	100	$3.0 x10^{-11}$	60
Ethylbenzene	$4.1x10^{-16}$	764	$3.0x10^{-13}$	$1.8 x10^{-13}$	285	$5.1 x10^{-11}$	170
m&p-Xylenes	$4.0x10^{-16}$	743	$2.9x10^{-13}$	$1.7 x10^{-13}$	347	$5.9 x10^{-11}$	200
o-Xylene	$4.0x10^{-16}$	670	$2.7x10^{-13}$	$1.5 x10^{-13}$	240	$3.6 x10^{-11}$	130
TCE	$3.9x10^{-15}$	251	$9.8x10^{-13}$	$4.0 x10^{-13}$	85	$3.4 x10^{-11}$	35
PCE	$1.1x10^{-15}$	610	$6.6x10^{-13}$	-	-	-	-
MTBE	$1.0x10^{-15}$	1	$1.0x10^{-15}$	-	-	-	-
DCM	$9.5x10^{-16}$	475	$4.5x10^{-13}$	$6.5 x10^{-13}$	6	$3.9 x10^{-12}$	9
Naphthalene	$1.4x10^{-17}$	1710	$2.5x10^{-14}$	-	-	-	-
1,4-DCB	$9.4 x10^{-16}$	760	$7.1x10^{-13}$	-	-	-	-

[1]Sangam & Rowe (2001)

APPENDIX B– CHEMICAL ANALYSIS

The cells were sampled at regular time intervals. During each sampling event, 10 ul to 100 ul was removed from the cell, and that volume was replaced with DDI water so there was no airspace in the cell.

The samples were added to a vial containing 0.4 ml of methanol, 0.01 ml internal standard, and water was added so the total fluid volume in the vial was 1.6 ml. A Solid Phase Micro Extraction (SPME) fiber was inserted into vial headspace and the volatile compounds sorbed onto the fiber. This fiber was analyzed using gas chromatography (GC), and results compared to a certified laboratory standard calibration curve for the contaminant in question. Two types of detectors were used (depending on the cell in question); namely, a mass selective detector and a flame ionization detector. A quality assurance certified lab standard (from a different source to the calibration standards) was assessed during each sampling event.

All laboratory testing was conducted in a Canadian Association for Laboratory Accreditation (CALA) lab and followed CALA methods. This means that rigorous quality assurance practices were followed during chemical analysis. CALA frequently reviews the methods used and the accreditation is renewed every two years.

REFERENCES

Rowe, R. K., and Booker, J. R. (2004). "POLLUTE V.7 - 1D Pollutant Migration through a Non-homogenous Soil." GAEA Environmental Engineering Ltd.

Sangam, H. P., and Rowe, R. K. (2001). "Migration of dilute aqueous organic pollutants through HDPE geomembranes." Geotextiles and Geomembranes, 19(6), 329–357.

DRAGO® WRAP VAPOR INTRUSION BARRIER
RESISTANCE TO DEGRADATION – ADDITIONAL CONSIDERATIONS

Drago Wrap Vapor Intrusion Barrier, and the technologies that underlie this game-changing vapor intrusion protection product, has undergone extensive testing to determine its ability to attenuate VOCs and other relevant material properties. These tests exposed Drago Wrap to a host of deleterious chemicals that may exist at or below a project site, including various petroleum distillates, chlorinated solvents, etc. The results of these tests are positive and telling; they show that Drago Wrap is extremely impermeable to a wide range of chemical vapors and, more importantly for our current considerations, maintains such impermeability over the course of years of exposure to these deleterious compounds.

While the results of such testing speak extensively to Drago Wrap's ability to resist degradation in extreme exposure conditions, we wished to pursue multiple exposure scenarios to further increase the confidence project team members should have in Drago Wrap as a critical component of the vapor intrusion systems they utilize on their projects. The following pages detail these measures. The conclusions indicate that there were no significant changes in mass or volume of Drago Wrap when exposed to direct contact with soils contaminated with benzene, toluene, ethylbenzene, xylene (collectively known as BTEX), trichloroethylene (TCE), perchloroethylene (PCE, or tetrachloroethylene), cis-1,2-dichloroehtylne (C-DCE), trans-1,2-dichloroehtylene (T-DCE), and sulfates. Additionally, we tested the post-exposure samples to determine their tensile strength (ASTM E882) and permeance to water vapor (F1249), and we observed that Drago Wrap maintains its ability to meet each corresponding performance threshold for high-performance water vapor barriers: for D882, Drago Wrap remains a Class A Vapor Barrier per ASTM E1745; for F1249, Drago Wrap maintains a permeance well below 0.01 perms.

If additional questions remain regarding any aspect of Drago Wrap, please be sure to contact the Stego Technical Department. We are happy to help and look forward to the opportunity to provide an effective and economical solution to your barrier needs.

Regards,

Dan Marks CSI CDT LEED Green Associate
Technical Director | Stego Industries, LLC
O: (949) 325-2035| F: (949) 325-2062
danmarks@stegoindustries.com

SETUP

To simulate a hydrocarbon contaminated brownfield site, a senior chemist at a research and testing lab prepared contaminated water to contain 1,000 ppb of each benzene, toluene, ethylbenzene, and xylene (BTEX). Two liters of this mixture were placed in a chamber, 49 cm x 23.5 cm wide by 27 cm tall. ASTM C778 standard 20-30 sand was added to the vessel until it was 5 cm above the original water line. At this level, the sand was damp with no free-standing water. Drago Wrap samples were placed on top of the damp sand, and the entire surface of the membrane were weighted down with sand-filled plastic bags to ensure full contact of the Drago Wrap with the damp sand. The test vessel was covered and sealed. After 30 days of exposure under ambient laboratory conditions (21-25°C), the samples were removed for evaluation.

Simply stated:
We took relatively large amounts of often-seen hydrocarbons resulting from fuel spills and old service station sites and put them into a water table just 2 inches below a sample of Drago Wrap. This can be considered an extreme situation in that water tables are not typically that close to the slab and vapor barrier membrane. After a 30-day exposure, the mass and volume changes were analyzed, and we subsequently tested the material for its water vapor permeance rating and tensile strength.

RESULTS

Mass and Volume

The chemist conducted mass and volume measurements before and after exposure. The following comes directly from her report: *"All of the test coupons exhibited slight changes in mass and volume, no matter what their exposure conditions were. Statistical analysis by the two-tailed t-test showed that the changes for the BTEX-exposed coupons were not significantly different from the changes for the control-exposed coupons."*

Conclusion: In other words, Drago Wrap mass and volume were not significantly affected by the BTEX exposure.

Tensile Strength

Samples were sent by the lab to our in-house lab and tested per ASTM E882 in both the machine and transverse directions. After the 30-day extreme BTEX solvent exposure, the results were 50.2 lbf/in and 49.6 lbf/in for machine and transverse directions respectively. These results were not significantly different than the water-exposed control samples (48.7 lbf/in, 48.5 lbf/in) or the unexposed samples (48.5 lbf/in, 46.8 lbf/in). For another point of comparison, consider that to be labeled as Class A per ASTM E1745, new-material tensile need only test at 45 lbf/in.

Conclusion: BTEX exposure has little to no effect on Drago Wrap's physical integrity in below-slab applications.

Water Vapor Permeance

The testing lab then sent exposed and control samples to our in-house lab where they were subsequently tested per ASTM F1249. The results were very positive. The permeance of the sample exposed to the BTEX solution (0.00733 perms) increased minimally compared to the control (0.00614 perms), both staying well below the threshold of 0.01 perms.

Conclusion: BTEX exposure had minimal effect on Drago Wrap's ability to retard water vapor.

SETUP

To simulate a dry-cleaning brownfield site, a senior chemist at a research and testing lab prepared contaminated water to contain 3,600 ppb perchloroethylene (PCE), 12,500 PPB trichloroethylene (TCE), 16,200 PPB CIS-1,2-dichloroethylene (C-DCE), AND 1,700 PPB trans-1,2-dichlorothylene (T-DCE). Two liters of this mixture were placed in a chamber, 49 cm x 23.5 cm wide and 27 cm tall. ASTM C778 standard 20-30 sand was added to the vessel until it was 5 cm above the original water line. At this level, the sand was damp with no free-standing water. Drago Wrap samples were placed on top of the damp sand, and the entire surface of the vapor barrier was weighted down with sand-filled plastic bags to ensure full contact of the Drago Wrap with the damp sand. The test vessel was covered and sealed. After 30 days of exposure under ambient laboratory conditions (21-25°C), the samples were removed for evaluation.

Simply stated:
We took an actual soils report from an old dry cleaning site and recreated the conditions, roughly. In the actual scenario the water table was 20 feet below the vapor barrier. In our setup, we created a contaminated water table just 2 *inches* below Drago Wrap. After a 30-day exposure, the mass and volume changes were analyzed, and we subsequently tested the material for its water vapor permeance rating and tensile strength.

RESULTS

Mass and Volume

The chemist conducted mass and volume measurements before and after exposure. The following comes directly from her report: *"All of the test coupons exhibited slight changes in mass and volume, no matter what their exposure conditions were. Statistical analysis by the two-tailed t-test showed that the changes for the chlorinated solvent-exposed coupons were not significantly different from the changes for the control-exposed coupons."*

Conclusion: Drago Wrap's mass and volume were not significantly affected by the chlorinated solvent exposure.

Tensile Strength

Samples were sent by the lab to our in-house lab and tested per ASTM E882 in both the machine and transverse directions. After the 30-day extreme chlorinated solvent exposure, the results were 51.2 lbf/in and 49.7 lbf/in for machine and transverse directions respectively. These results were not significantly different than the water-exposed control samples (48.7 lbf/in, 48.5 lbf/in) or the unexposed samples (48.5 lbf/in, 46.8 lbf/in). For another point of comparison, consider that to be labeled as Class A per ASTM E1745, new-material tensile need only test at 45 lbf/in.

Conclusion: Chlorinated solvent exposure has little to no effect on Drago Wrap's physical integrity in below-slab applications.

Water Vapor Permeance

The testing lab then sent exposed and control samples to our in-house lab where they were subsequently tested per ASTM F1249. The results were very positive. The permeance of the sample exposed to the BTEX solution (0.00713 perms) increased minimally compared to the control (0.00614 perms), both staying well below the threshold of 0.01 perms.

Conclusion: Chlorinated solvent exposure had minimal effect on Drago Wrap's ability to retard water vapor.

SETUP

To simulate the worst possible sulfate exposure, a senior chemist at a research and testing lab prepared water contaminated with 10,000 PPM of SO4 (sulfate.) This sulfate concentration was chosen because it was rated as "very severe" (the highest or worst classification) by UC Berkeley professors conducting research for the Caltrans Long Life Pavement Rehabilitation Strategy (LLPRS) Program. The Chemist took this worst-case scenario concentration and soaked samples of Drago Wrap in it for 28 days. Upon removal, the samples were analyzed for changes in mass and volume, and subsequently the exposed product was tested to determine its tensile strength and water vapor permeance rate.

RESULTS

Mass & Volume

The chemist conducted mass and volume measurements before and after exposure. The following comes directly from her report: *"All of the test coupons exhibited slight changes in mass and volume, no matter what their exposure conditions were. Statistical analysis by the two-tailed t-test showed that the changes for the sulfate-exposed coupons were not significantly different from the changes for the control-exposed coupons."*

Conclusion: In other words, Drago Wrap's mass and volume were not significantly affected by the sulfate exposure.

Tensile

Samples were sent by the lab to our in-house lab and tested per ASTM E882 in both the machine and transverse directions. After the 28-day extreme sulfate exposure, the results were 49.6 lbf/in and 52.3 lbf/in for machine and transverse directions respectively. These results were not significantly different than the water-exposed control samples (48.7 lbf/in, 50.8 lbf/in) or the unexposed samples (48.5 lbf/in, 46.8 lbf/in). For another point of comparison, consider that to be labeled as Class A per ASTM E1745, new-material tensile need only test at 45 lbf/in.

Conclusion: Sulfate exposure has little to no effect on Drago Wrap's physical integrity in below-slab applications.

Water Vapor Permeance

The testing lab then sent exposed and control samples to our in-house lab where they were subsequently tested per ASTM F1249. The results were very positive. The permeance of the sample exposed to the sulfate solution (0.00734 perms) increased minimally compared to the control (0.00698 perms), both staying well below the threshold of 0.01 perms.

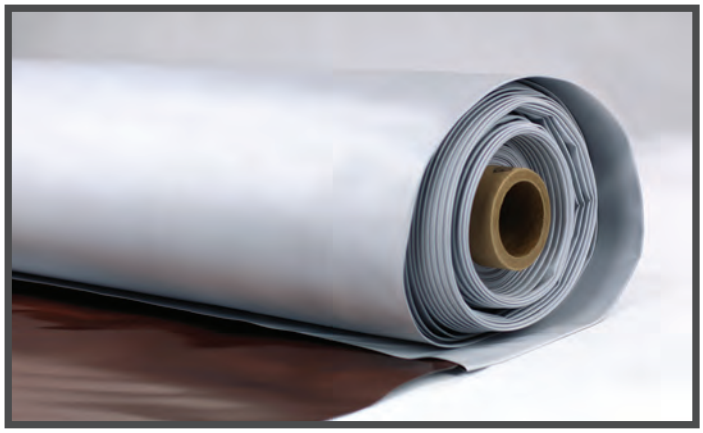
Conclusion: Sulfate exposure had no significant effect on Drago Wrap's ability to retard water vapor.

DRAGO® WRAP VAPOR INTRUSION BARRIER

A STEGO TECHNOLOGY, LLC INNOVATION | VAPOR RETARDERS 07 26 00, 03 30 00 | VERSION: 2/22/2019

1. PRODUCT NAME

DRAGO WRAP VAPOR INTRUSION BARRIER



2. MANUFACTURER

c/o Stego® Industries, LLC*
216 Avenida Fabricante, Suite 101
San Clemente, CA 92672
Sales, Technical Assistance
Ph: (877) 464-7834
Fx: (949) 257-4113
www.stegoindustries.com

3. PRODUCT DESCRIPTION

USES: Drago Wrap is specifically engineered to attenuate volatile organic compounds (VOCs) and serve as a below-slab moisture vapor barrier.

COMPOSITION: Drago Wrap is a multi-layered plastic extrusion that combines uniquely designed materials with only high grade, prime, virgin resins.

ENVIRONMENTAL FACTORS: Drago Wrap can be used in systems for the control of various VOCs including hydrocarbons, chlorinated solvents, radon, methane, soil poisons, and sulfates.

4. TECHNICAL DATA

TABLE 4.1: PHYSICAL PROPERTIES OF DRAGO WRAP VAPOR INTRUSION BARRIER

PROPERTY	TEST	RESULTS
Under Slab Vapor Retarders	ASTM E1745 – Standard Specification for Water Vapor Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs	ASTM E1745 Compliant
Water Vapor Permeance	ASTM F1249 – Test Method for Water Vapor Transmission Rate Through Plastic Film and Sheeting Using a Modulated Infrared Sensor	0.0069 perms
Push-Through Puncture	ASTM D4833 – Test Method for Index Puncture Resistance of Geotextiles, Geomembranes, and Related Products	183.9 Newtons
Tensile Strength	ASTM D882 – Test Method for Tensile Properties of Thin Plastic Sheeting	53.5 lbf/in
Permeance After Conditioning (ASTM E1745 Sections 7.1.2 - 7.1.5)	ASTM E154 Section 8, F1249 – Permeance after wetting, drying, and soaking ASTM E154 Section 11, F1249 – Permeance after heat conditioning ASTM E154 Section 12, F1249 – Permeance after low temperature conditioning ASTM E154 Section 13, F1249 – Permeance after soil organism exposure	0.0073 perms 0.0070 perms 0.0062 perms 0.0081 perms
Hydrocarbon Attenuation Factors	Contact Stego Industries' Technical Department	
Chlorinated Solvent Attenuation Factors	Contact Stego Industries' Technical Department	
Methane Transmission Rate	ASTM D1434 – Test Method for Determining Gas Permeability Characteristics of Plastic Film and Sheeting	7.0 GTR** (mL(STP)/m^2*day)
Radon Diffusion Coefficient	K124/02/95	9.8 x 10^{-14} m^2/second
Thickness		20 mil
Roll Dimensions		14' x 105' or 1,470 ft^2
Roll Weight		150 lb

Note: perm unit = grains/(ft^2*hr*in-Hg) ** GTR = Gas Transmission Rate

Continued...
Note – legal notice on page 2.

DRAGO® WRAP
VAPOR INTRUSION BARRIER

A STEGO TECHNOLOGY, LLC INNOVATION | VAPOR RETARDERS 07 26 00, 03 30 00 | VERSION: 2/22/2019

5. INSTALLATION

UNDER SLAB: Unroll Drago Wrap over a tamped aggregate, sand, or earth base. Overlap all seams a minimum of 12 inches and tape using Drago® Tape. All penetrations must be sealed using a combination of Drago Wrap and Drago Accessories.

Review Drago Wrap's complete installation instructions prior to installation.

6. AVAILABILITY & COST

Drago Wrap is available nationally through our network of building supply distributors. For current cost information, contact your local Drago distributor or Stego Industries' Sales Representative.

7. WARRANTY

Stego Industries, LLC believes to the best of its knowledge, that specifications and recommendations herein are accurate and reliable. However, since site conditions are not within its control, Stego Industries does not guarantee results from the use of the information provided and disclaims all liability from any loss or damage. Stego Technology, LLC does offer a limited warranty on Drago Wrap. Please see www.stegoindustries.com/legal.

8. MAINTENANCE

Store Drago Wrap in a dry and temperate area.

9. TECHNICAL SERVICES

Technical advice, custom CAD drawings, and additional information can be obtained by contacting Stego Industries or by visiting the website.

Contact Number: (877) 464-7834
Website: www.stegoindustries.com

10. FILING SYSTEMS

- www.stegoindustries.com

DRAGO® WRAP LIMITED WARRANTY
ISSUER: STEGO TECHNOLOGY, LLC ("Stego Tech")

This Drago Wrap Limited Warranty ("the Warranty") commences on the Effective Date and applies to Drago Wrap Vapor Intrusion Barrier (for the purposes of this Warranty "Drago Wrap").

Stego Tech recommends installation of Drago Wrap per ASTM E1643, its published installation instructions, and in accordance with all site-specific recommendations of the project's design team. Drago Wrap is specifically engineered to be installed in conjunction with its proprietary accessories, including Drago® Tape, DragoTack™ Tape, Drago® Sealant, and Drago® Sealant Form. Additionally, to avoid puncturing Drago Wrap and comply with ASTM E1643, Stego Tech recommends utilizing the Beast® Screed system of vapor barrier-safe accessories.

WARRANTY TERMS AND CONDITIONS

1 DRAGO WRAP WARRANTY

Stego Tech recognizes the most current version of ASTM E1745 (at the time of the material purchase) as the governing standard specification for under-slab vapor retarders. Subject to the limitations set forth below, for the Life of the Building™ Stego Tech warrants that Drago Wrap:

(a) meets all of the requirements for its designated ASTM E1745 classification;
(b) has been tested in accordance with each of the following ASTM test methods:
  i. ASTM E1745 – *Standard Specification for Water Vapor Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs*
  ii. ASTM F1249 – *Test Method for Water Vapor Transmission Rate Through Plastic Film and Sheeting Using a Modulated Infrared Sensor*
  iii. ASTM D1709 – *Test Methods for Impact Resistance of Plastic Film by Free-Falling Dart Method*
  iv. ASTM D882 – *Test Method for Tensile Properties of Thin Plastic Sheeting*
  v. ASTM E154 – *Sections 8, 11, 12, 13 – Permeance After Conditioning* [1]
  vi. ASTM D1434 – *Standard Test Method for Determining Gas Permeability Characteristics of Plastic Film and Sheeting*
  vii. ASTM D4833 – *Standard Test Method for Index Puncture Resistance of Geomembranes and Related Products*
(c) will be free from Manufacturing Composition Defects;
(d) eligible for input on project-specific installation best practices by a Stego Tech-authorized representative during the preconstruction phase upon reasonable notice, in-person or remotely; and
(e) eligible for Site Review by a Stego Tech-authorized representative, in-person or digitally, for input on installation prior to concrete placement upon reasonable notice.
(f) will meet or exceed its published product literature for **a period not less than two (2) years from the Date of Installation.**

This Warranty is the sole Warranty given by Stego Tech or its Affiliates as to Drago Wrap. All installations or uses of Drago Wrap automatically activate this Warranty. If you do not wish to be bound by the terms of this Warranty, please return the Drago Wrap for a full Refund. Otherwise, all installations will be presumed to have agreed to the terms herein.

2 NOTICE AND CLAIMS

Any Claim pursuant to this Warranty must be Certified and must be made within sixty (60) days of the date discovered or the date it should reasonably have been discovered in order for Stego Tech to evaluate the Claim and replace the Drago Wrap. Claims may be made at any time during the Life of the Building. Such replacement (or at Stego Tech's option, Refund of the verified purchase price) shall be your sole and exclusive remedy for any such Claim.

[1] Standard Test Methods for Water Vapor Retarders Used in Contact with Earth Under Concrete Slabs, on Walls, or as Ground Cover.

Continued...
Note - legal notice on last page.

3 WARRANTY AND CONDITIONS TO COVERAGE

This Warranty excludes any defect or damage caused by: (a) faulty or improper installation of the Drago Wrap, including the failure to comply with published specification and installation recommendations in effect at the time of installation; (b) improper use, storage or site conditions (e.g noncompliance with the terms of the Drago Wrap Material Safety Data Sheet); (c) any below-concrete slab or similar activity, and any other maintenance, repair, alteration or new installation to the Building that occurs after the completion of the original installation that impacts the Drago Wrap; (d) damage caused by non-Stego Tech materials; (e) factors beyond the reasonable control of Stego Tech or its Affiliates, including, but not limited to, natural disasters such as lightning, floods, windstorms, seismic disturbances, hurricanes, tornadoes, or impact of foreign objects or other violent storms or casualty; (f) damage resulting from any form of misuse, abuse or negligence; (g) structural defects or failures in the Building to which the Drago Wrap is installed.

Your sole remedy under this Warranty is, at Stego Tech's option: (a) Refund of the purchase price paid; or (b) replacement of so much of the Drago Wrap as Stego Tech deems necessary.

4 WARRANTY EXCLUSIONS

Except where prohibited by law, this Warranty and the remedies expressly stated herein are the exclusive warranties and remedies provided to you with respect to the Drago Wrap and supersede any prior, contrary or additional representations, whether oral or written. No representative, distributor, dealer or any other person is authorized to make, or makes any warranty, representation, condition or promise with respect to the Drago Wrap. ALL OTHER WARRANTIES ARE DISCLAIMED AND EXCLUDED – WHETHER EXPRESS, IMPLIED, OR STATUTORY – INCLUDING ANY **WARRANTY OF MERCHANTABILITY**, ANY **WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE**, AND ANY IMPLIED WARRANTIES OTHERWISE ARISING FROM COURSE OF DEALING, COURSE OF PERFORMANCE, OR USAGE OF TRADE.

In no event shall Stego Tech or its Affiliates be liable for any incidental, special, indirect, consequential damages, including but not limited to lost income or loss of use. This exclusion applies regardless of whether such damages are sought for breach of warranty, breach of contract, negligence, or strict liability in tort or any other legal or equitable theory.

5 SEVERANCE

If any provision in this Warranty is found to be invalid or unenforceable, then the remainder shall have full force and effect, and the invalid provision shall be modified or partially enforced to the maximum extent permitted by law to effectuate the purpose of the Warranty.

6 DISPUTE RESOLUTION

It is the intention of the parties to use their reasonable best efforts to informally resolve, where possible, any dispute, claim, demand or controversy arising out of the performance of this Warranty by mutual negotiation and cooperation. In the event that the parties are unable to informally resolve a dispute, the Parties agree that such disputes shall be completely and finally settled by submission to arbitration before a single arbitrator under the Judicial Arbitration and Mediation Services (JAMS) Arbitration Rules then in effect. Good faith mediation shall be a condition precedent to initiating arbitration. Unless the parties agree otherwise, the arbitration shall take place in Orange County, California, U.S.A. The award of the arbitrator shall be in writing, shall be final and binding upon the parties, shall not be appealed from or contested in any court and may, in appropriate circumstances, include injunctive relief. Judgment on such award may be entered in any court of appropriate jurisdiction, or application may be made to that court for a judicial acceptance of the award and an order of enforcement, as the party seeking to enforce that award may elect. The prevailing party shall be entitled to recover its attorney fees and costs. This Agreement shall be governed in all respects by the laws of the State of California without regard to the conflict of law provisions thereof. Neither party will consolidate, or seek class treatment for any action unless previously agreed to in writing by all parties.

Continued...
Note - legal notice on last page.

DEFINITIONS

"***Affiliates***" means Stego Tech affiliated entities, partners, joint venturers, suppliers, vendors, subcontractors, representatives, and agents.

"***Applicable Date***" means the Limited Warranty applies to material sold on or after January 1, 2018.

"***Building***" means the building above which Drago Wrap was installed, as verified by Stego Tech.

"***Certified***" means that you have investigated whether a breach of this Warranty occurred and obtained and provided a qualified inspector report confirming evidence exists of such a Defect. Stego Tech reserves the right to independently verify any Claims.

"***Claim***" means a claim for relief under the Warranty.

"***Date of Installation***" means the date Drago Wrap was installed, as verified by Stego Tech.

"***Effective Date***" means date of first sale as verified.

"***Life of the Building***" means the duration of which the building originally installed atop of the Drago Wrap is in good and working condition.

"***Manufacturing Composition Defect***" means any condition of the Drago Wrap that does not meet the material's intended design and is disclosed to Stego Tech during the Life of the Building.

"***Refund***" means Stego Tech providing a monetary return in the amount verified to be the cost of the Drago Wrap subject to the Claim.

"***Site Review***" means a review of representative portions of the Drago Wrap installation (digitally or in-person, when possible, and as determined by Stego Tech authorized representative) prior to concrete placement to help ensure compliance with governing installation standard, ASTM E1643, Stego Tech's installation instructions, and/or, if applicable, the design team's recommendations (e.g. contract documents). Site Reviews are not a full site inspection.

"***Stego Tech***" means Stego Technology, LLC, a California limited liability company with its principal place of business located at 216 Avenida Fabricante, #101, San Clemente, California 92672. Stego Industries, LLC is the exclusive representative of Drago Wrap and accessory products, owned by Stego Technology, LLC, a wholly independent company.

"***Warranty***" means this Drago Wrap Limited Warranty.

DRAGO® WRAP SAFETY DATA SHEET

Revision Date: July 30, 2018 | Date of Issue: June 1, 2017 | Version Number: 2.0

SECTION 1: IDENTIFICATION

Product Identifier
Product Name: Drago Wrap

Intended Use of the Product
Vapor Intrusion Barrier

Company Name, Address, and Telephone of the Responsible Party
Stego Technology, LLC or C/O Stego® Industries, LLC*
216 Avenida Fabricante #101
San Clemente, CA 92672

Emergency Telephone Number
Emergency Number: 1 (800) 424-9300 (24 Hrs.) CHEMTREC
Main Contact Number: (877) 464-7834

SECTION 2: HAZARDS IDENTIFICATION

Classification: This product is not classified as hazardous in accordance with 29 C.F.R. § 1910.1200.
Signal word: None.
Pictogram(s): None.
Hazard statement(s): None.
Precautionary statement(s): None.
Hazards not otherwise classified: Polymer film can burn if exposed to excessive temperatures beyond the normal use of the product.

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

Ingredient	CAS Number	% by WT.
Copper	Proprietary*	<10%*

The selections marked with an '*' are proprietary and considered to be Trade Secrets. This is the reason that they are listed as such, or provided as a range.

SECTION 4: FIRST AID MEASURES

The following first aid recommendations are based on an assumption that appropriate personal and industrial hygiene practices are followed.

Inhalation: Not a respirable film. If exposed to fumes from combustion, move subject to fresh air; if breathing is difficult, give oxygen and get medical attention; if victim has stopped breathing, give artificial respiration and get medical attention.
Eye Contact: Not a probable route of exposure. If exposed to fumes from overheating or from combustion, move subject to fresh air. Flush with plenty of water; if irritation continues, get medical attention.
Skin Contact: No treatment necessary. For thermal burns, cool molten materials with water and get medical attention.
Ingestion: Not a probable route of exposure.

Continued...
Note - legal notice on page 5

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SECTION 5: FIRE-FIGHTING MEASURES

Unusual Hazards: Polymer film can burn if exposed to excessive temperature beyond the normal use of the product.
Extinguishing Agents: Use extinguishing media appropriate for surrounding fire: carbon dioxide, foam, dry chemical, and water fog.
Personal Protective: Equipment unnecessary unless resin is burned, which is not an intended use of the product. If resin is burning, wear self-contained breathing apparatus (pressure-demand MSHAINIOSH approved or equivalent) and full protective gear.

Note: See Section 10 for hazardous combustion and thermal decomposition information.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Protection: None necessary.
Procedures: None necessary.

SECTION 7: HANDLING AND STORAGE

Storage Conditions: Cool, dry storage recommended. Indoor storage recommended.
Avoid storing films in areas containing aromatic hydrocarbons, halogenated compounds, chlorinated compounds, oxidative agents, solvents or other known polyethylene solubilizers, prodegradants, as they may impact the product performance and/or service life.
Handling Procedures: Avoid direct sunlight. Avoiding direct UV exposure of product. Avoid contact with incompatible materials.
Installation Temperature Range: Below 110°F (ambient). Please also see technical and safety data sheets for accessory products installation/application temperature ranges.
In-Service Temperature Range: Below 85°F (soil and slab temperature, beginning 28 days following slab placement). Please also see technical and safety data sheets for accessory products installation/application temperature ranges.
Exposure to Ultraviolet Radiation/Weather Events: The amount of time between when Stego Wrap is installed and when concrete is placed or other complete protection from sunlight and weather events is provided should be minimized while not exceeding 7 days.

Please review the remainder of the SDS and this wrap's technical data sheet for storage and additional information. If any of the conditions cited above pose a problem for the typical installation of Drago Wrap, please contact Stego Industries for additional information and solutions.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

Ingredient	OSHA PEL	ACGIH TWA
Copper	0.1 mg/m^3 (Cu fume)	0.2 mg/m^3 (Cu fume)

Respiratory Protection: None required during handling. Local exhaust to remove fumes from heat sealing and hot wire cutting areas of packaging or bag converting for worker comfort.
Eye Protection: None necessary.
Hand Protection: None necessary.
Engineering Controls (Ventilation): Use local exhaust ventilation when routinely heat sealing this product. Recommended ventilation is with a minimum capture velocity of 100 ft/min. (30 m/min.) at the point of vapor evolution. Refer to the current edition of *Industrial Ventilation: A Manual of Recommended Practice* published by the American Conference of Governmental Industrial Hygienists for information on the design, installation, use, and maintenance of exhaust systems.

Continued...
Note - legal notice on page 5

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES *Continued...*

General Physical Form: Solid plastic film.

INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Plastic film
Color:	Copper and Gray
State:	Solid
Odor Characteristics:	None
Odor Threshold:	None
pH:	Not Applicable
Melting Point/Freezing Point:	Not Applicable
Initial Boiling Point and Boiling Point Range:	Not Applicable
Flash Point:	Not Applicable
Evaporation Rate:	Not Applicable
Flammability (solid, gas):	Not Applicable
Upper flammability:	Not Applicable
Lower Flammability:	Not Applicable
Vapor Pressure:	Not Applicable
Vapor Density:	Not Applicable
Relative Density:	Not Applicable
Solubility:	Not Applicable
Partition Coefficient: n-octanol/water:	Not Applicable
Auto ignition-temperature:	Not Applicable
Decomposition temperature:	>325°C (617°F)
Viscosity:	Not Applicable

SECTION 10: STABILITY AND REACTIVITY

Instability: This material is considered stable. Thermal decomposition is dependent on time and temperature.

HAZARDOUS DECOMPOSITION PRODUCTS

Substance	Condition
Hydrocarbons	Combustion by-product
Carbon Monoxide	Combustion by-product
Carbon Dioxide	Combustion by-product
Copper Fume	Combustion by-product

Hazardous Polymerization: Product will not undergo hazardous polymerization. Product does not decompose at ambient temperatures.
Incompatibility: Lead azide and lead stiphanate commonly used in high explosive detonators react violently with copper.
Reactivity: Reacts and binds with polar gases such as Hydrogen sulfide (H_2S), Ozone (0_3), Carbonyl sulfide (COS), Sulfur Dioxide ($S0_2$), Hydrogen chloride (HCI), Formic Acid, Acetic Acid.
Hazardous Decomposition: Under recommended usage conditions, hazardous decomposition products are not expected. Hazardous decomposition products may occur as a result of oxidation, heating, or reaction with another material.

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SECTION 11: TOXICOLOGICAL INFORMATION

This product, when used under reasonable conditions and in accordance with the directions for use, should not present a health hazard. However, use or processing of the product in a manner not in accordance with the product's directions for use may affect the performance of the product and may present potential health and safety hazards.

Acute Data: No Toxicity data are available for this material.

PRIMARY ROUTES OF EXPOSURE

Skin Contact: Only if burned.
Eye Contact: Only if burned.
Respiratory Contact: Only if burned.

ACUTE EFFECTS OF EXPOSURE

Ingestion: Not a probable route of exposure.
Inhalation: No inhalation risk unless product is heated to point of burning, which in normal applications does not occur. Fumes from combustion are unlikely to be produced during heat shrinking. Local ventilation should be used for comfort. Testing data shows copper/polymer particulate count at approximately 0.007mg/m^3, which is well below OSHA PEL of 0.1 mg/m^{3+}.
Eye Contact: No eye exposure risk during all product usage except during heating if plastic is heated to point of combustion, which does not occur during the intended use of the product. Fumes from combustion, which have a low toxicity, may be produced during hot wire cutting or heat sealing. Fumes are unlikely to be produced during heat shrinking when used as directed.
Skin Contact: Not irritating when used as directed. Hot polymer created during heat shrinking, wire cutting, or heat sealing, may produce thermal bums.
Chronic Effects of Exposure: None known when used as directed.
Carcinogenicity: None known when used as directed.

SECTION 12: ECOLOGICAL INFORMATION

This material is insoluble in water and not expected to present any environmental problems in normal application, however areas containing aromatic hydrocarbons, halogenated compounds, chlorinated compounds, pH extremities, oxidative agents, solvents or other known polyethylene solubilizers, prodegradants, etc. may impact the product performance and/or service life.

SECTION 13: DISPOSAL CONSIDERATIONS

Procedure: Reclaim if feasible. If product can't be reclaimed, no special requirements are necessary; dispose of as ordinary solid waste. Pick up film for good "housekeeping" and to prevent a slipping hazard. Incineration or landfill in compliance with federal, state and local regulations. *Since regulations vary, consult applicable regulations or authorities before disposal.*

SECTION 14: TRANSPORT INFORMATION

US DOT Hazard Class: Not regulated.

Continued...
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SECTION 15: REGULATORY INFORMATION

Workplace Classification: This product is not considered hazardous under the OSHA Hazard Communication Standard (29 C.F.R. § 1910.1200).
CERCLA Information (40 C.F.R. 302.4): Because of the form in which copper is contained within the resin, releases of this material to air, land, or water are not reportable to the National Response Center under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).
Waste Classification: When this product becomes a waste, it is classified as a non-hazardous waste under criteria of the Resource Conservation and Recovery Act (40 C.F.R. 261).

SECTION 16: OTHER INFORMATION

HAZARD RATING
Health: 0 | Flammability: 1 | Reactivity: 0 | Special Hazards: None
Scale: 4 = Extreme | 3 = High | 2 = Moderate | 1 = Slight | 0 = Insignificant
National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material, but also include the toxic properties of combustion or decomposition products that are known to be generated in significant quantities.
Rating are based on internal supplier's guidelines, and they are intended for internal use only.

ABBREVIATIONS
ACGIH = American Conference of Governmental Industrial Hygienists
OSHA = Occupational Safety and Health Administration
TLV = Threshold Limit Value
PEL = Permissible Exposure Limit
TWA = Time Weighted Average
STEL = Short-Term Exposure Limit

Disclaimer: The information contained herein relates only to the specific material identified. Stego Technology, LLC believes that such information is accurate and reliable as of the date of this material safety data sheet, but no representation, guarantee or warranty, expressed or implied, is made as to the accuracy, reliability, or completeness of the information. Stego Technology, LLC urges persons receiving this information to make their own determination as to the information's suitability and completeness for their particular application.

Please read the product statements for all Drago® products by navigating here:
http://www.stegoindustries.com/legal

DRAGO® WRAP
VAPOR INTRUSION BARRIER

INSTALLATION INSTRUCTIONS

Engineered protection to create a ***healthy*** built environment.

DRAGO® WRAP VAPOR INTRUSION BARRIER
INSTALLATION INSTRUCTIONS

IMPORTANT: Please read these installation instructions completely, prior to beginning any Drago Wrap installation. The following installation instructions are generally based on ASTM E1643 – *Standard Practice for Selection, Design, Installation, and Inspection of Water Vapor Retarders Used in Contact with Earth or Granular Fill Under Concrete Slabs*. There are specific instructions in this document that go beyond what is stated in ASTM E1643 to take into account vapor intrusion mitigation. If project specifications call for compliance with ASTM E1643, then be sure to review the specific installation sections outlined in the standard along with the techniques referenced in these instructions.

UNDER-SLAB INSTRUCTIONS:

1. Drago Wrap has been engineered to be installed over a tamped aggregate, sand, or earth base. It is not typically necessary to have a cushion layer or sand base, as Drago Wrap is tough enough to withstand rugged construction environments.

NOTE: Drago Wrap must be installed with the gray facing the subgrade.

Fig.1: UNDER-SLAB INSTALLATION

2. Unroll Drago Wrap over the area where the slab is to be placed. Drago Wrap should completely cover the concrete placement area. All joints/seams should be overlapped a minimum of 12 inches and taped using Drago® Tape. (Fig. 1). If additional protection is needed, install DragoTack™ Tape in between the overlapped seam in combination with Drago Tape on top of the seam.

NOTE: The area of adhesion should be free from dust, dirt, moisture, and frost to allow maximum adhesion of the pressure-sensitive tape. Ensure that all seams are taped with applied pressure to allow for maximum and continuous adhesion of the pressure-sensitive Drago Tape. Adhesives should be installed above 40°F. In temperatures below 40°F, take extra care to remove moisture/frost from the area of adhesion.

3. ASTM E1643 requires sealing the perimeter of the slab. Extend vapor retarder over footings and seal to foundation wall or grade beam at an elevation consistent with the top of the slab or terminate at impediments such as waterstops or dowels. Consult the structural and environmental engineer of record before proceeding.

Fig.2a: SEAL TO PERIMETER WALL

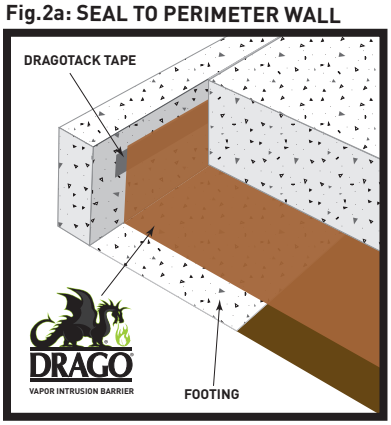
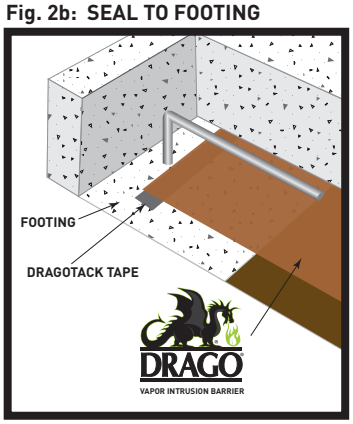


Fig. 2b: SEAL TO FOOTING



SEAL TO PERIMETER WALL OR FOOTING WITH DRAGOTACK TAPE: (Fig. 2a and 2b)

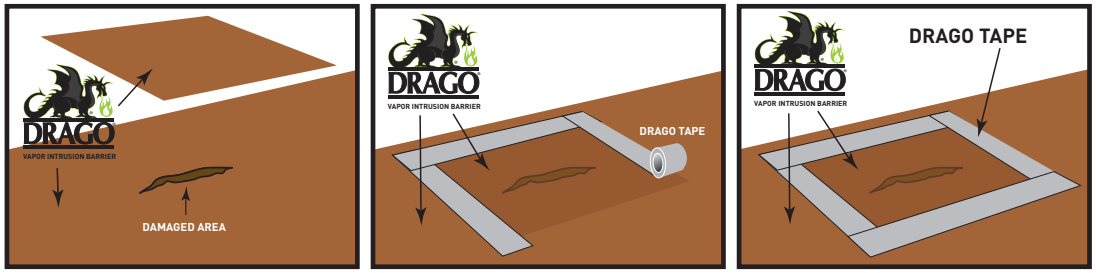
- **a.** Make sure area of adhesion is free of dust, dirt, debris, moisture, and frost to allow maximum adhesion.
- **b.** Remove release liner on one side and stick to desired surface.
- **c.** When ready to apply Drago Wrap, remove the exposed release liner and press firmly against DragoTack Tape to secure.
- **d.** If a mechanical seal is needed, fasten a termination bar over the top of the Drago Wrap inline with the DragoTack Tape.

NOTE: If sealing to the footing, the footing should receive a hand float finish to allow for maximum adhesion.

Continued ...

4. In the event that Drago Wrap is damaged during or after installation, repairs must be made. Cut a piece of Drago Wrap to a size and shape that covers any damage by a minimum of 6 inches in all directions. Clean all adhesion areas of dust, dirt, moisture, and frost. Tape down all edges using Drago Tape. (Fig. 3)

Fig. 3: SEALING DAMAGED AREAS



5. **IMPORTANT: ALL PENETRATIONS MUST BE SEALED.** All pipe, ducting, rebar, and block outs should be sealed using Drago Wrap, Drago Tape, and/or Drago® Sealant and Drago® Sealant Form. (Fig. 4a). Drago accessories should be sealed directly to the penetrations.

Fig. 4a: PIPE PENETRATION SEALING

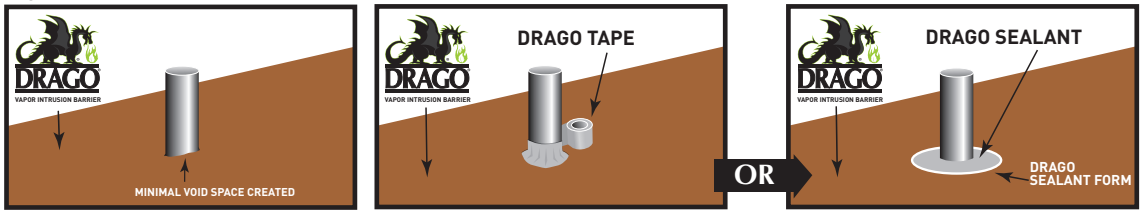
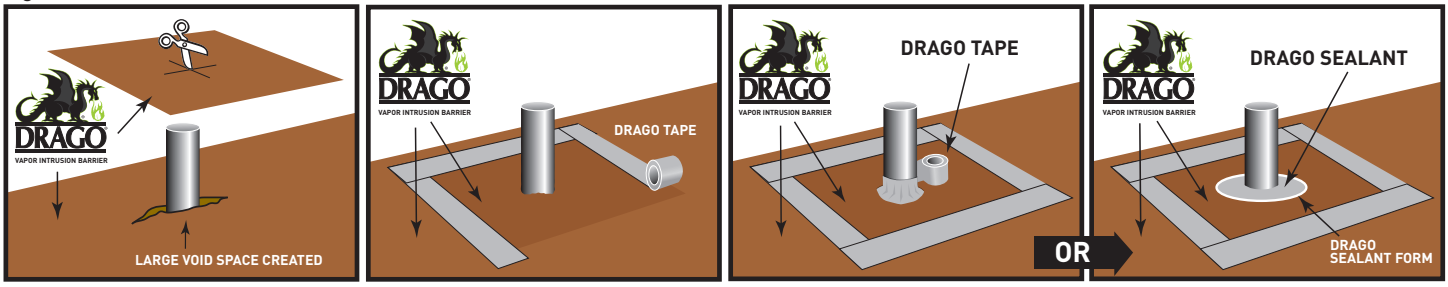


Fig. 4b: DETAIL PATCH FOR PIPE PENETRATION SEALING



DETAIL PATCH FOR PIPE PENETRATION SEALING: (Fig. 4b)

a. Install Drago Wrap around pipe penetrations by slitting/cutting material as needed. Try to minimize void space created.

b. If Drago Wrap is close to pipe and void space is minimized, proceed to step d.

c. If void space exists, then
   i. Cut a detail patch to a size and shape that creates a 6-inch overlap on all edges around the void space at the base of the pipe.
   ii. Cut an "X" slightly smaller than the size of the pipe diameter in the center of the detail patch and slide tightly over pipe.
   iii. Tape the edges of the detail patch using Drago Tape.

d. Seal around the base of the pipe using Drago Tape and/or Drago Sealant and Drago Sealant Form.
   i. If Drago Sealant is used to seal around pipe, make sure Drago Wrap is flush with the base of the penetration prior to pouring Drago Sealant.

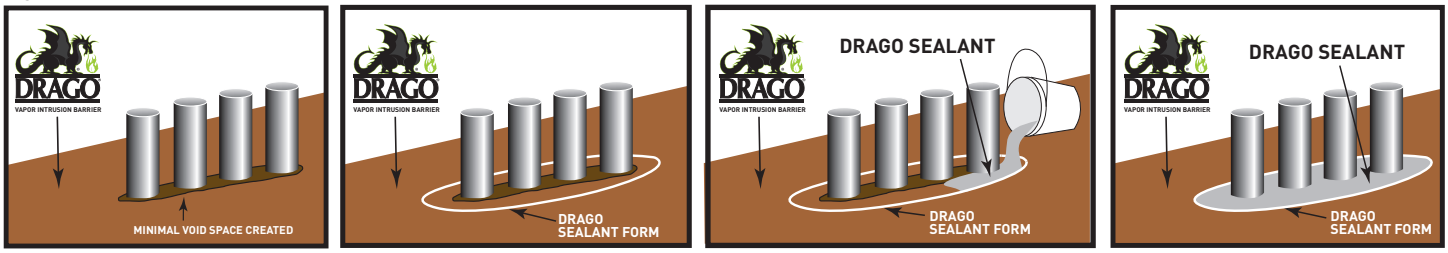
Continued ...

MULTIPLE PIPE PENETRATION SEALING: (Fig. 5)

NOTE: Multiple pipe penetrations in close proximity may be most efficiently sealed using Drago Wrap, Drago Sealant, and Drago Sealant Form for ease of installation.

a. Cut a hole in Drago Wrap such that the membrane fits over and around the base of the pipes as closely as possible, ensuring that it is flush with the base of the penetrations.
b. Install Drago Sealant Form continuously around the entire perimeter of the group of penetrations and at least 1 inch beyond the terminating edge of Drago Wrap.
c. Pour Drago Sealant inside of Drago Sealant Form to create a seal around the penetrations.
d. If the void space between Drago Wrap and the penetrations is not minimized and/or the base course allows for too much drainage of sealant, a second coat of Drago Sealant may need to be poured after the first application has cured.

Fig. 5: MULTIPLE PIPE PENETRATION SEALING

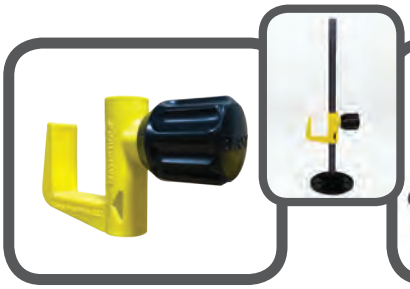


BEAST® CONCRETE ACCESSORIES - VAPOR BARRIER SAFE

Stego Industries* recommends the use of BEAST vapor barrier-safe concrete accessories, to help eliminate the use of non-permanent penetrations in Drago Wrap installations.

BEAST® SCREED

Improve efficiency and maintain concrete floor levelness with the BEAST SCREED SYSTEM!



BEAST® HOOK

Locate it and lock it down!

BEAST® FORM STAKE

The Stego barrier-safe forming system that prevents punctures in the vapor barrier.

IMPORTANT: AN INSTALLATION COMPLETED PER THESE INSTRUCTIONS SHOULD CREATE A MONOLITHIC MEMBRANE BETWEEN ALL INTERIOR INTRUSION PATHWAYS AND VAPOR SOURCES BELOW THE SLAB AS WELL AS AT THE SLAB PERIMETER. THE UNDERLYING SUBBASE SHOULD NOT BE VISIBLE IN ANY AREA WHERE CONCRETE WILL BE PLACED. IF REQUIRED BY THE DESIGN ENGINEER, ADDITIONAL INSTALLATION VALIDATION CAN BE DONE THROUGH SMOKE TESTING.

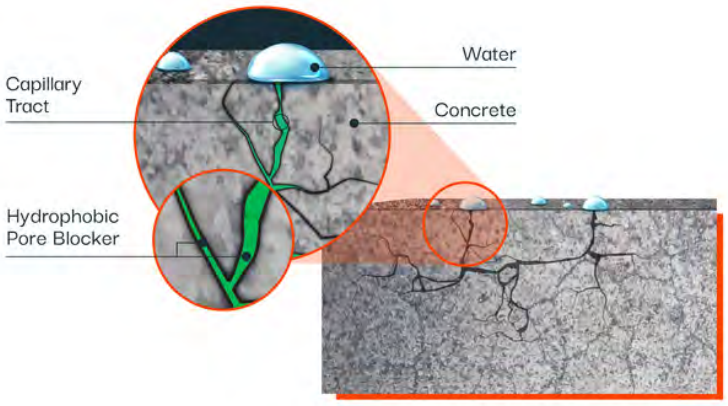
NOTE: While Drago Wrap installation instructions are based on ASTM E1643 - *Standard Practice for Selection, Design, Installation, and Inspection of Water Vapor Retarders Used in Contact with Earth or Granular Fill Under Concrete Slabs,* these instructions are meant to be used as a guide, and do not take into account specific job site situations. Consult local building codes and regulations along with the building owner or owner's representative before proceeding. If you have any questions regarding the above-mentioned installation instructions or products, please call us at 877-464-7834 for technical assistance. While Stego Industries' employees and representatives may provide technical assistance regarding the utility of a specific installation practice or Stego product, they are not authorized to make final design decisions.

Hycrete, Inc.
14 Spielman Road
Fairfield, NJ 07004
201.386.8110

DATA SHEET

Hycrete Endure WP

For Maximum Waterproofing Protection in Concrete Mixes



PRODUCT DESCRIPTION

Hycrete Endure WP (formerly W1000), Hycrete's patented flagship concrete waterproofing admixture, dramatically reduces water ingress through concrete. Ordinary concrete absorbs water and dissolved salts through its network of pores, leading to water infiltration and corrosion of steel reinforcement. Hycrete Endure WP reduces absorption to 1% or lower and forms a protective coating around steel reinforcement. Less water and fewer chlorides are able to penetrate the concrete and the reinforcement has enhanced protection from corrosion. Hycrete Endure WP delivers consistent and reliable performance and is easy to use. Hycrete Endure WP is an environmentally responsible, Cradle to Cradle™ certified product. Using Hycrete Endure WP allows owners and builders to have the comfort of knowing their investment /project remains secure against one of nature's most damaging elements ...water.

USES AND APPLICATIONS

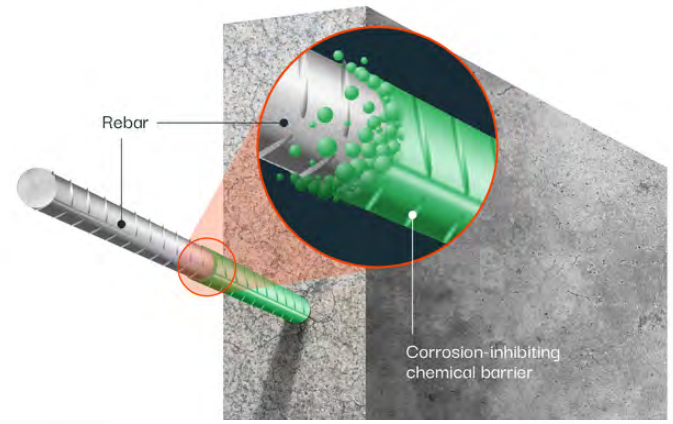
- Included in Hycrete360; see separate data sheet for Hycrete360.
- Extra protection for walls and slabs
- Above and below grade construction
- Water containment reservoirs
- Sewage and water treatment plants
- Secondary containment structures
- Underground vaults
- Tilt-up panel walls
- Pre-cast components
- Architectural water features and fountains
- Bridges, dams and highway infrastructure
- Aquatic centers, marinas and zoos
- Swimming pools

KEY BENEFITS

- Maximum waterproofing protection in concrete: less than 1% water absorption
- Corrosion protection; protective coating formed around steel reinforcement
- Neutral concrete set time performance, even in high fly ash and GGBS (slag) mixes
- Resists hydrostatic pressure
- Can heal cracks up to 0.4mm
- Consistent performance and verifiable dosage
- Easy to use; no additional labor required
- Safe to use

PRODUCT FEATURES

- Cradle to Cradle™ certified by MBDC
- NSF/ANSI 61 - approved for use in potable water tanks
- Compatible with standard admixture metering equipment
- ISO 14021 compliant - recycled content in accordance with Type II environmental labeling; applicable for LEED Materials and Resources Credit
  4.1/4.2 - Recycled Content



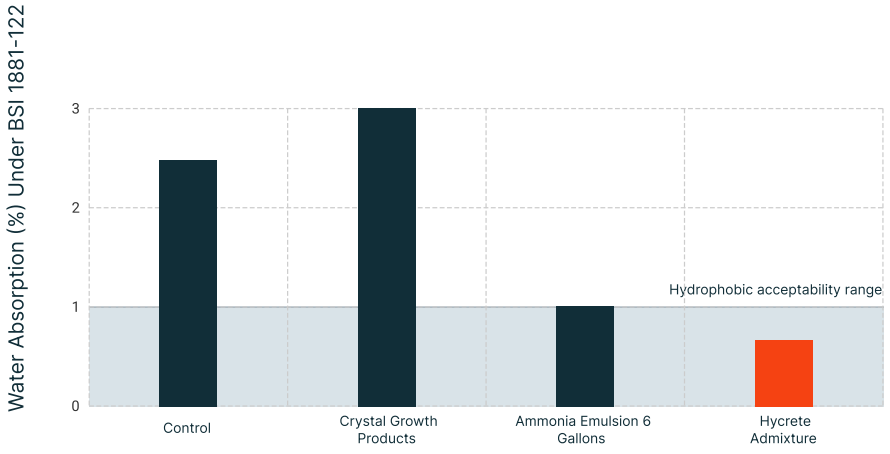
Hycrete, Inc.
14 Spielman Road
Fairfield, NJ 07004
201.386.8110

PRODUCT PERFORMANCE*

Water absorption	BSI 1881-122	Less than 1% absorption
Permeability/hydrostatic pressure	DIN 1048 BS EN 12390-8	Passes DIN 1048; up to 70% reduction in permeability
Crack healing	ASTM C597	Concrete with Hycrete fosters faster and 100% complete healing compared to untreated control
Set time	ASTM C403	Set neutral
Drying shrinkage	ASTM C157	Neutral to the control
Slump	ASTM C143	Neutral
Workability	N/A	Excellent
Effect on concrete color	N/A	None
Compressive strength	ASTM C39	Water/cement ratios may need to be lowered to account for possible, minor strength decreases associated with some materials. Perform trial mixes.
Potable water	NSF/ANSI 61	Approved for use in potable water tanks 50,000 gallons or greater and pipes 84" in diameter and greater
Adhesion	ASTM C1583, ASTM C1072, ASTM D3359	Neutral; no adverse effect on bond with concrete

*All benefits and results are based on actual test results. Results may vary according to concrete mix designs, Hycrete Endure WP dosage, or other factors.

WATERPROOFING PERFORMANCE



South Carolina independent Lab Testing: 40/60 Structural Mix, 0.40 W/C 611
Type I-II Cement Polycarboxylate Superplasticizer

Hycrete, Inc.
14 Spielman Road
Fairfield, NJ 07004
201.386.8110

GENERAL PROPERTIES AND CHARACTERISTICTS

Physical characteristics: Form: Liquid Specific gravity: 1.05 Chloride content: Nil pH: 8.5	**Compatibility:** • Most concrete admixtures • Most Portland cements or replacements including fly ash and GGBS (slag) • Shotcrete mixes and application • Most surface-applied sealants and external membrane protection systems
Recommended dosage: 1.0 U.S. gallon per cubic yard of concrete (5.0 liters per cubic meter)	
Usage guidelines: • Superplasticizer at the manufacturer's recommended rate and appropriate for the placement requirements of the project. • Cementitious Content: The cementitious content of concrete containing Hydrophobic Concrete Admixture will not be less than 550 lbs/yd3 (325 kg/m3) with up to 15% fly ash or 50% slag maximum. • Water-Cement Ratio: 0.42 maximum. Water content of Hydrophobic Concrete Admixture and other admixtures to be included in the water-to cementitious ratio.	
Packaging: 1 gallon bottles; 5 gallon pails; 55 gallon drums; 275 gallon totes; bulk tanker delivery	
Storage and handling: Store above 32°F (0°C) and below 120 °F (48 °C). Slight flocculation can occur over time due to pH reductions. Such flocculation does not affect product performance	

Notes

- For air-entrained concrete mixes speak to your local Hycrete Rep for proper mix design.
- User should perform trial mixes prior to placement and make necessary adjustments to the mix design as needed.
- If considering dosages other than recommended dosage contact Technical Services before use.

Safety

- Hycrete Endure WP (formerly W1000) is a water-based material and should not be swallowed or come into contact with skin or eyes. Wear suitable protective gloves and goggles. If material comes in contact with the skin, wash immediately with soap and water. In case of contact with eyes, rinse immediately with sufficient water and seek medical support. If swallowed, seek immediate medical attention. For further information please consult the Material Safety Data Sheet.

Related Documents

- Hycrete Mixing Instructions
- Hycrete Material Safety Data Sheet – Hycrete Endure WP
- For air-entrained concrete mixes speak to your local Hycrete Rep for proper mix design.

Hycrete, Inc.| 14 Spielman Rd | Fairfield, NJ 07004 USA | Phone: (+1) 201.386.8110 | Fax: (+1) 201.386.8155 | www.hycrete.com

1002002-DEC22

EXHIBIT C
ENVIRONMENTAL (RESTRICTIVE) COVENANT

DRAFT

After Recording Return
Original Signed Covenant to:
Tena Seeds
Toxics Cleanup Program
Department of Ecology
Northwest Regional Office
PO Box 330316
Shoreline, Washington 98133

Environmental Covenant

Grantor: City Investors IX L.L.C.
Grantee: State of Washington, Department of Ecology (hereafter "Ecology")
Brief Legal Description: PTN LOTS 8, 9, 10, 11, 12, AND 13, BLOCK 94, DENNY'S FIRST ADD TO N SEATTLE, VOL 1, LESS ST LESS ALLEY (ALLEY DEDICATION REC NO. 2019121200065)
Tax Parcel Nos.: 1983200170, 1983200180, and 198320019
Cross Reference: Consent Decree No. _____

RECITALS

a. This document is an environmental (restrictive) covenant (hereafter "Covenant") executed pursuant to the Model Toxics Control Act ("MTCA"), chapter 70A.305 RCW, and Uniform Environmental Covenants Act ("UECA"), chapter 64.70 RCW.

b. The Property that is the subject of this Covenant is part or all of a site commonly known as the Block 38 West ("Site") in Seattle, Washington, Ecology Facility Site ID No. 62773, Cleanup Site ID No. 15008. The Property is legally described in Exhibit A, and illustrated in Exhibit B, both of which are attached (hereafter "Property"). If there are differences between these two Exhibits, the legal description in Exhibit A shall prevail.

c. The Property is the subject of remedial action conducted under MTCA. This Covenant is required because residual contamination remains on the Property after completion of remedial actions. Specifically, the following principal contaminants remain on the Property:

Medium	Principal Contaminants Present
Soil	Residual total petroleum hydrocarbons as diesel- and oil-range organics (DRO and ORO); carcinogenic polycyclic aromatic hydrocarbons (cPAHs)

d. It is the purpose of this Covenant to restrict certain activities and uses of the Property to protect human health and the environment and the integrity of remedial actions conducted at the site. Records describing the extent of residual contamination and remedial actions conducted are

available through Ecology. These include the following documents, which can be found online at https://apps.ecology.wa.gov/cleanupsearch/site/15008:

- Remedial Investigation and Focused Feasibility Study - _____, 2024
- Interim Action Report (Property Cleanup) – December 28, 2023
- Alley Interim Action Report – January 5, 2024
- Cleanup Action Plan - _____, 2024

e. This Covenant grants Ecology certain rights under UECA and as specified in this Covenant. As a Holder of this Covenant under UECA, Ecology has an interest in real property; however, this is not an ownership interest which equates to liability under MTCA or the Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. § 9601 *et seq*. The rights of Ecology as an "agency" under UECA, other than its right as a holder, are not an interest in real property.

COVENANT

City Investors IX L.L.C. as Grantor and fee simple owner of the Property hereby grants to the Washington State Department of Ecology, and its successors and assignees, the following covenants. Furthermore, it is the intent of the Grantor that such covenants shall supersede any prior interests the Grantor has in the property and run with the land and be binding on all current and future owners of any portion of, or interest in, the Property.

Section 1. General Restrictions and Requirements.

The following general restrictions and requirements shall apply to the Property:

a. Interference with Remedial Action. The Grantor shall not engage in any activity on the Property that may impact or interfere with the remedial action and any operation, maintenance, inspection or monitoring of that remedial action without prior written approval from Ecology.

b. Protection of Human Health and the Environment. The Grantor shall not engage in any activity on the Property that may threaten continued protection of human health or the environment without prior written approval from Ecology. This includes, but is not limited to, any activity that results in the release of residual contamination that was contained as a part of the remedial action or that exacerbates or creates a new exposure to residual contamination remaining on the Property.

c. Continued Compliance Required. Grantor shall not convey any interest in any portion of the Property without providing for the continued adequate and complete operation, maintenance and monitoring of remedial actions and continued compliance with this Covenant.

d. Leases. Grantor shall restrict any lease for any portion of the Property to uses and activities consistent with this Covenant.

e. Preservation of Reference Monuments. Grantor shall make a good faith effort to preserve any reference monuments and boundary markers used to define the areal extent of coverage of this Covenant. Should a monument or marker be damaged or destroyed, Grantor shall

have it replaced by a licensed professional surveyor within 30 days of discovery of the damage or destruction.

Section 2. Specific Prohibitions and Requirements.

In addition to the general restrictions in Section 1 of this Covenant, the following additional specific restrictions and requirements shall apply to the Property.

a. Containment of Soil/Waste Materials. The remedial action for the Property is based on containing contaminated soil under a cap consisting of asphalt and concrete pavement overlying areas of remaining soil contamination in the alley area east of the Property and in the Westlake Avenue North right-of-way as illustrated in Exhibit C. The primary purpose of this cap is to contain soil impacted with residual contamination to protect human health by preventing direct contact exposure. As such, the following restrictions shall apply within the area illustrated in Exhibit C:

1. Any activity on the Property that will compromise the integrity of the cap including: drilling; digging; piercing the cap with sampling device, post, stake or similar device; grading; excavation; installation of underground utilities; removal of the cap; or, application of loads in excess of the cap load bearing capacity, is prohibited without prior written approval by Ecology. The Grantor shall report to Ecology within forty-eight (48) hours of the discovery of any damage to the cap. Unless an alternative plan has been approved by Ecology in writing, the Grantor shall promptly repair the damage and submit a report documenting this work to Ecology within thirty (30) days of completing the repairs.

The Grantor covenants and agrees that it shall annually, or at another time as approved in writing by Ecology, inspect the cap and report within thirty (30) days of the inspection the condition of the cap and any changes to the cap that would impair its performance.

Section 3. Access.

a. The Grantor shall maintain clear access to all remedial action components necessary to construct, operate, inspect, monitor, and maintain the remedial action.

b. The Grantor freely and voluntarily grants Ecology and its authorized representatives, upon reasonable notice, the right to enter the Property at reasonable times to evaluate the effectiveness of this Covenant and associated remedial actions, and enforce compliance with this Covenant and those actions, including the right to take samples, inspect any remedial actions conducted on the Property, and to inspect related records.

c. No right of access or use by a third party to any portion of the Property is conveyed by this instrument.

Section 4. Notice Requirements.

a. Conveyance of Any Interest. The Grantor, when conveying any interest in any part of the property within the area of the Property illustrated in Exhibits B and C, must:

i. Provide written notice to Ecology of the intended conveyance at least thirty (30) days in advance of the conveyance. This advance notice to Ecology is waived for conveyances of leasehold interests. Waiver of this advance notice to Ecology for these transactions does not constitute waiver of this notice for the entire Property nor a waiver of the requirement in Section 4.a.ii. to include this notice in any document conveying interest in the Property.

ii. Include in the conveying document a notice in substantially the following form, as well as make available, upon request, a complete copy of this Covenant:

NOTICE: THIS PROPERTY IS SUBJECT TO AN ENVIRONMENTAL COVENANT GRANTED TO THE WASHINGTON STATE DEPARTMENT OF ECOLOGY ON _____AND RECORDED WITH THE KING COUNTY AUDITOR UNDER RECORDING NUMBER _____. USES AND ACTIVITIES ON THIS PROPERTY MUST COMPLY WITH THAT COVENANT, A COMPLETE COPY OF WHICH IS AVAILABLE UPON REQUEST.

iii. Unless otherwise agreed to in writing by Ecology, provide Ecology with a complete copy of the executed document within thirty (30) days of the date of execution of such document.

b. Reporting Violations. Should the Grantor become aware of any violation of this Covenant, Grantor shall promptly report such violation in writing to Ecology.

c. Emergencies. For any emergency or significant change in site conditions due to Acts of Nature (for example, flood or fire) resulting in a violation of this Covenant, the Grantor is authorized to respond to such an event in accordance with state and federal law. The Grantor must notify Ecology in writing of the event and response actions planned or taken as soon as practical but no later than within 24 hours of the discovery of the event.

d. Notification procedure. Any required written notice, approval, reporting or other communication shall be personally delivered or sent by first class mail to the following persons. Any change in this contact information shall be submitted in writing to all parties to this Covenant. Upon mutual agreement of the parties to this Covenant, an alternative to personal delivery or first-class mail, such as e-mail or other electronic means, may be used for these communications.

City Investors IX L.L.C. 505 – 5th Avenue South, Suite 900 Seattle, WA 98104 206.342.2025 Attn: General Counsel	Environmental Covenants Coordinator Washington State Department of Ecology Toxics Cleanup Program P.O. Box 47600 Olympia, WA 98504 – 7600 (360) 407-6000 ToxicsCleanupProgramHQ@ecy.wa.gov

Section 5. Modification or Termination.

a. Grantor must provide written notice and obtain approval from Ecology at least sixty (60) days in advance of any proposed activity or use of the Property in a manner that is inconsistent with this Covenant. For any proposal that is inconsistent with this Covenant and permanently modifies an activity or use restriction at the site:

i. Ecology must issue a public notice and provide an opportunity for the public to comment on the proposal; and

ii. If Ecology approves of the proposal, the Covenant must be amended to reflect the change before the activity or use can proceed.

b. If the conditions at the site requiring a Covenant have changed or no longer exist, then the Grantor may submit a request to Ecology that this Covenant be amended or terminated. Any amendment or termination of this Covenant must follow the procedures in MTCA and UECA and any rules promulgated under these chapters.

Section 6. Enforcement and Construction.

a. This Covenant is being freely and voluntarily granted by the Grantor.

b. Within ten (10) days of execution of this Covenant, Grantor shall provide Ecology with an original signed Covenant and proof of recording and a copy of the Covenant and proof of recording to others required by RCW 64.70.070.

c. Ecology shall be entitled to enforce the terms of this Covenant by resort to specific performance or legal process. All remedies available in this Covenant shall be in addition to any and all remedies at law or in equity, including MTCA and UECA. Enforcement of the terms of this Covenant shall be at the discretion of Ecology, and any forbearance, delay or omission to exercise its rights under this Covenant in the event of a breach of any term of this Covenant is not a waiver by Ecology of that term or of any subsequent breach of that term, or any other term in this Covenant, or of any rights of Ecology under this Covenant.

d. The Grantor shall be responsible for all costs associated with implementation of this Covenant. Furthermore, the Grantor, upon request by Ecology, shall be obligated to pay for Ecology's costs to process a request for any modification or termination of this Covenant and any approval required by this Covenant.

e. This Covenant shall be liberally construed to meet the intent of MTCA and UECA.

f. The provisions of this Covenant shall be severable. If any provision in this Covenant or its application to any person or circumstance is held invalid, the remainder of this Covenant or its application to any person or circumstance is not affected and shall continue in full force and effect as though such void provision had not been contained herein.

g. A heading used at the beginning of any section or paragraph or exhibit of this Covenant may be used to aid in the interpretation of that section or paragraph or exhibit but does not override the specific requirements in that section or paragraph.

[no further text; signature pages follow]

The undersigned Grantor warrants it holds the title Property and has authority to execute this Covenant.

EXECUTED this _____ day of _____, 20___.

CITY INVESTORS IX L.L.C.

_____
Ada M. Healey
Vice President
505 5th Avenue South, Suite 900
Seattle, WA 98104
(206) 342-2000

Acknowledgment

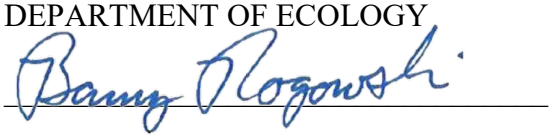
STATE OF _____
COUNTY OF _____

On this _____ day of _____, 20__, I certify that Ada M. Healey personally appeared before me, acknowledged that she is the Vice-President of the limited liability company that executed the within and foregoing instrument, and signed said instrument by free and voluntary act and deed of said limited liability company, for the uses and purposes therein mentioned, and on oath stated that she was authorized to execute said instrument for said limited liability company.

_____
Notary Public in and for the State of Washington
Residing at _____
My appointment expires _____

The Department of Ecology hereby accepts the status as GRANTEE and HOLDER of the above Environmental Covenant.

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY



By: Barry Rogowski

Title: Toxics Cleanup Program Manager

Dated: 1/14/2025

Exhibit A

LEGAL DESCRIPTION

PARCEL A:

LOTS 10, 11, 12 AND 13, BLOCK 94, DAVID T. DENNY'S FIRST ADDITION TO NORTH SEATTLE, ACCORDING TO THE PLAT THEREOF RECORDED IN VOLUME 1 OF PLATS, PAGE 79, IN KING COUNTY, WASHINGTON.

EXCEPT THE NORTH 7.36 FEET OF SAID LOT 13;

AND EXCEPT THE WEST 12 FEET THEREOF HERETOFORE CONDEMNED IN KING COUNTY SUPERIOR COURT CAUSE NO. 47549 FOR WIDENING OF WESTLAKE AVENUE NORTH, AS PROVIDED BY ORDINANCE NO. 12023 OF THE CITY OF SEATTLE.

PARCEL B:

LOTS 8 AND 9, BLOCK 94, DAVID T. DENNY'S FIRST ADDITION TO NORTH SEATTLE, ACCORDING TO THE PLAT THEREOF RECORDED IN VOLUME 1 OF PLATS, PAGE 79, IN KING COUNTY, WASHINGTON;

EXCEPT THE WEST 12 FEET THEREOF HERETOFORE CONDEMNED IN KING COUNTY SUPERIOR COURT CAUSE NO. 47549 FOR WIDENING OF WESTLAKE AVENUE NORTH, AS PROVIDED BY ORDINANCE NO. 12023 OF THE CITY OF SEATTLE.

PARCEL C:

THE NORTH 7.36 FEET OF LOT 13 AND ALL OF LOT 14, BLOCK 94, DAVID T. DENNY'S FIRST ADDITION TO NORTH SEATTLE, ACCORDING TO THE PLAT THEREOF RECORDED IN VOLUME 1 OF PLATS, PAGE 79, IN KING COUNTY, WASHINGTON;

EXCEPT THE NORTH 11.36 FEET OF SAID LOT 14; ALSO

EXCEPT THE WEST 12 FEET OF SAID LOTS 13 AND 14, AS CONDEMNED IN KING COUNTY SUPERIOR COURT CAUSE NO. 47549, FOR WIDENING OF WESTLAKE AVENUE NORTH, AS PROVIDED BY ORDINANCE NO. 12023 OF CITY OF SEATTLE.

Exhibit B

PROPERTY MAP

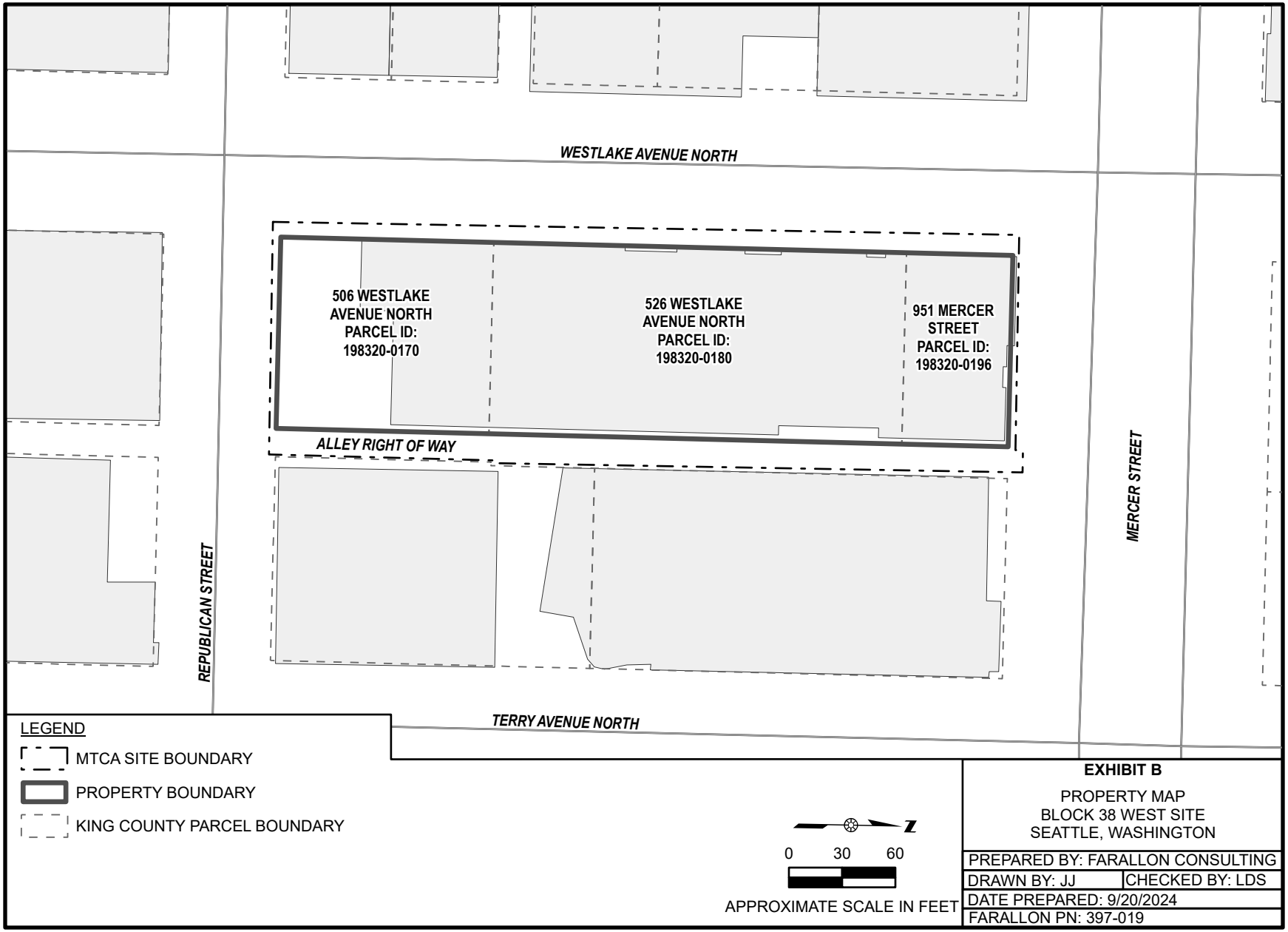


EXHIBIT B

PROPERTY MAP
BLOCK 38 WEST SITE
SEATTLE, WASHINGTON

PREPARED BY: FARALLON CONSULTING	
DRAWN BY: JJ	CHECKED BY: LDS
DATE PREPARED: 9/20/2024	
FARALLON PN: 397-019	

Exhibit C

MAP ILLUSTRATING LOCATION OF RESTRICTIONS

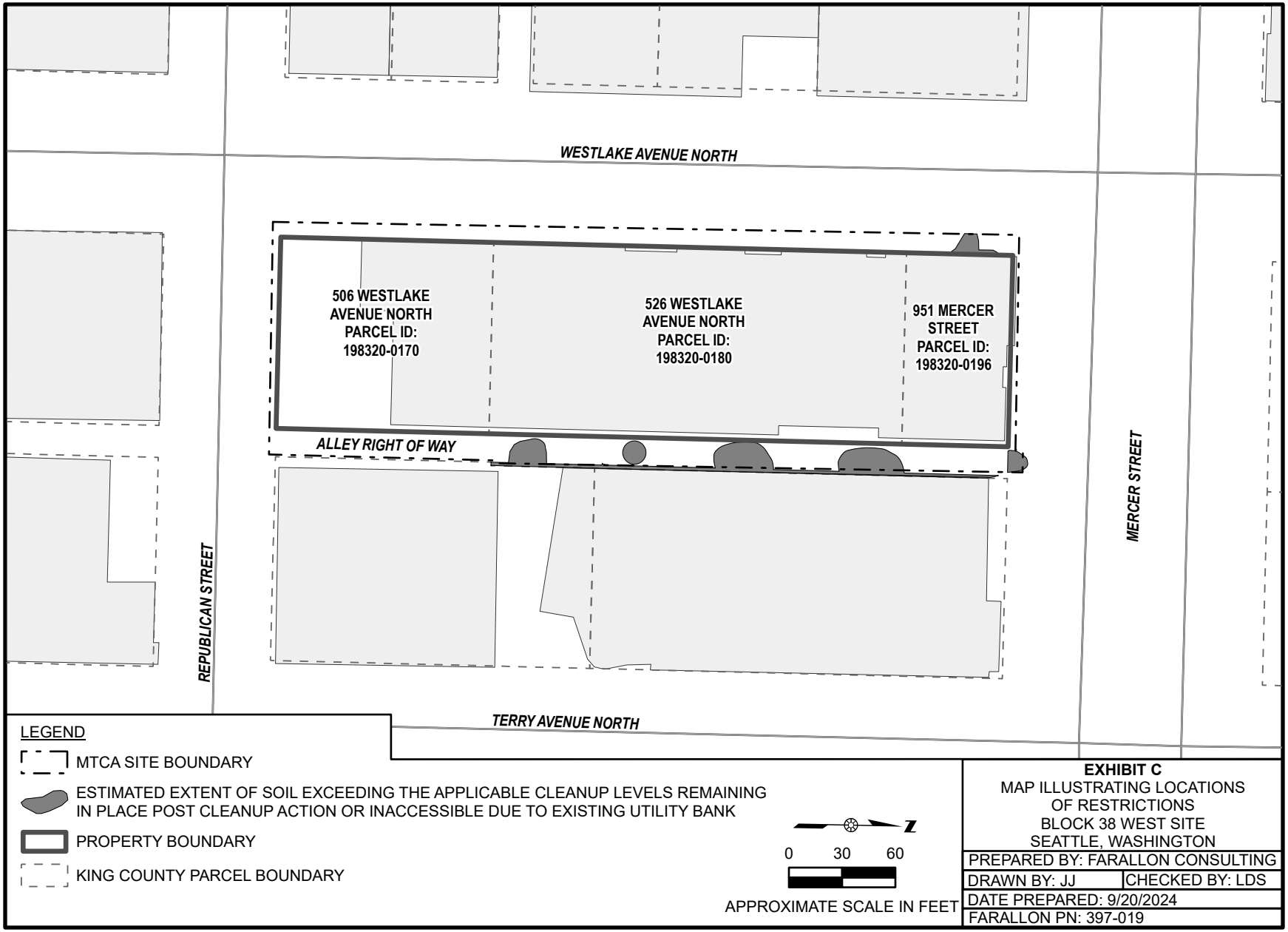


EXHIBIT C
MAP ILLUSTRATING LOCATIONS OF RESTRICTIONS
BLOCK 38 WEST SITE
SEATTLE, WASHINGTON

PREPARED BY: FARALLON CONSULTING	
DRAWN BY: JJ	CHECKED BY: LDS
DATE PREPARED: 9/20/2024	
FARALLON PN: 397-019	

Exhibit D

SUBORDINATION AGREEMENT

KNOW ALL PERSONS, That _____ __, the owner and holder of that certain __[INSTRUMENT – E.G. EASEMENT/ROW/MORTGAGE/ETC.]__ bearing the date the _____ day of __[MONTH]__, __ [YEAR] __, executed by __[NAME OF PERSON THAT GRANTED THE INTEREST BEING SUBORDINATED] __, __[LEGAL STATUS OF ORIGINAL GRANTOR – E.G. LANDOWNER, CORPORATE OFFICER, ETC.]__, and recorded in the office of the County Auditor of __[COUNTY]__ County, State of Washington, on __[DATE]__, under Auditor's File Number _____, does hereby agree that said Instrument shall be subordinate to the interest of the State of Washington, Department of Ecology, under the environmental (restrictive) covenant dated __[DATE]__, executed by __[NAME OF PERSON SIGNING THIS SUBORDINATION AGREEMENT]__, and recorded in __[COUNTY]__ County, Washington under Auditor's File Number _____.

_____ [SIGNATURE] _____

by: _____ [PRINTED NAME] _____

Title: _____

Dated: _____

Acknowledgment

STATE OF _____
COUNTY OF _____

On this _____ day of _____, 20__, I certify that _____ personally appeared before me, acknowledged that **he/she** is the _____ of the corporation that executed the within and foregoing instrument, and signed said instrument by free and voluntary act and deed of said corporation, for the uses and purposes therein mentioned, and on oath stated that **he/she** was authorized to execute said instrument for said corporation.

_____
Notary Public in and for the State of Washington [16]
Residing at _____
My appointment expires _____