STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

In the Matter of Remedial Action by	AGREED ORDER
The City of Tacoma for Sauro's Cleanarama 1401,1407, & 1409 Pacific Avenue Tacoma, WA 98402	No. DE 11080

TO: The City of Tacoma
Attn: Ricardo Noguera
Community and Economic Development Director
747 Market Street, Room 900
Tacoma, WA 98402

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I. INTRODUCTION

The mutual objective of the State of Washington, Department of Ecology (Ecology) and City of Tacoma (Tacoma) under this Agreed Order (Order) is to provide for remedial action at a facility where there has been a release or threatened release of hazardous substances. This Order requires Tacoma to implement the Cleanup Action Plan (CAP) for Sauro's Cleanarama attached as Exhibit E to this Order. Ecology believes the actions required by this Order are in the public interest.

II. JURISDICTION

This Agreed Order is issued pursuant to the Model Toxics Control Act (MTCA), RCW 70.105D.050(1).

III. PARTIES BOUND

This Agreed Order shall apply to and be binding upon the Parties to this Order, their successors and assigns. The undersigned representative of each party hereby certifies that he or she is fully authorized to enter into this Order and to execute and legally bind such party to comply with this Order. Tacoma agrees to undertake all actions required by the terms and conditions of this Order. No change in ownership or corporate status shall alter Tacoma's responsibility under this Order. Tacoma shall provide a copy of this Order to all agents, contractors, and subcontractors retained to perform work required by this Order, and shall ensure that all work undertaken by such agents, contractors, and subcontractors complies with this Order.

IV. DEFINITIONS

Unless otherwise specified herein, the definitions set forth in RCW 70.105D and WAC 173-340 shall control the meanings of the terms in this Order.

A. Site: The Site is referred to as Sauro's Cleanarama and the source property is generally located at 1401, 1407, and 1409 Pacific Avenue, Tacoma, Washington. The Site is defined by the extent of contamination caused by the release of hazardous substances at the Site.

The Site is generally described in the Site Diagram (Exhibit A). The Site constitutes a facility under RCW 70.105D.020(8).

B. Parties: Refers to the State of Washington, Department of Ecology and the City of Tacoma.

C. Potentially Liable Person (PLP): Refers to the City of Tacoma.

D. Agreed Order or Order: Refers to this Order and each of the exhibits to this Order. All exhibits are integral and enforceable parts of this Order. The terms "Agreed Order" or "Order" shall include all exhibits to this Order.

E. Days: Days shall mean calendar days.

V. FINDINGS OF FACT

Ecology makes the following findings of fact, without any express or implied admissions of such facts by Tacoma:

A. The address of the Sauro's property is commonly known as 1401, 1407 and 1409 Pacific Avenue, Tacoma, Washington. The Site's location is generally depicted in the diagram attached to this Agreed Order as Exhibit A. The Site is listed on the Department of Ecology's Hazardous Sites List as "Sauros Cleanerama Tacoma" with the Facility Site ID #4339824. The Site's hazard ranking is 1.

B. From 1961 to 2000, Pete Sauro operated a dry cleaning business, Sauro's Cleanarama, at the Site. Based on Pierce County Assessor-Treasurer's office records, the property includes Parcel Numbers: 2014030010, 2014030020 and 2014030030. Mr. Sauro died in May of 2002, at which time his appointed personal representative took control of these parcels on behalf of the Estate of Pete Sauro ("the Sauro Estate").

C. During its operation, Sauro's Cleanarama used a wastewater sump that was located in the facility's basement. Over time, dry cleaning solvents leaked from the wastewater sump into underlying soil and groundwater. These solvents included perchloroethylene which is a chemical used in the dry cleaning process.

D. Various Remedial Investigation projects have been performed at the Site and are documented in the following reports:

1. *Preliminary Environmental Assessment, Sauro's Cleanarama, Tacoma, Washington,* Kennedy / Jenks Consultants, January 1992.

2. *Subsurface Environmental Assessment, Sauro's Cleanarama, 1401 Pacific Avenue, Tacoma, Washington,* GeoEngineers, Inc., October 2000.

3. *Subsurface Environmental Assessment, Sauro's Cleanarama, 1401 Pacific Avenue, Tacoma, Washington,* GeoEngineers, Inc., March 2001.

4. *Supplemental Site Exploration, TRC Building, 1423 Pacific Avenue, Tacoma, Washington, 98402,* Environmental Associates, October 2001.

5. *Draft report, Subsurface Environmental Assessment, Sauro's Cleanarama, 1401 Pacific Avenue, Tacoma, Washington,* GeoEngineers, Inc., November 2003.

6. *Summary of Additional Subsurface Investigation, Former Sauro's Cleanarama, Tacoma, Washington,* Farralon Consulting LLC, August 2005.

7. *Additional Groundwater Characterization, Former Sauro's Cleanarama Site, Tacoma, Washington,* Robinson Noble Saltbush, Inc., July 2006.

8. *Additional Groundwater Characterization, Former Sauro's Cleanarama Site, Tacoma, Washington,* Robinson Noble Saltbush, Inc., August 2006.

9. *Additional Characterization and Pilot Feasibility Testing Former Sauro's Cleanerama Site, Tacoma, Washington,* Farrallon Consulting, January 11, 2008.

10. *Phase 2 Investigation Report, Sauro Property – 1401, 1407, & 1409 Pacific Avenue, Tacoma, Washington,* Landau Associates, June 2008.

11. *DRAFT Work Plan Interim Cleanup Action 1401, 1407 & 1409 Pacific Avenue, Sauro's Property, Tacoma, Washington.* Prepared by Landau Associates, April 22, 2009.

12. *DRAFT Remedial Investigation Work Plan, Sauro Property, 1401 Pacific Avenue, Tacoma, Washington.* Prepared by Landau Associates, February 23, 2009.

13. *Remedial Investigation Work Plan Addendum, Sauro Site.* Prepared by Landau Associates, March 26, 2009.

14. *Technical Memorandum, Excavation Shoring Considerations, Proposed Environmental Remediation Excavation, Sauros Property, Tacoma, Washington*. Prepared by Landau Associates, April 7, 2009.

15. *Interim Cleanup Action Work Plan, 1401, 1407, & 1409 Pacific Avenue, Sauro's Property.* Prepared by Landau Associates, May 18, 2009.

16. *Soil Vapor Intrusion, Evaluation of Neighboring Properties, Sauro's Cleanarama.* Prepared by Landau Associates, August 19, 2009.

17. *Monitored Natural Attenuation Remedy Evaluation Sampling Work Plan, Sauro's Cleanarama Site.* Prepared by Landau Associates, September 6, 2012.

18. Ecology website. *Guidance on Remediation of Petroleum-Contaminated Ground Water By Natural Attenuation*. Washington State Department of Ecology. Publication No. 05-09-091 (Version 1.0). July 2005. Available at: https://fortress.wa.gov/ecy/publications/publications/0509091.pdf. Accessed January 2014.

19. Ecology website. Washington State Well Log Viewer. https://fortress.wa.gov/ecy/waterresources/map/WCLSWebMap/default.aspx. Washington State Department of Ecology. Accessed February 25,2014.

20. Ecology website. Toxics Cleanup Program Web Reporting. https://fortress.wa.gov/ ecy/tcpwebreporting/report.aspx. Washington State Department of Ecology. Accessed April 25, 2014a.

21. Email message from Marv Coleman, Site Manager, Inspector, Washington State Department of Ecology, to Eric Weber, Landau Associates, and Calvin Taylor, City of Tacoma. Re: *RI FS Comments.* July 9, 2014.

22. *Remedial Investigation/Feasibility Study, Sauro's Cleanarama Site.* Prepared by Landau Associates, August 29. 2014.

23. *Draft Cleanup Action Plan, Former Sauro's Cleanarama Site.* Ecology Review Draft Prepared by Landau Associates, October 3, 2014; Final Draft Prepared by Ecology, November 2014.

In all these studies, perchloroethylene and its chlorinated hydrocarbon degradation products were found in Site soil and groundwater.

E. Perchloroethylene and some of its chlorinated hydrocarbon degradation products are known or suspected carcinogens and can be toxic to both humans and wildlife and their presence at historically observed concentrations pose a threat to human health and the environment.

F. The Sauro Estate previously entered the Site into Ecology's Voluntary Cleanup Program (VCP) to facilitate remedial action at the Site. By letter dated February 16, 2007,

Ecology informed the Sauro Estate that the Site had been withdrawn from the VCP program and that Ecology intended to address remediation at the Site under a formal process.

G. On October 21, 2008, Tacoma entered into a Purchase and Sale Agreement with the Sauro Estate for acquisition of the real property on which the Sauro Cleanarama operated. The transaction closed on January 9, 2009, at which time title to the property transferred from the Sauro Estate to Tacoma, and Tacoma became the owner of the property. According to Tacoma, it acquired the property, and thereby voluntarily assumed liability under RCW 70.105D.040, to expedite the cleanup of hazardous substances on the Site, and to encourage re-development of the former Sauro Cleanarama property so it can be returned to productive use.

H. Subsequently, on March 30, 2009, the City and Washington State Department of Ecology (Ecology) entered into AO No. DE 4283. The AO defines the mutual objectives of Ecology and the City and the associated Site cleanup work needed. Landau Associates has assisted the City in implementing AO requirements including the Remedial Investigation (RI)/Feasibility Study (FS; Landau Associates 2014) and the draft CAP. Ecology issued a Facility Site ID as 4339824 and the Cleanup Site ID as 3310.

VI. ECOLOGY DETERMINATIONS

Ecology makes the following determinations, without any express or implied admissions of such determinations (and underlying facts) by Tacoma.

A. Tacoma is an "owner or operator" as defined in RCW 70.105D.020(17) of a "facility" as defined in RCW 70.105D.020(5).

B. Based upon all factors known to Ecology, a "release" or "threatened release" of "hazardous substance(s)" as defined in RCW 70.105D.020(32) and (13), respectively, has occurred at the Site.

C. Based upon credible evidence, Ecology issued a PLP status letter to Tacoma dated January 12, 2009, pursuant to RCW 70.105D.040, .020(26), and WAC 173-340-500. By letter dated January 20, 2009, Tacoma voluntarily waived its rights to notice and comment and accepted Ecology's determination that Tacoma is a PLP under RCW 70.105D.040. Ecology

simultaneously issued a determination that Tacoma is a PLP under RCW 70.105D.040 and notified Tacoma of this determination by letter dated January 21, 2009.

D. Pursuant to RCW 70.105D.030(1) and -.050(1), Ecology may require PLPs to investigate or conduct other remedial actions with respect to any release or threatened release of hazardous substances from a facility, whenever it believes such action to be in the public interest. Based on the foregoing facts, Ecology believes the remedial actions required by this Order are in the public interest.

VII. WORK TO BE PERFORMED

Based on the Findings of Fact and Ecology Determinations, it is hereby ordered that Tacoma take the following remedial actions at the Site and that these actions be conducted in accordance with WAC 173-340 unless otherwise specifically provided for herein:

Tacoma will implement the Cleanup Action Plan (Exhibit E), and all attachments to the CAP, under the schedule provided for in the CAP. These documents are integral and enforceable parts of this Order.

In the RI/FS, the costs and benefits associated with the evaluated remedial alternatives were compared using a disproportionate cost analysis (DCA). The DCA compared the relative environmental benefits of each alternative against those provided by the most permanent alternative evaluated. The selected cleanup action includes MNA as the primary remedial technology and institutional controls as the secondary remedial technology. The major components of these two remedial technologies are described below:

- **MNA (Groundwater)**: Implementing an MNA remedy to demonstrate that naturally occurring *in situ* attenuation processes are effective in reducing the plume extent.
- **Institutional Controls (Soil and Groundwater)**: Establishing institutional controls in City-controlled areas of the Site and the former Sauro's property, preventing or limiting intrusive activities that would bring workers into contact with contaminated soil and groundwater.

1. Monitored Natural Attenuation

The primary component of the MNA remedy includes monitoring chemical concentrations and natural attenuation parameters in groundwater from existing monitoring wells on an ongoing basis to achieve the following:

- Ensure that human health and the environment continue to be protected
- Evaluate the behavior of the plume (i.e., expanding, contracting, or stabilizing)
- Determine whether natural chemical or biological degradation continues to occur, reducing the contaminant mass and associated concentrations
- Evaluate whether Site cleanup will continue to progress toward cleanup in a reasonable restoration timeframe.

The City conducted quarterly MNA sampling from fall 2012 to fall 2013, yielding 5 quarters of data (presented in the RI/FS). Based on data collected during the 2012 and 2013 quarterly MNA sampling, modify the program for the final remedy by:

- Removing wells MW-1 and RNS-MW7:
  - MW-1 is screened only in the fill and the VOC results have been below CULs since April 2009. MW-2 is adequately representative of the area where MW-1 and MW-2 are located. It is located just upgradient of MW-1, is screened in the fill and just into the Qvi geologic unit, and results for VC are occasionally at or above the CUL; cis-1,2-DCE is the other COC detected, but its concentrations are close to non-detect and well below the CUL.
  - RNS-MW7 was included in the quarterly MNA sampling (not ever part of RI VOC sampling) to see if it may serve as a reasonable background well location. The MNA results from this well have not been that different from some other cross-gradient wells and have not been proven useful. Generally speaking, groundwater in this part of Tacoma was fairly industrial historically, so locating the perfect background well is not feasible. It is proposed that this well no longer be sampled.
- Reducing sample depths at LAI-MW5 and RNS-MW2 to one depth per well:
  - LAI-MW5: VOC results at the two sample depths are nearly identical and both are located within the pre-Fraser geologic unit. The following is proposed: 1) remove the upper sample depth and keep the lower sample depth; and 2) replace the MNA sample depth (which had been the midpoint between the two VOC sampling depths) to be equivalent to the lower VOC sample depth.
  - RNS-MW2: VOC results at the two sample depths are approximately the same. The upper sample depth is within the Qvi geologic unit; whereas, the lower is understood to be within the pre-Fraser geologic unit. The following is proposed: 1) remove the upper

sample depth and keep the lower sample depth; and 2) replace the MNA sample depth (which had been the midpoint between the two VOC sampling depths) to be equivalent to the lower VOC sample depth.

Groundwater sampling will be conducted in general accordance with the *Draft Sampling and Analysis Plan* (SAP), with minor changes as described above and summarized in Table 1. The Draft SAP was prepared by Landau Associates for the RI and documents procedures for groundwater sampling, field documentation, sample handling and documentation, and waste handling (Landau Associates 2013). A site-specific health and safety plan has been developed and is provided in Appendix A.

A. The proposed MNA remedy will consist of conducting groundwater monitoring at nine existing monitoring wells (LAI-MW1 through LAI-MW5, MW-2, MW-13, RNS-MW2, and RNS-MW6), shown on Figure 3 (Exhibit A). Sampling will focus on collection of the Site COCs (the four VOCs), which provide the best documentation of natural attenuation. The MNA remedy will be used to demonstrate that naturally occurring *in situ* attenuation processes are effective in limiting the plume extent to its current extent; that discharge to surface water is not occurring; and that contaminant concentrations are stable or declining. A number of factors provide evidence that natural attenuation processes are effectively limiting plume migration: 1) completion of the 2009 interim soil removal action at the former Sauro's property; 2) existing groundwater monitoring data indicates that the secondary plume has diminished to the former Sauro's property line along Court A; and 3) knowledge of the age of the release (as old as 50 years). Ongoing monitoring will be conducted per U.S. Environmental Protection Agency (EPA) guidance (EPA 1998) and the recommended MNA performance monitoring schedule in Ecology guidance (Ecology website 2005).

B. Year 1: quarterly (this component effectively covered in 2012 through 2013)
Years 2 and 3: semi-annually

Subsequent years (assume years 4 – 30): annually.

Groundwater monitoring results will be compared to groundwater CULs at applicable

performance monitoring locations to evaluate the effectiveness of the MNA remedy and direct future sampling activities.

C. Results from sampling events will be documented in regular status reports, which will be provided as technical memorandums and will include figures, data tables, and laboratory analytical data, as applicable, for the previous sampling event. Technical memorandum status reports will be submitted to Ecology within 60 days of each sampling event.

Upon completion of the cleanup action and follow-up confirmation sampling, a draft remedial action completion report will be prepared for submittal to Ecology documenting the results and performance of the cleanup action, and summarizing performance sampling and monitoring results, and the results of confirmation sampling. If the confirmation sampling results adequately demonstrate that cleanup has successfully remediated groundwater to below the Site CULs, the report will include or be accompanied by a request for a "no further action", in the form of a Satisfaction Letter, determination from Ecology. If evidence of residual contamination above CULs is identified by confirmation sampling, appropriate recommendations will be made for continued MNA sampling or implementation of an alternative remedy. After receipt of comments from Ecology, a final report will be prepared for submittal to Ecology.

QA/QC: Groundwater sampling will be conducted in general accordance with the Draft SAP (Landau Associates 2013), with minor changes as summarized in Table 1 in the CAP. The Draft SAP documents procedures for groundwater sampling, field documentation, sample handling and documentation, and waste handling (Landau Associates 2013).

Samples will be delivered to the laboratory under chain-of-custody procedures in a cooler with ice. Analytical data will be received electronically from the laboratory and will be tabulated using the laboratory electronic deliverable. Following tabulation, data entry will be verified for accuracy and corrections will be made as necessary. The laboratory data will then be evaluated using applicable sections from the EPA Contract Laboratory Program National Functional Guidelines. Appropriate data validation qualifiers will be applied to the data based on this review, and data will be compared to applicable CULs.

Data Submission: Data from MNA sampling will be tabulated and presented in the status reports and the draft remedial action completion report and submitted to Ecology for review. Additionally, all pertinent and applicable data collected during each of the sampling events will

be submitted electronically to Ecology via Ecology's Electronic Information Management (EIM) system online database application as required by WAC 173-340-840 and Ecology Toxics Cleanup Program Policy 840. EIM submittals will be made after each sampling event.

D. All plans or other deliverables submitted by Tacoma for Ecology's review and approval shall, upon Ecology's approval, become integral and enforceable parts of this Order.

E. If the Parties agree on an interim action under Section VI.E, Tacoma shall prepare and submit to Ecology an Interim Action Work Plan, including a scope of work and schedule, by the date determined by Ecology. Ecology will provide public notice and opportunity to comment on the Interim Action Work Plan in accordance with WAC 173-340-600(16). The PLP shall not conduct the interim action until Ecology approves the Interim Action Work Plan. Upon approval by Ecology, the Interim Action Work Plan becomes an integral and enforceable part of this Order, and Tacoma is required to conduct the interim action in accordance with the approved Interim Action Work Plan.

F. If Ecology determines that Tacoma has failed to make sufficient progress or failed to implement the remedial action, in whole or in part, Ecology may, after notice to Tacoma, perform any or all portions of the remedial action or at Ecology's discretion allow Tacoma the opportunity to correct. Tacoma shall reimburse Ecology for the costs of doing such work in accordance with Section VII.A (Remedial Action Costs). Ecology reserves the right to enforce requirements of this Order under Section X (Enforcement).

G. Except where necessary to abate an emergency situation, Tacoma shall not perform any remedial actions at the Site outside those remedial actions required by this Order, unless Ecology concurs, in writing, with such additional remedial actions.

VIII. TERMS AND CONDITIONS

A. Remedial Action Costs

Tacoma shall pay to Ecology costs incurred by Ecology pursuant to this Order 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 70.105D, including remedial actions and Order

preparation, negotiation, oversight, and administration. These costs shall include work performed both prior to and subsequent to the issuance of this Order. 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 subsequent to the signing of this Order, Tacoma 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.

In addition to other available relief, pursuant to RCW 19.16.500, Ecology may utilize a collection agency and/or, pursuant to RCW 70.105D.055, file a lien against real property subject to the remedial actions to recover unreimbursed remedial action costs.

B. Designated Project Coordinators

The project coordinator for Ecology is:

Marv Coleman, Cleanup Project Manager/Inspector
Southwest Regional Office, Department of Ecology
P.O. Box 47775
Olympia, WA 98504
360.407.6259
mcol461@ecy.wa.gov

The project coordinator for Tacoma is:

Calvin Taylor, L.H.G.
City of Tacoma Dept. of Public Works
2201 Portland Ave.
Tacoma, WA 98421
253.593.7711
ctaylor5@cityoftacoma.org

Each project coordinator shall be responsible for overseeing the implementation of this Order. Ecology's project coordinator will be Ecology's designated representative for the Site. To the maximum extent possible, communications between Ecology and Tacoma, and all documents, including reports, approvals, and other correspondence concerning the activities performed pursuant to the terms and conditions of this Order 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 Order.

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.

C. Performance

All geologic and hydrogeologic work performed pursuant to this Order 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, except as otherwise provided for by RCW 18.43 and 18.220.

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

All construction work performed pursuant to this Order shall be under the direct supervision of a professional engineer or a qualified technician under the direct supervision of a professional engineer. The professional engineer must be registered by the State of Washington, except as otherwise provided for by RCW 18.43.130.

Any documents submitted containing geologic, hydrologic, or engineering work shall be under the seal of an appropriately licensed professional as required by RCW 18.43 and 18.220.

Tacoma shall notify Ecology in writing of the identity of any engineer(s) and geologist(s), contractor(s) and subcontractor(s), and others to be used in carrying out the terms of this Order, in advance of their involvement at the Site.

D. Access

Ecology or any Ecology authorized representative shall have access to enter and freely move about all property at the Site that Tacoma 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 Order; reviewing Tacoma's progress in carrying out the terms of this Order; 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 Order; and verifying the data submitted to Ecology by Tacoma. Tacoma shall make all reasonable efforts to secure access rights for those properties within the Site not owned or controlled by Tacoma where remedial activities or investigations will be performed pursuant to this Order. Ecology or any Ecology authorized representative shall give reasonable notice before entering any Site property owned or controlled by Tacoma unless an emergency prevents such notice. All persons 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.

E. Sampling, Data Submittal, and Availability

With respect to the implementation of this Order, Tacoma shall make the results of all sampling, laboratory reports, and/or test results generated by it or on its behalf available to Ecology. Pursuant to WAC 173-340-840(5), all sampling data shall be submitted to Ecology in both printed and electronic formats in accordance with Section VII (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.

If requested by Ecology, Tacoma shall allow Ecology and/or its authorized representative to take split or duplicate samples of any samples collected by Tacoma pursuant to implementation of this Order. Tacoma shall notify Ecology seven (7) days in advance of any sample collection or work activity at the Site. Ecology shall, upon request, allow Tacoma and/or

its authorized representative to take split or duplicate samples of any samples collected by Ecology pursuant to the implementation of this Order, provided that doing so does not interfere with Ecology's sampling. Without limitation on Ecology's rights under Section VIII.E (Access), Ecology shall notify Tacoma prior to any sample collection activity unless an emergency prevents such notice.

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.

F. Public Participation

A Public Participation Plan is required for this Site. Ecology shall review any existing Public Participation Plan to determine its continued appropriateness and whether it requires amendment, or if no plan exists, Ecology shall develop a Public Participation Plan alone or in conjunction with Tacoma.

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

1. If agreed to by Ecology, develop appropriate mailing lists and 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 distribute such fact sheets and prepare and distribute public notices of Ecology's presentations and meetings.

2. Notify Ecology's project coordinator prior to the preparation of all press releases and fact sheets, and before major meetings with the interested public and local governments. Likewise, Ecology shall notify Tacoma prior to the issuance of all press releases and fact sheets, and before major meetings with the interested public and local governments. For all press releases, fact sheets, meetings, and other outreach efforts by Tacoma that do not receive prior Ecology approval, Tacoma shall clearly indicate to its

audience that the press release, fact sheet, meeting, or other outreach effort was not sponsored or endorsed by Ecology.

3. 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.

4. When requested by Ecology, arrange and/or continue information repositories to be located at the following locations:

a. Citizens for a Healthy Bay
917 Pacific Avenue Suite 100
Tacoma, WA 98402

b. Tacoma Public Library – Main Branch
Northwest Room
1102 Tacoma Avenue South
Tacoma, WA 98402

c. Ecology's Southwest Regional Office
300 Desmond Drive
Lacey, WA 98503

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

G. Retention of Records

During the pendency of this Order, and for ten (10) years from the date of completion of work performed pursuant to this Order, Tacoma shall preserve all records, reports, documents, and underlying data in its possession relevant to the implementation of this Order and shall insert a similar record retention requirement into all contracts with project contractors and subcontractors. Upon request of Ecology, Tacoma shall make all records available to Ecology and allow access for review within a reasonable time.

Nothing in this Order is intended to waive any right Tacoma may have under applicable law to limit disclosure of documents protected by the attorney work-product privilege and/or the attorney-client privilege. If Tacoma withholds any requested records based on an assertion of privilege, Tacoma shall provide Ecology with a privilege log specifying the records withheld and the applicable privilege. No Site-related data collected pursuant to this Order shall be considered privileged.

H. Resolution of Disputes

1. In the event that Tacoma elects to invoke dispute resolution Tacoma 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), Tacoma 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; Tacoma'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. Tacoma may then request regional management review of the dispute. This request ("Formal Dispute Notice") must be submitted in writing to the Southwest 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. The Decision on Dispute shall be Ecology's final decision on the disputed matter.

2. 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.

3. Implementation of these dispute resolution procedures shall not provide a basis for delay of any activities required in this Order, unless Ecology agrees in writing to a schedule extension.

4. In case of a dispute, failure to either proceed with the work required by this Order or timely invoke dispute resolution may result in Ecology's determination that insufficient progress is being made in preparation of a deliverable, and may result in Ecology undertaking the work under Section VII.E (Work to be Performed) or initiating enforcement under Section X (Enforcement).

I. Extension of Schedule

1. 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;

c. The reason(s) for the extension; and

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

2. The burden shall be on Tacoma 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 Tacoma 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 Tacoma;

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

c. Endangerment as described in Section VIII.L (Endangerment).

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

3. Ecology shall act upon any written request for extension in a timely fashion. Ecology shall give Tacoma written notification of any extensions granted pursuant to this Order. A requested extension shall not be effective until approved by Ecology. Unless the extension is a substantial change, it shall not be necessary to amend this Order pursuant to Section VIII.K (Amendment of Order) when a schedule extension is granted.

4. 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:

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; or

c. Endangerment as described in Section VIII.L (Endangerment).

J. Amendment of Order

The project coordinators may verbally agree to minor changes to the work to be performed without formally amending this Order. Minor changes will be documented in writing by Ecology within seven (7) days of verbal agreement.

Except as provided in Section VIII.M (Reservation of Rights), substantial changes to the work to be performed shall require formal amendment of this Order. This Order may only be formally amended by the written consent of both Ecology and Tacoma. Tacoma shall submit a written request for amendment to Ecology for approval. Ecology shall indicate its approval or disapproval in writing and in a timely manner after the written request for amendment is received. If the amendment to this Order represents a substantial change, Ecology will provide public notice and opportunity to comment. Reasons for the disapproval of a proposed amendment to this Order shall be stated in writing. If Ecology does not agree to a proposed amendment, the disagreement may be addressed through the dispute resolution procedures described in Section VIII.I (Resolution of Disputes).

K. Endangerment

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

In the event Tacoma determines that any activity being performed at the Site under this Order is creating or has the potential to create a danger to human health or the environment, Tacoma may cease such activities. Tacoma 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, Tacoma shall provide Ecology with documentation of the basis for the determination or cessation of such activities. If Ecology disagrees with Tacoma's cessation of activities, it may direct Tacoma to resume such activities.

If Ecology concurs with or orders a work stoppage pursuant to this section, Tacoma'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 VIII.J

(Extension of Schedule) for such period of time as Ecology determines is reasonable under the circumstances.

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

L. Reservation of Rights

This Order is not a settlement under RCW 70.105D. Ecology's signature on this Order in no way constitutes a covenant not to sue or a compromise of any of Ecology's rights or authority. Ecology will not, however, bring an action against Tacoma to recover remedial action costs paid to and received by Ecology under this Order. In addition, Ecology will not take additional enforcement actions against Tacoma regarding remedial actions required by this Order, provided Tacoma complies with this Order.

Ecology nevertheless reserves its rights under RCW 70.105D, including the right to require additional or different remedial actions at the Site should it deem such actions necessary to protect human health and the environment, and to issue orders requiring such remedial actions. Ecology also reserves all rights regarding the injury to, destruction of, or loss of natural resources resulting from the release or threatened release of hazardous substances at the Site.

By entering into this Order, Tacoma does not admit to any liability for the Site. Although Tacoma is committing to conducting the work required by this Order under the terms of this Order, Tacoma expressly reserves all rights available under law, including but not limited to the right to seek cost recovery or contribution against third parties, and the right to assert any defenses to liability in the event of enforcement.

M. Transfer of Interest in Property

No voluntary conveyance or relinquishment of title, easement, leasehold, or other interest in any portion of the Site shall be consummated by Tacoma without provision for continued implementation of all requirements of this Order and implementation of any remedial actions found to be necessary as a result of this Order.

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

N. Compliance with Applicable Laws

1. All actions carried out by Tacoma pursuant to this Order shall be done in accordance with all applicable federal, state, and local requirements, including requirements to obtain necessary permits, except as provided in RCW 70.105D.090. The permits or specific federal, state, or local requirements that the agency has determined are applicable and that are known at the time of the execution of this Order have been identified in Exhibit D.

2. Pursuant to RCW 70.105D.090(1), Tacoma is exempt from the procedural requirements of RCW 70.94, 70.95, 70.105, 77.55, 90.48, and 90.58 and of any laws requiring or authorizing local government permits or approvals. However, Tacoma shall comply with the substantive requirements of such permits or approvals. The exempt permits or approvals and the applicable substantive requirements of those permits or approvals, as they are known at the time of the execution of this Order, have been identified in Exhibit D.

Tacoma has a continuing obligation to determine whether additional permits or approvals addressed in RCW 70.105D.090(1) would otherwise be required for the remedial action under this Order. In the event either Ecology or Tacoma determines that additional permits or approvals addressed in RCW 70.105D.090(1) would otherwise be required for the remedial action under this Order, it shall promptly notify the other party of its determination. Ecology shall determine whether Ecology or Tacoma shall be responsible to contact the appropriate state and/or local agencies. If Ecology so requires, Tacoma 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 Tacoma and on how Tacoma must meet those requirements. Ecology shall inform Tacoma in writing of these requirements. Once established by Ecology, the additional requirements shall be enforceable requirements of this Order. Tacoma shall not begin or continue the remedial action potentially subject to the additional requirements until Ecology makes its final determination.

3. Pursuant to RCW 70.105D.090(2), in the event Ecology determines that the exemption from complying with the procedural requirements of the laws referenced in RCW 70.105D.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 Tacoma shall comply with both the procedural and substantive requirements of the laws referenced in RCW 70.105D.090(1), including any requirements to obtain permits.

O. Land Use Restrictions

In consultation with Tacoma, Ecology will prepare an Environmental (Restrictive) Covenant consistent with WAC 173-340-440 and RCW 64.70. After approval by Ecology, Tacoma shall record the Environmental (Restrictive) Covenant with the office of the Pierce County Auditor within ten (10) days of the implementation of this Order. The Environmental (Restrictive) Covenant shall restrict future activities and uses of the Site as agreed to by Ecology and Tacoma. Tacoma shall provide Ecology with the original recorded Environmental (Restrictive) Covenant within thirty (30) days of the recording date.

P. Financial Assurances

Pursuant to WAC 173-340-440(11), Tacoma 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, including institutional controls, compliance monitoring, and corrective measures.

Within sixty (60) days of the effective date of this Order, Tacoma shall submit to Ecology for review and approval an estimate of the costs that it will incur in carrying out the terms of this

Order, including operation and maintenance, and compliance monitoring. Within sixty (60) days after Ecology approves the aforementioned cost estimate, Tacoma shall provide proof of financial assurances sufficient to cover all such costs in a form acceptable to Ecology.

Tacoma shall adjust the financial assurance coverage and provide Ecology's project coordinator with documentation of the updated financial assurance for:

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

2. 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 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.

Q. Periodic Review

As remedial action, including groundwater monitoring, 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. At least every five (5) years after the initiation of cleanup action at the Site the Parties shall meet to discuss 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, Tacoma 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). 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 Order.

R. Indemnification

Tacoma 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 Tacoma, its officers, employees, agents, or contractors in entering into and implementing this Order. However, Tacoma 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 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 Order.

IX. SATISFACTION OF ORDER

The provisions of this Order shall be deemed satisfied upon Tacoma's receipt of written notification from Ecology that Tacoma has completed the remedial activity required by this Order, as amended by any modifications, and that Tacoma has complied with all other provisions of this Agreed Order.

X. ENFORCEMENT

Pursuant to RCW 70.105D.050, this Order may be enforced as follows:

A. The Attorney General may bring an action to enforce this Order in a state or federal court.

B. The Attorney General may seek, by filing an action, if necessary, to recover amounts spent by Ecology for investigative and remedial actions and orders related to the Site.

C. A liable party who refuses, without sufficient cause, to comply with any term of this Order will be liable for:

1. Up to three (3) times the amount of any costs incurred by the State of Washington as a result of its refusal to comply.

2. Civil penalties of up to twenty-five thousand dollars ($25,000) per day for each day it refuses to comply.

D. This Order is not appealable to the Washington Pollution Control Hearings Board. This Order may be reviewed only as provided under RCW 70.105D.060.

Effective date of this Order: July 16, 2015

CITY OF TACOMA

T. C. Broadnax
City Manager
747 Market Street

Ricardo Noguera, Director
Community & Economic Development Dept.
Telephone: 253.591.5139

Approved Only as to Form:

Deputy City Attorney

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

Rebecca S. Lawson, P.E., LHG
Section Manager
Toxics Cleanup Program
Southwest Regional Office
360.407.6241

EXHIBIT A

SITE DIAGRAM

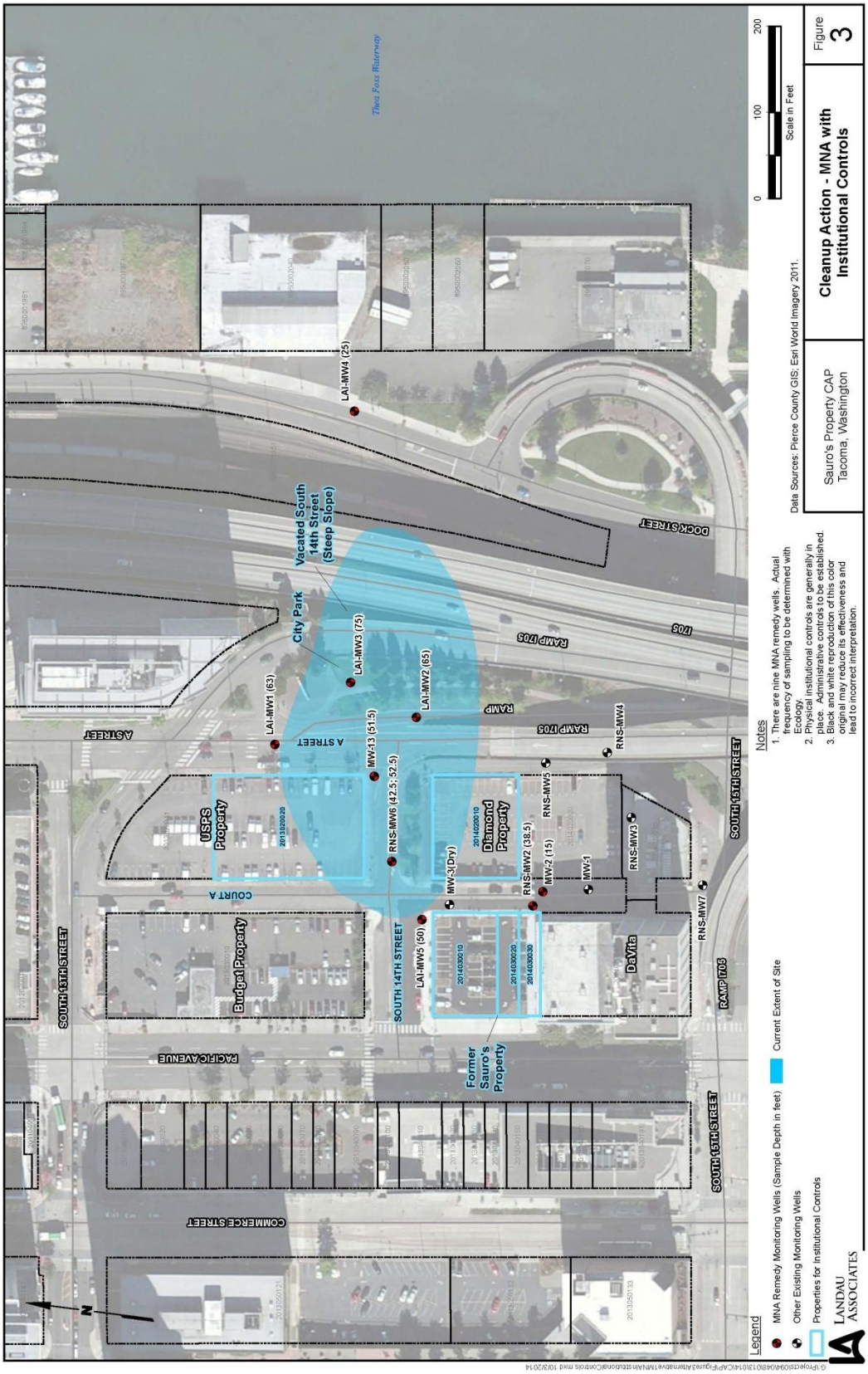
Thea Foss Waterway
Vacated South 14th Street (Steep Slope)
City Park
LAI-MW1 (63)
LAI-MW3 (75)
LAI-MW2 (65)
LAI-MW4 (25)
MW-13 (51.5)
RNS-MW6 (42.5;-52.5)
MW-3 (Dry)
RNS-MW2 (38.5)
MW-2 (15)
MW-1
RNS-MW5
RNS-MW4
RNS-MW3
RNS-MW7
LAI-MW5 (50)
USPS Property
Budget Property
Diamond Property
Former Sauro's Property
DeVita
A STREET
COURT A
SOUTH 14TH STREET
SOUTH 15TH STREET
PACIFIC AVENUE
COMMERCE STREET
DOCK STREET
RAMP
RAMP I705
I705
RAMP I705
N
Legend
MNA Remedy Monitoring Wells (Sample Depth in feet)
Other Existing Monitoring Wells
Properties for Institutional Controls
Current Extent of Site
Notes
1. There are nine MNA remedy wells. Actual frequency of sampling to be determined with Ecology.
2. Physical institutional controls are generally in place. Administrative controls to be established.
3. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.
Data Sources: Pierce County GIS; Esri World Imagery 2011.
0
100
200
Scale in Feet
LANDAU ASSOCIATES
Sauro's Property CAP
Tacoma, Washington
Cleanup Action - MNA with Institutional Controls
Figure 3

EXHIBIT B

LEGAL DESCRIPTION

Parcel 2014030010 (1401 Pacific Ave.): Section 04 Township 20 Range 03 Quarter 33 : NEW TACOMA L 1 THRU 3 B 1403.

Parcel 2014030020 (1407 Pacific Ave.): Section 04 Township 20 Range 03 Quarter 33 : NEW TACOMA L 4 B 1403.

Parcel 2014030030 (1409 Pacific Ave.): Section 04 Township 20 Range 03 Quarter 32 : NEW TACOMA L 5 B 1403.

EXHIBIT C
APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS

In accordance with MTCA, all cleanup actions conducted under MTCA shall comply with applicable state and federal laws [WAC 173-340-710(1)]. MTCA defines applicable state and federal laws to include legally applicable requirements and those requirements that are relevant and appropriate. Collectively, these requirements are referred to as applicable or relevant and appropriate requirements (ARARs). This section provides a brief overview of potential ARARs for Site cleanup. The primary ARAR is the MTCA cleanup regulation (WAC 173-340), especially with respect to the development of CULs and procedures for development and implementation of a cleanup under MTCA. The primary ARARs that may be applicable to the cleanup action include the following:

- Federal MCLs for drinking water [40 Code of Federal Regulations (CFR) Part 141].
- Washington Clean Air Act, Chapter 70.94 RCW.
- Washington Water Pollution Control Act and the following implementing regulation: Water Quality Standards for Surface Waters (WAC 173-201A). These regulations establish water quality standards for surface waters of the State of Washington consistent with public health and the propagation and protection of fish, shellfish, and wildlife. These standards are used in the development of groundwater CULs for the Site.
- Washington Hazardous Waste Management Act (Chapter 70.105 RCW) and the following implementing regulation: Dangerous Waste Regulations (WAC 173-303). These regulations establish a comprehensive statewide framework for the planning, regulation, control, and management, of dangerous waste. The regulation designates those solid wastes which are dangerous or extremely hazardous to the public health and environment. The management of excavated contaminated soil from the Site will be conducted in accordance with these regulations to the extent that any dangerous wastes are discovered or generated during the cleanup action.
- Washington Solid Waste Management Act (Chapter 70.95 RCW) and the following implementing regulation: Minimum Functional Standards for Solid Waste Handling (WAC 173-304). These regulations establish a comprehensive statewide program for solid waste management including proper handling and disposal. The management of excavated

contaminated soil from the Site will be conducted in accordance with these regulations to the extent that this soil could be managed as solid waste instead of dangerous waste.

- Hazardous Waste Operations (WAC 296-843). Establishes safety requirements for workers providing investigation and cleanup operations at Sites containing hazardous materials. These requirements will be applicable to onsite cleanup activities and will be addressed in a Site health and safety plan prepared specifically for these activities.
- Solid and Hazardous Waste Management (RCW 70.105; Chapter 173-303 WAC; 40 CFR 241, 257; Chapter 173-350 and 173-351 WAC) and Land Disposal Restrictions (40 CFR 268; WAC 173-303-340).
- Washington Industrial Safety and Health Act (RCW 49.17) and the Federal Occupational Safety and Health Act (29 CFR 1910, 1926).
- State Environmental Policy Act (SEPA; RCW 43.21C and Chapter 197-11 WAC).
- State and federal groundwater criteria are considered in the development of CULs. State Dangerous Waste Regulations may be applicable to contaminated soil or groundwater removed from the Site during cleanup activities due to contamination characteristics. Substantive SEPA requirements will be addressed concurrent with the Site draft CAP to the degree applicable for the selected cleanup action.

EXHIBIT D

MODEL ENVIRONMENTAL COVENANT

[Text highlighted by yellow are instructions/comments and options]
Questions about specific provisions should be directed to the Ecology Site Manager assigned to the site. If no Site Manager has been assigned, contact Ecology's Toxics Cleanup Program at (360) 407-7170 for advice.

After Recording Return
Original Signed Covenant to: [1]
[Ecology Site Manager]
Toxics Cleanup Program
Department of Ecology
[Ecology Office address]

NOTE: ***This Covenant should not be recorded without Ecology's approval and signature.***
Grantors must have a title search conducted within the last 6 months to identify all recorded interests in the Property including title holders, holders of other interests (such as easements, right of ways, water & mineral rights), and encumbrances (such as lien and mortgage holders). The results of this search, typically called a title report or plat certificate, must be included with any request asking Ecology to sign a Covenant. A update to the title search should be provided to Ecology along with the request to sign the final covenant.

Environmental Covenant

(5/7/14 version)

Grantor: **[Insert name of the land owner or other grantor]** [2]
Grantee: State of Washington, Department of Ecology
Brief Legal Description: **[Insert brief legal description]**
Tax Parcel Nos.: **[Insert tax parcel numbers]**
Cross Reference:

- **If superseding or amending an existing Covenant, insert one of the following: "Original Covenant #____ (superseding)" OR "Original Covenant #____ (amending)"**
- **Insert a reference to any subordination agreements, if separately recorded**
- **Insert a list of other related documents such as consent decree, order, or NFA opinion**
- **Otherwise, delete**

XIII. RECITALS [3]

a. This document is an environmental (restrictive) covenant (hereafter "Covenant") executed pursuant to the Model Toxics Control Act ("MTCA"), chapter 70.105D RCW and Uniform Environmental Covenants Act ("UECA"), chapter 64.70 RCW.

[1] Some counties keep the original covenant, others don't. If the signed original is available, it must be sent to Ecology. If the signed original is not available, send a legible copy to Ecology.
[2] The Grantor of a covenant typically is the fee simple land owner of the property. The Grantor may also include holders of other property interests such as a holder of an easement, right of way, mineral right, lien, or mortgage.
[3] This section is primarily used to describe this document and its purpose. It should not be used for substantive binding provisions.

b. The Property that is the subject of this Covenant is part or all of a site commonly known as **[Insert Ecology site name and facility ID]**. 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. [4]

c. The Property is the subject of remedial action under MTCA. This Covenant is required because residual contamination remains on the Property after completion of remedial actions. Specifically, the following principle contaminants remain on the Property: [5]

Medium	Principle Contaminants Present
Soil	
Groundwater	
Surface Water/Sediment	

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 the Washington State Department of Ecology. **[Optional--This includes the following documents: (list key documents such as RI/FS, Cleanup Action Plan, Voluntary Cleanup Report(s), As-built report)].**

e. This Covenant grants the Washington State Department of Ecology, as holder of this Covenant, certain rights specified in this Covenant. The right of the Washington State Department of Ecology as a holder is not an ownership interest under MTCA, Chapter 70.105D RCW or the Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA") 42 USC Chapter 103.

f. **[Optional–Include the following statement if this Covenant is superseding another environmental covenant.]** This Covenant supersedes and replaces the existing Environmental (Restrictive) Covenant, which is recorded with [_____] County as [**# of original covenant**].

XIV. COVENANT

[Name of Land Owner or other Grantor], as Grantor [6] and [**fee simple, easement or other]** owner of the Property hereby grants to the Washington State Department of Ecology, and its successors and assignees, (hereafter "Ecology") the following covenants. Furthermore, it is the intent of the Grantor that such covenants shall run with the land and be binding on all current and future owners of any portion of, or interest in, the Property.

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[4] Note that an environmental covenant applies to a specific Property, not the site (which may comprise several properties or "parcels"). A precise legal description of the Property (or Property interest such as an easement) is essential to know where the covenant applies. If there is any uncertainty, the Grantor must have the Property (or Property interest) surveyed and a legal description prepared by a licensed surveyor. If the contaminated area includes multiple parcels, each parcel must have the covenant recorded on the title. If contamination remains on only part of a larger Property, the restrictions may apply to just the smaller area, but the covenant must still be recorded on the title for all parcels encompassing the contaminated area.

[5] List the contaminants for the associated media. If more than a few are present, list the top three to five for each medium.

[6] If there is more than one Grantor, use the term "Grantors" here and throughout this document.

A. 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 and notify all lessees of the restrictions on the use of the Property.

e. Amendment to the Covenant. Grantor must notify 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.[7] Before approving any proposal, Ecology must issue a public notice and provide an opportunity for the public to comment on the proposal. If Ecology approves the proposal, the Covenant will be amended to reflect the change.

B. **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.

[See Appendix 1 for example restrictions.]

Select from the restrictions in Appendix 1 as appropriate, based on site-specific circumstances. Most sites will have only some of these restrictions. Options are provided to illustrate the range of potential restrictions. In some cases, the options are mutually exclusive (pick one or the other, but not both). In other cases several options may need to be combined to cover the range of conditions at the site. This is not intended to be an all-inclusive list. In circumstances where none of the categories or suggested options fit the site conditions, adjust the language as appropriate to fit the situation.

a. Land use.
b. Containment of soil/waste materials.
c. Stormwater facilities.
d. Vapor/gas controls.

[7] Examples of inconsistent uses are: using the Property for a use not allowed under the covenant (for example, mixed residential and commercial use on a property that is restricted to industrial uses); OR, drilling a water supply well when use of the groundwater for water supply is prohibited by the covenant.

e. Groundwater use.
f. Sediments.
g. Monitoring
h. Other.

C. **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.

D. Notice Requirements.

a. Conveyance of Any Interest. The Grantor, when conveying any interest **[in any part of the Property] OR [within the area of the Property described/illustrated in Exhibit B/C]**, including but not limited to title, easement, leases, and security or other interests, must:

i. Notify Ecology at least thirty (30) days in advance of the conveyance. [8]

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

NOTICE: THIS PROPERTY IS SUBJECT TO AN ENVIRONMENTAL COVENANT GRANTED TO THE WASHINGTON STATE DEPARTMENT OF ECOLOGY ON [DATE] AND RECORDED WITH THE [COUNTY] COUNTY AUDITOR UNDER RECORDING NUMBER [RECORDING NUMBER]. USES AND ACTIVITIES ON THIS PROPERTY MUST COMPLY WITH THAT COVENANT, A COMPLETE COPY OF WHICH IS ATTACHED TO THIS DOCUMENT.

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 to Ecology.

c. Emergencies. For any emergency or significant change in site conditions due to Acts of Nature (for example, flood, 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

[8] Ecology may waive this notice provision for some units at a Property where the anticipated use is a multi-tenant/owner building where some owners or tenants are unlikely to be exposed to residual contamination. For example: upper story apartments or condominiums, or commercial tenants in a strip mall, with limited rights to use the grounds under and around the building (such as for parking).

If Ecology agrees to such a waiver, the circumstances of the waiver will be detailed in paragraph 4.a.i. In addition to the specific circumstances, this provision must include the following statement: "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."

must notify Ecology 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. Any required written notice, approval, or 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.

[insert contact for Grantor] Phone contact	Environmental Covenants Coordinator Washington State Department of Ecology Toxics Cleanup Program P.O. Box 47600 Olympia, WA 98504 – 7600 (360) 407-6000

As an alternative to providing written notice and change in contact information by mail, these documents may be provided electronically in an agreed upon format at the time of submittal.

E. Modification or Termination.

a. 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 Chapter 64.70 RCW and Chapter 70.105D RCW and any rules promulgated under these chapters.

b. **[Optional]** By signing this agreement, per RCW 64.70.100, the original signatories to this agreement, other than Ecology, agree to waive all rights to sign amendments to and termination of this Covenant. [9]

F. Enforcement and Construction.

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

b. Grantor shall provide Ecology with an original signed Covenant and proof of recording within ten (10) days of execution of this Covenant.

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 Chapter 70.105D RCW and Chapter 64.70 RCW. 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, 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.

[9] As time passes, the original grantor and other signers of the covenant may no longer exist as viable entities. This is intended to allow future amendments or termination of the covenant without Ecology having to seek court authorization, as provided by RCW 64.70.100.

e. This Covenant shall be liberally construed to meet the intent of the Model Toxics Control Act, chapter 70.105D RCW and Uniform Environmental Covenants Act, chapter 64.70 RCW.

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.

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

EXECUTED this _____ day of _____, 20___.

[NAME OF GRANTOR]

[SIGNATURE]_____
[TITLE]

Dated: _____

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

[SECTION MANAGER SIGNATURE - if VCP or Order.]
[PROGRAM MANAGER SIGNATURE - if Consent Decree.]
[TITLE]

Dated: _____

[Unless waived under Section 5b above, add the following provision where a covenant is being amended or superseded.]

The undersigned acknowledge Environmental (Restrictive) Covenant **[# of the original covenant]** filed in **[_____]** County is hereby terminated and replaced with the above Environmental Covenant.

[NAME OF GRANTOR OF ORIGINAL COVENANT]

[SIGNATURE]_____
[TITLE]

Dated: _____

GRANTOR INDIVIDUAL ACKNOWLEDGMENT

STATE OF _____
COUNTY OF _____

On this _____ day of _____, 20__, I certify that _____ personally appeared before me, and acknowledged that **he/she** is the individual described herein and who executed the within and foregoing instrument and signed the same at **his/her** free and voluntary act and deed for the uses and purposes therein mentioned.

_____
Notary Public in and for the State of
Washington, residing at _____.
My appointment expires_____.

GRANTOR CORPORATE 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, residing at _____.
My appointment expires_____.

Exhibit A

LEGAL DESCRIPTION

(Required)

Exhibit B

PROPERTY MAP

(Required)

Exhibit C

MAP ILLUSTRATING LOCATION OF RESTRICTIONS

While a map illustrating the location of the restrictions is required, the grantor has the option of creating a separate map or including this information in Exhibit B.

More than one map may be necessary to illustrate the area subject to restrictions. For example, the area encompassing a soil cap may be different than the area where vapor or groundwater contamination is a concern.

The area subject to the restrictions, if less than the entire property, should be a contiguous area with even boundaries that follow physical features on the site so the boundary can be easily discerned in the field.

Exhibit D

SUBORDINATION AGREEMENT

KNOW ALL PERSONS, That _____, the owner and holder of that certain _____ (Instrument) bearing the date the _____ day of _____, 20____, executed by _____, _____, and recorded in the office of the County Auditor of _____ County, State of Washington, on the _____, 20____, 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 _____, 20____, executed by _____, and recorded in _____ County, Washington under Auditor's File Number _____.

Dated _____, 20___.

NAME

_____

STATE OF _____
COUNTY OF _____

On this _____ day of _____, 20____, I certify that _____ _____ personally appeared before me, and acknowledged that **he/she** is the individual described herein and who executed the within and foregoing instrument and signed the same at **his/her** free and voluntary act and deed for the uses and purposes therein mentioned.

_____
Notary Public in and for the State of Washington, residing at _____.
My appointment expires_____.

APPENDIX 1

EXAMPLE SITE-SPECIFIC COVENANT PROVISIONS

a. Land Use. [10]

Option 1 Industrial Land Use: The remedial action for the Property is based on a cleanup designed for industrial property. As such, the Property shall be used in perpetuity only for industrial uses, as that term is defined in the rules promulgated under Chapter 70.105D RCW. Prohibited uses on the Property include but are not limited to residential uses, childcare facilities, K-12 public or private schools, parks, grazing of animals, growing of food crops, and non-industrial commercial uses.

Option 2 Commercial Land Use: The remedial action for the Property is based on a cleanup designed for commercial property. As such, the Property shall be used in perpetuity only for commercial land uses as that term is defined in the rules promulgated under Chapter 70.105D RCW. Prohibited uses on the Property include but are not limited to residential uses, childcare facilities, K-12 public or private schools, parks, grazing of animals, and growing of food crops.

Option 3 Park: The remedial action for the Property is based on a cleanup designed for a public park. As such, the Property shall be used in perpetuity only for a public park. Prohibited uses on the Property include but are not limited to residential uses, childcare facilities, K-12 public or private schools, grazing of animals, and growing of food crops.

Option 4 [Specify other land use limitations as appropriate.]

b. Containment of Soil/Waste Materials. [11]

[Use where contaminated soil or solid or hazardous waste remains on the property.]

The remedial action for the Property is based on containing contaminated soil **[and waste materials]** under a cap consisting of **[Insert a description of the cap]** [12] and located as illustrated in **[Exhibit B/C]** [13]. The primary purpose of this cap is to **[Insert purpose of cap].** [14] As such, the following restrictions shall apply within the area illustrated in **[Exhibit B/C]** [15]:

Option 1 [Use where a cap is required.] 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

---

[10] Use one of these restrictions only if the underlying zoning allows the use.
[11] Waste materials means solid wastes as defined in Chapter 70.95 RCW or hazardous wastes as defined in Chapter 70.105 RCW and the rules promulgated under these statutes.
[12] Such as: an X foot thick layer of clean soil; an engineered cap consisting of X inches of clean soil overlying a X mil thick geomembrane and/or clay layer; asphalt pavement; an X square foot building, etc.]
[13] Be very clear in describing or diagramming where the contamination is located relative to a legally defined benchmark such as a property line or survey monument; or use a legal description.
[14] Such as: minimize the potential for contact with contaminated soil; minimize leaching of contaminants to groundwater and surface water; prevent runoff from contacting contaminated soil; minimize airborne contaminants. A cap may have multiple purposes.
[15] NOTE: More than one exhibit may be necessary to illustrate the area restricted by this and other limitations.

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.

Option 2 [Use when contamination is left behind under a building.]

The Grantor shall not alter or remove the existing structures on the Property in any manner that would expose contaminated soil **[and waste materials]**, result in a release to the environment of contaminants, or create a new exposure pathway, without prior written approval of Ecology. Should the Grantor propose to remove all or a portion of the existing structures illustrated in **[Exhibit B/C]** so that access to the underlying contamination is feasible, Ecology may require treatment or removal of the underlying contaminated soil **[and waste materials]**.

Option 3: [Use when periodic inspections of a cap/building are included.]

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

c. Stormwater facilities. [Use when infiltration needs to be controlled to minimize leaching from soil or waste materials, or spreading of groundwater contamination.]

To minimize the potential for mobilization of contaminants remaining in the **[soil/waste materials/groundwater]** on the Property, no stormwater infiltration facilities or ponds shall be constructed **[on the Property] OR [within the area of the Property illustrated in Exhibit B/C]**. All stormwater catch basins, conveyance systems, and other appurtenances located within this area shall be of water-tight construction.[16]

d. Vapor/gas controls. [Use when vapors or methane gas are a concern.]

The residual contamination on the Property includes **[volatile chemicals that may generate harmful vapors] AND/OR [biodegradable wastes/chemicals that may generate methane, a combustible gas]**. As such, the following restrictions shall apply **[on the Property] OR [within the area of the Property illustrated in Exhibit B/C]** to minimize the potential for exposure to these vapors:

Option 1 No building or other enclosed structure shall be constructed **[on the Property/within this area]**.

Option 2 Any building or other enclosed structure constructed **[on the Property/within this area]** shall be constructed with a sealed foundation and with a **[vapor/gas]** control system installed and maintained to prevent the migration of **[vapors/gas]** into the building or structure.

e. Groundwater Use. [Use when groundwater use restrictions are required.]

The groundwater beneath **[the Property] OR [within the area of the Property illustrated in Exhibit B/C]** remains contaminated and shall not be extracted for any purpose other than temporary construction dewatering, investigation, monitoring or remediation. Drilling of a well for any water supply purpose is strictly prohibited. Groundwater extracted **[from the**

[16] NOTE: Most local ordinances require on-site infiltration of runoff. If redevelopment of the Property is anticipated, the cleanup plan should reserve an area for this infiltration to occur without exacerbating leaching of residual soil contamination or enhancing movement of contaminants within the groundwater.

Property/within this area] for any purpose shall be considered potentially contaminated and any discharge of this water shall be done in accordance with state and federal law.

f. Sediments. [Use for sediment cleanup sites.] [17]

The residual contamination on the Property includes contaminated sediments. As such, the following restrictions shall apply to minimize potential disturbance of these sediments **[on the Property] OR [within the area of the Property illustrated in Exhibit B/C]**:

Option 1 [Use where a cap is required.] Any activity **[on the Property/within this area]** that will compromise the integrity of the cap including: drilling; digging; piercing the cap with sampling device, post, stake or similar device; excavation; installation of buried 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.

Option 2 No docks or other structures shall be constructed **[on the Property/within this area]** without prior written approval of Ecology.

Option 3 No dredging shall be allowed **[on the Property/within this area]** without prior written approval of Ecology.

Option 4 No ships or boats shall be allowed to anchor or use side thrusters **[on the Property/within this area]**. A no wake zone shall be enforced and ships and boats shall be limited to a draft depth of **[XX]** feet **[on the Property/within this area]**.

Option 5 No digging for clams, setting of crab pots or fishing nets, anchoring of mooring buoys or channel markers, or similar activities that could disturb the surface of the sediment shall be allowed **[on the Property/within this area]** without prior written approval of Ecology.

g. Monitoring. [Use for long-term protection of monitoring devices.]

Several **[groundwater monitoring wells, vapor probes, etc.]** are located on the Property to monitor the performance of the remedial action. The Grantor shall maintain clear access to these devices and protect them from damage. The Grantor shall report to Ecology within forty-eight (48) hours of the discovery of any damage to any monitoring device. Unless Ecology approves of an alternative plan 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.

h. Other.

[Add other property-specific use or activity restrictions and affirmative obligations that are necessary but not identified above. Examples include special remedy-specific requirements

[17] NOTE: Sediment restrictions are currently evolving. Additional guidance can be found in Ecology's Sediment Cleanup Users Manual II (SCUM II), Publication No. 12-09-057.

such as restrictions on structures over leachate/groundwater collection systems, or protection requirements for cut-off walls or sheet piling.]

EXHIBIT E

CLEANUP ACTION PLAN

Draft Cleanup Action Plan
Former Sauro's Cleanerama Site
Tacoma, Washington

FSID: 4339824

Issued by:
Washington State Department of Ecology
Toxics Cleanup Program
Southwest Regional Office
Olympia, Washington

December 2014

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FIGURES

TABLES

APPENDIX

LIST OF ABBREVIATIONS AND ACRONYMS

AO	Agreed Order
ARAR	Applicable or Relevant and Appropriate Requirement
draft CAP	draft Cleanup Action Plan
CFR	Code of Federal Regulations
cis-1,2-DCE	Cis-1,2-Dichloroethene
City	City of Tacoma
COC	Constituent of Concern
CSM	Conceptual Site Model
CUL	Cleanup Level
DCA	Disproportionate Cost Analysis
Ecology	Washington State Department of Ecology
EIM	Electronic Information Management
EISB	Enhanced *in situ* Bioremediation
EPA	U.S. Environmental Protection Agency
ERH	Electrical Resistance Heating
FS	Feasibility Study
MCL	Maximum Contaminant Level
MNA	Monitored Natural Attenuation
MTCA	Model Toxics Control Act
PCE	Tetrachloroethene
RAO	Remedial Action Objective
RCW	Revised Code of Washington
RI	Remedial Investigation
SAP	Sampling and Analysis Plan
SEPA	State Environmental Policy Act
VC	Vinyl Chloride
VCP	Voluntary Cleanup Program
VOC	Volatile Organic Compound
WAC	Washington Administrative Code
WARM	Washington Ranking Method

1.0 INTRODUCTION

This document presents the draft Cleanup Action Plan (draft CAP) for the former Sauro's Cleanerama dry cleaner property (Sauro's property or the property) located at 1401, 1407, and 1409 Pacific Avenue in Tacoma, Washington (Figure 1). Historical operations conducted at the former Sauro's property resulted in releases of hazardous substances (chlorinated solvents) to soil and groundwater that impacted adjacent and downgradient properties. Therefore, the overall Site[1] evaluated for this draft CAP includes the Sauro's property and the surrounding impacted area. The approximate extent of the Site falls within the project area shown on Figure 1.

The City of Tacoma (City) purchased the Sauro's property from the Sauro Estate on January 9, 2009. Subsequently, on March 30, 2009, the City and Washington State Department of Ecology (Ecology) entered into AO No. DE 4283. The AO defines the mutual objectives of Ecology and the City and the associated Site cleanup work needed. Landau Associates has assisted the City in implementing AO requirements including the Remedial Investigation (RI)/Feasibility Study (FS; Landau Associates 2014) and the draft CAP.[2]. The Ecology issued Facility Site ID as 4339824 and the Cleanup Site ID as 3310.

The cleanup action alternative chosen in the RI/FS (Landau Associates 2014) and approved by Ecology in July 2014 (Coleman, M. 2014) is monitored natural attenuation (MNA) with institutional controls. This draft CAP was prepared in accordance with the requirements of the Model Toxics Control Act (MTCA) as identified under Washington Administrative Code (WAC) 173-340-380(1)(a). This draft CAP assumes the reader is generally familiar with the Site history, results of previous Site investigations, and current Site conditions. Detailed information related to Site background and history, hydrogeologic setting, previous Site investigations, interim action, and development of groundwater screening criteria and screening levels is provided in the RI/FS.

1.1 REGULATORY FRAMEWORK

The previous owner (Sauro Estate) conducted a number of pre-RI field investigation activities as independent actions beginning in 1992 (Kennedy Jenks 1992). Ecology first listed the "Sauro Estate" in their Integrated Site Information System on July 12, 2000, marking the date of Site discovery or receipt of a Site release report (Ecology website 2014a). The Sauro Estate entered the Site into Ecology's Voluntary Cleanup Program (VCP) on March 28, 2001. The Site was withdrawn from the VCP on

[1] As defined by the Sauro's property Agreed Order (AO) No. DE 4283, the Site is defined to include both the real property where Sauro's Cleanerama operated (1401, 1407, and 1409 Pacific Avenue) as well as the extent of contamination caused by the hazardous releases from the former Sauro's property.

[2] The project schedule in the AO was modified three times with Ecology approval to allow for additional RI groundwater characterization. The most recent schedule extension request was approved in December 2012 (Landau Associates 2012).

November 20, 2006, and on February 16, 2007, Ecology informed the Sauro's Estate that they intended to address remediation at the Site under a formal process with an AO. From September 6, 2007 to February 6, 2008, Ecology conducted a site hazard assessment and subsequently placed the Site on its Confirmed and Suspected Contaminated Sites List, and gave the Site a "1" ranking under the Washington Ranking Method (WARM)[3].

On January 9, 2009, the City purchased the property from the Sauro's Estate with the intent of redevelopment for commercial use. On March 19, 2009, the City and Ecology entered into AO No. DE 4283; all investigations conducted since March 19, 2009 are termed "RI field investigations" (except for the interim action[4]). The order requires that the City perform an RI/FS and prepare a report and prepare a draft CAP. Site cleanup, including this draft CAP, is being accomplished under Revised Code of Washington (RCW) 70.105D.090, MTCA. Ecology holds regulatory authority over MTCA in the State of Washington.

1.2 SUMMARY OF CURRENT SITE CONDITIONS AND CONCEPTUAL SITE MODEL

The conceptual site model (CSM) represents current Site conditions since the 2009 interim action, identifying potential sources of hazardous substances, potentially affected media, and potential migration and exposure pathways for human and ecological receptors. The CSM was presented in the RI/FS. A diagram of the CSM is shown on Figure 2.

The constituents of concern (COCs) at the Site are tetrachloroethene (PCE), a chlorinated solvent volatile organic compound (VOC), and its breakdown products. Breakdown products include trichloroethene (TCE), cis-1,2-dichloroethene (cis-1,2-DCE), and vinyl chloride (VC).

The identified source of PCE contamination was a sump historically located in the basement of the dry cleaning business (north central portion of the property) where wastewater and waste dry cleaning liquids were apparently discharged (GeoEngineers 2001). Releases from the sump, potential piping, and connections and spills associated with the sump and adjacent PCE aboveground storage tank (Farallon 2005) are the primary release mechanisms by which COCs may be transferred from the source to affected environmental media. Secondary release mechanisms include leaching and infiltration from soil into groundwater and vapor migration from soil (or impacted groundwater) into indoor air spaces. The primary source (the sump) and the surrounding soil (immediately adjacent to sump) were excavated and hauled off of the property in 2001 (Farallon 2005). The bulk of the remaining secondary release

[3] The WARM categorizes contaminated sites between 1 and 5, with 1 representing the highest priority for cleanup.
[4] The City elected to conduct the interim action to expedite cleanup of contaminated soil and encourage redevelopment of the property. The interim action was concluded in January 2010.

mechanism (contaminated soil in the vadose zone throughout the property) was excavated and hauled off the property in the 2009/2010 interim action, with some residual soil contamination identified during confirmation sampling. Following excavation, residual soil contamination was capped beneath a geotextile fabric liner, clean fill, and a parking lot. Therefore, following the 2009 interim action, the primary remaining affected medium of concern was groundwater and potentially, indoor air.

Potential human receptors were identified for the Site based on current and reasonable future Site land use; it was determined that no likely potential ecological receptors are applicable to the Site. Potential human receptors and exposure pathways include:

- Potential future exposures of underground parking lot occupants (workers and customers) to COCs in air via inhalation
- Potential exposure of temporary construction workers via dermal contact and inhalation of COCs in Site groundwater.

2.0 PROPOSED CLEANUP ACTION

The following sections describe the proposed cleanup action at the Site.

2.1 GOALS AND OBJECTIVES OF THE CLEANUP ACTION

The proposed cleanup action was designed to meet the Remedial Action Objectives (RAOs) defined in the RI/FS, which consist of:

- RAO-1: Prevent direct human contact with soil containing hazardous constituents above the direct contact soil cleanup level (CUL)[5]
- RAO-2: Prevent human ingestion of Site groundwater containing concentrations of COCs above the groundwater CULs
- RAO-3: Prevent contaminated soil containing concentrations of COCs above soil CULs from impacting groundwater
- RAO-4: Prevent groundwater containing concentrations of COCs above surface water CULs from discharging to the Thea Foss waterway
- RAO-5: Obtain groundwater CULs at the point of compliance within a reasonable time frame.

The selection of MNA with institutional controls as the cleanup action to be performed at the Site will address each of these goals and objectives and complies with WAC 174-340-360.

2.2 CLEANUP ACTION ALTERNATIVES EVALUATED IN RI/FS

The RI/FS thoroughly evaluated four alternatives for cleanup action at the Site. A summary of alternatives evaluated in the RI/FS is as follows:

- Alternative 1: MNA with Institutional Controls (selected and approved alternative)
  - This alternative consists of implementing an MNA remedy to demonstrate that naturally occurring *in situ* attenuation processes are effective in reducing the plume extent and establishing institutional controls to prevent or limit intrusive activities that could bring workers into contact with contaminated soil.
- Alternative 2: Enhanced *In Situ* Bioremediation (EISB)
  - This alternative utilizes EISB to enhance naturally occurring biological processes to achieve remediation of contaminated groundwater and soil by periodically injecting electron donor solution through wells that would enhance the biologically active zone.
- Alternative 3: Ozone Sparging
  - This alternative involves injecting a strong oxidant into the subsurface for rapid VOC mass reduction in groundwater and enhanced desorption in contaminated saturated soil using ozone sparging.

[5] Cleanup levels for the Site are presented in Section 3.

- Alternative 4: Electrical Resistance Heating (ERH)
  - This alternative utilizes ERH to treat contaminated groundwater and saturated soil. ERH uses heat generated by the resistance of the soil matrix to the flow of electrical current to raise subsurface temperatures up to the boiling point of water; this, in turn, converts volatile compounds to the vapor phase where they can be captured by a vapor recovery system.

2.3 GENERAL DESCRIPTION OF THE SELECTED CLEANUP ACTION

In the RI/FS, the costs and benefits associated with the evaluated remedial alternatives were compared using a disproportionate cost analysis (DCA). The DCA compared the relative environmental benefits of each alternative against those provided by the most permanent alternative evaluated. The selected cleanup action includes MNA as the primary remedial technology and institutional controls as the secondary remedial technology. The major components of these two remedial technologies are described below:

- **MNA (Groundwater)**: Implementing an MNA remedy to demonstrate that naturally occurring *in situ* attenuation processes are effective in reducing the plume extent.
- **Institutional Controls (Soil and Groundwater)**: Establishing institutional controls in City-controlled areas of the Site and the former Sauro's property, preventing or limiting intrusive activities that would bring workers into contact with contaminated soil and groundwater.

2.3.1 MONITORED NATURAL ATTENUATION

The primary component of the MNA remedy includes monitoring chemical concentrations and natural attenuation parameters in groundwater from existing monitoring wells on an ongoing basis to achieve the following:

- Ensure that human health and the environment continue to be protected
- Evaluate the behavior of the plume (i.e., expanding, contracting, or stabilizing)
- Determine whether natural chemical or biological degradation continues to occur, reducing the contaminant mass and associated concentrations
- Evaluate whether Site cleanup will continue to progress toward cleanup in a reasonable restoration timeframe.

The City conducted quarterly MNA sampling from fall 2012 to fall 2013, yielding 5 quarters of data (presented in the RI/FS). Based on data collected during the 2012 and 2013 quarterly MNA sampling, the City proposes to modify the program for the final remedy by:

- Removing wells MW-1 and RNS-MW7:
  - MW-1 is screened only in the fill and the VOC results have been below CULs since April 2009. MW-2 is adequately representative of the area where MW-1 and MW-2 are located. It is located just upgradient of MW-1, is screened in the fill and just into the Qvi geologic unit, and results for VC are occasionally at or above the CUL; cis-1,2-DCE is

the other COC detected, but its concentrations are close to non-detect and well below the CUL.

  - RNS-MW7 was included in the quarterly MNA sampling (not ever part of RI VOC sampling) to see if it may serve as a reasonable background well location. The MNA results from this well have not been that different from some other cross-gradient wells and have not been proven useful. Generally speaking, groundwater in this part of Tacoma was fairly industrial historically, so locating the perfect background well is not feasible. It is proposed that this well no longer be sampled.

- Reducing sample depths at LAI-MW5 and RNS-MW2 to one depth per well:
  - LAI-MW5: VOC results at the two sample depths are nearly identical and both are located within the pre-Fraser geologic unit. The following is proposed: 1) remove the upper sample depth and keep the lower sample depth; and 2) replace the MNA sample depth (which had been the midpoint between the two VOC sampling depths) to be equivalent to the lower VOC sample depth.
  - RNS-MW2: VOC results at the two sample depths are approximately the same. The upper sample depth is within the Qvi geologic unit; whereas, the lower is understood to be within the pre-Fraser geologic unit. The following is proposed: 1) remove the upper sample depth and keep the lower sample depth; and 2) replace the MNA sample depth (which had been the midpoint between the two VOC sampling depths) to be equivalent to the lower VOC sample depth.

Groundwater sampling will be conducted in general accordance with the *Draft Sampling and Analysis Plan* (SAP), with minor changes as described above and summarized in Table 1. The Draft SAP was prepared by Landau Associates for the RI and documents procedures for groundwater sampling, field documentation, sample handling and documentation, and waste handling (Landau Associates 2013). A site-specific health and safety plan has been developed and is provided in Appendix A.

The proposed MNA remedy will consist of conducting groundwater monitoring at nine existing monitoring wells (LAI-MW1 through LAI-MW5, MW-2, MW-13, RNS-MW2, and RNS-MW6), shown on Figure 3. Sampling will focus on collection of the Site COCs (the four VOCs), which provide the best documentation of natural attenuation. The MNA remedy will be used to demonstrate that naturally occurring *in situ* attenuation processes are effective in limiting the plume extent to its current extent; that discharge to surface water is not occurring; and that contaminant concentrations are stable or declining. A number of factors provide evidence that natural attenuation processes are effectively limiting plume migration: 1) completion of the 2009 interim soil removal action at the former Sauro's property; 2) existing groundwater monitoring data indicates that the secondary plume has diminished to the former Sauro's property line along Court A; and 3) knowledge of the age of the release (as old as 50 years). Ongoing monitoring will be conducted per U.S. Environmental Protection Agency (EPA) guidance (EPA 1998) and the recommended MNA performance monitoring schedule in Ecology guidance (Ecology website 2005); i.e., the wells indicated above will be monitored on the following schedule:

- Year 1: quarterly (this component effectively covered in 2012 through 2013)

- Years 2 and 3: semi-annually
- Subsequent years (assume years 4 – 30): annually.

Groundwater monitoring results will be compared to groundwater CULs at applicable performance monitoring locations to evaluate the effectiveness of the MNA remedy and direct future sampling activities.

2.3.2 INSTITUTIONAL CONTROLS

The City proposes implementing the secondary component of the remedy (institutional controls) to achieve the following:

- Prohibit the use of Site groundwater as a potable water supply (already addressed by City ordinance)
- Restrict intrusive activities on City-owned property or right-of-way
- Require that proper safety measures and soil management practices be implemented as part of any project involving disturbance of soil at the Site (in accordance with WAC 173-340-440).

For the City-owned property, the institutional controls will be conveyed as a restrictive covenant (Environmental Covenant – UECA Compliant) on the City property and recorded on the deeds registered with Pierce County/City of Tacoma. This covenant will be binding on the owner's successors and assignees. Documented administrative procedures will need to be established to ensure that redevelopment and utility maintenance activities on City property are coordinated carefully to prevent unacceptable exposure of subsurface contamination to temporary construction contractors. Copies of the Environmental Covenant will be provided to the County Auditor, the City of Tacoma Planning Department (per WAC 173-340-440 (10)) and the owner of affected adjacent private properties.

Regarding the impacted private properties, the current owner (private investor) purchased the two properties since the AO was signed and is aware of the subsurface impacts and the City's commitment to adhering to the AO requirements. The City will provide an update on the project and status of subsurface impacts to the current owner of the private properties. A documented administrative procedure will be established to ensure that the City will coordinate with the owner of the two private properties. The work will be performed in such a manner that the City will address any required environmental monitoring for dewatering or excavation that could generate contaminated waste and ensure that worker health and safety is adequately protected.

The physical component of institutional controls (physical barriers, including liners and pavement) is already in place at the former Sauro's property (overlies the residual soil contamination) and throughout much of the Site (extent of impacted groundwater above CULs). The existing institutional controls prevent activities that would result in risk to human health and the environment. As mentioned, the administrative components of the institutional control remedy are not yet in place.

3.0 CLEANUP STANDARDS

This section develops Site cleanup standards for chemical constituents that were detected in affected Site media. Cleanup standards consist of 1) CULs defined by regulatory criteria that are adequately protective of human health and the environment and, 2) the point of compliance at which the CULs must be met.

3.1 GROUNDWATER CLEANUP LEVELS

As described in the RI/FS, the highest beneficial use for groundwater is considered drinking water. Although Site groundwater is not used for drinking water, the MTCA Method A CULs are considered conservative and were proposed in the RI/FS and approved by Ecology in July 2014 (Coleman e-mail 2014). MTCA regulations (WAC 173-340-704) indicate that "Method A may be used to establish cleanup levels at sites that have few hazardous substances and . . . sites where numerical standards are available in this chapter for applicable state and federal laws for all indicator hazardous substances in the media for which the Method A cleanup level is being used." The COCs in groundwater include PCE and breakdown products. These COCs and their associated CULs[6] are provided in Table 2.

3.2 GROUNDWATER POINT OF COMPLIANCE

Under MTCA, the point of compliance is the point or location on the Site where the CULs must be attained. The standard point of compliance for groundwater, as established under WAC 173-340-720(8), is typically throughout the site when the highest beneficial use is drinking water. There are no existing drinking water wells within the Site or immediate surrounding area (Ecology website 2014b). The Site is in Tacoma, where the public water purveyor, Tacoma Water, supplies potable water service throughout the Site and surrounding area. In accordance with Tacoma Water's Customer Service Policy Section 4.0 and the Tacoma Municipal Code Title 12.10, customers within the City limits shall have water service provided to them by Tacoma Water. Therefore, customers (property owners) within the Site will not be allowed to install private drinking water supply wells. Since there are no drinking water wells and new ones cannot be installed, groundwater may not be used as a potable drinking water source within the Site or the immediate surrounding area. However, because MTCA Method A is being used, this assumes protection of groundwater; therefore, the point of compliance will be throughout the Site. The compliance monitoring locations consist of the nine wells to be monitored for MNA.

[6] Cis-1,2-DCE does not have a MTCA Method A value; therefore, the Federal/State maximum contaminant level (MCL), 70 micrograms per liter, is used as a CUL.

4.0 APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS

In accordance with MTCA, all cleanup actions conducted under MTCA shall comply with applicable state and federal laws [WAC 173-340-710(1)]. MTCA defines applicable state and federal laws to include legally applicable requirements and those requirements that are relevant and appropriate. Collectively, these requirements are referred to as applicable or relevant and appropriate requirements (ARARs). This section provides a brief overview of potential ARARs for Site cleanup. The primary ARAR is the MTCA cleanup regulation (WAC 173-340), especially with respect to the development of CULs and procedures for development and implementation of a cleanup under MTCA. The primary ARARs that may be applicable to the cleanup action include the following:

- Federal MCLs for drinking water [40 Code of Federal Regulations (CFR) Part 141].
- Washington Clean Air Act, Chapter 70.94 RCW.
- Washington Water Pollution Control Act and the following implementing regulation: Water Quality Standards for Surface Waters (WAC 173-201A). These regulations establish water quality standards for surface waters of the State of Washington consistent with public health and the propagation and protection of fish, shellfish, and wildlife. These standards are used in the development of groundwater CULs for the Site.
- Washington Hazardous Waste Management Act (Chapter 70.105 RCW) and the following implementing regulation: Dangerous Waste Regulations (WAC 173-303). These regulations establish a comprehensive statewide framework for the planning, regulation, control, and management, of dangerous waste. The regulation designates those solid wastes which are dangerous or extremely hazardous to the public health and environment. The management of excavated contaminated soil from the Site will be conducted in accordance with these regulations to the extent that any dangerous wastes are discovered or generated during the cleanup action.
- Washington Solid Waste Management Act (Chapter 70.95 RCW) and the following implementing regulation: Minimum Functional Standards for Solid Waste Handling (WAC 173-304). These regulations establish a comprehensive statewide program for solid waste management including proper handling and disposal. The management of excavated contaminated soil from the Site will be conducted in accordance with these regulations to the extent that this soil could be managed as solid waste instead of dangerous waste.
- Hazardous Waste Operations (WAC 296-843). Establishes safety requirements for workers providing investigation and cleanup operations at Sites containing hazardous materials. These requirements will be applicable to onsite cleanup activities and will be addressed in a Site health and safety plan prepared specifically for these activities.
- Solid and Hazardous Waste Management (RCW 70.105; Chapter 173-303 WAC; 40 CFR 241, 257; Chapter 173-350 and 173-351 WAC) and Land Disposal Restrictions (40 CFR 268; WAC 173-303-340).
- Washington Industrial Safety and Health Act (RCW 49.17) and the Federal Occupational Safety and Health Act (29 CFR 1910, 1926).
- State Environmental Policy Act (SEPA; RCW 43.21C and Chapter 197-11 WAC).

- State and federal groundwater criteria are considered in the development of CULs. State Dangerous Waste Regulations may be applicable to contaminated soil or groundwater removed from the Site during cleanup activities due to contamination characteristics. Substantive SEPA requirements will be addressed concurrent with the Site draft CAP to the degree applicable for the selected cleanup action.

5.0 PUBLIC PARTICIPATION/COMMUNICATIONS

Consideration of public concerns is an inherent part of the Site cleanup process under MTCA (see WAC 173-340-600). Prior to implementation of a cleanup action, this draft CAP will be issued by Ecology for public comment as specified in WAC 173-340-380. Under this process, Ecology will publish a notice in the site registry regarding the availability of this draft CAP document for public review and comment.

6.0 SCHEDULE FOR IMPLEMENTATION

Following public review of the AO and draft CAP, the cleanup will progress in a series of implementation phases, including engineering and design (negligible for this cleanup), implementation of institutional controls, and performance and compliance monitoring. Long term performance/compliance monitoring is the primary activity related to this cleanup action. Monitoring of potential property sale/acquisition and redevelopment activities at private property within the Site boundaries and enforcement of institutional controls and restrictive covenants will also be a critical element for success of this cleanup action.

As previously discussed, groundwater monitoring will be conducted per EPA guidance (EPA 1998) and the recommended MNA performance monitoring schedule in Ecology guidance (Ecology website 2005); wells will be monitored on the following schedule:

- Year 1: quarterly (this component was effectively covered in 2012 through 2013)
- Years 2 and 3: semi-annually (begins in January 2015)
- Subsequent years (assume years 4 – 30): annually. Annual sampling will be conducted in July.

A groundwater compliance monitoring plan will be developed for Ecology approval within 30 days of signing of an AO for Implementation. The intent of this plan is to serve as a concise work plan for field use. Institutional controls will be implemented within 90 days of signing of the AO for implementation.

7.0 REPORTING, QUALITY ASSURANCE/ CONTROL, DATA SUBMISSION

This section discusses requirements for reporting, quality control/quality assurance procedures, and data submission for the project.

7.1 REPORTING

As previously discussed, wells will be sampled quarterly for the first year, semi-annually for the second and third years, and annually for subsequent years (assume years 4 through 30). Results from sampling events will be documented in regular status reports, which will be provided as technical memorandums and will include figures, data tables, and laboratory analytical data, as applicable, for the previous sampling event. Technical memorandum status reports will be submitted to Ecology within 60 days of each sampling event.

Upon completion of the cleanup action and follow-up confirmation sampling, a draft remedial action completion report will be prepared for submittal to Ecology documenting the results and performance of the cleanup action, and summarizing performance sampling and monitoring results, and the results of confirmation sampling. If the confirmation sampling results adequately demonstrate that cleanup has successfully remediated groundwater to below the Site CULs, the report will include or be accompanied by a request for a "no further action", in the form of a Satisfaction Letter, determination from Ecology. If evidence of residual contamination above CULs is identified by confirmation sampling, appropriate recommendations will be made for continued MNA sampling or implementation of an alternative remedy. After receipt of comments from Ecology, a final report will be prepared for submittal to Ecology.

7.2 QUALITY ASSURANCE/QUALITY CONTROL

Groundwater sampling will be conducted in general accordance with the Draft SAP (Landau Associates 2013), with minor changes as summarized in Table 1. The Draft SAP documents procedures for groundwater sampling, field documentation, sample handling and documentation, and waste handling (Landau Associates 2013).

Samples will be delivered to the laboratory under chain-of-custody procedures in a cooler with ice. Analytical data will be received electronically from the laboratory and will be tabulated using the laboratory electronic deliverable. Following tabulation, data entry will be verified for accuracy and corrections will be made as necessary. The laboratory data will then be evaluated using applicable sections from the EPA Contract Laboratory Program National Functional Guidelines. Appropriate data

validation qualifiers will be applied to the data based on this review, and data will be compared to applicable CULs.

7.3 DATA SUBMISSION

Data from MNA sampling will be tabulated and presented in the status reports and the draft remedial action completion report and submitted to Ecology for review. Additionally, all pertinent and applicable data collected during each of the sampling events will be submitted electronically to Ecology via Ecology's Electronic Information Management (EIM) system online database application as required by WAC 173-340-840 and Ecology Toxics Cleanup Program Policy 840. EIM submittals will be made after each sampling event.

8.0 USE OF THIS DOCUMENT

This Cleanup Action Plan has been prepared for use by the City of Tacoma and Ecology for specific application to the former Sauro's Cleanerama Site in Tacoma, Washington. The reuse of information, conclusions, and recommendations provided herein for extensions of the project or for any other project, without review and authorization by Landau Associates and Ecology, shall be at the user's sole risk. Landau Associates warrants that within the limitations of scope, schedule, and budget, our services have been provided in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing in the same locality under similar conditions as this project. We make no other warranty, either express or implied.

The Ecology Review Draft of this document was prepared under the supervision and direction of the following key staff:

LANDAU ASSOCIATES, INC.

Brittany N. Gordon
Senior Staff Biologist

Eric F. Weber, L.Hg., CWRE
Principal

The Final Draft of this document was prepared by:

WASHINGTON STATE DEPARTMENT OF ECOLOGY
SOUTHWEST REGIONAL OFFICE, TOXICS CLEANUP PROGRAM

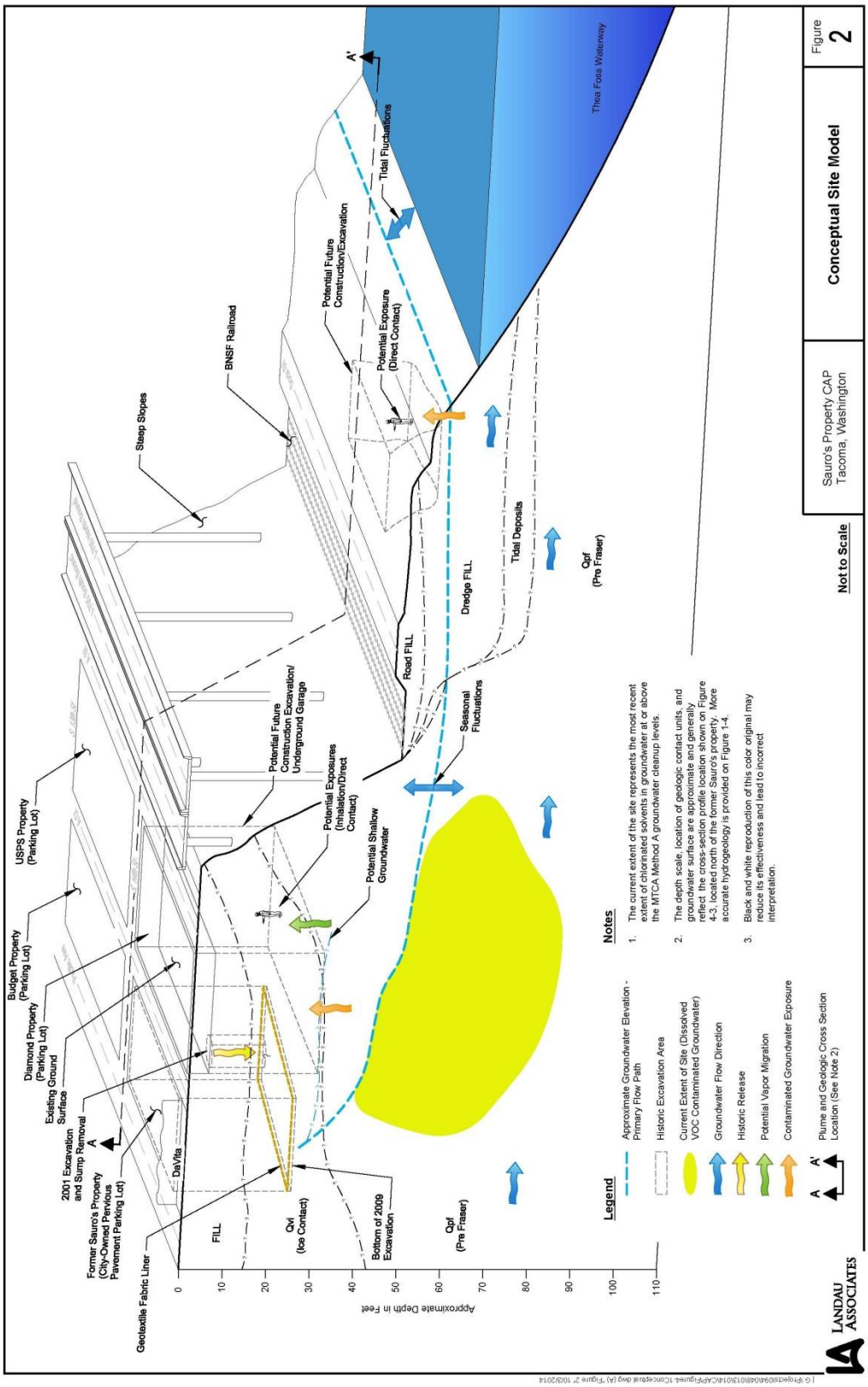
Marv Coleman
Cleanup Project Manager

9.0 REFERENCES

- *Draft Cleanup Action Plan, Former Sauro's Cleanarama Site.* Ecology Review Draft Prepared by Landau Associates, October 3, 2014; Final Draft Prepared by Ecology, November 2014.
- *Remedial Investigation/Feasibility Study, Sauro's Cleanarama Site.* Prepared by Landau Associates, August 29. 2014.
- Email message from Marv Coleman, Site Manager, Inspector, Washington State Department of Ecology, to Eric Weber, Landau Associates, and Calvin Taylor, City of Tacoma. Re: *RI FS Comments*. July 9, 2014.
- Ecology website. Toxics Cleanup Program Web Reporting. https://fortress.wa.gov/ecy/tcpwebreporting/report.aspx. Washington State Department of Ecology. Accessed April 25, 2014a.
- Ecology website. Washington State Well Log Viewer. https://fortress.wa.gov/ecy/waterresources/map/WCLSWebMap/default.aspx. Washington State Department of Ecology. Accessed February 25,2014.
- Ecology website. *Guidance on Remediation of Petroleum-Contaminated Ground Water By Natural Attenuation*. Washington State Department of Ecology. Publication No. 05-09-091 (Version 1.0). July 2005. Available at: https://fortress.wa.gov/ecy/publications/ publications/0509091.pdf. Accessed January 2014.
- *Monitored Natural Attenuation Remedy Evaluation Sampling Work Plan, Sauro's Cleanarama Site*. Prepared by Landau Associates, September 6, 2012.
- *Soil Vapor Intrusion, Evaluation of Neighboring Properties, Sauro's Cleanarama.* Prepared by Landau Associates, August 19, 2009.
- *Interim Cleanup Action Work Plan, 1401, 1407, & 1409 Pacific Avenue, Sauro's Property.* Prepared by Landau Associates, May 18, 2009.
- *Technical Memorandum, Excavation Shoring Considerations, Proposed Environmental Remediation Excavation, Sauros Property, Tacoma, Washington*. Prepared by Landau Associates, April 7, 2009.
- *Remedial Investigation Work Plan Addendum, Sauro Site.* Prepared by Landau Associates, March 26, 2009.
- *DRAFT Remedial Investigation Work Plan, Sauro Property, 1401 Pacific Avenue, Tacoma, Washington.* Prepared by Landau Associates, February 23, 2009.
- *DRAFT Work Plan Interim Cleanup Action 1401, 1407 & 1409 Pacific Avenue, Sauro's Property, Tacoma, Washington.* Prepared by Landau Associates, April 22, 2009.
- *Additional Characterization and Pilot Feasibility Testing, Former Sauro's Cleanarama Site, Tacoma, Washington*. Prepared by Farallon Consulting, Inc, January 11, 2008.
- DRAFT *Phase I ESA Sauro Property*-1401, 1407 & 1409 Pacific Avenue, Tacoma, Washington. Prepared by Landau Associates, June 6, 2008.
- *Phase II Investigation Repoert, Sauro Property-1401, 1407 & 1409 Pacific Avenue, Tacoma, Washington*. Prepared by Landau Associates, June 17, 2008.
- *Additional Groundwater Characterization, former Sauro's Cleanarama Site, Tacoma, Washington*. Prepared by Robinson, Noble, & Saltbush, August 2006.
- *Summary of Additional Subsurface Investigation, Former Sauro's Cleanarama, Tacoma, Washington*. Prepared by Farallon Consulting, Inc, August 25, 2005.
- DRAFT *Subsurface Environmental Assessment, Sauro's Cleanarama, 1401 Pacific Avenue, Tacoma, Washington*. Prepared by GeoEngineers, Inc, November 11, 2003.
- *Subsurface Environmental Assessment, Sauro's Cleanarama, 1401 Pacific Avenue, Tacoma, Washington*. Prepared by GeoEngineers, Inc, March 21, 2001.
- *Supplemental Site Exploration, TRC Building, 1423 Pacific Avenue, Tacoma, Washington*. Prepared by Environmental Associates, October 16, 2001.

- *Phase II Environmental Assessment (Limited Soil Sampling and Testing), the 1409 Pacific Avenue Project, Tacoma, Pierce County, Washington.* Prepared by Saltbush Environmental Services, Inc, April 25, 2000.
- *Subsurface Environmental Assessment, Sauro's Cleanarama, 1401 Pacific Avenue, Tacoma, Washington*. Prepared by GeoEngineers, Inc, October 27, 2000.
- EPA. *Technical Protocol for Natural Attenuation of Chlorinated Solvents in Groundwater*. U.S. Environmental Protection Agency, Office of Research and Development. EPA/600/R-98/128. September, 1998.
- *Preliminary Environmental Assessment, Sauro's Cleanarama, Tacoma, Washington*. Prepared by Kennedy/Jenks Consultants, October 27, 1992.


Ruston Way
Old Tacoma
N 30th St
Schuster Pky
Commencement Bay
N Carr St
N Tacoma Ave
N 21st St
N I St
N 15th St
Stadium Way
N 6th St
Division Ave
6th Ave
Project Area
S 1st St
Market St
Thea Foss Waterway
E 11th St
Saint Paul Ave
Puyallup River
Lincoln Ave
Milwaukee Way
S 12th St
Earnest S Brazill St
S Sprague Ave
E 15th St
Former Sauro's Property
705
Pacific Ave
E D St
S Cedar St
S 19th St
509
Eells St
Allenmore Public Golf Course
Tacoma
Tacoma Ave S
Jefferson Ave
Puyallup Ave
Bay St
E 26th St
S 25th St
Tacoma Dome
167
16
Center St
5
Delin St
E L St
E Portland Ave
S Tacoma Way
S Pine St
S G St
Mckinley Ave
N
0
0.5
1
Miles
Everett
Seattle
Tacoma
Project Location
Spokane
Olympia
Washington
Data Source: Esri 2012
G:\Projects\094045\013\014\CAP\Figure1VicMap.mxd 9/27/2014 NAD 1983 StatePlane Washington North FIPS 4601 Feet
LANDAU ASSOCIATES
Sauro's Property CAP
Tacoma, Washington
Vicinity Map
Figure
1


Conceptual Site Model
Figure 2
Sauro's Property CAP
Tacoma, Washington
Not to Scale
LANDAU ASSOCIATES
Thea Foss Waterway
Tidal Fluctuations
Potential Future Construction/Excavation
Potential Exposure (Direct Contact)
BNSF Railroad
Steep Slopes
USPS Property (Parking Lot)
Budget Property (Parking Lot)
Diamond Property (Parking Lot)
Existing Ground Surface
2001 Excavation and Sump Removal
Former Sauro's Property (City-Owned Pervious Pavement Parking Lot)
DaVita
Geotextile Fabric Liner
FILL
Qvi (Ice Contact)
Bottom of 2009 Excavation
Qpf (Pre Fraser)
Potential Future Construction Excavation/ Underground Garage
Potential Exposures (Inhalation/Direct Contact)
Potential Shallow Groundwater
Road FILL
Dredge FILL
Seasonal Fluctuations
Tidal Deposits
Qpf (Pre Fraser)
Approximate Depth in Feet
0
10
20
30
40
50
60
70
80
90
100
110
Legend
Approximate Groundwater Elevation - Primary Flow Path
Historic Excavation Area
Current Extent of Site (Dissolved VOC Contaminated Groundwater)
Groundwater Flow Direction
Historic Release
Potential Vapor Migration
Contaminated Groundwater Exposure
A A'
Plume and Geologic Cross Section Location (See Note 2)
Notes
1. The current extent of the site represents the most recent extent of chlorinated solvents in groundwater at or above the MTCA Method A groundwater cleanup levels.
2. The depth scale, location of geologic contact units, and groundwater surface are approximate and generally reflect the cross-section profile location shown on Figure 4-3, located north of the former Sauro's property. More accurate hydrogeology is provided on Figure 1-4.
3. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

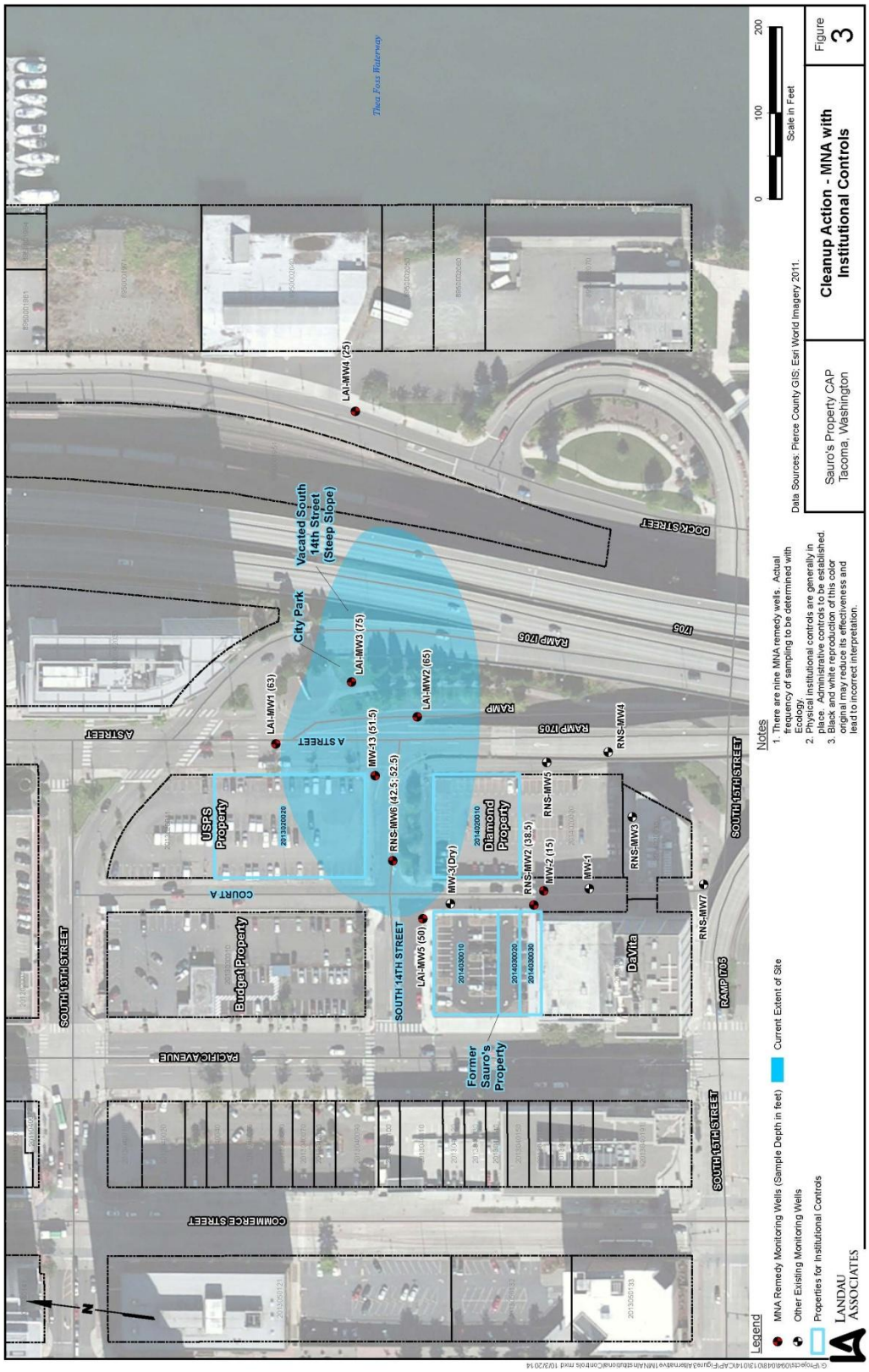

Vacated South 14th Street (Steep Slope)
City Park
Thea Foss Waterway
A STREET
SOUTH 16TH STREET
SOUTH 15TH STREET
SOUTH 14TH STREET
COURT A
PACIFIC AVENUE
COMMERCE STREET
DOCK STREET
RAMP I705
I705
USPS Property
Budget Property
Diamond Property
Former Sauro's Property
DeVita
LAI-MW1 (63)
LAI-MW2 (65)
LAI-MW3 (75)
LAI-MW4 (25)
LAI-MW5 (50)
MW-13 (51.5)
RNS-MW6 (42.5; 52.5)
MW-3(Dry)
RNS-MW2 (38.5)
MW-2 (15)
MW-1
RNS-MW5
RNS-MW4
RNS-MW3
RNS-MW7
Legend
MNA Remedy Monitoring Wells (Sample Depth in feet)
Other Existing Monitoring Wells
Properties for Institutional Controls
Current Extent of Site
Notes
1. There are nine MNA remedy wells. Actual frequency of sampling to be determined with Ecology.
2. Physical institutional controls are generally in place. Administrative controls to be established.
3. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.
Data Sources: Pierce County GIS; Esri World Imagery 2011.
0
100
200
Scale in Feet
Sauro's Property CAP
Tacoma, Washington
Cleanup Action - MNA with Institutional Controls
Figure 3
LANDAU ASSOCIATES

TABLE 1
CLEANUP ACTION - MONITORED NATURAL ATTENUATION SAMPLING PLAN
SAURO'S PROPERTY CAP
TACOMA, WASHINGTON

Location	VOCs Sampling Depth (ft)	VOCs Concentration Data Sample Method	MNA Parameters Sampling Depth (ft)	MNA Parameters Sample Method
LAI-MW1	63	PDB	63	WAT
LAI-MW2	65	PDB	65	WAT
LAI-MW3	75	PDB	75	WAT
LAI-MW4	25	PDB	25	WAT
LAI-MW5	42	PDB	50	WAT
LAI-MW5 (a)	50	PDB		
MW1-PP	18(b)	PP	18	PP
MW2-PP	15(b)	PP	15	PP
MW13	51.5	PDB	51.5	WAT
RNS-MW2	21.5	PDB	38.5	WAT
RNS-MW2 (a)	38.5	PDB		
RNS-MW6 (b)	42.5	PDB	47.5	WAT
RNS-MW6 (b)	52.5	PDB		
RNS-MW7	NPS	NPS	41	WAT

Sample point from RI to be discontinued
Revised sample depth

NPS = not previously sampled
PP = peristaltic pump w/dedicated tubing
PDB = permeable diffusion bag
Q = quarterly
SA = semiannual
WAT = (dedicated) Waterra foot valve (w/dedicated tubing 5/8" HDPE tubing)

(a) The Monitored Natural Attenuation (MNA) sampling depth has been revised to be the same as the remaining volatile organic compound (VOC) sampling depth.
(b) For RNS-MW6, where there is two VOC sampling depths, the MNA sampling depth is the mid-point between the two VOC sampling depths.

TABLE 2
GROUNDWATER AND SOIL CLEANUP LEVELS
SAURO'S PROPERTY RI/FS
TACOMA, WASHINGTON

Medium	Units	Groundwater and Soil MTCA Method A CUL or Screening Level				Groundwater Federal/State Primary MCL	Point of Compliance
		PCE	TCE	cis-1,2-DCE	VC	cis-1,2-DCE	
Groundwater	µg/L	5	5	NE	0.2	70	Throughout Site
Soil - direct contact	µg/kg	50	30	NE	NE	NE	Ground surface to 15 ft BGS
Soil - protective of groundwater (d)	µg/kg						Throughout Site

MCL = Maximum Contaminant Levels
MTCA = Model Toxics Control Act
NE = not established
µg/L = micrograms per liter
µg/kg = micograms per kilogram

(a) Cis-1,2-DCE does not have a Model Toxics Control Act (MTCA) Method A cleanup level (CUL) for groundwater; therefore, the Federal/State primary MCL value of 70 µg/L is used as a cleanup level .

Note:
Federal ARARs and MTCA Method A values based on CLARC database (accessed November 25, 2013)

APPENDIX A

Health and Safety Plan

LANDAU ASSOCIATES
ENVIRONMENTAL | GEOTECHNICAL | NATURAL RESOURCES

WORK LOCATION PERSONNEL PROTECTION AND SAFETY EVALUATION FORM

Attach Pertinent Documents/Data
Fill in Blanks As Appropriate

Job No.:	0094048.013	Revised:	
Prepared by:	Brittany Gordon	Reviewed by:	Christine Kimmel
Date:	August 29, 2014	Date:	September 2, 2014

A. WORK LOCATIONS DESCRIPTION

1. **Project Name:** Former Sauro's Property Monitored Natural Attenuation Groundwater Sampling
2. **Location:** Tacoma, Washington
3. **Anticipated Activities:** Groundwater sampling
4. **Size:** Approximately 2 acres
5. **Surrounding Population:** Mixed industrial and commercial
6. **Buildings/Homes/Industry:** Commercial/industrial buildings, roadways, parking areas
7. **Topography:** Mostly flat paved surface or landscaping, gradual slope toward the Foss Waterway
8. **Anticipated Weather:** 25 to 80 degrees Fahrenheit
9. **Unusual Features:** Occasional work in roadways
10. **Site History:** Groundwater beneath the Site contains chlorinated solvent contamination associated with a former dry cleaning facility. The approved 2014 RI/FS proposed monitored natural attenuation of PCE with institutional controls as the Site remedy. This groundwater sampling plan will monitor natural breakdown of PCE for approximately 30 years. Year 1 will consist of quarterly sampling, years 2 and 3 will consist of semi-annual sampling, and subsequent years will consist of annual sampling.

B. HAZARD DESCRIPTION

1. **Background Review:** ☒ Complete ☐ Partial

   If partial, why?

2. **Hazardous Level:** ☐ B ☐ C ☒ D ☐ Unknown

   Justification: Existing data regarding site conditions

3. **Types of Hazards:** (Attach additional sheets as necessary)

   A. ☒ Chemical ☒ Inhalation ☐ Explosive
   ☐ Biological ☒ Ingestion ☐ O2 Def. ☒ Skin Contact

   Describe: Sampling of groundwater impacted by VOCs.

   B. ☒ Physical ☒ Cold Stress ☐ Noise ☒ Heat Stress ☐ Other

   Describe: Physical hazards associated with working outdoors near roadways. Potential for cold, wet weather or hot dry weather.

   C. ☐ Radiation

   Describe:

4. **Nature of Hazards:**

☒ Air	Describe: Potential for volatile constituents to be released from contaminated groundwater.
☐ Soil	Describe:
☐ Surface Water	Describe:
☒ Groundwater	Describe: Potential for contact with or ingestion of contaminated groundwater.
☐ Other	Describe:

5. Chemical Contaminants of Concern ☐ N/A

The primary chemical contaminants of concern are VOCs. The table below lists information for these primary compounds and other potential contaminants.

Contaminant	PEL (ppm)	I.D.L.H. (ppm)	Source/Quantity Characteristics	Route of Exposure	Symptoms of Acute Exposure	Instruments Used to Monitor Contaminant
Trichloroethene	50 ppm	1,000 ppm	Present in groundwater Max 260 µg/L	Inhalation, ingestion, dermal contact,	Eye, nose, and throat irritation; headache; nausea	Footnote A
Vinyl Chloride	1 ppm	5 ppm	Present in groundwater Max 118 µg/L	Inhalation, ingestion, dermal contact	Weakness, abdominal pain	Footnote A
cis-1,2-Dichloroethene	200 ppm	4,000 ppm	Present in groundwater Max 200 µg/L	Inhalation, ingestion, dermal contact	Dizziness, nausea, dermatitis, irritation of mucous membranes	Footnote A
Tetrachloroethene	50 ppm	150 ppm	Present in groundwater Max 1500 µg/L	Inhalation, ingestion, dermal contact	Eye, nose, skin and throat irritation; nausea; flushed face and neck; dizziness, incoherent; drowsy	Footnote A

Footnote A Based on previous samples collected, concentrations of VOCs in groundwater are not expected to result in measurable concentrations of VOCs in ambient air during sampling.

ppm: Parts per Million
PEL: Personal Exposure Limit
IDLH: Immediately Dangerous to Life and Health
µg/L: Micrograms per Liter

6. Physical Hazards of Concern ☐ N/A

Hazard	Description	Location	Procedures Used to Monitor Hazard
Road hazards from working along roadways.	Interaction with moving vehicles.	Monitoring well locations that are in public right-of-way.	Use of flaggers and traffic control, alert observation of surroundings, wear highly visible safety vests, park vehicle between work zone and oncoming traffic.
Weather Stress.	Exposure to hot or cold temperatures, wind, and rain.	Site wide.	Have drinking water accessible, wear appropriate clothing (light for heat, warm for cold), wear sunscreen, avoid caffeine, take short breaks as needed.
Slip, trips, and falls.	Uneven terrain, slippery surfaces.	Site wide.	Visual observations, keep work area clear of debris, keep focused on working activities.
Travel to and from project site.	Operating motor vehicle in traffic on highways and rural roads.	Route to and from site.	Operate motor vehicle while well rested and physically able to drive safely. Conduct pre-trip vehicle inspection, all vehicles to be maintained and in good working order. Obey all traffic laws including no cell phone use while driving. Secure all cargo properly to avoid shifting. Allow sufficient time for travel to site at safe speeds. Engage emergency brake when parking vehicles. Establish planned route prior to departure.

7. Work Location Instrument Readings ☒ N/A

Location: _____

Percent O_2: _____ Percent LEL: _____

Radioactivity: _____ PID: _____

FID: _____ Other: _____

Other: _____ Other: _____

Other: _____ Other: _____

Location: _____

Percent O_2: _____ Percent LEL: _____

Radioactivity: _____ PID: _____

FID: _____ Other: _____

Other: _____ Other: _____

Other: _____ Other: _____

Location: _____

Percent O_2: _____ Percent LEL: _____

Radioactivity: _____ PID: _____

FID: _____ Other: _____

Other: _____ Other: _____

Other: _____ Other: _____

Location: _____

Percent O_2: _____ Percent LEL: _____

Radioactivity: _____ PID: _____

FID: _____ Other: _____

Other: _____ Other: _____

Other: _____ Other: _____

8. Hazards Expected In Preparation For Work Assignment ☒ N/A

Describe:

C. PERSONAL PROTECTIVE EQUIPMENT

1. Level of Protection

☐ A ☐ B ☐ C ☒ D

Location/Activity: All

2. Protective Equipment (specify probable quantity required)

Respirator ☐ N/A

- ☐ SCBA, Airline
- ☐ Full-Face Respirator
- ☐ Half-Face Respirator (Cart. organic vapor)
- ☐ Escape mask
- ☐ None
- ☐ Other:
- ☐ Other:

Clothing ☐ N/A

- ☐ Fully Encapsulating Suit
- ☐ Chemically Resistant Splash Suit
- ☒ Safety Vests
- ☐ Tyvek Coverall
- ☐ Saranex Coverall
- ☐ Coverall, Specify
- ☐ Other:

Head & Eye ☐ N/A

- ☒ Hard Hat
- ☐ Goggles
- ☐ Face Shield
- ☒ Safety Eyeglasses
- ☐ Other: Hearing protection

Hand Protection ☐ N/A

- ☐ Undergloves; Type:
- ☒ Gloves; Type: Nitrile
- ☐ Overgloves; Type:
- ☐ None
- ☐ Other:

Foot Protection ☐ N/A

- ☒ Neoprene Safety Boots with Steel Toe/Shank
- ☐ Disposable Overboots
- ☐ Other:

3. **Monitoring Equipment** ☒ N/A

☐ CGI	☐ PID
☐ O^2 Meter	☐ FID
☐ Rad Survey	☐ Other
☐ Detector Tubes	

Type:

D. PERSONNEL DECONTAMINATION (ATTACH DIAGRAM)

☐ Required ☒ Not Required

Avoid hand to mouth contact, no eating/drinking in exclusion zone. Wash hand and face after work shift.

EQUIPMENT DECONTAMINATION (ATTACH DIAGRAM)

☒ Required ☐ Not Required

If required, describe and list equipment:

Decontamination of non-dedicated or non-disposable sampling equipment with Alconox®/tap water solution followed by tap water rinse and de-ionized water rinse.

E. PERSONNEL

	Name	Work Location Title/Task	Medical Current	Fit Test Current
1.	Kristin Hooper	Senior Staff Geologist	☒	☒
2.	Sierra Mott	Staff Scientist	☒	☒
3.	Ben Lee	Senior Staff Engineer	☒	☒
4.	Dave Rupert	Senior Staff Geologist	☒	☒
5.	Jamie Sloan	Staff Scientist	☒	☒
6.			☐	☐
7.			☐	☐
8.			☐	☐
9.			☐	☐
10.			☐	☐

Site Safety Coordinator: Kristin Hooper

F. ACTIVITIES COVERED UNDER THIS PLAN

Task No.	Description	Preliminary Schedule
1	Groundwater Sampling	2015-2016: Semi-Annually 2016- ~2044: Annually

EMERGENCY FACILITIES AND NUMBERS

Hospital:
St. Joseph Medical Center
1717 South J Street
Tacoma, Washington 98405

Directions: Attachment A

Telephone: (253) 426-4101

Emergency Transportation Systems (Fire, Police, Ambulance) – 911

Emergency Routes – Map (Attachment A)

Emergency Contacts:

	Offsite
Landau Associates	
Christine Kimmel	(206) 786-3801
Eric Weber	(253) 284-4878

HEALTH AND SAFETY PLAN
APPROVAL/SIGN OFF FORMAT

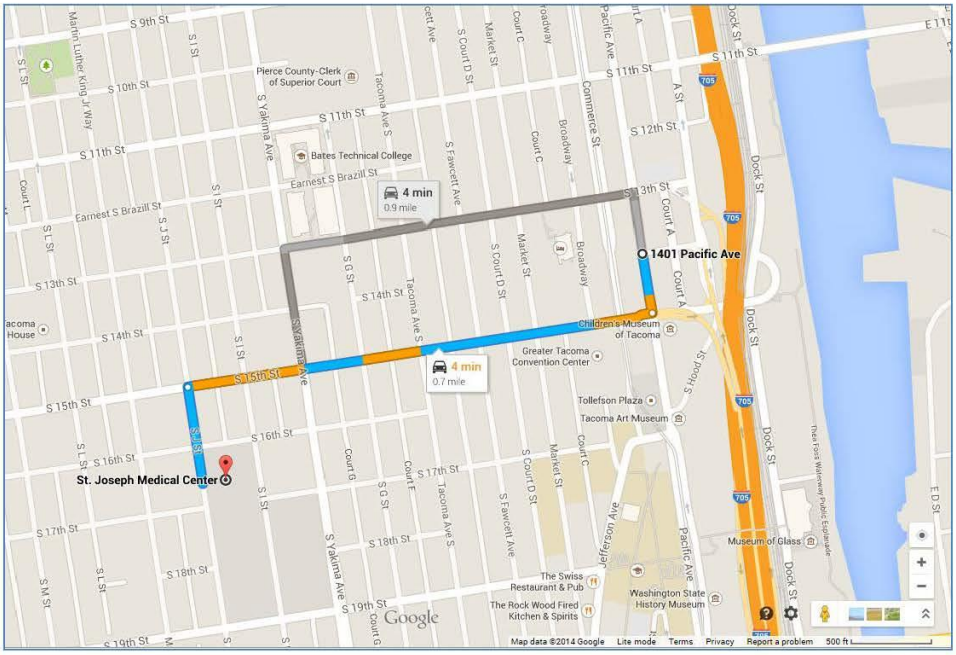
I have read, understood, and agreed with the information set forth in this Health and Safety Plan (and attachments) and discussed in the Personnel Health and Safety briefing.

Name	Signature	Date
Name	Signature	Date
Name	Signature	Date
Name	Signature	Date
Name	Signature	Date
Kristin Hooper Site Safety Coordinator	Signature	Date
Christine Kimmel Landau Associates' Health and Safety Manager	Signature	Date
Eric Weber Project Manager	Signature	Date

Personnel Health and Safety Briefing Conducted By:

Name	Signature	Date

ATTACHMENT A
OFFSITE WORK - ROUTE TO HOSPITAL



Directions:

1. Head south on Pacific Avenue toward South 15th Street.
2. Turn right on South 15th Street.
3. Turn left on South J Street.