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of Ecology (SWRO)

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

In the Matter of Remedial Action by:

AGREED ORDER

City of Tacoma, Washington State Department
of Transportation, Puget Sound Energy,
PacifiCorp

No. DE 13972

TO: City of Tacoma
c/o Mary Henley
City of Tacoma, Public Works Department
326 East D Street
Tacoma, WA 98421

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TABLE OF CONTENTS

I. INTRODUCTION.....3
II. JURISDICTION.....3
III. PARTIES BOUND.....3
IV. DEFINITIONS.....3
V. FINDINGS OF FACT.....5
VI. ECOLOGY DETERMINATIONS.....7

VII.	WORK TO BE PERFORMED	9
VIII.	TERMS AND CONDITIONS.....	12
	A. Remedial Action Costs	12
	B. Designated Project Coordinators	13
	C. Performance	14
	D. Access	15
	E. Sampling, Data Submittal, and Availability	15
	F. Public Participation.....	16
	G. Retention of Records.....	18
	H. Resolution of Disputes.....	18
	I. Extension of Schedule.....	20
	J. Amendment of Order	21
	K. Endangerment	22
	L. Reservation of Rights.....	23
	M. Transfer of Interest in Property.....	24
	N. Compliance with Applicable Laws.....	24
	O. Land Use Restrictions	25
	P. Periodic Review	26
	Q. Indemnification.....	26
IX.	SATISFACTION OF ORDER.....	27
X.	ENFORCEMENT	27

EXHIBIT A Site Diagram

EXHIBIT B *Groundwater Sampling and Analysis Plan, DOF, April 22, 2016*

I. INTRODUCTION

The mutual objective of the State of Washington, Department of Ecology (Ecology) and City of Tacoma, Puget Sound Energy, PacifiCorp, and Washington State Department of Transportation (WSDOT) – herein-after, “PLPs”, 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 PLPs to complete a Remedial Investigation and Feasibility Study (RI/FS) and develop a Draft Cleanup Action Plan (dCAP) for the Tacoma Coal Gasification Site, Ecology FSID # 1249. The Site has been the subject of Agreed Order No. DE 93TC-S166, signed October 28, 1993. 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. PLPs agree to undertake all actions required by the terms and conditions of this Order. No change in ownership or corporate status shall alter PLPs’ responsibility under this Order. PLPs 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 Tacoma Coal Gasification Site (the Site) and is generally located at South 21st to South 24th Streets and South A Street to Thea Foss Waterway, Tacoma, WA. The legal description of the Site is: Blocks 57, 2200, 2300, 2101, 2201, and 2301 of Tacoma Land Company's Second Addition to Tacoma, W.T. Based upon factors currently known to Ecology, the Site is generally described in the Site Diagram (Exhibit A). The Site is defined by the extent of contamination caused by the release of hazardous substances at the Site. The Site constitutes a facility under RCW 70.105D.020(8).

B. Parties: Refers to the State of Washington, Department of Ecology and City of Tacoma, Puget Sound Energy, PacifiCorp, and Washington State Department of Transportation (WSDOT).

C. Potentially Liable Persons (PLPs): Refers to City of Tacoma, Puget Sound Energy, PacifiCorp, and Washington State Department of Transportation (WSDOT).

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. MTCA: Model Toxics Control Act -- Chapter 70.105D RCW (Statute) and Chapter 173-340 WAC (Regulation).

F. COCs: Contaminants of Concern – those contaminants that are used to determine the nature and extent of contamination present at the Site. Generally, these include polynuclear aromatic hydrocarbons (PAHs) and benzene, toluene, ethylbenzene, xylenes (BTEX).

G. RI/FS: Remedial Investigation/Feasibility Study – Report of the results of investigation activities and consideration of relative costs and expected effectiveness of remedial options. Informal consultation to discuss these issues will be conducted prior to the generation of the Draft RI/FS.

H. dCAP: Draft Cleanup Action Plan – Proposed final remediation option(s) to be implemented for the purpose of achieving cleanup of the site in accordance with MTCA.

- I. UECA: Uniform Environmental Covenants Act – Chapter 64.70 RCW.

V. FINDINGS OF FACT

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

- A. A coal gasification plant operated on portions of the Site.
- B. The purpose of previous Agreed Order No. DE 93TC-S166 was to provide an administrative process by which the PLPs would determine the source(s) of potential ongoing contamination to Thea Foss Waterway, and to develop & implement remedial actions for mitigation of the ongoing contamination migration to Thea Foss Waterway. These activities were to be performed as Interim Actions in accordance with WAC 173-340. Extensive remedial activities, including historical investigations were completed as part of Agreed Order No. DE 93TC-S166, and First and Second Amendments to the order.
- C. The City of Tacoma (“City”) owns public property and maintains public rights-of-way within limited portions of the Site. Included in these portions are street ROWs (South 22nd and 23rd Streets and Dock Street), as well as a previously developed park (parcel ID: 2022000021) and pier (now removed) near the head of the waterway (shown on attached Exhibit A). The Washington State Department of Transportation (“WSDOT”) owns portions of the Site, consisting of the ROW for the SR 705 Spur. Puget Sound Energy or “PSE” (formerly Washington Natural Gas) was an owner and an operator of the Site. PacifiCorp was an owner and an operator of the Site as a successor corporation to Mountain States Power.
- D. During construction of the SR 705 Spur highway, extensive deposits of waste material generally known as coal tar, as well as contaminated soils, and contaminated groundwater were discovered on the Site and documented in reports prepared by Black &

Veatch¹ as part of Agreed Order 93TC-S166. Contaminants of concern included PAHs and BTEX. Contaminated soils encountered during roadway construction excavation activities were removed from parts of the Site that lay within the spur ROW. Soils and groundwater contaminated by historical coal gas manufacturing operation may remain within the Site. Additional investigation and study is needed to determine the nature and extent of such contamination and the cleanup actions needed to address it. The Site is now overlain by elevated portions of SR 705 supported by large concrete piers and soil abutments.

E. The Head of the Thea Foss Waterway was remediated in 2003-2004². During site investigations, free coal tar was observed entering the waterway from a seep along the shoreline of the site along with coal tar derived deposits discovered in deeper sediments beneath the head of the waterway. A portion of these coal tar derived deposits and seep were sourced to the Standard Chemical Company, a coal tar distillation facility, which operated on property located along the shoreline and immediately north of the three tanks (shown on attached Exhibit A)³.

F. As a result of investigative actions performed by the PLPs and Ecology, it was found that a portion of the Site, identified as property owned at that time by Waterway Properties, Inc., was found to be a source of contamination, resulting from the activities of Standard Chemical Company, Inc. In 2001 and 2002, Ecology performed a State led cleanup of the Standard Chemical Site under the Clean Sites Initiative³. This work entailed the removal of contamination that was impacting upland soils and groundwater, as well as sediments and surface water in Thea Foss Waterway. Concomitant with the Ecology led cleanup, Waterway Properties, Inc. was removed

¹ Black & Veatch: (1) 1994, Draft Focused Site Characterization and Interim Remedial Action Evaluation Report, The Tacoma Coal Gasification Site, V. 1 and II, prepared for City of Tacoma, April 1994; (2) Draft Technical Memorandum, Pre-Remedial Design Investigation, Tacoma Historical Coal Gasification Site, prepared for the City of Tacoma, September 1996.

² Dalton, Olmsted & Fuglevand, Inc. (DOF), 2004, Remedial Construction Report, prepared for PacifiCorp Environmental Remediation Company and Puget Sound Energy, June 2004.

³GeoEngineers, 2003, Final Closure Report, Standard Chemical Company Site, Tacoma, Washington; prepared for Washington State Department of Ecology, September 29, 2003.

from Agreed Order No. DE 93TC-166 by the Second Amendment to Agreed Order No. DE 93TC-166.

G. In addition, the Second Amendment redefined the Site boundaries and refined the work to be performed to mitigate for the continued migration of contamination to the Thea Foss Waterway.

H. The PLPs performed other interim actions to eliminate preferential pathways for coal tar to migrate to Thea Foss Waterway sediments and surface water. Additional investigative and monitoring wells were installed in the upland areas of the Site. A well inventory³ was completed in January 2016 to locate existing wells to make measurements to update groundwater flow directions and collect samples to update groundwater quality conditions. A sampling and analysis plan was approved by Ecology and testing was completed in July 2016, December 2016⁴, and April 2017.

I. The PLPs named above are subject to the requirements of this Agreed Order and are expected to cooperate and perform necessary work to achieve regulatory closure to the TCG Site. This work will include the completion of a Remedial Investigation (RI) and, a Feasibility Study (FS). The RI/FS will form the basis to prepare a draft Cleanup Action Plan (dCAP) for the Site.

VI. ECOLOGY DETERMINATIONS

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

A. The PLPs are “owners or operators” as defined in RCW 70.105D.020(22) of a “facility” as defined in RCW 70.105D.020(8). Standards of Liability include Owners and

⁴ DOF, 2016, Results of Well Inventory, A St. MGP, Tacoma, Washington; prepared for PacifiCorp and PSE, January 25, 2016.

⁵ Results are documented in a technical memorandum to Ecology: DOF, 2016, Data Report, A-Street MGP Sampling, Tacoma, Washington; Agency Review Draft: September 27, 2016.

Operators (Puget Energy and PacifiCorp), Owner and Transporter (WSDOT), and Owner (City of Tacoma).

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 PLP status letters to all the aforementioned PLPs prior to the initiation of previous Agreed Order No. DE 93TC-S166 pursuant to RCW 70.105D.040, .020(26), and WAC 173-340-500. Those notices remain valid for the same purposes of this Agreed Order.

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, 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.

E. Under WAC 173-340-430, an interim action is a remedial action that is technically necessary to reduce a threat to human health or the environment by eliminating or substantially reducing one or more pathways for exposure to a hazardous substance, that corrects a problem that may become substantially worse or cost substantially more to address if the remedial action is delayed, or that is needed to provide for completion of a site hazard assessment, remedial investigation/feasibility study, or design of a cleanup action plan. Any Party may propose an interim action under this Order. If the Parties are in agreement concerning the interim action, the Parties will follow the process in Section VII.E. If the Parties are not in agreement, Ecology reserves its authority to require interim action(s) under a separate order or other enforcement action under RCW 70.105D, or to undertake the interim action itself.

F. The previous Agreed Order No. DE 93TC-S166 addressed the implementation of necessary interim actions on select portions of the Site for the purpose of achieving source control

of contaminants migrating from the Site to Thea Foss Waterway sediments and surface water. This new Agreed Order is developed for the purpose of achieving final cleanup of the Site.

G. This Agreed Order No. DE 13972 replaces Agreed Order No. DE 93TC-S166 in its entirety.

VII. WORK TO BE PERFORMED

Based on the Findings of Fact and Ecology Determinations, it is hereby ordered that the PLPs 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:

A. Conduct monitoring of wells that have been established in the upland and shoreline of the Site: To determine the current status of groundwater with respect to the nature and extent, as well as concentrations, of COCs that have been identified for the Site, in accordance with the *Groundwater Sampling and Analysis Plan*, DOF, April 22, 2016. Additionally, analyses of conventional parameters to determine the migratory characteristics of contaminated groundwater will be performed. Schedule: Initial sampling will be performed on a quarterly basis – results of sampling will be provided within 60 days of sampling. Continuation of sampling and frequency of sampling will be determined by consultation and consideration of sampling results by Ecology and the PLPs after each round of sampling.

B. Develop a comprehensive Compilation of Existing Information and Data Gaps Analysis: Existing data shall be compiled to provide a preliminary assessment of the nature and extent of contamination within the Site and to identify current and historical source areas of contamination. Data gaps identified during the review of existing data must be filled to assure that the RI/FS Work Plan is properly tailored to Site conditions. The compilation of existing information should include , but is not limited to the following information:

- Historical site operational and source information
- Groundwater and NAPL product monitoring results

- Seep testing information
- Surface and core test results for soils
- Hydrologic information
- Air monitoring data
- Previous interim remedial actions or other onsite construction activities

The compilation of existing data shall also include information on property ownership within the site by the PLPs and other parties. In conjunction with the compilation of existing site information, the report shall include a discussion of data gaps and a preliminary analysis of work to be performed to complete site characterization.

C. Develop a RI/FS Work Plan: Develop and submit to Ecology an RI/FS Work Plan to perform agreed upon activities to finalize characterization of the Site and determine feasible options to perform remedial actions for the Site. Schedule: Draft RI/FS Work Plan submitted to Ecology within 90 days of Ecology approval of the Compilation of Existing Information and Data Gaps Analysis described in paragraph B above. Final RI/FS Work Plan submitted to Ecology within 60 days of receipt of comments on Draft RI/FS Work Plan by Ecology.

D. Perform additional remedial investigation of Site: If it is determined that additional characterization of the Site is necessary, perform the work in accordance with the Work Plan. Schedule: to be developed by the PLPs, included in the Work Plan, and approved by Ecology.

E. Generate a RI/FS Report: Provide an Agency Review Draft RI/FS Report that discusses the findings of the final remedial investigation and presents options for remedial actions that can be undertaken to do a final Site cleanup, including a Cost Benefit Analysis of the potential remedial options. Ecology will review and comment on the draft⁷. Issue a final RI/FS in accordance with Ecology and public comments. Schedule: Final RI/FS submitted within 90 days of receipt of Ecology and public comments.

F. Generate a Preliminary Draft Cleanup Action Plan that presents the preferred alternative for final Site cleanup, as derived from the FS. Ecology will review and generate a Public Review Draft that will be disseminated for public review and comment⁷. Depending upon public comment, Ecology may draft a Responsiveness Summary. Ecology will then generate a Final CAP that will govern the final cleanup activities to be undertaken at the Site. Schedule: dCAP submitted within 60 days of approval of Final RI/FS; Final CAP to be provided within 90 days of end of public comment period.

The following naming conventions shall be used for documents: Agency Review Draft (designation for the first time Ecology receives a document); Public Review Draft (designates a document ready for public comment); Final (designation for a document after public comment and Ecology approval); and the preliminary Draft Cleanup Action Plan (designation for the PLP's version of the DCAP).

G. For required SEPA compliance, Ecology will assume Lead Agency Status and will provide the SEPA DNS and Checklist.

H. The remedial investigation schedule of work performance and list of deliverables will be described in the Final RI Work Plan and is incorporated by reference as an enforceable part of this Order. Deliverables shall include provisions for progress reports, QA/QC protocols and documentation, as built documentation, sampling and analysis plan, and health and safety plan.

I. All plans or other deliverables submitted by PLPs for Ecology's review and approval under the Scope of Work and Schedule shall, upon Ecology's approval, become integral and enforceable parts of this Order.

J. If the Parties agree on an interim action under Section VI.E, PLPs 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 PLPs are required to conduct the interim action in accordance with the approved Interim Action Work Plan.

K. If Ecology determines that PLPs have failed to make sufficient progress or failed to implement the remedial action, in whole or in part, Ecology may, after notice to PLPs, perform any or all portions of the remedial action or at Ecology's discretion allow the PLPs opportunity to correct. PLPs 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).

L. Except where necessary to abate an emergency situation, PLPs 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

PLPs 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 effective date of this Order, PLPs 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
Ecology, Southwest Regional Office, Toxics Cleanup Program
P.O. Box 47775
Olympia, WA 98504-7775
360.407.6259

The project coordinators for PLPs are:

Jackie Wetzsteon, Project Manager PacifiCorp 825 NE Multnomah, LCT 600 Portland, OR 97232 503.813.5036	Mary Henley City of Tacoma – Environmental Service Department 326 East D Street Tacoma, WA 98421 253.502.2113
Libby Goldstein Puget Sound Energy P.O. Box 97034 PSE09S Bellevue, WA 98009-9734	Jeff Sawyer, Environmental Hydrogeologist Washington State Department of Transportation

425.457.5339

P.O. Box 47440

Olympia, WA 98504-7440

360.570.6701

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 PLPs, 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.

PLPs 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 PLPs either own, control, or have 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 PLPs' 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 PLPs. PLPs shall make all reasonable efforts to secure access rights for those properties within the Site not owned or controlled by PLPs 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 PLPs 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, PLPs shall make the results of all sampling, laboratory reports, and/or test results generated by them or on their 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, PLPs shall allow Ecology and/or its authorized representative to take split or duplicate samples of any samples collected by PLPs pursuant to implementation of this Order. PLPs shall notify Ecology seven (7) days in advance of any sample collection or work activity at the Site. Ecology shall, upon request, allow PLPs and/or their authorized representative(s) 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 PLPs 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 PLPs.

Ecology shall maintain the responsibility for public participation at the Site. However, PLPs 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 PLPs 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 PLPs that do not receive prior Ecology approval, PLPs 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
535 Dock Street
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, PLPs 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, PLPs 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 PLPs may have under applicable law to limit disclosure of documents protected by the attorney work-product privilege and/or the attorney-client privilege. If PLPs withholds any requested records based on an assertion of privilege, PLPs 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 one or more PLPs elect to invoke dispute resolution, PLPs 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), PLPs have fourteen (14) calendar days within which to notify Ecology's project coordinator in writing of their dispute ("Informal Dispute Notice").

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

c. PLPs 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 PLPs 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 PLPs 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 PLPs;

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 PLPs.

3. Ecology shall act upon any written request for extension in a timely fashion. Ecology shall give PLPs 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 PLPs. PLPs 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 PLPs to cease such activities for such period of time as it deems necessary to abate the danger. PLPs shall immediately comply with such direction.

In the event PLPs determine 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, PLPs may cease such activities. PLPs 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, PLPs shall provide Ecology with documentation of the basis for the determination or cessation of such activities. If Ecology disagrees with PLPs' cessation of activities, it may direct PLPs to resume such activities.

If Ecology concurs with or orders a work stoppage pursuant to this section, PLPs' 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 PLPs to recover remedial action costs paid to and received by Ecology under this Order. In addition, Ecology will not take additional enforcement actions against PLPs regarding remedial actions required by this Order, provided PLPs comply 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, PLPs do not admit to any liability for the Site. Although PLPs are committing to conducting the work required by this Order under the terms of this Order, PLPs expressly reserve 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 PLPs 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 PLPs' transfer of any interest in all or any portion of the Site, and during the effective period of this Order, PLPs 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, PLPs shall notify Ecology of said transfer. Upon transfer of any interest, PLPs 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 PLPs 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 will have determined are applicable or that are known at the time of the execution of this Order shall be identified in the Feasibility Study Report, to come.

2. Pursuant to RCW 70.105D.090(1), PLPs are 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, PLPs 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, shall be identified in the Feasibility Study Report, to come.

PLPs have 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 PLPs determine that additional permits or approvals addressed in RCW 70.105D.090(1) would otherwise be required for the remedial action under this Order, it/they shall promptly notify the other parties of its/their determination. Ecology shall determine whether Ecology or PLPs shall be responsible to contact the appropriate state and/or local agencies. If Ecology so requires, PLPs 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 PLPs and on how PLPs must meet those requirements. Ecology shall inform PLPs in writing of these requirements. Once established by Ecology, the additional requirements shall be enforceable requirements of this Order. PLPs 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 PLPs 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 PLPs, Ecology will prepare the Environmental (Restrictive) Covenant consistent with WAC 173-340-440 and RCW 64.70 (UECA). After approval by Ecology, PLPs shall record the Environmental (Restrictive) Covenant with the office of the Pierce County Auditor within ten (10) days of receiving notice from Ecology that the requirements and provisions of this

Agreed Order have been met. The Environmental (Restrictive) Covenant shall restrict future activities and uses of the Site as agreed to by Ecology and PLPs. PLPs shall provide Ecology with the original recorded Environmental (Restrictive) Covenant within thirty (30) days of the recording date.

P. 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, at Ecology's request confer, 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, PLPs 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.

Q. Indemnification

PLPs agree to indemnify and save and hold the State of Washington, Department of Ecology, 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 PLPs, their officers, employees, agents, or contractors in entering into and implementing this Order. However, PLPs 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 PLPs' receipt of written notification from Ecology that PLPs have completed the remedial activities required by this Order, as amended by any modifications, and that PLPs have 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:

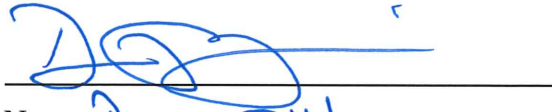
1. Up to three (3) times the amount of any costs incurred by the State of Washington as a result of its refusal to comply.

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: September 13, 2018

PACIFICORP



Name: *Justin Till*

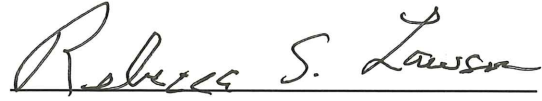
Title: *Senior Counsel*

Location: *Portland, OR*

Telephone: *503.813.6589*

STATE OF WASHINGTON

DEPARTMENT OF ECOLOGY



Rebecca S. Lawson

Section Manager

Toxics Cleanup Program

Southwest Regional Office

360.407.6241

PUGET SOUND ENERGY

Name:

Title:

Location:

Telephone:

RECEIVED

JAN 31 2018

WA State Department
of Ecology (SWRC)

PACIFICORP

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Name: Elizabeth Pauli

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Tacoma, WA 98402

Telephone: (253) 591-5134

WASHINGTON STATE DEPARTMENT OF TRANSPORTATION

Name:

Title:

Location:

Telephone:

CITY OF TACOMA

Name:

Title:

Location:

Telephone:

WASHINGTON STATE DEPARTMENT OF TRANSPORTATION



Name: John Wynands, PE

9/7/18

Title: Region Administrator

Location: WSDOT Olympic Region

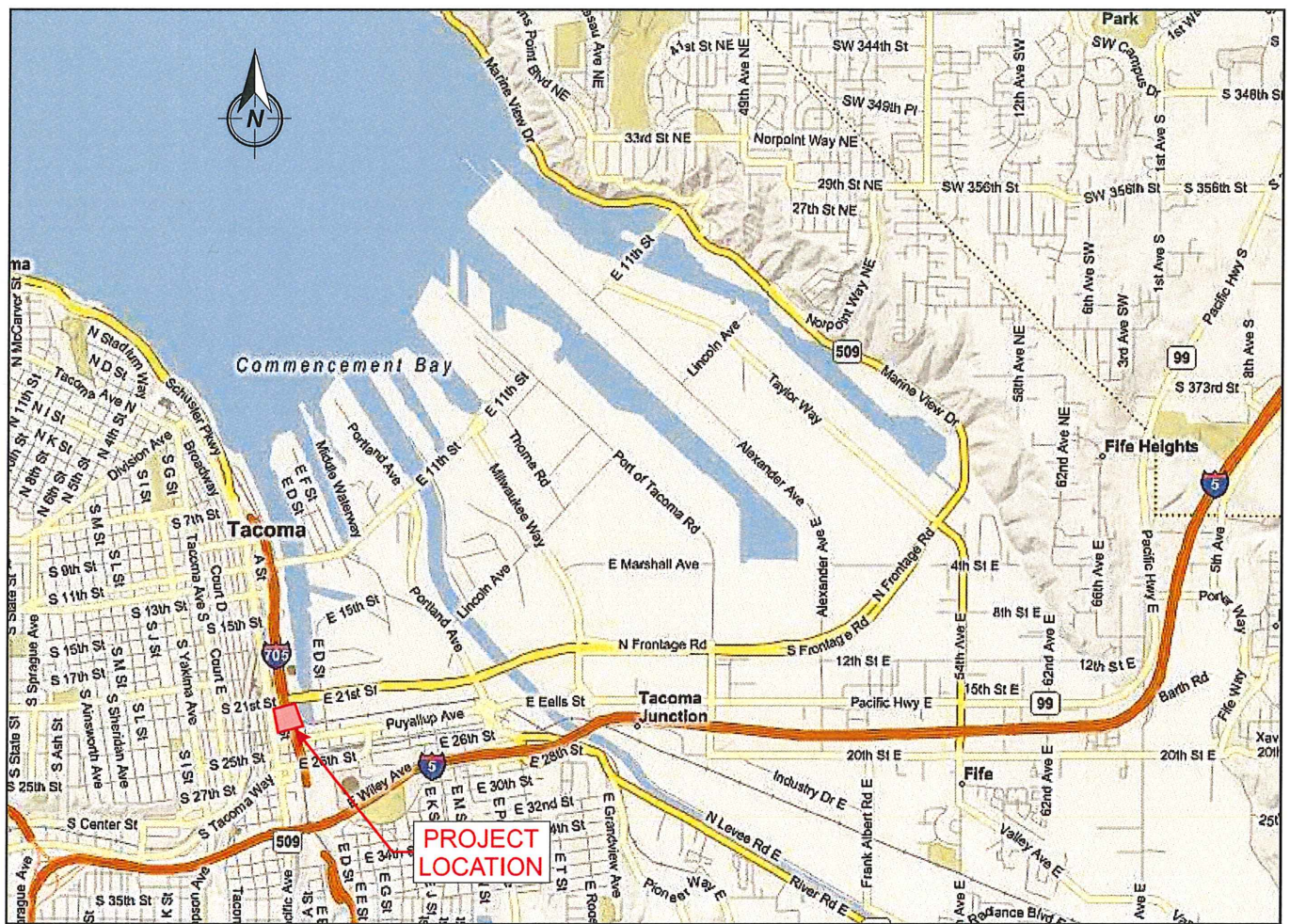
Telephone: 360.357.2658

EXHIBIT A

SITE DIAGRAM



Not to Scale



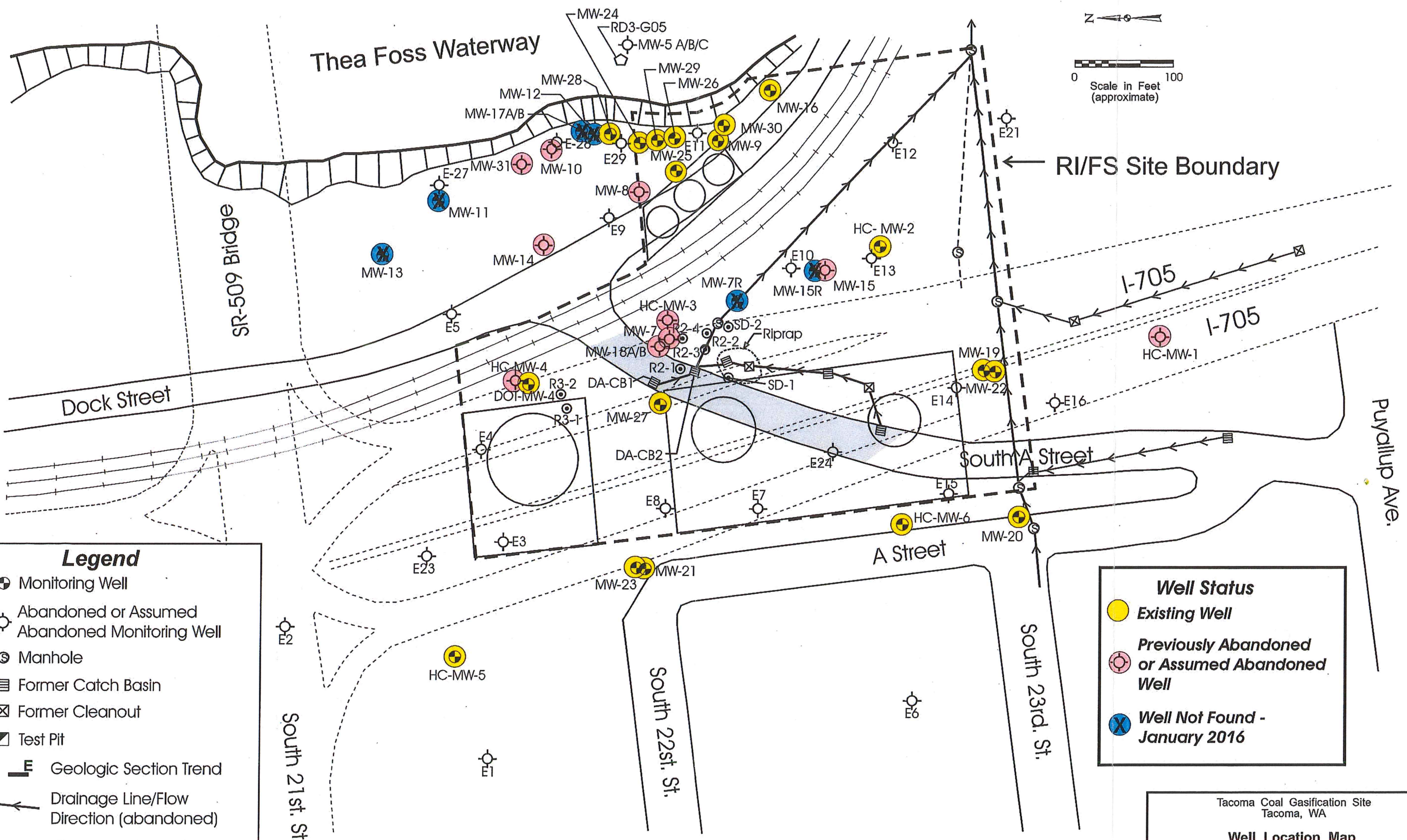
Not To Scale

General Note:
Vicinity map images come from
Microsoft Virtual Earth web site.

Former MGP Site
Tacoma, Washington

VICINITY MAP

**FIGURE
1**



Legend

- Monitoring Well
- Abandoned or Assumed Abandoned Monitoring Well
- Manhole
- Former Catch Basin
- Former Cleanout
- Test Pit
- Geologic Section Trend (W-E)
- Drainage Line/Flow Direction (abandoned)
- Abandoned DA-1 Line Subsurface Drainage Syst.

Well Status

- Existing Well
- Previously Abandoned or Assumed Abandoned Well
- Well Not Found - January 2016

Tacoma Coal Gasification Site
Tacoma, WA

Well Location Map
(Updated January 2016)

PAP-001-07a,b **FIGURE 2** Jan. 2016
Dalton, Olmsted & Fuglevand, Inc.

Ref: Inventory Status 1-2016.cdr

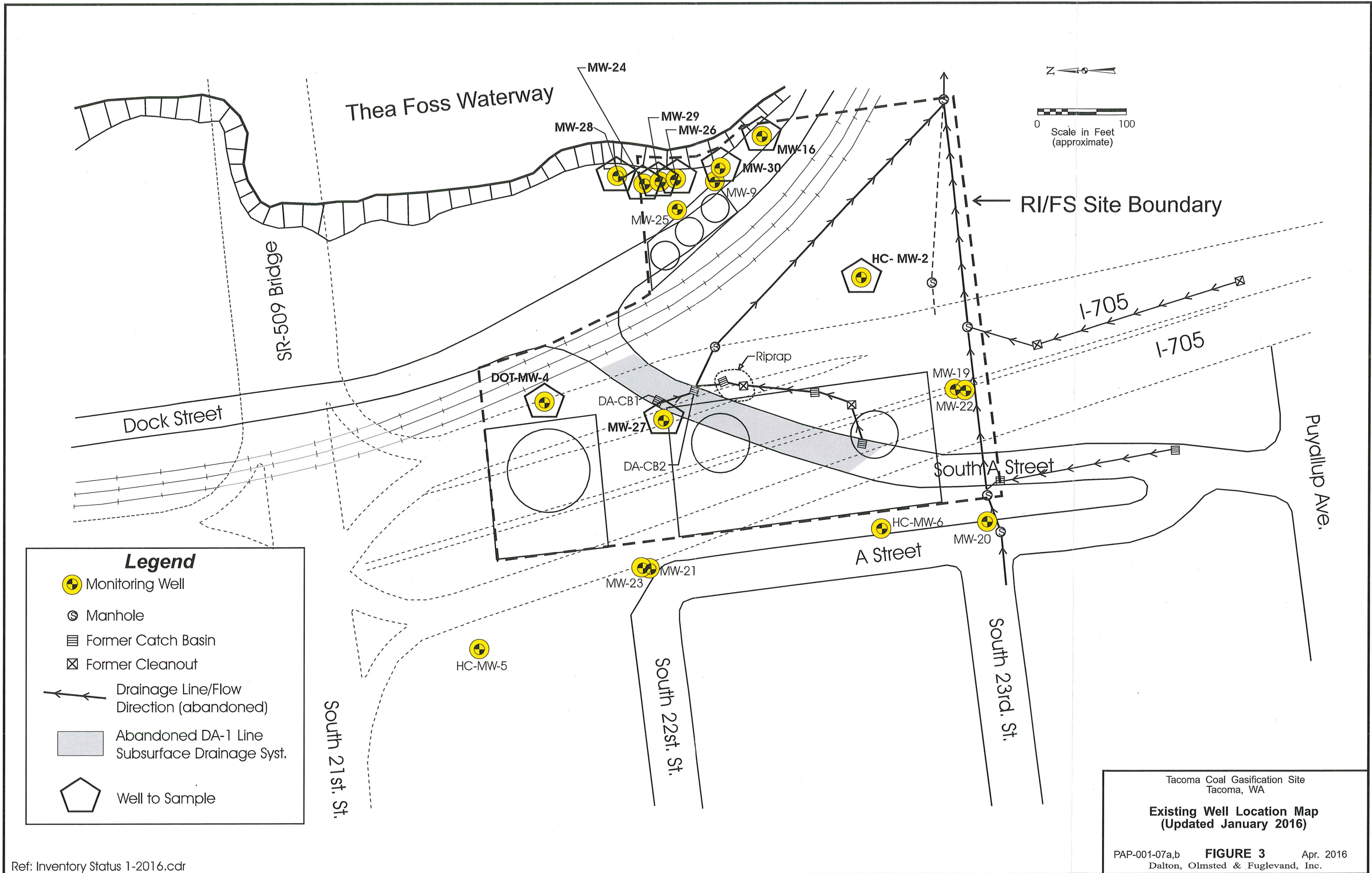


EXHIBIT B

*GROUNDWATER SAMPLING &
ANALYSIS PLAN, DOF – APRIL 22, 2016*

GROUNDWATER SAMPLING AND ANALYSIS PLAN

Former "A" Street MGP
South A Street
Tacoma, Washington

Prepared For:

PSE
PacifiCorp

April 22, 2016

Prepared By:

DOF DALTON
OLMSTED
FUGLEVAND

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TABLE OF CONTENTS

I. Introduction.....	1
II. Sampling and Analysis Plan.....	1
A. Groundwater Monitoring Locations.....	1
B. Monitoring Well Construction	1
C. Surveying	2
D. Groundwater Monitoring Parameters.....	2
E. Sampling Procedures and Handling	2
F. Decontamination and Investigative-Derived Waste	3
G. Reporting.....	3
III. Quality Assurance Project Plan.....	4
A. Analytical Procedures and Target Reporting Limits.....	4
B. Data Quality and Quality Control	4
IV. References	5

LIST OF TABLES

Table 1. Monitoring Well Construction Data (attached)
Table 2. Sample Handling Requirements
Table 3. Analytical Methods and RLs

LIST OF FIGURES

Figure 1. Vicinity Map
Figure 2. Well Location Map (Updated January 2016)
Figure 3. Existing Well Location Map (Updated January 2016)

I. INTRODUCTION

The project site is the former "A" Street Manufactured Gas Plant (MGP) located near the head of the Thea Foss Waterway in the vicinity of South A St., Tacoma, Washington (Figure 1). The Remedial Investigation/Feasibility Study (RI/FS) site boundary was defined in the Second Amendment to Agreed Order DE 93TC-S166, September 2001 and is illustrated on Figures 2 and 3. This groundwater sampling and analysis plan (SAP) describes procedures for the implementation of a plan to assess the current groundwater conditions and update previously collected groundwater data for the site. The SAP also includes a Quality Assurance Project Plan (QAPP); field sampling will be conducted using a DOF site-specific health and safety plan (HSAP) to provide worker safety in accordance with federal and state requirements.

Thirty-six groundwater monitoring wells were installed at the site between 1987 and 1999 (Figure 2). Of those, eleven have been reported as abandoned by various sources. In January 2016, Dalton Olmsted & Fuglevand (DOF) conducted a well inventory and found seven more to be abandoned, buried or otherwise missing. The eighteen remaining wells (Figure 3) were visually observed to be in good condition (DOF 2016).

II. SAMPLING AND ANALYSIS PLAN

A. GROUNDWATER MONITORING LOCATIONS

Monitoring will be completed at eighteen well locations as described below and shown on Figure 3. Monitoring well construction data are summarized in Table 1 (attached).

- **Water Level Measurements** – Water level measurements will be made in all eighteen wells. While water level measurements are being made, observations for the presence of non-aqueous phase liquid (NAPL) will be made. If evidence of NAPL is detected, an interface probe or bailer will be used to measure the thickness in the well.
- **Collect Groundwater Samples** – Groundwater samples will be collected from nine wells including DOT-MW4, HC-MW2, MW-16, MW-24, MW-26, MW-27, MW-28, MW-29 and MW-30.

B. MONITORING WELL CONSTRUCTION

The existing monitoring wells were installed by others between 1987 and 1999 to meet the requirements of Agreed Order DE93TC-S166. The wells are generally constructed of two inch diameter PVC screen and riser pipe, finished with either above-ground or flush-to-ground monuments. Screen lengths range from five to ten feet, installed to depths ranging from 16 to 51.5 feet (Table 1, attached). The horizontal coordinates presented in Table 1 were determined using a hand-held GPS, accurate to +/- 2 feet during the well inventory. As a part of this SAP, all wells will be professionally surveyed to a horizontal and vertical datum as described below.

C. SURVEYING

Surveying will be done by a licensed professional surveyor. The horizontal position of the wells will be confirmed using the North American Datum of 1983 (NAD83). Top of casing elevations of the monitoring wells will be surveyed to an accuracy of 0.01 feet using NAVD88 as the datum.

D. GROUNDWATER MONITORING PARAMETERS

Each of the 18 existing wells (Figure 3) will be sampled during the second quarter of 2016 (most likely May). Both field measurements and laboratory analyses will be made/conducted as follows:

- **Field Parameters** – pH, electrical conductivity, temperature, dissolved oxygen (DO), oxidation-reduction potential (ORP), ferrous iron and turbidity.
- **Laboratory Parameters**
 - Polycyclic Aromatic Hydrocarbons (PAHs) using Method SW8270D-SIM – Low Level.
 - Benzene(B), toluene(T), Ethylbenzene(E) and Xylenes(X) using Method SW8260C – GC/MS.

The laboratory parameters were based on typical groundwater constituents of potential concern (COPCs) at MGP sites. MGP waste materials are predominately composed of PAHs and BETX.

E. SAMPLING PROCEDURES AND HANDLING

Groundwater samples will be collected with a peristaltic pump and dedicated downhole polyethylene tubing. Low flow sampling procedures will be used to minimize particulates being entrained in the samples submitted to the laboratory.

Sample labels will clearly indicate the following:

- Sample location (well number)
- Date and time of collection
- Sampler's initials

The depth to water will be initially measured using an electric well probe. Measurements will be recorded to 0.01 feet. Purging will be completed at a flow rate of less than 0.5 liters/minute. During purging, field parameters will be monitored. Samples will be obtained using the same purging flow rate when field parameters have stabilized to within 10% or at least three casing volumes have been removed from the well.

Samples will be pumped directly into containers provided by the receiving laboratory. The laboratory will place the appropriate preservatives into the containers prior to delivery to the sampling team. A summary of sample handling requirements is provided in Table 2 below.

Table 2. Sample Handling Requirements

Constituent	Container Type	No/ Volume	Preservation	Maximum Holding Time
PAHs	Glass Amber	2/1L	Cool 4C	7 days (sample) 14 days (extract)
BTEX	Glass vial w/ Teflon lined septum	3/40ml	Cool with HCl	14 days

Field measurements and observations will be recorded on a groundwater sampling field form. The following information will be recorded:

- Date and time of sampling
- Identity of sampler
- Water level below top of casing (TOC)
- Depth to bottom of well
- Purging/sampling method
- Flow rate and volume purged prior to sampling
- Field measurements
- Identification of field duplicate sample
- Other pertinent observations as appropriate

Once the containers are filled, they will be placed in chilled coolers that will be delivered to the laboratory (by the sampler) within 24 hours of collection. Sample handling will be documented using standard chain-of-custody (COC) procedures. The filled out COCs will be included with the laboratory documentation, along with the typical documentation of the condition of the samples when delivered to the laboratory.

F. DECONTAMINATION AND INVESTIGATIVE-DERIVED WASTE

Purge water generated as part of the groundwater sampling will be placed in drums or other appropriate containers, profiled and disposed off-site in an appropriate manner.

G. REPORTING

Once the analytical data are received from the laboratory and reviewed for data quality, the results of the sampling will be documented in a short technical memorandum that will be submitted to the Washington State Department of Ecology (Ecology). As discussed in a recent telephone conference call with Ecology, data from the sampling will be used, in part, to develop a path forward to achieve regulatory closure for the site.

III. QUALITY ASSURANCE PROJECT PLAN

The purpose of the Quality Assurance Project Plan (QAPP) is to define the Quality Assurance (QA) and Quality Control (QC) procedures that will be used to ensure reliable data is collected during implementation of the monitoring plan. The QAPP presents the objectives and functional activities associated with the sampling and analysis of groundwater samples collected to assess performance of the interim remedial actions.

A. ANALYTICAL PROCEDURES AND TARGET REPORTING LIMITS

Laboratory analytical methods and target reporting limits for groundwater analyses are summarized below:

Table-3 – Analytical Methods and Reporting Levels

Constituent	Analytical Method	Target Reporting Limit (RL) in ug/l
Benzene	EPA 8260C	0.2
Toluene		0.2
Ethylbenzene		0.2
Total Xylenes		0.4
PAHs	EPA 8270D	0.01

The laboratory will achieve the above-listed RLs for the indicated method, depending on possible matrix interferences (that are not expected). The RL is equivalent to the practical quantitation limit (PQL) and is defined as the lowest concentration at which a chemical can be accurately and reproducibly quantified within specified limits of precision and accuracy, for a given environmental sample. The RL can vary from sample to sample depending on the sample size, sample dilution, matrix interferences, and other specific sample conditions. The RLs usually correspond to the lowest calibration standard.

B. DATA QUALITY AND QUALITY CONTROL

Data quality will be maintained using standard procedures as outlined below:

- Field equipment used to measure the field parameters will be maintained and calibrated according to manufacturer’s instructions and recommendations.
- The laboratory analyses will be completed by Analytical Resources Inc. a Washington State certified laboratory using approved methods.
- Data quality will be validated at level EPA2B as outlined in EIM upload guidance. This validation level includes the following:
 - **Completeness** – defined as the percentage of measurements made that are judged to be valid for their intended use. The target completeness goal is 95%.

- **Sample Receipt Conditions** – Samples are delivered to the laboratory in a timely manner and in good condition. Sample handling documentation and chain-of-custody are complete and in order.
- **Sample Related QC Results** – A field duplicate will be obtained and delivered to the laboratory. The results of the original and duplicate sample analyses will be used to calculate a relative percent difference (RPD).
- **Laboratory/Instrument QC Results** – QC sample analyses will be conducted in accordance with the approved analytical method, typically at a rate of 1 per 20 samples or per batch of samples, if the sample number is less than 20. The QC checks will include:
 - Trip Blank (one per sampling round)
 - Laboratory method blanks (per method)
 - Laboratory control samples (per method)
 - Laboratory control duplicate samples (per method)

The QC results will be reported on the laboratory data sheets, along with QC criteria and data qualifiers. Each report will include a narrative discussion of the QC results, any anomalies, and any required corrective actions.

IV. REFERENCES

DOF (Dalton, Olmsted & Fuglevand, Inc.). 2016a. Results of Well Inventory, A St. MGP, Tacoma, Washington, January 25, 2016.

TABLE 1 - Well Status Summary

Well No.	Horizontal Coordinates (NAD83)		Depth to Water (ft)	Measured Depth (ft)	DNAPL Present (Y/N)	Date Installed	By Whom	Depth (ft)	Screen Depth (ft)		Comment/Status (if known)
	Northing	Eastng							Top	Bottom	
HC-MW2	701781	1160267	15.2	21.3	N	Nov-87	Hart Crowser	29	15.5	25.5	Above-ground Monument, no Locking Cap
DOT-MW-4	702134	1160123	7.3	20.3	N	Jan-96	Black & Veatch	28	10.5	20.5	Flush Monument - Good condition
HC-MW5	702228	1159859	15.6	24.1	N	Nov-87	Hart Crowser	23.5	11	20	Same vicinity - newer Flush Monument
HC-MW6	701754	1159987	18.3	31.1	N	Nov-87	Hart Crowser	32.9	19	29	Above-ground monument - Good condition
MW-9	701951	1160367	14.6	24.9	Y - 0.30	Nov-93	Black & Veatch	34	9	25	Flush Monument - Good condition
MW-16	701897	1160422	14.2	30	N	Jan-96	Black & Veatch	36.5	9.5	29.5	Flush Monument - Good condition
MW-19	701680	1160143	3.9	39.5	N	Mar-97	Black & Veatch	40	24.5	39.5	Flush Monument - Good condition
MW-20	701640	1159997	19.2	50.2	N	Mar-97	Black & Veatch	55	31.5	51.5	Flush Monument - Good condition
MW-21	702024	1159926	10.5	53.3	N	Mar-97	Black & Veatch	55	36.5	51.5	Flush Monument - Good condition
MW-22	701684	1160142	4.1	14.8	N	Mar-97	Black & Veatch	40	4.5	14.5	Flush Monument - Good condition
MW-23	702021	1159930	11.5	19.6	N	Mar-97	Black & Veatch	55	9.5	19.5	Flush Monument - Good condition
MW-24	702032	1160369	10.5	21.7	N	Jul-98	Black & Veatch	22	11.5	21.5	Flush Monument - Good condition
MW-25	701992	1160343	14.3	22	Y - 0.05'	Jul-98	Black & Veatch	23	12.5	22.5	Flush Monument - Good condition
MW-26	701995	1160374	10.2	25	N	Jul-98	Black & Veatch	25	14.5	24.5	Flush Monument - Good condition
MW-27	701993	1160101	-	-	-	Jul-98	Black & Veatch	27	11.5	26.5	Flush Monument Intact, but inaccessible due to flooding
MW-28	702062	1160377	9.3	42.8	N	Feb-99	Geoengineers	44	33.5	44	Flush Monument - Good condition
MW-29	702015	1160374	10.3	33.2	N	Feb-99	Geoengineers	33	22.5	33	Flush Monument - Good condition
MW-30	701943	1160387	8.7	31.2	N	Feb-99	Geoengineers	32	21.5	31	Flush Monument - Good condition