STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

In the Matter of Remedial Action by:	AGREED ORDER
J.R. Simplot Company	No. DE 16890

TO: Alan Prouty
Vice President, Regulatory Affairs
J.R. Simplot Company
1099 W Front Street
Boise, ID 83701

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I. INTRODUCTION

The mutual objective of the State of Washington, Department of Ecology (Ecology) and J.R. Simplot Company ("Simplot") 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 Simplot to implement the Cleanup Action Plan (CAP -Exhibit A). 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. Simplot agrees to undertake all actions required by the terms and conditions of this Order. No change in ownership or corporate status shall alter Simplot's responsibility under this Order. Simplot 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 the Warden City Former Water Supply Well No. 4 and Warden City Water Supply Well No. 5 Site (Site) and is generally located at Warden, Grant County, Washington. The Site constitutes a facility under RCW 70.105D.020(8). The Site is defined by where a hazardous substance, other than a consumer product in consumer use, has been deposited, stored, disposed of, or placed, or otherwise come to be located. Based upon factors

currently known to Ecology, the Site is generally located at 1800 West First Street, Warden, WA 98857, Grant County Parcel No. 060697000 as shown in the Site Location Diagram (Exhibit B).

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

C. Potentially Liable Persons (PLP(s)): Refers to Simplot.

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.

V. FINDINGS OF FACT

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

A. Based upon factors currently known to Ecology, the Site is generally located at 1800 West First Street, Warden, WA 98857, Grant County Parcel No. 060697000 as shown in the Site Location Diagram (Exhibit B). The Site consists of Warden City former water supply well number 4 and Warden City current water supply well number 5, and property owned by Simplot. The Site is located at latitude 46.970 degrees north and longitude 119.061 degrees west using the NAD83(2011) geoid. UTM coordinates are: Zone 11N, 343,225.886 E, 5,203,891.935 N. State planar coordinates (SPC) are: Zone WA S-4602; 609,492.870m E, 182,917.059m N.

B. The Site is listed on Ecology's Hazardous Sites List as the "Warden City Water Supply Wells 4 & 5 Site," Facility Site ID No. 2802409 and Cleanup Site ID No. 1618. Ecology has assigned the Site an overall priority ranking of three (3) pursuant to WAC 173-340-330.

C. Between approximately 1971 and 1992, the Site was used by Simplot for storage, blending, and transport of agricultural chemicals. Between 1971 and 1984 Simplot handled ethylene dibromide (EDB) at the Site until the use of EDB was banned. After 1992 until present day, Simplot uses the Site for storage of agricultural products such as packaged fertilizers. Contamination at the Site is related to blending and storage of EDB formulations. The release of EDB to on-Site soils and groundwater represents a threat to human health or the environment and requires remedial action.

D. Warden City water supply wells numbered 4 and 5 have been contaminated with EDB exceeding health-based standards.

E. Shallow groundwater beneath the Property is contaminated with EDB.

F. Beginning 2006, Ecology conducted investigations at the Site to determine the source of EDB in the city's water supply. Phase I was completed in 2007, and Phase II in 2009. The results indicated the source of EDB contamination was the Simplot Property.

G. Ecology and Simplot entered into Agreed Order No. 8241 on May 27, 2011 to conduct a Remedial Investigation and Feasibility Study (RI/FS) at the Site.

H. Simplot has completed the RI/FS at the Site and after public review submitted a final RI/FS report to Ecology on September 2018.

I. Ecology sent a satisfaction letter for Agreed Order No. 8241 to Simplot on October 17, 2018.

J. Release(s) and/or potential release(s) of hazardous substances occurred at the Site. EDB in soil and groundwater at the Site have been detected at concentrations above MTCA cleanup levels. These hazardous substances have been released, and pose a continuing threat of release into the environment.

VI. ECOLOGY DETERMINATIONS

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

A. Simplot is an "owner or operator" as defined in RCW 70.105D.020(22) of a "facility" as defined in RCW 70.105D.020(8).

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 Simplot dated April 6, 2010, pursuant to RCW 70.105D.040, .020(26), and WAC 173-340-500. After providing for notice and opportunity for comment, reviewing any comments submitted, and concluding that

credible evidence supported a finding of potential liability, Ecology issued a determination that Simplot is a PLP under RCW 70.105D.040 and notified Simplot of this determination by letter dated May 11, 2010.

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. Either 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.L. 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.

VII. WORK TO BE PERFORMED

Based on the Findings of Fact and Ecology Determinations, it is hereby ordered that Simplot take the following remedial actions at the Site. The area within the Site where remedial action is necessary under RCW 70.105D is described in the Remedial Action Location Diagram (Exhibit C). These remedial actions must be conducted in accordance with WAC 173-340:

A. Simplot shall implement the CAP in accordance with the Scope of Work and Schedule attached to this Order (Exhibit D), and all other requirements of this Order. Generally, The CAP requires Simplot to:

1. Drill and sample soil borings to further assess for the presence of EDB and to delineate EDB the soil in more detail, with the purpose to have more data for the design of the remediation system.
2. Excavate approximately 13,000 cubic yards of soil.
3. Treat approximately 1200 cubic yards of excavated contaminated soil by ex-situ vapor extraction (SVE)
4. Backfill excavation with clean and treated soil.
5. Provide for groundwater monitoring to assess effectiveness of soil remedial action.
6. Provide for and maintain institutional controls in the form of environmental covenants in accordance with the Uniform Environmental Covenants Act (UECA – Chapter 64.70 RCW).

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

C. Simplot shall submit to Ecology written monthly Progress Reports that describe the actions taken during the previous month to implement the requirements of this Order. All Progress Reports shall be submitted by the tenth (10th) day of the month in which they are due after the effective date of this Order. Unless otherwise specified by Ecology, Progress Reports and any other documents submitted pursuant to this Order shall be sent by certified mail, return receipt requested, to Ecology's project coordinator. The Progress Reports shall include the following:

1. A list of on-site activities that have taken place during the month.
2. Detailed description of any deviations from required tasks not otherwise documented in project plans or amendment requests.
3. Description of all deviations from the Scope of Work and Schedule (Exhibit D) during the current month and any planned deviations in the upcoming month.

4. For any deviations in schedule, a plan for recovering lost time and maintaining compliance with the schedule.
5. All raw data (including laboratory analyses) received during the previous quarter (if not previously submitted to Ecology), together with a detailed description of the underlying samples collected.
6. A list of deliverables for the upcoming month if different from the schedule.

D. Pursuant to WAC 173-340-440(11), Simplot 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.

E. Within sixty (60) days of the effective date of this Order, Simplot shall submit to Ecology for review and approval an estimate of the costs under this Order for operation and maintenance of the remedial actions at the Site, including institutional controls, compliance monitoring and corrective measures. Within sixty (60) days after Ecology approves the aforementioned cost estimate, Simplot shall provide proof of financial assurances sufficient to cover all such costs in a form acceptable to Ecology.

F. Simplot 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 Simplot'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 cleanup action plan (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.

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

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

I. After approval by Ecology, Simplot shall record the Environmental (Restrictive) Covenant for affected properties it owns with the office of the Grant County Auditor as detailed in the Schedule (Exhibit D). Simplot shall provide Ecology with the original recorded Environmental (Restrictive) Covenants within thirty (30) days of the recording date.

J. As part of the remedial action for the Site, institutional controls may be required on properties not owned by Simplot. Simplot will ensure that the owner of each affected property records an Ecology-approved Environmental (Restrictive) Covenant as detailed in the Schedule and Scope of Work (Exhibit D). Upon a showing that Simplot has made a good faith effort to secure an Environmental (Restrictive) Covenant for an affected property and failed to do so, Ecology may provide assistance to Simplot. Simplot shall provide Ecology with the original recorded Environmental (Restrictive) Covenants within thirty (30) days of the recording date.

K. All plans or other deliverables submitted by Simplot for Ecology's review and approval under the Scope of Work and Schedule (Exhibit D) shall, upon Ecology's approval, become integral and enforceable parts of this Order.

L. If the Parties agree on an interim action under Section VI.E, Simplot 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). Simplot 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 Simplot is required to conduct the interim action in accordance with the approved Interim Action Work Plan.

M. If Ecology determines that Simplot has failed to make sufficient progress or failed to implement the remedial action, in whole or in part, Ecology may, after notice to Simplot, perform any or all portions of the remedial action or at Ecology's discretion allow the Simplot opportunity to correct. In an emergency, Ecology is not required to provide notice to Simplot, or an opportunity for dispute resolution. Simplot shall reimburse Ecology for the costs of doing such work in accordance with Section VIII.A (Remedial Action Costs). Ecology reserves the right to enforce requirements of this Order under Section X (Enforcement).

N. Except where necessary to abate an emergency situation or where required by law, Simplot shall not perform any remedial actions at the Site outside those remedial actions required by this Order to address the contamination that is the subject of this Order, unless Ecology concurs, in writing, with such additional remedial actions pursuant to Section VIII.J. (Amendment of Order). In the event of an emergency, or where actions are taken as required by law, Simplot must notify Ecology in writing of the event and remedial action(s) planned or taken as soon as practical but no later than within twenty-four (24) hours of the discovery of the event.

VIII. TERMS AND CONDITIONS

A. Payment of Remedial Action Costs

Simplot 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 Ecology costs incurred, Simplot 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:

Christer Loftenius
Department of Ecology, Toxics Cleanup Program, Eastern Region
4601 North Monroe Street
Spokane, WA 99205-1295
Telephone 509-329-3543
clof461@ecy.wa.gov

The project coordinator for Simplot is:

Rachel Roskelley
J.R. Simplot Company
1099 W Front Street
Boise, ID 83701
(208)780-7426
Rachel.Roskelley@Simplot.Com

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 Simplot, 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. Simplot shall have one

representative who shall also receive and disseminate correspondence to other individuals affiliated within Simplot. The Simplot representative is:

Mrs. Dedra Williams
J.R. Simplot Company
1099 W. Front Street
Boise, ID 83701
Telephone: (208)780-7360
Email: Dedra.Williams@Simplot.com

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. The supervising professional must have experience and expertise in hazardous waste site investigation and cleanup.

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. The professional engineer must have experience and expertise in hazardous waste site investigation and cleanup.

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. The professional engineer must have experience and expertise in hazardous waste site investigation and cleanup.

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

Simplot 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 Simplot 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 Simplot'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 Simplot. Simplot shall make all reasonable efforts to secure access rights for those properties within the Site not owned or controlled by Simplot 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 Simplot 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, Simplot 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, Simplot shall allow Ecology and/or its authorized representative to take split or duplicate samples of any samples collected by Simplot pursuant to implementation of this Order. Simplot shall notify Ecology seven (7) days in advance of any sample collection or work activity at the Site. Ecology shall, upon request, allow Simplot 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.D (Access), Ecology shall notify Simplot 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

Ecology shall maintain the responsibility for public participation at the Site. However, Simplot 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 meetings related to remedial action work to be performed at the Site with the interested public and/or local governments. Likewise, Ecology shall notify Simplot prior to the issuance of all press releases and fact sheets related to the Site, and before meetings related to the Site with the interested public and local governments. For all press releases, fact sheets, meetings, and other outreach efforts by Simplot that do not receive prior Ecology approval, Simplot 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. City of Warden Public Library
305 S Main Ave,
Warden, WA 98857

b. Ecology's Eastern Regional Office
4601 North Monroe Street,
Spokane, WA 99205-1295

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 Eastern Regional Office in Spokane, 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, Simplot 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, Simplot 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 Simplot may have under applicable law to limit disclosure of documents protected by the attorney work-product privilege and/or the attorney-client privilege. If Simplot withholds any requested records based on an assertion of privilege, Simplot 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 Simplot elects to invoke dispute resolution Simplot 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), Simplot has fourteen (14) calendar days within which to notify Ecology's project coordinator in writing of its dispute (Informal Dispute Notice).

b. The Parties' project coordinators shall then confer in an effort to resolve the dispute informally. The parties shall informally confer for up to fourteen (14) calendar days from receipt of the Informal Dispute Notice. If the project coordinators cannot resolve the dispute within those 14 calendar days, then within seven (7) calendar days Ecology's project coordinator shall issue a written decision (Informal Dispute Decision) stating: the nature of the dispute; the Simplot'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. Simplot may then request regional management review of the dispute. This request (Formal Dispute Notice) must be submitted in writing to the Eastern 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. (Work to be Performed) or initiating enforcement under Section X (Enforcement).

I. Extension of Schedule

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

a. The deadline that is sought to be extended.

b. The length of the extension sought.

c. The reason(s) for the extension.

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

2. The burden shall be on Simplot 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 Simplot 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 Simplot.

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

c. Endangerment as described in Section VIII.K (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 Simplot.

3. Ecology shall act upon any of Simplot's written requests for extension in a timely fashion. Ecology shall give Simplot 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.J (Amendment of Order) when a schedule extension is granted.

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

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

b. Other circumstances deemed exceptional or extraordinary by Ecology.

c. Endangerment as described in Section VIII.K (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.L (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 Simplot. Ecology will provide its written consent to a formal amendment only after public notice and opportunity to comment on the formal amendment.

When requesting a change to the Order, Simplot shall submit a written request to Ecology for approval. Ecology shall indicate its approval or disapproval in writing and in a timely manner

after the written request is received. If Ecology determines that the change is substantial, then the Order must be formally amended. Reasons for the disapproval of a proposed change to this Order shall be stated in writing. If Ecology does not agree to a proposed change, the disagreement may be addressed through the dispute resolution procedures described in Section VIII.H (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 Simplot to cease such activities for such period of time as it deems necessary to abate the danger. Simplot shall immediately comply with such direction.

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

If Ecology concurs with or orders a work stoppage pursuant to this section, Simplot'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.I (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 Simplot to recover remedial action costs paid to and received by Ecology under this Order. In addition, Ecology will not take additional enforcement actions against Simplot regarding remedial actions required by this Order, provided Simplot 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 or 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, Simplot does not admit to any liability for the Site. Although Simplot is committing to conducting the work required by this Order under the terms of this Order, Simplot 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 Simplot 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 Simplot's transfer of any interest in all or any portion of the Site, and during the effective period of this Order, Simplot 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, Simplot shall notify Ecology of said transfer. Upon transfer of any

interest, Simplot 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. *Applicable Laws.* All actions carried out by Simplot pursuant to this Order shall be done in accordance with all applicable federal, state, and local requirements, including requirements to obtain necessary permits or approvals, 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 A. Simplot has a continuing obligation to identify additional applicable federal, state, and local requirements which apply to actions carried out pursuant to this Order, and to comply with those requirements. As additional federal, state, and local requirements are identified by Ecology or Simplot, Ecology will document in writing if they are applicable to actions carried out pursuant to this Order, and Simplot must implement those requirements.

2. *Relevant and Appropriate Requirements.* All actions carried out by Simplot pursuant to this Order shall be done in accordance with relevant and appropriate requirements identified by Ecology. The relevant and appropriate requirements that Ecology has determined apply have been identified in Exhibit A. If additional relevant and appropriate requirements are identified by Ecology or Simplot, Ecology will document in writing if they are applicable to actions carried out pursuant to this Order and Simplot must implement those requirements.

3. Pursuant to RCW 70.105D.090(1), Simplot may be 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, Simplot shall comply with the substantive requirements of such permits or approvals. For permits and approvals covered under RCW 70.105D.090(1) that have been issued by local government, the Parties agree that Ecology has the non-exclusive ability under this Order to enforce those local government permits and/or approvals. Simplot will identify in its Engineering Design Report any state or local permits or approvals that are applicable but procedurally exempt under this section.

4. Simplot 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 Simplot 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 Simplot shall be responsible to contact the appropriate state and/or local agencies. If Ecology so requires, Simplot 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 Simplot and on how Simplot must meet those requirements. Ecology shall inform Simplot in writing of these requirements. Once established by Ecology, the additional requirements shall be enforceable requirements of this Order. Simplot shall not begin or continue the remedial action potentially subject to the additional requirements until Ecology makes its final determination.

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 Simplot 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 or approvals.

O. Periodic Review

So long as remedial action continues at the Site, and so long as institutional controls are recorded for the Site, the Parties agree to review the progress of remedial action at the Site, and to review the data accumulated as a result of monitoring the Site as often as is necessary and appropriate under the circumstances. Unless otherwise agreed to by Ecology, at least every five (5) years after the initiation of cleanup action at the Site, the Parties shall confer regarding the status of the Site and the need, if any, for further remedial action at the Site. At least ninety (90)

days prior to each periodic review, Simplot 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.

P. Indemnification

Simplot 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 Simplot, its officers, employees, agents, or contractors in entering into and implementing this Order. However, Simplot 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 Simplot's receipt of written notification from Ecology that Simplot has completed the remedial activity required by this Order, as amended by any modifications, and that Simplot 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: 05/07/2020

J.R. SIMPLOT COMPANY

Alan Prouty
Vice President, Regulatory Affairs
Boise, Idaho
(208) 780-7365

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

Ali Furmall
Section Manager
Toxics Cleanup Program
Eastern Regional Office
(509) 329-3436

ATTACHMENT 1

FINAL CLEANUP ACTION PLAN

Warden City Water Supply Wells 4 & 5
Warden, WA
FSID 2802409, CSID 1618

May 2019
Washington Department of Ecology
Toxics Cleanup Program
Eastern Regional Office
Spokane, WA

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LIST OF ACRONYMS

ARAR .....Applicable, Relevant, and Appropriate Requirements
bgs.....Below ground surface
CLARC .....Cleanup Levels and Risk Calculation (Ecology)
CAP.....Cleanup Action Plan
CSID .....Cleanup Site Identification Number (Ecology)
CUL.....Cleanup Level
DCA .....Disproportionate Cost Analysis
DOH.....Washington Department of Health
Ecology .....Washington Department of Ecology
EDB.....Ethylene Dibromide or 1,2-Dibromoethane
ECMP.....Excavation Compliance Monitoring Plan
FS .....Feasibility Study
FSID.....Facility Identification Number (Ecology)
GCMP .....groundwater compliance monitoring plan
MCL.....Maximum Contaminant Level
MTCA.....Model Toxics Control Act
O & M.....oversight and maintenance
PID .....photo ionization detector
PLP.....potentially liable person
PQL.....practical quantification limit
QAPP .....quality assurance project plan
RCW .....Revised Code Washington
RIFS .....Remedial Investigation/Feasibility Study
SVE.....soil vapor extraction
SVEP.....Soil vapor ex
TEE .....terrestrial ecological evaluation
µg/kg .....microgram per kilogram
µg/l.....microgram per liter
US EPA.....United States Environmental Protection Agency
WAC .....Washington Administrative Code

EXECUTIVE SUMMARY

This document presents the Cleanup Action Plan (CAP) for the Warden City Water Supply Wells 4 and 5 Site (Site) at 1800 West First Street in the City of Warden, Grant County, WA 98857. This CAP was prepared by the Washington State Department of Ecology (Ecology) in collaboration with J.R. Simplot Company (Simplot). The CAP is Ecology's decision document for the Site and provides the rationale for selecting the cleanup alternative. This CAP describes the selected cleanup action to remove ethylene dibromide-(EDB) contaminated soil and groundwater. This CAP has been prepared to meet the requirements of the Model Toxics Control Act (MTCA). Ecology has determined that actual or threatened releases of EDB from this Site, if not addressed by implementing the proposed cleanup action, present a threat to human health and the environment. Table 1 presents pertinent Site information.

The Site has been a retail outlet for agro-chemicals since 1971. Between 1971 and 1992 Simplot operated at the Site under the name of Soilbuilders. During that time EDB was stored and handled at the Site until 1984 when EDB was banned from use. EDB handled at the Site was used as a soil fumigant to control pests in soil.

The Site is located within the Quincy basin on top of windblown fine sand and silt (loess) resting on top of basalt. Groundwater occurs in the lower portion of the loess approximately 22 feet below ground surface. The City of Warden obtains its water supply from a number of wells within the City boundary completed in fractured basalt from about 100 to 800 feet below the ground surface (bgs). The City had observed EDB contamination in Wells No. 4 and 5 since 1989. In June 2003, the City reported EDB concentrations exceeding Federal and State maximum allowable EDB concentration of 0.05 micrograms per liter (µg/l) in drinking water to Ecology. Ecology conducted two initial investigations in 2004 and 2009 and discovered EDB contamination in soils and shallow water on Simplot's nearby property to the east and southeast of the affected City wells.

In 2011 Ecology and Simplot entered into an Agreed Order, under which Simplot carried out a remedial investigation and feasibility study (RI/FS). The purpose of the RI/FS study that was finalized in 2018, was to delineate the EDB source in soil and groundwater and to select a remedial action for the Site.

The results from the RI showed EDB-contaminated soil in the western portion of the Site with one detection of EDB in soil at the central portion of the Site. Contaminated groundwater was only encountered on-site in shallow groundwater.

Three remedial alternatives were proposed by the Potentially Liable Person (PLP) in the FS. Ecology completed an evaluation of the alternatives and has determined that Alternative 3 is Ecology's selected remedy. The remedial action consists of excavation and treatment of EDB-contaminated using an applied vacuum to the soil and collection of the EDB vapors from the soil. The vapors will be captured using a filter and treated through destruction in an incinerator. Clean soils will be removed and stockpiled so that contaminated soils can be excavated, treated, and returned to the excavation. Treated soils with EDB concentrations less than the soil cleanup level (CUL) of 0.27 micrograms per kilogram (µg/kg) will be returned to the excavation and the

ground restored to its original condition. Upon completion of the soil cleanup action compliance groundwater monitoring will take place in order to evaluate the effectiveness of the cleanup action with regards to groundwater protection.

1.0 INTRODUCTION

This report presents the Washington State Department of Ecology's proposed cleanup action for the Warden City Water Supply Wells 4 & 5 Site (Site) (Facility Site #2802409, Cleanup Site #1618), located at 1800 W 1st St, Warden, in Grant County, Washington (see Figure 1). This Cleanup Action Plan (CAP) is required as part of the site cleanup process under the Model Toxics Control Act (MTCA), Ch. 70.105D RCW, implemented by the Washington State Department of Ecology (Ecology). The cleanup action decision given herein is based on the Remedial Investigation/Feasibility Study (RI/FS) and other relevant documents in the administrative record. Ecology named J.R. Simplot Company (Simplot) as the potentially liable person (PLP) for the Site. Simplot has completed investigation activities under Agreed No. 8421with Ecology.

This CAP outlines the following:

- The history of operations, ownership, and activities at the Site;
- The nature and extent of contamination as presented in the RI;
- Cleanup levels for the Site that are protective of human health and the environment;
- The selected remedial action for the Site; and
- Any required compliance monitoring and institutional controls.

Ecology has made a preliminary determination that a cleanup conducted in conformance with this CAP will comply with the requirements for selection of a remedy under WAC 173-340-360 through 390.

1.1 DECLARATION

Ecology has selected this remedy because it will be protective of human health and the environment. Furthermore, the selected remedy is consistent with the preference of the State of Washington as stated in RCW 70.105D.030(1)(b) for permanent solutions.

1.2 APPLICABILITY

Cleanup standards specified in this CAP are applicable only to the Warden City Wells 4 & 5 Site. They were developed as a part of an overall remediation process under Ecology oversight using the authority of MTCA, and should not be considered as setting precedents for other sites.

1.3 ADMINISTRATIVE RECORD

The documents used to make the decisions discussed in this CAP are on file in the administrative record for the Site. Major documents are listed in the reference section. The entire administrative record for the Site is available for public review by appointment at Ecology's Eastern Regional Office, located at 4601 N. Monroe Street, Spokane, WA 99205-1295. Results from applicable studies and reports are summarized to provide background information pertinent to the CAP. These studies and reports include:

- *Preliminary Investigation of Ethylene Dibromide Contamination. April, 2007.*
- *Phase II Preliminary Investigation, April 2009*
- *Final Remedial Action and Feasibility Study Work Plan, November 2011*
- *Phase II Work Plan to Support Remedial Investigation and Feasibility Study, May 2013*
- *Final Remedial Action and Feasibility Study Report, September 2018*

1.4 CLEANUP PROCESS

Cleanup conducted under the MTCA process requires the preparation of specific documents either by the PLP or by Ecology. Procedural tasks and these resulting documents, along with the MTCA section requiring their completion, are listed below with a brief description of each task.

- *Public Participation Plan – WAC 173-340-600*
  Public Participation Plans summarize the methods that will be implemented to encourage coordinated and effective public involvement. This document is prepared by Ecology with PLP participation.

- *Remedial Investigation and Feasibility Study - WAC 173-340-350*
  The RI/FS documents the investigations and evaluations conducted at the Site from the discovery phase to the RI/FS document. The Remedial Investigation (RI) collects and presents information on the nature and extent of contamination, and the risks posed by the contamination. The Feasibility Study (FS) presents and evaluates site cleanup alternatives and proposes a preferred cleanup alternative. The document is prepared by the PLP, accepted by Ecology, and undergoes public comment.

- *Cleanup Action Plan - WAC 173-340-380*
  The CAP sets cleanup standards for the Site, and selects the cleanup actions intended to achieve the cleanup standards. The document is prepared by Ecology, and undergoes public comment.

- *Engineering Design Report, Construction Plans and Specifications - WAC 173-340-400*
  The report outlines details of the selected cleanup action, including any engineered systems and design components from the CAP. These may include construction plans and specifications with technical drawings. The document is prepared by the PLP and approved by Ecology. Public comment is optional.

- *Operation and Maintenance Plan(s) - WAC 173-340-400*
  These plans summarize the requirements for inspection and maintenance of cleanup actions. They include any actions required to operate and maintain equipment, structures, or other remedial systems. The document is prepared by the PLP and approved by Ecology.

- *Cleanup Action Report - WAC 173-340-400*
  The Cleanup Action Report is completed following implementation of the cleanup action, and provides details on the cleanup activities along with documentation of adherence to or variance from the CAP. The document is prepared by the PLP and approved by Ecology.

- *Compliance Monitoring Plan - WAC 173-340-410*
  Compliance Monitoring Plans provide details on the completion of monitoring activities required to ensure the cleanup action is performing as intended. It is prepared by the PLP and approved by Ecology.

2.0 SITE DESCRIPTION

2.1 SITE HISTORY

The site is a former Simplot Grower Solutions (also known as Simplot Soilbuilders) facility. Simplot Grower Solutions are retail outlets for agro-chemicals (fertilizers, pesticides, soil amendments) that offer customized fertilizer blending, application services, and consulting. Environmental Data Resources conducted a chain-of-title search and reported the following for the 1800 W. First Street facility (2011):

- 1940 to 1971: site owned by Burlington Northern, Inc. (formally Northern Pacific Railroad Company)
- 1971 to current: J.R. Simplot Company

Simplot actively operated the Simplot Soilbuilders facility from 1971 through 1992, where they stored, blended, and transported agro-chemicals, including EDB. Most of the Simplot workers familiar with the site are retired (many no longer living). Little information is available about the storage and use of EDB and if there were any observed spills.

EDB was used in the past as a pesticide for potato crops and as an additive for leaded gasoline fuel. Potatoes are a common crop in the Warden area, and there are potato processing facilities in the industrial section of the city. Although the chemical was banned for use as a soil fumigant in 1984, elevated levels of EDB were found in City of Warden wells (City Wells #4 and #5) in 2003, which led to multiple investigations to find the source of the EDB. (Figure 2).

City Well 4 is located approximately 250 feet northwest of the Site. EDB was discovered in the well with a concentration exceeding the maximum contaminant level (MCL) of 0.05 micrograms per liter (µg/L) in March 1989. The well was permanently decommissioned by the City of Warden in January 2011. The well was abandoned because of the presence of EDB and also because of the presence of industrial activities and railroads within the well's 100-foot sanitary control area. (HDR, 2018)

City Well 5 is located approximately 800 feet west-southwest of the Site. EDB was detected in groundwater collected from the well in February 1990. The City of Warden installed a packer in this well in 2004 to isolate the lower portion of the well for water production and to prevent shallow potentially EDB-contaminated water from entering the well. The city periodically pumps the well for irrigation use at a wastewater land application site. (HDR, 2018)

2.2 CURRENT SITE USE

The Simplot property is currently used by Simplot for storing agricultural products (e.g., packaged fertilizers) in warehouses. The property consists of two warehouse buildings, an unpaved parking area, and several storage bins. Figure 1 and Figure 2 are aerial photographs of the site and surrounding area that provide an indication of current land use. The parcel and surrounding parcels are listed by Grant County as "trade-general merchandise." Land use within

1/2 mile of the property includes commercial and light industry, undeveloped open space, and agricultural. Simplot anticipates continuing to use the property for storage of agricultural products for the near future and has not identified any long-term changes to property use.

The area immediately around the Simplot Growers Solutions property is industrial (agricultural), with irrigated agricultural areas on the north and west sides of the East Low Canal. A railroad spur borders the property to the north and west, with industrial buildings to the east, West First Street to the south, and industrial facilities to the west. The Washington Potato Company is located to the west of the Simplot property and Pure Line Seeds, Columbia Seeds, Greater Pacific Cold Storage, and ConAgra Lamb Weston (formerly Ochoa Ag Unlimited Foods and Basin Frozen Foods) are located to the east of the Simplot property. Further to the southeast across First Street, there is an auto wrecking lot. To the south across First Street there is a facility belonging to Pacific Coast Canola, and to the southwest is Skone Irrigation, CHS Sun Basin Growers, and the Warden Airport. The nearest residential properties (single family homes) are located approximately 1,500 feet east-southeast from the Site.

2.3 Contamination Discovery and Subsequent Preliminary Site Investigations

The City made its first detections of EDB in city water supply in 1989. The EDB contamination has been known to Ecology since 1990. Between 1992 and 2002 the EDB concentrations in city wells 4 and 5 were below the MCL. During this time, the City, the Washington State Department of Health, and Grant County Health District (GCHD) conducted monitoring and oversight of the EDB observed in the wells (DOH, 2005). Information regarding EDB detections in the two City wells is provided in Table 2.

On December 22, 2003, after the EDB exceedances in June, Ecology received a discovery notice from GCHD that EDB concentrations in City of Warden Wells 4 and 5 exceeded the MCL during the June 2003 sampling event. Ecology conducted an initial investigation and sent an early notice letter to the City on May 18, 2004. Ecology entered the Site into its database for hazardous waste sites. On February 1, 2005 the GCHD conducted a site hazard assessment and determined that the Site had a moderate risk, i.e. a number 3 on a scale from 5 (low risk) to 1 (high risk)

Ecology conducted two preliminary site investigations in 2007 and 2009 (PGG, 2007 and Ecology, 2009). Ecology performed the first preliminary investigation of the City of Warden's well field in response to the discovery of EDB in City Wells 4 and 5 (PGG, 2007). Under contract with Ecology, Pacific Groundwater Group (PGG) installed five groundwater monitoring wells (MW-1, MW-2, MW-3, MW-4, and MW-5D) and completed groundwater sampling. Figure 3 shows the location of the groundwater monitoring wells. Additionally, Ecology collected two water samples from adjacent agricultural processing facilities and three water samples from the City of Warden's wastewater treatment ponds. Between the two preliminary investigations, Ecology sampled the monitoring wells every other month starting in November 2006 until February 2009 (Ecology, 2009)

Ecology conducted a second phase of the preliminary site investigations between November and December 2008 (Ecology 2009). Ecology advanced and sampled a total of 22 borings (borings

SB-1 through SB-22 shown in Figure 4). Ecology also performed additional sampling and EDB analysis of agricultural process water from adjacent potato processing plants. (HDR, 2018).

The two preliminary site investigations identified two on-site areas with soils contaminated with EDB: one area within the central portion at boring SB-5; and a larger area at the western portion located at well MW-5D and boring SB-12. Ecology also discovered EDB contamination in groundwater monitoring well MW-5D.

EDB concentrations were also identified in the potato processing water in the facilities west of the Site. After the facilities stopped using water from the City Wells 4 and 5 no more detections of EDB were noted in the process water (Ecology, 2009).

2.4 PHYSICAL SITE CHARACTERISTICS

2.4.1 Topography and Climate

The topography of the area is generally flat with a few gently sloping hills. Elevation of the site is approximately 1,252 feet above sea level. The region is arid, receiving around 9 inches of precipitation annually. The majority of the precipitation occurs in late fall through early spring; winter precipitation is usually in the form of snow. Summers are warm and dry. The annual mean temperature is about 50˚F.

2.4.2 Surface Water

The nearest surface water body from the Site is East Low Canal and it is located approximately 250 feet to the north of the facility (see Figure 2). The canal is filled with water during the growing season from approximately April to October and dry during the rest of the year. The nearest major natural surface water body is Warden Lake located approximately four miles to the west.

2.4.3 Geology

The City of Warden is located within the Columbia Plateau, which is dominated by the Columbia River Basalt Group (thick sequence of basalt flows). Unconsolidated sediment overlies basalt in the Warden area and is comprised of sand and silt deposited by outburst floods from Glacial Lake Missoula and Palouse Formation loess (windblown silt and fine sand).

The upper unconsolidated sediments consist of 17-64 feet thick silty, fine sand of the Palouse Formation. Layers of caliche (hardened soil created by carbonate and sulfate precipitation) occur in the upper 25 feet of site boreholes. The caliche layers are thinner and not as well-defined in the center of the property. Approximately 5 to 15 feet of weathered basalt is encountered beneath the Palouse Formation. The weathered basalt is underlain by competent basalt. The average depth to the loess-basalt contact within the Site ranges from about 45 feet in the northwest to 25 feet in the southeast. Further descriptions of the regional and Site geology are found in PGG (2007), Ecology (2009), and in HDR (2018).

2.3.5 Hydrogeology

The Site and surrounding area lies in the Odessa groundwater management sub-area, a segment of the Columbia Basin groundwater system, which is characterized by declining basalt aquifer water levels and high amounts of recharge to the shallow aquifer due to irrigated agricultural activities in the region. The surficial geologic deposits are outwash deposits and wind-blown aeolian deposits (loess). Below these surficial deposits, three aquifers are identified in the City of Warden area (Hansen et al. 1994; HDR, 2018).

Depth to water (shallow aquifer) in the project area is approximately 11 to 30 feet bgs and varies seasonally, where groundwater elevation rises during the irrigation season and declines during the non-irrigation season. Shallow groundwater is influenced by the East Low Canal. Currently there are twelve groundwater monitoring wells installed both on-site and off-site. Installation details for these twelve wells are presented in the RI/FS report (HDR. 2018). Monitoring wells designated with a “D” refer to wells screened at least partially within the weathered basalt whereas monitoring wells with no designation or with an “S” designation are screened in the unconsolidated Palouse Formation. Groundwater elevations for the on-site wells measured during the RI are presented in the RI/FS report (HDR, 2018).

Shallow groundwater in the Palouse Formation has a southerly to southwesterly flow direction. Deeper groundwater flow in in the basalt fluctuates between a northerly flow direction in winter and a southerly direction in summer. The southerly flow during summer is caused by groundwater recharge from the canal. Beyond the City water supply wells 4 and 5, no other groundwater extraction wells in the area have been identified by Ecology to contain EDB.

3.0 REMEDIAL INVESTIGATION

Based on the results from the two preliminary Ecology site investigations, Simplot prepared an initial RI/FS work plan in 2011 followed by two supplemental RI/FS work plans in 2012 and 2013. RI/FS work was performed from 2011 through 2013, followed by one groundwater monitoring event in 2017.

3.1 SUBSURFACE STRUCTURES AND SOIL

Prior to the soil investigation, a geophysical survey was conducted to determine if any tanks, piping, or subsurface infrastructure was present as a potential source; none were found.

In February 2012, Simplot drilled seven push probe borings (GP-1 through GP-7) in areas that were not sampled during Ecology's earlier investigations; boring locations are shown in Figure 4. Two to three soil samples were collected from each boring at depths ranging from one foot down to eighteen feet below the ground surface.

Between December 2011 and July 2013, Simplot drilled and sampled six additional soil borings that were converted into groundwater monitoring wells (MW-5S through MW-10S). Simplot collected soil samples from these borings for EDB analysis.

Additional EDB soil contamination was found in the western portion of the Site in samples collected from the new soil borings, GP-7 and MW-5S, drilled adjacent to well MW-5D. Simplot did not detect any EDB in samples collected from borings drilled adjacent to SB-5 within the central portion of the Site. EDB was found primarily in the caliche at depths ranging from approximately 10 to 20 feet below ground surface. (PGG, 2007; Ecology, 2009; HDR, 2018). Detected EDB concentrations ranged from 3.2 µg/kg (SB-12) with a maximum of 218 µg/kg (MW-5S). Figure 4 shows the estimated extent of EDB-contaminated soil. Table 3 provides information regarding detections of EDB in the soil borings.

3.2 GROUNDWATER

Groundwater monitoring wells MW-5S through MW-10S were completed within the shallowest portion of the water table and one well (MW-7D) was completed within the deeper portion of the shallow aquifer into the basalt (Figure 3)

EDB has been found in groundwater primarily in shallow well MW-5S, which is screened at the top of the water surface. Detections with concentrations ranging from 5.7 µg/l to 234 µg/l have been observed in this well. Shallow well MW-6S has also had detections of EDB ranging from non-detect to 26.8 µg/l. Monitoring well MW-5D, which is screened at the unconsolidated groundwater/basalt interface, has shown non-detect to low (< 0.27 µg/l) EDB concentrations during the RI monitoring period, even though higher concentrations of EDB had been detected in this well in the previous preliminary investigations (Ecology, 2009). EDB has not been detected

in any off-site monitoring wells. Table 4 shows the EDB detections in the groundwater monitoring wells during the RI.

3.3 RISKS TO HUMAN HEALTH AND THE ENVIRONMENT

EDB evaporates quickly upon exposure to the air and dissolves in groundwater to some extent. It is moderately persistent in the soil environment, with a representative half-life of 100 days. Generally, EDB degrades readily near the surface and becomes more persistent with depth. Further information regarding the properties of EDB and EDB risks to human health and the environment is found in the RI/FS report (HDR, 2018). Three EDB sources have been identified at the Site (HDR, 2018):

1. soil at the site;
2. groundwater at the site, and
3. deep Wanapum basalt aquifer in the area of City Wells 4 and 5.

Transport and/or migration pathways define those mechanisms by which humans are exposed to a chemical released from a site. A pathway is comprised of four elements:

- A source and mechanism for release of a chemical into the environment
- A transport medium (e.g., soil, air, and water)
- A point of potential human contact (exposure point)
- A human exposure route (ingestion, inhalation, dermal contact)

In the soil, contaminant mass remains in the caliche, which is not currently a direct contact exposure risk due to its depth. However, it continues to represent a source to leach to the groundwater.

Groundwater, particularly the shallow groundwater, remains a completed exposure pathway, due to the impacted groundwater's connection to the drinking water aquifer. Receptors may be exposed through current or future ingestion or direct contact with contaminated groundwater.

Due to the high volatility of EDB, vapors from contaminated soil and groundwater represent sources to air. However, there are no current exposures since buildings are not currently present in areas directly over contamination; however, future buildings could potentially trap and concentrate vapors.

The closest surface water is the East Low Canal, which is a losing stream through the project area during the summer months. In wintertime, the gradient is relatively flat or to the southwest. Water is flowing from the canal towards the Site when it is filled during the summer months. Therefore, the EDB in groundwater does not enter the canal and consequently, there is no complete pathway for EDB contamination into canal surface water or sediments.

The development of exposure scenarios is based on the conceptual site model, information obtained during the RI, and on State of Washington risk assessment guidance. Potential exposure scenarios included residential, industrial, utility worker, and agricultural.

Completed EDB pathways do not currently exist at the Site, as long City Well 5 is not used for human consumption.

Future exposure scenarios could include on-site exposure to impacted soil and groundwater by Site personnel. Also, because there are detectable levels of EDB in groundwater beneath the site, there is a potential for off-site migration. Future groundwater exposures via ingestion, inhalation, and dermal contact by Site personnel is possible, if groundwater production for human consumption takes place within the Site vicinity.

4.0 CLEANUP STANDARDS

4.1 OVERVIEW

MTCA requires the establishment of cleanup standards for individual sites. The two primary components of cleanup standards are CULs and points of compliance. CULs determine the concentration at which a substance does not threaten human health or the environment. All media exceeding a cleanup level is addressed through a cleanup remedy that prevents exposure to the contaminated material. Points of compliance represent the locations on the site where CULs must be met.

The process for establishing cleanup levels involves the following:

- Determining which analytical method to use;
- Developing cleanup levels for individual contaminants in each media;
- Determining which contaminants contribute the majority of the overall risk in each media (indicators); and
- Adjusting the cleanup levels downward based on total site risk.

MTCA provides three options for establishing cleanup levels: Methods A, B, and C.

- Method A may be used to establish cleanup levels at routine sites or sites with relatively few hazardous substances.
- Method B is the standard method for establishing cleanup levels and may be used to establish cleanup levels at any site.
- Method C is a conditional method used when a CUL under Method A or B is technically impossible to achieve or may cause significantly greater environmental harm. Method C also may be applied to qualifying industrial properties.

MTCA defines the factors used to determine whether a substance should be retained as an indicator for the Site. When defining cleanup levels at a site contaminated with several hazardous substances, Ecology may eliminate from consideration those contaminants contributing a small percentage of the overall threat to human health and the environment. WAC 173-340-703(2) provides a substance may be eliminated from further consideration based on:

- The toxicological characteristics of the substance which govern its ability to adversely affect human health or the environment relative to the concentration of the substance;
- The chemical and physical characteristics of the substance which govern its tendency to persist in the environment;
- The chemical and physical characteristics of the substance which govern its tendency to move into and through the environment;
- The natural background concentration of the substance;
- The thoroughness of testing for the substance;

- The frequency of detection; and
- The degradation by-products of the substance.

4.2 SITE USE

The evaluation of both cleanup levels and ecological exposures depends on the nature of the Site use. Options under MTCA are either an unrestricted property or an industrial property. Industrial properties are defined in WAC 173-340-200; the definition includes properties characterized by transportation areas and facilities zoned for industrial use. Industrial properties are further described in WAC 173-340-745(1) with the following factors:

- People don't normally live on industrial property;
- Access by the general public is generally not allowed;
- Food is not grown/raised;
- Operations are characterized by chemical use/storage, noise, odors, and truck traffic;
- Ground surface is mostly covered by buildings, paved lots and roads, and storage areas; and
- Presence of support facilities serving the industrial facility employees and not the general public.

The Site is currently zoned as industrial (City of Warden designation: M1-Light Manufacturing), which does not allow for daycare centers and residential use. Therefore, the Site does qualify for industrial site use. Current Site use is as a distribution center for agricultural supplements such as fertilizers and therefore Method C CUL apply for risk from direct soil contact. Since aquifers beneath the Site are used for human consumption, groundwater Method B CULs will apply. Potential ecological exposure to Site contamination is discussed further in Section 4.3.

4.3 TERRESTRIAL ECOLOGICAL EVALUATION

WAC 173-340-7490 requires that sites perform a terrestrial ecological evaluation (TEE) to determine the potential effects of soil contamination on ecological receptors. A site may be excluded from a TEE if any of the following are met:

- All contaminated soil is or will be located below the point of compliance;
- All contaminated soil is or will be covered by physical barriers such as buildings or pavement;
- The site meets certain requirements related to the nature of on-site and surrounding undeveloped land; or
- Concentrations of hazardous substances in soil do not exceed natural background levels.

For the Site, a TEE is not required because it meets the third criteria above. The site has less than 1.5 acres of contiguous undeveloped land on the site or within 500 feet of any area of the site affected by hazardous substances, other than those substances listed in WAC 173-340-7491(1)(c)(ii).

4.4 SITE CLEANUP LEVELS

The RI and previous investigations have documented the presence of EDB contamination in soil and groundwater at the Site. Therefore, CULs will be developed for both soil and groundwater.

4.4.1 Groundwater

Because this Site meets the requirements identified in WAC 173-340-704 for groundwater, a Method B CUL for EDB will apply. Table 5 shows the cleanup level development including the Federal and State MCL, Method A CUL, and Method B CULs. The site-specific groundwater CUL of 0.0219 µg/l is calculated using the MTCA Method B equation and taking the cancer risk into account.

4.4.2 Soil

Since groundwater is contaminated at concentrations that exceed the Method B CUL as described above, soil CULs need to consider the leaching pathway and be set at concentrations protective of groundwater in accordance with Method B guidance. The CUL for surface soils must also be protective from the risk posed by the direct-contact pathway. Table 5 shows the site-specific CULs for soil direct exposure from contaminated soil. The CUL protective of groundwater is lower than the CUL protective of the direct contact pathway for industrial properties. For EDB in soils, Ecology has selected the soil CUL that is protective of groundwater. Based upon the MTCA Method B equation, the Site-specific soil EDB CUL is calculated to be 0.27 µg/kg.

4.5 POINT OF COMPLIANCE

MTCA defines the point of compliance as the point or points where cleanup levels shall be attained. Once cleanup levels are met at the point of compliance, the Site is no longer considered a threat to human health or the environment.

WAC 173-340-740(6) gives the point of compliance requirements for soil. For soil cleanup levels based on protection of ground water, the point of compliance shall be established in the soils throughout the Site under WAC 173-340-740(6). For soil cleanup levels based on human exposure via direct contact, the point of compliance is within in the soils throughout the Site from the ground surface to fifteen feet below the ground surface. If groundwater is contaminated, the soil point of compliance is all soil from the ground surface down to the groundwater table.

At the Site the soil point of compliance is from the ground surface down to the top of groundwater approximately 22 feet below the ground surface, due to the presence of EDB-contaminated groundwater.

WAC 173-340-720(6) gives the point of compliance requirements for groundwater. The standard groundwater point of compliance is established throughout the site from the uppermost level of

the saturated zone extending vertically to the lowest most depth which could potentially be affected by the site.

At the Site a standard groundwater point of compliance will apply throughout the extent of the plume. Groundwater cleanup levels shall be attained in all groundwater from the point of compliance to the outer boundary of the hazardous substance plume.

5.0 CLEANUP ACTION SELECTION

5.1 REMEDIAL ACTION OBJECTIVES

The remedial action objectives are statements describing the actions necessary to protect human health and the environment by eliminating, reducing, or otherwise controlling risks posed through each exposure pathway and migration route. They are developed considering the characteristics of the contaminated media, the characteristics of the hazardous substances present, migration and exposure pathways, and potential receptor points.

Soil and groundwater have been contaminated by past activities at the Site. Given the current status of the Site, people may be exposed to contaminated soil via dermal contact or inhalation of dust, or contaminated groundwater via dermal contact or ingestion. While a water well is not currently installed in the area of contaminated groundwater, future groundwater use must be protected. Potential human receptors include on-site workers, trespassers, residents, and recreational users. As described in Section 4.3 above, exposure to both plant and animal receptors is not likely under the current and proposed Site use.
Given these potential exposure pathways, the following are the remedial action objectives for the Site:

- Prevent direct contact, ingestion, or inhalation of contaminated soil by humans
- Prevent direct contact or ingestion of contaminated groundwater by humans
- Prevent or minimize the potential for migration of contaminants from soil to groundwater

5.2 CLEANUP ACTION ALTERNATIVES

Cleanup alternatives to meet these remedial action objectives were evaluated as part of the RI/FS process. The FS evaluated multiple alternatives for addressing all contaminated media at the Site. The following four alternatives are based on the proposals made by the PLPs in the FS. Technology options for soils generically included containing/stabilizing soils in place, treating the soils in place to remove EDB, or removing soils for treatment or disposal. For groundwater, options included containing and/or actively treating groundwater underground, pumping groundwater to the surface and treating it, or relying primarily on soil cleanup to reduce groundwater concentrations. Several specific technologies or treatments were excluded by the PLPs due to various factors; these can be reviewed in detail in the RI/FS. The retained technologies were combined into the four alternatives to address contaminated soil and groundwater.

5.2.1 Alternative 1: No Action

The Site would remain in its current state with no cleanup action.

Alternative 1 does not meet MTCA requirements that prohibit reliance on natural processes alone to clean up contaminated sites where more active remedial measures are practicable. In particular, this alternative does not include a provision for monitoring as required by MTCA

(WAC 173-340-360(2)(a)(iv)). Additionally, this alternative does not fulfill the MTCA requirement to remove contaminants of concern to the maximum extent practicable. This alternative is therefore not considered further.

5.2.2 Alternative 2: Institutional Controls and Monitored Natural Attenuation

This alternative includes institutional controls for land use, which would remain until the cleanup standards are met for groundwater through the monitored natural attenuation of EDB.

Institutional controls are measures taken to limit or prohibit activities that may interfere with the integrity of a cleanup action, or result in exposure to hazardous substances remaining at the Site. Here, the institutional control would be an environmental covenant filed with the property deed that would restrict groundwater usage and limit site uses such as where buildings could be built on the property.

Monitored natural attenuation refers to the natural physical, chemical, and/or biological processes that reduce the mass, toxicity, or mobility of EDB in the subsurface over time. Monitored natural attenuation involves sampling and analysis of groundwater samples to verify that concentrations of EDB are reducing.

Monitoring would involve collection of groundwater samples from the existing monitoring well network twice per year. Two new monitoring wells would also be added to the compliance monitoring network at the site boundary. The semi-annual compliance monitoring would ensure that EDB contamination would not leave the Site property boundary. In addition, soil samples would be collected annually to assess if EDB in soils meet the soil CUL.

5.2.3 Alternative 3: Institutional Controls, Soil Excavation and Treatment, and Monitored Natural Attenuation of Groundwater

Institutional controls and monitored natural attenuation for groundwater would be the same as Alternative 2. This alternative would add the targeted excavation of EDB-impacted soil including soil at the soil/groundwater interface where EDB is detected. All soil exceeding the EDB CUL of 0.27 µg/kg would be excavated. Confirmation sampling would be performed in the excavation to confirm that all contaminated soil had been removed. Excavated soil would be treated on-site through an *ex-situ* vapor extraction process. After testing confirms the soil is clean, it would be returned to the excavation pit and the site re-graded. As an alternative, the treated soil could be used for other uses such as fill material. Compliance monitoring would be used to confirm natural attenuation was taking place and to ensure that contaminated groundwater does not migrate off-site. A 20 –year maximum restoration time frame is assumed for the site.

5.2.4 Alternative 4: Institutional Controls, Soil Excavation, Soil Off-Site Disposal, and Monitored Natural Attenuation of Groundwater:

This alternative is the same as Alternative 3, except that contaminated soils are transported to an off-site landfill instead of treated on-site. Imported clean fill tested for potential contaminants

will be used to backfill the excavation. Institutional controls and monitored natural attenuation for groundwater would be the same as Alternatives 2 and 3. The compliance monitoring and periodic review procedures would be the same as for Alternative 3. The restoration time frame would be the same as Alternative 3.

5.3 REGULATORY REQUIREMENTS

MTCA sets forth the minimum requirements and procedures for selecting a cleanup action. A cleanup action must meet each of the minimum requirements specified in WAC 173-340-360(2), including certain threshold and other requirements. These requirements are outlined below.

5.3.1 Threshold Requirements

WAC 173-340-360(2)(a) requires that the cleanup action shall:

- Protect human health and the environment;
- Comply with cleanup standards (see Section 4.0);
- Comply with applicable state and federal laws (see Section 5.3.4); and
- Provide for compliance monitoring.

5.3.2 Other Requirements

In addition, WAC 173-340-360(2)(b) states the cleanup action shall:

- Use permanent solutions to the maximum extent practicable;
- Provide for a reasonable restoration time frame; and
- Consider public concerns

WAC 173-340-360(3) describes the specific requirements and procedures for determining whether a cleanup action uses permanent solutions to the maximum extent practicable. A permanent solution is defined as one where cleanup levels can be met without further action being required at the Site other than the disposal of residue from the treatment of hazardous substances. To determine whether a cleanup action uses permanent solutions to the maximum extent practicable, a disproportionate cost analysis is conducted. This analysis compares the costs and benefits of the cleanup action alternatives and involves the consideration of several factors, including:

- Protectiveness
- Permanent reduction of toxicity, mobility and volume
- Cost
- Long-term effectiveness
- Short-term risk
- Implementability
- Consideration of public concerns

The comparison of benefits and costs may be quantitative, but will often be qualitative and require the use of best professional judgment.

WAC 173-340-360(4) describes the specific requirements and procedures for determining whether a cleanup action provides for a reasonable restoration time-frame.

5.3.3 Cleanup Action Expectations

WAC 173-340-370 sets forth the following expectations for the development of cleanup action alternatives and the selection of cleanup actions. These expectations represent the types of cleanup actions Ecology considers likely results of the remedy selection process; however, Ecology recognizes that there may be some sites where cleanup actions conforming to these expectations are not appropriate.

- Treatment technologies will be emphasized at sites with liquid wastes, areas with high concentrations of hazardous substances, or with highly mobile and/or highly treatable contaminants;
- To minimize the need for long-term management of contaminated materials, hazardous substances will be destroyed, detoxified, and/or removed to concentrations below cleanup levels throughout sites with small volumes of hazardous substances;
- Engineering controls, such as containment, may need to be used at sites with large volumes of materials with relatively low levels of hazardous substances where treatment is impracticable;
- To minimize the potential for migration of hazardous substances, active measures will be taken to prevent precipitation and runoff from coming into contact with contaminated soil or waste materials;
- When hazardous substances remain on-site at concentrations which exceed cleanup levels, they will be consolidated to the maximum extent practicable where needed to minimize the potential for direct contact and migration of hazardous substances;
- For sites adjacent to surface water, active measures will be taken to prevent/minimize releases to that water; dilution will not be the sole method for demonstrating compliance;
- Natural attenuation of hazardous substances may be appropriate at sites under certain specified conditions (see WAC 173-340-370(7)); and
- Cleanup actions will not result in a significantly greater overall threat to human health and the environment than other alternatives.

5.3.4 Applicable, Relevant, and Appropriate State and Federal Laws, and Local Requirements

WAC 173-340-710(1) requires that all cleanup actions comply with all applicable state and federal law. It further states the term “applicable state and federal laws” shall include legally applicable requirements and those requirements that the department determines “…are relevant and appropriate requirements.” This section discusses applicable state and federal law, relevant and appropriate requirements, and local permitting requirements, which were considered and were of primary importance in selecting cleanup requirements. If other requirements are identified at a later date, they will be applied to the cleanup actions at that time.

MTCA provides an exemption from the procedural requirements of several state laws and from any laws authorizing local government permits or approvals for remedial actions conducted under a consent decree, order, or agreed order. [RCW 70.105D.090] However, the substantive requirements of a required permit must be met. The procedural requirements of the following state laws are exempted:

- Ch. 70.94 RCW, Washington Clean Air Act;
- Ch. 70.95 RCW, Solid Waste Management, Reduction, and Recycling;
- Ch. 70.105 RCW, Hazardous Waste Management;
- Ch. 75.20 RCW, Construction Projects in State Waters;
- Ch. 90.48 RCW, Water Pollution Control; and
- Ch. 90.58 RCW, Shoreline Management Act of 1971.

WAC 173-340-710(4) sets forth the criteria Ecology evaluates when determining whether certain requirements are relevant and appropriate for a cleanup action. Table 6 lists the state and federal laws containing the applicable or relevant and appropriate requirements (ARARs) that apply to the cleanup action at the Site. Local laws, which may be more stringent than specified state and federal laws, will govern where applicable.

5.4 Evaluation of Cleanup Action Alternatives

The requirements and criteria outlined in Section 5.3 are used to conduct a comparative evaluation of the cleanup action alternatives and to select a cleanup action from those alternatives. Table 7 provides a summary of the ranking of the cleanup alternatives against the various criteria set forth in MTCA. Note that as stated in Section 5.2.1, Alternative 1 is not a viable alternative under MTCA and is not considered further or evaluated. The comparative evaluation of the cleanup action alternatives against the requirements and criteria are summarized below.

5.4.1 Threshold Requirements

5.4.1.1 Protection of Human Health and the Environment

- Soil Contamination: Alternatives 2 would reduce the risk posed from site-related contamination, as it would no longer be available for direct contact by human and ecological receptors; however, it may not eliminate the soil-to-groundwater pathway. Alternatives 3 and 4 would eliminate the risk posed from site-related contaminated soil through complete removal of soil exceeding the CULs.

- Groundwater Contamination: Alternative 2 likely does not achieve protection of human health and the environment within a reasonable time-frame, because it does not address vertical migration of EDB from contaminated soil into groundwater. Alternatives 3 and 4 would achieve protection of human health and the environment in a much shorter time-frame because they include removing contaminated soil that would be a continuing source to groundwater.

5.4.1.2 Compliance with Cleanup Standards

- Soil Contamination: Alternative 2 may not achieve the EDB soil CUL within the projected 20-year maximum restoration time frame. Alternatives 3 and 4 would achieve the EDB soil CUL through complete removal of EDB-contaminated soil.

- Groundwater Contamination: Alternative 2 is not anticipated to achieve cleanup standards in groundwater because achieving the CULs in soil is not assured. Alternatives 3 and 4 are anticipated to achieve CULs in shallow groundwater through complete removal of the EDB soil source.

5.4.1.3 Compliance with Local, State, and Federal Laws

Alternative 2 does not comply with applicable State and Federal laws because it may not achieve groundwater standards. Alternatives 3 and 4 are expected to comply with all applicable laws due to the removal and treatment of all EDB-contaminated soil above the CUL. Local laws, which may impact the final implementation of the chosen cleanup action will be considered when preparing the cleanup action engineering design document.

5.4.1.4 Provision for Compliance Monitoring

There are three types of compliance monitoring: protection, performance, and confirmation. Protection monitoring is designed to protect human health and the environment during the construction and operation & maintenance phases of the cleanup action. Performance monitoring confirms that the cleanup action has met cleanup and/or performance standards. Confirmation monitoring confirms the long-term effectiveness of the cleanup action once cleanup standards have been met initially or other performance standards have been attained.

All three alternatives would meet this provision as all require varying levels of all three types of compliance monitoring.

5.4.2 Other Requirements

5.4.2.1 Use of Permanent Solutions to the Maximum Extent Practicable

To determine whether a cleanup action uses permanent solutions to the maximum extent practicable, the procedures outlined in MTCA to consider a disproportionate cost analysis is used. The analysis compares the costs and benefits of the cleanup action alternatives and involves the consideration of several factors. The comparison of costs and benefits may be quantitative, but will often be qualitative and require the use of best professional judgment. Table 7 provides a summary of the relative ranking of each cleanup alternative in the decision process. The relative ranking of each deep contamination alternative for each of the evaluation factors is summarized below.

- Protectiveness

  Protectiveness measures the degree to which existing risks are reduced and the time required to reduce risk and attain cleanup standards. On- and off-site risks resulting from implementing the alternative are measured in order to determine the improvement of overall environmental quality.

  Alternative 2 would not be protective of groundwater because EDB may remain in soil and continue to impact groundwater adversely. Alternative 3 would be more protective than Alternative 4, because in Alternative 3, the EDB would be destroyed and not merely transferred to another location.

- Permanence

  Permanence measures the adequacy of the alternative in destroying the hazardous substance(s), the reduction or elimination of releases or sources of releases, the degree of irreversibility of any treatment process, and the characteristics and quantity of any treatment residuals.

  Alternative 3 would be more permanent than Alternative 4, because EDB would be destroyed and not transferred to another location as proposed in Alternative 4. Alternative 2 is not anticipated to be permanent because it does not reduce the toxicity, mobility or volume of EDB in soils within an acceptable restoration time frame. .

- Cost

  Cleanup costs are estimated based on specific design assumptions for each alternative. Although the costs are estimates based on design assumptions that might change, the relative costs are used for this evaluation. A detailed description of the costs involved with each alternative can be found in the FS (HDR, 2018). Alternative 2, assuming a 10-monitoring period is estimated to cost $475,560. Alternative 3, (*ex-situ* soil vapor extraction) is estimated to cost $461,212 based on a 5-year compliance monitoring period with semi-annual monitoring events. The estimated cost for Alternative 4, (excavation and off-site disposal) is $579,846 also assuming a 5-year compliance monitoring period with semi-annual monitoring events.

- Long-term Effectiveness

  Long-term effectiveness measures the degree of success, the reliability of the alternative during the period that hazardous substances will remain above cleanup levels, the magnitude of residual risk after implementation, and the effectiveness of measures required to manage institutional controls.

  Alternatives 3 and 4 would be more effective for the long-term than Alternative 2, as all

shallow soil contamination would be treated or removed from the Site.

- Short-term Risk

  Short-term risk measures the risks related to an alternative during construction and implementation, and the effectiveness of measures taken to manage such risks.

  Alternatives 2 would have the lowest risk since soils would not be excavated. Alternative 3 would have a lower short-term risk than Alternative 4 since less excavation and contaminated soil transport would occur. Alternatives 3 and 4 would use standard construction techniques and any risks are would be easily mitigated.

  Additionally, Alternative 3 is more also more attractive than Alternative 4 because of the lower use of fossil fuels for the *ex-situ* soil treatment Alternative 4 is dependent on heavy trucks for long-distance transportation and disposal Consequently, Alternative 3 would have a lower carbon footprint than Alternative 4.

- Implementability

  Implementability considers whether the alternative is technically possible, the availability of necessary off-site facilities, services, and materials, administrative and regulatory requirements, scheduling, size, complexity, monitoring requirements, access for operations and monitoring, and integrations with existing facility operations.

  Alternatives 2, 3, and 4 are fully implementable at this Site. Alternative 2 ranks slightly lower, as it requires inspection and maintenance until the contamination degrades to a point of meeting CULs.

- Consideration of Public Concerns

  few comments from the public were received regarding proposed remedial alternatives presented in the RI/FS report to clean up the Site. Comments received from the public concerned potential migration of EDB contamination to other groundwater production wells. This CAP will undergo public review and comment and Ecology will respond to the public comments. Ecology will consider the comments before finalizing this CAP.

5.4.2.2 Disproportionate Cost Analysis

Costs are disproportionate to the benefits if the incremental costs of an alternative are disproportionate to the incremental benefits of that alternative. In this case, Alternative 3 is considered more permanent since it treats the contamination, but also less expensive than Alternative 4. Therefore, a disproportionate cost analysis is not needed.

5.4.2.3 Provide a Reasonable Restoration Time Frame

WAC 173-340-360(4) describes the specific requirements and procedures for determining whether a cleanup action provides for a reasonable restoration time frame, as required under subsection (2)(b)(ii). The factors used to determine whether a cleanup action provides a reasonable restoration time frame are set forth in WAC 173-340-360(4)(b).

To drive continuous improvement and adaptive management of the active cleanup technologies, Ecology has established an overall restoration time frame (RTF) for the Site of 20 years based on the longevity of EDB in soil and groundwater. This period is consistent with the alternatives presented in the FS and evaluated in this CAP. A 20-year time frame allows adequate time to determine whether the selected cleanup action alternative is proving effective, while allowing time to evaluate an alternate cleanup action, if the primary alternative is not effective. A 20-year RTF is the measure by which the performance of alternatives will be evaluated. It is Ecology's goal that cleanup standards at the Site are attained as quickly as practicable. The RTF starts following completion of construction and start of the compliance monitoring.

It is anticipated that Alternatives 3 and 4 would be able to achieve the soil and shallow groundwater EDB CULs within a time frame of maximum 20 years, whereas Alternative 2 will not.

5.4.3 Cleanup Action Expectations

Specific expectations of cleanup levels are outlined in WAC 173-340-370 and are described in Section 5.3.3. Alternatives would address applicable expectations in the following manner:

Alternative 2:

- Soil - To minimize the potential for migration due to precipitation, a cover or cap would be needed

Alternative 3:

- Soil - Emphasizes a treatment technology
- Soil - Destroys contamination
- Groundwater - Natural attenuation gets benefit of source control with monitoring and lesser risks until CULs achieved

Alternative 4:

- Soil - Removes but does not destroy contamination
- Groundwater - Natural attenuation gets benefit of source control with monitoring and lesser risks until CULs achieved

Soil Contamination:

- Alternative 2 would rely on successful natural attenuation of EDB in soils within the reasonable restoration time frame of 20 years for the Site.

- Alternative 2 would be required to control surface runoff to prevent any impacts to surface water or groundwater.
- In Alternative 3 *ex-situ* vapor extraction treatment will be used to treat EDB vapors that are highly mobile in the environment
- Alternatives 3 and 4 would remove all contaminated materials from the ground surface to 22 feet bgs to concentrations less than cleanup levels, which would eliminate the requirement for long-term management of EDB-contaminated soils.

Groundwater Contamination:

- All three alternatives, Alternative 2, 3 and 4 will rely on natural attenuation of EDB contamination in shallow groundwater after the removal of EDB-contaminated soils in the vadose zone. Compliance monitoring will ensure that natural attenuation is taking place in accordance with the requirements set forth in WAC 173-340-370(7). It is anticipated that compliance groundwater monitoring will be required for the remainder of the RTF of 20 years, with estimated four, five-year reviews evaluating the success of the selected cleanup action for the Site during the .

Indoor Vapor Intrusion:

- All three alternatives, Alternative 2, 3 and 4 will rely on institutional controls to prevent structures from being built within the soil and shallow groundwater EDB contamination footprint. The institutional controls will remain in place as long the soil and shallow groundwater CULs have not been met and site data shows that soil gas EDB concentrations do not pose an unacceptable risk to occupants to such structures.

5.5 DECISION

After evaluation of the three alternatives that meet the cleanup threshold criteria, Alternative 3 is the selected cleanup action at the Site because it is more permanent and less costly.

6.0 SELECTED REMEDIAL ACTION

The selected cleanup action is described below. During the implementation of the CAP if there is a need to deviate from the CAP, any changes to the CAP must be approved by Ecology in writing before the changes are implemented [WAC 173-340-400(6)(d)]. Protection monitoring procedures for the cleanup action implementation will be described in a separate Health and Safety Plan, which will be prepared in accordance with Federal and State occupational health and safety regulations, including those that regulate work on sites where hazardous materials are present.

6.1 CLEANUP ACTION IMPLEMENTATION

Prior to excavation, two wells (MW-5S and MW-5D) inside the planned excavation area will be decommissioned. The PLP will delineate the horizontal and vertical extent of EDB-contaminated soils in more detail through soil borings. The purpose of this contaminant delineation is to define the volume of soils in more detail to be able to design the correct capacity of the *ex-situ* SVE treatment system.

The estimated area to be excavated and treated is approximately 5,000 square feet (sq. ft.) with a maximum depth of approximately 22 feet below ground surface. The areas are divided with approximately 4,500 sq. ft. at the western portion of the Site and 500 sq. ft. around soil boring SB-5. Excavation will not take place in saturated soils below the groundwater table. Estimated total excavation volume is approximately 13,000 cubic yards. The total estimated volume of EDB-contaminated soil greater than 0.27 µg/kg that will be treated through ex-situ vapor extraction is approximately1,200 cubic yards. Figure 5 shows the anticipated extent of EDB-contaminated soil to be excavated and treated. Excavation activities would occur during the winter months to take advantage of a lower water table, which allows greater access to soil at the soil/groundwater interface and less risk for EDB volatilization. Dust control measure will be in place such as water spraying during excavation to keep dust levels below the limits set in the health and safety plan.

Upon completion of excavation, confirmed clean soil will be returned to the excavation and compacted.

Excavated contaminated soil would be separately stockpiled and stored during the winter months. They would be placed on a one-foot layer of clean soil with plastic sheeting on top. The plastic sheeting will have a network of slotted piping on top. The soil will then be covered with plastic to prevent EDB releases into the atmosphere. The piping will be connected to an ex-situ vacuum system to capture the EDB vapors. The extracted vapors will be captured in an appropriate filter and cleaned air will be discharged into the atmosphere. Regular air confirmation sampling of pre-treatment and exhaust air will be conducted to ensure that EDB concentrations are declining and not released into the atmosphere after treatment.

The ex-situ SVE would take place during the warmer months (late spring or early summer) when higher temperatures would volatilize EDB more readily. The goal for the SVE soil treatment

would be to treat soils until EDB vapor levels drop to near or below detection limits and soil testing confirms that EDB concentrations are less than 0.27 µg/kg.

Confirmed clean soil that has undergone the SVE treatment may be returned to the excavation or used in other areas of the site.

During the cleanup action implementation the active work area will be fenced with secure chain link fences equipped with windscreen. Access to the Site will be limited to controlled access gates that will be locked after work hours.

Upon completion of the cleanup action, Simplot will prepare a cleanup action report describing the soil excavation, the SVE treatment, any deviations from the plans, and whether the soil cleanup action has fulfilled the soil cleanup action goals set forth in the CAP.

6.2 GROUNDWATER COMPLIANCE MONITORING

Compliance monitoring will involve collection of groundwater samples from the monitoring well network semi-annually until CULs in groundwater in two consecutive monitoring events have been achieved. Sampling will take place in August and January to coincide with maximum and minimum groundwater recharge from the East Low Canal. As described previously, two new monitoring wells will be installed as part of this alternative. The proposed compliance monitoring well locations are shown in Figure 6. These wells would serve as a conditional point of compliance well, along with MW-8S for the horizontally downgradient property boundary. Well MW-5D will serve as a conditional point-of-compliance monitoring well for vertical downgradient groundwater flow. A total of thirteen wells (MW-1, MW-2, MW-3, MW-5D[new], MW-5S[new], MW-6S, MW-7D, MW-7S, MW-8S, MW-9S, MW-10S, MW-11S, and MW-12S) will be monitored as part of the groundwater monitoring program.

A Groundwater Performance Monitoring Plan will be prepared during the development of the engineering design documents to describe in detail the sampling, testing, and data gathering methods, locations, frequency, and other field study procedures that will be used for obtaining and interpreting groundwater sampling data.

6.3 INSTITUTIONAL CONTROLS

Institutional controls are measures undertaken to limit or prohibit activities that may interfere with the integrity of a cleanup action or result in exposure to hazardous substances at the Site. Such measures are required to assure both the continued protection of human health and the environment and the integrity of the cleanup action whenever hazardous substances remain at the Site at concentrations exceeding applicable cleanup levels. Institutional controls can include both physical measures and legal and administrative mechanisms. WAC 173-340-440 provides information on institutional controls, and the conditions under which they may be removed.

Institutional controls will include an environmental covenant prohibiting the extraction of groundwater. The environmental covenant shall be consistent with the State of Washington

Uniform Environmental Covenant Act (UECA; Chapter 64.70 RCW). The environmental covenant can be removed once groundwater has met cleanup levels.

6.4 Financial Assurances

WAC 173-340-440 states that financial assurance mechanisms shall be required at sites where the selected cleanup action includes engineered and/or institutional controls. Financial assurances not are required at this Site at this time, because institutional controls such as on-site groundwater use restrictions are not part of the overall Site cleanup action after the EDB CUL has been achieved.

6.5 Periodic Review

WAC 173-340-420 states that at sites where a cleanup action requires an institutional control, a periodic review shall be completed no less frequently than every five years after the initiation of a cleanup action. Periodic reviews will not be required at this Site upon achieving the groundwater CUL in two consecutive monitoring events. After groundwater cleanup levels have been achieved, periodic reviews will still be required because institutional controls are a part of the remedy. Ecology may require the use of the new improved analytical techniques and may revise cleanup targets accordingly.

The first periodic review will take place no more than five years after the cleanup action construction has been completed. For this site, that will be when soils are treated below cleanup levels.

7.0 REFERENCES CITED

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TABLES

Table 1, Pertinent Site Information

Site Name	Warden City Water Supply Wells 4 and 5
Ecology Facility/sites ID	2802409
Ecology Cleanup Site ID	1618
Agreed Order	8421
Address	1800 West 1st Street Warden, WA 98857
Location:	GPS: 46.97025 46° 58' 13" North and -119.060309 -119° 3' 37" West UTM: Zone 11 N; 343279.18, 5203918.33 Legal: SW T17N R30E S9 County Assessor's Parcel Number.: 060697000 County: Grant
Ecology Site Manager	Christer Loftenius, LG, LHG State of Washington Department of Ecology Toxics Cleanup Program, Eastern Region 4601 N Monroe Street Spokane, Washington 99205-1295 clof461@ecywa.gov 509.329.3400
Potentially Liable Person (PLP)	J.R. Simplot Company P.O. Box 27 Boise, Idaho 83707
PLP Contact	Karl Schultz, CSP J.R. Simplot Company P.O. Box 27 Boise, Idaho 83707 Karl.schultz@simplot.com 208.780.7368
Site Owner	Same as PLP
RI/FS Preparer	HDR Engineering Michael Murray, Ph.D. 412 East Park Center Boulevard, Suite 100 Boise, Idaho 83706 mike.murray@hdrinc.com 208.387.7033

Table 2, Summary of EDB Sampling Results from City Wells No. 4 and 5 (from HDR, 2018)

City Well #4[a]		City Well #5	
Sample Month	(µg/L)	Sample Month	(µg/L)
3/89	3.0	3/89	0.02
5/89	0.02	5/89	0.02
12/89	0.8	12/89	0.09
2/90	0.29	2/90	0.33
4/90	0.1	4/90	0.10
6/90	0.02	6/90	0.02
11/90	0.05	11/90	0.08
5/91	0.02	5/91	0.02
10/91	0.02	10/91	0.02
4/92	0.05	4/92	0.02
12/96	0.02	11/96	0.02
6/01	0.02	6/01	0.02
6/03	0.09	6/03	0.09
8/03	0.04	8/03	0.06
11/03	0.46	9/03	0.06
12/03	0.36	11/03	0.09
3/04	1.62	1/04	0.33
10/04	0.02	2/04	0.38
11/04	0.04	3/04	0.40
2/05	0.72	4/04	0.50
6/05	0.06	5/04	0.17
1/07	1.28	10/04	0.05
		11/04	0.06
		1/05	0.15
		2/05	0.15
		4/05	0.15
		5/05	0.06
		6/05	0.04
		7/05	0.05
		8/05	0.05
		10/05	0.05
		11/05	0.03
		10/06	0.01
		11/06	<0.010
		1/07	0.12
		3/07	1.29
		5/07	0.09
		8/07	0.15
		10/07	0.01
		12/07	0.08
		4/11	0.19 0.15
		6/11	0.11
		7/12	0.086
		9/12	0.099
		9/12	0.83
		8/13	0.10[b]

[a] This table represents a compilation of results from several sources and has not been substantiated through review of laboratory reports by HDR.

[b] Samples collected by HDR to support pump test (HDR 2013b)

µg/L = micrograms per liter

Table 3, Soil Boring EDB Analytical Data (from HDR, 2018)

Well	MW-4	MW-10S	MW-8S	SB-3	SB-12	SB-22	MW-5	MW-5S	GP-7	SB-11	SB-1	SB-2	SB-9	SB-8	SB-7	GP-6	MW-9S	MW-6S	SB-10	SB-4	SB-5	SB-6	GP-5	SB-21	GP-4	MW-7	MW-7S	GP-3	GP-2	GP-1
@Grade Elevation ft.	1244.22	1242.8	1244.5	1247	1246	1245.5	1245.05	1245	1245	1245	1245	1245	1246.5	1246	1246.5	1247	1244.8	1245.4	1247	1248	1248	1248	1249	1249.5	1250	1248.5	1248.4	1251	1253	1253
1250																													ND	
																											ND	ND	ND	
			ND					ND									ND								ND					
		ND																						ND				ND		
																							ND							
1240																				ND	8.4		ND		ND		ND			
	ND		ND			ND	6.22	ND								ND	ND	ND	ND			ND								
		ND						ND																						
				ND					11.8					ND																
1230					3.19				11.6				ND			ND														
										ND																	ND			
							ND				ND	ND						ND												
	ND		ND					218																						
		ND																												
1220																														
																											ND			
							ND																							
	ND		ND					ND																						
		ND																												

Caliche Interbeds

Silt/Sand

Basalt

Refusal - Total Thickness Unknown

ND Soil Sample - Non Detect

EDB Detected in Soil Sample (micrograms per kilogram)

Table 4, RI Investigation Groundwater EDB Analytical Data (from HDR, 2018)

Well	Jan 12	Apr 12	Jul 12	Oct 12	Jan 13	Jul 13	Oct 13	Dec 17
	EDB (µg/L)							
MW-1	ND[1]	ND	ND	ND	ND	ND	ND	ND
MW-2	ND	ND	ND	ND	ND	ND	ND	ND
MW-3	ND	ND	ND	ND	ND	ND	ND	ND
MW-4	ND	ND	ND	ND	ND	ND	ND	No Well[3]
MW-5D	0.27	0.01[2]	ND	ND	ND	ND	0.01[2]	ND
MW-5S	234	16.1	9.1	22.3	14.5	5.7	63	151
MW-6S	10.9	8.7	26.8	15.4	4.2	2.0	ND	0.35
MW-7D	ND	0.01[2]	ND	ND	ND	ND	ND	ND
MW-7S	ND	0.01[2]	ND	ND	ND	ND	ND	ND
MW-8S					ND	ND	ND	ND
MW-9S							Dry	Dry
MW-10S							ND	ND

[1]ND = non-detected. Laboratory reporting limit (practical quantitation limit) is 0.01 micrograms per liter (µg/L).

[2] Laboratory or site cross-contamination suspected given the low detection and that the wells were ND for all other sampling events.

[3]Well MW-4 was permanently decommissioned in April 2015 with Ecology approval

Table 5, EDB Target Concentrations with Soil and Groundwater CULs (in bold)

	MTCA Method		
	A MTCA Table 720-1 (groundwater) MTCA Table 740-1 (soil)	B Unrestricted Land Use	C Industrial Land Use
	EDB Soil Target (µg/kg)		
Soil Direct Contact, Ingestion and Dermal, based on non-cancer risk	-	720,000	31,500,000
Soil Direct Contact, Ingestion and Dermal, based on cancer risk	-	500	65,600
Protection of Potable Groundwater, Soil CUL	5	**0.27**[1]	
	EDB Groundwater Target (µg/l)		
Groundwater Protection based on non-cancer risk	-	72	158
Groundwater Protection based on cancer risk	0.01	**0.0219**	0.219
Groundwater Protection, vapor intrusion non-cancer risk	-	277	605
Groundwater Protection, vapor intrusion cancer risk	-	0.28	2.8

[1]The Practical Quantitation Limit (PQL) laboratory reporting limit for EDB in soil using US EPA Method 8011 is 0.1 µg/kg (HDR, 2018)

[2]Federal ans State Maximum Contaminant Level (MCL) for EDB is 0.05 µg/l (HDR,2018)

Method B cancer risk: 1×10^{-6}; Method C cancer risk: 1×10^{-5}

µg/kg = microgram per kilogram

µg/l = microgram per liter

Table 6. Applicable or Relevant and Appropriate Requirements

Cleanup Action Implementation	
Ch. 18.104 RCW; Ch. 173-160 WAC	Water Well Construction; Minimum Standards for Construction and Maintenance of Water Wells
Ch. 173-162 WAC	Rules & Regulations Governing the Licensing of Well Contractors & Operators
Ch. 70.105D RCW; Ch. 173-340 WAC	Model Toxics Control Act; MTCA Cleanup Regulation
Ch. 43.21C RCW; Ch. 197-11 WAC	State Environmental Policy Act; SEPA Rules
29 CFR 1910	Occupational Safety and Health Act
Ch. 49.17 RCW	Washington Industrial Safety and Health Act
Groundwater and Surface Water	
42 USC 300	Safe Drinking Water Act
33 USC 1251; 40 CFR 131; Ch. 173-201A WAC	Clean Water Act of 1972; Water Quality Standards
Ch. 70.105D RCW; Ch. 173-340 WAC	Model Toxics Control Act; MTCA Cleanup Regulation
40 CFR 141; 40 CFR 143	National Primary Drinking Water Standards; National Secondary Drinking Water Standards
Ch. 246-290 WAC	Department of Health Standards for Public Water Supplies
Ch. 173-154 WAC	Protection of Upper Aquifer Zones
Air	
42 USC 7401; 40 CFR 50	Clean Air Act of 1977; National Ambient Air Quality Standards
Ch. 70.94 RCW; Ch. 43.21A RCW; Ch. 173-400 WAC	Washington Clean Air Act; General Regulations for Air Pollution
Ch. 173-460 WAC Ch. 173-470 WAC	Controls for New Sources of Air Pollution Ambient Air Quality Standards for Particulate Matter
Ch. 70.105D RCW; Ch. 173-340 WAC	Model Toxics Control Act; MTCA Cleanup Regulation

Table 7. Evaluation of Cleanup Action Alternatives

Criteria	Alternative 1	Alternative 2	Alternative 3	Alternative 4
	No Action	Institutional Controls and Monitored Natural Attenuation	Institutional Controls, Soil Excavation and Treatment, and Monitored Natural Attenuation of Groundwater	Institutional Controls, Soil Excavation, Off-Site Soil Disposal, and Monitored Natural Attenuation of Groundwater
Threshold Requirements				
Protection of human health & environment	no	uncertain	yes	yes
Compliance with cleanup standards	no	uncertain	yes	yes
Compliance with state & federal laws	no	uncertain	yes	yes
Provision for compliance monitoring	no	yes	yes	yes
Other Requirements				
Use of Permanent Solutions (disproportionate cost analysis)	--	overall rank #3	overall rank #1	overall rank #2
Protectiveness	--	3	1	2
Permanent Reduction	--	3	1	2
Cleanup Cost (estimated)	--	2	1	3
Long-term Effectiveness	--	3	1	1
Short-term Risk	--	3	1	2
Implementability	--	3	1	1
Consider Public Concerns	--	yes	yes	yes
Provide Reasonable Time Frame	--	no	yes	yes
Consider Public Comments	--	yes	yes	yes

FIGURES

Cleanup Action Plan, Cleanup Site No. 1618: City of Warden Water Supply Wells No. 4

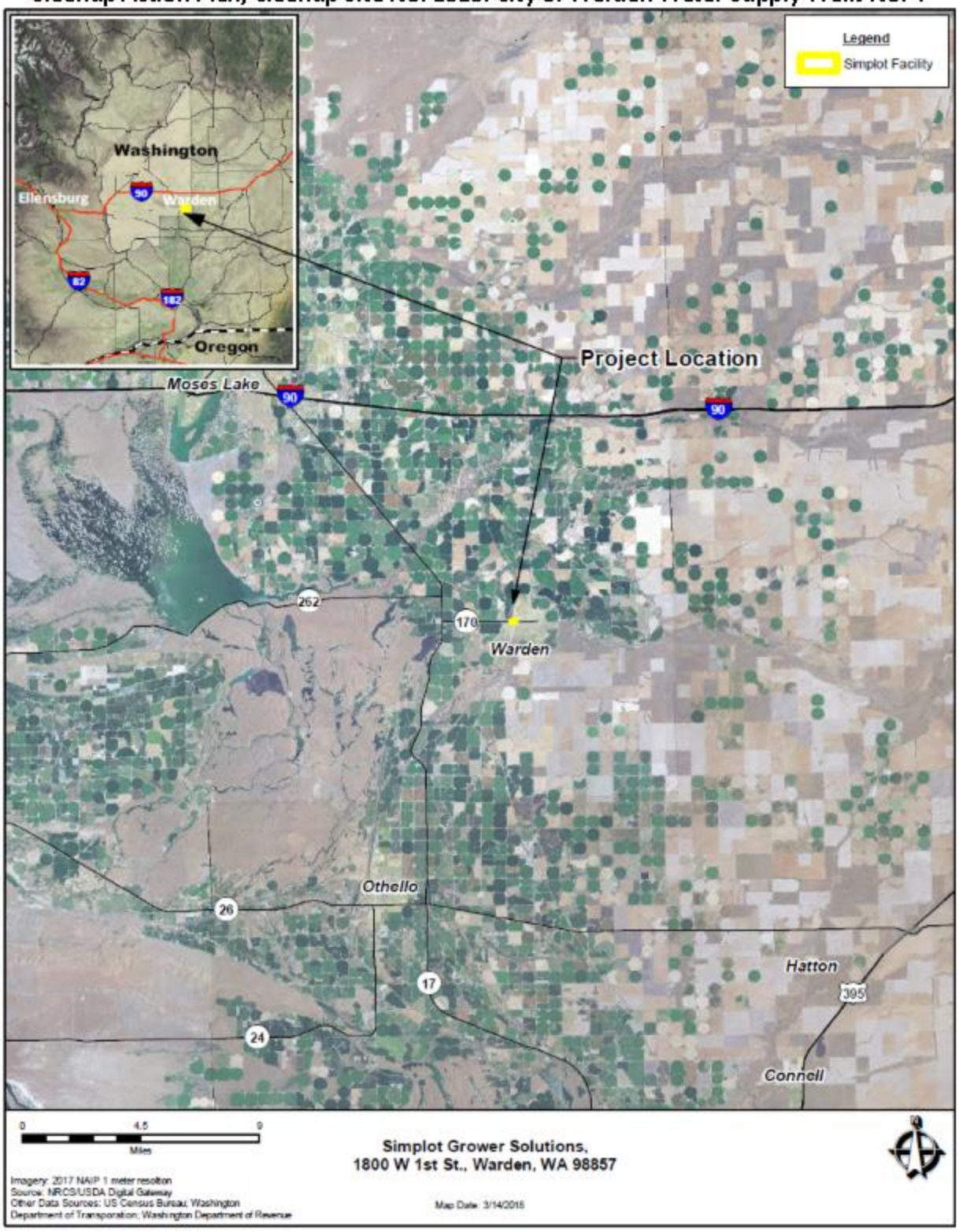

Figure 1, Site Vicinity Map

(from HDR, 2018)

Cleanup Action Plan, Cleanup Site No. 1618: City of Warden Water Supply Wells No. 4 and 5

Figure 2, Site Layout
(from HDR, 2018)

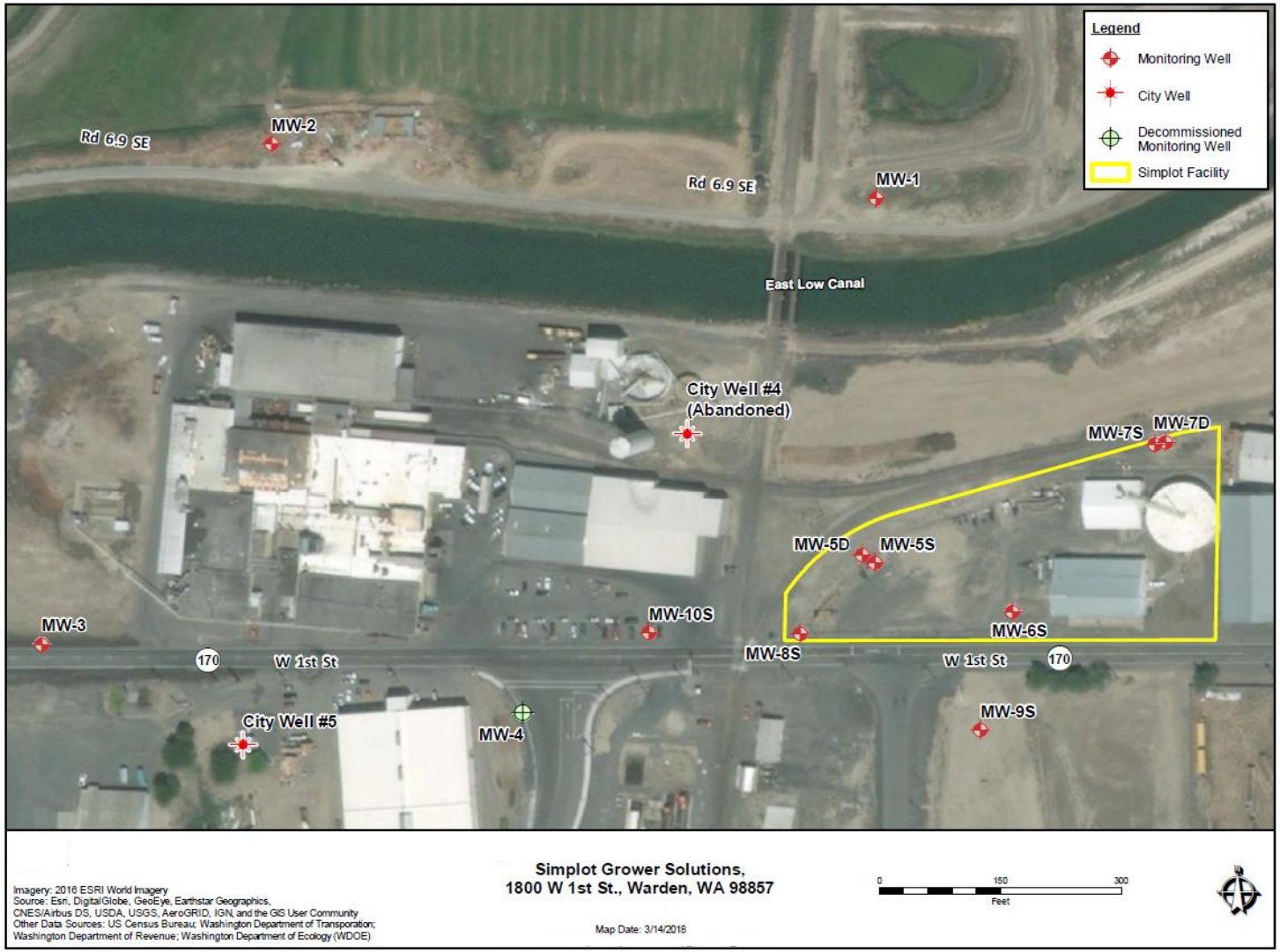

Figure 3, Current Groundwater Monitoring Wells (from HDR, 2018)

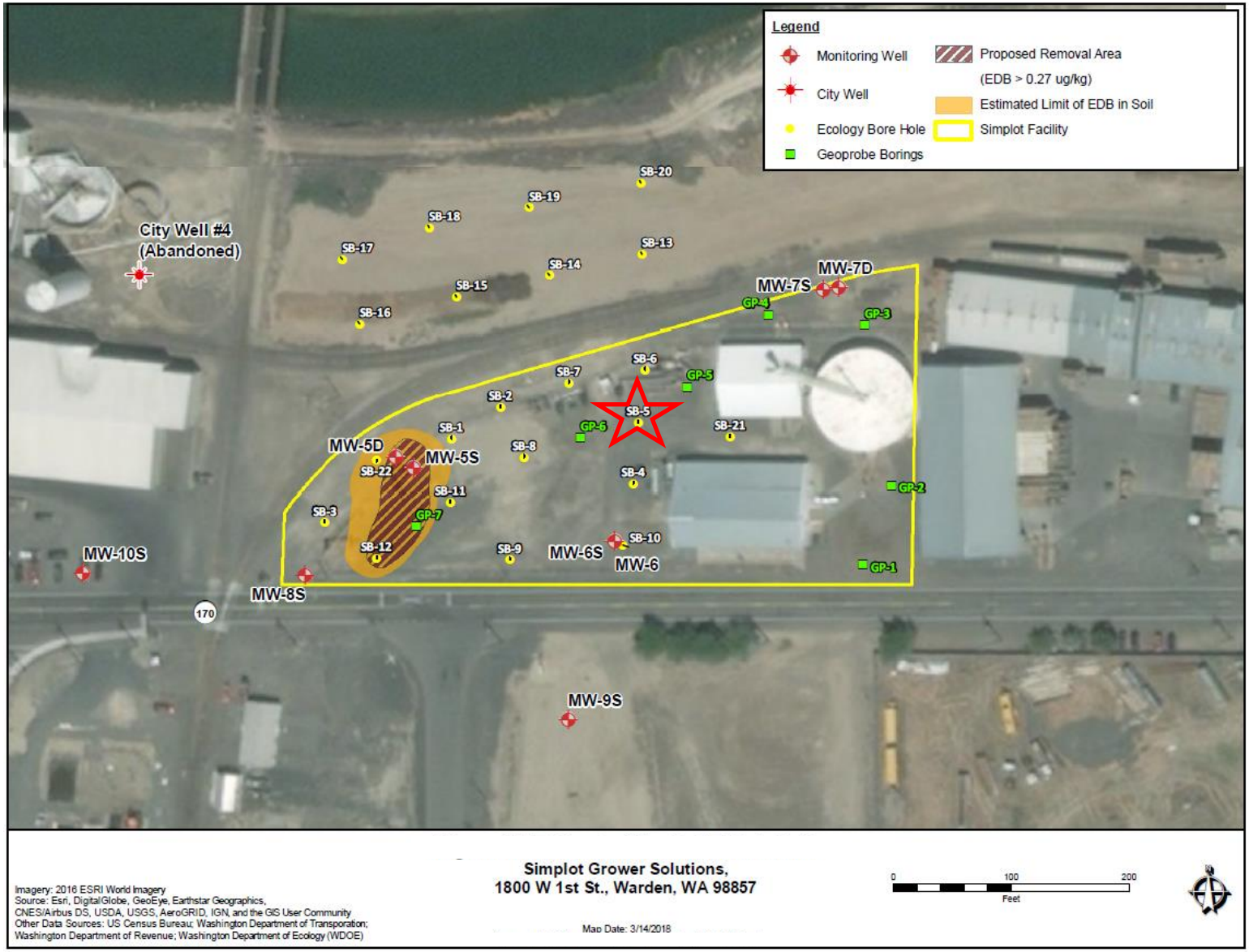

Figure 4, Soil Boring Locations and Estimated Extent of Soil EDB Contamination
(from HDR, 2018)

8.4 µg/kg EDB was detected in Boring SB-5 @ 10' below ground surface

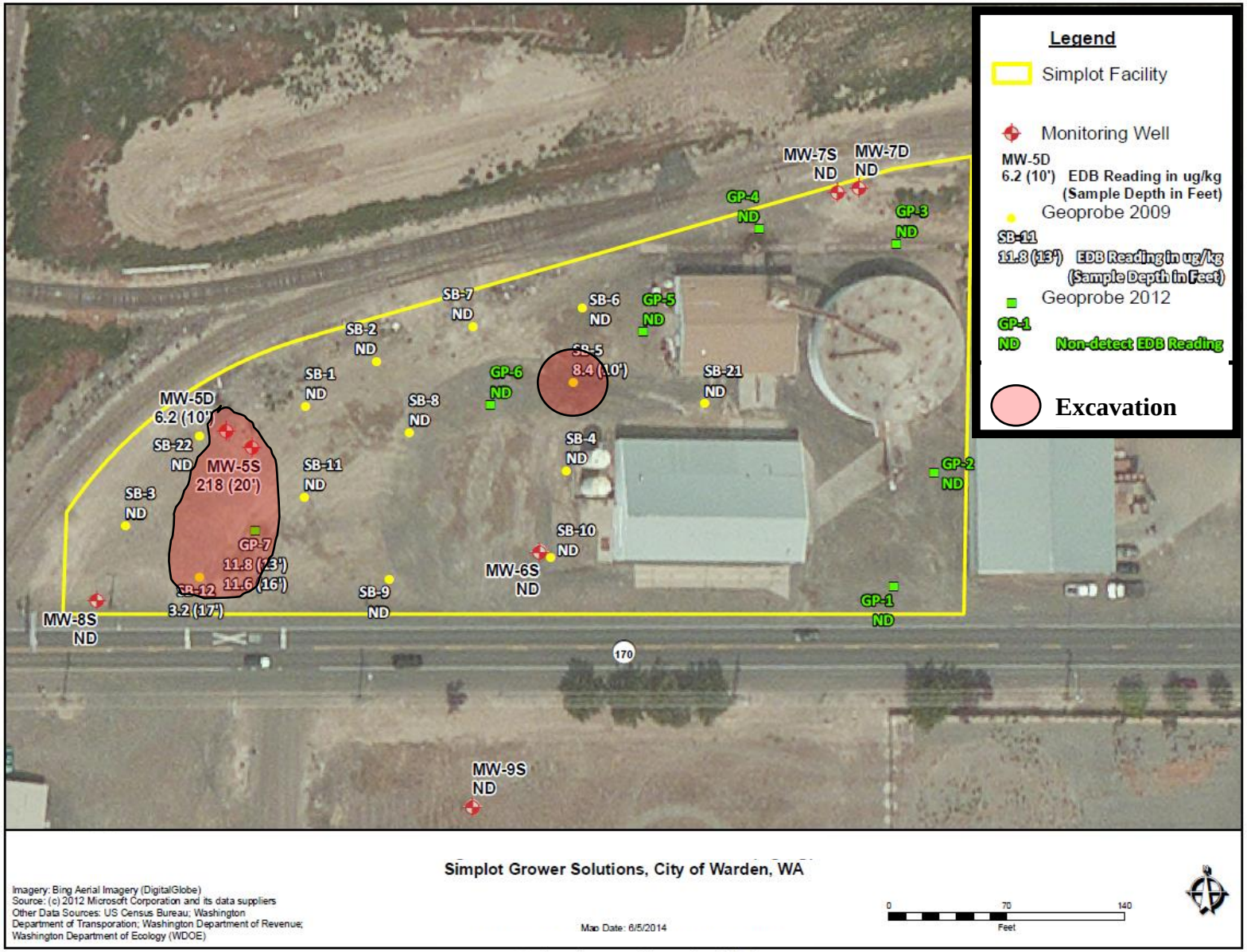

Figure 5, Anticipated Excavation Extent
(data from HDR, 2018)

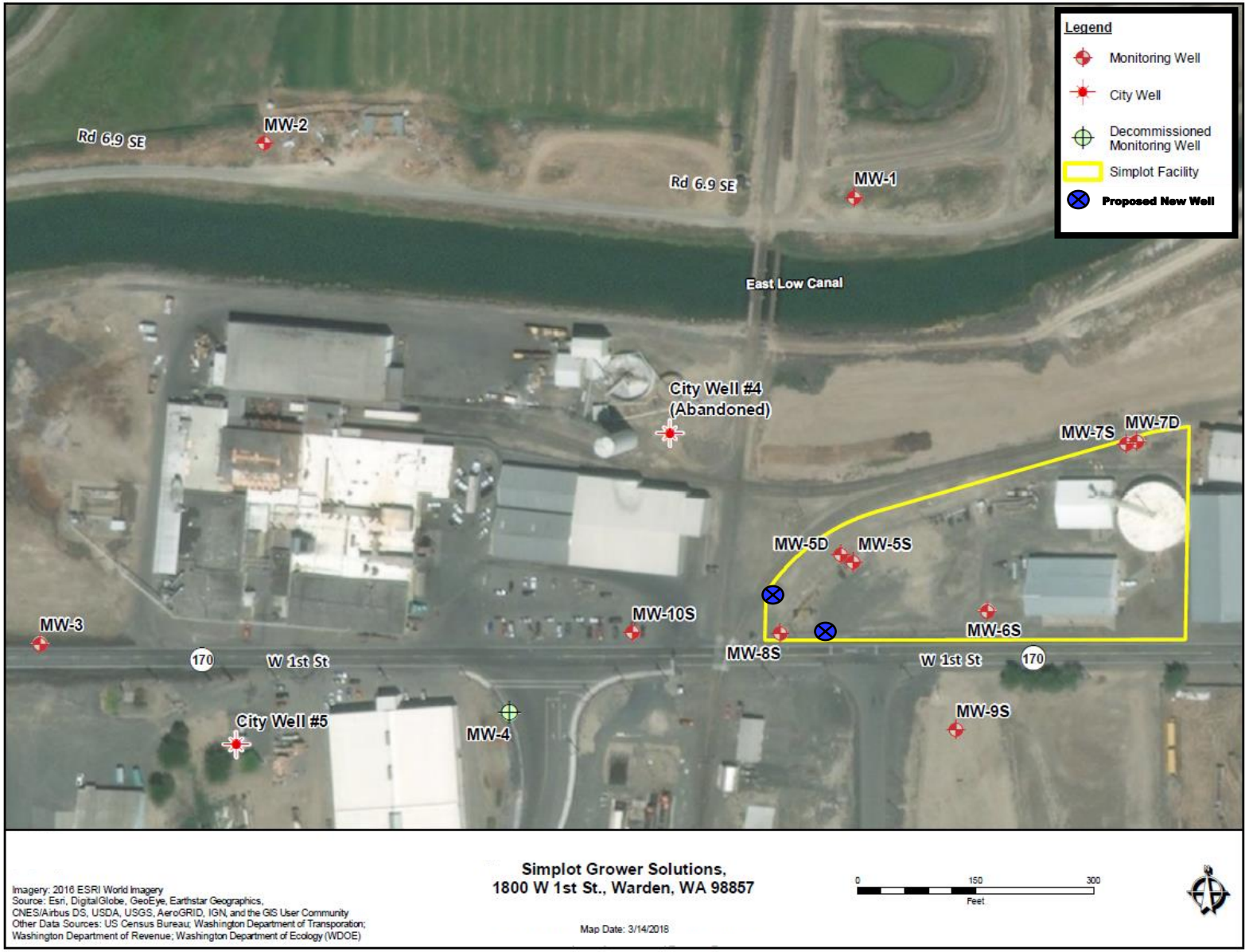

Figure 6, Proposed New Groundwater Monitoring Wells (data from HDR, 2018)

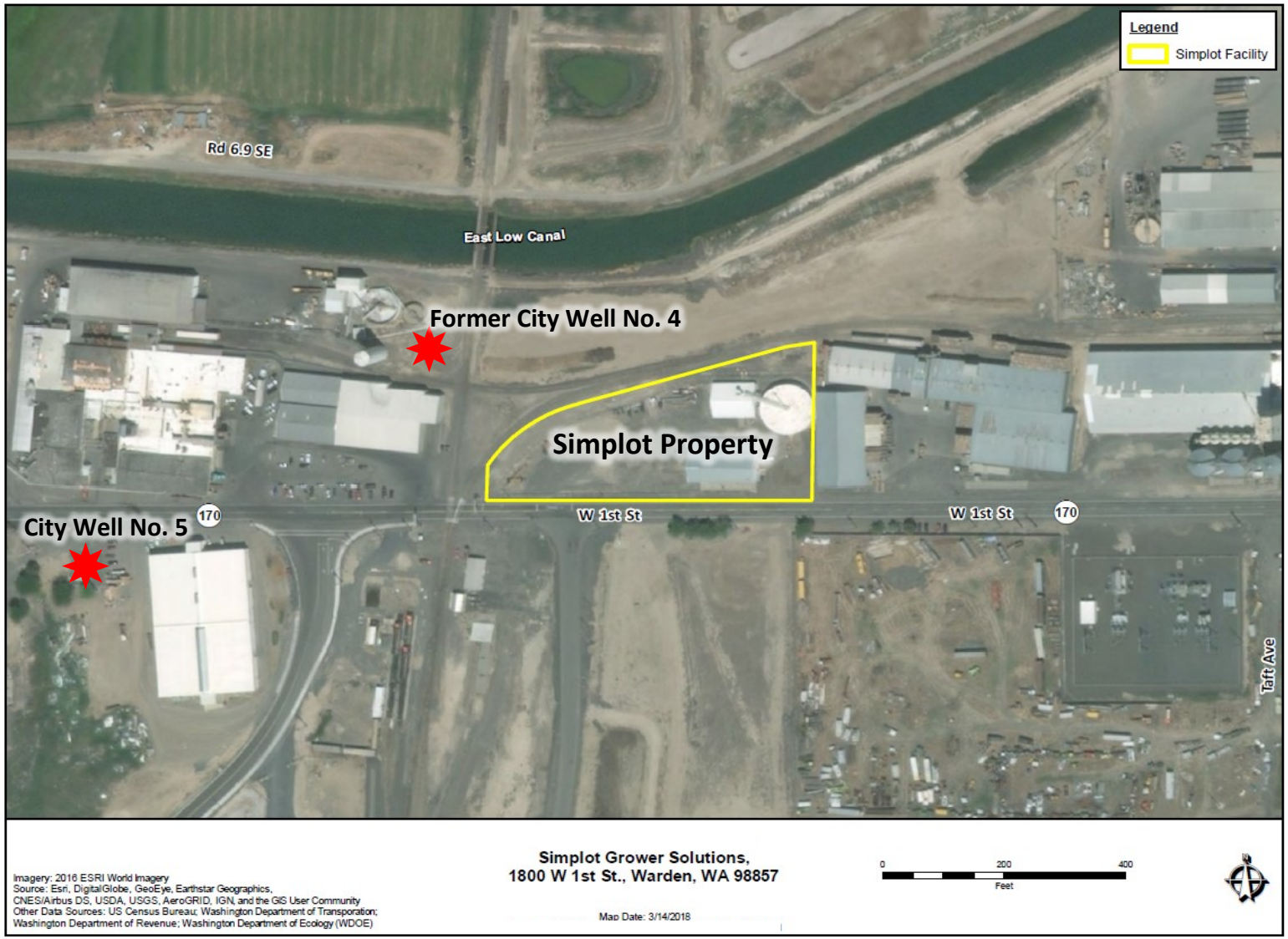

Exhibit B, Site Location Diagram

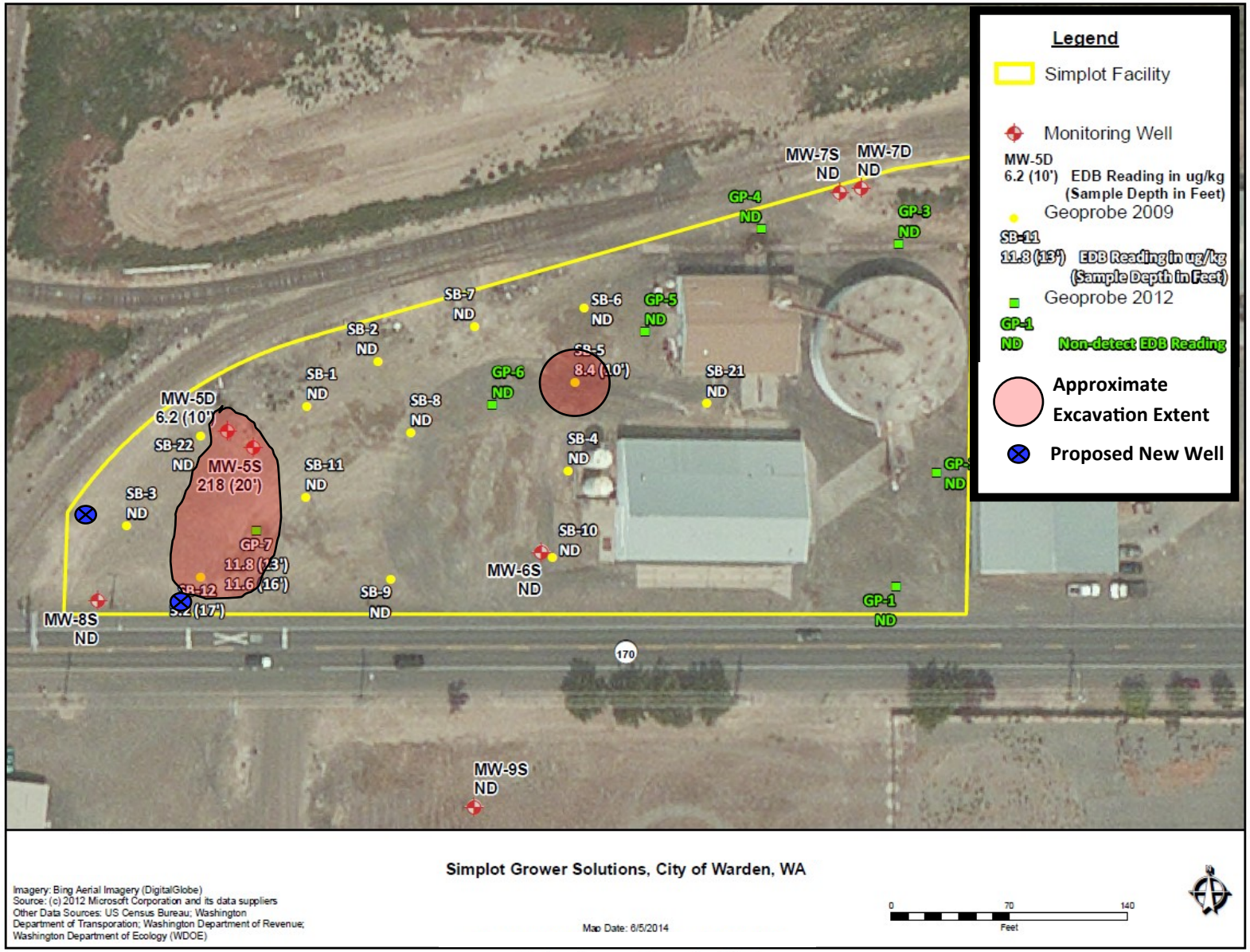

Exhibit C, Remedial Action Location Diagram

EXHIBIT D
Agreed Order No. DE 16890
City of Warden Supply Wells No. 4 and 5 Site
Ecology Cleanup Site ID No. 1618
J.R. Simplot Company
Scope of Work and Schedule

This Scope of Work implements the Cleanup Action Plan (Exhibit A) to address soil and groundwater contamination at the Warden Water Supply Wells No. 4 and 5 Site (Site) (Exhibit B) in City of Warden, Washington. The potentially liable person (PLP), the J.R. Simplot Company, must implement this Scope of Work to perform site cleanup. The Scope of Work requires the development of plans and specifications, along with all other work products, that meet the requirements of the Model Toxics Control Act (MTCA) Cleanup Regulation, Chapter 173-340 WAC.

The PLP must furnish all personnel, materials, and services necessary for, or incidental to, performing the cleanup action selected for the Site.

The Scope of Work contains the following tasks to be accomplished in accordance with the schedule below:

Task 1: Engineering Design Report

The Engineering Design Report must comply with the requirements of WAC 173-340-400(4)(a). The report will provide engineering concepts and design criteria for major components of the selected cleanup action. The Engineering Design Report will describe the excavation, *ex-situ* soil vapor extraction system, and soil compaction requirements of treated soils, and storm water control on J.R. Simplot's (Simplot) property, as well as the materials and methods required to implement the selected cleanup action. The storm water management design will describe the engineered controls and best management practices (BMPs) that will be utilized to manage storm water in accordance with applicable laws and regulations during the cleanup action.

The Engineering Design Report should identify the necessary permits or the substantive provisions of laws for which there is a permit exemption in MTCA for the Site cleanup. The Engineering Design Report must include a section describing the institutional controls for the Site. Institutional controls will be required for Simplot's property as long as ethylene dibromide concentrations in soil and groundwater exceed the cleanup levels set forth in the cleanup action plan. The controls will prohibit groundwater use until cleanup levels for groundwater are achieved at the Site.

Task 2: Permits and Substantive Conditions of Permit-Exempt Laws

The PLP must obtain any necessary permits prior to construction of the cleanup action, or identify substantive requirements of laws for which MTCA creates a permit exemption.

Task 3: Construction Plans and Specifications

The PLP will complete Construction Plans and Specifications and submit them to Ecology for review and acceptance before making them available for the purpose of bidding on the project construction. The Construction Plans and Specifications must comply with WAC 173-340-400(4)(b). The PLP's construction bid process should be completed in order to meet the construction start date.

Task 4: Compliance Monitoring Plan

The Compliance Monitoring Plan will be developed prior to installation of the remediation systems. The Compliance Monitoring Plan will include protection monitoring, performance monitoring, and confirmation monitoring plans. The Compliance Monitoring Plan will also include a Sampling and Analysis Plan (SAP) and a Quality Assurance Project Plan (QAPP). The plans must meet the requirements of WAC 173-340-410 and WAC 173-340-820. All sampling data will be submitted to Ecology according to the requirements of Section VIII.E of the Agreed Order.

Task 5: Operation & Maintenance Plan:

The Operation & Maintenance Plan will describe the operating procedures of the soil vapor extraction system, procedures for maintaining the system and monitoring equipment, and plans for maintaining monitoring equipment after the completion of the remedial action. The plan will meet the requirements of WAC 173-340-400(4)(c).

Task 6: Cleanup Action Implementation

The Engineering Design Report will be used to develop bid specifications to be used in obtaining bids for cleanup action implementation. Based on the Engineering Design Report and the project bids, the PLP will prepare a final punch list of items to be completed during cleanup action implementation. The punch list items will be tracked as the implementation progresses.

The cleanup action to be implemented at the Site includes:

- Decommissioning groundwater monitoring wells in accordance with WAC 173-160 located inside the planned excavation areas.
- Further defining the extent of ethylene dibromide-contaminated soils in more detail through soil borings.
- Excavating ethylene dibromide contaminated soil exceeding the cleanup level as set forth in the cleanup Action Plan.

- Treating the excavated ethylene dibromide-contaminated soil using *ex-situ* vapor extraction.
- Returning treated soil to the excavated areas, when the treatment has reduced the ethylene dibromide concentrations in the soil below the soil cleanup level.
- Compacting the soil to the final grade.
- Installing additional compliance groundwater monitoring wells.

The cleanup action shall be carried out in accordance with the requirements and procedures set forth in the Cleanup Action Plan and the Engineering Design Report.

Task 7: Institutional Controls

After the PLP completes construction of the cleanup action, the PLP must implement the institutional controls described in the approved Engineering Design Report. These institutional controls will include access restrictions to the excavation and treatment areas as well as prohibiting groundwater use at the Site. The access restrictions and groundwater prohibition will remain in-place until Site soil and groundwater cleanup levels have been met. The PLP will incorporate these restrictions into a Draft Environmental Restrictive Covenant for the property and file the covenant with Grant County after Ecology's review and approval. If restrictive covenants are required for properties not owned by Simplot, Simplot will draft the restrictive covenants for those properties. Simplot will submit all draft covenants for Ecology's review at the time Simplot submits the Draft Environmental Restrictive Covenant for its property.

Task 8: Cleanup Action Report

The PLP must submit a Cleanup Action Report in accordance with WAC 173-340-400(6)(b) and (c), after completion of the construction of the cleanup. Laboratory data must be included in the report and will be reviewed and compared to the quality assurance and quality control procedures outlined in the SAP and QAPP. Raw data will be submitted to Ecology following receipt of the data from the analytical laboratory within three weeks from release from the laboratory. The Cleanup Action Report will be submitted with graphical representations of the work performed. The report will also provide documented evidence that institutional controls have been recorded.

Task 9: Periodic Review

Ecology will perform periodic reviews in accordance with WAC 173-340-420 to evaluate the effectiveness of the cleanup action and assess EDB trends in groundwater The periodic reviews will be conducted approximately every five years until the groundwater CUL has been achieved as described in the CAP or Site conditions change so that other actions may be necessary to protect human health and the environment.

SCHEDULE

Each of the documents required below are subject to Ecology's review and approval. Ecology will approve, approve with conditions, or disapprove of such documents. If Ecology disapproves of a document, Ecology will provide comments to the PLP and the parties will establish a mutually agreed upon date for the PLP's re-submittal of the document, not to exceed forty-five (45) days after the PLP's receipt of Ecology's comments. The PLP will then submit a revised document that addresses Ecology's comments. For the purposes of the following schedule, the construction season will be defined as April 15 through November 1.

Deliverables	**Date Due**
Effective date of Agreed Order	Start
PLP submits Draft Engineering Design Report (EDR), Draft Operation and Maintenance Plan, and Draft Compliance Monitoring Plan	90 days after start
PLP submits Final Engineering Design Report, Operation and Maintenance Plan, and Compliance Monitoring Plan	30 days after PLP receives Ecology's written comments on draft documents
PLP submits Construction Plans and Specifications	30 days after Ecology approval of Engineering Design Report
Begin constructing cleanup action	as described in Final EDR, but no later than October 15, 2020
Construction is complete	on or before October 15, 2021
Submit Draft Environmental Covenant	30 days after construction is complete
Record Environmental Covenant	Within 10 days of Ecology approval
PLP submits Draft Cleanup Action Report	90 days after construction is complete
PLP submits Final Cleanup Action Report	30 days after PLP receives Ecology's written comments on Draft Cleanup Action Report
PLP submits Progress Reports	In accordance with Section VII.C of this Order.