



# **Response to Comments**

## **Draft documents for Boeing Everett**

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**Public comment period held:**

**February 15th – April 19th, 2021**

**Facility Site ID: 2703, Cleanup Site ID: 4534**

**Hazardous Waste & Toxics Reduction Program**

Washington State Department of Ecology  
Shoreline, Washington

July 2021, Publication 21-04-037

# Document Information

This document is available in the Washington Department of Ecology's [Boeing Everett document repository](#)<sup>1</sup> and on the Department of Ecology's website at: <https://apps.ecology.wa.gov/publications/summarypages/2104037.html>.

## Related Information

- Facility site ID: 2703
- Cleanup site ID: 4534

# Contact Information

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<sup>1</sup> <http://ecyaptcp/gsp/CleanupSiteDocuments.aspx?csid=4534>

<sup>2</sup> <https://apps.ecology.wa.gov/gsp/Sitepage.aspx?csid=4534>

<sup>3</sup> <https://ecology.wa.gov/accessibility>

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DEPARTMENT OF  
**ECOLOGY**  
State of Washington

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# Toxics Cleanup in Washington State

Past business practices and accidental spills of dangerous materials contaminated land and water throughout the state. The Washington State Department of Ecology (Ecology) Hazardous Waste and Toxics Reduction program (HWTR) works to remedy these situations at sites with a RCRA permit through corrective actions. Most HWTR corrective actions are large, complex projects requiring engineered solutions.

Contaminated sites in Washington are cleaned up under the [Model Toxics Control Act](#)<sup>4</sup> (MTCA, Chapter 173-340 Washington Administrative Code), a citizen-mandated law passed in 1989. This law sets standards to ensure toxics cleanup protects human health and the environment and includes opportunities for public input.

## Public Comment Period Summary

Ecology held a comment period February 15 – April 19, 2021, for the following draft documents for Boeing Everett:

- The Remedial Investigation (RI) studies the site conditions and contamination so the Feasibility Study (FS) and Supplemental Feasibility Study (SFS) can compare cleanup actions.
  - The RI is in two volumes: RI Vol. 1A<sup>5</sup> and RI Vol. 1B.<sup>6</sup>
  - The FS<sup>7</sup> and SFS compare cleanup methods for the site.
  - The SFS report<sup>8</sup> was modified by four letters: Aug. 2016,<sup>9</sup> July 2017,<sup>10</sup> May 2019,<sup>11</sup> and Sept 2019.<sup>12</sup>
- Cleanup Action Plan (CAP):<sup>13</sup> Ecology prepared this CAP that describes the cleanup actions and sets the cleanup standards.
- Enforcement Order:<sup>14</sup> Ecology is using an Enforcement Order to implement the Cleanup Action Plan.

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<sup>4</sup> <https://ecology.wa.gov/MTCA>

<sup>5</sup> Available for download at <https://apps.ecology.wa.gov/gsp/DocViewer.ashx?did=96559>.

<sup>6</sup> Available for download at <https://apps.ecology.wa.gov/gsp/DocViewer.ashx?did=96560>.

<sup>7</sup> Available for download at <https://apps.ecology.wa.gov/gsp/DocViewer.ashx?did=96155>.

<sup>8</sup> Available for download at <https://apps.ecology.wa.gov/gsp/DocViewer.ashx?did=96287>.

<sup>9</sup> Available for download at <https://apps.ecology.wa.gov/gsp/DocViewer.ashx?did=96159>.

<sup>10</sup> Available for download at <https://apps.ecology.wa.gov/gsp/DocViewer.ashx?did=96158>.

<sup>11</sup> Available for download at <https://apps.ecology.wa.gov/gsp/DocViewer.ashx?did=97654>.

<sup>12</sup> Available for download at <https://apps.ecology.wa.gov/gsp/DocViewer.ashx?did=96289>.

<sup>13</sup> Available for download at <https://apps.ecology.wa.gov/gsp/DocViewer.ashx?did=97661>.

<sup>14</sup> Available for download at <https://apps.ecology.wa.gov/gsp/DocViewer.ashx?did=97758>.

- Agreed Order (AO):<sup>15</sup> We and Boeing decided to use an Agreed Order to implement the Cleanup Action Plan for the portion of the site called the Bomarc property so it can be sold.
- Permit:<sup>16</sup> A Permit Lite is a **Dangerous Waste Corrective Action Permit**, that allows environmental cleanup at the site to continue.
- State Environmental Policy Act (SEPA) Checklist:<sup>17</sup> We use SEPA during site cleanups to find and evaluate large, negative environmental impacts that could result from a proposed action. Ecology's evaluation of this SEPA checklist resulted in an Associated Determination of Non-Significance.<sup>18</sup>
- [Public Participation Plan \(PPP\)](#):<sup>19</sup> The PPP encourages comment and involvement in cleanup decisions from the community.

More information is available in the [public notice](#)<sup>20</sup> we mailed to the surrounding community.

We appreciate the comments we received from people and address them in the [Response to Comments](#) section. After considering the comments, we have finalized the draft documents without further changes.

## Site Background

Since 1967, the Boeing Company (Boeing) has owned and operated the Boeing Everett Plant, at 3003 West Casino Road. The plant produces commercial aircraft models 747, 767, 777, and 787.

In order to store dangerous waste at a site for longer than 90 days, facilities must have a Resource Conservation and Recovery Act (RCRA) permit that is issued in two parts, Part A and Part B. As the U.S. Environmental Protection Agency (EPA) required, Boeing submitted a Part A permit application in 1980 because it wanted to store its dangerous waste longer than 90 days. After the Part A application is turned in, a facility has interim status. Boeing currently has interim status.

Boeing submitted a RCRA Part B Permit Application for dangerous waste storage, but withdrew it in 2002 because it decided not to store dangerous waste on site longer than 90 days.

However, Ecology will not end Boeing Everett's RCRA interim status until all site cleanup is complete and the Boeing Everett Plant meets RCRA Corrective Action cleanup requirements.

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<sup>15</sup> Available for download at <https://apps.ecology.wa.gov/gsp/DocViewer.ashx?did=97759>.

<sup>16</sup> Available for download at <https://apps.ecology.wa.gov/gsp/DocViewer.ashx?did=97587>.

<sup>17</sup> Available for download at <https://apps.ecology.wa.gov/gsp/DocViewer.ashx?did=97652>.

<sup>18</sup> Available for download at <https://apps.ecology.wa.gov/gsp/DocViewer.ashx?did=97649>.

<sup>19</sup> <https://apps.ecology.wa.gov/publications/SummaryPages/2104008.html>

<sup>20</sup> <https://apps.ecology.wa.gov/publications/SummaryPages/2104009.html>

## How the site became contaminated

During past aircraft production, Boeing released hazardous substances and wastes on site. The releases got into the environment from leaking underground storage tanks, leaking underground piping, a former gun shooting range, spills, site stormwater entering surface water, and other manufacturing practices.

The primary contaminants on the site are:

- Trichloroethylene (a cleaning and degreasing solvent)
- Xylene (a cleaning solvent)
- Toluene (a cleaning solvent)
- Ethylbenzene (a cleaning solvent)
- Jet fuel
- Lead (a toxic metal)
- Arsenic (a toxic metal)
- Hydraulic fluid
- Oil, gasoline and diesel
- Polyaromatic hydrocarbons (PAHs) (solvent chemical known to cause cancer)
- Polychlorinated biphenyls (PCBs) (long-lasting, hazardous liquid used to insulate electrical equipment)

State and federal laws require that Boeing cleans up contamination on its property and on nearby affected properties. The cleanup protects human health and the environment from the contamination.

## Contamination

The RI evaluated the nature and extent of soil and groundwater contamination at the site and potential risks to human health and the environment. During the RI, Boeing sampled soil, groundwater, surface water, indoor air, soil gas, sediment, and stormwater to find the contamination.

Contaminants on Boeing property are above state cleanup levels. However, as long as the facility remains as an industrial property, these chemicals do not present a risk to human health.

The main contaminants detected in groundwater north of Boeing property and in Powder Mill Creek are TCE (Trichloroethylene) and TCE breakdown products. TCE is a degreasing solvent once commonly used to clean metal parts. TCE easily evaporates into the air. Under certain conditions in water, it slowly breaks down into other chemicals, such as vinyl chloride. If TCE gets into groundwater, it dissolves and then moves with the natural flow of the water. Ecology has groundwater cleanup standards for TCE and its breakdown products.

Residents in the area get drinking water from supply wells located outside of the site boundary. Drinking water is not impacted by the groundwater contamination.

**For safety reasons, people and animals should stay on the walking trails near Powder Mill Creek and avoid contact with the creek water.** TCE-contaminated groundwater seeps from the creek banks, drains along the creek shore, and flows into the creek. The City of Everett has posted signs advising walkers to stay on the trails. Fencing and signs prevent creek access on Boeing property.

## Response to Comments

The comment letters are printed verbatim in alphabetical order based on the commenter's last name. Each letter is followed by Ecology's response.

### Index of comments received

Everyone who submitted comments is listed below in alphabetical order by their last name, followed by the date we received their comments and the page on which their comments are printed as received. We omitted contact information (postal and email addresses and phone numbers).

Table 1. Index of comments received.

| Name             | Date received  | Page |
|------------------|----------------|------|
| Boeing Company   | March 25, 2021 | 6    |
| Discowizard      | April 15, 2021 | 25   |
| From Where I Sit | April 15, 2021 | 24   |
| Lyman, Annie     | April 12, 2021 | 23   |
| Riter, Dianne    | March 25, 2021 | 6    |
| Worden, Michael  | April 14, 2021 | 24   |

### Dianne Riter, received via electronic mail, March 25, 2021

Subject: Boeing Everett/Powder Mill Gulch Clean-Up

**Comment:**

Thank you for sending the DOE Boeing Everett Draft Cleanup Action Plans flyer. I appreciate this update and opportunity for comment.

This clean-up project is critical to continue until fully complete and the risks from the hazardous substances and wastes are eliminated. The health of people, animals and the environment is too important to decrease clean-up standards as Boeing has requested.

I wholly support DOE's calling for the Enforcement Order to apply the most stringent clean-up of Powder Mill Gulch. For too many years, these hazardous substances have been in our



neighborhood and likely leaching out into Port Gardner Bay and it's critical that they be cleaned up in a complete manner.

Thank you for DOE's continued leadership on this clean-up and so many other projects across Washington.

### **Ecology's response**

Thank you for your comment. We appreciate your support and taking time to support this cleanup action.

## **The Boeing Company, received via electronic mail, March 25, 2021**

Subject: **General Comment - WA Department of Ecology Site Web Page**

### **Comment:**

The web page states that Boeing asked Ecology to use an Enforcement Order. In fact, after Ecology made a final decision to apply Surface Water Quality Standards (SWQS) as the cleanup level for groundwater at the Facility, Boeing informed Ecology that Boeing could *not* agree to that decision and, therefore, could not enter into an Agreed Order containing that requirement. Ecology then issued an Enforcement Order. As we indicated throughout the process, Boeing strongly disagrees with, and objects to, the use of SWQS as cleanup levels for groundwater. Boeing continues to disagree with the agency's decision and reserves all of the company's rights associated with that decision.

### **Ecology's response**

We acknowledge that Boeing declined to enter into an Agreed Order. Ecology chose to issue an Enforcement Order to expedite the cleanup activities at the Uplands Area of the site since the use of SWQS would not be agreed upon by Boeing. The [Boeing Everett Ecology webpage](https://apps.ecology.wa.gov/gsp/Sitepage.aspx?csid=4534)<sup>21</sup> has been updated to reflect this comment.

## **The Boeing Company, received via electronic mail, March 25, 2021**

Subject: **General Comment - Feasibility Study for Site Sediments**

### **Comment:**

Boeing notes that the scope of the Enforcement Order is limited to the implementation of the Uplands/PMG Cleanup Action Plan. As Ecology is aware, Boeing has submitted a Feasibility Study for sediments at the Site for Ecology review and will ultimately develop a Cleanup Action

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<sup>21</sup> <https://apps.ecology.wa.gov/gsp/Sitepage.aspx?csid=4534>

Plan for sediments. In the near future, the parties should discuss the appropriate administrative mechanism for the sediment work.

## Ecology's response

Comment noted. We are aware that Boeing submitted a Feasibility Study for sediments at the Site and is currently working to review the document. We agree that Boeing and Ecology should move forward on the sediment cleanup requirements and discuss the appropriate mechanism for the sediment work.

## The Boeing Company, received via electronic mail, March 25, 2021

Subject: **dCAP Comment – Description of Cleanup Actions**

### Comment:

*Multiple Sections.* Throughout the dCAP, Ecology is inconsistent with remedial alternative naming schemes. The naming scheme is outlined in Section 4.1; however, it is not followed throughout the document. The changes throughout the document are especially confusing for the reader where multiple alternatives are discussed within one section. These comments are outlined in *The Boeing Company's Comments on Ecology's August 28, 2020 Draft Cleanup Action Plan – Boeing Everett Facility* dated November 16, 2020, in Uplands Comments #54, #55, #75, #76, #77, #78, and #88. Sections that do not follow the naming scheme as outlined in Section 4.1 include Sections 5.1, 5.3, 5.4, 5.5, and 5.7.

Example: Section 5.4.1 Description of the Cleanup Action

Page 5-12, First Paragraph, First and Second Bullet. These sentences should be changed as follows to be consistent with the FS for less confusion (changes in red text):

“**Near-Term** Excavation with Dewatering and followed by Additional Excavation (Modified FS Alternative 4) to meet cleanup standards for SWMU/AOC Nos. 055 and 168, Building 40-24” and “**Maintain** Containment ~~of Contaminated Soils followed by~~ with Future Excavation for:”

## Ecology's response

Section 5 of the dCAP has been revised for consistency.

## The Boeing Company, received via electronic mail, March 25, 2021

Subject: **dCAP Comment - Section 2.1.2 Powder Mill Gulch (part of the Upland Area and PMG portion of the site)**

**Comment:**

*Page 2-3, Second Complete Paragraph.* This paragraph should be changed as follows to be factually complete and accurate (changes in red text):

“No indications of vadose zone soil CVOC contamination above cleanup levels were identified at the PMG SWMU during the RI. No indication of soil gas CVOC concentrations above screening levels was identified during supplemental investigation activities on the PMBC property **and Seaway Center property.**”

**Ecology’s response**

The sentence:

“No indication of soil gas CVOC concentrations above screening levels was identified during supplemental investigation activities on the PMBC property.”

Has been revised to:

“No indication of soil gas CVOC concentrations above screening levels was identified during supplemental investigation activities on the PMBC property and Seaway Center property.”

**The Boeing Company, received via electronic mail, March 25, 2021**

Subject: **dCAP Comment - Section 2.1.2.1 Groundwater Conditions and Interim Actions**

**Comment:**

*Page 2-4, Last Paragraph (continuing onto Page 2-5) and Footnote 3.* This paragraph should be changed and the associated footnote deleted as follows to be factually accurate and provide more current and up-to-date information, and update figure number references (changes in red text and strikeout):

“As a result of implementation of the Source Area IA and Downgradient Plume IAs, TCE concentrations have decreased throughout much of the plume. However, groundwater chemical data indicates that the TCE groundwater plume is still (to a lesser extent) migrating across Seaway Blvd onto City of Everett (Lot #9), PMBC and Seaway Center properties. Figures 2-~~12~~ and 2-~~23~~ show, respectively, TCE iso-concentration contours from 2012 prior to the implementation of any IAs, and recent data from October 20~~19~~. As indicated by the data represented in Figure 2-~~23~~, as a result of the source area IA, source area TCE concentrations have been reduced from over 2,500 µg/L at multiple wells (with a measured maximum concentration of 31,000 µg/L in 2005) to a maximum concentration of ~~330~~ 180 µg/L as of ~~April~~ **October** 2020. TCE concentrations in the downgradient plume have also substantially declined as a result of the source area and Downgradient Plume IAs, from a high concentration of 1,900 µg/L to a maximum concentration of ~~480~~ 270 µg/L as of ~~February~~ **October** 2020. ~~However, TCE concentrations have increased on the western boundary<sup>3</sup> of the downgradient plume on the PMBC and Seaway Center properties (up to 300 µg/L recently). These elevated concentrations have been routinely observed in groundwater monitoring wells EGW171R2 and EGW174 for~~

~~several years and these groundwater chemical data are accurate and represent TCE concentrations on the western boundary of the downgradient plume and not anomalous.”~~

Footnote 3: ~~“<sup>3</sup> As seen at EGW174 (15-20 µg/L TCE) and EGW171R2 TCE (150-210 µg/L) over the last four sampling quarters.”~~

To clarify the need for these changes, note that the TCE concentrations in the wells identified by Ecology (EGW171R2 and EGW174) in this paragraph/footnote have exhibited precisely the opposite trend of what Ecology indicated in the original text above (i.e., TCE concentrations have generally been declining versus increasing as suggested by Ecology) as demonstrated by the following data:

- TCE concentrations at EGW171R2 over the last 8 quarters of monitoring are listed below (clearly showing a declining trend):
  - Jan 2019 = 300 µg/L
  - April 2019 = 260 µg/L
  - July 2019 = 190 µg/L
  - October 2019 = 200 µg/L
  - January 2020 = 210 µg/L
  - April 2020 = 150 µg/L
  - July 2020 = 160 µg/L
  - October 2020 = 110 µg/L
- TCE concentrations at EGW174 over the last 8 quarters of monitoring are listed below (clearly showing a declining trend):
  - January 2019 = 22 µg/L
  - April 2019 = 17 µg/L
  - July 2019 = 20 µg/L
  - October 2019 = 19 µg/L
  - January 2020 = 18 µg/L
  - April 2020 = 15 µg/L
  - July 2020 = 16 µg/L
  - October 2020 = 14 µg/L

***Note: Boeing has attached the most current TCE concentration contour map for October 2020 to replace DCAP Figure 2-3. Also, the list of figures for Section 2 (i.e., Figures 2-1 through 2-4) are out of order in the Table of Contents. Therefore, the DCAP table of contents should be change for these figures as follows to reflect these updates and proper order:***

***2-1 Sitewide Conceptual Site Model***

***2-2 Baseline TCE Concentrations – PMG (Pre-Interim Action Groundwater Conditions – October 2012***

**2-3 TCE Concentrations – PMG (Post-Interim Action Groundwater Conditions October ~~2019~~2020)**

**2-4 Groundwater Contours Elevation Map Upland Esperance Sand – October 2018**

## **Ecology’s response**

The dCAP was drafted using the most recent data available at the time it was written and is accurate based on this available data. The comment uses data that was not yet collected at the time the dCAP was written. We do not intend to continually update the dCAP based on future data collection. Therefore, no edits were made to the data or conclusion presented in this section.

The Figure number references and Table of Contents have been revised for accuracy.

## **The Boeing Company, received via electronic mail, March 25, 2021**

Subject: **dCAP Comment - Section 4.4 Updates to FS Evaluation Since FS Report Submittal**

### **Comment:**

*Pages 4-12 and 4-13, Sub-header Further Requirements for Confirmatory Indoor Air Sampling at 40-56 Building, SWMUs 086/089/091, and Fourth Paragraph in this Section. The sub-header and forth paragraph should be changed as follows to be factually accurate (changes in red text):*

*“Further Requirements for Confirmatory Indoor Air Sampling at 40-56 Building, SWMUs 086/089/~~091~~4”*

*“Or Boeing may instead collect routine indoor air samples (similar to the other 11 SWMUs) for SWMUs 086/089/~~091~~4.*

## **Ecology’s response**

The sub-header:

*“Further Requirements for Confirmatory Indoor Air Sampling at 40-56 Building, SWMUs 086/089/091”*

Has been revised to:

*“Further Requirements for Confirmatory Indoor Air Sampling at 40-56 Building, SWMUs 086/089/094”*

The sentence:

*“Or Boeing may instead collect routine indoor air samples (similar to the other 11 SWMUs) for SWMU 086/089/091”*

Has been revised to:

“Or Boeing may instead collect routine indoor air samples (similar to the other 11 SWMUs) for SWMUs 086/089/094.”

## The Boeing Company, received via electronic mail, March 25, 2021

Subject: **dCAP Comment - Section 5.2 Exposure Pathway Model B (BTEX/Perched GW)**

### Comment:

*Page 5-5, Second Paragraph.* This paragraph should be changed as follows to be factually accurate because soil concentrations do not exceed direct contact (changes in red text):

“Potential future exposures could include workers performing excavations into contaminated ~~soil or~~ perched groundwater at the site or future site building users if the building configuration changes in a way that exposes contaminated ~~perched groundwater-soil~~ (new sumps, pits, floor removal/modification) or otherwise...”

### Ecology’s response

Upon review, it is Ecology’s determination that the existing sentence is factually accurate. Based on the remedial investigation information provided in Section 2.15.2 of the Feasibility Study, soil is contaminated at this area. The sentence simply states that the soil is contaminated and a worker can come into contact with that soil. For clarity, the following edits were made to this sentence.

The sentence:

“Potential future exposures could include workers performing excavations into contaminated soils or perched groundwater at the site or future site building users if the building configuration changes in a way that exposes contaminated soil (new sumps, pits, floor removal/modification) or otherwise creates unacceptable vapor intrusion into those existing buildings.”

Has been revised to:

“Potential future exposures could include workers performing excavations into contaminated soils or perched groundwater at the site or future site building users if the building configuration changes in a way that exposes contaminated soil or perched groundwater (new sumps, pits, floor removal/modification) or otherwise creates unacceptable vapor intrusion into those existing buildings.”

## The Boeing Company, received via electronic mail, March 25, 2021

Subject: **dCAP Comment - Section 5.3.6 Institutional/Engineering Controls**

**Comment:**

*Page 5-10, Third Paragraph, First Sentence, Item 1.* This Item should be changed as follows to be factually accurate because soil does not exceed Method B protection of groundwater cleanup levels (changes in red text):

“(1) Annual monitoring/inspection/reporting of the land use and concrete/pavement integrity will be performed, and maintenance of the concrete/pavement will be completed when necessary to prevent infiltration of rainwater and exacerbation of ~~soil and~~ perched groundwater contamination migration to the Esperance Sand Aquifer, until ~~soil and~~ groundwater concentrations are below cleanup levels.”

**Ecology’s response**

The sentence:

“(1) Annual monitoring/inspection/reporting of the land use and concrete/pavement integrity will be performed, and maintenance of the concrete/pavement will be completed when necessary to prevent infiltration of rainwater and exacerbation of soil and perched groundwater contamination migration to the Esperance Sand Aquifer, until soil and groundwater concentrations are below cleanup levels.”

Has been revised to:

“(1) Annual monitoring/inspection/reporting of the land use and concrete/pavement integrity will be performed, and maintenance of the concrete/pavement will be completed when necessary to prevent infiltration of rainwater and exacerbation of perched groundwater contamination migration to the Esperance Sand Aquifer, until groundwater concentrations are below cleanup levels.”

**The Boeing Company, received via electronic mail, March 25, 2021**

Subject: **dCAP Comment - Section 5.3.6 Institutional/Engineering Controls**

**Comment:**

*Page 5-11, Last Paragraph, Third Sentence.* This sentence should be changed as follows to be factually accurate with the model results (changes in red text):

“Under gravity driven vertical infiltration only, vadose zone modeling predicts subsurface contamination may reach the potable groundwater above cleanup levels within 100 years due to rainwater infiltrating ~~the~~without pavement and recharging the perched aquifer.”

**Ecology’s response**

The Boeing public comment submission listed this comment under Section 5.3.6. However, Section 5.3.6 of the dCAP ends on page 5-10 and does not include the referenced sentence in

the comment. We assume this comment is regarding Section 5.4 and are responding to it based on the sentence in Section 5.4, page 5-11, last paragraph, third sentence of the dCAP.

The sentence:

“Under gravity driven vertical infiltration only, vadose zone modeling predicts subsurface contamination may reach the potable groundwater above cleanup levels within 100 years due to rainwater infiltrating the pavement and recharging the perched aquifer.”

Has been revised to:

“Under the gravity driven vertical infiltration only with recharge scenario, vadose zone modeling predicts subsurface contamination may reach the potable groundwater above cleanup levels within 100 years due to rainwater recharging the perched aquifer.”

## The Boeing Company, received via electronic mail, March 25, 2021

Subject: **dCAP Comment - Section 5.7.2 Cleanup Levels**

### Comment:

*Page 5-25, Third Bullet.* The bullet should be changed as follows to be factually accurate because MEK is not a contaminant of concern for indoor air for SWMUs 93 and 67/71 (changes in red text):

“Indoor Air – MTCA Method C for BTEX ~~and MEK~~”

### Ecology’s response

The sentence:

“Indoor Air – MTCA Method C for BTEX and MEK”

Has been revised to:

“Indoor Air – MTCA Method C for BTEX”

## The Boeing Company, received via electronic mail, March 25, 2021

Subject: **dCAP Comment - Section 5.9 Exposure Pathway Model K (Powder Mill Gulch)**

### Comment:

*Page 5-29, Second Paragraph, Fifth Bullet.* The fifth bullet of this paragraph should be changed as follows to be factually accurate (changes in red text and strikeout):

- “No current TCE soil gas to indoor air exposure pathway at the PMBC property ~~or Seaway Center property~~ based on soil gas samples collected from three paired (deep/shallow) soil gas probes on these PMBC property ~~ies.~~”



## Ecology's response

The sentence:

"No current TCE soil gas to indoor air exposure pathway at the PMBC property based on soil gas samples collected from three paired (deep/shallow) soil gas probes on the PMBC property."

Has been revised to:

"No current TCE soil gas to indoor air exposure pathway at the PMBC property or Seaway Center property based on soil gas samples collected from soil gas probes on these properties."

## The Boeing Company, received via electronic mail, March 25, 2021

Subject: **dCAP Comment - Section 5.9 Exposure Pathway Model K (Powder Mill Gulch)**

### Comment:

*Page 5-30, First (Partial) Paragraph, Last Sentence.* This sentence should be changed as follows to be technically accurate (changes in red text):

"TCE contamination in PMC is diluted by the increasing stream flow and **decreased by** volatilization until TCE is no longer detected in water samples more than 3,600 feet north of the detention basin."

## Ecology's response

The sentence:

"TCE contamination in PMC is diluted by the increasing stream flow and volatilization until TCE is no longer detected in water samples more than 3,600 feet north of the detention basin."

Has been revised to:

"TCE contamination in PMC is diluted by the increasing stream flow and decreased by volatilization until TCE is no longer detected in water samples more than 3,600 feet north of the detention basin."

## The Boeing Company, received via electronic mail, March 25, 2021

Subject: **dCAP Comment - Section 5.9.5 Compliance Monitoring**

### Comment:

*Page 5-40, First Paragraph (First Complete Bullet on Page), Second Sentence.* This sentence should be changed as follows to be complete and consistent with Section 4.4 (changes in red text):

- "Consistent with Section 4.4, Boeing shall perform soil gas monitoring during protection and performance monitoring of the final remedy in the downgradient plume. Seasonal

soil gas sampling events (summer and winter) shall be conducted at the five existing soil gas monitoring well locations at PMG **over 1 year to evaluate if soil gas concentrations remain below Ecology screening levels under varying seasonal conditions.**"

## Ecology's response

After review, Section 4.4 clearly states the soil gas monitoring and evaluation requirements. Therefore, this edit provides no additional or clarifying language to the dCAP and is unnecessary. No edits were made to the existing language in the dCAP based on this comment.

## The Boeing Company, received via electronic mail, March 25, 2021

Subject: **Enforcement Order Comment - Section I, Page 1**

### Comment:

The draft EO states "The objective of the State of Washington, Department of Ecology (Ecology) under this Enforcement Order (Order) is to require remedial action at a facility where there has been a release or threatened release of hazardous substances. This Order requires the Boeing Company (Boeing) to implement a cleanup action plan at a portion of a Facility where there has been a release or threatened release of hazardous substances. Ecology believes the actions required by this Order are in the public interest." Boeing requests the completion of the following modification, for the purpose of clarity (changes in **red** text):

"The objective of the State of Washington, Department of Ecology (Ecology) under this Enforcement Order (Order) is to require remedial action at a facility where there has been a release or threatened release of hazardous substances. This Order requires the Boeing Company (Boeing) to implement a cleanup action plan at a portion of a Facility where there has been a release or threatened release of hazardous substances, **with the exception of the BOMARC Property, Wetland 3A, Former Gun Club Areas B and C, Boeing Lake, Japanese Gulch, and Powder Mill sediments.** Ecology believes the actions required by this Order are in the public interest."

## Ecology's response

The sentence:

"This Order requires the Boeing Company (Boeing) to implement a cleanup action plan at a portion of a Facility where there has been a release or threatened release of hazardous substances"

Has been revised to:

"This Order requires the Boeing Company (Boeing) to implement a cleanup action plan at a portion of a Facility where there has been a release or threatened release of hazardous substances, with the exception of the BOMARC Property, Wetland 3A, Former Gun Club Areas B and C, Boeing Lake, Japanese Gulch, and Powder Mill sediments."

## The Boeing Company, received via electronic mail, March 25, 2021

Subject: Enforcement Order Comment - Section IV.1, Page 4

### Comment:

The draft EO states “Facility or Site: Refers to the Boeing Commercial Airplane Group – Everett Plant (BCAG – Everett Plant) DWMU controlled by Boeing, located at 3003 West Casino Road Everett, Washington; all property contiguous to the DWMU also controlled by Boeing; and all property, regardless of control, affected by release(s) or threatened release(s) of hazardous substances, including dangerous wastes and dangerous constituents, at and from these areas. “Facility” also includes the definition found in RCW 70A.305.020(8). Based on factors currently known to Ecology, the Remedial Action Location Diagram (Exhibit A) shows where Boeing will implement the remedial action. The Facility description and remedial action are more fully described in the Cleanup Action Plan (Exhibit B).” Boeing requests the completion of the following modification, for the purpose of clarity (changes in red text):

“Facility or Site: Refers to the Boeing Commercial Airplane Group – Everett Plant (BCAG – Everett Plant) DWMU controlled by Boeing, located at 3003 West Casino Road Everett, Washington; all property contiguous to the DWMU also controlled by Boeing **excluding the BOMARC Property, located at 2600 94<sup>th</sup> Street Southwest in Everett, Washington**; and all property, regardless of control, affected by release(s) or threatened release(s) of hazardous substances, including dangerous wastes and dangerous constituents, at and from these areas **with the exception of the BOMARC Property, Wetland 3A, Former Gun Club Areas B and C, Boeing Lake, Alpha Pond, Japanese Gulch, and Powder Mill Gulch sediments**. “Facility” also includes the definition found in RCW 70A.305.020(8). Based on factors currently known to Ecology, the Remedial Action Location Diagram (Exhibit A) shows where Boeing will implement the remedial action. The Facility description and remedial action are more fully described in the Cleanup Action Plan (Exhibit B).”

### Ecology’s response

Commented noted, no changes made.

## The Boeing Company, received via electronic mail, March 25, 2021

Subject: Enforcement Order Comment - Section V between 14 and 15 new section, Page 9

### Comment:

The draft EO excluded discussion of the Sediment FS. Boeing requests that a new section be included to encompass the sediment FS as follows (changes in red):

“**Boeing completed a separate FS for the sediments at the Facility (Boeing Lake, Powder Mill Gulch, and Japanese Gulch), dated August 18, 2016**”

## Ecology's response

Comment noted, no changes made.

## The Boeing Company, received via electronic mail, March 25, 2021

Subject: Enforcement Order Comment - Section V.15, Page 9

### Comment:

The draft EO states "Ecology selected the final upland site cleanup actions, based on its letters dated August 18, 2016 and July 20, 2017, as modified by Ecology letters dated September 5, 2019, May 2, 2019." Boeing requests that this section be revised for sentence structure as well as discussion of the sediment FS as follows (changes in red):

Ecology selected the final upland site cleanup actions, based on its letters dated August 18, 2016 and July 20, 2017, as modified by Ecology letters dated **May 2, 2019** and September 5, 2019, ~~May 2, 2019~~. **The sediment FS is still under review by Ecology and selection of cleanup actions for sediment SWMUs will be provided under a separate CAP at a later date. The sediment CAP will additionally include Wetland 3A (part of the BOMARC FS dated March 31, 2014) and the Former Gun Club Area B and C (part of the Uplands FS dated November 16, 2015).**"

## Ecology's response

Comment noted, no changes made.

## The Boeing Company, received via electronic mail, March 25, 2021

Subject: Enforcement Order Comment - Section V.23, Page 11

### Comment:

The draft EO states "In October 2020, Boeing indicated to Ecology that it would not sign an Agreed Order for implementing a cleanup action plan at the Upland portion of the Facility seen in the Remedial Action Location Diagram (Exhibit A)." Boeing requests that this statement be clarified as follows (changes in red text):

"In October 2020, Boeing indicated to Ecology that, **because of disagreements on the application of surface water standards as groundwater cleanup levels and the placement of a conditional point of compliance**, it would not sign an Agreed Order for implementing a cleanup action plan at the Upland portion of the Facility seen in the Remedial Action Location Diagram (Exhibit A)."

## Ecology's response

Comment noted, no changes made.

## The Boeing Company, received via electronic mail, March 25, 2021

Subject: Enforcement Order Comment - Section V.24, Page 11

### Comment:

The draft EO states “Ecology and Boeing anticipate entering into an Agreed Order in Spring 2021 for a cleanup action plan at the BOMARC Property, located at 2600 94<sup>th</sup> Street Southwest in Everett, Washington that is located within the facility.” Boeing requests the statement be clarified for consistency with Section VII, second paragraph, and include the following additions to this section (changes in red text):

“Ecology and Boeing ~~anticipate entering~~ **have entered** into an Agreed Order in Spring 2021 for a cleanup action plan at the BOMARC Property, located at 2600 94<sup>th</sup> Street Southwest in Everett, Washington that is located within the facility. **Therefore, the BOMARC Property is not held to any provisions within the Enforcement Order.**”

### Ecology’s response

Comment noted, no changes made.

## The Boeing Company, received via electronic mail, March 25, 2021

Subject: Enforcement Order Comment - Section VII, Page 12 and 13, *Second Paragraph, Second and Third Sentence*

### Comment:

The draft EO states “Boeing agreed to perform a final cleanup action for the BOMARC Property by implementing the remedial actions set forth in the upland cleanup action plan (Exhibit B), Sections 5.11.1, 5.11.5, and 5.11.6 describe the cleanup actions, compliance monitoring, and institutional controls for the BOMARC Property. Additional sections of the cleanup action plan, Sections 5.11.2 through 5.11.4 describe the cleanup standards, points of compliance, restoration timeframes, and applicable, relevant and appropriate state and federal requirements that apply to the BOMARC Property.” The following sentences should be changed for accuracy to reflect the CAP revisions (changes in red text):

“Boeing agreed to perform a final cleanup action for the BOMARC Property by implementing the remedial actions set forth in the upland cleanup action plan (Exhibit B), Sections 5.~~11~~**10**.1, 5.~~11~~**10**.5, and 5.~~11~~**10**.6 describe the cleanup actions, compliance monitoring, and institutional controls for the BOMARC Property. Additional sections of the cleanup action plan, Sections 5.~~11~~**10**.2 through 5.~~11~~**10**.4 describe the cleanup standards, points of compliance, restoration timeframes, and applicable, relevant and appropriate state and federal requirements that apply to the BOMARC Property.”

## Ecology's response

The sentences in Section VII on pages 12 and 13:

“Boeing agreed to perform a final cleanup action for the BOMARC Property by implementing the remedial actions set forth in the upland cleanup action plan (Exhibit B), Sections 5.11.1, 5.11.5, and 5.11.6 describe the cleanup actions, compliance monitoring, and institutional controls for the BOMARC Property. Additional sections of the cleanup action plan, Sections 5.11.2 through 5.11.4 describe the cleanup standards, points of compliance, restoration timeframes, and applicable, relevant and appropriate state and federal requirements that apply to the BOMARC Property.”

Have been revised to:

“Boeing agreed to perform a final cleanup action for the BOMARC Property by implementing the remedial actions set forth in the upland cleanup action plan (Exhibit B), Sections 5.10.1, 5.10.5, and 5.10.6 describe the cleanup actions, compliance monitoring, and institutional controls for the BOMARC Property. Additional sections of the cleanup action plan, Sections 5.10.2 through 5.10.4 describe the cleanup standards, points of compliance, restoration timeframes, and applicable, relevant and appropriate state and federal requirements that apply to the BOMARC Property.”

## The Boeing Company, received via electronic mail, March 25, 2021

Subject: Enforcement Order Comment - Section VII.D, Page 13

### Comment:

The draft EO states, “As detailed in the cleanup action plan, as part of the remedial action for the Facility, institutional controls are required on properties not owned by Boeing. Boeing will ensure that the owner of each affected property records an Ecology-approved Environmental (Restrictive) Covenant as detailed in the cleanup action plan (Exhibit B). Upon a showing that Boeing 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 Boeing. Unless Ecology determines otherwise, affected properties include Seaway Center, Powder Mill Business Center (PMBC), and City of Everett (City) Lot 9.”

Boeing understands that under Washington Administrative Code (WAC) 173-340-440(4), Ecology has some discretion as to when and where institutional controls, including restrictive environmental covenants, must be applied. However, it is not clear to Boeing that these are necessary for the non-Boeing properties, because the goal of the cleanup is to restore groundwater (and surface water for Lot 9) to applicable cleanup levels making the need for institutional controls unnecessary. Additionally, because this EO is being issued to only Boeing, and Boeing has no authority to place restrictive covenants on property it does not own, the EO appears to be an inappropriate place to include these requirements for those properties (i.e., Ecology cannot enforce this provision of the EO through Boeing). Therefore, Boeing suggests that this paragraph be struck from the EO.

## Ecology's response

Comment noted, no changes made.

## The Boeing Company, received via electronic mail, March 25, 2021

Subject: Enforcement Order Comment - Section VIIF.3, Page 13

### Comment:

The draft EO states:

“As detailed in the cleanup action plan, as part of the remedial action for the Facility, institutional controls are required on properties not owned by Boeing. Boeing will ensure that the owner of each affected property records an Ecology-approved Environmental (Restrictive) Covenant as detailed in the cleanup action plan (Exhibit B). Upon a showing that Boeing 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 Boeing. Unless Ecology determines otherwise, affected properties include Seaway Center, Powder Mill Business Center (PMBC), and City of Everett (City) Lot 9.”

Boeing understands that under Washington Administrative Code (WAC) 173-340-440(4), Ecology has some discretion as to when and where institutional controls, including restrictive environmental covenants, must be applied. However, it is not clear to Boeing that these are necessary for the non-Boeing properties, because the goal of the cleanup is to restore groundwater (and surface water for Lot 9) to applicable cleanup levels making the need for institutional controls unnecessary. Additionally, because this EO is being issued to only Boeing, and Boeing has no authority to place restrictive covenants on property it does not own, the EO appears to be an inappropriate place to include these requirements for those properties (i.e., Ecology cannot enforce this provision of the EO through Boeing). Therefore, Boeing suggests that this paragraph be struck from the EO.

## Ecology's response

Comment noted. No changes made.

## The Boeing Company, received via electronic mail, March 25, 2021

Subject: Enforcement Order Comment – Exhibit A

### Comment:

The remedial action location diagram should not include the BOMARC Property as it is under the provisions of a separate Agreed Order.

## Ecology's response

The remedial action location diagram has been revised to indicate the BOMARC Property is under the provisions of a separate Agreed Order.

## The Boeing Company, received via electronic mail, March 25, 2021

Subject: **Agreed Order Comment** - Section IV.G, Page 4

### Comment:

The draft AO states "Facility or Site: Refers to the Boeing Commercial Airplane Group – Everett facility (Exhibit A), control by Boeing located at 3003 West Casino Road Everett, Washington; all property ..." The following section should be changed for accuracy because there is not an Exhibit for the Boeing Everett facility (changes in red text):

"Facility or Site: Refers to the Boeing Commercial Airplane Group – Everett facility (~~Exhibit A~~), controlled by Boeing located at 3003 West Casino Road Everett, Washington; all property ..."

## Ecology's response

The sentence:

"Facility or Site: Refers to the Boeing Commercial Airplane Group – Everett facility (Exhibit A), control by Boeing located at 3003 West Casino Road Everett, Washington; all property ..."

Has been changed to:

"Facility or Site: Refers to the Boeing Commercial Airplane Group – Everett facility, controlled by Boeing located at 3003 West Casino Road Everett, Washington; all property ..."

## The Boeing Company, received via electronic mail, March 25, 2021

Subject: **Agreed Order Comment** - Section IV.H, Page 4

### Comment:

The draft AO states "BOMARC Property: Refers to the property located at 2600 94<sup>th</sup> Street Southwest in Everett, Washington that is located within the Facility and is the subject of this Agreed Order. The BOMARC Property is depicted in Exhibit B to this Agreed Order." The following section should be changed for accuracy because Exhibit A is the BOMARC Property diagram in the table of contents (changes in red text):

"BOMARC Property: Refers to the property located at 2600 94<sup>th</sup> Street Southwest in Everett, Washington that is located within the Facility and is the subject of this Agreed Order. The BOMARC Property is depicted in Exhibit ~~B~~ A to this Agreed Order."



## Ecology's response

The sentence:

"BOMARC Property: Refers to the property located at 2600 94<sup>th</sup> Street Southwest in Everett, Washington that is located within the Facility and is the subject of this Agreed Order. The BOMARC Property is depicted in Exhibit B to this Agreed Order."

Has been revised to:

"BOMARC Property: Refers to the property located at 2600 94<sup>th</sup> Street Southwest in Everett, Washington that is located within the Facility and is the subject of this Agreed Order. The BOMARC Property is depicted in Exhibit A to this Agreed Order."

## The Boeing Company, received via electronic mail, March 25, 2021

Subject: Agreed Order Comment - Section VI, Page 9, *First Sentence*

### Comment:

The draft AO states "Boeing shall perform a final cleanup action for the BOMARC Property by implementing the remedial actions set forth in the upland cleanup action plan (CAP) and included as Exhibit C." The sentence should be changed for accuracy because Exhibit B is the Cleanup Action Plan in the table of contents (changes in red text):

"Boeing shall perform a final cleanup action for the BOMARC Property by implementing the remedial actions set forth in the upland cleanup action plan (CAP) and included as Exhibit CB."

## Ecology's response

The sentence:

"Boeing shall perform a final cleanup action for the BOMARC Property by implementing the remedial actions set forth in the upland cleanup action plan (CAP) and included as Exhibit C."

Has been revised to:

"Boeing shall perform a final cleanup action for the BOMARC Property by implementing the remedial actions set forth in the upland cleanup action plan (CAP) and included as Exhibit B."

## The Boeing Company, received via electronic mail, March 25, 2021

Subject: Agreed Order Comment - Section VI, Page 9, *Item A, Second and Third Sentences*

### Comment:

The draft AO states "Specifically, Sections 5.11.1, 5.11.5, and 5.11.6 of the CAP describe the cleanup actions, compliance monitoring, and institutional controls for the BOMARC Property. Additional sections of the CAP, Sections 5.11.2 through 5.11.4 describe the cleanup standards, points of compliance, restoration timeframes, and applicable, relevant and appropriate state

and federal requirements.” The sentences should be changed for accuracy to reflect the CAP revisions (changes in red text):

“Specifically, Sections 5.~~1110~~.1, 5.~~1110~~.5, and 5.~~1110~~.6 of the CAP describe the cleanup actions, compliance monitoring, and institutional controls for the BOMARC Property. Additional sections of the CAP, Sections 5.~~1110~~.2 through 5.~~1110~~.4 describe the cleanup standards, points of compliance, restoration timeframes, and applicable, relevant and appropriate state and federal requirements.”

## **Ecology’s response**

The sentences in Section VI, on page 9:

“Specifically, Sections 5.11.1, 5.11.5, and 5.11.6 of the CAP describe the cleanup actions, compliance monitoring, and institutional controls for the BOMARC Property. Additional sections of the CAP, Sections 5.11.2 through 5.11.4 describe the cleanup standards, points of compliance, restoration timeframes, and applicable, relevant and appropriate state and federal requirements.”

Have been revised to:

“Specifically, Sections 5.10.1, 5.10.5, and 5.10.6 of the CAP describe the cleanup actions, compliance monitoring, and institutional controls for the BOMARC Property. Additional sections of the CAP, Sections 5.10.2 through 5.10.4 describe the cleanup standards, points of compliance, restoration timeframes, and applicable, relevant and appropriate state and federal requirements.”

## **Annie Lyman, received via eComments, April 12, 2021**

Subject: Narbeck Wetlands Sanctuary

### **Comment:**

I walk in the Narbeck Wetlands Sanctuary adjacent to the Boeing Everett plant. There is little to no wildlife and the water and trees appear to be in poor condition. Interpretive signs indicate that I will see wild ducks, herons and Redwing black birds. I did observe a pair of I'll looking mallards huddled with heads tucked down in and no reaction to my presence. Have there been tests taken of water and soils in this 48 acre site. It is a very sad atmosphere opposite of it's intent.

## **Ecology’s response**

Thank you for your comment. The Narbeck Wetland Sanctuary is a wetland that was created to mitigate wetlands removed during Paine Field runway safety projects. The wetland opened on July 31, 1999 and is located North and West of the Boeing Everett facility. Information for the

Narbeck Wetland can be found at the Ecology webpage, [Paine Field - Washington State Department of Ecology](#).<sup>22</sup>

During investigations at the Boeing Everett facility, samples were not collected at the Narbeck Wetland since the Boeing Everett facility does not discharge water to the Narbeck Wetland and, based on the investigation data, no indication of possible impacts to the Narbeck Wetland from the Boeing Everett facility were observed.

## Michael Worden, received via eComments, April 14, 2021

Subject: General Comment - Communication

### Comment:

Please be proactive and tell the community the truth about any potential issues. Please remember that this community has helped Boeing grow for generations.

### Ecology's response

Thank you for your comment. Ecology follows the core values of the International Association of Public Participation,<sup>23</sup> an international leader in public participation.

For every public comment period, we create a [Public Participation Plan](#).<sup>24</sup> The purpose of the plan is to encourage meaningful public involvement during cleanup. This plan describes how Ecology will tell the public about contamination and cleanup options during the cleanup process. We encourage you to learn about and get involved in decision-making. This plan tells you how and when you can get involved during the investigation and cleanup of contamination.

We also communicate with the community by sending out [Public Notice mailers](#)<sup>25</sup> to the areas surrounding the sites, holding public meetings (when requested), and working with tribal and community leaders to reach as many people as we can.

We will continue to share all stages of the cleanup process at the Boeing Everett site with the public. We look forward to the public's comments and will continue on our mission to protect, preserve, and enhance Washington's environment for current and future generations.

## From Where I Sit, received via Twitter, April 15, 2021

Subject: General Comment – Site Cleanup

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<sup>22</sup> <https://ecology.wa.gov/Water-Shorelines/Wetlands/Mitigation/Wetland-mitigation-banking/Mitigation-bank-projects/Paine-Field>

<sup>23</sup> <https://www.iap2.org/mpage/Home>

<sup>24</sup> <https://apps.ecology.wa.gov/publications/SummaryPages/2104008.html>

<sup>25</sup> <https://apps.ecology.wa.gov/publications/SummaryPages/2104009.html>

**Comment:**

What's to comment about cleaning up other than bravo

**Ecology's response**

Thank you for your comment. We appreciate your support and taking time to support this cleanup action.

**Discowizard, received via Twitter, April 15, 2021**

Subject: General Comment – Site Cleanup

Comment:

The more cleanup for the environment, the better for all of us.

I know there's probably more to the story, but I just want to focus on the commitment to helping the eco-system

**Ecology's response**

Thank you for your comment. We appreciate your support and taking time to support this cleanup action.

## Appendix A. Acronyms and Abbreviations

| Shortened Version | Meaning                                      |
|-------------------|--|
| AO                | Agreed Order                                 |
| Boeing            | The Boeing Company                           |
| CAP               | Cleanup Action Plan                          |
| Ecology           | Washington State Department of Ecology       |
| EPA               | U.S. Environmental Protection Agency         |
| FS                | Feasibility Study                            |
| HWTR              | Hazardous Waste and Toxics Reduction program |
| MTCA              | Model Toxics Control Act                     |
| PAHs              | Polyaromatic hydrocarbons                    |
| PCBs              | Polychlorinated biphenyls                    |
| PPP               | Public Participation Plan                    |
| RCRA              | Resource Conservation and Recovery Act       |
| RI                | Remedial Investigation                       |
| SEPA              | State Environmental Policy Act               |
| SFS               | Supplemental Feasibility Study               |
| TCE               | Trichloroethylene                            |