March 29, 2024

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Submitted via email

John Zinza
Toxics Cleanup Program – Central Regional Office
Department of Ecology
1250 W. Alder Street
Union Gap, WA 98903
Email: john.zinza@ecy.wa.gov

Re: East Side Conceptual Site Model and Data Gaps Report

- **Site Name:** Boise Cascade Mill (aka Yakima Mill Site)
- **Site Address:** 805 N 7th Street, Yakima
- **Facility/Site ID No.:** 450
- **Cleanup Site ID No.:** 12095
- **Agreed Order No.:** DE 13959

Dear Mr. Zinza:

This letter is to transmit the report titled East Side Conceptual Site Model and Data Gaps Report. The report has been prepared consistent with the scope in our September 29, 2023 letter to Ecology.

We provided Yakima County and the City of Yakima with the opportunity to review a draft of the report and we have incorporated their comments into the report.

We are requesting that Ecology review the report and provide any comments to us so we can prepare the RI Work Plan Addendum to close the data gaps identified in this report, also as described in our September 29, 2023 letter. This report will be an important part of the RI Work Plan Addendum.

Please contact me if you wish to discuss anything in the report prior to providing comments.

Sincerely,

Allan Gebhard
Project Coordinator

cc: Rhonda Luke, Valerie Bound, Jennifer Lind, Will Strand, Ecology
Brett Sheffield, Yakima County
Bill Preston, City of Yakima
Ryan Mathews, Fulcrum Environmental
John Greer, Barr

Attachment – East Side Conceptual Site Model and Data Gaps Report, March 2024

East Side Conceptual Site Model and Data Gaps Report

Boise Cascade Mill Site (aka Yakima Mill Site)

805 North 7th Street
Yakima, WA 98901

Agreed Order No. DE 13959
Facility Site ID 450
Cleanup Site ID 12095

Prepared for
OfficeMax, LLC
LeeLynn, Inc. & Wiley Mt., Inc.
Yakima Resources, LLC
Dunollie Enterprises, LLC

March 2024

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Minneapolis, MN 55435
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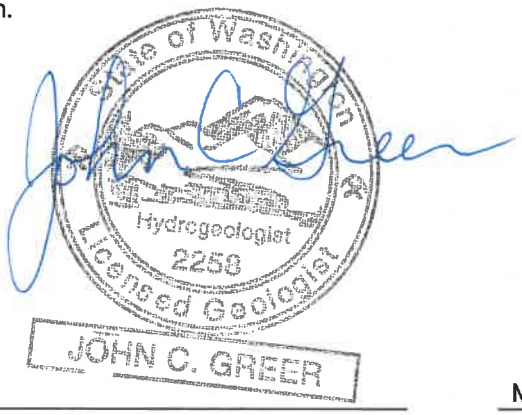
Certification

I hereby certify that this plan, document, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Geologist/Hydrogeologist under the laws of the state of Washington.



John C. Greer
WA LG/LHG #: 2258

March 29, 2024
Date

East Side Conceptual Site Model and Data Gaps Report
Boise Cascade Mill Site (aka Yakima Mill Site)

March 2024

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Abbreviations

Acronym	Description
AOC	Area of Concern
bgs	Below Ground Surface
COPC	Contaminant of Potential Concern
CSM	Conceptual Site Model
dCAP	Draft Cleanup Action Plan
DO	Dissolved Oxygen
DOE	Washington Department of Ecology (also Ecology)
FS	Feasibility Study
LEL	Lower Explosive Limit
MSL	Feet above Mean Sea Level
MSW	Municipal Solid Waste
MTCA	Model Toxics Control Act
ORP	Oxygen Reducing Potential
PAHs	Polycyclic Aromatic Hydrocarbons
PCBs	Polychlorinated Biphenyls
PCP	Pentachlorophenol
PCUL	Potential Clean Up Level
PHASP	Project Health and Safety Plan
QAPP	Quality Assurance Project Plan
RI	Remedial Investigation
RIWP	Remedial Investigation Work Plan
SAP	Sampling and Analysis Plan
SVOCs	Semi-Volatile Organic Compounds
TOC	Total Organic Carbon
TPH	Total Petroleum Hydrocarbons
UEL	Upper Explosive Limit
USGS	United States Geological Survey
VOC	Volatile Organic Compound
WAC	Washington Administrative Code
WSDOT	Washington State Department of Transportation

1 Introduction

This East Side Conceptual Site Model (CSM) and Data Gaps Report (East Side CSM/Data Gaps Report) has been prepared on behalf of OfficeMax, LLC, LeeLynn, Inc. & Wiley Mt., Inc., Yakima Resources, LLC, and Dunollie Enterprises, LLC (OfficeMax/Owners) by Barr Engineering Co. (Barr) with assistance from Fulcrum Environmental Consulting, Inc. (Fulcrum). This report is being prepared under Agreed Order No. DE 13959 and is described as **Step 1 – Collect available information on east side parcels** in the September 29, 2023 letter to the Washington State Department of Ecology (Ecology) that defined the scope of this project and includes the following:

- Collect and summarize available information on six parcels located east of Interstate 82 (I-82) that were believed to have been owned for a period of time by Boise Cascade Corporation (Boise Cascade). These parcels were conveyed by way of donation through a quit claim deed to the Yakima River Greenway Foundation (Greenway Foundation) in January 1987 and then conveyed again by quit claim deed to Yakima County (County) in January 1988 (Parcels A – F on Figure 1) (east side parcels). It was determined by 1989 that Parcel 191307-41001 (Figure 1) (referred to as Parcel C2 in this Report) had been mistakenly included in the 1987 and 1988 quit claim deeds and the 1988 Greenway Foundation to County conveyance was corrected in 1989 to exclude Parcel 191307-41001 (Parcel C2). Parcel 191307-41001 was never owned by Boise Cascade, and so was not legally conveyed to the Greenway Foundation or the County. It is currently owned by LSL Properties, LLC, located in Yakima, WA. The portion of Parcel 191307-41001 shown on Figure 1 was evaluated in this report as part of the area referred to as "Parcel C."

- Ecology requested that the I-82 corridor, generally located between the six parcels and the former Boise Cascade Mill (Mill) that was located west of what is now I-82, be evaluated for potential impacts from former mill operations in addition to the six parcels. Fulcrum completed the review of the available information on the six parcels and the I-82 corridor. The results of this review are in Exhibit 1 to this Report. The six parcels and the I-82 corridor are referred to as the "east side area" in this report. The properties west of the I-82 corridor that were investigated in the 2019-2021 Remedial Investigation are referred to as the "Mill Site" in this report. The location of the Mill Site is shown on Figure 1.

- Using the available information, identify the portions of the east side area that has been potentially impacted by activities at the Mill and organize the potentially affected areas into an Area of Concern (AOC) as was completed for twenty-seven AOCs in the 2019-2021 Remedial Investigation of the Mill Site. Consistent with the completed 2019-2021 Remedial Investigation, this AOC will be identified as AOC 28.

- Develop a CSM for AOC 28. The CSM will be consistent with the definition in WAC 173-340-200 and will be based on the review of previous investigations, aerial photos, current conditions, a pending public works construction project and property use. The CSM will be integrated with the CSM in the approved 2021 Remedial Investigation Report and Addendum for the Mill Site (2021

RI Report and Addendum) (Barr 2021a) to support the development of an investigation plan for AOC 28.

- Based on the CSM**,** identify data gaps relevant to defining the nature, magnitude, and extent of any potential releases of hazardous substances in AOC 28 and potential groundwater impacts to the area due to upgradient conditions on the Mill Site and on the Interstate 82 Exit 33A Yakima City Landfill (Landfill Site). The location of the Landfill Site is shown on Figure 1.
- Coordinate any east side area evaluation with the current property owner Yakima County and the City of Yakima as they proceed with road projects underway in the area.

The results from the above activities will be incorporated into an East Side CSM/Data Gaps Report (this report) and will be submitted to Ecology for review and comment.

Following Ecology's review of this East Side CSM/Data Gaps Report, an AOC 28 Remedial Investigation Work Plan Addendum (AOC 28 RIWP Addendum) to the January 2019 Revised Final Remedial Investigation Work Plan for the Mill Site (Approved RIWP) (Barr and Fulcrum 2019) will be prepared**.** This is **Step 2 – Prepare AOC 28 RIWP Addendum** described in the September 29, 2023 letter to Ecology. The AOC 28 RIWP Addendum will include the pertinent information known about AOC 28, the CSM, and the identified data gaps. Ecology's comments on the East Side CSM/Data Gaps Report will be incorporated into the AOC 28 RIWP Addendum.

The AOC 28 RIWP Addendum will address the identified data gaps consistent with the process and format used for evaluating AOCs for the 2019-2021 Remedial Investigation completed at the Mill Site. The AOC 28 RIWP Addendum will incorporate elements of the Approved RIWP that apply to the investigation of AOC 28 (e.g., field procedures will follow the approved Sampling and Analysis Plan and laboratory analyses and data review will follow the approved Quality Assurance Project Plan). The AOC 28 RIWP Addendum will describe how the AOC 28 investigation field work will be coordinated with the County's Cascade Mill Parkway Phase 3 Project to provide access to the portion of the investigation work site that is in the vicinity of the County's project area (Yakima County 2023). The RIWP Addendum will be submitted to Ecology for review and approval.

Following approval of the RIWP Addendum, the investigation will be completed as described in the approved AOC 28 RIWP Addendum. This is **Step 3 – Implement AOC 28 RIWP Addendum and Prepare AOC 28 Addendum to RI Report** as described in the September 29, 2023, letter to Ecology. An investigation report (AOC 28 RI Report Addendum) will be prepared and submitted to Ecology as an addendum to the approved 2021 RI Report and Addendum (Barr 2021a), consistent with the Agreed Order, the Approved RIWP (Barr and Fulcrum 2019), and the approved AOC 28 RIWP Addendum. As appropriate, the AOC 28 RI Report Addendum will include revisions to the CSM for AOC 28 in the RIWP Addendum, and, as appropriate, revisions to the CSM for the Mill Site in the 2021 RI Report and Addendum, needed to incorporate the data collected during the AOC 28 investigation. The AOC 28 RI Report Addendum will include appropriate figures, tables, and content so it can be evaluated as a standalone document.

The AOC 28 RI Report Addendum will be submitted to Ecology for review and approval. Upon approval of the AOC 28 RI Report Addendum, OfficeMax/Owners will work with Ecology to determine the path forward for completing a Feasibility Study for the Mill Site, as it may then be defined, consistent with the Model Toxics Control Act (MTCA) and Agreed Order DE 13959.

2 Mill Site Project Background

This section provides the overall background from the 2019-2021 Remedial Investigation of the Mill Site that is relevant to the preparation of this East Side CSM/Data Gaps Report.

What is known regarding the history of operations at the Mill Site is described in the Approved RIWP (Barr and Fulcrum 2019). Historical resources, public records, historical aerial photographs, previous reports, and local background information indicate that the Mill operated as a sawmill and lumber manufacturing facility from the early 1900s until operations ceased in 2006. Records indicate that Boise Cascade operated two sawmills and a plywood plant at the Mill, which also included kiln buildings, a boiler house, large log deck areas and log ponds, and other support buildings and storage areas from the time Boise Cascade assumed ownership in the 1950s until 2004. In 2004, Boise Cascade sold all but one of the parcels on the Mill Site to LeeLynn, Inc. and Wiley Mt., Inc., the current owners, and simultaneously leased the remaining parcel to Yakima Resources, LLC. Dunollie Enterprises, LLC has operated on the parcels since the sale and lease in 2004.

In 2004, Boise Cascade changed its corporate name to OfficeMax. The sawmills ceased operations in 2005; the plywood plant ceased operations in 2006 and log storage ceased in 2009. Since then, the sale, salvage, and demolition of buildings and equipment has been ongoing. The recovery and sale of log yard material (LYM) occurred from about 2006 until the Fall of 2018 when it was directed to be stopped by Ecology, pending completion of the investigations at the Mill Site.

Releases of hazardous substances, including petroleum products, were documented in early investigations at certain discrete locations (subsites) on the Mill Site. Based on the results of these early investigations, Ecology determined that a release or threatened release of hazardous substances had occurred at the Mill Site. OfficeMax/Owners were named potential liable persons (PLPs) and entered into an Agreed Order (No DE 13959) with Ecology (Ecology 2017). The Mill Site is identified by Ecology as the Boise Cascade Mill, Facility Site ID 450, and Cleanup ID 12095. The Mill Site is also known as the Yakima Mill Site.

Section VII of the Agreed Order requires that OfficeMax/Owners prepare a Remedial Investigation (RI) Work Plan (RIWP), conduct the RI and prepare a RI Report, conduct a Feasibility Study (FS) and prepare a FS Report, and prepare a draft Cleanup Action Plan (dCAP), all in a manner that complies with MTCA. The Final RIWP was submitted to Ecology in January 2019 and was approved by Ecology by letter dated January 29, 2019, as satisfying Part VII.A of the Agreed Order in accordance with Washington Administrative Code (WAC) 173-340-350 requirements (Barr and Fulcrum 2019).

The Mill Site location and boundary are shown in the Agreed Order and on Figure 1 of this Report. The Mill Site is further defined by the extent of contamination caused by releases of hazardous substances at the Mill Site. Based on facts known as of the effective date of the Agreed Order, the Mill Site does not include any area 1) where municipal waste has come to be located or 2) which is affected by a release or threatened release of hazardous substances from municipal solid waste in the adjacent Landfill Site, with a boundary also shown on Figure 1.

During development of the Approved RIWP, a review of prior investigations, public records, requested company archives, and Mill Site knowledge was completed to identify potential uses, specific locations of hazardous substance use or storage, and potential contaminants of concern.

The Approved RIWP included the following:

- The understanding of environmental conditions at the Mill Site based on a review of the earlier investigations that had been conducted at the Mill Site and the operational history of the Mill. The Approved RIWP presented a CSM for the Mill Site, including potential or known releases of hazardous substances, types of hazardous substances potentially released, potentially impacted media, and potential exposure pathways and receptors. As a result of the above-described work and through discussions with Ecology, twenty-seven (27) potential AOCs were identified in the Approved RIWP for assessment during the Remedial Investigation.

- The processes that were used to identify potentially significant data gaps in the CSM for the Mill Site, to identify the approach for investigating each AOC during the RI to fill the identified data gaps, and to identify contaminants of potential concern (COPCs) applicable to each AOC.

- The analytical approach that was to be used to investigate each AOC, focusing on the COPCs of total petroleum hydrocarbons (TPH), metals, volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), chlorinated pesticides, and chlorinated herbicides.

- The soil, groundwater, surface water, and soil gas investigation activities that were to be completed at each AOC during the Remedial Investigation to close the identified data gaps. The details of the investigation activities are set forth in a field Sampling and Analysis Plan (SAP), a Laboratory Quality Assurance Project Plan (QAPP), and a project health and safety Plan (PHASP) that are in Exhibits A, B, and C of the Approved RIWP. The SAP is the primary document for all field procedures. The QAPP is the primary document for all laboratory procedures, data QA/QC, and data validation. The PHASP provides the health and safety protocols for the RI work. The RI activities described in the Approved RIWP were performed in accordance with the SAP, QAPP, and PHASP.

- The human health and ecological risk assessment methods and screening values that would be used to interpret the information for each AOC from earlier investigations and the RI.

- Preparation of a Remedial Investigation Report per MTCA and the Agreed Order requirements and the schedule for completion of significant Remedial Investigation tasks in accordance with the Approved RIWP and the Agreed Order.

- Several appendices that presented information supporting the scope of the Approved RIWP and other information provided at the direction of Ecology.

As noted above, Remedial Investigation activities at the Mill Site were completed in accordance with the Approved RIWP. The initial RI field activities were completed in April and May 2019. The second round of groundwater and soil gas sampling was completed in August 2019. The third round of groundwater and soil gas sampling was completed in November 2019, and the fourth round of sampling was completed in February 2020.

Based on the Remedial Investigation results, the CSM was updated and final COPCs were identified for the Mill Site in cooperation with Ecology. Preliminary cleanup levels (PCULs) were developed for the COPCs, also in cooperation with Ecology. The PCULs were developed to address potential soil and groundwater exposure pathways at the Site, based on the updated CSM. The tables showing the basis for the COPCs and the PCULs for the Mill Site are in Appendix A to this Report.

An August 2021 Revised Draft Remedial Investigation Report was prepared summarizing the Remedial Investigation activities that were completed, presenting the Remedial Investigation data collected during the investigation activities conducted in April through August 2019, summarizing the overall results of the Remedial Investigation including the updated CSM and providing recommendations for FS scoping (Barr 2021b).

COPCs were identified at concentrations above the PCULs in soil in discrete areas at various AOCs. TPH-impacted soil was identified near some of the former Mill Site operational features (e.g., fuel distribution system, lathe pit, sawmills, former operational ponds[1]) and within some areas of fill containing LYM. Fill-containing LYM on the Mill Site (as currently defined) was found to consist generally of wood debris consisting of wood chips, bark, logs, sawdust, whole or scrap milled or unmilled wood and lumber, and other general woody debris from Mill activities that have not been chemically treated and could not be used at the Mill and that have been mixed with topsoil, sand, gravel, rock, or other inert materials (e.g., brick, concrete, hot mix asphalt pieces), with the occasional presence of metal, geotextile fabric, rubber, and similar material and minor impacts from greases and oils from operating equipment [2]. SVOC and metal impacts were limited to near-surface soil and within the former operational ponds (plywood plant equalization pond, north and south kiln ponds, recycle pond, settling pond). Groundwater samples that exceeded PCULs for TPH were identified adjacent to, and immediately downgradient of the plywood plant lathe pit. Groundwater samples collected from monitoring wells across the rest of the Mill Site, including locations with TPH soil impacts, were below PCULs for TPH. Groundwater samples that exceeded PCULs

[1] Five operational ponds were located on the Mill Site and received either discharges from Mill operating facilities (e.g., plywood plant discharge, boiler plant blowdown, kiln building condensate) or surface water runoff from active log yards that was recycled back onto the logs or discharged.

[2] Log yard material that has not been impacted by hazardous substances above the applicable cleanup levels is not a waste and can be left in place (absent significant adverse impacts to human health or the environment) or beneficially recycled, composted, or reused without restriction, consistent with Ecology guidance. Log yard material, in and of itself, is not a hazardous substance under MTCA.

for metals were collected from wells across the Mill Site in the Remedial Investigation, including upgradient wells for some of the groundwater to surface water pathway PCULs.

Final conclusions regarding the Mill Site COPCs and PCULs as well as the results from the last two rounds of groundwater and soil gas sampling were added to the Draft RI Report in a November 15, 2021, Addendum (2021 RI Report and Addendum) (Barr 2021a).

Groundwater samples that exceeded PCULs for two SVOCs (pentachlorophenol (PCP), bis(2-ethylhexyl)phthalate) were collected from several wells in the interior of the Mill Site during the Remedial Investigation. These concentrations were near the laboratory's practical quantification limits and generally only occurred in one round of samples. With the agreement of Ecology, a program involving four quarters of supplemental sampling of these wells began in July 2022 and was completed in October 2023 to determine if these SVOCs are present in the groundwater. Based on the supplemental sampling results from four consecutive quarterly sampling events in each well, it was determined that these two SVOCs are not present in the groundwater, as described in the Supplemental Groundwater Sampling Memorandum that was submitted to Ecology in February 2024 (Barr 2024).

Through discussions with Ecology in November 2021, it was concluded that the available data in the 2021 RI Report and Addendum (Barr 2021a) was sufficient to meet the purpose of the RI process under WAC 173-340-350, and that approval of the 2021 RI Report and Addendum would lead to the efficient preparation of the FS. To the extent that additional data was needed to select a cleanup action for the Mill Site, such further assessment or evaluation would be developed, as appropriate, in consultation with Ecology, through the FS process or through the cleanup selection and cleanup design process (Ecology 2021).

Barr and Fulcrum began work on scoping the FS in early 2022. A general scope and schedule for preparation of the FS was furnished to Ecology on March 1, 2022 (Barr 2022) and was approved by Ecology on March 8, 2022 (Ecology 2022). Discussions regarding the scope of the FS, including alternatives to be evaluated in the FS, continued through 2022 and into 2023.

In March 2023, the Mill Site PLPs received a February 23, 2023 letter from Ecology (February 2023 Ecology Letter) (Ecology 2023a) that provided historic aerial photographs showing apparent land disturbance in an area, referred to as Parcel E and the southern portion of Parcel D, located north and south of the Moxee Line railroad tracks, east of the Mill Site and the Landfill Site and east of I-82. The February 2023 Ecology Letter required that the Mill Site PLPs provide an assessment of this information related to the Mill Site, an investigation plan to characterize the parcels, and a schedule for the investigation work in these areas.

The Mill Site PLPs responded to the February 2023 Ecology Letter on May 4, 2023, and agreed to investigate the area identified in the February 2023 Ecology Letter (Barr 2023a). The letter stated that the investigation would be conducted consistent with the strategy used for investigating the areas of fill containing LYM during the completed 2019-2021 Remedial Investigation on the Mill Site. The identified area would be investigated as an additional AOC under Agreed Order DE 13959 and under the Approved RIWP including the SAP, QAPP, PHASP.

Ecology provided a letter response on June 2, 2023 (Ecology 2023b), generally agreeing with the approach described in the May 5, 2023 letter The June 2, 2023 Ecology letter requested that the Mill Site PLPs also evaluate the footprint of I-82 adjacent to the Mill Site and the Landfill Site (I-82 corridor) and evaluate additional parcels east of I-82 that were not described in the February 2023 Ecology Letter (Ecology 2023a) but were believed to have been owned by Boise Cascade prior to their donation to the County in January 1987. These included Parcels A, B, C1, the northern portion of Parcel D, and F.[3]

On August 11, 2023, a technical meeting was held between Ecology representatives and Mill Site PLP representatives. Ecology indicated that its primary area of concern was Parcel E and the southern portion of Parcel D but indicated that all six parcels (A through F) plus the I-82 corridor needed to be evaluated and, if appropriate, investigated.

Parcels A through F appear to have had only limited association with the former operations at the Mill. Nonetheless, Barr, on behalf of the Mill Site PLPs and as described in Section 1 of this Report, submitted a September 29, 2023 letter to Ecology that provided a scope of work and a schedule for evaluating the six parcels east of I-82 and the I-82 corridor that are adjacent to the Mill Site and the Landfill Site and preparing a RIWP Addendum to investigate the parcels or portions of the parcels that are concluded to have been potentially impacted by former activities at the Mill (Barr 2023b). Ecology approved the scope of work in an October 9, 2023 letter (Ecology 2023d). As described in Section 1 of this Report, this East Side CSM/Data Gaps Report is the first step in preparing the RIWP Addendum. This Report, as well as Ecology's comments on this Report, will become the basis for completing the RIWP Addendum describing the scope and schedule for investigating the potentially impacted area.

[3] As noted above, it has been determined that the eastern portion of the area described as Parcel C in the 1987 quit claim deed from Boise Cascade to the Greenway Foundation was never owned by Boise Cascade. This eastern portion of Parcel C is referred to as Parcel C2 in this report and the portion of Parcel C that was owned by Boise Cascade is referred to as Parcel C1.

3 Available Information on East Side Area

This section of the Report summarizes the information that has been collected on the six parcels east of I-82 and the I-82 corridor. Detailed information collected by Fulcrum on the six parcels and the I-82 corridor is provided in Exhibit 1 to this report.

The east side area is in Yakima, Washington, in Township 13 Range 19 Sections 7 and 18, east of the Mill Site and east of the Landfill Site. The six parcels (Parcels A through F on Figure 1) are defined as Parcel Nos.: 191307-32407, 191307-31002, 191307-43002/41001, 191318-11002, and 191318-41002. The total area of the parcels is approximately 110 acres.

Parcels A through F were conveyed by quit claim deed from Boise Cascade to the Yakima River Regional Greenway Foundation in 1987 and from the Greenway Foundation to Yakima County in 1988. A corrected quit claim deed was filed in 1989 to exclude Parcel 191307-41001 (Parcel C2), which was never owned by Boise Cascade. Yakima County is the current owner of the six parcels, except for Parcel 191307-41001, which is owned by LSL Properties, LLC.

The east side area also includes the I-82 corridor east of the Mill Site and Landfill Site boundaries shown in their respective Agreed Orders (Figure 1). The I-82 corridor is owned by the State of Washington and is maintained by the Washington State Department of Transportation (WSDOT). The area of the I-82 corridor that is evaluated in this Report is 46 acres.

The area east of the I-82 corridor and west of the Yakima River is currently used for recreational purposes, including a bike and walking path, a children's play area, and public parking. Individuals setting up homeless encampments periodically use the area, especially within the WSDOT maintained I-82 corridor. The east side area also has flood protection levees dating back to the 1940s.

The southern portion of the east side area is the location of Yakima County's Cascade Mill Parkway Phase 3 Project that is in the final design stage and will be a major east-west roadway extending from new roads being constructed on the Mill Site and the Landfill Site, eastward under I-82 and continuing eastward over the Yakima River.

As noted previously, the Mill Site that is the subject of the 2019-2021 Remedial Investigation is located west of I-82. Any investigation of the east side area determined to be appropriate will be described in an addendum to the Approved RIWP (Barr and Fulcrum 2019) previously prepared for the Mill Site and approved by Ecology.

3.1 Physical Setting

The physical setting of the east side area in terms of climate, topography, regional geology, regional hydrogeology, and surface water is described in the following paragraphs taken from the Approved RIWP (Barr and Fulcrum 2019).

3.1.1 Climate

The climate is semi-arid with cool winters and hot/dry summers. The average daily maximum temperature ranges from 36 to 88 degrees Fahrenheit and the average annual precipitation is 8.4 inches (NOAA 2016).

3.1.2 Topography

Topography of the east side area is shown on Figure 2 and, except for the I-82 embankment fill and the flood protection levee, is generally level, varying from approximately 1,080 feet above mean sea level (feet MSL) in the northwestern portion of the area to approximately 1,050 feet MSL in the southeastern corner. The roadway embankment fill placed to construct I-82 on the western edge of the east side area is a significant topographic feature. The flood protection levee that is aligned northwest-southeast through the east side area, generally parallel to I-82, is also a significant topographic feature.

3.1.3 Regional Geology

The east side area is located in the Yakima valley. The regional geology consists of Miocene basalt flows of the Columbian River Basalt Group, overlain by the Ellensburg Formation, which is overlain by mostly Holocene alluvial deposits resulting from the adjacent Yakima River. Geologic information for the area comes from the *Geologic Map of the Yakima Quadrangle, Washington* (Bentley 1983) and logs from nearby wells.

The basalt is present at a depth of approximately 1,850 feet below ground surface (bgs), based on the drilling log from a deep well at the Mill completed in 1927. The Ellensburg Formation (based on a drilling log located within ¼ mile of the Mill Site) was logged as a clayey shale and sandstone, capped with a cemented gravel, beginning at a depth of 44 feet bgs (Landau 1998).

The alluvial deposits are characterized as coarse-grained sand, gravel, and cobbles with lenses of silt and clay, underlain in many places by silty sand, sandy silt, or clay (Landau 2013, Barr 2021a). In some locations, fill overlays the native alluvial deposits and is described as imported rock, soil, and, on the Mill Site, wood debris (LYM) (Barr 2021a).

3.1.4 Regional Hydrogeology

The hydrogeologic units of the Yakima region can be split into the following two categories (Vaccaro, et al. 2009):

- Basin-Fill Units (including unconsolidated alluvial deposits and semi-consolidated to consolidated units of the Ellensburg Formation)
- Columbia River Basalt Group and interbedded units

The lithology and hydraulic characteristics of the basin-fill units are diverse and groundwater levels generally follow land surface contours. Groundwater generally flows towards the Yakima River in the shallow basin-fill units. The flow in the deeper units is controlled primarily by characteristics of the unit itself and the overlying units. Flowing artesian conditions exist in the Yakima basin where groundwater is present under confined conditions, described as "aerially extensive productive artesian zones" in the

Approved RIWP. There is evidence that the Mill deep well was a flowing artesian well from a depth of about 700 feet bgs when it was constructed (Barr and Fulcrum 2019).

3.1.5 Surface Water

The six parcels and the I-82 corridor are located west of the Yakima River, approximately 4,000 feet down-river from the confluence with the Naches River. The parcels are approximately between river-mile 114 and 116.

The section of the Yakima River adjacent to the six parcels has had several braided river channels over time, visible in aerial photographs. Flow velocities in the river are rapid. The locations of the braided channels have varied east-west over time due to erosion, deposition, levee construction, and any channelization.

Water from the River was historically used to in the manner described in the History of Surface Water Features Memorandum in Appendix B of the Approved RIWP (Barr and Fulcrum 2019). The 2019 memorandum and work completed for this Report identifies the presence of the following water connections between the Mill Site and the Yakima River (discussed further in Section 3.2 of this Report):

(1) a river inlet channel through Parcels A and B to feed the log ponds at the Mill. This river inlet channel now crosses, from east to west, in a culvert under I-82 and then south along the western side of I-82 to the northeast corner of the Mill Site.

(2) a secondary water intake ditch, visible on historical aerial photographs, that served an unknown purpose but perhaps also carried water from the Yakima River to the Mill. This ditch is no longer visible on aerial photographs at the time that I-82 was constructed.

(3) the North First Lateral Drain (NFLD) that carries irrigation return water across the northern portion of the Mill Site and discharges into the river inlet channel.

(4) an overflow from the river inlet channel to an "overflow channel" that extends south along the western side of the I-82 corridor and crosses, from west to east, in a culvert under I-82. This channel then extends south along the eastern side of the I-82 corridor adjacent to Parcel D.

(5) a "spillway" from the Mill's north log pond to what was later called the recycle pond, with a discharge from the recycle pond to a culvert beneath I-82 and into the overflow channel along the eastern side of the I-82 corridor. The discharge from the recycle pond was eliminated in 1997 but the culvert crossing of I-82 remains and now carries flow from the remnant site ditch that crosses the central portion of the Mill Site

(6) a pipe from the Mill's south log pond located south of the Moxee Line railroad tracks to a channel that leads to the river through Parcel E. Water no longer flows through this crossing.

(7) the Fruitvale Wasteway that carries irrigation return flow in a pipe across the southern portion of the Mill Site into a ditch that runs along the eastern side of the Landfill Site, through a culvert under I-82, to a ditch on the western side of Parcel E and to the Yakima River.

These surface water flow features are further described in Section 3.2 of this Report and are shown on Figure 3. Additional surface water features located in the east side area, including ponds that, based on the review of aerial photographs, were likely gravel borrow areas for interstate highway construction and other purposes, are also described in Section 3.2 and are shown on Figure 3.

3.1.6 Area Geology

Based on their proximity to the Yakima River, near-surface unconsolidated materials on the six parcels likely consist of native sand, gravel, and cobbles. Aerial photos and a ground surface reconnaissance indicate that there are areas of fill on some of the parcels. The extent of any fill can be only generally estimated by reviewing aerial photographs and through a reconnaissance and will be investigated under the work scope to be presented in the RIWP Addendum.

3.1.7 Area Hydrogeology

Groundwater is likely to be first encountered within the alluvial or fill materials at depths ranging from a few feet to approximately 15 to 20 feet bgs, with the variation in depth attributable to the groundwater gradient to the southeast, the grade of the river to the south and the variability in parcel topography. Groundwater monitoring completed at the Mill Site since 1997 (including for the 2019-2021 Remedial Investigation) shows that groundwater flow is from the west-northwest to the east-southeast across the Mill Site toward the Yakima River with a gradient ranging between 0.003 and 0.007 feet/foot (Barr 2021a). A portion of the groundwater likely discharges to surface waters east of I-82 and water levels in the ponds east of I-82 are likely expressions of the groundwater table. The groundwater eventually reaches the Yakima River. Local variability in hydraulic conductivity may influence the localized groundwater flow pattern; however, the coarse-grained materials present throughout the area likely minimize the influence of localized variations in hydraulic conductivity on flow direction (Barr 2021a).

Groundwater elevation contour maps and geologic cross sections in previous reports, including the 2021 RI Report and Addendum, provide groundwater elevations and river stage levels indicating that groundwater from the southwestern portion of the Mill Site flows beneath the Landfill Site and I-82 and discharges toward the Yakima River in the vicinity of Parcel E and to the south (Landau 2015, Landau 2021, Barr 2021a). The groundwater elevation data also indicates that groundwater from the northeastern portion of the Mill Site flows beneath I-82 and toward the river in the vicinity of Parcel D and does not pass beneath the Landfill Site (Barr 2021a).

The near surface groundwater aquifer underlying the Mill Site, the I-82 corridor and the six parcels east of I-82 is not used for potable supply, or any other application, and no drinking water supply wells are located in this aquifer on the Mill Site or downgradient between I-82 and the river. It is considered unlikely that future drinking water supply wells will be located in these areas. In addition, the parcels are not in a wellhead protection area.

3.2 Parcel and I-82 Corridor Histories

Historical and present-day information on the six parcels and the I-82 corridor has been compiled and evaluated by Fulcrum to identify areas that may have potentially been impacted by Mill operations (See Exhibit 1). Information includes the physical setting, previous investigations and known conditions, known Mill operational history, aerial photographs, area topography, and what is known of the history of filling, grading and land use since donation of the properties to the Greenway Foundation more than thirty-seven years ago in January 1987. The most useful historical records have been the aerial photographs and the results from the geotechnical investigations completed by Yakima County for the Cascade Mill Parkway Phase 3 Project. Aerial photographs and other historical records for each parcel are in Exhibit 1

Fulcrum also conducted a visual ground surface reconnaissance of the six parcels and the I-82 corridor. Observations from the reconnaissance including photographs are in Exhibit 1.

Based on the review of aerial photographs, the visual reconnaissance of the parcels, and available test pit and soil boring logs from the geotechnical investigations, it appears that fill containing LYM is present on some portions of the east side parcels.[4] No buildings, structures or other forms of development associated with historical Mill operations have been identified on any of the parcels. The plans for the Cascade Mill Parkway Phase 3 Project indicate that fill, including LYM, will be excavated, for geotechnical reasons, from the roadway right-of-way and from the construction area along the roadway through the southern portion of Parcel D and the northern portion of Parcel E. The approximate anticipated limits of the excavation are shown on Figure 4 although planning for the project is continuing,

3.2.1 Parcel A

3.2.1.1 Aerial Photograph Review and Historical Uses

Aerial photographs show that the majority of the area mapped by Yakima County as Parcel A was within the Yakima River until sometime between 1971 and 1973 when the river channel shifted to the northeast, creating a larger riverbank area consistent with the present condition.[5] The riverbank area has consistently been observed in aerial photos to be covered with vegetation Aerial photographs support the conclusion that the river islands consist of river deposits and natural vegetation. Rotary Lake is present west of the southwest boundary of the parcel. Rotary Lake was formed concurrently with the construction of I-82, between 1956 and 1962, likely as a gravel source to support interstate highway construction. Rotary Lake is shown on Figure 3 of this Report and in aerial photographs in Exhibit 1.

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[4] To the extent fill material is found to contain LYM, the presence of LYM in and of itself, is not a hazardous substance under MTCA. Such materials that have not been impacted by hazardous substances above the applicable cleanup levels are not a waste and can be left in place (absent significant adverse impacts to human health or the environment) or beneficially recycled, composted, or reused without restriction, consistent with Ecology guidance.

[5] Parcels A through F are legally described as being bounded by/extending to the west bank of the Yakima River. The figures and text of this report use tax parcel boundaries as mapped by Yakima County to identify the areas of potential interest. Based on the legal descriptions of the properties conveyed, the evaluation extended to the west bank of the Yakima River, reflecting the likely extent of historical ownership by Boise Cascade.

No Mill-related operational buildings were present on Parcel A. The northeast portion of the area mapped as Parcel A is an island in the river and is inaccessible except by crossing the water. The river flood protection levee with a pathway on top of the levee is apparent along the southwestern boundary of Parcel A by the time of the 1947 aerial photograph. The pathway on top of the levee was connected to the Yakima Greenway trail system in about 1988. No land use or impacts associated with Mill operations were noted on Parcel A in Fulcrum's historical review of the aerial photographs (Exhibit 1).

3.2.1.2 Parcel Ground Surface Reconnaissance

Ground surface reconnaissance observations of Parcel A made in 2023 are described in Exhibit 1 along with pictures taken during the reconnaissance. Parcel A contains trees along the river and undulating topography and low shrubs along the Yakima Greenway trail. The reconnaissance of Parcel A did not identify evidence of land use or impacts associated with Mill operations.

3.2.1.3 Previous Investigations and Known Conditions

There have been no known investigations conducted within Parcel A.

3.2.1.4 Conclusion

No historical land use or impacts associated with Mill operations were identified on Parcel A in Fulcrum's historical review and reconnaissance. Based on the review of historical information and current conditions, Parcel A is not in AOC 28.

3.2.2 Parcel B

3.2.2.1 Aerial Photograph Review and Historical Uses

The river historically has been adjacent to and crossing through the area mapped as Parcel B with most of the parcel being between the river and what is now I-82. A portion of the area mapped as Parcel B is an island in the river and is inaccessible except by crossing the water. Aerial photographs support the conclusion that the river island consists of river deposits and natural vegetation. The river flood protection levee with a pathway on top is present along the western boundary of the parcel at the time of the 1947 aerial photograph. The pathway on the river levee was connected to the Yakima Greenway trail system in about 1988. No Mill-related operational buildings are present on Parcel B.

By 1968, the southern corner of the parcel was mostly free of vegetation until the development of the Yakima Greenway Rotary Lake Park and Ride parking lot. The interstate borrow pit located on Parcel C1 and Parcel D (see discussion below) does not appear to extend to Parcel B. The parking lot is first visible in the 1991 aerial photograph and was likely constructed with the development of the Yakima Greenway trail system through the parcel in about 1988. An undated as-built plan for the parking lot provided by Yakima County identifies the area in the center of the parking lot driveway loop as containing "sawdust, etc.". As described above, the southern portion of the parcel lacked vegetation prior to the construction of the Rotary Lake Park and Ride parking lot, and this suggests that the filling that appears to have occurred in Parcel C1 adjacent to this portion of Parcel B may have extended into this portion of Parcel B (Figure 3).

Based on the identification of sawdust being present in the Rotary Lake Park and Ride parking lot, it appears that fill containing LYM may have been placed in the southernmost two-acre portion of Parcel B. No other evidence of land use or impacts potentially associated with Mill operations were noted on Parcel B in Fulcrum's historical review of the aerial photographs and other available historical information.

3.2.2.2 Parcel Ground Surface Reconnaissance

Ground surface reconnaissance observations of Parcel B made in 2023 are described in Exhibit 1 along with pictures taken during the reconnaissance.

The reconnaissance shows that Parcel B has flat topography with low shrubs, grasses, and tree cover. The portion of the area mapped as Parcel B that is an island in the river is tree covered. West of the west bank of the Yakima River, the center of the Rotary Lake Park and Ride parking lot appears to contain LYM. The uneven ground in the parking lot entry driveway also appears to suggest that fill containing LYM may also extend under portions of the driveway. No other land use or impacts potentially associated with Mill operations were observed in Parcel B in the reconnaissance.

3.2.2.3 Previous Investigations and Known Conditions

There are no known investigations within Parcel B other than those that may have been associated with the design and construction of the parking lot in the southernmost portion of the parcel. No information is available on any investigations that may have been conducted.

3.2.2.4 Conclusion

The southernmost portion of Parcel B will be included in AOC 28, based on the apparent presence of fill material that may contain LYM and the reported presence of sawdust in the Rotary Lake Park and Ride parking lot. Consistent with the investigation conducted on the Mill Site and described in the Revised 2021 Remedial Investigation Report and Addendum (Barr 2021a), these materials will be evaluated for the presence of hazardous substances regulated under MTCA. As noted previously in footnote 4, the presence of LYM (including sawdust), in and of itself, is not a hazardous substance under MTCA. LYM that has not been impacted by hazardous substances above the applicable cleanup levels is not a waste and can be left in place (absent significant adverse impacts to human health or the environment) or beneficially recycled, composted, or reused without restriction, consistent with Ecology guidance.

3.2.3 Parcel C

3.2.3.1 Aerial Photograph Review and Historical Uses

The area mapped as Parcel C1 and Parcel C2 historically and currently consists primarily of land between the Yakima River and I-82, south of Parcel B plus river islands in the northeast portion of Parcel C2. The river islands are inaccessible except by crossing the water. Aerial photographs support the conclusion that the river islands consist of river deposits and natural vegetation. The river flood protection levee with a pathway on top is present along the southwest Parcel C1 boundary by the time of the 1947 aerial photograph. The pathway on the river levee was connected to the Yakima Greenway trail system in about 1988. No Mill-related operational buildings were present on Parcel C1 or Parcel C2.

Aerial photos show that one of the braided river channels present east of the flood protection levee in Parcel C1 was cut off from the river and became a pond between 1956 and 1964. This feature will be referred to as the "interstate borrow pit" in this Report. Aerial photos show that the pond/borrow pit extended onto the northern portion of Parcel D but did not extend onto Parcel B or Parcel C2 (Figure 3). The interstate borrow pit was formed at the same time as I-82 was constructed and is believed to have been excavated by project contractors as a gravel source to support the construction. Aerial photos show that a path is present after construction of I-82 at the location of the underpass beneath the interstate. The path appears to have connected Parcel C1 and the Mill Site. The 1971 aerial photograph shows what appears to be fill material placed in the northeast portion of the interstate borrow pit, with additional apparent filling of the borrow pit shown in the 1974 aerial photograph. The fill shown in the 1974 aerial photograph looks to extend north to the Rotary Lake Park and Ride parking lot in the southern portion of Parcel B as described above (Figure 3). The portion of the interstate borrow pit on Parcel C1 is entirely filled by the time of the 1977 aerial photograph. The nature and source of the fill is unclear. Aerial photos and ground reconnaissance suggest that the fill may be primarily LYM. The surface of the backfilled footprint of the interstate borrow pit is not heavily vegetated to the present day. What appear to be shallow excavations are first visible adjacent to and to the east of the interstate borrow pit on Parcel C1 in the 1970 aerial photograph. These areas of excavation are also visible on the 1974 aerial photograph and are filled by the time of the 1981 photograph. The filled area in this portion of Parcel C1, based on the aerial photos and the site reconnaissance, is shown on Figure 3. There is no evidence of filling in Parcel C2 in the aerial photographs.

Small ponds are first shown in the northern portion of Parcel C1 in the 1974 aerial photograph. Three small ponds are shown on the 1981 to 1991 photos with one pond remaining to the present day (Northeast Parcel C1 Pond - Figure 3). The reason these smaller ponds were excavated, and the source of material used to fill these ponds is unknown. Dense vegetation surrounds the present-day pond and the filled ponds.

A September 1992 letter and a figure from Ecology's files associated with the former wood waste landfill that was located in the northern portion of the Mill Site west of I-82 indicate that fill containing LYM may have been placed on Parcel C1 (Ecology 1992). The history of the former wood waste landfill on the Mill Site is described in the Approved RIWP (Barr/Fulcrum 2019).

3.2.3.2 Parcel Ground Surface Reconnaissance

The 2023 ground surface reconnaissance observations of Parcel C1 and Parcel C2 are described in Exhibit 1 along with pictures taken during the reconnaissance.

The topography of Parcel C1 and Parcel C2 is rolling with portions covered by grasses, shrubs, and trees. The portions of the area mapped as Parcel C2 that appear to be islands in the river are tree covered. West of the west bank of the Yakima River, LYM is present at the ground surface in open areas of Parcel C1 with limited surface vegetation in some areas where aerial photos indicate that ponds and shallow excavations once existed, and filling occurred. The surface LYM includes pieces of metal scrap, broken concrete, rock, and some rubber debris. The location of the surface LYM on Parcel C1 is consistent with the filled interstate borrow pit and adjacent shallow excavation areas to the east visible in aerial photographs from

the mid-1960s and 1970s. As described above, the area around the Northeast Parcel C1 Pond is covered by large trees and other vegetation with no evidence of LYM on the ground surface. There was no evidence of filling observed in Parcel C2 during the 2023 ground surface reconnaissance.

3.2.3.3 Previous Investigations and Known Conditions

There are no known investigations in Parcel C1 or Parcel C2.

3.2.3.4 Conclusion

Aerial photos and ground surface observations indicating the apparent placement of fill with LYM into the interstate borrow pit and the adjacent area to the east, also in Parcel C1, and the filling of the northern Parcel C1 ponds suggest potential impacts by Mill-related activities, and these filled areas on Parcel C1 will be included in AOC 28.

3.2.4 Parcel D

3.2.4.1 Aerial Photograph Review and Historical Uses

Parcel D is located south of Parcel C1 and Parcel C2, between the Yakima River and I-82. The Moxee Line railroad track crosses the southern portion of Parcel D dating back to the earliest aerial photo in 1927. At the time of the 1927 aerial photograph, the majority of the area mapped as Parcel D consisted of the natural riverbank with small river channels and natural vegetation throughout. A braided stream channel is present on the area mapped as Parcel D north of the railroad by 1927 that was connected to one of the log ponds at the Mill.

The river flood protection levee has been present north to south on and west of Parcel D since the 1940s. The levee has always been along the riverbank in the southern portion of Parcel D. Before the construction of I-82, the levee extended onto the Mill Site adjacent to the northern portion of the parcel as shown on Figure 3. No Mill-related operational buildings were present on Parcel D. Following (or during) the construction of I-82, the portion of the levee on the Mill Site was reconstructed on the eastern side of I-82, also as shown on Figure 3. The Yakima Greenway trail extends from the developed portion of the Greenway further south to the top of the flood protection levee by 1988.

As described above, the interstate borrow pit on Parcel C1 extended onto the northern portion of Parcel D. The borrow pit was excavated in a former river channel and appears to have been used as a gravel source to support interstate highway construction. The portion of the interstate borrow pit that extended from Parcel C1 into Parcel D is entirely backfilled by the time of the 1981 aerial photograph.

The present-day Cascade Mill Pond (Mill Pond) in Parcel D is first observed in the 1964 aerial photograph and was believed to have been excavated as a gravel source for interstate highway construction. The aerial photographs show no evidence of fill being placed into the Mill Pond.

The Mill Pond is separated from the portion of the interstate borrow pit that extends into Parcel D by a narrow pathway in the 1964 aerial photo. As described previously, the pathway appears to connect the

Mill Site, through the I-82 underpass, to Parcel C1 and the northern portion of Parcel D and extending across Parcel C1 and Parcel D to the east.

Areas of apparent shallow excavation are present in Parcel D east of the Mill Pond in the 1964 photograph. By 1971, these areas of apparent excavation include multiple small ponds that may also have been gravel sources. By 1981, the majority of these small ponds have been filled. In the 1981 aerial photograph, an additional small pond is present in the northern portion of Parcel D (Northeast Parcel D Pond – Figure 3). In the 1970 aerial photo, two ponds are shown east of the Mill Pond. These ponds are no longer visible by the time of the 1979 aerial photo (East Parcel D Ponds – Figure 3). These ponds were also likely excavated as gravel sources.

The portion of Parcel D south of the railroad has a lighter ground surface coloration in the 1927 aerial photograph compared to the surrounding area. The lighter color is consistent with sawdust-type material. This lighter colored ground surface extends west into the eventual I-82 corridor, and further west into the Mill Site, and south into Parcel E. A perimeter pathway is visible surrounding the area of lighter ground surface coloration. The 1939 aerial photograph shows this lighter colored area to be larger and to extend across all of Parcel E to the south. The maximum extent of this lighter colored area is shown in the 1949 photograph (Figure 3). A small ditch is present traversing the area. By 1956, piled material is visible on Parcel D north of the railroad.

The lighter colored material in the southern portion of Parcel D appears to be arranged into piles and rows in the 1947 and 1949 aerial photographs. The lighter colored material is west of the flood protection levee in the southern portion of Parcel D. Following construction of I-82, piled material appears to be present along the railroad in Parcel D. The 1971 to 1981 aerial photographs show possible excavation in the portion of Parcel D north of the railroad and south of the Mill Pond, with the ground surface shown as dark brown on the aerial photographs. By the time of the 1989 aerial photograph, the former lighter colored piled material in the southern portion of Parcel D appears to have been graded or removed with the color of the land surface appearing to be more consistent with the natural topography. The ground surface in this area is not heavily vegetated and is a darker color than the surrounding soil on present-day aerial photos.

A 1947 levee easement document identifies a "sawdust and refuse pile" somewhere along the west bank of the Yakima River, within the levee easement. No further information was found on the specific location of the 1947 referenced sawdust and refuse pile.

A 1966 levee repair map identifies sawdust on Parcel D, north and south of the railroad and on Parcel E. The 1966 levee repair map notes that the sawdust has an average depth of 3 to 4-feet.

Pictures from Ecology's files associated with the former wood waste landfill that was located in the northern portion of the Mill Site west of I-82 appear to show LYM stockpiled east of I-82 on the southern portion of Parcel D in 1989 and 1991 (Ecology 1989–1991). The September 1992 letter and figure from Ecology's files referenced previously indicate that fill containing LYM may have been placed on Parcel D

(Ecology 1992). The history of the former wood waste landfill on the Mill Site is described in the Approved RIWP (Barr/Fulcrum 2019).

Boise Cascade retained the right to place fill materials on a portion of Parcel D and on all of Parcel E until January 31, 1990, by way of the January 1987 quit claim deed for the transfer of the parcels from Boise Cascade to the Greenway Foundation.

3.2.4.2 Parcel Ground Surface Reconnaissance

The 2023 ground surface reconnaissance observations of Parcel D are described in Exhibit 1 along with pictures taken during the reconnaissance.

The topography of Parcel D is gently rolling to flat with trees and grasses along the Yakima Greenway trail. The Mill Pond is a significant feature in the northern portion of Parcel D. The filled areas east of the Mill Pond that are believed to have been excavated as sources of gravel show evidence of surface LYM.

The southern portion of Parcel D, both north and south of the railroad, is dominated by open areas with limited surface vegetation west of the flood protection levee and the Greenway trail. Fill with LYM is present at the ground surface in these areas. The surface of the fill includes pieces of metal scrap, broken concrete, rock, and equipment debris. The makeup of the surface of these areas is consistent with the surface of the filled interstate borrow pit area in Parcel C1 and the northern portion of Parcel D and the filled areas east of the Mill Pond.

A short trestle carries the Moxee Line railroad track over the Yakima Greenway on Parcel D near the western end of the railroad bridge over the Yakima River.

3.2.4.3 Previous Investigations and Known Conditions

Geotechnical investigations for the Cascade Mill Parkway Phase 3 Project have been carried out since 2014. Most of the investigation locations between I-82 and the Yakima River are in the northern portion of Parcel E, but some are in in the southern portion of Parcel D, south of the railroad. The locations of the soil borings and test pits placed for the geotechnical investigation are shown on Figure 4. For simplicity, the information from these investigations will be described here even though some was collected on Parcel E.

Logs of two geotechnical borings on Parcel E placed in 2014 (EWC-B-02-14 and EWC-B-03-14) describe fill containing some LYM above the alluvium to a depth of about 15 feet bgs along the future Cascade Mill Parkway Phase 3 roadway alignment near I-82 (EWC-B-02-14) and to a depth of about 6 feet bgs above the alluvium along the roadway alignment near the river (EWC-B-03-14). The boring logs show a recorded depth to groundwater of about 15 feet bgs in the boring near I-82 and about 12 feet bgs in the boring near the river (Shannon & Wilson 2023). The analysis of samples collected from about 12 feet bgs from each of these boring showed no detectable TPH, VOC, or PAH concentrations and metal concentrations that are well below Mill Site PCULs, and very low concentration of PCP slightly above the Mill Site PCUL. Neither Barr or Fulcrum has reviewed a SAP or a QAPP for these samples.

In 2017, a test pit and a boring were placed on the northern portion of Parcel E (TP-P1-17 and B-2-17) along the planned roadway alignment (Shannon & Wilson 2023). Wood fragments and wood debris were reported in fill from 0 to 6 feet bgs in the test pit and in fill to a depth of 9.5 feet bgs in the boring, all above the groundwater table which was recorded at a depth of about 16 feet bgs in the boring. The analyses of four samples from the boring showed no detectable concentrations of TPH-gasoline range organics, TPH-diesel range organics, PAHs, PCBs, or pesticides/herbicides and metal concentrations that are well below Mill Site PCULs. One sample collected at a depth of 8.8 feet bgs from one of the borings showed a detectable concentration of heavy oil (495 mg/kg) and very low concentrations of three VOCs, all of which are below MTCA Method A unrestricted cleanup criteria and below Mill Site PCULs. The Mill Site heavy oil PCUL of 460 mg/kg is based on a terrestrial ecological pathway and is applicable in the top six feet of the soil profile. Neither Barr or Fulcrum has reviewed a SAP or a QAPP for these samples.

Two test pits (North Test Hole and South Test Hole) were completed by Yakima County in 2021 in the southern portion of Parcel D. These test pits were placed in a planned surface runoff ponding area north of the roadway alignment and south of the railroad (Shannon & Wilson 2023). The test pit logs show that a layer of LYM was present from a depth of 8 feet to 9 feet bgs above the alluvium in the northern test pit and from a depth of 1-foot bgs to 13 feet bgs above the alluvium in the southern test pit. No description was provided of the fill above the LYM in either test pit. No groundwater was reported as encountered in these test pits. No samples were collected for laboratory analysis.

Two test pits were placed in the vicinity of the Cascade Mill Parkway Phase 3 roadway alignment in September 2023 by Yakima County – one north of the roadway in the planned surface water ponding area (TP-9-18-23-P) in Parcel D and the second just south of the roadway alignment (TP-9-18-23-R) in Parcel E (Yakima County 2023d). Although test pit logs are not available, a County representative reported that fill containing LYM was present in each test pit location and that a soil sample was collected from each test pit in the alluvium just below the base of the fill for laboratory analysis (Yakima County, 2023c). The chain of custody for the sampling indicates that the sample from the test pit placed north of the roadway alignment was collected at a depth of 11 feet bgs and that the sample from the test pit placed just south of the roadway alignment was collected at a depth of 9 feet bgs (Fremont Analytical 2023). The laboratory report for the analysis of the samples (Fremont Analytical 2023) showed no detectable organic compounds (VOCs, SVOCs, PAHs) and metal concentrations that are well below Mill Site PCULs. This indicates that the alluvium below the fill containing LYM has not been impacted for these analytes in these locations. Neither Barr or Fulcrum has reviewed a SAP or a QAPP for these samples.

In summary, available information indicates that fill containing LYM in is present above the groundwater table in the southern portion of Parcel D and Parcel E where borings and test pits have been placed. This would be expected to limit the release of metals resulting from low oxygen levels in the groundwater, compared to conditions where fill containing LYM is below the groundwater table. Additionally, Yakima County plans to remove the fill containing LYM from the southern portion of Parcel D south of the railroad and from Parcel E except from beneath the Sunrise Rotary Park for offsite disposal or reuse as part of the Cascade Mill Parkway Phase 3 Project (Yakima County 2023a, Yakima County 2024). The approximate anticipated limits of the County's excavation are shown on Figure 4, although planning is still underway.

3.2.4.4 Conclusion

The northern and southern portions of Parcel D west of the flood protection levee that have been filled may have potentially been impacted by Mill-related activities and (excluding the railway right-of-way) will be included in AOC 28.

3.2.5 Parcel E

3.2.5.1 Aerial Photograph Review and Historical Uses

Parcel E is the southernmost of the six parcels under evaluation. Parcel E is bounded by I-82 to the west, the Yakima River to the east and Parcel D to the north. The shape of the parcel has remained consistent on aerial photographs since the earliest aerial photograph in 1927. In the 1927 aerial photograph, an outfall channel is present extending from the location of an adjoining log pond on the Mill Site, running parallel to and along what is now the west parcel boundary until discharging to the Yakima River (Figure 3).

The river flood protection levee and the Yakima Greenway trail are present along the east boundary of the parcel adjacent to the river. The Sunrise Rotary Park McGuire Community Playground was constructed in the very southern portion of the parcel in approximately 1996 and is accessed from the Yakima Greenway located to the east.

Parcel E appears to have a similar history of Mill-related activities as the southern portion of Parcel D. No operational buildings were present on Parcel E. A small pile of light-colored material identified on Parcel D in the 1927 aerial photograph appears to have extend onto Parcel E. The majority of Parcel E west of the flood protection levee is covered by the light-color material by 1947. In the 1964 aerial photograph, a large rectangular pile of material is present in the northern portion of Parcel E.

Pictures from Ecology's files associated with the former wood waste landfill referenced previously appear to show LYM stockpiled east of I-82 on Parcel E in1989 and 1991 (Ecology 1989–1991). A September 1992 letter and a figure from Ecology's files associated with the former wood waste landfill also referenced previously indicate that fill containing LYM may have been placed on Parcel E (Ecology 1992).

3.2.5.2 Parcel Ground Surface Reconnaissance

The 2023 ground surface reconnaissance observations of Parcel E are described in Exhibit 1 along with pictures taken during the reconnaissance.

The Sunrise Rotary Park McGuire Community Playground is located in the southern portion of Parcel E (Figure 4). Wood chips are present at the ground surface near the playground, perhaps part of playground construction. The ground surface over the remaining portion of Parcel E west of the flood protection levee and the Greenway trail shows evidence of fill containing LYM, similar to the ground surface in the likely filled areas in Parcels C and D. Metal debris and other trash were observed at the ground surface in the areas of fill and surface LYM on Parcel E.

3.2.5.3 Previous Investigations and Known Conditions

A 1993 letter from the Rotary Park Committee to Ecology indicates that two feet of compacted soil would be placed above what is called "bark chips" prior to constructing the McGuire Community Playground and indicating the Committee's understanding that this would be "acceptable closure of the property" (Exhibit 1).

A monitoring well was placed at the southern end of Parcel E in November 2009 by a consultant working for the City of Yakima on the Landfill Site. The location of the well (MW-15) is shown on Figure 4. The well log shows that the bottom of the well is 20 feet bgs, with a 15-foot long well screen. The groundwater level was approximately 14 feet bgs at the time of well installation. The boring log shows 1-foot of bark chips at the ground surface, underlain by sand, silty sand, gravelly sand, and gravel. The boring log notes a "landfill odor" in the groundwater at the time of well placement (SLR Consulting 2010). Sampling results over the last 9-years (9/2014, 12/2014, 3/2015, 6/2015, 11/2020), have shown no detectable TPH or VOC concentrations, no detectable Mill Site SVOC concentrations, and no arsenic concentrations exceeding the groundwater PCULs for either the Landfill Site or the Mill Site (6 ug/l). Iron and manganese concentrations have exceeded the groundwater PCULs for the Landfill Site and the Mill Site (Landau 2023).

Geotechnical investigations for the Cascade Mill Parkway Phase 3 Project have been completed on Parcel E. See section 3.2.4.3 for investigation details.

3.2.5.4 Conclusions

A number of areas within Parcel E may have been impacted by Mill-related activities due to apparent placement of fill containing LYM. The portion of Parcel E west of the flood protection dike will be included in AOC 28.

3.2.6 Parcel F

3.2.6.1 Aerial Photograph Review and Historical Uses

Parcel F is the northernmost parcel of the six parcels and is not contiguous with the other parcels or associated with Mill-related operations. Parcel F historically and currently consists of the southwest bank of the Yakima River between the river and what is now Rotary Lake. The area mapped as Parcel F was partially within the river prior to the construction of the river flood protection levee, first visible in the 1947 aerial photograph, and located on the northern side (river side) of the parcel. A pathway appears to have been constructed on top of the levee concurrently with the construction of original river levee. The pathway on top of the levee is connected to the Yakima Greenway trail system by 1988.

No Mill-related operational buildings were present on Parcel F. Aerial photographs indicate that Rotary Lake, just to the west of Parcel F, was formed at the time of the construction of I-82 between about 1956 and 1962 and was likely excavated as a gravel source to support interstate highway construction. Following the construction of I-82 and Rotary Lake, Parcel F has primarily been used for travel between the Yakima River and Rotary Lake. Vegetation appears to consist of natural vegetation.

3.2.6.2 Parcel Ground Surface Reconnaissance

The 2023 ground surface reconnaissance observations of Parcel F are described in Exhibit 1 along with pictures taken during the reconnaissance.

The parcel consists of the river levee, the Yakima Greenway trail, and vegetation. No evidence of fill containing LYM, or other Mill-related impacts were observed.

3.2.6.3 Previous Investigations and Known Conditions

There are no known investigations in Parcel F.

3.2.6.4 Conclusions

No historical land use or impacts associated with Mill operations were identified on Parcel F in Fulcrum's historical review or reconnaissance. Based on the review of historical information and current conditions, Parcel F is not in AOC 28.

3.2.7 I-82 Corridor

3.2.7.1 Aerial Photograph Review and Historical Uses

The location of the I-82 corridor in relation to the six parcels, the Mill Site and the Landfill Site is shown on Figure 1. I-82 was fully constructed through the corridor by 1964. Construction of the interstate correlates with the appearance of what appear to be borrow pits east of the corridor, including Rotary Lake and the interstate borrow pit described previously. The off-ramp for northbound Exit 31, at the northern extent of what is defined as the I-82 corridor for purposes of this review, appears to have been constructed at the same time as the interstate. The off-ramp for southbound Exit 33A near the southern extent of the I-82 corridor was constructed in approximately 1996. Prior to interstate construction, Mill operations involving LYM placement and Mill-related materials storage and other operations unrelated to the Mill likely extended onto what became the corridor at various locations along the corridor.

Prior to construction of I-82, the northern portion of what is now the I-82 corridor consisted of riverbank, river channels, and paths leading from the Mill Site to the portions of the original parcels located east of I-82.

Aerial photos indicate that the portion of what is now the corridor north of the Moxee Line railroad track and east of the southern portion of Parcel D was used as an extension of what was a Mill related materials storage area on the Mill Site from about 1939 until the construction of I-82.

Aerial photos indicate that historical corridor conditions south of the railroad are generally consistent with those on the portion of Parcel D south of the railroad and on Parcel E. The materials that were on the parcels east of what is now the corridor and south of the railroad extended onto the corridor. The extent of LYM placement that would have been removed by I-82 construction is shown on Figure 3.

The 1927 aerial photograph shows cultivated fields and visible structures, consistent with a small farm, in the southern portion of what is now the I-82 corridor. Aerial photos and other information shows

development and other activities to be present south of the Mill property along what became the I-82 corridor dating back at least to 1927. No Mill-related operational buildings were located on the I-82 corridor.

Surface water features located along and crossing the I-82 corridor are generally described in Section 3.1.5 and are shown on Figure 3. From north to south, the northernmost feature is the historical river water intake channel that carried water from the Yakima River to the log ponds at the sawmills at the Mill). From the intake structure on the riverbank, the channel extends southward on the western side of the flood protection levee and on the eastern side of what now is the I-82 corridor and crosses under I-82 west of the Rotary Lake Park and Ride parking lot. The channel then turns south along the western side of the I-82 corridor to the Mill Site. The 1927 and subsequent aerial photographs show this river water intake channel extending to the Mill Site, consistent with the alignment visible in aerial photographs to the present day.

A second waterway from the Yakima River to the Mill Site that may have conveyed water from the Yakima River to the Mill Site or may have served another purpose is visible on the 1927 aerial photo (Former Secondary Water Intake Ditch - Figure 3). The 1927 through 1956 aerial photos indicate that water carried in this waterway and water carried in the river water intake channel appears to fill a lowland area on the Mill Site located north of the former north log pond. In the 1964 aerial photograph showing a completed I-82, this second waterway is not visible and only the river water intake channel remains.

The location of the intake headgate structure on the western shore of the river that supplied water to the river water intake channel is shown on Figure 3. This structure was constructed in the 1940s. The gates in the intake structure were welded shut when river water was no longer needed for Mill operations. Fulcrum's 2023 reconnaissance showed some seepage through the closed inlet structure that likely occurs at higher river water levels. The outlet at the southeast corner of Rotary Lake now also contributes water to this channel before the channel crosses under I-82. On the west side of the I-82 corridor, the flow from the NFLD enters the channel. The NFLD carries irrigation return water from west to east across the northern portion of the Mill Site. Information collected in the 2019-2021 Remedial Investigation and described in the 2021 RI Report and Addendum (Barr 2021a) shows that the water level in the NFLD is typically above the adjacent groundwater levels on the Mill Site.

As shown on Figure 3, the combined flow from seepage at the river water intake headgate, the Rotary Lake outlet and the NFLD is carried in the channel a short distance to the south along the west side of the I-82 corridor before the channel becomes the "overflow channel" described previously (Section 3.1.5) and turns east. The water flows through a culvert beneath I-82. Once east of I-82, the combined flow travels south in the overflow channel along the east side of the I-82 corridor to the southern end of the Mill Pond where the flow enters the south end of the pond. Near this point of entry, the water flows out of the pond, over a spillway, and through the flood protection levee, eventually reaching the Yakima River.

As also shown on Figure 3, a remnant site ditch (described in the 2021 RI Report and Addendum) is aligned from west to east across the north-central portion of the Mill Site on the north side of what was once a large log deck. Water in this ditch is surface runoff and groundwater that enters the ditch during

wet periods. Flow in this ditch crosses under I-82 as shown on Figure 3, joining the channel carrying river intake seepage, Rotary Lake overflow, and NFLD excess irrigation water flowing to the south.

Further to the south, Figure 3 shows the location of the Fruitvale Wasteway that carries irrigation return water from west to east in a buried pipe across the southern portion of the Mill Site and along the northern side of the Landfill Site. Wasteway flow daylights from the buried pipe into a ditch at the northeastern corner of the Landfill Site and flows in the ditch to the south along the western side of the I-82 corridor. This ditch then turns east, and the water flows in a culvert under I-82, then past the flood protection levee and discharges to the Yakima River near the southern tip of Parcel E. The water level in the Fruitvale Wasteway across the Mill Site is above the groundwater level and water in the Wasteway is not impacted by the Mill Site (Barr 2021a).

Another southern historical water conveyance feature along the corridor is an outfall channel from the former south log pond on the Mill Site that crossed what is now the I-82 corridor and carried overflow water from the log pond to the river. (Figure 3). The concrete culvert that carried this flow under I-82 remains, but there is no evidence of recent water conveyance.

3.2.7.2 Ground Surface Reconnaissance

The 2023 ground surface reconnaissance observations of the I-82 corridor are described in Exhibit 1 along with pictures taken during the reconnaissance.

I-82 is a four-lane divided highway located on an elevated embankment fill section in the corridor. Two overpass sections are in the area of review - a northern overpass allowing vehicle travel under the interstate to the Yakima Greenway Rotary Lake Park & Ride, and a southern overpass providing one lane of vehicle traffic and the Moxee Line railroad track to cross under the interstate.

Areas of homeless encampment have been observed to be present in the I-82 corridor, on both the east and west sides of the interstate embankment. Discarded clothing and other debris are common in areas being used as encampments. Areas with large concrete debris, appearing to be from past I-82 projects, are present along the east slope of the I-82 embankment.

The management of stormwater runoff from I-82 is not clear based on the reconnaissance. WSDOT information shows that an estimated 19 stormwater management locations are present in what is defined as the I-82 corridor, primarily on the east side of the interstate (Figure 3, WSDOT n.d.). Observed stormwater management approaches include sheet flow off the roadway surface, discharge piping associated with the overpass structures, and corrugated metal culverts located below the overpasses with unidentified discharge locations. Stormwater runoff at the north overpass likely discharges into the comingled Rotary Lake outlet, river water Intake, and NFLD overflow channel east of I-82 that flows into the south end of the Mill Pond as described previously. Other stormwater runoff locations from I-82 appear to discharge to the remnant ditch where it goes under I-82, which is also conveyed into the overflow channel carrying Rotary Lake outlet water, river intake water and NFLD water southward to the south end of the Mill Pond.

3.2.7.3 Previous Investigations and Known Conditions

A total of seven deep borings were placed through the I-82 embankment fill and into the underlying alluvium in 2017 and 2021 (B-1-17, B-9-21, B-10-21, B-11P-21, B-12P-21, B-13-21, and B-14-21) as part of the design of the proposed Cascade Mill Parkway roadway crossing of I-82 (Shannon & Wilson 2023). The locations of the soil borings are shown on Figure 4. Logs from two of the seven borings (B-1-17, B-9-21) placed through the I-82 embankment fill showed evidence of small amounts of LYM in the embankment fill just above the alluvium that may be Mill related. A few soil samples from other borings showed evidence of woody debris or soil with elevated TPH concentrations higher up in the embankment fill that are likely not associated with the Mill.

As described above, I-82 was constructed through former LYM placement and Mill-related material storage areas in the late 1950s/early 1960s. The borings indicate that the majority of the LYM was removed with the construction of I-82, consistent with good construction practices. It is possible that small amounts of LYM may remain in the embankment fill just above the alluvium in the section of the I-82 corridor that spans the old LYM placement areas (Figure 3). Evidence of this is the LYM in boring B-1-17 at the top of the alluvium at a depth of about 33 feet bgs ("few wood fragments") and the LYM in boring B-9-21 at the top of the alluvium at a depth of about 42 to 43 feet bgs ("wood fragments"). The boring logs report groundwater at a depth of about 40 feet bgs in these borings. This small amount of LYM in the interstate embankment fill at the top of the alluvium will be considered in interpreting the results from the groundwater investigation that will be part of the AOC 28 RI Addendum.

3.2.7.4 Conclusion

Based on prior investigations involving the placement of borings through the I-82 embankment fill and standard construction methods to remove soft soils under major infrastructure projects dating back to the 1940s, it is concluded that virtually all of the LYM that likely was present above the alluvium in the corridor was removed during construction of the interstate highway. As noted above, any remaining LYM that remains will be considered in the interpretation of the groundwater monitoring results from the investigation of AOC 28. Further investigation of the I-82 corridor embankment fill would involve safety issues in drilling, and it is considered unlikely that any remedy involving the base of the embankment fill carrying the interstate highway would be practical. As such, the I-82 corridor will not be included in AOC 28.

4 Area of Concern

Based on the evaluation of the existing information and the recent reconnaissance of the ground surface of the six parcels and the I-82 corridor as described in Section 3, an Area of Concern (AOC 28) on the east side of I-82 has been identified for further evaluation and investigation.

Parcels A, C2, and F are not considered to be a part of AOC 28, as there is no indication of impacts from, or in connection to, the Mill Site. Information presented in Section 3 above indicates that portions of Parcels B, C1, D, and E appear to exhibit evidence of potential impacts from or in connection with the Mill Site that warrant further investigation to determine if a cleanup action is required under WAC 173-340-360.

Based on the review of historical land use, a reconnaissance of these areas and potential impacts from Mill operations, AOC 28 is defined as: the southernmost portion of Parcel B; the filled borrow pits on Parcel C1and the northern portion of Parcel D; the southern portion of Parcel D west of the flood protection levee and east of the I-82 corridor (excluding the railroad right of way); and Parcel E west of the flood protection levee and east of the I-82 corridor. The boundaries of AOC 28 and the features identified based on the review of historical information and the ground reconnaissance are shown on Figure 5.

AOC 28 also encompasses the area within the parcels where groundwater flow from the upgradient portion of the Mill Site and/or the Landfill Site potentially impacts groundwater east of I-82, so that any impacted groundwater from the Mill Site and/or from the Landfill Site that has migrated east of I-82 can be investigated in the AOC 28 RI Addendum. Groundwater contour maps show that groundwater flow from the Landfill Site likely only has the potential to impact Parcel E Landau 2015, Landau 2021, Barr 2021a).

The I-82 corridor is not included in AOC 28 because borings placed through the I-82 embankment fill indicate that virtually all of the LYM that likely was present above the alluvium in the corridor was removed during construction of the interstate highway. Soil with elevated TPH concentrations higher up in the embankment fill are likely not associated with the Mill Site. As described previously, the LYM that remains ("wood fragments") will be considered in the interpretation of the groundwater monitoring results from the investigation of AOC 28 but will not be further investigated. Further investigation would involve safety issues in drilling in the I-82 right-of-way and it is considered unlikely that any remedy involving the base of the embankment fill carrying the interstate highway would be practical. It is concluded that the available information regarding the I-82 corridor is sufficient for the purposes of the AOC 28 RI process.

The overflow channel on the east side of the I-82 corridor that carries water from the Rotary Lake outlet, seepage through the river water intake structure, water exiting the NFLD, water from the remnant site ditch, and I-82 surface water runoff, as well as the very southern portion of the Mill Pond that receives water from the overflow channel, are not included in AOC 28. The basis for this is the small amount of water from the Mill Site that is contributed to the flow in this channel compared to the other sources of

water into the overflow channel. As described previously, there is no evidence that fill from the Mill Site was placed into the overflow channel or the Mill Pond.

5 Conceptual Site Model

The Conceptual Site Model (CSM) is defined in WAC 173-340-200 as:

> "*Conceptual site model means a conceptual understanding of a site that identifies potential or suspected sources of hazardous substances, types and concentrations of hazardous substances, potentially contaminated media, and actual and potential exposure pathways and receptors. This model is typically initially developed during the scoping of the remedial investigation and further refined as additional information is collected on the site. It is a tool used to assist in making decisions at a site.*"

The following CSM has been developed for AOC 28 based on the above definition in WAC 173-340-200, the remedial investigation results for the Mill Site as described in the 2021 RI Report and Addendum (Barr 2021a), the remedial investigation and subsequent investigation results for the Landfill Site (Landau, 2015, Landau 2021), the review of aerial photographs, current conditions, and previous investigations on the east side of I-82 described in Section 3 and provided in Exhibit 1 to this Report, and likely future uses of the AOC 28 area. This CSM is the CSM described as *"initially developed during the scoping of the remedial investigation"* in the above definition and will be further refined as additional information is collected. Data gaps in the CSM have been identified for further investigation in the AOC 28 RI Addendum as described in Section 6 of this Report and the path forward to the scoping of an FS is described in Section 7.

This AOC 28 CSM is integrated with the CSM for the Mill Site that is described in the 2021 RI Report and Addendum in Section 5.6 of this Report.

5.1 Known Conditions

The AOC 28 RIWP Addendum will investigate the fill containing LYM that may have been transported from the Mill Site during Mill operations and placed in AOC 28, or that resulted from the limited activities that occurred on the southern portion of Parcel D and on Parcel E during Mill operations. The purpose of the investigation will be to determine whether the fill containing LYM has been impacted by hazardous substances above the applicable cleanup levels. The AOC 28 RIWP Addendum will also investigate groundwater east of I-82 that migrates from the Mill Site and from the Landfill Site, and groundwater that may be impacted by the fill containing LYM placed in AOC 28.[6]

To the extent fill containing LYM from former Mill operations is confirmed to be present on the east side of I-82, historical research conducted for this Report and described in Section 3 and Exhibit 1, indicates

[6] As noted in footnote 4, to the extent fill material is found to contain LYM, the presence of LYM in and of itself, is not a hazardous substance under MTCA. Such materials that have not been impacted by hazardous substances above the applicable cleanup levels are not a waste and can be left in place (absent significant adverse impacts to human health or the environment) or beneficially recycled, composted, or reused without restriction, consistent with Ecology guidance.

that such material would be consistent with and typical of the fill containing LYM investigated in the 2019-2021 Remedial Investigation on the Mill Site. There is no evidence that Mill operations involving the storage or use of hazardous substances (e.g., sawmill operations, chemical and fuel storage, vehicle and equipment maintenance, plywood manufacturing, millwork manufacturing, etc.) occurred in AOC 28.

Based on the information in Section 3 and Exhibit 1, it is believed that fill material containing LYM may have been placed on the southernmost portion of Parcel B, in former borrow pits in Parcel C1 and the northern portion of Parcel D, and over most of the southern portion of Parcel D and in Parcel E. The basis for this belief are the review of the historical aerial photos and other historical information related to the six parcels under evaluation and the I-82 corridor, the reconnaissance of the ground surface in the six parcels and the I-82 corridor, and the soil borings and test pits that were placed in the southern portion of Parcel D, in the northern portion of Parcel E, and in the I-82 corridor for the planned construction of Yakima County's Cascade Parkway Phase 3 Project, all as described in Section 3 and Exhibit 1 of this Report.

The AOC 28 CSM includes the concept that a portion of the fill containing LYM that was placed in Parcel C1 and the northernmost portion of Parcel D is located below the groundwater table and that most of the fill containing LYM that was placed in the southern portion of Parcel D and in Parcels B and E is located above the groundwater table. The basis for this is the review of the aerial photos showing water in the borrow pits in Parcel C1, and the northernmost portion of Parcel D before filling occurs, the absence of any evidence of excavation or borrow pits on Parcel B, and the logs of test pits and borings from the southern portion of Parcel D and the northern portion of Parcel E that show unsaturated fill containing LYM above the alluvium and the groundwater levels shown in the boring logs. The results from the review of the logs of borings and test pits placed on Parcels D and E are summarized in Section 3.2.4.3 of this Report.

As also discussed in Section 3, I-82 was constructed through a portion of the Mill property that contained LYM resulting from Mill operations including the placement of LYM and the storage of Mill related materials. The CSM for the I-82 corridor is that most, but not all, of this LYM was removed for geotechnical purposes during construction of the interstate highway. The basis for this conclusion is the logs of borings placed through the I-82 embankment for the Cascade Parkway Phase 3 Project that indicate that only a small amount of LYM ("wood fragments") remains at the embankment fill/alluvium interface at two of the seven boring locations and common engineering and construction practices in the late 1950s/early 1960s to remove soft foundation materials when building a large public works project like an interstate highway.

Figures 3 and 5 show a plan view of the historical features in AOC 28 that are included in this CSM. Figures 6 and 7 are conceptual east-west cross sections across the northern (Figure 6) and southern (Figure 7) portions of AOC 28 and provide conceptual representations of the possible fill containing LYM, potential exposure pathways and potential receptors for AOC 28.

5.2 Potential Sources of Hazardous Substances

As discussed in the Approved RIWP (Barr and Fulcrum 2019) and in Section 2 of this Report, Barr and Fulcrum completed an extensive review of prior investigations, public records, company archives, and knowledge of former operations on the Mill Site as part of the 2019-2021 Remedial Investigation of the Mill Site to identify past activities and COPCs. In the 2019-2021 Remedial Investigation, historical lumber mill operations, plywood manufacturing and supporting activities such as fuel storage and distribution were identified as sources of hazardous substance releases on the Mill Site. The types of hazardous substances released included petroleum hydrocarbons (gasoline, diesel, heavy oils), metals, certain SVOCs, and the VOCs benzene, toluene, ethyl benzene and xylenes. Methane was also determined to be present in soil gas due to the decomposition of LYM and, along the southern border of the Mill Site, by the decomposition of municipal solid waste (MSW) in the adjacent Landfill Site.

The initial list of Mill Site COPCs included in an early draft of the RI Work Plan included petroleum hydrocarbons, metals, VOCs, PCBs, and methane in soil vapor (Barr and Fulcrum 2018). At Ecology's direction, following Ecology's review of the early draft RI Work Plan, additional specific SVOCs (phthalates, naphthalene, carcinogenic PAHs, and pentachlorophenol) and a broad list of chlorinated herbicides and pesticides were added as Mill Site COPCs to the Approved RIWP.

The 2019-2021 Remedial Investigation of the Mill Site provided a great deal of information on Mill-related impacts to soil, groundwater, pond bottoms from former operational ponds on the Mill Site, and soil vapor on the 27 AOCs investigated. Representatives of the Mill Site PLPs and Ecology reviewed the results from the Remedial Investigation and developed a detailed rationale for selecting soil and groundwater COPCs for the Mill Site in accordance with MTCA. This rationale and the resulting COPCs for the Mill Site from the approved 2021 RI Report and Addendum (Barr 2021a) are shown in Appendix A to this Report (Table 3 (soil), Table 4 (groundwater to drinking water pathway) and Table 5 (groundwater to surface water pathway)). These tables are being included in this Report to show the detailed process that was used by the Mill Site PLPs and Ecology to select the soil and groundwater COPCs for the Mill Site as part of the 2019-2021 Remedial Investigation.

The COPCs in Tables 4 and 5 in Appendix A (groundwater pathways) need to be modified slightly for the Mill Site based on work completed following preparation of the 2021 RI Report and Addendum. PCP and bis(2-ethylhexyl)phthalate should not be groundwater COPCs for the Mill Site based on the absence of PCP and bis(2-ethylhexyl)phthalate in four consecutive quarters of supplemental groundwater sampling of several monitoring wells as described in the January 29, 2024 Technical Memorandum submitted to Ecology (Barr 2024).

As described above, Mill-related impacts involving soil containing LYM and impacted groundwater will directly apply to the fill containing LYM that was apparently placed on portions of AOC 28, to the groundwater in AOC 28 impacted by the fill containing LYM, and the groundwater in AOC 28 that originates upgradient on the Mill Site and the Landfill Site. Based on this conclusion, the COPCs that will be used in the AOC 28 CSM and in the AOC 28 RIWP Addendum are those in Table 1, which, for the Mill Site, are the same as the COPCs in Tables 3, 4 and 5 of the approved 2021 RI report and Addendum, in

Appendix A, minus pentachlorophenol and bis (2-ethylhexyl)phthalate for the groundwater pathways. The groundwater COPCs from the Landfill Site remedial investigation are also included in Table 1 and, in addition to the Mill Site COPCs, will be applied to the analysis of samples from monitoring wells in Parcel E that are downgradient of the Landfill Site (Landau 2024). The PCULs for the Mill Site in Tables 3, 4 and 5 in Appendix A may or may not apply to AOC 28 and will be developed as part of the AOC 28 RIWP Addendum or for the AOC 28 RI Report Addendum.

5.3 Impacted Media

Previous investigations of the Mill Site indicate that soil (including fill containing LYM), groundwater, soil gas, pond bottom material from former operational ponds on the Mill Site and surface water (using the groundwater to surface water pathway investigation) have been impacted or could potentially be impacted by past operations at the Mill Site and, in the case of soil gas and groundwater, by possible impacts from MSW at the Landfill Site. For this AOC 28 CSM, it is assumed that impacts from Mill-related operations have potentially impacted soil, groundwater, and surface water (using the groundwater to surface water pathway) in AOC 28. Although future land use is not anticipated to include development/occupied buildings, soil gas will be considered a potentially impacted media for the AOC 28 CSM because, current zoning could theoretically allow for development/occupied buildings, and homeless encampments have the potential to include occupied shelters. Pond bottoms are not included because the east side ponds did not receive discharges from Mill facilities and are not analogous to the operational ponds that were investigated in the Mill Site Remedial Investigation.

5.4 Potential Exposure Pathways

MTCA (WAC 173-340-200) defines an exposure pathway as:

> "The path a hazardous substance takes or could take from a source to an exposed organism. An exposure pathway describes the mechanism by which an individual or population is exposed or has the potential to be exposed to hazardous substances at or originating from a site. Each exposure pathway includes an actual or potential source or release from a source, an exposure point [i.e., the point of potential contact with a hazardous substance], and an exposure route [e.g., ingestion, inhalation, dermal contact]. If the exposure point differs from the source of the hazardous substance, the exposure pathway also includes a transport/exposure medium."

Based on the current understanding of conditions in AOC 28 and current and potential future land use and development scenarios, the AOC 28 CSM includes the following potentially complete exposure pathways:

- **Soil – direct contact pathway:** MTCA requires an evaluation of the soil-direct contact pathway at every site and a concurrent evaluation of ingestion and dermal absorption exposure routes at sites with mixtures of petroleum and hazardous substances. Because most of AOC 28 is unpaved, for the purposes of this CSM, this exposure pathway is considered to be potentially complete for the filled areas in AOC 28 for all soil COPCs in Table 1. The removal of the fill containing LYM from

the County's Cascade Mill Parkway Phase 3 Project area will eliminate this pathway for the excavated area.

- **Soil leaching to groundwater pathway (protection of groundwater):** Hazardous substances including those in Table 1, have the potential to leach from soils and porous paved surfaces to groundwater. Since most of the AOC 28 area is unpaved and the groundwater is shallow, this exposure pathway is considered to be potentially complete for the filled areas in AOC 28 for all soil COPCs in Table 1 for the purposes of this CSM. Empirical downgradient groundwater data may be used to show that this pathway is not complete for certain COPCs. The removal of the fill containing LYM from the County's Cascade Mill Parkway Phase 3 Project area will eliminate this pathway for the excavated area.

- **Soil vapor – receptor pathway:** In soil gas samples collected at in areas with soil containing LYM at the Mill Site, methane has been previously detected at concentrations exceeding the lower exposure limit (LEL) and upper exposure limit (UEL). For this CSM, this exposure pathway is considered to be potentially complete for the filled areas in AOC 28 for recreational users, construction/maintenance workers and individuals occupying homeless encampments. No development or construction of occupied buildings is anticipated on the east side area parcels. The removal of the fill containing LYM from the County's Cascade Mill Parkway Phase 3 Project area will eliminate this pathway for the excavated area.

- **Groundwater – drinking water exposure pathway:** Under MTCA, all groundwater is considered potable unless it is shown through a rigorous approach that it would not be suitable for drinking water. Groundwater in AOC 28 has the potential to contain the groundwater to drinking water pathway COPCs in Table 1. Although it is unlikely that potable water wells will be constructed in AOC 28**,** consistent with MTCA, the drinking water ingestion exposure pathway is considered to be potentially complete for AOC 28.

- **Groundwater-surface water exposure pathway:** Groundwater in AOC 28 has the potential to contain the groundwater to surface water pathway COPCs in Table 1 from groundwater on the Mill Site and from the Landfill Site migrating southeastward to AOC 28 or from leaching from fill containing LYM that originated on the Mill Site and was placed in AOC 28. Groundwater in AOC 28 has the potential to migrate and interact with surface waters east of I-82. The groundwater to surface water exposure pathway is therefore considered to be potentially complete for AOC 28 for the purposes of this CSM.

- **Groundwater-soil vapor-receptor pathway:** Groundwater in AOC 28 has the potential to contain the groundwater COPCs in Table 1 either through migration from the portion of the Mill Site and from the Landfill Site located upgradient of AOC 28 or from releases from the fill containing LYM from the Mill Site placed in AOC 28. Since some of these COPCs can volatilize directly from groundwater into the air via free space in the soil pores, the groundwater-vapor exposure pathway is considered to be potentially complete for recreational users, construction/maintenance workers and individuals in homeless encampments in AOC 28.

5.5 Potential Receptors

A receptor is an individual human (e.g., resident, commercial/industrial worker, construction worker, recreational participant, occasional visitor) or an ecological population (e.g., terrestrial, or aquatic wildlife, terrestrial plants) that has the potential to be exposed to a hazardous substance through a complete exposure pathway.

AOC 28 is zoned as a Suburban Residential District, which by designation would allow the area to be used for residential homes with a density ranging from one unit per five net residential acres to seven units per net residential acre (Yakima County Assessor's Office n.d.). However, AOC 28 is used for recreation with the occasional presence of homeless encampment occupants. AOC 28 is also located in the floodplain/floodway of the Yakima River and development is restricted for that reason.

The following potential receptors will be considered in the CSM, the data gap analysis, and the AOC 28 RIWP Addendum:

- **Public recreational receptors (adults and children).** Members of the public recreating in the filled areas in AOC 28 could potentially be exposed to the COPCs in Table 1 through direct contact (i.e., ingestion, dermal contact) with the soil and groundwater, inhalation of soil particles (i.e., blowing dust) and vapors.
- **Site construction/maintenance workers (adults).** Construction and maintenance workers working in the filled areas in AOC 28 could potentially be exposed to the COPCs in Table 1 through direct contact (i.e., ingestion, dermal contact) with the soil and groundwater and inhalation of soil particles (i.e., blowing dust) and vapors.
- **Homeless encampment occupants (adults and children).** As described in Section 3 of this Report, evidence of homeless encampments exists along the I-82 corridor, primarily outside of AOC 28. These encampments could, however, potentially occur in the filled areas in AOC 28 containing LYM and individuals could potentially be exposed to the COPCs in Table 1 through direct contact (i.e., ingestion, dermal contact) with the soil groundwater, and inhalation of soil particles (i.e., blowing dust) and vapors and to methane accumulation in temporary shelters located on the filled areas.
- **Terrestrial plants and wildlife.** Terrestrial plants and wildlife could potentially be exposed to the soil COPCs in Table 1 in the shallow soils in the filled areas in AOC 28 through direct contact (i.e., uptake, ingestion).
- **Aquatic wildlife.** Aquatic wildlife could potentially be exposed to the soil and groundwater COPCs in Table 1 in AOC 28 through direct contact if hazardous substances are present at concentrations above surface water cleanup levels in the groundwater that discharges to surface waters in AOC 28 or in soil that erodes into the surface waters.

5.6 Integration with West Side CSM

Key parts of the integration of the AOC 28 CSM and the CSM for the Mill Site in the 2021 RI Report and Addendum (Barr 2021a) are explained above as the AOC 28 CSM was developed (e.g., use of Mill Site CSM COPCs for the AOC 28 CSM).

Fill containing LYM from the Mill Site appears to have been transported east of I-82 to fill gravel borrow pits and portions of AOC 28 appear to have been filled with LYM associated with activities on the Mill Site that extended into AOC 28 before I-82 was constructed. Based on these conclusions, the COPCs from the Mill Site CSM logically apply to this CSM for AOC 28.

Likewise, groundwater from the west side of I-82 flows southeastward beneath the I-82 corridor and beneath AOC 28 toward the Yakima River. Thus, the groundwater CSMs for the Mill Site and the Landfill Site, including the groundwater COPCs for each site, fit closely with the groundwater portion of this CSM for AOC 28.

Portions of the CSM for the Mill Site do not apply to the CSM for AOC 28 based on different future land uses (e.g., industrial/commercial use on the Mill Site and recreational users and occupants of homeless encampments for AOC 28).

Also, the CSM for the Mill Site includes consideration of historical operations involving the use and storage of hazardous substances, whereas the CSM for AOC 28 does not include historical operations involving the use and storage of hazardous substances.

More details regarding the integration of the Mill Site CSM in the 2021 RI Report and Addendum with the CSM for AOC 28 may be provided in the AOC 28 RIWP Addendum and/or in the AOC 28 RI Report Addendum upon completion of the AOC 28 RI.

6 Data Gap Analysis

A data gap analysis was conducted to assess how well AOC 28 has been characterized. As described in Section 3 of this report, the existing characterization of the nature, magnitude, and extent of Mill-related impacts in AOC 28 is largely limited to the portions of Parcels D and E and the I-82 corridor along and adjacent to the alignment of the proposed Cascade Mill Parkway Phase 3 Project. Most of this characterization was conducted for geotechnical reasons and selected soil samples were analyzed in the laboratory to assist with the disposal of investigation derived waste and to understand any construction worker safety issues. This work has been sufficient to show that fill containing LYM is present in the areas studied in Parcels D and E but not sufficient to understand the extent of LYM or determine if Mill Site or Landfill Site impacts are present in the studied area. The soil borings placed through the I-82 embankment where the Cascade Mill Parkway will pass under I-82 provided evidence that virtually all of the LYM that once was present in the future I-82 right of way has been removed during construction of the interstate highway. Any remaining LYM at the base of the I-82 embankment is concluded to be de minimis and not a data gap in characterizing the nature, magnitude, and extent of contamination in the I-82 corridor. The small amounts of LYM that likely exist at the base of the I-82 embankment will be considered in the interpretation of the results from the AOC 28 groundwater investigation.

The following data gaps have been identified and the general approach for closing each data gap is described. The details of the field and laboratory methods and other methods that will be used to close the data gaps will be provided in the AOC 28 RIWP Addendum and will use the detailed procedures that are in the SAP and QAPP that are part of the Approved RIWP (Barr and Fulcrum 2019). A PHASP will be prepared for the work and will be included in the AOC 28 RIWP Addendum. The PHASP will be modeled after the PHASP in the Approved RIWP. In addition, the Inadvertent Discovery Plan that was in the Approved RIWP will be updated and included in the AOC 28 RIWP Addendum.

Data Gap #1 – Characterize the nature, magnitude, and extent of any Mill-related contamination in the fill containing LYM that appears to have been used to backfill various gravel borrow pits and to fill around the borrow pits in low topographic areas in the southern portion of Parcel B, in Parcel C1, and the northern portion of Parcel D. The locations of these apparent areas of fill containing LYM are shown on Figures 3 and 5. This data gap also includes characterizing the nature, magnitude, and extent of any Mill-related impacts in the fill containing LYM in the southern portion of Parcel D and Parcel E where aerial photos indicate that the storage of Mill related materials and/or the placement of LYM likely occurred and where filling with fill containing LYM from the Mill Site may have also occurred. Yakima County has developed a draft work plan to investigate soil and groundwater characteristics in the area of the County's Phase 3 Cascade Parkway Project in portions of Parcels D and E (Maul, Foster & Alongi 2024). The AOC 28 investigation to close this data gap will be coordinated with Yakima County so that investigation efforts are not duplicated.

Closure of this data gap will involve the excavation of test pits through the fill containing LYM and a short distance into the underlying native alluvium. Soil borings will be used if the depth of the fill containing LYM exceeds the depth that test pits can be placed. Soil samples will be collected from the test

pits/borings and analyzed for the soil COPCs in Table 1. The laboratory results will be compared to the Mill Site PCULs. Additional test pits may be placed, if necessary, to define the presence and/or extent of the fill containing LYM without soil sampling for laboratory analysis. The test pits will be logged by an experienced geologist. If groundwater is encountered, the groundwater level in the test pit will be measured and tied into a reference point so the elevation can be entered into sea level datum and considered in the groundwater investigation portion of the work. The test pits will be backfilled after logging and sampling is complete.

Data Gap #2 – Characterize groundwater quality and the groundwater flow regime upgradient and downgradient of the apparent areas of fill containing LYM in AOC 28 and across AOC 28 to investigate any Mill Site or Landfill Site related impacts to groundwater that has migrated downgradient into AOC 28. The impact of groundwater flow from the Mill Site and Landfill Site will be evaluated using groundwater monitoring wells and the groundwater to surface water pathway PCULs for the Mill Site and, where applicable, the Landfill Site COPCs in Table 1. The use of Landfill Site PCULs will be coordinated with the City of Yakima. The AOC 28 groundwater investigation will be coordinated with Yakima County so that investigation efforts are not duplicated.

Closure of this data gap will involve the construction of monitoring wells and the collection of groundwater samples for laboratory analysis of the groundwater COPCs in Table 1 and redox parameters (e.g., DO, ORP, TOC, pH, temperature, specific conductance, total and soluble arsenic, iron, and manganese, nitrate, nitrogen, and sulfate). The laboratory results will be compared to appropriate groundwater PCULs for the drinking water and surface water pathways. The redox data will be used to help interpret the results from the analysis of the groundwater samples for metals (e.g., iron. manganese, and arsenic). The top of each monitoring well casing will be tied into sea level datum and water levels will be measured in the monitoring wells at the time of sampling and perhaps at other times as well. Yakima River water elevations and the water elevation in the present-day ponds in AOC 28 will be measured as appropriate at the times that groundwater levels are measured in the monitoring wells to better understand the groundwater flow regime across AOC 28. The frequency of groundwater sampling (e.g., 2 quarterly samples, 4 quarterly samples) will be specified in the AOC 28 RIWP Addendum. Consideration will be given to measuring groundwater levels (and groundwater quality) in monitoring wells MW-5, MW-6, MW-18, and MW-20 located on the Mill Site upgradient of AOC 28 and monitoring wells MW-105 and MW-108 on the Landfill Site and upgradient of portions of AOC 28 if it is concluded that such additional information will provide a more complete picture of the groundwater flow regime across AOC 28. Landfill Site monitoring well MW-15 will be included in the AOC 28 RIWP Addendum groundwater monitoring plan.

Data Gap #3 – Characterize methane concentrations in soil gas at representative locations in AOC 28 that have fill containing LYM.

Closure of this data gap will involve placing soil gas probes into the soil containing LYM following standard methods and the analysis of the soil gas samples for methane using a landfill gas analyzer. In addition to methane, hydrogen sulfide, carbon monoxide, carbon dioxide, and oxygen levels will be

measured using field instruments. The purpose of this sampling will be to determine if elevated levels of methane are likely to be a concern for AOC 28.

Data Gap #4 – Define regulated wetlands in AOC 28 to help guide placement of test pits, monitoring wells and soil gas probes.

Closure of this data gap will be completed by conducting a wetlands survey of the AOC 28 area as a part of remedial investigation planning. The purpose of the survey will be to generally define the locations of regulated wetlands to guide remedial investigation planning and implementation so as to avoid or minimize impacts to wetlands and buffer areas. Based on the 2023 ground surface reconnaissance, it is considered unlikely that any of the filled areas in AOC 28 are in a regulated wetland. Further, it is considered likely that monitoring wells can be placed outside of any regulated wetlands. The survey will be used to be sure that access to the investigation areas does not encroach on regulated wetlands and, if encroachment cannot be avoided, to plan the encroachment to minimize impacts and satisfy regulatory requirements. More details regarding the delineation of wetlands in AOC 28 will be provided in the AOC 28 RIWP Addendum.

7 Next Steps

Following Ecology's review and comment of this CSM/Data Gaps Report, an AOC 28 RIWP Addendum to the Approved RIWP will be prepared. The Addendum will address Ecology's comments and address the identified data gaps consistent with the process and format used for evaluating the 27 AOCs in the 2019-2021 Remedial Investigation completed for the Mill Site. The AOC 28 RIWP Addendum will incorporate elements of the Approved RIWP that apply to the investigation of AOC 28 and will utilize the COPCs provided in Table 1. The AOC 28 RIWP Addendum will be submitted to Ecology for review and approval.

The AOC 28 RIWP Addendum will describe how the investigation field work will be coordinated with the County's Cascade Mill Parkway Phase 3 Project to provide access to the investigation work sites. The investigation will not duplicate the County's investigation work to characterize the fill containing LYM and the underlying alluvial soils in the County's Cascade Mill Parkway Phase 3 Project area). The County has advised Barr and Fulcrum that LYM in this area will be removed for geotechnical purposes. The groundwater portion of the AOC 28 RIWP Addendum will include all of AOC 28 not covered by the County's investigation work.

The investigation of AOC 28 will be completed as described in the AOC 28 RIWP Addendum after approval by Ecology. An investigation report (AOC 28 RI Addendum Report) will be prepared and submitted to Ecology as an addendum to the approved 2021 RI Report and Addendum (Barr 2021a), consistent with the Agreed Order, the Approved RIWP (Barr and Fulcrum 2019), and the approved AOC 28 RIWP Addendum. As appropriate, the AOC 28 RI Addendum Report will include any revisions to the AOC 28 pre-investigation CSM described in Section 5 of this Report to incorporate the data collected during the AOC 28 investigation. Any refinements appropriate to the Mill Site CSM in the 2021 RI Report and Addendum (Barr 2021a) will also be identified. The AOC 28 RI Addendum will include appropriate figures, tables, and content so it can be evaluated as a standalone document.

After Ecology's approval of the AOC 28 RI Report Addendum, the Mill Site PLPs will work with Ecology to determine the path forward for completing a FS and dCAP consistent with MTCA and Agreed Order DE 13959.

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Table

Table 1
COPCs - Soil, Soil Gas, and Groundwater - AOC 28
East Side Conceptual Site Model and Data Gaps Report
Boise Cascade Mill Site (aka Yakima Mill Site)

SOIL PATHWAY
Analyte
TPH-Gx (gasoline-extended range) - Benzene Present
TPH-Dx (diesel and heavy-oil ranges combined)
Bis(2-ethylhexyl)phthalate
Pentachlorophenol
cPAHs
Benzo(a)anthracene
Benzo(a)pyrene
Benzo(b)fluoranthene
Benzo(k)fluoranthene
Chrysene
Dibenz(a,h)anthracene
Indeno(1,2,3-cd)pyrene
BaP TEQ
Metals (mg/kg)
Arsenic
Cadmium
Copper
Lead
Zinc

SOIL GAS PATHWAY
Analyte
Methane

GROUNDWATER TO DRINKING WATER PATHWAY (2)
Analyte
TPH-Dx (diesel and heavy-oil ranges combined)
Bis(2-ethylhexyl)phthalate(1)
Vinyl chloride(1)
Metals
Arsenic
Iron
Manganese

GROUNDWATER TO SURFACE WATER PATHWAY (2)
Analyte
TPH-Dx (diesel and heavy-oil ranges combined)
Bis(2-ethylhexyl)phthalate(1)
N-Nitrosodiphenylamine(1)
1,2,4-trichlorobenzene(1)
Metals
Arsenic
Cadmium
Copper
Iron
Lead
Manganese
Nickel
Zinc

Notes:

(1) Landfill Site COPC also applicable to monitoring wells located in AOC 28 potentially downgradient of Landfill Site.

(2) Also analyze groundwater samples for: DO, ORP, temperature, specific conductance, total and soluble As, Mn and Fe, NO3, SO4, and TOC for redox and attenuation purposes.

Figures

PARCEL F
181312-14006

PARCEL A
191307-32407

PARCEL B
191307-31002

PARCEL C1
191307-43002

PARCEL C2
191307-41001

I-82 Corridor

PARCEL D
191318-11002

PARCEL E
191318-41002

Rest Haven Rd
Yakima River
Freeway Lake Rd
82
E S St
E R St
E Q St
E P St
E O St
E Sycamore St
Oak St
E N St
Thornton Ln
Murphy Ln
Buwalda Ln
E K St
E J St
E I St
W I St
N 1st St
N 2nd St
N 3rd St
N 4th St
N 5th St
N 6th St
N 7th St
N 8th St
N 9th St
N 10th St
N Nachies Ave
N Front St
E H St
E G St
E F St
E E St
E D St
E Lincoln Ave
N Fair Ave

Parcel Boundary (Owned by Yakima County)
Parcel Boundary (Owned by LSL Properties, LLC)
Mill Site Boundary
Landfill Site Boundary

Aerial Imagery: City of Yakima (2023)

0 300 600 900 1,200
Feet

BARR

EAST SIDE PARCEL MAP
East Area CSM/Data Gaps Report – March 2024
Boise Cascade Mill Site
Yakima, WA

FIGURE 1

Aerial Imagery: City of Yakima (2023)

Parcel Boundary

Contour (ft MSL) (Puget Sound LiDAR Consortium (PSLC), 2005)

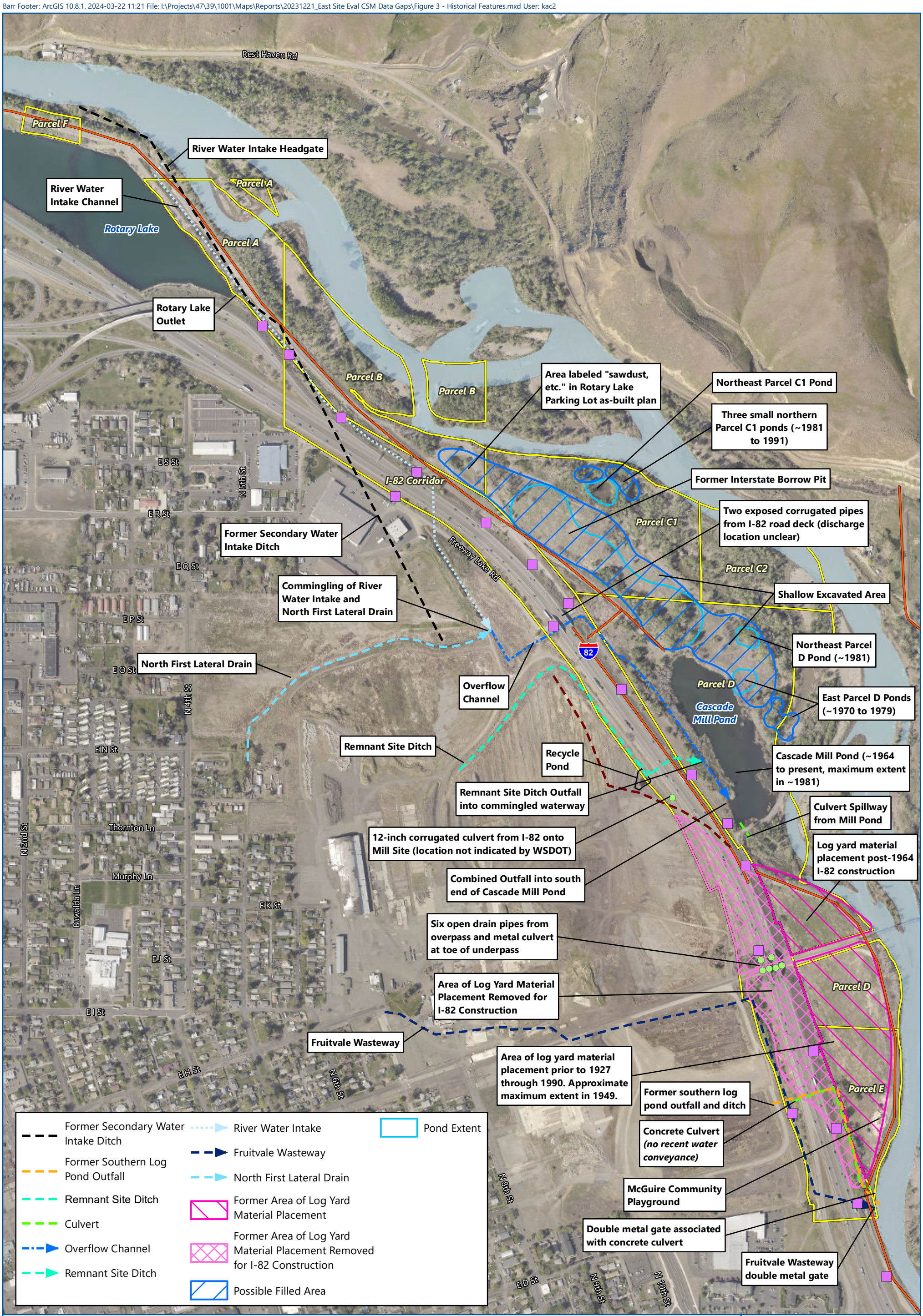
0 300 600 900 1,200

Feet

BARR

TOPOGRAPHIC MAP
East Area CSM/Data Gaps Report – March 2024
Boise Cascade Mill Site
Yakima, WA

FIGURE 2



Aerial Imagery: City of Yakima (2023)

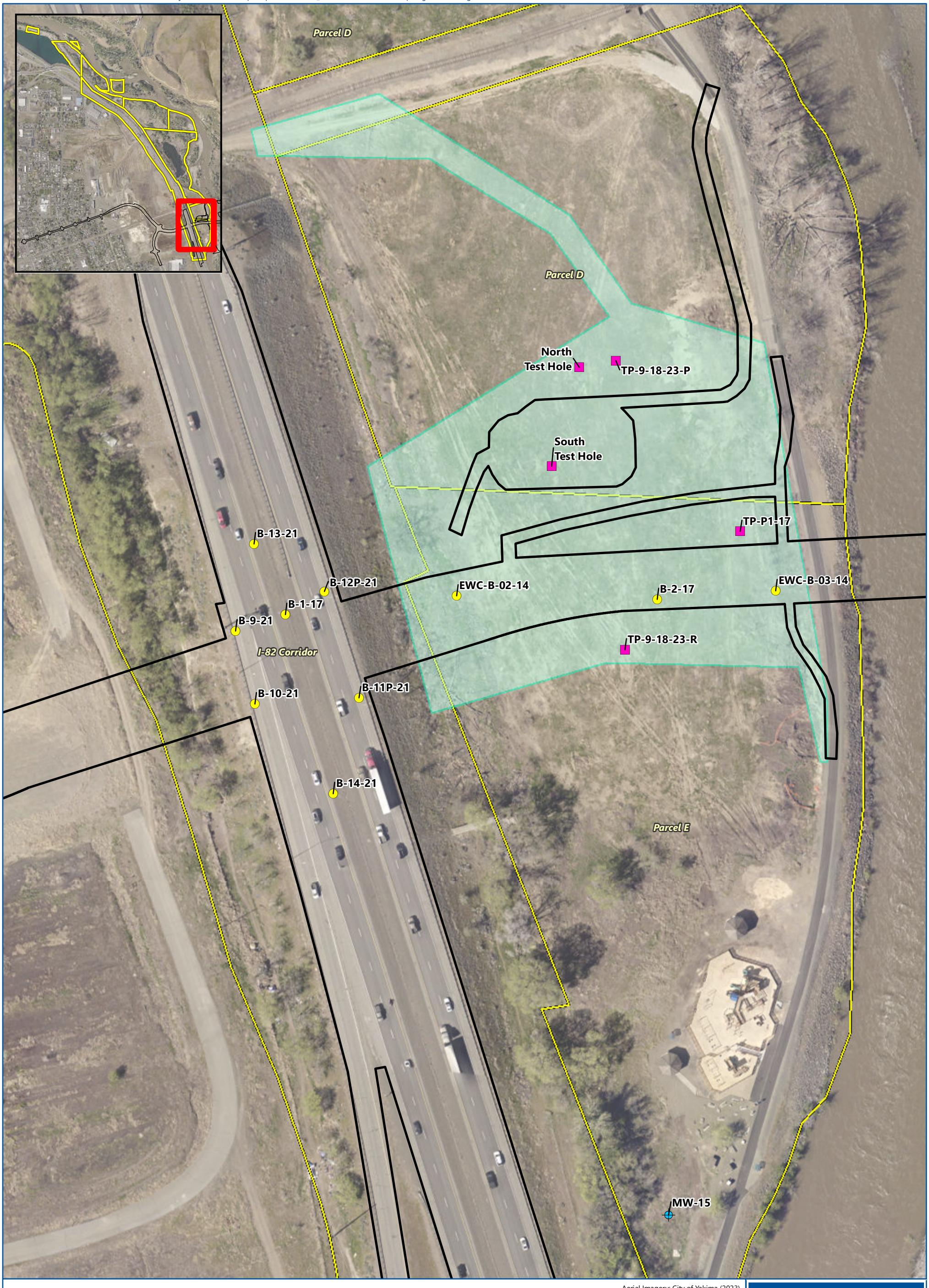
Parcel Boundary
Current Levee (Approximate)
1954 Levee (Approximate)
I-82 Stormwater Discharge Point (Approximate) (WSDOT Phase I and II 2009 NPDES Municipal Stormwater Permit Areas)
Drain from Overpass

0 550 1,100
Feet

BARR

HISTORICAL SITE FEATURES
East Area CSM/Data Gaps Report – March 2024
Boise Cascade Mill Site
Yakima, WA

FIGURE 3



Parcel Boundary
County Roadway Project Area
Road Alignment (Approximate)
Soil Boring by Yakima County
Test Pit by Yakima County
Landfill Site Monitoring Well on Parcel E

Aerial Imagery: City of Yakima (2023)

0 100 200
Feet

BARR

BORING AND TEST PIT LOCATIONS - CASCADE MILL PARKWAY PROJECT
East Area CSM/Data Gaps Report – March 2024
Boise Cascade Mill Site
Yakima, WA

FIGURE 4

Parcel B
Parcel B
Parcel B
Area labeled "sawdust, etc." in Rotary Lake Parking Lot as-built map
Northeast Parcel C1 Pond
Three small northern Parcel C1 ponds (~1981 to 1991)
Parcel C1
Shallow Excavated Area
Former Interstate Borrow Pit
Parcel C2
Freeway Lake Rd
Northeast Parcel D Pond (~1981)
Parcel D
Cascade Mill Pond
East Parcel D Ponds (~1970 to 1979)
82
I-82 Corridor
Log yard material placement post-1964 I-82 construction
Parcel D
Area of log yard material placement prior to 1927 through 1990. Approximate maximum extent in 1949.
Parcel E
McGuire Community Playground
E G St
N 7th St
E F St
N 6th St
N 6th St
E E St

Parcel Boundary
AOC 28 Boundary
Former Area of Log Yard Material Placement
Possible Filled Area

Aerial Imagery: City of Yakima (2023)

N

0 350 700
Feet

BARR

AOC 28 BOUNDARY
East Area CSM/Data Gaps Report – March 2024
Boise Cascade Mill Site
Yakima, WA

FIGURE 5

SOUTHWEST

NORTHEAST

Elevation, Feet (MSL)

1090
1075
1060
1045
1030
1015

I-82

EMBANKMENT FILL

Overflow channel

Yakima Greenway

Flood Protection Levee

LEVEE EMBANKMENT FILL

Direct Contact Pathway

Temporary homeless encampment

Ecological exposure

Shallow excavated area

Reducing groundwater condition (potential metals liberation)

Yakima River

Reducing groundwater condition from upgradient (potential metals liberation; extent unknown)

Groundwater flow direction

Groundwater discharge to river - Groundwater to Surface Water Pathway

Former borrow pit

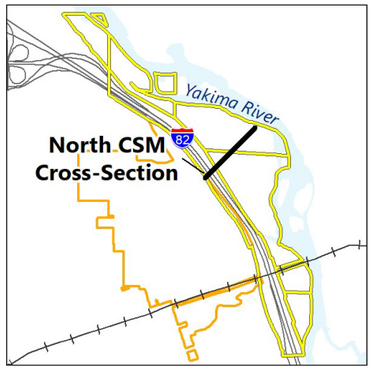
FILL and LYM

Soil Vapor (methane) Receptor Pathway and Groundwater Soil Vapor Receptor Pathway

Future potable well on site (hypothetical) - Groundwater Ingestion and Direct Contact Pathway

Soil Leaching to Groundwater Pathway

ALLUVIUM - GRAVEL WITH SAND AND COBBLES AND VARIABLE SILT AND CLAY IN LENSES



BARR

Inferred Geologic Contact

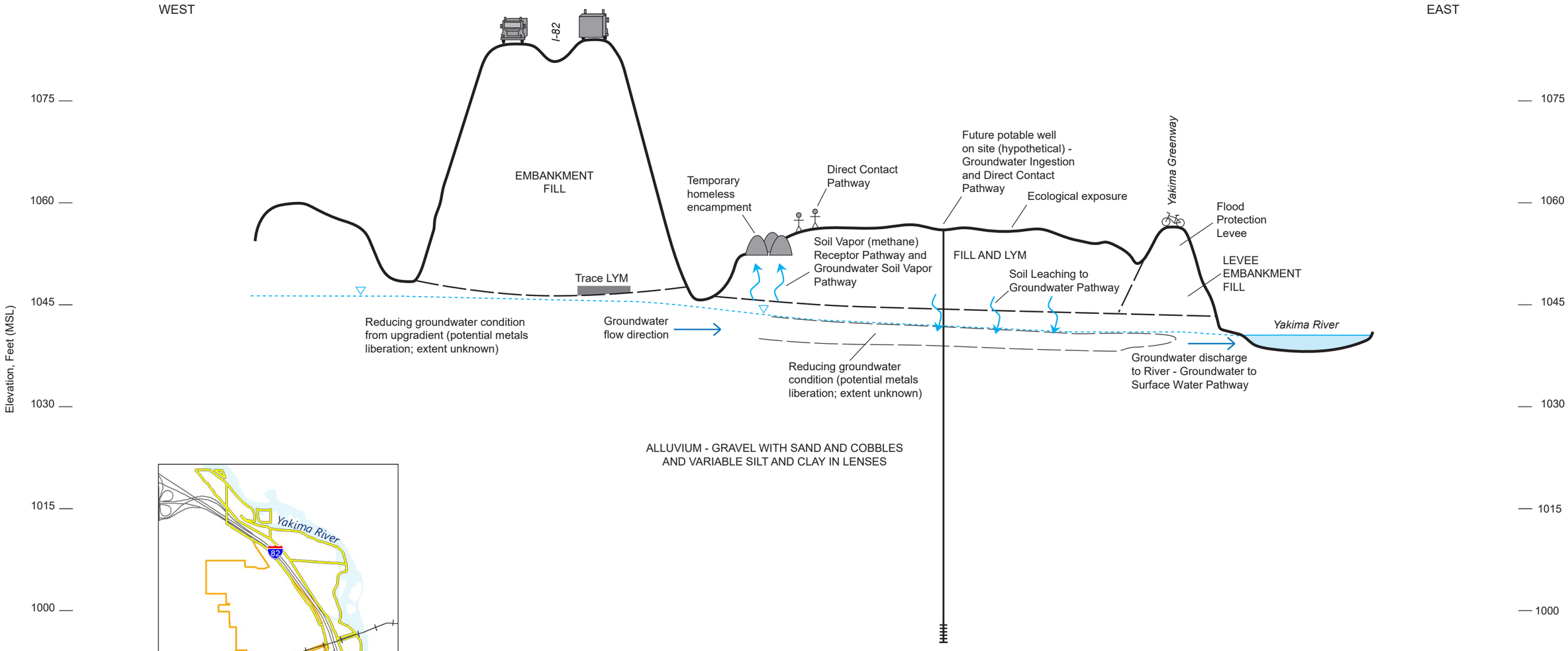
Approximate Groundwater Table

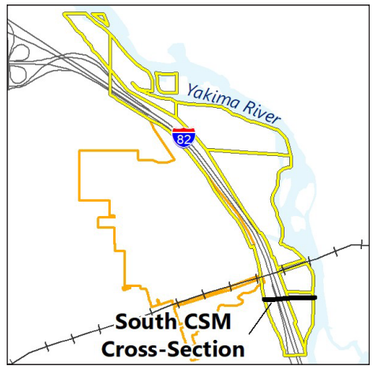
0 100 200

Approximate Horizontal Scale in Feet
Approximate 7x Vertical Exaggeration

NORTH CSM CROSS SECTION AOC 28
East Area CSM/Data Gaps Report - March 2024
Boise Cascade Mill Site
Yakima, WA

Figure 6





BARR

Inferred Geologic Contact

Approximate Groundwater Table

0 100 200

Approximate Horizontal Scale in Feet
Approximate 7x Vertical Exaggeration

SOUTH CSM CROSS SECTION AOC 28
East Area CSM/Data Gaps Report - March 2024
Boise Cascade Mill Site
Yakima, WA

Figure 7

Appendix A

Development of Mill Site Contaminants of Potential Concern (COPCs)

From *Revised Draft Remedial Investigation Report with Addendum, November 2021*

Table 3
PCULs and COPCs - Soil
Remedial Investigation Report
Yakima Mill Site

Analyte	CAS	Soil Method A (mg/kg)	Soil Method B Direct Contact (mg/kg)	Soil Method B Protection of Groundwater (mg/kg)	Method B Protection of Surface Water (mg/kg)	Simplified TEE Unrestricted (mg/kg)	Agreed upon PQL (mg/kg)	Natural Background (mg/kg)	PCUL (mg/kg)	Highest Recorded Value (mg/kg) [1]	COPC?	Basis for PCUL?	Notes (2)
TPH-Gx (gasoline-extended range) - Benzene Present	x	3.00E+01	x	3.00E+01	3.00E+01	2.00E+02	5.00E+00	x	3.00E+01	1.80E+02	y	Method A	
TPH-Dx (diesel and heavy-oil ranges combined)	x	2.00E+03	x	2.00E+03	2.00E+03	4.60E+02	2.50E+01	x	4.60E+02	2.89E+04	y	Method A, TEE	
Acetone	67-64-1	x	7.20E+04	2.89E+01	x	x	5.00E-01	x	7.20E+04	ND	n		
Benzene	71-43-2	3.00E-02	1.80E+01	2.74E-02	5.47E-02	x	2.35E-02	x	1.80E+01	1.52E-01	n		
Bis(2-ethylhexyl)phthalate	117-81-7	x	7.10E+01	1.33E+01	1.11E+00	x	5.30E-02	x	4.45E-01	1.26E+00	y	Soil>GW>SW	
Butyl benzyl phthalate	85-68-7	x	5.30E+02	1.28E+01	1.70E-01	x	5.20E-02	x	5.30E+02	2.41E-01	n		
Carbon tetrachloride	56-23-5	x	1.40E+01	4.16E-02	8.33E-03	x	5.00E-02	x	1.40E+01	ND	n		
Chloroform	67-66-3	x	3.20E+01	7.36E-02	3.13E-01	x	2.21E-02	x	3.20E+01	1.57E-01	n		
1,2 Dibromethane (EDB)	106-93-4	5.00E-03	5.00E-01	2.67E-04	x	x	5.00E-03	x	5.00E-01	ND	n		
1,2 Dichloroethane (EDC)	107-06-2	x	1.10E+01	2.40E-02	4.27E-02	x	2.00E-02	x	1.10E+01	ND	n		
Ethylbenzene	100-41-4	6.00E+00	8.00E+03	5.85E+00	1.00E-01	x	2.92E-02	x	8.00E+03	6.10E+00	n		
Methyl ethyl ketone (2-Butanone)	78-93-3	x	4.80E+04	x	x	x	5.00E-02	x	4.80E+04	ND	n		
Methyl tertiary butyl ether (MTBE)	1634-04-4	x	5.60E+02	1.03E-01	x	x	5.00E-02	x	5.60E+02	ND	n		
Methylene chloride	75-09-2	2.00E-02	9.40E+01	2.15E-02	4.30E-02	x	5.00E-02	x	9.40E+01	ND	n		
Napthalene	91-20-3	5.00E+00	1.60E+03	4.45E+00	1.36E+02	x	4.23E-02	x	1.60E+03	1.08E+01	n		
Pentachlorophenol	87-86-5	x	2.50E+00	1.58E-02	1.58E-03	1.10E+01	4.10E-02	x	4.10E-02	1.27E-01	y	Method B, Soil>GW>SW	
Tetrachloroethylene (PCE)	127-18-4	5.00E-02	4.80E+02	4.99E-02	2.40E-02	x	5.00E-02	x	4.80E+02	4.95E-02	n		
Toluene	108-88-3	7.00E+00	6.40E+03	7.06E+00	3.74E-01	x	2.23E-02	x	6.40E+03	2.35E+01	n		
Trichloroethylene (TCE)	79-01-6	3.00E-02	1.20E+01	3.15E-02	6.29E-03	x	5.00E-02	x	1.20E+01	ND	n		
Vinyl Chloride	75-01-4	x	6.70E-01	5.77E-03	5.77E-03	x	5.00E-02	x	6.70E-01	ND	n		
Xylenes	1330-20-7	9.00E+00	1.60E+04	1.42E+01	5.07E-01	x	5.91E-02	x	1.60E+04	1.49E-01	n		
cPAHs													
Benzo(a)anthracene	56-55-3	x	x	x	7.16E-01	x	5.00E-02	x	x	1.08E+01	n		
Benzo(a)pyrene	50-32-8	1.00E-01	1.90E-01	3.88E+00	1.42E-01	3.00E+01	5.00E-02	x	1.90E-01	1.02E+01	y	Method B	Empirical Demonstration for Soil>GW>SW
Benzo(b)fluoranthene	205-99-2	x	x	x	2.46E+00	x	5.00E-02	x	x	8.05E+00	n	Soil>GW>SW	Empirical Demonstration for Soil>GW>SW
Benzo(k)fluoranthene	207-08-9	x	x	x	7.87E-01	x	5.00E-02	x	x	6.48E+00	n		
Chrysene	218-01-9	x	x	x	7.96E-01	x	5.00E-02	x	x	1.06E+01	n		
Dibenz(a,h)anthracene	53-70-3	x	x	x	7.52E-02	x	5.00E-02	x	x	1.53E+00	n	Soil>GW>SW	Empirical Demonstration for Soil>GW>SW
Indeno(1,2,3-cd)pyrene	193-39-5	x	x	x	6.94E+00	x	5.00E-02	x	x	2.79E+00	n		
BaP TEQ	x	1.00E-01	1.90E-01	3.88E+00	1.42E-01	x	5.00E-02	x	1.90E-01	1.30E+01	y	Method B	Empirical Demonstration for Soil>GW>SW
Metals (mg/kg)													
Arsenic	7440-38-2	2.00E+01	6.70E-01	2.92E+00	1.46E+00	2.00E+01	3.22E-01	2.00E+01	2.00E+01	2.92E+01	y	Nat. Background	
Cadmium	7440-43-9a	2.00E+00	8.00E+01	6.90E-01	9.94E-02	2.50E+01	1.72E-01	1.00E+00	1.00E+00	4.15E+00	y	Nat. Background	
Chromium VI	18540-29-9	1.90E+01	2.40E+02	1.92E+01	3.84E+00	4.20E+01	5.51E-01	4.20E+01	4.20E+01	6.70E-01	n		
Total Chromium	7440-47-3	x	x	x	x	4.20E+01	5.00E-01	4.20E+01	x	x	n		
Copper	7440-50-8	x	3.20E+03	2.84E+02	4.88E+00	1.00E+02	2.57E-01	3.60E+01	3.60E+01	9.75E+01	y	Nat. Background	
Iron	7439-89-6	x	5.60E+04	x	x	x	5.00E+00	5.15E+04	5.60E+04	x	n		
Lead	7439-92-1	2.50E+02	x	3.00E+03	5.00E+02	2.20E+02	2.57E-01	1.70E+01	2.20E+02	1.87E+03	y	Method A, Soil>GW>SW, TEE	
Manganese	7439-96-5a	x	3.70E+03	x	x	x	1.00E-01	1.10E+03	3.70E+03	x	n		
Nickel	7440-02-0	x	1.60E+03	1.30E+02	6.78E+01	1.00E+02	6.44E-01	4.60E+01	6.78E+01	3.65E+01	n		
Silver	7440-22-4	x	4.00E+02	1.36E+01	5.44E-01	x	8.69E-02	x	4.00E+02	9.98E-01	n		
Zinc	7440-66-6	x	2.40E+04	5.97E+03	1.24E+02	2.70E+02	6.44E-01	8.60E+01	1.24E+02	5.61E+02	y	Soil>GW>SW, TEE	

Notes:
1 Potential false positive values based on blank data validation procedures are excluded.
2 If wells between contamination and surface water are clean, then the empirical data has demonstrated that the Soil>GW>SW palthway is incomplete.

Table 4
PCULs and COPCs - Groundwater to Drinking Water
Remedial Investigation Report
Yakima Mill Site

Analyte	CAS	H.H. GW Method A (ug/L)	H.H. GW Method B (ug/L)	Final Protective Value (ug/L)	Agreed Upon PQL (ug/L)	PCUL (ug/L)	Highest Value Detected (ug/L) [1]	COPC ?	Basis for PCUL ?	Notes
TPH-Gx (gasoline-extended range) - Benzene Present	x	8.00E+02	x	8.00E+02	2.50E+02	8.00E+02	<50	n		
TPH-Dx (diesel and heavy-oil ranges combined)	x	5.00E+02	x	5.00E+02	2.50E+02	5.00E+02	8.76E+05	y	MTCA A	Applies to all GW wells
Acetone	67-64-1	x	7.20E+03	7.20E+03	1.00E+00	7.20E+03	6.28E+00	n		
Benzene	71-43-2	5.00E+00	5.00E+00	5.00E+00	1.00E+00	5.00E+00	8.19E-02	n		
Bis(2-ethylhexyl)phthalate	117-81-7	x	6.00E+00	6.00E+00	5.00E-01	6.00E+00	7.38E-01	n		
Butyl benzyl phthalate	85-68-7	x	4.61E+01	4.61E+01	2.00E-01	4.61E+01	<0.612	n		
Carbon tetrachloride	56-23-5	x	5.00E+00	5.00E+00	1.00E+00	5.00E+00	<.625	n		
Chloroform	67-66-3	x	1.41E+01	1.41E+01	1.00E+00	1.41E+01	2.19E+00	n		
1,2 Dibromethane (EDB)	106-93-4	1.00E-02	5.00E-02	5.00E-02	1.00E-02	5.00E-02	<0.0861	n		
1,2 Dichloroethane (EDC)	107-06-2	5.00E+00	4.81E+00	5.00E+00	1.00E+00	5.00E+00	<0.0831	n		
Ethylbenzene	100-41-4	7.00E+02	7.00E+02	7.00E+02	1.00E+00	7.00E+02	<1	n		
Methyl ethyl ketone (2-Butanone)	78-93-3	x	x	x	1.00E+00	x	<5	n		
Methyl tertiary butyl ether (MTBE)	1634-04-4	2.00E+01	2.43E+01	2.43E+01	1.00E+00	2.43E+01	<1	n		
Methylene chloride	75-09-2	5.00E+00	5.00E+00	5.00E+00	1.00E+00	5.00E+00	<1	n		
Napthalene	91-20-3	1.60E+02	1.60E+02	1.60E+02	1.00E+00	1.60E+02	6.34E-01	n		
Pentachlorophenol	87-86-5	x	1.00E+00	1.00E+00	1.00E-01	1.00E+00	8.09E-01	n		
Tetrachloroethylene (PCE)	127-18-4	5.00E+00	5.00E+00	5.00E+00	1.00E+00	5.00E+00	<1	n		
Toluene	108-88-3	1.00E+03	6.40E+02	1.00E+03	1.00E+00	1.00E+03	3.27E+00	n		
Trichloroethylene (TCE)	79-01-6	5.00E+00	4.00E+00	5.00E+00	1.00E+00	5.00E+00	<0.5	n		
Vinyl Chloride	75-01-4	2.00E-01	2.92E-01	2.92E-01	1.00E+00	1.00E+00	1.49E-02	n		
Xylenes	1330-20-7	1.00E+03	1.60E+03	1.60E+03	1.00E+00	1.60E+03	<1	n		
cPAHs										
Benzo(a)anthracene	56-55-3	x	x	x	1.00E-01	x	<0.102	n		
Benzo(a)pyrene	50-32-8	1.00E-01	2.00E-01	2.00E-01	7.30E-03	2.00E-01	1.05E-02	n		
Benzo(b)fluoranthene	205-99-2	x	x	x	1.00E-01	x	2.35E-01	n		
Benzo(k)fluoranthene	207-08-9	x	x	x	3.20E-02	x	<0.0315	n		
Chrysene	218-01-9	x	x	x	1.00E-01	x	<0.102	n		
Dibenz(a,h)anthracene	53-70-3	x	x	x	2.10E-03	x	2.48E-03	n		
Indeno(1,2,3-cd)pyrene	193-39-5	x	x	x	1.00E-01	x	<0.102	n		
BaP TEQ	x	1.00E-01	2.00E-01	2.00E-01	7.30E-03	2.00E-01	2.87E-02	n		
Metals										
Arsenic	7440-38-2	5.00E+00	5.00E+00	5.00E+00	2.50E+00	5.00E+00	1.12E+01	y	MTCA A; MTCA B	Applies to all GW wells
Cadmium	7440-43-9a	5.00E+00	5.00E+00	5.00E+00	2.00E-01	5.00E+00	1.02E+00	n		
Chromium VI	18540-29-9	5.00E+01	4.80E+01	5.00E+01	1.00E+00	5.00E+01	x	n		
Total Chromium	7440-47-3	5.00E+01	x	5.00E+01	1.00E+00	5.00E+01	1.74E+01	n		
Copper	7440-50-8	x	6.40E+02	6.40E+02	5.00E-01	6.40E+02	1.95E+02	n		
Iron	7439-89-6	x	x	x	1.00E+03	x	5.60E+04	x		
Lead	7439-92-1	1.50E+01	1.50E+01	1.50E+01	1.00E+00	1.50E+01	9.36E+00	n		
Manganese	7439-96-5a	x	x	x	2.00E+01	x	5.93E+03	x		
Nickel	7440-02-0	x	1.00E+02	1.00E+02	2.00E+00	1.00E+02	8.83E+01	n		
Silver	7440-22-4	x	8.00E+01	8.00E+01	2.00E-01	8.00E+01	1.60E+00	n		
Zinc	7440-66-6	x	4.80E+03	4.80E+03	3.50E+00	4.80E+03	1.31E+02	n		

Notes:
1 Potential false positive values based on blank data validation procedures are excluded.

Table 5
PCULs and COPCs - Surface Water
Remedial Investigation Report
Yakima Mill Site

Analyte	CAS	H.H. SW Method B (ug/L)	H.H. SW ARAR (ug/L)	SW Eco (ug/L)	Final Protective Value (ug/L)	Agreed Upon PQL (ug/L)	PCUL (ug/L)	Highest Value Detected (ug/L) [1]	COPC ?	Basis for PCUL ?	Notes (2)
TPH-Gx (gasoline-extended range) - Benzene Present	x	8.00E+02	x	1.00E+03	8.00E+02	2.50E+02	8.00E+02	<50	n		
TPH-Dx (diesel and heavy-oil ranges combined)	x	5.00E+02	x	3.00E+03	5.00E+02	2.50E+02	5.00E+02	8.76E+05	y	H.H. SW MTCA B	
Acetone	67-64-1	x	x	x	x	1.00E+00	x	6.28E+00	x		
Benzene	71-43-2	2.30E+01	4.40E+01	1.00E+01	1.00E+01	1.00E+00	1.00E+01	8.19E-02	n		
Bis(2-ethylhexyl)phthalate	117-81-7	3.60E+00	4.50E-02	x	4.50E-02	5.00E-01	5.00E-01	7.38E-01	y	PQL	
Butyl benzyl phthalate	85-68-7	8.20E+00	1.30E-02	x	1.30E-02	6.10E-01	6.10E-01	<0.628	n		
Carbon tetrachloride	56-23-5	4.90E+00	2.00E-01	x	2.00E-01	1.00E+00	1.00E+00	<.625	n		
Chloroform	67-66-3	5.60E+01	6.00E+01	x	6.00E+01	1.00E+00	6.00E+01	2.19E+00	n		
1,2 Dibromethane (EDB)	106-93-4	x	x	x	x	1.00E-02	x	<0.0861	x		
1,2 Dichloroethane (EDC)	107-06-2	5.90E+01	8.90E+00	x	8.90E+00	1.00E+00	8.90E+00	<0.0831	n		
Ethylbenzene	100-41-4	6.90E+03	2.90E+01	1.20E+01	1.20E+01	1.00E+00	1.20E+01	<1	n		
Methyl ethyl ketone (2-Butanone)	78-93-3	x	x	x	x	1.00E+00	x	<5	x		
Methyl tertiary butyl ether (MTBE)	1634-04-4	x	x	x	x	1.00E+00	x	<1	x		
Methylene chloride	75-09-2	5.90E+02	1.00E+01	x	1.00E+01	1.00E+00	1.00E+01	<1	n		
Napthalene	91-20-3	4.90E+03	x	x	4.90E+03	1.00E+00	4.90E+03	6.34E-01	n		
Pentachlorophenol	87-86-5	1.50E+00	2.00E-03	1.30E+01	2.00E-03	1.00E-01	1.00E-01	8.09E-01	y	PQL	
Tetrachloroethylene (PCE)	127-18-4	1.00E+02	2.40E+00	x	2.40E+00	1.00E+00	2.40E+00	<1	n		
Toluene	108-88-3	1.90E+04	5.70E+01	5.30E+01	5.30E+01	1.00E+00	5.30E+01	3.27E+00	n		
Trichloroethylene (TCE)	79-01-6	4.90E+00	3.00E-01	x	3.00E-01	1.00E+00	1.00E+00	<0.5	n		
Vinyl Chloride	75-01-4	3.70E+00	2.00E-02	x	2.00E-02	1.00E+00	1.00E+00	1.49E-02	n		
Xylenes	1330-20-7	x	x	5.70E+01	5.70E+01	1.00E+00	5.70E+01	<1	n		
cPAHs											
Benzo(a)anthracene	56-55-3	x	1.60E-04	x	1.60E-04	1.00E-01	1.00E-01	<0.105	n		
Benzo(a)pyrene	50-32-8	3.50E-02	1.60E-05	x	1.60E-05	7.30E-03	7.30E-03	1.05E-02	n	PQL	Empirical Demonstration
Benzo(b)fluoranthene	205-99-2	x	1.60E-04	x	1.60E-04	1.00E-01	1.00E-01	2.35E-01	n	PQL	Empirical Demonstration
Benzo(k)fluoranthene	207-08-9	x	1.60E-03	x	1.60E-03	3.20E-02	3.20E-02	<0.0315	n		
Chrysene	218-01-9	x	1.60E-02	x	1.60E-02	1.00E-01	1.00E-01	<0.105	n		
Dibenz(a,h)anthracene	53-70-3	x	1.60E-05	x	1.60E-05	2.10E-03	2.10E-03	2.48E-03	n	PQL	Empirical Demonstration
Indeno(1,2,3-cd)pyrene	193-39-5	x	1.60E-04	x	1.60E-04	1.00E-01	1.00E-01	<0.105	n		
Total Toxicity Equivalent (1) Concentration (TEQ)	x	3.50E-02	1.60E-05	x	1.60E-05	7.30E-03	7.30E-03	2.87E-02	n	PQL	Empirical Demonstration
Metals											
Arsenic	7440-38-2	9.80E-02	1.80E-02	1.50E+02	1.80E-02	2.50E+00	2.50E+00	1.12E+01	y	PQL	
Cadmium	7440-43-9a	x	x	7.20E-01	7.20E-01	2.00E-01	7.20E-01	1.02E+00	y	PQL	
Chromium VI	18540-29-9	4.90E+02	x	1.00E+01	1.00E+01	1.00E+00	1.00E+01	x	n		
Total Chromium	7440-47-3	x	x	x	x	1.00E+00	x	1.74E+01	n		
Copper	7440-50-8	2.90E+03	1.30E+03	1.10E+01	1.10E+01	5.00E-01	1.10E+01	1.95E+02	y	SW Eco	
Iron	7439-89-6	x	1.00E+03	1.00E+03	1.00E+03	1.00E+03	1.00E+03	5.60E+04	y	HH SW ARAR; SW Eco	
Lead	7439-92-1	x	x	2.50E+00	2.50E+00	1.00E+00	2.50E+00	9.36E+00	y	SW Eco	
Manganese	7439-96-5a	x	5.00E+01	x	5.00E+01	2.00E+01	5.00E+01	5.93E+03	y	HH SW ARAR	
Nickel	7440-02-0	1.10E+03	8.00E+01	5.20E+01	5.20E+01	2.00E+00	5.20E+01	8.83E+01	y	SW Eco	
Silver	7440-22-4	2.60E+04	x	3.20E+00	3.20E+00	2.00E-01	3.20E+00	1.60E+00	n		
Zinc	7440-66-6	1.70E+04	2.30E+03	1.00E+02	1.00E+02	3.50E+00	1.00E+02	1.31E+02	y	SW Eco	

Notes:
1 Potential false positive values based on blank data validation procedures are excluded.
2 If wells between contamination and surface water are clean, then the empirical data has demonstrated that the Soil>GW>SW palthway is incomplete.

Exhibit 1

East of I-82 and I-82 Corridor Document Review and Site Reconnaissance Memorandum

Fulcrum Environmental Consulting, Inc, March 28, 2024

FULCRUM environmental consulting

Memorandum

DATE	March 28, 2024
TO	Allan Gebhard, John Greer, Barr Engineering Co.
FROM	Erica Simmons, GIT, Fulcrum Environmental Consulting, Inc. Ryan K. Mathews, CIH, CHMM, Fulcrum Environmental Consulting, Inc.
RE	**East of I-82 and I-82 Corridor Document Review and Site Reconnaissance**
SUBJECT	Boise Cascade Mill Site (aka Yakima Mill Site), Yakima, Washington Agreed Order No. DE 13959 FSID 450

In their February 27, 2023 letter to Barr Engineering Co. (Barr), the Washington State Department of Ecology (Ecology) directed that OfficeMax, LLC (OfficeMax)/Dunollie Enterprises, LLC/LeeLynn, Inc. & Wiley Mt., Inc./Yakima Resources, LLC (Owners), collectively the PLPs for the Boise Cascade Mill Site (Mill Site), complete an evaluation of six parcels (Parcels A through F on Figure 1 in Attachment A) located east of the Boise Cascade Mill Site. These parcels were conveyed by way of donation through a quit claim deed to the Yakima River Greenway Foundation (Greenway Foundation) in January 1987 and then conveyed again by quit claim deed to Yakima County (County) in January 1988. It was determined by 1989 that Parcel 191307-41001 (referred herein as Parcel C2) had been mistakenly included in the 1987 and 1988 quit claim deeds and the 1988 Greenway Foundation to County conveyance was corrected in 1989 to exclude Parcel C2. Parcel 191307-41001 was never owned by Boise Cascade, and so was not legally conveyed to the Greenway Foundation or the County. It is currently owned by LSL Properties, LLC. The portion of Parcel 191307-41001 shown on Attachment A, Figure 1 was evaluated in this report as part of the area referred to as "Parcel C." The parcels are located east of Interstate 82 (East of I-82 properties).

In subsequent communications, Ecology noted that they were also interested in any past activities within the I-82 corridor adjacent to the Mill Site (I-82 Corridor).

Fulcrum Environmental Consulting, Inc. (Fulcrum) has completed a review of historical documents and a site reconnaissance of the East of I-82 properties, and the I-82 corridor as directed in Ecology's February 2023 letter and clarified through subsequent project communications.

This memorandum includes the following attachments:

Attachment A Figures
- Figure 1 – Parcel Map prepared by HLA
- Figure 2 – 2022 Aerial with Parcels and I-82 Corridor Boundaries
- Figure 3 – Historical Site Features
- Figure 4 – Levee Locations (1940, 1954, 1966, and 2015)
- Figure 5 – Site Reconnaissance Photograph Locations

Attachment B Site Photographs
Attachment C Historical References
Attachment D Ecology File Letters and Photographs

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Project tasks were completed consistent with the historical research and site reconnaissance efforts described in ASTM E1527-21: *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process* and ASTM E2247-16: *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process for Forestland or Rural Property*. This review was prepared by, or under the direction of Environmental Professionals, defined in 40 CFR 312.10(b), as a professional with at least 5-years of relevant experience, meeting the education, training, and experience requirements, and demonstrating the technical capabilities to complete environmental investigations and Phase I ESAs. The names and qualifications of the Environmental Professionals responsible for this review and memorandum are at the end of the document.

Executive Summary

Fulcrum completed a review of the East of I-82 properties and the I-82 corridor. The review consisted of site reconnaissance of accessible portions of the properties and a review of historical documents, including aerial photographs, topographic maps, and miscellaneous drawings and other information obtained from public records requests, online resources, or sourced in Fulcrum's library collection. The present-day tax parcel boundaries established by Yakima County were used to define the general area of review. Fulcrum's evaluation extended to the shoreline of the Yakima River.

The review found the following:

- No significant buildings or constructed features are visible on the East of I-82 properties in the historical records. Small structures were present in the log yard areas, typical of single-room unconditioned office sheds, and within the southern portion of the I-82 corridor prior to construction of I-82 and appear to have been associated with a former agricultural field that preceded the log yards.
- Flood levees were constructed on the East of I-82 properties in the 1940s and have generally been maintained in their current location since that time except for the center of the area where levees were relocated for I-82 construction. In the 1980s the Yakima Greenway pathway was established generally on top of the levees.
- The south portions of Parcel D, south of the railroad, and all of Parcel E were used for the placement and/or storage of log yard material from the 1920s until December 31, 1990, with limited additional placement thereafter until April 4, 1991. Placement in these areas extended onto the current I-82 corridor prior to construction of I-82.
- Borrow pits were excavated for aggregate presumably to support interstate construction in the early 1960s. Two of these borrow pits remain and are the present-day Rotary Lake and Cascade Mill Pond. A third pit, called the "interstate borrow pit" for this work, was filled with materials in the 1970s. Aerial photographs and ground reconnaissance suggest that the fill came from the Mill Site and likely contained log yard material.
- Other smaller minor borrow pits were also excavated on Parcel C1 and Parcel D in the 1970s. The reason these borrow pits were excavated is unknown. One of these minor borrow pits remains in the north portion of Parcel C1 and is called the "northeast Parcel C1 pond" For this work.

- Log yard material is visible at the ground surface in the Rotary Lake Park and Ride parking lot (southeast corner of Parcel B), in the footprint and east of the interstate borrow pit (on Parcel C1 and Parcel D), and on the portions of Parcel D north and south of the railroad, and on all of Parcel E.
- Minor presence of broken concrete, asphalt, brick, metal scrap rubber hose, tire pieces, and other debris was observed in areas of log yard material on the ground surface.
- No equipment, vehicles, or building foundations were observed on the six parcels during site reconnaissance.
- Water features on the East of I-82 properties include those identified during evaluation of the Mill Site (including the River Water Intake, Overflow Channel from the River Water Intake, Remnant Site Ditch, North First Lateral Drain, and Fruitvale Wasteway).
- Additional historical water features in the area include outfalls from the north log pond and south log pond, and a minor water channel west and generally parallel to the River Water Intake channel (present prior to 1964).
- Stormwater associated with I-82 includes sheet flow from the highway; collection and conveyance of highway runoff in metal culverts; and drains from overpass roadways.

Evaluated Properties

The evaluated properties consist of three separate areas, the six tax parcels located east of the I-82 corridor that were once owned by Boise Cascade and are presently owned by Yakima County, the I-82 corridor once part of parcels owned by Boise Cascade and now owned by the State of Washington and maintained by the Washington State Department of Transportation (WSDOT), and Parcel C2, owned by LSL Properties, LLC. See Figure 2 in Attachment A for the boundaries of the parcels and the I-82 corridor.

The I-82 corridor adjacent to the Mill Site was acquired by the State of Washington from Boise Cascade for construction of State Highway No. 3, later integrated into the interstate system as I-82 (generally understood to have been completed in 1963 and first shown in a 1964 aerial photograph). For review purposes, the I-82 corridor was defined based on the present-day interstate right-of-way boundaries to locations where it aligns with the western extent of Parcel A to the north and the southern extent of Parcel E to the south.

In March 2023, HLA Engineering and Land Surveying, Inc. (HLA) reviewed the legal descriptions of the parcels in the January 1987 Quit Claim Deed from Boise Cascade to the Greenway Foundation and prepared a figure showing the current tax parcels that are representative of that property. The 1987 legal descriptions define the parcels using both metes and bounds descriptions and by defining some of the parcels to be "lying southwesterly of Yakima River and northeasterly of the State Highway right-of-way", or similar. These parcels were conveyed by way of donation through a quit claim deed to the Yakima River Greenway Foundation in January 1987 and then conveyed again by quit claim deed to Yakima County in January 1988. By 1989 it was determined that Parcel 191307-41001 (referred herein as Parcel C2) had been mistakenly included in the 1987 and 1988 quit claim deeds and the 1988 Greenway Foundation to County conveyance was corrected in 1989 to exclude Parcel 191307-41001 (Parcel C2). Parcel 191307-41001 was

never owned by Boise Cascade, and so was not legally conveyed to the Greenway Foundation or the County. Parcel C2 is currently owned by LSL Properties, LLC.

Figure 1 in Attachment A which shows the boundaries of the parcels defined as the following present-day Yakima County tax parcels:

- Parcel A: Yakima County parcel 191307-32407
- Parcel B: Yakima County parcel 191307-31002
- Parcel C1: Yakima County parcel 191307-43002
- Parcel C2: Yakima County parcel 191307-41001
- Parcel D: Yakima County parcel 191318-11002
- Parcel E: Yakima County parcel 191318-41002
- Parcel F: Yakima County parcel 181312-14006

Parcels A through E are contiguous. Parcel F is located about 1,200-feet northwest of Parcel A. Land between Parcel A and Parcel F is owned by the Washington Department of Fish and Wildlife.

The present-day tax parcel boundaries established by Yakima County were used to define the general area of review; however, Fulcrum's evaluation extended to the shoreline of the Yakima River.

Site Reconnaissance

On March 10, June 19, November 10 and 13, 2023, Ryan Mathews and Amanda Enbysk from Fulcrum completed a reconnaissance of accessible portions of the parcels and the I-82 corridor. Supplemental reconnaissance of the I-82 corridor was completed by Amanda Enbysk on December 5, 6 and 7, 2023. In addition, pictures of a portion of the East of I-82 properties were taken in 2017 in association with earlier work. Photographs collected during site reconnaissance from 2017 to the present were reviewed and are in Attachment B with brief descriptions of content. See Attachment A, Figure 3 for a summary of features identified on historical aerial photographs; Figure 4 for former and current levee locations; and Figure 5 for the locations of the site photographs.

Consistent with ASTM E2247-16, current and historical aerial photographs were reviewed prior to the site reconnaissance and were used to ensure that all accessible locations of known or suspected activities were visited.

The parcels east of the I-82 corridor consist of the Yakima River flood levees; the Yakima Greenway, located atop the flood levee system; and the open land between the interstate and the Yakima River (Attachment B, photographs B3.1, B5.1, B5.2, and B16.4). Portions of the current tax parcels include islands in the river that are inaccessible during some portions of or all of the year. The flood levee system is maintained by Yakima County with both local and federal funding.

I-82 is a four-lane divided highway. Two overpass sections are located in the area of review, a north overpass allowing vehicle travel to the Yakima Greenway Rotary Lake Park & Ride (Attachment B,

photograph B23.1), and a south overpass providing one lane of vehicle passage and the BNSF Railway Moxee Branch Rail Line (Moxee Line) (Attachment B, photographs B17.3, B18.1, B21.4). One rail overpass of the Greenway is located on the Moxee Line, a short trestle near the west end of the railroad bridge over the Yakima River in Parcel D (Attachment B, photographs on pages 21 and 23).

The former River Water Intake structure for the Mill is located north of Parcel A. The concrete structure with metal gates is heavily sedimented. The gate operations were disabled, and the gate was welded shut in about 2007 as a portion of the temporary donation of the surface water right in Washington State's trust water right program (Attachment B, photographs B1.3 and B1.4). A small volume of water appeared to be leaking through the gate at the time of the reconnaissance and likely during periods of the year with higher river water elevations.

The East of I-82 properties generally consist of pathways, open areas with low vegetation, and areas of dense vegetation and trees. Localized wet areas are located in and around the area. In the areas of the parcels, the Yakima Greenway consists of a hot mix asphalt pathway, localized concrete features, bridges, fishing docks, pit toilets, signage, benches, picnic tables, and other features typical of a public trail area. See Attachment B for representative photographs.

Two concrete structures, appearing to be related to former bridge locations are present in the main channel of the Yakima River, one north of Parcel A and one east of Parcel B (Attachment B, photograph B6.1).

The Sunrise Rotary Park McGuire Community Playground is located at the southern portion of Parcel E (Attachment B, photograph B19.2).

Fulcrum completed reconnaissance of water features on the parcels and the I-82 corridor. In addition to the Yakima River, there are three primary surface water features: Rotary Lake (lying between I-82 and the Yakima Greenway, Attachment B, photograph B1.2 and B1.4); an unnamed pond (referred to as the "northeast Parcel C1 pond", Attachment B, photograph B10.3); and the Cascade Mill Pond (located within the boundary of Parcel D, Attachment B, photograph B16.1).

Log yard material was present on the ground surface in open areas with limited surface vegetation where past filling has likely occurred (Attachment B, photograph B10.4). These locations were consistent with the footprint of the interstate borrow pit visible in aerial photographs in the 1960s and 1970s on Parcel C1 and Parcel D and with areas of log yard material placement on Parcel D near the Moxee Line, and Parcel E (Attachment B, photographs B9.3, B9.4, B11.2, B11.4, B12.4, B18.2, B18.3, B18.4, B24.2, B24.3, B24.4, B25.1, B25.2, and B25.4). No equipment, vehicles, or building foundations were observed on the six parcels.

Minor presence of broken concrete, asphalt, brick, metal scrap rubber hose, tire pieces, and other debris was observed in areas of log yard material on the ground surface (Attachment B, photographs B8.4, B9.2, B10.3, B11.3, B12.1, B12.2, B12.3, and B24.2).

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Evidence of homeless encampments was present in localized areas, primarily located outside of the East of I-82 properties along the I-82 corridor, including in areas where the chain link fence along the corridor has been cut. Large amounts of clothing and other debris are common in areas used as encampments (Attachment B, photograph B7.4 and B14.2).

Areas of large concrete debris, appearing to be sourced from past I-82 construction projects, were observed along the slope of I-82.

The management of stormwater on I-82 was not clear from the site renaissance. WSDOT reports about 19 specific stormwater management locations, located primarily on the east side of the interstate. Observed stormwater management methods included sheet flow off the roadway, discharge piping located in the overpass structures, and corrugated culverts visible below the overpasses but with unidentified discharge locations (Attachment B, photographs B21.1, B21.2, B21.3, B23.2, B23.3, and B26.3).

Historical Review

Fulcrum obtained historical documents from Environmental Data Resources, of Shelton, Connecticut. Additional historical records were requested, purchased, accessed, or otherwise obtained from the following public agencies and resources:

- Yakima County
- City of Yakima
- Washington State Department of Ecology (Ecology)
- Washington State Department of Transportation (WSDOT)
- U.S. Army Corps of Engineers (USACE) (no responsive documents were provided)
- University of Washington Libraries (*online*)
- United States Geological Survey (USGS)
- Yakima Valley Libraries (*online*)
- Yakima Health District (YHD)
- Google Earth
- Library of Congress Sanborn Fire Insurance Map collection (*online*)

USACE reported that there were no records responsive to the public records request. Fulcrum's request to WSDOT was limited to a request for aerial photographs and did not seek to gain access to planning, construction or other records associated with the construction of I-82 since these records would have been over 60 years old and voluminous.

Fulcrum reviewed aerial photographs, topographic maps, public agency records, photographs, and other available historical records from the above sources for the East of I-82 properties and the I-82 corridor to determine if Mill operations or impacts extended to the parcels or the I-82 corridor and to determine areas of potential environmental impact. Historical references are included in Attachment C.

Historical review of the parcels east of I-82 and the I-82 corridor was primarily focused on a review of aerial photographs, surveys, and maps that show the parcels. Aerial photographs were provided by EDR, Yakima County, USGS, Google Earth, and WSDOT. Maps with information about portions of the parcels were primarily provided by Yakima County, many of which were prepared by the USACE for levee projects associated with flood control along the Yakima River. The City of Yakima did not report any building or construction permits for the parcels. Based on the review of the records acquired during Fulcrum's search, the aerial photographs, surveys, and maps in Table 1 were determined to provide the most complete information about the parcels east of I-82 and the I-82 corridor. Tables 2 through 16 provide individual summaries of the aerial photographs and other resources detailing changes observed on the individual parcels at the time intervals in which changes were indicated. The aerial photographs and other resources are provided in Attachment A to this memorandum.

Aerial photographs show that the Yakima Greenway pathway that is present on the parcels east of I-82 was completed in approximately 1988 and has been maintained and repaired since that time. The Yakima Greenway is present primarily as a pathway on top of the river flood protection levee in this portion of the Greenway system. See Attachment A, Figure 4 for the current and former levee locations. The river levee along this portion of the Yakima River was originally constructed in about 1947, with further levee development extending to the present time. An easement document provided by Yakima County provides the 1947 conveyance of Boise Cascade property to Yakima County for construction of the flood protection levee. The easement follows the observed levee location and includes the following term:

> "Since the construction by the United States, and perpetual maintenance by Yakima County of the bank protection works along the South and West bank of the Yakima River, as called for in this easement, will necessitate movement of part of a sawdust or refuse pile, it is agreed that before the sawdust and refuse in this pile is moved, the Management of the Cascade Lumber Mills, Inc. will be consulted so that satisfactory arrangements can be made for the disposition of the sawdust and refuse so moved".

The specific location of the referenced sawdust and refuse pile is not identified in the easement or in other documents reviewed for this memorandum. The easement was granted by the President of Cascade Lumber Mills, Inc. on October 31, 1947. See Attachment C for the easement documents.

The Yakima Greenway's Rotary Lake Park and Ride parking lot and the Sunshine Rotary Park playground are present on Parcels B and E, respectively (Attachment B, photograph B4.1, B18.2 and B19.2). These are the only developments on the East of I-82 properties. Aerial photographs show that the Rotary Lake Park and Ride parking lot was completed in approximately 1988, around the same time that the Yakima Greenway was completed. As-built drawings completed for the Rotary Lake Park and Ride parking lot identify "sawdust, etc." in the central portion of the parking lot.

Fulcrum completed a review of past surface water features on and through the parcels and the I-82 corridor shown in drawings and aerial photographs. The summary of these past water features is provided in the historical review section of this memorandum and the features are shown on Attachment A, Figure 3. *Note:*

a separate water features memorandum specific to the Mill Site was prepared by Fulcrum in November 2017 and is included as Attachment B of the January 2019 Revised Final Remedial Investigation Work Plan.

Parcel Summaries

A detailed review of the historical resources by parcel is provided in Tables 2 through 16. Photographs of current conditions are in Attachment B. The historical resources discussed in Tables 2 through 16 are in Attachment C. See Attachment A, Figure 5 for photograph locations.

Parcel A:

The majority of Parcel A was within the Yakima River until between 1971 and 1973 when the river stage shifted slightly to the northeast, creating a larger riverbank consistent with the present bank. The riverbank has been observed to be covered with natural vegetation using aerial photographs and reconnaissance. Rotary Lake is present along the southwest boundary of the parcel. Rotary Lake was excavated concurrently with the construction of I-82, sometime between about 1956 and 1962 and was likely excavated for use as a gravel source to support interstate construction. Rotary Lake and other features described in this memorandum are shown on Attachment A, Figure 3.

The northeast portion of the parcel is on an island that remains within the river and is inaccessible except by crossing the water. The river flood protection levee with a pathway above the levee is apparent along what became Rotary Lake by the time of the 1947 aerial photograph. The pathway on top of the river levee was connected to the Yakima Greenway system in about 1988.

No land use or impacts associated with Mill operations were noted on Parcel A in Fulcrum's historical review or reconnaissance.

Parcel B:

The river historically and currently crosses through the center of Parcel B with a portion of the parcel on the southwest riverbank and the rest of the parcel an island that remains within the river and is inaccessible except by crossing the water. The river flood protection levee and the Yakima Greenway are currently present along the southwest boundary of the parcel. The river levee with a pathway on top of the levee is present in the southwest parcel boundary at the time of the 1947 aerial photograph. The pathway on the river levee was later connected to the Yakima Greenway system in about 1988. I-82 is present along the south boundary of the parcel.

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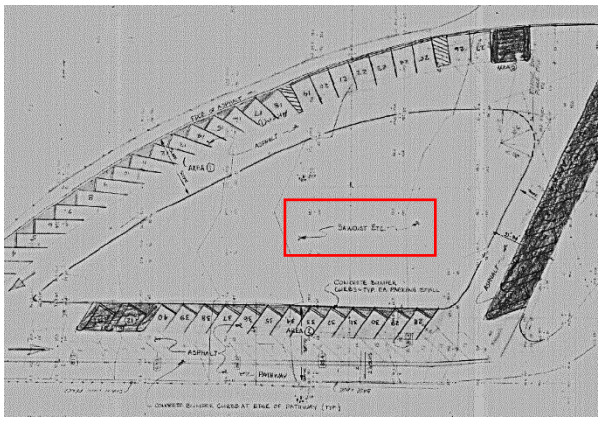
By 1968, the southeast corner of the parcel is mostly free of vegetation until the development of the Yakima Greenway's Rotary Lake Park and Ride parking lot. The parking lot is first visible in a 1991 aerial photograph and was likely constructed with the establishment of the Yakima Greenway in about 1988. An undated as-built map provided by Yakima County for the Rotary Lake Park and Ride parking lot identifies the area in the center of the parking lot loop as "sawdust, etc.". Based on the identification of sawdust in the Rotary Lake parking lot, it is concluded that log yard material placement extended into the southeast portion of Parcel B.



Rotary Lake Park & Ride As-Built depicting "Sawdust Etc." on Parcel A (see Attachment C for the as-built drawing)

Historical research shows that possible Mill-related impact to Parcel B is limited to the presence of log yard materials in the southeast corner of the parcel.

Parcel C1 and Parcel C2:

The area mapped as Parcel C1 and Parcel C2 historically and currently consists primarily of land between the Yakima River and I-82, south of Parcel B plus river islands in the northeast portion of Parcel C2. The river islands are inaccessible except by crossing the water. Aerial photographs support the conclusion that the river islands in Parcel C2 consist of river deposits and natural vegetation. The river flood protection levee with a pathway on top is present along the southwest Parcel C1 boundary by the time of the 1947 aerial photograph. The pathway on the river levee was connected to the Yakima Greenway trail system in about 1988.

A river channel is present to the east of the flood protection levee in Parcel C1 until the channel changes to a pond between 1956 and 1964 (the "interstate borrow pit"), that extends onto Parcel D. The interstate borrow pit was formed at the same time as the construction of I-82 and appears to have been excavated as a gravel source to support interstate construction. A pathway is present at the present-day underpass beneath I-82 and connects Parcel C1 and the Mill Site after construction of I-82. In the 1971 aerial photograph, the interstate borrow pit appears to have backfill material placed in the northeast portion of the pond, with additional backfill observed in the 1974 aerial photograph. The portion of the interstate borrow pit on Parcel C1 is entirely backfilled by the time of the 1977 aerial photograph. The backfill material could be log yard material or other material such as gravel. The surface of the backfilled interstate borrow pit footprint is not vegetated to the present day. Areas immediately around the interstate borrow pond footprint appear to have had log yard material also placed. The interstate borrow pit footprint and areas of observed log yard material was not on Parcel C2 in any of the historical resources reviewed or in the site reconnaissance.

A series of small ponds is shown in the north portion of Parcel C1 in the 1974 aerial photograph with one of the ponds (designated the northeast Parcel C1 pond) remaining to the present day. Dense vegetation surrounds the present-day pond.

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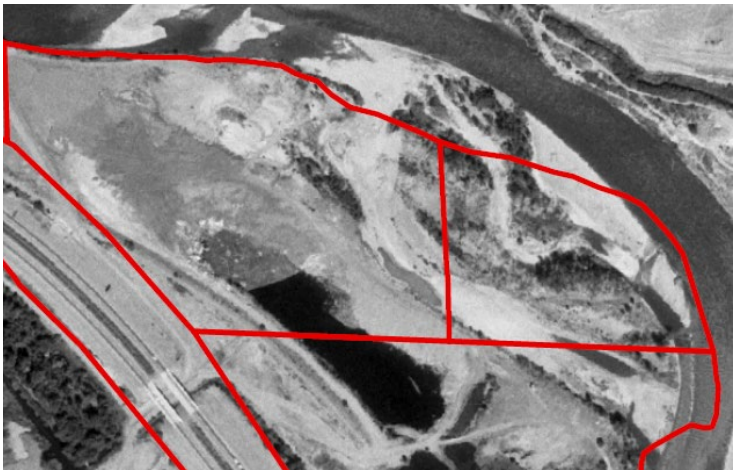
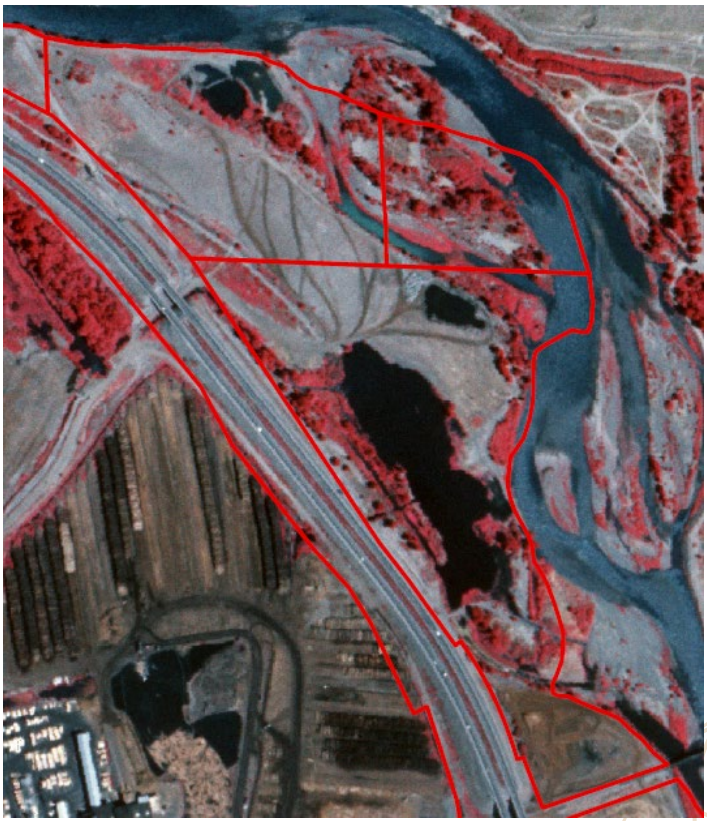
Log yard material placement appears to have occurred in portions of Parcel C1. The backfilled interstate borrow pit on Parcel C1 appears to have been filled with log yard material or some other fill. Pathways appear to lead from the Mill Site on the west side of I-82 to the filled interstate borrow pit. Other smaller ponds appear to have been excavated on the parcel for gravel production and then later backfilled, except for the remaining northeast Parcel C1 pond. This pond is located east of the levee and the Yakima Greenway Rotary Lake Park and Ride parking lot.



1974 EDR Aerial - Backfill of the interstate borrow pit (see Attachment C for the aerial photograph)

Historical review did not identify any use or apparent impacts to Parcel C2.

Portions of Parcel C1 appear to have been potentially impacted by Mill-related activities. Parcel C2 does not appear to have been impacted by Mill-related activities.



1981 EDR Aerial depicting backfill, ponds, and gravel production on Parcels C and D (see Attachment C for the aerial photograph)

Parcel D:

Parcel D extends about 3,000 feet from north to south, beginning near the north I-82 underpass and extending beyond the Moxee Line railroad tracks. The present-day Cascade Mill Pond (Mill Pond) is located within Parcel D. Current and historical use on the northern about two-thirds of Parcel D has been generally consistent with the historical use of Parcel C1. While the current and historical use of the southern about one-third of Parcel D has been consistent with the historical use of Parcel E.

The majority of Parcel D is located on the southwest riverbank and has remained a consistent size and shape since the earliest

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aerial photograph in 1927. An early aerial photo shows stream braiding and a channel present on Parcel D north of the railroad by 1927 that was connected to one of log ponds on the Mill Site.

The river flood protection levee was constructed in the 1940s. The Yakima Greenway extends from the already developed portion of the Greenway further south to the existing pathways along the flood protection levee by 1988. The original north portion of the river levee ended near the center of Parcel D, at the north end of the present-day Mill Pond. Levee upgrades in the 1950s extended northwestward across what is now the I-82 corridor onto the Mill Site. The levee was reconstructed east of I-82 when I-82 was constructed. The present levee extends west from the original north portion of the levee and follows I-82 south until connecting to the existing south portion of the levee south of the Mill Pond. See Figure 3 for the current levee location and Figure 4 for the previous levee locations.

1966 Levee Repair Map with sawdust pile indicated on Parcels D & E (see Attachment C for the map)

The interstate borrow pit present on Parcel C1 extended onto Parcel D, and was present at the location of a former river channel that appears to have been excavated as a gravel source to support interstate construction. The present-day Mill Pond is present in the 1964 aerial photograph. The interstate borrow pit that extends from Parcel C1 to north of the Mill Pond is separated from the Mill Pond by a pathway. The pathway appears to connect to the Mill Site through the I-82 underpass and extends east past the Mill Pond and the interstate borrow pit. An oval stockpile of material, potentially log yard material or gravel, is present on Parcel D near the underpass in the 1964 aerial photograph. Northeast of the Mill Pond are small areas of apparent excavation. By 1971, aerial photographs show these areas of apparent excavation as multiple small ponds that may have been used as gravel sources (east Parcel D ponds on Figure 3). By 1981, the majority of the ponds east of the Mill Pond appear to have been backfilled. An additional small pond is present to the north (northeast Parcel D pond) and is next to what appears to be a small gravel pile. The Mill Pond remains to the present-day and does not appear to have received any backfill.

The portion of Parcel D south of the Moxee Line railroad tracks, has a lighter surface coloration than the surrounding area in the 1927 aerial photograph. This lighter color extends west across the eventual I-82 corridor and onto the Mill Site, and south onto Parcel E. The lighter color is consistent with sawdust-type material. A perimeter pathway is visible surrounding the area. The 1939 aerial photograph shows this area

to be larger and to extend south to encompass most of Parcel E west of the levee. A small ditch is present traversing the area within the eventual I-82 corridor. By 1956, piles of additional material are visible on Parcel D north of the railroad, with all piled material west of the river levee.

A 1966 levee repair map identifies a sawdust pile on Parcels D and E north and south of the railroad, and, as described earlier in this memorandum, the 1947 levee easement identifies a "sawdust and refuse pile" somewhere along the west and south bank of the Yakima River within the levee easement. No further information on the specific locations of the referenced sawdust and refuse piles was identified. The 1966 levee repair map notes that the sawdust pile has an average depth of 3 to 4-feet. Coloration consistent with sawdust appears to cover most of the area south of the railroad and to extend north of the railroad to about the center of Parcel D by the time of the 1947 aerial photograph. See Figure 3 for the area of possible log yard material placement in Parcel D in 1947.

The sawdust or similar material appears to be arranged into piles and rows in the 1947 and 1949 aerial photographs. Following construction of I-82, areas of material relocation appear to be present along the railroad in Parcel D. The 1971 to 1981 aerial photographs show continued relocation of log yard materials in Parcel D north of the railroad in approximately the 1947 footprint. Log yard equipment travel pathways are darker in color, potentially as a result of water for dust suppression. By the time of the 1989 aerial photograph, the earlier what may have been sawdust, appears to have been graded or removed with the appearance of the land surface being consistent with the natural topography. The area presently is not heavily vegetated with visible log yard materials at the ground surface.

Portions of Parcel D appear to have been potentially impacted by Mill-related activities.

Parcel E:

Parcel E is the southernmost parcel. Parcel E is bound by I-82 to the west and the Yakima River to the east. The parcel has remained a consistent size and shape since the earliest aerial photograph in 1927. In the 1927 aerial photograph, an outfall channel is present extending from the location of an adjoining log pond to the west and running parallel to and along the west parcel boundary until discharging to the Yakima River. The river flood protection levee and the Yakima Greenway are present along the east boundary of the parcel by 1947 and has remained consistent to the present-day. The Yakima Greenway is present by 1988. The Sunshine Rotary Park playground was constructed in the south portion of the parcel in approximately 1996 and is accessed from the Yakima Greenway to the east. See Attachment B, pages 18 through 22 for photographs of Parcel E. See Figure 5 for photograph locations.

Parcel E appears to have a similar history as the south portion of Parcel D. What appears to be sawdust or other log yard material identified on Parcel D in the 1927 aerial photograph extended onto Parcel E in 1927. Only a small portion of the material extended onto Parcel E in the 1927 aerial photograph, with the majority of Parcel E covered by the material by 1947. In the 1964 aerial photograph, a large rectangular pile of material is present in the north portion of the parcel.

The Sunshine Rotary Park playground was completed in approximately 1994. A 1993 letter from the Rotary Park Committee to Ecology clarifies a previous conversation with Ecology regarding encountering bark chip fill on the property during construction of the Sunshine Rotary Park playground.

Most of Parcel E appears to have been potentially impacted by Mill-related activities, principally through the placement or storage of log yard materials.

1947 Yakima County Aerial depicting material on Parcel E (see Attachment C for aerial photographs)

Parcel F:

Parcel F is the northern most parcel and is not contiguous with other parcels or Mill-related operations. Parcel F historically and currently consists of the southwest riverbank and was partially within the river prior to the first observation of the flood protection levee in the 1947 aerial photograph. A pathway appears to have been constructed on top of the levee concurrently with the construction of the original river levee. The pathway on top of the levee was connected to the Yakima Greenway system by 1988. Parcel F is located between Rotary Lake and the river. Rotary Lake was excavated concurrently with the construction of I-82 between about 1956 and 1962 and was likely excavated for use as a gravel source to support interstate construction. Following the construction of I-82 and Rotary Lake, Parcel F is primarily used as a pathway between the Yakima River and Rotary Lake. Vegetation surrounding the pathway to the north and south appears to consist of natural vegetation. See Attachment B, page 1 for photographs of Parcel F. See Attachment A, Figure 5 for photograph locations.

No land use or impacts associated with the Mill operations were noted on Parcel F in Fulcrum's historical review or site reconnaissance.

I-82 Corridor:

Interstate 82 was fully constructed through the corridor by 1964. Construction of the interstate correlates with gravel pits and borrow pits constructed east of the corridor, including those on Parcels C1 and D. The

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off-ramp for northbound Exit 31, at the northern extent of what is defined as the I-82 corridor for purposes of this review, was constructed at the same time as the original interstate. The off-ramp for southbound Exit 33A near the southern extent of the I-82 corridor was constructed in 1996. Prior to interstate construction, Mill operations and other operations unrelated to the Mill appeared to extend to, and in some locations as discussed above, across the corridor.

Two waterways are visible crossing the northwestern portion of the I-82 corridor in the 1927 and 1939 aerial photographs. The River Water Intake is visible to the west of the corridor, consistent with the alignment visible in aerial photographs to the present-day. A second waterway is visible to the west of the River Water Intake and may have received water directly from the Yakima River or may represent some other purpose. Water from this second waterway and water from the River Water Intake, fill a low area north of the north log pond on the Mill Site. In the 1964 aerial photograph, showing the completed I-82, only the River Water Intake remains.

Prior to construction of I-82, most of the I-82 corridor consisted of riverbank and river channels, with a few paths leading from the Mill property to the parcels east of I-82. The portion of the corridor north of the railroad and parallel to the south about half of Parcel D, was used as an extension of a lumber storage area on the Mill property by 1939 and until the construction of the interstate.

Corridor developments south of the railroad are mostly consistent with those on the portion of Parcel D south of the railroad and Parcel E. The material in Parcel D south of the railroad extended into the corridor prior to the 1927 aerial photograph and continued after construction of I-82.

The far southwestern portion of the corridor appears to have been used differently than the more northern portion at the time of the 1927 aerial photograph. The 1927 aerial photograph shows cultivated fields in this portion of what became the I-82 corridor and includes visible structures, consistent with a small farm, in the very southern portion of what is now the I-82 corridor.

A 1920s Sanborn Map indicates the presence of the Yakima Meat Co.'s Abattoir, a slaughterhouse, in the southwestern-most portion of the I-82 corridor. A facility shown in the 1950 and 1952 Sanborn Maps is identified as Gibson Packing Co.'s Abattoir. While shown in different locations between the 1920 and 1950s Sanborn Maps, these appear to reference one facility originally operated by Yakima Meat Co. and later expanded and operated by Gibson Packing Co. The actual location of the facility is visible in aerial photographs that show that the slaughterhouse facility is located south and outside of the I-82 corridor.

Multiple outfall and drainage channels formerly crossed the I-82 corridor. Identified drainage channels include the River Water Intake, the Overflow Channel from the River Water Intake, a drainage channel from the north log ponds on the Mill Site, the Fruitvale Wasteway, a drainage channel from the south log pond on the Mill Site and more recently the Mill Site remnant ditch, all as shown on Figure 3.

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Mill Site Wood Waste Landfill:

During the course of collecting and reviewing records, Fulcrum located a letter from Ecology's files discussing the wood waste landfill formerly located at the north portion of the Mill Site west of I-82. Materials were excavated from the landfill and samples were analyzed for contaminants of concern from the underlying soil in 2003. On June 27, 2005, the Yakima Health District issued a letter in which they considered the "wood waste at this site cleaned."

Within Ecology's files are photographs of log yard material piles dated 1989 and 1991. Fulcrum's review determined that these photographs are likely of piles located south of the railroad tracks on Parcel D and Parcel E. Handwritten notes from the author "D.B.", dated December 21, 1988 includes at item (2) (c), "Woodwaste piles to north of I-82 have been given to Greenway, so assume that these lands no longer of any concern." A March 13, 1991 letter from Ecology to the Yakima Health District reports on a site visit completed by Ecology staff and provides photographs of areas reported to be "located near the Yakima River and the Greenway Trail." A series of letters between Boise Cascade and the Yakima Health District continue in 1991 and 1992 discussing this issue. Later, in a September 11, 1992 letter from Ecology to Yakima Health District discussing the "Boise Cascade Woodwaste facility", Ecology refers to "neighboring areas which we believe have received woodwaste in the past." An included map indicates two areas associated with Parcel C1, Parcel D south of the railroad tracks, and Parcel E. These records are in Attachment D of this memorandum and indicate that LYM may have been placed in these areas until December 31, 1990, with limited additional placement thereafter until April 4, 1991.

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Table 1: Sequential Identified Resource List

Year	Source
1899-1901	*EDR Topographic Map (incomplete)*
1920	Sanborn Fire Insurance Map – title page and detail
1927 *	Yakima County Aerial Photograph
1936	*EDR Topographic Map (incomplete)*
1939 *	EDR Aerial Photograph
1941	*EDR Topographic Map (incomplete)*
1947	Yakima County Aerial Photograph
1947	Yakima County/Cascade Lumber Mills Easement for Levee
1948	*EDR Topographic Map (incomplete)*
1949	County Records: USACE Levee and Channel Improvements site plans
1949 *	USGS Aerial Photograph
1950	Sanborn Fire Insurance Map – title page and detail
1953	*EDR Topographic Map (incomplete)*
1953/1958	EDR Topographic Map
1954	County Records: USACE Flood Control As-Builts (maps)
1955	USGS Aerial Photograph
1956 *	EDR Aerial Photograph
1960s	County Records: Boise Cascade Levee Map *(undated, but approx. 1960)*
1962	WSDOT Aerial Photograph
1964	WSDOT Aerial Photograph
1964 *	EDR Aerial Photograph
1964	USGS Aerial Photograph
1966	County Records: USACE Levee Repair plans (maps)
1968[1]	Yakima County Aerial Photograph
1970 *	WSDOT Aerial Photograph
1971	Yakima County Aerial Photograph
1971 *	EDR Aerial Photograph
1971	USGS Aerial Photograph
1973	WSDOT Aerial Photograph
1974	EDR Topographic Map
1974 *	EDR Aerial Photograph
1974	USGS Aerial Photograph
1977 *	Yakima County Aerial Photograph
1979	WSDOT Aerial Photograph
1981 *	EDR Aerial Photograph
1981	USGS Aerial Photograph
1984	County Records: Yakima River Cross Sections (maps)
1985	EDR Topographic Map
1989 *	WSDOT Aerial Photograph
1980s/90s	County Records: Yakima Greenway Rotary Lake As-Builts Maps
1991 *	WSDOT Aerial Photograph
1992	Yakima County Aerial Photograph

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Year	Source
1993	County Records: Rotary Park Committee letter to Ecology RE: Sunshine Rotary Park Bark Chips
1994 *	Yakima County Aerial Photograph
1994	County Records: Federal Flood Control Project map
1995	*EDR Topographic Map (incomplete)*
1996 *	Yakima County Aerial Photograph
1996	EDR Aerial Photographs
1996	USGS Aerial Photograph
1998 *	Yakima County Aerial Photograph
2002 *	Yakima County Aerial Photograph
2005 *	Yakima County Aerial Photograph
2006	EDR Aerial Photograph
2008	Yakima County Aerial Photograph
2011	Yakima County Aerial Photograph
2011	EDR Aerial Photograph
2013	Yakima County Aerial Photograph
2013	EDR Topographic Map
2015	Yakima County Aerial Photograph
2015	EDR Aerial Photograph
2017	Yakima County Aerial Photograph
2017	EDR Topographic Map
2019	Yakima County Aerial Photograph
2019	EDR Aerial Photograph
2020	EDR Topographic Map
2021	Yakima County Aerial Photograph

[1] Photograph is dated 1968 but appears to show developments consistent with early 1960s

* indicates a resource with good image resolution

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Parcel Information From Identified Resources

Table 2: 1927 Aerial – Yakima County, 1920s Sanborn (only for I-82 Corridor)

Parcel	Developments/Changes
Parcel A	The present-day land associated with Parcel A is mostly shown within the river. The southwest riverbank is present in the southwest portion of Parcel A and appears heavily vegetated. A small river island is present within the river in the northeast portion of Parcel A and appears to consist of natural vegetation and river deposits. Mill operations do not appear to extend to Parcel A.
Parcel B	The present-day land associated with Parcel B is currently shown mostly within the river. The northeastern portion of Parcel B extends onto the northeast riverbank. Small river islands are present within Parcel B and appear to consist of natural vegetation and river deposits. Mill operations do not appear to extend to Parcel B.
Parcel C	The river is present in the north of Parcel C1 and northeast of Parcel C2. The southwest riverbank and northern river islands appear to consist of natural vegetation and river deposits. Mill operations do not appear to extend to Parcel C1 or Parcel C2. Parcel C2 consists of vegetated riverbank.
Parcel D	Parcel D consists mostly of the southwestern riverbank. The river crosses the northeast corner of Parcel D and a river channel generally follows along the west parcel boundary before crossing through the south portion of the parcel (north of the railroad) and outflowing to the river. The railroad tracks pass through the south portion of the parcel. The eastern portions of Parcel D are present along the northeastern riverbank. The portion of Parcel D with land north of the railroad appears to consist of natural vegetation and river deposits. The south portion of Parcel D, south of the railroad tracks, is shown with a lighter coloration. This coloration extends west into the I-82 corridor, further west onto the Mill Site, and south onto Parcel E. This area has a perimeter pathway. Mill Site use of this area appears to be occurring, but the use is unclear.
Parcel E	The east portion of Parcel E is within the river. The northwest corner of Parcel E consists of the same conditions as the south portion of Parcel D. Mill site use of this area appears to be occurring, but the use is unclear. The remainder of Parcel E appears to consist of natural vegetation and river deposits.
Parcel F	At least half of Parcel F is within the river. The south portion of the parcel consists of the southwest riverbank and appears undeveloped with natural riverbank deposits. Mill operations do not appear to extend to Parcel F.
I-82 Corridor	The I-82 corridor use is mostly consistent to the parcels to the east. The River Water Intake and a smaller secondary ditch cross through the northernmost portion of the corridor from the Yakima River to the Mill property and into log ponds. No developments or apparent fill or mining are observed in the corridor. The very northwesternmost portion of the corridor appears to be a part of an agricultural field and distinct from any mill type land use. Agricultural property use does not appear to be associated with the Mill. The middle section of the corridor mostly consists of small river channels that appear to be naturally occurring. The railroad crosses through the south portion of the corridor. South of the railroad is an extension of the use shown on Parcel D and Parcel E and consists of a light color area typical of sawdust-type material. Further south of the railroad there appears to be cultivated fields. While not depictable as structures within the 1927 aerial photograph, features later recognized as small structures are present near the cultivated fields in the southern portion of the corridor. Pathways are present between these structures and the Mill property.

Additional notes: The 1920s Sanborn Map only includes developments shown within the southern portion of the I-82 corridor. No developments are shown on the parcels east of I-82.

Table 3: 1939 Aerial – EDR

Parcel	Developments/Changes
Parcel A	Parcel A appears mostly unchanged from the 1927 aerial photograph and remains partially within the river. The southwest riverbank is now within the southwest portion of Parcel A. The river island in the northeast portion of the parcel is now larger. Mill operations do not appear to extend to Parcel A.
Parcel B	Parcel B appears mostly unchanged from the 1927 aerial photograph and remains partially within the Yakima River with portions of the southwest riverbank and a northern river island. The riverbank and river island appear to consist of natural vegetation and river deposits. Mill operations do not appear to extend to Parcel B.
Parcel C	Parcel C1 and Parcel C2 appear mostly unchanged from the 1927 aerial photograph and consists primarily of the southwest riverbank with two river islands in the north portion of the parcel. The riverbank and river islands appear to consist of natural vegetation and river deposits. Mill operations do not appear to extend to Parcel C1 or Parcel C2.
Parcel D	Parcel D mostly consists of the riverbank with few areas depicted within the river. The majority of the parcel is on the southwest riverbank with the eastern portions of the parcel on the northeast riverbank. Use south of the railroad tracks is unclear; however, the area of light coloration is enlarged and extending across all of Parcel E with a small ditch extending through the area. Mill site use of this area appears to be occurring, but the use is unclear.
Parcel E	Most of Parcel E has a light coloration extending from Parcel D and is encircled by a roadway or pathway. The majority of Parcel E is on the southwest riverbank and vegetation is present along the riverbank on Parcel E. Mill operations of this area appears to be occurring, but the use is unclear.
Parcel F	Parcel F is now mostly on the southwest riverbank and remains undeveloped. Mill operations do not appear to extend to Parcel F.
I-82 Corridor	Most of the I-82 corridor appears unchanged from the 1927 aerial photograph. The agricultural plantings remain in the northwesternmost portion of the property and the River Water Intake and smaller secondary drainage ditch, west of the River Water Intake, remain. Lands east of the River Water Intake appear to be vegetated with river side channels. Near the center of the corridor, north of the Moxee Line railroad, is an area of the corridor used for finished lumber storage. An outfall channel from the north log pond conveys water across into the corridor into a river channel. Similar to the south portion of Parcel D and Parcel E, the portion of the corridor south of the railroad consists of an expanded footprint of the previously observed area of light coloration. A drainage channel appears to be present along the west boundary of the lighter material. A portion of the south log pond appears to extend onto the corridor. While likely present also in 1927 but not as clearly depictable in the 1939 aerial photograph, the outfall channel from the south log pond is present in the corridor and outfalls into a channel that flows south and east to the Yakima River. The very southern portion of the corridor appears to primarily consist of cultivated fields and the two structures consistent with a residence and outbuilding near the fields are more apparent than in the 1927 aerial photograph.

Additional notes: The river appears to be at a lower stage than the 1927 aerial photograph. The riverbanks and river islands appear more exposed than in the 1927 aerial.

Table 4: 1947 Aerial & Levee Easement – Yakima County, 1949 Aerial – USGS*, 1949 Levee Repair Map, 1950 Sanborn Map (for I-82 Corridor only)

Parcel	Developments/Changes
Parcel A	The majority of Parcel A is within the river. The southwest portion of the parcel consists of the southwest riverbank. A river levee near the location of the present-day Yakima Greenway is now present along the southwest riverbank and within Parcel A and has replaced much of the natural vegetation along the riverbank. A roadway appears to be present parallel to the levee and is consistent with the location of the present-day Yakima Greenway. The northeast portion of Parcel A is within a river island. The river water intake for the Mill Site is located north of Parcel A. Mill operations do not appear to extend to Parcel A.
Parcel B	The majority of Parcel B is within the river. The north portion of the parcel is present on the same river island as Parcel A and a portion of the northeast riverbank. The north river island and northeast riverbank appear to consist of natural vegetation and river deposits. The southwest portion of the parcel is on the southwest riverbank which contains the same levee and roadway as seen in Parcel A. A river side channel is present along the river side of the levee and extends to Parcels C and D. A separate river water intake is consistent with the head gate that remains in this area. Culvert No. 7 is shown to pass through the levee in the north portion of Parcel B on the 1949 Levee Improvements drawing. Mill operations, beyond the conveyance of water, do not appear to extend to Parcel B.
Parcel C	The river channel has expanded to the west and now includes more of the southwest riverbank included in Parcel C1 and most of Parcel C2. The river levee extends through Parcel C1 as does the river side channel. The remainder of Parcel C1 and Parcel C2 consists of the southwest riverbank with a river island on Parcel C2, both appear to consist of natural vegetation and river deposits. Mill operations do not appear to extend to Parcel C1 or Parcel C2.
Parcel D	The majority of Parcel D remains within the southwest riverbank. The 1949 Levee Improvements drawing shows levees along the portions of Parcel D immediately north and south of the railroad tracks. Also visible in the aerial photograph is accumulated water near the present-day Mill Pond. The material north of the railroad tracks is lighter in color and does not have shadowing, suggesting that either small rows of material or layering of material is occurring. Lumber storage from the west encroaches on the area north of the railroad tracks. The portion of Parcel D south of the railroad consists of piled material. A levee is present along the east boundary of Parcel D near the railroad tracks. The 1947 levee easement reports a “sawdust and refuse pile” on the mill property that was within the easement for the levee, it is not specified if the material observed on Parcel D and E is the identified “sawdust and refuse pile”.
Parcel E	Parcel E consists nearly entirely of the same piled material observed in the portion of Parcel D south of the railroad. The river levee follows the east parcel boundary. The 1949 levee map shows an outfall channel from the west adjacent log pond that connects to the west boundary of Parcel E. The constructed outfall channel outflows on Parcel E parallel to the west boundary of Parcel E until outflowing to the Yakima River. Culvert No. 3 is shown to pass through the levee in the far south portion of Parcel E on the 1949 Levee Improvements drawing.
Parcel F	Parcel F now consists of the pathway observed in the other parcels. The river levee is present in the center of the parcel. Vegetation is present south of the levee. Mill operations do not appear to extend to Parcel F.
I-82 Corridor	Most of the I-82 corridor appears unchanged from the 1939 aerial photograph and consistent with other parcels, a river levee is visible at the north extent of the corridor. Agricultural plantings remain

	in the northwesternmost portion of the property and the River Water Intake and second channel remain. The center portion of the corridor consists of river channels and the riverbank with some pathways. Vegetation north of the railroad has been removed and the area is now further used for lumber storage and with rows of materials or layered materials, similar to the south portion of Parcel D. The portion of the corridor south of the railroad consists of piled materials extending from Parcels D and E and referred to as a "sawdust and refuse pile" in the 1947 levee easement. The southernmost portion of the corridor remains as cultivated fields with two small structures. The log ponds on the mill property remain and the outfall channels remain on the corridor. The southern log pond drainage channel is labeled as Drainage Culvert No. 2 in the 1947 levee easement.

Additional notes: The 1947 aerial appears to have been a combination of at least two images. The northeast ¼ of the aerial photograph appears to have been taken separately than the remainder of the photograph. The split between images is approximately in the center of Parcel B (splits the parcel into east-west halves) and near the center of Parcel D (splits the parcel into north-south halves). Developments are not necessarily consistent between the separate images, as seen when observing the split areas within the mill ponds. The 1947 and 1949 aerial photographs show nearly identical developments.
The 1950s Sanborn Map only includes developments shown within the southern portion of the I-82 corridor. No developments are shown on the parcels east of I-82.

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Table 5: 1955 Aerial – USGS, 1956 Aerial – EDR*

Parcel	Developments/Changes
Parcel A	The river levee and pathway remain in the southwest portion of Parcel A. An additional area of riverbank is now present in the northwest corner of the parcel, on the east side of the river levee. The remainder of the parcel remains within the river or on a northeast river island. Mill operations do not appear to extend to Parcel A.
Parcel B	Parcel B appears mostly unchanged from the 1947 and 1949 aerial photographs and remains partially within the river with portions of the southwest riverbank, river levee, pathway, and a river island. Mill operations do not appear to extend to Parcel B.
Parcel C	Parcel C1 and Parcel C2 appear mostly unchanged from the 1947 and 1949 aerial photographs. The defined river channel, river levee, and pathway remain in the southwest portion of Parcel C1. Parcel C2 consists of riverbank, within the river, or on a northeast river island. Mill operations do not appear to extend to Parcel C2.
Parcel D	The river side channel present on Parcel C1 continues southeast on to Parcel D. Parcel D includes areas with dense vegetation and other areas without vegetation. The spillway from the north log pond and smaller pond remains. Water from the outfall flows into the Yakima River. The portions of Parcel D located north and south of the railroad tracks have piled materials consistent with log yard materials visible in other aerial photographs.
Parcel E	The material observed on Parcel D extends into Parcel E, as is shown in previous aerial photographs.
Parcel F	Parcel F appears unchanged from the 1947 and 1949 aerial photographs and consists of the river levee and vegetation. A small building may be present on Parcel F associated with the adjacent, off property orchard. Mill operations do not appear to extend to Parcel F.
I-82 Corridor	Most of the I-82 corridor appears unchanged from the 1947 and 1949 aerial photographs. The agricultural plantings remain in the northwesternmost portion of the property and the River Water Intake remains in the north portion. The second smaller ditch is not as apparent. Pathways extend from the mill property towards the river levee and to the riverbank near the center of the corridor and onto Parcel D. The portion of the corridor north of the railroad but south of the north log pond outfall channel does not appear to actively be used for lumber storage but appears to remain cleared consistent with that use. Corridor developments south of the railroad are consistent with those of the south portion of Parcel D and Parcel E. The southernmost portion of the corridor does not appear to be used for agriculture and the structures are no longer observed.

Additional notes: The 1955 and 1956 aerial photographs appear to depict the same features. The 1955 aerial photograph is taken on a larger scale and does not depict the parcel developments with sufficient image resolution.

Table 6: 1964 Aerials – EDR*, USGS, WSDOT and 1966 Levee Repair Map

Parcel	Developments/Changes
Parcel A	Parcel A appears mostly unchanged from the 1955 and 1956 aerial photographs. The northeast river island observed in the 1955 and 1956 aerial photographs appears to now be a part of the northeast riverbank. The parcel consists of the river, the southwest riverbank with the river levee and pathway, and the northeast riverbank. A river channel runs along the river levee and extends to Parcels B. The river intake is consistent with the head gate that remains in this area. Mill operations do not appear to extend to Parcel A.
Parcel B	Parcel B appears mostly unchanged from the 1955 and 1956 aerial photographs. The northeastern-most portion of the parcel is shown to extends slightly into a constructed pond on the adjacent gravel quarry property located north of the Yakima River. The pond appears unrelated with mill operations. The remaining portions of the parcel consists of the river, the southwest riverbank and the river levee, the northeast riverbank, and river islands to the northeast. The 1966 Levee Repair Map shows the south portion of Parcel B and includes the levee outline. State Highway No. 3, subsequently I-82, is located southwest of Parcel B. The map also denotes the location of the "mill pond inlet canal" located on the Mill Site and referred to generally as a the "River Water Intake." Mill operations do not appear to extend to Parcel B.
Parcel C	Parcel C1 now consists of the interstate borrow pit in the location of the former defined channel. The interstate borrow pit does not appear to extend onto Parcel C2. The interstate borrow pit extends onto Parcel D. The interstate borrow pit was likely excavated for use as a gravel quarry to support interstate construction. Roadways are visible along the northeast side of the interstate borrow pit and connect to roadways on Parcel D. The main channel of the Yakima River generally divides Parcel C1 and Parcel C2 with the river further south than shown in previous aerial photographs. The river levee is present along the southwest boundary of the pond on Parcel C1 and is visible in aerial photographs and outlined in the 1966 Levee Repair Map. The majority of Parcel C1 is present on the southwest riverbank. Parcel C2 is present in the river or on a northeast river island. The river island appears to remain vegetated consistent with previous aerial photographs.
Parcel D	Parcel D consists mostly of the southwest riverbank. The main river channel crosses through the northeast portion of the parcel and a portion of a northeast river island is present north of the main river channel. The interstate borrow pit extends into the northwest portion of Parcel D. The present-day Mill Pond is now observed as a full pond, with similar boundaries to the present-day pond. A pathway or roadway is present between the interstate borrow pit and the Mill Pond. On the 1966 Levee Repair Map, the northern portion of the levee is shown to end near the north extent of the Mill Pond. The spillway from the River Water Intake is visible traversing at the north I-82 underpass, then parallel to I-82, joined by a separate outfall from the Remnant Site Ditch on the Mill Site, and together conveyed into the south portion of the Mill Pond. In the northwest corner of the parcel is a pile of material; the type of material is not known. Northeast of the Mill Pond appears to be an area of gravel mining. The portion of the parcel south of the channel and surrounding the railroad appears to consist of piled materials. Two lighter piles are present, one north of the railroad and one southeast of the railroad,

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	and a darker pile is present to the southwest of the railroad. Some of the piled materials in the south portion of Parcel D around the railroad are labeled in the 1966 Levee Repair Map as "toe of sawdust pile" or "edge of sawdust". The sawdust pile is labeled with an average depth of 3 to 4-feet. To the northeast of the labeled sawdust pile and the levee is an area identified as "disposal area"; however, this is consistent with placement of materials removed from the river channeling project. The west adjacent log pond on the mill property is also labeled as a "disposal area." Another "disposal area" is shown east of the channel to be completed for the Yakima River.
Parcel E	Parcel E appears to consist entirely of piled and stored materials and is also labeled on the 1966 Levee Repair Map as a portion of the sawdust pile. A large rectangular pile of material is present in the north portion of the parcel. Material handling appears to be occurring across Parcel E and appear to consistent of larger material. An unlabeled feature, extending from the southeast corner of the "disposal area" shown on the Mill Site, is shown to extend from the Mill Site below the state highway. This unlabeled feature location is consistent with a concrete culvert observed in the present-day, and extends from the west below I-82 to Parcel E.
Parcel F	Parcel F consists of the river levee and vegetation. Parcel F now borders Rotary Lake to the south. Mill operations do not appear to extend to Parcel F.
I-82 Corridor	Interstate 82 is now constructed and encompasses nearly all of the corridor. The off-ramp for present-day northbound Exit 31 is constructed. Two overpasses are present on I-82, the north overpass with a pathway and channel crossing beneath and connecting the mill property to Parcels C and D, and the south overpass with the railroad beneath. The River Water Intake passes below I-82. The comingled River Water Intake and North First Lateral Ditch crosses beneath the interstate at the north overpass. A second channel passes below I-82 near the recycle pond on the mill site and connects to the north-south channel that parallels I-82. A third channel extends from the south log pond, east to Parcel E. The Fruitvale Wasteway is visible along the west side of I-82. The present-day southbound Exit 33A is not yet constructed in the south portion of the corridor.

Additional notes: I-82 is now constructed (labeled as State Highway No. 3), and Rotary Lake is now present. The size of log ponds on the mill property has been significantly reduced. The materials observed around the railroad in Parcel D and within Parcel E are consistent with piled material rather than an excavated area based on shadows.

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Table 7: 1971 Aerials – Yakima County, EDR*, USGS, WSDOT (1970)*

Parcel	Developments/Changes
Parcel A	Parcel A appears unchanged from the 1964 aerial photographs. The parcel consists of the river, the southwest riverbank, the river levee, pathway, and the northeast riverbank. Mill operations do not appear to extend to Parcel A.
Parcel B	Parcel B appears mostly unchanged from the 1964 aerial photographs. The southeast corner of the parcel is no longer vegetated. A small pathway or roadway is present in the southeast portion of the parcel. The rest of the parcel consists of the river, the southwest riverbank and the river levee and pathway, the northeast riverbank, river islands to the northeast, and a very small corner of the parcel is present within the quarry pond to the northeast. No developments are present on the cleared bare area in the southeast corner of the parcel.
Parcel C	The interstate borrow pit remains on Parcel C1 and extends to Parcel D. The interstate borrow pit appears larger than observed in the 1964 aerial photographs; however, this may be associated with the season in which the photograph was collected. An area along the northeast pond boundary appears to have been filled with material. The interstate borrow pit does not extend to Parcel C2. Parcel C2 consists primarily of the southwest riverbank which remains mostly unvegetated. The remainder of Parcel C2 is present within the river or on a northeast river island which consists of natural vegetation.
Parcel D	The south about one-third of the interstate borrow pit is present on Parcel D. The present-day Mill Pond remains and is shown with the largest footprint of any historical resource. Two smaller ponds are present east of the Mill Pond and are likely gravel sources. The northern pond appears to be connected to the Mill Pond. The east Parcel D pond is a lighter in color than other water bodies, consistent with a shallower pond. The River Water Intake outfall channel crosses at the underpass of I-82, and parallels I-82, before connecting into the Mill Pond. A small pond located on the mill site has an outfall that conveys below I-82 to the Mill Pond. A ditch extends east from the Mill Pond to the Yakima River. Piled materials are present on the portion of Parcel D immediately north and south of the railroad tracks. Material handling patterns vary between the three aerial photographs.
Parcel E	Parcel E now appears to be mostly consistent with the surrounding elevation and appears to consist of dirt. A small area of piled materials in the south portion of the parcel remains. A water connection, consistent with a concrete culvert observed in the present-day, extends from the mill site to Parcel E.
Parcel F	Parcel F appears unchanged from the 1964 aerial photographs. The parcel consists of the river levee and vegetation. Mill operations do not appear to extend to Parcel F.
I-82 Corridor	The I-82 corridor is mostly unchanged from the 1964 aerial photographs. The same waterways and overpasses remain. The present-day southbound Exit 33A is not yet constructed. Water from the southeast corner of the south log yard pond appears to connect to a separate outfall at the Yakima River. The Fruitvale Wasteway is visible along the west side of I-82.

Additional notes: The 1971 aerial photograph provided by Yakima County does not include the entirety of Parcel C1 or Parcel C2.

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Table 8: 1973 Aerial – WSDOT, 1974 Aerials – EDR*, USGS

Parcel	Developments/Changes
Parcel A	Parcel A appears mostly unchanged from the 1971 aerial photographs. The river appears to have shifted to the northeast, increasing the land on the southwest riverbank and decreasing it on the northeast riverbank. The parcel consists of the river, southwest riverbank with river levee and pathway, and a small portion of the northeast riverbank. Mill operations do not appear to extend to Parcel A.
Parcel B	Parcel B appears mostly unchanged from the 1971 aerial photographs. Additional river deposits are present along the northeast riverbank and northeast river island. The remainder of the parcel consists of the river and the southwest riverbank. The parcel does not appear to include any of the quarry ponds to the northeast of the Yakima River. The southwest riverbank consists of the river levee and pathway. There is no vegetation on the southeast portion of the parcel. No developments are present on the cleared bare area in the southeast corner of the parcel; however, the general use is consistent with Parcel C1 and may have association with mill operations.
Parcel C	The north portion of the interstate borrow pit (located on Parcel C2 and Parcel D) has been filled. The debris appears consistent with a mixed log yard material. About 40% of the interstate borrow pit footprint (as shown in the 1971 aerial photograph) has been filled. The interstate borrow pit with visible water remains on the south portion of Parcel C1 and north portion of Parcel D. Some excavation, likely as a gravel quarry, may be occurring northeast of the interstate borrow pit on Parcel C1. The river levee remains to the southwest of the interstate borrow pit. The interstate borrow pond does not extend to Parcel C2. Parcel C2 is nearly entirely on the southwest riverbank now. Small natural appearing ponds are present around the river islands in the east portion of Parcel C2.
Parcel D	The interstate borrow pit extends onto Parcel D. No filling of the interstate borrow pit appears to have occurred on Parcel D. The river levee remains on the southwest side of the pond and ends at the north extent of the Mill Pond. The east portion of the parcel consists of river islands and the northeast riverbank. Pathways are present throughout Parcel D (similarly to the 1971 aerial photographs). The Mill Pond remains and appears to be of similar size as in the 1971 aerial photographs. Waterways in and around the Mill Pond are consistent with the 1970 aerial photographs. Material handling in the portions of Parcel D north and south of the railroad crossing include many small piles of material.
Parcel E	Less material handling is shown on Parcel E with use consistent with the adjacent portion of Parcel D. The culvert beneath I-82 is visible.
Parcel F	Parcel F appears mostly unchanged from the 1971 aerial photographs. The parcel consists of the river levee and vegetation. Mill operations do not appear to extend to Parcel F.
I-82 Corridor	The I-82 corridor is mostly unchanged from the 1971 aerial photographs. The same channel and overpasses remain. Present-day southbound Exit 33A is not yet constructed. Lumber storage on the mill property appears to encroach onto the present-day corridor near the middle of the corridor. The Fruitvale Wasteway is visible along the west side of I-82.

Additional notes: The 1973 and 1974 aerial photographs appear to show similar developments and were grouped together for review.

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Table 9: 1977 Aerial – Yakima County*, 1979 Aerial – USGS

Parcel	Developments/Changes
Parcel A	Parcel A appears mostly unchanged from the 1973 and 1974 aerial photographs. The southwest riverbank has more river deposited sediment and the majority of the parcel is now on the southwest riverbank with the river levee and pathway. A small portion of the parcel to the northeast remains on the northeast riverbank and within the river. Mill operations do not appear to extend to Parcel A.
Parcel B	Parcel B appears mostly unchanged from the 1973 and 1974 aerial photographs. Additional river deposited sediments are present in the northwest portion of the parcel. The parcel consists of the southwest riverbank with the river levee and pathway, the river, and the northeast riverbank. The southwest portion of the parcel remains free of vegetation and may be a result of mill activities.
Parcel C	The interstate borrow pit has been substantially filled, nearly to the south boundary of Parcel C1 by 1977. The interstate borrow pit, including the portion extending onto Parcel D is filled by 1979. The interstate borrow pond does not extend onto Parcel C2. The former footprint of the interstate borrow pit is identifiable by the absence of vegetation. A new smaller pond is visible northeast of the former the interstate borrow pit footprint (“northeast Parcel C1 pond"). Parcel C1 and Parcel C2 are divided by a side channel of the Yakima River. Parcel C1 and the west half consists of the southwest riverbank with the river levee and the northeast Parcel C1 pond. Parcel C2 is a river island and appears to consist of natural river deposits and vegetation.
Parcel D	The interstate borrow pit is completely filled by 1979, including the portion on Parcel D. The Mill Pond remains in the same condition and shape as in the 1973 and 1974 aerial photographs. The north small pond remains, but the pond appears to be dry or filled and the south smaller pond still contains water but is smaller than in previous aerial photographs. The outfall channel from the south portion of the Mill Pond remains. The portion of the Parcel D north of the railroad tracks is shown with a darker material and the area south of the railroad tracks with a lighter coloration. While the resolution is poor, both areas appear to be used for log yard material handling.
Parcel E	Activities on Parcel E are difficult to distinguish, but are still consistent with handling of log yard materials.
Parcel F	Parcel F appears unchanged from the 1973 and 1974 aerial photographs. The parcel consists of the river levee and vegetation. Mill operations do not appear to extend to Parcel F.
I-82 Corridor	The I-82 corridor appears unchanged from the 1973 and 1974 aerial photographs. The lumber storage on the mill property appears to still partially encroach onto the corridor near the middle of the corridor. The Fruitvale Wasteway is visible along the west side of I-82.

Table 10: 1981 Aerial – EDR*, USGS

Parcel	Developments/Changes
Parcel A	Parcel A appears unchanged from the 1977 and 1979 aerial photographs. The parcel consists of the southwest riverbank with the river levee and pathway, the river, and a small portion of the northeast riverbank. Mill operations do not appear to extend to Parcel A.
Parcel B	Parcel B is mostly unchanged from the 1977 and 1979 aerial photographs. The river location has shifted slightly and more of the parcel is now within the river. The parcel consists of the southwest riverbank with the river levee and pathway, the river, and a small portion of the northeast riverbank. The southwest portion of the parcel remains free of vegetation and may be a result of mill activities.
Parcel C	On Parcel C1, the interstate borrow pit is fully backfilled and pathways cross the pond footprint. Three small, connected ponds (1981 Ponds) are located north of the former interstate borrow pit. The western small pond may be in the process of being backfilled. Parcel C2 is now connected to the southwest riverbank. The river no longer appears to divide Parcel C1 from Parcel C2.
Parcel D	The interstate borrow pit is fully backfilled. Similar to Parcel C1, pathways are present on the ground covering the former pond. The Mill Pond remains with a size and shape consistent with previous aerial photographs. No filling of the Mill Pond is visible. The outfall from the Mill Pond, east to the Yakima River, does not appear to be present, having been replaced by two overflows to the south. The smaller north and east ponds have been backfilled. A new pond is present in the northeast portion of Parcel D (northeast Parcel D pond). Concrete or other light-colored debris is present north of the pond. The portion of Parcel D located north and south of the railroad tracks remain in use for log yard material handling. The area north of the railroad tracks consists of a darker color consistent with bark. The area to the south is lighter in color and more typical of sawdust or wood chip. The east portion of the parcel consists of river islands and the northeast riverbank.
Parcel E	Parcel E appears unchanged from the 1977 and 1979 aerial photographs. The parcel is unvegetated.
Parcel F	Parcel F appears mostly unchanged from the 1977 and 1979 aerial photographs. The parcel consists of the river levee and vegetation. Mill operations do not appear to extend to Parcel F.
I-82 Corridor	The I-82 corridor appears mostly unchanged from the 1977 and 1979 aerial photographs. The Fruitvale Wasteway is visible along the west side of I-82 with an open channel near the railroad line and a thinner vegetation pathway, suggesting possible installation of underground piping, along the south half.

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Table 11: 1989 & 1991 Aerials – WSDOT, Yakima Greenway Rotary Lake Parking As-Builts

Parcel	Developments/Changes
Parcel A	*Not shown in either aerial photograph.*
Parcel B	Only the southwest portion of Parcel B is visible in the 1991 aerial photograph. The southwest portion of Parcel B consists of the bare unvegetated area in previous aerial photographs. The 1991 aerial photograph shows this area as graveled with vehicles parked along the outside of the graveled area. The layout of this area is consistent with a present-day Rotary Lake Park and Ride parking area used by the Yakima Greenway. As-built drawings of the Yakima Greenway Rotary Lake Park and Ride parking lot identify the center of the parking lot as "sawdust, etc."
Parcel C	Parcel C1 consists mostly of the southwest riverbank. The interstate borrow pit footprint is slightly vegetated with few shrubs and trees. A small pond remains in the north portion of Parcel C1 surrounded by vegetation. An additional pond is now present in the northeast portion of the parcel within a mostly unvegetated area of river deposits. Parcel C2 consists of vegetated riverbank.
Parcel D	The small pond observed in the 1981 aerial photographs to the northeast of the Mill Pond is no longer present and appears to have been backfilled. The gravel or other debris immediately northwest of the former north Parcel D pond is no longer present. The Yakima Greenway pathway is visible north of the Mill Pond. A small clearing is now present to the south of the Mill Pond. The areas of Parcel D north and south of railroad tracks appear to have a capping layer of soil applied across the areas shown in the aerial photograph.
Parcel E	Log yard material placement is occurring on Parcel E in the 1989 aerial pathography. By the 1991 aerial photograph, the area is filled and consistent with the current topography.
Parcel F	*Not shown in either aerial photograph.*
I-82 Corridor	The I-82 corridor appears mostly unchanged from the 1981 aerial photograph and consists of the interstate, two overpasses, and pathways that access lumber storage areas near the center and south portions of the mill property. The very northwestern portion of the corridor is not visible in either aerial photograph. The Fruitvale Wasteway is visible along the west side of I-82 and appears unchanged.

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Table 12: 1992 & 1994* Aerials – Yakima County, 1993 Rotary Park Committee Letter to Ecology

Parcel	Developments/Changes
Parcel A	Parcel A appears unchanged from the 1981 aerial photographs. The parcel consists of the southwest riverbank with the river levee and pathway, now developed as the Yakima Greenway, the river, and a small portion of the northeast riverbank. Mill operations do not appear to extend to Parcel A.
Parcel B	Parcel B appears mostly unchanged from the visible extent in the 1989 and 1991 aerial photographs. The graveled clearing observed in the 1991 aerial photograph now appears to be used as a parking area consistent with the present-day Rotary Lake Park and Ride. The remainder of Parcel B consists of the southwest riverbank with the river levee and pathway (now developed as the Yakima Greenway), the river, and a northeast river island.
Parcel C	Parcel C1 appears mostly unchanged from the 1989 and 1991 aerial photographs. A small pond remains in the north portion of Parcel C1. The pond observed within the river sediments in the 1989 and 1991 aerial photographs appears to be mostly dry during the photograph capture. The former interstate borrow pit footprint on Parcel C1 remains mostly unvegetated. The Yakima Greenway crosses through the south portion of Parcel C1. Parcel C2 consists of vegetated riverbank.
Parcel D	Parcel D appears mostly unchanged between 1989 and 1991. The Mill Pond remains. Waterways through Parcel D are unchanged. The clearing is still present to the south of the Mill Pond and is consistent with pond overflow. The areas of Parcel D to the north and south of the railroad tracks appear unchanged. The outfall from the River Water Intake is visible traversing at the north I-82 underpass, then parallel to I-82, joined by a separate outfall from the mill site, and together conveyed into the Mill Pond. The Yakima Greenway enters the north portion of the parcel and follows the east side of the Mill Pond, and then follows the east parcel boundaries in the south portion of the parcel.
Parcel E	No activities appear to be occurring on Parcel E in 1991. By the 1994 aerial photograph, material placement has occurred in the south portion E in preparation for the present-day playground. A 1993 letter from the Rotary Park Committee to Ecology clarifies a previous conversation with Ecology regarding encountering bark chip fill on the property during construction of the Sunshine Rotary Park. A travel pathway is visible across Parcels D and E, south of the railroad tracks. The Yakima Greenway is present along the east parcel boundary and connects to the present-day playground clearing.
Parcel F	Parcel F appears mostly unchanged from the 1981 aerial photographs. The parcel consists of the river levee, the Yakima Greenway, and vegetation. Mill operations do not appear to extend to Parcel F.
I-82 Corridor	The I-82 corridor appears mostly unchanged from the 1989 and 1991 aerial photograph and consists of the interstate, two overpasses, and pathways that access lumber storage areas near the center and south portions of the mill property. The Fruitvale Wasteway is visible along the west side of I-82 and appears unchanged.

Additional notes: The 1992 and 1994 aerial photographs do not appear to have notable changes in developments or features on the parcels, aside from Parcel E. The 1994 aerial photograph does not include Parcel F.

Table 13: 1996 Aerials – Yakima County*, EDR, USGS

Parcel	Developments/Changes
Parcel A	Parcel A appears unchanged from the 1994 aerial photograph. The parcel consists of the southwest riverbank with the river levee and Yakima Greenway, the river, and a small portion of the northeast riverbank. Mill operations do not appear to extend to Parcel A.
Parcel B	Parcel B appears unchanged from the 1994 aerial photograph. Parcel B consists of the southwest riverbank with the river levee, Yakima Greenway, and Rotary Lake Park and Ride lot; the river; and a northeast river island.
Parcel C	Parcel Ca appears mostly unchanged from the 1994 aerial photograph. A small pond remains in the north portion of Parcel C1. The remainder of Parcel C1 consists of the former interstate borrow pit footprint, the river levee, the Yakima Greenway, and a vegetated area of the riverbank. The interstate borrow pit footprint has little vegetation. Parcel C2 consists of a vegetated are of the riverbank.
Parcel D	Parcel D appears mostly unchanged from the 1994 aerial photograph. The Mill Pond remains and is unchanged. The former Northeast Parcel D Pond footprint has poor vegetation. The clearing south of the Mill Pond now appears to connect to the river and is partially flooded in the 1996 aerial photograph from Yakima County. The areas of Parcel D, north and south of the railroad have poor vegetation. Some activity appears to be occurring in the west portion of Parcel D south of the railroad tracks.
Parcel E	Parcel E is unused except for the present-day Sunshine Rotary Park playground area and the Yakima Greenway. Parcel E has little established vegetation.
Parcel F	Parcel F appears mostly unchanged from the 1992 aerial photograph. The parcel consists of the river levee, the Yakima Greenway, and vegetation. Mill operations do not appear to extend to Parcel F.
I-82 Corridor	The I-82 corridor appears mostly unchanged from the 1992 and 1994 aerial photographs and consists of the interstate, two overpasses, and pathways that access lumber storage areas near the center and south portions of the mill property. The southwest portion of the corridor appears to have been slightly cleared in preparation for construction of southbound Exit 33A. Areas of the Fruitvale Wasteway appear to be flooded.

Additional notes: The 1996 aerial photographs were provided by Yakima County, EDR, and USGS. The aerial photographs appear to all show the same developments but in slightly different periods of the year.
Yakima County's 1996 aerial photograph was collected during a period of spring flooding and shows areas with water that are outside of the OHW of the Yakima River.

Table 14: 1998 & 2002 Aerials – Yakima County

Parcel	Developments/Changes
Parcel A	Parcel A appears unchanged from the 1996 aerial photographs. The parcel consists of the southwest riverbank with the river levee and Yakima Greenway, the river, and a small portion of the northeast riverbank. Mill operations do not appear to extend to Parcel A.
Parcel B	Parcel B appears unchanged from the 1996 aerial photographs. Parcel B consists of the Rotary Lake Park and Ride parking lot, the southwest riverbank with the river levee and the Yakima Greenway, the river, and a northeast river island.
Parcel C	Parcel C1 appears mostly unchanged from the 1996 aerial photographs. A small pond remains in the north portion of Parcel C1 and is surrounded by dense vegetation. The footprint of the former interstate borrow pit has poor vegetation. Parcel C2 consists of vegetation and the riverbank.
Parcel D	Parcel D appears mostly unchanged from the 1996 aerial photographs. The Mill Pond remains with a consistent size and shape. The clearing south of the Mill Pond is not observed with as much river flow as in the 1996 Yakima County aerial photograph. The combined River Water Intake and North First Lateral Drain outfall is visible traversing at the north I-82 underpass, then parallel to I-82, joined by a separate outfall from the Remnant Site Ditch on the mill site, and together conveyed into the south portion of the Mill Pond.
Parcel E	Parcel E is an extension of the poorly vegetated area on Parcel D. Additional playground developments are present at the Sunshine Rotary Park playground area.
Parcel F	Parcel F appears mostly unchanged from the 1996 aerial photographs. The parcel consists of the river levee, the Yakima Greenway, and vegetation. Mill operations do not appear to extend to Parcel F.
I-82 Corridor	Most of the I-82 corridor is unchanged from the 1996 aerial photographs with southbound Exit 33A now constructed in the southwest. The Fruitvale Wasteway is visible along the west side of I-82. Vegetation remains west of the Exit 33A off-ramp consistent with the former Fruitvale Wasteway channel location.

Additional notes: The 1998 aerial photograph appears to consist of two separate aerial photographs, both photographs show features consistent with expected developments in 1998.

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Table 15: 2005 Aerial – Yakima County*, 2006 Aerial – EDR, 2008 Aerial – Yakima County

Parcel	Developments/Changes
Parcel A	Parcel A appears unchanged from the 2002 aerial photograph. The parcel consists of the southwest riverbank with the river levee and Yakima Greenway, the river, and a small portion of the northeast riverbank. Mill operations do not appear to extend to Parcel A.
Parcel B	Parcel B appears unchanged from the 2002 aerial photograph. Parcel B consists of the Rotary Lake Park and Ride parking lot, the southwest riverbank with the river levee and the Yakima Greenway, the river, and a northeast river island.
Parcel C	Parcel C1 and Parcel C2 appear mostly unchanged from the 2002 aerial photograph. The small pond remains in the north portion of Parcel C1 and is surrounded by dense vegetation. The remainder of Parcel C1 consists of the poorly vegetated footprint of the former interstate borrow pit, the river levee, and the Yakima Greenway. Parcel C2 consists of a vegetated area of the riverbank.
Parcel D	Parcel D appears mostly unchanged from the 2002 aerial photograph. The Mill Pond remains as do the previously described waterways. The areas north and south of the railroad tracks on Parcel D are poorly vegetated.
Parcel E	Parcel E appears mostly unchanged from the 2002 aerial photograph and is poorly vegetated. The Sunshine Rotary Park playground area remains.
Parcel F	Parcel F appears mostly unchanged from the 2002 aerial photograph. The parcel consists of the river levee, the Yakima Greenway, and vegetation. Mill operations do not appear to extend to Parcel F.
I-82 Corridor	The I-82 corridor appears mostly unchanged from the 2002 aerial photograph and consists of the interstate, two overpasses, the northbound Exit 31 off-ramp, and the southbound Exit 33A off-ramp.

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Table 16: 2011, 2015, 2019 Aerials – EDR; 2011, 2019, 2021 – Yakima County

Parcel	Developments/Changes
Parcel A	Parcel A appears unchanged from the 2008 aerial photograph. The parcel consists of the southwest riverbank with the river levee and Yakima Greenway, the river, and a small portion of the northeast riverbank. The developments shown in the aerial photographs appear consistent with conditions observed during Fulcrum's site visits. Mill operations do not appear to extend to Parcel A.
Parcel B	Parcel B appears unchanged from the 2008 aerial photograph. Parcel B consists of the Rotary Lake Park and Ride parking lot, the southwest riverbank with the river levee and the Yakima Greenway, the river, and a northeast river island. The developments shown in the aerial photographs appear consistent with conditions observed during Fulcrum's site visits.
Parcel C	Both Parcel C1 and Parcel C2 appear mostly unchanged from the 2008 aerial photograph. The small pond remains in the north portion of the parcel and is surrounded by dense vegetation on Parcel C1. The footprint of the former interstate borrow pit is poorly vegetated. The developments shown in the aerial photographs appear consistent with conditions observed during Fulcrum's site visits.
Parcel D	Parcel D appears mostly unchanged from the 2008 aerial photograph. The Mill Pond remains. The combined River Water Intake and North First Lateral Drain outfall is visible traversing at the north I-82 underpass, then parallel to I-82, joined by a separate outfall from the Remnant Site Ditch on the mill site, and together conveyed into the south portion of the Mill Pond. The areas north and south of the railroad tracks on Parcel D are poorly vegetated. The developments shown in the aerial photographs appear consistent with conditions observed during Fulcrum's site visits.
Parcel E	Parcel E appears mostly unchanged from the 2008 aerial photograph and is poorly vegetated. The Sunshine Rotary Park playground area remains. The developments shown in the aerial photographs appear consistent with conditions observed during Fulcrum's site visits.
Parcel F	Parcel F appears mostly unchanged from the 2008 aerial photograph. The parcel consists of the river levee, the Yakima Greenway, and vegetation. The developments shown in the aerial photographs appear consistent with conditions observed during Fulcrum's site visits. Mill operations do not appear to extend to Parcel F.
I-82 Corridor	The I-82 corridor appears mostly unchanged from the 2008 aerial photograph and consists of the interstate, two overpasses, the northbound Exit 31 off-ramp, and the southbound Exit 33A off-ramp. The developments shown in the aerial photographs appear consistent with conditions observed during Fulcrum's site visits.

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Qualifications of the Preparers

Environmental Scientist: Erica Simmons, GIT

Ms. Simmons graduated from North Carolina State University with a Bachelor of Science in Geology and Bachelor of Science in Environmental Sciences with minors in Environmental Toxicology and Biological Sciences. She is an Environmental Scientist and provides technical support for Phase I Environmental Site Assessments; Phase II soil, groundwater, and vapor investigations; NEPA Environmental Assessments; and hazardous building materials inspections. She is a Washington State registered Geologist-in-Training (GIT), Washington State UST Site Assessor and Decommissioner, Washington State Certified Erosion Control and Sediment Lead, AHERA accredited Building Inspector, and 40-hour HAZWOPER trained.

Project Scientist: Amanda M. Enbysk, GIT

Ms. Enbysk graduated from Oregon State University in 2013 with a Bachelor of Science in Geology from Oregon State University. She provides technical support and oversight for Phase II soil, groundwater, and vapor investigations; soil remediation efforts, underground storage tank closure and removal, and Phase I Environmental Site Assessments.

Ms. Enbysk is a Washington State registered Geologist-in-Training, Washington State Registered UST Site Assessor and Decommissioner, Certified Erosion and Sediment Control Lead (CESCL), and 40-Hour HAZWOPER trained. Ms. Enbysk's education, training, and certifications demonstrate that she is an Environmental Professional as defined by the Environmental Protection Agency's All Appropriate Inquiry, 40 CFR 312.

Principal: Ryan K, Mathews, CIH, CHMM

Mr. Mathews received a Bachelor of Science in Biology and a Bachelor of Science in Economics from Central Washington University. Mr. Mathews specializes in environmental site assessments, subsurface investigations, remedial design, and industrial hygiene. Prior to joining Fulcrum, Mr. Mathews was an independent crop consultant specializing in crops throughout central and eastern Washington. His training and experience during five seasons in agricultural fields and operations provide for specialized knowledge in assessing agricultural sites and rural sites of significant acreage.

Mr. Mathews is a Certified Industrial Hygienist (CIH) and Certified Hazardous Materials Manager (CHMM). Mr. Mathews' education, training, and certifications demonstrate that he is an Environmental Professional as defined by the Environmental Protection Agency's All Appropriate Inquiry, 40 CFR 312.

FULCRUM environmental consulting

Declarative Statements

We, declare that, to the best of our professional knowledge and belief, we meet the definition of Environmental Professional as defined in ASTM E1527-21, ASTM E2247-16, and §312.10 of 40 CFR 312.

We have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the Subject Site. We have developed and performed historical research, including requests for public information from agencies and from private data vendors and evaluated these resources, completed a site walk, and prepared this narrative of the findings as would be typical of the relevant sections specified in the standards and practices set in ASTM E1527-21, ASTM E2247-16, and 40 CFR Part 312.

Authored by: Erica Simmons **Date:** 3/28/2024

Erica Simmons, GIT, Environmental Scientist
Fulcrum Environmental Consulting, Inc.

Site Reconnaissance by: _____ **Date:** 3/28/2024

Amanda Enbysk, GIT, Project Scientist
Fulcrum Environmental Consulting, Inc.

Reviewed by: _____ **Date:** 3/28/2024

Ryan K. Mathews, CIH, CHMM, Principal
Fulcrum Environmental Consulting, Inc.

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