4.6 Hazardous Materials

Hazardous materials are substances that can adversely affect public health and safety and the natural environment. There are risks in using, storing, and transporting hazardous materials. If a hazardous material is released into the environment, it can contaminate the surrounding area and expose people and the environment to harm.

This section describes hazardous materials relevant to the proposed export terminal and impacts related to hazardous materials that could occur as a result of construction and operation of the terminal.

4.6.1 Regulatory Setting

Laws and regulations relevant to hazardous materials are summarized in Table 4.6-1.

Table 4.6-1. Regulations, Statutes, and Guidelines for Hazardous Materials

Regulation, Statute, Guideline	Description
Federal	
Comprehensive Environmental Response, Compensation, and Liability Act (42 USC 103)	Regulates former and newly discovered uncontrolled waste disposal and spill sites identified on the National Priority List of contaminated sites and under the Superfund cleanup program.
Superfund Amendment and Reauthorization Act (40 CFR 302)	Amended CERCLA and requires reporting for emergency response, emergency release, and hazardous and toxic chemical releases.
Federal Resource Conservation and Recovery Act (42 USC 6901 *et seq*.)	Governs the generation, storage, and transportation of hazardous waste and waste management activities for hazardous waste treatment, storage, and disposal facilities. This is a delegated Washington State program under the Washington Hazardous Waste Management Act.
Toxic Substances Control Act (15 USC 2601–2629)	Tracks industrial chemicals in the United States and regulates intrastate and interstate commerce.
Clean Water Act (33 USC 1342, 1344; 40 CFR 230)	Regulates the placement of fill material in waters of the United States, including fill placement below ordinary high water elevation or within navigable waters or wetlands.
Department of Transportation Hazardous Materials Regulations (49 CFR 100–185)	Protect against the risks to life, property, and the environment and apply to all interstate, intrastate, and foreign transport of hazardous materials in commerce.
National Emission Standards for Hazardous Air Pollutants (40 CFR 61–71)	Set standards regulating the emission of these pollutants with EPA and the state implementing and enforcing them. Hazardous air pollutants are those pollutants that are known or suspected to cause cancer or other serious health effects, such as reproductive effects or birth defects, or adverse environmental effects.

Regulation, Statute, Guideline	Description
Safe Drinking Water Act (42 USC 300f *et seq*.)	Requires the protection of groundwater and groundwater sources used for drinking water. Requires every state to develop a wellhead protection program.
Occupational Safety and Health Act (29 USC 651 *et seq*.)	Enacted to "assure safe and healthful working conditions for working men and women." Sets standards and enforces inspections to ensure that employers are providing safe and healthful workplaces.
State	
Washington Water Pollution Control Permit Program	Requires that all releases to waters of the state of a reportable quantity must be reported to Ecology as soon as possible, but no later than 24 hours after discovery.
Model Toxics Control Act and its implementing regulations (RCW 70.105D and WAC 173-340)	Requires potentially liable persons to assume responsibility for cleaning up contaminated sites. Requires reporting hazardous substance releases if they constitute a threat to human health or the environment.
State Water Pollution Control Law (RCW 90.48)	Provides Ecology with the jurisdiction to control and prevent the pollution of streams, lakes, rivers, ponds, inland water, salt waters, watercourses, and other surface and groundwater in the state.
Oil and Hazardous Substance Spill Prevention and Response (RCW 90.56)	Established to prevent the release of oil and other hazardous substances to the navigable waters of the state. Intended to prevent spills and promote programs that reduce the risk of spills.
Underground Storage Tank Regulations (RCW 90.76 and WAC 173-360)	Ensure that underground storage tanks are installed, managed, and monitored in a manner that prevents releases to the environment.
Water Quality Standard for Surface Waters of the State of Washington (WAC 173-201A)	Establishes water quality standards for surface waters in Washington State. Ecology is the responsible agency.
Sediment Management Standards (WAC 173–204)	Establish numerical standards for the protection of benthic invertebrates in marine sediments.
Washington Hazardous Waste Management Act (RCW 70.105, and WAC 173–303)	State equivalent of RCRA; requires designation of dangerous and extremely hazardous waste, and proper handling, storage, transport, and disposal of such wastes. Governs and establishes regulations for hazardous waste treatment, storage, and disposal facilities.
Washington Administrative Code (WAC 173-340-300)	Requires reporting hazardous substance releases if they constitute a threat to human health or the environment.
Washington Solid Waste Handling Standards (WAC 173–350)	Set standards for the proper handling and disposal of solid waste originating from residences, commercial, agricultural, and industrial operations and other sources.
General Occupational Health Standards (WAC 296–62)	Protect the health of employees and help create a healthy work place by establishing requirements to control health hazards including chemical hazard communication and exposure programs.
Hazardous Waste Operations (WAC 296–843)	Applies to facilities that have workers handling hazardous waste at a treatment, storage, or disposal facility and are required to have a permit under RCRA.

Regulation, Statute, Guideline	Description
Safety Standards for Construction Work (WAC 296–155)	Apply to work places where construction, alteration, demolition, related inspection, and/or maintenance and repair work, including painting and decorating, is performed. Set minimum safety requirements with which all industries must comply when engaged in these types of work.

Notes:
USC = United States Code; CFR = Code of Federal Regulations; CERCLA = Comprehensive Environmental Response, Compensation, and Liability Act; EPA = U.S. Environmental Protection Agency; WAC = Washington Administrative Code; Ecology = Washington State Department of Ecology; RCW = Revised Code of Washington; RCRA = Resource Conservation and Recovery Act

4.6.2 Study Area

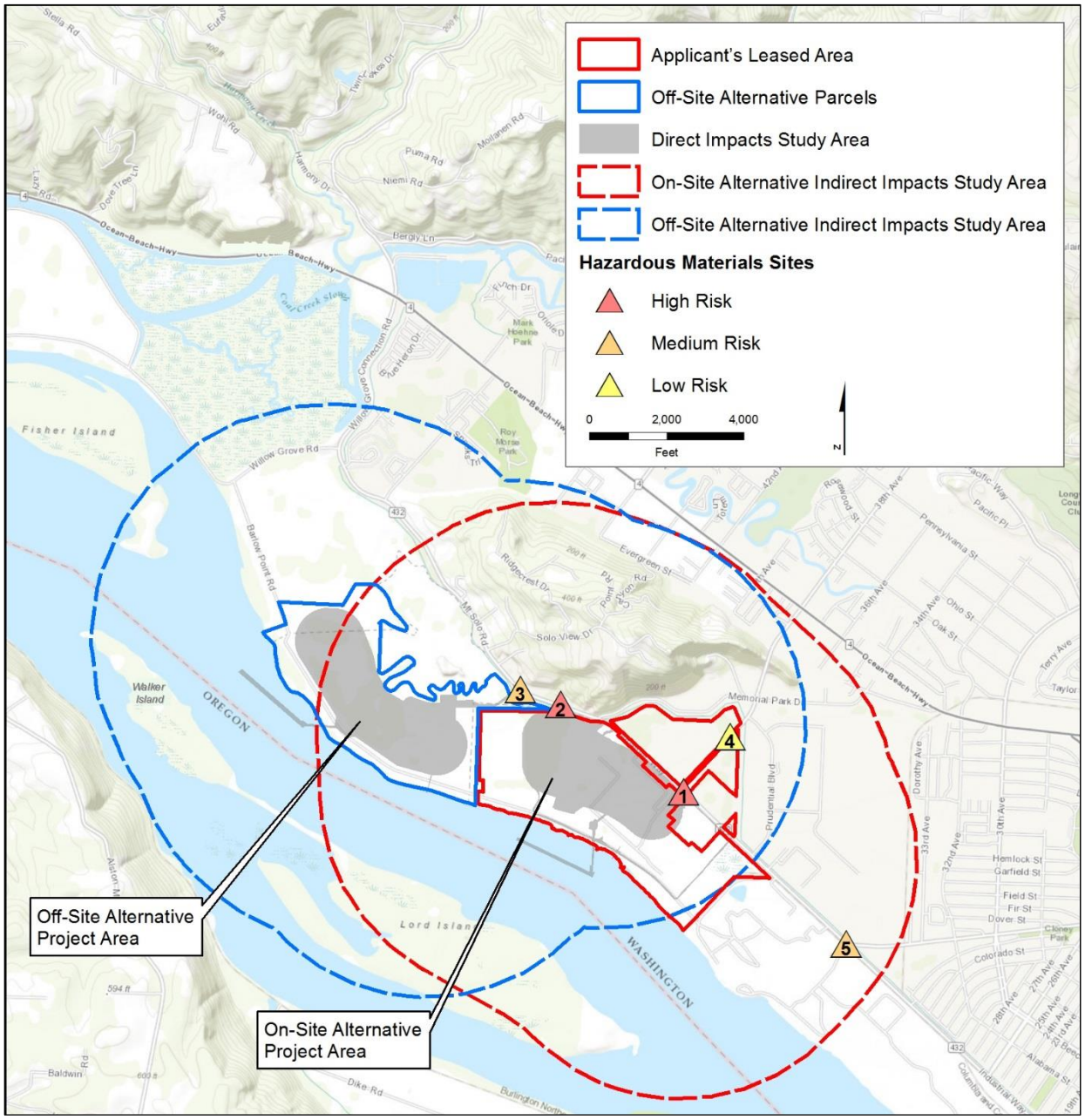
The study area for direct impacts for both the On-Site Alternative and the Off-Site Alternative is the project area. The study area for indirect impacts is the direct impacts study area plus the area within 1 mile of the project area, which includes the BNSF Spur-Reynolds Lead rail corridor

Additionally, the nearest hazardous materials sites with a high potential to cause environmental impacts, such as Superfund sites, landfills, or large-quantity generators of hazardous waste, were identified and evaluated, even if located outside the study area. The nearest federal Superfund site is the Hamilton-Labree Roads site, which is 33 miles north of the study area. Due to its distance from the study area, this site was not further evaluated and is not included in this Draft EIS. In addition, the nearest landfill was identified as the Cowlitz County Landfill, which is approximately 4 miles east of the study area. This site was not further evaluated in this Draft EIS due to its distance from the project area and because groundwater at this site flows away from the project area. Furthermore, a No Further Action (NFA) status has been issued for the landfill site, further reducing its potential to affect or be affected by construction or operation of the On-Site Alternative.

Dietz Bros. Inc., located at 149 Barlow Point Road, is within the Off-Site Alternative project area. This site is currently a general freight trucking company that does not generate, treat, store, or transport hazardous materials. Additionally, the site was not found in Ecology's Contaminated Site Cleanup Information database and no violations were identified for the site in any of the databases researched. As such, the site was eliminated from further evaluation in this document.

Figure 4.6-1 shows the study area for direct and indirect impacts for both the On-Site Alternative and Off-Site Alternative.

Figure 4.6-1. Hazardous Materials Sites and Study Areas



4.6.3 Methods

This section describes the sources of information and methods used to evaluate the potential impacts related to hazardous materials associated with construction and operation of the proposed export terminal.

4.6.3.1 Hazardous Materials Definition

In this Draft EIS, *hazardous materials* refers to various types of contaminated or hazardous media, including contaminated environmental media, dangerous waste, solid waste, hazardous substances, and petroleum products.

Contaminated environmental media includes soil, sediment, groundwater, or surface water that have been affected by a release of a hazardous material, hazardous or dangerous waste, or hazardous substance. Sites with contaminated environmental media would be regulated under the federal Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) or Resource Conservation and Recovery Act (RCRA), or under the state Model Toxics Control Act (MTCA).

- Dangerous waste is solid waste designated in Washington Administrative Code (WAC) 173-303-070 through 173-303-100 as dangerous, or extremely hazardous or mixed waste. Dangerous waste includes all federal hazardous waste, plus certain wastes exhibiting specific criteria based on toxicity and persistence.
- Solid waste is defined slightly differently in state and federal regulations. State regulations define solid waste as solid and semisolid wastes including, but not limited to, garbage, rubbish, ashes, industrial wastes, swill, sewage sludge, demolition and construction wastes, abandoned vehicles or parts thereof, and recyclable materials. Federal regulations define solid waste as any garbage, refuse, or sludge from a wastewater treatment plant, water supply treatment plant, or air pollution control facility, and other discarded material that includes solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations and from community activities. Solid waste includes hazardous and problem wastes.
- Hazardous substances are defined under CERCLA Section 9601(14). A list of more than 600 CERCLA hazardous substances is provided in 40 Code of Federal Regulations (CFR) 302.4. CERCLA Section 9601(33) defines pollutants or contaminants in terms of their negative impact on people and the environment.
- Hazardous substances are also defined under the state MTCA. The term means any dangerous or extremely hazardous waste as defined in Revised Code of Washington (RCW) 70.105.010 (5) and (6), or any dangerous or extremely dangerous waste as designated by rule under RCW 70.105; any hazardous substance as defined in RCW 70.105.010(14) or any hazardous substance as defined by rule under RCW 70.105; any substance that, on the effective date of this section, is a hazardous substance under Section 101(14) of the federal cleanup law, 42 U.S.C., Sec. 9601(14); petroleum or petroleum products; and any substance or category of substances, including solid waste decomposition products, determined by the director by rule to present a threat to human health or the environment if released into the environment.

  The term *hazardous substance* does not include any of the following when contained in an underground storage tank from which there is not a release: crude oil or any fraction thereof or petroleum, if the tank is in compliance with all applicable federal, state, and local laws.

4.6.3.2 Information Sources

The following sources of information were used to identify the potential impacts of the proposed export terminal regarding hazardous materials.

- *DataMap Area Study for the On-Site Alternative* (Environmental Data Resources 2014)
- *DataMap Area Study for the Off-Site Alternative* (Environmental Data Resources 2015)
- *Millennium Coal Export Terminal Longview, Washington Hazardous Materials Resource Report* (URS Corporation 2014a)
- *Final Remedial Investigation and Feasibility Study* (Anchor QEA 2015)
- *Millennium Coal Export Terminal Longview, Washington Off-Site Alternative-Barlow Point Resource Report* (URS Corporation 2014b).
- Washington State Department of Ecology (Ecology) (2014a) regulatory files

The *DataMap Area Study for the On-Site Alternative* (Environmental Data Resources 2014) and the *DataMap Area Study for the Off-Site Alternative* (Environmental Data Resources 2015) investigated all sites in the two study areas that use hazardous materials. The studies included a search of federal, state, local, and other appropriate databases to obtain information on facilities that use, store, transport, or generate regulated and potentially hazardous substances. The database search results used in support of this analysis were reported in accordance with the ASTM Standard Practice for Environmental Site Assessments, E 1527-13. The *NEPA Hazardous Materials Technical Report* (ICF International 2016) contains a complete list of searched databases.

4.6.3.3 Data Screening

The *DataMap Area Study for the On-Site Alternative* (Environmental Data Resources 2014) and *DataMap Area Study for the Off-Site Alternative* (Environmental Data Resources 2015) identified 24 sites within 1 mile of the project areas. Eight of these sites are associated with historical and current operations in the Applicant's leased area (i.e., the 540-acre industrial site currently leased by the Applicant). Ten orphan sites[1] were identified; however, nine of these ten sites were determined to be outside the study areas and were eliminated from further evaluation (Environmental Data Resources 2014). The one remaining orphan site within the study area was also eliminated from further consideration because no known releases have been reported for the site.

The remaining sites located outside the Applicant's leased area but within both study areas were then screened to determine if they should be eliminated or carried forward for analysis. Screening criteria are listed below.

- Sites where hazardous materials are stored and used in compliance with laws and regulations (e.g., RCRA), including large- and medium-quantity generators and underground storage tank sites, were assumed to have negligible risks of being affected by or having an impact on the On-Site Alternative or Off-Site Alternative. Thus, these types of sites were excluded from further analysis.
- Other sites were also eliminated from further analysis, including closed sites or NFA sites where remediation (e.g., contaminated soil removal or groundwater cleanup) had been completed.

[1] Orphan sites are hazardous materials sites where the polluter could not be identified or held accountable, and/or the address/location information is incomplete.

Sites that were retained based on the screening criteria listed above were subsequently ranked as being high-, medium-, or low-risk with regard to whether hazardous materials would affect or be affected by construction or operation of the terminal.

- **High-risk sites.** High-risk sites include sites where both soil and groundwater have been affected by a release of hazardous materials and where groundwater flow is predominantly toward the project area. The site is partially closed (e.g., soil cleanup has been completed) but has ongoing groundwater-focused remedial or monitoring activities planned, and the site is located within 500 feet of the project area.
- **Medium-risk sites.** Medium-risk sites include sites where both soil and groundwater have been affected by a release of hazardous materials and where groundwater flow is predominantly toward the project area. The site is partially closed (e.g., soil cleanup has been completed) but has ongoing remedial or monitoring activities planned, and the site is located within 500 to 1,000 feet of the project area.
- **Low-risk sites.** Low-risk sites include sites where only soil has been affected by a release of hazardous materials and where groundwater has not been affected. The site has been closed by an oversight agency with an NFA status or no further remedial action is planned, and the site is located more than 1,000 feet from the project area but within the study area.

The ranking criteria considered the environmental media contaminated (soil or groundwater), the direction of groundwater flow, the status of remediation (site partially closed or closed with status of NFA), and distance between the hazardous materials site and the project areas. Based on these criteria, five sites were identified in the study areas:

- **Site 1.** U.S. Department of Energy, Bonneville Power Administration, Longview Substation (high risk)
- **Site 2.** McCall Trucking (high risk)
- **Site 3.** Schill Brothers Asphalt & Paving/American Asphalt (medium risk)
- **Site 4.** GT Metals and Salvage (low risk)
- **Site 5.** Weyerhaeuser Chlor-Alkali Facility (medium risk)

These five hazardous materials sites are presented in Figure 4.6-1 and described in Section 4.6.4.3, *Hazardous Materials Sites in the Study Areas*.

4.6.3.4 Impact Analysis

The methods described above were used to assess the potential environmental impacts of hazardous materials that could result from construction and operation of the proposed export terminal. For direct impacts, the analysis assumes best management practices were incorporated into the design, construction, and operations of the terminal. More information about best management practices can be found in Chapter 8, *Minimization and Mitigation*, and Appendix H, *Export Terminal Design Features*.

4.6.4 Affected Environment

This section describes the affected environment in the study areas related to hazardous materials.

4.6.4.1 On-Site Alternative

The following sections describe the contaminated sites and remediation history located in the study area for the On-Site Alternative.

Contaminated Sites

This section summarizes the history of contamination and remedial actions in the Applicant's 540-acre leased area, which includes the 190-acre On-Site Alternative project area. The discussion also identifies chemicals of concern and final cleanup options or actions that would take place under a cleanup action plan unrelated to the proposed export terminal. Figure 4.6-2 shows the previous cleanup and focus areas on the Applicant's leased area and the project area for the On-Site Alternative. For more information, refer to the *Remedial Investigation/Feasibility Study* (Anchor QEA 2015).

Project Area

Contaminated sites in the project area include aluminum production facilities and former cable plant operations.

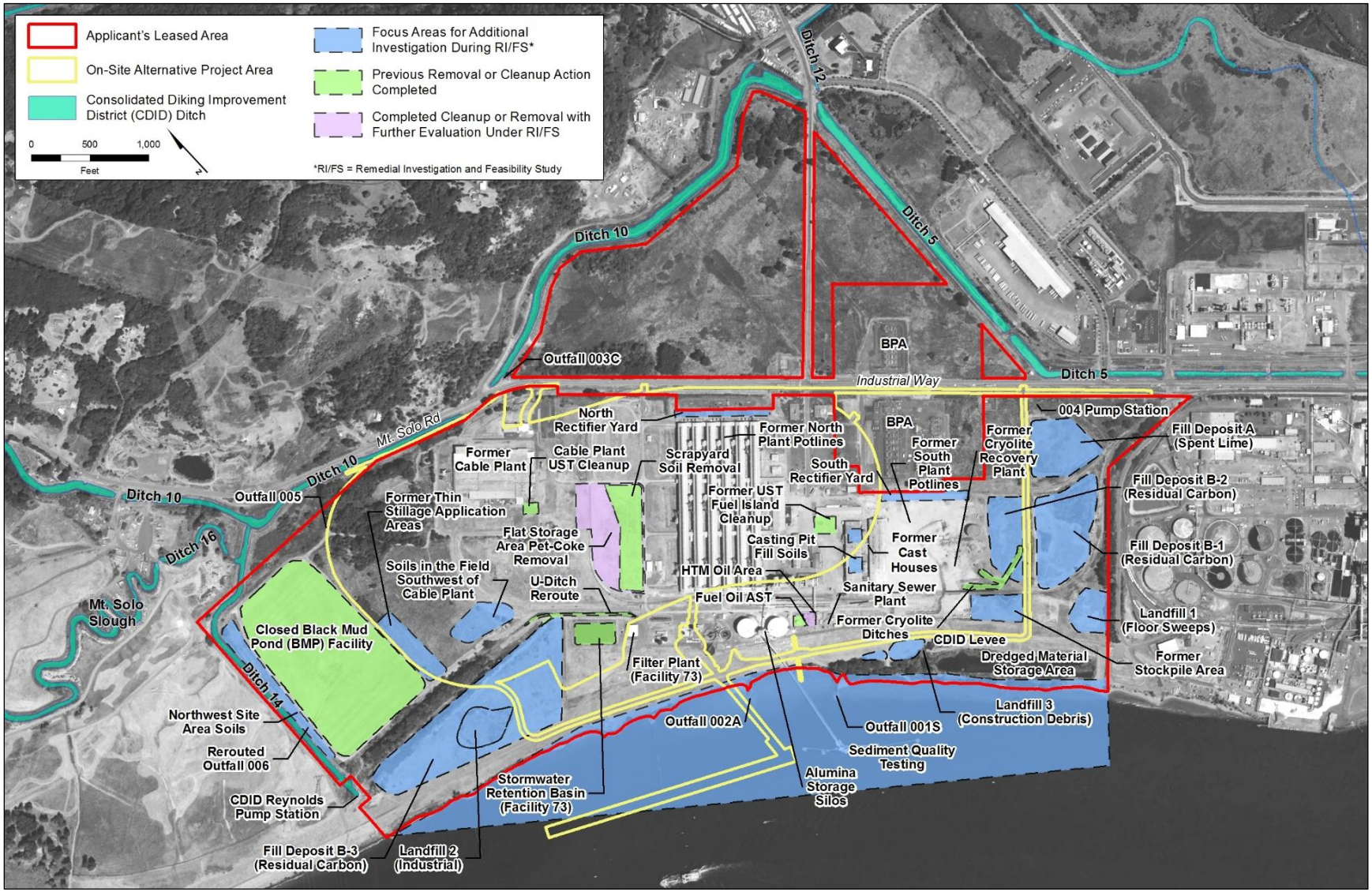
Aluminum Production Facilities

Initial industrial operations at the former Reynolds facility began in 1941 when the eastern portion of the project area was developed as an aluminum reduction plant for aluminum smelting and casting operations. These operations were expanded in 1967 when the western portion of the former Reynolds facility was developed for additional aluminum production; this area was known as the North Plant.

Smelter operations required an extensive dry-materials handling system for raw materials, such as alumina ore (transported by rail or ocean-going vessel), petroleum coke, coal tar pitch, anthracite coal, cryolite, and aluminum fluoride (transported by rail and truck). Liquid coal tar was unloaded from rail cars and transferred into on-site storage tanks, which were connected to the greenmill by distribution lines. At the greenmill, pitch (which contains polycyclic aromatic hydrocarbons [PAHs]) was used as a raw material for anode and cathode fabrication. Pitch was also stored on the ground near the rail unloading area. Elevated concentrations of fluoride in soils have been associated with historical smelter operations at the former Reynolds facility.

Figure 4.6-2 shows the location of the aluminum manufacturing facilities. The potline buildings and cast houses lie within the boundaries of the project area, while the alumina storage silos lie outside the project area's southern boundary.

Figure 4.6-2. Previous Cleanup and Focus Areas in the Applicant's Leased Area and the Project Area for the On-Site Alternative



Former Cable Plant Operations

The cable plant was constructed in the late 1960s. It was located west of the aluminum production facilities and within the boundaries of the project area. The cable plant produced electrical cable products, including aluminum wire, rods, and insulated (polyethylene and polyvinyl) low- and medium-voltage cable. The cable plant received molten aluminum from the aluminum production facilities and processed it in three furnaces: a continuous ingot caster, a rolling mill, and wire drawers. Ancillary structures associated with the cable plant included office buildings, a parking lot, and an on-site sanitary wastewater treatment plant.

The cable plant ceased production in 1992 and all assets were removed from the buildings. Since the mid-1990s, the facility has been mostly inactive and used only sporadically for storage. In addition, with approval from Ecology, successfully treated soil from the fuel island cleanup area was used for fill in former equipment concrete pits in the cable plant warehouse floor (see *Remediation History*, in Section 4.6.4.1, *Project Area for the On-Site Alternative*).

Applicant's Leased Area outside of the Project Area

Contaminated sites on the Applicant's leased area outside of the project area include a cryolite recovery plant, industrial landfills, the closed Black Mud Pond (BMP) facility, and other historical uses after closure of the former Reynolds facility.

Cryolite Recovery Plant

The cryolite recovery plant was constructed in 1953 in the former Reynolds facility East Plant area, east of the cast houses and outside the project area. It was used as a *spent potliner* (SPL) recovery and recycling facility for both the former Reynolds facility and other northwest aluminum reduction plants. SPL is a byproduct of the aluminum manufacturing process. It contains fluoride and PAH compounds and, potentially, varying levels of cyanide. The cryolite recovery plant also recovered reusable fluoride compounds, called *underflow solids*, which were eventually used to control air emissions that occurred during the aluminum manufacturing process. The underflow solids were collected in clarifiers at two locations on the former Reynolds facility.

The cryolite recovery process involved multiple steps, resulting in *black mud*, a black carbon liquid, which was disposed in several fill deposits on the former Reynolds facility. The fill deposits were closed in the 1960s and 1970s and were subsequently capped with clean soil. The cryolite recovery process also required lime to produce a sodium hydroxide solution. Circa 1980, the spent lime facility, which was constructed as part of the original cryolite recovery plant for the cryolite recovery process, was combined and managed with the residual carbon facility.

With the increase in regulatory requirements associated with SPL stockpiling and handling in the 1980s, Reynolds began to bury and cover the stockpiled SPL. Groundwater monitoring wells were installed to assess and monitor potential impacts on groundwater.

In May 1990, the cryolite recovery plant ceased operation. The SPL generated during aluminum manufacturing was removed and shipped to permitted treatment, storage, and disposal facilities. The cryolite recovery plant facilities were removed in May 1990; the land in that area is now vacant. No deposits of SPL are known to remain within the former Reynolds facility.

Carbon was generated as a by-product of operation of the on-site cryolite recovery process. Residual carbon from this process typically includes calcium carbonate, alumina, fluoride compounds, sodium, iron, and sulfate. Test results from groundwater monitoring wells indicated that shallow groundwater at the former cryolite plant contained elevated concentrations of fluoride, with high alkalinity as a result of the cryolite plant's operations. Additional investigations, findings, and cleanup of the residual carbon deposits are discussed under *Remediation History*, in Section 4.6.4.1, *On-Site Alternative*.

Industrial Landfills

Three historical landfills are located in the Applicant's leased area but outside the project area (Figure 4.6-2). These include the floor sweeps landfill (Landfill 1), east of the former cryolite recovery plant; the industrial landfill (Landfill 2) on the southwest side of the former Reynolds facility West Plant area; and the construction debris landfill (Landfill 3), between the Consolidated Diking Improvement District (CDID) #1 levee and the Columbia River.

The floor sweeps landfill (Landfill 1) received dry materials gathered from floors in the potline buildings, including alumina, bath, cryolite, and aluminum fluoride. By the mid-1970s, the floor sweeps landfill was no longer in use, and the industrial landfill (Landfill 2) began operation. The industrial landfill was used primarily for management of inert wastes, including scrap coke, ore, cryolite, aluminum fluoride, bath, brick, concrete, and debris from miscellaneous maintenance activities. The construction debris landfill (Landfill 3) contains concrete debris and other plant wastes, similar to those of the industrial landfill. Standard practices included not placing liquids in the landfills.

Closed Black Mud Pond (BMP) Facility

As discussed under the former cryolite recovery plant operations, a byproduct of the cryolite recovery process was black mud, which was disposed of in several fill deposits. One such pond was located in the West Plant area near Landfill 2 (Figure 4.6-2). The 33-acre BMP impoundment, which was formally closed in 1992, has been subject to an approved ongoing maintenance and monitoring program overseen by Ecology. Since implementation, the closed BMP facility has continued to meet the requirements of the maintenance and monitoring program. Details on closure, post-closure, and maintenance and monitoring can be found in the *Millennium Coal Export Terminal Longview, Washington Hazardous Materials Resource Report* (URS Corporation 2014a). No further remedial activities related to the closed BMP facility are required in the final cleanup action plan.

Historical Uses after Closure of the Reynolds Facility

Aluminum production operations at the former Reynolds facility ceased in 2001 at the time of the facility's closure. Between 2004 and 2011, Chinook Ventures, Inc. (Chinook Ventures) operated a terminal for the import, handling, and export of dry bulk materials, such as alumina, coal, green petroleum coke, cement, fly ash, slag, and other materials. During this time, Chinook Ventures decommissioned the majority of the facilities associated with aluminum manufacturing operations and recycled materials from smelters, which were being decommissioned throughout the northwest region of the United States. These activities included the removal and disposal or recycling of alumina, electrolyte bath, coal, and carbon products. In 2011, Chinook Ventures sold its assets to the Applicant. The Applicant subsequently removed most of the structures constructed by Chinook Ventures and continued facility decommissioning, removal, and cleanup activities.

Remediation History

The remediation history for the study area is presented in Appendix J, *Hazardous Materials Remediation History*. In 2007, Northwest Alloys and the Applicant signed an Agreed Order (AO No. DE-8940) with Ecology to complete a remedial investigation and feasibility study (RI/FS). The purpose of the RI/FS was to investigate the nature and extent of impacts at the site and identify cleanup options. From 2011 through 2014, the Applicant tested soils and completed laboratory analyses as part of the RI/FS. In May 2014, Northwest Alloys submitted a second RI/FS, detailing over 18,000 chemical measurements of soil, surface water, groundwater and sediment along with extensive testing and engineering to support possible cleanup alternatives.

Ecology held a public comment period from June 2 through August 1, 2014, which included several public workshops and a formal hearing. Following the public comment period, Ecology prepared a Responsiveness Summary in January 2015, and has developed a draft cleanup action plan. Ecology will select cleanup standards and points of compliance in the final cleanup action plan. A cleanup action plan is typically prepared after the RI/FS has been finalized and a preferred remedial alternative selected. The plan is based on information and technical analyses generated during the RI/FS and consideration of public comments and community concerns.

A draft cleanup action plan and draft consent decree was released in 2016 for a 60-day public comment period (Washington State Department of Ecology 2016). The comment period ended March 18, 2016. A responsiveness summary will be prepared to address public comments and then the reports will be finalized. Likely remedial technologies will include a combination of, but not necessarily all of, the following: removal, consolidation, capping, groundwater treatment, and monitored natural attenuation treatments. Property owner Northwest Alloys, Inc. (a subsidiary of Alcoa, Inc.) and the Applicant are legally responsible for the cleanup, including paying for and performing the work.

4.6.4.2 Off-Site Alternative

The 220-acre Off-Site Alternative project area is adjacent to the On-Site Alternative project area, immediately west of CDID Ditch 14.

Limited site-specific subsurface information was available at the time this document was prepared; however, the project area is undeveloped and generally consists of dense vegetation and grassy areas that extend to the shoreline of the Columbia River. A portion of the eastern side of the project area is in agricultural use while another portion of the project area appears to have been used for motocross racing. Agricultural uses included pasture, silage/grass/hay, food crops, commercial Christmas trees, and two golf courses that are considered turf grass crops. Agricultural and motocross activities may have included the use of pesticides, herbicides, fuels, lubricants, and other related contaminants. No groundwater wells have been constructed on, and no structures are present within, the project area.

Surrounding land uses include the residential neighborhoods of Barlow Point immediately to the northeast, and Memorial Park and West Longview less than 1 mile to the north of the project area. The closed Mount Solo Landfill is also immediately north of the project area. The On-Site Alternative project area is also immediately adjacent to the east. The nearest residential community is the West Longview neighborhood, less than 1 mile north of the project area. The next-nearest residential communities are to the east about 1 to 2 miles from the project area toward the Longview city

center and include the Olympic West, Columbia Valley Garden, Highlands, and Columbia Valley Gardens neighborhoods.

Groundwater conditions are anticipated to be similar to those for the On-Site Alternative project area due to the presence of the CDID #1 ditch system (Ditches 14 and 16) that borders the project area to the north and east, but these conditions have not been confirmed. Groundwater data collected from nearby groundwater monitoring wells installed in conjunction with the post-closure monitoring of the Mount Solo Landfill indicate that there may be a slight groundwater gradient from the closed Mount Solo Landfill toward the project area, at least within the shallow groundwater zone. It is possible that this is the result of a more pronounced groundwater flow gradient between the Mount Solo Landfill and CDID Ditch 16, which caused a significant difference in topographic relief between the On-Site Alternative project area and the Off-Site Alternative project area. Therefore, the CDID #1 ditch system may have a reduced impact on the shallow aquifer in terms of groundwater gradient in this isolated area (URS Corporation 2014b).

4.6.4.3 Hazardous Materials Sites in the Study Areas

Hazardous materials sites outside of the Applicant's leased area and the Off-Site Alternative project area, but still within the indirect impacts study area for hazardous materials, are presented below. Data screening identified five hazardous materials sites that require further evaluation (Section 4.6.3.3, *Data Screening*). These sites, shown in Figure 4.6-1, are described in Table 4.6-2. For additional information on the hazardous materials sites, refer to the *NEPA Hazardous Materials Technical Report*.

Table 4.6-2. Hazardous Materials Sites in the Indirect Impacts Study Area

Site	Business Name	Distance from Project Area	Risk Class
Sites within both the On-Site Alternative and Off-Site Alternative Indirect Impacts Study Areas			
1	U.S. DOE BPA Longview Substation/Longview Substation	33 feet from On-Site Alternative 0.5 mile from Off-Site Alternative	High
2	McCall Trucking	127 feet from On-Site Alternative 100 feet from Off-Site Alternative	High
3	Schill Brothers Asphalt & Paving/American Asphalt[a]	722 feet from On-Site Alternative 100 feet from Off-Site Alternative	Medium
4	GT Metals and Salvage (formerly Longview Auto Wrecking)	1,902 feet from On-Site Alternative 0.5 mile from Off-Site Alternative	Low
Sites within the On-Site Alternative Indirect Impacts Study Area Only			
5	Weyerhaeuser Chlor-Alkali Facility	2,953 feet from On-Site Alternative	Medium
Sites within the Off-Site Alternative Indirect Impacts Study Area Only			
There were no sites exclusively located in the Off-Site Alternative Study Area only.			

Notes:

[a] The Schill Brothers Asphalt & Paving/American Asphalt 1 site is located adjacent to and partially atop the inactive Mount Solo Landfill, which was classified as a limited-purpose landfill that disposed of mainly wood-wastes and construction and demolition waste between about 1966 and 1992. The landfill was closed in 1993 under WAC 173–304 Minimum Functional Standards for Solid Waste Handling. According to information received from the Cowlitz County Health Department, Environmental Health Unit (EHU), the current environmental status of the Mount Solo Landfill is unknown. According to the EHU, the last annual report was received in 2008 and the last post closure permit was issued that same year. The landfill has not been actively monitored since then (Long pers. comm.).

Sources: Washington State Department of Ecology 2014b–2014o; ICF International 2016.

U.S. DOE = U.S. Department of Energy; BPA = Bonneville Power Administration

4.6.5 Impacts

This section describes the potential direct and indirect impacts related to hazardous materials that would result from construction and operation of the proposed export terminal.

4.6.5.1 On-Site Alternative

This section describes the potential impacts that could occur in the study area as a result of construction and operation of the proposed export terminal at the On-Site Alternative location.

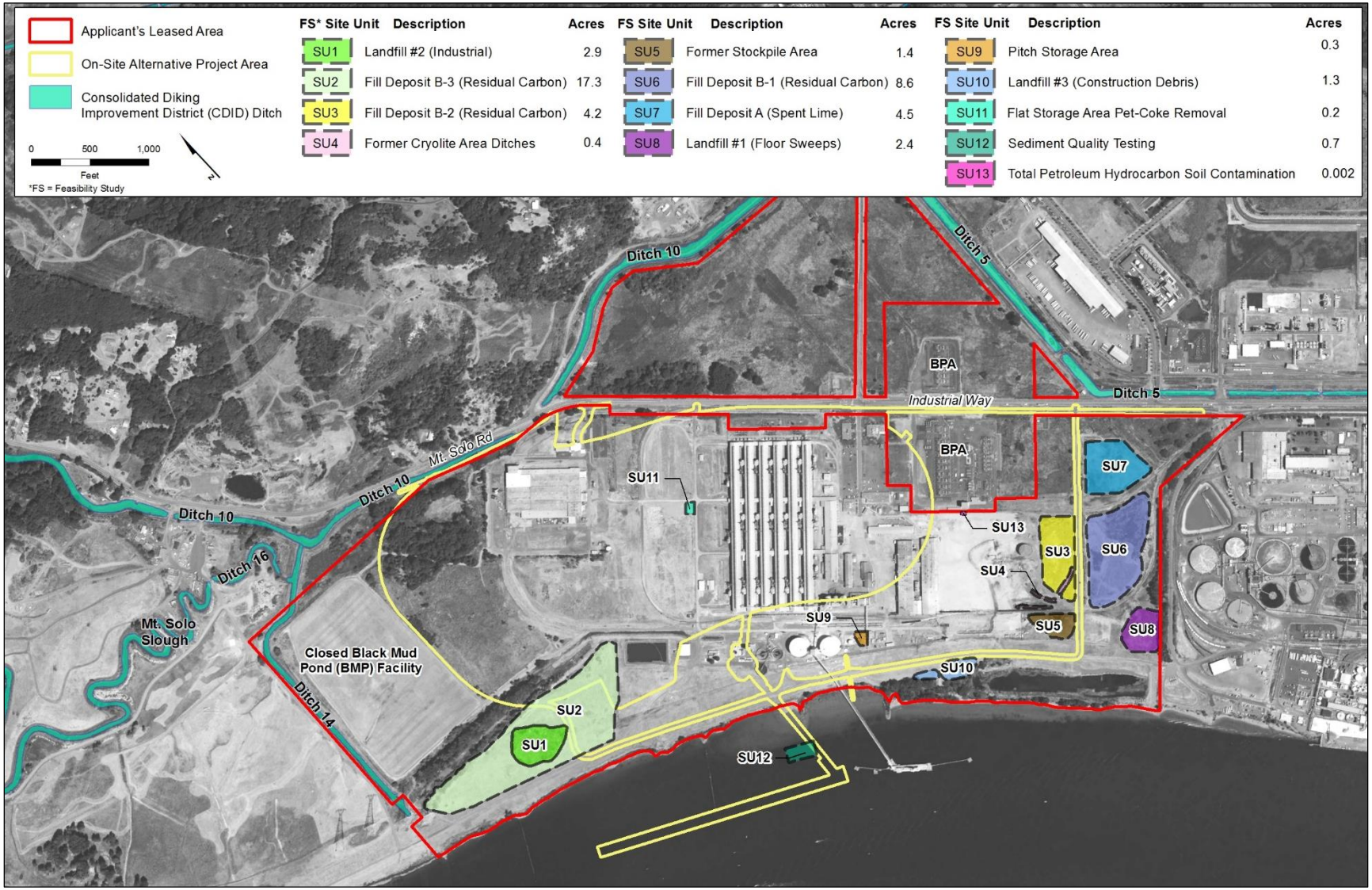
Construction—Direct Impacts

Construction-related activities include demolishing existing structures and preparing the site, constructing the rail loop and dock, and constructing supporting infrastructure (e.g., conveyors and transfer towers). Construction equipment would include heavy machinery to prepare foundations and footings for the new facility, associated services, and utilities. This equipment would likely include cranes, wheel loaders, dozers, dump trucks, excavators, graders, rollers, compactors, drill rigs, pile-driving equipment, portable ready-mix batch plant, ready-mix trucks, concrete pumps, elevated work platforms, forklifts, rail track-laying equipment, welders, water pumps, and other similar machinery. Waste likely to be generated or encountered during construction would consist of contaminated soils and sediment; contaminated groundwater generated by excavation, drilling, and dewatering activities; and existing on-site building materials containing lead or asbestos. Construction of the proposed export terminal could result in exposing or introducing these substances to the project area, which would pose risks to human health and environment.

Encountering Hazardous Materials

Construction of the terminal at the On-Site Alternative location would take place in the RI/FS cleanup and focus areas and would pose risks to human health and environment should any hazardous materials be encountered through contact with contaminated soil, contaminated groundwater, and inhalation of toxic vapors. However, with the exception of two small areas on the eastern corner of the flat storage area and the northeastern portion of Fill Deposit B-3 (SU11 and SU2 in Figure 4.6-3), construction in the On-Site Alternative project area would occur where remedial action is not required, because hazardous materials are either not present or have been previously remediated. In the two areas where overlap would occur, construction of the terminal and remediation would be coordinated to minimize potential exposure to construction personnel and the environment. Northwest Alloys and the Applicant would be required to follow the final cleanup action plan, comply with applicable state and federal laws and regulations, and conduct compliance monitoring to ensure cleanup actions comply with the cleanup plan. Therefore, remedial actions are expected to remove or isolate all hazardous materials and ensure that any remaining hazardous materials are below thresholds established by federal, state, and local regulations, thereby reducing the potential for construction personnel or the environment to be exposed to hazardous materials.

Figure 4.6-3. Feasibility Study Site Units in the Applicant's Leased Area and the Project Area for the On-Site Alternative



Construction activities associated with the On-Site Alternative would also encounter possible lead- and asbestos-containing materials, chemically treated wood, and polychlorinated biphenyls (PCBs) during demolition of existing structures. Releasing these materials into the air, soil, surface water, or groundwater would affect the health and safety of construction personnel and others. However, demolition of former Reynolds facility buildings and structures would require adherence to all applicable standards and regulations. The applicable agencies and regulations would provide oversight and prevention techniques. Therefore, lead- and asbestos-containing material, treated wood debris, and caulking waste (containing PCBs) would be managed properly and disposed of at off-site facilities to avoid and minimize potential impacts on human health and the environment.

Introduced Hazardous Materials

Construction of the terminal would involve the routine transport, use, storage, and disposal of hazardous materials such as fuels, solvents, paints, oils, concrete-curing compounds, and grease. Releasing these materials into the air, soil, surface water, or groundwater would pose risks to human health and the environment. Hazardous materials likely to be transported, used, stored, or disposed of in the project area during construction would be materials typical of construction projects and would generally be used and handled in relatively small quantities (less than 5 gallons). However, fuel spills could range from less than 50 gallons up to a worst-case maximum spill from a fuel truck of approximately 4,000 gallons.[2]

Impacts from releases would likely be localized and short-term in nature although spills could reach and affect the Columbia River. The Applicant would be required to transport, use, store, and dispose of hazardous materials in compliance with applicable federal, state, and local laws and regulations such as the RCRA, U.S. Department of Transportation Hazardous Materials Regulations, and other regulations identified in Section 4.6.1, *Regulatory Setting*. The enforcement of construction and demolition standards and best management practices by state and local agencies (e.g., Ecology, Longview Fire Department, Cowlitz County Public Works), would help minimize the potential for a release of hazardous materials.

Furthermore, the Applicant would be required to obtain and comply with the NPDES Construction Stormwater General Permit, which requires controls to protect surface water and groundwater. The permit would require the preparation of a construction stormwater pollution prevention plan and implementation of best management practices to avoid and minimize the risk of pollutants from entering surface waters and groundwater, thereby, further reducing the potential for impacts on the Columbia River.

Construction—Indirect Impacts

Construction-related activities would not result in indirect impacts. Construction of the proposed export terminal would not encounter or introduce hazardous materials in the Applicant's leased area outside the limits of disturbance for the project area. Construction activities would be confined to the project area, and remediation of contaminated areas in the Applicant's leased area would be performed per the final cleanup action plan. In addition, the transport of hazardous materials in the Applicant's leased area to and from the project area would comply with applicable federal, state and local regulations such as the RCRA, U.S. Department of Transportation Hazardous Materials

[2] The capacity for fuel trucks used during construction and operations is discussed in Section 4.7, *Energy*.

Regulations, and other regulations identified above under *Remediation History*, in Section 4.6.4.1, *On-Site Alternative.* Furthermore, construction of the terminal would not encounter hazardous materials that would pose risks to human health and the environment from any of the five hazardous materials sites identified in the indirect impacts study area (Section 4.6.4.3, *Hazardous Materials Sites in the Study Areas*) because soil contaminants associated with these site would not come into contact with construction activities, and groundwater contamination has either not been reported, or groundwater flows away from the project area.

Operations—Direct Impacts

Operations-related activities of the proposed export terminal are described in Chapter 3, *Alternatives,* but would take place on a site identified for remediation (the Applicant's leased area) and cleaned up as described in the final cleanup action plan. As a result, hazardous materials could be encountered in the project area that would pose risks to human health and the environment. In addition, the following hazardous materials are expected to be used during normal operations of the terminal at the On-Site Alternative location.

- Diesel fuel, gasoline, oils, greases, hydraulic fluids, antifreeze/coolants, and solvents used for equipment operation and maintenance.
- Sulfuric acid, calcium hydroxide, flocculants, lime, and antiscalants used for water treatment.
- Chemicals used in the on-site laboratory (generally in small quantities of 5 gallons or less) could include methylene chloride, toluene, acetone, and 2-butanone.
- Wastes classified as hazardous and sanitary sewer waste.

These materials would be stored on site, as well as all necessary collection and containment measures for immediate response to any spill; however, operation of the terminal could result in exposing or releasing these substances into the project area that would pose risks to human health and the environment. Impacts associated with encountering and introducing hazardous materials during operations are described below.

Encountering Hazardous Materials

Operation of the terminal at the On-Site Alternative location would not encounter hazardous materials in the project area that would pose risks to human health and the environment as remedial and monitoring activities associated with the former Reynolds facility would be carried out as described in the final cleanup action plan and would be coordinated to avoid contact and exposure to operations personnel and the environment.

Introduced Hazardous Materials

Operation of the terminal at the On-Site Alternative location would involve the use of hazardous materials and would generate small quantities of hazardous waste that could be released into the environment through an accidental spill, which would pose a risk to human health and the environment. However, hazardous materials would generally be stored and used in small quantities. In addition, the Applicant is responsible for reporting and responding to spills as required by federal, state, and local laws.

Locomotives (with fuel capacity of approximately 5,000 gallons) traveling to and from the project area could accidentally release fuel during operations; however, the likelihood of a

derailment or spill would be low. Locomotives and rail cars would be maintained, and failed equipment would be repaired in a timely manner by train or railroad operators, thereby minimizing the potential for releases. Further information on rail transportation and rail safety is provided in the Chapter 6, Section 6.1, *Rail Transportation*, and Section 6.2, *Rail Safety*, respectively.

As with construction, the Applicant would be required to transport, use, store, and dispose of hazardous materials in compliance with applicable federal, state and local laws and regulations such as the RCRA, U.S. Department of Transportation Hazardous Materials Regulations, and other regulations identified in Section 4.6.1, *Regulatory Setting.* The Applicant would follow regulations governing the storage of hazardous materials and the separation of hazardous materials in designated storage areas. Water quality and the Columbia River would be protected from polluted stormwater runoff as a result of the Applicant complying with the requirements of the NPDES Industrial Stormwater Permit.

Operations—Indirect Impacts

Operation of the terminal at the Off-Site Alternative location would not result in indirect impacts associated with encountering or introducing hazardous materials on the Applicant's leased area or the five hazardous material sites identified in the study area. However, the increase in rail traffic (240 unit trains arriving and 240 unit trains departing per month with three locomotives per train) on the Reynolds Lead and BNSF Spur could result in indirect impacts related to a release of hazardous materials that would pose risks to human health and the environment. However, locomotives and rail cars would be maintained, and leaks avoided by timely repairs made by train and railroad operators to minimize the potential for releases.

Fuel spills could occur if trains or rail cars collide or derail. Public safety and environmental risks of a fuel spill by collision or derailment would include fires or explosions, wildfires, water contamination, air quality impacts, impacts on tribal treaty resources, and impacts on wildlife, vegetation and fish. If a release of hazardous materials in the study area were to result from a collision or derailment, emergency response and cleanup measures would be implemented as required by the federal and state law, including Washington State regulations under RCW 90.56. Further information on rail transportation and rail safety is provided in the Chapter 6, Section 6.1, *Rail Transportation,* and Section 6.2, *Rail Safety*, respectively. Indirect impacts associated with increased vessel traffic are addressed in Chapter 5, Section 5.5, *Water Quality*, and Chapter 6, Section 6.4, *Vessel Transportation*.

4.6.5.2 Off-Site Alternative

Potential impacts related to hazardous materials from construction and operation of the proposed export terminal at the Off-Site Alternative location are described below.

Construction—Direct Impacts

Construction-related activities for the Off-Site Alternative would follow the same construction sequence and require the same materials and equipment as described for the On-Site Alternative. However, the Off-Site Alternative project area is undeveloped and no building demolition would be required. In addition, site preparation would require vegetation removal because the area is currently overgrown with vegetation. The Off-Site Alternative would also require constructing a new access road and rail spur. Therefore, construction of the proposed export terminal at the Off-

Site Alternative location could encounter hazardous materials in the project area that would pose risks to human health and the environment.

Although there are no documented or known sources of environmental contamination in the project area, past farming activities and operation of a former motocross track may have involved pesticides, herbicides, fuel, and other related petrochemical contaminants that could have affected soil, surface water, and groundwater. It is not known if any chemicals were released into soils, surface waters, or groundwater. The Applicant would need to screen, sample, and analyze soils to confirm if any contamination is present.

In addition, environmental contaminants from the closed Mount Solo Landfill could have migrated into groundwater in the project area. Construction workers could be exposed to contaminated groundwater during construction activities. The Applicant would need to characterize groundwater flow and quality beneath the site to determine if this is occurring.

Construction—Indirect Impacts

Construction of the proposed export terminal would not result in indirect impacts. Construction would not encounter contaminants from the closed BMP facility in the On-Site Alternative project area because chemicals of concern are contained by soil caps, and soil and groundwater monitoring show that fluoride has limited mobility under existing conditions and is not affecting down-gradient groundwater or surface water quality (Anchor QEA 2015). Furthermore, construction of the terminal is not expected to encounter hazardous materials originating from the four hazardous materials sites in the study area (Sites 1 through 4). Impacts would be the same as those discussed for the On-Site Alternative.

Operations—Direct Impacts

Operation of the proposed export terminal at the Off-Site Alternative location would require using and storing the same materials as identified for the On-Site Alternative, and would generate hazardous wastes in similar quantities. Operation of the terminal would result in the following direct impacts.

Encountering Hazardous Materials

As explained previously, it is not known if any chemicals were released into or remain in the soil, surface water and sediments, or groundwater in the Off-Site Alternative project area. The Applicant would need to screen, sample, and analyze soils to confirm whether any contamination is present. If found, contaminants would need to be remediated prior to initiating operation. Therefore, operations are not expected to encounter preexisting hazardous materials that would pose risks to human health and the environment.

Similarly, it is not known if environmental contaminants from the closed Mount Solo Landfill have migrated into groundwater in the project area and would affect operations. The Applicant would need to characterize groundwater flow and quality beneath the project area prior to issuance of grading permits to determine whether groundwater is contaminated and evaluate the potential for impacts.

Introduced Hazardous Materials

Operation of the terminal at the Off-Site Alternative location would involve the same types and quantities of hazardous materials as the On-Site Alternative, and operations would be limited to the project area. The terminal would operate in compliance with all applicable environmental laws and regulations and implement similar water management and treatment facilities as proposed for the On-Site Alternative. Therefore, impacts would be the same as those discussed for the On-Site Alternative.

Operations—Indirect Impacts

Operation of the proposed export terminal at the Off-Site Alternative location would result in indirect impacts similar to a terminal constructed at the On-Site Alternative location. In addition, the terminal at the Off-Site Alternative location would require approximately 2,500 linear feet of new rail spur, which could increase the potential to release hazardous materials during rail operations. It is unknown whether that increased potential would be measurably different from the On-Site Alternative.

4.6.5.3 No-Action Alternative

Under the No-Action Alternative the Corps would not issue a Department of the Army permit authorizing construction and operation of the proposed export terminal. As a result, impacts resulting from constructing and operating the terminal would not occur. In addition, not constructing the terminal would likely lead to expansion of the adjacent bulk product business onto the export terminal project area. The following discussion assesses the likely consequences of the No-Action Alternative related to hazardous materials.

Because operations of the former Reynolds facility have resulted in cleanup actions throughout the Applicant's leased area, new development or expansion of existing uses could encounter similar impacts during construction and operation as those discussed for the On-Site Alternative. Construction activities could take place in RI/FS cleanup and focus areas, as well as involve handling possible lead- and asbestos-containing materials, chemically treated wood, and PCBs that would pose risks to human health and the environment. In addition, construction activities would involve the routine transport, use, storage, and disposal of hazardous materials such as fuels, solvents, paints, oils, concrete-curing compounds, and grease. Operations would also be expected to use similar hazardous materials as those described for the On-Site Alternative. However, all potential impacts would be minimized through remedial actions carried out in the cleanup action plan and compliance with federal, state, and local regulations as well as implementation of best management practices. Therefore, impacts of the No-Action Alternative related to hazardous materials are expected to be similar to the On-Site Alternative.

4.6.6 Required Permits

The following permits related to hazardous materials would be required for the proposed export terminal.

- **National Pollutant Discharge Elimination System Construction Stormwater General Permit—Washington State Department of Ecology.** The quality of surface water and groundwater would be protected by the Applicant obtaining and complying with an NPDES Construction Stormwater General Permit. The permit would require preparation of a

construction stormwater pollution prevention plan and implementation of best management practices to minimize the risk of pollutants entering surface waters and groundwater.

As part of the NPDES Construction Stormwater General Permit, a stormwater pollution prevention plan would be required. A stormwater pollution prevention plan is a site-specific document that identifies potential sources of stormwater pollution at the construction site; describes practices to reduce pollutants in stormwater discharges from the construction site; and identifies procedures to comply with the terms and conditions of the permit.

- **National Pollutant Discharge Elimination System Industrial Stormwater Permit—Washington State Department of Ecology.** The quality of surface water and groundwater would be protected as a result of the Applicant obtaining and following an NPDES Industrial Stormwater Permit. The permit would require preparation of a stormwater pollution prevention plan and implementation of best management practices to minimize the risk of pollutants entering surface waters and groundwater.

  As part of the NPDES Industrial Stormwater Permit, a stormwater pollution prevention plan would be required. A stormwater pollution prevention plan is a site-specific document that identifies potential sources of stormwater pollution from operations; describes practices to reduce pollutants in stormwater discharges; and identifies procedures the operator would implement to comply with the terms and conditions of the permit.

- **Clean Water Act, Section 401 Water Quality Certification—Washington State Department of Ecology.** The On-Site Alternative would involve construction and operation of a facility that requires state water quality certification under Section 401 of the Clean Water Act. Water quality certification would require implementation of best management practices to protect the aquatic environment.