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August 20, 2019

Mr. Chris Maurer Washington State Department of Ecology 300 Desmond Drive Southeast Lacey, Washington 98503

RE: OVERVIEW OF POTENTIAL OCCURRENCE OF THREATENED AND ENDANGERED SPECIES LAKESIDE INDUSTRIES ABERDEEN SITE VOLUNTARY CLEANUP PROGRAM IDENTIFICATION NO. SW1161 ABERDEEN, WASHINGTON FARALLON PN: 525-006

Dear Mr. Maurer

Farallon Consulting, L.L.C. (Farallon) has prepared this letter on behalf of Lakeside Industries, Inc. (Lakeside) to provide the results of the biological assessment conducted for the Lakeside property at 2400 Sargent Boulevard in Aberdeen, Washington (herein referred to as the Site) (Figure 1) as a supplement to the *Remedial Investigation and Feasibility Study Report, Lakeside Industries Aberdeen Site, 2400 Sargent Boulevard, Aberdeen, Washington* revised August 2019, prepared by Farallon. The remedial investigation (RI) and feasibility study (FS) are being conducted under the Washington State Department of Ecology (Ecology) Voluntary Cleanup Program. The Site is a hot-mix asphalt plant in an area of mixed industrial and undeveloped properties in Grays Harbor County. The 8.58-acre Site is bounded by the Chehalis River to the south and west, by Elliott Slough to the east, and by a frontage road and State Route 12 to the north (Figure 2). The entire Site is either paved or covered with buildings and is impervious. Prior to Lakeside's ownership, the Site was owned and operated by Chevron USA, Inc. (formerly Standard Oil Company) as a bulk fuel facility between 1922 and 1985.

BACKGROUND

The *Remedial Investigation and Feasibility Study Report, Lakeside Industries Aberdeen Site, 2400 Sargent Boulevard, Aberdeen, Washington* dated June 2015, prepared by Farallon, was previously submitted to Ecology to obtain concurrence with respect to the selected cleanup action alternative to mitigate the identified presence of petroleum hydrocarbons in soil and groundwater at concentrations exceeding the cleanup levels established in the Washington State Model Toxics Control Act Cleanup Regulation (MTCA). Although the Site was determined to be exempt from the requirements identified in MTCA to complete a terrestrial ecological evaluation as part of the RI/FS process, in a meeting with representatives of Lakeside, Ecology, and Farallon held on January 24, 2017 at the Ecology Southwest Regional office, the Ecology Project Manager requested that supplemental research be conducted to evaluate the potential presence of threatened or endangered species in the riverine environment in the vicinity of the Site.



The selected cleanup action alternative for the Site includes source removal excavations in select localized areas where residual concentrations exceeding MTCA cleanup levels of constituents of concern in soil and groundwater remain, institutional and engineered controls, containment measures, and monitored natural attenuation. Containment would be realized with the existing impervious surfaces, the existing retaining wall along the southern and western boundaries that is keyed into the underlying native silt, and the subsurface stratigraphy in the areas north and east of the retaining wall where the native silt is prevalent underlying the entire Site. As part of the remedy, a sheet pile barrier with sealed seams would be installed along the upland face of the existing retaining wall to a depth of up to 25 feet below grade and extending approximately 300 feet beyond the east end of the existing retaining wall (Figure 3).

The Chehalis River is present on the southern and western sides of the Site. The portion of the riverbank adjacent to the Site between the perimeter chain-link fence and the rip rap shoreline averages approximately 20 feet wide and is mostly bare soil with limited vegetation. Shallow groundwater beneath the Site flows primarily to the south, toward the Chehalis River. However, the concrete retaining wall impedes shallow groundwater flow on the western and central parts of the Site. A tidal study conducted during the RI concluded that tides in the Chehalis River have no influence on groundwater levels and flow in the shallow groundwater-bearing zone beneath the Site, due to the presence of the concrete retaining wall and the native silt aquitard underlying the entire Site. Based on the available data for the Site, the physical barriers present and planned, and the underlying lithology, the potential groundwater to surface water exposure pathway is and will remain incomplete.

ASSESSMENT METHODOLOGY

Farallon identified threatened, endangered, and candidate species likely to be present in the vicinity of the Site by searching available literature on the occurrence of these species in Grays Harbor County and the Chehalis River basin (Table 1), although the majority of the literature available does not provide the detail necessary to definitively determine whether these species would be present in the environment at the Site or in the adjacent portions of the Chehalis River. Farallon then evaluated whether each species was likely to be present in the Site area and whether the types of habitat in the vicinity of the Site were appropriate to each species. A species was indicated as Not Found in This Area or Not Appropriate Habitat if it met one or more of the following conditions:

- Species not found in habitats similar to those in the vicinity of the Site.
- Species identified on maps showing the locations where they occur, if the mapped area does not include the lower portions of the Chehalis River.
- Species identified in written descriptions of locations where they occur, if the described area is not in the vicinity of the Site.
- Species identified as being present only at elevations above 500 feet.
- Species requiring a strictly marine environment.



- Species identified with the following preferred habitats that do not occur in the vicinity of the Site:
 - Deep forest;
 - Old-growth forest;
 - o Desert;
 - o Alpine meadows;
 - High mountain streams; and
 - Bogs or marshes, slow-moving water.
- Species that require association with another species not present in the vicinity of the Site.

The literature reviewed by Farallon to compile the list of threatened, endangered, and candidate species in the area included the following:

- Species and Habitat Information, Appendix G of Chehalis Basin Strategy Final Programmatic Environmental Impact Statement dated June 2, 2017, prepared by Ecology. http://chehalisbasinstrategy.com/programmatic-eis/.
- Washington Natural Heritage Program, 2019 Washington Vascular Plant Species of Special Concern dated July 25, 2019, prepared by the Washington Department of Natural Resources. <u>http://www.dnr.wa.gov/publications/amp_nh_vascular_ets.pdf</u>.
- National Oceanic and Atmospheric Administration's Endangered and Threatened Marine Species under the National Marine Fisheries Service's Jurisdiction database. <u>http://www.nmfs.noaa.gov/pr/species/esa/listed.htm#fish.</u>
- United States Forest Service (USFS), Interagency Special Status/Sensitive Species Program (ISSSSP). <u>https://www.fs.fed.us/r6/sfpnw/issssp/</u>.
- *Priority Habitats and Species List* dated August 2008, revised January 2019, prepared by the Washington Department of Fish and Wildlife. <u>http://wdfw.wa.gov/publications/00165</u>.
- Washington Department of Fish and Wildlife's PHS [Priority Habitats and Species] on the Web database map. <u>http://apps.wdfw.wa.gov/phsontheweb/</u>.
- U.S. Fish and Wildlife Service's Environmental Conservation Online System Species Reports database. <u>https://ecos.fws.gov/ecp</u>.
- Listed and Proposed Endangered and Threatened Species and Critical Habitat; Candidate Species; and Species of Concern in Grays Harbor County revised November 1, 2007, prepared by the U.S. Fish and Wildlife Service, Western Washington Fish and Wildlife Office. <u>https://www.fws.gov/wafwo/speciesmap/GRAYS%20HARBOR.html.</u>



THREATENED AND ENDANGERED SPECIES OVERVIEW

The Site is entirely paved or covered by structures and is not habitat for threatened or endangered species. Areas adjacent to the Site that could potentially be habitat for threatened or endangered species are the banks of the Chehalis River, the Chehalis River, and Elliott Slough. Potential threatened or endangered species in the vicinity of the Site are those that inhabit the river, slough, riverbank, or riparian areas.

Based on the assessment methodology described above, two threatened fish species, one candidate insect species, and one endangered plant species were identified as potentially present in the vicinity of the Site (Table 1). Because the Site is entirely paved or covered with structures and only very sparse vegetation is present in constrained areas at the top of the riprap wall along the western and southern boundaries of the Site, the insect and plant species are unlikely to be affected by the constituents of concern identified in the subsurface at the Site. Further, the plant species identified (i.e., bear's foot sanicle) is listed as restricted to drought-prone, low-lying maritime meadows, and the insect species identified (i.e., Queen Charlotte's copper) is listed as preferring forest openings and bogs where host plants grow. Based on these preferences, these species are unlikely to be present at or near the Site.

The green sturgeon, one of the two species of fish identified as potentially present in the vicinity of the Site, is the most anadromous of the members of the sturgeon family and is found along the Pacific coast from Mexico to the Bering Sea. Its preferred habitats are bays and estuaries, but the green sturgeon also spends a good portion of time in the ocean and moving between river basins. One of the survival characteristics cited for this species is that at any point in time a significant portion of the population is in the ocean. There is no documented spawning of green sturgeon in Washington waters, but the species is known to feed on bottom animals (e.g., amphipods, shrimp, crabs, fish) in the bays and estuaries of Grays Harbor, primarily in late summer. Although the Site is upstream of the ideal habitat for the species, green sturgeon can move upstream to reach better feeding areas. Thus, the occurrence of the green sturgeon in the vicinity of the Site is anticipated to be transient in nature. Further protection for green sturgeon in the vicinity of the Site will be provided by the engineering controls to be implemented as part of the preferred cleanup action alternative.

Bull trout, the second fish species identified as potentially present in the vicinity of the Site, are found throughout the Pacific Northwest, from northern California to the upper Yukon and Mackenzie drainages in Canada. A Bull trout can migrate through an area, or remain in a portion of a river system for its entire life. For spawning, bull trout use headwater areas typically in pristine environments with water temperatures in the mid- to low-40s degrees Fahrenheit. Bull trout population management has been cited as being made more difficult because of the limited areas where late summer and autumn water temperatures are low enough for spawning. Bull trout are opportunistic feeders, eating aquatic insects, shrimp, snails, leeches, fish eggs, and fish. In general, bull trout require cold, clear running water, and would not be expected to spend much residence time in the Chehalis River near the Site based on the influence of tidal actions in the area. The influence of the Site on bull trout in the area will also continue to be negated by the engineering



controls to be constructed at the Site. Therefore, impact to bull trout from constituents of concern identified in the subsurface at the Site is expected to be nominal.

CONCLUSION

Other than the Chehalis River itself and Elliot Slough to the east, the limited area of habitat in the vicinity of the Site provides minimal potential for threatened or endangered species to be present on or near the Site. The habitat in the Site vicinity is not ideal for many of the threatened and endangered species known to exist in Grays Harbor County and/or the Chehalis River basin, and other species are known not to be present in the area around the Site. Most or all of the threatened or endangered aquatic species migrate through or otherwise use the Site area in a transitory manner. The engineering controls in place and those to be implemented as part of the preferred cleanup action, the presence of the native silt layer underlying the entire Site, and the continued natural attenuation of the constituents of concern present in the subsurface will mitigate the potential for either the direct contact or potential discharge of groundwater to surface water exposure pathways to adversely affect threatened or endangered species. Further, neither the direct contact nor groundwater to surface water pathways at the Site area considered to be complete.

CLOSURE

Farallon appreciates the opportunity to provide this information on behalf of Lakeside Industries, and trusts this information is sufficient for your needs. Please contact either of the undersigned at (425) 295-0800 if you have questions or need additional information.

Sincerely,

Farallon Consulting, L.L.C.

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Eric Buer, L.G., L.H.G., P.G. Senior Hydrogeologist

J. Riley Conkin, L.G., L.H.G. Principal Geologist

Attachments: Figure 1, Site Vicinity Map Figure 2, Historical Features and Sampling Location Map Figure 3, Site Plan Showing Primary Elements of Preferred Cleanup Alternative Table 1, Threatened and Endangered Species Potentially Present in Grays Harbor County, Washington

cc: Karen Deal, Lakeside Industries William Joyce, Joyce Ziker Parkinson PLLC

EB/JRC:tlc

FIGURES

OVERVIEW OF POTENTIAL OCCURRENCE OF THREATENED AND ENDANGERED SPECIES Lakeside Industries Aberdeen Site Aberdeen, Washington

Farallon PN: 525-006









TABLE

OVERVIEW OF POTENTIAL OCCURRENCE OF THREATENED AND ENDANGERED SPECIES Lakeside Industries Aberdeen Site Aberdeen, Washington

Farallon PN: 525-006

Table 1 Threatened and Endangered Species Potentially Present in Grays Harbor Couunty, Washington Lakeside Industries Aberdeen Facility Aberdeen, Washington Farallon PN: 525-006

				Not Found in This	Not Appropriate
Species	Common Name	Status	Type of Species	Area ¹	Habitat ²
Fratercula cirrhata	Tufted puffin	Endangered	Bird	Х	Х
Uria aalge	Common murre	Candidate	Bird	Х	Х
Coccyzus americanus	Yellow-billed cuckoo	Threatened	Bird		Х
Phoebastria albatrus	Short-tailed albatross	Endangered	Bird		Х
Brachyramphus marmoratus	Marbled murrelet	Threatened	Bird		Х
Charadrius alexandrinus nivosus	Western snowy plover	Endangered	Bird	Х	Х
Eremophila alpestris strigata	Streaked horned lark	Endangered	Bird	Х	
Strix occidentalis caurina	Northern spotted owl	Endangered	Bird	Х	Х
Phalacrocorax penicillatus	Brandt's cormorant	Candidate	Bird		Х
Aechmophorus occidentalis	Western grebe	Candidate	Bird	Х	Х
Chaetura vauxi	Vaux's swift	Candidate	Bird		Х
Progne subis	Purple martin	Candidate	Bird		Х
Dryocopus pileatus	Pileated woodpecker	Candidate	Bird		Х
Aquila chrysaetos	Golden eagle	Candidate	Bird	Х	Х
Sebastes (various species)	Rockfish	Candidate	Fish	Х	Х
Acipenser medirostris	Green sturgeon	Threatened	Fish		
Thaleichthys pacificus	Eulachon	Threatened	Fish		Х
Salvelinus confluentus	Bull trout	Threatened	Fish		
Oncorhynchus nerka	Sockeye salmon	Threatened	Fish		Х
Oncorhynchus keta	Chum salmon	Candidate	Fish		Х
Oncorhynchus mykiss	Steelhead trout	Threatened	Fish		Х
Theragra chalcogramma	Walleye pollok	Candidate	Fish		Х
Lampetra ayresi	River lamprey	Candidate	Fish		Х
Clupea pallasii	Pacific herring	Candidate	Fish		Х
Merluccius productus	Pacific hake	Candidate	Fish		Х
Gadus macrocephalus	Pacific cod	Candidate	Fish		Х
Plebejus icarioides blackmorei	Puget blue	Candidate	Insect		Х
Mitoura johnsoni	Johnson's hairstreak	Candidate	Insect		Х

Table 1 Threatened and Endangered Species Potentially Present in Grays Harbor Couunty, Washington Lakeside Industries Aberdeen Facility Aberdeen, Washington Farallon PN: 525-006

				Not Found in This	Not Appropriate
Species	Common Name	Status	Type of Species	Area ¹	Habitat ²
Lycaena mariposa charlottensis	Queen Charlotte's copper	Candidate	Insect		
Phocoena phocoena	Pacific harbor porpoise	Candidate	Sea mammal		Х
Physeter microcephalus	Sperm whale	Endangered	Sea mammal	Х	Х
Orcinus orca	Killer whale	Endangered	Sea mammal		Х
Megaptera novaeangliae	Humpback whale	Endangered	Sea mammal	Х	Х
Balaenoptera musculus	Blue whale	Endangered	Sea mammal	Х	Х
Sciurus griseus	Western gray squirrel	Threatened	Mammal	Х	Х
Thomomys mazama velmensis	Yelm pocket gopher	Threatened	Mammal		Х
Thomomys mazama melanops	Western pocket gopher	Threatened	Mammal		Х
Thomomys mazama couchi louiel	Western pocket gopher	Threatened	Mammal		Х
Thomomys mazama tumuli	Tenino pocket gopher	Threatened	Mammal		Х
Thomomys mazama pugetensis	Olympia pocket gopher	Threatened	Mammal		Х
Martes pennanti	Fisher	Endangered	Mammal	Х	Х
Marmota olympus	Olympic marmot	Candidate	Mammal	Х	Х
Arenaria paludicola	Marsh sandwort	Endangered	Plant		Х
Silene spaldingii	Spalding's catchfly	Threatened	Plant	Х	Х
Physaria tuplashensis	White Bluff's bladder-pod	Threatened	Plant	Х	Х
Dodecatheon austrofrigidum	Frigid shooting star	Endangered	Plant	Х	Х
Sanicula arctoides	Bear's foot sanicle	Endangered	Plant		
Carex macrochaeta	Large-awned sedge	Threatened	Plant		Х
Erythronium quinaultense	Quinault fawn-lily	Threatened	Plant	Х	Х
Claytonia multiscapa ssp. Pacifica	Pacific lacewinged spring beauty	Threatened	Plant	Х	Х
Sanguisorba menziesii	Menzies' burnet	Threatened	Plant		Х
Iwatsukiella leucotricha	Iwatsukiella moss	Endangered	Plant		Х
Polemonium carneum	Great polemonium	Threatened	Plant		Х
Rhyacotriton cascadae	Cascade torrent salamander	Candidate	Amphibian	X	X
Rana pretiosa	Oregon spotted frog	Threatened	Amphibian	X	X
Anaxyrus boreas	Western toad	Candidate	Amphibian		X

Table 1 Threatened and Endangered Species Potentially Present in Grays Harbor Couunty, Washington Lakeside Industries Aberdeen Facility Aberdeen, Washington Farallon PN: 525-006

Species	Common Name	Status	Type of Species	Not Found in This Area ¹	Not Appropriate Habitat ²
Plethodon vandykei	Van Dyke's salamander	Candidate	Amphibian		Х
Plethodon dunni	Dunn's salamander	Candidate	Amphibian		Х
Myotis evotis keenii	Keen's long-eared bat	Candidate	Bat		Х
Corynorhinus townsendii	Townsend's big-eared bat	Candidate	Bat		Х
Actinemys marmorata	Pacific (western) pond turtle	Endangered	Reptile		Х
Chelonia mydas	Green sea turtle	Threatened	Reptile	X	Х
Dermochelys coriacea	Leatherback sea turtle	Endangered	Reptile	Х	Х

NOTES:

¹Listed species has not been identified as present in lower portions of the Chehalis River basin or areas in the vicinity of the Site.

²Preferred habitat(s) for listed species do not occur in the vicinity of the Site.