Proposed Plan
Tongue Point Naval Air Station
Astoria, Oregon

US Army Corps of Engineers

Introduction

The United States Army Corps of Engineers (USACE) invites you to comment on our proposed plan for the Tongue Point project (Project) in Astoria, Oregon. The proposed plan summarizes the extensive information collected during our investigation and contained in the Project Administrative Record for the aquatic areas, the former Incinerator Building, and the Former Fire Training Area. We conducted an investigation for the Project to assess contaminants potentially resulting from past U.S. Department of Defense (DoD) activities and that meet the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) definition of a hazardous substance. The results of the investigation, risk assessments, and the current and future site uses for the areas discussed in this plan show that cleanup is not needed because the DoD-related contamination does not pose an unacceptable risk to people's health or the environment. The project is being conducted as part of the Formerly Used Defense Sites (FUDS) program.

Public Comment Period

Your comments are important to us. The final decision for the Project will be made after reviewing and considering all information submitted during the comment period.

Public Meeting

You are invited to attend a public meeting on June 29, 2016 to hear more about the proposed plan. This is an opportunity to learn more about the Project, ask questions, and share relevant concerns. Please see the "Opportunities for Public Involvement" section of this plan for additional information about the meeting.

Submitting Comments

Comments may be submitted during the public meeting or written (mail or email) by no later than July 8, 2016. Following the public comment period, the USACE will summarize and respond to public comments in a responsiveness summary, which will become part of the official Project decision documents.

Project Background

The Tongue Point project is located at the former Tongue Point Naval Air Station in Astoria, Oregon. The Project is in a rural area on the tidelands near the mouth of the Columbia River (Cathlamet Bay) off Old Highway 30 approximately 3 miles east of Astoria, Oregon (Figure 1).

The DoD used the area as a Naval Seaplane Base from 1941 through 1946 and constructed seaplane hangars, aviation gasoline refueling systems, and repair and maintenance facilities on a portion of the former Naval Air Station. Construction activities were completed in 1942, and seaplanes arrived in early 1943. Concrete ramps allowed seaplanes access to the river, and a large ordnance storage area was constructed on Tongue Point. Supporting structures included living quarters, an athletic field, a medical dispensary, a powerhouse, a sewage treatment plant, a fire training area, sludge burn pits, pipelines, tanks, and a waste incinerator.

In 1946, naval air operations ceased, and the base became a fleet facility for the Columbia River Group of the Pacific Reserve Fleet. This group dredged the river and constructed eight concrete finger piers. Activities included handling of electrical transformers, pesticide application, ship deactivation and reactivation, preservation of deactivated ships, and ship overhauls. The Navy deactivated the facility and transferred the property to the Government Services Administration in 1962.

Several previous studies were conducted before the USACE's investigation. Some of that historical information helped us determine sampling locations for our investigation and are briefly referenced in the discussions below.

The USACE completed a detailed investigation in 2008 and evaluated potential threats to people's health and the environment potentially resulting from DoD activities. Data collected during the investigation focused on specific areas, designated as Decision Units (DUs), and related to potential release of chemicals from past DoD use associated with DoD-era activities from 1941 to 1962.

Based on our investigation and the accompanying health and environmental risk assessments, we know that past chemical releases at the DUs addressed by this plan did not leave significant amounts or areas of contamination. Our findings are summarized in this plan along with key points that provide the basis for this proposed plan. The investigation report and other technical documents related to the Project are available in the Administrative Record file at the Astoria Public Library.

Decision Units

The following DUs are the subject of this proposed plan:

- Aquatic DU – North of Pier 8
- Aquatic DU – Finger Piers
- Aquatic DU – Near Landfill
- Incinerator Building DU
- Former Fire Training Area DU

Key points for these five DUs are:

- They were conclusively evaluated during the remedial investigation.
- They do not pose an unacceptable risk to people's health or the environment.
- The proposed CERCLA no action decision is the recommended and preferred decision for these areas of the Project.

Land Use

The Project area, shown on Figure 1, comprises 230 acres (85 acres onshore and 145 acres off shore). The land portion is situated within the flat lying area on the banks of Cathlamet Bay within the Columbia River and is bordered by upland areas to the southwest, the prominent Tongue Point to the north, and Mill Creek to the south. The aquatic portion lies within Cathlamet Bay immediately surrounding the finger piers.

Wildlife management, habitat protection, and wildlife observation restrict access in the northern portion of the investigation area. Industrial and residential zones, including the Job Corps training facilities, comprise the area south of Tongue Point to Hangar 2. Land south of Hangar 2 is zoned industrial and consists primarily of a multi-use transportation logistics and intermodal fish processing facility. The southernmost portion of the investigation area includes the Former Fire Training Area, which is covered by dredge sediments emplaced in 2001, post-DoD activities. Unconsolidated fill from dredged sediments underlies the waterfront portion of the investigation area; this area is paved, with the exception of a small portion of waterfront near the Former Fire Training Area.

The Aquatic DUs, Incinerator Building DU, and the Former Fire Training Area DU will most likely continue to be used as industrial and open space without the need for land use restrictions or other institutional controls to prevent future residential use.

Investigating the Project

To make risk-based decisions for the DUs, the USACE compared results for the various soil, sediment, groundwater, surface water, and tissue (fish and clams) samples collected during the investigation to screening and risk-based levels. The screening levels that we used are much lower than CERCLA "cleanup levels." A chemical at a concentration above a screening level results in further evaluation of that chemical in the risk assessment, but does not mean that cleanup is necessarily required. The need for cleanup depends on factors such as site use, human exposures, and consideration of habitat available for plants and animals.

Incinerator Building Decision Unit

The Incinerator Building consists of a small (10 feet by 25 feet), short-stacked brick structure in the southern portion of the investigation area. It is adjacent to a steep slope in a heavily forested and thick brushy area. Also known as a "Refuse and Garbage Incinerator," it was used as a low temperature furnace to burn paper wastes.

One residual ash sample was collected in 1993 from inside the incinerator and analyzed for various metals. In 2007, the USACE conducted additional sampling to assess the nature and extent of contamination in the surface soils, related to ash and stack deposition around the perimeter of the brick structure.

Ash

A 2007 ash sample contained polychlorinated biphenyls (PCBs), metals, a non-explosive nitroaromatic/nitroamine compound, and common combustion byproducts including polycyclic aromatic hydrocarbons (PAHs), and dioxin/furan compounds. While some reported concentrations did exceed screening levels, none of the reported concentrations exceeded CERCLA cleanup levels. Additionally, the ash is limited to residual ash in the firebox and chimney of the building both of which are too small for a person to enter.

Soils

Soil samples collected in 2007 from the incinerator area were analyzed for semi-volatile organic compounds (SVOCs), PAHs, PCBs, dioxins/ furans, nitroaromatics/ nitroamines, and metals. While some reported concentrations did exceed screening levels, none of the reported concentrations exceeded CERCLA cleanup levels.

Aquatic Decision Units (North of Pier 8, Finger Piers, and Near Landfill)

The Aquatic DUs include eight reinforced concrete finger piers on the east side of the hydrofilled area of Cathlamet Bay. The piers, approximately 30 to 50 feet wide and 1,100 to 1,500 feet long, are numbered 1 through 8 from south to north and are spaced approximately 520 feet apart, with the exception of Piers 7 and 8, which are approximately 290 feet apart (Figure 1).

Sediment in the Finger Piers, Near Landfill, and Pier 8 DUs consist of silt and sandy silt (ranging from 5 to 20 feet in thickness) underlain by sand (at least 10 feet thick). The upper silt layer is believed to be sediment deposited after the initial development of the destroyer and submarine base and construction of the Finger Piers. Infilling of the bay and construction of the Finger Piers slowed river flow velocities, resulting in a lower energy depositional environment and increased silt deposition. The underlying sand represents sediment deposited in a higher energy environment before development. Sediment accumulation within the Finger Piers DU ranged from 1.5 to 3 feet between 1995 and 2008. Based on this sedimentation rate, an estimated 8 feet of sediment has accumulated since the cessation of DoD-related activities in 1962.

The USACE collected surface water and sediment samples near the Finger Piers to assess health risks and potential ecological effects. Clam tissue samples were collected to

assess ecological effects and evaluate potential impacts due to human consumption.

Surface Water

The USACE collected one surface water sample from a location North of Pier 8, two from the Finger Piers area, and one from the Near Landfill area. We analyzed all samples for total petroleum hydrocarbons (TPH), volatile organic compounds (VOCs), SVOCs (including PAHs), pesticides, PCBs, and metals. TPH, VOCs, and PCBs were not detected. Two SVOCs, one pesticide, and several metals were detected and evaluated in the investigation.

Sediment

The USACE collected seven samples each from north of Pier 8, the Finger Piers area, and the Near Landfill area. We analyzed all of these samples for SVOCs (including PAHs), pesticides, PCBs, and metals, three of the samples from each area for VOCs and TPH, the Finger Piers samples for tributyltin, and the samples from the Near Landfill area for dioxins/furans. The detected compounds were evaluated in the risk assessment.

Tissue

We collected samples of organisms in each area and analyzed one composite tissue sample from each DU for chemicals from the following list: PCBs, select bioaccumulative chemicals, pesticides, PAHs, dioxins/furans, tributyltin, and SVOCs. The limited availability of organisms resulted in limited analyses of some samples. While some reported concentrations in the surface water, sediment, and tissue samples did exceed screening levels, none of the reported concentrations exceeded CERCLA cleanup levels.

Former Fire Training Area Decision Unit

Formerly used for fire training exercises and a public works storage yard, this DU contained several structures, mostly constructed in 1947, including warehouse buildings, a railroad spur, two steel oil-storage tanks, and one steel tank specifically used for fire training. This DU area consists of a manmade construction fill type soil and a naturally occurring alluvial soil type. The fill occurs from ground surface to approximately 17 feet below ground surface (bgs). Alluvium underlies the fill and extends to 22 to 32 feet bgs. Bedrock, the Astoria Formation, underlies the alluvium. The fill includes mounds of dredge spoils overlying older hydraulic fill that was placed as part of early site development.

Groundwater occurs within the fill and alluvium soil types. Historically, the depth to groundwater ranged from 5 to 15 feet bgs. The saturated thickness ranges from 12 to 20 feet, with the greatest saturated thickness near the banks of the Columbia River. Groundwater flows east toward Cathlamet Bay. Groundwater levels are expected to be tidally influenced.

Several monitoring wells were installed before the investigation along the eastern shoreline near the finger piers and in the Fire Training Area DU. Soil samples collected from borings during well installation showed 16 micrograms per kilogram (µg/kg) of vinyl chloride in a groundwater sample from one of the finger piers wells. Concentrations up to 34 µg/kg of vinyl chloride were in soil samples from well locations in the Fire Training Area. PCB, several SVOCs, TPH, and vinyl chloride (a VOC) were detected in groundwater samples from the monitoring wells within and around the Fire Training Area.

During our investigation, we collected several groundwater, soil, soil gas, near-shore sediment, and surface water samples in September 2008 to assess the nature and extent of various compounds related to Former Fire Training Area activities. Our results are summarized below.

Soil

We collected 15 soil samples and analyzed for VOCs, petroleum compounds, PAHs, metals, dioxin/furans, pesticides, and PCBs. PCBs were not detected. The other chemicals were evaluated in the risk assessment.

Soil Gas

Samples around and within the dredged sediments stockpile were analyzed for VOCs, oxygen, and carbon dioxide. The VOCs in soil gas were evaluated in the risk assessment.

Groundwater

The USACE sampled both existing and temporary wells for analysis of VOCs, select TPH compounds, PAHs, and metals; select samples were also analyzed for dioxin/furans, pesticides, and PCBs. PCBs were not detected, and other chemicals were evaluated in the risk assessment.

Sediment

The USACE collected sediment samples for the Former Fire Training Area DU from two near-shore sediment cores at locations between Finger Piers 1 and 2. We analyzed the samples for VOCs, select petroleum compounds, SVOCs, pesticides, metals, and PCBs. VOCs were not detected; the other chemicals were evaluated in the risk assessment.

Near-Shore Surface Water

Surface water samples from two near-shore locations between Finger Piers 1 and 2 were analyzed for VOCs, petroleum compounds, SVOCs, pesticides, and metals. VOCs were not detected; the other chemicals were evaluated in the risk assessment.

While some reported concentrations in the soil, soil gas, groundwater, sediment, and surface water did exceed screening levels, none of the reported concentrations exceeded CERCLA cleanup levels.

Assessment of Risks

The purpose of the remedy selection process is to implement cleanup activities that eliminate, reduce, or control risks to people's health and the environment. The health and ecological risk assessment conclusions determine whether chemicals within each of the DUs posed risks that warrant action, or potentially trigger cleanup. The risk assessments are consistent with United States Environmental Protection Agency (EPA) guidance and generally followed State of Oregon guidance.

CERCLA provides a range of acceptable risk values to assess whether federal cleanup is necessary based on potential threats to people's health. The EPA established an acceptable excess cancer risk range, from 1 in 10,000 (or 10^{-4}) to 1 in 1,000,000 (or 10^{-6}) over a person's lifetime. An excess lifetime cancer risk of 1 in 10,000 indicates that an individual experiencing the reasonable maximum exposure estimate for current and future land use has a 1 in 10,000 chance of developing cancer because of site-related exposure. This is referred to as an "excess lifetime cancer risk" because it would be in addition to the risks of cancer individuals face from other causes such as smoking or exposure to too much sun.

Non-cancer health effects for people are evaluated by comparing an exposure level over a specified time period (e.g., lifetime) with a reference dose that represents a level an individual may be exposed to but that is not expected to cause adverse effects. The EPA (and Oregon Department of Environmental Quality [ODEQ]) established a non-cancer threshold of 1 to indicate that adverse non-cancer effects are unlikely.

The DoD-related risks were compared to the EPA acceptable risk levels by DU; these assessments are summarized in the following sections.

Incinerator Building DU

Media of concern: soil

- The DU provides little or no suitable habitat for ecological receptors, and none of the detected contaminants was measured at concentrations associated with unacceptable risk. *Therefore, the USACE expects little or no adverse ecological effects.*
- In the scenarios evaluated for current and future land use, cancer and non-cancer risk estimates fell within or below the EPA target cancer risk range of 10^{-4} to 10^{-6} and the non-cancer threshold of 1. *Therefore, contaminants in soils are not likely to cause adverse health effects for people using this area.*
- Existing conditions are protective of current and future people using the area.

The USACE found no actionable risk for the Incinerator Building DU attributable to past DoD practices.

Aquatic DUs (North of Pier 8, Finger Piers, and Near Landfill

Media of concern: surface water, sediment, tissue

- Contaminants from chemicals possibly released during DoD activities are not accessible because of overlying sediment that accumulated, post-DoD, from 1962 to the present. This overlying layer of sediment separates any chemicals associated with DoD activities from organisms using the near-surface sediment. In addition, Cathlamet Bay is a depositional environment with little or no potential for scouring to expose the DoD-era sediments. Dredging activities required to maintain the pier areas for existing commercial uses would not encounter the DoD-era sediments.
- Concentrations for several chemicals are of potential ecological concern in sediment for certain organisms such as benthic invertebrates, aquatic life such as fish, water column invertebrates, and/or birds. However, existing concentrations of CERCLA contaminants within surface water and sediment in the near-surface biotic zone are not distinguishable from concentrations of CERCLA contaminants observed in surrounding areas not impacted by DoD activities or upstream in the Lower Columbia River. *Therefore, adverse ecological effects due to DoD activities are unlikely.*
- Excess cancer risks to anglers and recreational users are generally below or within the EPA target risk range of 10^{-4} to 10^{-6} although cancer risks for an angler in the Finger Piers area is 2×10^{-4}, which exceeds the upper bound of the EPA target risk range. This risk to anglers is almost entirely due to consumption of fish as opposed to direct contact with sediment and surface water. Risk from exposure to arsenic in fish makes up the majority of the excess cancer risk while dioxins/furans in fish tissue make up the rest. Recreational users of the shoreline are unlikely to experience exposure at a level of concern. Non-cancer hazard thresholds in the Finger Piers DU exceed 1, with arsenic and dioxins/furans as the non-cancer hazard drivers. However, arsenic concentrations in fish tissue are similar to background and are not a result of DoD activities in the area.
- Based on multiple lines of evidence, as presented in the investigation report, concentrations of CERCLA contaminants from DoD-era activity pose *no actionable risk to people and ecological receptors evaluated for the Aquatic DUs. Existing conditions are protective of current and future use by people.*

The USACE found no actionable risk for the Aquatic DUs attributable to past DoD practices.

Former Fire Training Area DU

Media of concern: groundwater

- The dredge spoils that potentially contain contaminants were not placed there by DoD.
- Groundwater beneath the Former Fire Training Area is not now, or in the foreseeable future, a drinking water source.
- The DU provides little or no suitable habitat for ecological receptors. In addition, none of the detected contaminants were measured at concentrations associated with unacceptable risk. *Therefore, little or no adverse ecological effects are expected.*
- In the scenarios evaluated for current and future land use, excess cancer risk estimates fell within or below the EPA target cancer risk range of 10^{-4} to 10^{-6} for

consumption of groundwater. Cancer risk from consumption of groundwater in this DU is associated with vinyl chloride. The presence of the vinyl chloride is most commonly related to the use of industrial cleaners, such as tetra- and trichloroethene. Both of these cleaners degrade to vinyl chloride when oxygen concentrations are sufficiently low. The occurrence of vinyl chloride is consistent with DoD fire training exercises. The origins of vinyl chloride are not clear due to post DoD activities of previous users. The vinyl chloride-related cancer risk from consumption of groundwater is 3×10^{-5}, within the EPA's acceptable risk range. Therefore, *contaminants within the DU do not pose unacceptable risks and are not likely to cause adverse health effects for people currently using this area.*

- Contaminants in groundwater are not accessible to people given the current land uses. In addition, they do not pose unacceptable health risks to people even if they were to become accessible through foreseeable industrial future use of the DU.
- Risk-based conclusions from the Aquatic DUs indicate that potential DoD-related chemicals at the Former Fire Training Area do not pose adverse effects to people or the environment exposed to surface water adjacent to the Finger Piers area of Cathlamet Bay.
- Risk-based conclusions for the vapor intrusion pathway indicate no risk to current land users because no buildings or structures are currently present in the DU.
- Existing conditions are protective of current and future people using the area.

The USACE found no actionable risk for the Former Fire Training DU directly attributable to past DoD practices.

Summary of Our Investigation

The USACE found no unacceptable risks to people's health or to the environment from past DoD activities at the Aquatic DUs, Incinerator Building DU, and Former Fire Training Area DU.

Petroleum compounds, SVOCs/PAHs, VOCs, metals, dioxin/furans, pesticides, and PCBs were detected in several samples; however, health and environmental risk assessments performed as part of our investigation showed no significant environmental impacts from DoD-related contamination, and existing conditions are protective of current and future users.

The DoD-related chemicals pose no unacceptable risk because consumption of groundwater at the Former Fire Training Area DU has a risk within an acceptable management range.

The USACE found no significant environmental impacts from past DoD activities at Aquatic DUs (North of Pier 8, Finger Piers, and Near Landfill), Incinerator Building DU, and Former Fire Training Area DU. The ODEQ takes exception to some procedures used in the risk assessments. However, ODEQ agrees that since no areas of significant contamination were found in recent investigations, the threat of unacceptable risk is low. Based on our investigation, a review of available data, and the expected land use, the *USACE proposes that no cleanup is required under CERCLA for the Aquatic DUs, Incinerator Building DU, and Former Fire Training Area DU.* All indications are that these DUs will remain in industrial and open space use and, therefore, land use restrictions or other institutional controls to prevent future residential use are not needed.

Proposed Decision and Working with Stakeholders

The USACE is the lead federal agency, and the ODEQ is the lead regulatory agency. The USACE participated in multiple meetings with stakeholders during the investigation and risk assessment activities to share information and hear concerns. We have shared information and draft documents throughout our investigation and risk assessment activities to help inform and engage all stakeholders. The ODEQ, involved with the Project since the beginning, reviews documents and provides oversight and consultation in close collaboration with USACE and in support of the USACE's selection of remedial or corrective actions. The United States Fish and Wildlife Service is also a stakeholder and provided input during development of our investigation.

The USACE found no unacceptable risks from releases of hazardous substances associated with past DoD activities at the Aquatic DUs, Incinerator Building DU, and the Former Fire Training Area DU. Therefore, the USACE proposes no action is necessary to ensure protection of human health and the environment.

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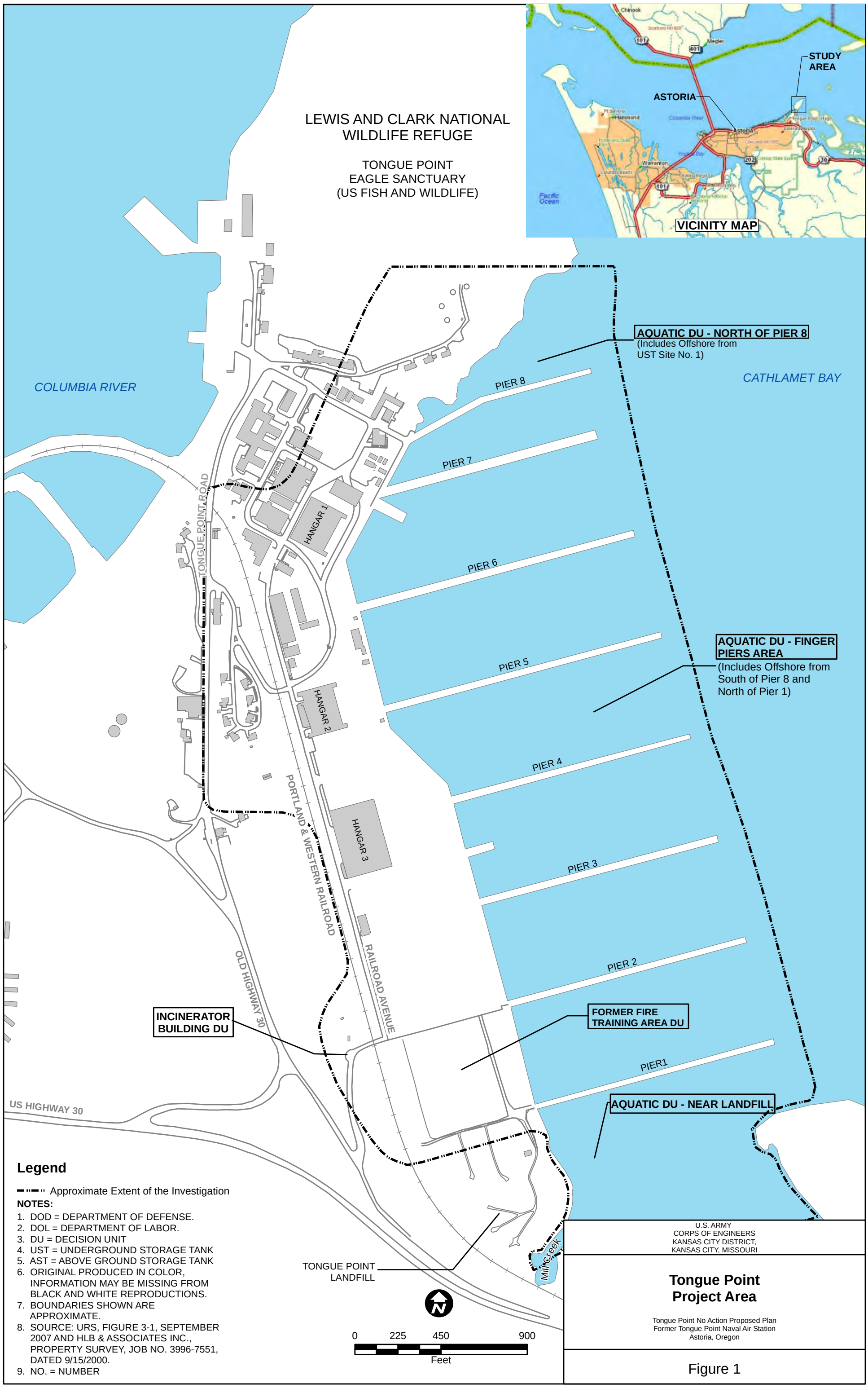
LEWIS AND CLARK NATIONAL WILDLIFE REFUGE
TONGUE POINT EAGLE SANCTUARY (US FISH AND WILDLIFE)
VICINITY MAP
STUDY AREA
ASTORIA
Chinook
Megler
Hammond
Warrenton
Astoria
Pacific Ocean
AQUATIC DU - NORTH OF PIER 8
(Includes Offshore from UST Site No. 1)
CATHLAMET BAY
COLUMBIA RIVER
PIER 8
PIER 7
PIER 6
PIER 5
PIER 4
PIER 3
PIER 2
PIER1
AQUATIC DU - FINGER PIERS AREA
(Includes Offshore from South of Pier 8 and North of Pier 1)
HANGAR 1
HANGAR 2
HANGAR 3
TONGUE POINT ROAD
PORTLAND & WESTERN RAILROAD
RAILROAD AVENUE
OLD HIGHWAY 30
US HIGHWAY 30
INCINERATOR BUILDING DU
FORMER FIRE TRAINING AREA DU
AQUATIC DU - NEAR LANDFILL
TONGUE POINT LANDFILL
Mill Creek
Legend
Approximate Extent of the Investigation
NOTES:
1. DOD = DEPARTMENT OF DEFENSE.
2. DOL = DEPARTMENT OF LABOR.
3. DU = DECISION UNIT
4. UST = UNDERGROUND STORAGE TANK
5. AST = ABOVE GROUND STORAGE TANK
6. ORIGINAL PRODUCED IN COLOR, INFORMATION MAY BE MISSING FROM BLACK AND WHITE REPRODUCTIONS.
7. BOUNDARIES SHOWN ARE APPROXIMATE.
8. SOURCE: URS, FIGURE 3-1, SEPTEMBER 2007 AND HLB & ASSOCIATES INC., PROPERTY SURVEY, JOB NO. 3996-7551, DATED 9/15/2000.
9. NO. = NUMBER
0 225 450 900
Feet
U.S. ARMY
CORPS OF ENGINEERS
KANSAS CITY DISTRICT,
KANSAS CITY, MISSOURI
Tongue Point Project Area
Tongue Point No Action Proposed Plan
Former Tongue Point Naval Air Station
Astoria, Oregon
Figure 1

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Opportunities for Public Involvement

Public Meeting

USACE will hold a public meeting to explain the proposed plan for no action. Because your input is important, we encourage you to attend. It's a great opportunity to learn more about the details.

Tongue Point Naval Air Station
Public Meeting

June 29, 2016
6:30 to 8:30 pm

Astoria Public Library, Flag Room
450 10th Street
Astoria, OR 97103
503.325.7323

Contacts

If you have questions or need additional information, please contact the following representatives:

Mirek Towster, Project Manager
USACE Kansas City District
601 E. 12th Street, Suite 0439
Kansas City, MO 64106-9861
816.389.3886
Mirek.S.Towster@usace.army.mil

May Carrell, Project Lead
USACE, Seattle District
P.O. Box 3755
Seattle, WA 98124-3755
206.764.3418
May.G.Carrell@usace.army.mil

Mr. Robert Williams
Oregon DEQ
700 Lloyd Building
700 NE Multnomah Street
Portland, OR 97232
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williams.robert@deq.state.or.us

Written Comments and Extensions

The public comment period is June 1 to July 8, 2016. During that time, you may submit a comment in writing (by mail, email, or at the public meeting). The mailing address for written comments is:

May Carrell, Project Lead
USACE, Seattle District
P.O. Box 3755
Seattle, WA 98124-3755
206.764.3418
May.G.Carrell@usace.army.mil

USACE will respond in writing to all significant public comments in a responsiveness summary. The responsiveness summary will be included as part of the decision document for the Tongue Point Naval Air Station.

Administrative Record File

Documents from the Administrative Record file that provide the basis for selecting the final cleanup alternative will be available for viewing at:

Astoria Public Library *
450 10th Street
Astoria, OR 97103
503.325.7323

and

USACE Kansas City District
635 Federal Building
601 E 12th Street
Kansas City, MO 64106-2824

** Please call for the most current information on office hours.*

Glossary of Terms

Alluvium: loose, unconsolidated (not cemented together into solid rock) soil or sediments, which have been eroded, reshaped by water in some form, and redeposited in a non-marine setting.

Benthic biota/fauna: the collection of organisms living on or in the bottom of a body of water.

Bioavailability: the fraction of a substance available to cross an organism's cellular membrane from the environment.

CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act): Also known as Superfund, this federal law regulates environmental investigation and cleanup of hazardous waste sites identified as possibly posing a risk to human health or the environment.

Dioxins/Furans: a family of toxic substances with a similar chemical structure that are created when other chemicals or products are made, e.g., herbicides. 2, 3,7,8-tetrachlorodibenzo-p-dioxin is considered the most toxic. For the Project, dioxins/furans were reported as 2,3,7,8-tetrachlorodibenzo-p-dioxin toxicity equivalents.

DoD (Department of Defense): an executive branch department of the federal government of the United States charged with coordinating and supervising all agencies and functions of the government concerned directly with national security and the U.S. Armed Forces.

DU (decision unit): term for each of a number of separate activity areas used to manage investigation and potential cleanup more efficiently. A DU can be based on geography, media, or other characteristics.

EPA (United States Environmental Protection Agency): a federal agency that conducts actions throughout the United States to protect human health and the environment.

FS (feasibility study): a required process at a Superfund site to develop, screen, and evaluate various alternatives being considered for selection of a remedial action.

Groundwater: water located beneath the earth’s surface in soil pore space and fractures.

Institutional controls: non-engineered legal methods that help maintain the integrity of a remedy, discourage human contact with contaminants, and/or encourage safe land uses. These may be governmental controls (e.g., zoning or permits), proprietary controls (e.g., covenants, conditions, and restrictions), and informational devices (e.g., deed notices).

Nitroaromatics/Nitroamines: groups of compounds bearing one nitro group as a substituent of the aromatic ring. These are usually industrial chemicals materials such as explosives, dyes, polyurethane foams, herbicides, insecticides, and solvents.

ODEQ (Oregon Department of Environmental Quality): a regulatory agency whose job is to protect the quality of the State of Oregon's environment.

PAHs (polycyclic aromatic hydrocarbons): neutral, nonpolar, organic compounds containing only carbon and hydrogen, which are found in fossil fuels and tar deposits. PAHs are produced, generally, when insufficient oxygen or other factors result in incomplete combustion of organic matter. Carcinogenic PAHs: benzo(a)pyrene, benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, and indeno(1,2,3-cd)pyrene.

PCBs (polychlorinated biphenyls): toxic, synthetic organic chemical compounds of chlorine attached to biphenyls. These were widely used as dielectric and coolant fluids until banned in 1979. Total PCBs: Aroclor 1016, Aroclor 1221, Aroclor 1232, Aroclor 1242, Aroclor 1248, Aroclor 1254, and Aroclor 1260.

Pesticides: chlorinated hydrocarbon pesticides that often act as nerve toxins; they are readily stored in fatty tissue and resist metabolism so they can accumulate in increasing concentrations up the food chain. DDT (dichlorodiphenyltrichloroethane) is a colorless, crystalline, tasteless, and almost odorless organochloride known for its insecticidal properties. Total DDT comprises p,p’-dichlorodiphenyldichloroethane, p,p'-dichlorodiphenyldichloroethylene, and p,p'-dichlorodiphenyltrichloroethane

Remedial investigation (investigation): required data collection at Superfund sites used to characterize the nature and extent of contamination and assesses the risk to human health and the environment.

ROD (Record of Decision): a formal decision document that describes the selected remedy for CERCLA sites.

SVOCs (semi-volatile organic compounds): a group of organic compounds that have a boiling point higher than water and which may vaporize when exposed to temperatures above room temperature. SVOCs include phenols and PAHs.

TPH (total petroleum hydrocarbons): a term used to describe a large family of several hundred chemical compounds that originally come from crude oil.

Tributyltin: a class of organo-tin compounds (based on tin with hydrocarbon substitutes); an anti-fouling agent.

VOCs (volatile organic compounds): organic chemicals that have a high vapor pressure at ordinary room temperature. The high vapor pressure results from a low boiling point, which causes large numbers of molecules to evaporate or sublimate from the liquid or solid form of the compound and enter the surrounding air.

COMMENT SHEET

The USACE encourages your written comments on the proposed plan for the Tongue Point Project. This form is provided for your convenience. Please mail this form to May Carrell, USACE Project Lead, or bring your comments to the public meeting. You may use additional sheets of written comments. Comments by mail must be postmarked no later than Friday, July 8, 2016, to the address shown below:

May Carrell, Project Lead
USACE, Seattle District
P.O. Box 3755
Seattle, WA 98124-3755

Comment Submitted by: _____

Address: _____

_____

_____

Return Address

affix postage here

May Carrell, Project Lead
USACE, Seattle District
P.O. Box 3755
Seattle, WA 98124-3755