UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, Washington 98101

Reply To
Attn Of: ECL-112

ACTION MEMORANDUM /ENFORCEMENT

DATE: **April 28, 2004**

SUBJECT: **Request for a Removal Action at the GASCO site, Portland, Multnomah County, Oregon; Site ID: BW**

FROM: **Sean Sheldrake**
Remedial Project Manager

TO: **Michael F. Gearheard, Director**
Office of Environmental Cleanup

THRU: **Sylvia Kawabata, Manager**
Site Cleanup Unit 2
Office of Environmental Cleanup

Chris Field, Manager
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Office of Environmental Cleanup

I. PURPOSE

The purpose of this Action Memorandum is to request and document approval for a Removal Action described herein for the GASCO site, Portland, Multnomah County, Oregon. The Removal is required for immediate reduction of the risk to the public and the environment from the uncontrolled hazardous substances at the GASCO site.

II. SITE CONDITIONS AND BACKGROUND

The U.S. Environmental Protection Agency (EPA) identification number for the Site is: CERCLIS - OR027734359. This is a time critical removal action.

The GASCO site is a former gasification plant and oil-tar distillation plant located at 7900 NW St. Helens RD Portland 97210 and is bounded by the Willamette River at River Mile 6 and State Highway 30

(St. Helens Road). The site is adjacent to the Wacker Siltronic and U.S. Army Corps of Engineers U.S. Moorings facilities. The site is located on township/Range/Sect: 1N , 1W , 12 and Latitude: 45.5774 deg. Longitude: -122.7563 deg. The site size is approximately 35 acres. See Figure 1.

There are no known historical landmarks or structures with historical significance identified at the Site.

Ownership and Operational History

The Site is currently owned by Northwest Natural Gas Company (NWNG), which is the assumed name of the Portland Gas and Coke Company (GASCO). It is currently used as a liquified natural gas plant. GASCO purchased the site in approximately 1910. At that time the site was larger, approximately 85 acres, than currently configured. GASCO built and operated an oil gasification plant on the site between 1913 and 1956. Between 1913 and 1923, only gas and lampblack briquettes were produced. In 1923 by-products refining began. After 1925, when tar refining operations began, the quantity of tar within the waste stream would have decreased, but waste tar in the effluent continued to occur as suspended material and emulsions from the secondary tar box. Prior to 1941, all wastewater effluent and tar stills from the gasification process and by-product refining was discharged to a stream channel leading from the production area to the Willamette River, or to low lying areas of the GASCO site. After 1941, wastewater effluent and tar stills were disposed of in settling ponds on the northern portion of the Site. When the plant was shut down in 1956 an estimated 30,000 cubic yards of tar waste had accumulated in the ponds. The southern portion of the site was sold to Victor Rosenfeld and H.A. Anderson, who sold the property to the City of Portland, Portland Development Commission in 1972. In 1978, the City of Portland sold the property to Wacker Siltronic Corporation, now known as "Siltronic". The tar ponds on the northern portion of the Site were buried under 10 feet of fill in 1973. Koppers Company leased an 8-acre portion of the GASCO site from NWNG in 1965 and built a coal-tar distillation plant. The Koppers plant shut down in 1973 and has only been used for the bulk transfer of creosote oil and coal tar pitch since 1977. Portions of the site are also used for liquefied natural gas storage by NW Natural and for bulk petroleum storage by a lease holder.

State Enforcement Actions

In December 1993, NWNG signed up for DEQ's Voluntary Cleanup Program. In August 1994, NWNG signed an agreement with DEQ to conduct a Remedial Investigation and Feasibility Study (RI/FS) at the site. An RI/FS workplan was submitted to DEQ in January 1995 and approved in August 1995. In March 2001, a source control evaluation was initiated. In 2003 an evaluation was performed to consider options for bank stabilization to limit the potential migration of contaminants in bank soil to the river.
An updated upland RI is due to be submitted to DEQ in mid April 2004.

Regulatory and Enforcement History

See "State Enforcement Actions," above.

EPA Enforcement Actions

There are no current EPA enforcement actions for the GASCO site.

EPA listed the lower Willamette River and sources of hazardous substances to the river on the National Priorities List in December, 2000. The initial study area for the RI/FS is comprised of River Miles (RM) 3.2 to 9.5. The GASCO facility is included within the boundaries of the NPL site and NWNG was notified of its potential responsibility for response. NWNG is one of ten parties that signed an administrative order on consent for RI/FS activities with EPA in September, 2001.

A. Site Description

1. Site Investigations

Numerous Remedial Investigation and Risk Assessment activities have been completed at the site to date. During the first phase of the Remedial Investigation, widespread oil gasification and by-products refining waste contamination was identified in site soils, groundwater, and Willamette River sediments. Tars were identified to depths of 70 feet in the vicinity of the former tar waste disposal area. In the former plant site area, dense non-aqueous-phase liquids (DNAPLs) were identified at three distinct locations. Monitoring wells installed adjacent to the Willamette River detected elevated levels of benzene and naphthalene. Sediment samples were found to contain high concentrations of polynuclear aromatic hydrocarbons (PAHs) and pure tar waste was found to be in the river off of the bank of the Site. (See the table in Subsection 3 below for concentration levels of hazardous substances found in various media at the site.) Phase II of the RI was completed during the fall of 1998. Groundwater contamination was detected up to 100 feet below the surface along the riverbank. A significant zone of tar waste contamination extending from the site into the river was also confirmed. In March 2000, two cathodic protection wells that extended 400 feet into the basalt aquifer were abandoned. In August 2000, a waste recovery system was installed and soil sampling to support the upland risk assessment was completed. In March 2001, a source control evaluation was initiated which included off-shore sampling.

2. Physical Location

The Site is located in the Portland Basin, a broad structural depression of the Willamette Valley. Three main units are found beneath the site including (youngest to oldest): surficial fill, Willamette River alluvial deposits, and Columbia River basalt. A laterally extensive layer of silt with little to no clay content was found at elevations ranging from 25 to 30 feet above mean sea level (msl) on the west of the site (near St. Helen's Road) to 5 to 10 feet msl on the east of the site (near the Willamette River). Based on a detailed survey map for the GASCO site dated 1906 which identifies the pre-fill elevations of the site, the silt layer at this site is inferred to be at the top of the alluvial deposits. The GASCO 1906 survey map also depicts a former creek bed, which has been characterized as a drainage feature of the former Doane Lake that extends from the former lake south of the GASCO property, through the GASCO property north to the U.S. Moorings facility. Monitoring wells on the GASCO site placed within the former creek bed (monitoring wells MW-6 600 feet south of Moorings, and MW-11, 1,500 feet south) indicate the top of the silt layer is lower in elevation in the vicinity of the creek bed.

3. Site Characteristics

Wastewater containing tar stills and unusable by-products were discharged to the Willamette River, land-farmed on a portion of the site, or disposed of in settling ponds on-site. Lampblack briquettes and spent iron oxide waste were stored in large on-site waste piles. Time of disposal of the above materials on or

off-site was between 1913 and 1977. The following table summarizes maximum concentrations typical of each media.

Media Contamination Information (Taken from ODEQ Environmental Cleanup Site Information (ECSI) Database Site Summary Report - Details for Site ID 84)

Substance	Media Contaminated	Concentration Level
BENZENE	Groundwater	16 ppm
BENZENE	Sediment	22 ppm
BENZENE	Soil	360 ppm
CYANIDE (AS ION)	Groundwater	11 ppm
CYANIDE (AS ION)	Soil	50.7 ppm
NAPHTHALENE	Groundwater	30 ppm
NAPHTHALENE	Sediment	5,100 ppm
NAPHTHALENE	Soil	11,000 ppm
POLYAROMATIC HYDROCARBONS (PAH)	Groundwater	0.36 ppm
Total POLYAROMATIC HYDROCARBONS (PAH)	Sediment	26,408 ppm
Carcinogenic POLYAROMATIC HYDROCARBONS (PAH)	Sediment	5,048 ppm
POLYAROMATIC HYDROCARBONS (PAH)	Soil	3,156 ppm

Site groundwater occurs in three principle hydrologic zones including the unconfined surficial fill water bearing zone, the semi-confined alluvial sand water bearing zone, and the confined bedrock aquifers in the Columbia River basalts. A laterally extensive low permeability silt unit separates the surficial fill water bearing zone from the alluvial sand water bearing zone across a majority of the site.

4. Release or Threatened Release into the Environment of a Hazardous Substance, or Pollutant or Contaminant

The primary concern at this Site is the release and threat of release of CERCLA hazardous substances and pollutant or contaminants, including: tars, oil, creosote, phenols, cyanide, and associated contaminants, such as, polynuclear aromatic hydrocarbons (PAHs), and benzene. This removal is focused on hot spot removal of tar waste from the Willamette River adjacent to the GASCO site. The area of focus of this removal action is the bank and river bottom containing contaminated sediments with high levels of total PAHs (tPAHs) and visibly observable black tar waste, hereinafter referred to as the "tar body." Chemical concentrations detected within the tar body include tPAHs, up to 26,400 mg/kg, benzene up to 22 mg/kg, and napthalene up to 5100 mg/kg. Certain samples of tPAHs detected are more than 1000 times the probable (ecological) effects concentrations (MacDonald, 2000). This area of pure tar waste and highly contaminated materials is the source of ongoing releases or potential threat of releases of contaminants to the Willamette River and downstream areas.

5. **NPL Status**

The GASCO site is located within the Portland Harbor Superfund Site and is being investigated as part of the Harbor-wide RI/FS. The site was listed on the National Priorities List on December 1, 2000.

6. **Maps, Pictures, and other Graphic Representations**

See attached figures.

B. Other Actions To Date

1. Previous Actions

No full-scale cleanup actions have been taken to clean up the site to date. See the above descriptions of past/ongoing site investigations.

2. Current Actions

There is a pilot scale NAPL (non-aqueous phase liquid) recovery system in the uplands area. Also, contaminated groundwater seeping into the liquified natural gas (LNG) containment basin is being treated and discharged to the Willamette under a state-issued NPDES discharge permit.

C. **State and Local Authorities' Roles:**

1. State and Local Actions to Date:

Concurrent with the in-water RI/FS investigation being conducted under EPA oversight, ODEQ is conducting source control investigations and actions on the upland portion of the facility. Northwest Natural Gas did not conduct additional site characterization requested of ODEQ over the last two years, but recently indicated its willingness to perform such work.

2. Potential for Continued State and Local Response:

ODEQ plans to continue to oversee source control efforts in the upland areas of the GASCO site at this time, including the oversight of a comprehensive, site-wide, upland RI/FS.

III. THREATS TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES:

Conditions presently exist at the site which may present an imminent and substantial endangerment to public health or welfare or the environment. Conditions at the site meet the criteria for a removal action as stated in the National Contingency Plan (NCP), 40 CFR, Section 300.415 as follows:

A. Threats to Public Health or Welfare

Actual or potential exposure to hazardous substances or pollutants or contaminants by nearby human populations or the food chain
The tar body is open and exposed in the Willamette River and on the river bank, more so at low water levels. Trespassers on this and adjacent industrial property, transients camping nearby, recreational boaters, and workers all may be exposed by contact to site contaminants, especially during low water when more of the tar is exposed. Although the risk is unquantified, uptake of site contaminants by aquatic biota may become a part of the food chain.
Hazardous substances or pollutants or contaminants in drums, barrels, tanks, or other bulk storage containers, that may pose a threat of a release. CERCLA hazardous substances, pollutants, and contaminants already are present in the riverbank, on the river bottom, and in river sediments.
High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface, that may migrate. Pure tar waste is present on the bank and river bottom, significantly high levels of PAHs and benzene are dissolving off the tar body. The tar body present in the Willamette River is prone to erosion during flood events. High level sediments near the tar body may be elevated due to erosion from the tar body itself. "Tar balls" that have been noted on nearby beach areas downstream of the main tar body area.
Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released. Willamette River stage and current fluctuation can accelerate erosion of the high PAH material in the river.

B. Threats to the Environment

The contamination at the Site creates an imminent and substantial endangerment to the environment in part through the actual or potential exposure of the river water, river sediment, surface soils and standing surface water to hazardous substances and pollutants or contaminants.
Actual or potential exposure to hazardous substances or pollutants or contaminants by nearby animals or the food chain. Actual or potential exposure to the tar body and associated contaminants exists for fish, shellfish, other aquatic biota, such as benthic organisms, and wildlife, such as pisciverous birds. Actual or potential exposure to aquatic species, although not quantified, may become part of the ecological food chain as wildlife consume such species. PAH contamination exists as pure tar in the Willamette River and on the riverbank. Levels throughout the "tar body" and in some surrounding sediment exceed 1000 times the probable effects concentrations (PEC) and in all areas are above 100 times the PEC (MacDonald, et al, 2000). Contact with the tar body could pose a risk to waterfowl that may use rest or feed in the area. Other animals may also be exposed if using this water for drinking. Uptake to aquatic species is likely but not quantified. The Willamette River is a transitory area for a number of ESA listed fish species, including 5 salmonid species listed as threatened under the Endangered Species Act. Coastal cutthroat trout, steelhead, and chum and chinook salmon are also all considered sensitive species by ODFW. Pacific lamprey and river lamprey are recognized as species of concern at the federal level (USFWS). Western toad, Cope's giant salamander, tailed frog, northern red-legged frog, northwestern pond turtle, and painted turtle are all considered sensitive species by ODFW. In addition, northwestern pond turtle, tailed frog, and red-legged frog are listed as species of concern by USFWS. Aleutian Canada geese and the American peregrine falcon are protected as state endangered species (ODFW). Nine wetland plants that occur in the Willamette Valley and may occur in the Portland Harbor Superfund Site are all species of concern by USFW.
Hazardous substances or pollutants or contaminants in drums, barrels, tanks, or other bulk storage

containers, that may pose a threat of a release. Release has already occurred as pure tar exists in the river and on the riverbank.
High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface, that may migrate. Based on site visits performed by EPA and DEQ personnel, tar and associated contaminants from historical releases has and continues to erode and be deposited on nearby beaches posing an actual or potential threat of exposure and environmental and human health threat.
Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released. Willamette River stage and current fluctuation can accelerate erosion of the high PAH material in the river.

IV. ENDANGERMENT DETERMINATION

Actual and threatened releases of hazardous substances, pollutants and contaminants from this site may present an imminent and substantial endangerment to public health, or welfare, or the environment.

V. PROPOSED ACTIONS AND ESTIMATED COSTS

Proposed Actions

The objectives of the actions outlined below are to: (1) removal of tar containing high concentrations of total polycyclic aromatic hydrocarbons (tPAH) in river sediments and the riverbank adjacent to the Gasco facility (the "Tar Body") (principle threat material), (2) achieve reductions in potential exposures to human health and the environment; and reduce the actual or potential migration of such high level contamination downstream. Additionally, an objective of the actions outlined below is to facilitate further characterization work on upland sources of contamination to the river. These proposed actions are based on the information known to date regarding the conditions at the site. As additional information is gathered, further actions may be necessary.

1. Proposed Action Description

The following Removal options were evaluated:

1. Removal of the tar from the riverbank, Willamette River bottom sediment in the areas of highest concentration (tar body), off-site disposal, and placement of a thin layer cover on the dredged surface. (See estimated location in Figure 2)
2. Capping of tar body.
3. No action.

Alternative #1 was selected, as this was determined to be the most protective, while still being cost effective in removing riverbank and sediment contamination on site. Alternative #2 and #3 do not fully meet the objectives of the NCP, CERCLA, or CWA 404 (b) (1) criteria regarding minimization of short and long-term impact. Alternative #2 would be protective of human health and the environment by limiting the spread of contamination by reducing the erosion of high PAH material, however, would still leave a substantial source which could be mobilized during flood events, no matter how durable the cap design. Placement of a cap, which would isolate this material for some period of time, is also less preferable under EPA guidance and 404(b)(1) analysis since there is an alternative (#1) which is a hot spot removal of principal threat material which reduces the overall amount of source material in the river. Alternative #2 is also the most likely alternative to preclude future actions that will likely be necessary as part of remedial action in the Harbor. Alternative #3 was not selected as this did not address the threats to human health and the environment whatsoever, and left hazardous substances in place. This alternative

was not protective because it did not provide for protection of the fishing community, trespassers/transients, or the environment.

2. Contribution to Remedial Performance

The GASCO site is located within the "Initial Study Area" (ISA) of the Portland Harbor Superfund Site and is being investigated as part of the in-water Harbor-wide RI/FS. The ISA is from approximately River Mile 3.5 to 9.2 and includes portions of the GASCO site that have or could impact the river sediments. The Portland Harbor Superfund site was listed on the National Priorities List on December 1, 2000. A Record of Decision is expected some years after the completion of this time critical removal action (TCRA). Due to the number of years remaining to outline the remedy at this site, this TCRA is designed to immediately remove a known hotspot of pure tar waste and one likely source of the highest tPAH-contaminated material, reduce the risk of further migration of contaminants to adjacent sites, and reduce exposure to the receptors described above to high concentration tPAH material that will require removal under any remedial alternative. This action, at a minimum, is also necessary to reduce the exposure and migration of the highest concentrations of site contaminants from the GASCO site before remedial work can be undertaken.

3. Description of Alternative Technologies

Use of alternative technologies will be explored to some degree in the Removal Action Work Plan, if they may be implemented consistent with the scope of this time critical removal action.

4. EE/CA

This applies only to non-time critical responses. This is a time critical removal action.

5. Applicable or Relevant and Appropriate Requirements (ARARs)

The proposed removal action will attain or exceed all ARARs to the extent practicable. Two factors will be applied to determine whether the identification and attainment of ARARs is practicable: (1) the exigencies of the situation; and (2) the scope of the removal action to be taken. See attached listing of likely ARARs.

6. Project Schedule

The selected removal action is estimated to require several months to complete. Removal may commence upon signature of this Action Memorandum.

IV. EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN

Delay or disapproval of the proposed action will allow releases of CERCLA hazardous substances into the environment to continue and increase the risk of exposure to nearby residents, tribal members, trespassers/transients and ecological receptors. Failure to act will increase/prolong the threats to human health and the environment described above.

VII. OUTSTANDING POLICY ISSUES - NONE

VIII. ENFORCEMENT

EPA has identified Northwest Natural Gas Company as potentially responsible party at the Site.

IX. RECOMMENDATION

Conditions at the site meet the NCP Section 300.415(b)(2) criteria for a removal and I recommend your approval of the proposed removal action.

APPROVED	DISAPPROVED
//s//	_____
Michael F. Gearheard, Director	Michael F. Gearheard, Director
Office of Environmental Cleanup	Office of Environmental Cleanup
Date: April 28, 2004	Date: _____

REFERENCES

1. **ODEQ Environmental Cleanup Site Information (ECSI) Database Site Summary Report, Site 084.**
2. **Phase I Remedial Investigation Report, Northwest Natural-GASCO facility, Hahn and Associates, Inc., 1998.**
3. **Preliminary Analysis of Soil contamination Data, Decision Management Associates, 1998.**
4. **Supplemental Soil Quality Investigation Report, NW Natural GASCO facility, Hahn and Associates, Inc. 2001.**
5. **North Doane's Lake Site Characterization Work Plan, Camp Dresser & McKee, Inc., June 1987**
6. **MacDonald, D.D., C.G. Ingersoll, and T.A. Berger. 2000 Development and evaluation of consensus-based sediment quality guidelines for freshwater ecosystems. Arch. Environ. Contam. Toxicol. 39:20-31.**

Attachment 1; ARARs

Regulation	Citation	Criterion/Standard
Federal ARARs		
Clean Water Act, Ambient Water Quality Criteria	33 USC 1314 40 CFR Part 131	Provides minimum standards for water quality programs established by states. Two kinds of water quality criteria exist: one for protection of human health, and one for protection of aquatic life.
Water Pollution Control Act, Total Maximum Daily Loads	33 USC 1313 (d) 40 CFR Part 130	Provides for development of TMDLs.
Migratory Bird Treaty Act	16 U.S.C. Section 703	Provides protection to migrating birds that may utilize nearshore areas.
Resource Conservation and Recovery Act	42 USC 6901 et seq 40 CFR 260, 261, 262, 263, 265	Establishes management standards for solid and hazardous waste.
State /Local ARARs		
State Water Quality Criteria	ORS 468.735, 720, 990, 992 OAR 340-41-0442 and 0445	Provides Willamette Basin beneficial uses and water quality standards.
Total Maximum Daily Loads	ORS 468.020, 030, 468(B).030, 035, 110 OAR 340-042-0025	Provides for development of TMDLs.
Solid Waste Management Regulations	ORS 459.005-418 OAR 340-93	General provisions for storing, collecting, transporting, treating and disposing of solid waste.
Hazardous Waste Regulations	ORS 466.020, 075, 105, 195 ORS 340-100	General provisions for distinguishing between solid waste and hazardous waste.
Oregon Hazardous Substance Remedial Action Rules	ORS 465.200-465.420,465.900, 466.995 OAR 430-122-010 et seq.	Establishes cleanup authority and objectives; regulations establish cleanup standards and procedures to be used to implement the cleanup law.

Regulation	Citation	Criterion/Standard
Federal ARARs		
Fish and Wildlife Coordination Act Requirements	16 USC 662, 663 40 CFR 6.302 (g)	Requires consultation with appropriate agencies to protect fish and wildlife when federal actions may alter waterways. Must develop measures to prevent and mitigate potential loss to the maximum extent possible.
National Historic Preservation Act	16 USC 470 et seq. 36 CFR Part 800	Establishes requirements for the recovery and preservation of historical and archaeological data. Also requires measures to minimize harm to historic resources.
Native American Graves Protection and Reparation Act	25 USC 3001-3013 43 CFR 10	Prevents willful removal of cairn, burial, human remains, funerary object, sacred object or object of cultural patrimony. Provides for reinternment of human remains or funerary objects under the supervision of the appropriate Indian tribe.
Archaeological Resources Protection Act	16 USC 470aa 43 CFR 7	Archaeological sites on public lands are under the stewardship of the people of the United States and are to be protected and managed in perpetuity.
Endangered Species Act	16 USC 1531 et seq.	This act requires action to avoid jeopardizing the continued existence of listed endangered or threatened species or destruction or adverse modification of critical habitat.
Executive Order for Wetlands Protection	Executive Order 11990 (1977) 40 CFR 6.302 (a) 40 CFR Part 6, App.	Requires measures to avoid adversely impacting wetlands whenever possible, minimize wetland destruction, and preserve the value of wetlands.

Regulation	Citation	Criterion/Standard
	A	
Executive Order for Floodplain Management - Portland Nat'l Flood Insurance Program in part implements EO	Exec. Order 11988 (1977) 40 CFR Part 6, App. A 40 CFR 6.302 (b); Ch. 24.50.060(D) & (F)(8)	Requires measures to reduce the risk of flood loss, minimize impact of floods, and restore and preserve the natural and beneficial values of Floodplain. Requires no rise in base flood level and balance cut and fill for work in floodway
Clean Water Act Section 404 Requirements	33 USC 1344 33 CFR Parts 320-323 40 CFR 230	For discharge of dredged or fill material into water bodies or wetlands, there must be no practical alternative with less adverse impact on ecosystem; discharge cannot cause or contribute to violation of state water quality standard or toxic effluent standard or jeopardize threatened and endangered species; discharge cannot significantly degrade waters of U.S.; must take practicable steps to minimize and mitigate adverse impacts; must evaluate impacts on flood level, flood velocity, and flood storage capacity.
Rivers and Harbors Act	33 USC 403 33 CFR 320-330	Regulates activity that may obstruct or alter a navigable waterway. Activities controlled include construction of piers and berms, installation of piling, or sheet pile walls.
State ARARs		
State Removal Fill Operations	ORS 274.040, 0.43,.922, .944 OAR 141-	Regulates all activities associated with removal and fill operations in state waters.

Regulation	Citation	Criterion/Standard
	85-001 et seq	
Certification of Compliance with Water Quality Requirements and Standards	ORS 468b.035 OAR 340-048-	Outlines review process between state and federal agencies regarding compliance with water quality requirements and standards for projects that discharge into navigable waters or impact water quality (only substantive portions apply).
Lower Willamette River Management Plan	ORS 273.045 OAR 141-0105	Regulates leasing, license, and permit activities in the lower 18 miles of the Willamette River, which includes Terminal 4. The plan describes allowable activities and conditions for waterway management areas based on public trust values (fisheries, recreation, or navigation). (only substantive portions apply)
Willamette Basin Program	ORS 536.300, 340 OAR 690-52	Requires development of plans to maintain stream flow, promote in-stream uses and values, and meet public needs.
Indian Graves and Protected Objects	ORS 97.740-760	Prevents willful removal of cairn, burial, human remains, funerary object, sacred object or object of cultural patrimony. Provides for reinternment of human remains or funerary objects under the supervision of the appropriate Indian tribe.
Archaeological Objects and Sites	ORS 358.905-955	Archaeological sites on public lands are under the stewardship of the people of Oregon and are to be protected and managed in perpetuity by the state.
Permit and Condition For Excavation or Removal of Archaeological or Historical Material on Public Lands	ORS 390.235 OAR 736-051-0080	Provides for permits and conditions for excavation or removal of archaeological or historical materials (only substantive portions apply).