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REPORT ON

INITIAL SEISMIC VULNERABILITY ASSESSMENT
COLUMBIA PACIFIC BIO-REFINERY
CLATSKANIE, OREGON

by
Haley & Aldrich, Inc.
Portland, Oregon

for
Cascade Kelly Holdings LLC
Clatskanie, Oregon

File No. 0210947-000
May 2024

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31 May 2024
File No. 0210947-000

Cascade Kelly Holdings, LLC, dba Columbia Pacific Bio-Refinery
81200 Kallunki Road
Clatskanie, Oregon 97016-2244

Attention: Doug Lenz

Subject: Initial Seismic Vulnerability Assessment
Columbia Pacific Bio-Refinery
81200 Kallunki Road
Clatskanie, Oregon

Dear Doug Lenz:

Haley & Aldrich, Inc. (Haley & Aldrich) is pleased to submit this report to Cascade Kelly Holdings, LLC (Cascade Kelly) summarizing our initial geotechnical seismic vulnerability assessment services for the Columbia Pacific Bio-Refinery (CPBR) facility and appurtenant improvements located on the Columbia River at 81200 Kallunki Road in Clatskanie, Oregon (herein referred to as the "Site").

The Site encompasses facilities and improvements containing liquid fuel products subject to evaluation under Oregon Administrative Rule (OAR) 340-300-0003. The Site is comprised of the main facility of the Columbia Pacific Bio-Refinery, two aboveground fuel tanks located inland adjacent to a Portland General Electric (PGE) tank farm, fueling infrastructure on a nearby Port of Columbia County (Port) dock, and largely aboveground pipelines that convey fuel product between each of these three areas. The locations of these areas and features are shown on *Figure 1 - Project Locus* and *Figure 2 - Site and Exploration Plan*.

The CPBR facility is owned by Cascade Kelly and is located almost entirely on property owned by the Port. The main bio-refinery facility is bordered by PGE power stations to the north, the slough to the east and northeast, and the PGE Beaver Generating Facility to the southwest. The CPBR facility was constructed in the early 2000s and includes several processing and storage buildings, stormwater ponds, fuel pipelines supported on shallow foundations and on relatively short pile foundations, a railroad transloading area, non-liquid fuel product storage tanks, and several small-capacity liquid fuel storage tanks (collectively under 1,000 gallons). The Site includes two fuel tanks operated by CPBR located approximately 1/2-mile west of the main facility adjacent to the PGE Beaver Tank Farm. Those tanks are 125 feet in diameter and 40 feet tall with a storage capacity of 100,000 barrels (4.2 million gallons). We understand the tank farm was constructed in approximately 1975. The Site also includes a liquid fuel

pipe substructure connected to a dock on the Columbia River owned by the Port of Columbia County, located approximately 3/4-mile northwest of the main CPBR facility. The dock is used to berth vessels for loading and unloading petroleum and ethanol products for CPBR. We understand this dock was constructed in the 1940s. Largely aboveground liquid fuel pipelines run between the dock, the fuel tanks, and the main facility. These pipelines typically consist of 8- to 14-inch-diameter carbon steel pipe, raised several feet above the ground. Pipe support foundations are understood to consist of shallow footings for much of the pipe alignments, though pipes near and within the main CPBR facility are understood to be supported on driven piles (approximately 20-foot-long).

This report contains the results of our initial study supporting seismic vulnerability analysis of the Site and includes recommendations for supplemental studies at the Site in support of producing a final seismic vulnerability assessment (SVA) in conformance with OAR 340-300-0003. The first section of this report provides an overview of the project information. The main body of the report presents our seismicity and seismic hazard evaluation in detail, followed by an evaluation of expected facility performance in the event of design-level seismic shaking. This is followed by a discussion of engineering and administrative controls in place at the facility for spill prevention, safe operating conditions, fire prevention and firefighting, and emergency response personnel and procedures. Figures are presented at the end of the text. Appendix A includes readily available historical geotechnical data for the Site provided by Cascade Kelly. Appendix B includes the Facility Response Plan.

Scope of Services

The purpose of our services was to evaluate subsurface conditions at the Site using readily available data prepared by others, and to produce an initial SVA of the Site for review by the Oregon Department of Environmental Quality (DEQ). We completed the following tasks in general accordance with our proposal for Engineering Services for Seismic Vulnerability Analysis (Agreement) dated 31 October 2023 and authorized on 4 December 2023:

- Reviewed relevant, readily available geologic maps and geotechnical reports that cover the Site and vicinity to evaluate geologic hazards, regional soil mapping, and local soil and groundwater conditions.
- Reviewed Site and facility plans, and reviewed historical aerial photographs for information regarding historical site developments.
- Developed seismic design parameters and conducted preliminary geotechnical engineering analyses including evaluating seismic-induced settlement, liquefaction potential, and seismic slope instability to evaluate the seismic performance of the facility in accordance with OAR 340-300-0003, with analyses based on existing subsurface data by others.
- Subcontracted Degenkolb Engineers (Degenkolb), a structural engineering firm, to provide initial structural analysis services.
- Prepared this report outlining our initial SVA of the Site from a geotechnical and structural perspective.

Subsurface Conditions

Subsurface conditions interpreted from geologic maps and historical site explorations, in conjunction with materials properties inferred from our review of field explorations and laboratory tests performed by others at discrete locations at the Site, formed the basis for the geotechnical analyses, conclusions, and recommendations contained within this report. Explorations by others reviewed for this study are shown on Figure 2 and included in Appendix A. The geotechnical data reviewed for this study consists of the following:

- **Dames and Moore (1973):** We reviewed data from three borings and three cone penetration test (CPT) soundings completed by Dames & Moore in 1973 in the vicinity of PGE turbine generator units immediately east of the PGE tank farm and west of the main CPBR facility. The borings were designated D-6, D-12, and D-14; and the CPTs (referred to in the report as Dutch Cone tests) were designated P-1, P-2, and P-3. The borings reached depths of approximately 121.5 feet below ground surface (bgs) and were drilled with a truck-mounted drill rig utilizing drilling mud. The CPTs were advanced to depths ranging from 150 to 165 feet bgs using trailer-mounted equipment and a hydraulic system. Each of the borings and CPTs reportedly terminated at scheduled depths without encountering drilling or driving refusal.
- **Landau Associates (2013A):** We reviewed logs for three borings (designated B-1 (DOCK) through B-3 (DOCK) on Figure 2) performed by Landau Associates in 2013 in support of design for the pipe rack substructure on the Port dock. These logs were presented as several plan sheets within the pipe rack drawing set prepared by Collins Engineers. No formal geotechnical report was provided for review, just the boring logs. These borings were completed using mud rotary drilling methods to depths ranging from 101.5 to 201.5 feet bgs. The boring logs begin at mudline, which was identified as being at elevation (El.) –35 feet at borings B-1 (DOCK) and B-3 (DOCK) and at El. –9 feet below the dock surface at boring B-2 (DOCK). None of the borings encountered drilling refusal.
- **Landau Associates (2013B):** We reviewed logs for five borings (designated B-1 through B-5) completed by Landau Associates in 2013 in the area of a proposed tank farm at the northern end of the main CPBR facility. These borings were advanced using mud rotary drilling methods to depths ranging from 51.5 to 101.5 feet bgs. None of the borings encountered drilling refusal.

SOIL CONDITIONS

Generally, explorations in the upland portions of the Site (i.e., outside of the dock area) encountered a layer of dredge sand fill overlying a layer of native fine-grained silt and/or clay, which overlies thick deposits of alluvial sand with varying percentages of silt content. Borings in the dock area encountered variable conditions, but typically advanced through over 100 feet of sand with varying silt content. The near-surface in the dock area varied from over 10 feet of riprap at boring B-1 (DOCK), to native sand, to over 12 feet of silt alluvium. The thick native sand deposits generally tend to range from loose to medium dense, though dense to very dense layers were observed at depth at the more inland tank farm and to some extent at the dock.

We divided the encountered soils into four engineering soil units (ESUs), which are grouped by similar geologic origin and/or engineering properties. Descriptions of the ESUs are provided below:

- ESU 1: Very Loose to Medium Dense Sand Fill *(Liquefiable)*
- ESU 2: Very Soft to Medium Stiff Clay and Silt *(Cyclic Softening Susceptible)*
- ESU 3: Loose to Medium Dense Sand *(Liquefiable)*
- ESU 4: Dense to Very Dense Sand *(Non-Liquefiable)*

Development of Design-Level Earthquake

The Site is in a seismically active area. In this section, we describe the seismic setting at the Site, identify the seismic basis of analysis, provide a code-based design response spectra, and discuss the seismic hazards at the Site. Geologic hazards mapped near the Site are all related to seismicity and include violent earthquake shaking, fault rupture, and a liquefaction hazard.

The seismicity of northwest Oregon is controlled by the Cascadia Subduction Zone (CSZ). Plate tectonics cause the oceanic Juan de Fuca Plate to subduct beneath the continental North American Plate. Three types of earthquakes are associated with subduction zones: intraslab, interface, and crustal earthquakes. Contributions from each of these sources to the total site seismic hazard were evaluated using the U.S. Geological Survey (USGS) Unified Hazard Tool (https://earthquake.usgs.gov/hazards/interactive/).

Intraslab and Interface Sources. Intraslab earthquakes originate from a deeper zone of seismicity that is associated with bending and breaking of the subducting Juan de Fuca Plate. Intraslab earthquakes (such as the 2001 magnitude M7.0 Nisqually earthquake in west central Washington) occur at depths of 40 to 70 kilometers (km) and can produce earthquakes with magnitudes up to and greater than magnitude M7.0.

Subduction zones are characterized by the interaction of tectonic plates, in this case the oceanic Juan de Fuca Plate and continental North American Plate. As the oceanic plate subducts beneath the continental plate, the two plates lock together. As the plates move together, stresses similar to a spring build in the overlying continental plate. This stress acts to unlock the two plates. Then the magnitude of the spring stresses becomes large enough to overcome the stresses locking the plates together. The plates will suddenly rupture causing an interface earthquake. Interface earthquakes (such as the 2011 magnitude M9.0 Tohoku earthquake in northern Japan) are some of the largest magnitude earthquakes on record.

Our review of the interactive deaggregations indicate that interface and intraslab earthquakes contribute approximately 96 percent of the total seismic hazard to the site.

Crustal Sources. Shallow crustal faults are caused by cracking of the continental crust from the stress that builds as the subduction zone plates remain locked together. Many small crustal faults are mapped near the site that are a part of the greater Cascadia Fold and Thrust Belt (Personius, 2019). However,

due to the size of these faults, their contribution to the Site seismic hazard is relatively small compared to the subduction zone sources.

The interactive deaggregations indicate that crustal sources contribute approximately 4 percent of the total seismic hazard to the site.

SEISMIC BASIS OF DESIGN AND ANALYSIS METHODOLOGY

Seismic Site Class

Thick sequences of unconsolidated, soft sediments typically amplify the shaking of long-period ground motions, such as those associated with subduction zone earthquakes, whereas areas underlain by shallow bedrock are not likely to amplify seismic waves.

The "Site Class" is a designation used by the 2021 International Building Code (IBC) to quantify ground motion amplification (International Code Council, Inc., 2021). The classification is based on the stiffness of soil and bedrock materials in the upper 100 feet at a site. The upper 100 feet of subsurface stratigraphy at the Site generally consists of near-surface loose sand that is underlain by very soft silt, that is further underlain by generally loose to medium dense sand with some zones of dense sand. We evaluated the site class using standard penetration test (SPT) blow count (N-value) data from borings across the Site. Based on our analysis, the weighted average N-value of subsurface materials sampled within the upper 100 feet of historical borings is consistently less than 15; therefore, the Site is classified as Site Class E.

Our analyses have also identified a liquefaction hazard present underlying the Site, as discussed in the Liquefaction section of this report. American Society of Civil Engineers (ASCE) 7-16 states that at sites where a liquefaction hazard is identified, Site Class F applies, and a site-specific ground response analysis should be completed to determine the response spectrum for design, unless the subject structure has a fundamental period of vibration of less than 0.5 seconds. A site-specific ground response analysis will eventually be required to be completed for the Site, though for this initial assessment code-based parameters have been developed based on a Site Class E designation.

Preliminary Spectral Design Parameters

The parameters provided in Table 1 are appropriate for initial 2021 IBC code-based seismic evaluations and based on procedure outlined in ASCE 7-16. For evaluation of structures with fundamental periods of vibration exceeding 0.5 seconds, these values will need to be supplemented with a site-specific ground response analysis.

Table 1. Preliminary Seismic Design Parameters	
Parameter	**Value**
Site Class	E
Spectral Response Acceleration at Short Periods (S_s)	0.968
Spectral Response Acceleration at 1-Second Period (S_1)	0.488
Site coefficient for Short Periods (F_a)	1.300
Site coefficient for 1-Second Period (F_v)	--
Peak Ground Acceleration (PGA)	0.451
Site Coefficient for PGA (F_{PGA})	1.298
Spectral Response Acceleration for Short Period, S_{DS}	0.839
Spectral Response Acceleration for 1-second period, S_{D1}	--
PGA Adjusted for Site Amplification, A_s	0.585
Notes: *Per ASCE 7-16 Supplement 1, a site-specific seismic response analysis is required for evaluation of periods exceeding T_s. Values for F_v and S_{D1} are not provided for this reason.*	

Seismic Hazards Evaluation

LIQUEFACTION

When cyclic loading occurs during an earthquake, the shaking can increase the pore pressure in loose to medium dense saturated sand and cause liquefaction. The rapid increase in pore water pressure reduces the effective normal stress between soil particles, resulting in the sudden loss of shear strength in the soil. Granular soils, which rely on interparticle friction for strength, are susceptible to liquefaction until the excess pore pressures can dissipate. Sand boils and flows observed at the ground surface after an earthquake are the result of excess pore pressures dissipating upwards, carrying soil particles with the draining water. In general, loose, saturated sand soils with low silt and clay contents are the most susceptible to liquefaction. Silty soils with low plasticity are moderately susceptible to liquefaction under relatively higher levels of ground shaking. For any soil type, the soil must be saturated for liquefaction to occur.

We note the term liquefaction is defined very specifically by the simplified method that we used to evaluate the liquefaction hazard. Liquefaction is defined as when a soil under repeated cyclic loading exhibits the generation of increasing excess pore pressures until the pore pressure equals the total overburden stress. When this condition is reached, the normal stress acting between adjacent soil particles is effectively lost, and the soil, which derives its shear strength from interparticle friction, can lose much of its available shear strength. However, it is well-documented that not all soils exhibit the same behavior after the initiation of liquefaction.

Loose sandy soils that achieve the condition of liquefaction during earthquake shaking can subsequently collapse and exhibit large shear strains under continued cyclic or static loading. This type of behavior has been a well-documented result of many earthquakes where structures underlain by shallow, liquefiable hydraulically placed fills experienced bearing capacity failures and collapse. Conversely, medium dense

to dense sandy soils that achieve the condition of liquefaction will typically not collapse and can exhibit strain hardening behavior due to dilation effects. Therefore, despite the soil achieving the condition of liquefaction, there is little to no shear strength loss and only moderate shear strains under continued cyclic and static loading. This condition is termed “cyclic mobility”.

We performed Site-specific liquefaction potential analyses on the materials encountered in the borings provided for our review, using procedures outlined in Idriss and Boulanger (2008). In accordance with ASCE 7-16, we completed the liquefaction hazard analysis using the site class adjusted acceleration coefficient PGA_M for Site Class E. We used a PGA_M of 0.59g and an associated earthquake magnitude of 9.34 in our analysis for the design-level maximum considered earthquake event. We assumed groundwater at a depth of 8 feet bgs for our liquefaction analyses of the upland areas.

Based on our simplified analyses, liquefaction is expected to occur in ESUs 1, 2, and 3.

Settlement

We evaluated the potential for liquefaction-related settlement to occur using the methods outlined in Idriss and Boulanger (2008). This method estimates “free-field” vertical settlement that does not account for surface manifestations such as sand boils, where uncontrolled surficial settlements can occur.

Following the standard of practice for the simplified liquefaction analyses performed for this study, we limited the depth of analysis to the upper 50 feet bgs. Maximum predicted liquefaction-induced settlement at the main CPBR facility is 16 inches, while at the CPBR tanks the maximum predicted liquefaction settlement is as much as 20 inches. Predicted settlement at the dock is 13 inches. An overall Site average of 15 inches of liquefaction-induced settlement is predicted for these analyses.

Based on our analyses, we anticipate free-field settlement in excess of 1 foot is likely to occur throughout the Site; though with surface manifestations, as discussed below, localized ground settlements could be larger. Permanent ground surface settlement is not typically uniform across an area and can result in significant differential settlement. Differential settlement will have the most significant effect on structures supported by shallow foundations.

Surface Manifestations

We evaluated the potential for liquefaction-related surface manifestations (such as sand boils) to occur using the procedures presented by Ishihara (1985).

The Ishihara (1985) procedure compares the thickness of a given liquefiable soil layer to the thickness of the overlying non-liquefiable soil mantle to determine if surface manifestations are possible at a given PGA. This approach has several limitations and may overestimate potential for surface manifestations to occur in silty sands and sandy silts, as the relatively low permeability of these materials has potential to prevent pore water from flowing quickly enough to produce sand boils (Kramer, 1996). The appearance of surface manifestations may locally increase the amount of total and differential seismic-induced

settlements occurring at a site, to a degree that is challenging to accurately predict. These analyses indicate that the potential for surface manifestations is generally high, but variable across the Site.

Seismic Strength Loss

We anticipate considerable reductions in the strength of the liquefiable layers of the Site soil profile. The shear strength loss was determined by using the recommendations of Idriss and Boulanger (2008). Simplistically, the liquefied shear strength directly correlates to the soil's pre-liquefied relative density. The relative density is estimated based on the SPT blow counts. The higher the relative density, the less strength loss that occurs. Additionally, some strength loss due to cyclic shear stresses are expected to occur in the fine-grained ESU 2 soils.

The loss of strength in the Site alluvial soils will create a reduced bearing capacity of the soils, as well as causing a reduced overall ground stability, resulting in potential lateral spreading in the project area. Lateral spreading can impose significant loads on the foundations, cause failure, and is discussed below.

SEISMIC SLOPE STABILITY

We evaluated the global stability of Site slopes under the influence of seismic shaking from the design earthquake. This evaluation was performed by running limit-equilibrium seismic (pseudostatic) global stability analyses on representative Site cross-sections using the commercial code Slide2 by RocScience. For these analyses, we assumed non-liquefied strength parameters throughout each soil profile and analyzed stability using a horizontal seismic coefficient (k_h) of 0.29, corresponding to one-half of the PGA_M for the design seismic event scenario.

These analyses indicate the Site is expected to experience seismic slope instability during design-level seismic shaking, even with an assumed analysis condition that seismic shaking will not be coincident with cyclic strength loss (e.g., liquefaction). Analysis of a cross-section at the Port dock indicates that the critical seismic factor of safety for the Columbia River bank at the Port dock is as low as 0.5; numerous failure surfaces were identified throughout the riverbank slope indicating that slope stability is a widespread problem in this area. Analysis of stability along Cross Section A-A' isolated to focus on the CPBR fuel tanks indicates a critical seismic factor of safety of about 0.95, which equates to marginal stability in this area. Analysis of the main CPBR facility by evaluation of Cross Section B-B' indicates a critical seismic factor of safety of about 0.8, with failure surfaces extending as far as 350 feet inland from the western bank of the Bradbury Slough.

Based on these findings, we conclude that the hazard posed to Site improvements by seismic slope instability is high.

Seismic and Post-Seismic Slope Displacements

We performed seismic displacement analyses using the simplified procedure for estimating seismic slope displacements in subduction zones by Bray et al. (2018). The analyses indicate that the mean level of expected displacement at the main CPBR facility following the design seismic event is approximately

4.5 feet. The CPBR tanks are expected to experience a mean lateral displacement on the order of several inches or less. The dock is expected to experience a mean displacement of at least 2.5 feet, though much greater displacements are anticipated as the banks of the Columbia River slide inwards towards the river under design-level shaking.

We performed post-seismic lateral displacement analyses using the commercial code Slide2 by RocScience. The lateral spread analysis was performed by evaluating slopes under static conditions but using liquefied strength parameters for liquefiable materials. These analyses indicate that portions of the Site are expected to undergo post-seismic displacements triggered by liquefaction of select layers after design-level seismic shaking has occurred. Analysis of Cross Section A-A' indicates that the critical seismic factor of safety for the Columbia River bank at the Port dock is less than 0.5, meaning there is broad instability in this area. The CPBR fuel tanks and main CPBR facility are located sufficiently inland that this type of post-seismic instability is generally not expected to be a hazard.

Lateral Spreading and Flow Failures

Lateral spreading occurs when large blocks of ground are displaced down gentle slopes or toward the free face of river channels, ditches, etc. as a result of earthquake-induced inertial forces acting on the soil mass. Initiation of lateral spreading is often made worse when the soils within and beneath the soil mass liquefy or soften as a result of the shaking. Lateral spreading deformations can be experienced relatively far from a free face. Similar to lateral spread, flow failures result when large volumes of soil near the free face of river channels or lake bottoms displace vertically and laterally during or after earthquakes. As the ground begins to shake and the shearing resistance of liquefied soils decreases, ground displacement occurs in response to mainly static shear forces present within the soil mass and, to a lesser extent, earthquake-induced inertial forces. Flow failures typically manifest larger deformations than lateral spreading; however, the extent of the deformations is typically localized to the area behind the free face of the channel.

We completed several stability analyses to assess how lateral spreading could affect the Site. We first performed a lateral spread displacement analysis following the procedure of Youd et al. (2002) and Youd (2018). This analysis takes into consideration the design seismic event, free face height, lateral distance from free face, and qualities of the liquefiable layer upon which lateral spreading occurs, including layer thickness, fines content, and average grain size. Based on our review of regional topographic data, the Site and surrounding area are relatively flat until encountering either the Columbia River to the north and northwest or the Bradbury Slough to the east and northeast of various Site features.

The average thickness of the liquefiable layer considered in these analyses is taken as the thickness of liquefied alluvium above a depth of 2H (where *H* is the height of the free face, per recommendations presented by Youd [2018]). The screening analysis, which does not directly consider regional geologic conditions, indicates that liquefaction-induced lateral spreading on the order of tens of feet is predicted to occur throughout the Site. The severity of predicted displacement increases with proximity to the shoreline.

SUMMARY

Based on the analyses completed to date, we consider there to be a high potential for seismically induced ground instability to occur at the Site. Instability as a result of seismic shaking and lateral spreading are likely to occur at the main CPBR facility and at the Port dock in the event of the design earthquake. The CPBR tanks appear to be of sufficient distance from the river and slough that lateral ground instability and deformation may be relatively diminished. More detailed field investigation and stability analyses would be required to better define the extent and magnitude of such movements throughout the Site.

Structural Evaluation

We have evaluated each of the Site features potentially capable of contributing to a fuel release exceeding Maximum Allowable Uncontained Spill (MAUS) volume. The controls, containment and topographic features that limit potential fuel release are discussed in subsequent sections. The features are discussed individually below.

TANKS

The two, 100,000-barrel storage tanks located midway between the transloading rack and the dock were constructed in 1975 of welded steel. The tanks are not anchored to their foundations. The most recent out-of-service inspection per American Petroleum Institute 653 was in 2020. Because the tanks do not have anchorage per modern codes, they cannot be ruled out as a source of a spill exceeding the MAUS volume.

SPILL CONTAINMENT BERMS

Construction details and dimensions for the berms surrounding the two tanks have not yet been evaluated. Additional evaluation, including an investigation of berm construction and supplemental geotechnical analyses, would be needed to verify if the berms can withstand the expected design-level ground deformations. As such, with the stability of the berms being uncertain, we cannot currently verify the berms being capable of containing a spill that would exceed the MAUS volume.

TRANSLOADING RACK

Structural drawings for the transloading rack were not available for review at the time of this assessment. Based on visual assessment, the rack is a steel-framed structure supporting access platforms and piping for offloading rail cars. Approximately six cars can be unloaded at a given time.

Based on the currently anticipated lateral spread at this location adjacent to the slough, the structure could experience sufficient movement to result in damage to the pipes supported on the rack, or connections thereto. Due to the large volume of anticipated lateral spread at this feature, a detailed structural evaluation of the rack has not been performed, as it is assumed the structure would fail due to loss of subgrade support. The steel-framed structure and steel pipe itself is relatively ductile and can

accommodate some differential settlement and lateral movement without rupture. Additional information and analysis are necessary to assess whether there is a potential to exceed the MAUS volume.

PIPELINE

Pipelines at the Site connect the transloading area to the fuel tanks and the fuel tanks to the dock. Full details of the pipeline foundations were not available for review for this assessment. The pipelines consist of welded steel pipes and are 8 inches in diameter in the run to the tanks and 14 inches in diameter in the run to the docks. Expansion loops are present.

The pipeline runs through areas with large expected lateral spreads. The steel pipe itself is relatively ductile and can accommodate some differential settlement and lateral movement without rupture. A full analysis of the maximum allowable settlement has not been conducted at this time, given the potential for spills within other portions of the facility. Connections to the tanks, rack, and dock are fixed. Differential movements between these structures and the nearby ground-supported pipeline could result in connection failure leading to spills, potentially in amounts exceeding the MAUS volume.

DOCK

Cascade Kelly owns the pipe rack from the shore to the dock, and the pipeline and marine loading/unloading infrastructure at Berth 1. Cascade Kelly constructed the pipe rack in 2024, and the Port constructed Berth 1 in 2015. The pipe rack and Berth 1 were constructed to meet the applicable seismic and structural codes in place at the time of design of each feature. Additional evaluation, including an analysis of design drawings, would be needed to verify that the pipe rack and Berth 1 are adequate for the expected design-level ground deformations. While the dock surface is not owned by Cascade Kelly, it serves as a transloading feature and is subject to assessment under OAR 340-300-0003. The dock was constructed in the 1940s and built on timber pilings. Large seismic settlements and lateral displacements are expected in a design earthquake. The dock would likely sustain damage due to these displacements. The steel pipe itself is relatively ductile and can accommodate a currently unquantified degree of differential settlement and lateral movement without rupture. Damage to the pipeline and connections due to dock failure cannot be ruled out, and this damage would have a potential to cause a spill exceeding the MAUS volume.

Engineering and Administrative Controls

The CPBR facility employs a number of engineering and administrative controls to prevent and control spills, fires, and other hazardous or unsafe conditions. A brief summary of these controls is provided in the following sections.

SPILL PREVENTION AND MITIGATION MEASURES

The facility design has numerous inherent spill prevention and mitigation measures. Pipelines at the main facility are aboveground and generally sit above pavement, with drainage and containment

systems, such as containment ponds that control release from the main facility. The tanks are surrounded by a containment berm. The containment berm is in accordance with 40 Code of Federal Regulations (CFR) 112.8 (c). The secondary containment areas (e.g., the containment berm) for all tanks are sized to contain a release of at least the largest tank capacity, plus sufficient room for freeboard to contain precipitation. All containment areas for oil storage units are constructed so that drainage (i.e., collected rainwater) is either restrained by valves or completely enclosed in order to prevent unauthorized releases from the containment area, in accordance with 40 CFR 112.7 (g). Bypass valves remain closed unless opened under responsible CPBR staff supervision.

The tank farm containment area is constructed of poly bentonite with a berm embankment. The containment area is sufficiently impervious to contain an oil spill until cleanup can occur.

The main facility, the tanks, and the majority of the aboveground pipelines are further contained within a U.S. Army Corps of Engineers levee. In addition, the Site has significant on-site equipment, including skimmers and pumps, booms, sorbents, communication equipment, and personal protective equipment.

CPBR is regulated by numerous laws and numerous state and federal agencies. To ensure compliance with these regulations, CPBR requires and provides significant training to all employees. Safety and Environmental Training for all employees includes:

- Facility Response Plan training (included as Appendix B);
- Fire extinguisher training;
- Spill Prevention, Control and Countermeasure training;
- CPR/First Aid training for volunteer responders;
- Hazardous Waste Operations and Emergency Response training by Response Training Services;
- Occupational Safety and Health Administration safety training;
- U.S. Department of Transportation training;
- Storm Water Pollution Control Plan training;
- Facility Security Plan training; and
- Process Safety Management training.

Facility personnel inspect the Site each day for spill prevention purposes and to evaluate any additional maintenance that may be required outside of the standard preventative maintenance program. These daily inspections include inspecting equipment for unanticipated liquid and vapor leaks. Numerous additional facility inspections are conducted during transfer operations and at the beginning of each shift. In addition, a comprehensive documented inspection of the entire terminal is conducted monthly.

Regular emergency preparedness and response drills are conducted involving facility personnel and local, state, and federal emergency response organizations, including DEQ. Drills include emergency responder notification, tabletop exercises, and equipment deployment activities. Following each drill, an “after action” review is conducted to evaluate drill performance and to initiate any recommended

improvements. This “after action” review helps emergency responders fully understand their tasks and facilitates effective coordination and communication between all involved agencies and facility responders.

SAFETY OF OPERATING CONDITIONS AND SAFE SHUTDOWN PROCEDURES

All operations are controlled and monitored in the Main Process Control Room. Facility systems are able to be observed remotely, and emergency shutdown operations can be performed from remote locations. The facility has a main emergency shutdown valve (Shore Valve) that is integrated with all systems safeties and remains closed unless loading a vessel. In the event of a loss of power, the shore valve automatically closes.

During loading operations, facility personnel are required to walk the pipeline to ensure proper operations.

FIRE CONTROL AND FIREFIGHTING MEASURES

All process tanks at the facility are equipped with a fixed foam fire suppression system. In addition, two self-contained mobile foam trailers equipped with hoses, nozzles, and monitors are available for fire response within Port of Columbia County’s Port Westward site near the dock. The dock is also equipped with a fire suppression system.

Fire response training for CPBR facility personnel is conducted on a regular basis in conjunction with the Clatskanie Fire Department (Clatskanie Fire) and the Marine Fire and Safety Association (MFSA), which may serve as incident commander in the event of an incident at the terminal. Clatskanie Fire has mutual aid agreements with other local departments in the surrounding communities to support and supply resources in the event of an incident, such as fire suppression foam, equipment, and personnel. MFSA has mutual aid agreements among individual Fire Protection Agencies Advisory Council fire agencies, to providing mutual aid to fire protection agencies participating in the MFSA program.

Cascade Kelly also retains a national firefighting organization to respond with additional fire suppression foam, equipment, and personnel.

The facility is equipped with fire suppression measures to mitigate an emergency fire situation. Tanks are equipped with certified fire suppression foam for efficient firefighting performance. The facility holds in excess of 3,000 gallons of firefighting foam, as well as a mobile foam trailer to accommodate multiple areas and scenarios. The Site features a 500,000-gallon fire water tank with unlimited feed from the Columbia River, as well as a backup fire generator and pump that supplies the facility. In addition, Clatskanie Fire has a fire substation at Quincy, which is adjacent to the facility.

The facility is located within Port Westward in a rural area with little development. The surrounding area is agricultural land, mainly used for grazing and farming. The likelihood of fire spreading beyond Port Westward is low.

EMERGENCY RESPONSE PERSONNEL

The facility is manned 24 hours a day and all employees are trained in Emergency and Spill Response activities. The facility is equipped with all the necessary equipment to respond to land or water emergencies.

CPBR is a member of Clean Rivers Cooperative and the MFSA. These groups assist with planning and ensuring proper response along the lower Columbia River. MFSA has developed a spill response contingency plan that has received approval from DEQ and the Washington Office of Marine Safety. MFSA maintains specialized marine firefighting equipment along the river. Clean Rivers Cooperative provides oil spill coverage for its membership's facility response plans in addition to vessels.

Summary

In summary, the CPBR facility features numerous engineering and administrative controls in line with or exceeding current standard of practice for safety and spill prevention; however, the facility is located in an area with subsurface conditions susceptible to geotechnical hazards under design-level seismic shaking. Structural failures leading to spillage exceeding MAUS volume may result from these hazards. Preliminary analysis of these hazards suggests that much of the CPBR facility is not currently likely to meet the performance objective established by OAR 340-300-0003, and that spills exceeding the MAUS volume may occur in the event of a design-level earthquake. However, additional evaluation of some portions of the facility (e.g., containment berms) is required to determine their vulnerability to adverse seismic effects. These additional evaluations will be incorporated into the Site's final SVA.

Hazard mitigation and spill prevention is conceptually feasible and could take the form of several different approaches. Additional analyses could show that the transloading rack and major runs of the pipeline could meet the OAR 340-300-0003 performance criteria or be economically retrofitted to meet the criteria. For example, pipelines could be evacuated of fuel while not actively in a state of transloading, and/or additional automatic shutoff valves could be introduced throughout the system. Hazard mitigation and retrofit of the fuel tanks and dock may require extensive ground improvement, improvements to deep foundations, and structural modifications, to develop resilience against seismic motions and hazards. Such improvements would be costly, and in some cases, reconstruction of such features may be preferential to retrofit on both a cost and performance basis.

Future Work

This initial SVA identifies the need for future mitigation/stabilization for the facility to meet the performance objective established by OAR 340-300-0003. As such, we believe Cascade Kelly will ultimately need to develop a risk mitigation implementation plan (RMIP) in conformance with OAR 340-300-0004. At present, however, it is not clear that an RMIP will need to include each of the site features.

Further investigation and evaluation of the effects of hazards on the facility and identification of conceptual mitigation options are required in order to prepare an RMIP. Working towards the goal of completing the SVA and developing and implementing an RMIP will require the following future tasks.

We have provided preliminary estimated durations of individual tasks, which will largely be performed sequentially and do not include time stops for DEQ review:

- Complete further evaluation of portions of the facility to better understand how seismically induced ground deformations could affect their potential to contribute to spills which exceed the MAUS volume. (Estimated duration: one to three months.)
- Development of a scope for completion of a detailed site-specific geotechnical investigation within vulnerable portions of the facility. (Estimated duration: one to two months.)
  - reviewing the proposed scope of work with DEQ.
- Incorporation of DEQ comments and updated analyses into a final SVA. (Estimated duration: two to six months.)
  - depending upon DEQ comments, additional engineering analyses may be required, which would affect timing of work.
- Approval of final SVA by DEQ prior to start of RMIP work. (Unknown duration.)
- Implementation of the DEQ-approved site-specific geotechnical investigation and associated laboratory testing. (Estimated duration: four to six months.)
- Completion of site-specific geotechnical analysis regarding earthquake-induced ground deformations and soil strength loss. This may involve advanced geotechnical numerical modeling. (Estimated duration: three to five months.)
- Completion of updated structural evaluation of the facility, tanks, and related components, as it relates to updated geotechnical findings regarding ground performance during an earthquake. (Estimated duration: four to six months.)
- Development of geotechnical, structural, mechanical and safety mitigation/stabilization alternative concepts and operational changes. (Estimated duration: three to four months.)
  - review of concepts with DEQ and selection of preferred alternatives.
  - preparation of preliminary RMIP outlining proposed mitigation/stabilization measures with schedule of implementation.
- Detailed geotechnical, structural, mechanical and safety engineering analyses to develop phased RMIP plans. (Estimated duration: four to six months.)
  - review of plans by DEQ.
- Implementation of RMIP plans. (Estimated duration: one to 10 years following RMIP completion.)

Closing

We appreciate the opportunity to provide engineering consulting services on this project. Please do not hesitate to call if you have any questions or comments.

Sincerely yours,
HALEY & ALDRICH, INC.

EXPIRES: 06/30/2025

Micah D. Hintz, P.E., G.E.
Geotechnical Engineer

Daniel J. Trisler, P.E., G.E.
Principal Geotechnical Engineer

Attachments:

Figure 1 - Vicinity Map
Figure 2 - Site and Exploration Plan

Appendix A - Historical Geotechnical Data
Appendix B - Facility Response Plan

https://haleyaldrich.sharepoint.com/sites/SchwabeWilliamsonWyatt/Shared Documents/0210947.Schwabe Beaver Dock Evaluation/Deliverables/Deliverables/Overall_SVA/Final/2024_0531_HAI_CPBR_Overall_SVA_F.docx

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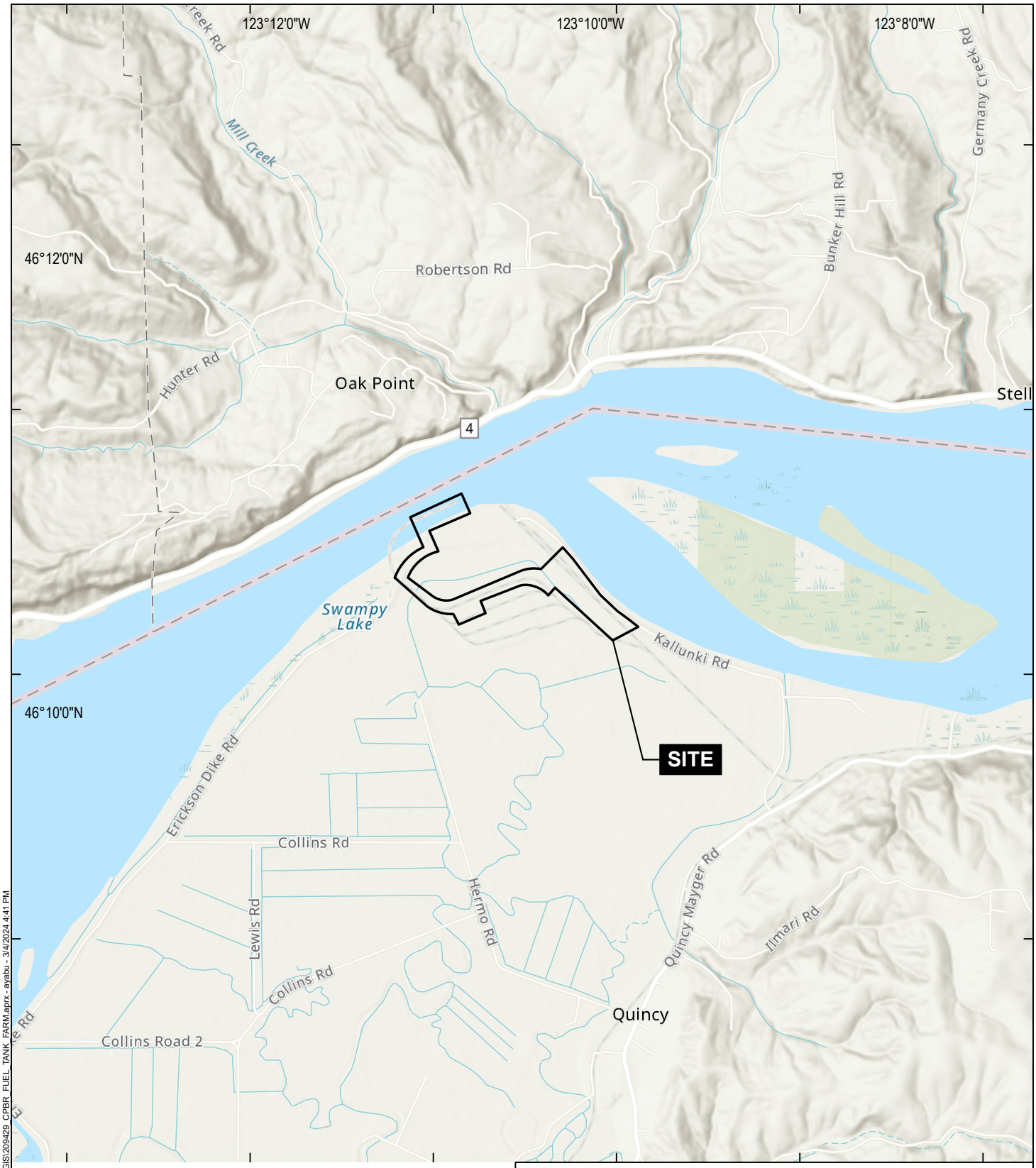
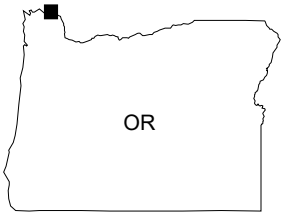
FIGURES





MAP SOURCE: ESRI
SITE COORDINATES: 46°10'34"N, 123°10'32"W

HALEY ALDRICH

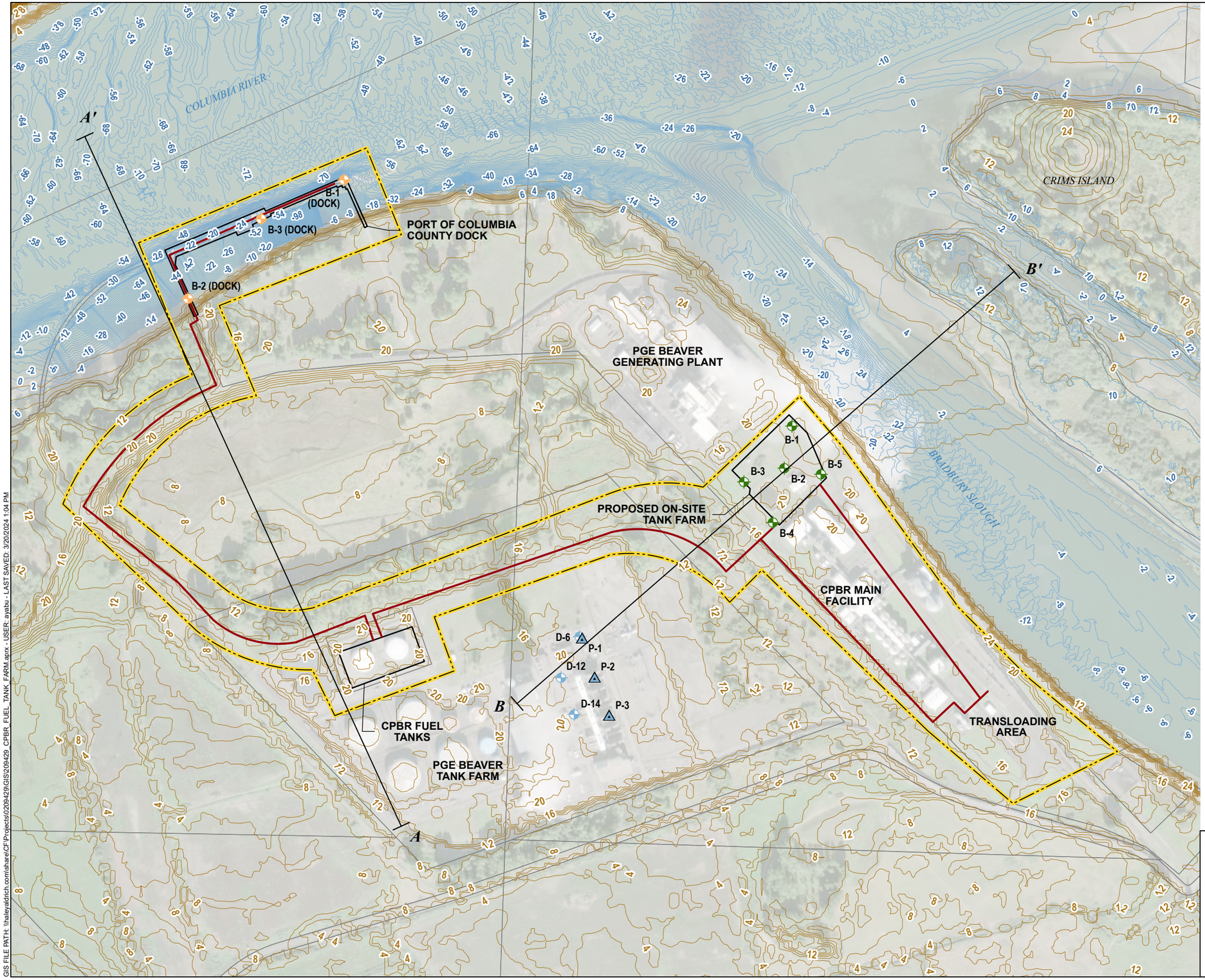
INITIAL SEISMIC VULNERABILITY ASSESSMENT
COLUMBIA PACIFIC BIO-REFINERY
CLATSKANIE, OREGON

PROJECT LOCUS

APPROXIMATE SCALE: 1 IN = 1 MILE
MAY 2024

FIGURE 1

GIS: \\haleyaldrich.com\share\CF\Projects\0209429\GIS\209429_CPBR_FUEL_TANK_FARM.aprx - ayabu - 3/4/2024 4:41 PM



LEGEND

- MUD ROTARY BORING - DOCK AREA (LANDAU 2013A)
- MUD ROTARY BORING - PROPOSED TANK FARM (LANDAU 2013B)
- MUD ROTARY BORING (DAMES & MOORE 1973)
- CONE PENETRATION TEST (DAMES & MOORE 1973)
- CROSS SECTION LOCATION
- PIPELINE
- TOPOGRAPHIC ELEVATION CONTOUR, 2-FT INTERVAL (NAVD88)
- BATHYMETRIC CONTOUR, 5-FT INTERVAL (NAVD88)
- SITE BOUNDARY
- PARCEL BOUNDARY

NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.
2. TOPOGRAPHIC ELEVATION CONTOUR DATA SOUCE: UNITED STATES GEOLOGICAL SURVEY NATIONAL ELEVATION DATASET
3. BATHYMETRIC DATA SOURCE: US ARMY CORPS OF ENGINEERS
4. ASSESSOR PARCEL DATA SOURCE: COLUMBIA COUNTY
5. AERIAL IMAGERY SOURCE: ESRI

N

0 600 1,200
SCALE IN FEET

HALEY ALDRICH

INITIAL SEISMIC VULNERABILITY ASSESSMENT
COLUMBIA PACIFIC BIO-REFINERY
CLATSKANIE, OREGON

SITE AND EXPLORATION PLAN

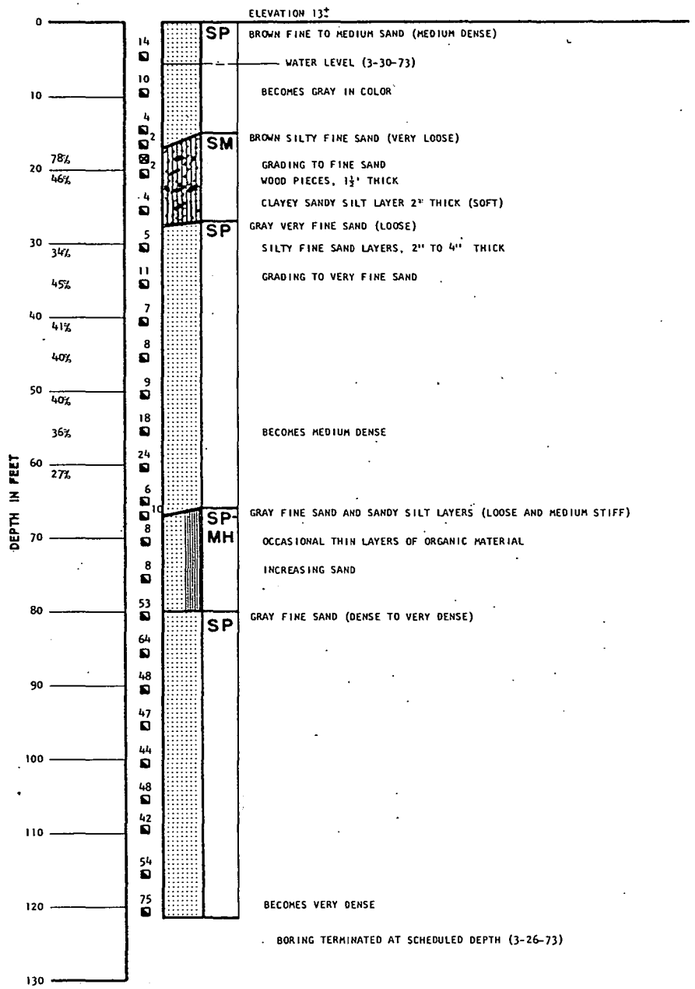
MAY 2024

FIGURE 2

GIS FILE PATH: \\haleyaldrich.com\share\CF\Projects\0209429\GIS\209429_CPBR_FUEL_TANK_FARM.aprx - USER: ayabu - LAST SAVED: 3/20/2024 1:04 PM

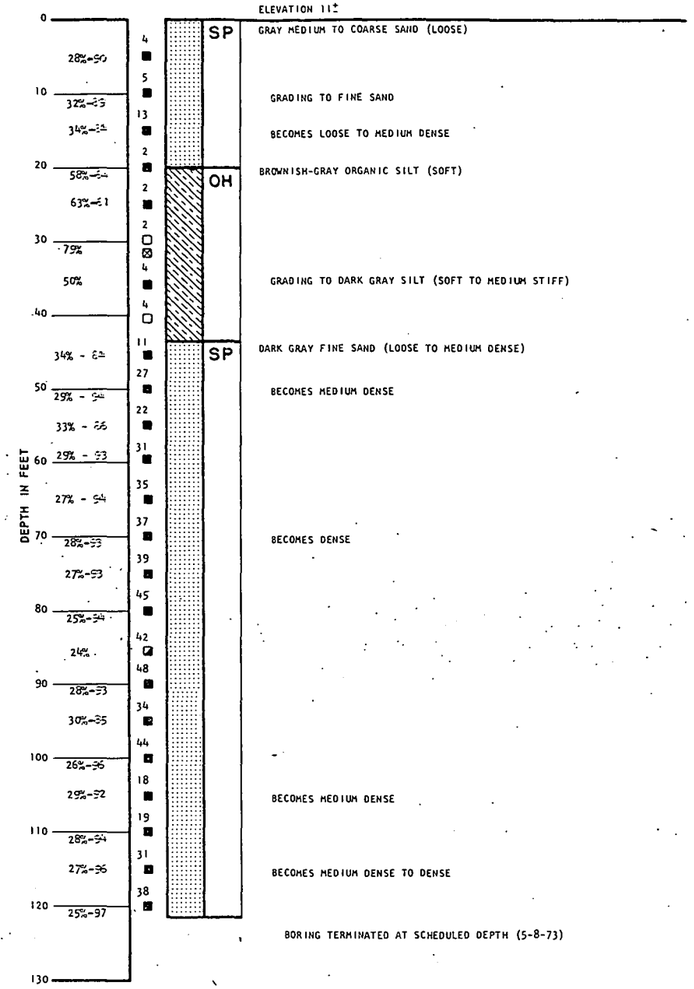
APPENDIX A
Historical Data

BORING D-6



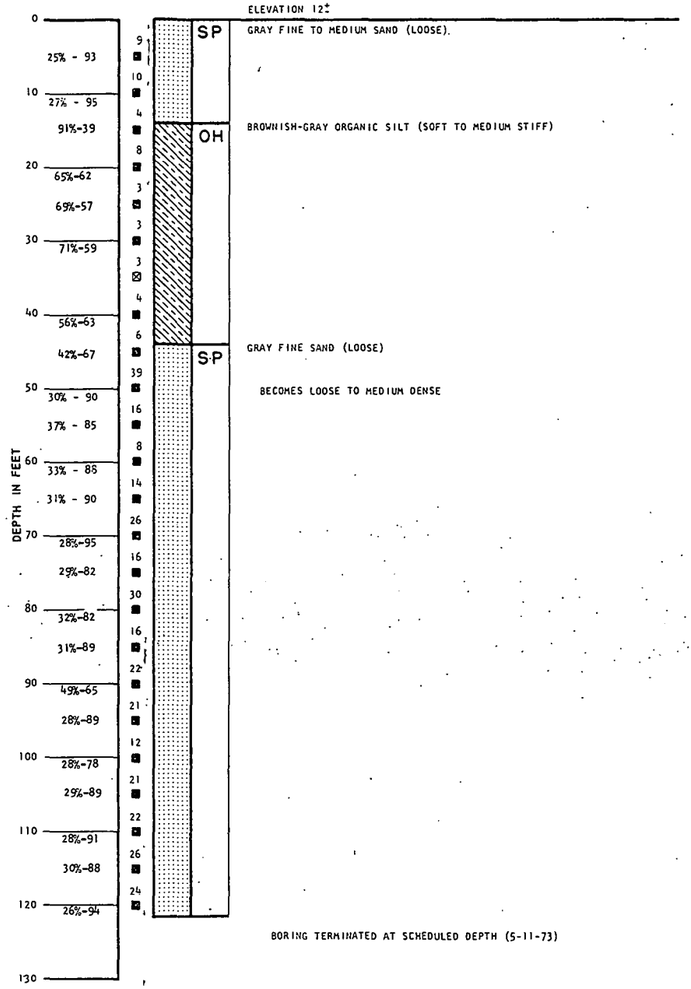
BORING TERMINATED AT SCHEDULED DEPTH (3-26-73)

BORING D-12



BORING TERMINATED AT SCHEDULED DEPTH (5-8-73)

BORING D-14



BORING TERMINATED AT SCHEDULED DEPTH (5-11-73)

NOTES:

1) ELEVATION REFERS TO U.S. CORPS OF ENGINEERING DATUM.
2) BORINGS D-4 THROUGH D-18 WERE DRILLED WITH A ROTARY DRILLING RIG.
3) DISCUSSION IN THE TEXT OF THIS REPORT IS NECESSARY FOR A PROPER UNDERSTANDING OF SUBSURFACE CONDITIONS REVEALED BY THE BORINGS.

KEY:

- ■ ← INDICATES UNDISTURBED SAMPLE (DAMES & MOORE SAMPLER)
- ⊠ ← INDICATES DISTURBED SAMPLE (DAMES & MOORE SAMPLER)
- ○ ← INDICATES SAMPLING ATTEMPT WITH NO RECOVERY (DAMES & MOORE SAMPLER)
- 35% - 83 ■ ← FIELD MOISTURE EXPRESSED AS A PERCENT OF THE DRY WEIGHT OF THE SOIL; IN-SITU DRY DENSITY EXPRESSED IN POUNDS PER CUBIC FOOT
- 6 ■ ← INDICATES NUMBER OF BLOWS REQUIRED TO DRIVE DAMES & MOORE TYPE-U SAMPLER ONE FOOT,
- 6 ⊠ ← INDICATES NUMBER OF BLOWS REQUIRED TO DRIVE STANDARD PENETRATION TEST SAMPLER ONE FOOT WITH 140 POUND WEIGHT FALLING 30 INCHES

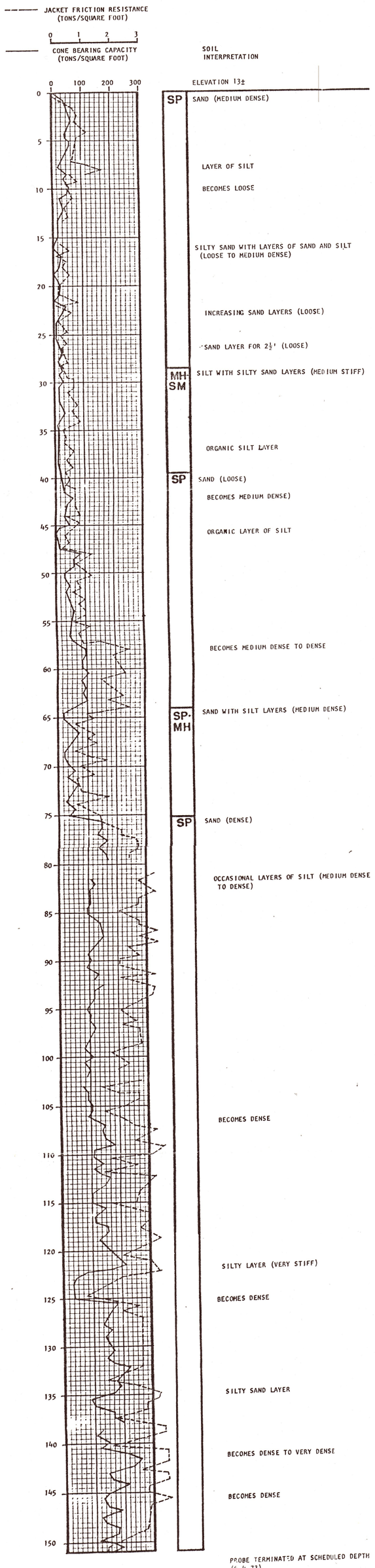
LOG OF BORINGS

DAMES & MOORE

PLATE A-1

0446-027-09

DUTCH CONE PROBE P-1

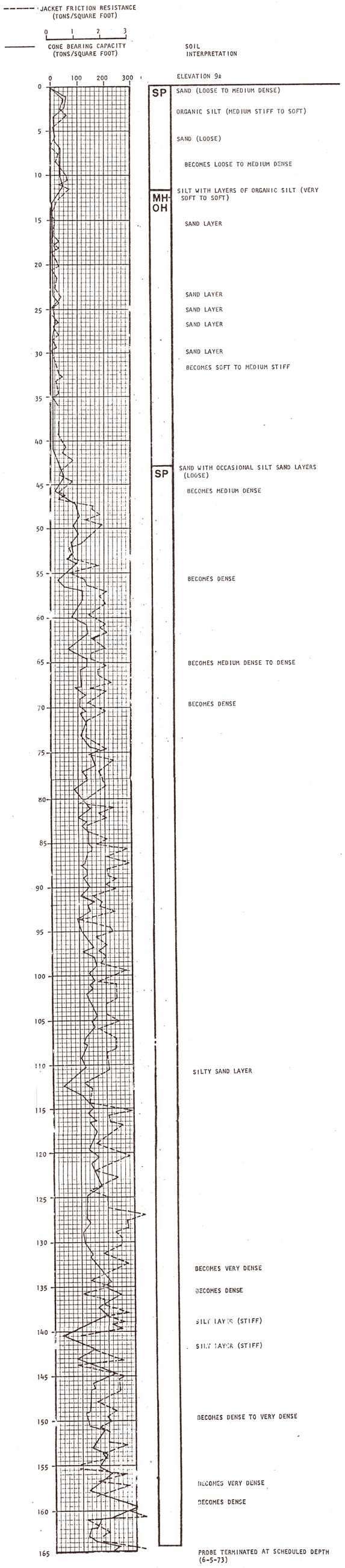


SOIL INTERPRETATION

ELEVATION 13±

- SP — SAND (MEDIUM DENSE)
- LAYER OF SILT
- BECOMES LOOSE
- SILTY SAND WITH LAYERS OF SAND AND SILT (LOOSE TO MEDIUM DENSE)
- INCREASING SAND LAYERS (LOOSE)
- SAND LAYER FOR 2½' (LOOSE)
- MH-SM — SILT WITH SILTY SAND LAYERS (MEDIUM STIFF)
- ORGANIC SILT LAYER
- SP — SAND (LOOSE)
- BECOMES MEDIUM DENSE)
- ORGANIC LAYER OF SILT
- BECOMES MEDIUM DENSE TO DENSE
- SP-MH — SAND WITH SILT LAYERS (MEDIUM DENSE)
- SP — SAND (DENSE)
- OCCASIONAL LAYERS OF SILT (MEDIUM DENSE TO DENSE)
- BECOMES DENSE
- SILTY LAYER (VERY STIFF)
- BECOMES DENSE
- SILTY SAND LAYER
- BECOMES DENSE TO VERY DENSE
- BECOMES DENSE
- PROBE TERMINATED AT SCHEDULED DEPTH (6-4-73)

DUTCH CONE PROBE P-2

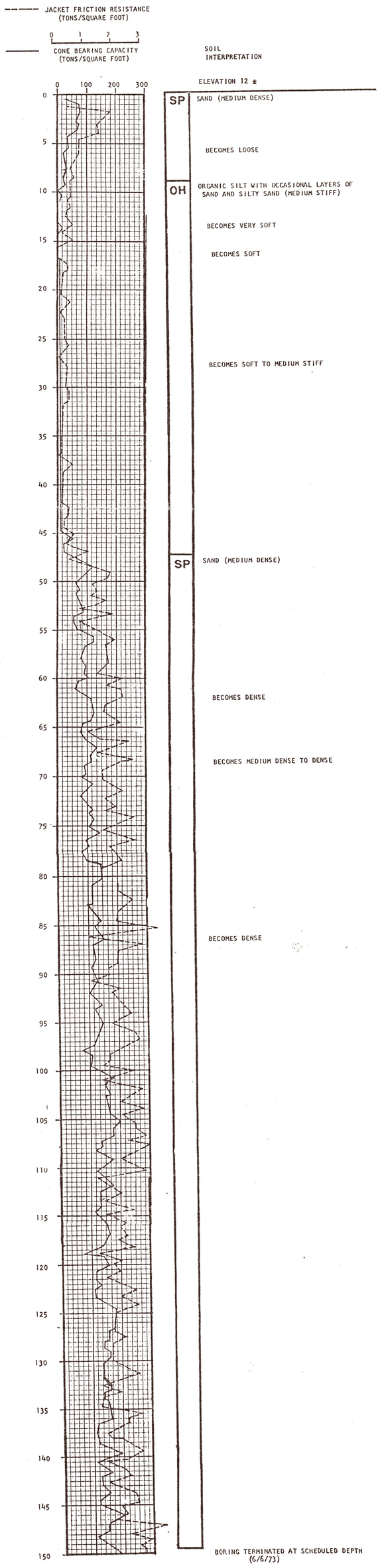


SOIL INTERPRETATION

ELEVATION 9±

- SP — SAND (LOOSE TO MEDIUM DENSE)
- ORGANIC SILT (MEDIUM STIFF TO SOFT)
- SAND (LOOSE)
- BECOMES LOOSE TO MEDIUM DENSE
- MH-OH — SILT WITH LAYERS OF ORGANIC SILT (VERY SOFT TO SOFT)
- SAND LAYER
- SAND LAYER
- SAND LAYER
- SAND LAYER
- SAND LAYER
- BECOMES SOFT TO MEDIUM STIFF
- SP — SAND WITH OCCASIONAL SILT SAND LAYERS (LOOSE)
- BECOMES MEDIUM DENSE
- BECOMES DENSE
- BECOMES MEDIUM DENSE TO DENSE
- BECOMES DENSE
- SILTY SAND LAYER
- BECOMES VERY DENSE
- BECOMES DENSE
- SILT LAYER (STIFF)
- SILT LAYER (STIFF)
- BECOMES DENSE TO VERY DENSE
- BECOMES VERY DENSE
- BECOMES DENSE
- PROBE TERMINATED AT SCHEDULED DEPTH (6-5-73)

DUTCH CONE PROBE P-3



SOIL INTERPRETATION

ELEVATION 12 ±

- SP — SAND (MEDIUM DENSE)
- BECOMES LOOSE
- OH — ORGANIC SILT WITH OCCASIONAL LAYERS OF SAND AND SILTY SAND (MEDIUM STIFF)
- BECOMES VERY SOFT
- BECOMES SOFT
- BECOMES SOFT TO MEDIUM STIFF
- SP — SAND (MEDIUM DENSE)
- BECOMES DENSE
- BECOMES MEDIUM DENSE TO DENSE
- BECOMES DENSE
- BORING TERMINATED AT SCHEDULED DEPTH (6/6/73)

NOTES:

1) INTERPRETATION OF SOIL TYPE IS BASED ON FRICTION RATIO (JACKET FRICTION RESISTANCE DIVIDED BY CONE BEARING CAPACITY) AND CONE BEARING CAPACITY AFTER SCHMERTMANN'S SOIL CLASSIFICATION CURVES (REF. G. SANGLERAT, THE PENETROMETER AND SOIL EXPLORATION, 1972, P. 209).

2) CONSISTENCY CLASSIFICATION IS BASED ON VALUES OF JACKET FRICTION RESISTANCE, RELATIVE DENSITY CLASSIFICATION IS BASED ON FRICTION RATIO AND CONE BEARING CAPACITY (REFS. G. SANGLERAT, THE PENETROMETER AND SOIL EXPLORATION, 1972, P. 200 AND J.H. SCHMERTMANN, STATIC CONE TO COMPUTE SETTLEMENT OVER SAND, JOURNAL, A.S.C.E., S.M. 3, MAY, 1970).

DATE OF ISSUE 6-19-73

LOG OF DUTCH CONE PROBES

DAMES & MOORE

PLATE A-2

SOIL CLASSIFICATION CHART

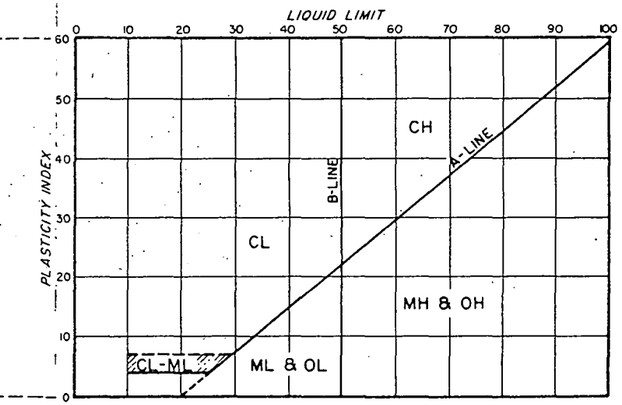
MAJOR DIVISIONS			GRAPH SYMBOL	LETTER SYMBOL	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS — MORE THAN 50 % OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVEL AND GRAVELLY SOILS — MORE THAN 50 % OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
				GP	POORLY-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES
	SAND AND SANDY SOILS — MORE THAN 50% OF COARSE FRACTION PASSING NO. 4 SIEVE	CLEAN SAND (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
				SP	POORLY-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND-SILT MIXTURES
				SC	CLAYEY SANDS, SAND-CLAY MIXTURES
FINE GRAINED SOILS — MORE THAN 50 % OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS — LIQUID LIMIT LESS THAN 50			ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS — LIQUID LIMIT GREATER THAN 50			MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICTY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

FOR LABORATORY CLASSIFICATION OF FINE-GRAINED SOILS

GRADATION CHART

MATERIAL SIZE	PARTICLE SIZE			
	LOWER LIMIT		UPPER LIMIT	
	MILLIMETERS	SIEVE SIZE*	MILLIMETERS	SIEVE SIZE*
SAND				
FINE	.074	#200*	0.42	#40*
MEDIUM	0.42	#40*	2.00	#10*
COARSE	2.00	#10*	4.76	#4*
GRAVEL				
FINE	4.76	#4*	19.1	3/4"*
COARSE	19.1	3/4"*	76.2	3"*
COBBLES	76.2	3"*	304.8	12*
BOULDERS	304.8	12*	914.4	36"

PLASTICITY CHART



NOTES:

1. DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE CLASSIFICATIONS.
2. WHEN SHOWN ON THE BORING LOGS, THE FOLLOWING TERMS ARE USED TO DESCRIBE THE CONSISTENCY OF COHESIVE SOILS AND THE RELATIVE COMPACTNESS OF COHESIONLESS SOILS.

COHESIVE SOILS	(APPROXIMATE SHEARING STRENGTH IN KSF)
VERY SOFT	LESS THAN .25
SOFT	0.25 TO 0.5
MEDIUM STIFF	0.5 TO 1.0
STIFF	1.0 TO 2.0
VERY STIFF	2.0 TO 4.0
HARD	GREATER THAN 4.0

COHESIONLESS SOILS	
VERY LOOSE	THESE ARE USUALLY BASED ON AN EXAMINATION OF SOIL SAMPLES, PENETRATION RESISTANCE, AND SOIL DENSITY DATA.
LOOSE	
MEDIUM DENSE	
DENSE	
VERY DENSE	

SAMPLES

- ▣ INDICATES UNDISTURBED SAMPLE
- ⊠ INDICATES DISTURBED SAMPLE
- ▢ INDICATES SAMPLING ATTEMPT WITH NO RECOVERY
- I INDICATES LENGTH OF CORING RUN

NOTE:
DEFINITIONS OF ANY ADDITIONAL DATA REGARDING SAMPLES ARE ENTERED ON THE FIRST LOG ON WHICH THE DATA APPEAR.

UNIFIED SOIL CLASSIFICATION SYSTEM

DAMES & MOORE

PLATE A-3

Soil Classification System

MAJOR DIVISIONS			GRAPHIC SYMBOL	USCS LETTER SYMBOL[1]	TYPICAL DESCRIPTIONS [2][3]
COARSE-GRAINED SOIL (More than 50% of material is larger than No. 200 sieve size)	GRAVEL AND GRAVELLY SOIL (More than 50% of coarse fraction retained on No. 4 sieve)	CLEAN GRAVEL (Little or no fines)		GW	Well-graded gravel; gravel/sand mixture(s); little or no fines
				GP	Poorly graded gravel; gravel/sand mixture(s); little or no fines
		GRAVEL WITH FINES (Appreciable amount of fines)		GM	Silty gravel; gravel/sand/silt mixture(s)
				GC	Clayey gravel; gravel/sand/clay mixture(s)
	SAND AND SANDY SOIL (More than 50% of coarse fraction passed through No. 4 sieve)	CLEAN SAND (Little or no fines)		SW	Well-graded sand; gravelly sand; little or no fines
				SP	Poorly graded sand; gravelly sand; little or no fines
		SAND WITH FINES (Appreciable amount of fines)		SM	Silty sand; sand/silt mixture(s)
				SC	Clayey sand; sand/clay mixture(s)
FINE-GRAINED SOIL (More than 50% of material is smaller than No. 200 sieve size)	SILT AND CLAY (Liquid limit less than 50)			ML	Inorganic silt and very fine sand; rock flour; silty or clayey fine sand or clayey silt with slight plasticity
				CL	Inorganic clay of low to medium plasticity; gravelly clay; sandy clay; silty clay; lean clay
				OL	Organic silt; organic, silty clay of low plasticity
	SILT AND CLAY (Liquid limit greater than 50)			MH	Inorganic silt; micaceous or diatomaceous fine sand
				CH	Inorganic clay of high plasticity; fat clay
				OH	Organic clay of medium to high plasticity; organic silt
	HIGHLY ORGANIC SOIL			PT	Peat; humus; swamp soil with high organic content

OTHER MATERIALS	GRAPHIC SYMBOL	LETTER SYMBOL	TYPICAL DESCRIPTIONS
PAVEMENT		AC or PC	Asphalt concrete pavement or Portland cement pavement
ROCK		RK	Rock (See Rock Classification)
WOOD		WD	Wood, lumber, wood chips
DEBRIS		DB	Construction debris, garbage

Notes:
1. USCS letter symbols correspond to symbols used by the Unified Soil Classification System and ASTM classification methods. Dual letter symbols (e.g., SP-SM for sand or gravel) indicate soil with an estimated 5-15% fines. Multiple letter symbols (e.g., ML/CL) indicate borderline or multiple soil classifications.
2. Soil descriptions are based on the general approach presented in the Standard Practice for Description and Identification of Soils (Visual-Manual Procedure), outlined in ASTM D 2488. Where laboratory index testing has been conducted, soil classifications are based on the Standard Test Method for Classification of Soils for Engineering Purposes, as outlined in ASTM D 2487.
3. Soil description terminology is based on visual estimates (in the absence of laboratory test data) of the percentages of each soil type and is defined as follows:

Primary Constituent:	> 50%	- "GRAVEL," "SAND," "SILT," "CLAY," etc.
Secondary Constituents:	> 30% and ≤ 50%	- "very gravelly," "very sandy," "very silty," etc.
	> 15% and ≤ 30%	- "gravelly," "sandy," "silty," etc.
Additional Constituents:	> 5% and ≤ 15%	- "with gravel," "with sand," "with silt," etc.
	≤ 5%	- "with trace gravel," "with trace sand," "with trace silt," etc., or not noted.

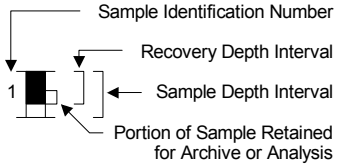
4. Soil density or consistency descriptions are based on judgement using a combination of sampler penetration blow counts, drilling or excavating conditions, field tests, and laboratory tests, as appropriate.

Drilling and Sampling Key

SAMPLER TYPE

Code	Description
a	3.25-inch O.D., 2.42-inch I.D. Split Spoon
b	2.00-inch O.D., 1.50-inch I.D. Split Spoon
c	Shelby Tube
d	Grab Sample
e	Single-Tube Core Barrel
f	Double-Tube Core Barrel
g	2.50-inch O.D., 2.00-inch I.D. WSDOT
h	3.00-inch O.D., 2.375-inch I.D. Mod. California
i	Other - See text if applicable
1	300-lb Hammer, 30-inch Drop
2	140-lb Hammer, 30-inch Drop
3	Pushed
4	Vibrocore (Rotosonic/Geoprobe)
5	Other - See text if applicable

SAMPLE NUMBER & INTERVAL



Field and Lab Test Data

Code	Description
PP = 1.0	Pocket Penetrometer, tsf
TV = 0.5	Torvane, tsf
PID = 100	Photoionization Detector VOC screening, ppm
W = 10	Moisture Content, %
D = 120	Dry Density, pcf
-200 = 60	Material smaller than No. 200 sieve, %
GS	Grain Size - See separate figure for data
AL	Atterberg Limits - See separate figure for data
GT	Other Geotechnical Testing
CA	Chemical Analysis

Groundwater

▽ Approximate water level at time of drilling (ATD)

▼ Approximate water level at time other than ATD

B-1

LAI Project No: 1374001.010

SAMPLE DATA | **SOIL PROFILE**

Drilling Method: Mud Rotary
Ground Elevation (ft): Not Measured
Drilled By: Holocene Drilling Inc.
Logged By: DAR Date: 04/29/13

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	Graphic Symbol	USCS Symbol	Soil Description	Groundwater
0	S-1	b2	10			GP / SP-SM	Dark gray, fine to coarse GRAVEL with sand (loose, moist) **(FILL)**	Groundwater Not Measured
							Gray, fine to medium SAND with silt (loose to medium dense, wet)	
10	S-2	b2	5	W = 36 GS				
	S-3	b2	3	W = 43 AL		CH	Gray CLAY (soft, wet) **(ALLUVIUM)**	
20	S-4	b2	2	W = 38 -200 = 42		SM	Gray, very silty, fine SAND (very loose, wet)	
	S-5	b2	17	W = 28 GS		SP	Gray, fine to medium SAND (loose to medium dense, wet)	
30	S-6	b2	9					
	S-7	b2	16					
40	S-8	b2	16					
	S-9	b2	16					
50	S-10	b2	22					

Moisture Content (%) — Plastic Limit — Liquid Limit
20 40 60 80
▲ SPT N-Value ▲
△ Non-Standard N-Value △
20 40 60 80
× Fines Content (%) ×
20 40 60 80

Boring Completed 04/29/13
Total Depth of Boring = 51.5 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

LANDAU ASSOCIATES

CPBR New Tank Farm
Clatskanie, Oregon

Log of Boring B-1

Figure
A-2

B-2

LAI Project No: 1374001.010

SAMPLE DATA | **SOIL PROFILE**

Drilling Method: Mud Rotary
Ground Elevation (ft): Not Measured
Drilled By: Holocene Drilling Inc.
Logged By: DAR Date: 04/29/13

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	Graphic Symbol	USCS Symbol	Soil Description	Groundwater
0						GP SP	Dark gray, fine to coarse gravel with sand (loose, moist) **(FILL)**	
	S-1	b2	17				Gray, fine to medium SAND (medium dense, wet)	
						ML	Gray, sandy to very sandy SILT (soft to medium stiff, wet) **(ALLUVIUM)**	
10	S-2	b2	6	W = 35				
	S-3	c3						
	S-4	b2	3	W = 37 -200 = 54				
	S-5	b2	14			SM	Gray, silty, fine SAND (loose to medium dense, wet)	
20	S-6	b2	12	W = 33 -200 = 16				
	S-7	b2	7					
30	S-8	b2	11					
						SP-SM	Gray, fine to medium SAND with silt (medium dense, wet)	
	S-9	b2	16					
40	S-10	b2	19					
	S-11	b2	19					
50	S-12	b2	14	W = 30 GS				

Groundwater Not Measured

Moisture Content (%)
Plastic Limit — Liquid Limit
20 40 60 80

▲ SPT N-Value ▲
△ Non-Standard N-Value △
20 40 60 80

× Fines Content (%) ×
20 40 60 80

Boring Completed 04/29/13
Total Depth of Boring = 51.5 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

LANDAU ASSOCIATES

CPBR New Tank Farm
Clatskanie, Oregon

Log of Boring B-2

Figure
A-3

B-3

LAI Project No: 1374001.010

SAMPLE DATA | **SOIL PROFILE**

Drilling Method: Mud Rotary
Ground Elevation (ft): Not Measured
Drilled By: Holocene Drilling Inc.
Logged By: DAR Date: 04/29/13

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	Graphic Symbol	USCS Symbol	Soil Description
0						GP SP	Dark gray, fine to coarse GRAVEL with sand (loose, moist) **(FILL)** Brownish-gray, fine to medium SAND (loose, wet)
	S-1	b2	7				
						SM	Gray, silty, fine SAND (loose, wet) **(ALLUVIUM)**
10	S-2	b2	7			CH	Brownish-gray, CLAY with organics (very soft to soft, wet)
	S-3	b2	0				
	S-4	c3		D = 69 GT W = 46 AL			
	S-5	b2	3				
20	S-6	b2	11	W = 35 -200 = 21		SM	Gray, silty, fine SAND (medium dense, wet)
	S-7	b2	11				
						SP	Gray, fine to medium SAND (medium dense, wet)
30	S-8	b2	26				
	S-9	b2	21				
40	S-10	b2	18				
	S-11	b2	11				
50	S-12	b2	24				

Groundwater: Groundwater Not Measured

Moisture Content (%)
Plastic Limit — Liquid Limit
20 40 60 80

▲ SPT N-Value ▲
△ Non-Standard N-Value △
20 40 60 80

× Fines Content (%) ×
20 40 60 80

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

LANDAU ASSOCIATES

CPBR New Tank Farm
Clatskanie, Oregon

Log of Boring B-3

Figure
A-4
(1 of 2)

B-3

LAI Project No: 1374001.010

SAMPLE DATA				SOIL PROFILE			
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	Graphic Symbol	USCS Symbol	Drilling Method: Mud Rotary Ground Elevation (ft): Not Measured Drilled By: Holocene Drilling Inc. Logged By: DAR Date: 04/29/13
50	S-13	b2	19			SP	Gray, fine to medium SAND (medium dense, wet)
60	S-14	b2	21				
	S-15	b2	16	W = 27 GS			
70	S-16	b2	21				
	S-17	b2	23				
80	S-18	b2	26				
	S-19	b2	19				
90	S-20	b2	23				
	S-21	b2	26				
100	S-22	b2	35				- grades dense
110							

Groundwater: Groundwater Not Measured

Moisture Content (%)
Plastic Limit — Liquid Limit
20 40 60 80

▲ SPT N-Value ▲
△ Non-Standard N-Value △
20 40 60 80

× Fines Content (%) ×
20 40 60 80

Boring Completed 04/29/13
Total Depth of Boring = 101.5 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

LANDAU ASSOCIATES

CPBR New Tank Farm
Clatskanie, Oregon

Log of Boring B-3

Figure
A-4
(2 of 2)

B-4

LAI Project No: 1374001.010

SAMPLE DATA | **SOIL PROFILE**

Drilling Method: Mud Rotary
Ground Elevation (ft): Not Measured
Drilled By: Holocene Drilling Inc.
Logged By: DAR Date: 04/30/13

Groundwater: Groundwater Not Measured

Moisture Content (%) — Plastic Limit — Liquid Limit
20 40 60 80
▲ SPT N-Value ▲
△ Non-Standard N-Value △
20 40 60 80
× Fines Content (%) ×
20 40 60 80

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	Graphic Symbol	USCS Symbol	Description
0						SM / SP-SM	Brown, silty, fine to medium SAND with organics (medium dense, moist) **(TOPSOIL)**
	S-1	b2	25				Brown, fine to medium SAND with silt (medium dense, wet) **(FILL)**
						ML	Gray SILT with sand (medium stiff, wet) **(ALLUVIUM)**
10	S-2	b2	7	W = 38			
	S-3	c3					
	S-4	b2	2	W = 38		SM	Gray, very silty, fine SAND (very loose to loose, wet)
	S-5	b2	9	W = 40 -200 = 49			
20	S-6	b2	4	W = 31			
	S-7	b2	8	W = 41			
30	S-8	b2	5	W = 40 GS		SP	Gray, fine to medium SAND (medium dense, wet)
	S-9	b2	16				
40	S-10	b2	15				
	S-11	b2	13				
50	S-12	b2	14			SW-SM	Gray, fine to coarse SAND with silt (medium dense, wet)

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

LANDAU ASSOCIATES

CPBR New Tank Farm
Clatskanie, Oregon

Log of Boring B-4

Figure
A-5
(1 of 2)

B-4

LAI Project No: 1374001.010

SAMPLE DATA | **SOIL PROFILE**

Drilling Method: Mud Rotary
Ground Elevation (ft): Not Measured
Drilled By: Holocene Drilling Inc.
Logged By: DAR Date: 04/30/13

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	Graphic Symbol	USCS Symbol	Soil Description	Groundwater
	S-13	b2	10			SW-SM	Gray, fine to coarse SAND with silt (medium dense, wet)	
60	S-14	b2	16					
	S-15	b2	22					
70	S-16	b2	22					
	S-17	b2	22	W = 21 GS			- grades to with gravel	
80	S-18	b2	18				- grades to with trace gravel	
	S-19	b2	24					
90	S-20	b2	17					
	S-21	b2	21					
100	S-22	b2	22					
110								

Groundwater Not Measured

Moisture Content (%)
Plastic Limit — Liquid Limit
20 40 60 80

▲ SPT N-Value ▲
△ Non-Standard N-Value △
20 40 60 80

× Fines Content (%) ×
20 40 60 80

Boring Completed 04/30/13
Total Depth of Boring = 101.5 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1374001.01 5/29/13 O:\1374\001\T\TASK 12 DATA REPORT\1374001L.GPJ SOIL BORING LOG WITH GRAPH

LANDAU ASSOCIATES

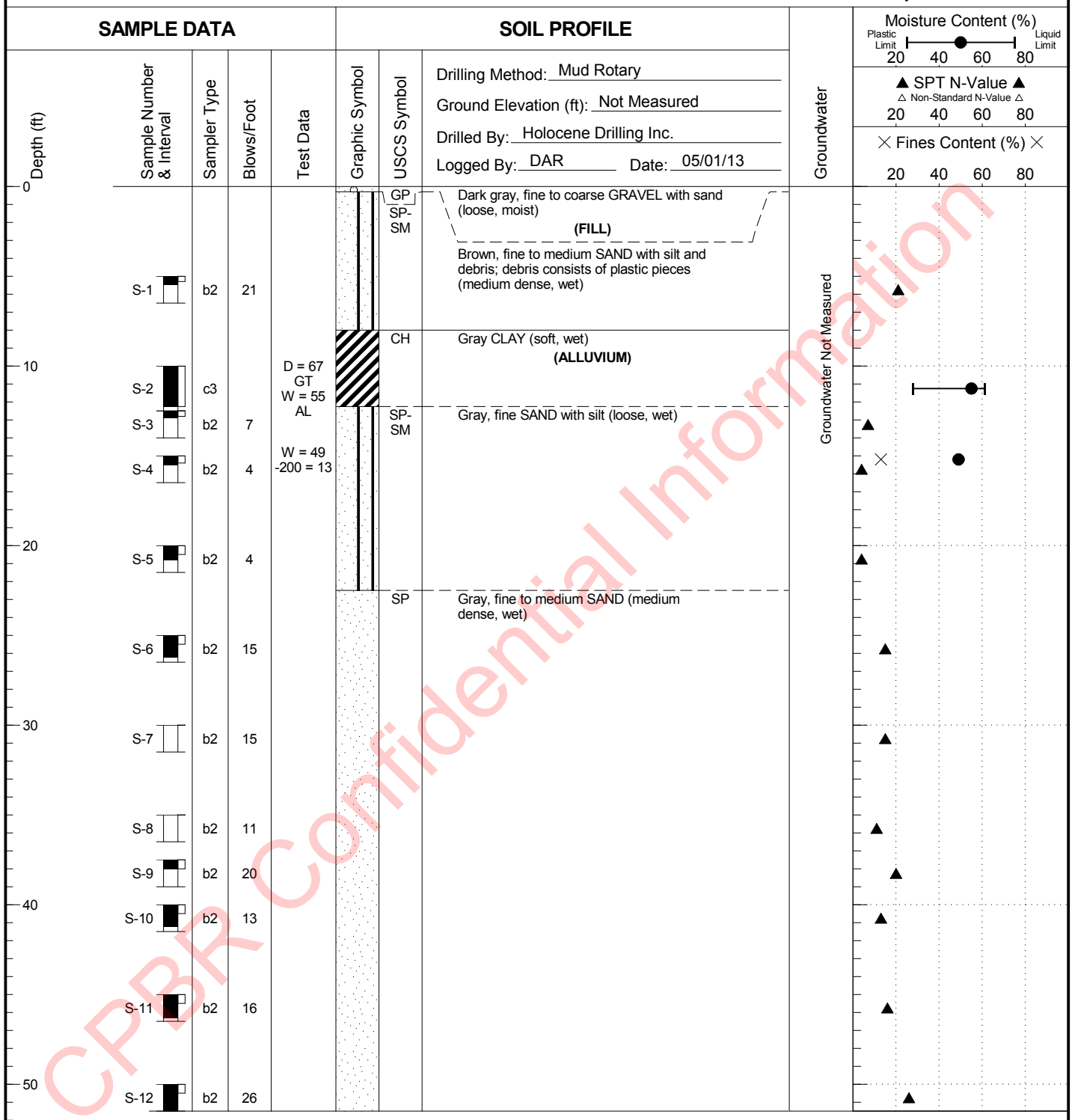
CPBR New Tank Farm
Clatskanie, Oregon

Log of Boring B-4

Figure
A-5
(2 of 2)

B-5

LAI Project No: 1374001.010



Boring Completed 05/01/13
Total Depth of Boring = 51.5 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

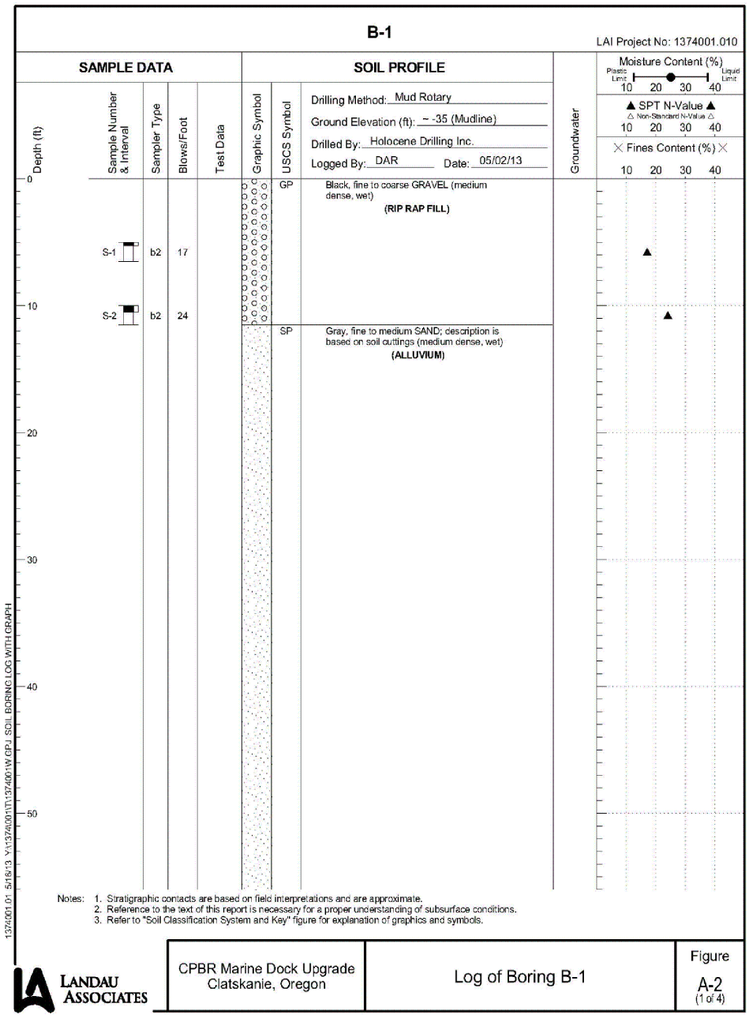
1374001.01 5/29/13 O:\1374\001\TXTASK 12 DATA REPORT\1374001L.GPJ SOIL BORING LOG WITH GRAPH

LANDAU ASSOCIATES

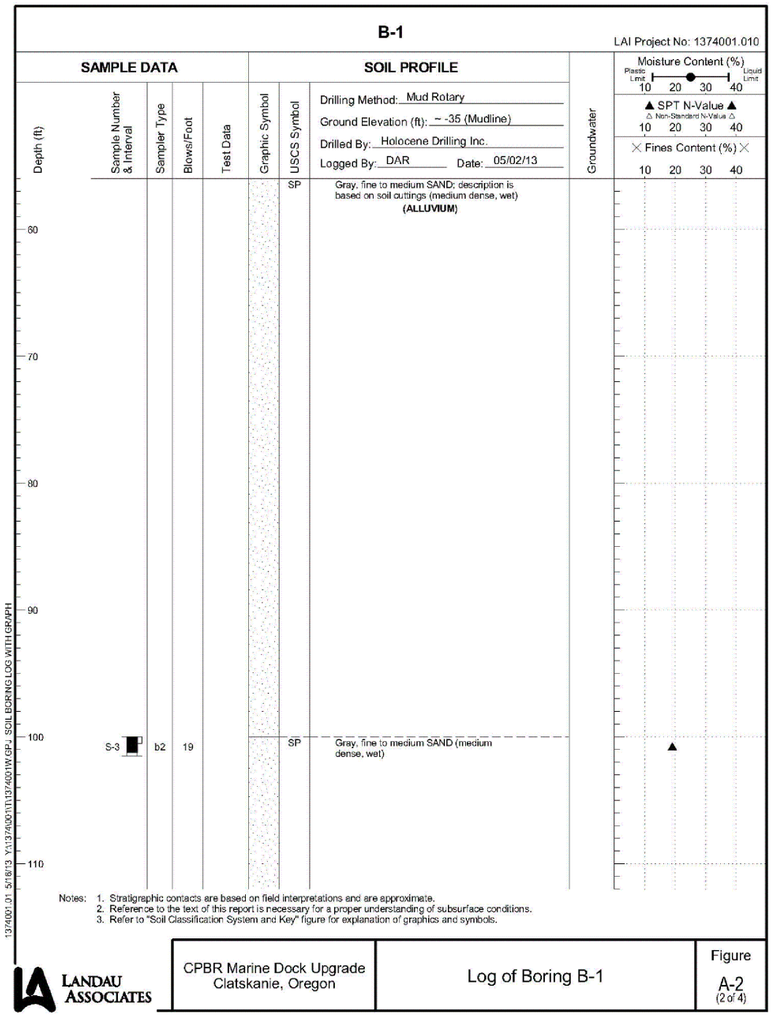
CPBR New Tank Farm
Clatskanie, Oregon

Log of Boring B-5

Figure
A-6



LANDAU ASSOCIATES | CPBR Marine Dock Upgrade Clatskanie, Oregon | Log of Boring B-1 | Figure A-2 (1 of 4)



LANDAU ASSOCIATES | CPBR Marine Dock Upgrade Clatskanie, Oregon | Log of Boring B-1 | Figure A-2 (2 of 4)

SEE AUGUST 28 GRI GEOTECHNICAL REPORT FOR ADDITIONAL INFORMATION.

COLUMBIA PACIFIC BIO-REFINERY
81200 Kallunki Rd
Clatskanie, OR 97016

COLLINS ENGINEERS INC
650 ISLINGTON ST, SUITE 1
PORTSMOUTH, NH 03801
603-334-4742
WWW.COLLINSENGR.COM

SEAL

REVISIONS

NO.	DESCRIPTION	DATE

Designed by:	CTC
Drawn by:	JD
Checked by:	WMM
Reviewed by:	ZDJ
Revisions by:	DTG

PROJECT NO.
DATE:

COLUMBIA PACIFIC BIO-REFINERY

PIPE RACK SUBSTRUCTURE
CLATSKANIE OR

GEOTECHNICAL BORING LOGS - 1

DISCIPLINE/SHT NO
G-03

SHEET 3 OF 12

DRAWFORM REVISION: 31 JANUARY 2017

B-1

LAI Project No: 1374001.010

SAMPLE DATA					SOIL PROFILE				Groundwater	Moisture Content (%) / SPT N-Value / Fines Content (%)
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	Graphic Symbol	USCS Symbol	Drilling Method: Mud Rotary Ground Elevation (ft): ~ -35 (Mudline) Drilled By: Holocene Drilling Inc. Logged By: DAR Date: 05/02/13			Plastic Limit 10 20 30 40 Liquid Limit ▲ SPT N-Value ▲ (△ Non-Standard N-Value △) 10 20 30 40 × Fines Content (%) × 10 20 30 40
120						SP	Gray, fine to medium SAND (medium dense, wet)			
	S-4	b2	19							▲
130										
140										
150	S-5	b2	43				Grades to dense			▲
160										

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1374001.01 5/16/13 X:\1374\001\11\1374001W.GPJ SOIL BORING LOG WITH GRAPH

LANDAU ASSOCIATES | CPBR Marine Dock Upgrade Clatskanie, Oregon | Log of Boring B-1 | Figure A-2 (3 of 4)

B-1

LAI Project No: 1374001.010

SAMPLE DATA					SOIL PROFILE				Groundwater	Moisture Content (%) / SPT N-Value / Fines Content (%)
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	Graphic Symbol	USCS Symbol	Drilling Method: Mud Rotary Ground Elevation (ft): ~ -35 (Mudline) Drilled By: Holocene Drilling Inc. Logged By: DAR Date: 05/02/13			Plastic Limit 10 20 30 40 Liquid Limit ▲ SPT N-Value ▲ (△ Non-Standard N-Value △) 10 20 30 40 × Fines Content (%) × 10 20 30 40
170						SP	Gray, fine to medium SAND (medium dense, wet)			
	S-6	b2	31							▲
180										
190										
200	S-7	b2	32							▲
210										
220										

Boring Completed 05/02/13
Total Depth of Boring = 201.5 ft.

Boring was advanced through casing to reach mudline. Mudline was approximately 55 feet below the dock surface. Boring/casing advance refused at 12 ft due to rip-rap. Re-drilled this location using hollow-stem auger to penetrate the rip-rap. Began sampling on re-drill at a depth of 100 ft. below mudline.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1374001.01 5/16/13 X:\1374\001\11\1374001W.GPJ SOIL BORING LOG WITH GRAPH

LANDAU ASSOCIATES | CPBR Marine Dock Upgrade Clatskanie, Oregon | Log of Boring B-1 | Figure A-2 (4 of 4)

SEE AUGUST 28 GRI GEOTECHNICAL REPORT FOR ADDITIONAL INFORMATION.

COLUMBIA PACIFIC BIO-REFINERY
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SEAL

REVISIONS

NO.	DESCRIPTION	DATE

Designed by:	CTC
Drawn by:	JD
Checked by:	WMM
Reviewed by:	ZDJ
Revisions by:	DTG

PROJECT NO.
DATE:

COLUMBIA PACIFIC BIO-REFINERY

PIPE RACK SUBSTRUCTURE
CLATSKANIE OR

GEOTECHNICAL BORING LOGS - 2

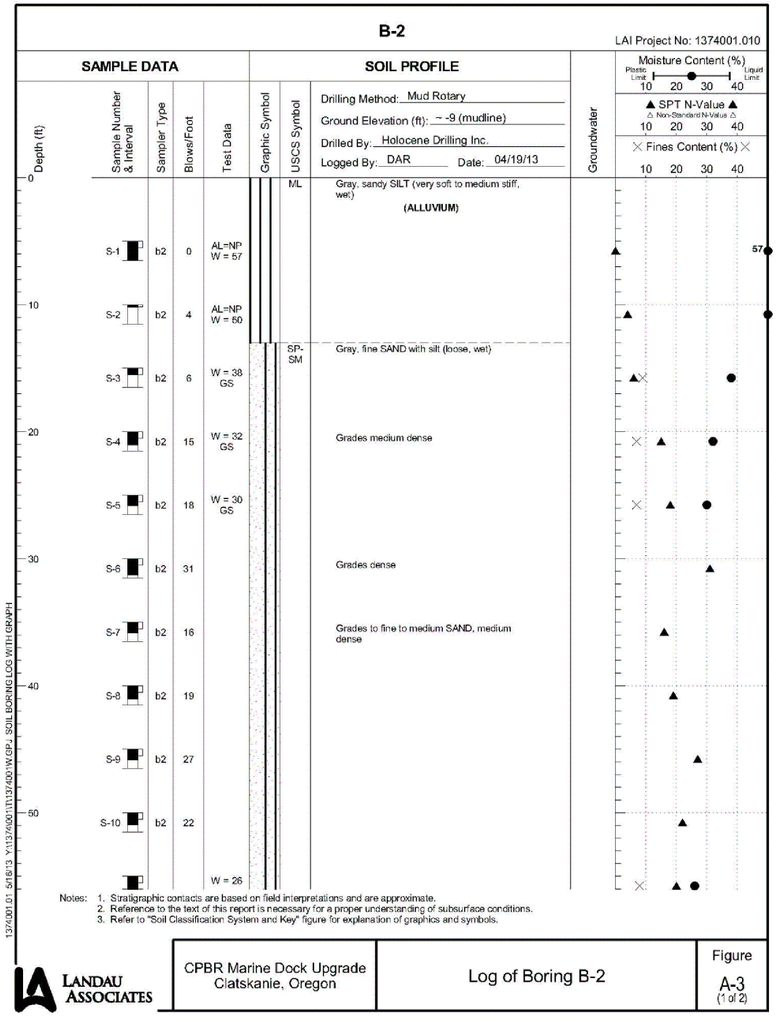
DISCIPLINE/SHT NO
G-04

SHEET 4 OF 12

DRAWFORM REVISION: 31 JANUARY 2017

B-2

LAI Project No: 1374001.010



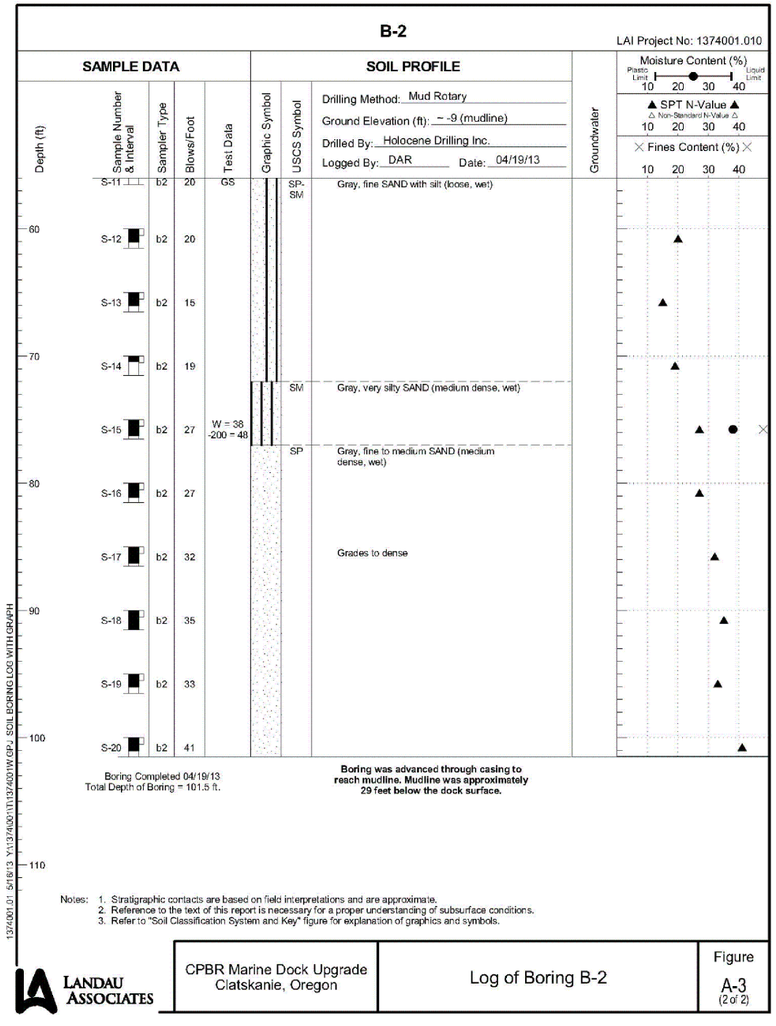
Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

LANDAU ASSOCIATES

CPBR Marine Dock Upgrade Clatskanie, Oregon	Log of Boring B-2	Figure A-3 (1 of 2)

B-2

LAI Project No: 1374001.010



Boring Completed 04/19/13
Total Depth of Boring = 101.5 ft.

Boring was advanced through casing to reach mudline. Mudline was approximately 29 feet below the dock surface.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

LANDAU ASSOCIATES

CPBR Marine Dock Upgrade Clatskanie, Oregon	Log of Boring B-2	Figure A-3 (2 of 2)

SEE AUGUST 28 GRI GEOTECHNICAL REPORT FOR ADDITIONAL INFORMATION.

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SEAL

REVISIONS

NO.	DESCRIPTION	DATE

Designed by:	CTC
Drawn by:	JD
Checked by:	WMM
Reviewed by:	ZDJ
Revisions by:	DTG

PROJECT NO.
DATE:

COLUMBIA PACIFIC BIO-REFINERY

PIPE RACK SUBSTRUCTURE
CLATSKANIE OR

GEOTECHNICAL BORING LOGS - 3

DISCIPLINE/SHT NO
G-05

SHEET 5 OF 12

DRAWFORM REVISION: 31 JANUARY 2017

B-3

LAI Project No: 1374001.010

SAMPLE DATA

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data
0	S-1	b2	2	
10	S-2	b2	69	
	S-3	b2	5	W = 34 -200 = 2
20	S-4	b2	13	
	S-5	b2	5	
30	S-6	b2	15	
	S-7	b2	15	
40	S-8	b2	17	
	S-9	b2	16	W = 28 GS
50	S-10	b2	19	

SOIL PROFILE

Drilling Method: Mud Rotary
Ground Elevation (ft): ~ -35 (Mudline)
Drilled By: Holocene Drilling Inc.
Logged By: DAR Date: 04/20/13

Graphic Symbol	USCS Symbol	
	SP	Gray, fine SAND (very loose, wet) **(ALLUVIUM)**
		Portion of wood pile in sampler. Blow count not representative.
		Grades loose
		Grades medium dense
		Grades loose
		Grades medium dense
	SP-SM	Gray, fine to medium SAND with silt (medium dense, wet)

Groundwater

Moisture Content (%) — Plastic Limit 10 20 30 40 Liquid Limit
▲ SPT N-Value ▲ (△ Non-Standard N-Value △) 10 20 30 40
× Fines Content (%) × 10 20 30 40

69

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

137400.01 5/16/13 Y:\1374001\11\1374001W.GPJ SOIL BORING LOG WITH GRAPH

LANDAU ASSOCIATES | CPBR Marine Dock Upgrade Clatskanie, Oregon | Log of Boring B-3 | Figure A-4 (1 of 2)

B-3

LAI Project No: 1374001.010

SAMPLE DATA

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data
	S-11	b2	23	
60	S-12	b2	35	W = 30 GS
	S-13	b2	31	
70	S-14	b2	18	
	S-15	b2	25	W = 32 GS
80	S-15	b2	22	
	S-16	b2	27	
90	S-18	b2	33	
	S-19	b2	33	
100	S-20	b2	23	
110				

SOIL PROFILE

Drilling Method: Mud Rotary
Ground Elevation (ft): ~ -35 (Mudline)
Drilled By: Holocene Drilling Inc.
Logged By: DAR Date: 04/20/13

Graphic Symbol	USCS Symbol	
	SP	Gray, fine SAND (medium dense, wet)
		Grades medium dense
		Grades dense
		Grades medium dense

Groundwater

Moisture Content (%) — Plastic Limit 10 20 30 40 Liquid Limit
▲ SPT N-Value ▲ (△ Non-Standard N-Value △) 10 20 30 40
× Fines Content (%) × 10 20 30 40

Boring Completed 04/20/13
Total Depth of Boring = 101.5 ft.

Boring was advanced through casing to reach mudline. Mudline was approximately 55 ft below the dock surface.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

137400.01 5/16/13 Y:\1374001\11\1374001W.GPJ SOIL BORING LOG WITH GRAPH

LANDAU ASSOCIATES | CPBR Marine Dock Upgrade Clatskanie, Oregon | Log of Boring B-3 | Figure A-4 (2 of 2)

SEE AUGUST 28 GRI GEOTECHNICAL REPORT FOR ADDITIONAL INFORMATION.

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SEAL

REVISIONS

NO.	DESCRIPTION	DATE

Designed by:	CTC
Drawn by:	JD
Checked by:	WMM
Reviewed by:	ZDJ
Revisions by:	DTG

PROJECT NO.
DATE:

COLUMBIA PACIFIC BIO-REFINERY

PIPE RACK SUBSTRUCTURE
CLATSKANIE OR

GEOTECHNICAL BORING LOGS - 4

DISCIPLINE/SHT NO: G-06
SHEET 6 OF 12

DRAWFORM REVISION: 31 JANUARY 2017

APPENDIX B
Facility Response Plan

U.S. Coast Guard Facility Response Plan
and
Oregon Department of Environmental Quality
Oil Spill Contingency Plan

Columbia Pacific Bio-Refinery
81200 Kallunki Road
Clatskanie, Oregon
97016

December 6, 2023

Table of Contents

Tables

Figures

Appendices

OSCP Submittal Agreement

Owner/Operator of Facility: Cascade Kelly Holdings, LLC dba Columbia Pacific Bio-Refinery

Facility Name: Columbia Pacific Bio-Refinery

Facility Address: 81200 Kallunki Road, Clatskanie, Oregon 97016

Facility Phone Number: 503-728-7000 (Office) 503-728-7065 (Fax)

Latitude/Longitude: N46° 10' 19" / W123° 09' 51"

River Mile: 53 of the Columbia River

NAICS Code: 325193 (Ethyl Alcohol Manufacturing) and 424710 (Petroleum Bulk Stations and Terminals)

Starting Date of Operations: June, 2008 as Cascade Grain Products

Types of Material Stored: Natural Gasoline, Denatured Ethanol, Undentaured Ethanol, Diesel (conventional or renewable), Crude Oil, Corrosion Inhibitor and 55-gallon miscellaneous oil and lubricant drums

> Note: **This plan will continue with listing Ethanol, which includes requirements for Denatured Ethanol (200 proof ethanol and denaturant) only**. The Oregon Department of Environmental Quality's emergency response plan regulations includes both oil and hazardous materials; however, 200 proof ethanol is not an oil nor is it considered hazardous under these regulations. **Therefore, undenatured ethanol (200 proof ethanol) is not regulated under this program.**

Average Oil Storage: 3,180,000 gallons

Maximum Oil Storage Capacity (Aboveground Storage Tanks): 8,041,075 gallons

I certify under penalty of law that I have personally examined the information in this document, I accept the plan contents and that based on my inquiry of those individuals responsible for obtaining this information, I believe that the information is true, accurate, and complete. In addition, this plan will be implemented executed at the facility and the qualified individuals listed in the plan will have authority to appropriate expenditures in order to execute plan provisions.

Signature: _____ Date: 12/13/2023

Title: General Manager

Revision Record				
Date	**Section**	**Revision/Review Description**	**Agency Notifications**	**Initials**
10/21/11	All	The original FRP for Cascade Grain Products was approved on June 24, 2008. The FRP was submitted as part of an Integrated Contingency Plan (ICP) that was prepared to meet a number of planning requirements. While preparing to re-start the facility, CPBR chose to develop a stand-alone FRP to meet USCG's prescribed format. CPBR conducted an audit of the FRP portions of the ICP in September/October 2011 and developed this FRP (dated October 21, 2011) for CPBR operations. All future amendments must be approved by plant management and the USCG as outlined in Section 4.0.	USCG	BB
7/27/12	Main text and Appendices A, B, C, D, E, F, H, J, and K	CPBR revised the FRP to include crude oil and undenatured ethanol marine vessel loading activities and changes in facility contacts.	USCG	BB
10/1/13	All	FRP was updated to incorporate information required by the Oregon Spill Contingency Plan (OAR 340-141). All future amendments must be approved by plant management, ODEQ and the USCG as outlined in Section 4.0.	USCG ODEQ	SB, BB
10/10/13	Appendix C	Updated the list of Qualified Individuals	USCG ODEQ	SB, BB
11/23/13	Appendix R	Updated Cross-reference List to include SPCC regulations	ODEQ	SB, BB
2/11/14	Main text, Appendix P	Addressed comments from ODEQ and updated App	USCG ODEQ	SB, BB
11/1/16	Main text, Appendices A, B, F, L, and Q	Update text with info for second berth at loading dock and update contact info	USCG ODEQ	SB
11/16/17	Main text, App H	Minor text updates and inclusion of new checklists in Appendix H. Addresses USCG-required plan review.	USCG ODEQ	BB
9/2/20	All	Added diesel as a product and added specific response for non-floating oils	USCG ODEQ	BD, PM
11/8/21	NA	Annual review completed – no changes required	NA	PM
10/13/22	Main Text and Appendices B and C	Updated the list of Qualified Individuals. Updated main text to reflect the Port of St. Helens name change to Port of Columbia County.	USCG ODEQ	MB, PM
12/6/23	Main text and App A-D, F, G, and P	Annual plan review and consolidated Environmental Manager and Safety Manager as Environment and Safety Manager.	USCG ODEQ	BD

1.0 Introduction and Plan Content

1.1 Applicability

Cascade Kelly Holdings, LLC dba, Columbia Pacific Bio-Refinery, LLC (CPBR) is a fuel-grade ethanol production facility in Clatskanie, Oregon (see Appendix A for additional facility-specific information). CPBR operates under the Standard Industrial Code (SIC) of 2869 and 5171 and North American Industry Classification System (NAICS) code of 325193 and 424710. CPBR is capable of transferring ethanol produced at the facility to marine vessels on the Columbia River. CPBR also has the capacity to receive crude oil, ethanol, or diesel via railcar or marine vessel and transload the material to railcar or marine vessel on the Columbia River. In either case, aboveground piping transports the material to be loaded from two 3,800,000-gallon aboveground storage tanks in an adjacent onsite tank farm to railcar loading rack or loading dock on the Columbia River. CPBR does not currently receive oil from pipelines. The distance from the marine transfer manifold to the non-transportation-related portion of the facility (a manual valve within the tank farm secondary containment area) is approximately 2,800 feet.

CPBR is considered to be a fixed marine-transportation-related (MTR) onshore facility which has the potential to cause significant and substantial harm to the environment by discharging oil products into or on the navigable waters, adjoining shorelines, or exclusive economic zone surrounding the facility. This Facility Response Plan (FRP) meets requirements outlined in the U.S. Coast Guard's (USCG) oil and hazardous materials transfer regulations at 33 Code of Federal Regulations (CFR) 154.1030, 154.1035, 154.1040 and 154.1041 and follows the format outlined in 33 CFR 154. This FRP shares planning efforts with the FRP prepared for the non-MTR portion of the facility regulated under the U.S. Environmental Protection Agency's (EPA) separate FRP regulations at 40 CFR 112.20.

This FRP is consistent with the National Contingency Plan (NCP), the Northwest Area Contingency Plan (NWACP) and the Lower Columbia River Geographic Response Plan (LCRGRP) (considered a component of the NWACP). Similar to the NCP and NWACP/LCRGRP, the FRP identifies the facility's response management structure, response procedures for discharges of oil up to and including the worst-case discharge and agency notification requirements. This FRP also has been reviewed against the Columbia County, Oregon Emergency Operations Plan. The Columbia County Plan is primarily applicable to extraordinary situations and is not intended for use in response to typical, day-to-day emergency situations. CPBR will provide this FRP to the Local Emergency Planning Commission (LEPC) upon request so that it may be reviewed for consistency with LEPC planning efforts.

This FRP is also consistent with Oregon Administrative Rule (OAR) 340-141-0001 for Oil Spill Contingency Planning and OAR 340-142-0001 for emergency response actions in response to an actual or threatened spill or release of oil or hazardous material.

The specific facility and management personnel that have been assigned responsibilities related to this FRP are identified in Sections 1.3, 2.1.1, 2.1.2 and Appendix B.

1.2 Facility Location

CPBR is located in the Port of Columbia County Port Westward Industrial Park. The facility is located approximately 8 miles north of Clatskanie, Oregon. The latitude/longitude of the main facility entrance is N46° 10' 19" and W123° 09' 51" in Columbia County. The facility's physical and mailing address is 81200 Kallunki Road, Clatskanie, Oregon, 97016. CPBR is located on approximately 43.62 acres of land. An additional 4.76 acres of land was purchased from Portland General Electric (PGE) for storage of ethanol, or crude oil in two 3,800,000 gallon aboveground storage tanks. Figures 1 and 2 present CPBR storage and transfer locations and the valves in the adjacent onsite tank farm that separate the MTR and non-MTR portions of the facility.

The site is located directly adjacent to the Columbia River at approximate river mile (RM) 53. River features near the site include Bradbury Slough and Crims Island. Areas adjacent to CPBR's property include undeveloped land to the south, PGE's Port Westward Electric Generating Plant to the north, the Bradbury Slough of the Columbia River to the east and PGE's Beaver Electric Generating Plant to the west.

1.3 Facility Response Organization

CPBR personnel are included in the classifications listed below. The designated title indicates the responsibilities for each respective employee.

1) Incident Commander and Alternate Incident Commanders
   The Incident Commander (IC) is responsible for implementing this FRP and coordinating the plant-wide response to emergency situations. Alternate ICs serve the function of the IC when the IC is not immediately available. The IC or Alternate is available 24 hours a day and 7 days a week. The IC and Alternates have been trained to recognize and assess emergency situations and coordinate responses to emergency situations. The IC and Alternates are members of the Facility Response Team. The IC designation letter is located in Appendix C.

2) Plant Manager
   The Plant Manager is responsible for protecting the health and safety of the personnel in the facility. The Plant Manager is trained in the implementation of the FRP and will proceed as appropriate. The Plant Manager is the primary IC.

3) Process Supervisors
   The Process Supervisor is responsible for the implementation of the FRP and will proceed as appropriate. They will act as a member of the Facility Response Team and will assist in all response efforts. Process Supervisors are Alternate ICs and will act as the Qualified Individual (QI) during non-business hours.

4) Environmental and Safety Manager
   The Environmental and Safety Manager is responsible for protecting the health and safety of personnel in the facility and protecting environmental assets surrounding the facility. The Environmental and Safety Manager is a member of the Facility Response Team and will assist in

all response efforts. The Environmental and Safety Manager is also responsible for the maintenance of this FRP.

5) Facility Response Team
Personnel trained in Hazardous Waste Operations and Emergency Response (HAZWOPER) and spill response under this FRP. Members of the Facility Response Team will serve under the direction of the IC and Alternates.

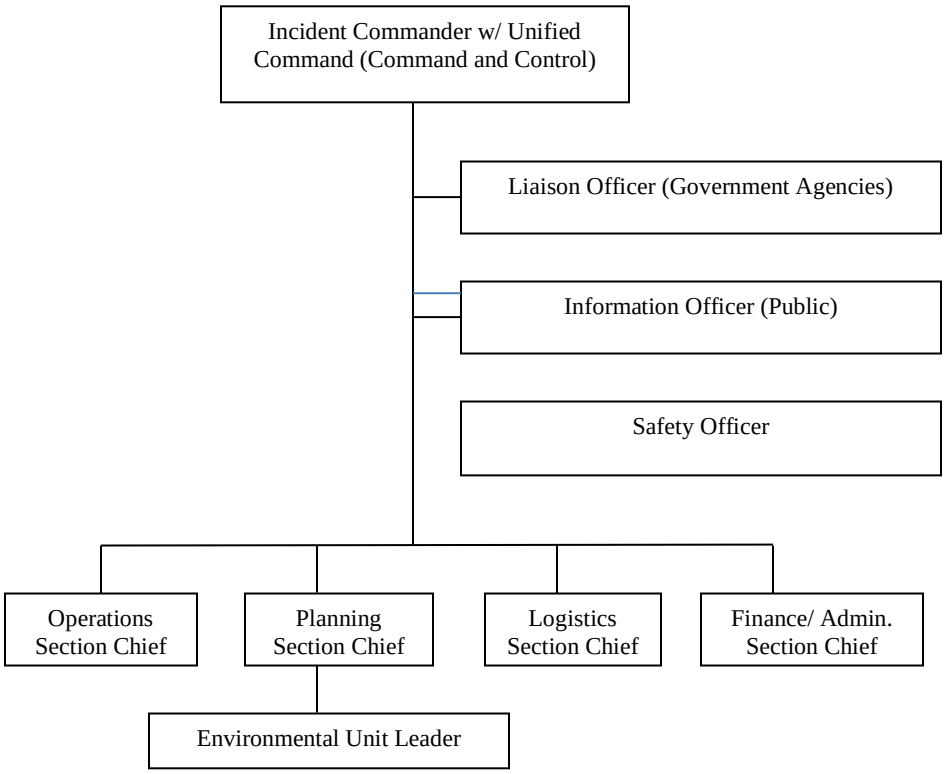
6) Operators and Maintenance Personnel (This includes personnel that work on the production floor and general maintenance operations)
The Operators and Maintenance personnel are the primary line of defense in protecting health, safety and the environment from spills, fires, or explosions that may release oils or hazardous materials into the environment. These personnel often serve as the spill "discoverer." The Operators and Maintenance personnel have been trained to recognize and evaluate emergency situations in their work area. The Operations and Maintenance Personnel notify the IC or Alternate IC if an incident occurs.

7) Office Personnel
Office Personnel are typically located in the office area of the facility. Office Personnel have been trained to recognize and evaluate emergency situations in their work area.

The following table in conjunction with Appendix B can be used to contact the ICs via phone, email, or fax 24 hours a day. Personnel in Table 1 office directly at the facility and are responsible for FRP implementation and maintenance (for the purpose of this FRP the term "IC" refers to the role of Qualified Individual (QI) under 33 CFR 154).

Table 1 Facility Contact Information	
Name	**24-hour Phone/Email**
Columbia Pacific Bio-Refinery 81200 Kallunki Road Clatskanie, Oregon, 97016	503-728-7000 (Office) 503-728-7065 (Fax)
Incident Commanders and Alternates	
Plant Manager (IC)	_____
General Manager (Alternate IC)	_____
, Environmental and Safety Manager (Alternate IC)	_____
	_____ _____

CPBR will use the National Incident Management System (NIMS) as described in the NWACP to manage spill response throughout any incident at the facility.



The above chart shows the structure for the CPBR Incident Command System (ICS). The functions of each role are as follows. Job titles that will fill each of these roles are presented in Appendix B and D.

- **Unified Command:** Unified Command will be made up of the CPBR IC or Alternate IC and the pre-designated Federal and/or State On-Scene Coordinator (OSC). Together, they will be responsible for overall management of the incident. The Unified Command directs incident activities including the development and implementation of strategic decisions, approval of the incident action plan and approves the ordering and releasing of resources. Each Unified Command member will have the authority to make decisions and commit resources on behalf of their organization.
- **Liaison Officer:** Incidents that are multi-jurisdictional or have several agencies involved may require the establishment of a Liaison Officer. They will have the following duties: 1) Serve as the initial point of contact for agencies with a vested interest in response; 2) Maintain a spill response summary distribution list for public and private entities requesting spill response status reports; 3) Receive and coordinate all calls from public and private entities offering assistance or requesting information; and 4) Identify public and private concerns related to the status and effectiveness of the response.
- **Information Officer:** Responsible for developing and releasing information (with Unified Command's approval) about the incident to news media, to incident personnel and to other appropriate agencies in a timely manner. They will obtain information from technical experts to

provide to the press and other interested parties and will be responsible for controlling direct media access to staff within the Unified Command structure.

- **Safety Officer:** Responsible for monitoring and assessing hazardous and unsafe situations and developing measures for assuring personal safety. Although the Safety Officer may exercise emergency authority to stop or prevent unsafe acts when immediate action is required, the Safety Officer will attempt to correct unsafe acts or conditions through the regular line of authority. The Safety Officer maintains awareness of active and developing situations, ensures the preparation and implementation of the Safety Plan, briefs personnel and includes safety messages in each incident action plan.
- **Environmental Unit Leader:** Ensures environmental rules and regulations are followed. This position will assist in the planning and activities of environmental-related issues.
- **Operations:** Directed by the IC for the direction and coordination of all incident tactical operations.
- **Planning:** Lead the Environmental Officer to assist Operations.
- **Logistics:** Directed by the IC for whatever is needed in terms of logistics.
- **Finance/Administrative:** Ensures proper finances are in order along with assuring proper use of the FRP.

1.4 Revision Record

A record of all revisions to this FRP will be maintained on page 4 of the plan.

2.0 Emergency Response Action Plan

This section presents the information needed in an actual emergency involving an oil and/or hazardous materials discharge.

2.1 Notification Procedures

2.1.1 Internal Response Notifications

In the event of a spill, fire, or explosion that could result in the release of oil and/or hazardous materials into the environment, the discoverer will adhere to the following immediate response and notification procedures (also depicted on Figure 3). Failure to adhere to the following procedures may result in disciplinary action.

1. **Evacuate** from the area if the situation is immediately dangerous to life or health.

2. **Notify** the IC of the incident via telephone in the order outlined in Appendix B. Appendix B prioritizes the personnel in the order in which they should be contacted. The IC is responsible for coordinating the plant-wide response to emergency situations. The IC or Alternate IC is available 24 hours a day and 7 days a week. ICs have the authority to initiate response activities and spend money as needed to resolve the issue. Confirmed verbal notification of one IC will fulfill the IC notification requirement. The discoverer will share the following information: nature of emergency (e.g., fire, spill); location of emergency; size and extent of emergency; materials involved; and personnel injury or exposure.

3. **Identify** the type and size of the release. If the area is safe to barricade, the discoverer may establish a perimeter using appropriate means. The discoverer may then evaluate containment needs and collect spill kits, if necessary. If the emergency involves the release of oil or hazardous material, qualified and authorized plant personnel shall commence containment activities immediately using all available trained manpower and materials while awaiting the IC. Qualified and authorized plant personnel include those persons who have been HAZWOPER trained. All containment activities will be conducted at a safe distance from the release area and will consist of only those activities covered in the employee's level of response training. Immediate containment of the spill shall include blocking drains, constructing dikes, etc. The location of available spill response and emergency equipment is depicted in Figures 4 and 5.

Upon notification, the IC or Alternate IC will respond as follows:

1. Immediately **implement** this FRP.

2. **Assess** the situation by verifying the spill location/source, establishing the type of incident based on quantity released or extent of impact; identifying the character of the materials; and the quantity of materials released; assessing the efficacy of the initial containment (if any); projecting resource needs to control the release; and obtaining local knowledge about the impacts of the release. Also assess the interaction of the spilled surface with water and/or other substances stored at the Facility and the possible hazards to human health and the environment.

3. **Activate** the internal alarms and hazard communication systems to notify all facility personnel and oversee the evacuation of the facility, if necessary.

4. **Notify** all response personnel and provide them results of the assessment, as needed.

5. **Ensure** that emergency medical attention is provided if required.

6. If necessary, **notify** and provide necessary information gained from the assessment to the appropriate Federal, State, and local authorities with designated response roles, including the NRC, State Emergency Response Commissions, and LEPC and medical facilities (see section 2.1.2 and Appendix B).

7. **Contact** OSROs and **direct** personnel in control, rescue and clean-up operations past initial containment efforts that may have been performed by the discoverer. Use authority to immediately access company funding to initiate cleanup activities (see section 2.3).

8. Supervise disposal, cleanup and post-incident management activities (see section 2.5).

In Appendix F of this FRP are Quick Reference Sheets outlining emergency control guidelines for situations including bomb threats, oil spills, evacuation, fires/explosions, floods, hazardous materials spills, medical events, and weather emergencies. A written evacuation plan is also included. Modification of these guidelines can occur during the emergency if the IC or Alternate IC determines that a different procedure will result in a better response to the emergency.

2.1.2 Federal, State and Local Agency Notifications

Appendix B presents the phone numbers of agencies and organizations that will be contacted in the event of an emergency. It prioritizes the names, phone numbers and organizations that need to be notified. This document is accessible to all facility personnel.

In the event of an emergency situation at CPBR, the IC or Alternate IC is responsible for contacting the proper authorities such as the fire and police departments and ambulance (presented as Primary Emergency Contacts in Appendix B). CPBR operators may also notify the fire and police departments and ambulance if the IC cannot be contacted. After the local police and fire are contacted, the LEPC and Port of Columbia County should be contacted as well. When an emergency has affected a significant number of people within the facility, the IC will notify the local hospital about the situation. If the event has affected human health beyond the facility, the LEPC will notify the hospitals. If the IC for the emergency is a Process Supervisor, he/she is authorized to contact Secondary Emergency Contacts such as the EPA, Oregon Department of Environmental Quality (ODEQ), and/or National Response Center (NRC).

The IC or Alternate IC will immediately notify Primary and Secondary Emergency Contacts as outlined in Appendix B, as appropriate. The IC may also notify qualified OSROs contracted to provide services to CPBR in the event of a release.

<u>Federal Spill Notification</u>
All spills of oil or hazardous substance into navigable waters and all spills of a reportable quantity of hazardous substances (40 CFR Part 302) must be immediately reported by CPBR to the NRC. NRC

notification is also required when a spill of hazardous material results in death, hospitalization, property damage in excess of $50,000, or in any other situation where CPBR thinks it should be reported. The NRC will contact appropriate local USCG and/or EPA offices. Notifying state offices does not relieve CPBR from federal requirements to notify the NRC nor vice versa, so CPBR will make contact with the USCG and EPA as well.

For spills occurring in the Columbia River, CPBR will contact the USCG Sector Columbia River and the EPA Region 10 office in Seattle. If the Seattle EPA office is not reachable by telephone, notifications may be made to the San Francisco EPA office. All of these contacts are presented in Appendix B.

State and Local Spill Notification

Spills into the Columbia River must be reported to agencies in Oregon and Washington.

Spills and releases (including threatened spills or releases) of oil or hazardous materials as defined by OAR 340-142-0005(9) in quantities equal to or greater than the following amounts must be reported to the Oregon Emergency Response System (OERS).

- If spilled into the waters of the state or in a location from which it is likely to escape into waters of the state, any quantity of oil that would produce a visible film, sheen, oily slick, oily solids, or coat aquatic life, habitat or property with oil, but excluding normal discharges from properly operating marine engines.
- If spilled on the surface of the land and not likely to escape into waters of the state, any quantity of oil over one barrel (42 gallons).
- An amount equal to or greater than the quantity listed in 40 CFR Part 302-Table 302.4.
- 10 pounds or more of a hazardous material not otherwise listed as having a different reportable quantity by the ODEQ or the EPA on the list of hazardous substances in 40 CFR 302.4.
- In the case of threatened releases, the reportable quantity is the amount of oil or hazardous material in the container or tank farm from which a spill or release is likely or imminent.

ODEQ notification is also required when a spill of hazardous material results in death, hospitalization, property damage in excess of $50,000, or in any other situation where CPBR thinks it should be reported.

The release does not need to be reported to ODEQ if the following conditions are met:

- It occurs within an engineered containment area with an impervious surface designed to contain such a release;
- It does not penetrate any surface of the containment area;
- The spilled material does not and will not escape the containment;
- It is completely cleaned up in less than 24 hours; and
- The cause of the spill or release is repaired.

All spills of oil into Washington State waters must be immediately reported to the Washington State Emergency Management Division (WEMD). For spills of hazardous substances, the spiller is also required to notify the nearest regional Office of Ecology.

CPBR will contact the OERS if the assessment of the emergency indicates medical assistance, fire assistance, or an evacuation of the facility or local areas may be advisable. Local authorities must also be notified immediately if such a situation occurs. The IC will assist the appropriate officials in deciding whether local areas should be evacuated. Sections 304, Title III of the Federal Superfund Amendments and Re-authorization Act (SARA) of 1986 also requires facilities to notify the LEPC if there is a release of a listed hazardous substance that exceeds the reportable quantity for that substance.

For all spills, Safety Data Sheets (SDS) should be consulted for component concentrations to determine whether components of a mixture are listed hazardous materials with an established reportable quantity. The following table lists select substances located at the facility and reportable quantities. Always consult the SDS and applicable regulations for the most accurate information.

Table 2
Reportable Quantities for Select Chemicals at CPBR

Chemical Name	CAS Number	CERCLA RQ (pounds)	CERCLA RQ (gallons)	State RQ
Ammonia	7664-41-7	100	25	Same as CERCLA RQ
Sodium Hypochlorite	7681-52-9	100	10	Same as CERCLA RQ
Ferric Chloride	7705-08-0	1,000	85	Same as CERCLA RQ
Sodium bisulfite	7631-90-5	5,000	420	Same as CERCLA RQ
Sodium Hydroxide	1310-73-2	1,000	100	Same as CERCLA RQ
Sulfuric Acid	7664-93-9	1,000	60	Same as CERCLA RQ
Oil, denaturant, ethanol, crude oil, diesel		Any amount that produces a sheen if spilled in streams, lakes, or adjoining shorelines.		If spilled into waters of the state, or escape into waters of the state is likely, any quantity that would produce a visible oily slick, oily solids or coat aquatic life, habitat or property with oil, excluding normal discharges from properly operating marine engines. If spilled on the surface of the land, any quantity of oil over one barrel (42 gallons).

Appendix G contains two Spill Response Notification Forms that guide in information gathering for agency notification. One form is used for NRC notifications and follows the guidelines in 33 CFR 154.2035(b)(1)(ii). The other is the standard ODEQ form for spills, which must be submitted after a release. Copies of these forms will be stored in the Control Room and in each IC/Alternate IC's office.

2.2 Facility Spill Mitigation Procedures

Information in this section will aid in the Facility's ability to respond to any discharge to the Columbia River and will identify available assistance. Because of the variety of oil products that can be handled on-site, CPBR has addressed discharge scenarios for multiple different types of oil and hazardous materials, including:

- Denatured ethanol: Considered a Group I, non-persistent oil. Denatured ethanol is comprised of 97-98% 200-proof alcohol and approximately 2-3% denaturant (natural gasoline).
- Crude oil: Depending upon the characteristics of each oil shipment, considered a Group II or III persistent oil. CPBR may receive crude oil with an API Gravity of 18.5 to 50.
- Diesel: Considered a Group I non-persistent oil. Diesel (renewable or conventional petroleum-based) is composed of middle distillate-range iso- and n-paraffinic hydrocarbons.
- Non-floating oils: Heavy oils and Group V oils, hereby merged and defined as non-floating oils, exhibit qualities that could potentially cause the oils to submerge or sink, due to the oil characteristics, weathering, environmental factors, or how they are discharged.

2.2.1 Potential Discharges

OAR 340-141-0140 requires that regulated facilities examine the facility's operations closely to evaluate spill risk variables. Spill risk identification and evaluation assists facility owners and operators in planning for potential discharges, thereby reducing the severity of discharges that may occur in the future. The risk evaluation also assists in identifying and correcting potential sources of releases.

There are two primary potential sources for a release of oil or hazardous material from this facility which include: release from an aboveground storage tank (AST), and release from transfer operations. There are no underground storage tanks at CPBR. Information regarding detailed characteristics of each aboveground storage tank and storage unit can be found in Table 3, below. Surface impoundments (SIs) are described on Table 4. Potential spill scenarios can be found in Table 5. Figures 7 and 8 present CPBR's outfall drainage areas and topography.

Table 3 Hazard Identification Tanks					
Tank Number	**Substance Stored**	**Avg. Quantity Stored (gallons)**	**Tank Type/Year**	**Max. Capacity (gallons)**	**Secondary Containment (see Table 2)**
TK-6104	Ethanol/Crude Oil/ Diesel	100,000	Carbon Steel floating roof /2007	248,000	Earth Berm with Geomembrane Liner (SI 1)
TK-6105	Ethanol/ Crude Oil/ Diesel	1,500,000	Carbon Steel floating roof /1968	3,800,000	Earth Berm with Bentonite Liner (SI 2)
TK-6106	Ethanol/ Crude Oil/ Diesel	1,500,000	Carbon Steel floating roof /1968	3,800,000	Earth Berm with Bentonite Liner (SI 2)
TK-6114	Denaturant (Natural Gasoline)	80,000	Carbon Steel floating roof /2011	192,000	Earth Berm with Geomembrane Liner (SI 1)
Z-7701	Corrosion Inhibitor	275	Double Wall Steel/2007	~550	Earth Berm with Geomembrane Liner (SI 1)
4540 Locomotive	Diesel	1000	Double Wall Steel/1953	1200	NA
EG-1001	Diesel	1800	Double Wall Steel/2007	2000	Inside Emergency Generator Building
EG-1002	Diesel	1800	Double Wall Steel/2007	2000	Inside Emergency Generator Building
Storage Tank	Diesel	200	Double Wall Steel/2021	300	Secondary Steel Containment
Storage Tank	Gasoline	250	Double Wall Steel/2021	500	Secondary Steel Containment
N/A	Diesel	250	Carbon Steel/2007	500	Inside Fire Pump Building
N/A	Oil Drum Storage	55 gallons per drum	Poly drums/N/A	Varies	Inside Maintenance Building
* No tank listed in Table 3 has experienced failure which resulted in a loss of tank contents.					

Table 4 Hazard Identification Surface Impoundments				
SI Number	**Substance Stored**	**Avg. Quantity Stored (gallons)**	**Surface Area (ft^2)/Year**	**Maximum Capacity (gallons)**
1	Ethanol, denaturant, crude oil, diesel, corrosion inhibitor spills at rail load-out (On-site tank farm)	332,300	13,500/2008	285,400
2	Ethanol, crude oil, or diesel (Adjacent on-site tank farm)	3,000,000	142,200/2008	4,810,000
5	Ethanol/Denaturant Truck sump	0	2/2008	9,600
			Facility Total	5,254,000
* No surface impoundment listed in Table 4 has experienced failure which resulted in a loss of tank contents.				

Loading and Unloading of Transportation Vehicles

Delivery of denaturant and diesel fuel occurs on an as-needed basis by a CPBR vendor via tank truck or rail car. CPBR ships ethanol, crude oil, and diesel via truck, rail, and marine vessel. During loading and unloading, standard operating procedures are followed to minimize the likelihood of a spill. In addition, all vendor loading and unloading activities are required to follow, at a minimum, Department of Transportation requirements.

The denaturant receiving and ethanol, crude oil and diesel truck load-out area is equipped with a concrete sump that can hold the entire contents of a tank truck. The truck load-out containment system has a containment capacity of 9,600 gallons. Average volume of material involved in truck transfer activities is 7,800 gallons per transfer.

The denaturant, ethanol, crude oil, diesel rail receiving and ethanol, crude oil and diesel rail load-out area is equipped with an Enviropan system designed to contain a spill and drain into the facility on-site tank farm. The on-site tank farm has no outlet and has a containment capacity of 285,400 gallons. Average volume of material involved in rail transfer activities is 28,000 gallons per transfer.

Motor vehicle fuel is periodically delivered to four locations at the facility: (1) a 525-gallon diesel tank for the emergency fire pump, (2) two diesel generator fuel tanks (2,000 gallons each), (3) the railcar locomotive in the railyard (1,200 gallon capacity), and (4) the equipment fueling area (two tanks 300 and 500 gallons capacity). The fire pump fuel tank is located inside the fire water pump building. The emergency generator fuel tanks are located inside the Generator Buildings. The locomotive is filled while located inside the DDG Loadout Building. The equipment fueling area is located outside of DDG Loadout Building where there are two tanks, one storing diesel fuel and one storing gasoline for fueling mobile equipment/vehicles. All fuel transfer activities are completed directly from the delivery tanker

truck to the CPBR tank/locomotive under the direct supervision of CPBR employees trained in spill response techniques. The average volume of material involved in these fuel transfer activities is 200-1000 gallons per transfer.

CPBR provides ethanol, crude oil and diesel for bulk marine vessel transfer (receiving from and shipment to bulk marine vessels). CPBR conducts transfer operations according to the USCG Dock Operations Manual. Transfer operations are monitored at all times via a shore-side Person-In-Charge and additional CPBR personnel. Average volume of material involved in marine vessel fuel transfer activities is 6,000,000 gallons per transfer.

Secondary containment structures and volumes for all oil outdoor storage and transfer areas are outlined in Table 4. Indoor tanks are contained by building curbing which prevents internally-spilled material from leaving the building. All filling locations have warning signs and wheel chocks are used to prevent tank truck and rail car departures before disconnecting fluid transfer lines.

Day-to-day Operations that Present a Risk for Release

There are a few day-to-day operations at CPBR that present the potential for oil spills. Levels within the ethanol/crude oil/ diesel and denaturant tanks are monitored by automated level alarms which are consistently monitored by operations personnel via the distributed controls system in the Facility control room. Operators monitor the activity of pumps and positioning of valves. Maintenance operations, such as fixing a valve or piping, present the potential for oil spills. Fuel delivery to maintenance vehicles also presents the potential for minor drips and spills. Both maintenance activities are covered by SOPs and safework permitting to ensure that spills are minimized.

The Facility implements internal site-specific and industry standard operating procedures. Loading and unloading of tank trucks at the truck load-out are done under the supervision of CPBR personnel. The driver is responsible for ensuring their operations are performed in accordance with applicable local, state and federal regulations. Truck, rail and marine vessel transfer operations are conducted by CPBR personnel trained in transfer procedures.

All facility piping containing oil or oil products is aboveground and is shown on Figure 1. The piping network is constructed from carbon steel. In all areas where piping crosses roadways, piping has been placed at such a height where vehicular traffic cannot come in contact with the pipe. All overhead piping is protected by a steel rack protection system which acts a first line of defense against any potential collision.

A summary of potential spills at CPBR and the estimated volume of oil released under each of the scenarios is presented in Table 5.

Table 5 Summary of Potential Spills			
Spill Volume	**Small**	**Medium**	**Worst Case**
Possible Spill Source	Broken valve, hose, piping or nozzle; vehicle fueling/ pumping station operations overflow; Valve change; Filter change; other maintenance activity; failure of a smaller oil storage tank; age and condition of older tank components	Broken valve, hose, piping or nozzle; Fueling operations overflow or other loading and unloading release; sump failure; Electrical shut-off failure; Overflow control failure; Moderate tank failure; Extended pressure release; failure of oil storage tank; age and condition of older tank components	Major ethanol/crude oil/ diesel AST and secondary containment failure due to age and condition of facility components or natural disaster or sabotage. Multiple tank car or rail car failure.
Spill Direction	Small spills would be contained locally near the spill. The tank farms and bermed chemical storage area would collect potential spills, building curbing would collect facility spills in buildings. Truck or rail spills would be collected within each secondary containment structure.	Medium spills would be contained locally near the spill. The tank farms and bermed chemical storage area would collect potential spills, building curbing would collect facility spills in buildings. Truck or rail spills would be collected within each secondary containment structure.	Large spills would be contained locally near the spill. The tank farm would collect potential spills. Truck or rail spills would be collected within each secondary containment structure. Tanker failure outside of the load-out secondary containment unit would generally follow the at grade storm water flow direction toward the storm water ponds.
Rate of Flow	Minimal	Moderate	Moderate to High
Total Quantity of Oil Released	1 to 2,100 gallons	2,100 – 36,000 gallons	3,800,000 gallons

Normal Daily Throughput

The normal throughput of ethanol at CPBR averages 2,940,000 gallons per week or 420,000 gallons per day. Of those 2,940,000 gallons per week, approximately 48,000 gallons per week is denaturant or

natural gasoline, or 6,900 gallons per day. When transloading ethanol, crude oil, or diesel the normal throughput is expected to be 13,850,000 gallons per week. The normal throughput of corrosion inhibitor is approximately 100 gallons per week or 14 gallons per day. The throughput of ethanol, crude oil, diesel, and denaturant is unlikely to increase due to facility specifications and CPBR production capacity; however, an increase in pumping capabilities would pose more frequent opportunities for small, localized spills. Spillage of ethanol, crude oil, diesel, or denaturant in the truck or rail truck load-out areas would be contained within each area's containment system.

Secondary Containment

Tables 3 and 4 provide the type and characteristics of the secondary containment for each of the oil storage units and transfer areas. The secondary containment area for all tanks are at least the largest tank capacity, plus sufficient room for freeboard to contain precipitation. AST regulations also require containment capacity sufficient to contain the largest tank capacity plus freeboard for precipitation. All containment areas for storage units are constructed so that drainage (i.e., collected rainwater) is either restrained by valves or completely enclosed in order to prevent unauthorized releases from the containment area.

As previously discussed, CPBR has installed a containment sump at the truck loading area for at least the largest compartment of a tank truck. CPBR also has installed a drain system at the rail load-out area for at least the largest compartment of a rail car. The rail load-out area drains to the on-site tank farm. Neither of these containment systems has an outlet; therefore, any liquids will be manually pumped out when observed.

2.2.1.1 Average Most Probable Discharge from the MTR Facility

The average most probable discharge from the MTR facility is a discharge of the lesser of 50 barrels (2,100 gallons) or 1 percent of the volume of the worst case discharge. One percent of the volume of the worst case discharge, as defined in Section 2.2.1.3, is 28.95 barrels. Therefore, the average most probable discharge for the CPBR facility is 28.95 barrels (1,216 gallons) of ethanol, crude oil or diesel. Response actions and resources used to respond to such a discharge are included in section 2.3.1.

2.2.1.2 Maximum Most Probable Discharge from the MTR Facility

The maximum most probable discharge from the MTR facility is a discharge of the lesser of 1,200 barrels (37,200 gallons) or 10 percent of the volume of the worst case discharge. Ten percent of the volume of the worst case discharge, as defined in Section 2.2.1.3, is 289.5 barrels. Therefore, the maximum most probable discharge for the CPBR facility is 289.5 barrels (12,159 gallons) of ethanol, crude oil, or diesel. Response actions and resources used to respond to such a discharge are included in section 2.3.1.

2.2.1.3 Worst-Case Discharge from the MTR Facility

The worst-case discharge at CPBR is defined as the largest foreseeable discharge of ethanol, crude oil or diesel in adverse weather conditions meeting the requirements of 33 CFR 154.1029. This generally means the discharge from all piping carrying oil or hazardous materials between the marine transfer manifold and the non-MTR facility.

The amount of oil or hazardous material contained within the piping for planning purposes is calculated by taking the maximum time to discover a release from the pipe in hours plus the maximum time to shut down flow from the pipe in hours multiplied by the maximum flow rate in barrels per hour plus the total line drainage volume in barrels for the pipe between the marine manifold and the non-MTR facility.

The CPBR ethanol//crude oil/ diesel pipe is a 14-inch external diameter pipe (13.25 inch interior diameter) and is 5,250 feet in total length. Therefore:

- The 13.25-inch interior diameter pipe = 7.1629 gallons per linear foot x 5,250 feet = 37,605 gallon (895 barrels) total line drainage volume.
- (0.2 hours + 0.2 hours x 5,000 barrels/hour) + 895 barrels = 2,895 barrels.

The worst-case discharge for the CPBR facility is 2,895 barrels (121,590 gallons) of ethanol, crude oil, or diesel. The impact of a Group II or III crude oil spill would be greater than an ethanol spill or a diesel spill, and CPBR has planned for this worst-case discharge scenario. Response actions and resources used to respond to such a discharge are included in section 2.3.1.

2.2.1.4 Worst Case Discharge from the Non-MTR Facility

The two 3,800,000 aboveground storage tanks are not permanently manifolded. Although the tanks have common piping systems they are not operated as one unit. Therefore, the worst case discharge planning volume for the non-MTR facility is the capacity of the largest oil or hazardous material storage tank within a common secondary containment area per Appendix D of 40 CFR 112. The worst-case discharge from the non-MTR portion of the CPBR facility is 3,800,000 gallons, or 90,476 barrels. Response to this worst-case discharge is addressed under separate cover in the CPBR FRP prepared for the EPA.

2.2.2 Mitigation and Prevention of Discharge

Spill prevention and control structures (e.g., secondary containment structures) are present in CPBR oil and hazardous material storage areas to contain potential spills. The likelihood of a release is minimized by routine inspections, preventive operating practices such as good maintenance, security measures and personnel training.

The facility is committed to conducting prevention planning for systems and operations involving oil products or hazardous materials. Changes to systems prompted by operating requirements will be reviewed through prevention planning prior to implementation. CPBR encourages employees to report "near miss" incidents and those situations will be reviewed throughout the company. Prevention planning will be performed through periodic planning meetings that will be held with plant staff representing plant safety, maintenance, operations and environmental management. The group will meet periodically to cover the following prevention topics for the high hazard chemicals:

- Focused review of transfer operations;
- Focused review of storage systems;
- Scheduling of preventative maintenance for critical systems; and

- Monitoring and measurement of prevention program performance.

This process of ongoing review is intended to foster continual improvement in the operation. Identification of alternatives will lead to consideration of the feasibility for implementation. The facility will consider alternatives for prevention within the broad scope of available resources within the facility and concepts of full cost accounting will be generally applied for prevention projects.

Contractors and delivery staff can have a significant impact on the prevention of spills. CPBR will take reasonable measures to direct contractors and delivery staff to operate in a manner consistent with this FRP.

The CPBR maintenance department conducts rounds on all spill response equipment and the storage tanks and pipe. These rounds ensure that spills, drips, or leaks that could result in a more substantial discharge are addressed in a timely manner, and that equipment remains stocked. Maintenance activities (including inspections and tests) are managed by the Maintenance Manager and entered in the facility's computerized maintenance management system. Work orders are addressed by maintenance staff on a daily basis. Maintenance procedures are maintained in the Maintenance Shop. The Maintenance Manager will report at least quarterly to the Plant Manager on the status of scheduled preventative maintenance.

Alarms are installed on tanks and pipelines to the prompt detection and recognition of an emergency event. A fire alarm panel is located at the adjacent onsite tank farm to provide cross-zoned heat detection and foam release and is linked to the CPBR control room.

In addition, all internal and external transfers are closely monitored by CPBR personnel as described in the CPBR Dock Operations Manual. Emergency shutdown procedures related to marine transfers are presented in the Dock Operations Manual. A copy of the Dock Operations Manual is maintained in the dock shed and in the control room.

CPBR will conduct pre-booming for vessels unless weather conditions are detrimental to health and safety of personnel or contractors. If Pre-booming cannot be conducted, vessel and CPBR management will consult about ongoing operations and decide the need to continue transfer activities.

CPBR has the capability to re-anchor or adjust the location of the boom without contractor support. CPBR will counsel with vessel management staff and will conclude if transfer should be discontinued or continued based on individual circumstance. CPBR would shut down transfers and close the primary shore valve during boom location adjustment or re-anchoring of boom unless worker health and safety concerns dictated otherwise.

Scenarios involving releases of oil could result from the following activities:

- Failure of manifold, other transfer equipment, or hoses;
- Tank overfill;
- Tank failure;

- Piping rupture;
- Piping leak, both under pressure and not under pressure;
- Explosion or fire; and
- Equipment failure.

In the event of a discharge, potential discharge, or emergency under one of these or any other scenario, the "discoverer" will initiate response as outlined in section 2.3. CPBR spill response procedures to all of these scenarios are presented in sections 2.3.1, 2.3.2.1 and 2.3.2.2. The procedures include information regarding all response equipment and the responsibilities of facility personnel to mitigate any size of discharge, including the average most probable and worst-case discharge.

2.3 Facility Response Activities

The following sections discuss CPBR's response activities to the scenarios listed in section 2.2.1 and the responsibilities of 1) facility personnel pending the arrival of the IC; 2) the IC/Alternate ICs; 3) the Facility Response Team (the IC/Alternate IC and individuals listed in Appendix B) and OSROs; and 4) the IC/Alternate IC in coordination with the Federal and/or State OSC, who may be appointed to co-manage response to a significant spill at the facility.

These spill response procedures will prevent harmful discharges of oil into the surrounding environment. For all types of response, implementation of this FRP is the responsibility of CPBR. For all emergencies, on-site and off-site telephone service and an internal intercom system are available throughout the facility. CPBR does not use any nonstandard methods to detect, contain, or recover spilled oil as described in OAR 340-141-0140(19).

In all instances, CPBR personnel will not respond to spills or any other emergency incident which is not incidental and poses a safety or health hazard. For all spills or other emergency incidents that are greater than incidental or pose a safety and health hazard, an OSRO will be used. All oil response activities will be conducted under CPBR's Oil Spill Response Health and Safety Plan.

2.3.1 Release of Oil Products or Hazardous Materials

The purpose of this procedure is to describe the proper methods for preventing, responding to, reporting and investigating ethanol, crude oil, or diesel releases at CPBR. This procedure has been developed to improve facility spill management capabilities and to support federal and state reporting guidelines in the event of a reportable spill or release of oil products or hazardous materials. This procedure outlines response to 1) the average most probable discharge (release of 28.95 barrels of ethanol, crude oil, or diesel to an on-land receptor) and 2) the worst-case discharge (release of 2,895 barrels of ethanol, crude oil, or diesel to the Columbia River). Equipment availability and response personnel actions for both of these events do not differ based on the *type* of discharge, but rather the *location* of the discharge. To simplify planning procedures, CPBR has defined two different types of responses: on-land and on-water spills. The average most probable and the worst-case discharge could hypothetically follow either of these response procedures, depending on the specifics of the release. In the event of a spill, movement in the first 72 hours will be restricted by secondary containment and by the response activities described by this section. CPBR has developed this plan to be thorough and complete and therefore does not anticipate any obstacles to response activities.

A list of available facility response equipment can be found in Appendix H. Figures 4 and 5 illustrate the location of CPBR emergency response equipment. Major changes to this section will require an FRP update. Minor inventory fluctuations due to the use of expendable equipment do not require an FRP update, provided that the equipment has been ordered for immediate replacement. It is the responsibility of the Environmental or Safety Managers to ensure that spill response and personal protective equipment (PPE) is available and in working order. Flashlights and other portable lighting equipment will be used when responding to spills during low visibility conditions.

In the event of a spill unable to be controlled by the Facility, there is a need to provide wildlife rescue and rehabilitation, or if non-floating oils are suspected, CPBR will call upon an OSRO to assist with

response efforts. CPBR has contracted with a USCG-classified OSRO (Clean Rivers Cooperative) with non-floating oil capabilities adequate to respond to oil discharges at the facility. A list and description of OSRO response equipment can be found in Appendix I. The OSRO's response resources will be made available as necessary to meet the needs of the emergency incident. The spill contractor also will supply necessary manpower, including laborers and tradesmen, to assist with an emergency. CPBR's agreements with the OSRO are presented in Appendix I.

2.3.1.1 Responsibilities Common to all Spills

Discoverer
The discoverer must take the following steps immediately:

- Move a safe distance away from the area. Determine the nature and extent of the situation from this vantage point and identify any chemical materials and equipment involved.
- Notify the IC or Alternate IC. Emergency response contact information is listed in Appendix B.
- Pending arrival of the IC or Alternate IC, trained personnel in the area can undertake the following defensive actions:
  - Set up barriers to prevent employee entry.
  - Eliminate all ignition sources.
  - Do not touch or walk through spilled material.
  - Stop leak if possible without risk.
  - Employees may commence containment activities immediately using all available trained manpower and materials while awaiting the IC if appropriately trained.
- If personal safety is at risk, leave the area immediately.

Incident Commander
The IC and Alternate IC are available on a 24-hour basis and be able to arrive at the facility in a reasonable time. In addition, the IC and Alternate ICs are located in the United States; speak fluent English; are familiar with the implementation of the FRP; and are trained in the responsibilities of the IC under the FRP. Per the designation letter in Appendix C, each IC and Alternate IC has the full authority to activate and engage in contracting with OSRO(s); act as a liaison with the OSC; and obligate funds required to carry out response activities. The IC and Alternate ICs are not responsible for the adequacy of the FRP or for contracting or obligating funds for response resources beyond the authority contained in their designation from the CPBR. ICs and Alternate ICs are presented in Appendix B.

The IC will be responsible for:

- Notifying other CPBR management in the event of a spill or release;
- Immediately reporting releases that meet the reporting criteria, and ensuring that emergency contact numbers remain current;
- Ensuring that CPBR's spill response equipment is inspected and maintained on a monthly basis. Facility equipment lists are included in Appendix H.

- Initiating the actions required for initial containment of the spill and leading Facility spill responders in response efforts according to the specifics of the event.
- Requiring employees to evacuate via verbal warning by radio, in-plant phone intercom system and/or word of mouth. In the event that evacuation is necessary, the IC will initiate the Evacuation Plan as described in Appendix F.
- Ensuring that the contaminated waste generated from the spill is properly remediated, containerized and disposed.
- Maintaining a log of activities during the spill event, including the quantity of material spilled, recovered, disposed, itemized expenditures, general assessment of environmental damage and any other notable events that may occur. Upon completion of activities, completion of the Incident Investigation form in Appendix J.
- Ensuring that employees who may assist with cleanup duties have HAZWOPER training in accordance with 29 CFR 1910.120.
- Maintaining SDS for all oil products.

Specific IC responsibilities related to spill scenarios are presented in sections 2.3.1.2 through 2.3.3.

Facility Response Team and OSROs

Appendix B presents employees that have been designated and trained to participate in spill response activities. In the event that a spill exceeds CPBR's response capacity, CPBR has contracted with a USCG-classified OSRO to provide adequate resources to respond to oil discharges at the facility. OSRO response resources will be made available as necessary to meet the needs of the emergency incident. CPBR is a member of Clean Rivers Cooperative (CRC), a response organization integrated with the NWACP, which assists facilities in locating and arranging for additional response resources in addition to contracted amounts. CRC will be notified of a spill event and will provide assistance as needed to ensure that adequate equipment arrives within required response times. The OSRO provides services to other oil storing facilities in the area. These facilities will also rely on the response equipment supplied; however, it is very unlikely that facilities will have coinciding spills. In addition, CRC has several locations for response equipment and will be able to respond to multiple spills. CPBR has also contracted with Cowlitz Clean Sweep as a secondary OSRO. Appendix I contains copies of relevant portions of the agreements between CPBR and its OSROs and provides evidence of their response capabilities. Specific responsibilities of the Facility Response Team and the OSROs are presented in sections 2.3.1.2 through 2.3.1.3.

2.3.1.2 Response to an On-Land Spill

In the event of an on-land spill, the IC shall ensure that the actions below are taken:

Immediate Actions:

- Implement this FRP.

- Conduct an incident assessment by verifying the spill location, establishing the type of incident based on quantity released or extent of impact; identifying the character of the materials; and the quantity of materials released; assessing the efficacy of the initial containment (if any); projecting resource needs to control the release; and obtaining local knowledge about the impacts of the release.
- If the release is at the pipe manifold within the CPBR adjacent onsite tank farm and occurs during a marine transfer activity, notify the CPBR Person in Charge (PIC) on the marine radio. Ensure that spilled material remains inside the tank farm containment area.
- If the electronic level alarms indicate a spill as a result of pipe equipment failure, prevent additional material from spilling by switching off pumps and valves to the pipe. Ensure that spilled material remains inside the tank farm containment area.
- If the release is from the pipe (rupture or leak as determined by a loss of pressure within the pipeline), immediately shut down flow in the pipe and ensure that the pipe valves are closed, so that no additional product may enter the pipe.
- If the release is due to equipment failure, shutdown all pumping equipment until the reason for failure can be determined and corrective actions taken.
- Ensure the safety of all personnel involved with the spill, response and clean up. Use the Hazard Communication Program, guidance in Appendix K, and SDS as guides to determine the level of protection that response personnel will employ when responding to a release.

Within first 30 minutes:

- Eliminate potential ignition sources.
- Make appropriate notifications in Appendix B. Determine the immediate need for assistance from the local fire department, emergency medical assistance, or OSROs in the event that a release threatens the Columbia River.
- Activate the ICS and Facility Response Team. First develop an entry plan that outlines what will be accomplished and appropriate safety and health procedures. Then, manage the team working in the area as they respond to the incident.

Within first 2 hours:

- Following the initial phase of the incident, there may be contaminated materials that need to be placed in containment for eventual shipment offsite. The IC will supervise the transfer of materials to the containment systems and dispose of the materials in accordance with the disposal plan in section 2.5.
- Decontamination of personnel and equipment may need to be conducted to reduce or eliminate transport of contaminants from the emergency area into other areas of the facility or into the environment. Decontamination methods for employees will depend on the type of contaminants, protection level, work assignment and operation location. Contractors will be responsible for decontamination of their own equipment.
- In the event of a general emergency, the primary staging area for response resources will be in the parking lot of the Administrative Building. The alternate location will be near the guard shack. The on-site Incident Command Post will be in the Main Process Building.

Members of the Facility Response Team listed in Appendix B, along with other Facility employees, have been trained in accordance with 1910.120 (q)(6)(iii). CPBR and the OSRO's employees and equipment will be used to conduct cleanup of all discharges. A spill cart which includes goggles, 50 absorbent pillows and pads, 25 absorbent socks, 3-4 bags of floor dry and barrier tape will be stored in the maintenance shop. The OSRO and the Facility Response Team will take the following response actions where applicable.

- Use appropriate PPE for all response efforts. Only employees trained in the selection and use of respirators per 29 CFR 1910.134 may use respirators. See the Respiratory Protection and PPE Programs for more details.
- Bring the incident under control by attempting to stop the release.
- Use vehicle barriers and barricade tape to block off and secure the surrounding area to prevent foot or vehicle traffic from spreading the spill. The North American Emergency Response Guide suggests 25 to 50 yards in all directions.
- Prevent the product or sheen from flowing down a road, onto the soil, into a storm water ditch, down a drain or into a sewer pipe or other surface water.
- Contain the spill using the following methods where applicable:
  - Place booms or other absorbent materials in ditches to restrict or stop the flow of the contaminants.
  - Place barriers and dikes to stop the flow of the contamination. Example dikes include: truckload of dirt or sand in a ditch, sandbags, floodgates and polyethylene (at least 6 mm in thickness).
  - Apply absorbent materials to absorb only the petroleum materials for collection and disposal.
  - Absorbent material will be removed when saturated with product. Fresh absorbent materials will be used until the entire retrievable product has been recovered.
  - Small spills can be treated by containing the spill with absorbent material around the spill and then applying pads or granular products to the surface of the spill.
  - Use clean non-sparking tools to collect absorbed material.
  - Use only enough material to do the job. All absorbent materials will be disposed of as contaminated waste after contact with petroleum products. Therefore, it is important to use only the amount of absorbent material needed.

2.3.1.3 Response to an On-Water Spill

If, in spite of the response actions listed above, the spill leaves the CPBR property and enters the Columbia River, response efforts will be intensified to protect off-site water resources. It is also possible that an on-water spill could occur without first starting on land. CPBR has adopted the response planning efforts of the LCRGRP in the event of a spill which affects the Columbia River. CPBR will use its own spill response equipment in addition to that provided by the OSRO(s). CPBR will use a combination of OSRO and CPBR personnel to respond to a spill which affects the Columbia River. Shoreline impact shall be limited when responding to a spill. CPBR personnel and trained spill contractors will be deployed to state and NWRCP agreed upon locations identified in the LCRGRP. Pre-existing boat launches will be utilized down river. Responders will take care to avoid disturbance of shoreline vegetation, nesting areas and noise impacts to the extent possible.

The CPBR IC will immediately take the following actions:

- Immediately implement this FRP.
- Conduct an incident assessment by verifying the spill location, establishing the type of incident based on quantity released or extent of impact; identifying the character of the materials; and the quantity of materials released; assessing the efficacy of the initial containment (if any); projecting resource needs to control the release; and obtaining local knowledge about the impacts of the release
- If the release is from the pipe (rupture or leak as determined by a loss of pressure within the pipeline), immediately shut down flow in the pipe and ensure that the pipe valves are closed.
- If the release is due to equipment failure, shutdown all pumping equipment until the reason for failure can be determined and corrective actions taken.
- Ensure the safety of all personnel involved with the spill, response and clean up.

Within 30 minutes:

- Eliminate potential ignition sources.
- Make appropriate notifications in Appendix B. Determine the immediate need for assistance from the local fire department, emergency medical assistance, or OSROs in the event that a release threatens the Columbia River. When CPBR notifies the NRC of an event that affects the Columbia River, the NRC will appoint an OSC. When CPBR contacts the ODEQ, the ODEQ will appoint its own OSC that represents all state agencies. The OSC will notify appropriate response agencies/teams. These agencies will give recommendations on where protective measures will be taken, the best locations for staging areas, access points, or anchorage and the potential effects of the spill on plants, fish and wildlife habitats in the affected area. The ODEQ and Washington Department of Health maintain contact information for downstream water users and affected local governments. The OSC may contact the local response organizations and mobilize forces to address the spill.

The IC will ensure that the following containment and recovery efforts are completed within the first hour:

- Activate the ICS and Facility Response Team and work to contain the spill or release within the Columbia River. Prior to work, develop an entry plan that outlines what will be accomplished and appropriate safety and health procedures.
    - Immediately launch CPBR's response boat and boom to head off any spilled material in the river. CPBR maintains a spill response boat and 1,000 feet of spill boom for emergency spill response associated with a water release. CPBR also has access to 5,000 feet of CRC boom. The CPBR boat is on a trailer and is stored with the 1,000 feet of CPBR boom within the fenced area of the main ethanol production facility. The CRC boom is stored in a trailer and staged at the boat ramp to the Columbia River, which is accessed via a road northeast of the CPBR facility. The boat ramp is located along the south side of the convergence of Bradbury Slough and the Columbia River. In the event of a spill to the river, the boat will be hauled from the main facility and launched at the boat ramp. The boom must be placed in the water in a location and a fashion so as to contain and facilitate recovery of the greatest amount of oil from the water.

- CPBR booming tactics will be dictated by site specific conditions before arrival of the OSRO. Methods CPBR may use include deflection and containment. Deflection would be used in a worst case spill, while containment would be used in smaller scenarios. Any secondary efforts will focus on areas identified in the LCRGRP until the OSRO support arrives, if manageable under CPBR's current resource list.
- Direct OSRO to place response resources in the Columbia River downstream of the discharge. CPBR's OSRO is capable of responding within 2 hours.
- CPBR will not use any chemical agents (dispersants, coagulants, bioremediants, etc.) for response operations. The LCRGRP does not allow use of dispersants in the area. Approval for in-situ burning in this area is unlikely due to the proximity of population to a burn site. Burning requires the approval of Unified Command, who would determine conformance of a request to burn with the guidelines in the NWACP/LCRGRP.

Within the first 2 hours:

- Place additional boom/containment structures (earthen berms, diking material, absorbent pads/booms, etc.) in the path of any on-land channelized flow headed for the Columbia River.
- Coordinate response efforts with the OSC. Figures in Appendix L illustrate the response actions specified in the LCRGRP, which outline booming strategies and vulnerable species and associated habitats found in the worst-case discharge planning area. CPBR has included information for RMs 0-71.6 as a conservative measure. Utilize maps in Appendix L to direct placement of booms, fences, wildlife deterrent devices, etc. as directed by the OSCs. Protective measures for fish and wildlife and sensitive environments may include one or all of the following actions:
  - Preventing oil from reaching sensitive areas by utilizing deployable booms and pads and skimmers at the locations noted in Appendix L;
  - Deterring birds from entering areas affected by oil by using wildlife hazing devices or other methods; and
  - Deterring other wildlife from entering areas affected by oil by using wildlife hazing devices, erecting construction safety/silt fencing, or other methods.
  - CPBR's policy will be to deploy the CRC wildlife trailer. CRC trained personnel will handle wildlife and CPBR personnel will only assist with visual observation or location from a distance, of any affected wildlife.
- Ensure recovery devices are deployed.
- Ensure availability of storage of recovered oil in the adjacent onsite tank farm or through OSRO.
- Ensure availability of qualified site personnel to aid in response efforts off-site.
- Coordinate response efforts for spills that affect the Columbia River with the marine vessel company if a marine vessel is docked.

- Following the initial phase of the incident, there may be contaminated materials that need to be placed in containment for eventual shipment offsite. The IC will supervise the transfer of materials to the containment systems and dispose of the materials in accordance with the disposal plan in section 2.5.

- Decontamination of personnel and equipment may need to be conducted to reduce or eliminate transport of contaminants from the emergency area into other areas of the facility or into the environment. Decontamination methods for employees will depend on the type of contaminants, protection level, work assignment and operation location. Contractors will be responsible for decontamination of their own equipment.
- Dedicate financial resources (in the form of contracted assistance) to aid OSC in clean-up methods.
- The on-site Incident Command Post will be in the Main Process Building. For spills to the water, the response resource staging area will be located at the boat ramp located along the south side of the convergence of Bradbury Slough and the Columbia River. In the event of sustained emergency response, the Incident Command Post will be located at the Clatskanie River Inn located in Clatskanie.

The IC will determine in consultation with the FOSC and SOSC the level of ICS structure needed for appropriate response and ensure that the ICS structure an job functions within the ICS continue to be performed in the event that an emergency incident leads to prolonged actions.

2.3.1.4 Response to an On-Water Spill – Non-floating Oils

Any spill of oils that, depending on their chemical properties, environmental factors (weathering), and method of discharge, may submerge or sink will be handled by the OSRO. The OSRO maintains the resources and/or capabilities necessary to respond to a spill of non-floating oils. The OSRO (primary response contractor) has the necessary personnel and equipment capable within the time frames outlined in the table below:

Time (hours)	Capability
1	Initiate an assessment and consultation regarding the potential for the spilled oil to submerge or sink.
6-12	Resources and personnel to detect and delineate the spilled oil such as side scan or multibeam sonar, laser fluorosensors, induced polarization, divers, remotely operated vehicles, or other methods to locate the oil on the bottom or suspended in the water column could have arrived. Additionally, containment boom, sorbent boom, silt curtains, or other methods for containing the oil that may remain floating on the surface or to reduce spreading on the bottom could have arrived.
12-24	Resources and personnel necessary to assess the impact of the spilled oil on the environment could have arrived. Types of resources that may be used for this purpose include sampling equipment. Additionally, dredges, submersible pumps, sorbents, agitators, or other equipment necessary to recover oil from the bottom and shoreline could have arrived.

2.3.2 Fire/Explosion

This section applies to all fires and explosions along the CPBR transport pipelines. Ethanol has the ability to ignite due to static charges resulting from handling and use. Crude oil and diesel are flammable and can be ignited by heat, sparks, flames, or other sources of ignition. Crude oil, diesel, and ethanol fires vapors may travel to the source of ignition and flash back and can settle in low or confined spaces. These flammable materials (with the exception of 200 proof ethanol[1]) may also produce a floating fire hazard. As such, they must be handled with extreme care. Explosions tend to have the following characteristics:

- Short duration;
- Immediate risk of personnel injury;
- Immediate threat to the environment;
- Immediate threat to neighbors;
- Produce large quantities of debris;
- Often lead to other emergency situations, e.g., fire and chemical releases; and
- Create the possibility of a panic situation among facility personnel.

In case of fire, the fire alarms are located throughout the facility. An audible (indoor) alarm bell is installed in each building and is automatically activated when the sprinkler system in that building is activated; sprinkler activation in any building on the facility is automatically displayed via the DCS on the screens in the control room. Automatic fire suppression systems are located in the following areas:

- A fire sprinkler system in the Distillation Building – 214 heads.
- A fire water tank - TK-7303, holds 525,000 gallons.
- Fire Suppression for the dryers – 24 heads.
- Fire extinguishers throughout the facility.
- A foam system located at the adjacent onsite tank farm.
- Fire hydrants at 16 locations.

The Maintenance Manager will have primary responsibility for coordinating the maintenance of the fire control equipment (alarm system, sprinkler system and the fire extinguishers).

2.3.2.1 Responsibilities and Actions – Fire

Discoverer

Any person who discovers a fire is termed the “discoverer.” The discoverer must take the following steps immediately:

[1] 200 proof ethanol is miscible with water and will dissolve to a non-flammable concentration when immersed in water. Therefore, for undenatured ethanol is not likely to be flammable when discharged into the Columbia River; and only the denaturant component of denatured ethanol will be flammable when denatured ethanol is discharged in to the Columbia River.

- Move a safe distance away from the area. Determine the nature and extent of the situation from this vantage point and identify any chemical materials and equipment involved.
- Use the nearest telephone to notify the IC or Alternate IC as listed in Appendix B.
- If personal safety is at risk, leave the area immediately. Employees should only use fire extinguishers to fight fires in their beginning stages. Do not attempt to fight the fire unless you have been specifically authorized, educated and trained to use fire-fighting equipment.
- Trained personnel in the affected area can undertake the following defensive actions:
  - Isolate the area for at least ½ mile in all directions.
  - Keep unauthorized personnel away, stay upwind and keep out of low areas.
  - Stay clear of storage tanks, drum storage areas and compressed gas storage areas.
  - Shut down all feed lines, including power in the area.
  - If possible, use fire extinguishers to control the spread of the fire.
  - Remove ignitable substances and substances that could cause heat-induced explosions from the area.
  - Treat all fire control materials (i.e., water, foam, or other materials.) as spilled materials. Prevent the movement of these materials to the storm drains and retention basin by diking with adsorbent materials.
  - Note that ethanol flame can be invisible in daylight. Ethanol and crude oil are extremely flammable materials that may release vapors that are heavier than air and can travel long distances, ignite and flash back.
  - Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
  - Cool containers with flooding quantities of water until well after fire is out.
  - Withdraw immediately in case of rising sound from venting safety devices or discoloration of a tank.
  - ALWAYS stay away from tanks engulfed in fire.
  - For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.
  - Move containers from fire area if possible without risk.
  - Do not use straight sprays.
  - Dike fire control water for later disposal, do not scatter the material.

Incident Commander

The IC will immediately notify the local fire department and will provide the following information, to the extent possible:

- Exact location and extent of the fire;
- Injuries; and
- Hazardous materials involved, if any.

2.3.2.2 Responsibilities and Actions - Explosion

Discoverer

In the event of an explosion, immediately evacuate the area and notify the IC.

Incident Commander

The following activities may occur concurrently with assistance from facility personnel at the direction of the IC. The particular nature of the incident will alter the order or need of any of the following listed actions.

- Keep all unnecessary people away from the area.
- Activate internal alarms or communication systems.
- Contact the appropriate response agencies (e.g. fire, police and ambulance) if assistance is needed (Appendix B).
- Ensure that any injured personnel will be given appropriate medical attention and/or arrange transportation to the hospital.
- Coordinate on-site evacuations.

2.4 Fish and Wildlife and Sensitive Environments

According to the USCG's planning distance criteria, for non-persistent oils (denatured ethanol) discharged into tidal waters, the facility must plan response efforts for an area encompassing 5 miles from the facility down current during ebb tide and to the point of maximum tidal influence or 5 miles, whichever is less, during flood tide. For persistent oils (crude oil and diesel) discharged into tidal waters the facility must plan response efforts for an area encompassing 15 miles from the facility down current during ebb tide and to the point of maximum tidal influence or 15 miles, whichever is less, during flood tide. According to OAR 340-141-0140, each plan must consider the environmental variables from the probable point of release to the point the oil could travel in 24 hours in a current of four knots. CPBR has planned response efforts that meet and exceed the requirements for persistent oils, the worst-case scenario.

The LCRGRP is used by the OSC during the emergent phase of a spill which lasts from the time a spill occurs until the Unified Command is operating and/or the spill has been contained and cleaned up. CPBR has provided copies of appropriate maps and matrices from the LCRGRP in Appendix L to aid in the implementation of CPBR's oil spill response actions. CPBR is located at approximate RM 53 and has included response actions for RMs 0-71.6 as a conservative measure. Appendix L lists all sensitive species and environments listed in the LCRGRP potentially impacted by a worst-case discharge from CPBR and presents maps showing the location of sensitive receptors potentially impacted, along with CPBR's response actions. CPBR has included information for RMs 0-71.6, conservatively. Response actions that CPBR anticipates taking to protect these resources are presented in Section 2.3.1.3. Appropriate equipment and required personnel used to respond to protect these resources in the event of a worst-case discharge are presented in Section 2.3 and in the equipment lists in Appendices H and I. Appendix B presents the Facility Response Team and OSROs that have been designated and trained pursuant to this FRP, to participate in spill response activities at this facility. The IC is responsible for managing the OSRO during a spill event to ensure that response services are adequately provided.

2.5 Post-Incident Management and Clean-Up/Disposal Plans

Following the completion of response actions, the IC or Alternate IC will proceed with post-incident management and clean-up activities per best management practices and through the OSRO. CPBR will follow the guidelines that have been adapted in Section 9405 – Disposal Guidance for Washington State and Oregon State – of the Northwest Area Contingence Plan. These actions should include, but are not limited to, clean-up, decontamination, incident investigation, a response critique, a review of the FRP and written follow-up reports. These activities include, at a minimum:

- Supervise cleanup actions to ensure that any released material is properly contained, identified and labeled for disposal/treatment. All discarded materials, waste materials, or other objects shall be handled in such a way as to avoid the potential for spreading contamination, creating a sanitary hazard, or causing litter to be left on-site. All potentially contaminated material (i.e. clothing, gloves, disposable equipment, soil) will be drummed and disposed off-site at a licensed facility. Additionally, all decontamination liquids (if any) will be collected, drummed and shipped offsite to a licensed facility for disposal. CPBR will coordinate with OSROs to collect all oil and oil-contaminated debris resulting from a spill that enters or has the possibility of entering a navigable waterway. For oil spilled on land, the following facilities provide disposal/treatment of oil-impacted soils. In all cases, cleanup and disposal shall be conducted in accordance with federal, state and local requirements and in a manner that will reduce damages to the environment.

Table 6
Disposal Facilities

City	Facility	Phone
Roosevelt, WA	Roosevelt Regional Landfill	1-800-275-5641
Arlington, OR	Chemical Waste Management Facility	1-800-963-4776
Seattle, WA	LaFarge Class 3&4 Soils	(206) 937-8025
Everett, WA	CEMEX PCS Landfill	(425) 348-6396

- Ensure that all containerized waste materials are properly stored.
- Supervise the decontamination, cleaning and preparation of emergency equipment for future use. Decontamination (the removal of contaminants that have accumulated on personnel and equipment) is critical to the health and safety of those who work in contaminated areas. All personnel, clothing, equipment and samples leaving a contaminated area must be decontaminated to remove any harmful materials that have adhered to them.
- Using SDS or manufacturers' literature, the IC will determine decontamination methods based on the chemical, physical and toxicological properties of the contaminant and the amount of contamination.

  - Expendable equipment, including tyvek coveralls, will be collected in a drum and disposed of accordingly.
  - In general, all nonexpendable equipment, including boots, respirators and tools, will be washed using soap and water followed by a clean water rinse.
  - Rinse water will be collected and tested, as necessary, to ensure proper disposal.
  - Following completion of the response effort, workers' hands and face will be washed with soap and water before leaving the facility.
  - Spill response contractors should follow their own decontamination protocol.
- Replace and restock necessary equipment.
- Review the response operations with the Facility Response Team via one or more meetings where recommendations can be made to improve either the response effort or safety controls within the facility that might prevent the accident from reoccurring in the future. Meetings will be documented with minutes taken and filed in the IC's office. Modifications to the FRP could result from this review.
- Conduct a post-accident incident investigation in accordance with the Incident Investigation Procedure in Appendix J.
- If there is a reportable personal injury prepare the required OSHA documentation including the OSHA 300 log.
- Review the response operations with the supervisor of the area where the release occurred via one or more meetings. Recommendations can be made to improve either the response effort or safety controls within the area that might prevent the accident from reoccurring in the future. Modifications to the FRP could result from this review.
- All members of the Facility Response Team are entitled to seek a medical examination anytime there is a possibility of exposure resulting from the response to an incident.
- Submit a spill/release report to the ODEQ. If the release has resulted in an exceedance of a reportable quantity of hazardous substance under 40 CFR Part 302 Table 302.4, a written report must be filed with NRC/EPA as soon as possible. This notice must update information included in the initial NRC telephone notice and provide information on actual response actions taken and advice regarding medical attention necessary for exposed individuals. Copies of the report forms are presented in Appendix G. The Incident Investigation Procedure in Appendix J provides directions for follow-up notifications to agencies.

3.0 Training and Exercises

CPBR has developed and implemented a training program and a drill/exercise program that satisfies the requirements of 33 CFR 154.1050 and 154.1055. Training is functional in nature and conducted according to job tasks for both supervisory and non-supervisory operational personnel.

CPBR management will conduct exercises in accordance with the USCG's National Preparedness for Response Exercise Program (PREP). This section of the FRP describes the actions to be taken at CPBR to comply with the PREP Guidelines. The specific exercise requirements from the PREP guidelines that will be implemented at this facility are described in the following sections.

3.1 Training Procedures

3.1.1 Facility Personnel Training

All personnel are trained on proper procedures for containment and clean-up of small spills and leaks, emergency response procedures, the contents of the FRP and other applicable pollution control laws, rules and regulations. Appropriate personnel are instructed in the operation and maintenance of equipment to minimize the discharge of oils and other regulated substances. Basic training for all employees will be conducted by the Environmental and Safety Manager and will include, at a minimum, the following items:

- Risk/spill prevention;
- A review of the FRP and description of its components;
- Individual roles and responsibilities;
- Information about hazards (e.g. flammable liquids) and protective actions;
- Notification, warning and communication procedures;
- Emergency response procedures;
- Hypothetical spill scenario response;
- Potential impacts to waterways;
- Evacuation and accountability procedures; and
- Location and use of common emergency equipment.

CPBR will provide training for all new employees and provide refresher training for all employees annually. Additionally, training will be provided whenever:

- There are changes to materials or equipment within the facility;
- The FRP is updated; and
- Exercises/drills indicate that employees do not understand their responsibilities.

In addition to the basic training described above, all plant personnel will receive annual fire extinguisher training. Documentation of all training is kept by the Environmental and Safety Manager.

3.1.2 HAZWOPER Training

All employees working on site who are exposed to hazardous substances, health hazards, or safety hazards and their supervisors and management responsible for the site will receive HAZWOPER training per 29 CFR 1910.120 before they are permitted to engage in hazardous waste operations that could expose them to hazardous substances, safety, or health hazards.

Training shall be based on the duties and functions to be performed by each responder of an emergency response organization. The skill and knowledge levels required for all new responders, those hired after the effective date of this standard, shall be conveyed to them through training before they are permitted to take part in actual emergency operations on an incident. Employees who participate, or are expected to participate, in emergency response, shall be given training. Refresher training will be given annually.

The IC and Alternate ICs directly responsible for, or who supervise employees engaged in, hazardous waste operations will receive 40 hours initial training and three days of supervised field experience. The training requirement may be reduced to 24 hours and one day if the only area of their responsibility is employees covered by paragraphs 1910.120(e)(3)(ii) and (e)(3)(iii)) and at least 8 additional hours of specialized training at the time of job assignment on such topics as, but not limited to, the employer's safety and health program and the associated employee training program, PPE program, spill containment program and health hazard monitoring procedure and techniques.

Employees and supervisors that have received and successfully completed the required training and field experience shall receive a written certification by their instructor. Documentation of all HAZWOPER training is kept by the Environmental and Safety Manager.

3.1.3 Facility Response Team Training

CPBR conducts an annual Facility Response Team training session for personnel with responsibilities identified within this FRP (the IC, Alternate ICs and the Facility Response Team). The following is an outline of the Facility Response Team training segment:

- A discussion and history regarding the conditions of 33 CFR 154;
- The specific responsibilities of the IC and Alternate ICs and the Facility Response Team;
- Facility personnel are trained to implement this FRP by specifically focusing on the contents of the FRP chapter by chapter, with discussions that outline the information contained in each chapter and the spill response significance associated with the information and why it is presented;
- A discussion relating to the implementation of the FRP in an emergency, with discussions relating to the roles and responsibilities of the Facility Response Teams, the emergency response roles and procedures used to manage and direct CPBR’s emergency response activities;
- A discussion on personnel responsibilities as they relate to spill detection, initial discovery actions, activation of communications, health and safety considerations and facility evacuation;
- A discussion on responsibilities and procedures relating to spill prevention, facility inspections and plan updating; and
- A review of the facility maps, personnel lists, contact lists and telephone numbers for accuracy.

All personnel who serve on the Facility Response Team have been trained at the 40-hour HAWOPER level as outlined in section 3.1.2. Facility Response Team members have specific knowledge of hazardous releases and substances, how to manage spill cleanup operations and potentially act as liaisons with governmental authorities. They also understand the hazards and risks associated with employees working in chemical PPE. CPBR will not use the services of volunteers or casual laborers during a response.

All personnel who fulfill part of the NIMS ICS structure as outlined in section 1.3 will complete ICS-200/ICS-300 competency training in their duties.

3.1.4 Training Records

Records of CPBR training sessions will be kept and will include the type of training, date conducted, the names of employees attending and the number of training participants. Training Logs are presented in Appendix M. Detailed and completed records, sufficient to document facility personnel and Facility Response Team participants during training performed at the facility, will be maintained by the Environmental and Safety Manager. Facility training records will be retained at the facility for a period of five years from the completion of a training session and will be available to the USCG, ODEQ or EPA upon request. In addition to the CPBR personnel records, the IC will ensure that OSRO personnel training records will be available for inspection by the facility management, the IC and USCG/EPA/ODEQ upon request for a period of five years from the completion of a training session. CPBR does not plan to use the services of private response personnel other than those contracted through the OSRO.

3.2 Exercise Procedures

Conducting exercises is one of the best means for assessing emergency plans and procedures, for determining the readiness of emergency responders, for resolving questions of coordination and clarifying roles and responsibilities and for promoting awareness of potential hazards.

Once employees have been trained, CPBR will conduct exercises to determine if the FRP is workable and to determine if people are properly trained. In addition, it will give employees an opportunity to become familiar with their responsibilities so that they will act more instinctively during an emergency. Each exercise should revolve around a potential emergency that is likely to arise at CPBR (e.g., a release of oil). The exercise should be carried through each phase of an emergency (e.g., discovery, notification, evacuation) following the steps listed in the FRP. During the exercise a person from CPBR should act as an observer to evaluate the response.

CPBR will design its exercise program so that all components of the FRP are exercised at least once every 3 years through separate exercise events or through an Area Exercise. CPBR's exercise program will consist of the following:

CPBR will notify the ODEQ 60 days prior to full deployment and tabletop exercises and 10 days prior to equipment exercises.

Exercises completed at CPBR are listed in Table 7 and may include but are not limited to the following:

- IC One-Call Notification
- Spill Team Management Tabletop Exercise
- Facility Equipment Deployment Exercise
- OSRO Equipment Deployment Exercise
- First Responder Boat and Boom Deployment Drill

When selecting the scenario to use, the IC managing the exercise may choose to use the following scenarios, in addition to other scenarios as determined by the IC:

- Bomb threat;
- Oil spill response;
- Site evacuation;
- Fire/explosion;
- Flooding;
- Hazardous material release;
- Medical emergency; or
- Severe weather.

Table 7 Exercise Summary		
Exercise/Drill	**Purpose/Description**	**Frequency/ Records**
IC One-Call Notification Exercise	• Ensure that the ICS can be activated and effectively implemented with a single call to IC or Alternate IC. • Conducted during non-business hours. • Exercises communications between facility personnel/IC(s) and ensures is that the IC is able to be reached in a spill response emergency to carry out his or her required duties. • Based on an assumed spill scenario, the IC or other qualified managers will be contacted (telephone, radio, message-pager, or facsimile) so that appropriate agency notifications can be identified. • Confirmation of contact must be received by IC or other qualified managers to satisfy the requirements of the exercise. • Exercises communications between facility personnel and designated ICs.	Quarterly Maintain records on log in Appendix N
Spill Management Team Tabletop Exercise	• To exercise the Facility Response Team's organization, communication and decision making in managing a spill response. • At least one exercise every 3 years must be based on worst-case discharge scenario. • An actual spill response may be used for credit. • Items reviewed: FRP, notifications, communication systems, ability to access IC and OSRO, facility/agency coordination and notification, off-site spill response coordination, ability to access data in the LCRGRP for location of sensitive areas, resources available, unique conditions, etc.	Annually Maintain records on log in Appendix N
Facility Equipment Deployment Exercise	• Ensures response equipment is operational. • Ensures that the personnel who would operate this equipment in a spill response are capable of deploying and operating it. • Exercise should include deployment of a representative sample of facility response equipment (boat and boom) in the water. Within 1 hour of notification, the facility must have deployed containment boom around the "spill source." The length of boom on hand for this purpose must be at least four times the length of the largest vessel, or combined vessel lengths, potentially at that facility.	Semiannually Maintain records on log in Appendix N

Table 7 Exercise Summary		
Exercise/Drill	**Purpose/Description**	**Frequency/ Records**
	The boom must be placed in the water in a location and fashion so as to contain and facilitate recovery of the greatest amount of oil from the water. • The remainder of the equipment which is not deployed will be included in a comprehensive training and maintenance program.	
OSRO Equipment Deployment Exercise	• Ensures that OSRO's response equipment is operational. • OSRO should provide IC with the annual certification of OSRO deployment drill.	Annually Maintain OSRO log as provided
Unannounced Exercises	• This is not a separate exercise from those listed above. • Any type of drill listed above, except the One-Call Notification, qualifies as an unannounced drill and could include a Spill Management Team Tabletop Exercise or Facility Equipment Deployment Exercise. • As another option, CPBR could also hold an "Emergency Procedures Exercise," which would consist of: o An exercise of CPBR's emergency procedures to ensure personnel knowledge of actions to be taken to mitigate a spill. This exercise may be a walk-through of the emergency procedures. o Exercise should involve one or more of the sections of the emergency procedures for spill mitigation (Section 2.3.1). The exercise should involve a simulation of a response to an oil spill. • In an unannounced exercise, exercise participants do not have prior knowledge of the exercise, as would be the situation in an actual spill incident.	Annually Maintain records on log in Appendix N
Government-Initiated (USCG/Area) Exercises	• CPBR will participate in unannounced exercises as directed by the USCG or OSC. The objective of unannounced USCG exercises will be to test notifications and equipment deployment for response to the average most probable discharge. • Ensures that the EPA/USCG knows whom to call in the event of a discharge within a given area. • If this occurs, activities conducted by CPBR during the USCG/area drill also would satisfy the respective facility-initiated drill requirements.	At Discretion of USEPA or USCG Maintain records in exercise file

3.3 Evaluation

Following the exercise the observer, the IC and the responding agencies should thoroughly analyze each component of the response and make recommendations for modifying the FRP or re-training personnel. To accommodate this, an appropriate exercise log is completed after each exercise. The logs contain an evaluation of each exercise and are completed by the exercise organizer and through a group discussion with exercise participants. All tabletop and full deployment logs will be sent to the ODEQ no later than 60 days following the completion of the exercise. Logs can be found in Appendix N. Completed Drill Logs are maintained by the Environmental and Safety Manager for five years.

4.0 Plan Review and Update Procedures

The Environmental and Safety Manager will be the primary individual responsible for maintaining this FRP. The Plant Manager and General Manager must approve all revisions to the FRP.

4.1 Annual Review

The facility owner or operator will perform an annual review of the FRP and record any revisions in the revision record on page 4 of the plan. This review will incorporate any revisions to the plan and any updates on personnel changes and/or responsibilities and updated contact information, if necessary. Additionally, the review will ensure that the FRP is consistent with the NWACP/LCRGRP in effect 6 months prior to the annual FRP review. The review will occur within 1 month of the anniversary date of USCG approval of the FRP.

4.2 Required Submission

CPBR will submit any revisions to this FRP to the USCG, ODEQ and all other holders of the FRP for information and approval, as appropriate. The submittal of revisions will require a cover letter containing a detailed listing of all revisions to the response plan. If no revisions are required, the facility owner or operator will indicate the completion of the annual review in the revision record on page 4 of the plan.

Any required revisions to the plan will be recorded in the revision record on page 4 of the plan. CPBR will submit revisions to a previously submitted or approved plan to the USCG and all other holders of the plan for information and approval within 30 days, whenever there is:

- A change in the facility's configuration that significantly affects the information included in the response plan;
- A change in the type of oil handled, stored, or transported that affects the required response activities;
- A change in the name(s) or capabilities of the oil spill removal organization;
- A change in the facility's emergency response procedures;
- A change in the facility's operating area that includes ports or geographic area(s) not covered by the previously submitted plan; or,
- Any other changes that significantly affect the implementation of this plan.

Revisions to personnel and telephone number lists included in the response plan do not require USCG approval; however, the USCG and all other holders of the response plan shall be advised of these revisions and provided a copy of the revisions as they occur.

Additionally, the USCG may require a facility owner or operator to revise a response plan at any time as a result of a compliance inspection if the USCG determines that the response plan does not meet the requirements of federal regulations or as the result of inadequacies noted in the FRP during an actual pollution incident at the facility.

4.3 Post-Discharge Plan Review

The IC shall initiate a review of this FRP after a discharge has occurred using the Incident Investigation Procedure located in Appendix J. The IC or Alternate IC and members of the Facility Response Team who were involved with the incident will participate in the review. This review should focus on identifying the strengths and weaknesses of the FRP. CPBR will review the written comments of the employees, evaluate the comments and make changes to this plan as necessary. These changes shall be documented in the revision record on page 4 of the plan. Section 4.2 discusses submission requirements. Once the incident investigation is complete, a debriefing with the ODEQ should be completed that includes any newly recognized need to amend the plan and list other lessons learned.

5.0 References

U.S. Environmental Protection Agency. National Oil and Hazardous Substances Pollution Contingency Plan. Available online at: https://www.epa.gov/emergency-response/national-oil-and-hazardous-substances-pollution-contingency-plan-ncp-overview. Accessed December 2023.

U.S Environmental Protection Agency. 2020 Northwest Area Contingency Plan. Available online at: https://www.rrt10nwac.com/Files/NWACP/2020/Northwest%20Area%20Contingency%20Plan2020.pdf . Accessed December 2023.

Oregon Department of Environmental Quality Division Chapter 340, Division 142 Oil and Hazardous Materials Emergency Response Requirements. Available online at: https://secure.sos.state.or.us/oard/displayDivisionRules.action%3BJSESSIONID_OARD=st_4jwUo5yTfBbTmAq7lfmCBh_Mf_Xfin2rkC6ov5ysAt3qHJMlJ%21-1740555568?selectedDivision=1514. Assessed December 2023.

Washington Department of Ecology. Lower Columbia River Geographic Response Plan. Available online at: https://www.oilspills101.wa.gov/northwest-area-contingency-plan/geographic-response-plans-grps/lower-columbia-river-grp/ Last Full Update: June 2015, Accessed December 2023.

Figures

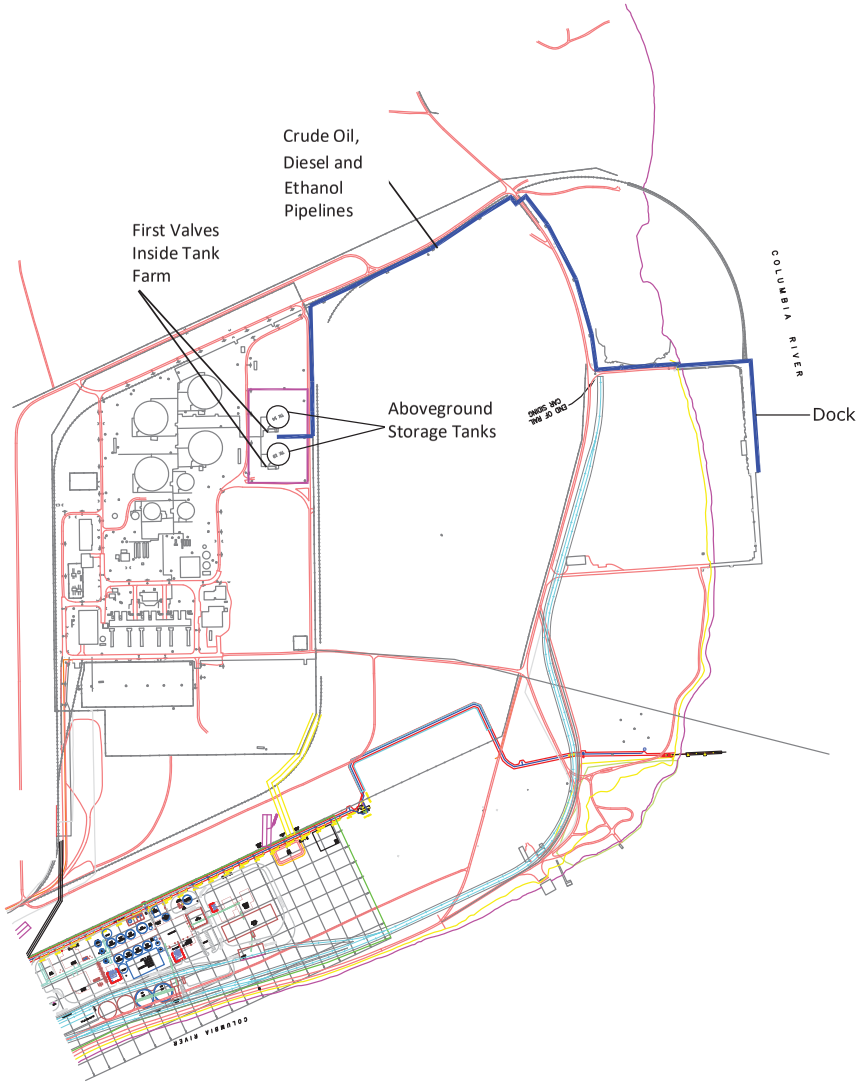
Safety Camera
Denatured Ethanol Pipeline
Crude Oil Pipeline
Dock

Secure & Restricted Area
Perimeter Fence
Non-Marine Transportation Related, Access-Controlled Area

0 500 1,000 Feet
1:12,000

N

Columbia Pacific Bio-Refinery
Figure 1
Site Layout



COLUMBIA PACIFIC BIO-REFINERY

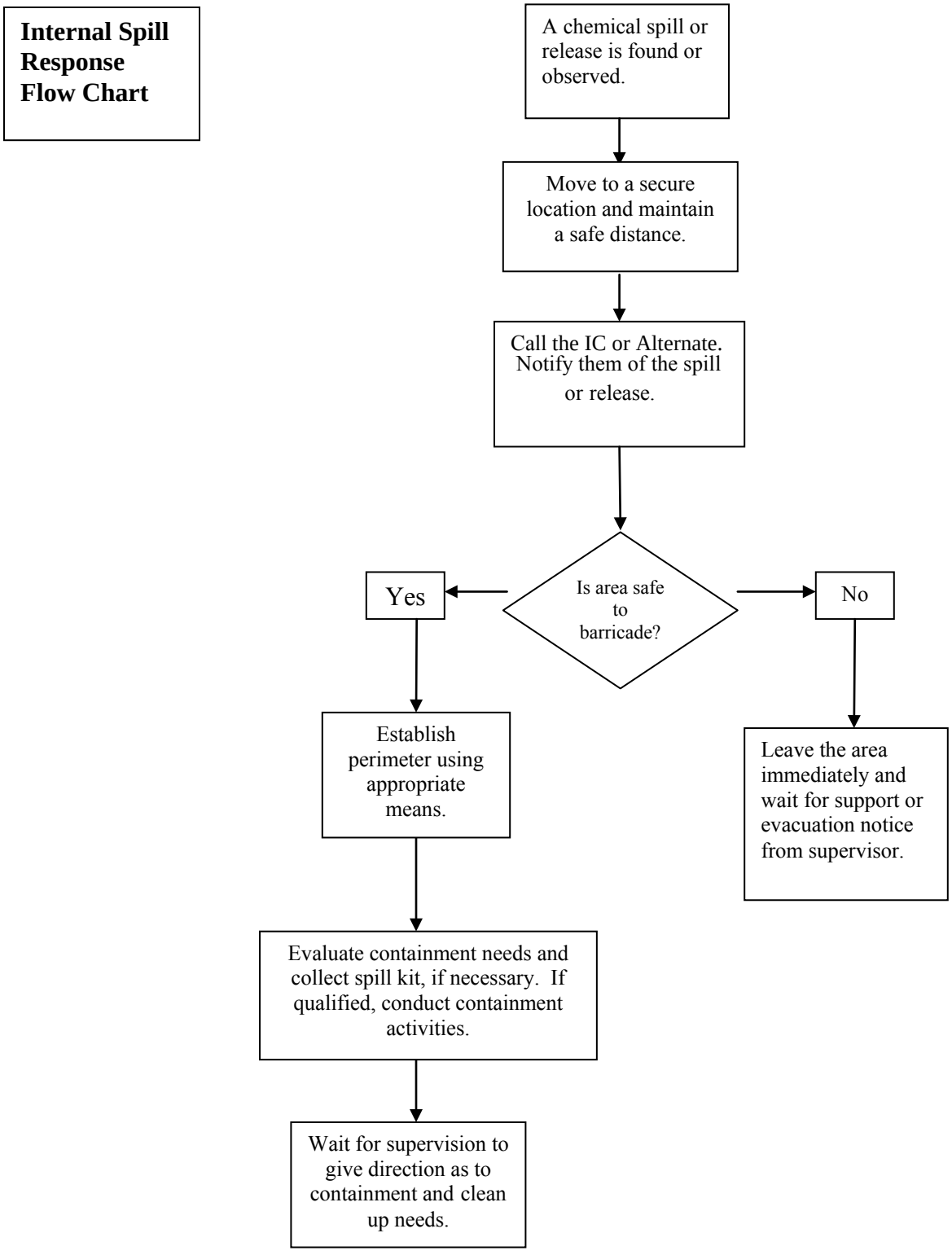
Figure 2

Adjacent Onsite Tank Farm

REVISIONS		
Name	Description	Date

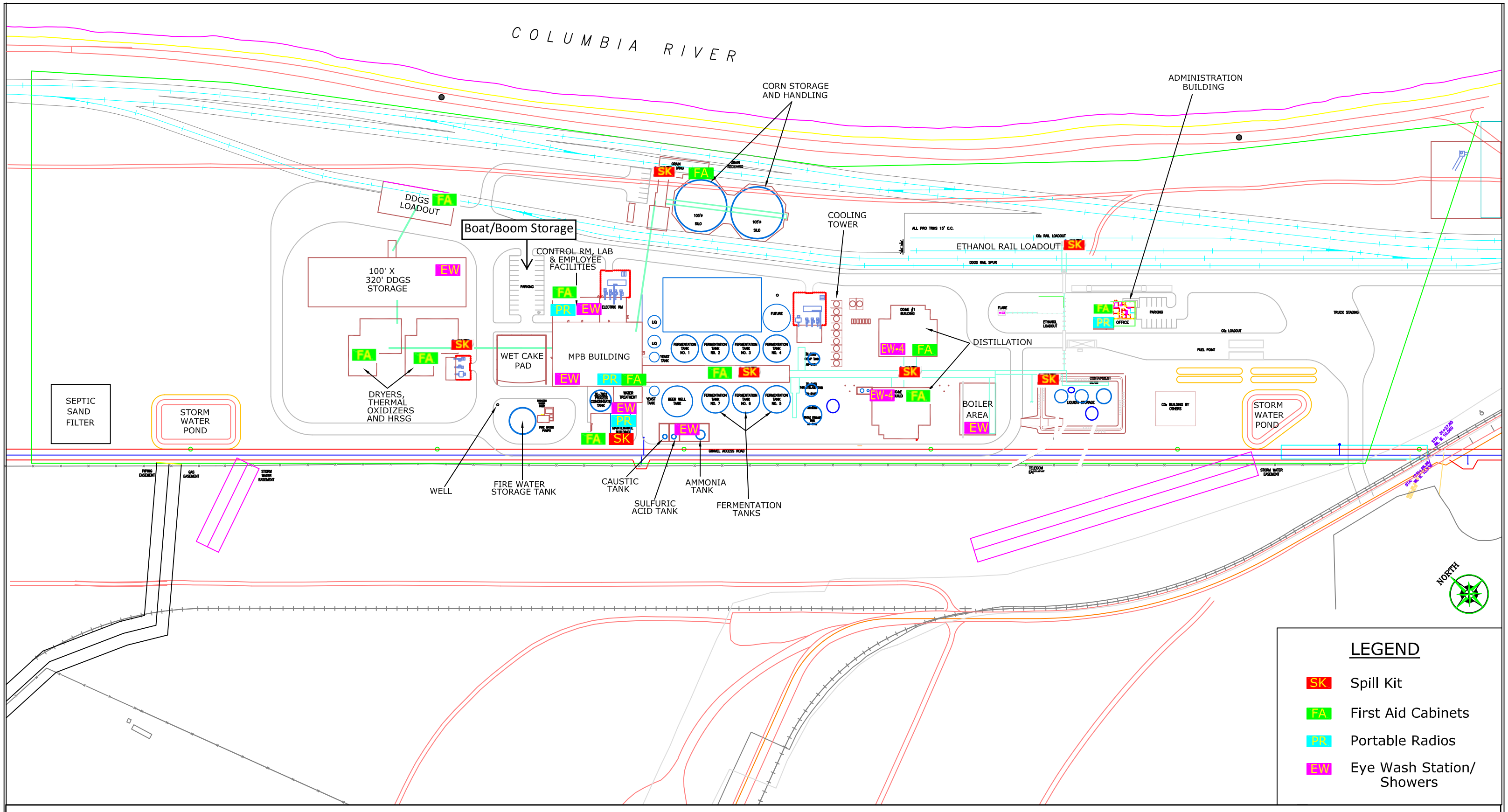
PREPARED BY: DTC
CHECKED BY: VB
DESIGNED BY:
DATE: 12-04-07
FILE: Figure 3

Figure 3
Internal Spill Response Flow Chart



Columbia Pacific Bio-Refinery
Figure 4

Safety Equipment at the Transfer Facility



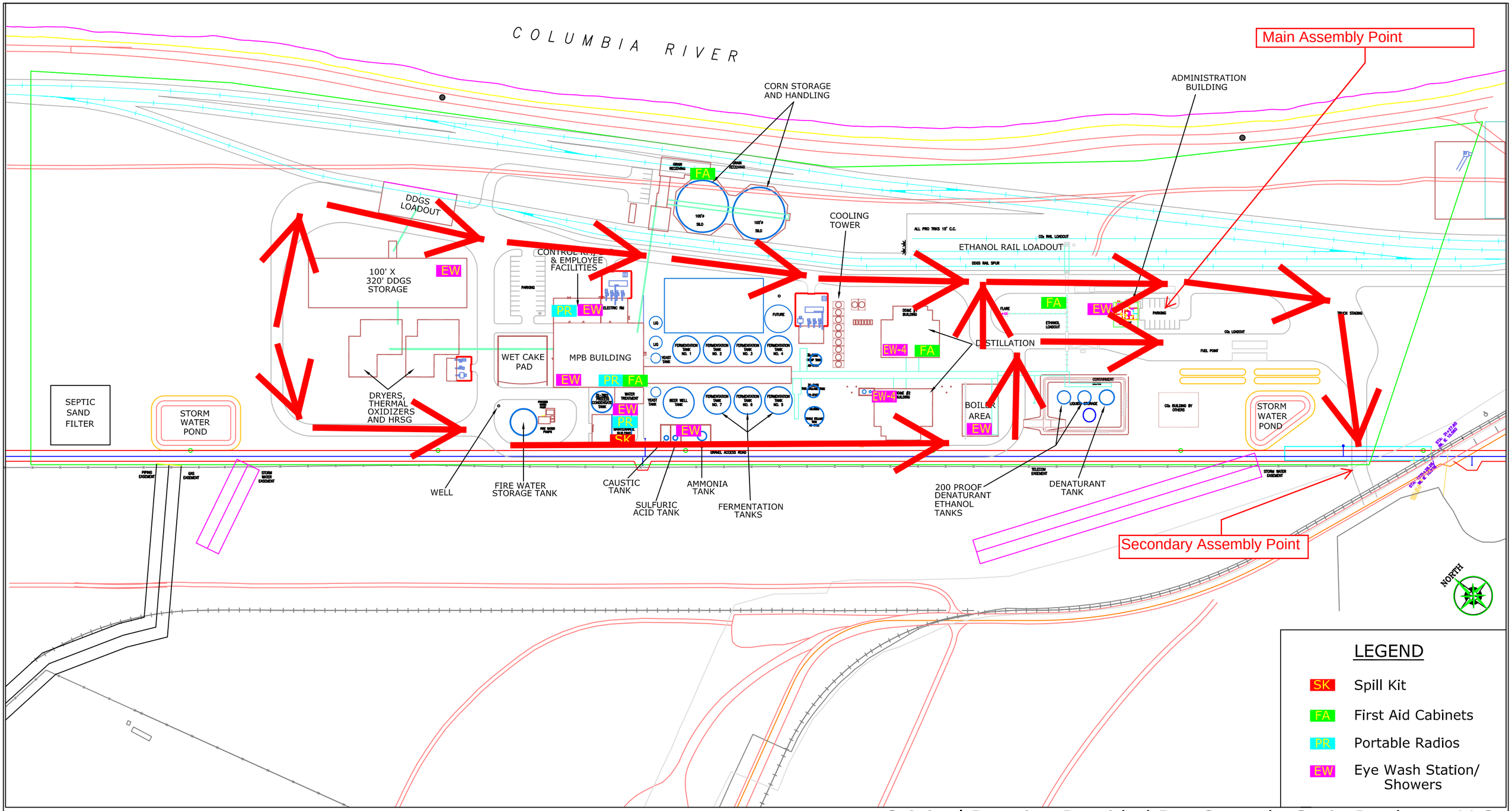
COLUMBIA PACIFIC BIO-REFINERY

Figure 5
Safety Equipment at the Production Facility

Columbia Pacific Bio-Refinery
Clatskanie, OR

REVISIONS		
Name	Description	Date

PREPARED BY: DTC
CHECKED BY: VB
DESIGNED BY:
DATE: 12-04-07
FILE: Figure 4



Original Drawing Provided By: Cascade Grain Products, LLC

COLUMBIA PACIFIC BIO-REFINERY

Figure 6
Evacuation Diagram

Evacuation Plan
Cascade Grain, LLC
81200 Kallunki Road
Clatskanie, OR 97016

REVISIONS		
Name	Description	Date

PREPARED BY: DTC
CHECKED BY: VB
DESIGNED BY:
DATE: 12-04-07
FILE: Figure 4

Bradbury Slough

GRAIN RECEIVING

GRAIN RECEIVING

105'Ø SILO

105'Ø SILO

DDGS LOADOUT

CONNEX WAREHOUSE
100' BY 40' MAIN
12 40' CONTAINERS

OFFICE

100' X 320' DDGS STORAGE

PARKING

CONTROL RM, LAB & EMPLOYEE FACILITIES

ELECTRIC RM

FUTURE CO2 LIQUEFACTION PROCESS BUILDING 110' x 200'

FUTURE

LIQ

LIQ

FERMENTATION TANK NO. 1

FERMENTATION TANK NO. 2

FERMENTATION TANK NO. 3

FERMENTATION TANK NO. 4

YEAST TANK

TK-3402 SYRUP TANK AG-3102

Outfall 1
(Overflow weir to swale, storm water will overflow during saturated conditions)

OUTFALL POND

WETCAKE BUILDING

DRYERS, THERMAL OXIDIZERS AND HRSG

CORN OIL EXTRACTION

THIN STILLAGE CLARRIFICATION

MPB BUILDING

PROCESS WATER PUMP

FIRE WATER STORAGE TANK

FIRE WATER PUMPS

TK-7601 PROCESS CONDENSATE TANK

WATER TREATMENT

YEAST TANK

BEER WELL TANK

FERMENTATION TANK NO. 7

FERMENTATION TANK NO. 6

FERMENTATION TANK NO. 5

FUTURE

MAINTENANCE BUILDING

MAINTENANCE BUILDING

STORM WATER POND

4+00 5+00 6+00 7+00 8+00 9+00 10+00 11+00 12+00 13+00 14+00 15+00 16+00 17+00 18+00

1204+00 1205+00 1206+00 1207+00 1208+00 1209 1210+00 1211+00 1212 1213+00 1214+00 1215+00 1216+00 1217+00 1218+00

GRAVEL ACCESS ROAD

PIPING EASEMENT

GAS EASEMENT

INFILTRATION TRENCH

STORM WATER EASEMENT

Swale (Discharge to McLean Slough)

Caustic Tank

Sulfuric Acid Tank

Ammonia Tank

N W E S

LEGEND

- Storm Water Monitoring Point
- Hydrants
- Storm Water Ditch
- Storm Water Flow
- Culvert

COLUMBIA PACIFIC BIO-REFINERY

Columbia Pacific Bio-Refinery
Clatskanie, OR
Figure 7
Outfall 1 (West) Drainage Area

merjent

Source: Z:\Clients\A_D\Columbia_Pacific Bio_Refinery\ArcGIS\2012\09\Figures\Fig_3_Outfall_1.mxd

Date: (9/14/2012)

Bradbury Slough

POWER STATION

ALL PRO TRKS 15' C.C.

C0
2 RAIL LOADOUT
ETHANOL RAIL LOADOUT

ETHANOL TRANSLOAD

DDGS RAIL SPUR

FUTURE

DD&E #1 BUILDING

FLARE

ETHANOL LOADOUT

OFFICE

PARKING

OFFICE

PARKING

C0
2 LOADOUT

TRUCK STAGING

FUEL POINT

CONTAINMENT BERM

LIQUIDS STORAGE

C0
2 BUILDING BY OTHERS

STORM WATER POND

OUTFALL 2
(Overflow weir to swale, storm water will overflow during saturated conditions)

FUTURE

THIN STILLAGE TANK

SYRUP TANK

WHOLE STILLAGE TANK

CO2 SCRUBBER
CO2 Plant Compressor

DD&E #2 BUILDING

BOILER AREA

20+00

25+00

30+00

35+00

TELECOM EASEMENT

STORM WATER EASEMENT

INFILTRATION TRENCH

To Mclean Slough

SWALE

LEGEND

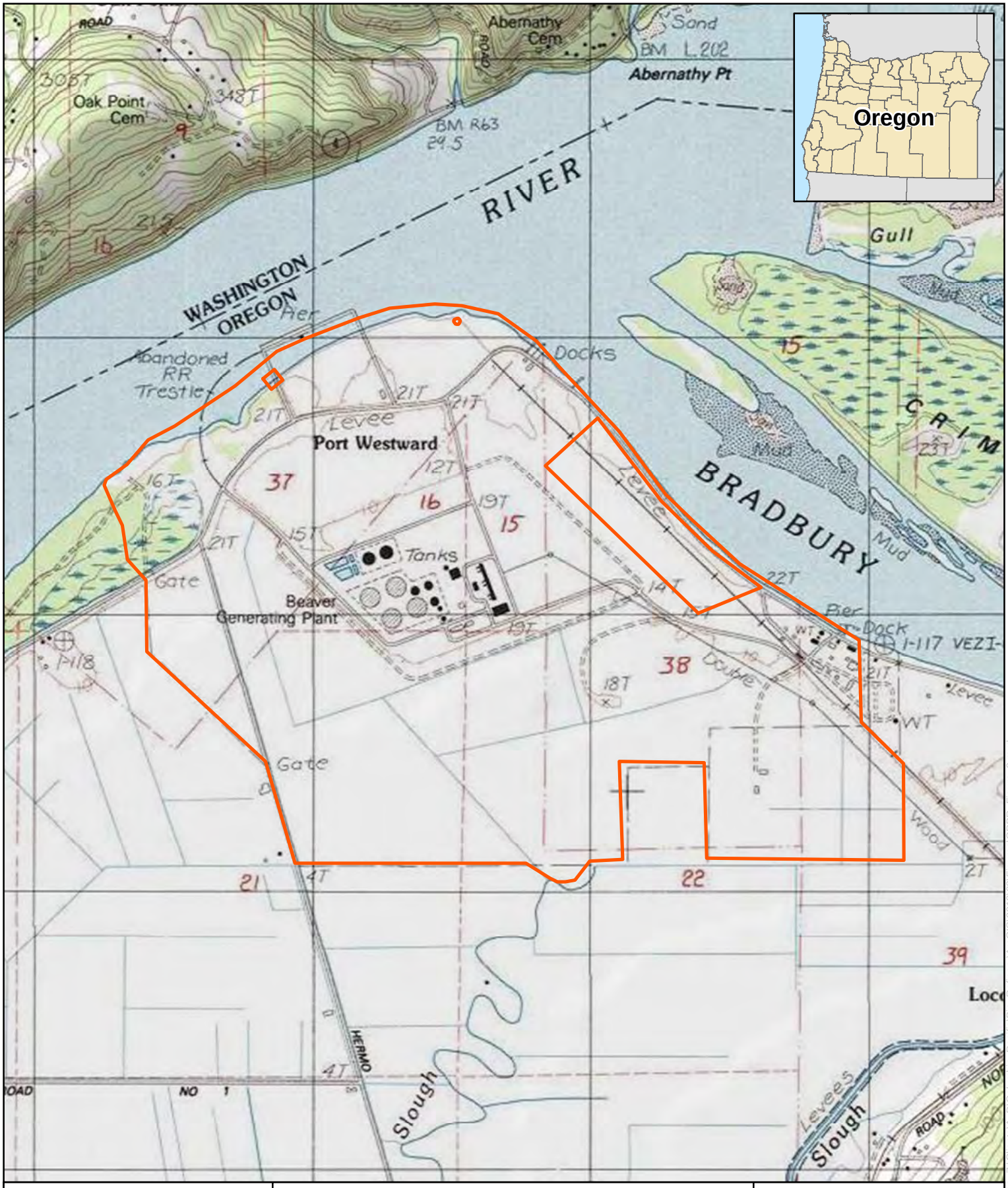
- Storm Water Monitoring Point
- Hydrant
- Storm Water Ditch
- Storm Water Flow
- Culvert

COLUMBIA PACIFIC BIO-REFINERY

Columbia Pacific Bio-Refinery
Clatskanie, OR
Figure 8
Outfall 2 (East) Drainage Area

merjent

Source: Z:\Clients\A_D\Columbia_Pacific\Bio_Refinery\ArcGIS\2012\09\Figures\Fig_4_Outfall_2.mxd
Date: (9/14/2012)



0 750 1,500 Feet

1 inch = 1,500 feet

N W E S

COLUMBIA PACIFIC BIO-REFINERY

Figure 9
Columbia Pacific Bio-Refinery
Site Topography
Clatskanie, OR

Facility Boundary

Source: Z:\Clients\A_D\Columbia_Pacific\Bio_Refinery\ArcGIS\2013\08\Figures\CPBR_Figure_9.mxd

Date: (9/10/2013)

Appendix A
Facility-Specific Information

Physical Description

Columbia Pacific Bio-Refinery (CPBR or the facility) is a producer of fuel-grade denatured ethanol. Ethanol is produced by fermenting a corn and water mash. The mash then is separated, distilled, dehydrated, evaporated and the resultant ethanol is blended with natural gasoline (a denaturant). Most of the ethanol produced by CPBR will be sold as a fuel additive to improve the air quality characteristics of gasoline. CPBR ships ethanol offsite via railroad, truck, and through a pipeline to a marine vessel load-out facility. CPBR also has the capacity to receive light sweet crude oil (crude oil), diesel (conventional or renewable) or other ethanol products via railcar or marine vessel and transload the material to railcars or marine vessels. The "control station" is the 1st valve inside the secondary containment structure at each of the tanks in the off-site tank farm. Figure 1 presents a plan of the facility with mooring area, transfer location, and the location of the transfer pipes and the two 3,800,000 gallon storage tanks. Figure 2 depicts the location of the 1st valves at each tank within the off-site tank farm secondary containment area. Figure 3 presents the location of safety equipment at the transfer location. Figure 4 presents the location of safety equipment at the CPBR production facility.

Vessel Transfer Activities

CPBR will vet all vessels independently and issue an individual mooring plan based on dock specifications, EHS and USCG requirements. There are two berths located at the loading dock. Vessel loading is limited to 1 vessel at each loading berth at a time (2 total). This terminal will accommodate vessels.

Materials Offered by Transport

CPBR offers ethanol, crude oil and diesel for transport by barge and railcar. A Safety Data Sheet (SDS) for each of these materials is located in the CPBR control room. (The SDS contains the generic name of the chemical, a description of appearance and odor, the physical and chemical characteristics, the hazards involved in handling the material, and a list of firefighting measures and effective extinguishing agents).

As discussed in the CPBR Dock Operations Manual, two methods for fire extinguishing can be found near the dock. One is with the use of water and the other is with foam or fire extinguishers. See Figures 4 and 5 for the location of all fire extinguishers. For fire extinguishing with water:

1. Locate the nearest fire station.
2. Pull the hoses from the storage unit and attach it to the fire hydrant.
3. Start the water flow.
4. Attempt to extinguish the fire.

The best method for extinguishing ethanol, diesel, or crude oil fires will be foam. CPBR has a foam building located near the off-site storage tanks (See Figure 4). The foam is Alcohol Resistant – Aqueous Film Forming Foam (AR-AFFF). To use the equipment:

1. Attach the trailer containing the foam to a motorized vehicle.
2. Transport to the area of the fire.
3. Aim at the base of fire.
4. Initiate foam dispensing system.

Appendix B
Emergency Notification Phone List

Facility Response Team Emergency Notification Phone List
Date of Last Update: October 2022

Role	Name	Phone (office)	Home Phone	Cellular Phone	Off-site Response Time	Responsibility During Response Action	Response Training Type/Date			
							FRP	SPCC	HAZWOPER	ICS
Incident Commander/Alternates										
Primary IC	Plant Manager				15 minutes-1 hour	See Appendix D	X	X	X	X
Alternate	General Manager				15 minutes-1 hour	See Appendix D	X	X	X	X
Alternate	t, Environmental and Safety Manager				15 minutes-1 hour	See Appendix D	X	X	X	X
Alternate					15 minutes-1 hour	See Appendix D	X	X	X	X
Alternate	Purchasing Manager				15 minutes-1 hour	See Appendix D	X	X	X	X
Spill Response Team										
Lab Manager					15 minutes-1 hour	See Appendix D	X	X	X	X
OSROs		**Emergency**			**Response Time**	**Contract Responsibility**				
Clean Rivers Cooperative		503-220-2040			1 – 2 hours	Primary USCG-classified to provide spill response services (personnel and equipment). Agreements and equipment located in Appendix I.				
Cowlitz Clean Sweep (CCS)		360-423-6316			1 hour	Secondary USCG-classified OSRO to provide spill response services (personnel and equipment). Agreements and equipment located in Appendix I.				

Agency Emergency Notification Phone List
Date of Last Update: November 2017

Primary Emergency Contacts	
Police	911/ 503-728-2145
Fire	911/ 503-728-2025
Ambulance (all times)	911
Columbia County Department of Emergency Management	503-366-3931
Secondary Emergency Contacts	
For all spills and emergencies, contact:	
(1) National Response Center (NRC)	Toll Free: 1-800-424-8802 Direct: 202-267-2675
(2) Oregon Emergency Response System (OERS)	1-800-452-0311
(3) Clean Rivers Cooperative (USCG-classified OSRO)	503-220-2040
(4) Cowlitz Clean Sweep (CCS) (USCG-classified OSRO)	360-423-6316
For spills occurring in the Columbia River contact the following additional agencies:	
(5) Washington Emergency Management Division	1-800-258-5990
(6) USCG Sector Columbia River Marine Safety Office (Portland)	503-240-9301
(7) Washington Department of Ecology, Southwest Regional Office (for spills that also involve hazardous materials)	360-407-6300
(8) U.S. Environmental Protection Agency (EPA) Region 10 Spill Response Hotline/OSC, Seattle	206-553-1263
U.S. Environmental Protection Agency (EPA), San Francisco (if Seattle is not reachable by telephone)	1-800-300-2193
Other Contacts	
Columbia County Sherriff's Office	503-366-4611
Oregon State Fire Marshal	503-378-3473 (business hours)
Oregon State Police	503-378-3720 (business hours) 503-375-3555 (N. Dispatch)
Oregon OSHA	503-378-3272
PeaceHealth St. John Medical Center (Longview, Washington)	360-414-2000
NOAA National Weather Service (Portland office)	503-261-9246
Local television station (for evacuation notification) KGW	503-226-5000
Local radio station (for evacuation notification) KTJC	360-501-6044
ODEQ Northwest Regional Office	503-229-5263
Port Westward	503-728-7470
Portland General Electric (Beaver Control Room)	503-728-7251
Port of St. Helens (local water supply)	503-397-2888 After Hours: 503-369-0856

Appendix C
Qualified Individual and Alternate Qualified Individual Designation Letter

The following individuals have been identified as Qualified Individuals or Alternates (referred to in this FRP as "Incident Commanders" (IC)) that will be available on a 24-hour basis and be able to arrive at the facility in a reasonable time. The ICs are located in the United States, speak fluent English, and are familiar with the implementation of this FRP.

The following individuals have been trained in the responsibilities of the IC under the FRP.

Through this document, CPBR designates each of the following individuals as ICs and grants their full authority to:

- Activate and engage in contracting with Oil Spill Removal Organizations;
- Act as a liaison with the pre-designated Federal On-Scene Coordinator (OSC); and
- Obligate funds required to carry out response activities.

The IC is the first individual given authority to make these decisions. In the event that the IC is not able to respond, the Alternate ICs may take the role of IC. Each individual that signs below agrees that they understand the duties that have been assigned.

Incident Commander _____
Plant Manager

Alternate Incident Commander _____
General Manager

Alternate Incident Commander _____
Environmental and Safety Manager

Alternate Incident Commander _____
Lab Manager

Alternate Incident Commander _____
Purchasing Manager

As General Manager, I give the above listed persons the authorities as defined.

Print: _____

Sign: _____

Date: _____

Appendix D
Personnel Resource List

	Positions					
Activity	**Plant Mgr.**	**Gen. Mgr.**	**Env. And Safety Mgr.**	**Process Sups.**	**Lab Mgr.**	**Ops Mgr.**
Assessment/Monitoring	X	X	X	X		
Site Entry and Reconnaissance	X	X	X	X		
Initial Characterization of emergency	X	X	X	X		
On-site Survey	X	X	X	X		
Containment	X	X	X	X		
Decontamination	X	X	X	X		
Disposal	X	X	X	X		
Inspection and Reports	X	X	X	X		
Communicate with regulatory agencies	X	X	X			
Equipment Use*						
Boat	X	X	X	X		
Air Monitors	X	X	X	X		
Ethanol Analyzer	X	X	X	X		
Boom			X	X		
Incident Command						
Incident Commander	X	X	X	X		
Liaison Officer	X	X	X	X		
Information Officer	X	X		X		
Safety Officer			X			
Operations Section Chief				X	X	X
Planning Section Chief				X	X	X
Logistics Section Chief				X	X	X
Finance/Admin. Section Chief	X	X				
Environmental Unit Leader			X	X		
Equipment Possession						
Cell Phone	X	X	X	X	X	X
Plant Radio	X	X	X	X	X	X

*Additional equipment from OSROs can be found in Appendix I.

Appendix E
Spill Response Checklist

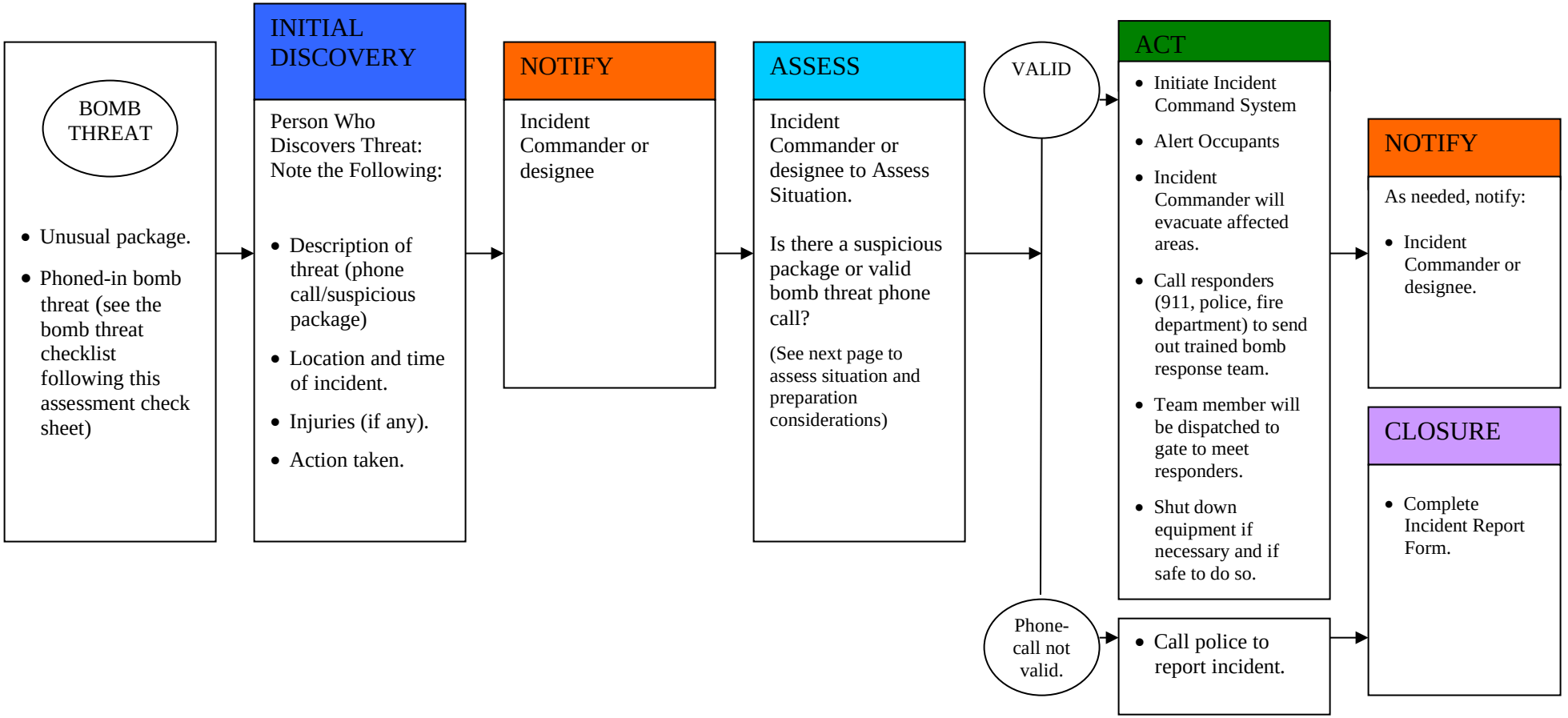
Spill Response Checklist

Name of Incident Commander: _____
Date and Time of Spill: _____

Step	Date Complete	Signature upon Completion
Assess the situation using the NRC Spill Response Notification Form in Appendix G		
Activate the internal alarms and hazard communication systems to notify all facility personnel of evacuation (if necessary)		
Notify all response personnel and provide them results of the assessment		
Ensure emergency medical attention is provided (if required)		
Notify and provide necessary information to appropriate Federal, State, and local authorities as outlined in Appendix B		
Contact OSROs and direct personnel in control, rescue and clean-up operations		
Supervise disposal, clean-up and post-incident management activities		

Appendix F
Emergency Response Quick Reference Sheets

Bomb Threat



IMPORTANT PHONE NUMBERS

Department Supervisor ..... Access Paging System

Incident Commanders ..... See Next Page

Emergencies (Fire, Police, Ambulance) 911

USEPA National Response Center (NRC) 800-424-8802

Oregon Department of Environmental Quality (ODEQ)
Oregon Emergency Response System 800-452-0311
ODEQ Emergency Response (24 hour).....800-452-4011
ODEQ Regional Office…….(503) 229-5614

Columbia County Sheriff…… 503-397-2511

Utilities
Electric: 503-728-2163
Natural Gas: 800-826-7724

Health and Safety
Oregon OSHA (Portland Office) . (503) 229-5910

Bomb Threat

Situation Assessment Fact Sheet

The following information has been provided as a guide for the situation assessment. This information is not a complete list of all factors required to be considered.

Initial Discovery of threat.

- Obtain information as to the time of the call and the exact words used. Did the caller or reporter describe what type of bomb it is, where it is and what time it will explode? Did the caller give a motive? Was the caller male or female? Was there any background noise? **See attached bomb threat checklist for detailed questions to ask when a bomb threat is called in.**

- For suspicious and/or unusual packages: Get detailed information on the source of the threat as may be available including the description of any suspicious items, markings or identifying addresses, **BUT DO** NOT TOUCH OR MOVE ANY SUSPICIOUS PACKAGE OR ITEM.

- For written bomb threats: save all materials for evidence.

Notify the Incident Commander or designee of the threatening situation and provide detailed information about it.

- The Incident Commander or designee will implement Incident Command System and notify Fire Department/Police. A designated team member will be dispatched to the gate to meet the responders.

- The Incident Commander or designee will make the decision whether to evacuate all or a portion of the facility. The Incident Commander will issue the Evacuation notice and immediately notify plant personnel via the in-plant intercom system and coordinate response actions with the Police. All evacuated personnel are to go to the evacuation Rally point and remain there until told to go back by the Incident Commander or designee. Designated team members will take a head count of the personnel working in their areas.

- Once evacuated, prevent re-entry back into the facility until the situation has been assessed. If possible, turn off all gas and fuel lines.

CPBR will plan ahead in the consideration of a bomb threat and when a bomb threat has been identified, as follows:

- Personnel familiar with the surrounding area should be able to quietly identify items which appear to be out of place.

- Two-way radios will not be used. Therefore, “runners” designated by the Incident Commander or designee must be used to communicate within the plant.

- Designate a control center location with a focal point for telephone or radio communications with communication procedures and telephone numbers.

- Do not put a suspicious article in water, or in a desk drawer or a filing cabinet.

- If possible, open windows and doors to assist in venting in case of an explosion.

- Bomb searches will be conducted by trained personnel.

Incident Commanders

Qualified Incident Commander Name: 24-Hour Phone: Contact requirements:
Title: Plant Manager For all emergencies

Alternate Qualified Incident Commanders
Name: 24- Hour Phone:
Title: General Manager Contact requirements: For all emergencies

Name: 24-Hour Phone:
Title: Environmental and Safety Manager
Contact requirements: For all emergencies including safety and environmental

BOMB THREAT CHECKLIST

Exact time of call _____AM or PM

Exact words of caller

_____

_____

_____

QUESTIONS TO ASK (ask questions to keep caller on the line)

1. When is bomb going to explode? _____

2. Where is the bomb? _____

3. What does it look like? _____

4. What kind of bomb is it? _____

5. What will cause it to explode? _____

6. Did you place the bomb? _____

7. Why? _____

8. Where are you calling from? _____

9. What is your address? _____

10. What is your name? _____

CALLER'S VOICE (circle)

Calm	Disguised	Nasal	Angry	Broken
Stutter	Slow	Sincere	Lisp	Rapid
Giggling	Deep	Crying	Squeaky	Excited
Stressed	Accent	Loud	Slurred	Normal

If voice is familiar, whom did it sound like? _____

Were there any background noises? _____

Remarks: _____

Person receiving call: _____

Telephone number call received at: _____

Date: _____

Oil Spill Response

INITIAL DISCOVERY

Person Who Discovers Oil Spill: Note the Following:

Provide:

- Type of incident.
- Location and time of spill.
- Amount of material spilled (if known).
- See next page for initial release assessment protocol.

NOTIFY

IC or Alternate.

ASSESS

Incident Commander or Alternate to Assess Situation.

Health & Safety threat to personnel, plant or community?

An immediate threat to worker is when a spill of oil threatens life or exposure to acute health impacts to unprotected workers whether by routes of ingestion, inhalation, or dermal absorption. Personnel must evacuate the hazard area immediately.

See next page to conduct Incident Assessment.

THREAT

NON THREAT

ACT Safety

- Initiate Incident Command System
- Shut down equipment if necessary.
- Extinguish all sources of flame or sparks near affected area (smoking, welding, burning, etc.).
- Check for explosion hazard.
- Check personnel exposure.
- Call responders (911, etc.) for potential fire, explosion.
- Team member will be dispatched to gate to meet responders.
- Alert hospital if necessary.

ACT Notify

Notify NRC:
800-424-8802

- Any amount with a sheen to the Columbia River.

Notify ODEQ:
800-452-0311

- Any amount with a sheen to the Columbia River.
- Any amount over 42 gallons on land.

Notify Washington EMD:
800-258-5990

- Any amount with a sheen to the Columbia River (shared water with Oregon)
- Other notifications as required.

ACT Response

- Incident Commander Notify Oil Spill Response Organization

Cowlitz Clean Sweep
(360) 423-6316

- Facility personnel contain the spill if on land (if safe to do so).
- Qualified Individual at facility deploy on-site spill response boat and containment boom within one-hour of spill to the Columbia River.

Response Completion

Properly contain, clean and dispose of residue.

CLOSURE

- Complete incident report.
- Complete Agency reporting, if required.
- Complete Incident Response Critique.

IMPORTANT PHONE NUMBERS

Department Supervisor ..... Access Paging System

Incident Commanders..... See Back of Page

Emergencies (Fire, Police, Ambulance) 911

USEPA National Response Center (NRC) 800-424-8802

Oregon Department of Environmental Quality (ODEQ)
Oregon Emergency Response System 800-452-0311
ODEQ Emergency Response (24 hour).....800-452-4011
ODEQ Regional Office…….(503) 229-5614
Washington Emergency Management Division
(EMD)…… 800-258-5990

Columbia County Sheriff…… 503-397-2511

Health and Safety
Oregon OSHA (Portland Office) (503) 229-5910

Utilities
Electric: ……..503-728-2163
Natural Gas: …….800-826-7724

Oil Spill Response

Situation Assessment Fact Sheet

The following information has been provided as a guide for the situation assessment. This information is not a complete list of all factors required to be considered.

The Discoverer of the oil spill/release will determine the following and notify the Incident Commander or alternate:

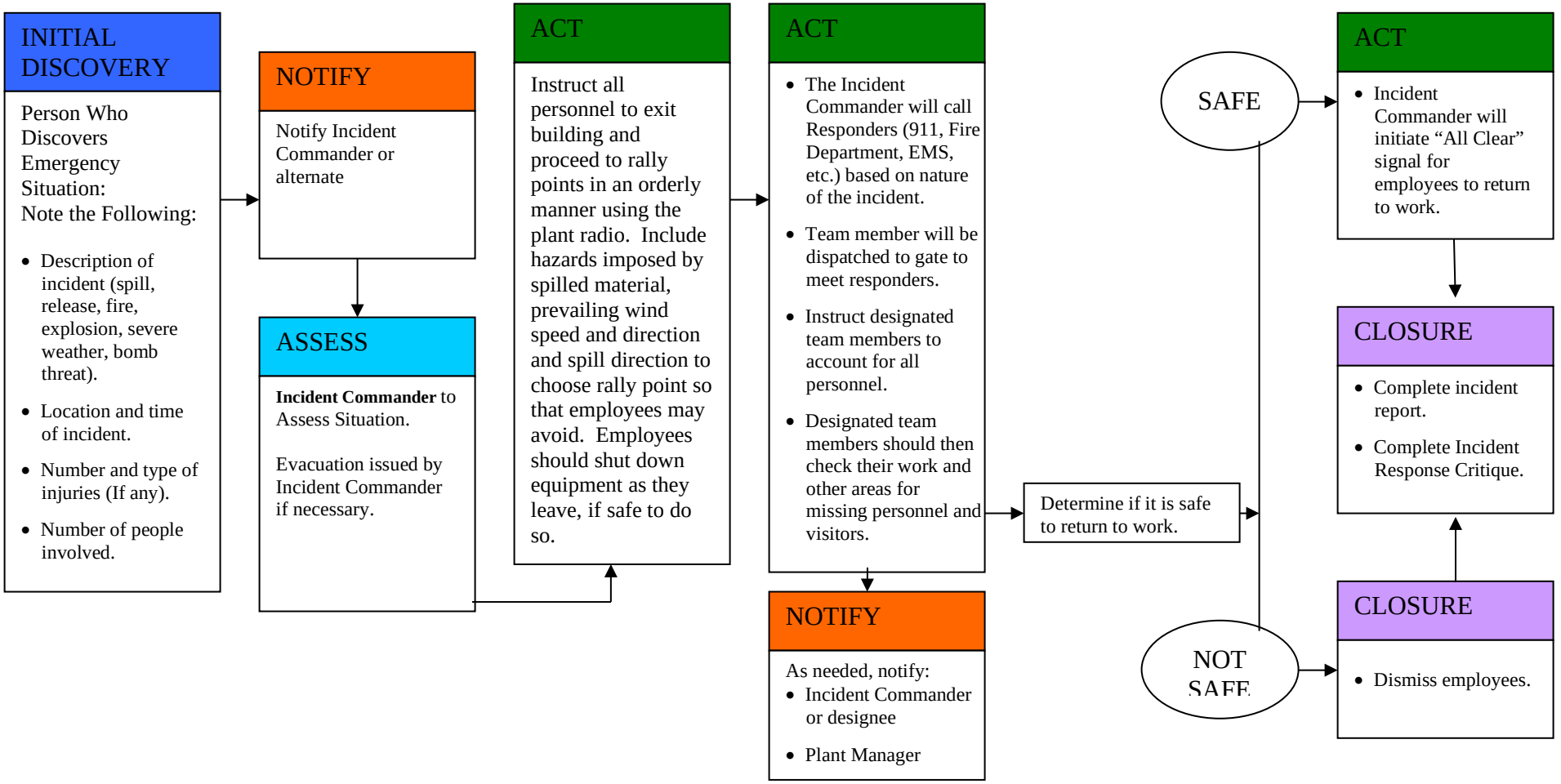
- What type of regulated oil has spilled;
- Where is the spill location;
- Type of spill – on land or water;
- Approximate spill rate (e.g., gallons per minute);
- Approximate area (square feet) of liquid pool,
- Is the spill contained;
- What is the estimated time to contain the spill;
- Duration (an estimate in minutes as to how long before the spill source can be stopped).
- Are there health and/or physical (such as explosion or fire) hazards? Is the release to the environment which results in the presence of oil and/or hazardous material vapors within buildings, structures, or underground utility conduits at a concentration equal or greater than 10% of the LEL?
- If it can be done safely, minimize spreading of the release by using absorbent booms, socks, or oil dry material. Otherwise, leave the area and wait for emergency response personnel to arrive.
- Notify the facility Incident Commander or designee to implement the Incident Command System. The Incident Commander or designee will compute the release of a hazardous substance and the associated reportable quantity and make the appropriate notifications. Volatile organics may vaporize, requiring the computation of release of these compounds to the atmosphere.
- In the event of an evacuation, the Incident Commander or designee and designated team members will ensure that all unauthorized personnel are kept from entering the evacuated areas. All personnel are to go to the designated rally point and remain there until told to go back by the Incident Commander or designee. Designated team members will take a head count of the personnel working in their areas. See **Evacuation Procedures**.
- The Incident Commander or designee will identify and assess the character, source(s), amount, and extent of the spill.
- The Incident Commander or designee will determine the level of response required to respond to the spill. In the event of a spill to the Columbia River, deploy the spill response boat and containment boom within one hour of discovery.
- The Incident Commander will notify the OSRO(s).
- An emergency zone around the hazard area shall be established to prevent unauthorized entry. If necessary, a designated team member will isolate the area prior to team arrival. At no time are any team members to risk their lives to isolate the area.
- Following the spill cleanup operations, an assessment shall be made as to the proper handling of recovered materials. Laboratory analysis of the recovered material may be necessary to determine the appropriate disposal method for the material.
- Once the emergency event has been properly assessed, controlled, contained and secured, the Incident Commander will be responsible for ensuring proper treatment, storage and disposal of any wastes, equipment or other materials generated by the incident in accordance with federal, state and local requirements.

Incident Commanders

Qualified Incident Commander Name: 24-Hour Phone: Contact requirements:
Title: Plant Manager For all emergencies

Alternate Qualified Incident Commanders
Name: 24- Hour Phone:
Title: General Manager Contact requirements: For all emergencies

Evacuation Plan Procedures



IMPORTANT PHONE NUMBERS

Department Supervisor ..... Access Paging System

Incident Commanders..... See Back of Page

Emergencies (Fire, Police, Ambulance) 911

USEPA National Response Center (NRC) 800-424-8802

Oregon Department of Environmental Quality (ODEQ)
Oregon Emergency Response System 800-452-0311
ODEQ Emergency Response (24 hour).....800-452-4011
ODEQ Regional Office……(503) 229-5614

Columbia County Sheriff…… 503-397-2511

Utilities
Electric: 503-728-2163
Natural Gas: 800-826-7724

Health and Safety
Oregon OSHA (Portland Office) . (503) 229-5910

Evacuation Plan

Situation Assessment Fact Sheet

The following information has been provided as a guide for the situation assessment. This information is not a complete list of all factors required to be considered. **CPBR will plan ahead in the consideration of evacuations, as follows:** Personnel should ensure that tools, carts and associated items are not blocking aisles, if possible, to preventions obstructions during evacuations.

Evacuation actions:

- Be aware of wind direction. Wind socks are located at the facility to determine wind direction. Keep the evacuation area upwind, as necessary. The Incident Commander or designee or Plant Manager will locate an alternate evacuation area if wind direction changes.
- All vehicle traffic within the plant will cease in order to allow safe exit of personnel and movement of emergency equipment. Vehicles will be parked off the main aisles without blocking exit aisles or doors. The keys must remain with the vehicles.
- All personnel, visitors and contractors will immediately leave the plant area and proceed to the primary or alternate rally point. The evacuation routes are posted throughout the plant and are shown on Figure 4. Depending on the specifics of the incident, take effort to avoid locations of stored hazardous materials that may be involved in the incident. These materials are shown on Figure 4.
- If needed, all personnel, visitors and contractors will be directed to an offsite rally point at the CPBR guard station equipped with phone and parking if the onsite rally point is within the danger zone for the specific incident.
- The Administrative Assistant will be responsible for taking the visitor log list and a current employee list to the rally point.
- No persons shall remain or re-enter the location unless specifically authorized by the Incident Commander or designee.
- The Control Room can be used to shelter-in-place, if necessary.
- In cases where buildings are being evacuated, operators should shut down their machinery, if safe and possible.
- The Incident Commander or designee and designated team members will take a head count using employee and contractor lists at the rally point to determine if there are any missing persons.
- No attempt to find persons not accounted for will involve endangering lives of others by re-entry into emergency areas. Rescue services for injured persons will be obtained, where required.
- The Incident Commander will relay all pertinent information to the emergency responders.
- Re-entry into the area will be made only after clearance is given by the Incident Commander or Incident Commander or designee. An "All Clear" signal will be given for re-entry into the plant; and
- In all questions of accountability, designated team members will be held responsible for those persons reporting to them. Visitors will be the responsibility of those personnel they are seeing. Contractors are the responsibility of those persons administering the individual contracts.
- Personnel must not leave the assembly area until the “all clear” signal is given, or until they are released to go home.
- Injured personnel should be transported to St. John Hospital in Longview if necessary and ambulance is not available.
- In the event that the primary evacuation route is blocked or determined not to be appropriate, an alternate route will be followed. The primary and alternate evacuation routes are as follows:

Primary Rally Point/Command Center: Proceed to your nearest exit, as indicated within the various work areas of the facility and exit the buildings. After exiting the buildings proceed to designated rally point in an orderly fashion. The rally point is in the administration parking lot.

Alternate Rally Point/Command Center: If directed to use the alternate evacuation route, please proceed to the nearest exit, as directed within the various work areas of the facility and exit the building. After exiting the buildings proceed to the alternate rally point in an orderly fashion. The alternate rally point is at the security guard station.

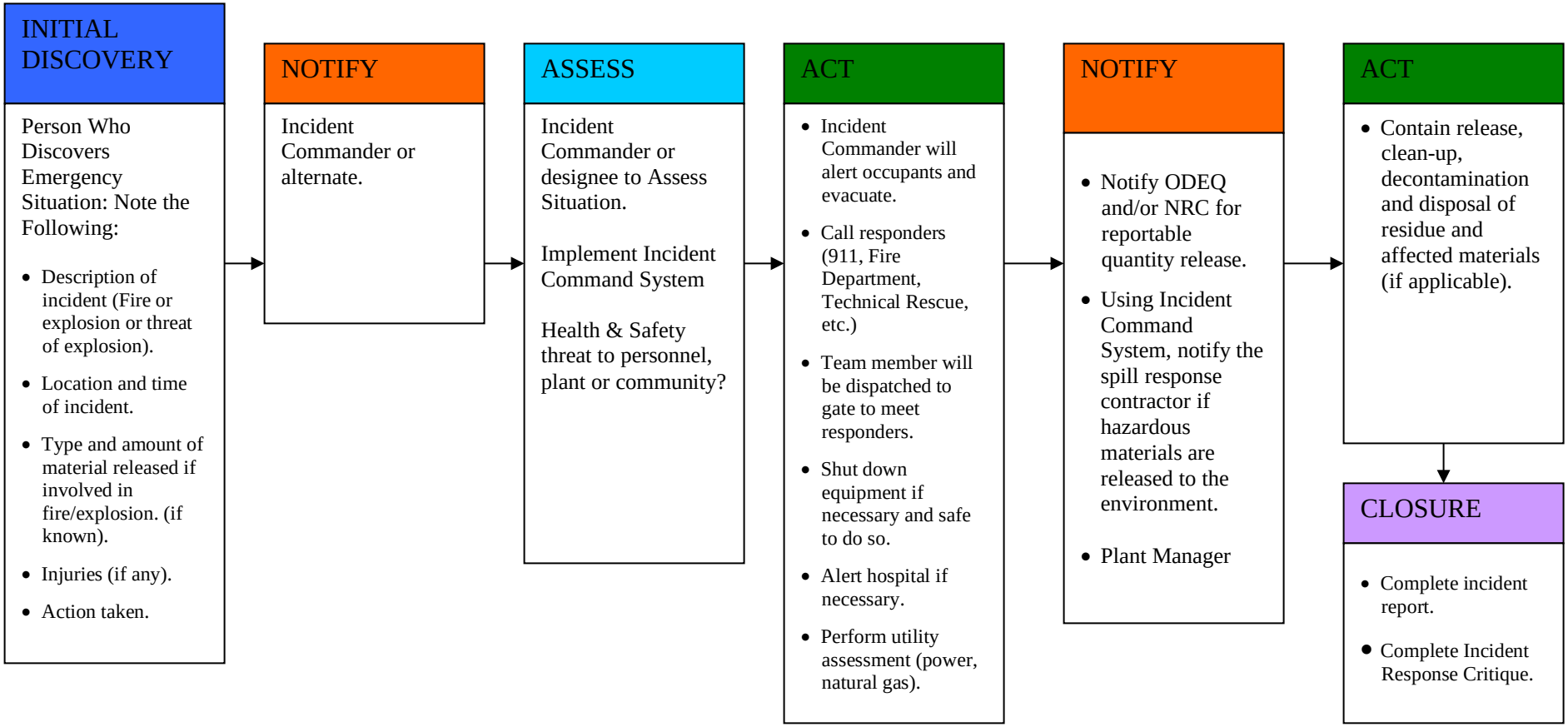
Incident Commanders

Qualified Incident Commander Name: 24-Hour Phone: Contact requirements: For all emergencies
Title: Plant Manager

Alternate Qualified Incident Commanders
Name: 24- Hour
Title: General Manager Contact requirements: For all emergencies

Na Environmental and Safety Manager
Contact requirements: For all emergencies including safety and environmental

Fire/Explosion



IMPORTANT PHONE NUMBERS

Department Supervisor ..... Access Paging System

Incident Commanders..... See Back of Page

Emergencies (Fire, Police, Ambulance) 911

USEPA National Response Center (NRC) 800-424-8802

Oregon Department of Environmental Quality (ODEQ)
Oregon Emergency Response System 800-452-0311
ODEQ Emergency Response (24 hour).....800-452-4011
ODEQ Regional Office……(503) 229-5614

Columbia County Sheriff…… 503-397-2511

Utilities
Electric: 503-728-2163
Natural Gas: 800-826-7724

Health and Safety
Oregon OSHA (Portland Office) . (503) 229-5910

Fire/Explosion

Situation Assessment Fact Sheet

The following information has been provided as a guide for the situation assessment. This information is not a complete list of all factors required to be considered.

- Using Incident Command System, the Incident Commander or designee will evaluate the need for evacuation.
- Identify the impact to human health, the environment or the plant if the fire were to spread.
- What type of fire is it (electrical, chemical, other)?
- Keep unnecessary people away from the area.
- Consider if it is safe or desirable to shut off power to the area.
- Contact the Incident Commander or designee to determine if fire control materials (water, foam, etc.) must be treated as a spill material.
- Monitor equipment and building systems after restart.

***For small fires**:*

- If the building or equipment is on fire, area personnel should check the area for hazardous material/hazardous waste storage or other flammable materials and remove all suspected materials from the area, if possible.
- Response personnel to prevent unauthorized entry into the area shall establish an emergency zone around the hazard area.
- Only personnel trained in the use of fire extinguishers per 29 CFR 1910.157 should extinguish flames with fire extinguishers.
- If a hazardous material release was involved with the fire, emergency response personnel will follow spill response guidelines specified in Hazardous Material Release Response Section. Response personnel must use non-sparking tools when cleaning up a spill of flammable material.

For Fires that require off-site help:

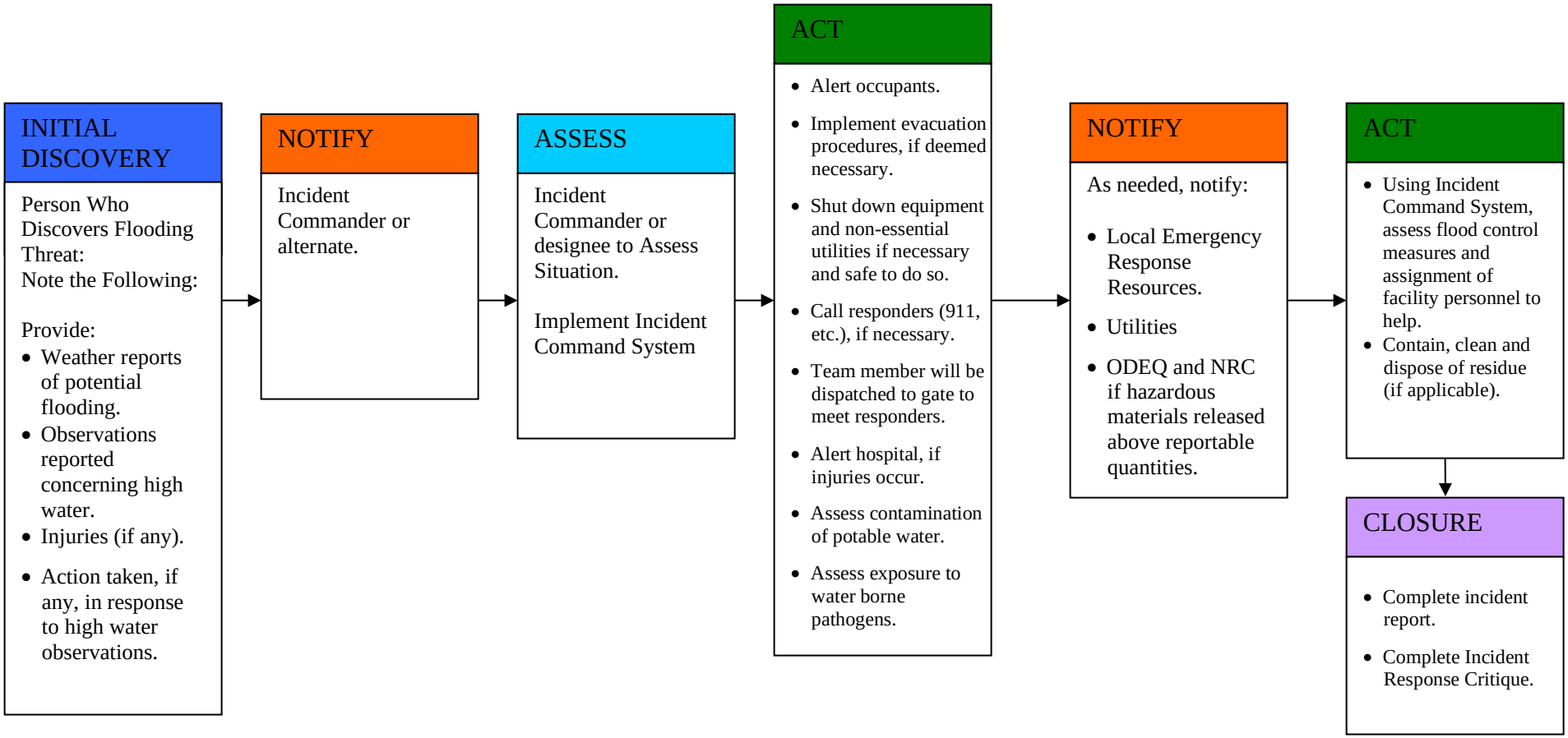
- Notify the Incident Commander or designee to decide whether emergency evacuation is needed.
- The Incident Commander will issue an immediate evacuation as determined through the Incident Command System following **Evacuation procedures.**
- Notify the Fire Department.
- Team member will be dispatched to gate to meet responders.
- All personnel, except those designated by the Incident Commander or designee, shall evacuate the area immediately via the nearest exit and assemble in the rally point.
- If a hazardous material is involved in the fire, an attempt should be made to determine the nature of the burning material using knowledge of the container contents.
- When the Fire Department arrives, primary responsibility will be delegated to them. The Incident Commander should stand by to assist the Fire Department if needed.
- Emergency response personnel will contain and collect material and contaminated fire water runoff with earthen dikes, sand, absorbent, etc. via the spill response procedures.
- During an evacuation, the Incident Commander or designee and designated team members will ensure that all unauthorized personnel are kept from entering the evacuated areas. All personnel are to go to the Rally point and remain there until told to go back by the Incident Commander or designee. Designated team members will take a head count of the personnel working in their areas. See **Evacuation Procedures** for further information.
- The Incident Commander or designee will evaluate whether the hazardous material release is recordable and notify ODEQ and NRC, if applicable.
- If a hazardous material release was involved with the fire, emergency response personnel will follow spill response guidelines specified in **Hazardous Material Release Response Section**. If there is a release to the environment, the Emergency Spill Response Contractor will be notified by the Incident Commander.

Incident Commanders

Qualified Incident Commander Name: 24-Hour Phone: Contact requirements:
Title: Plant Manager For all emergencies

Alternate Qualified Incident Commanders
Name: 24- Hour Phone:
Title: General Manager Contact requirements: For all emergencies

Flooding



IMPORTANT PHONE NUMBERS

Department Supervisor ..... Access Paging System

Incident Commanders..... See Back of Page

Emergencies (Fire, Police, Ambulance) 911

USEPA National Response Center (NRC) 800-424-8802

Oregon Department of Environmental Quality (ODEQ)
Oregon Emergency Response System 800-452-0311
ODEQ Emergency Response (24 hour).....800-452-4011
ODEQ Regional Office……(503) 229-5614

Columbia County Sheriff…… 503-397-2511

Utilities
Electric: 503-728-2163
Natural Gas: 800-826-7724

Health and Safety
Oregon OSHA (Portland Office) . (503) 229-5910

Flooding

Situation Assessment Fact Sheet

The following information has been provided as a guide for the situation assessment. This information is not a complete list of all factors required to be considered.

- Listen to the radio for weather updates.
- Listen for disaster sirens and warning signals.
- Be aware that flash flooding can occur. If there is any possibility of a flash flood, move immediately to higher ground. Do not wait for instructions to move.
- Be aware of streams, drainage channels, and other areas known to flood suddenly. Flash floods can occur in these areas with or without such typical warnings as rain clouds or heavy rain.
- If the plant is flooded, work with plant maintenance and/or trades to de-energize equipment (if safe to do so). Do not touch electrical equipment if you are wet or standing in water.
- Do not walk through moving water. Six inches of moving water can make you fall. If you have to walk in water, walk where the water is not moving. Use a stick to check the firmness of the ground in front of you.
- Do not drive into flooded areas. If floodwaters rise around your car, abandon the car and move to higher ground if you can do so. Be aware of areas where flood waters may have receded and weakened road surfaces.
- Stay away from and report downed power lines.
- Stay away from disaster areas unless authorities ask for volunteers.

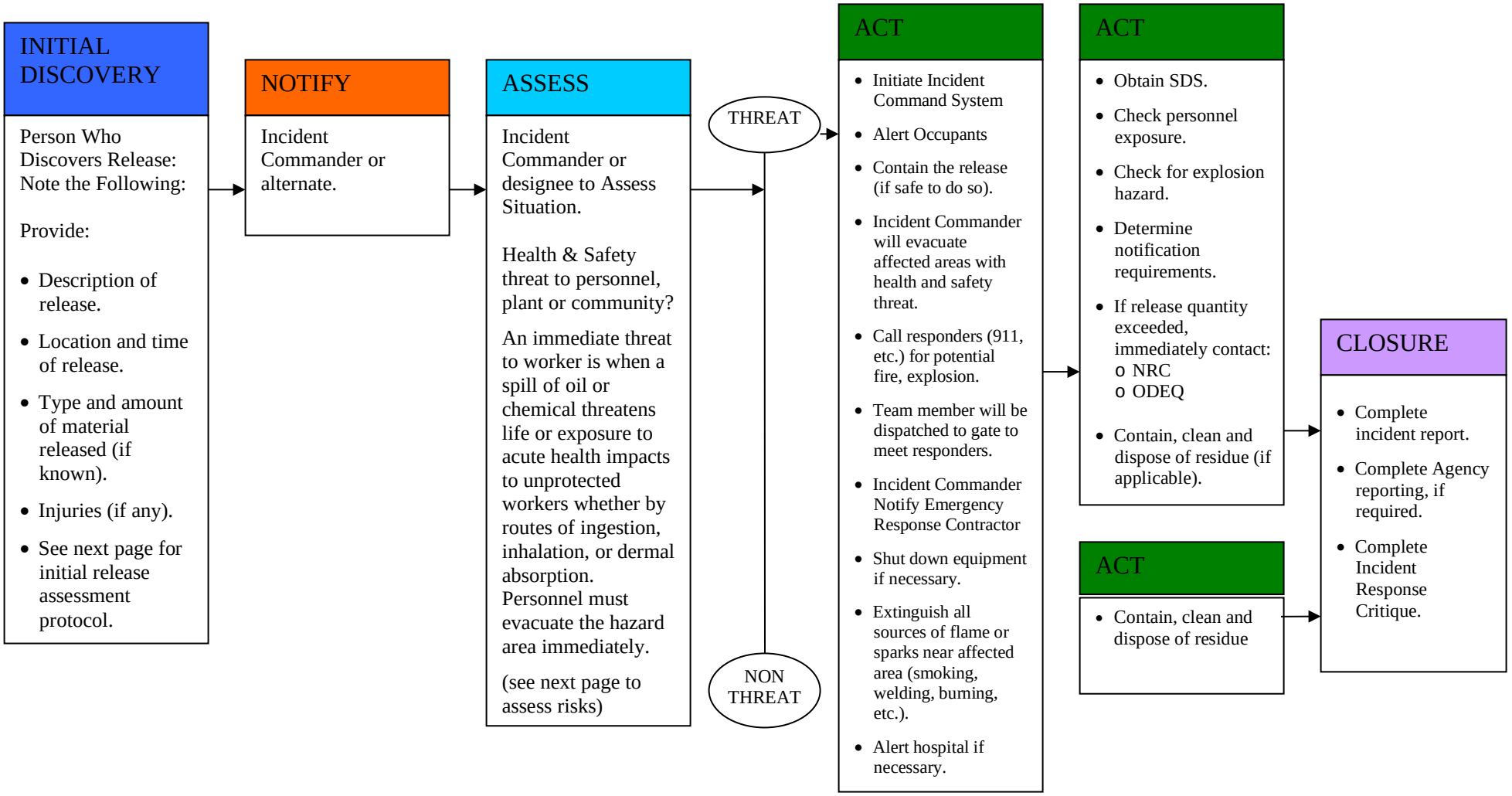
- Consider health and safety needs. Wash your hands frequently with soap and clean water if you come in contact with flood waters.
- If water supply has been contaminated, post signs warning people not to drink the water. Contact the Incident Commander or designee to arrange for flushing, disinfection and testing of the water lines.

Incident Commanders

Qualified Incident Commander Name: 24-Hour Phone: Contact requirements:
Title: Plant Manager For all emergencies

Alternate Qualified Incident Commanders
Name: Hour Phone:
Title: General Manager Contact requirements: For all emergencies

Hazardous Material Release



IMPORTANT PHONE NUMBERS

Department Supervisor ..... Access Paging System

Incident Commanders..... See Back of Page

Emergencies (Fire, Police, Ambulance) 911

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Oregon Department of Environmental Quality (ODEQ)
Oregon Emergency Response System 800-452-0311
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Health and Safety
Oregon OSHA (Portland Office) . (503) 229-5910

Utilities
Electric: ……..503-728-2163
Natural Gas: ……800-826-7724

Hazardous Material Release

Situation Assessment Fact Sheet

The following information has been provided as a guide for the situation assessment. This information is not a complete list of all factors required to be considered.

The Discoverer of the spill/release will determine the following and notify the Incident Commander or designee and Plant Manager:

- What type of material is leaking or being released (acid, caustic, flammable substance);
- Where is the release location;
- Type of release (i.e., liquid and/or vapor and or aerosol);
- Approximate release rate (e.g., gallons per minute);
- Approximate area (square feet) of liquid pool,
- Is the leak contained;
- What is the estimated time to contain the leak;
- Is the leak repairable;
- Duration (an estimate in minutes as to how long before the release can be stopped).
- Are there health and/or physical (such as explosion or fire) hazards? Is the release to the environment which results in the presence of oil and/or hazardous material vapors within buildings, structures, or underground utility conduits at a concentration equal or greater than 10% of the LEL?
- If it can be done safely, minimize spreading of the release by using absorbent booms, socks, or oil dry material. Otherwise, leave the area and wait for emergency response personnel to arrive. **Note: Do not use organic material such as peat moss or saw dust on acid spills.**
- Notify the facility Incident Commander or designee to implement the Incident Command System. The Incident Commander or designee will compute the release of a hazardous substance and the associated reportable quantity and make the appropriate notifications. Volatile organics may vaporize, requiring the computation of release of these compounds to the atmosphere.
- In the event of an evacuation, the Incident Commander or designee and designated team members will ensure that all unauthorized personnel are kept from entering the evacuated areas. All personnel are to go to the designated rally point and remain there until told to go back by the Incident Commander or designee. Designated team members will take a head count of the personnel working in their areas. See **Evacuation Procedures**.
- The Incident Commander or designee will identify and assess the character, source(s), amount, and extent of released materials.
- The Incident Commander or designee will determine the level of response required to approach the chemical release. The Incident Commander or designee will use Material Safety Data Sheets and professional judgment to define the level of emergency response to be used. OSHA requires that all handling of hazardous materials be conducted by certified trained technicians.
- The Incident Commander will notify the Emergency Response Contractor.
- An emergency zone around the hazard area shall be established by the Emergency Response Contractor to prevent unauthorized entry. If necessary, a designated team member will isolate the area prior to team arrival. At no time are any team members to risk their lives to isolate the area.
- Following the spill cleanup operations, an assessment shall be made as to the proper handling of recovered materials. Laboratory analysis of the recovered material may be necessary to determine the appropriate disposal method for the material.
- Once the emergency event has been properly assessed, controlled, contained and secured, the Incident Commander will be responsible for ensuring proper treatment, storage and disposal of any wastes, equipment or other materials generated by the incident in accordance with federal, state and local requirements.

Incident Commanders

Qualified Incident Commander Name: 24-Hour Phone: Contact requirements:
Title: Plant Manager For all emergencies

Alternate Qualified Incident Commanders
Name: Hour Phone:
Title: General Manager Contact requirements: For all emergencies

Medical Emergency

INITIAL DISCOVERY

Person who discovers a medical Emergency:
Note the Following:

Provide:

- Description of incident (what happened).
- Location and time of incident.
- Action taken.
- Number and type of injuries (if any).
- Number of people involved.

NOTIFY

Incident Commander or alternate.

ASSESS

Incident Commander or designee to Assess Situation.

The Incident Commander or designee will implement the Incident Command System.

Determine cause and take precautionary measures to protect team members, contractors and visitors from further medical injury.

(see next page to assess risks)

ACT

- Provide medical attention (if safe) – use proper Personal Protective Equipment to protect from bloodborne pathogens.
- Call responders (911, ambulance) for emergency medical incident.
- Team member will be dispatched to gate to meet responders.
- Alert hospital, if necessary.
- Shut down equipment if necessary and safe to do so and use emergency equipment if necessary (fire extinguishers, spill control).
- Provide MSDS to Emergency Medical Services/Hospital.
- Contact spill response contractor to contain, cleanup and dispose of medical waste residue (if applicable).

NOTIFY

As needed, notify:

- Incident Commander or designee
- Plant Manager

CLOSURE

- Complete incident report
- Complete OSHA 300 log, if the medical emergency is a recordable incident.
- Complete Incident Response Critique.

IMPORTANT PHONE NUMBERS

Department Supervisor ..... Access Paging System

Incident Commanders..... See Back of Page

Emergencies (Fire, Police, Ambulance) 911

USEPA National Response Center (NRC) 800-424-8802

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ODEQ Regional Office……(503) 229-5614

Columbia County Sheriff…… 503-397-2511

Utilities
Electric: 503-728-2163
Natural Gas: 800-826-7724

Health and Safety
Oregon OSHA (Portland Office) . (503) 229-5910

Medical Emergency

Situation Assessment Fact Sheet

The following information has been provided as a guide for the situation assessment. This information is not a complete list of all factors required to be considered.

When a medical emergency is discovered: Notify the Incident Commander or designee and Plant Manager and describe the type of injury and location and time of injury. If situation is life threatening, any personnel in the immediate area may summon emergency aid from the outside by calling 911. If a head, neck, or back injury is involved, only a professional medical team shall move the victim unless the situation is life threatening.

The Incident Commander or designee will determine cause of the injury/medical emergency and will implement the Incident Command System to respond to incidences where other personnel may be exposed to injury or health and safety hazards that could result in further medical emergencies.

GENERAL

- Be aware of hazards associated with bloodborne pathogens. Do not come into contact with bodily fluids. Wear proper protective clothing (safety goggles, protective gloves, etc.)
- Facility response personnel will not enter small buildings during emergencies when the possibility of asphyxiation exists or confined spaces at any time. Regulatory requirements relative to confined space entry (29 CFR 1910.146) must be met. Such entry will be performed by outside personnel such as the Clatskanie Fire Department, who are trained in the use of self-contained breathing apparatus.
- Maintain accurate records of the names, medical history and medical progress of all injuries in the plant.
- Dispatch a responsible person to direct the Emergency Medical Service (EMS)/ambulance at the gate when they arrive.
- Make a detailed report of the injury. A statement is to be taken from any person(s) that witnessed the incident.

DECONTAMINATION

- Assure all contaminated clothing is turned over to the Incident Commander or designee for proper treatment and disposal.
- The Environmental Manager should serve as the focal point transferring information (including SDSs) to the hospital emergency department administrator about the properties of the hazardous substances or conditions at the scene.
- Ensure first responders are trained to appropriate level.

CLEANUP

- Cleanup immediately by persons trained in decontaminating procedures.
- Identify infectious material spills with a warning sign.
- Disinfect work surfaces, parts, materials, equipment and flooring that was involved.
- Personnel not involved in decontamination process should not handle any items before disinfection and disposal.

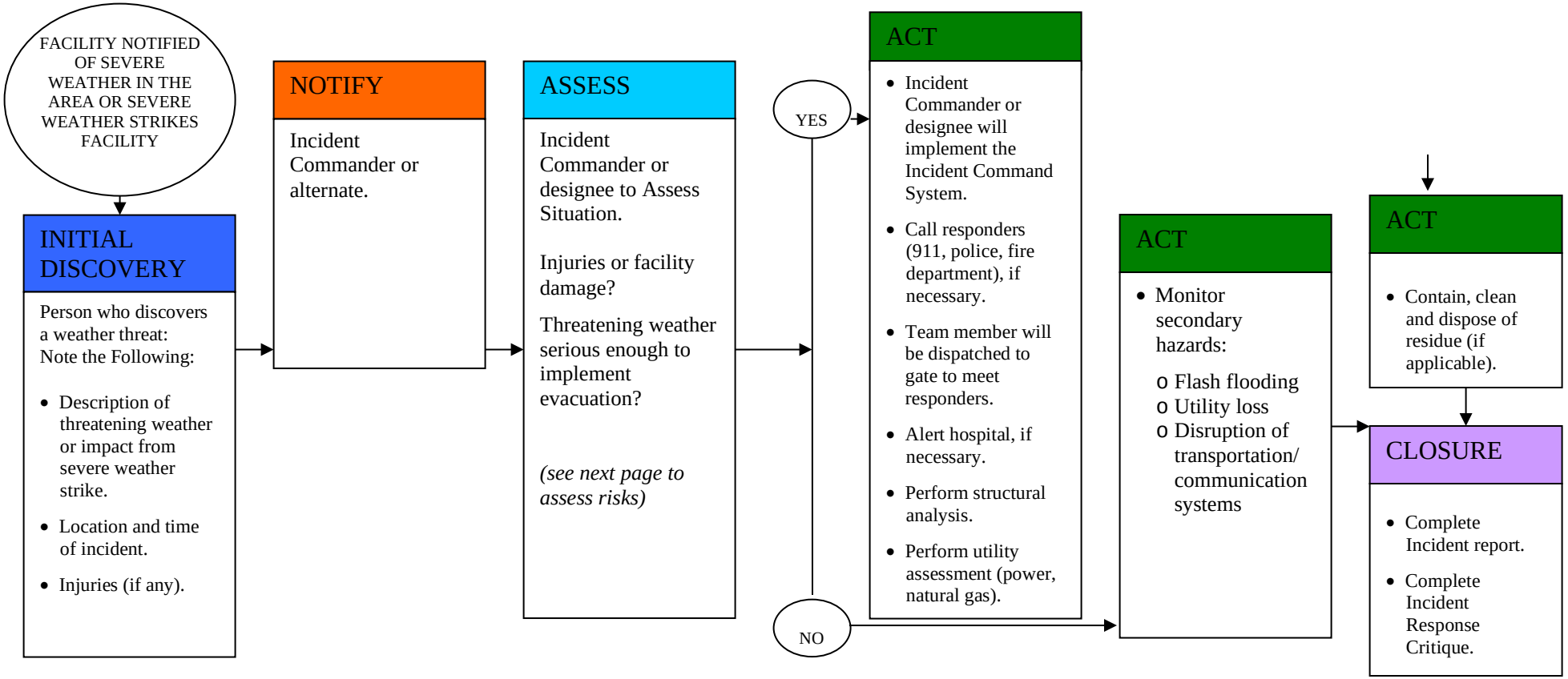
Complete incident report and OSHA 300 log, if the medical emergency is a recordable incident.

Incident Commanders

Qualified Incident Commander Name: 24-Hour Phone: Contact requirements:
Title: Plant Manager For all emergencies

Alternate Qualified Incident Commanders
Name: 24- Hour Phone:
Title: General Manager Contact requirements: For all emergencies

Severe Weather (lightning, high winds, hail, heavy rain, tornado)



IMPORTANT PHONE NUMBERS

Department Supervisor ..... Access Paging System

Incident Commanders..... See Back of Page

Emergencies (Fire, Police, Ambulance) 911

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Utilities
Electric: 503-728-2163
Natural Gas: 800-826-7724

Health and Safety
Oregon OSHA (Portland Office) . (503) 229-5910

Severe Weather (lightning, high winds, hail, heavy rain, tornado)

Situation Assessment Fact Sheet

The following information has been provided as a guide for the situation assessment. This information is not a complete list of all factors required to be considered.

- If necessary, shut down equipment and seek shelter in an orderly fashion.
- Avoid using telephones for other than emergency purposes.
- Personnel working outdoors should seek shelter inside buildings. Do not seek shelter under trees, towers or other tall metal or conductive structures.
- Severe weather shelters are identified on facility maps by exits.
- The Incident Commander or designee, in consultation with the Plant Manager, will decide if shutdown of the facility will be required.
- The Incident Commander or designee shall coordinate the appropriate facility shutdown procedures to be followed. Production personnel will be notified of shutdown procedures via the in-plant intercom system. Personnel may be notified by telephone not to report to work in the event of a plant shutdown.
- Once the shutdown operations are completed, the Incident Commander or designee will notify the Plant Manager or designated team member of the status of the shutdown.
- Following a severe weather emergency, the Incident Commander or designee should inspect the facility to verify it is safe for entry and operations.

Incident Commanders

Qualified Incident Commander Name: 24-Hour Phone: Contact requirements:
Title: Plant Manager For all emergencies

Alternate Qualified Incident Commanders

Name: 24- Hour Phone:
Title: General Manager Contact requirements: For all emergencies

Appendix G
NRC and OERS Spill Response Notification Forms

NRC SPILL RESPONSE NOTIFICATION FORM
Initial NRC notification must not be delayed pending collection of all information.
National Response Center - 1-800-424-8802 or (202) 267-2675

REPORTING PARTY

Name: _____
Phones: _____
Company: _____
Position: _____
Address: _____
City/State/Zip: _____

SUSPECTED RESPONSIBLE PARTY

Name: _____
Phones: _____
Company: _____
Address: _____
City/State/Zip: _____
Organization Type: _____

INCIDENT DESCRIPTION:
Were Material Discharged? Yes __No __Confidential? Yes__ No __Calling for Responsible Party? Yes __No ___
Meeting Federal Obligation to Report? Yes ___ No ___ Date and Time Called _____
Source and/or Cause of Incident: _____
Date of Release: ____/_____/_____ Time: _____ (a.m. _____ p.m. _____)
Incident Address/Nearest City/State/Zip/County: _____
Distance from City/Section/Township/Range: _____
Storage Tank Container Type: _____
Tank/Pipeline Oil Storage Capacity: _____
Facility Oil Storage Capacity: _____
Latitude: _____ Longitude: _____
Mile Post or River Mile: _____

MATERIALS:
Material Released: _____ Estimated Total Quantity: _____
Estimated Quantity in Water: _____

RESPONSE ACTION:
Actions taken to Correct, Control or Mitigate Incident: _____
_____
_____

IMPACTS:
Number of Injuries: _____ Number of Fatalities: _____
Were there Evacuations? Yes ___ No ___ Number Evacuated: _____
Were there Damages? Yes ____ No ____ Damage in Dollars: _____ Area Affected: _____
_____

ADDITIONAL INFORMATION:
Any information about the Incident not recorded elsewhere in the report: _____

CALLER NOTIFICATIONS:
NRC? Yes ___ No ___ USCG? Yes ___ No ___ EPA? Yes ___ No ___ State? Yes ___ No ___
Other: Yes ___ No ___ Describe: _____

OERS Spill Response Notification Form

SpillReleaseReportForm.pdf

SPILL/RELEASE REPORT

DEQ
State of Oregon
Department of
Environmental
Quality

1 - GENERAL INFORMATION **OERS No. _____**

a. Company/Individual Name: _____

b. Address: _____

_____

c. Company Contact Person: _____

d. Phone Number(s): _____

e. Report Prepared by: _____ Phone:_____

f. Specific on-site location of the release (and address if different from above):

_____

_____

Please provide a map of the site showing area(s) where the release occurred, any sample collection locations, location of roads/ditches/surface water bodies, etc.

2 - RELEASE INFORMATION

a. Date/Time Release started:_____ Date/Time stopped:_____

b. Release was reported to (specify Date/Time/Name of Person contacted where applicable):

ODEQ _____

OERS _____

NRC _____

Other (describe):_____

c. Person(s) reporting release:_____

d. Name, quantity and physical state (gas, liquid, solid or semi-solid) of material(s) released:

_____

_____

Please attach copies of material safety data sheets (MSDS) or constituent profiles for released material(s).

e. The release affected: ____Air ____Groundwater ____Surface Water ____Soil ____Sediment

f. Name and distance to nearest surface water body(s), even if unaffected (include locations of creeks, streams, rivers and ditches that discharge to surface water on maps):

_____

Has the release reached the surface water identified above?: ____Yes ____No
Could the release potentially reach the surface water identified above? ____Yes ____No
Explain:_____

_____

g. Depth to nearest aquifer/groundwater:_____

Is nearest aquifer/groundwater potable (drinkable)? ____Yes ____No
Has the release reached the nearest aquifer/groundwater? ____Yes ____No
Explain:_____

_____

h. Release or potential release to the air occurred? ____Yes ____No
Explain:_____
_____

i. Was there a threat to public safety? ____Yes ____No
j. Is there potential for future releases? ____Yes ____No
Explain:_____
_____

k. Describe other effects/impacts from release (emergency evacuation, fish kills, etc.):
_____
_____
_____

l. Describe how the release occurred. Include details such as the release source, cause, contributing weather factors, activities occurring prior to or during the release, dates and times of various activities, first responders involved in containment activities, etc.:
_____
_____
_____
_____
_____
_____

3 - SITE INFORMATION

a. Adjacent land uses include (check all that apply and depict on site maps):
____Residential ____Commercial ____Light Industrial ____Heavy Industrial
____Agricultural ____Other (describe):_____
b. What is the population density surrounding the site:_____
c. Is the site and/or release area secured by fencing or other means? ____Yes ____No
d. Soil types (check all that apply): ____alluvial ____ bedrock ____ clay ____sandy
____silt ____ silty loam ____artificial surface (cement/asphalt/etc.)
e. Describe site topography:_____
_____
_____

4 - CLEANUP INFORMATION

a. Was site cleanup performed? ____Yes ____No
If No, explain:_____
_____

b. Who performed the site cleanup?
Company Name:_____
Address: _____
_____
Cleanup Supervisor:_____
Phone Number(s): _____

c. Has all contamination been removed from the site? ____Yes ____No
If No, explain:_____

_____

d. Estimated volume of contaminated soil removed:_____

e. Estimated volume of contaminated soil left in place:_____

f. Was a hazardous waste determination made for cleanup materials? ____Yes ____No

g. Based on the determination, are the cleanup materials hazardous wastes?
____Yes ____No If Yes, list all waste codes:_____

h. Was contaminated soil or water disposed of at an off-site location? ____Yes ____No
If yes, attach copies of receipts/manifests/etc., and provide the following information:
Facility Name: _____
Address: _____
_____
Facility Contact: _____
Phone Number(s): _____

i. Is contaminated soil or water being stored and/or treated on-site? ____Yes ____No
If yes, please describe the material(s), storage and/or treatment area, and methods utilized (attach additional sheets if necessary):

_____

_____

_____

_____

j. Describe cleanup activities including what actions were taken, dates and times actions were initiated and completed, volumes of contaminated materials that were removed, etc. (attach additional sheets or contractor reports if necessary or more convenient):

_____

_____

_____

5 - SAMPLING INFORMATION
Attach copies of all sample data and indicate locations of sample collection on maps.

a. Were samples of contaminated soil collected? ____Yes ____No ____N/A
b. Were samples of contaminated water collected? ____Yes ____No ____N/A
c. Were samples collected to show that all contamination had been removed?
____Yes ____No ____N/A
d. Describe sampling activities, results and discuss rationale for sampling methods:

_____

_____

_____

_____

_____

6 - ADDITIONAL INFORMATION

a. Provide a description or plan outlining the list of actions to be taken to prevent future releases from occurring.

_____

_____

_____

_____

7 - SPILL REPORT CHECKLIST

To ensure that you have gathered all the information requested by the Department in this Spill/Release Report, please complete the following checklist:

____ Map(s), pre and post cleanup photos of the site showing buildings, roads, surface water bodies, ditches, waterways, point of the release, extent of contamination, areas of excavation and sample collection locations attached.

____ Material Safety Data Sheet (MSDS), or constituent profiles for released material(s) attached. **Note: an MSDS is not required for motor fuels.**

____ Sampling data/analytical results attached.

____ Receipts/manifests (if any) for disposal of cleanup materials attached.

____ Contractor reports (if any) attached.

If you would like to submit your report by e-mail an electronic version can be downloaded on the internet at this link: http://www.oregon.gov/deq/filterdocs/SpillReleaseReportForm.pdf. This form can then be submitted by e-mail to DOSPILLS@deq.state.or.us. Please ensure that emails submitted to DEQ are less than 8 MB each. Multiple emails can be submitted to the DEQ if a report has to be divided into smaller sections for transmittal.

I certify that based on information and belief formed after reasonable inquiry, the statements and information contained in this submittal are true, accurate and complete.

Signature:_____ Date:_____

Appendix H
Facility Emergency Response Equipment and Inspection Lists

4.8a_App H_Monthly
FRP Response Equipm

4.8b_App H_AST
Monthly Inspection.pc

4.8b_App
H_Secondary Contain

1. Spill Kits/Sorbents–

Operational Status/Time to Respond: 24/7 – 365 days IC on all shifts
Type: Spill Drums
Year Number: 2011
Capacity: 55 gallons
Date of Last Testing: N/A
Dates of purchase/Shelf Life: 10-20-2011
Locations: 10 throughout plant
Inspection/Testing Freq. Monthly
Design Limits None

2. Hand Tools –

Operational Status: Readily Available

Type & Year	Quantity	Storage Location
Shovels (Blade)	5	Main Process Building
Shovels (Scoop)	10	Main Process Building
Rakes (Steel)	5	Main Process Building
Brooms (24 inch Push)	10	Main Process Building
Squeegee (18 inch rubber blade)	5	Main Process Building
Eye Wash Stations and Showers	15	DDGS Storage, Main Process Building and Chemical Storage, Lab, Maintenance Building, DD&E, Boiler, and Office

3. Communication Equipment (include operating frequency and channel and/or cell numbers)

Operational Status: Readily Available

Type & Year	Quantity	Storage Location/Number
Portable, Intrinsically Safe Radios	65	Control Room, Administration, Maintenance, Gate, Personnel

4. Fire Fighting and Personnel Protective Equipment –

Operational Status: Readily Available

Type & Year	Quantity	Storage Location/Number
Portable Fire Extinguisher	Aprox. 10	Located strategically throughout facility
Fire Hydrants	16	Located strategically throughout facility
Fire Sprinkler System DD&E	214 heads	Located in DDE #1 and DDE #2
Fire Suppression Dryers	24 heads	Located at Dryers A and B
Dual Diesel Powered Water Pumps for F.S.S.	2	Located in the Fire Pump Building
Fire Water Tank (525,000 gallons)	1	Located in the Fire Suppression Complex

5. Other (e.g., Heavy Equipment, Boats and Motors, Boom)

Operational Status: Readily Available

Type, Model & Year	Quantity	Storage Location/Number	Design Limits
2008 Alumaweld Response Boat with 90HP Mercury motor	1	Main Site	Inland
2008 (24 feet) Flatbed “Boom Trailer”	1	Main Site	None
1000 feet Heavy Duty Containment Boom	1,000 ft	Main Site on “Boom Trailer”	Wave height < 3 feet Total tensile strength between 15,000 and 20,000 pounds
2011 Hyundai HL-770 9-Wheel Loader	1	Main Site	None
5000 feet Heavy Duty Containment Boom (Clean Rivers Cooperative)	5,000 feet	Near boat launch in trailer	Wave height < 3 feet Total tensile strength between 15,000 and 20,000 pounds

Note: CPBR does not maintain any skimmers or pumps on-site and therefore does not include the manufacturer’s nameplate capacity or the effective daily recovery rate. These will be provided by the CPBR OSRO. CPBR does not store or plan to use dispersants or dispersant dispensing equipment for oil spill response. The State of Washington does not allow the use of dispersants in the Columbia River, per the LCRGRP, unless authorized by the OSC.

Columbia Pacific Bio-Refinery
Monthly Response Equipment Checklist

Equipment	Quantity	Location(s)	Accessibility (time to access and respond)	Operational Status	Last Test Date/Actual Use	Shelf Life	Comments
Sorbents							
Spill Drums	10	Throughout plant	< 5 min				
Hand Tools							
Shovels (blade)	5	Main Process Building	< 5 min				
Shovels (scoop)	10	Main Process Building	< 5 min				
Rakes (steel)	5	Main Process Building	< 5 min				
Squeegee (18 inch rubber blade)	5	Main Process Building	< 5 min				
Eye Wash Stations and Showers	15	DDGS Storage, Main Process Building and Chemical Storage, Lab, Maintenance Building, DD&E, Boiler, and Office	< 5 min				
Communication Equipment							
Portable, Intrinsically Safe Radios	65	Control Room, Administration, Maintenance, Gate, Personnel	< 5 min				
Firefighting and Personal Protective Equipment							
Portable Fire Extinguishers	10	Strategically throughout facility	< 5 min				
Fire Hydrants	16	Strategically throughout facility	< 5 min				
Fire Sprinkler System	214 heads	Located in DDE #1 and DDE #2	<5 min				
Fire Suppression Dryers	24 heads	Located at Dryers A and B	<5 min				
Dual Diesel Powered Water Pumps for F.S.S.	2	Located in the Fire Pump Building	<5 min				
Fire Water Tank (525,000 gallons)	1	Located in the Fire Suppression Complex	<5 min				
Other							
Trash Pump Honda		Tank farm	< 5 min				
2008 Alumaweld Response Boat with 90HP Mercury motor	1	Main Site	< 5 min				
2008 (24 feet) Flatbed "Boom Trailer"	1	Main Site	< 5 min				
1000 feet Heavy Duty Containment Boom	1,000 ft	Main Site on "Boom Trailer"	< 5 min				
2011 Hyundai HL-770 9-Wheel Loader	1	Main Site	< 5 min				
5000 feet Heavy Duty Containment Boom (Clean Rivers Cooperative)	5,000 feet	Near boat launch in trailer	< 5 min				

Inspected by: _____

Signature: _____

Date: _____

Columbia Pacific Bio-Refinery

Monthly Above Ground Storage Tank Monitoring / Inspection Checklist

Name: _____

Date & Time: _____

Weather Conditions: _____

	Tank Name & ID Numbers											
	TK-6104	TK-6105	TK-6106	TK-6114	Z-7701	4540	EG-1001	EG-1002	firepump	fueling	fueling	Maint. Bldg.
	Ethanol/Crude/Ren. Diesel			Denaturant	Cor. Inhib.	Diesel/Loc	Diesel	Diesel	Diesel	Diesel	Gasoline	Oil Drums
	248,000 Gal	3,800,000 Gal	3,800,000 Gal	192,000 Gal	550 Gal	1,200 gal	2,000 gal	2,000 gal	500 gal	300 gal	500 gal	55 Gal/Drum
Tanks												
Check for condition of the paint on the tank for signs of drips marks, discoloration, puddles containing spilled or leaked material, corrosion, cracks, and localized dead vegetation.												
Foundation												
Check for signs of cracks, discoloration, puddles containing spilled or leaked materials, settling, gaps between tanks and foundation, and damage caused by vegetation roots.												
Piping												
Check for signs of droplets of stored material, discoloration, corrosion, bowing of pipe between supports, evidence of stored material seepage from valves or seals, and localized dead vegetation.												

Columbia Pacific Bio-Refinery

Monthly Secondary Containment Monitoring / Inspection Checklist

Name: _____

Date & Time: _____

Weather Conditions: _____

	Secondary Containment Name & ID Numbers											
	1 On-site Tank Farm (Ethanol, denaturant, denatured ethanol, crude oil, corrosion inhibitor spills at rail load-out) 285,400 Gal	2 Adjacent On-site Tank Farm (Denatured ethanol, crude oil or ethanol) 4,810,000 Gal	3 Chemical Storage Area (Sulfuric acid, sodium hydroxide, aqueous ammonia, individual containment cells) 13,200/13,600/85,000 Gal	4 Chemical Storage Area (Alpha Amylase, Gluco Amylase, Urea, individual containment cells) 8,100/8,100/21,000 Gal	5 Denatured Ethanol/Denaturant Truck Sump 9,600 Gal	EG-1001 Diesel 2,000 gal	EG-1002 Diesel 2,000 gal	firepump Diesel 500 gal	fueling Diesel 300 gal	fueling Gasoline 500 gal	SE Stormwater Pond	Outfall Pond
Dike or Berm System												
Check for level of precipitation in dike/available capacity, operational status of drainage valves, dike or berm permeability, debris, erosion, permeability of the earthen floor of diked area, and location/status of pipes, inlets, drainage beneath tanks, etc.												
Secondary Containment												
Check for signs of cracks, discoloration, presence of spilled or leaked material (standing liquid), corrosion, and valve conditions.												
Retention and Drainage Ponds												
Check for erosion, available capacity, presence of spilled or leaked material, debris, and stressed vegetation.												

Appendix I
OSRO Equipment Lists and Certificates

Appendix I
OSRO Equipment Lists and Certificates

Cowlitz Clean Sweep (CCS)

STANDBY EMERGENCY RESPONSE AGREEMENT

This Agreement is made this 17th day of October 2016, by andbetween Cowlitz Clean Sweep, a Washington corporation, with offices located at 55 International Way, Longview, WA 98632, ("Contractor") and Cascade Kelly Holdings, LLC, dba Columbia Pacific Bio-Refinery, organized in Oregon, with its principal place of business at 81200 Kallunki Road, Clatskanie, OR 97016 ("Customer").

WHEREAS, Contractor is engaged in the business of providing Emergency Response Services ("Services") to respond to discharges of oil or other hazardous substances; and

WHEREAS, Customer desires to engage Contractor to provide such Services in the event they are necessary; and

WHEREAS, Customer and Contractor desire to establish the terms and conditions pursuant to which such Services will be provided.

NOW, THEREFORE, in consideration of the mutual covenants contained herein and for other good and valuable consideration, the sufficiency and receipt of which are hereby acknowledged, the parties, intending to be legally bound, agree as follows:

ARTICLE 1. Purpose and Procedure

1.1 This Agreement establishes the terms and conditions pursuant to which Contractor may furnish Customer with certain Services in connection with response to discharges of oil or other hazardous substances.

1.2 This Agreement shall not obligate Customer to purchase Services from Contractor, nor shall it obligate Contractor to provide Services, but shall govern all orders for Services issued by Customer and which are accepted by Contractor. Contractor will use best efforts to respond to requests by Customer for Services.

1.3 If Customer desires to have Contractor provide services under this Agreement, Customer shall submit to Contractor a proposed project contract, in the form attached hereto as **Exhibit A** (the "Project Contract"), setting forth the specific services to be performed by Contractor (the "Services") with respect to a project. Contractor shall review its obligations under such proposed Project Contract and this Agreement and shall within five (5) days of receipt, return both copies of the proposed Project Contract to Customer either: (a) signed, if the terms and conditions thereof are acceptable to Contractor, or (b) unsigned, specifying any requested changes and additions; or (c) rejected.

ARTICLE 2. Scope of Services

2.1 The Services contemplated in connection with the response to discharges of oil or other hazardous substances shall be identified in the Project Contract and may include, but not be limited to, the following:

- o Containment, recovery, repackaging and removal of materials;
- o Site evaluation, decontamination and restoration;
- o Transportation, storage, treatment or disposal of wastes;
- o Technical services, including sampling, laboratory analysis, and other related services;
- o Standby of personnel and equipment in anticipation of imminent activation;
- o Training and mock spill drill deployments.

ARTICLE 3. Contractor's Obligations

3.1 Contractor shall provide supervision, labor, materials, tools, equipment and subcontracted items for the performance of the Services.

3.2 Contractor shall take necessary precautions for the safety of its employees, and shall comply with applicable provisions of the Occupational Safety and Health Act. It is understood and agreed, however, that Contractor shall not be responsible for the elimination or abatement of safety hazards created by or otherwise resulting from work being performed by Customer's employees, its other contractors or agents.

3.3 Contractor shall acquire or maintain any and all permits and licenses required for the performance of Services.

3.4 During the performance of all Services, Contractor's employees shall, while on Customer's premises, comply with all of Customer's rules and regulations applicable to Customer's employees, including but not limited to Customer's rules and regulations pertaining to safety and drug-free workplace. Contractor and its employees and independent contractors shall cooperate with Customer's representatives in the performance of the Services. Access to Customer's premises for performance of Contractor's duties hereunder will be strictly limited to those employees, agents or representatives of Contractor approved by Customer or necessary to carry out the performance of Contractor's duties and obligations under this Agreement.

3.5 In the performance of all Services and each Project Contract, Contractor shall comply with all applicable federal, state and local laws, rules, regulations and orders, including those which may become effective after the date of this Agreement.

ARTICLE 4. Customer's Obligations

4.1 Customer shall provide full and complete information regarding its requirements for the Services.

4.2 Customer shall designate a representative ("Customer's Representative") in the Project Contract who shall be fully acquainted with the Services to be provided hereunder and who shall be authorized to approve changes in the Services; render decisions promptly; authorize commitments and expenditures on behalf of Customer; approve Contractor's daily worksheets and to accept, verify and approve Contractor's invoices.

4.3 Customer shall be responsible for repairs to all private property, roadways, structures and rights-of-way resulting from Contractor's reasonable and normal use thereof. Contractor remains responsible for any repairs made necessary by the Contractor's negligence, intentional acts, or breach of this Agreement.

4.4 Customer shall provide payment to Contractor for the services provided by Contractor as set forth in Article 5 and the Project Contract.

4.5 Customer shall communicate to Contractor all special hazards or risks known to or learned by the Customer during the term hereof that are related to the performance of Services pursuant to this Agreement.

ARTICLE 5. Compensation

5.1

5.2 Customer agrees to pay Contractor for Services in accordance with Contractor's Rate Schedule for emergency response work ("Rates") in effect at the time Services are rendered and agreed to in a Project Contract. Customer's obligation to pay amounts due pursuant to this Agreement shall not be conditioned upon or limited by the types, amounts or availability of insurance coverage.

5.3 Contractor will present its first invoice to Customer as soon as possible following commencement of Services provided under a Project Contract, and may issue subsequent invoices every five (5) days thereafter. Customer agrees to pay the full amount of each invoice amount within thirty (30) calendar days of the date of receipt of said invoice by Customer.

5.4 Customer agrees that interest shall accrue and will be paid to Contractor on any unpaid balance of any invoice after thirty (30) calendar days of receipt of invoice by Customer at the rate of one and one half percent (1.5%) per month or the maximum amount allowed by law, whichever is less.

5.5 In the event that legal or other action is required to collect unpaid balances of invoices due Contractor and Contractor is successful in such legal or other action, Customer

agrees to pay all costs of collection, litigation or settlement incurred by Contractor, including reasonable attorneys fees. "Legal or other action" as used above shall include bankruptcy and insolvency proceedings.

5.6 In the event that work is suspended or terminated for any reason prior to the completion of the Services, Customer agrees to pay for labor, equipment, materials, disposal and other costs incurred by Contractor at the Rates and for actual and documented demobilization costs.

5.7 Customer agrees to pay Contractor in accordance with the Rates for any litigation support or testimony provided by Contractor in connection with, or arising out of, the work performed by Contractor hereunder.

ARTICLE 6. Changes in Work

6.1 If Customer requires Contractor to respond to any emergency condition that threatens safety of persons or property such that Contractor is unable to perform the Services requested, Customer agrees to pay Contractor at the Rates for its actual and documented costs incurred or delays resulting from such emergency condition.

6.2 If any change occurs during the term of this Agreement with respect to any laws, rules, regulations or ordinances that affect the rights or obligations of Customer or Contractor under this Agreement, or the applicability of any taxes or fees, or the cost of handling waste materials, Customer and Contractor shall negotiate in good faith to bring this Agreement into conformance with such change or changes. In the event that such agreement cannot be reached, Customer or Contractor shall have the right to terminate this Agreement immediately upon written notice to the other party.

ARTICLE 7. Insurance

7.1 Contractor shall keep in effect during the term of this Agreement the following minimum insurance coverages:

COVERAGE LIMITS	
Worker's Compensation	Statutory
Employer's Liability (covering all operations and the Services hereunder, written on an "occurrence" basis)	$1 million per person $1 million per occurrence
Auto Liability	$1 million per occurrence $1 million aggregate

Comprehensive General Liability	$1 million per occurrence $3 million aggregate $5 million umbrella

7.2 Contractor shall provide Customer with a certificate of insurance upon execution of this Agreement and upon written request thereafter.

ARTICLE 8. Indemnification

8.1 Contractor shall indemnify, defend and hold harmless Customer, its parent and affiliated companies and their respective directors, officers, employees and agents from and against any and all costs, liabilities, claims, demands and causes of action including, without limitation, bodily injury to or death of any person or destruction of or damage to any property, except natural resource and other damages as provided in Section 8.3, which Customer may suffer, incur, or pay out, to the extent such are caused by the negligence or willful misconduct of Contractor, its agents or employees during the performance of this Agreement, or Contractor's failure to comply with any laws, regulations or lawful authority, or failure to comply with its obligations under this Agreement; except to the extent such liabilities, claims, demands and causes of action result from Customer's failure to comply with any laws, regulations or other lawful authority, or Customer's failure to comply with its obligations under this Agreement or result from the negligence or willful misconduct of Customer, its employees or agents.

8.2 Customer shall indemnify, defend and hold harmless Contractor, its parent and affiliated companies and their respective directors, officers, employees and agents from and against any and all costs, liabilities, claims, demands and causes of action including, without limitation, any bodily injury to or death of any person or destruction of or damage to property which Contractor may suffer, incur, or pay out, to the extent such are caused by the negligence or willful misconduct of Customer, its employees or agents or the failure of Customer to comply with any laws, regulations or other lawful authority or the failure of Customer to comply with its duties or obligations under this Agreement; except to the extent such liabilities, claims, demands and causes of action result from Contractor's failure to comply with any laws, regulations or lawful authority, or Contractor's failure to comply with its obligations under this Agreement or result from the negligence or willful misconduct of Contractor, its employees or agents.

8.3 Notwithstanding the foregoing, Customer shall indemnify, defend and hold harmless Contractor, its parent and affiliated companies and their respective directors, officers, employees, agents and subcontractors from and against any and all costs, liabilities, claims, demands and causes of action for pollution damages; contamination or adverse effects on the environment; destruction of, damage to, or loss of, whether actual or alleged, any property or natural resources, including the cost of assessing the damage; injury to or economic losses resulting from destruction of real or personal property; damages for loss of subsistence use of natural resources; damages equal to the loss of profits or impairment of earning capacity due to the injury, destruction or loss of real property, personal property or natural resources; damages for net costs of providing

increased or additional public services; removal costs; and any other costs assessable under the Oil Pollution Act of 1990, the Comprehensive Environmental Response, Compensation and Liability Act or other local, state or Federal law or lawful authority applicable to discharges or releases of oil or hazardous substances which Contractor, individually or collectively, may suffer, incur, or pay out in connection with, or arising out of, the release of oil or hazardous substances by Customer; provided, however, that the foregoing indemnity shall not apply to any claims, liabilities or causes of action caused by the transportation or disposal of waste materials by Contractor, Contractor's failure to comply with any laws, regulations or lawful authority, Contractor's failure to comply with its obligations under this Agreement or the negligence or willful misconduct of Contractor, its employees or agents.

ARTICLE 9. Excuse of Performance

The performance of this Agreement, except for the payment of money for Services already rendered, may be suspended by either party in the event performance of this Agreement is prevented by a cause or causes beyond the reasonable control of such party. Such causes shall include but not be limited to: acts of God, acts of war, riot, fire, explosion, accidents, inclement weather, or sabotage; lack of adequate fuel, power, raw materials, labor or transportation facilities; changes in government laws, regulations, orders, or defense requirements; restraining orders, labor dispute, strike, lock-out or injunction (provided that neither party shall be required to settle a labor dispute against its own best judgements). The party which is prevented from performing by a cause beyond its reasonable control shall use its best efforts to eliminate such cause or event.

ARTICLE 10. Termination

This Agreement may be terminated by either party upon forty-eight (48) hours prior notice to the other party.

ARTICLE 11. Notice

Any notice to be given under this Agreement shall be in writing and delivered to the address listed below:

Customer: Cascade Kelly Holdings, LLC, dba Columbia Pacific Bio-Refinery
2311 East First Street
Vancouver, WA 98661
Attn: General Counsel (Urgent Contract Matter)

Contractor: Cowlitz Clean Sweep
55 International Way
Longview, WA 98632
Attn: General Counsel (Urgent Contract Matter)

ARTICLE 12. Additional Provisions

12.1 Limitation of Liability - Customer agrees that Contractor shall not be responsible for pre-existing contamination at the job location, natural resource damage, or for indirect, incidental, consequential or special damages, including loss of use or lost profits, resulting from or arising out of the performance of the Scope of Work by Contractor, its employees, agents and/or subcontractors.

12.2 Waiver - Any waiver by either party of any provision or condition of this Agreement shall not be construed or deemed to be a waiver of any other provision or condition of this Agreement, nor a waiver of a subsequent breach of the same provision or condition.

12.3 Severability - If any section, subsection, sentence or clause of this Agreement shall be deemed to be illegal, invalid or unenforceable for any reason, such illegality, invalidity or unenforceability shall not affect the legality, validity or enforceability of this Agreement or other sections of this Agreement.

12.4 Entire Agreement - This Agreement and any Exhibits to this Agreement represent the entire understanding and agreement between Customer and Contractor and supersedes any and all prior agreements, whether written or oral, that may exist between the parties regarding same. Modifications to this Agreement shall be in writing and shall be signed by the Customer and Contractor. Additional, conflicting or different terms on any Purchase Order or other preprinted document issued by Customer shall be void and are hereby expressly rejected by Contractor.

12.5 Survival - The provisions contained in Articles 3, 4, 5, 8 and 12 shall survive and remain in effect following the termination of this Agreement.

12.6 Applicable Law - This Agreement shall be interpreted and enforced according to the Laws of the state of Washington and the parties agree to submit to the jurisdiction of the courts of the state of Washington for any disputes arising under this Agreement.

12.7 Confidentiality

- The term "Confidential Information" shall mean and include all tracings, drawings, data, formulae, processes, documentation, records, specifications, procedures, test results, evaluations, experience, know-how, materials, financial, technical, engineering, production, marketing, sales and other information in any form relating, directly or indirectly, to Customer's business, assets, products, technology, or research and development activities, as well as all written materials, data, records, documents and other tangible information prepared by Contractor on the basis of, or including, such information.

- Issues relating to Confidential Information shall be governed by the Non-Disclosure Agreement between Cascade Kelly Holdings, LLC, dba Columbia Pacific Bio-Refinery, and Contractor, dated February 19, 2010.

- Contractor shall disclose Confidential Information only to those of Contractor's employees who need to have access to such Confidential Information to carry out the purpose of this Agreement and any Project Contract. Contractor undertakes, as far as is legally possible, to require its employees with access to Confidential Information to keep the same secret and confidential, both during and after their periods of employment, to the same extent as Contractor.

- No photographs of any portion of Customer's premises, shall be taken by Contractor or any consultant or sub-consultant without Customer's permission.

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed by their duly authorized representatives as of the day and year first above written.

Cascade Kelly Holdings, LLC, dba Columbia Pacific Bio-Refinery	Cowlitz Clean Sweep
Signature: _____	Signature: _____
By: Robert D Lucht Sr PRINT NAME	By: Todd Partridge PRINT NAME
Title: General Manager	Title: COO

RDL

EXHIBIT A

This Project Contract (the "Project Contract") is made as of this 11th day of October, 2011 by and between Cascade Kelly Holdings, L.L.C, dba Columbia Pacific Bio-Refinery ("Customer"), and Cowlitz Clean Sweep. ("Contractor") pursuant to the Master Standby Emergency Response Agreement, dated _____, by and between the parties (the "Agreement"). This Project Contract is subject to the terms and conditions of the Agreement, which Agreement is incorporated herein by reference.

1. Definitions: Except as expressly defined in this Project Contract, capitalized terms used herein shall have the meanings ascribed to such terms in the Agreement.

2. Commencement Date. The Commencement Date for the Project Contract shall be November 7, 2011.

3. Project Description:

4. Scope of Services

5. Compensation for Services (specify lump sum, T&M or other arrangement) and Payment Schedule [attach Contractor's current Rates for Services]:

6. Schedule for Completion:

7. Completion Date:

8. Customer's Representative(s):

Cascade Kelly Holdings, LLC, dba Columbia Pacific Bio-Refinery, LLC

Signature: _____

By: Robert A Lucas Sr.
PRINT NAME

Title: General Manager

Cowlitz Clean Sweep

Signature: _____

By: Todd Pardridge
PRINT NAME

Title: COO

Category	Indentification	Specifications	Equip. #	Recovery	Liquid Storage	Boom	People	Home Base	State
Boom	American Marine	18"		0	0	2,500	0	Aberdeen	WA
Boom	Kepner, Contractor, SeaCurtain	30"		0	0	1500	0	Port Angeles	WA
Boom	Contractor	18"		0	0	4,800	0	Longview	WA
Boom	Contractor Boom	18"		0	0	800	0	Tacoma	WA
Boom	20" Contractor Boom (Versatech)	18"		0	0	2,000	0	Portland	OR
Equipment	Cold Water Pressure Washer	Cold Water Pressure Washer		0	0	0	0	Aberdeen	WA
Equipment	Truck (A9 WA A23461M)	1988 Chevy Pick-up		0	0	0	0	Aberdeen	WA
Equipment	Cold Water Pressure Washer	Cold Water Pressure Washer		0	0	0	0	Aberdeen	WA
Equipment	Hot Water Pressure Washer	Hot Water Pressure Washer		0	0	0	0	Aberdeen	WA
Equipment	Hot Water Pressure Washer	Hot Water Pressure Washer		0	0	0	0	Aberdeen	WA
Equipment	Trash Pump	3" Trash Pump		0	0	0	0	Aberdeen	WA
Equipment	Hot Water Pressure Washer	Hot Water Pressure Washer		0	0	0	0	Aberdeen	WA
Equipment	Hot Water Pressure Washer (A2TR WA 9583PF)	1987 Trailer/Hot Water Pressure Washer		0	0	0	0	Aberdeen	WA
Equipment	Tractor (A6 WA A48279T)	1991 Ford L8000		0	0	0	0	Aberdeen	WA
Equipment	Flatbed (PT-78 WA 0918SG)	1985 Trailer Flatbed		0	0	0	0	Aberdeen	WA
Equipment	Van Trailer (A6TR WA 0571NL)	1971 Brown Trailer Van		0	0	0	0	Aberdeen	WA
Equipment	Crew Bus (#29 WA A20088R)	1996 Ford F350 Crew Cab		0	0	0	0	Aberdeen	WA
Equipment	Truck (A3 WA 0047PZ)	1978 Chevy Pick Up		0	0	0	0	Aberdeen	WA
Equipment	Truck (A4 WA A38759G)	1996 GMC		0	0	0	0	Aberdeen	WA
Equipment	Truck (A5 WA A00000F)	1999 Chevy Truck		0	0	0	0	Aberdeen	WA
Equipment	Trash Pump	3" Trash Pump		0	0	0	0	Aberdeen	WA
Equipment	Diaphragm Pump	2" Diaphragm Pump		0	0	0	0	Aberdeen	WA
Equipment	Truck (A11 WA A47946T)	1996 Chevy		0	0	0	0	Aberdeen	WA
Equipment	Diaphragm Pump	2" Diaphragm Pump		0	0	0	0	Aberdeen	WA
Equipment	Air Compressor			0	0	0	0	Aberdeen	WA
Equipment	Air Compressor			0	0	0	0	Aberdeen	WA
Equipment	Confined Space Rescue Kits			0	0	0	0	Aberdeen	WA
Equipment	Confined Space Rescue Kits			0	0	0	0	Aberdeen	WA
Equipment	Dump Truck (#300 WA 06968RP)	1999 Peterbilt Dump Truck & Pup		0	0	0	0	Aberdeen	WA
Equipment	Forklift			0	0	0	0	Aberdeen	WA
Equipment	Aberdeen Meter #1	Industrial Scientfic		0	0	0	0	Aberdeen	WA
Equipment	Aberdeen Meter #2	Industrial Scientfic		0	0	0	0	Aberdeen	WA
Equipment	MSA	Stealth H-60 /with Extra Tank		0	0	0	0	Aberdeen	WA
Equipment	MSA	Stealth H-60 /with Extra Tank		0	0	0	0	Aberdeen	WA
Equipment	MSA	Stealth H-60 /with Extra Tank		0	0	0	0	Aberdeen	WA
Equipment	MSA	Stealth H-60 /with Extra Tank		0	0	0	0	Aberdeen	WA
Equipment	Van Trialer (A21TR WA 8007203)	1972 Clark Trailer		0	0	0	0	Aberdeen	WA
Equipment	Truck (A20 WA A36617U)	1994 Chevy Truck		0	80	0	0	Aberdeen	WA
Equipment	Cutting Torch			0	0	0	0	Aberdeen	WA
Equipment	Welder			0	0	0	0	Aberdeen	WA
Equipment	PT-9 Response Trailer	Trailer with 1 14'-Skiff		0	0	600	0	Albany	OR
Equipment	Emergency Response Truck (#10 WA B69022A)	2001 Ford F-250 4x4 Gas ER Truck		0	0	0	0	Albany	OR
Equipment	Crew Bus (#27 WA A475735)	1999 Ford F350 Crew Cab		0	0	0	0	Albany	OR
Equipment	Flatbed (#88 OR ZPF203)	1984 Chevy 1 Ton		0	0	0	0	Albany	OR
Equipment	Truck (#101 OR YPV378)	1997 Ford F150 Ext Cab		0	0	0	0	Albany	OR
Equipment	Crew Bus (#103 WA A21448R)	1989 Ford F350 Pick Up		0	0	0	0	Albany	OR
Equipment	Diaphragm Pump	2", 90 gpm		0	0	0	0	Albany	OR
Equipment	Pump	2", 90 gpm		0	0	0	0	Albany	OR
Equipment	Service Truck (#91 OR T554372)	Ford F350 Service Truck		0	0	0	0	Albany	OR
Equipment	Truck (#106 OR XQM158)	2005 F250 Superduty Ext Cab		0	0	0	0	Albany	OR
Equipment	Albany Meter #1	Industrial Scientific		0	0	0	0	Albany	OR
Equipment	Pressure Washer			0	0	0	0	Albany	OR
Equipment	Service Truck (#146 WA A82977U)	1994 Ford F350 Superduty Service Truck		0	0	0	0	Albany	OR
Equipment	Diaphragm Pump	3", Air Driven, 140 gpm		0	0	0	0	Astoria	OR
Equipment	Emergency Response Truck (#96 OR W5L553)	1999 Ford F250 4x4 ER Truck		0	0	0	0	Astoria	OR
Equipment	Trailer (PT-95 9953PW)	1980 Trailmobile Van		0	0	0	0	Astoria	OR
Equipment	Pump	Float-o-Pump		0	0	0	0	Astoria	OR
Equipment	Pressure Washer (PT-73 WA 0912SG)	1996 Morgan Pressure Washer Trailer		0	0	0	0	Astoria	OR
Equipment	Pump	2" Diaphragm Pump		0	0	0	0	Astoria	OR
Equipment	Diaphragm Pump	1"		0	0	0	0	Astoria	OR

Category	Indentification	Specifications	Equip. #	Recovery	Liquid Storage	Boom	People	Home Base	State
Equipment	2" Vac-U-Max (Wet)	Vacuum Pump, 1 bbl		0	1	0	0	Astoria	OR
Equipment	3" Vac-U-Max (Dry)	Vacuum Pump, 1 bbl		0	1	0	0	Astoria	OR
Equipment	Vac-U-Max (Dry)	4" Diaphragm		0	0	0	0	Astoria	OR
Equipment	Air Compressor	100 CFM		0	0	0	0	Astoria	OR
Equipment	Generator	Gas Power 60HZ 2.3kva		0	0	0	0	Astoria	OR
Equipment	MSA	Stealth H-60 /with Extra Tank		0	0	0	0	Astoria	OR
Equipment	MSA	Stealth H-60 /with Extra Tank		0	0	0	0	Astoria	OR
Equipment	Astoria 1	Radio Hand-held		0	0	0	0	Astoria	OR
Equipment	Astoria 2	Radio Hand-held		0	0	0	0	Astoria	OR
Equipment	Astoria 3	Radio Hand-held		0	0	0	0	Astoria	OR
Equipment	Trash Pump	3", Honda		0	0	0	0	Astoria	OR
Equipment	Truck (#92 OR WUD151)	1992 Ford 4x4 Truck with Lift Gate		0	0	0	0	Astoria	OR
Equipment	Ingerssoll-Rand	150 CFM		0	0	0	0	Longview	WA
Equipment	Meter #1	ProCon O2 LEL meter		0	0	0	0	Longview	WA
Equipment	Diaphragm Pump	3", 140 gpm		0	0	0	0	Longview	WA
Equipment	Diaphragm Pump	3", 140 gpm		0	0	0	0	Longview	WA
Equipment	Diaphragm Pump, Air	3", 140 gpm		0	0	0	0	Longview	WA
Equipment	Diaphragm Pump	3", 140 gpm		0	0	0	0	Longview	WA
Equipment	Diaphragm Pump	2", 90 gpm		0	0	0	0	Longview	WA
Equipment	Diaphragm Pump	2", 90 gpm		0	0	0	0	Longview	WA
Equipment	Diaphragm Pump	2", 90 gpm		0	0	0	0	Longview	WA
Equipment	Diaphragm Pump	2", 90 gpm		0	0	0	0	Longview	WA
Equipment	Diaphragm Pump	1-1/2", 65 gpm		0	0	0	0	Longview	WA
Equipment	Diaphragm Pump	1-1/2", 65 gpm		0	0	0	0	Longview	WA
Equipment	Diaphragm Pump	1-1/2", 65 gpm		0	0	0	0	Longview	WA
Equipment	Diaphragm Pump	1-1/2", 65 gpm		0	0	0	0	Longview	WA
Equipment	Diaphragm Pump	1-1/2", 65 gpm		0	0	0	0	Longview	WA
Equipment	Guzzler Sludge Pump	PT-72 Guzzler 4", 1100 gpm		0	0	0	0	Longview	WA
Equipment	Centrifical Pump	2"		0	0	0	0	Longview	WA
Equipment	1993 Buttworth Hydroblaster (PT-80 WA 7475RU)	10,000 psi		0	0	0	0	Longview	WA
Equipment	1992 NLB Hydroblaster (PT 83 WA 0914SG)	20,000 psi		0	0	0	0	Longview	WA
Equipment	1999 Jetstream Hydroblaster (PT-74 WA 0130NL)	20,000 psi		0	0	0	0	Longview	WA
Equipment	Vanguard Pressure Washer	4000 psi		0	0	0	0	Longview	WA
Equipment	Diaphragm Pump, Air	3", 140 gpm		0	0	0	0	Longview	WA
Equipment	Diaphragm Pump, Air	3 inch		0	0	0	0	Longview	WA
Equipment	Diaphragm Pump, Air	3 inch		0	0	0	0	Longview	WA
Equipment	Diaphragm Pump, Air	3 inch		0	0	0	0	Longview	WA
Equipment	Diaphragm Pump, Air	2 inch		0	0	0	0	Longview	WA
Equipment	Diaphragm Pump, Air	2 inch		0	0	0	0	Longview	WA
Equipment	Diaphragm Pump, Air	2 inch		0	0	0	0	Longview	WA
Equipment	Diaphragm Pump, Air	2 inch		0	0	0	0	Longview	WA
Equipment	Diaphragm Pump, Air	1-1/2 inch		0	0	0	0	Longview	WA
Equipment	Diaphragm Pump, Air	1-1/2 inch		0	0	0	0	Longview	WA
Equipment	Diaphragm Pump, Air	1-1/2 inch		0	0	0	0	Longview	WA
Equipment	Diaphragm Pump, Air	1-1/2 inch		0	0	0	0	Longview	WA
Equipment	Submersable, Hydralic	4", 1100 gpm		0	0	0	0	Longview	WA
Equipment	Submersable, Hydralic	4", 1100 gpm		0	0	0	0	Longview	WA
Equipment	Truck (#85 WA A19561R)	1991 Ford Superduty		0	0	0	0	Longview	WA
Equipment	Tractor (#60 WA 81135PR)	1995 Kenworth Tractor Truck		0	0	0	0	Longview	WA
Equipment	Blazer (#8 WA 863MYJ)	1997 Chevy Blazer		0	0	0	1	Longview	WA
Equipment	Sweeper (#14 WA 02472RP)	1996 Schwarze Model A7000 Sweeper		0	0	0	0	Longview	WA
Equipment	Emergency Response Truck (#148 WA A522200X)	2005 Chevy Crew Cab ER Truck		0	0	0	0	Longview	WA
Equipment	Truck (#2 WA A63634E)	1998 Dodge 4X4 Extended Cab		0	0	0	0	Longview	WA
Equipment	Disposal Truck (#3 WA 84182PR)	1994 Ford LN9000 with 1995 TIMT 26' Aluminum Van Body		0	0	0	0	Longview	WA
Equipment	Truck (#7 WA A39765F)	1999 Chevy Truck		0	0	0	0	Longview	WA
Equipment	TV/Video Inspection Camera Van (#007 WA A20887R)	2001 E450 Hi-Cube Van with Inspection Unit		0	0	0	0	Longview	WA
Equipment	Sweeper (#21 WA A09844X)	1996 Supervac 347-I on 1995 GMC Truck		0	0	0	0	Longview	WA
Equipment	Crew Bus (#28 WA A91145V)	1995 Chevy Crew Cab		0	0	0	0	Longview	WA
Equipment	30 WA20717Z	1983 Chevy van		0	0	0	1	Longview	WA
Equipment	Flatbed (#33 WA A20543W)	1979 350 Ford Lift Gate		0	0	0	0	Longview	WA
Equipment	Water Truck (#44 WA 86119PR)	1989 Kenworth T800 Water Truck		0	0	0	0	Longview	WA

Category	Indentification	Specifications	Equip. #	Recovery	Liquid Storage	Boom	People	Home Base	State
Equipment	Tractor (#47 WA 04555RP)	1991 Freightliner T800 Tractor		0	0	0	0	Longview	WA
Equipment	Tractor (#48 WA 02403RP)	1995 Kenworth T800 Tractor		0	0	0	0	Longview	WA
Equipment	Tractor (#49 WA 92154PR)	1998 Freightliner Stainless Spec Tank		0	0	0	0	Longview	WA
Equipment	Flatbed (#86 WA A4364OJ)	1986 Ford F350 1-Ton		0	0	0	0	Longview	WA
Equipment	Truck (#95 WA A82441U)	1995 Ford F150		0	0	0	0	Longview	WA
Equipment	Truck (#104 OR ZPF204)	1994 Chevy Pick Up		0	0	0	0	Longview	WA
Equipment	Blazer (PNE 105 OR WBH215)	1997 Chevy Blazer		0	0	0	0	Longview	WA
Equipment	Diaphragm Pump	2", 90 gpm		0	0	0	0	Longview	WA
Equipment	Diaphragm Pump	2", 90 gpm		0	0	0	0	Longview	WA
Equipment	Diaphragm Pump	2", 90 gpm		0	0	0	0	Longview	WA
Equipment	Diaphragm Pump	2", 90 gpm		0	0	0	0	Longview	WA
Equipment	Diaphragm Pump	2", 90 gpm		0	0	0	0	Longview	WA
Equipment	Diaphragm Pump	2", 90 gpm		0	0	0	0	Longview	WA
Equipment	Diaphragm Pump	2", 90 gpm		0	0	0	0	Longview	WA
Equipment	Diaphragm Pump	2", 90 gpm		0	0	0	0	Longview	WA
Equipment	Diaphragm Pump	2", 90 gpm		0	0	0	0	Longview	WA
Equipment	Diaphragm Pump	2", 90 gpm		0	0	0	0	Longview	WA
Equipment	Diaphragm Pump	2", 90 gpm		0	0	0	0	Longview	WA
Equipment	Sweeper (#17 WA 93846PR)	2003 Sterling Sweeper Truck		0	0	0	0	Longview	WA
Equipment	Sweeper (#18 WA 92548PR)	2002 Schwarze Sweeper Sterling SC8000		0	0	0	0	Longview	WA
Equipment	Sweeper (#22 WA 86424PR)	1996 Applex 7000 Vacuum Sweeper on 1995 Ford Truck		0	0	0	0	Longview	WA
Equipment	Sweeper (#24 WA A66748L)	2000 Schwarze Model A4000 Sweeper with GMC Cab		0	0	0	0	Longview	WA
Equipment	Service Truck (#145 WA A62943S)	1991 Ford Service Truck		0	0	0	0	Longview	WA
Equipment	Blazer (#80 WA 665498PR)	1989 Chevy Blazer		0	0	0	0	Longview	WA
Equipment	Truck (#81 WA A46911G)	Ford F250 3/4 Ton		0	0	0	0	Longview	WA
Equipment	Emergency Response Truck (#89 WA A38584U)	1999 F250 4x4 Diesel ER Truck		0	0	0	0	Longview	WA
Equipment	Service Truck (#98 WA A18899N)	1991 Ford F350 Service Truck		0	0	0	0	Longview	WA
Equipment	Truck (#132 WA A93668K)	2001 Dodge Ram 1500		0	0	0	0	Longview	WA
Equipment	Truck (#134 WA A78743T)	1994 Ford Ranger		0	0	0	0	Longview	WA
Equipment	Flatbed (#137 WA A52293X)	2005 Ford F350 Crew Cab Flatbed		0	0	0	0	Longview	WA
Equipment	Flatbed (#138 WA A52291X)	2005 Ford F350 Crew Cab Flatbed		0	0	0	0	Longview	WA
Equipment	Crew Bus (#139 WA A522290X)	2005 Ford F350 Crew Cab		0	0	0	0	Longview	WA
Equipment	Crew Bus (#140 WA A52292X)	2005 Ford F350 Crew Cab		0	0	0	0	Longview	WA
Equipment	Truck (#141 WA A52289X)	2005 Ford F250 Extra Cab		0	0	0	0	Longview	WA
Equipment	Truck (#143 WA A79588A)	1996 Ford Ranger		0	0	0	0	Longview	WA
Equipment	Pump	82029 Float-o-Pump		0	0	0	0	Longview	WA
Equipment	Pump	82034 Float-o-Pump		0	0	0	0	Longview	WA
Equipment	Pump	82029 Float-o-Pump		0	0	0	0	Longview	WA
Equipment	Pump	Float-o-Pump		0	0	0	0	Longview	WA
Equipment	Skim Pack	Douglas M 4200 2K/HR		0	0	0	0	Longview	WA
Equipment	Skim Pack	Douglas M 4200 2K/HR		0	0	0	0	Longview	WA
Equipment	MSA	Stealth H-60 /with Extra tank		0	0	0	0	Longview	WA
Equipment	MSA	Stealth H-60 /with Extra tank		0	0	0	0	Longview	WA
Equipment	MSA	Stealth H-60 /with Extra tank		0	0	0	0	Longview	WA
Equipment	MSA	Stealth H-60 /with Extra tank		0	0	0	0	Longview	WA
Equipment	HAZMAT Response Trailer	22'		0	0	0	0	Longview	WA
Equipment	Land & Marine Response Trailer	22'		0	0	0	0	Longview	WA
Equipment	Cascade Air System	4 Man		0	0	0	0	Longview	WA
Equipment	Cascade Air System	2 Man		0	0	0	0	Longview	WA
Equipment	Confined Space Rescue Equipment	2-5 Man Teams		0	0	0	0	Longview	WA
Equipment	Truck Roll-Over Kit	Contains Air Driven Hot Tap Drill		0	0	0	0	Longview	WA
Equipment	Yamaha Generator			0	0	0	0	Longview	WA
Equipment	CCS 2	Radio Hand-held		0	0	0	0	Longview	WA
Equipment	CCS 3	Radio Hand-held		0	0	0	0	Longview	WA
Equipment	CCS 4	Radio Hand-held		0	0	0	0	Longview	WA
Equipment	CCS 5	Radio Hand-held		0	0	0	0	Longview	WA
Equipment	CCS 6	Radio Hand-held		0	0	0	0	Longview	WA
Equipment	CCS 7	Radio Hand-held		0	0	0	0	Longview	WA
Equipment	CCS 8	Radio Hand-held		0	0	0	0	Longview	WA
Equipment	CCS 9	Radio Hand-held		0	0	0	0	Longview	WA
Equipment	CCS 10	Radio Hand-held		0	0	0	0	Longview	WA

Category	Indentification	Specifications	Equip. #	Recovery	Liquid Storage	Boom	People	Home Base	State
Equipment	CCS 11	Radio Hand-held		0	0	0	0	Longview	WA
Equipment	CCS 12	Radio Hand-held		0	0	0	0	Longview	WA
Equipment	CCS Meter #1	Industrial Scientfic		0	0	0	0	Longview	WA
Equipment	CCS Meter #2	Industrial Scientfic		0	0	0	0	Longview	WA
Equipment	CCS Meter #3	Industrial Scientfic		0	0	0	0	Longview	WA
Equipment	Drum Load Accessory Attachment	Attaches to #63		0	0	0	0	Longview	WA
Equipment	677PC Fixed Wing	6 Passanger		0	0	0	0	Longview	WA
Equipment	Flatbed (PNE 48 WA 16529Y)	1994 Ford F350 Flatbed		0	0	0	0	Longview	WA
Equipment	Service Truck (PNE 57 WA A67028L)	1995 Chevy 1 Ton Service Truck		0	0	0	0	Longview	WA
Equipment	Service Truck (PNE 61 WA A52365B)	1996 Chevy 1 Ton Service Truck		0	0	0	0	Longview	WA
Equipment	Flatbed (PNE 63 WA A19466D)	1996 Chevy C30 Flatbed		0	0	0	0	Longview	WA
Equipment	Truck (PNE 65 WA A34901C)	1997 Chevy C30 Truck		0	0	0	0	Longview	WA
Equipment	Truck (PNE 71 WA A19969D)	1997 Ford F250 3/4 Ton		0	0	0	0	Longview	WA
Equipment	Truck (PNE 73 WA A1997OD)	1997 Ford F250 3/4 Ton		0	0	0	0	Longview	WA
Equipment	Truck (PNE 76 WA A04995E)	1998 Ford F150		0	0	0	0	Longview	WA
Equipment	Truck (PNE 86 WA A93704J)	1999 Chevy C30 Dumpbed		0	0	0	0	Longview	WA
Equipment	Van (PNE 89 WA A41383M)	1997 Ford Van		0	0	0	0	Longview	WA
Equipment	Truck (PNE 91 WA A40763M)	2002 Chevy Silverado		0	0	0	0	Longview	WA
Equipment	Truck (PNE 92 WA ZHV350)	1999 Ford F350		0	0	0	0	Longview	WA
Equipment	Crew Bus (PNE 93 WA A40846T)	1999 Ford F350 Crew Cab		0	0	0	0	Longview	WA
Equipment	Blazer (PNE 94 WA ZWK465)	2001 Chevy Blazer		0	0	0	0	Longview	WA
Equipment	Truck (PNE 95 WA A4114V)	2000 Ford F250		0	0	0	0	Longview	WA
Equipment	Cargo Trailer (PNE-97 WA 3685SA)	2003 Large Cargo Trailer		0	0	0	0	Longview	WA
Equipment	Crew Bus (PNE 100 WA A38861Y)	2006 F350 Crew Cab		0	0	0	0	Longview	WA
Equipment	1992 Backhoe	Case 480 EZ with Clamshell Bucket and Extend-a-hoe		0	0	0	0	Longview	WA
Equipment	Crew Bus (PNE 101 WA A17344Z)	2006 Ford F350 Superduty Crew Bus		0	0	0	0	Longview	WA
Equipment	Crew Bus (PNE 102 WA A17345Z)	2006 Ford F350 Superduty Crew Bus		0	0	0	0	Longview	WA
Equipment	Car Trailer (PNE-103 WA 4627SE)	1992 Auto Trailer		0	0	0	0	Longview	WA
Equipment	Truck (PNE 99 WA A39726Y)	2006 Ford F150 XL		0	0	0	0	Longview	WA
Equipment	Taurus (PNE 98 WA 815TQN)	1996 Ford Taurus		0	0	0	0	Longview	WA
Equipment	Job Trailer (PNE-80 WA 8757NB)	1987 Welco Job Trailer		0	0	0	0	Longview	WA
Equipment	Job Trailer (PNE-81 WA 8755NB)	1985 Welco Job tariler		0	0	0	0	Longview	WA
Equipment	Job Trailer (PNE-82 WA 8756NB)	1985 Welco Job Trailer		0	0	0	0	Longview	WA
Equipment	Job Trailer (PNE-83 WA 9794NB)	1988 Welco Job Trailer		0	0	0	0	Longview	WA
Equipment	Blazer (PNE 79 WA 437KCP	1999 Chevy Tahoe		0	0	0	0	Longview	WA
Equipment	Huskey	2 HP		0	0	0	0	Longview	WA
Equipment	Blue Emglo			0	0	0	0	Longview	WA
Equipment	Huskey Easy Air			0	0	0	0	Longview	WA
Equipment	Makita	Cut Off Saw		0	0	0	0	Longview	WA
Equipment	Forkfilt			0	0	0	0	Longview	WA
Equipment	Coleman	Pro Gen 5000		0	0	0	0	Longview	WA
Equipment	Subaru Robin			0	0	0	0	Longview	WA
Equipment	Generator	Blue Star 180K		0	0	0	0	Longview	WA
Equipment	Briggs & Stratten	2" Tarsh Pump, 3 hp		0	0	0	0	Longview	WA
Equipment	Safety Tripod/Retractor			0	0	0	0	Longview	WA
Equipment	#3	2" Trash Pump		0	0	0	0	Longview	WA
Equipment	Honda	4" Trash Pump		0	0	0	0	Longview	WA
Equipment	Titan	4" Trash Pump		0	0	0	0	Longview	WA
Equipment	Miller	Blue Star 180K		0	0	0	0	Longview	WA
Equipment	2002 Jestream Hydroblaster 4200 Series (PT-82 WA 4513RK)	10,000 psi		0	0	0	0	Longview	WA
Equipment	Guzzler Sludge Pump	PT-71 Guzzler 4", 1100 gpm		0	0	0	0	Longview	WA
Equipment	CCS Meter #4	Industrial Scientfic		0	0	0	0	Longview	WA
Equipment	CCS Meter #5	Industrial Scientfic		0	0	0	0	Longview	WA
Equipment	CCS Meter #6	Industrial Scientfic		0	0	0	0	Longview	WA
Equipment	MSA	Stealth H-60 /with Extra tank		0	0	0	0	Longview	WA
Equipment	Miscellaneous Hand Tools	511 Count		0	0	0	0	Longview	WA
Equipment	Safety Meter #1	Industrial Scientific		0	0	0	0	Longview	WA
Equipment	Tilt Trailer (PT-8 WA 0005SN)	1996 Big Tex Tilt Trailer		0	0	0	0	Longview	WA
Equipment	Supply Trailer (PT-10 WA 3804LZ)	1997 Tandem Axle Supply Trailer		0	0	0	0	Longview	WA
Equipment	Trailer (PT-11 WA 2506TF)	1997 Garland Single Axle Trailer		0	0	0	0	Longview	WA
Equipment	Boom Trailer (PT-21 OR LL292350)	1995 Assem. Trailer		0	0	1000	0	Longview	WA

Category	Indentification	Specifications	Equip. #	Recovery	Liquid Storage	Boom	People	Home Base	State
Equipment	Steam Cleaner (PT-81)			0	0	0	0	Longview	WA
Equipment	Flatbed (PT-67 WA 4434SE)	1957 Trailmobile Flatbed 45' Trailer		0	0	0	0	Longview	WA
Equipment	Flatbed (PT-77 WA 0010PX)	1983 Strby Flatbed Trailer		0	0	0	0	Longview	WA
Equipment	Truck (#1 WA B06729C)	2006 Dodge Ram 2500		0	0	0	0	Longview	WA
Equipment	Truck (#147 WA A01717Z)	2004 Dodge Dakota		0	0	0	0	Longview	WA
Equipment	ER 1 Intrinsically Safe	Radio Hand-held		0	0	0	0	Longview	WA
Equipment	ER 2 Intrinsically Safe	Radio Hand-held		0	0	0	0	Longview	WA
Equipment	ER 3 Intrinsically Safe	Radio Hand-held		0	0	0	0	Longview	WA
Equipment	ER 4 Intrinsically Safe	Radio Hand-held		0	0	0	0	Longview	WA
Equipment	Emergency Response Van (#19 WA A66459L)	1981 Chevy Cube ER Van		0	0	0	0	Port Angeles	WA
Equipment	Emergency Response Van (#12 WA A067805K)	1982 Chevy Cube ER Van		0	0	0	0	Portland	OR
Equipment	Crew Bus (#16 WA A39809M)	1994 Chevy Crew Cab 1 Ton		0	0	0	0	Portland	OR
Equipment	Truck (#90 OR YHK614)	2001 Dodge Ram 2500		0	0	0	0	Portland	OR
Equipment	Crew Bus (#93 OR T551646)	2005 Ford F350 Superduty Crew Cab		0	0	0	0	Portland	OR
Equipment	Truck (#102 OR VGZ706)	1995 Dodge 3500 Pick-up		0	0	0	0	Portland	OR
Equipment	Crew Bus (#97 OR T551647)	2005 Ford Superduty Crew Cab		0	0	0	0	Portland	OR
Equipment	Blazer (#99 WA 483NUU)	1996 Chevy Blazer		0	0	0	0	Portland	OR
Equipment	Truck (#133 OR WJY823)	1997 Ford Flatbed with Lift		0	0	0	0	Portland	OR
Equipment	Truck (#135 OR 716BVN)	1996 Ford F250		0	0	0	0	Portland	OR
Equipment	Flatbed (#136 OR T551649)	2005 Ford F350 Crew Cab Flatbed		0	0	0	0	Portland	OR
Equipment	Cascade Air System	4 Man		0	0	0	0	Portland	OR
Equipment	Cascade Air System	4 Man		0	0	0	0	Portland	OR
Equipment	Diaphragm Pump	3", 140 gpm		0	0	0	0	Portland	OR
Equipment	Diaphragm Pump	3", 140 gpm		0	0	0	0	Portland	OR
Equipment	Diaphragm Pump	3", 140 gpm		0	0	0	0	Portland	OR
Equipment	Diaphragm Pump	2", 90 gpm		0	0	0	0	Portland	OR
Equipment	Diaphragm Pump	2", 90 gpm		0	0	0	0	Portland	OR
Equipment	MSA	Stealth H-60 /with Extra Tank		0	0	0	0	Portland	OR
Equipment	MSA	Stealth H-60 /with Extra Tank		0	0	0	0	Portland	OR
Equipment	MSA	Stealth H-60 /with Extra Tank		0	0	0	0	Portland	OR
Equipment	MSA	Stealth H-60 /with Extra Tank		0	0	0	0	Portland	OR
Equipment	MSA	Stealth H-60 /with Extra Tank		0	0	0	0	Portland	OR
Equipment	MSA	Stealth H-60 /with Extra Tank		0	0	0	0	Portland	OR
Equipment	MSA	Stealth H-60 /with Extra Tank		0	0	0	0	Portland	OR
Equipment	MSA	Stealth H-60 /with Extra Tank		0	0	0	0	Portland	OR
Equipment	Compressor	Air Compressor		0	0	0	0	Portland	OR
Equipment	Pressure Washer	4000 psi Hot Pressure Washer		0	0	0	0	Portland	OR
Equipment	Pressure Washer	4000 psi Hot Pressure Washer		0	0	0	0	Portland	OR
Equipment	Pressure Washer	4000 psi Cold Pressure Washer		0	0	0	0	Portland	OR
Equipment	PDX Meter 1	Industrial Scientific		0	0	0	0	Portland	OR
Equipment	PDX Meter 2	Industrial Scientific		0	0	0	0	Portland	OR
Equipment	PDX Meter 3	Industrial Scientific		0	0	0	0	Portland	OR
Equipment	PDX Meter 4	Industrial Scientific		0	0	0	0	Portland	OR
Equipment	PDX Meter 5	Industrial Scientific		0	0	0	0	Portland	OR
Equipment	Dump Truck (#142 WA 86425PR)	1988 International Dump Truck		0	0	0	0	Portland	OR
Equipment	Utility Trailer (PT-6 WA 3679SA)	1997 Big Tex Large Utility Trailer		0	0	0	0	Portland	OR
Equipment	Hydroblaster (PT-68 OR)	20,000 psi		0	0	0	0	Portland	OR
Equipment	Emergency Response Van Trailer (PT-85 WA 0913SG)	1979 Hobbs 45' Resposne Van Trailer		0	0	0	0	Portland	OR
Equipment	Truck (#149 OR ??????)	2007 Dodge Ram 2500		0	0	0	0	Portland	OR
Personnel	Personnel	40 Hr HAZWOPER Trained Personnel		0	0	0	4	Aberdeen	WA
Personnel	Personnel	24 Hr HAZWOPER Trained Personnel		0	0	0	4	Aberdeen	WA
Personnel	Personnel	80 Hr HAZWOPER Trained Personnel		0	0	0	3	Aberdeen	WA
Personnel	Response Manager	Joe German		0	0	0	1	Aberdeen	WA
Personnel	Response Manager	Bob Reukauf		0	0	0	1	Albany	OR
Personnel	Personnel	40 Hr HAZWOPER Trained Personnel		0	0	0	3	Albany	OR
Personnel	Personnel	24 Hr HAZWOPER Trained Personnel		0	0	0	4	Albany	OR
Personnel	Response Manager	Mel Hebert		0	0	0	1	Astoria	OR
Personnel	Response Personnel	Boat Operators		0	0	0	5	Astoria	OR
Personnel	Response Manager	Chad Braaksma		0	0	0	1	Longview	WA
Personnel	Emergency Response Division Manager/Response Manager	Justin Piper		0	0	0	1	Longview	WA

Category	Indentification	Specifications	Equip. #	Recovery	Liquid Storage	Boom	People	Home Base	State
Personnel	Response Manager	Ken Partridge		0	0	0	1	Longview	WA
Personnel	Response Manager	Steve Johnson		0	0	0	1	Longview	WA
Personnel	Personnel	80 Hr HAZWOPER Trained Personnel		0	0	0	20	Longview	WA
Personnel	Personnel	40 Hr HAZWOPER Trained Personnel		0	0	0	39	Longview	WA
Personnel	Personnel	24 Hr HAZWOPER Trained Personnel		0	0	0	20	Longview	WA
Personnel	Response Manager	Ray Mayer		0	0	0	1	Longview	WA
Personnel	Response Personnel	Boat Operators		0	0	0	5	Longview	WA
Personnel	Health & Safety Coordinator/Response Manager	Matt Brenes		0	0	0	1	Longview	WA
Personnel	Health & Safety Coordinator/Response Personnel	Bobby Fike		0	0	0	1	Longview	WA
Personnel	ICS Coordinator	Marisa Chilafoe		0	0	0	1	Longview	WA
Personnel	ICS Personnel	Various Positions		0	0	0	23	Longview	WA
Personnel	Response Manager	Scott Gilfillan		0	0	0	1	Portland	OR
Personnel	Personnel	24 Hr HAZWOPER Trained Personnel		0	0	0	2	Portland	OR
Personnel	Personnel	80 Hr HAZWOPER Trained Personnel		0	0	0	6	Portland	OR
Personnel	Personnel	40 Hr HAZWOPER Trained Personnel		0	0	0	10	Portland	OR
Personnel	Response Manager	Bob Janak		0	0	0	1	Portland	OR
Personnel	Response Manager	Bob Matson		0	0	0	1	Portland	OR
Skimmer	28' Rapid Response Skimmer	28' Willard Marine with Drum or Belt Skimmer		2400	23	600	0	Longview	WA
Skimmer	Model 24 Voss Skimmer	24" Drum Skimmer (Hydraulic)		2400	0	0	0	Longview	WA
Skimmer	Skimpak #2	Douglas Skimpak 4200		4200	0	0	0	Longview	WA
Skimmer	Skimpak #3	Douglas Skimpak 4200		4200	0	0	0	Aberdeen	WA
Storage	Air Mover/Vacuum Truck (A8 WA 95800Y)	1994 Ford Master Vacuum		0	80	0	0	Aberdeen	WA
Storage	Poly Tank	8000 Gallon Capacity		0	189	0	0	Aberdeen	WA
Storage	Air Mover/Vacuum Truck (#72 WA 92161PR)	1981 Ford Vactor Vacuum		0	80	0	0	Aberdeen	WA
Storage	Combo Truck [Jet Rod/Vac Truck] (A13 WA 44540W)	1985 Ford Pumper Combo Truck		0	80	0	0	Aberdeen	WA
Storage	Combo Truck [Jet Rod/Vac Truck] (A16 WA A33313E)	1990 Ford Vacuum Combo		0	80	0	0	Aberdeen	WA
Storage	Liquid Vacuum Truck (#71 WA 66549PR)	1994 Ford Guzzler Liquid Vacuum Truck		0	0	0	0	Aberdeen	WA
Storage	Combo Truck [Jet Rod/Vac Truck] (#121 OR YAPU101)	2002 Sterling LT9500 Combo Truck		0	80	0	0	Albany	OR
Storage	Combo Truck [Jet Rod/Vac Truck] (#122 OR YCRV503)	2004 Sterling Vactor Vacuum Combo Truck		0	80	0	0	Albany	OR
Storage	Air Mover/Vacuum Truck (#131 OR YAPT990)	2002 Int'l Vacuum Truck		0	80	0	0	Albany	OR
Storage	Poly Tanks	8.5 bbl Poly Tank		0	8.5	0	0	Astoria	OR
Storage	Poly Tanks	8.5 bbl Poly Tank		0	8.5	0	0	Astoria	OR
Storage	Poly Tanks	8.5 bbl Poly Tank		0	8.5	0	0	Astoria	OR
Storage	Poly Tanks	8.5 bbl Poly Tank		0	8.5	0	0	Astoria	OR
Storage	Poly Tanks	8.5 bbl Poly Tank		0	8.5	0	0	Astoria	OR
Storage	Poly Tanks	8.5 bl Poly Tank		0	8.5	0	0	Longview	WA
Storage	Poly Tanks	8.5 bl Poly Tank		0	8.5	0	0	Longview	WA
Storage	Liquid Vacuum Truck (#55 WA 66543PR)	1987 Kenworth Liquid Vacuum Truck (80 bbl)		0	80	0	0	Longview	WA
Storage	Liquid Vacuum Truck (#56 WA 81134PR)	1977 Mack 6X6 Liquid Vacuum Truck (80 bbl)		0	80	0	0	Longview	WA
Storage	Liquid Ring/Vacuum Truck (#62 WA 66545PR)	1990 Freightliner Ace Liquid Ring Vacuum Truck		0	80	0	0	Longview	WA
Storage	Air Mover/Vacuum Truck (#63 WA 66546PR)	1994 Ford Guzzler Ace Vacuum Truck		0	80	0	0	Longview	WA
Storage	Combo Truck [Jet Rod/Vac] (#65 WA 98896PR)	2005 Sterling Combo Truck Model LT9513		0	80	0	0	Longview	WA
Storage	Combo Truck [Jet Rod/Vac] (#70 WA 665498PR)	1990 Ford Ramrodder Combo Truck		0	80	0	0	Longview	WA
Storage	Air Mover/Vacuum Truck (#64 WA 97758PR)	2005 Sterling Vacuum Truck		0	80	0	0	Longview	WA
Storage	Liquid Vacuum Truck (#68 WA 02583RP)	1997 Freightliner 80 bbl Liquid Vacuum Truck		0	80	0	0	Longview	WA
Storage	Poly Tanks	8.5 bl Poly Tank		0	8.5	0	0	Longview	WA
Storage	Poly Tanks	8.5 bl Poly Tank		0	8.5	0	0	Longview	WA
Storage	Poly Tanks	8.5 bl Poly Tank		0	8.5	0	0	Longview	WA
Storage	Poly Tanks	8.5 bl Poly Tank		0	8.5	0	0	Longview	WA
Storage	Poly Tanks	8.5 bl Poly Tank		0	8.5	0	0	Longview	WA
Storage	Poly Tanks	8.5 bl Poly Tank		0	8.5	0	0	Longview	WA
Storage	Poly Tanks	8.5 bl Poly Tank		0	8.5	0	0	Longview	WA
Storage	Poly Tanks	8.5 bl Poly Tank		0	8.5	0	0	Longview	WA
Storage	Tanker (PT-53 WA 3525MD)	1979 Stemco Thompson 120 bbl Liquid Vacuum		0	120	0	0	Longview	WA
Storage	Tanker (PT-59 WA 6886LS)	1987 Spen Semi-Trailer 120 bbl Liquid Vacuum		0	120	0	0	Longview	WA
Storage	Portable Storage Tank	2500 gal		0	59	0	0	Longview	WA
Storage	Air Mover/Vacuum Truck (#73 WA 11966RP)	2007 International Vacuum Truck		0	80	0	0	Longview	WA
Storage	Tanker (PT-49 WA 9754RP)	1995 Polar 42' with Certified Vacuum Pump		0	120	0	0	Longview	WA
Storage	Tanker (PT-51 WA 8666TI)	1982 Trailmaster Tanker Non-Spec Aluminum		0	120	0	0	Longview	WA

Category	Indentification	Specifications	Equip. #	Recovery	Liquid Storage	Boom	People	Home Base	State
Storage	Tanker (PT-54 WA 0057SV)	1981 Proco Tank Trailer		0	120	0	0	Longview	WA
Storage	Tanker (PT-55 WA 0225SN)	1993 SPCNS Tank Trailer		0	120	0	0	Longview	WA
Storage	Air Mover/Vacuum Truck (A7 WA 83887L)	1988 Ford Vactor Vacuum		0	80	0	0	Port Townsend	WA
Storage	Liquid Vacuum Truck (#58 OR YAPW591)	1977 Mack 6X6 Liquid Vacuum Truck (80 bbl)		0	80	0	0	Portland	OR
Storage	Liquid Vacuum Truck (#66 WA 66547PR)	1980 Peterbilt Liquid Vacuum Truck (80 bbl)		0	80	0	0	Portland	OR
Storage	Air Mover/Vacuum Truck (#69 WA 76955PR)	1994 Kenworth/Vactor Vacuum Truck		0	80	0	0	Portland	OR
Storage	Air Mover/Vacuum Truck (#61 OR YAPU856)	1999 Int'l Truck with Guzzler Vacuum Truck		0	80	0	0	Portland	OR
Storage	Liquid Vacuum Truck (#67 OR YAPW388)	1994 International 80 bbl Liquid Vacuum Truck		0	80	0	0	Portland	OR
Storage	Poly Tanks	8.5 bbl Poly Tank		0	8.5	0	0	Portland	OR
Vessel	14' SKIFF G3-BL (BL-2)	14' G3 SKIFF with 9.9hp		0	0	0	0	Aberdeen	WA
Vessel	Gator Boat (B-90 OR 160AAX)	24' Workboat		0	0	600	0	Aberdeen	WA
Vessel	14' SKIFF G3-BL (BL-1)	14' G3 SKIFF with 9.9hp		0	0	0	0	Springfield	OR
Vessel	Hewes Craft (B-88 WN1965ME)	18.5' Hewes Craft		0	0	0	0	Longview	WA
Vessel	16' SKIFF (B-2)	16' SKIFF with 15hp		0	0	0	0	Longview	WA
Vessel	14' SKIFF G3-BL (BL-3)	14' G3 SKIFF with 15hp		0	0	0	0	Port Angeles	WA
Vessel	16' SKIFF (B-4)	16' SKIFF with 15hp		0	0	0	0	Longview	WA
Vessel	26' FRV - Splasher	26' FRV w/ (2) 90 HP Outboards		0	0	800	0	Longview	WA
Vessel	Workboat (B-86)	21' Response Vessel "FibreForm"		0	0	0	0	Port Angeles	WA
Skimmer	28' Rapid Response Skimmer	28' Willard Marine with Drum or Belt Skimmer		2400	23	600	0	Longview	WA
Vessel	18' Skiff (B-5 OR 9055NM)	18' Skiff with 25 hp		0	0	0	0	Portland	OR

Type	Indentification	Specifications	Equip. #	License Plate	Liquid Storage (bbl)	Home Base	State
Eq, Veh	Air Mover/Vacuum Truck	1988 Ford Vactor Vacuum	A7	WA, 83887L	80	Aberdeen	WA
Eq, Veh	Air Mover/Vacuum Truck	1994 Ford Master Vacuum	A8	WA, 98500Y	80	Aberdeen	WA
Eq, Veh	Air Mover/Vacuum Truck	2002 Int'l Vacuum Truck	131	OR, YAPT990	80	Albany	OR
Eq, Veh	Air Mover/Vacuum Truck	1994 Ford Guzzler Ace Vacuum Truck	63	WA, 66546PR	80	Longview	WA
Eq, Veh	Air Mover/Vacuum Truck	2005 Sterling Vacuum Truck	64	WA, 97758PR	80	Longview	WA
Eq, Veh	Air Mover/Vacuum Truck	1981 Ford Vactor Vacuum	72	WA, 92161PR	80	Longview	WA
Eq, Veh	Air Mover/Vacuum Truck	2007 International Vacuum Truck	73	WA, 11966RP	80	Longview	WA
Eq, Veh	Air Mover/Vacuum Truck	1999 Int'l Truck with Guzzler Vacuum Truck	61	OR, YAPU856	80	Portland	OR
Eq, Veh	Air Mover/Vacuum Truck	1994 Kenworth/Vactor Vacuum Truck	69	WA, 76955PR	80	Portland	OR
Eq, Veh	Backhoe	1992 Case 480 EZ with Clamshell Bucket and Extend-a-hoe				Longview	WA
Eq, Veh	Blazer	1997 Chevy Blazer	8	WA, 998YDB		Longview	WA
Eq, Veh	Blazer	1989 Chevy Blazer	80	WA, 497RRG		Longview	WA
Eq, Veh	Blazer	1999 Chevy Tahoe	PNE 79	WA, 317UYT		PNE	WA
Eq, Veh	Blazer	2001 Chevy Blazer	PNE 94	WA, 766TVW		PNE	WA
Eq, Veh	Combo Truck [Jet Rod/Vac Truck]	1990 Ford Vacuum Combo	A16	WA, A33313E	80	Aberdeen	WA
Eq, Veh	Combo Truck [Jet Rod/Vac Truck]	2007 International Combo Truck	76	WA, 15524RP		Aberdeen	WA
Eq, Veh	Combo Truck [Jet Rod/Vac Truck]	2002 Sterling LT9500 Combo Truck with Vactor Model 2115	121	PR, YAPU101	80	Albany	OR
Eq, Veh	Combo Truck [Jet Rod/Vac Truck]	2004 Sterling Vactor Vacuum Combo Truck	122	PR YCRV503	80	Albany	OR
Eq, Veh	Combo Truck [Jet Rod/Vac]	2005 Sterling Combo Truck Model LT9513	65	WA, 98896PR	80	Longview	WA
Eq, Veh	Combo Truck [Jet Rod/Vac]	1990 Ford Ramrodder Combo Truck	70	WA, 66548PR	80	Longview	WA
Eq, Veh	Combo Truck [Jet Rod/Vac]	2007 Sterling Combo Truck	74	OR, YARD484		Portland	OR
Eq, Veh	Crew Bus	1999 Ford F350 Crew Cab	27	WA, A47573S		Albany	OR
Eq, Veh	Crew Bus	1994 Ford F-350 Crew Cab	91	OR, T554372		Albany	OR
Eq, Veh	Crew Bus	1994 Chevy Crew Cab 1 Ton	16	WA, A39809M		Longview	OR
Eq, Veh	Crew Bus	1995 Chevy Crew Cab	28	WA, A91145V		Longview	WA
Eq, Veh	Crew Bus	1989 Ford F350 Pick Up	103	WA, A21448R		Longview	OR
Eq, Veh	Crew Bus	2005 Ford F350 Crew Cab	139	WA, A52290X		Longview	WA
Eq, Veh	Crew Bus	2005 Ford F350 Crew Cab	140	WA, A52292X		Longview	WA
Eq, Veh	Crew Bus	1999 Ford F350 Crew Cab	PNE 93	WA, A40846T		PNE	WA
Eq, Veh	Crew Bus	2006 F350 Crew Cab	PNE 100	WA, A38861Y		PNE	WA
Eq, Veh	Crew Bus	2006 Ford F350 Superduty Crew Bus	PNE 101	WA, A17344Z		PNE	WA
Eq, Veh	Crew Bus	2006 Ford F350 Superduty Crew Bus	PNE 102	WA, A17345Z		PNE	WA
Eq, Veh	Crew Bus	2005 Ford F350	PNE 108	WA, TSS1646		PNE	WA
Eq, Veh	Crew Bus	2005 Ford Superduty Crew Cab	97	OR, T551647		Portland	OR
Eq, Veh	Dump Truck	1999 Peterbilt Dump Truck & Pup	300	WA, 06968RP		Aberdeen	WA
Eq, Veh	Dump Truck	1988 International Dump Truck	142	WA, 86425PR		Portland	OR
Eq, Veh	Emergency Response Truck	2001 Ford F-250 4x4 Gas ER Truck	10	WA, B69022A		Albany	OR
Eq, Veh	Emergency Response Truck	1999 Ford F250 4x4 ER Truck	96	OR, W5L553		Astoria	OR
Eq, Veh	Emergency Response Truck	1999 F250 4x4 Diesel ER Truck	89	WA, A38584U		Longview	WA
Eq, Veh	Emergency Response Truck	2005 Chevy Crew Cab ER Truck	148	WA, A52200X		Longview	WA
Eq, Veh	Emergency Response Van	1981 Chevy Cube ER Van	19	WA, B34364G		Port Angeles	WA
Eq, Veh	Emergency Response Van	1982 Chevy Cube ER Van	12	WA, A67805K		Portland	OR
Eq, Veh	Fixed Wing Aircraft	6 Passanger		677PC		Longview	WA
Eq, Veh	Flatbed	1979 350 Ford Lift Gate	33	WA, A20543W		Longview	WA
Eq, Veh	Flatbed	1986 Ford F350 1-Ton	86	WA, A43640J		Longview	WA
Eq, Veh	Flatbed	1984 Chevy 1 Ton	88	OR, ZPF203		Longview	OR
Eq, Veh	Flatbed	2005 Ford F350 Crew Cab Flatbed	137	WA, A52293X		Longview	WA
Eq, Veh	Flatbed	2005 Ford F350 Crew Cab Flatbed	138	WA, A52291X		Longview	WA
Eq, Veh	Flatbed	1994 Ford F350 Flatbed	PNE 48	WA, A82827U		PNE	WA
Eq, Veh	Flatbed	2005 Ford F350 Crew Cab Flatbed	136	OR, T551649		Portland	OR
Eq, Veh	Liquid Ring/Vacuum Truck	1990 Freightliner Ace Liquid Ring Vacuum Truck	62	WA, 66545PR	80	Longview	WA
Eq, Veh	Liquid Vacuum Truck	1994 Ford Guzzler Liquid Vacuum Truck	71	WA, 66549PR		Aberdeen	WA
Eq, Veh	Liquid Vacuum Truck	1987 Kenworth Liquid Vacuum Truck (80 bbl)	55	WA, 66543PR	80	Longview	WA
Eq, Veh	Liquid Vacuum Truck	1997 Freightliner 80 bbl Liquid Vacuum Truck	68	WA, 02583RP	80	Longview	WA
Eq, Veh	Liquid Vacuum Truck	1977 Mack 6X6 Liquid Vacuum Truck (80 bbl)	58	OR, YAPW591	80	Portland	OR
Eq, Veh	Liquid Vacuum Truck	1980 Peterbilt Liquid Vacuum Truck (80 bbl)	66	WA, 66547PR	80	Portland	OR
Eq, Veh	Liquid Vacuum Truck	1994 International 80 bbl Liquid Vacuum Truck	67	OR, YAPW388	80	Portland	OR
Eq, Veh	Service Truck	1994 Ford F350 Superduty Service Truck	146	WA, A82977U		Albany	OR
Eq, Veh	Service Truck	1991 Ford Service Truck	145	WA, A41073T		Longview	WA
Eq, Veh	Service Truck	1996 Chevy 1 Ton Service Truck	PNE 61	WA, A82650X		PNE	WA
Eq, Veh	Service Truck	1995 Chevy 1 Ton Service Pickup	152	WA, B74113H		Puget Sound	WA
Eq, Veh	Sweeper	1996 Schwarze Model A7000 Sweeper	14	WA, 02472RP		Longview	WA
Eq, Veh	Sweeper	2003 Sterling Sweeper Truck	17	WA, 93846PR		Longview	WA
Eq, Veh	Sweeper	2002 Schwarze Sweeper Sterling SC8000	18	WA, 92548PR		Longview	WA
Eq, Veh	Sweeper	1996 Supervac 347-I on 1995 GMC Truck	21	WA, A09844X		Longview	WA
Eq, Veh	Sweeper	2000 Schwarze Model A4000 Sweeper with GMC Cab	24	WA, B34753G		Longview	WA
Eq, Veh	Sweeper	2005 Sterling Schware A7000	36	WA, 20076RP		Longview	WA
Eq, Veh	Sweeper	2006 Sterling Schwarze A7000	37	WA, 15370RP		Longview	WA
Eq, Trlr	Tanker Trailer	1995 Polar 42' with Certified Vacuum Pump 120 bbl	PT-49	WA, 9754RP	120	Longview	WA
Eq, Trlr	Tanker Trailer	1982 Trailmaster Tanker Non-Spec Aluminum 120 bbl	PT-51	WA, 8666TI	120	Longview	WA
Eq, Trlr	Tanker Trailer	1979 Stemco Thompson 120 bbl Liquid Vacuum	PT-53	WA, 3525MD	120	Longview	WA
Eq, Trlr	Tanker Trailer	1981 Proco Tank Trailer 120 bbl	PT-54	WA, 0057SV	120	Longview	WA
Eq, Trlr	Tanker Trailer	1993 SPCNS Tank Trailer 160 bbl	PT-55	WA, 0225SN	130	Longview	WA
Eq, Trlr	Tanker Trailer	1987 Spen Semi-Trailer 120 bbl Liquid Vacuum	PT-59	WA, 6886LS	120	Longview	WA
Eq, Veh	Tractor	1991 Ford L8000	A6	WA, A48279T		Aberdeen	WA
Eq, Veh	Tractor	2000 Freightliner Tractor	151	WA, 14051RP		Aberdeen	WA
Eq, Veh	Tractor	1991 Freightliner T800 Tractor	47	WA, 04555RP		Longview	WA
Eq, Veh	Tractor	1995 Kenworth T800 Tractor	48	WA, 02403RP		Longview	WA
Eq, Veh	Tractor	1998 Freightliner Stainless Spec Tank	49	WA, 92154PR		Longview	WA

Type	Indentification	Specifications	Equip. #	License Plate	Liquid Storage (bbl)	Home Base	State
Eq, Veh	Tractor	1995 Kenworth Tractor Truck	60	WA, 81135PR		Longview	WA
Eq, Veh	Tractor	2007 Peterbilt 379 Tractor	158	WA, 22816RP		Longview	WA
Eq, Veh	Tractor	2007 Peterbilt 379 Tractor	159	WA, 22817RP		Longview	WA
Eq, Veh	Tractor	2007 Peterbilt 379 Tractor	160	WA, 22818RP		Longview	WA
Eq, Veh	Tractor	2000 Freightliner Tractor	150	WA, 14050RP		Portland	OR
Eq, Veh	Tractor	2001 Dodge Ram 2500	90	OR, B56444D		Puget Sound	WA
Eq, Veh	Truck	1978 Chevy Pick Up	A3	WA, A06197E		Aberdeen	WA
Eq, Veh	Truck	1996 Chevy	A11	WA, A47946T		Aberdeen	WA
Eq, Veh	Truck	1994 Chevy Truck	A20	WA, A36617U	80	Aberdeen	WA
Eq, Veh	Truck	2003 Ford F-250	75	WA, B81537B		Aberdeen	WA
Eq, Veh	Truck	1996 Chevy C30 Flatbed	154	WA, A18781Z		Aberdeen	WA
Eq, Veh	Truck	1997 Chevy C30 Truck	155	WA, A34901C		Aberdeen	WA
Eq, Veh	Truck	1997 Ford F150 Ext Cab	101	OR, YPV378		Albany	OR
Eq, Veh	Truck	2005 F250 Superduty Ext Cab	106	OR, XQM158		Albany	OR
Eq, Veh	Truck	2006 Dodge Ram 2500	1	WA, B06729C		Longview	WA
Eq, Veh	Truck	1998 Dodge 4X4 Extended Cab	2	WA, A63634E		Longview	WA
Eq, Veh	Truck	1999 Chevy Truck	7	WA, A65835Z		Longview	WA
Eq, Veh	Truck	Ford F250 3/4 Ton	81	WA, 8999590		Longview	WA
Eq, Veh	Truck	1991 Ford Superduty	85	WA, A19561R		Longview	WA
Eq, Veh	Truck	1992 Ford 4x4 Truck with Lift Gate	92	OR, WUD151		Longview	OR
Eq, Veh	Truck	1995 Ford F150	95	WA, A82441U		Longview	WA
Eq, Veh	Truck	1995 Dodge 3500 Pick-up	102	OR, VGZ706		Longview	OR
Eq, Veh	Truck	1994 Chevy Pick Up	104	OR, ZPF204		Longview	WA
Eq, Veh	Truck	2001 Dodge Ram 1500	132	WA, B95045E		Longview	WA
Eq, Veh	Truck	2005 Ford F250 Extra Cab	141	WA, A52289X		Longview	WA
Eq, Veh	Truck	2004 Dodge Dakota	147	WA, B74038H		Longview	WA
Eq, Veh	Truck	2006 For F150 Truck	156	WA, A39726Y		Longview	WA
Eq, Veh	Truck	2005 Chevy Silverado Truck	157	WA, A39766X		Longview	WA
Eq, Veh	Truck	1997 Ford F250 3/4 Ton	PNE 71	WA, A19969D		PNE	WA
Eq, Veh	Truck	1999 Chevy C30 Dumpbed	PNE 86	WA, A93704J		PNE	WA
Eq, Veh	Truck	2002 Chevy Silverado	PNE 91	WA, A40763M		PNE	WA
Eq, Veh	Truck	1999 Ford F350	PNE 92	WA, B85938C		PNE	WA
Eq, Veh	Truck	2000 Ford F250	PNE 95	WA, A41144V		PNE	WA
Eq, Veh	Truck	2006 Chevrolet Silverado 2500	PNE 103	WA, B15497A		PNE	WA
Eq, Veh	Truck	2006 Chevy Silverado 3500	PNE 104			PNE	WA
Eq, Veh	Truck	2005 Dodge Ram 1500	PNE 106	WA, B49143B		PNE	WA
Eq, Veh	Truck	1996 Ford Ranger	PNE 107	WA, A82158X		PNE	WA
Eq, Veh	Truck	2008 Chevy Silverado 3500	PNE 113	WA, B35214G		PNE	WA
Eq, Veh	Truck	2008 Ford F150	PNE 114	WA, B95467E		PNE	WA
Eq, Veh	Truck	1997 Ford Flatbed with Lift	133	OR, WJY823		Portland	OR
Eq, Veh	Truck	1996 Ford F250	135	OR, 716BVN		Portland	OR
Eq, Veh	Truck	2007 Dodge Ram 2500	149	OR, 015CWY		Portland	OR
Eq, Veh	Truck	2006 Dodge Ram Pickup	153	OR, 553CLS		Puget Sound	WA
Eq, Veh	TV/Video Inspection Camera Van	2001 E450 Hi-Cube Van with Inspection Unit	007	WA, A20887R		Longview	WA
Eq, Veh	Water Truck	1989 Kenworth T800 Water Truck	44	WA, 86119PR		Longview	WA

Category	Indentification	Specifications	Equip. #	License Plate	Boom	Home Base	State
Eq, Trlr	Pressure Washer	1987 Trailer/Hot Water Pressure Washer	A2TR	WA, 9583PF	-	Aberdeen	WA
Eq, Trlr	Pressure Washer	1987 Trailer/Hydroblaster	A3TR	WA, 5281UO		Aberdeen	WA
Eq, Trlr	Van Trailer	1971 Brown Trailer Van	A6TR	WA, 0571NL	-	Aberdeen	WA
Eq, Trlr	Van Trailer	1972 Clark Trailer	A21TR	WA, 8007203	-	Aberdeen	WA
Eq, Trlr	Emergency Response Trailer	2008 Emergency Response Trailer	PT-182			Albany	OR
Eq, Trlr	Response Vessel Trailer	Response Vessel Trailer with 1 14'-Skiff	PT-9	OR, 1162SG	600	Albany	OR
Eq, Trlr	Pressure Washer	1996 Morgan Pressure Washer Trailer	PT-73	WA, 0912SG	-	Astoria	OR
Eq, Trlr	Trailer	1980 Trailmobile Van	PT-95	WA, 9953PW	-	Portl Angeles	WA
Eq, Trlr	Boom Trailer	1995 Assem. Boom Trailer	PT-21	OR, LL292350	1,000	Longview	WA
Eq, Trlr	Car Trailer	1992 Auto Trailer	PNE 103	WA, 4627SE	-	Longview	WA
Eq, Trlr	Cargo Trailer	2003 Large Cargo Trailer	PNE 97	WA, 3685SA	-	Longview	WA
Eq, Trlr	Emergency Response Trailer	22' HAZMAT Response Trailer	ER 48	WA, 4515RK	-	Longview	WA
Eq, Trlr	Hydroblaster	1992 NLB Hydroblaster 20,000 PSI	PT-83	WA, 0914SG	-	Longview	WA
Eq, Trlr	Hydroblaster	1993 Buttworth Hydroblaster 10,000 PSI	PT-80	WA, 7475RU	-	Longview	WA
Eq, Trlr	Hydroblaster	1999 Jetstream Hydroblaster 20,000 PSI	PT-74	WA, 0130NL	-	Longview	WA
Eq, Trlr	Hydroblaster	2002 Jestream Hydroblaster 4200 Series 10,000 PSI	PT-82	WA, 4513RK	-	Longview	WA
Eq, Trlr	Pump	Guzzler 4" Sludge Pump, 1100 gpm	PT-72	WA, 4590RK	-	Longview	WA
Eq, Trlr	Pump	Guzzler 4" Sludge Pump, 1100 gpm	PT-71	WA, 4589RK	-	Longview	WA
Eq, Trlr	Steam Cleaner	Steam Cleaner	PT-81	WA	-	Longview	WA
Eq, Trlr	Tilt Trailer	1996 Big Tex Tilt Trailer	PT-8	WA, 0005SN	-	Longview	WA
Eq, Trlr	Trailer	1997 Garland Single Axle Trailer	PT-11	WA, 2506TF	-	Longview	WA
Eq, Trlr	Emergency Response Van Trailer	1979 Hobbs 45' Response Van Trailer	PT-85	WA, 0913SG	-	Portland	OR
Eq, Trlr	Hydroblaster	Hydroblaster 20,000 PSI	PT-68	OR	-	Portland	OR
Eq, Trlr	Utility Trailer	1997 Big Tex Large Utility Trailer	PT-68	WA, 3679SA	-	Portland	OR

Category	Indentification	Specifications	Home Base	State
Eq, Pumps	Diaphragm Pump	2" Diaphragm Pump	Aberdeen	WA
Eq, Pumps	Diaphragm Pump	2" Diaphragm Pump	Aberdeen	WA
Eq, Pumps	Trash Pump	3" Trash Pump	Aberdeen	WA
Eq, Pumps	Trash Pump	3" Trash Pump	Aberdeen	WA
Eq, Pumps	Diaphragm Pump	2", 90 gpm	Albany	OR
Eq, Pumps	Pump	2", 90 gpm	Albany	OR
Eq, Pumps	2" Vac-U-Max (Wet)	Vacuum Pump, 1 bbl	Longview	WA
Eq, Pumps	3" Vac-U-Max (Dry)	Vacuum Pump, 1 bbl	Longview	WA
Eq, Pumps	Diaphragm Pump	1"	Longview	WA
Eq, Pumps	Diaphragm Pump	3", Air Driven, 140 gpm	Longview	WA
Eq, Pumps	Pump	2" Diaphragm Pump	Longview	WA
Eq, Pumps	Pump	Float-o-Pump	Longview	WA
Eq, Pumps	Trash Pump	3", Honda	Longview	WA
Eq, Pumps	Vac-U-Max (Dry)	4" Diaphragm	Longview	WA
Eq, Pumps	Centrifical Pump	2"	Longview	WA
Eq, Pumps	Diaphragm Pump	1-1/2", 65 gpm	Longview	WA
Eq, Pumps	Diaphragm Pump	1-1/2", 65 gpm	Longview	WA
Eq, Pumps	Diaphragm Pump	1-1/2", 65 gpm	Longview	WA
Eq, Pumps	Diaphragm Pump	1-1/2", 65 gpm	Longview	WA
Eq, Pumps	Diaphragm Pump	1-1/2", 65 gpm	Longview	WA
Eq, Pumps	Diaphragm Pump	2", 90 gpm	Longview	WA
Eq, Pumps	Diaphragm Pump	2", 90 gpm	Longview	WA
Eq, Pumps	Diaphragm Pump	2", 90 gpm	Longview	WA
Eq, Pumps	Diaphragm Pump	2", 90 gpm	Longview	WA
Eq, Pumps	Diaphragm Pump	2", 90 gpm	Longview	WA
Eq, Pumps	Diaphragm Pump	2", 90 gpm	Longview	WA
Eq, Pumps	Diaphragm Pump	2", 90 gpm	Longview	WA
Eq, Pumps	Diaphragm Pump	2", 90 gpm	Longview	WA
Eq, Pumps	Diaphragm Pump	2", 90 gpm	Longview	WA
Eq, Pumps	Diaphragm Pump	2", 90 gpm	Longview	WA
Eq, Pumps	Diaphragm Pump	2", 90 gpm	Longview	WA
Eq, Pumps	Diaphragm Pump	2", 90 gpm	Longview	WA
Eq, Pumps	Diaphragm Pump	2", 90 gpm	Longview	WA
Eq, Pumps	Diaphragm Pump	2", 90 gpm	Longview	WA
Eq, Pumps	Diaphragm Pump	2", 90 gpm	Longview	WA
Eq, Pumps	Diaphragm Pump	3", 140 gpm	Longview	WA
Eq, Pumps	Diaphragm Pump	3", 140 gpm	Longview	WA
Eq, Pumps	Diaphragm Pump	3", 140 gpm	Longview	WA
Eq, Pumps	Diaphragm Pump, Air	1-1/2 inch	Longview	WA
Eq, Pumps	Diaphragm Pump, Air	1-1/2 inch	Longview	WA
Eq, Pumps	Diaphragm Pump, Air	1-1/2 inch	Longview	WA
Eq, Pumps	Diaphragm Pump, Air	1-1/2 inch	Longview	WA
Eq, Pumps	Diaphragm Pump, Air	2 inch	Longview	WA
Eq, Pumps	Diaphragm Pump, Air	2 inch	Longview	WA
Eq, Pumps	Diaphragm Pump, Air	2 inch	Longview	WA
Eq, Pumps	Diaphragm Pump, Air	2 inch	Longview	WA
Eq, Pumps	Diaphragm Pump, Air	3 inch	Longview	WA
Eq, Pumps	Diaphragm Pump, Air	3 inch	Longview	WA
Eq, Pumps	Diaphragm Pump, Air	3 inch	Longview	WA
Eq, Pumps	Diaphragm Pump, Air	3", 140 gpm	Longview	WA
Eq, Pumps	Diaphragm Pump, Air	3", 140 gpm	Longview	WA
Eq, Pumps	Pump	82029 Float-o-Pump	Longview	WA
Eq, Pumps	Pump	82029 Float-o-Pump	Longview	WA
Eq, Pumps	Pump	82034 Float-o-Pump	Longview	WA
Eq, Pumps	Pump	Float-o-Pump	Longview	WA
Eq, Pumps	Submersable, Hydralic	4", 1100 gpm	Longview	WA
Eq, Pumps	Submersable, Hydralic	4", 1100 gpm	Longview	WA
Eq, Pumps	Diaphragm Pump	2", 90 gpm	Portland	OR
Eq, Pumps	Diaphragm Pump	2", 90 gpm	Portland	OR
Eq, Pumps	Diaphragm Pump	3", 140 gpm	Portland	OR
Eq, Pumps	Diaphragm Pump	3", 140 gpm	Portland	OR
Eq, Pumps	Diaphragm Pump	3", 140 gpm	Portland	OR

Category	Indentification	Specifications	Home Base	State
Eq, Misc	Aberdeen Meter #1	Industrial Scientfic	Aberdeen	WA
Eq, Misc	Aberdeen Meter #2	Industrial Scientfic	Aberdeen	WA
Eq, Misc	Air Compressor		Aberdeen	WA
Eq, Misc	Air Compressor		Aberdeen	WA
Eq, Misc	Cold Water Pressure Washer	Cold Water Pressure Washer	Aberdeen	WA
Eq, Misc	Cold Water Pressure Washer	Cold Water Pressure Washer	Aberdeen	WA
Eq, Misc	Confined Space Rescue Kits		Aberdeen	WA
Eq, Misc	Confined Space Rescue Kits		Aberdeen	WA
Eq, Misc	Cutting Torch		Aberdeen	WA
Eq, Misc	Forklift		Aberdeen	WA
Eq, Misc	Hot Water Pressure Washer	Hot Water Pressure Washer	Aberdeen	WA
Eq, Misc	Hot Water Pressure Washer	Hot Water Pressure Washer	Aberdeen	WA
Eq, Misc	Hot Water Pressure Washer	Hot Water Pressure Washer	Aberdeen	WA
Eq, Misc	MSA	Stealth H-60 /with Extra Tank	Aberdeen	WA
Eq, Misc	MSA	Stealth H-60 /with Extra Tank	Aberdeen	WA
Eq, Misc	MSA	Stealth H-60 /with Extra Tank	Aberdeen	WA
Eq, Misc	MSA	Stealth H-60 /with Extra Tank	Aberdeen	WA
Eq, Misc	Welder		Aberdeen	WA
Eq, Misc	Albany Meter #1	Industrial Scientific	Albany	OR
Eq, Misc	Pressure Washer		Albany	OR
Eq, Misc	Air Compressor	100 CFM	Astoria	OR
Eq, Misc	Astoria 1	Radio Hand-held	Astoria	OR
Eq, Misc	Astoria 2	Radio Hand-held	Astoria	OR
Eq, Misc	Astoria 3	Radio Hand-held	Astoria	OR
Eq, Misc	Generator	Gas Power 60HZ 2.3kva	Astoria	OR
Eq, Misc	MSA	Stealth H-60 /with Extra Tank	Astoria	OR
Eq, Misc	MSA	Stealth H-60 /with Extra Tank	Astoria	OR
Eq, Misc	#3	2" Trash Pump	Longview	WA
Eq, Misc	677PC Fixed Wing	6 Passanger	Longview	WA
Eq, Misc	Blue Emglo		Longview	WA
Eq, Misc	Briggs & Stratten	2" Tarsh Pump, 3 hp	Longview	WA
Eq, Misc	Cascade Air System	2 Man	Longview	WA
Eq, Misc	Cascade Air System	4 Man	Longview	WA
Eq, Misc	CCS 10	Radio Hand-held	Longview	WA
Eq, Misc	CCS 11	Radio Hand-held	Longview	WA
Eq, Misc	CCS 12	Radio Hand-held	Longview	WA
Eq, Misc	CCS 2	Radio Hand-held	Longview	WA
Eq, Misc	CCS 3	Radio Hand-held	Longview	WA
Eq, Misc	CCS 4	Radio Hand-held	Longview	WA
Eq, Misc	CCS 5	Radio Hand-held	Longview	WA
Eq, Misc	CCS 6	Radio Hand-held	Longview	WA
Eq, Misc	CCS 7	Radio Hand-held	Longview	WA
Eq, Misc	CCS 8	Radio Hand-held	Longview	WA
Eq, Misc	CCS 9	Radio Hand-held	Longview	WA
Eq, Misc	CCS Meter #1	Industrial Scientfic	Longview	WA
Eq, Misc	CCS Meter #2	Industrial Scientfic	Longview	WA
Eq, Misc	CCS Meter #3	Industrial Scientfic	Longview	WA
Eq, Misc	CCS Meter #4	Industrial Scientfic	Longview	WA
Eq, Misc	CCS Meter #5	Industrial Scientfic	Longview	WA
Eq, Misc	CCS Meter #6	Industrial Scientfic	Longview	WA
Eq, Misc	Coleman	Pro Gen 5000	Longview	WA
Eq, Misc	Confined Space Rescue Equipment	2-5 Man Teams	Longview	WA
Eq, Misc	Drum Load Accessory Attachment	Attaches to #63	Longview	WA
Eq, Misc	ER 1 Intrinsically Safe	Radio Hand-held	Longview	WA
Eq, Misc	ER 2 Intrinsically Safe	Radio Hand-held	Longview	WA
Eq, Misc	ER 3 Intrinsically Safe	Radio Hand-held	Longview	WA
Eq, Misc	ER 4 Intrinsically Safe	Radio Hand-held	Longview	WA
Eq, Misc	Forkfilt		Longview	WA
Eq, Misc	Generator	Blue Star 180K	Longview	WA
Eq, Misc	HAZMAT Response Trailer	22'	Longview	WA
Eq, Misc	Honda	4" Trash Pump	Longview	WA
Eq, Misc	Huskey	2 HP	Longview	WA
Eq, Misc	Huskey Easy Air		Longview	WA
Eq, Misc	Ingerssoll-Rand	150 CFM	Longview	WA
Eq, Misc	Land & Marine Response Trailer	22'	Longview	WA
Eq, Misc	Makita	Cut Off Saw	Longview	WA
Eq, Misc	Meter #1	ProCon O2 LEL meter	Longview	WA
Eq, Misc	Miller	Blue Star 180K	Longview	WA
Eq, Misc	Miscellaneous Hand Tools	511 Count	Longview	WA
Eq, Misc	MSA	Stealth H-60 /with Extra tank	Longview	WA
Eq, Misc	MSA	Stealth H-60 /with Extra tank	Longview	WA
Eq, Misc	MSA	Stealth H-60 /with Extra tank	Longview	WA
Eq, Misc	MSA	Stealth H-60 /with Extra tank	Longview	WA
Eq, Misc	MSA	Stealth H-60 /with Extra tank	Longview	WA
Eq, Misc	Safety Meter #1	Industrial Scientific	Longview	WA
Eq, Misc	Safety Tripod/Retractor		Longview	WA
Eq, Misc	Skim Pack	Douglas M 4200 2K/HR	Longview	WA
Eq, Misc	Skim Pack	Douglas M 4200 2K/HR	Longview	WA
Eq, Misc	Subaru Robin		Longview	WA
Eq, Misc	Titan	4" Trash Pump	Longview	WA

Category	Indentification	Specifications	Home Base	State
Eq, Misc	Truck Roll-Over Kit	Contains Air Driven Hot Tap Drill	Longview	WA
Eq, Misc	Vanguard Pressure Washer	4000 psi	Longview	WA
Eq, Misc	Yamaha Generator		Longview	WA
Eq, Misc	Cascade Air System	4 Man	Portland	OR
Eq, Misc	Cascade Air System	4 Man	Portland	OR
Eq, Misc	Compressor	Air Compressor	Portland	OR
Eq, Misc	MSA	Stealth H-60 /with Extra Tank	Portland	OR
Eq, Misc	MSA	Stealth H-60 /with Extra Tank	Portland	OR
Eq, Misc	MSA	Stealth H-60 /with Extra Tank	Portland	OR
Eq, Misc	MSA	Stealth H-60 /with Extra Tank	Portland	OR
Eq, Misc	MSA	Stealth H-60 /with Extra Tank	Portland	OR
Eq, Misc	MSA	Stealth H-60 /with Extra Tank	Portland	OR
Eq, Misc	MSA	Stealth H-60 /with Extra Tank	Portland	OR
Eq, Misc	MSA	Stealth H-60 /with Extra Tank	Portland	OR
Eq, Misc	PDX Meter 1	Industrial Scientific	Portland	OR
Eq, Misc	PDX Meter 2	Industrial Scientific	Portland	OR
Eq, Misc	PDX Meter 3	Industrial Scientific	Portland	OR
Eq, Misc	PDX Meter 4	Industrial Scientific	Portland	OR
Eq, Misc	PDX Meter 5	Industrial Scientific	Portland	OR
Eq, Misc	Pressure Washer	4000 psi Cold Pressure Washer	Portland	OR
Eq, Misc	Pressure Washer	4000 psi Hot Pressure Washer	Portland	OR
Eq, Misc	Pressure Washer	4000 psi Hot Pressure Washer	Portland	OR

Category	Indentification	Specifications	Boom (ft.)	Home Base	State
Boom	American Marine	18"	2,500	Aberdeen	WA
Boom	Kepner, Contractor, SeaCurtain	30"	1500	Port Angeles	WA
Boom	Contractor	18"	4,800	Longview	WA
Boom	Contractor Boom	18"	800	Tacoma	WA
Boom	20" Contractor Boom (Versatech)	18"	2,000	Portland	OR

Category	Indentification	Specifications	Equip. #	License Plate	Boom (ft.)	Home Base	State
Vessel	Gator Boat	24' Workboat "Gator"	B-90	OR160AAX	600	Longview	WA
Vessel	Landing Craft	1975 Johndunn Landing Craft	B-6	WN6838RS	-	Aberdeen	OR
Vessel	Skiff	1997 14' G3 Smoker Craft with 15hp	B-3	WN6442NF	-	Aberdeen	WA
Vessel	Skiff	1974 Seaking Small Skiff	B-73	WN9824ME		Springfield	OR
Vessel	Hewes Craft	18.5' Hewes Craft	B-88	WN1965ME	-	Longview	WA
Vessel	Skiff	1997 16' Smoker Craft Skiff with 15hp	B-2	WN6443NF	-	Longview	WA
Vessel	Skiff	1997 16' Smoker Craft with 15hp	B-4	WN6441NF	-	Longview	WA
Vessel	Workboat	21' Response Vessel "Fibre Form"	B-86		-	Port Angeles	WA
Vessel	Skiff	2002 18' G-3 Skiff with 25 hp	B-5	OR9055NM	-	Portland	OR
Skimmer	28' Rapid Respo	28' Willard Marine with Drum or Belt Skimmer		2400		Longview	WA
Vessel	Workboat	26' FRV w/ (2) 90 HP Outboards "Splasher"	B-99	WN3947NJ	800	Puget Sound	WA

Category	Indentification	Specifications	EDRC	Storage Capacity	Boom (ft.)
28' Rapid Response Skimmer	28' Willard Marine with Drum or Belt Skim		2400	23	600
Model 24 Voss Skimmer	24" Drum Skimmer (Hydraulic)		2400	0	0
Skimpak #2	Douglas Skimpak 4200		4200	0	0
Skimpak #3	Douglas Skimpak 4200		4200	0	0

Home Base	State
Longview	WA
Longview	WA
Longview	WA
Aberdeen	WA

Clean Rivers Cooperative, Inc.

CLEAN RIVERS
COOPERATIVE, INC

February 28, 2011

200 SW Market Street, Suite 190
Portland, OR 97201
Phone: (503) 220-2040
Fax: (503) 295-3660

www.cleanriverscooperative.com

Kevin Van Fleet
Cascade Kelly Holdings LLC
821 3rd Avenue
Longview, WA 98632

Re: 2011 Membership Verification and 2010 PREP Documentation

Dear Kevin,

This letter is to confirm that Cascade Kelly Holdings LLC is a member of Clean Rivers Cooperative, Inc. (CRC), and that the cooperative will provide oil containment and recovery services as a qualified Oil Spill Removal Organization (OSRO) according to the terms and conditions outlined in the Membership Bylaws. This letter encompasses OSRO coverage for the 2011 calendar year for the purposes of meeting the requirements set forth in 33 CFR 154.1028, and shall be renewed each calendar year.

As a member of CRC, however, there is no "end date" to your coverage under the Bylaws. Coverage is terminated upon member request or at the discretion of the CRC Board of Directors and Membership. For specific terms of coverage and effective periods, please reference the Bylaws.

CRC additionally confirms that it has met the PREP (Preparedness for Response Exercise Program) requirements for 2010. Through equipment deployments, contractor training, maintenance and actual responses, Clean Rivers has exceeded the minimum representative sample of these equipment deployments and training exercises.

We conduct contractor training on a monthly basis (at a minimum) and membership specific training or spill events as they arise. These trainings involve both classroom and equipment deployment exercises, with the goal of increasing the competency levels of our contracted personnel as well as meets the PREP requirements. Preventative maintenance is done in accordance with the manufacturer's written specification with repairs conducted as needed. Additional training and maintenance records can be made available upon request.

Clean Rivers is located within Sector Columbia River. Our area of interest is the mouth of the Columbia River to River Mile 125, and the Willamette River from its confluence up to Willamette Falls (Zones 1 & 2). Our area of interest also includes our 12- and 24-hour response zones which are the Columbia River from River Mile 125 to its confluence with the Snake River, and the Snake River up to the Idaho border.

Please feel free to contact me should you have any questions. For additional information, please visit us online at www.cleanriverscooperative.com.

Sincerely,
Clean Rivers Cooperative

Ernie Quesada
General Manager

MC

Certificate of Membership

CLEAN RIVERS
COOPERATIVE, INC.

Issued to:

Cascade Kelly Holdings LLC

This is to certify that the above named company is a member in good standing of Clean Rivers Cooperative, Inc. and is therefore entitled to all the rights and privileges thereof.

March 3, 2011
Date

Ernie Quesada
Ernie Quesada, General Manager
Clean Rivers Cooperative, Inc.
Portland, Oregon

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Add New Equipment Record | Multi-Record Edit | « Prev | Next »

Multi-record edit function:
A member can only edit information for the equipment owned by that member.
Only the equipment records shown in the list will be edited. There is no "Undo" button.

WRRL Equipment List

Guest users cannot add records

WRRL ID	Org.	KindType	Resource Category	Indentification	Specifications	Recovery (BPD-EDRC)	Liq. Storage (BBL)	Boom (Feet)	People	Home Base	State	Staging	Owner ID	Contact Name	Contact Phone	Latitude	Longitude	Not Usually Avail.	Name-plate Capacity
29029	CRC	WB3	Workboat	FRV Columbia Responder	32' Kvichak				2	Astoria	OR	West	006-27	Ernie	503-220-2040	46.131328	-122.993194	Dedicat	
29030	CRC	WB3	Workboat	FRV Independence	32' Browns				2	Longview	WA	Jack Fowler's	004-24	Ernie	503-220-2040	46.196136	-123.803283	Dedicat	
29031	CRC	WB3	Workboat	FRV Protector	34' Munson				2	St. Helens	OR	Dillards, St.	004-25	Ernie	503-220-2040	45.861539	-122.795536		
29032	CRC	RV3	Skimmer V	OSRV HW Zarling	34' Kvichak	3720	24		2	Portland	OR	Fred's Marina	002-22	Ernie	503-220-2040	45.619775	-122.805878	Dedicat	18600
29033	CRC	RV3	Skimmer V	OSRV Mark O. Hatfield	34' Kvichak	3720	24		2	Cathlamet	WA	Elochoman	003-23	Ernie	503-220-2040	46.206269	-123.385731	Dedicat	18600
29034	CRC	RV3	Skimmer V	OSRV MFSA 1	34' Kvichak	3720	24		2	Portland	OR	Sause Bros.	000-20	Ernie	503-220-2040	45.54883	-122.705183	Dedicat	18600
29035	CRC	RV3	Skimmer V	OSRV Clean Rivers 1	34' Kvichak	3720	24		2	Rainier	OR	Foss Dock	001-21	Ernie	503-220-2040	46.089014	-122.928147	Dedicat	18600
29037	CRC	WB4	Workboat	16' Workboat	16' Boston Whaler w/40 hp				1	Portland	OR	Portland	007-28	Ernie	503-220-2040	45.592936	-122.777381	Dedicat	
29038	CRC	WB4	Workboat	21' Workboat	21' Boston Whaler w/150 hp				1	Portland	OR	Portland	008-28	Ernie	503-220-2040	45.592936	-122.777381	Dedicat	
29039	CRC	WB4	Workboat	20' Workboat	20' Alumaweld w/115 hp				1	Portland	OR	Portland	009-31	Ernie	503-220-2040	45.592936	-122.777381	Dedicat	
29040	CRC	WB4	Workboat	Elizabeth Furse	27' Allday				2	Portland	OR	Portland	005-26	Ernie	503-220-2040	45.592936	-122.777381	Dedicat	
29041	CRC	WB5	Skiff	14' Skiff	14' Skiff w/15 hp				1	Portland	OR	Portland	010-58	Ernie	503-220-2040	45.592936	-122.777381	Dedicat	
29042	CRC	WB5	Skiff	14' Skiff, Shoreline Clean-up	14' Skiff w/15 hp				1	Portland	OR	Shoreline	011-58	Ernie	503-220-2040	45.592936	-122.777381	Dedicat	
29043	CRC	WB5	Skiff	14' Skiff, Spill Response Trailer	14' Skiff w/15 hp				1	Portland	OR	Spill	012-58	Ernie	503-220-2040	45.592936	-122.777381	Dedicat	
29044	CRC	WB5	Workboat	16' Skiff	16' Skiff w/25 hp				1	Portland	OR	Portland	013-58	Ernie	503-220-2040	45.592936	-122.777381	Dedicat	
29045	CRC	WB5	Workboat	16' Skiff	16' Skiff w/ 25hp				1	Portland	OR	Portland	014-58	Ernie	503-220-2040	45.592936	-122.777381	Dedicat	
29047	CRC	VHO	Equipment	1 Ton Service Truck	2008 GMC				1	Portland	OR	Portland	212-65	Ernie	503-220-2040				
29048	CRC	VHO	Equipment	Trailer (303-35)	38' Boom Trailer					Astoria	OR	Tongue Point	303-35	Ernie	503-220-2040				
29049	CRC	VHO	Equipment	Trailer (304-35)	45' Boom Trailer					Vancouver	WA	Port of	304-35	Ernie	503-220-2040				
29050	CRC	SK3	Skimmer V	Shallow Water Recovery Barge	30' American Eagle w/ Lori	2473	100		2	Vancouver	WA	Tesoro	105-29	Ernie	503-220-2040	45.627856	-122.686272	Dedicat	12365
29051	CRC	SK3	Skimmer V	Shallow Water Recovery Barge	30' Kvichak w/ Lori Skimmer	2473	100		2	Portland	OR	Portland	104-29	Ernie	503-220-2040	45.592936	-122.777381	Dedicat	12365
29052	CRC	SK3	Skimmer V	Shallow Water Recovery Barge	30' Kvichak w/ Lori Skimmer	2473	100		2	Longview	WA	Weyerhaeuse	103-29	Ernie	503-220-2040	46.131328	-122.993194	Dedicat	12365
29053	CRC	SK3	Skimmer V	Shallow Water Recovery Barge	30' Kvichak w/ Lori Skimmer	2473	100		2	Longview	WA	Weyerhaeuse	102-29	Ernie	503-220-2040	46.131328	-122.993194	Dedicat	12365
29054	CRC	SK3	Skimmer V	Shallow Water Recovery Barge	30' American Eagle w/ Lori	2473	100		2	Astoria	OR	Tongue Point	101-29	Ernie	503-220-2040	46.199094	-123.763933	Dedicat	12365
29055	CRC	SK3	Skimmer V	Shallow Water Recovery Barge	30' Kvichak w/ Lori Skimmer	2473	100		2	Astoria	OR	Tongue Point	100-29	Ernie	503-220-2040	46.199094	-123.763933	Dedicat	12365

BYLAWS
OF
CLEAN RIVERS COOPERATIVE, INC.

(Amended and adopted by the members December 16, 2004.)

ARTICLE 1
Definitions

As used in these bylaws, the following terms shall have the following respective meanings:

"**Area of Interest**" shall mean the Snake River up to the Idaho border, the Columbia River from its confluence with the Snake River to the mouth of the Columbia, and the Willamette River up to Willamette Falls.

"**Contractor(s)**" shall mean, where applicable, the entity or entities engaged by the Cooperative to maintain and operate all or any portion of the vessels, equipment and materials owned or leased by the Cooperative or who are retained under contract to provide oil spill response and related services to the Cooperative or its Members.

"**Cooperative**" shall mean Clean Rivers Cooperative, Inc.

"**Former Member**" shall mean any person whose membership has been terminated either voluntarily or involuntarily pursuant to **Article 3**.

"**Manager**" shall mean the person or entity designated from time to time by the Cooperative to provide general administrative services to the Cooperative under independent contract to the Cooperative.

"**Member**" shall mean any company, person or entity admitted as a Member of the Cooperative pursuant to **Article 3**, which has not had its membership terminated or assigned pursuant to **Article 3**.

"**Membership Interest**" shall mean the interest of a Member expressed as a percentage and calculated pursuant to **Section 7.1**.

"**Oil**" means oil of any kind or in any form including, but not limited to, crude oil, petroleum, fuel oil, sludge, slops, oil refuse, oil mixed with wastes other than dredged soil, and non-petroleum edible oils.

"**Representative(s)**" shall mean any person(s) appointed by a Member to act as its representative(s) or alternate representative pursuant to **Section 3.2**.

ARTICLE 2
Offices

2.1 **Principal Office**. The principal office of the Cooperative shall be located in the City of Portland, Oregon.

2.2 **Other Offices**. The Cooperative may also have offices and a registered office at such other places both within and without the State of Oregon as the Board of Directors may from time to time determine or the activities of the Cooperative may require.

ARTICLE 3
Members

3.1 **Qualifications**. Individuals, partnerships, corporations and other entities operating or owning an interest in any oil or gasoline pipeline, oil storage, refining or processing facility or oil terminal facility in the Area of Interest, or who, as a petroleum owner or seller, have "through put" transfers at petroleum facilities within the Area of Interest, are eligible to become Members of the Cooperative and may be admitted to membership by a vote of the existing Members under the bylaws.

3.2 **Representatives of Members**. Every Member shall designate to the Manager a Representative and one or more alternates, who shall for all purposes hereof have full power and authority to represent such Member in all matters dealing with the affairs of the Cooperative and upon whom any notices, statements of costs and expenses or any other communications with respect to the Cooperative may be given, delivered or served. The power and authority of such Representative (or alternate) shall continue until the Member represented by him or her shall designate another Representative or until the membership of the Member is terminated or assigned as provided below.

3.3 **Admission of Members**. Any person or entity meeting the requirements set forth in **Section 3.1** shall be eligible to become a Member by a vote of the existing Members. A vote of 75% of the number of participating Members, irrespective of Membership Interest, shall be required to approve the admission of all new Members into the Cooperative. Membership shall become effective upon payment by such new Member of all amounts required pursuant to **Section 7.2**. The requirements of this subsection shall not apply to Members that are voting Members in good standing as of the date of enactment of these bylaws. Any Former Member seeking readmittance as a Member shall be subject to the same requirements as any other person or entity applying for membership.

3.4 **Voluntary Termination of Membership**. Any Member may terminate its membership in the Cooperative by filing a written notice thereof with the Manager. Such withdrawal shall become effective immediately upon receipt of said notice or as provided in said notice, whichever occurs later in time.

3.5 **Involuntary Termination of Membership**. The Members may expel any other Member if approved by a vote of 75% of the remaining Members, for any reasons in the interests of the Cooperative, including, but not limited to:

(a) Failure to pay assessments, expenses or service fees properly attributable to such Member when due;

(b) A finding that the Member no longer meets the qualifications for membership eligibility as described in **Section 3.1**.

(c) Conduct which impairs the Cooperative's spill response and equipment programs.

A Member shall have at least 15 days notification by registered or certified mail prior to any vote on the Member's expulsion. The Cooperative's remedy of expulsion is in addition to any other remedies at law or equity that the Cooperative may have.

3.6 **Obligations on Termination.** Upon any termination of membership, whether voluntary or involuntary, the Former Member shall pay in full all outstanding Cooperative assessments, costs or service fees due and payable as of the effective date of the termination of membership. By such termination, the Former Member forfeits all rights the Former Member may have acquired in the Cooperative, including rights to any property owned by the Cooperative. Such termination shall not relieve the Former Member from its proportionate share of any liabilities, if any, incurred by or rights or claims accruing against the Cooperative as of the effective date of the termination of membership.

3.7 **Adjustment of Membership Interest upon Admission or Termination.** The Membership Interest of each Member shall be adjusted pursuant to **Section 7.1** as of the effective date of the admission of a new Member or termination of an existing Member.

3.8 **Assignment and Transfer of Membership Interest.** No Member may assign or otherwise transfer in whole or in part its Membership Interest without the assignee or other transferee being admitted as a new Member pursuant to **Section 3.3**. A corporate reorganization of a Member, by merger, consolidation, or otherwise, shall not constitute an assignment or transfer for the purposes of this subsection, provided such reorganization does not cause the Cooperative to be in violation of applicable law.

3.9 **Associates.** The Cooperative may invite vendors and other persons or entities that are not eligible for membership to become associated with the Cooperative. Associates shall have no membership rights respecting voting, equipment programs, emergency procedure programs or contingency planning, but may otherwise participate in Cooperative meetings and other activities designated as open to associates or the public by the Board of Directors. Associates may be assessed annual fees set from time to time by the Board of Directors.

ARTICLE 4
Meetings of Members

4.1 **Place of Meeting.** All Member meetings shall be held in Portland, Oregon or at any other place, either within or without the State of Oregon, as may be designated by the Board of Directors.

4.2 **Annual Meeting**. The annual Member meeting shall be held in the last quarter of each calendar year on such date and at such time as shall be designated by the Board of Directors and stated in the notice of the meeting. At each annual Member meeting, the Members shall (i) elect a Chairman, a Vice Chairman and members of the Board of Directors to succeed those whose terms expire in that year to serve until their successors are elected, (ii) approve the capital and expense forecast for the following year and (iii) transact such other business as may properly be brought before the meeting.

4.3 **Notice of Annual Meeting**. Written notice of the annual Member meeting stating the place, date and hour of the meeting shall be given to each Member entitled to vote at such meeting not less than seven (7) or more than thirty (30) days before the date of the meeting. Notice by electronic transmission is written notice. Such notice shall be given either personally or by mail. "Personally," as used in this subsection, shall include electronic transmission. Notice shall be deemed to have been given at the time when delivered personally, or if mailed, when deposited in the United States mail, postage prepaid, directed to each Member entitled to vote at such meeting at the address of such Member appearing on the books of the Cooperative or given by it to the Cooperative for the purpose of such notice. The notification requirements for a vote on expulsion of a Member under **Section 3.5** are in addition to the notice requirement stated herein.

4.3.1 **Waiver of Notice.** A written waiver of notice signed by the Representative of the Member entitled to the notice, whether before or after the time stated in the notice, is equivalent to the giving of the notice.

4.4 **List of Members**. The Manager who has charge of the membership ledger of the Cooperative shall prepare and make a complete list of Members entitled to vote at the Member meeting, showing the Membership Interest registered in the name of each Member. Such list shall be open to the examination of any Member at the place where the meeting is to be held.

4.5 **Regular and Special Meetings.**

4.5.1 **Regular Meetings.** In addition to the annual meeting, the Cooperative shall hold regular Member meetings during the year as may be called by the Chairman. Subject to the notice provisions in **Section 4.6**, the Chairman and/or Manager shall notify the Members of a schedule of regular meetings to be held throughout the year. Any business of the Cooperative may be conducted at regular meetings either in the open meeting or, at the election of the Chairman, in executive session for Members only. The Chairman may designate one or more regular meetings open to associates and non-Members, and may invite associates and non-Members to any regular or special meeting.

4.5.2 **Special Meetings.** The Chairman or the Board of Directors may call special Member meetings for any purpose or purposes. The Secretary shall call a special Member meeting upon the filing of a petition stating the business to be brought before the meeting signed by not less than 10 percent of the Members.

4.6 **Notice of Regular and Special Meetings**. Written notice of regular and special meetings stating the place, date and hour of the meeting shall be given to each Member entitled

to vote at such meeting not less than seven (7) or more than thirty (30) days before the date of the meeting. Notice of special meetings shall also state the purposes for which the meeting is called. Notice by electronic transmission is written notice. Notice of regular and special meetings shall be given either personally or by mail. "Personally," as used in this subsection, shall include electronic transmission. Notice shall be deemed to have been given at the time when delivered personally, or if mailed, when deposited in the United States mail, postage prepaid, directed to each Member entitled to vote at such meeting at the address of such Member appearing on the books of the Cooperative or given by it to the Cooperative for the purpose of such notice. The notification requirements for a vote on expulsion of a Member under **Section 3.5** are in addition to the notice requirement stated herein.

4.6.1 **Waiver of Notice.** A written waiver of notice signed by the Representative of the Member entitled to the notice, whether before or after the time stated in the notice, is equivalent to the giving of the notice.

4.7 **Business at Special Meetings.** The business transacted at any special Member meeting shall be limited to the purpose or purposes stated in the notice.

4.8 **Adjourned Meetings and Notice Thereof.** Any Members' meeting (annual, regular or special), whether or not a quorum is present, may be adjourned from time to time by the vote of 66 2/3% of the Membership Interest present by Representative, but in the absence of a quorum, no other business may be transacted at such meeting, except as provided in **Section 4.12** and **4.13**.

When a Members' meeting is adjourned to another time or place, a notice of the adjourned meeting need not be given if the time and place thereof are announced at the meeting at which the adjournment is taken; except that if the adjournment is for more than thirty (30) days or, if after the adjournment a new record date is fixed for the adjourned meeting, notice of the adjourned meeting small be given to each Member of record entitled to vote at such meeting.

At the adjourned meeting, the Cooperative may transact any business that might have been transacted at the original meeting.

4.9 **Quorum.** A majority (at least 50½%) of the Members representing at least 66 2/3% of the Membership Interest, present by Representative, shall constitute a quorum at all Member meetings for the transaction of business.

4.10 **Vote Required for Member Approval.** In all matters other than the admission or expulsion of a Member, a quorum must be present and Members holding at least 75% of the Membership Interest present in such quorum shall be required for approval of matters submitted to the Members.

4.11 **Voting Rights of Membership**

4.11.1 Subject to **Section 4.10**, each Member shall be entitled to one vote for each percentage point and a fractional vote equivalent to any fractional percentage point (rounded to the nearest 1/100th of a percentage point) of the Membership Interest held by such Member as determined pursuant to **Section 7.1**. Voting may be by voice or written ballot.

4.11.2 No voting by proxy is allowed. However, the Board of Directors may cause to be submitted by mail ballot any question to be voted on at any Member meeting, including the election of Directors. In such event, the Secretary shall mail to each Member along with the notice of the meeting, the ballot on each such question and a voting envelope. The ballot may be cast only in a sealed envelope which is authenticated by the Member's signature. A vote so cast shall be counted as if the Member were present and voting in person.

4.12 **Member Action Without Meeting**. Any action required to be taken at any Members' meeting or which may be taken at any Members' meeting, may be taken without a meeting if a consent in writing setting forth the action so taken is signed by all of the Members entitled to vote with respect to the subject matter thereof. Such consent shall have the same force and effect as a unanimous vote at a meeting. Unless the consent specifies a different effective date, action taken under this subsection is effective when the last Member entitled to vote signs the consent.

4.13 **Ratification by Absentees**. Members may ratify any vote or action taken at a membership meeting from which the Members were absent if done in writing and filed with the Manager.

ARTICLE 5
Board of Directors

5.1 **Board of Directors**. The business and affairs of the Cooperative shall be managed by or under the direction of the Board of Directors which may exercise all such powers of the Cooperative and do all such lawful acts and things as are directed by these bylaws or to be exercised or done by the Members. The Board of Directors shall consist of the following persons: Chairman, Vice Chairman, current past chairman, Training Committee representative and Equipment Committee representative. The Board of Directors may also include up to two Directors nominated from the Member Representatives at large. The Directors shall be nominated by the current Chairman and elected at the annual meeting of the Members, or the Board of Directors may be elected at any special meeting of the Members held for that purpose. Each Director shall be elected annually and hold office until his or her successor is elected and qualified.

5.2 **Vacancies**. In the event of a vacancy of any position on the Board of Directors, the Chairman shall designate a person to fill such Board of Directors position for the balance of the pending term for such position until the annual meeting.

5.3 **Compensation of Directors**. Directors shall not receive any stated salary for their services but may, upon approval of the Board of Directors, be paid their expenses, if any, of attendance at each meeting of the Board of Directors.

5.4 **Resignation**. Any Director may resign effective upon giving written notice to the Chairman or the Manager, unless the notice specifies a later time for the effectiveness of such resignation.

5.5 **Meetings**. The Board of Directors shall meet as deemed necessary by the Chairman. Notices of regular and special meetings of the Board of Directors shall be delivered personally to each Director or sent to each Director by facsimile, U.S. mail or e-mail at least four (4) days prior to the time of holding of the meeting provided, however, that the Board of Directors may meet and conduct business at any annual, regular or special meeting of Members without such notice and provided further that the Chairman may declare an oil-spill emergency and conduct a meeting without such prior written notice. Notice of a meeting need not be given to any Director who waives notice, whether before or after the meeting, or who attends or participates in the meeting without protesting the lack of notice prior thereto or at its commencement.

5.6 **Quorum**. At any meeting of the Board of Directors a majority of the total authorized number of Directors shall constitute a quorum. Matters to be decided by the Board of Directors shall be on vote of the majority of the Directors present including the Chairman, and in case of a tie, the vote of the Chairman or in his absence, the Vice Chairman shall be considered the deciding vote. Any meeting of the Board of Directors, whether or not a quorum is present, may be adjourned to another time and place by vote of the majority of Directors present.

5.7 **Action Without Meeting**. Unless otherwise restricted by these bylaws, any action required or permitted to be taken at a meeting of the Board of Directors or any committee thereof may be taken without a meeting if all Directors entitled to vote on the matter give their consent in writing, and such consent is filed with the minutes of proceedings of the Board of Directors maintained by the Manager.

5.8 **Meeting by Conference Telephone or Similar**. Unless otherwise restricted by these bylaws, Directors may participate in any meeting of the Board of Directors by means of conference telephone or similar communications equipment by means of which all persons participating in the meeting can hear each other. Participation pursuant to this subsection shall constitute presence in person at the meeting.

5.9 **Manager**. The Manager or the Manager's designated representative shall be an ex officio member of the Board of Directors and, unless otherwise stated by the Chairman, may attend all meetings of the Board of Directors. The Manager shall perform such secretarial and administrative duties as requested by the Chairman at such meetings but shall have no vote in business or matters before the Board of Directors.

ARTICLE 6
Officers

6.1 **Officers**. The Cooperative shall have a President, Vice President, Secretary/Treasurer and such other officers as may be determined by the Board of Directors from time to time. The offices of Chairman and President shall be combined in one person, and the offices of Vice Chairman and Vice President shall be combined in one person.

6.2 **Election and Term of Office**. The officers shall be elected annually at the first meeting of the Directors held after each annual meeting of the Members, or as soon thereafter as conveniently may be. Each officer shall hold office until a qualified successor to the officer is

duly elected or appointed, until the death or resignation of the officer, or until the officer is removed in the manner provided for in these bylaws; provided that a Chairman may only serve up to two consecutive years before replacement.

6.3 **Removal.** Any officer elected or appointed by the Board of Directors may be removed by the Board of Directors whenever in its judgment the best interests of the Cooperative will be served thereby.

6.4 **Vacancies.** The Board of Directors may fill a vacancy in any office for the unexpired portion of the term.

6.5 **Duties.** All officers shall have such authority and perform such duties as the Board of Directors may determine, not inconsistent with these bylaws.

ARTICLE 7
Finance

7.1 **Calculation of Membership Interest.** Each Member's voting rights, obligations to pay dues, assessments for similar contributions, and rights and duties upon merger, consolidation or dissolution of the Cooperative shall be based on such Member's Membership Interest. The Member's Membership Interest shall be determined by calculating such Member's participation percentage of the total Membership Interest held by all Members in accordance with the Participation Formula set forth on **Exhibit C** attached hereto and made a part hereof. The Members may amend **Exhibit C** from time to time pursuant to **Article 14** of these bylaws.

Membership Interest shall be calculated to the nearest one/one hundredth (1/100) of one (1) percent and computed annually using the best available data from the previous calendar year. The Membership Interest for new Members shall be based on data from the previous calendar year and shall be effective on the first day of the next calendar quarter following the acceptance of the new Member. The new Member shall be assessed for its proportionate share of the approved budget for the remaining part of the year following acceptance to membership.

The annually recalculated participation percentages shall be effective on July 1st of each year and January 1st if Member(s) are accepted or dropped during the fourth calendar quarter. Actual performance statistics for the immediate past year shall be submitted to the principal office of the Cooperative by March 31 of each year. The Cooperative shall have the right, at any reasonable time, to inspect and audit records of any Member to verify performance statistics reported by the Member for purposes of calculating participation percentage. Inspection and audit may be made by the Manager or by an independent public accounting firm or auditors selected by the Manager. The results of any inspection or audit, when conducted by an independent public accounting firm or auditor, shall be final and binding unless acceptance of such results is altered or modified by membership vote in accordance with regular membership voting procedures. The costs of any such audits shall be borne by the Cooperative unless the audit results in modification of reported transfer volumes in excess of 5%, in which case the costs of the audit may be charged to the affected Member.

7.2 **Payment by New Members**. Except where permitted by **Section 3.8**, a person admitted as a new Member shall make payment to the Cooperative for its Membership Interest in an amount determined as follows:

Its proportionate share determined in accordance with the Participation Formula of the then current replacement value of all major capital vessels, equipment and materials owned by the Cooperative, determined as follows:

$$\text{Current Replacement value} = \text{Original Cost} \times \frac{N_2}{N_1} \times \frac{\text{Remaining life yrs)}}{\text{Total life (yrs)}}$$

* N_1 = Nelson inflation index at end of year equipment purchased.

* N_2 = Latest available Nelson inflation index.

*or substitute some other appropriate index at the option of the Cooperative, such as:

(i) Producers Price index;

(ii) Nelson Miscellaneous Equipment Average; or

(iii) Marshall Equipment Index.

The equipment and materials to be included and the economic life of each shall be established by the Manager, subject to approval by the Board of Directors.

The amount can be paid either in cash, or in oil spill containment of recovery equipment or services, acceptable to the Board of Directors, of equal value.

For the purpose of this subsection, the new Member's Membership Interest shall be determined by the Participation Formula based upon the best available projection of the new Member's annual transfers. It shall be subject to approval by the Members in accordance with **Section 3.3**.

The requirements of this subsection may be partially or totally waived upon approval by the existing Members.

7.3 **Capital and Expense Forecasts**. The Board of Directors shall, each year, prior to the annual meeting of the Members, submit to the Members a capital and expense forecast, including equipment and material acquisitions plans, for operations of the Cooperative for the following year. Approval by the Members of the forecasts shall be by vote of the Members under **Section 4.10**.

7.4 **Capital Dues Assessments**. Each Member shall be assessed dues or assessments based on such Member's Membership Interest. Assessments shall be paid within the invoicing cycle established by the Board of Directors. Dues assessments shall be based, as near as possible, on the capital and expense forecasts for the applicable calendar year.

7.5 **Additional Capital and Expense Requirements.** Upon approval of the Members, additional monies may from time to time be added to the charges or assessments against the Members in accordance with their Membership Interest. Any Member which has given notice of withdrawal in accordance with **Section 3.4** or which has had its membership terminated pursuant to **Section 3.5** shall not be required to advance additional monies after the effective date of such withdrawal or termination.

ARTICLE 8
Cleanup Policies

8.1 **Emergency Procedures.** The Cooperative shall maintain a statement of emergency procedures to be followed in the event of an oil spill emergency in the Area of Interest involving any Member, for which a Member is or may be legally or contractually responsible, or to which the Cooperative is otherwise contractually obligated to respond (the "**Emergency Procedures**"). The Emergency Procedures may be amended from time to time by vote of the Members independently of any change or amendment to these bylaws. The benefits of the Cooperative's equipment and Emergency Procedures programs are limited to Members as stated in these bylaws and as may otherwise be stated in the Emergency Procedures provisions of any membership agreement of the Cooperative.

8.2 **Unidentified Spills.** The Cooperative and its Members assume no responsibility for spills from unidentified sources. The Board of Directors may, without further approval of the Members, authorize use of Cooperative equipment and material, or authorize a Contractor to use Cooperative equipment or materials, in cleanup of spills from unidentified sources within the Area of Interest at the request and under the direction of the governmental agency having jurisdiction over the spill, all for the account of the governmental agency or the Contractor, as the case may be. The Contractor shall at all times indemnify the Cooperative and the Members against all liability in connection with such use of Cooperative equipment and materials.

8.3 **Spills Originating Outside of the Area of Interest.** The Board of Directors may, with the Members' approval, release equipment and material to a Contractor or a governmental agency for use in the cleanup of spills originating outside the Area of Interest, subject, however, to the requirements of any applicable Contingency Plan maintained by the Cooperative or the Members.

8.4 **Charges for Cleanup Operations by Cooperative.** Any charges for cleanup services provided by the Cooperative to Members or non-Members shall be based on actual costs incurred by the Cooperative. The foregoing shall not apply to charges by Contractors.

8.5 **Member-Owned Equipment and Materials.** The Manager, with the assistance of the Members, shall collect and maintain current lists of oil-spill equipment and the materials owned by Members which are designated by such Members for purposes of the Emergency Procedures. The Manager shall arrange for distribution and updating of these lists to all Members. The information collected and maintained by the Manager shall include the following:

8.5.1 **Equipment Lists**. There shall be furnished by each Member a list of the equipment (recovery devices, skimmers, vacuum trucks, oil booms, etc.) which it would be willing to make available for use by a Member affected by an oil spill, or for use by the Cooperative, as the case may be. All listed equipment shall be released on authority of the contact personnel of the respective Member unless that Member clearly designates on the list that certain equipment can be released only on higher authority, together with the name, title and contact information of such higher authority. Members' inventory of designated equipment is subject to reasonable periodic inspection by the Manager.

In addition to Member-owned equipment, the Cooperative also has contractually-guaranteed access to equipment which is maintained by Contractor(s). This equipment is to be released by the Manager or the Chairman only pursuant to the Emergency Procedures and/or contingency plans maintained by the Cooperative.

8.5.2 **Materials Lists**. There shall be furnished by each Member company a list of the materials (approved chemicals, sorbents, etc.) which it would be willing to make available for use by a Member affected by an oil spill, or for use by the Cooperative, as the case may be. All listed materials shall be released on authority of the contact personnel of the respective Member unless that company clearly designates on the list that certain materials can be released only on higher authority, together with the name, title and contact information of such higher authority. Members' inventory of designated materials is subject to reasonable periodic inspection by the Manager.

In addition to Member-owned materials, the Cooperative also has contractually-guaranteed access to materials which are maintained by Contractor(s). These materials are to be released by the Manager or the Chairman only pursuant to the Emergency Procedures and/or contingency plans maintained by the Cooperative.

8.5.3 **Personnel**. Each Member shall provide the Manager with current and updated lists of Member personnel trained in oil spill response. It is not anticipated that the Cooperative will supply personnel to operate Member-owned equipment, except in the case of specialized equipment. Each Member shall indicate on its equipment list which items of equipment require specially trained personnel. The Cooperative may furnish such personnel on a voluntary basis only, subject to the Emergency Procedures.

8.5.4 **Authorized Contact Lists**. Each Member shall exercise its best efforts to provide and regularly update the Manager with the names and/or titles, facility emergency telephone numbers and home telephone numbers of responsible personnel in its facility who are authorized to release material and equipment for such Member. This list should be prioritized in order of those to be called. The first item on the list, if possible, should be the name(s) and/or title(s) of personnel who are on duty at all times. Except for the normal workweek (Monday through Friday, excluding holidays), this person should be called to request material or equipment. The second name on the list should be the company's representative in the Cooperative who would normally be called during regular office hours. This should be followed by his or her alternate in the Cooperative, and other officials such as Facility Managers, General Superintendents, etc.

8.5.5 **Other Sources of Materials and Equipment**. The Manager, with the assistance of the Members, shall also prepare lists of other sources of materials and equipment, including the various suppliers of approved chemicals.

ARTICLE 9
Member Contingency Plans

9.1 **Member Contingency Plans**. The Cooperative shall maintain a master list of materials and equipment owned by Members, as designated by Members pursuant to the procedures stated in **Section 8.5**. The Manager shall also maintain lists of spill response equipment owned by the Cooperative or made available to the Cooperative and its Members by contract. The Cooperative shall maintain this information as a resource for Members. Any Member in good standing may refer to and list these materials and equipment in that Member's individual contingency plan(s) or facility SPCC plan(s), as response resources available to that Member pursuant to the Emergency Procedures. Any Member listing all or part of the Cooperative resources in Member contingency or SPCC plans shall provide a copy of such listing or plan to the Manager upon request.

ARTICLE 10
Indemnification

10.1 **Indemnification by the Members**. A Member company requesting or receiving materials, equipment, personnel or similar spill-response services pursuant to the Emergency Procedures regularly maintained by the Cooperative shall indemnify, defend and hold the Cooperative and other Members harmless from all claims, damages, liabilities, expenses, penalties or fines arising from or relating to the receipt of emergency assistance from the Cooperative or other Members provided, however, that such indemnity obligation shall not apply where a Member furnishing equipment or materials to another Member under the Emergency Procedures has caused or contributed to the Spill or where equipment, materials, personnel or other services are provided to the Member by the Cooperative or other Members by, through or under the direction and control of any Contractor(s) under contract to the Cooperative or to the Member receiving emergency services. Subject to the foregoing provisions, the indemnity and hold harmless obligations by the Member shall be applicable regardless of whether any accident, damages or injuries are the result of negligence of an indemnified party.

10.2 **Indemnification of Directors and Uncompensated Officers**. The Cooperative shall, either directly or by insurance coverage it procures or is provided by Contractors, indemnify any person who is or was made, or threatened to be made, a party to an action, suit or proceeding, whether civil, criminal, administrative, investigative, or otherwise (including an action, suit or proceeding by or in the right of the Cooperative corporation), for judgments, fines, reasonable amounts paid in settlement and reasonable costs of defense in connection with such actions, to the extent not covered by other insurance or other right of indemnity, when such expenses are incurred by reason of the fact that the person is or was a Director, Manager, or uncompensated officer of the Cooperative.

10.3 **Indemnification of Others**. The Cooperative may, either directly or by insurance coverage it procures or is provided by Contractors, indemnify any other person who is

or was made, or threatened to be made, a party to any action, suit or proceeding, whether civil, criminal, administrative, investigative, or otherwise (including an action, suit or proceeding by or in the right of the Cooperative corporation), for judgments, fines, reasonable amounts paid in settlement and reasonable costs of defense in connection with such actions, to the extent not covered by other insurance or other right of indemnity, when such expenses are incurred by reason of the fact that the person is or was a compensated officer, an employee or agent of the Cooperative.

10.4 **Scope.** The indemnification provided under **Section 10.2** shall, and the indemnification provided under **Section 10.3** may, be made to the fullest extent not prohibited by the Oregon Cooperative Corporation Act, as it exists on the date hereof or may hereafter be amended or restricted by other applicable law, provided, however, that:

(a) No such indemnity shall be granted under either section to any person adjudged liable in a derivative action or adjudged liable in any proceeding on the basis that improper personal benefit was received by that person unless and to the extent the court in which such action was brought determines that the person is fairly and reasonably entitled to indemnity under all of the circumstances or the amount to be paid is covered by insurance procured by or provided for the benefit of the Cooperative;

(b) No such indemnity shall be granted under either section to any person in breach of his duty of loyalty to the Cooperative, guilty of intentional misconduct or knowing violation of law, guilty of acts or omissions not in good faith, or one who received an illegal loan, corporate guarantee of a personal obligation or other improper personal benefit from the Cooperative or who authorized an unlawful distribution or acted with an undisclosed conflict of interest to approve a transaction which was not fair to the Cooperative;

(c) To the extent that indemnification is neither mandatory under the relevant law or the provisions of **Section 10.2** nor covered by insurance procured by the Cooperative, the classes of persons entitled to indemnification (compensated officers, any employees or agents or any sub-categories thereof) shall be only as determined from time to time by Board resolution.

10.5 **Determination of Entitlement.** All issues of individual entitlement of any claimant and of amount of indemnification under particular factual circumstances shall be determined in accordance with the procedures of the Oregon Cooperative Corporation Act or the comparable statutes in effect at the time of the demand.

10.6 **Notice.** If the Corporation indemnifies or advances expenses to a Director in a derivative proceeding, that action shall be reported to the Members, in writing, at least 15 days before the next meeting of Members.

10.7 **Advance of Defense Costs.** When it appears to the Cooperative's satisfaction that a person is or will be entitled to or will be granted indemnity, the Cooperative may advance or reimburse the reasonable out-of-pocket expenses of defense (including attorneys fees) actually and reasonably incurred by that person in defense of the action, suit or proceeding, upon the person's compliance with any applicable statutes respecting advance reimbursement of expenses; provided, however, that this subsection shall not apply to the extent costs of defense are required

to be advanced under the terms of any other indemnity agreement, insurance or right held by the person which is not provided by or through the Cooperative, including any insurance policy not procured by or provided for the benefit of the Cooperative; and when the Cooperative advances expenses of defense under this subsection, the Cooperative shall have the right to designate or approve counsel, major items of expense, and any proposed settlement, in advance.

10.8 **Other Commitments**. The authorizations of this article shall not be deemed exclusive of any other provisions for indemnification of directors, officers, managers, employees or agents that may be provided by statute or agreement not inconsistent with the restrictions herein.

ARTICLE 11
Cooperative Nonprofit Operation

11.1 **Nonprofit Operation and Tax-Exempt Status**. It is the intent of the Cooperative to operate on a cooperative nonprofit basis for the mutual benefit of its Members, as a tax-exempt organization in compliance with section 501(c)(4) of the Internal Revenue Code.

11.2 **Distribution of Net Proceeds or Savings.** The Cooperative shall periodically distribute the net proceeds or savings of the Cooperative to the Members in accordance with the Oregon Cooperative Corporation Act. Such distributions shall be apportioned in accordance with each Member's membership interest during that period. Such distributions shall be in the form of a credit toward the Member's dues, assessments, or other similar required contributions, unless otherwise determined by the Board of Directors.

ARTICLE 12
General Provisions

12.1 **Contracts**. The Board of Directors may authorize the Manager or any officer or officers of the Cooperative, in addition to the officers so authorized by these bylaws, to enter on behalf of the Members into any contract or execute and deliver any instrument in the name of and on behalf of the Cooperative, and such authority may be general or confined to specific instances.

12.2 **Checks, Drafts or Orders for Payment**. All checks, drafts or orders for the payment of money, notes or other evidences of indebtedness issued in the name of the Cooperative shall be signed by such officer or officers of the Cooperative and in such manner as shall from time to time be determined by resolution of the Board of Directors. In the absence of such determination by the Board of Directors, such instruments shall be signed by the Chairman, Vice Chairman, Secretary/Treasurer or Manager.

12.3 **Deposits**. All funds of the Cooperative shall be deposited from time to time to the credit of the Cooperative on behalf of the Members in such banks, trust companies or other depositaries as the Board of Directors may select.

12.4 **Gifts**. The Cooperative shall not accept any grant, contribution, gift, bequest or devise offered for the general purposes of or for any special purpose of the Cooperative without the prior approval of the Board of Directors.

12.5 **Books and Records**. The Cooperative shall keep correct and complete books and records of account of all transactions conducted hereunder and shall also keep minutes of the proceedings of its Members and Board of Directors and shall keep at the registered or principal office a record giving the names and addresses of the Members, Directors and officers. These bylaws and amendments thereto shall be filed in a minute book that shall be kept at the principal office. All books and records of the Cooperative may be inspected by any Member for any proper purpose at any reasonable time.

12.6 **Severability**. If any provision of these bylaws or portion thereof should be declared invalid for any reason, the invalid provision or portion thereof shall be deemed omitted and the remaining terms shall nevertheless be carried into effect. If any transfer of any interest or control of any vessel contemplated hereunder would require the approval of any governmental authority in order to be lawful, obtaining such approval is a condition precedent to the effectiveness of any agreement to so transfer, and any actual such transfer.

ARTICLE 13
Dissolution

13.1 **Election by Members**. The Cooperative may elect to wind up its affairs and voluntarily dissolve by the vote of the Members pursuant to **Section 4.10** at a meeting of the Members specially called for that purpose, or by written consent of all Members without a meeting pursuant to **Section 4.12**.

13.2 **Disposition**. Upon the dissolution or winding up of the Cooperative, after paying or adequately providing for the debts and contractual obligations of the Cooperative, the remaining assets being held by the Cooperative for and on behalf of the Members shall be divided among the Members in accordance with each Member's respective Membership Interest as determined pursuant to **Section 7.1** at the time of dissolution.

ARTICLE 14
Amendments

14.1 **Amendments**. These bylaws may be altered, amended, or repealed or new bylaws may be adopted only by an affirmative vote of the Members pursuant to **Section 4.10** of these bylaws. Members may vote to alter, amend, or repeal or adopt new bylaws at any regular meeting of the Members, or at any special meeting of the Members if notice of such action is contained in the notice of such special meeting.

Exhibits

Exhibit A - Membership List (Date: 4-22-08)
Exhibit B - Equipment Lists (Date: 4-22-08)
Exhibit C - Participation Formula for Determining Membership Interest (7/1/92)
Exhibit D - Emergency Procedures (Date: 4-22-08)

CERTIFICATE OF THE SECRETARY

The undersigned Secretary of the Cooperative hereby certifies that the foregoing bylaws were adopted by the Members as of the 12th day of DECEMBER, 2000, replacing any and all prior versions or editions thereof

The Members of the Cooperative each certify that the foregoing bylaws are acceptable and agreed to by signature of an authorized representative of each Member on the attached acknowledgement signature pages. The acknowledgment signature pages for the Members may be signed in counterparts by the various Members and all such counterparts executed by the Members shall, taken together, be considered a fully executed original of the bylaws and membership acknowledgment.

Upon the admission of each new Member, such new Member shall also execute an acknowledgment copy of these bylaws in the form and version then current as of the time of the new Member's admission.

John W. Sherman

Secretary

EXHIBIT A

Membership List

Membership Roster

BP

9930 NW St. Helens Road
Portland, OR

P.O. Box 83409, Portland, OR 97283

Rep – Dave Anderson
Business: 503-286-8254 Ext: 231
Cell: 503-710-7874
e-mail: Anderdb@bp.com

Alt – Jim Swatman
Bus: 503-286-8257
Fx: 503-286-3961
e-mail: jim.swatman@bp.com

Emergency Phone: 503-286-8254

Boise White Paper, LLC

1300 Kaster Road
St. Helens, OR 97051

Rep – Eric Steffensen
Bus: 503-397-9299
Fx: 503-397-9613
e-mail: Ericsteffensen@BoisePaper.com

Alt Rep – Gary Pettit
Bus: 503-397-9228
Fx: 503-397-9613
e-mail: Garypettit@BoisePaper.com

Emergency Phone: 503-397-2900

Cascade General

5555 N. Channel
Portland, OR 97217

Rep – Lian Jewell
Bus: 503-285-1111 ext 1806
(or 503-247-1806)
Fx: 503-781-8161
e-mail: ljewell@vigorindustrial.net

Emergency Phone: 503-240-3005 or 503-240-3007

Membership Roster

Chevron

5924 NW Front Avenue
Portland, OR 97210

Rep – Jerry Henderson
Bus: 503-221-7714
Cel: 503-539-4019
Fx: 503-222-9766
e-mail: hegs@chevron.com

Alt – Larry Patershall
Bus: 503-221-7767
Fx: 503-222-9766
Cel: 503-475-6391
e-mail: pdla@chevron.com

Alt – Gene Ketchum
Bus: 503-221-6579
Cell: 503-806-1682
Fx: 503-222-9766
e-mail: gpke@chevron.com

Emergency Phone: 503-221-7866
*If unable to contact emergency number call Emergency Radio: 503-283-5601

ConocoPhillips Petroleum Company

5528 NW Doane Avenue
Portland, OR 97207

Rep – Steve Kober
Bus: 503-248-1538
Fx: 503-248-1522
e-mail steven.kober@conocophillips.com

Alt – Tom Lyons
Bus: 503-248-1572
Fx: 503-248-1519
e-mail:
Thomas.Lyons@conocophillips.com

Emergency Phone 503-248-1565

Emerald Materials

1296 3rd NW Street
Kalama, WA 98625

Rep – Tony Bazylko
Bus: 360-673-2550
Fx: 360-673-3564
Tony.Bazylko@emeraldmaterials.com

Emergency Phone: 360-673-2550

ExxonMobil Lube Oil

9420 NW St. Helens Road
Portland, O R 97231

Rep – Ken Scribner
Bus: 503-247-7300
Pg: 503-321-1124
Fx: 503-286-6727
e-mail:
kenneth.c.scribner@exxonmobil.com

Rep – Karen Cordes
Bus: 503-247-7300
Pg:
Fx: 503-286-6727
e-mail: Karen.s.cordes@exxonmobil.com

Georgia - Pacific (Camas)

401 N E Adams Street
Camas, WA 98607

Rep –Chris Newman
Bus: 360-834-8473
Fx: 360-834-8412
e-mail: christopher.newman@gapac.com

Alt – Steve Young
Bus: 360-834-3021 ext 8322
Fx: 360-834-8412
e-mail: steve.young@gapac.com

Kevin Goodell
Bus: 360-834-3021 ext 3202
Alt: 360-834-3021 ext 3213
Fx: 360-834-8412
e-mail: Kevin.goodell@gapac.com

Emergency Phone: 360-834-8414

Kinder Morgan Energy Partners, Ltd.

6565 NW St. Helens Road
Portland, OR 97201

P.O. Box 2533
Eugene, OR 97402

Rep – Sid Carr
Bus: 541-461-2517
Cel: 503-209-4575
Fx: 541-689-9861
e-mal: carrs@kindermorgan.com

Alt – Ron Metcalf
Bus: 503-224-3390
Cel: 503-209-4576
Fx: 503-224-1448
e-mail: metcalfr@kindermorgan.com

Emergency Phone: 503-224-3390 or 541-224-3390

Membership Roster

Longview Fibre Paper & Packaging Inc.

300 Fibre Way
PO Box 639
Longview, WA 98632

Rep – Roy Cliffton
Bus: 360-575-5303
Fx: 360-575-5949
e-mail: wlcliffton@longfibre.com

Emergency Phone: 360-425-1551

Olympic Pipe Line Company

9420 NW St. Helens Road
Portland, OR 97203

2201 Lind Ave SE, Ste 270
Renton, WA 98055

Rep – Sandy Conlan
2201 Lind Avenue SW, Suite 270
Renton, WA 98055
Bus: 425-227-5209
Fx: 425-981-2525
e-mail: sandra.conlan@bp.com

Emergency Contact: (24-hr) 888-271-8880

Owens Corning Sales Inc.

11910 NW St. Helens Road
Portland, OR 97213

Rep – Frank Burg
Bus: 503-273-1465
Cell: 503-702-6856
Fx: 503-325-9780
e-mail: frank.burg@owenscorning.com

3605 NW 35th
Portland, OR 97210

Alt – Tony Katzenberger
Bus: 503-273-1467
Cell: 503-804-0509

Emergency Phone:503-220-2457
Linnton: 503-273-1446
24-hour Trumbull 503-273-1470

Pacific Terminal Services, Inc.

7900 NW St. Helens Road
Portland, OR 97210

Rep – Kevin Buffum
5211 122nd Street SE
Everett, WA 98208
Bus: (425) 337-1359
Fax (425) 337-1359
Cel: (206) 979-3918
e-mail: kevinb@fammpnw.com

Local Phone: Tina Garrett 503.286.9621

Paramount Petroleum

5501 NW Front Avenue
Portland, OR 97208

Rep – Mark Wells
Bus: 206-546-0504
Cell: 206-794-9759
e-mail: m.wells@ppcla.com

Local – Dan York
Bus: 503-273-4704
Email: dyork@ppcla.com

Emergency Phone: 503-221-7811

Portland General Electric

80997 Kallunki Road
Clatskanie, OR 97016

Rep – Scott Bauska
Bus: 503-728-7211
Cell: 503-750-1290
Fax: 503-728-7216
e-mail: sc-ott.Bauska@pgn.com

Alt – Shift Supervisor
Bus: 503-728-7256
Fax: 503-728-7217

Emergency Phone: 503-728-7256

Shell Oil Products US

3800 NW St. Helens Road
Portland, OR 97210
P.O. Box 10406
Portland, OR 97210

Rep – Rodney Gregory
Bus: 503-225-4212
Fx: 503-225-4238
Cell: 503-209-0186
e-mail: rodney.gregory@shell.com

Alt – Ken Goldman
Bus: 503-225-4213
Fx: 503-225-4238

Emergency Phone: 503-225-4217 *If no answer **Radio: 503-294-1160**

NuStar Terminals

9420 NW St. Helens Road
Portland, OR 97231

Rep - Bill Dungan
Bus: 503-286-6732
Fx: 503-285-1909
Hm: (Emergency Only) 360-256-3941
Cel: 503-969-4550
e-mail:
William.l.Dungan@nustarenergy.com

Alt Rep –Todd Clark
Bus: 503-286-6732
Fx: 503-285-1909
Cel: 503-969-5173
e-mail: todd.clark@nustarenergy.com

NuStar Terminals – Vancouver Facility

5420 NW Fruit Valley Road
Vancouver, WA 98660

Mailing Address:
PO Box 1207
Vancouver 98666

Vancouver Facility Contact:
Rep: Dale Swanson
Cell#: 360-772-5031
Bus: 360-694-8591
e-mail:
dale.swanson@nustarenergy.com

Alt #2 –Donald Marti
Bus: 360-772-1918
Fx: 503-285-1909
Hm: (Emergency Only) 503-646-2375
Cel: 503-969-2246
e-mail: Donald.Marti@nustarenergy.com

EMERGENCY Phone: (800) 964-2210

Tesoro Refining and Marketing Co. – Vancouver Terminal

2211 St. Francis Lane
Vancouver, WA 98660

10200 West March Point Rd
Anacortes, WA 98221

Rep – John Schumacher
Bus: 360- 293-1601
Fx: 360-293-1462
Cel: 360-428-0682
e-mail: jschumacher@tsocorp.com

Alt – Bruce Boster
Bus: 360-696-2390
Fx: 360-694-9010
Email: bboster@tsocorp.com

Emergency Phone: 360-696-2390 (7:30 a.m. – 4:00 p.m.)
(360) 907-0519 (After 4:00 p.m. and weekends)

Tidewater Barge Lines

6305 NW Old Lower River Road
Vancouver, WA 98660

PO Box 1210
Vancouver WA 98666

Rep – Jim Underwood
Bus: 360-693-1491
Fax: 360-694-8981
Email: jim@tidewater.com

Emergency Phone: (503) 289-4274

West Linn Paper Co.

4800 Mill Street
West Linn, OR 97068

Rep – Penny Machinski
Bus: 503-557-6687
Cell: 503-975-0612
Fx: 503-557-6614
e-mail: pmach@wlinpco.com

Alt – Jorge Fregoso
Bus: 503-557-6560
Cell: 503-708-6822
Fx: 503-557-6615
e-mail: jfregoso@wlinpco.com

Emergency Phone: 503-557-6500 or call reps at home

Weyerhaeuser Paper Co.

3401 Industrial Way
P.O. Box 188
Longview, WA 98632

Rep – Brian Wood
Bus: 360-636-7080
Cell: 360-957-2784
e-mail: brian.wood@weyerhaeuser.com

Alt: Brien Kirby
Bus: 360-414-3360
Fx: 360-636-6354
Cell: 360-957-0010
e-mail: brian.kirby@weyerhaeuser.com

Main Office Phone: 360-425-2150 Ex: 5296
Emergency Phone: 360-425-2150 Ex: 5296

EXHIBIT B

Equipment List

EXHIBIT C

Participation Formula for Determining Membership Interest

TYPE "A" MEASUREMENT: WATER TRANSFERS

Contributions under this method shall be based on the sum of all transfers of petroleum products across a dock within the Clean Rivers Cooperative, Inc. Area of Interest. The custodian of the product at the time of transfer shall record the volume involved.

$$\frac{\text{Water transfer volume x 65}}{\text{Total volume of water transfers plus adjusted land transfers}}$$

TYPE "B" MEASUREMENT: DOCKINGS

Contributions under this method shall be based on the total number of dockings that involve the transfer of petroleum products within the Clean Rivers Cooperative, Inc. Area of Interest. Each docking will be recorded by the owner of the facility.

$$\frac{\text{Number of dockings x 35}}{\text{Total of dockings}}$$

TYPE "C" MEASUREMENT: LAND TRANSFERS

Contributions under this method are based on volumes transferred over land by companies involved in the transportation of petroleum products (pipeline companies, tank truck operators, etc.)

Tank truck operations shall report their total volume transported within the Clean Rivers Cooperative, Inc. Area of Interest. The volume is adjusted by a factor of 30.

$$\frac{\text{Total Volume}}{\text{Factor 30}} = \text{Adjusted land transfers}$$

Pipeline companies shall report their total volume of product transported within the Clean Rivers Cooperative, Inc. Area of Interest. The volume is adjusted by a factor of 50.

$$\frac{\text{Total volume}}{\text{Factor 50}} = \text{Adjusted land transfers}$$

Contribution portion is calculated by:

$$\frac{\text{Individual adjusted land transfers x 65}}{\text{Total volume of water transfers plus adjusted land transfers}} = \text{Percentage}$$

PARTICIPATION PERCENTAGES

Volume percentage + Docking percentage = Participation Percentage

Adjusted total: The total of all participating pipeline companies' and tank truck companies' reported transfer volumes after division by the appropriate factor.

Pipeline Companies: 50 Tank truck Companies: 30

EXHIBIT D

Emergency Procedures

EMERGENCY PROCEDURES

Emergency Phone Number: (503) 220-2040 (24 hours)

Emergency Response Operations

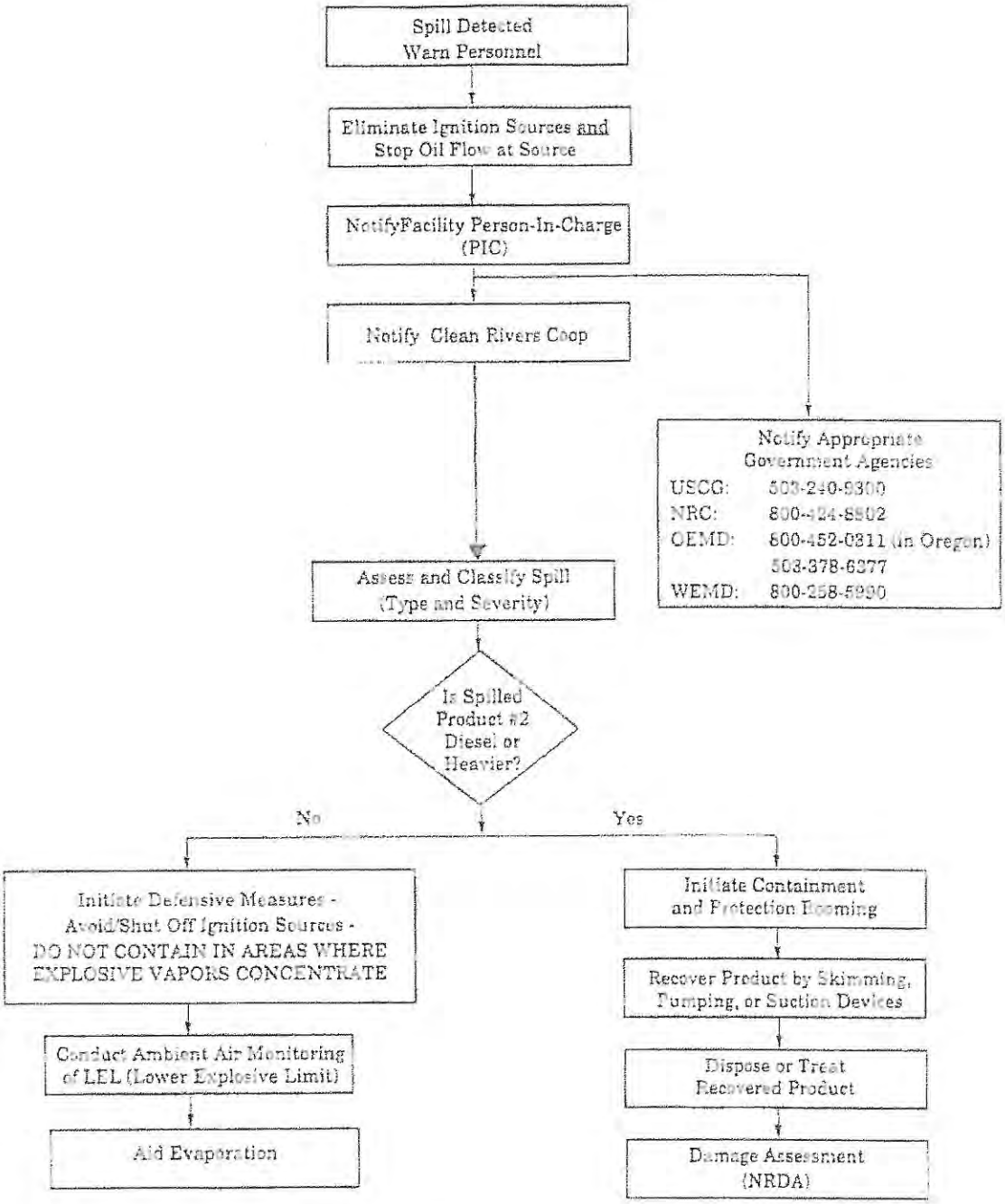
1) Upon detection of spill, the facility will initiate response actions in accordance with the applicable Facility Response Plan.

2) Agency notifications are the responsibility of the facility from which the incident occurred. Note: Clean Rivers can make initial notifications to the National Response Center, Oregon Emergency Response System and Washington Department of Emergency Management if requested by the member, but the facility will need to follow up with notifications as well.

3) Member facility will notify Clean Rivers by calling (503) 220-2040

4) Clean Rivers will activate response personnel and equipment based on preliminary assessment information reported. Clean Rivers will also notify mutual aid resources if requested. Note: Level of response initiated by Clean Rivers will vary on the capabilities and needs of the member – at least one Clean Rivers representative will be dispatched to the scene regardless of size.

5) Initial response actions and notification responsibilities are illustrated in the Emergency Response operations flow chart on following page.


Spill Detected
Warn Personnel
Eliminate Ignition Sources and Stop Oil Flow at Source
NotifyFacility Person-In-Charge (PIC)
Notify Clean Rivers Coop
Notify Appropriate Government Agencies
USCG: 503-240-9300
NRC: 800-424-8802
OEMD: 800-452-0311 (in Oregon)
503-378-6377
WEMD: 800-258-5990
Assess and Classify Spill (Type and Severity)
Is Spilled Product #2 Diesel or Heavier?
No
Yes
Initiate Defensive Measures - Avoid/Shut Off Ignition Sources - DO NOT CONTAIN IN AREAS WHERE EXPLOSIVE VAPORS CONCENTRATE
Conduct Ambient Air Monitoring of LEL (Lower Explosive Limit)
Aid Evaporation
Initiate Containment and Protection Booming
Recover Product by Skimming, Pumping, or Suction Devices
Dispose or Treat Recovered Product
Damage Assessment (NRDA)

ACKNOWLEDGMENT AND ACCEPTANCE OF THE BYLAWS OF CLEAN RIVERS COOPERATIVE, INC. BY ITS MEMBERS

_____
(Member Company)

By: _____

Name: _____

Title: _____

Date: _____

AMENDMENT NO. ONE TO AMENDED BYLAWS
OF
CLEAN RIVERS COOPERATIVE, INC.

This Amendment No. One to Amended Bylaws is made to the Amended Bylaws of Clean Rivers Cooperative, Inc., an Oregon cooperative corporation (the "Cooperative"), which were adopted by the Members of the Cooperative as of December 12, 2000.

1. Section 4.11 is amended to read in its entirety as follows:

"**Voting Rights of Membership.**

4.11.1 Subject to Section 4.10, each Member shall be entitled to one vote for each percentage point and a fractional vote equivalent to any fractional percentage point (rounded to the nearest 1/100th of a percentage point) of the Membership Interest held by such Member as determined pursuant to Section 7.1. Voting may be by voice or written ballot.

4.11.2 No voting by proxy is allowed. However, the Board of Directors may cause to be submitted by mail ballot any question to be voted on at any Member meeting, including the election of Directors. In such event, the Secretary shall mail to each Member along with the notice of the meeting, the ballot on each such question and a voting envelope. The ballot may be cast only in a sealed envelope which is authenticated by the Member's signature. A vote so cast shall be counted as if the Member were present and voting in person."

2. Section 5.1 is amended to read in its entirety as follows:

"**Board of Directors.** The business and affairs of the Cooperative shall be managed by or under the direction of the Board of Directors which may exercise all such powers of the Cooperative and do all such lawful acts and things as are directed by these bylaws or to be exercised or done by the Members. The Board of Directors shall consist of the following persons: Chairman, Vice Chairman, current past chairman, Training Committee representative and Equipment Committee representative. The Board of Directors may also include up to two Directors nominated from the Member Representatives at large. The Directors shall be nominated by the current Board of Directors and elected at the annual meeting of the Members, or Directors may be elected at any special meeting of the Members held for that purpose. Each Director shall be elected annually and hold office until his or her successor is elected and qualified."

[signature page follows]

This amendment was adopted by the Members of the Cooperative at a regular meeting of the Members on December 16, 2004.

Frank Burg, Secretary

Clean Rivers Cooperative, Inc.

Wildlife Equipment Description

WILDLIFE RESPONSE & REHABILITATION UNIT

- Fully insulated 48' trailer with a 35 kilowatt generator for power; Dedicated tractor to relocate trailer to spill sites
- Stainless steel counter tops in kitchen, work areas and stainless steel deep sinks with automatic water control valves
- One each, kitchen sink.
- Water heater, two Nieven 180 in-line propane fired water heater set up in series. Water heaters with motorized automatic exhaust system capable of nine gallons pluse of water per minute continuous service
- 50 gallon portable water storage tank, 100 gallon gray water storage tank
- Sewage transfer pump
- 2 sixty gallon propane saddle tanks
- Heating & air conditioning units that exchange the entire volume of air up to 14 times per hour
- Marine grade racks capable of accommodating 280 birds
- large marine grade waterproof storage cabinets
- Over $10,000.00 worth of triage and veterinary supplies
- 110 volt electrical outlets throughout interior and exterior
- Hydraulic lift tail gate
- Exterior metal halide flood lights
- Western Shelters Systems (Rehabilitation shelter)19'x35' complete systems

WILDLIFE TRANSPORTATION UNIT

- 30' trailer with a 15 kilowatt generator for power
- Heating & air conditioning unit capable of exchanging the entire volume of air up to 14 times per hour
- Auxiliary 110 volt outlets
- Marine grade racks capable of accommodating 100 birds
- Portable bird carriers for safely transporting wildlife

WILDLIFE RESPONSE CONTRACTOR AND EQUIPMENT

MFSA/CRC has contracted with the International Bird Rescue Research Center (IBRC) to provide trained Wildlife Search, Rescue and Rehabilitation Specialists.

WILDLIFE REHABILITATION FACILITY

MFSA/CRC has entered into an agreement with the Port of Longview to use the Port of Longview gymnasium complex and available warehouse space as a possible wildlife rehabilitation facility. These facilities would be activated and established under the direction of the IBRC.

Wildlife Response Equipment

The equipment for the wildlife response will come from several sources. The majority of the equipment for the initial phase of any response will come from the stockpile at the Clean Rivers maintenance facility in Portland. This equipment includes one mobile stabilization/cleaning trailer that can be utilized as a stabilization site. This trailer has the capacity to handle approximately 100 medium sized birds at a time or it can be utilized as a cleaning component with the capacity to handle about 15-20 birds a day. It also includes a 36' transport trailer, equipped with heating, ventilation and an onboard generator that can be used as a small stabilization site in the initial stages of a spill. The stockpile includes disposables necessary for at least 100 birds in the first 24 hrs. An agreement exists between CRC and MFSA for use of any and all CRC equipment.

Equipment owned by IBRC, and stored in Seattle and at the Berkeley, CA headquarters, will be used to augment the CRC equipment.

CRC EQUIPMENT, (PORTLAND, OREGON)

Amount		**Equipment**
		VEHICLES
1	ea	Wildlife Response Trailer w/ Tractor
1	ea	Transportation 36’ Trailer
		CAPTURE
100	ea	Plastic pet carriers
50	ea	Pillow cases
6	ea	Long handled Nets w/ extensions 3/4"-1 1/4" mesh
6	ea	Large Flight Kennels
2	ea	Medium Flight Kennels
		STABILIZATION
2	ea	Digital Scale - Battery operated
1	case	Pedialyte (unflavored)
1	case	Ensure_ liquid food mix (vanilla)
6	ea	Infrared/ceramic heat lamps
250	ea	IBRRC Intake Forms
100	ea	Leg band - Size 4
100	ea	Leg band - Size 5
100	ea	Leg band - Size 7
100	ea	Leg band - Size 11
100	ea	Leg band - Size 13
1	case	Toxiban_ activated charcoal solution
20	ea	Catheters: Size 8 Fr
20	ea	Catheters: Size 12 Fr
20	ea	Catheters: Size 14 Fr
3	box	60cc syringes
2	box	35 cc syringes
1	box	20 cc syringes
1	box	12 cc syringes
1	box	6 cc syringes
1	box	3 cc syringes with 22 g needles

1	box	1 cc syringes with 25 g needles
6	slv	2" x 2" gauze sponges
1	box	25 g x 5/8" needles
1	box	20 g x 3/4" needles
1	box	Glucose sticks
2	gl	70% alcohol disinfectant
5	ea	Digital thermometer
2	ea	KY Jelly for thermometer
1	box	Exam Gloves: small
1	box	Exam Gloves: medium
1	box	Exam Gloves: large
1	box	Paper foot booties
1	ea	Sharps container 4 qt.
1	case	2 1/2% Dextrose in1/2 Normal Saline
6	ea	Eye wash/Saline solution 12oz
2	box	Cotton tipped swabs
1	box	Vetwrap 2"
5	ea	Penlights (6 per box)
1	gal	Nolvasan solution

HUSBANDRY

4	ea	4'x4' Wooden Net-bottom Pen
2	ea	4'x8' Wooden Net-bottom Pen
1	ea	8'x8' Wooden Pen
28	ea	2"x 2"x 8' lumber
11	shts	4'x8'x 1/2" CDX or Marine ply
500	ea	Self tapping wood screws 11/4"
200#		Netting (1/2" to 1") knotless nylon or cotton
1	roll	Visqueen, clear (cover floors)
60	ea	2"x4"x12" (Lumber for caging around pools)
1	ea	4'x8'x 1/2" CDX or Marine ply (for doors)
1	ea	Max-min thermometer air temp
6	ea	1 Gallon plastic food storage containers
1	set	Measuring spoons
2	ea	Large plastic measuring cup (2+ cups)
6	ea	Plastic mixing spoons
12	ea	Metal cake pans (8X8 or 9 round)
12	ea	Metal cake pans (9x13)
6	ea	Galvanized oil pans
1	bag	Purina Trout Chow #50
1	ea	Microwave oven
1	ea	Food Blender
1	gal	Nolvasan Scrub

CLEANING

6	ea	Rubbermaid Dishwashing tub ~4.7 gal
3	ea	Wash Tubs (Rubbermaid Rough Tote type 10 gal)
1	ea	Water-pik
4	ea	Toothbrushes (soft bristle only)
2	ea	Plastic measuring cups (2 cup)
1	box	45 gal heavy duty garbage bags

6	ea	Aprons, plastic. 12 mil
12	ea	Wash gloves size M (vinylove 640 or 690)
12	ea	Wash gloves size L (vinylove 640 or 690)
1	ea	Spot light with clamp
2	ea	Rinse nozzles Spa 2000 #324 2 1/2 gpm
2	ea	Pet dryers Speedy # 600
2	ea	Water thermometer
24	ea	Safety glasses no fog
25	ea	Sheets
100	ea	Towels, bath size
		TRAILER EQUIPMENT
1	ea	Water hardness test kit
1	ea	Refrigerator Freezer 17-23 cubic ft
		Outside Worklights (attached to trailor)
2	ea	Outside Worklights (portable on stands)
1	ea	Booster pump for water supply
		EQUIPMENT E-4
3	ea	Heavy duty 50' extension cord
2	ea	Heavy duty 100' extension cord
1	ea	First Aid Kit
1	ea	36" x 48' Dry erase board with markers
1	ea	24" x 36' Dry erase board with markers
1	ea	Tool Kit

NOTE: THIS LIST DOES NOT INCLUDE PPE

IBRC EQUIPMENT (BERKELEY, CALIFORNIA)

		CAPTURE
6	ea	Tyvek Coveralls
1	roll	Duct tape
12	ea.	Pillow cases
1	ea.	Net long handled
1	ea.	Kennels, airline lg.
1	ea.	Kennels, airline med.
1	ea.	Kennels, airline small
12	ea.	Pet carriers, cardboard
		STABILIZATION
1	box	Syringes, 60cc cath (box 20)
5	ea.	Leg bands #5
50	ea.	Leg bands #6
60	ea.	Leg bands #7
1	ea.	Pedialyte 500ml
1	ea.	Toxiban 240ml
1	ea.	Ensure 250ml
10	ea.	Feeding tubes #8
8	ea.	Feeding tubes #12
17	ea.	Feeding tubes #16
1	bottle	Vit B6 100mg (100)

1	bottle	Vit B-1 bottle
1	bottle	Centrum A-Z
1	bottle	Oyster shell 500 mg (100)
1	ea.	Digital thermometer
1	box	Exam gloves (box)
1	box	Alcohol swabs
1	ea.	Field Kit
2	ea.	Heat lamps
		MEDICAL
1	ea.	Refractometer
1	ea.	Centrifuge
1	ea.	Stethescope
4	boxes	HCT Tubes (100)
1	ea.	HCT Reader
1	ea.	Heparin
		Suture Material
1	ea.	Amoxicillin
10	ea.	Surgical Blades
1	pr	Hemostats
2	ea.	Digital thermometer
1	box	Slides (100)
1	box	Slide covers (100)
1	ox	Alcohol swabs Box
2	a.	Penlight
1	bottle	T-61
1	bottle	Chloramphenicol
1	bottle	Bactoderm
1	bottle	Baytril
1	box	Culturettes
2	boxes	Chemstrips
60	tab	Itraconizol
2	bottles	Dextrose 50%
2	bottles	Iron Dextran
1	bottle	Saline solution
1	box	Needles 27g box (100)
1	box	Needles 20g (box 100)
1	box	Needles 22g (box 100)
1	box	Needles 25g (box 100)
10	ea.	Syringes 1cc w25g
10	ea.	Syringes 3cc w22g
22	ea.	Syringes 3cc
25	ea.	Syringes 1cc
12	ea.	Syringes 12cc
12	ea.	Syringes 6cc
1	bag	Normal Saline 500 ml
1	bag	Lac. Ringers 500 ml
1	box	Vetwrap 2" roll
1	box	Gauze roll 2"
4	ea.	HCT Clay tray
1	gal	Nolvasan

30	ea.	Butterfly infusion 12"
1	ea.	IV 70"
1	box	Surgical Masks (box)
		FIRST AID
1	box	Band-Aids (box)
1	ea.	Betadine (bottle)
1	ea.	Alcohol (bottle)
3	rolls	Vetwrap 2
1	box	Tegaderm
1	box	Gauze roll 2"
1	ea.	Cotton Balls (bag)
1	ea.	Gauze 2'x2' (sleeve)
1	bottle	Sodium chloride irrigation sol
1	ea.	First Aid kit
		OFFICE EQUIP. & SUPPLIES
		Forms; Intake, Diet, Blood etc.
1		Phone list
1	ea.	Copy of permits
2	ea.	Note pads
1	ea.	Hi-liter
1	ea.	IBRRC training video
		Paper clips
1	ea.	Permanent marker
1	ea	Calculator
1	ea.	IBRRC Manual
		WASHING EQUIP. & SUPPLIES
2	ea.	Spa 2000 Nozzles
8	pr	Washing gloves long sleeved
2	ea.	Rinse hose
2	ea.	Hose connector
4	ea.	Toothbrush, soft
4	pr	Safety glasses
1	Cs	Dawn
1	ea.	Water test kit
1	box	Q-tips box
1	ea.	Water thermometer
1	ea.	Pet dryer
2	ea.	Waterpick
6	ea.	Wash tubs
		MISCELLANEOUS
1	roll	Aluminum foil (roll)
2	box	Freezer bags (box)
1	bottle	Chlorhexaderm
3	pr	Scissors
1	ea.	Food prep knife
1	ea.	Extension cord, office
1	ea.	Wire cutters

1	pr	Pliers
1	ea.	Utility knife
1	ea.	Power strip
1	roll	Caution tape
1		Clips
1	ea.	Sponge

Dead Wildlife

Dead Wildlife should be placed in bags. An evidence tag should be completed for and attached to each bag.

The tag will list:

1. Number of birds in the bag
2. Date recovered
3. Team leader name
4. Incident name
5. If the animals are banded or tagged

Each time the bag is transferred the chain of custody list is signed. If animals are removed from the bag, it must be noted on the bag and the receiving party identified.

A storage facility will be set up to store dead wildlife as requested by trustee agency representatives listed below.

Contacts - Dead Wildlife

Evidence

Oregon Dept. of Fish and Game	503-872-5260 x 5348
US Fish and Wildlife Service	503-231-6179

Disposal

Oregon Department of Environmental Quality	
NW Region	503 229- 5263
Western Region	503 378-8240

WE'RE HERE TO HELP:

Guaranteed Response

A retainer with International Bird Rescue ensures that oil industry and government wildlife trustee clients have access to the expertise, capacity, equipment and resources needed to address emergency wildlife response needs, 24 hours a day, 7 days a week. But successful crisis management begins before the emergency, which is why International Bird Rescue (Bird Rescue) provides training, planning and preparedness services to ensure that our clients can effectively manage any contingency with our expert guidance and support.

Photo: Steve Ebbert

Before a Crisis: Professional Planning and Training

Our seasoned team is ready to deploy at a moment's notice, whenever disaster strikes, but we know the most effective emergency response efforts are those built on a strong foundation of preparation. That's why Bird Rescue provides industry and government clients with specialized contingency planning for oiled wildlife. We can help with wildlife risk assessment, facility design, procurement of equipment stockpiles, and first responder training.

Bird Rescue provides hands-on training in the field of oiled wildlife for all levels from professionals to volunteers, creating interactive classes specific to the client's needs, addressing geographic and cultural differences, available resources and response priorities. Investing in planning and training before a crisis occurs ensures the response effort runs as smoothly and efficiently as possible, saving time and money.

During a Crisis: Expert Emergency Management for Oiled Wildlife

International Bird Rescue provides a highly trained team of professional emergency managers, wildlife rehabilitators, biologists and veterinarians to manage each aspect of a wildlife response, from facility design and management to safe wildlife retrieval, rehabilitation and release. Bird Rescue leverages local resources, coordinating the efforts of pre-trained or convergent volunteers and other organizations to build an effective and integrated wildlife team.

CELEBRATING 40 YEARS

FOR MORE INFORMATION ON INTERNATIONAL BIRD RESCUE RESPONSE SERVICES:

Response.Services@Bird-Rescue.org

To activate International Bird Rescue for oil spill response or an oil spill drill, call +1 (888) 447-1743.

444 W. Ocean Blvd., Suite 777
Long Beach, CA 90802

www.Bird-Rescue.org

INTERNATIONAL BIRDRESCUE
EVERY BIRD MATTERS™

INTERNATIONAL BIRD RESCUE: PREPAREDNESS & EXPERT RESPONSE

Why International Bird Rescue?

International Bird Rescue (Bird Rescue) is a leader in the field of oil spill response and preparedness. We have over 40 years of effective crisis management, and our expert staff are continually refining treatment protocols and sharpening their skills at the two year-round aquatic bird rescue centers we manage in California, which treat over 5,000 birds annually.

Bird Rescue's highly trained team of specialists has led oiled bird rescue efforts in more than 200 oil spills in over a dozen countries, including some of the most significant oiled wildlife responses in history. The International Bird Rescue team can scale its response to meet the demands of even the largest spill.

International Bird Rescue utilizes the Incident Command System to provide overall crisis management for all aspects of an oiled wildlife response. Bird Rescue holds the federal permits from U.S. Fish and Wildlife Service required to rehabilitate oiled wildlife in the United States. It operates a comprehensive wildlife management program for all impacted animals, bringing in specialists with appropriate permits to manage marine mammal rehabilitation.

Become a Retainer Holder

International Bird Rescue provides oiled wildlife capture, rehabilitation and documentation services on an assured response basis for industry and governments. Retainer holders are guaranteed an immediate response by one of the world's leading wildlife rescue organizations and also benefit from reduced response rates should Bird Rescue's services be required.

In the U.S., the Oil Pollution Act (OPA) 90 mandates wildlife response during oil spills, and a successful response effort requires the leadership of professional, trained wildlife responders working within an incident management team using a contingency plan based on real world experience. Bird Rescue's 40 years of experience ensures that your plan, training and wildlife response management team will function effectively in a real world response effort.

EMERGENCY RESPONSE SERVICES

International Bird Rescue maintains an oiled wildlife response team comprised of trained and experienced emergency managers, professional wildlife rehabilitators, veterinarians, biologists and other wildlife experts.

All Bird Rescue response team members are HAZWOPER certified and trained, and experienced in emergency management. Team members are mobilized as needed to oversee different aspects of the wildlife response effort. They coordinate and train local wildlife rehabilitators and volunteers used in the wildlife response.

International Bird Rescue is committed to reducing the impact of oil on wildlife by releasing the highest possible number of animals back into the wild. To do this, Bird Rescue works cooperatively with the Responsible Party (RP) and state and federal agencies to move oiled animals through the rehabilitation system as quickly as possible.

Response Services

Upon activation, and following consultation with the RP and wildlife trustee, International Bird Rescue will mobilize and deploy a trained response team to support the wildlife response needs in any of the following areas:

- Wildlife impact assessment with trustee agencies and the RP;
- Oiled wildlife facility design, set up and operation;
- Overall management of rehabilitation program;
- Coordination of local wildlife rehabilitators;
- Management of field collection of wildlife;
- Veterinary medical evaluation, triage, and treatment;
- Wildlife dietary planning, preparation, support;
- Pre-release medical/physical evaluations;
- Release and post-release studies (when applicable);
- Volunteer/work force recruitment, training, and management;
- Public affairs and media contact;
- Documentation and cost tracking.

Organization	wrrlID	Resource	KindType	Indentification	Specifications	Recovery	quidStora	Boom	People	HomeBase	State	Staging	OwnerID
CRC	29029	Vessel	WB3	FRV Columbia Responder	32' Kvichak (includes boom from WRRL ID 29154)	0	0	0	2	Astoria	OR	West Mooring Basin, Port of Astoria	006-27
CRC	29030	Vessel	WB3	FRV Independence	32' Browns (includes boom from WRRL ID 29132)	0	0	0	2	Longview	WA	Jack Fowler's Marina	004-24
CRC	29031	Vessel	WB3	FRV Protector	34' Munson (includes boom from WRRL ID 29141)	0	0	0	2	St. Helens	OR	Dillards, St. Helens Marina	004-25
CRC	29032	OSRV	OSRV3	OSRV HW Zarling	34' Kvichak (includes boom from WRRL ID 29143)	3720	24	0	2	Portland	OR	Sause Bros.	002-22
CRC	29033	OSRV	OSRV3	OSRV Mark O. Hatfield	34' Kvichak (includes boom from WRRL ID 29142)	3720	24	0	2	Cathlamet	WA	Elochoman Marina	003-23
CRC	29034	OSRV	OSRV3	OSRV MFSA 1	34' Kvichak (includes boom from WRRL ID 29145)	3720	24	0	2	Portland	OR	Fred's Marina	000-20
CRC	29035	OSRV	OSRV3	OSRV Clean Rivers 1	34' Kvichak (includes boom from WRRL ID 29144)	3720	24	0	2	Rainier	OR	Foss Dock	001-21
CRC	29037	Vessel	WB4	16' Workboat	16' Boston Whaler w/40 hp	0	0	0	1	Portland	OR	Portland Base:Trailer (340-40)	007-28
CRC	29038	Vessel	WB4	21' Workboat	21' Boston Whaler w/150 hp	0	0	0	1	Portland	OR	Portland Base Traliler (341-40)	008-28
CRC	29039	Vessel	WB4	20' Workboat	20' Alumaweld I w/115 hp	0	0	0	1	Portland	OR	Portland Base Trailer (331-40)	009-31
CRC	29040	Vessel	WB4	Elizabeth Furse	27' Allday	0	0	0	2	Portland	OR	Portland Base Trailer (329-40)	005-26
CRC	29041	Skiff	WB5	14' Skiff	14' Skiff w/15 hp	0	0	0	1	Portland	OR	Portland Base (Trailer 315-40)	010-58
CRC	29042	Skiff	WB5	14' Skiff	14' Skiff w/15 hp	0	0	0	1	Portland	OR	Trailer 316-40	011-58
CRC	29043	Skiff	WB5	14' Skiff	14' Skiff w/15 hp	0	0	0	1	Portland	OR	Trailer 346-67	012-58
CRC	29044	Skiff	WB5	16' Skiff	16' Skiff w/25 hp	0	0	0	1	Portland	OR	Portland Base Trailer (333-40)	013-58
CRC	29045	Skiff	WB5	16' Skiff	16' Skiff w/ 25hp	0	0	0	1	Clatskanie	OR	Columbia PacificBio-Refinery: Trailer (332-40)	014-58
CRC	29046	Wildlife	WR0	Widlife Rehabilitation Shelter	19' x 35' Western Shelters Gatekeeper 1935	0	0	0	0	Portland	OR	Portland Base (Wildlife Rehabilitation Trailer 300-38)	
CRC	29047	Equipment	VH0	1 Ton Service Truck	2008 GMC	0	0	0	1	Portland	OR	Portland Base	212-65
CRC	29048	Equipment	VH0	Boom Trailer	53' Trailer (includes boom from WRRL ID 29169, 29153 and 29126)	0	0	0	0	Astoria	OR	Tongue Point	303-35
CRC	29049	Equipment	VH0	Boom Trailer	45' Trailer (includes boom from WRRL ID 29127)	0	0	0	0	Vancouver	WA	Port of Vancouver	304-35
CRC	29050	OSRV	OSRV3	Shallow Water Recovery Barge	30' Kvichak w/ Lori Skimmer (includes boom from WRRL ID 29146)	2473	100	0	2	Vancouver	WA	Tesoro Facility	105-29
CRC	29051	Storage	TB4	Shallow Water Barge	30' American Eagle	0	100	0	2	Portland	OR	Portland Base Trailer#321-40	104-29
CRC	29052	OSRV	OSRV3	Shallow Water Recovery Barge	30' Kvichak w/ Lori Skimmer ((includes boom from WRRL ID 29149)	2473	100	400	2	Astoria	OR	Tongue Point	103-29
CRC	29053	OSRV	OSRV3	Shallow Water Recovery Barge	30' Kvichak w/ Lori Skimmer (includes boom from WRRL ID 29148)	2473	100	400	2	Longview	WA	Weyerhaeuser	102-29
CRC	29054	OSRV	OSRV3	Shallow Water Recovery Barge	30' Kvichak w/ Lori Skimmer (includes boom from WRRL ID 29150)	2473	100	400	2	Portland	OR	Portland Base	101-29
CRC	29055	OSRV	OSRV3	Shallow Water Recovery Barge	30' American Eagle w/ Lori Skimmer (includes boom from WRRL ID 29151)	2473	100	400	2	Clatskanie	OR	Columbia Pacific Bio-Refinery	100-29
CRC	29056	Storage	TB4	Shallow Water Barge	30' American Eagle	0	100	0	0	Longview	WA	Weyerhaeuser	107-29
CRC	29057	OSRV	OSRV3	Shallow Water Recovery Barge	30' American Eagle w/ Lori Skimmer (includes boom from WRRL ID 29147)	2473	100	400	2	Longview	WA	Weyerhaeuser	106-29
CRC	29058	Storage	TB4	Shallow Water Barge	30' American Eagle	0	100	0	0	Portland	OR	Portland Base Trailer# 320-40	108-29
CRC	29059	Storage	TB4	Shallow Water Barge	30' American Eagle	0	100	0	0	Portland	OR	Portland Base	110-29
CRC	29060	Storage	TB4	Shallow Water Barge	30' Kvichak (includes boom from WRRL ID 29136)	0	110	0	0	Portland	OR	Portland Fire & Rescue Station #6 Moorage	109-29
CRC	29063	Storage	PS4	2500 gal. Towable Bladder	American Marine	0	60	0	0	Portland	OR	Portland Base	921-29
CRC	29064	Storage	PS4	2500 gal. Towable Bladder	American Marine	0	60	0	0	Portland	OR	Portland Base	922-29
CRC	29065	Storage	PS4	2500 gal. Towable Bladder	American Marine	0	60	0	0	Portland	OR	Portland Base	923-29
CRC	29066	Storage	PS4	2500 gal. Towable Bladder	American Marine	0	60	0	0	Portland	OR	Portland Base	924-29
CRC	29067	Storage	PS4	2500 gal. Towable Bladder	American Marine	0	60	0	0	Portland	OR	Portland Base	925-29
CRC	29068	Storage	PS4	1000 gal. Bladder	American Marine	0	23	0	0	Astoria	OR	Tongue Point	926-29
CRC	29069	Storage	PS4	500 gal. Bladder	American Marine	0	11	0	0	Astoria	OR	Tongue Point	920-29
CRC	29071	Equipment	VH0	Equipment Trailer	48' Trailer w/ lift gate	0	0	0	0	Longview	WA	Weyerhaeuser	330-40
CRC	29072	Storage	PS4	1000 gal. Portable Storage Tank	FastTanks Storage Tank	0	24	0	0	Portland	OR	Portland Base	1007-29
CRC	29073	Storage	PS4	1000 gal. Portable Storage Tank	FastTanks Storage Tank	0	24	0	0	Portland	OR	Portland Base	1008-29
CRC	29074	Storage	PS4	1000 gal. Portable Storage Tank	FastTanks Storage Tank	0	24	0	0	Portland	OR	Portland Base	1009-29
CRC	29075	Storage	PS4	1000 gal. Portable Storage Tank	FastTanks Storage Tank	0	24	0	0	Portland	OR	Portland Base	1010-29
CRC	29076	Storage	PS4	1000 gal. Portable Storage Tank	FastTanks Storage Tank	0	24	0	0	Portland	OR	Portland Base	1011-29
CRC	29077	Storage	PS4	1000 gal. Portable Storage Tank	FastTanks Storage Tank	0	24	0	0	Portland	OR	Portland Base	1012-29
CRC	29078	Storage	PS4	1000 gal. Portable Storage Tank	FastTanks Storage Tank	0	24	0	0	Portland	OR	Portland Base	1013-29
CRC	29079	Storage	PS4	1000 gal. Portable Storage Tank	FastTanks Storage Tank	0	24	0	0	Portland	OR	Shoreline Clean-up Trailer (346-40)	1014-29
CRC	29080	Storage	PS4	1000 gal. Portable Storage Tank	FastTanks Storage Tank	0	24	0	0	Portland	OR	Wildlife Transport Unit(204-47)	1015-29
CRC	29081	Storage	PS4	1000 gal. Portable Storage Tank	FastTanks Storage Tank	0	24	0	0	Portland	OR	Wildlife Transport Unit (204-47)	1016-29
CRC	29082	Equipment	VH0	Boat Trailer	Trailer (16' Skiff 013-58)	0	0	0	0	Portland	OR	Portland base (WB 013-58)	333-40
CRC	29083	Equipment	VH0	Boat Trailer	Trailer (16' Skiff 014-58)	0	0	0	0	Portland	OR	Portland Base (WB 014-58)	332-40
CRC	29086	Equipment	VH0	Boat Trailer	Trailer (Liz Furse 005-26)	0	0	0	0	Portland	OR	Portland Base (WB 005-26)	329-40
CRC	29087	Skimmer Portable	SK3	API Drum Skimmer	Hydraulic Power Unit and Drum Attachment	2400	0	0	1	Longview	WA	Trailer (ID 330-40) at Weyerhaeuser in Longview, WA	500-56
CRC	29088	Skimmer Portable	SK3	API Drum Skimmer	Hydraulic Power Unit (56-454) (in Trailer 29187)	2400	0	0	1	Clatskanie	OR	Columbia Pacific Bio-Refinery	501-56
CRC	29089	Skimmer Portable	SK2	Desmi Terminator 250	Hydraulic Power Unit (250) (57-251)	3017	0	0	1	Portland	OR	Portland Base	529-56
CRC	29090	Skimmer Portable	SK2	Desmi Terminator 250	Hydraulic Power unit (250) (57-252)	3017	0	0	1	Portland	OR	Portland Base	530-56
CRC	29091	Skimmer Portable	SK3	Douglas 18000 Skim-Pak (Unit ID 520-56)	3" Yanmar Diesel (Unit ID 613-57) 300 GPM	2057	0	0	0	Portland	OR	Portland Base	709-56
CRC	29092	Skimmer Portable	SK3	Douglas 18000 Skim-Pak (Unit ID 518-56)	3" Yanmar Diesel (Unit ID 611-57) 300 GPM	2057	0	0	0	Portland	OR	Portland Base	707-56
CRC	29093	Skimmer Portable	SK3	Douglas 18000 Skim-Pak (Unit ID 519-56)	3" Yanmar Diesel (Unit ID 612-57) 300 GPM	2057	0	0	0	Portland	OR	Portland Base	708-56
CRC	29094	Skimmer Portable	SK3	Douglas 18000 Skim-Pak (Unit ID 513-56)	3" Yanmar Diesel (Unit ID 615-57) 300 GPM	2057	0	0	0	Longview	WA	Weyerhaeuser	711-56
CRC	29095	Skimmer Portable	SK3	Douglas 18000 Skim-Pak (Unit ID 510-56)	3" Yanmar Diesel (Unit ID 606-57) 300 GPM	2057	0	0	0	Astoria	OR	Tongue Point	703-56
CRC	29096	Skimmer Portable	SK3	Douglas 18000 Skim-Pak (Unit ID 514-56)	3" Yanmar Diesel (Unit ID 616-57) 300 GPM	2057	0	0	0	Longview	WA	Weyerhaeuser	712-56
CRC	29097	Skimmer Portable	SK3	Douglas 18000 Skim-Pak (Unit ID 509-56)	3" Yanmar Diesel (Unit ID 609-57) 300 GPM	2057	0	0	0	Astoria	OR	Tongue Point	702-56
CRC	29098	Skimmer Portable	SK3	Douglas 18000 Skim-Pak (Unit ID 515-56)	3" Yanmar Diesel (Unit ID 617-57) 300 GPM	2057	0	0	0	Longview	WA	Weyerhaeuser	713-56
CRC	29099	Skimmer Portable	SK3	Douglas 18000 Skim-Pak (Unit ID 521-56)	3" Yanmar Diesel (Unit ID 614-57) 300 GPM	2057	0	0	0	Portland	OR	Portland Base	710-56
CRC	29100	Skimmer Portable	SK3	Douglas 18000 Skim-Pak	For use with CounterVac 3315 (502-56)	4457	0	0	0	Wauna	OR	Tidewater Barge # 2	511-56
CRC	29101	Skimmer Portable	SK3	Douglas 18000 Skim-Pak	For use with CounterVac 3315 (502-56)	4457	0	0	0	Wauna	OR	Tidewater Barge # 2	512-56
CRC	29102	Skimmer Portable	SK3	Douglas 18000 Skim-Pak	For use with CounterVac 3315 (503-56)	4457	0	0	0	Vancouver	WA	Tidewater Barge # 4	505-56
CRC	29103	Skimmer Portable	SK3	Douglas 18000 Skim-Pak	For use with CounterVac 3315 (503-56)	4457	0	0	0	Vancouver	WA	Tidewater Barge # 4	506-56

CRC	29104	Skimmer Portable	SK3	Douglas 18000 Skim-Pak	For use with CounterVac 3315 (504-56)	4457	0	0	0	Portland	OR	Portland Base	516-56
CRC	29105	Skimmer Portable	SK3	Douglas 18000 Skim-Pak	For use with CounterVac 3315 (504-56)	4457	0	0	0	Portland	OR	Portland Base	522-56
CRC	29106	Skimmer Portable	SK3	Douglas 18000 Skim-Pak (Unit ID 508-56)	3" Yanmar Diesel (Unit ID 607-57) 300 GPM	2057	0	0	0	Astoria	OR	Tongue Point	701-56
CRC	29107	Skimmer Portable	SK3	Douglas 18000 Skim-Pak (Unit ID 507-56)	3" Yanmar Diesel (Unit ID 608-57) 300 GPM	2057	0	0	0	Astoria	OR	Tongue Point	700-56
CRC	29108	Skimmer Portable	SK3	Douglas 18000 Skim-Pak (Unit ID 517-56)	3" Yanmar Diesel (Unit ID 610-57) 300 GPM	2057	0	0	0	Portland	OR	Portland Base	706-56
CRC	29109	Skimmer Portable	SK3	Douglas 4200 Skim-Pak	2" Yanmar Diesel (601-57) Diaphragm	480	0	0	0	Portland	OR	Portland Base	718-56
CRC	29110	Skimmer Portable	SK3	Douglas 4200 Skim-Pak (524-56)	2" Yanmar Diesel (600-57) Diaphragm	480	0	0	0	Portland	OR	Portland Base	717-56
CRC	29111	Skimmer Portable	SK3	Douglas 4200 Skim-Pak (527-56)	2" Yanmar Diesel (603-57) Diaphragm	480	0	0	0	Clatskanie	OR	Columbia Pacific Bio-Refinery	715-56
CRC	29112	Skimmer Portable	SK3	Douglas 4200 Skim-Pak (526-56)	2" Yanmar Diesel (602-57) Diaphragm	480	0	0	0	Portland	OR	Portland Base	714-56
CRC	29113	Skimmer Portable	SK3	Douglas 4200 Skim-Pak (528-56)	2" Yanmar Diesel (604-57) Peristaltic	480	0	0	0	Portland	OR	Portland Base	716-56
CRC	29114	Skimmer Portable	SK4	Ro-Clean Rope Mop Skimmer	Hatz Diesel	30	0	0	0	Portland	OR	Portland Base	543-56
CRC	29115	Skimmer Portable	SK2	Slickbar "High Capacity Oil Skimmer"	For use with CounterVac (503-56) (WRRL ID 29194)	4457	0	0	0	Vancouver	WA	Tidewater Barge # 4	111-29
CRC	29116	Skimmer Portable	SK3	Slickbar "High Capacity Oil Skimmer"	For use with CounterVac (502-56) (WRRL ID 29195)	1714	0	0	0	Wauna	OR	Tidewater Barge # 2	112-29
CRC	29117	Skimmer Portable	SK2	Slickbar "High Capacity Oil Skimmer"	For use with CounterVac (504-56) (WRRL ID 29193)	4457	0	0	0	Portland	OR	Portland Base	533-56
CRC	29118	Skimmer Portable	SK2	Slickbar "High Capacity Oil Skimmer"	For use with CounterVac (504-56) (WRRL ID 29193)	4457	0	0	0	Portland	OR	Portland Base	534-56
CRC	29119	Skimmer Portable	SK3	Slickbar "High Capacity Oil Skimmer"	For use with CounterVac (504-56) (WRRL ID 29193)	1714	0	0	0	Portland	OR	Portland Base	535-56
CRC	29120	Skimmer Portable	SK3	Slickbar "Manta Ray"	For use with CounterVac (504-56) (WRRL ID 29193)	1028	0	0	0	Portland	OR	Portland Base	534-56
CRC	29121	Skimmer Portable	SK3	36" Coated Drum Skimmer (Unit ID 544-56)	Yanmar Diesel Hydraulic Power Unit (ID 800-58) and 3" Hydraulic Diaphragm Transfer Pump (636-57)	891	0	0	0	Portland	OR	Portland Base	719-56
CRC	29122	Skimmer Portable	SK3	36" Coated Drum Skimmer (Unit ID 545-56)	Yanmar Diesel Hydraulic Power Unit (ID 801-58) and 3" Hydraulic Diaphragm Transfer Pump (ID 637-56)	891	0	0	0	Portland	OR	Portland Base	720-56
CRC	29123	Skimmer Portable	SK3	36" Coated Drum Skimmer (Unit ID 546-56)	Yanmar Diesel Hydraulic Power Unit (ID 802-58) and 3" Hydraulic Diaphragm Transfer Pump (ID 638-57)	891	0	0	0	Portland	OR	Portland Base	721-56
CRC	29124	Skimmer Portable	SK3	36" Coated Drum Skimmer (Unit ID 547-56)	Yanmar Diesel Hydraulic Power Unit (ID 803-58) and 3" Hydraulic Diaphragm Transfer Pump (ID 639-57)	891	0	0	0	Longview	WA	Trailer (330-40) Weyerhaeuser	722-56
CRC	29125	Boom	B2	20" Boom	American Marine	0	0	5000	0	Astoria	OR	Trailer (302-35), Tongue Point	401-00
CRC	29126	Boom	B2	20" Boom	American Marine	0	0	3900	0	Astoria	OR	Trailer (303-35) Tongue Point	402-00
CRC	29127	Boom	B2	20" Boom	American Marine	0	0	5000	0	Vancouver	WA	Trailer (304-35) Port of Vancouver	400-00
CRC	29129	Boom	B2	20" Boom	American Marine	0	0	4200	0	Longview	WA	Trailer (309-35) Weyerhaeuser	410-00
CRC	29130	Boom	B2	20" Boom	American Marine	0	0	5000	0	Wauna	OR	Trailer (313-35) Georgie Pacific Facility	416-00
CRC	29131	Boom	B2	20" Boom	American Marine	0	0	5000	0	Longview	WA	Trailer (307-35) Weyerhaeuser	426-00
CRC	29132	Boom	B3	14" Boom	American Marine (includes WRRL ID 29030)	0	0	1500	0	Longview	WA	FRV Independence (Jack Fowler's Marina)	407-00
CRC	29133	Boom	B3	12" Boom	American Marine	0	0	3000	0	Portland	OR	A-1 Moorage (on leased barge)	408-00
CRC	29134	Boom	B3	12" Boom	American Marine	0	0	2000	0	Portland	OR	Spill Response Trailer (316-40)	417-00
CRC	29135	Boom	B2	20" Boom	American Marine	0	0	5000	0	Astoria	OR	53' Trailer (312-35)	404-00
CRC	29136	Boom	B3	12" Boom	American Marine (includes WRRL ID 29060)	0	0	2000	0	Portland	OR	SWB 109-29 (PFR Fire Station 6)	412-00
CRC	29137	Boom	B2	20" Boom	American Marine	0	0	400	0	Scappoose	OR	Scappoose Fire Bureau	411-00
CRC	29138	Boom	B2	20" Boom	American Marine (includes WRRL ID 29176)	0	0	2500	0	Skamokaw	WA	28' Trailer (306-35), Vista Park	414-00
CRC	29139	Boom	B2	20" Boom	American Marine (includes WRRL ID 29180)	0	0	5000	0	St. Helens	OR	Boise Cascade (Boom Trailer 310-35)	415-00
CRC	29140	Boom	B2	20" Boom	American Marine (includes WRRL ID 29185)	0	0	5000	0	Port Westu	OR	Boom Trailer (308-35), PGE Beaver	405-00
CRC	29141	Boom	B2	20" Boom	American Marine (includes WRRL ID 29031)	0	0	1000	0	St. Helens	OR	FRV Protector (Dillards Marina)	403-00
CRC	29142	Boom	B2	20" Boom	American Marine (includes WRRL ID 29033)	0	0	1100	0	Cathlamet	WA	OSRV Mark O. Hatfield (Elochoman Marina)	418-00
CRC	29143	Boom	B2	20" Boom	American Marine (includes WRRL ID 29032)	0	0	1000	0	Portland	OR	OSRV HW Zarling (Fred's Marina)	419-00
CRC	29144	Boom	B2	20" Boom	American Marine (includes WRRL ID 29035)	0	0	1000	0	Rainier	OR	OSRV Clean Rivers 1 (Foss Dock)	421-00
CRC	29145	Boom	B2	20" Boom	American Marine (includes WRRL ID 29034)	0	0	1000	0	Portland	OR	MFSA 1 (Sause Bros.)	420-00
CRC	29146	Boom	B3	12" Boom	American Marine (includes WRRL ID 29050)	0	0	400	0	Vancouver	WA	SWRB 105-29 (Tesoro Facility)	425-00
CRC	29147	Boom	B3	12" Boom	American Marine (includes WRRL ID 29057)	0	0	400	0	Portland	OR	SWRB 106-29 (Portland Base)	413-00
CRC	29148	Boom	B3	12" Boom	American Marine (includes WRRL ID 29053)	0	0	400	0	Longview	WA	SWRB 102-29 (Weyerhaeuser)	406-00
CRC	29149	Boom	B3	12" Boom	American Marine (includes WRRL ID 29052)	0	0	400	0	Longview	WA	SWRB 103-29 (Weyerhaeuser)	424-00
CRC	29150	Boom	B3	12" Boom	American Marine (includes WRRL ID 29054)	0	0	400	0	Astoria	OR	SWRB 101-29 (Tongue Point)	423-00
CRC	29151	Boom	B3	12" Boom	American Marine (includes WRRL ID 29055)	0	0	400	0	Clatskanie	OR	Columbia Pacific Bio-Refinery (SWRB 100-29)	422-00
CRC	29152	Boom	B3	14" Boom	American Marine (includes WRRL ID 29176)	0	0	500	0	Skamokaw	WA	Skamokawa, WA (Boom Trailer 306-35)	427-00
CRC	29153	Boom	B2	28" Fast Water Boom	American Marine (includes WRRL ID 29169)	0	0	700	0	Astoria	OR	Boom Trailer 303-35 (Tongue Point)	429-00
CRC	29154	Boom	B3	12" Boom	American Marine (include WRRL ID 29029)	0	0	2000	0	Astoria	OR	FRV Columbia Responder (West Mooring Basin)	409-00
CRC	29155	Skimmer Portable	SK3	12" Drum Skimmer (Flotation Unit ID 548-56)	Yanmar Diesel Hydraulic Power Unit (804-58) and 3" Hydraulic Diaphragm Transfer Pump (ID 640-57)	891	0	0	0	Portland	OR	Portland Base	723-56
CRC	29156	Skimmer Portable	SK3	12" Drum Skimmer (Flotation Unit ID 549-56)	Yanmar Diesel Hydraulic Power Unit (ID 805-58) and 3" Hydraulic Diaphragm Transfer Pump (ID 641-57)	891	0	0	0	Portland	OR	Portland Base	724-56
CRC	29157	Vessel	WB4	20' Workboat	20' Alumaweld II w/90 hp	0	0	0	1	Portland	OR	Porland Base Trailer (342-40)	015-33
CRC	29159	Equipment	VH0	4x4 Pick-up	2003 Ford F-350	0	0	0	1	Portland	OR	Portland Base	206-54
CRC	29160	Equipment	VH0	4x4 SUV	2007 Toyota 4-Runner	0	0	0	1	Portland	OR	Portland Base	208-60
CRC	29161	Equipment	VH0	Boom Trailer	53' Trailer	0	0	0	0	Portland	OR	Portland Base	338-35
CRC	29163	Wildlife	WR0	Wildlife Transport Trailer	32' Climate Control Cargo Trailer	0	0	0	1	Portland	OR	Portland Base	350-66
CRC	29164	Equipment	VH0	Flatbed Trailer	48' Flatbed Trailer	0	0	0	0	Portland	OR	Portland Base	339-40
CRC	29165	Equipment	VH0	Flatbed Crane Truck	1980 GMC	0	0	0	1	Portland	OR	Portland Base	203-48
CRC	29166	Equipment	VH0	Tractor	1981 Kenworth	0	0	0	1	Astoria	OR	Tongue Point	200-49
CRC	29167	Equipment	VH0	Tractor	2001 Freightliner	0	0	0	1	Portland	OR	Portland Base	209-61
CRC	29168	Equipment	VH0	Tractor	1993 International	0	0	0	1	Portland	OR	Portland Base	202-52
CRC	29169	Boom	B2	30" Boom	American Marine (includes WRRL ID ?)	0	0	400	0	Astoria	OR	Trailer 303-35 (Tongue Point)	428-00
CRC	29170	Wildlife	WR0	Wildlife Rehabilitation Trailer	48' Specialty Trailer - Wildlife Rehabilitation (includes WRRL ID ?)	0	0	0	1	Portland	OR	Portland Base	300-38
CRC	29171	Boom	B3	12" Boom	American Marine (includes WRRL ID 29176)	0	0	1000	0	Skamokaw	WA	Skamokawa, WA (Trailer 306-35)	430-00
CRC	29172	Equipment	COM	Command & Communication Trailer	53' Specialty Trailer - Command & Communications	0	0	0	1	Portland	OR	Portland Base	301-39
CRC	29174	Equipment	VH0	Boom Trailer	48' Trailer	0	0	0	0	Astoria	OR	Tongue Point	302-35
CRC	29176	Equipment	VH0	Boom Trailer	28' Trailer (miscellaneous boom)	0	0	0	0	Skamokaw	WA	Vista Park	306-35
CRC	29177	Equipment	VH0	Boom Trailer	48' Trailer	0	0	0	0	Longview	WA	Weyerhaeuser	307-35
CRC	29178	Equipment	VH0	Boom Trailer	42' Trailer	0	0	0	0	Wauna	OR	Georgia Pacific	313-35

CRC	29179	Equipment	VH0	Boom Trailer	48' Trailer	0	0	0	0	Longview	WA	Weyerhaeuser	309-35	
CRC	29180	Equipment	VH0	Boom Trailer	48' Trailer	0	0	0	0	St. Helens	OR	Boise Cascade	310-35	
CRC	29181	Boom	B2	20" Boom	American Marine	0	0	4000	0	Portland	OR	Trailer (338-35) Portland Base	431-00	
CRC	29182	Shoreline	TR0	Shoreline Clean-up Trailer	(includes WRRL ID 29042)	0	0	0	0	Portland	OR	Portland Base	346-67	
CRC	29184	Equipment	VH0	Boom Trailer	53' Trailer	0	0	0	0	Astoria	OR	Tongue Point	312-35	
CRC	29185	Equipment	VH0	Boom Trailer	48' Trailer	0	0	0	0	Port Westv	OR	PGE (Beaver Facility)	308-35	
CRC	29186	Equipment	VH0	Flatbed Trailer	28' Flatbed Trailer	0	0	0	0	Portland	OR	Portland Base	314-35	
CRC	29187	Equipment	VH0	Equipment Trailer	30' Trailer (contains misc. spill response equipment)	0	0	0	0	Clatskanie	OR	Columbia Pacific Bio-Refinery	315-40	
CRC	29188	Equipment	VH0	Spill Response Trailer	34' Trailer	0	0	0	0	Portland	OR	Portland Base	316-40	
CRC	29189	Equipment	SR0	Generator Trailer	25kw Generator	0	0	0	0	Portland	OR	Portland Base	317-40	
CRC	29190	Equipment	SR0	Generator Trailer	35kw Generator	0	0	0	0	Portland	OR	Portland Base	318-40	
CRC	29191	Skiff	WB5	14' Skiff	14' Skiff with 5 hp Outboard	0	0	0	0	Portland	OR	Portland Base (Trailer 316-40)		
CRC	29192	Equipment	VH0	Boom Trailer	53' Trailer	0	0	0	0	Portland	OR		303.-3	303
CRC	29193	Equipment	SR0	CounterVac 3315	21' pull on 3" hose	0	0	0	1	Portland	OR	Portland Base	504-56	
CRC	29194	Equipment	SR0	CounterVac 3315	21' pull on 3" hose	0	12	0	1	Vancouver	WA	Tidewater Barge # 4	503-56	
CRC	29195	Equipment	SR0	CounterVac 3315	21' pull on 3" hose	0	12	0	1	Wauna	OR	Tidewater Barge # 2	502-56	
CRC	29196	Equipment	PTP	Float-O-Pump	100 gpm	0	0	0	0	Portland	OR	Portland Base (Trailer 346-40)	618-57	
CRC	29197	Equipment	PTP	Float-O-Pump	100 gpm	0	0	0	0	Portland	OR	Portland Base (Trailer 346-40)	619-57	
CRC	29198	Equipment	PTP	Float-O-Pump	100 gpm	0	0	0	0	Portland	OR	Portland Base (Trailer 346-40)	622-57	
CRC	29199	Equipment	SR0	Desmi DOP 160	Hydraulic Power Unit (160)	0	0	0	0	Portland	OR	Portland Base		
CRC	29200	Equipment	SR0	Desmi DOP 160	Hydraulic Power Unit (160)	0	0	0	0	Portland	OR	Portland Base		
CRC	29203	Equipment	SR0	Pressure Washer Trailer (336-40)	3,500 psi, Hot, Trailer Mounted	0	0	0	0	Portland	OR	Portland Base	336-40	
CRC	30051	Boom	B2	20" Boom	American Marine	0	0	2000	0	Boardman	OR	20' Connex box on chassis, Tidewater Facility in Boardman, Oregon.	432-00	
CRC	30052	Equipment	VH0	Connex Box	20' container on chassis	0	0	0	0	Boardman	OR	Tidewater Facility in Boardman, Oregon	346-35	
CRC	30499	Vessel	WB4	18' Skiff	18' Skiff w/ 25hp	0	0	0	1	Portland	OR	Portland Base (Trailer 348-40)	016-58	
CRC	30500	Vessel	WB4	18' Skiff	18' Skiff w/ 25hp	0	0	0	1	Portland	OR	Portland Base (Trailer 349-40)	017-58	
CRC	30948	Equipment	VH0	Tractor	2007 Freightliner	0	0	0	1	Portland	OR	Portland	211-68	
CRC	30950	Equipment	Truck/Suv	Work Truck/Pickup	1 Ton Ford 350 Super Duty 2008	0	0	0	1	Portland	OR		210-62	

Organization	wrrlID	Resource	KindType	Indentification	Specifications	Boom	HomeBase	State	Staging	OwnerID
CRC	29125	Boom	B2	20" Boom	American Marine	5000	Astoria	OR	Trailer (302-35), Tongue Point	401-00
CRC	29126	Boom	B2	20" Boom	American Marine	3900	Astoria	OR	Trailer (303-35) Tongue Point	402-00
CRC	29127	Boom	B2	20" Boom	American Marine	5000	Vancouver	WA	Trailer (304-35) Port of Vancouver	400-00
CRC	29129	Boom	B2	20" Boom	American Marine	4200	Longview	WA	Trailer (309-35) Weyerhaeuser	410-00
CRC	29130	Boom	B2	20" Boom	American Marine	5000	Wauna	OR	Trailer (313-35) Georgie Pacific Facility	416-00
CRC	29131	Boom	B2	20" Boom	American Marine	5000	Longview	WA	Trailer (307-35) Weyerhaeuser	426-00
CRC	29132	Boom	B3	14" Boom	American Marine (includes WRRL ID 29030)	1500	Longview	WA	FRV Independence (Jack Fowler's Marina)	407-00
CRC	29133	Boom	B3	12" Boom	American Marine	3000	Portland	OR	A-1 Moorage (on leased barge)	408-00
CRC	29134	Boom	B3	12" Boom	American Marine	2000	Portland	OR	Spill Response Trailer (316-40)	417-00
CRC	29135	Boom	B2	20" Boom	American Marine	5000	Astoria	OR	53' Trailer (312-35)	404-00
CRC	29136	Boom	B3	12" Boom	American Marine (includes WRRL ID 29060)	2000	Portland	OR	SWB 109-29 (PFR Fire Station 6)	412-00
CRC	29137	Boom	B2	20" Boom	American Marine	400	Scappoose	OR	Scappoose Fire Bureau	411-00
CRC	29138	Boom	B2	20" Boom	American Marine (includes WRRL ID 29176)	2500	Skamokawa	WA	28' Trailer (306-35), Vista Park	414-00
CRC	29139	Boom	B2	20" Boom	American Marine (includes WRRL ID 29180)	5000	St. Helens	OR	Boise Cascade (Boom Trailer 310-35)	415-00
CRC	29140	Boom	B2	20" Boom	American Marine (includes WRRL ID 29185)	5000	Port Westward	OR	Boom Trailer (308-35), PGE Beaver	405-00
CRC	29141	Boom	B2	20" Boom	American Marine (includes WRRL ID 29031)	1000	St. Helens	OR	FRV Protector (Dillards Marina)	403-00
CRC	29142	Boom	B2	20" Boom	American Marine (includes WRRL ID 29033)	1100	Cathlamet	WA	OSRV Mark O. Hatfield (Elochoman Marina)	418-00
CRC	29143	Boom	B2	20" Boom	American Marine (includes WRRL ID 29032)	1000	Portland	OR	OSRV HW Zarling (Fred's Marina)	419-00
CRC	29144	Boom	B2	20" Boom	American Marine (includes WRRL ID 29035)	1000	Rainier	OR	OSRV Clean Rivers 1 (Foss Dock)	421-00
CRC	29145	Boom	B2	20" Boom	American Marine (includes WRRL ID 29034)	1000	Portland	OR	MFSA 1 (Sause Bros.)	420-00
CRC	29146	Boom	B3	12" Boom	American Marine (includes WRRL ID 29050)	400	Vancouver	WA	SWRB 105-29 (Tesoro Facility)	425-00
CRC	29147	Boom	B3	12" Boom	American Marine (includes WRRL ID 29057)	400	Portland	OR	SWRB 106-29 (Portland Base)	413-00
CRC	29148	Boom	B3	12" Boom	American Marine (includes WRRL ID 29053)	400	Longview	WA	SWRB 102-29 (Weyerhaeuser)	406-00
CRC	29149	Boom	B3	12" Boom	American Marine (includes WRRL ID 29052)	400	Longview	WA	SWRB 103-29 (Weyerhaeuser)	424-00
CRC	29150	Boom	B3	12" Boom	American Marine (includes WRRL ID 29054)	400	Astoria	OR	SWRB 101-29 (Tongue Point)	423-00
CRC	29151	Boom	B3	12" Boom	American Marine (includes WRRL ID 29055)	400	Clatskanie	OR	Columbia Pacific Bio-Refinery (SWRB 100-29)	422-00
CRC	29152	Boom	B3	14" Boom	American Marine (includes WRRL ID 29176)	500	Skamokawa	WA	Skamokawa, WA (Boom Trailer 306-35)	427-00
CRC	29153	Boom	B2	28" Fast Water Boom	American Marine (includes WRRL ID 29169)	700	Astoria	OR	Boom Trailer 303-35 (Tongue Point)	429-00
CRC	29154	Boom	B3	12" Boom	American Marine (include WRRL ID 29029)	2000	Astoria	OR	FRV Columbia Responder (West Mooring Basin)	409-00
CRC	29169	Boom	B2	30" Boom	American Marine (includes WRRL ID ?)	400	Astoria	OR	Trailer 303-35 (Tongue Point)	428-00
CRC	29171	Boom	B3	12" Boom	American Marine (includes WRRL ID 29176)	1000	Skamokawa	WA	Skamokawa, WA (Trailer 306-35)	430-00
CRC	29181	Boom	B2	20" Boom	American Marine	4000	Portland	OR	Trailer (338-35) Portland Base	431-00
CRC	30051	Boom	B2	20" Boom	American Marine	2000	Boardman	OR	20' Connex box on chassis, Tidewater Facility in Boardman, Oregon.	432-00

Total Boom **72600**

Organization	wrrlID	Resource	KindType	Indentification	Specifications	Daily Recovery Rate	HomeBase	State	Staging	OwnerID
CRC	29087	Skimmer Portable	SK3	API Drum Skimmer	Hydraulic Power Unit and Drum Attachment	2400	Longview	WA	Trailer (ID 330-40) at Weyerhaeuser in Longview, WA	500-56
CRC	29088	Skimmer Portable	SK3	API Drum Skimmer	Hydraulic Power Unit (56-454) (in Trailer 29187)	2400	Clatskanie	OR	Columbia Pacific Bio-Refinery	501-56
CRC	29091	Skimmer Portable	SK3	Douglas 18000 Skim-Pak (Unit ID 520-56)	3" Yanmar Diesel (Unit ID 613-57) 300 GPM	2057	Portland	OR	Portland Base	709-56
CRC	29092	Skimmer Portable	SK3	Douglas 18000 Skim-Pak (Unit ID 518-56)	3" Yanmar Diesel (Unit ID 611-57) 300 GPM	2057	Portland	OR	Portland Base	707-56
CRC	29093	Skimmer Portable	SK3	Douglas 18000 Skim-Pak (Unit ID 519-56)	3" Yanmar Diesel (Unit ID 612-57) 300 GPM	2057	Portland	OR	Portland Base	708-56
CRC	29094	Skimmer Portable	SK3	Douglas 18000 Skim-Pak (Unit ID 513-56)	3" Yanmar Diesel (Unit ID 615-57) 300 GPM	2057	Longview	WA	Weyerhaeuser	711-56
CRC	29095	Skimmer Portable	SK3	Douglas 18000 Skim-Pak (Unit ID 510-56)	3" Yanmar Diesel (Unit ID 606-57) 300 GPM	2057	Astoria	OR	Tongue Point	703-56
CRC	29096	Skimmer Portable	SK3	Douglas 18000 Skim-Pak (Unit ID 514-56)	3" Yanmar Diesel (Unit ID 616-57) 300 GPM	2057	Longview	WA	Weyerhaeuser	712-56
CRC	29097	Skimmer Portable	SK3	Douglas 18000 Skim-Pak (Unit ID 509-56)	3" Yanmar Diesel (Unit ID 609-57) 300 GPM	2057	Astoria	OR	Tongue Point	702-56
CRC	29098	Skimmer Portable	SK3	Douglas 18000 Skim-Pak (Unit ID 515-56)	3" Yanmar Diesel (Unit ID 617-57) 300 GPM	2057	Longview	WA	Weyerhaeuser	713-56
CRC	29099	Skimmer Portable	SK3	Douglas 18000 Skim-Pak (Unit ID 521-56)	3" Yanmar Diesel (Unit ID 614-57) 300 GPM	2057	Portland	OR	Portland Base	710-56
CRC	29100	Skimmer Portable	SK3	Douglas 18000 Skim-Pak	For use with CounterVac 3315 (502-56)	4457	Wauna	OR	Tidewater Barge # 2	511-56
CRC	29101	Skimmer Portable	SK3	Douglas 18000 Skim-Pak	For use with CounterVac 3315 (502-56)	4457	Wauna	OR	Tidewater Barge # 2	512-56
CRC	29102	Skimmer Portable	SK3	Douglas 18000 Skim-Pak	For use with CounterVac 3315 (503-56)	4457	Vancouver	WA	Tidewater Barge # 4	505-56
CRC	29103	Skimmer Portable	SK3	Douglas 18000 Skim-Pak	For use with CounterVac 3315 (503-56)	4457	Vancouver	WA	Tidewater Barge # 4	506-56
CRC	29104	Skimmer Portable	SK3	Douglas 18000 Skim-Pak	For use with CounterVac 3315 (504-56)	4457	Portland	OR	Portland Base	516-56
CRC	29105	Skimmer Portable	SK3	Douglas 18000 Skim-Pak	For use with CounterVac 3315 (504-56)	4457	Portland	OR	Portland Base	522-56
CRC	29106	Skimmer Portable	SK3	Douglas 18000 Skim-Pak (Unit ID 508-56)	3" Yanmar Diesel (Unit ID 607-57) 300 GPM	2057	Astoria	OR	Tongue Point	701-56
CRC	29107	Skimmer Portable	SK3	Douglas 18000 Skim-Pak (Unit ID 507-56)	3" Yanmar Diesel (Unit ID 608-57) 300 GPM	2057	Astoria	OR	Tongue Point	700-56
CRC	29108	Skimmer Portable	SK3	Douglas 18000 Skim-Pak (Unit ID 517-56)	3" Yanmar Diesel (Unit ID 610-57) 300 GPM	2057	Portland	OR	Portland Base	706-56
CRC	29109	Skimmer Portable	SK3	Douglas 4200 Skim-Pak	2" Yanmar Diesel (601-57) Diaphragm	480	Portland	OR	Portland Base	718-56
CRC	29110	Skimmer Portable	SK3	Douglas 4200 Skim-Pak (524-56)	2" Yanmar Diesel (600-57) Diaphragm	480	Portland	OR	Portland Base	717-56
CRC	29111	Skimmer Portable	SK3	Douglas 4200 Skim-Pak (527-56)	2" Yanmar Diesel (603-57) Diaphragm	480	Clatskanie	OR	Columbia Pacific Bio-Refinery	715-56
CRC	29112	Skimmer Portable	SK3	Douglas 4200 Skim-Pak (526-56)	2" Yanmar Diesel (602-57) Diaphragm	480	Portland	OR	Portland Base	714-56
CRC	29113	Skimmer Portable	SK3	Douglas 4200 Skim-Pak (528-56)	2" Yanmar Diesel (604-57) Peristaltic	480	Portland	OR	Portland Base	716-56
CRC	29116	Skimmer Portable	SK3	Slickbar "High Capacity Oil Skimmer"	For use with CounterVac (502-56) (WRRL ID 29195)	1714	Wauna	OR	Tidewater Barge # 2	112-29
CRC	29119	Skimmer Portable	SK3	Slickbar "High Capacity Oil Skimmer"	For use with CounterVac (504-56) (WRRL ID 29193)	1714	Portland	OR	Portland Base	535-56
CRC	29120	Skimmer Portable	SK3	Slickbar "Manta Ray"	For use with CounterVac (504-56) (WRRL ID 29193)	1028	Portland	OR	Portland Base	534-56
CRC	29121	Skimmer Portable	SK3	36" Coated Drum Skimmer (Unit ID 544-56)	Yanmar Diesel Hydraulic Power Unit (ID 800-58) and 3" Hydraulic Diaphragm Transfer Pump (636-57)	891	Portland	OR	Portland Base	719-56
CRC	29122	Skimmer Portable	SK3	36" Coated Drum Skimmer (Unit ID 545-56)	Yanmar Diesel Hydraulic Power Unit (ID 801-58) and 3" Hydraulic Diaphragm Transfer Pump (ID 637-56)	891	Portland	OR	Portland Base	720-56
CRC	29123	Skimmer Portable	SK3	36" Coated Drum Skimmer (Unit ID 546-56)	Yanmar Diesel Hydraulic Power Unit (ID 802-58) and 3" Hydraulic Diaphragm Transfer Pump (ID 638-57)	891	Portland	OR	Portland Base	721-56
CRC	29124	Skimmer Portable	SK3	36" Coated Drum Skimmer (Unit ID 547-56)	Yanmar Diesel Hydraulic Power Unit (ID 803-58) and 3" Hydraulic Diaphragm Transfer Pump (ID 639-57)	891	Longview	WA	Trailer (330-40) Weyerhaeuser	722-56
CRC	29155	Skimmer Portable	SK3	12" Drum Skimmer (Flotation Unit ID 548-56)	Yanmar Diesel Hydraulic Power Unit (804-58) and 3" Hydraulic Diaphragm Transfer Pump (ID 640-57)	891	Portland	OR	Portland Base	723-56
CRC	29156	Skimmer Portable	SK3	12" Drum Skimmer (Flotation Unit ID 549-56)	Yanmar Diesel Hydraulic Power Unit (ID 805-58) and 3" Hydraulic Diaphragm Transfer Pump (ID 641-57)	891	Portland	OR	Portland Base	724-56

Total EDRC **68428**

Organization	wrrlID	Resource	KindType	Indentification	Specifications	Recovery	LiquidStorage	Boom	People	HomeBase	State	Staging	OwnerID
CRC	29032	OSRV	OSRV3	OSRV HW Zarling	34' Kvichak (includes boom from WRRL ID 29143)	3720	24	0	2	Portland	OR	Sause Bros.	002-22
CRC	29033	OSRV	OSRV3	OSRV Mark O. Hatfield	34' Kvichak (includes boom from WRRL ID 29142)	3720	24	0	2	Cathlamet	WA	Elochoman Marina	003-23
CRC	29034	OSRV	OSRV3	OSRV MFSA 1	34' Kvichak (includes boom from WRRL ID 29145)	3720	24	0	2	Portland	OR	Fred's Marina	000-20
CRC	29035	OSRV	OSRV3	OSRV Clean Rivers 1	34' Kvichak (includes boom from WRRL ID 29144)	3720	24	0	2	Rainier	OR	Foss Dock	001-21
CRC	29050	OSRV	OSRV3	Shallow Water Recovery Barge	30' Kvichak w/ Lori Skimmer (includes boom from WRRL ID 29146)	2473	100	0	2	Vancouver	WA	Tesoro Facility	105-29
CRC	29052	OSRV	OSRV3	Shallow Water Recovery Barge	30' Kvichak w/ Lori Skimmer ((includes boom from WRRL ID 29149)	2473	100	400	2	Astoria	OR	Tongue Point	103-29
CRC	29053	OSRV	OSRV3	Shallow Water Recovery Barge	30' Kvichak w/ Lori Skimmer (includes boom from WRRL ID 29148)	2473	100	400	2	Longview	WA	Weyerhaeuser	102-29
CRC	29054	OSRV	OSRV3	Shallow Water Recovery Barge	30' Kvichak w/ Lori Skimmer (includes boom from WRRL ID 29150)	2473	100	400	2	Portland	OR	Portland Base	101-29
CRC	29055	OSRV	OSRV3	Shallow Water Recovery Barge	30' American Eagle w/ Lori Skimmer (includes boom from WRRL ID 29151)	2473	100	400	2	Clatskanie	OR	Columbia Pacific Bio-Refinery	100-29
CRC	29057	OSRV	OSRV3	Shallow Water Recovery Barge	30' American Eagle w/ Lori Skimmer (includes boom from WRRL ID 29147)	2473	100	400	2	Longview	WA	Weyerhaeuser	106-29

Total EDRC 29718

Organization	wrrIID	Resource	KindType	Indentification	Specifications	Boom	People	HomeBase	State	Staging	OwnerID
CRC	29037	Vessel	WB4	16' Workboat	16' Boston Whaler w/40 hp	0	1	Portland	OR	Portland Base:Trailer (340-40)	007-28
CRC	29038	Vessel	WB4	21' Workboat	21' Boston Whaler w/150 hp	0	1	Portland	OR	Portland Base Traliler (341-40)	008-28
CRC	29039	Vessel	WB4	20' Workboat	20' Alumaweld I w/115 hp	0	1	Portland	OR	Portland Base Trailer (331-40)	009-31
CRC	29040	Vessel	WB4	Elizabeth Furse	27' Allday	0	2	Portland	OR	Portland Base Trailer (329-40)	005-26
CRC	29041	Skiff	WB5	14' Skiff	14' Skiff w/15 hp	0	1	Portland	OR	Portland Base (Trailer 315-40)	010-58
CRC	29042	Skiff	WB5	14' Skiff	14' Skiff w/15 hp	0	1	Portland	OR	Trailer 316-40	011-58
CRC	29043	Skiff	WB5	14' Skiff	14' Skiff w/15 hp	0	1	Portland	OR	Trailer 346-67	012-58
CRC	29044	Skiff	WB5	16' Skiff	16' Skiff w/25 hp	0	1	Portland	OR	Portland Base Trailer (333-40)	013-58
CRC	29045	Skiff	WB5	16' Skiff	16' Skiff w/ 25hp	0	1	Clatskanie	OR	Columbia PacificBio-Refinery: Trailer (332-40)	014-58
CRC	29157	Vessel	WB4	20' Workboat	20' Alumaweld II w/90 hp	0	1	Portland	OR	Porland Base Trailer (342-40)	015-33
CRC	29191	Skiff	WB5	14' Skiff	14' Skiff with 5 hp Outboard	0	0	Portland	OR	Portland Base (Trailer 316-40)	
CRC	30499	Vessel	WB4	18' Skiff	18' Skiff w/ 25hp	0	1	Portland	OR	Portland Base (Trailer 348-40)	016-58
CRC	30500	Vessel	WB4	18' Skiff	18' Skiff w/ 25hp	0	1	Portland	OR	Portland Base (Trailer 349-40)	017-58

Organizatic	wrrlID	Resource	KindType	Indentification	Specifications	People	HomeBase	State	Staging	OwnerID
CRC	29029	Vessel	WB3	FRV Columbia Responder	32' Kvichak (includes boom from WRRL ID 29154)	2	Astoria	OR	West Moo	006-27
CRC	29030	Vessel	WB3	FRV Independence	32' Browns (includes boom from WRRL ID 29132)	2	Longview	WA	Jack Fowle	004-24
CRC	29031	Vessel	WB3	FRV Protector	34' Munson (includes boom from WRRL ID 29141)	2	St. Helens	OR	Dillards, St.	004-25

Organization	wrrlID	Resource	KindType	Indentification	Specifications	Recovery	LiquidStorage	Boom	People	HomeBase	State	Staging	OwnerID
CRC	29051	Storage	TB4	Shallow Water Barge	30' American Eagle	0	100	0	2	Portland	OR	Portland Base Trailer#321-40	104-29
CRC	29056	Storage	TB4	Shallow Water Barge	30' American Eagle	0	100	0	0	Longview	WA	Weyerhaeuser	107-29
CRC	29058	Storage	TB4	Shallow Water Barge	30' American Eagle	0	100	0	0	Portland	OR	Portland Base Trailer# 320-40	108-29
CRC	29059	Storage	TB4	Shallow Water Barge	30' American Eagle	0	100	0	0	Portland	OR	Portland Base	110-29
CRC	29060	Storage	TB4	Shallow Water Barge	30' Kvichak (includes boom from WRRL ID 29136)	0	110	0	0	Portland	OR	Portland Fire & Rescue Station #6 Moorage	109-29
CRC	29050	OSRV	OSRV3	Shallow Water Recovery Barge	30' Kvichak w/ Lori Skimmer (includes boom from WRRL ID 29146)	2473	100	0	2	Vancouver	WA	Tesoro Facility	105-29
CRC	29052	OSRV	OSRV3	Shallow Water Recovery Barge	30' Kvichak w/ Lori Skimmer ((includes boom from WRRL ID 29149)	2473	100	400	2	Astoria	OR	Tongue Point	103-29
CRC	29053	OSRV	OSRV3	Shallow Water Recovery Barge	30' Kvichak w/ Lori Skimmer (includes boom from WRRL ID 29148)	2473	100	400	2	Longview	WA	Weyerhaeuser	102-29
CRC	29054	OSRV	OSRV3	Shallow Water Recovery Barge	30' Kvichak w/ Lori Skimmer (includes boom from WRRL ID 29150)	2473	100	400	2	Portland	OR	Portland Base	101-29
CRC	29055	OSRV	OSRV3	Shallow Water Recovery Barge	30' American Eagle w/ Lori Skimmer (includes boom from WRRL ID 29151)	2473	100	400	2	Clatskanie	OR	Columbia Pacific Bio-Refinery	100-29
CRC	29057	OSRV	OSRV3	Shallow Water Recovery Barge	30' American Eagle w/ Lori Skimmer (includes boom from WRRL ID 29147)	2473	100	400	2	Longview	WA	Weyerhaeuser	106-29
					Total onwater storage		**1110**						

Organization	wrrlID	Resource	KindType	Indentification	Specifications	HomeBase	State	Staging	OwnerID
CRC	29046	Wildlife	WR0	Widlife Rehabilitation Shelter	19' x 35' Western Shelters Gatekeeper 1935	Portland	OR	Portland Base (Wildlife Rehabilitation Trailer 300-38)	
CRC	29163	Wildlife	WR0	Wildlife Transport Trailer	32' Climate Control Cargo Trailer	Portland	OR	Portland Base	350-66
CRC	29170	Wildlife	WR0	Wildlife Rehabilitation Trailer	48' Specialty Trailer - Wildlife Rehabilitation (inclu	Portland	OR	Portland Base	300-38

Totals

Skimming - Daily Recovery Rate	68428
Total Boom	72600

CRC equipment download
www.wrrl.us

Appendix J
Incident Investigation Program

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1.0 SCOPE

The purpose of the Incident Investigation Program is to understand what happened (or could have happened) during an event at Columbia Pacific Bio-Refinery (CPBR) and then to prevent any recurrence of similar incidents, thereby improving the safety of the process, enhancement of personal safety, and protection of the environment.

2.0 RESPONSIBILITIES

All employees are responsible for reporting incidents to the Incident Commanders (IC). The primary IC at CPBR is the Plant Manager. The Alternate ICs are the General Manager and the Operations Support Manager.

The IC will be responsible for initiating and coordinating investigations, keeping investigation records, and communicating the results of investigations to affected employees.

3.0 FOLLOW-UP REPORT

If the release impacted the environment or persons outside the facility and the National Response Center (NRC) and the Oregon Emergency Response System (OERS) were notified, then a written follow-up report is required to each agency. A copy of the reporting forms can be found at the end of this Appendix or in Appendix G of the USCG Facility Response Plan. Submit the follow-up reports to the following parties:

NRC
C/O Coast Guard (G-OPA)
2100 2nd Street SouthWest Room 2611
Washington, D.C. 20593

Oregon Department of Environmental Quality
Submit electronically at: DOSPILLS@deq.state.or.us

In the event of an oil spill under the jurisdiction of the EPA, EPA requires that a post-accident investigation is submitted within 60 days of an event where greater than or equal to 1,000 gallons of oil is discharged to navigable waters, or two reportable spills within a 12 month period are discharged to navigable waters. The submittal will include the following.

- Name of Facility;
- Name of the owner or operator of the facility;
- Location of the facility;
- Date and year of initial facility operation;
- Maximum storage or handling capacity of the facility and normal daily throughput;
- Description of the facility, including maps, flow diagrams, and topographical maps;
- A complete copy of the EPA FRP with any amendments;

- The cause of such spill, including a failure analysis of system or subsystem in which the failure occurred;
- The corrective actions and/or countermeasures taken, including an adequate description of equipment repairs and/or replacements;
- Additional preventive measures taken or contemplated to minimize the possibility of reoccurrence;
- Any additional information the EPA Regional Administrator may reasonably require pertinent to the FRP or spill event.

Submit the EPA follow-up report to the following address:

EPA Region 10
1200 Sixth Avenue
Seattle, WA 98101

A complete copy of the information submitted to the EPA Regional Administrator may be submitted to the ODEQ and USCG for information purposes.

The IC will file necessary reports within one week of the incident. All follow-up reports must be postmarked no later than one week after the incident date.

4.0 INCIDENT INVESTIGATION TEAM

All incident investigations will commence within 48 hours of the incident.

The IC is responsible for selecting the members of the Incident Investigation Team (hereafter referred to as the Team). The exact membership of the Team will depend upon the severity and circumstances surrounding the incident. Contractors should be included on the team if they were involved or have information relating to the event.

A Team Leader should be designated by the IC. The Team Leader's duties may include:

- Controlling the scope of team activities by identifying which lines of investigation should be pursued, referred to another group for study or deferred;
- Calling and presiding over meetings;
- Assigning tasks and establishing timetables;
- Ensuring that no potentially useful data source is overlooked; and
- Keeping the Plant Manager advised of the progress of the investigation.

The IC is responsible for ensuring that the Team has full access to the site, document files and to all employees who may have input to the investigation process. The IC should issue and post a notice on plant bulletin boards identifying the Investigation Team and the Team members. Employees who feel they have useful information should be encouraged to contact the Team.

5.0 DETERMINE THE FACTS

A prompt and comprehensive search for facts surrounding the incident is the first major undertaking of the Team. The Team should conduct the following types of activities as it performs its fact-finding function.

Team members should visit the incident scene before physical evidence has been disturbed. The Team Leader is responsible for ensuring that the Team is not subjecting itself to any dangers as the visit is conducted. Personal safety of the team members should take priority over the incident investigation process at all times. No team member should be forced to take any actions, which they feel could endanger their safety.

Team members should first review the scene individually, discuss their preliminary findings, and then repeat the process as a group with a designated individual preparing a written log of observations and important comments.

Some of the things that should be noted during the scene visit are:

- Indication of any non-routine activities in the area, such as welding or cutting equipment, tools, construction debris, or motorized equipment.
- Status of safety equipment in area. Was equipment used? Was it readily available? Any indications of safety equipment problem?
- Note positions of important valves and controls that could have contributed to the incident or which may have been used to control the incident.
- Note any indications of fire or explosion damage and whether any combustible materials were involved.
- Note whether vessels, piping, and storage tanks in the area were properly labeled and identified.

The team should prepare visual aids such as photographs, sketches and graphical representations of information that may be useful during the investigation.

The Team should take brief statements from any eyewitnesses who are available during the inspection of the scene. More detailed interviews should be arranged later. Perform interviews privately to avoid having several eyewitnesses share their impression of the incident so as to avoid undue influence of an eyewitness who may have a differing view of the incident.

The Team should determine whether any key mechanical equipment should be disassembled and should then observe such disassembly and record findings. Any equipment, which may have failed or otherwise may have contributed to the incident should be preserved and/or carefully documented.

The Team should review all sources of potentially useful information such as as-built drawings, operating logs, records, charts, previous reports, standard and emergency procedures, equipment

manuals, oral instructions, shift change records, training and performance records of employees, laboratory tests, or in-process sampling.

The Team should carefully document all sources of information gathered during the fact-finding process.

6.0 DETERMINE THE CAUSE

Establishing the cause of the incident is crucial to the development of effective recommendations to correct and prevent a recurrence. Formal analysis of the cause is encouraged to avoid making premature or erroneous judgments.

It is also important that the true "root" cause of the incident, as well as contributing causes be identified. A recommended procedure for determining cause(s) of the incident follows:

- The Team should develop the "chronology of events" which occurred before, during and after the incident. The focus of the chronology should be solely on what happened and what actions were taken. List alternatives when the status cannot be definitely established due to missing or contradictory information.
- The Team should identify any and all conditions or circumstances, which deviated from normal, no matter how insignificant they may seem. Identify all hypotheses of the causes of the incident based on these deviations.
- The Team should test the various cause hypotheses against all available evidence and information, and list in order of likelihood. In each case establish what the root cause and secondary cause was. As a Team, strive to agree on the most likely root cause(s) and secondary cause(s) (reference the standard lists of contributing causes contained on the Incident Investigation Report Form).

7.0 RECOMMEND CORRECTIVE AND PREVENTIVE ACTIONS

During the "determination of the cause" process, some actions may surface that could have eliminated or reduced the chances for the incident having occurred. In some cases, these recommendations may not relate to the most likely cause but may still be an appropriate recommendation to improve the safety of the process.

The Team should formalize these recommendations in two distinct areas. Engineering changes should encompass those actions, which include physical changes to the system hardware. Administrative changes should include procedures, training, and communications.

The Team should assess the urgency of implementing the corrective and preventive actions. If changes should be made prior to resumption of operations, they should be clearly stated in the recommendations. Otherwise an approximate time frame for implementation of the changes should be included with each recommendation.

Some recommended changes may be subject to the Management of Change (MOC) procedure. The MOC procedure should be consulted when implementing such changes (see the PSM/RMP Program)

The team should conduct a critique of all written documents or plans that directed their response. The critique should identify the weaknesses and most useful aspects of the document or plan.

8.0 COMMUNICATING RESULTS/FOLLOW UP

Communicating results falls into three distinct areas. First is the completion of the standard Incident Investigation Report Forms that should be used in all cases involving a hazardous material incident. Second is the requirement that the results of the investigation be reviewed with appropriate personnel whose work assignments were affected or could have been affected by the incident or one like it. Third is the issuance of Team status reports and follow-up reports. The Incident Investigation Report Form is included in this Program.

Within two weeks of the completion of investigation, the Team Leader should arrange for one or more review sessions with affected employees. The purpose of the meeting is to explain the outcome of the investigation. The Team, as part of its work, should have developed a list of affected individuals (by name or job description) who should be involved in the review process. The Team should consider incident circumstances in determining whom the "affected employees" are.

The IC should ensure that all appropriate affected personnel are in attendance at a review session. Minutes of review sessions should include the names of all individuals in attendance as well as any major issues that were raised during the review.

The Team Leader should issue a weekly Team status report to the IC until the Incident Investigation Report Form is completed. Thereafter, the Team Leader should be responsible for issuing a monthly status report until all recommended corrective and preventive actions are fully implemented or resolved. At that time the Team Leader should issue a final report and request the IC's approval for the investigation to be officially closed out.

9.0 ODEQ DEBRIEFING

Following the completion of the incident investigation a meeting must be set up with the Oregon Department of Environmental Quality. The purpose of the meeting will be to debrief the ODEQ, include any newly recognized needs to amend the OSCP, and provide a list of any other lessons learned.

10.0 COMPLETING THE FORMS

The following are instructions for completing the four-page Form 1(A-D) report form and the one-page 2A closeout form.

10.1 Form 1A (Incident Summary)

- Reference Number - The Team Leader checks the log of past investigations (LOG) and assigns an unused Reference Number to the investigation. This Reference Number should be included at the upper right corner of each page of the form.
- Facility Information - Fill in facility name, address and four-digit SIC (Standard Industrial Classification) Code. Include the normal inventory (pounds) of hazardous material on site. This should agree with the inventory figure included in any agency reports.
- Incident Type - Indicate the type of incident that occurred: Release of chemicals, hazardous material spill, near miss, fire, explosion, natural disaster, bomb threat, or workplace violence.
- Primary Source of Release - Indicate the likely (if not confirmed) release source. If none of the choices are appropriate, check "other" and list the source. In those cases where a small release then resulted in an explosion or other catastrophe that caused a larger release, report the initial release source, not the second source.
- Cause(s) Contributing to Release - Indicate those causes that contributed to the incident or which should have mitigated results but didn't.
- Types of Changes Recommended to Prevent Recurrence - Categorize the specific recommendations into the choices shown.
- Results of Incident - List the estimated quantity of hazardous material released. This should agree with the quantity reported to local, state and federal agencies. Include the estimated total property and product damages if known. Include the number of people injured seriously enough to require hospitalization and the number of fatalities directly linked to the hazardous material incident.

10.2 Form 1B (Incident Description)

- Location, Rate, Time and Duration - Include specific descriptions of areas within the facility affected by the incident, when the incident was first detected or reported, and how long it lasted.
- Circumstances Leading up to Incident - Briefly describe the operating conditions just prior to the incident including loads, pressures, weather, and equipment status. Note who was in charge and whether or not there were any abnormal circumstances or early indications of a problem.
- Events and Actions as Incident Unfolded - Provide a chronology of events including who discovered the incident, how it was reported, how it was responded to, and how and when it was brought under control.

10.3 Form 1C (Incident Cause)

- Assessment of Root Cause - Outline the Team's consensus view of the underlying cause of the incident. If there are multiple hypotheses that cannot be ruled out they should also be included. This should be the condition or event, which started the sequence of events which resulted in the near-miss or actual incident.
- Assessment of Additional Contributing Causes - List conditions, actions or events which contributed to the seriousness of the incident or which should have, but did not, mitigate the effects of the root cause.
- Actions or Circumstances Which Helped - Outline any administrative or engineering controls which tended to mitigate the effects of the incident. Particularly in the case of a near-miss, this would explain why the incident was controlled. Also include things that might have been done to minimize the effects of the incident.

10.4 Form 1D (Approvals, Follow-Up and Reviews)

- Date and Time Team Commenced Investigation - Record the time and date that the Team was formally requested to assemble. It should reflect the time at which the Team members were notified that they would be working on the team, not the time that the Team was physically assembled at the scene.
- Team Membership - Provide the name, title and business affiliation of the Team members. Upon completion of the Team's work they are to initial the report in the approved column if they agree that it accurately reflects the findings of the Team.
- Recommended Changes - Give a brief description of the requested changes and assign an MOC Reference Number if MOC is required for a change.
- Recommended Employee Reviews - Team is to list individual affected employees by name or describe groups of employees by job, department, area, etc., that should be asked to attend review sessions to present the investigation and recommendations.

10.5 Form 2A (Close-Out)

- Description of Incident - Briefly summarize the date and description of the incident.
- Investigative Review Session - List the review sessions that were conducted including dates, how many attended, and how the actual attendance compared to the recommended audience. Include any out-standing issues or recommended actions that may have been suggested during the review.
- Hazard Reduction Actions - Describe the various changes in administrative or engineering areas which would reduce the likelihood for recurrence of a similar incident in the future.

- Plan Critique - Describe the weaknesses of the written plan used to direct the response and the most useful aspects of the written plan.

11.0 DOCUMENT MANAGEMENT

The following are the documents that will typically be associated with an incident investigation, along with suggested filing and distribution paths:

- Team Leader should maintain the Team file. Individual members of the team should ensure that copies of any important documents, photos, etc. are in the Team file. At the close of the Team's work, the file should be completely assembled in the one Team file or series of files and should be sent to the E&S Manager.
- The Team Leader prepares weekly status reports from the commencement of the investigation until investigation work is completed and FORM 1 is submitted.
- The Team should fill in FORM 1 pages A through D upon completion of their investigation. The Team Leader signs them and other Team members initial them. The original is submitted to the IC for their signature.
- During the time between submission of FORM 1 and the completion of recommended changes, the Team Leader issues a monthly report providing status on various recommended changes as well as any employee review sessions. The report is submitted to the IC.
- Upon satisfactory completion or resolution of all recommended changes, the Team Leader fills out the form and signs it, requesting approval to formally close-out the investigation team's role. The IC signs off indicating his/her satisfaction that the process is completed.
- The IC should retain the completed Incident Investigation Report for 5 years in the EHS&S Manager's incident files.

INCIDENT INVESTIGATION FORMS

INCIDENT INVESTIGATION
INCIDENT SUMMARY (Form 1A)

Date of Incident: / /

Name:	SIC Code:
Address:	

Incident Type (Check any that apply):

[ ] Near-miss [ ] Vapor Release [ ] Chemical Release: [ ] Spill solid [ ] Spill liquid [ ] Air Release [ ] Water Release [ ] Soil Release [ ] Hazardous Material [ ] Natural Gas Release [ ] Earthquake [ ] Flooding	[ ] Fire [ ] Explosion [ ] Ammonia release [ ] Acid Release [ ] Oil Release [ ] Propane Release [ ] Workplace violence [ ] Medical Emergency [ ] Utility Loss [ ] Human Exposure [ ] Severe Weather	[ ] Adjacent Facility Incident [ ] Transportation Incident off site [ ] Transportation Incident on site [ ] Confined space rescue [ ] Entrapment rescue [ ] Bomb Threat [ ] Tornado

Primary Source of Release (Check One):

[ ] Oil Drain Valve [ ] Process Vessel [ ] Bulk storage tank [ ] Fermenter [ ] Pump [ ] Loading Operation	[ ] Piping [ ] Manual Valve [ ] Pressure Relief Valve [ ] Automatic Control Valve [ ]Charging Connection /Source	[ ] Other: [ ] Incident was not a release

Incident Reporting Information:

Date and Time of Initial Report Follow-Up Report Submitted to (list all agencies): Date follow-up report was submitted to the appropriate authorities:
[ ] Incident did not require a Report

Cause(s) Contributing to Release (Check all that apply):

[ ] Human Factors [ ] Design Shortcoming [ ] Misapplied Equipment [ ] Power Failure [ ] Corrosion [ ] Inadequate Maintenance [ ] Earthquake, Tornado, or Severe Weather	[ ] Equipment Defect/Malfunction [ ] Improper Installation [ ] Mechanical Damage [ ] Hydrostatic Expansion [ ] Hydraulic Shock [ ] Inadequate Administration Controls [ ] Incorrect Disposal [ ] Incident was not a release	[ ] Controls Failure [ ] Process Upset [ ] Other Emergency [ ] System Change [ ] Maintenance Activity [ ] Inadequate Labeling

Types of Changes Recommended to Prevent Recurrence (Check all that apply):

Administrative Changes	Engineering Changes
[ ] Operating Procedures	[ ] Design
[ ] Additional Training	[ ] Equipment
[ ] Emergency Response Procedures	[ ] Piping
[ ] Safe Work Practices	[ ] Safety Equipment
[ ] Labeling/Identification	[ ] Mechanical Protection/Access
[ ] Maintenance Procedures	[ ] Controls
[ ] Management of Change Procedures	[ ] Facility

Results of Incident (Provide Requested Information):

Hazardous Material Released: _____

Total Quantity Released: _____

Estimate of Property/Product Damages: _____

Number of Serious Injuries: _____

Number of Fatalities _____

INCIDENT INVESTIGATION
INCIDENT DESCRIPTION (Form 1B)

Location, Date, Time and Duration of Incident:

Circumstances Leading up to Incident:

Events and Actions as Incident Unfolded:

Continue on additional pages if needed

INCIDENT INVESTIGATION
INCIDENT CAUSE (Form 1C)

Investigation Team's Assessment of Root Cause of Incident:

Investigation Team's Assessment of Additional Contributing Causes:

Actions or Circumstances Which Either Helped to Minimize the Effects of the Incident or Which Could Have Minimized the Effects:

Continue on additional pages if needed.

INCIDENT INVESTIGATION
APPROVALS, FOLLOW-UP and REVIEWS (Form 1D)

Date and Time Team Commenced Investigation: _____

Team Membership (List Team Leader First):

Name	Title	Company	Approval

Recommended Changes:

Description of Change	MOC # (if applicable

Recommended Employee Reviews of Report:

Copy Distribution	Submitted By:	_____ Signature Date
		_____ Name Title
	Received By:	_____ Signature Date
		_____ Name Title
DOC File ID:		

INCIDENT INVESTIGATION CLOSE-OUT (Form 2A)

Description of Incident:

Investigation Review Sessions:

Hazard Reduction Actions:

Engineering	**Estimated Completion Date**
Administrative	

Plan Critique:

Weaknesses of Plan	**Recommended Changes**
Strengths of Plan	**Comments**

It is recommended that the subject incident investigation be considered closed and that the Team be formally disbanded.

Copy Distribution	Team Leader: _____ Signature Date Approved By: _____ Signature Date
DOC File ID:	

INCIDENT INVESTIGATION
REFERENCE NO. LOG

DATE	REFERENCE NO.	INCIDENT DESCRIPTION

Appendix K
Response Tables

Chemical Hazards and Public Safety

Chemical	Sulfuric Acid	Sodium hydroxide	Diesel Fuel	Denatured ethanol	200 Proof Ethanol	Aqueous Ammonia	Gasoline (Denaturant) or Crude Oil
Potential Hazards							
National Fire Protection Association Ratings	Health: 3 Flammability: 0 Reactivity: 2	Health: 3 Flammability: 0 Reactivity: 1	Health: 1 Flammability: 3 Reactivity: 0	Health: 1 Flammability: 3 Reactivity: 0	Health: 1 Flammability: 4 Reactivity: 0	Health: 3 Flammability: 1 Reactivity: 0	Health: 1 Flammability: 3 Reactivity: 0
Incompatibles	Bases, oxidizable materials (hot)	Water, acids, flammable liquids, organic halogens, metals, aluminum, tin, zinc, nitromethane, and nitro compounds		May react vigorously with heat, oxidizing materials such as nitrates, peroxides, acids		Strong oxidizers, acids, halogens, salts of silver & zinc [Note: Corrosive to copper & galvanized surfaces.]	Strong oxidizers such as peroxides, nitric acid, chlorates, chlorides & perchlorates
Health	Inhalation, ingestion, or contact with vapors, dust or substance may cause severe injuries, burns, or death Fire will produce irritating, corrosive, and or toxic gases Runoff from fire control or dilution water may be corrosive and/or toxic and cause pollution		Inhalation or contact with material may irritate or burn skin or eyes Fire may produce irritating, corrosive, and/or toxic gases Vapors may cause dizziness or suffocation Runoff from fire control or dilution water may cause pollution	The solvent in this product when inhaled or absorbed in harmful quantities may produce central nervous system depression, characterized by headaches, nausea, dizziness, loss of balance and coordination and stupor. Vapors or spray mist may be irritating to nasal and respiratory tract.		Liquid is intensely irritating to eyes and can cause blindness. Liquid causes corrosive burns to skin and gas is irritating to skin when moist. Vapors are irritating to the throat.	• Inhalation or contact with material may irritate or burn skin and eyes. • Fire may produce irritating, corrosive and/or toxic gases. • Vapors may cause dizziness or suffocation. • Runoff from fire control or dilution water may cause pollution.
Fire or explosion	Material may burn, but not ignite readily May ignite combustibles Substance will react with water, releasing corrosive and/or toxic gases	Non-combustible, substance itself does not burn but may decompose upon heating to produce	**Highly flammable: Will easily ignite by heat, sparks, or flames** Vapors may form explosive mixtures with air Vapors may travel to source of ignition and flash back Most vapors are heavier than air Vapor explosion hazard indoors, outdoors, or in sewers	Unusual fire and explosion hazards: Flame is invisible in daylight. Extremely flammable materials may release vapors that are heavier than air and travel long distances and ignite and flash back.		Ammonia increases the fire hazard from other combustibles including oil. Ammonia vapor in the range of 16-25% can explode on contact with ignition sources.	**Highly flammable: Will easily ignite by heat, sparks, or flames** Vapors may form explosive mixtures with air Vapors may travel to source of ignition and flash back

Chemical Hazards and Public Safety							
Chemical	**Sulfuric Acid**	**Sodium hydroxide**	**Diesel Fuel**	**Denatured ethanol**	**200 Proof Ethanol**	**Aqueous Ammonia**	**Gasoline (Denaturant) or Crude Oil**
	Flammable/toxic gases may accumulate in confined areas Contact with metals may evolve flammable hydrogen gas Containers will explode when heated or if contaminated with water Substance may be transported in a molten form	corrosive and/or toxic fumes. Some are oxidizers and may ignite combustibles Contact with metals may evolve flammable H2 gas. Containers may explode when heated.	Some may polymerize explosive when heated or involved in a fire Runoff to sewer may create fire or explosion hazard Containers may explode when heated				
Public Safety							
General	Isolate spill area immediately for at least 150 to 350 feet in all directions. Keep unauthorized personnel away Stay upwind Keep out of low areas Ventilate enclosed areas	Isolate spill area immediately for at least 80 to 160 feet. Keep unauthorized personnel away Stay upwind Keep out of low areas Ventilate enclosed areas	Isolate spill area immediately for at least 150 to 350 feet in all directions. Keep unauthorized personnel away Stay upwind Keep out of low areas Ventilate enclosed areas	• As an immediate precautionary measure, isolate spill or leak area for at least 50 meters (150 feet) in all directions. • Keep unauthorized personnel away. • Stay upwind. • Keep out of low areas. • Ventilate closed spaces before entering.		• As an immediate precautionary measure, isolate spill or leak area in all directions for at least 50 meters (150 feet) for liquids and at least 25 meters (75 feet) for solids. • Keep unauthorized personnel away. • Stay upwind. • Keep out of low areas. • Ventilate enclosed areas.	• As an immediate precautionary measure, isolate spill or leak area for at least 50 meters (150 feet) in all directions. • Keep unauthorized personnel away. • Stay upwind. • Keep out of low areas. • Ventilate closed spaces before entering.
Protective Clothing	DOT Recommended – Wear SCBA, chemical protective clothing. Structural firefighters' protective clothing for fire situations only, not for spills						

Fire Response							
Chemical	**Sulfuric Acid**	**Sodium hydroxide**	**Diesel Fuel**	**Denatured ethanol**	**200 Proof**	**Aqueous Ammonia**	**Gasoline (Denaturant)**
Fire							
General	When material is not involved in fire, do not use water on material itself		Avoid CO_2 which may react violently				LOW FLASH POINT Use of water spray when fighting fire may be inefficient
Small Fire	CO_2, dry chemical	Dry chemical, CO2 or water spray.	Water Spray	• Dry chemical, CO_2, water spray or alcohol-resistant foam.			
Fires involving tanks or trailer loads		If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.	• Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. • Do not get water inside containers. • Cool containers with flooding quantities of water until well after fire is out. • Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank. • ALWAYS stay away from tanks engulfed in fire.	• Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. • Cool containers with flooding quantities of water until well after fire is out. • Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank. • ALWAYS stay away from tanks engulfed in fire. • For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.			
Large Fires	Flood fire with large quantities of water, while knocking down vapors with water fog	• Dry chemical, CO2, alcohol-resistant foam or water spray. • Move containers from fire area if you can do it without risk. • Dike fire control water for later disposal; do not scatter the material.	• Dry chemical, alcohol-resistant foam or water spray. • Move containers from fire area if you can do it without risk. • Dike fire control water for later disposal; do not scatter the material.	Water spray, fog or alcohol-resistant foam Move containers from fire area if you can do it without risk Do not use straight sprays Dike fire control water for later disposal, do not scatter the material			

Spill or Leak Response							
Chemical	**Sulfuric Acid**	**Sodium hydroxide**	**Diesel Fuel**	**Denatured ethanol**	**200 Proof**	**Aqueous Ammonia**	**Gasoline (Denaturant)**
Spill or Leak							
General	Fully encapsulating vapor clothing should be worn for spills and leaks with no fire DO not touch damaged containers or spilled material unless wearing appropriate protective clothing Stop leak if you and do it without risk Use water spray to reduce vapors DO NOT PUT WATER DIRECTLY ON LEAK, SPILL AREA, OR INSIDE CONTAINER Keep combustibles away from spilled material Prevent entry into waterways, sewers, basements, or confined areas	Eliminate all ignition sources Ground all equipment being used Do not touch damage containers or spilled material unless wearing protective clothing Stop leak if you can do it without risk A vapor suppressing foam may be used to reduce vapors DO NOT GET WATER INSIDE CONTAINERS Use water spray to reduce vapors or divert vapor cloud drift Prevent entry into waterways, sewers, basements, or confined areas	• ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). • Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. • Stop leak if you can do it without risk. • Prevent entry into waterways, sewers, basements or confined areas. • Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers. • DO NOT GET WATER INSIDE CONTAINERS.	• ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). • All equipment used when handling the product must be grounded. • Do not touch or walk through spilled material. • Stop leak if you can do it without risk. • Prevent entry into waterways, sewers, basements or confined areas. • A vapor suppressing foam may be used to reduce vapors. • Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers. • Use clean non-sparking tools to collect absorbed material.			
Small Spills	Cover with dry earth, sand or other non-combustible material followed with plastic sheet to minimize spreading or contact with rain Use clean non-sparking tools to collect material and place it into loosely covered plastic containers						
Large Spills	Same as small spills			• Dike far ahead of liquid spill for later disposal. • Water spray may reduce vapor; but may not prevent ignition in closed spaces.			

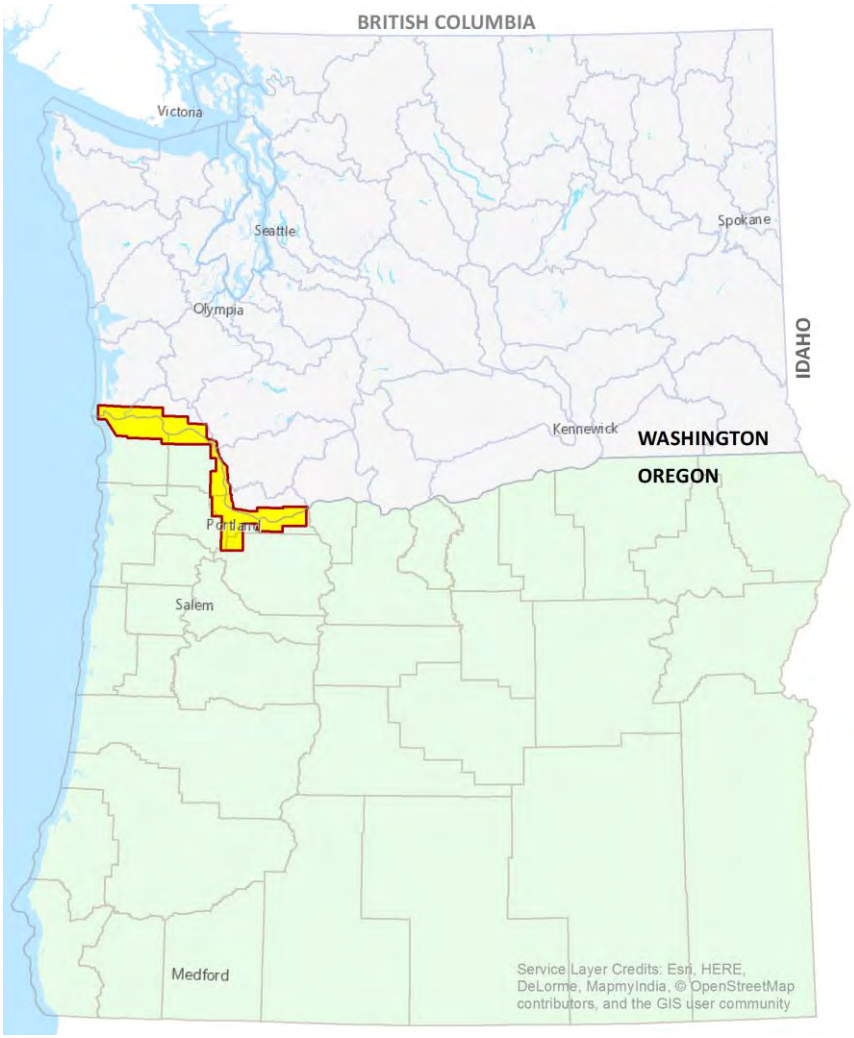
First Aid							
Chemical	**Sulfuric Acid**	**Sodium hydroxide**	**Diesel Fuel**	**Denatured ethanol**	**200 Proof**	**Aqueous Ammonia**	**Gasoline (Denaturant)**
First Aid							
General	Move victim to fresh air. Call emergency medical care Apply artificial respiration if victim not breathing **Do not use mouth to mouth method if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket** **mask equipped with a one-way valve or other proper respiratory medical device** Administer oxygen if breathing is difficult Remove and isolate chemical clothing and shoes In case of contact, immediately flush skin or eyes with running water for at least 20 minutes For minor skin contact, avoid spreading material on unaffected skin Keep victim quiet and warm Effects of exposure may be delayed Ensure that medical personnel are aware of the materials involved			Move victim to fresh air. Call emergency medical care Apply artificial respiration if victim not breathing Administer oxygen if breathing is difficult Remove and isolate chemical clothing and shoes In case of contact, immediately flush skin or eyes with running water for at least 20 minutes Wash skin with soap and water Keep victim quiet and warm Effects of exposure may be delayed Ensure that medical personnel are aware of the materials involve			

Appendix L
LCRGRP Planning Maps and Matrices and Sensitive Species Lists

LOWER COLUMBIA RIVER

Geographic Response Plan

(LCR GRP)



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LOWER COLUMBIA RIVER

Geographic Response Plan

(LCR GRP)

October 2015

Spill Response Contact Sheet

Required Notifications for Oil Spills and Hazardous Substance Releases	
Federal Notification - National Response Center	**(800) 424-8802***
State Notification - Washington Emergency Management Division	**(800) 632-8000***
State Notification - Oregon Emergency Response System	**(800) 452-0311***

U.S. Coast Guard	
National Strike Force Coord Center	**(252) 331-6000***
-Pacific Strike Team	**(415) 883-3311***
Sector Columbia River	
- Emergency	**(866) 284-6958***
-Safety	(503) 861-6229
USCG Marine Safety Unit Portland	(503) 240-9310
-Marine Environmental Response	(503) 240-9370
13th Coast Guard District	(800) 982-8813

U.S. Environmental Protection Agency (EPA)	
Region 10 Spill Response	**(206) 553-1263***
-Washington Ops Office	(360) 753-9437
-Oregon Ops Office	(503) 326-3250
- RCRA/CERCLA Hotline	(800) 424-9346
- Public Affairs	(206) 553-1203

National Oceanic Atmospheric Administration	
Scientific Support Coordinator	(206) 526-6829
Weather (NWS Portland)	(503) 261-9246

Other Federal Agencies	
U.S. Fish and Wildlife Service	(509) 891-6839
U.S. Department of Interior	(503) 326-2489
U.S. Army Corps of Engineers - Portland	(503) 808-4402
-Bonneville Dam	**(541) 374-8338***

Tribal Contacts	
Columbia River Inter-Tribal Fish Commission	(503) 238-0667
Confederated Tribes of the Umatilla Indian Reservation	**(541) 377-2959***
Confederated Tribes of the Yakama Indian Nation	(509) 865-5121
Cowlitz Indian Tribe	(360) 577-6962
Grand Ronde Confederated Tribes	(503) 879-2424
Shoalwater Bay Indian Tribe	(360) 267-0731
Warm Springs Confederated Tribes	**(541) 553-1171***

Response Contractors	
NRC Environmental Services	**(800) 337-7455***
Marine Spill Response Corporation	**(425) 252-1300***
Ballard Marine Construction	**(866) 782-6750***
Tidewater Barge / Terminal Co.	**(800) 562-1607***
Cowlitz Clean Sweep	**(360) 423-6316***
Clean Rivers Cooperative	**(503) 220-4040***
Clean Harbors	**(800) 645-8265***
NWFF Environmental Inc.	**(800) 942-4614***

Washington State	
Department of Ecology	
- Southwest Regional Office (Lacey)	(360) 407-6000
Washington State Patrol	
-District 5 (Clark, Cowlitz, Skamania)	(360) 449-7909
-District 8 (Pacific, Wahkiakum)	(360) 473-0172
Dept of Fish and Wildlife	(360) 902-2200
- Oil Spill Team	**(360) 534-8233***
Washington DNR	(360) 902-1064
-Outside of normal business hours	**(360) 556-3921***
Washington State Parks and Rec	(360) 902-8544
Dept. Archaeology & Historic Preservation	(360) 586-3065
Dept of Health (Drinking Water)	(800) 521-0323
-Outside of normal business hours	**(877) 481-4901***
Department of Transportation	(360) 705-7000

Oregon State	
Dept of Environmental Quality	
-Headquarters (Portland)	(503) 229-5153
Oregon State Police NW HQ	(503) 378-3387
Department of Fish and Wildlife	(503) 947-6000
Oregon Parks and Recreation	(503) 986-0707
-State Historic Preservation Office	(503) 986-0674
Dept of Health (Drinking Water)	(971) 246-1789
-Outside of normal business hours	**(971) 246-1789***
Department of Transportation	(888) 275-6368

Local Government	
City of Astoria Fire Department	(503) 325-2345
City of Vancouver Fire Dept	(360) 487-7260
City of Portland Fire Department	(503) 823-3700
City of Longview Fire Dept	(360) 442-5501
Camas-Washougal Fire Dept	(360) 834-2262
Columbia River Fire and Rescue	(503) 397-1014
Clark County Sheriff	(360) 397-2211
Clatsop County Sheriff	(503) 325-2061
Columbia County Sheriff	(503) 366-4611
Cowlitz County Sheriff	(360) 577-3125
Multnomah County Sheriff	(503) 988-4300
Pacific County Sheriff	(360) 875-9397
Skamania County Sheriff	(509) 427-9490
Wahkiakum County Sheriff	(360) 795-3911

Utilities, Pipeline Companies, and Railroads	
Bonneville Power Administration	**(360) 943-8630**
Olympic Pipeline Control Center	**(888) 271-8880***
BNSF Railroad	**(800) 832-5452***
Union Pacific Railroad	**(800) 877-7267***

*** Contact numbers staffed 24-hour/day**

LOWER COLUMBIA RIVER

Geographic Response Plan

(LCR GRP)

CHAPTER 4

Response Strategies And Priorities

October 2015

4.1 CHAPTER INTRODUCTION

This chapter provides information on GRP response strategies and the order (priority) they should be implemented based on potential oil spill origin points (POSOPs), and the proximity of sensitive resources to them. Area maps, sector maps, and information on staging areas and boat launch locations are also provided in this chapter. During a spill incident, GRP response strategies should be implemented as soon as possible. Unless circumstances unique to a particular spill situation dictate otherwise, the priority tables in Section 4.3 should be used to decide the order that GRP strategies are deployed. The downstream movement of oil and the time it takes to mobilize response resources to deploy GRP strategies must always be considered when setting implementation priorities. Response equipment type and location information can be found on the Western Response Resource List (WRRL). The WRRL is available online at http://www.wrrl.us . Information on resources at risk, sensitive areas, and flight restrictions can be found in Chapter 6 of this plan. Information on protection techniques can be found in Appendix A. Information on shoreline countermeasures can be found in the Northwest Area Shoreline Countermeasures Manual (NWACP Section 9420). The Northwest Area Contingency Plan (NWACP) is available online at http://www.rrt10nwac.com/NWACP/Default.aspx.

The GRP strategies provided in this chapter have been created to reduce spilled oil's impact on sensitive resources. They are not everything that should or could be done during a response to lessen the chance of injury to natural, cultural, and economic resources at risk from oil spills. Although designed to be implemented during the initial phase of an oil spill, GRP strategies may continue to be used throughout a response at the discretion of the Incident Commander or Unified Command.

4.1.1 On-Site Considerations:

Before Deploying a GRP Strategy (Questions to Ask)

- Are conditions safe? Response managers and responders must first determine if efforts to implement a response strategy would pose an undue risk to worker safety or the public, based on conditions present during the time of the emergency. No strategy should be implemented if doing so would threaten public safety or present an unreasonable risk to the safety of responders.
- Has initial control and containment been sufficiently achieved? Source control and containment of the spill at or near the source of a spill are always higher priorities than the deployment of GRP response strategies, especially when concurrent response activities are not possible.
- How far downstream or out into the marine environment is the spilled oil likely to travel before response personnel will be ready and able to deploy GRP response strategies?

- Are permits required? Consult the Northwest Area Contingency Plan Permit Summary Table (NWACP Section 9401) for information specific to your location and circumstance.
- Will equipment or vehicles need to be staged on or near a roadway? If so, traffic control may be required. Contact the Washington State Patrol, Oregon State Police, or local county, municipality, or tribal police for assistance. At minimum, Washington Department of Transportation (WADOT) guidelines or Oregon Department of Transportation (ODOT) guidelines for work zone traffic control should be followed when working on or near a roadway.
    - Washington State Patrol District 5 (360) 449-7909
    - Washington State Patrol District 8 (360) 473-0172
    - Oregon State Police Northwest Area HQ (503) 378-3387

During Strategy Implementation (Things to Remember)

- On-scene conditions (weather, currents, tides, waves, river speed, and debris) may require that strategies be modified in order to be effective. There is a significant chance that weather and conditions experienced at a particular strategy location during an actual spill event will be different from that when data was gathered during field visits. Response managers and responders must remain flexible and modify the strategies provided in this chapter as needed to meet the challenges experienced during an actual response.
- Certain strategies may call for access points or staging areas that are not easily reached at all times of the year or in all conditions.
- Oil containment boom must be free of twists, gaps, and debris in order to remain effective.
- The GRP response strategies provided in this chapter were designed for use with persistent heavy oils that float on water and may not be suitable for other petroleum products or hazardous substances.
- ***After Strategy Implementation (Things to Understand)***
- Oil containment boom should be maintained and periodically monitored to ensure its effectiveness. Changes in river or current speed will likely require modifications to boom deflection angles (see Table 4-9). Depending on conditions, some booming strategies may require around-the-clock tending.
- Although designed for implementation during the initial phase of an oil spill, GRP strategies may continue to be deployed and implemented throughout the entire lifespan of a response, as determined appropriate and necessary by the Incident Commander or Unified Command.

Water Speed and Boom Deflection Angle

Measure the speed that water is moving by anchoring a line with two floating markers/buoys attached that are spaced 100 feet apart. Time the movement of floating debris between the two buoys, and then use Table 4.1 to estimate the water speed based on the travel time of the debris between the two buoys. You can also measure 100 feet along a straight portion of river bank or shoreline, and time the movement of debris between those points, but this method is generally less accurate than using the buoys. The maximum boom deflection angle is also provided in the table, based on the water speed measurements.

Table 4-1: Water Speed Drift Measurement Table

Time to Drift 100 Feet (seconds)	Velocity (ft/sec)	Velocity (m/sec)	Velocity (knots)	Max Boom Deflection Angle (degrees)	Boom required for 100-foot Profile to Current (feet)	Anchors needed if Placed Every 50 feet (number)
6	16.7	5.1	10.00	4.0	1,429	30
8	12.5	3.8	7.50	5.4	1,071	22
10	10.0	3.1	6.00	6.7	857	18
12	8.3	2.5	5.00	8.0	714	15
14	7.1	2.2	4.29	9.4	612	13
17	5.9	1.8	3.53	11.4	504	11
20	5.0	1.5	3.00	13.5	429	10
24	4.2	1.3	2.50	16.3	357	8
30	3.3	1.0	2.00	20.5	286	7
40	2.5	0.8	1.50	27.8	214	5
60	1.7	0.5	1.00	44.4	143	4
>86	≤1.2	≤0.35	≤0.70	90.0	100	3

Source: Oil Spill Response in Fast Currents. A Field Guide. U.S. Coast Guard Research and Development Center. October, 2011

4.1.2 Historical River Streamflow Ranges:

Gage/stream-flow data from U.S. Geological Survey (USGS) was used to determine the mean monthly stream discharge for rivers and streams in the Lower Columbia River area. Stream discharge is recorded in cubic feet per second (cfs); velocities in miles per hour (mph) or nautical miles per hour (knots) are not available. Table 4.1 provides information that can be used to calculate river velocities based on the time it takes a floating object to drift 100 feet downstream from any given point in a river or creek. Additional information on calculating river velocities can be found in Appendix A of this plan. Information on USGS river gage readings can be found online at http://maps.waterdata.usgs.gov/mapper/index.html.

Table 4-2: Historic Streamflow for the Lower Columbia River

Monthly Average Flow in Cubic Feet per Second (cfs)			
	Willamette River at Portland, OR USGS **14211720**	**Cowlitz River** at Castle Rock, WA USGS **14243000**	**Columbia River** at Quincy, OR USGS **14246900**
January	67,100	14,200	278,000
February	52,200	12,800	253,000
March	45,400	10,800	253,000
April	37,100	10,200	291,000
May	27,900	10,500	344,000
June	19,400	9,440	335,000
July	10,000	5,350	223,000
August	8,730	3,000	162,000
September	11,100	2,860	125,000
October	15,600	4,710	140,000
November	39,100	11,000	193,000
December	65,400	15,300	249,000

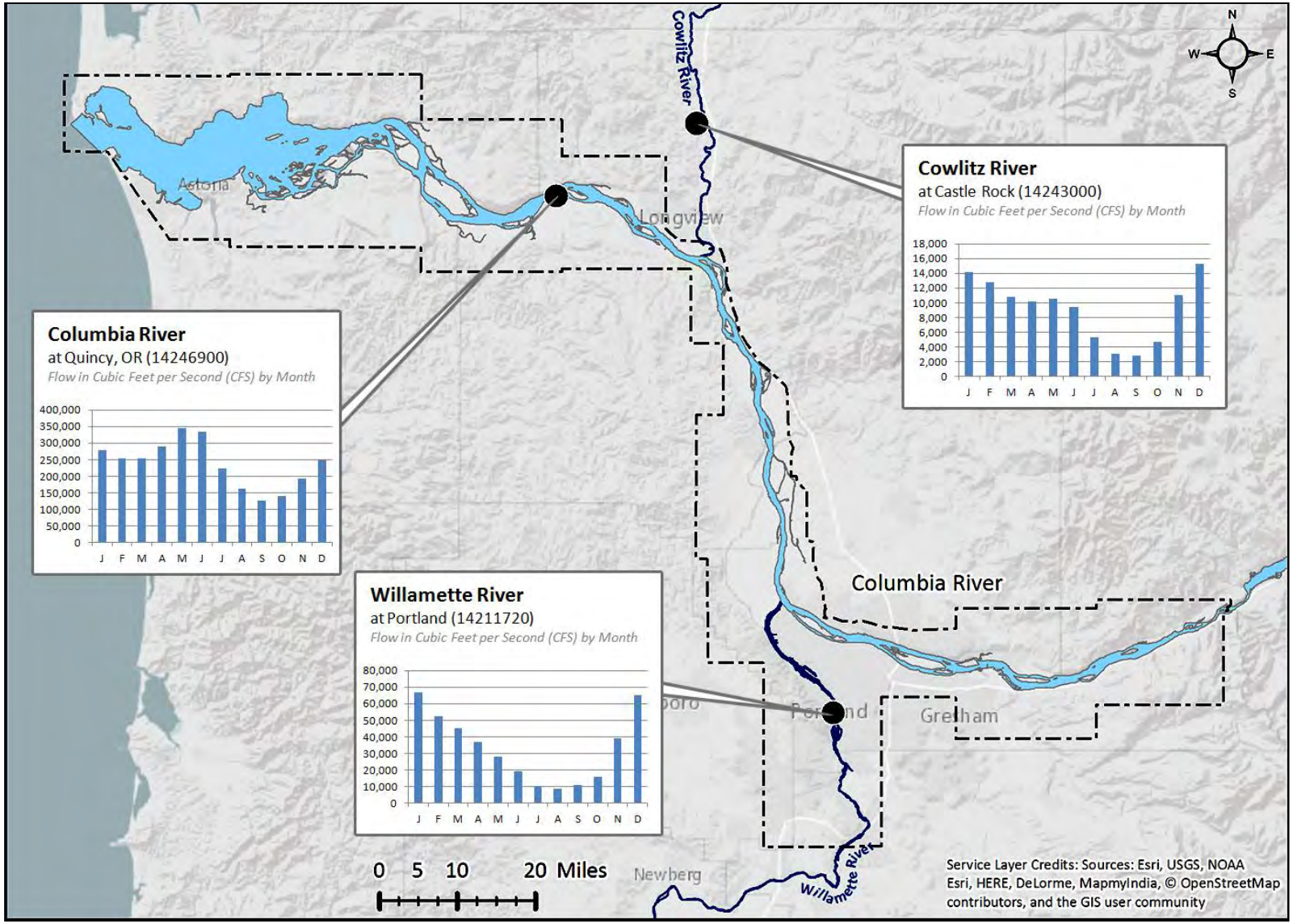


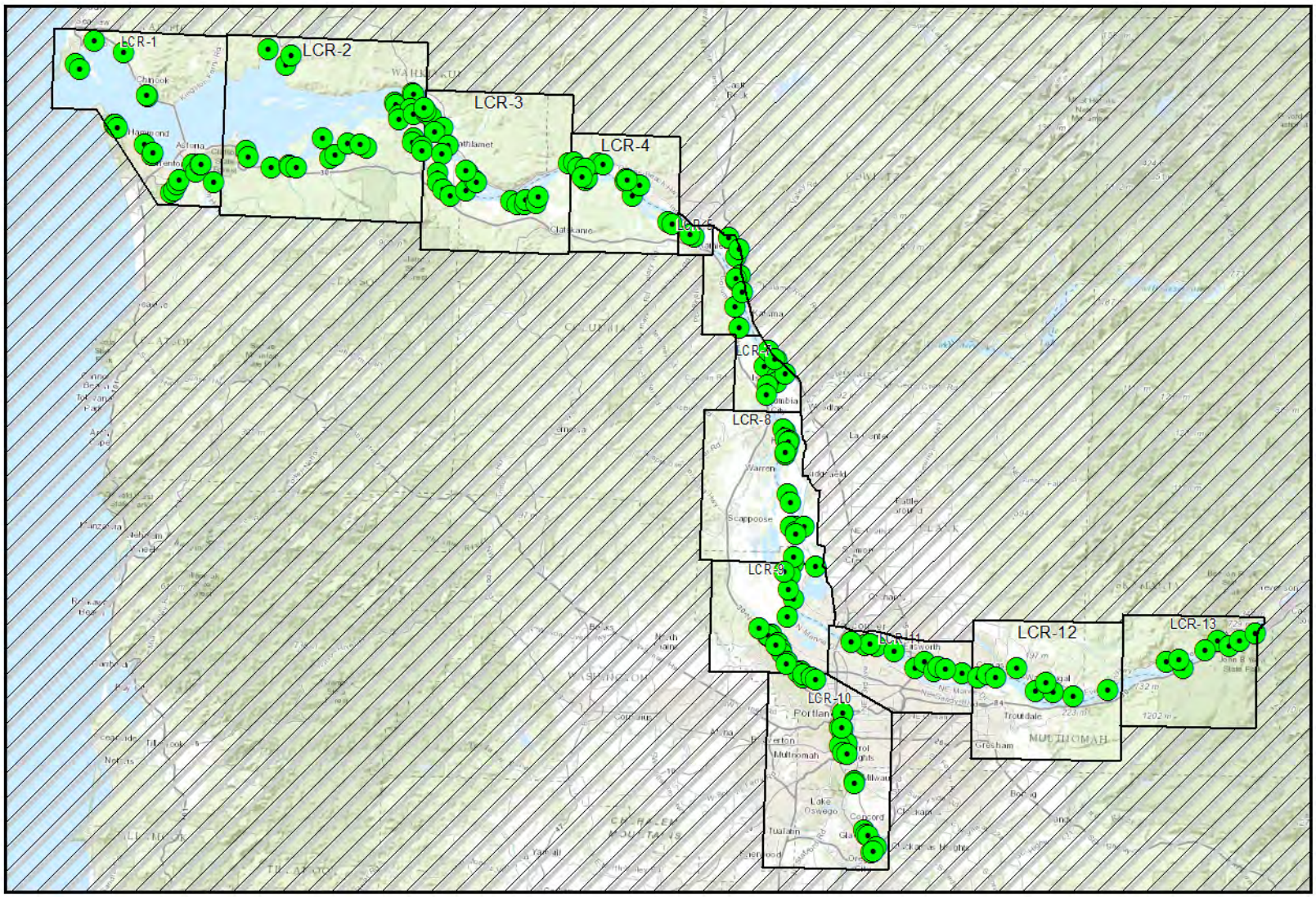
Figure 4-1: USGS Streamflow for Lower Columbia River

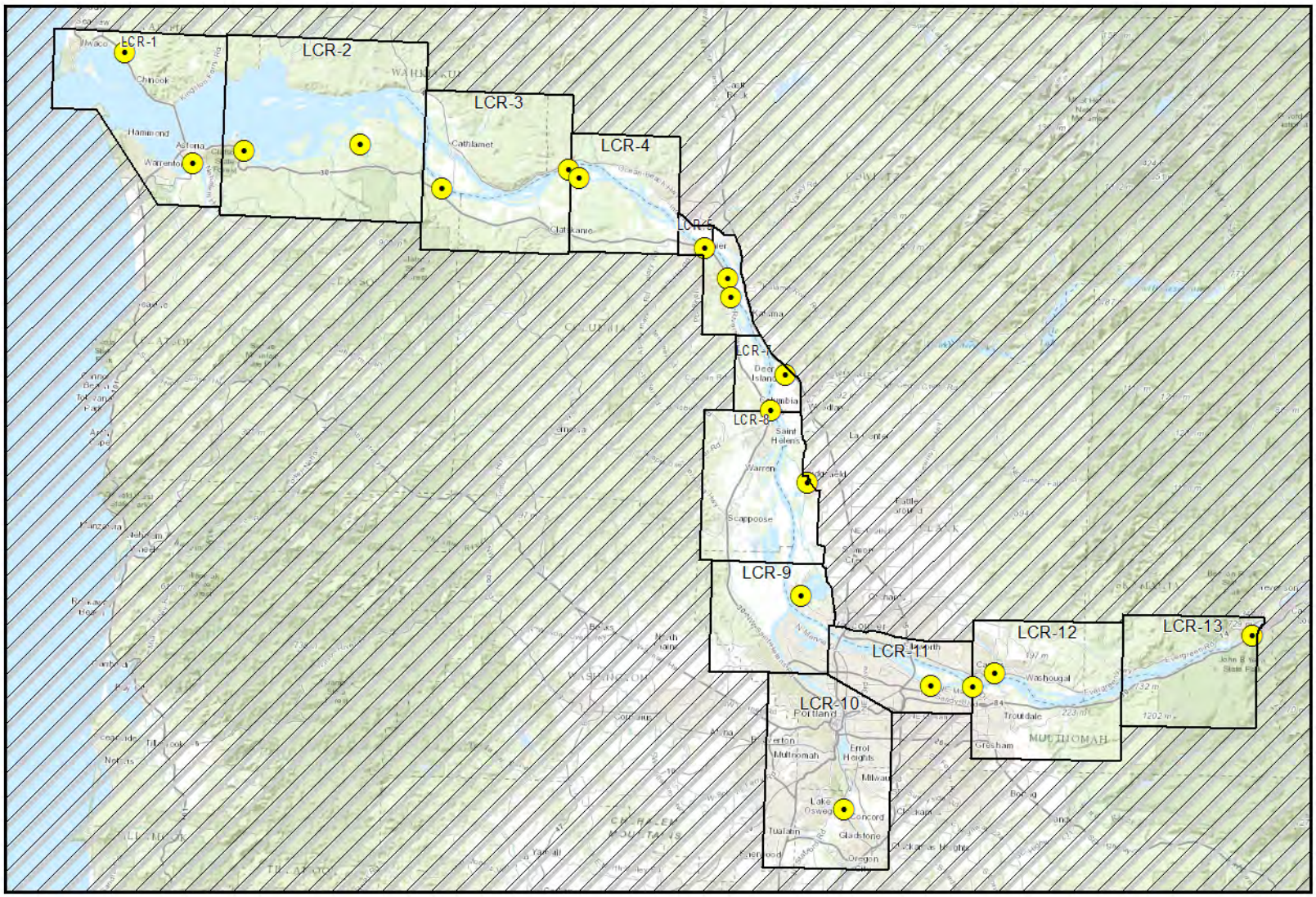
4.2 AREA OVERVIEW MAPS

The following maps provide a geographic overview of the Lower Columbia River GRP area. Sector maps in Section 4.4 of this chapter provide more detail on the location of response strategies, notification strategies, staging areas, boat launch locations, and POSOPs. Detailed information for each location can be found in the matrices of Section 4.5 or in the chapter appendices. Priority tables for potential oil spill origin points can be found in Section 4.3.2.

The following area maps are provided for reference:

- Response Strategy Locations
- Notification Strategy Locations
- Staging Areas
- Boat Launch Locations
- Potential Oil Spill Origin Points


LCR-1
LCR-2
LCR-3
LCR-4
LCR-5
LCR-6
LCR-8
LCR-9
LCR-10
LCR-11
LCR-12
LCR-13
Response Strategy Locations
0 3 6 12
Miles
Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan,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LCR-4
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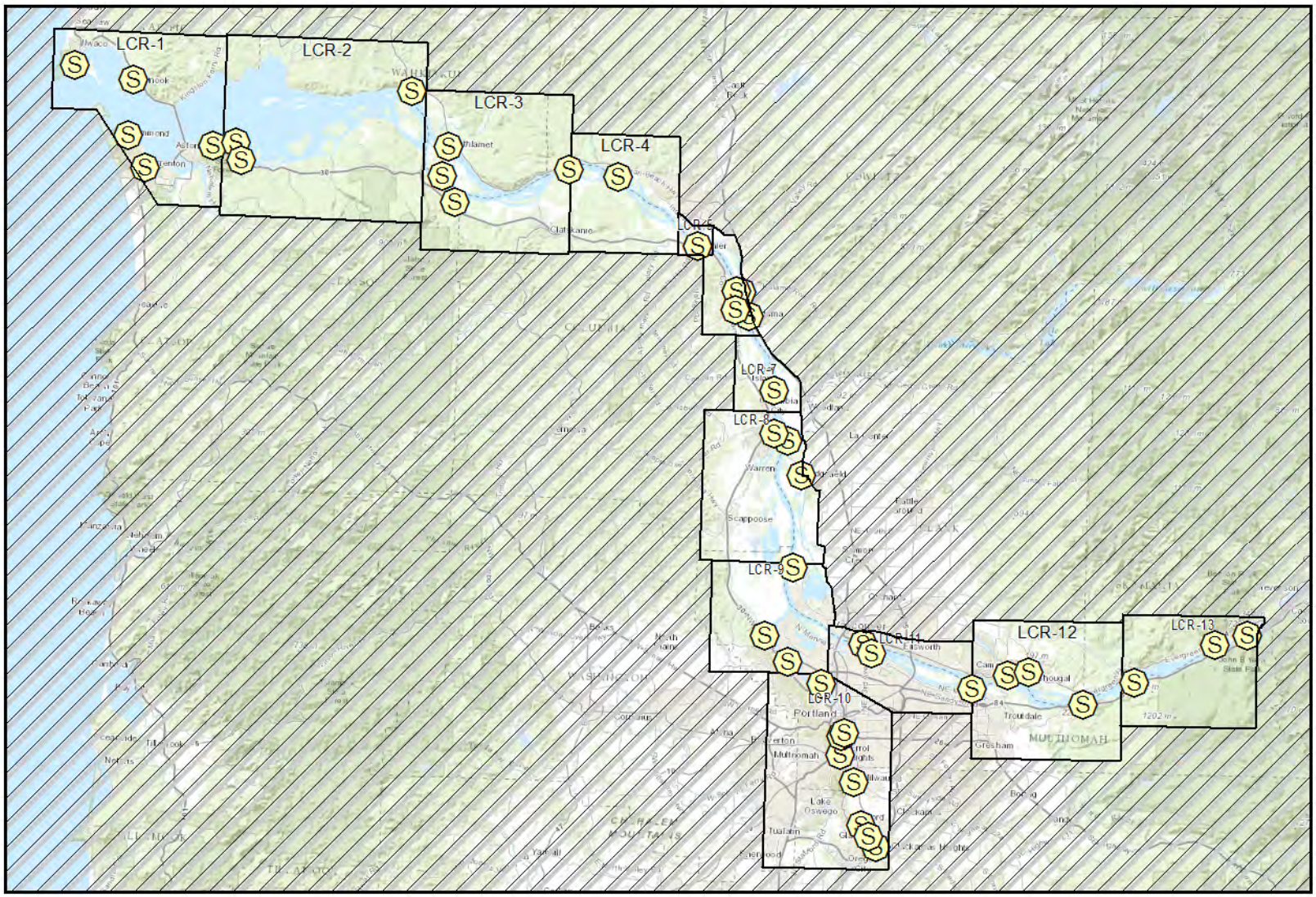
LCR-9
LCR-10
LCR-11
LCR-12
LCR-13
Notification Strategy Locations
0 3 6 12
Miles
Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan,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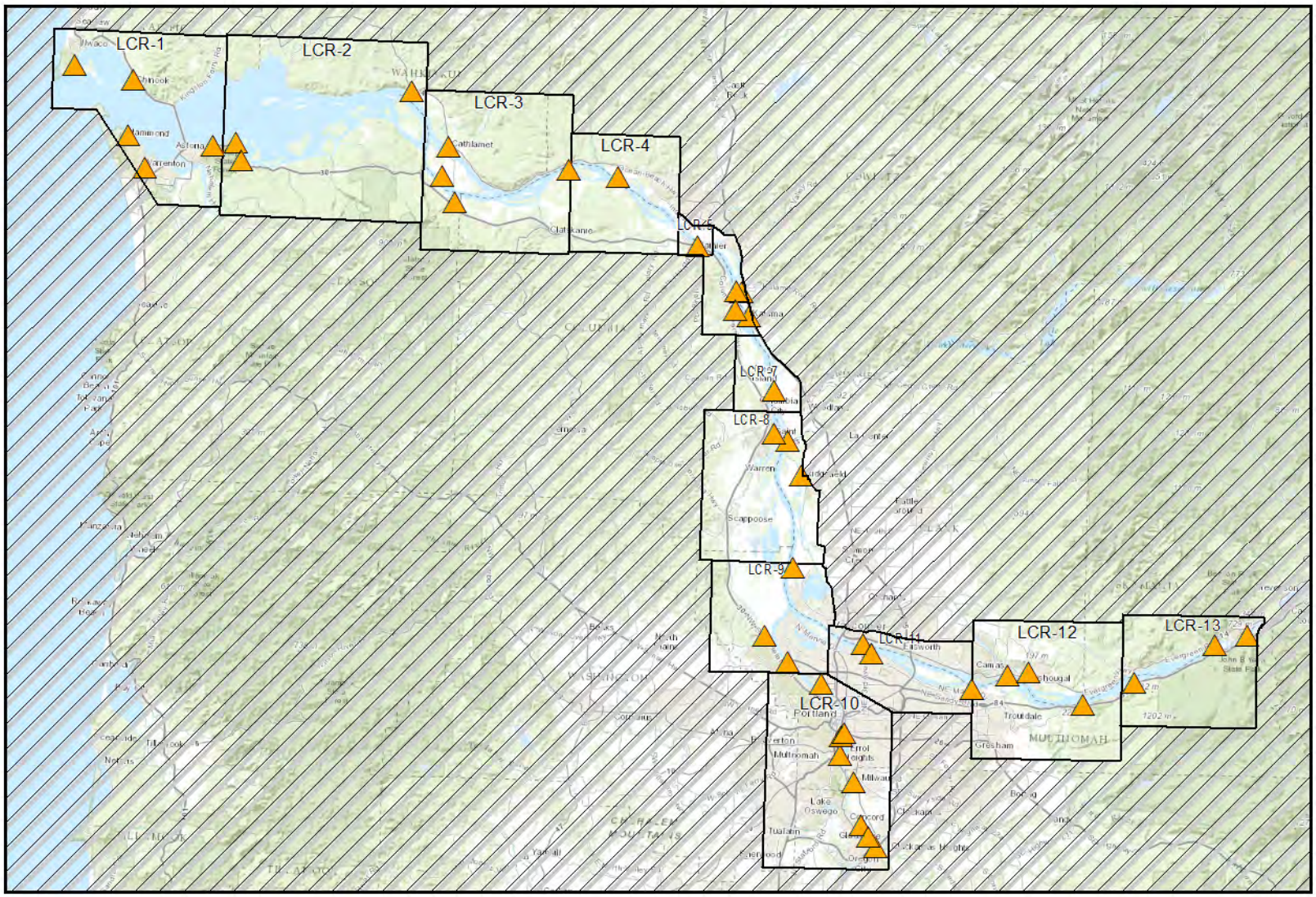
LCR-3
LCR-4
LCR-5
LCR-7
LCR-8
LCR-9
LCR-10
LCR-11
LCR-12
LCR-13
Staging Area Locations
0 3 6 12
Miles
Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan,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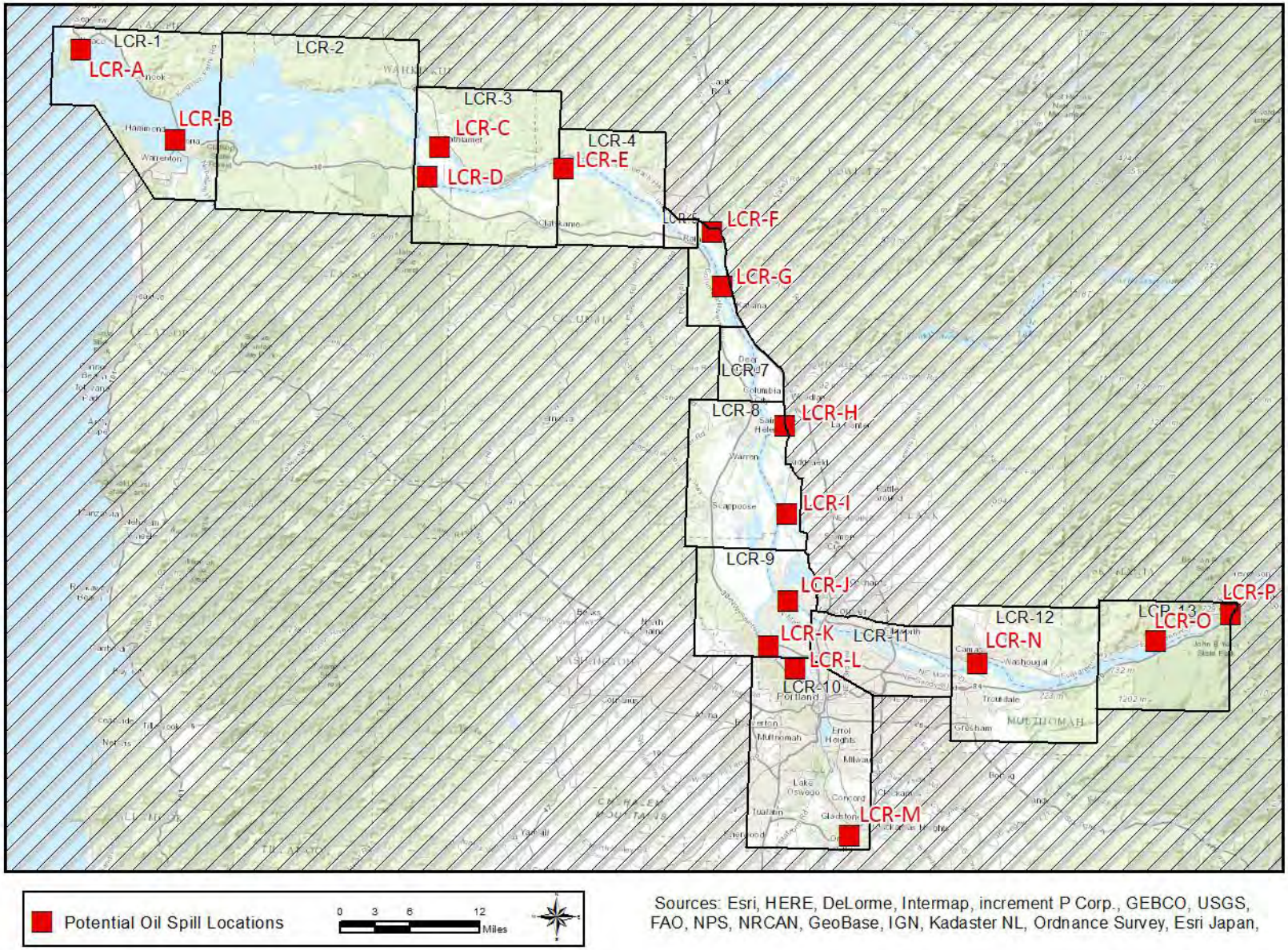
LCR-10
LCR-11
LCR-12
LCR-13
Boat Launch Locations
0 3 6 12
Miles
Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan,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LCR-B
LCR-C
LCR-D
LCR-4
LCR-E
LCR-5
LCR-F
LCR-G
LCR-7
LCR-8
LCR-H
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LCR-9
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LCR-K
LCR-L
LCR-10
LCR-11
LCR-12
LCR-N
LCR-13
LCR-O
LCR-P
LCR-M
Potential Oil Spill Locations
0 3 6 12
Miles
Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan,

4.3 STRATEGY AND RESPONSE PRIORITIES

4.3.1 General Response Priorities:

The following list provides the order of response priorities after an oil spill into the Lower Columbia River area.

1. Safety is always the number one priority. Do not implement GRP strategies or take actions that will unduly jeopardize public, worker, or personal safety.
2. Notify local public health and safety personnel.
3. Control and contain the source of the spill; mobilize resources to the spill location. Source control and containment are always a higher priority than the implementation of GRP strategies.
4. Determine the priority or order GRP strategies should be implemented based on the location of the spill or affected area. Priorities based on POSOPs are included in this chapter and should be used unless the situation or circumstances dictate otherwise (see Section 4.3.2).
5. As response resources become available, implement the GRP Strategies in order of priority.
6. In Washington State, if strategy implementation reduces, interrupts, or diverts the flow of water in streams, including the installation of a culvert block or underflow dam, an Emergency HPA must be obtained from WDFW (24-hour pager: (360) 534-8233).

4.3.2 Strategy Priorities based on Potential Spill Origin Points:

Potential Oil Spill Origin Points (POSOP) are geographic locations that have a defined list of response strategy implementation priorities listed in a matching table of Section 4.3. The placement of each POSOP is often based on spill risks in the area, including oil pipelines, railways, highways/roadways, tributaries, and vessel movements. Intersections of two or more of these risk locations typically represent a higher spill risk than any one individually, increasing the probability of an oil spill. Occasionally POSOPs are generalized to ensure implementation priorities are developed throughout an entire planning area.

These points are displayed on area overview and sector maps as red boxes. In establishing response priorities during a response, or selecting an appropriate POSOP, the downstream and tidal movement of spilled oil and the time it takes to mobilize and deploy response resources must be considered. Generally, GRP strategies should first be implemented downstream, well beyond the furthest extent of the

spill, with deployments continuing upstream towards the spill source and in some cases slightly beyond. POSOPs are alphabetically designated.

The following tables provide the strategy implementation order for Potential Oil Spill Origin Points in the Lower Columba River area: points LCR-A through LCR-P. These priority tables were determined using a combination of variables, including: notification time, travel time for responders and equipment, average and seasonal flow rates, average winds, tides or currents, deployment time, proximity to the spill source, and other considerations.

Source control and containment are a higher priority than GRP strategy implementation

Table 4- 3: Priority Table LCR-A (Port of Ilwaco LCR-3.0R)

"LCR-A" (Port of Ilwaco LCR-3.0R)					
Implementation Priority	Strategy Number	Sector Map (Page #)	Strategy Matrix (Page #)	Strategy Details (Page #)	Remarks
1	LCR-3.5R	63	89	189	Upstream Flow/Surface Wind
2	LCR-2.2R	63	89	185	Downstream Flow/Surface Wind
3	LCR-2.4R	63	89	187	Upstream Flow/Surface Wind
4	CHINR-0.3	63	86	159	Upstream Flow/Surface Wind
5	LCR-8.4R	63	90	197	Upstream Flow/Surface Wind
6	LCR-8.5R	63	90	199	Downstream Flow/Surface Wind
7	LCR-7.5L	63	90	195	High Water
8	LCR-6.8L	63	89	191	Upstream Flow/Surface Wind
9	LCR-7.1L	63	90	193	Upstream Flow/Surface Wind
10	LCR-10.1L	63	91	201	High Incoming Tide
11	LCR-10.8L	63	91	203	High Incoming Tide
12	LCR-10.9L	63	91	205	High Incoming Tide

Table 4- 4: Priority Table LCR-B (Port of Astoria/US-101 Bridge LCR-13.0L)

"LCR-B" (Port of Astoria/US-101 Bridge LCR-13.0L)					
Implementation Priority	Strategy Number	Sector Map (Page #)	Strategy Matrix (Page #)	Strategy Details (Page #)	Remarks
1	L&C-1.2	63	88	177	Upstream Flow/Surface Wind
2	YOR-3.6L	63	127	547	High Flow
3	LCR-10.1L	63	91	201	High Incoming Tide
4	LCR-10.8L	63	91	203	High Incoming Tide
5	LCR-10.9L	63	91	205	High Incoming Tide
6	LCR-6.8L	63	89	191	Upstream Flow/Surface Wind
7	LCR-7.1L	63	90	193	Upstream Flow/Surface Wind
8	LCR-7.5L	63	90	195	High Water
9	L&C-1.7	63	88	179	Upstream Flow/Surface Wind
10	L&C-2.3	63	88	181	Upstream Flow/Surface Wind
11	L&C-2.6	63	89	183	Upstream Flow/Surface Wind
12	YOR-4.1R	63	127	551	Any
13	YOR-4.0R	63	127	549	Any
14	YOR-3.3R	63	126	545	Any

Table 4- 5: Priority Table LCR-C (Highway Bridge/Cathlamet Marina LCR-40.7R)

"LCR-C" (Highway Bridge/Cathlamet Marina LCR-40.7R)					
Implementation Priority	Strategy Number	Sector Map (Page #)	Strategy Matrix (Page #)	Strategy Details (Page #)	Remarks
1	LCR-35.0M	65	95	245	Any
2	LCR-35.3R	66	95	249	High Water
3	LCR-35.7R	66	95	251	Downstream Flow/Surface Wind
4	LCR-36.0R	66	96	253	Any
5	ELOCR-1.6	66	87	169	Downstream Flow/Surface Wind
6	LCR-37.7M	65	96	257	Upstream Flow/Surface Wind
7	LCR-37.2R	66	96	255	Any
8	LCR-38.2L	65	96	259	Any
9	LCR-38.5M	65	96	261	Upstream Flow/Surface Wind
10	LCR-38.8L	65	97	265	Any
11	LCR-38.6R	66	97	263	Downstream Flow/Surface Wind

Table 4- 6: Priority Table LCR-D (James River Mill LCR-41.6L)

"LCR-D" (James River Mill LCR-41.6L)					
Implementation Priority	Strategy Number	Sector Map (Page #)	Strategy Matrix (Page #)	Strategy Details (Page #)	Remarks
1	LCR-35.0M	65	95	245	Any
2	LCR-34.6M	65	94	241	Any
3	LCR-33.7R	65	94	237	Upstream Flow/Surface Wind
4	LCR-35.0R	65	95	247	Any
5	LCR-35.3R	66	95	249	High Water
6	LCR-35.7R	66	95	251	Downstream Flow/Surface Wind
7	LCR-36.0R	66	96	253	Any
8	LCR-37.7M	65	96	257	Upstream Flow/Surface Wind
9	LCR-37.2R	66	96	255	Any
10	LCR-38.2L	65	96	259	Any
11	LCR-38.5M	65	96	261	Upstream Flow/Surface Wind
12	LCR-38.8L	65	97	265	Any
13	LCR-38.6R	66	97	263	Downstream Flow/Surface Wind
14	ELOCR-1.6	66	87	169	Downstream Flow/Surface Wind
15	LCR-40.5M	67	97	267	Upstream Flow/Surface Wind
16	LCR-41.3M	67	97	269	Any

Table 4- 7: Priority Table LCR-E (Clatskanie Crude Oil Terminal LCR-55.0L)

"LCR-E" (Clatskanie Crude Oil Terminal LCR-55.0L)					
Implementation Priority	Strategy Number	Sector Map (Page #)	Strategy Matrix (Page #)	Strategy Details (Page #)	Remarks
1	LCR-49.8L	66	100	297	Any
2	LCR-49.7L	66	100	295	Any
3	LCR-49.1M	66	100	293	High Flow
4	LCR-50.5L	66	100	299	Any
5	LCR-48.1M	66	99	287	High Flow
6	LCR-48.8M	66	99	291	High Flow
7	LCR-48.6M	66	99	289	High Flow
8	LCR-54.4M	69	101	305	High Flow
9	LCR-55.1M	69	101	307	High Flow
10	LCR-55.4L	69	102	311	Any
11	LCR-55.3M	69	102	309	High Flow
12	LCR-55.5M	69	102	313	High Flow
13	LCR-54.2R	69	101	303	Any
14	LCR-45.2M	67	99	285	Any
15	LCR-45.0M	67	99	283	Any
16	LCR-53.8R	66	101	301	Downstream Flow/Surface Wind

Table 4- 8: Priority Table LCR-F (Port of Kelso-Longview/Cowlitz River LCR-68.5R)

"LCR-F" (Port of Kelso-Longview/Cowlitz River LCR-68.5R)					
Implementation Priority	Strategy Number	Sector Map (Page #)	Strategy Matrix (Page #)	Strategy Details (Page #)	Remarks
1	LCR-58.7M	68	103	321	Upstream Flow/Surface Wind
2	LCR-58.8R	68	103	323	Any
3	LCR-58.9M	68	103	325	Any
4	LCR-58.95M	68	104	327	Downstream Flow/Surface Wind
5	LCR-59.8L	68	104	329	Upstream Flow/Surface Wind
6	LCR-60.2M	68	104	331	Mid or Low Flow
7	LCR-64.0M	68	104	333	Low Flow
8	LCR-64.4L	68	104	335	Downstream Flow/Surface Wind
9	LCR-65.9R	70	104	337	Downstream Flow/Surface Wind
10	LCR-66.2R	70	105	339	Downstream Flow/Surface Wind
11	CWLZR-1.0	71	87	163	Downstream Flow/Surface Wind
12	CLWZR-1.45	Clark/Cowlitz GRP		165	Downstream Flow/Surface Wind

Table 4- 9: Priority Table LCR-G (Port of Kalama/Kalama River LCR-73.1R)

LCR-G (Port of Kalama/Kalama River LCR-73.1R)					
Implementation Priority	Strategy Number	Sector Map (Page #)	Strategy Matrix (Page #)	Strategy Details (Page #)	Remarks
1	LCR-64.0M	68	104	333	Low Flow
2	LCR-64.4L	68	104	335	Downstream Flow/Surface Wind
3	LCR-65.9R	70	104	337	Downstream Flow/Surface Wind
4	LCR-66.2R	70	105	339	Downstream Flow/Surface Wind
5	LCR-70.0M	71	105	341	Any
6	LCR-71.4R	72	105	343	Any
7	LCR-71.5M	72	105	345	Downstream Flow/Surface Wind
8	LCR-71.6R	72	105	347	Downstream Flow/Surface Wind
9	KLMAR-0.7	72	88	175	Downstream Flow/Surface Wind
10	LCR-59.8L	68	104	329	Upstream Flow/Surface Wind
11	LCR-60.2M	68	104	331	Mid or Low Flow

Table 4- 10: Priority Table LCR-H (Lewis River LCR-86.5R)

"LCR-H" (Lewis River LCR-86.5R)					
Implementation Priority	Strategy Number	Sector Map (Page #)	Strategy Matrix (Page #)	Strategy Details (Page #)	Remarks
1	LCR-87.3R	75	107	373	Any
2	LCR-87.5R	75	108	375	Upstream Flow/Surface Wind
3	LCR-87.6R	75	108	377	Any
4	LCR-81.0M	73	106	359	Any
5	LCR-81.2R	73	106	361	Any
6	LCR-81.8L	73	107	363	Any
7	LCR-82.4L	73	107	365	Any
8	LCR-85.6M	75	107	367	Any
9	LCR-85.8M	75	107	369	Any
10	LCR-86.2R	75	107	371	Downstream Flow/Surface Wind
11	LEWR-1.9	Clark/Cowlitz GRP		459	Downstream Flow/Surface Wind
12	LEWR-0.4	75	117	457	Downstream Flow/Surface Wind
13	LEWR-0.35	75	117	455	Upstream Flow/Surface Wind

Table 4- 11: Priority Table LCR-I (Whipple Creek LCR-94.5R)

"LCR-I" (Whipple Creek LCR-94.5R)					
Implementation Priority	Strategy Number	Sector Map (Page #)	Strategy Matrix (Page #)	Strategy Details (Page #)	Remarks
1	LCR-85.6M	75	107	367	Any
2	LCR-85.8M	75	107	369	Any
3	LCR-86.2R	75	107	371	Downstream Flow/Surface Wind
4	LEWR-0.35	75	117	455	Upstream Flow/Surface Wind
5	LCR-87.3R	75	107	373	Any
6	LCR-87.5R	75	108	375	Upstream Flow/Surface Wind
7	LCR-87.6R	75	108	377	Any
8	LCR-91.0R	74	108	379	Any
9	LCR-94.3R	74	109	383	Any
10	LCR-94.5L	74	109	385	Any
11	WPPLC-0.8	74	120	483	Any

Table 4- 12: Priority Table LCR-J (Port of Vancouver LCR-103.0)

"LCR-J" (Port of Vancouver LCR-103.0)					
Implementation Priority	Strategy Number	Sector Map (Page #)	Strategy Matrix (Page #)	Strategy Details (Page #)	Remarks
1	LCR-94.5L	74	109	385	Any
2	LCR-94.8R	74	109	387	Any
3	LCR-95.0R	74	110	389	Any
4	LCR-97.0R	74	110	391	Downstream Flow/Surface Wind
5	LCR-97.5R	76	110	393	Any
6	LCR-98.6R	76	110	397	Any
7	LCR-99.9R	76	111	399	Downstream Flow/Surface Wind
8	LCR-100.8R	76	111	401	Any
9	WR-0.9R	76	121	485	Any

Table 4- 13: Priority Table LCR-K (Linnton Tank Farms WR-5.7)

"LCR-K" (Linnton Tank Farms WR-5.7)					
Implementation Priority	Strategy Number	Sector Map (Page #)	Strategy Matrix (Page #)	Strategy Details (Page #)	Remarks
1	MC-0.1	77	118	463	Any
2	MC-0.5	77	119	469	Any
3	MC-0.2	77	118	465	Any
4	MC-0.4	77	118	467	Any
5	WR-0.9R	76	121	485	Any
6	MC-1.5	77	119	471	Any
7	WR-3.7R	77	121	487	Downstream Flow/Surface Wind
8	WR-3.8L	77	121	489	Downstream Flow/Surface Wind
9	WR-4.2R	77	121	491	Any
10	WR-4.3R	77	121	493	Any
11	WR-4.5R	77	122	495	Downstream Flow/Surface Wind

Table 4- 14: Priority Table LCR-L (Port of Portland WR-8.6)

"LCR-L" (Port of Portland WR-8.6)					
Implementation Priority	Strategy Number	Sector Map (Page #)	Strategy Matrix (Page #)	Strategy Details (Page #)	Remarks
1	WR-7.5L	79	122	507	Downstream Flow/Surface Wind
2	WR-7.4R	79	122	505	Downstream Flow/Surface Wind
3	WR-6.9L	77	122	501	Downstream Flow/Surface Wind
4	SIL-0.4	79	119	475	Any
5	WR-6.9R	77	122	503	Any
6	WR-5.9L	77	122	499	Downstream Flow/Surface Wind
7	WR-5.8R	77	122	497	Downstream Flow/Surface Wind
8	MC-0.1	77	118	463	Any
9	WR-4.5R	77	122	495	Downstream Flow/Surface Wind
10	WR-4.3R	77	121	493	Any
11	WR-4.2R	77	121	491	Any
12	WR-0.9R	76	121	485	Any

Table 4- 15: Priority Table LCR-M (Willamette Falls Locks WR-26.5)

"LCR-M" (Willamette Falls Locks WR-26.5)					
Implementation Priority	Strategy Number	Sector Map (Page #)	Strategy Matrix (Page #)	Strategy Details (Page #)	Remarks
1	WR-26.1L	81	126	543	Any
2	WR-25.5R	81	126	539	Low to Mid Flow
3	WR-25.9R	81	126	541	Downstream Flow/Surface Wind
4	WR-23.8L	81	125	535	Downstream Flow/Surface Wind
5	WR-23.6L	81	125	533	Any
6	WR-23.9R	81	126	537	Any
7	WR-18.5R	78	125	531	Any
8	WR-15.9R	80	124	527	Any
9	WR-15.5M	80	124	525	Downstream Flow/Surface Wind

Table 4- 16: Priority Table LCR-N (Port of Camas-Washougal LCR-121.0)

"LCR-N" (Port of Camas-Washougal LCR-121.0)					
Implementation Priority	Strategy Number	Sector Map (Page #)	Strategy Matrix (Page #)	Strategy Details (Page #)	Remarks
1	LCR-111.0R	82	112	411	Downstream Flow/Surface Wind
2	LCR-113.3M	82	112	413	Any
3	LCR-113.8R	82	112	415	Downstream Flow/Surface Wind
4	LCR-114.8M	82	113	417	High Water Only
5	LCR-115.0R	82	113	419	Any
6	LCR-115.7R	82	113	421	Downstream Flow/Surface Wind
7	LCR-119.1R	83	114	425	Any
8	LCR-119.8R	83	114	427	Any
9	LCR-120.6R	83	114	429	Any

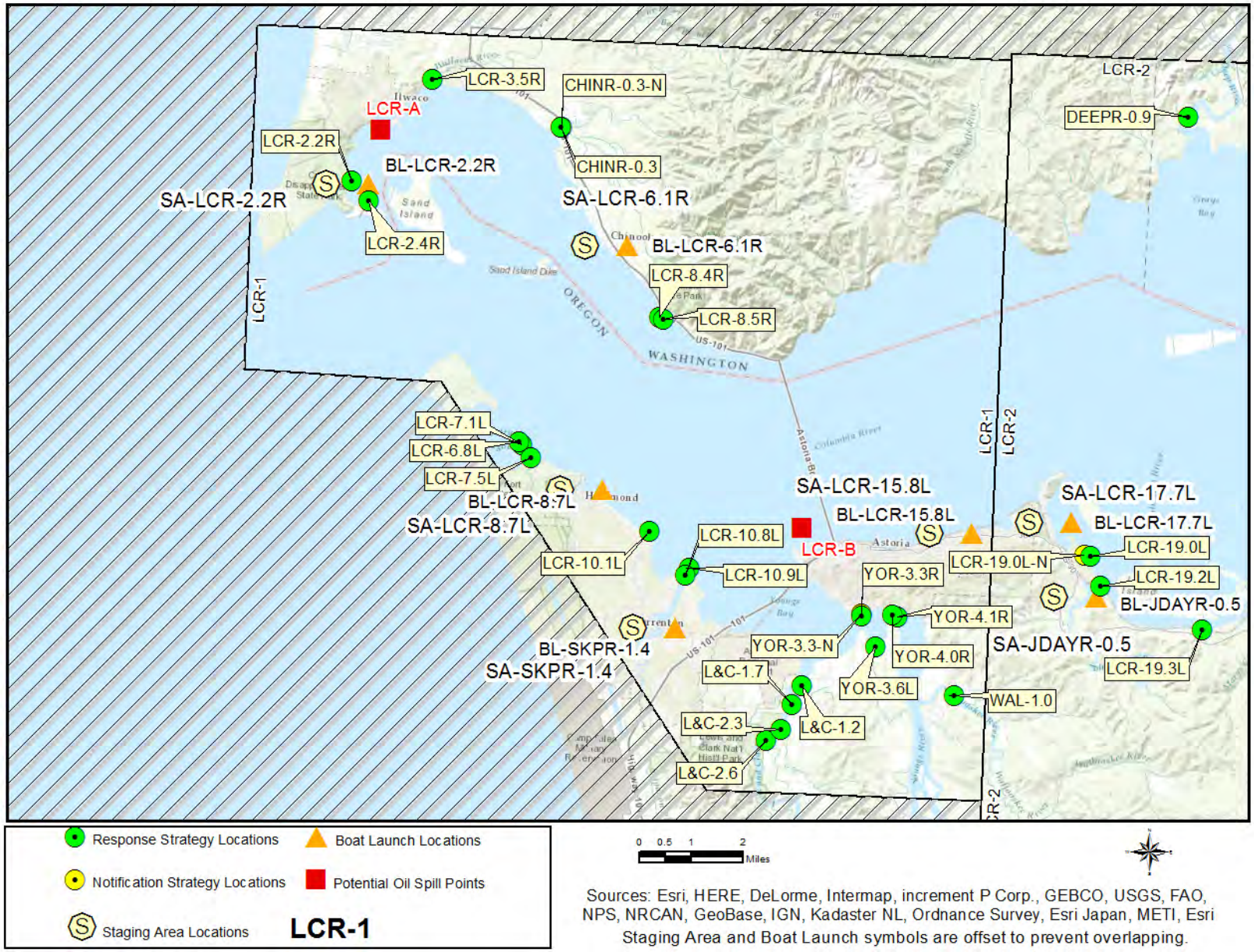
Table 4- 17: Priority Table LCR-O (Franz Lake Refuge LCR-138.4R)

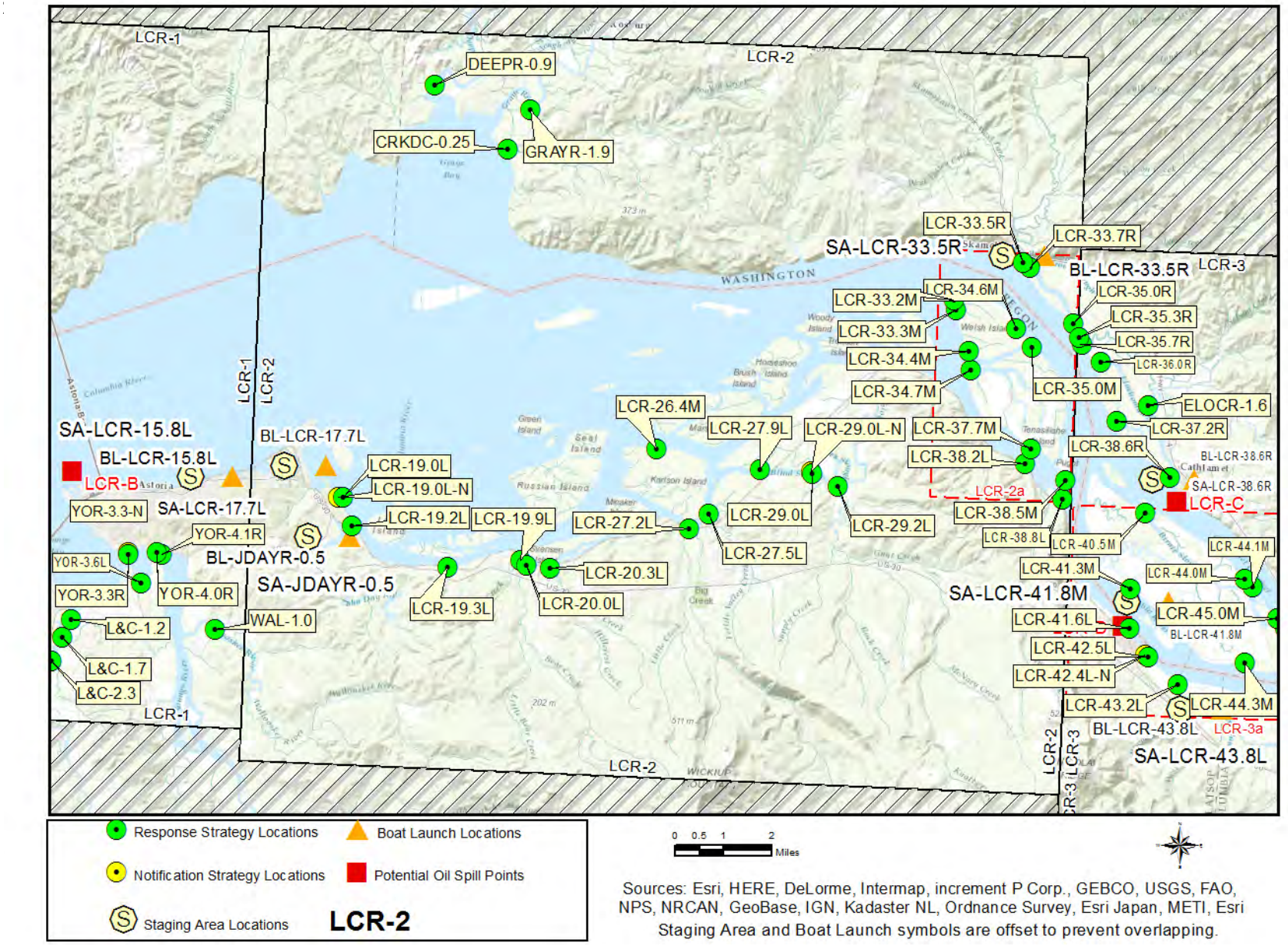
"LCR-O" (Franz Lake Refuge LCR-138.4R)					
Implementation Priority	Strategy Number	Sector Map (Page #)	Strategy Matrix (Page #)	Strategy Details (Page #)	Remarks
1	LCR-128.0R	83	115	435	Downstream Flow/Surface Wind
2	LCR-131.0R	83	115	437	Downstream Flow/Surface Wind
3	LCR-137.0R	84	115	439	Any
4	LCR-138.0L	84	116	441	Any
5	LCR-138.2R	84	116	443	Any

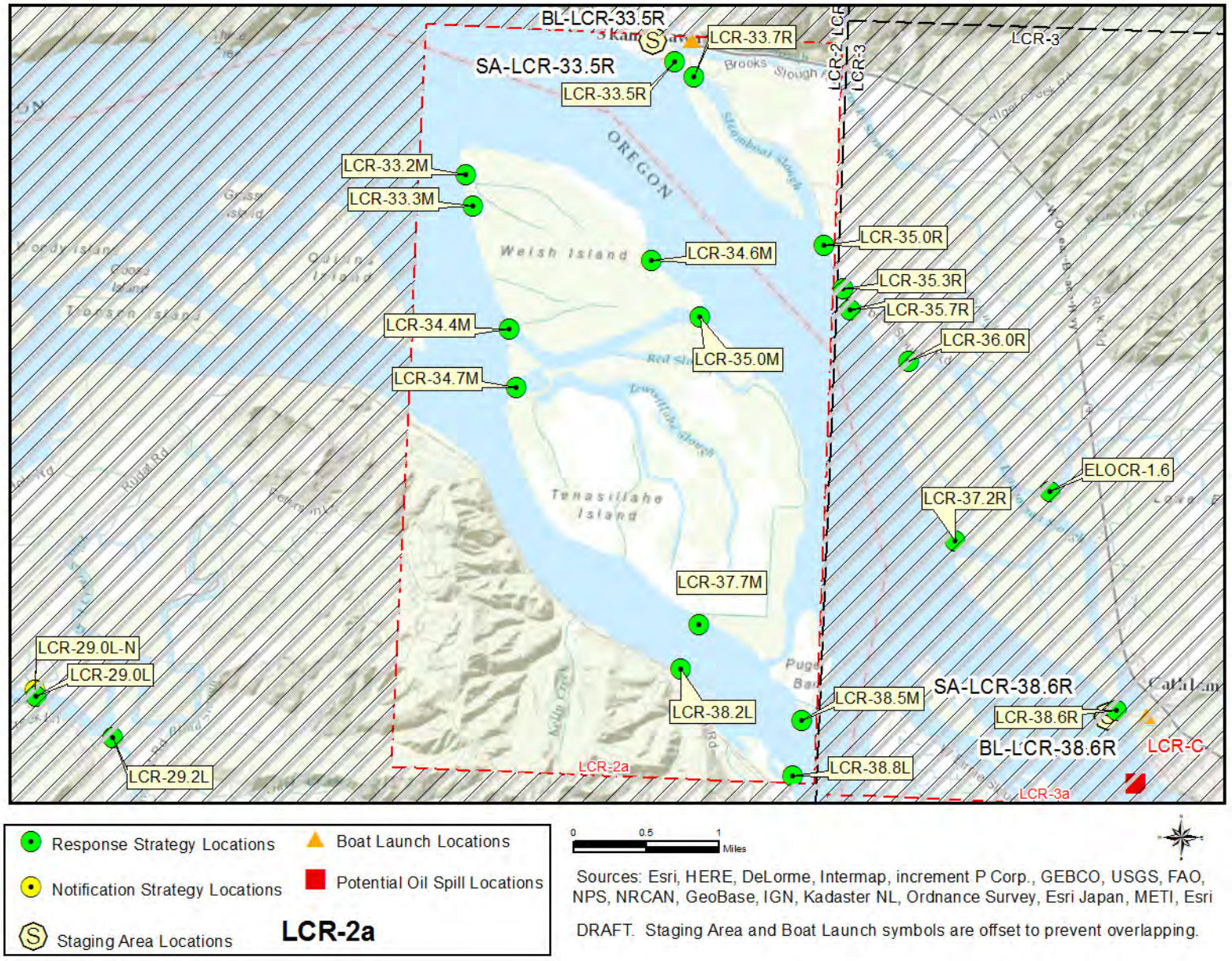
Table 4- 18: Priority Table LCR-P (Bonneville Dam LCR-145.4)

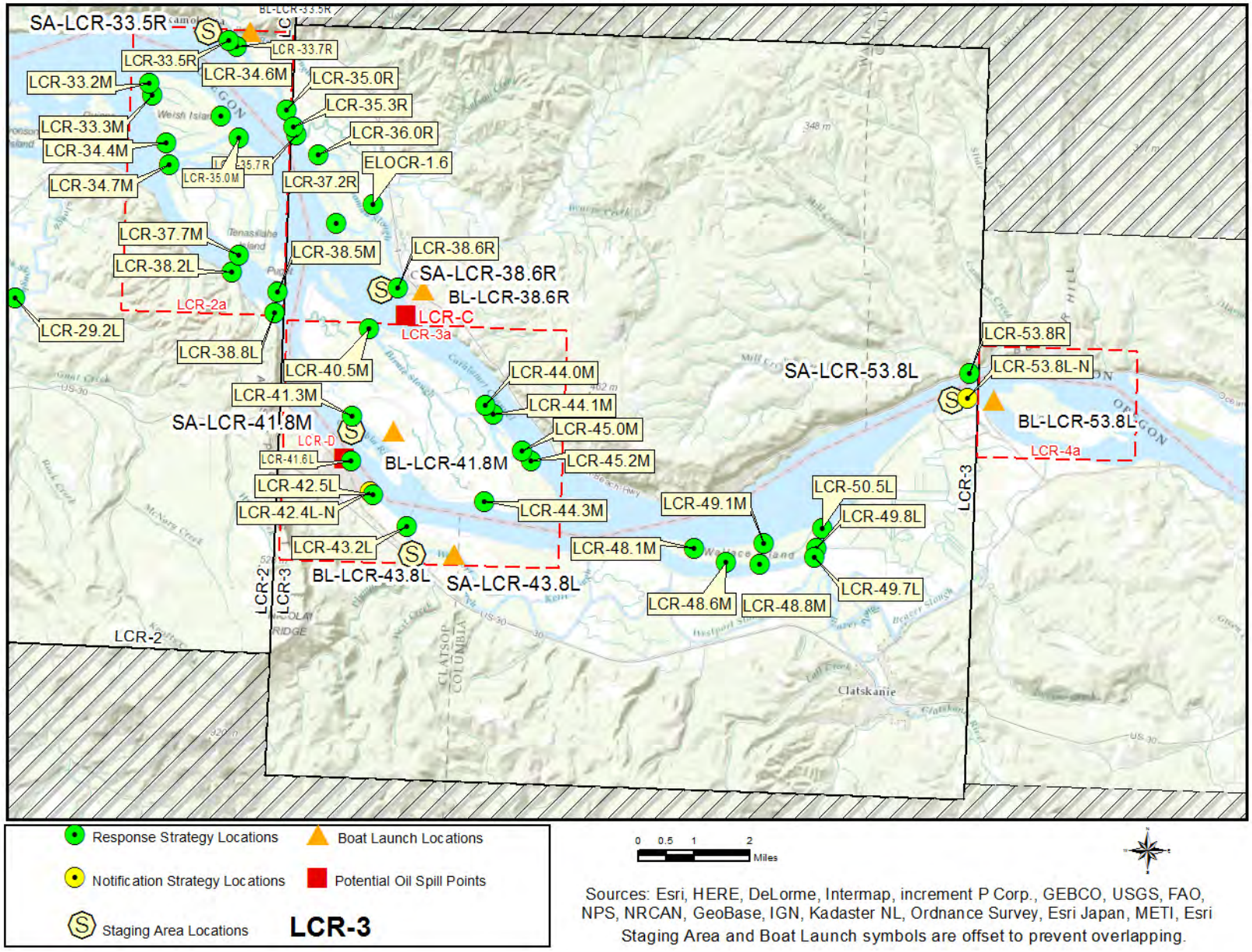
"LCR-P" (Bonneville Dam LCR-145.4)					
Implementation Priority	Strategy Number	Sector Map (Page #)	Strategy Matrix (Page #)	Strategy Details (Page #)	Remarks
1	LCR-131.0R	83	115	437	Downstream Flow/Surface Wind
2	LCR-137.0R	84	115	439	Any
3	LCR-138.0L	84	116	441	Any
4	LCR-138.2R	84	116	443	Any
5	LCR-140.3R	84	116	445	Any
6	LCR-141.4R	84	116	447	Mid to High Flow
7	LCR-142.4R	84	117	449	Any
8	LCR-143.4R	84	117	451	Mid to High Flow
9	LCR-144.9L	84	117	453	Any

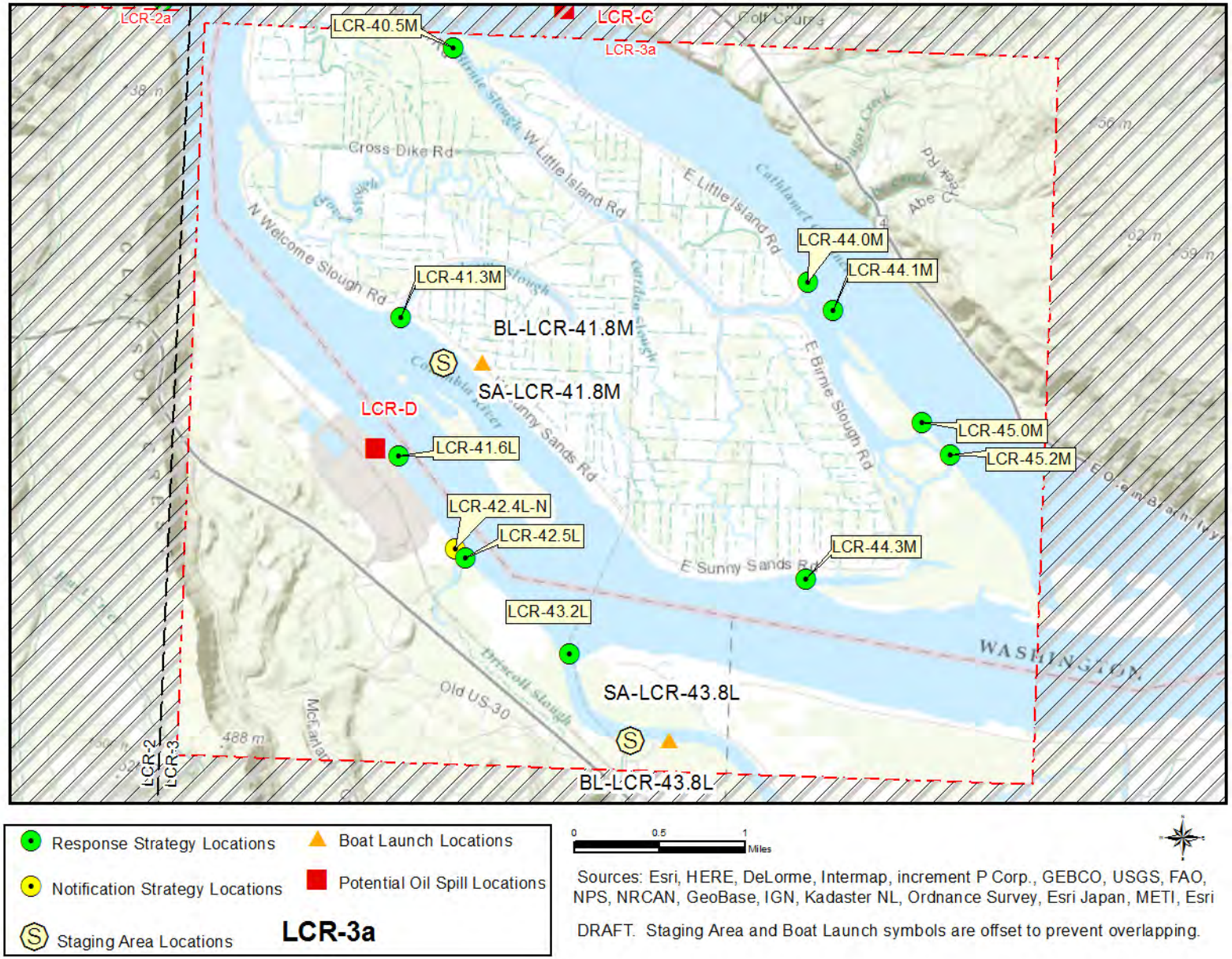
4.4 SECTOR MAPS (STRATEGY LOCATIONS)

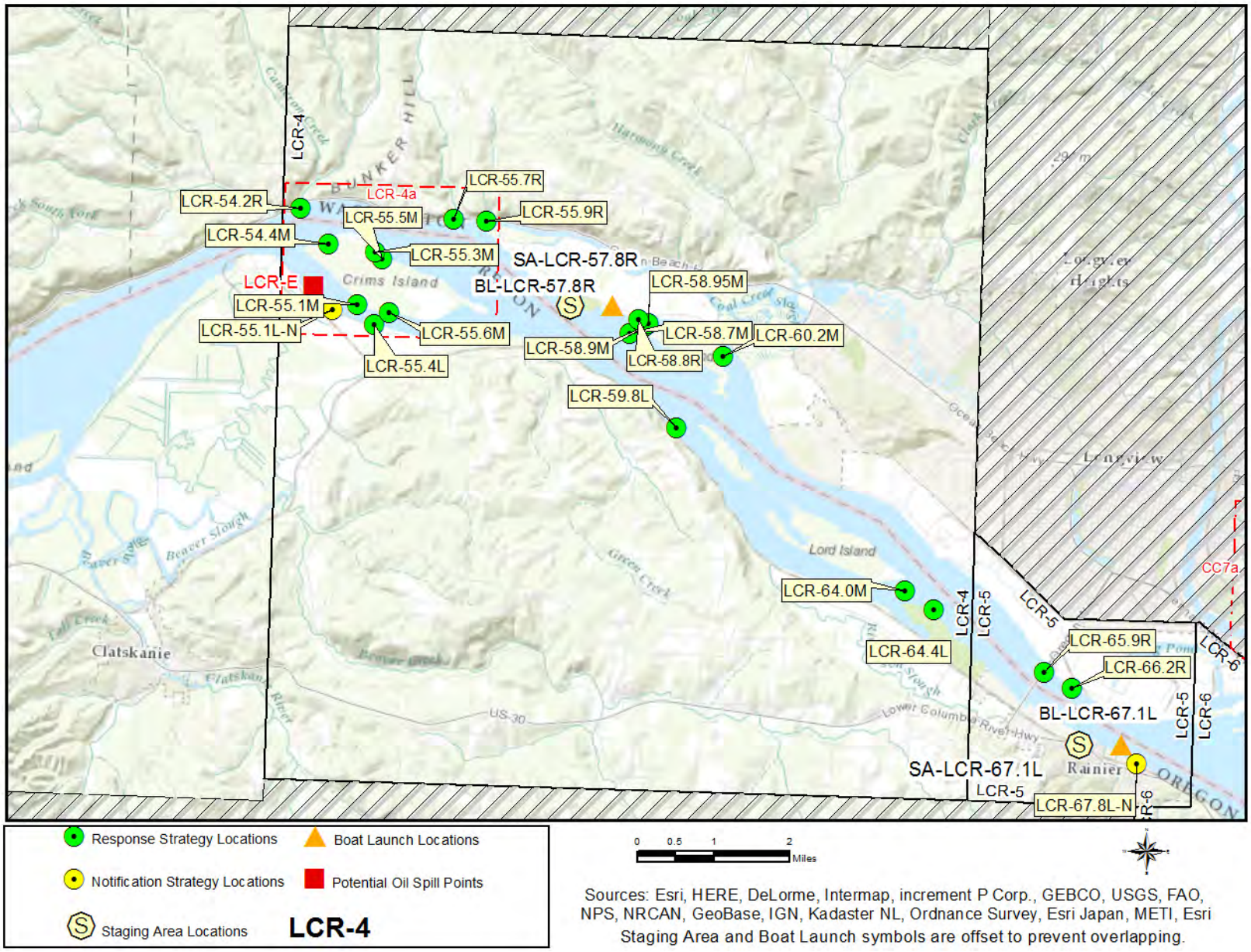


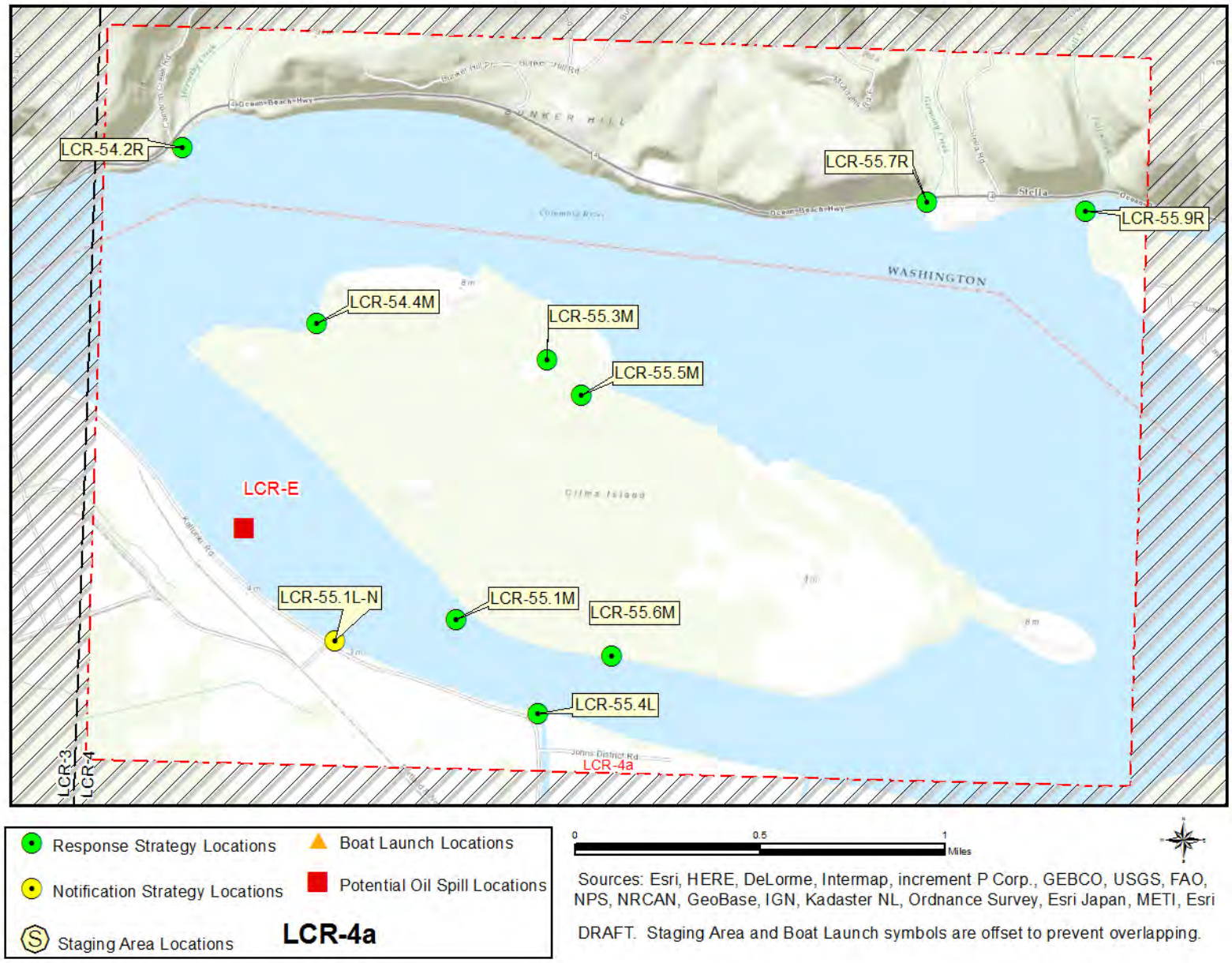

LCR-1
LCR-2
LCR-3
DEEPR-0.9
CRKDC-0.25
GRAYR-1.9
WASHINGTON
LCR-33.5R
SA-LCR-33.5R
LCR-33.7R
BL-LCR-33.5R
LCR-33.2M
LCR-34.6M
LCR-35.0R
LCR-33.3M
LCR-35.3R
LCR-35.7R
LCR-34.4M
LCR-36.0R
LCR-34.7M
LCR-35.0M
ELOCR-1.6
LCR-26.4M
LCR-27.9L
LCR-29.0L-N
LCR-37.7M
LCR-37.2R
SA-LCR-15.8L
BL-LCR-17.7L
LCR-38.2L
LCR-38.6R
BL-LCR-15.8L
LCR-B
LCR-19.0L
LCR-19.0L-N
BL-LCR-38.6R
SA-LCR-38.6R
LCR-C
LCR-2a
YOR-3.3-N
SA-LCR-17.7L
LCR-19.2L
LCR-19.9L
LCR-27.2L
LCR-29.0L
LCR-38.5M
YOR-4.1R
LCR-29.2L
LCR-38.8L
LCR-40.5M
BL-JDAYR-0.5
LCR-27.5L
LCR-44.1M
YOR-3.6L
LCR-41.3M
LCR-44.0M
SA-JDAYR-0.5
LCR-20.3L
YOR-3.3R
YOR-4.0R
LCR-19.3L
LCR-20.0L
SA-LCR-41.8M
LCR-41.6L
LCR-45.0M
WAL-1.0
L&C-1.2
BL-LCR-41.8M
LCR-42.5L
L&C-1.7
LCR-42.4L-N
L&C-2.3
LCR-43.2L
LCR-44.3M
BL-LCR-43.8L
LCR-3a
SA-LCR-43.8L
Response Strategy Locations
Boat Launch Locations
Notification Strategy Locations
Potential Oil Spill Points
Staging Area Locations
LCR-2
0 0.5 1 2
Miles
Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri
Staging Area and Boat Launch symbols are offset to prevent overlapping.

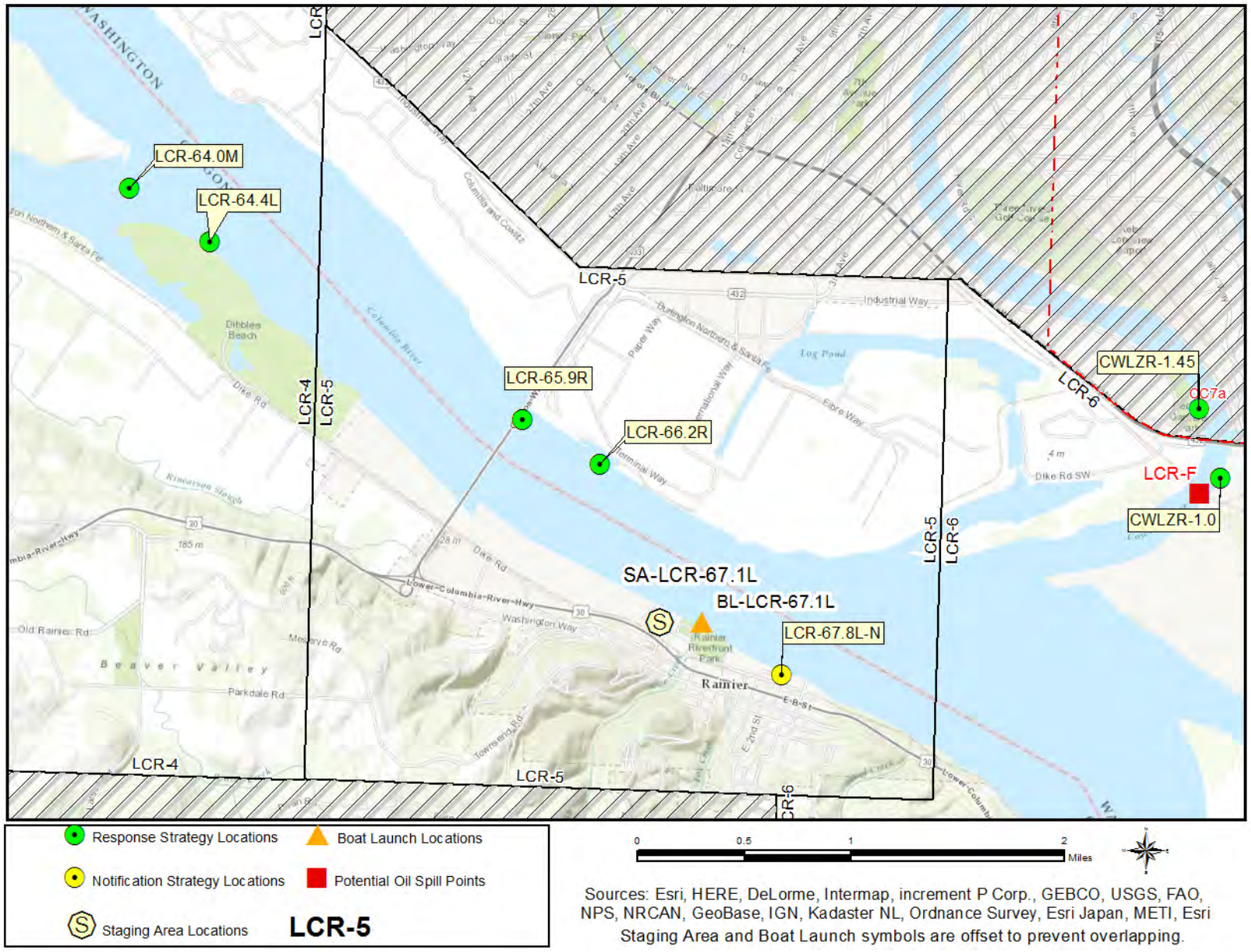

BL-LCR-33.5R
LCR-33.7R
SA-LCR-33.5R
LCR-33.5R
LCR-3
LCR-2
LCR-33.2M
LCR-33.3M
OREGON
Welsh Island
LCR-34.6M
LCR-35.0R
LCR-35.3R
LCR-35.7R
LCR-34.4M
LCR-35.0M
LCR-36.0R
LCR-34.7M
Tenasillahe Island
ELOCR-1.6
LCR-37.2R
LCR-37.7M
LCR-29.0L-N
LCR-29.0L
LCR-38.2L
LCR-38.5M
SA-LCR-38.6R
LCR-38.6R
BL-LCR-38.6R
LCR-C
LCR-29.2L
LCR-2a
LCR-38.8L
LCR-3a
Response Strategy Locations
Boat Launch Locations
Notification Strategy Locations
Potential Oil Spill Locations
Staging Area Locations
LCR-2a
0 0.5 1 Miles
Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri
DRAFT. Staging Area and Boat Launch symbols are offset to prevent overlapping.

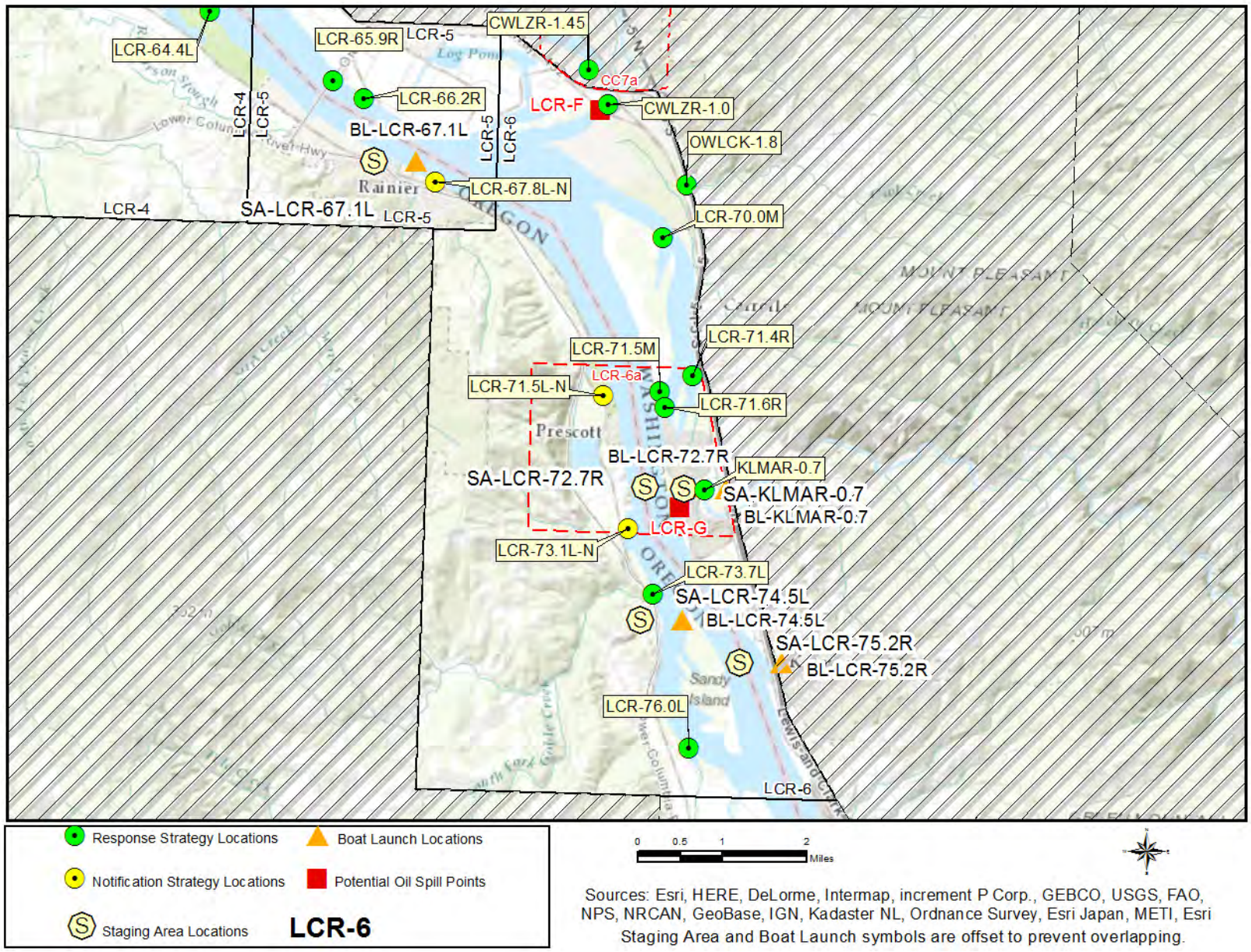

SA-LCR-33.5R
LCR-33.7R
LCR-33.5R
LCR-34.6M
LCR-35.0R
LCR-33.2M
LCR-35.3R
LCR-33.3M
LCR-36.0R
LCR-34.4M
LCR-35.7R
LCR-35.0M
ELOCR-1.6
LCR-34.7M
LCR-37.2R
LCR-37.7M
LCR-38.5M
LCR-38.6R
LCR-38.2L
SA-LCR-38.6R
BL-LCR-38.6R
LCR-2a
LCR-C
LCR-3a
LCR-29.2L
LCR-38.8L
LCR-40.5M
LCR-44.0M
LCR-41.3M
LCR-44.1M
SA-LCR-41.8M
LCR-45.0M
LCR-D
LCR-41.6L
BL-LCR-41.8M
LCR-45.2M
LCR-42.5L
LCR-42.4L-N
LCR-44.3M
LCR-43.2L
BL-LCR-43.8L
SA-LCR-43.8L
LCR-2
LCR-3
LCR-53.8R
SA-LCR-53.8L
LCR-53.8L-N
BL-LCR-53.8L
LCR-4a
LCR-3
LCR-50.5L
LCR-49.1M
LCR-49.8L
LCR-48.1M
LCR-49.7L
LCR-48.6M
LCR-48.8M
Clatskanie
Response Strategy Locations
Boat Launch Locations
Notification Strategy Locations
Potential Oil Spill Points
Staging Area Locations
LCR-3
0 0.5 1 2
Miles
Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri
Staging Area and Boat Launch symbols are offset to prevent overlapping.

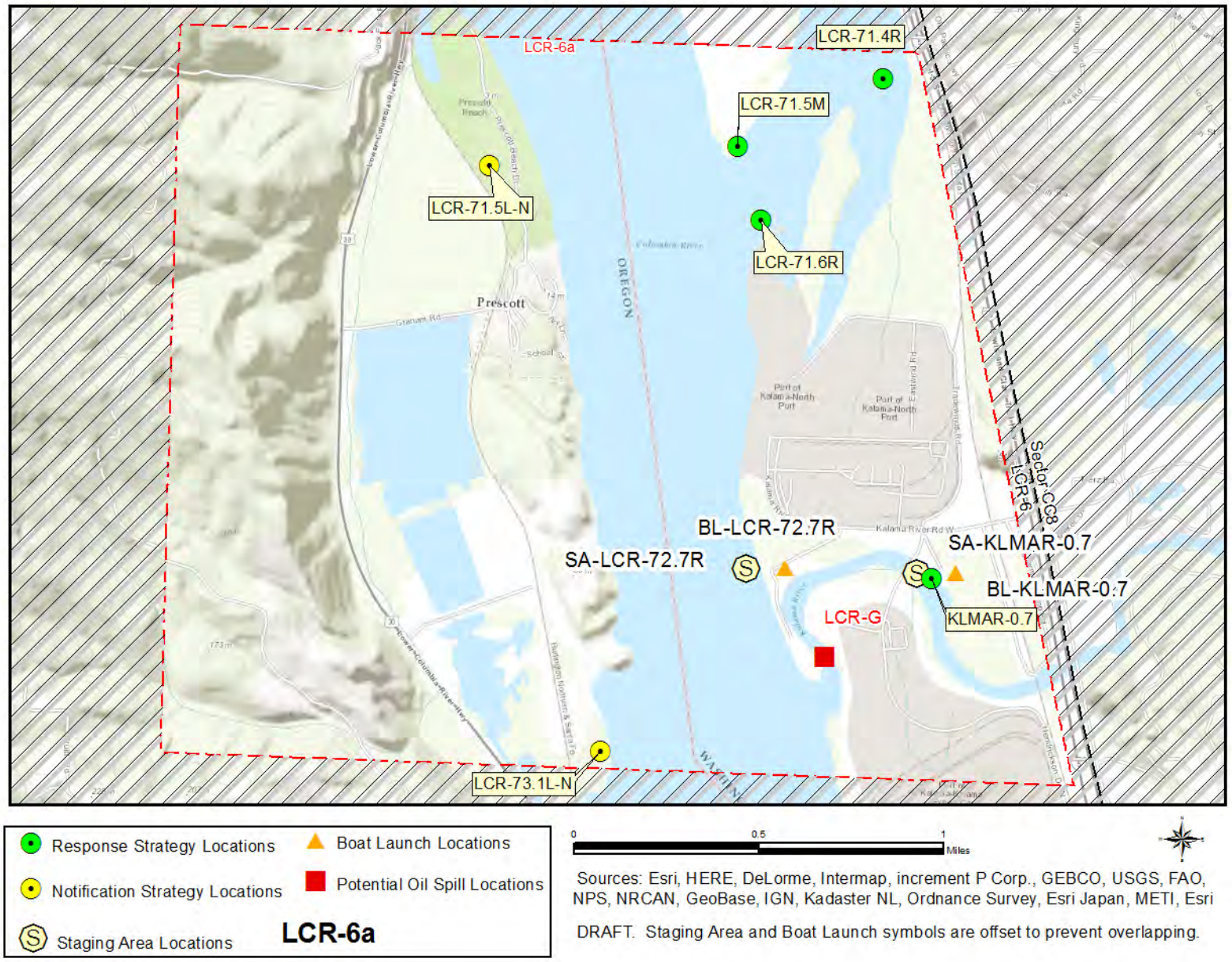

LCR-2a
LCR-40.5M
LCR-C
LCR-3a
Golf Course
Cross Dike Rd
W Little Island Rd
E Little Island Rd
N Welcome Slough Rd
LCR-44.0M
LCR-44.1M
LCR-41.3M
BL-LCR-41.8M
SA-LCR-41.8M
LCR-D
LCR-41.6L
E Birnie Slough Rd
LCR-45.0M
LCR-45.2M
LCR-42.4L-N
LCR-42.5L
E Sunny Sands Rd
LCR-44.3M
LCR-43.2L
WASHINGTON
Old US-30
SA-LCR-43.8L
BL-LCR-43.8L
LCR-2
LCR-3
Response Strategy Locations
Boat Launch Locations
Notification Strategy Locations
Potential Oil Spill Locations
Staging Area Locations
LCR-3a
0 0.5 1 Miles
Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri
DRAFT. Staging Area and Boat Launch symbols are offset to prevent overlapping.

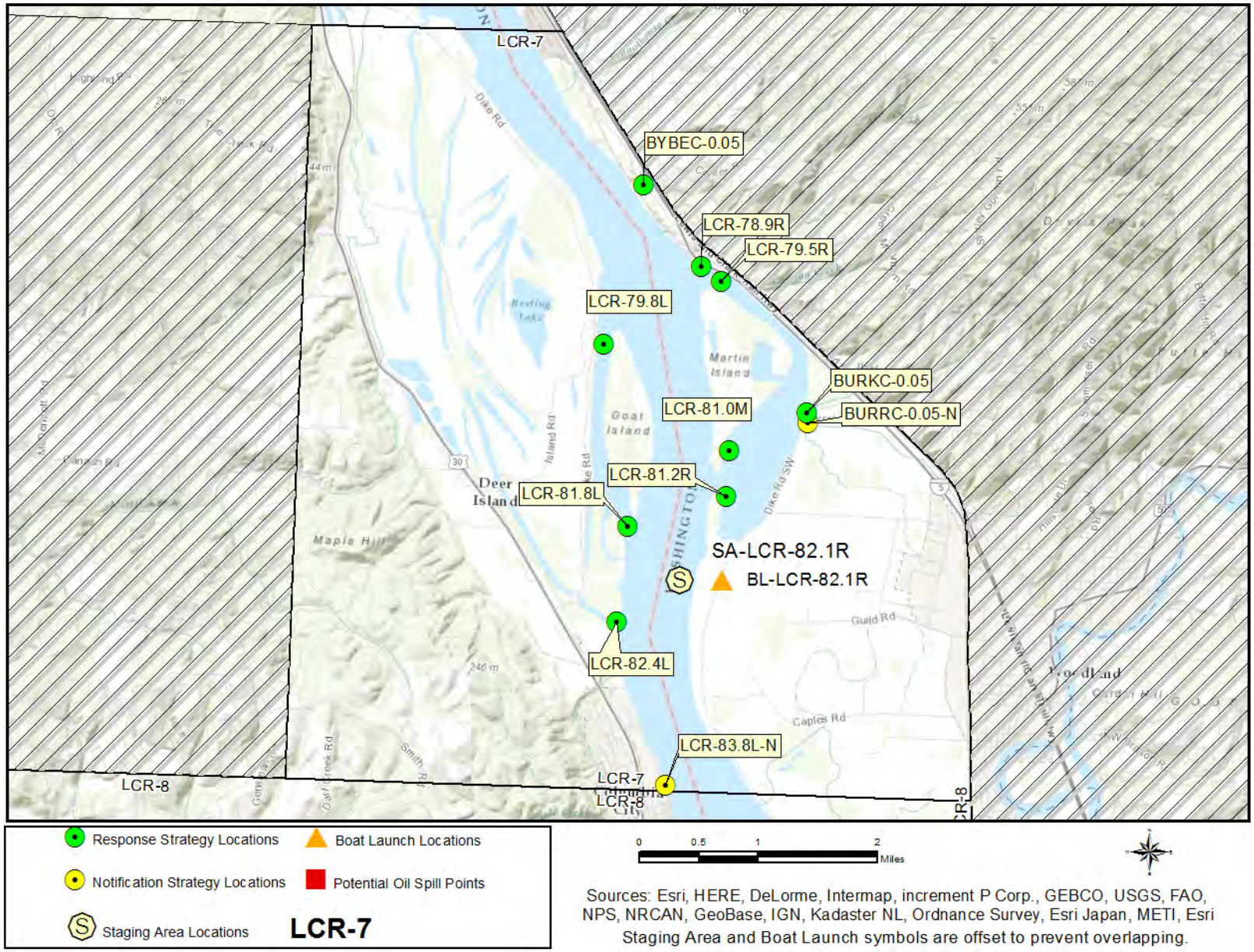

LCR-4
LCR-4a
LCR-54.2R
LCR-55.7R
LCR-55.5M
LCR-55.9R
LCR-54.4M
LCR-55.3M
SA-LCR-57.8R
LCR-E
BL-LCR-57.8R
LCR-55.1M
LCR-58.95M
LCR-55.1L-N
LCR-55.6M
LCR-58.7M
LCR-60.2M
LCR-58.9M
LCR-58.8R
LCR-55.4L
LCR-59.8L
Crims Island
Longview Heights
Longview
Lord Island
CC7a
LCR-64.0M
LCR-64.4L
LCR-4
LCR-5
LCR-65.9R
LCR-66.2R
LCR-6
BL-LCR-67.1L
LCR-5
LCR-6
Clatskanie
Beaver Slough
Green Creek
US-30
Lower Columbia River Hwy
SA-LCR-67.1L
Rainier
LCR-5
LCR-67.8L-N
LCR-6
OREGON
Response Strategy Locations
Boat Launch Locations
Notification Strategy Locations
Potential Oil Spill Points
Staging Area Locations
LCR-4
0 0.5 1 2
Miles
Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri
Staging Area and Boat Launch symbols are offset to prevent overlapping.

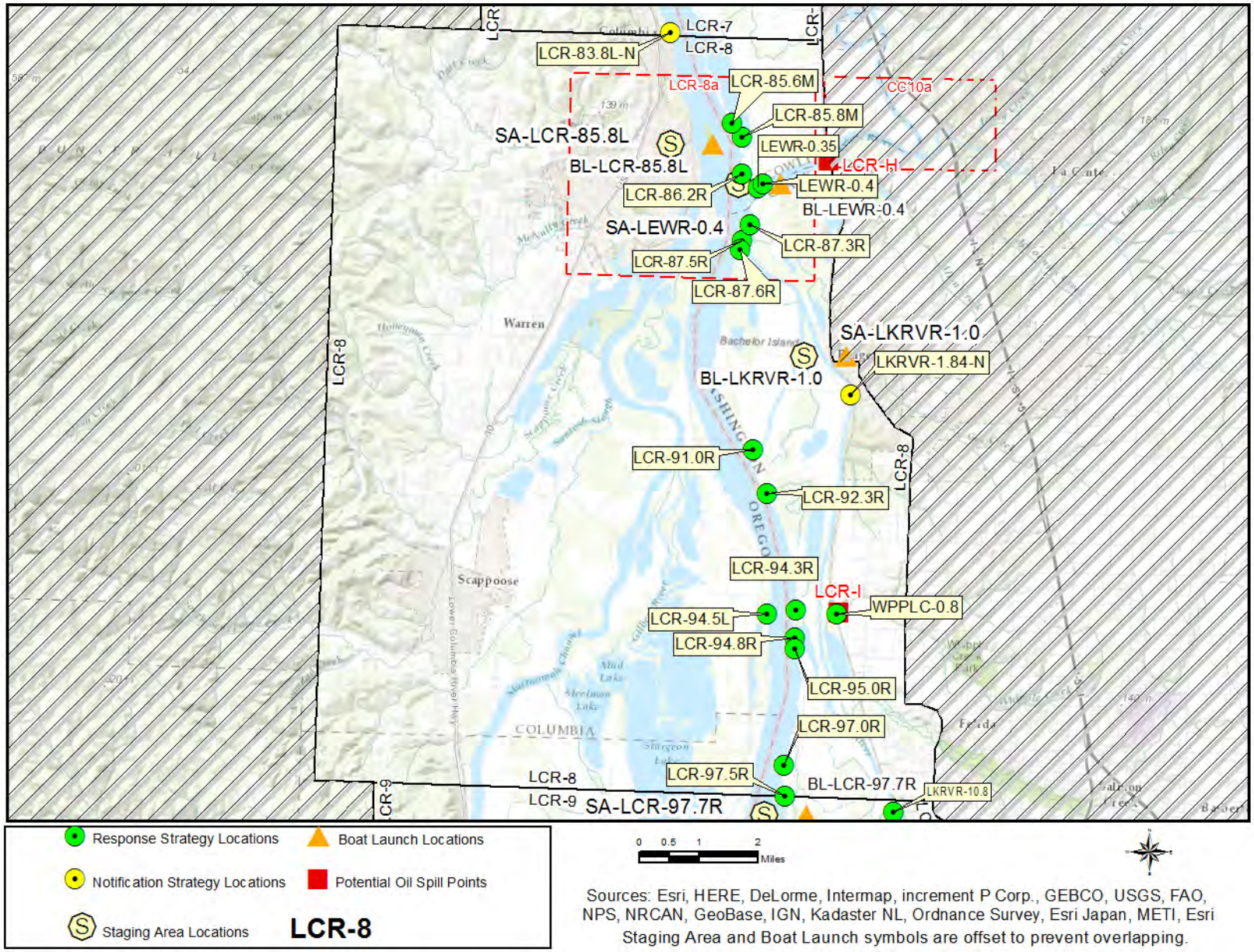

LCR-54.2R
LCR-55.7R
LCR-55.9R
LCR-54.4M
LCR-55.3M
LCR-55.5M
LCR-E
LCR-55.1L-N
LCR-55.1M
LCR-55.6M
LCR-55.4L
LCR-4a
LCR-3
LCR-4
WASHINGTON
BUNKER HILL
Stella
Ocean Beach Hwy
Response Strategy Locations
Notification Strategy Locations
Staging Area Locations
Boat Launch Locations
Potential Oil Spill Locations
LCR-4a
0
0.5
1
Miles
Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri
DRAFT. Staging Area and Boat Launch symbols are offset to prevent overlapping.


LCR-64.0M
LCR-64.4L
LCR-65.9R
LCR-66.2R
CWLZR-1.45
CC7a
LCR-F
CWLZR-1.0
SA-LCR-67.1L
BL-LCR-67.1L
LCR-67.8L-N
LCR-4
LCR-5
LCR-6
Dibblee Beach
Beaver Valley
Rainier
Response Strategy Locations
Boat Launch Locations
Notification Strategy Locations
Potential Oil Spill Points
Staging Area Locations
LCR-5
0 0.5 1 2 Miles
Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri
Staging Area and Boat Launch symbols are offset to prevent overlapping.


LCR-64.4L
LCR-65.9R
LCR-5
CWLZR-1.45
CC7a
LCR-66.2R
LCR-F
CWLZR-1.0
BL-LCR-67.1L
LCR-4
LCR-5
LCR-6
OWLCK-1.8
Rainier
LCR-67.8L-N
LCR-4
SA-LCR-67.1L
LCR-5
LCR-70.0M
LCR-71.4R
LCR-71.5M
LCR-6a
LCR-71.5L-N
LCR-71.6R
Prescott
BL-LCR-72.7R
SA-LCR-72.7R
KLMAR-0.7
SA-KLMAR-0.7
BL-KLMAR-0.7
LCR-G
LCR-73.1L-N
LCR-73.7L
SA-LCR-74.5L
BL-LCR-74.5L
SA-LCR-75.2R
BL-LCR-75.2R
LCR-76.0L
LCR-6
Response Strategy Locations
Boat Launch Locations
Notification Strategy Locations
Potential Oil Spill Points
Staging Area Locations
LCR-6
0 0.5 1 2
Miles
Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri
Staging Area and Boat Launch symbols are offset to prevent overlapping.

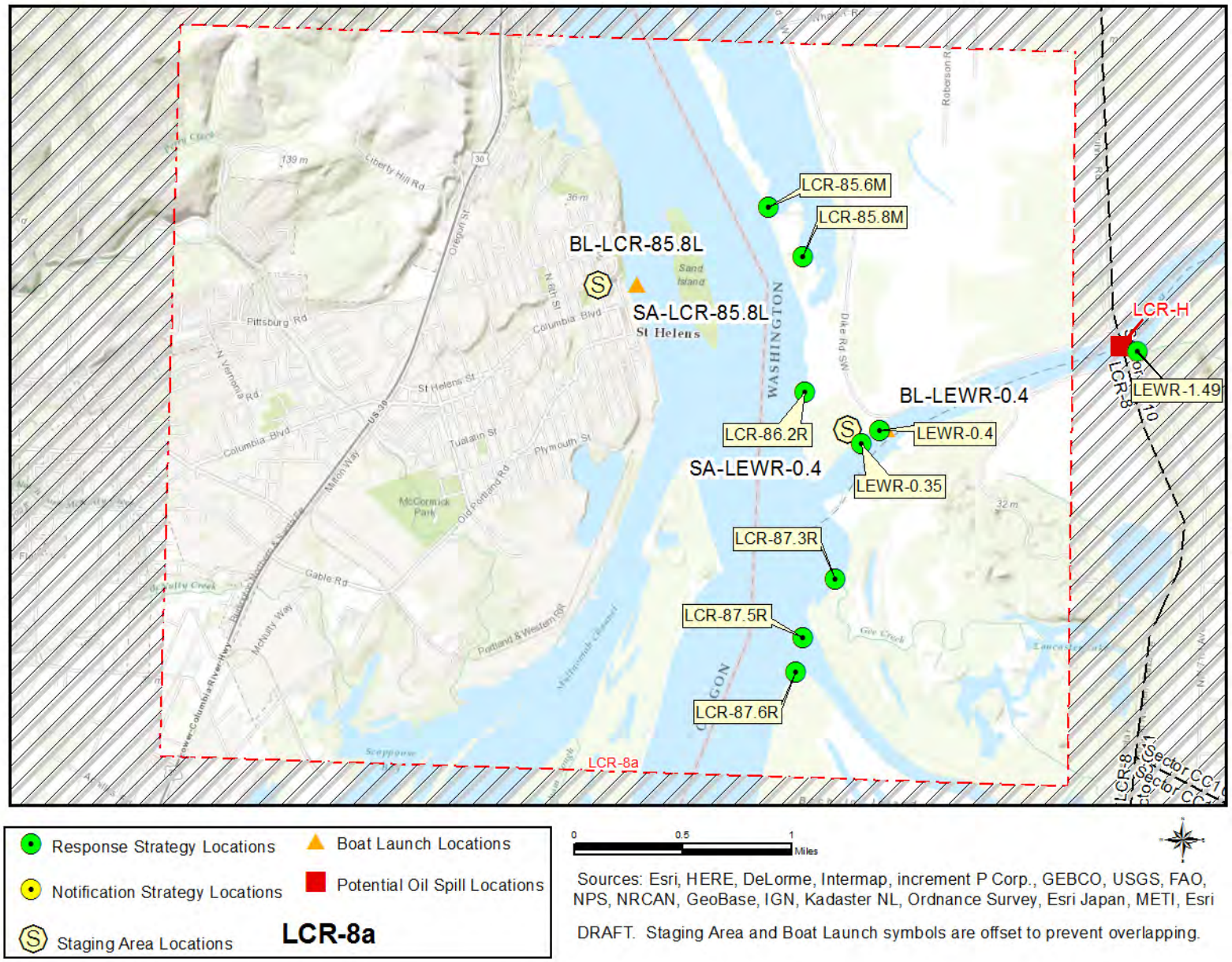

LCR-6a
LCR-71.4R
LCR-71.5M
LCR-71.5L-N
LCR-71.6R
Prescott
OREGON
Graham Rd
Port of Kalama-North Port
Sector CG8
LCR-6
BL-LCR-72.7R
SA-LCR-72.7R
SA-KLMAR-0.7
BL-KLMAR-0.7
KLMAR-0.7
LCR-G
LCR-73.1L-N
Response Strategy Locations
Notification Strategy Locations
Staging Area Locations
Boat Launch Locations
Potential Oil Spill Locations
LCR-6a
0
0.5
1
Miles
Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri
DRAFT. Staging Area and Boat Launch symbols are offset to prevent overlapping.

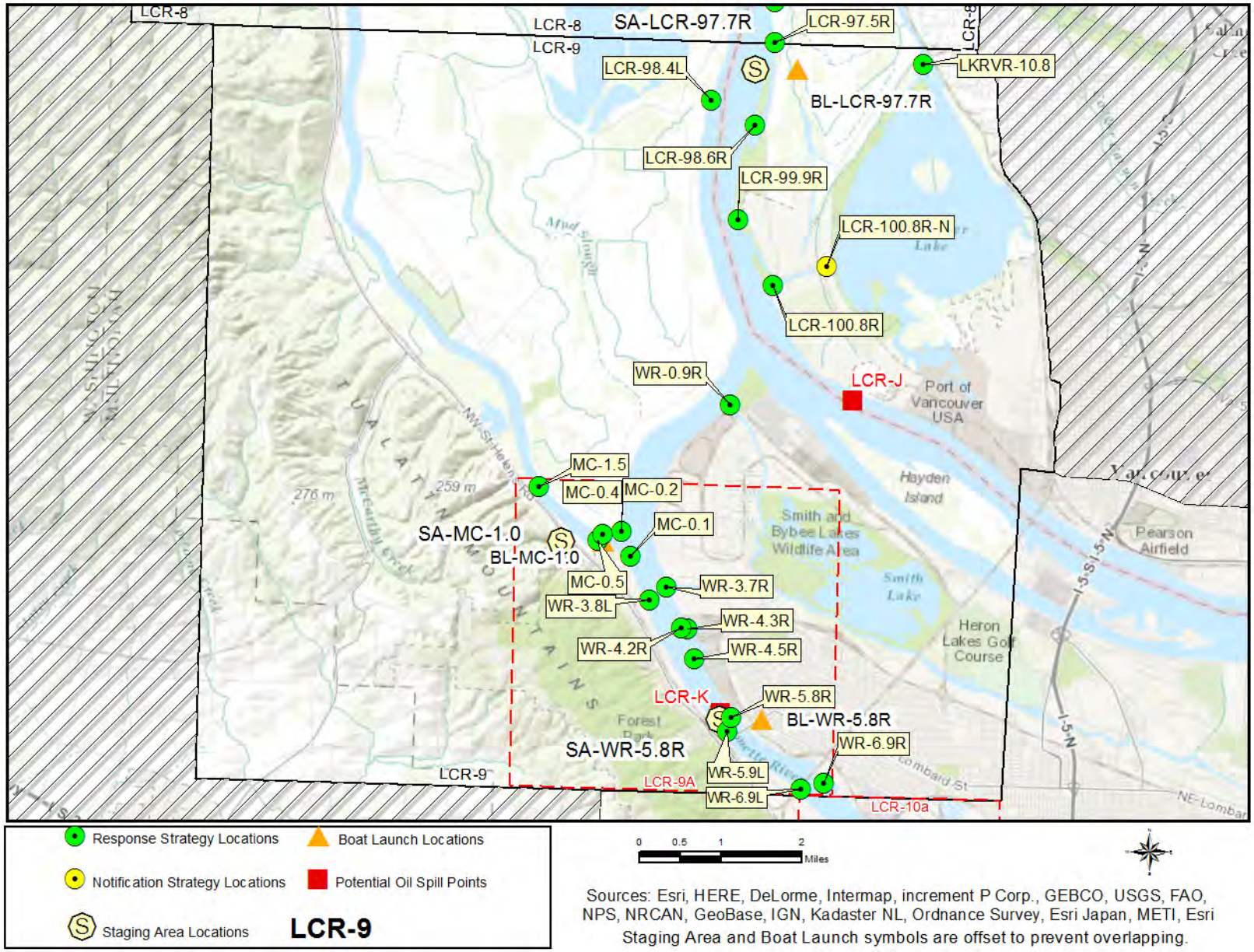

LCR-7
BYBEC-0.05
LCR-78.9R
LCR-79.5R
LCR-79.8L
BURKC-0.05
BURRC-0.05-N
LCR-81.0M
LCR-81.2R
LCR-81.8L
SA-LCR-82.1R
BL-LCR-82.1R
LCR-82.4L
LCR-83.8L-N
LCR-8
Deer Island
Maple Hill
Martin Island
Goat Island
Guild Rd
Caples Rd
Dike Rd
Island Rd
Response Strategy Locations
Boat Launch Locations
Notification Strategy Locations
Potential Oil Spill Points
Staging Area Locations
LCR-7
0 0.5 1 2
Miles
Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri
Staging Area and Boat Launch symbols are offset to prevent overlapping.



Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri

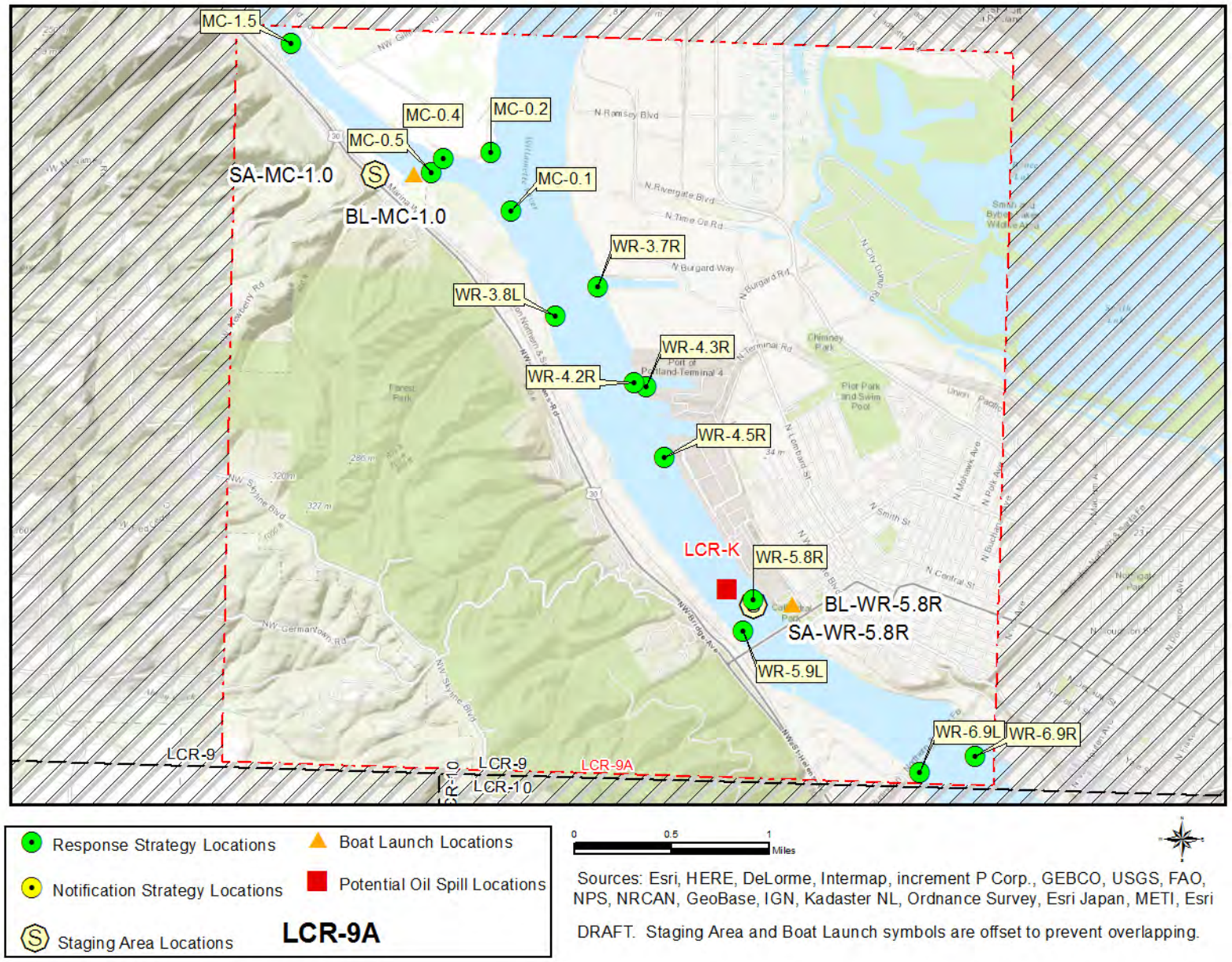
Staging Area and Boat Launch symbols are offset to prevent overlapping.

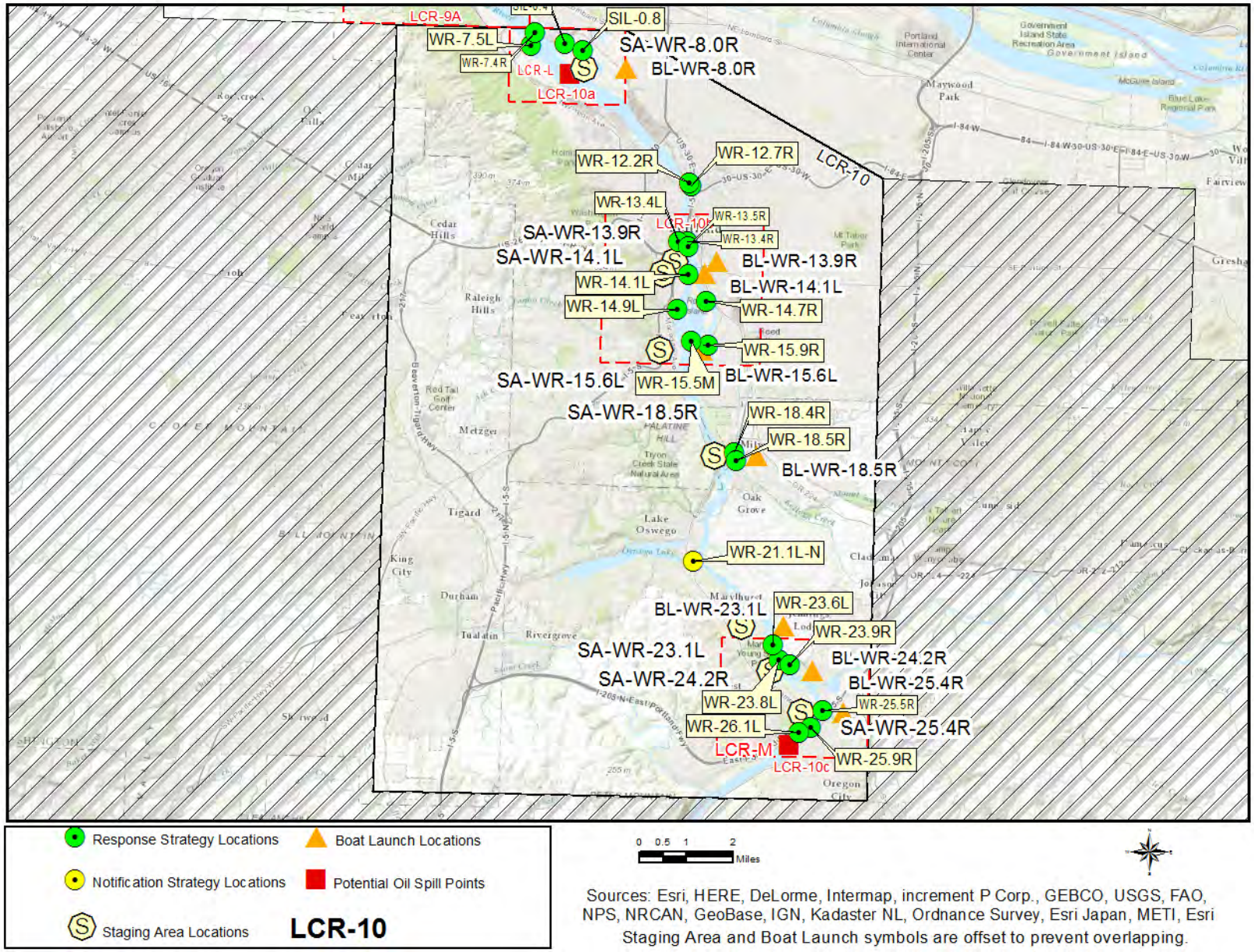

LCR-85.6M
LCR-85.8M
BL-LCR-85.8L
SA-LCR-85.8L
St Helens
LCR-H
LEWR-1.49
BL-LEWR-0.4
LCR-86.2R
LEWR-0.4
SA-LEWR-0.4
LEWR-0.35
LCR-87.3R
LCR-87.5R
LCR-87.6R
LCR-8a
WASHINGTON
OREGON
Response Strategy Locations
Boat Launch Locations
Notification Strategy Locations
Potential Oil Spill Locations
Staging Area Locations
LCR-8a
0 0.5 1 Miles
Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri
DRAFT. Staging Area and Boat Launch symbols are offset to prevent overlapping.



Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri

Staging Area and Boat Launch symbols are offset to prevent overlapping.


MC-1.5
MC-0.4
MC-0.2
MC-0.5
SA-MC-1.0
MC-0.1
BL-MC-1.0
WR-3.7R
WR-3.8L
WR-4.3R
WR-4.2R
WR-4.5R
LCR-K
WR-5.8R
BL-WR-5.8R
SA-WR-5.8R
WR-5.9L
WR-6.9L
WR-6.9R
LCR-9
LCR-9
LCR-9A
LCR-10
Response Strategy Locations
Notification Strategy Locations
Staging Area Locations
Boat Launch Locations
Potential Oil Spill Locations
LCR-9A
0
0.5
1
Miles
Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri
DRAFT. Staging Area and Boat Launch symbols are offset to prevent overlapping.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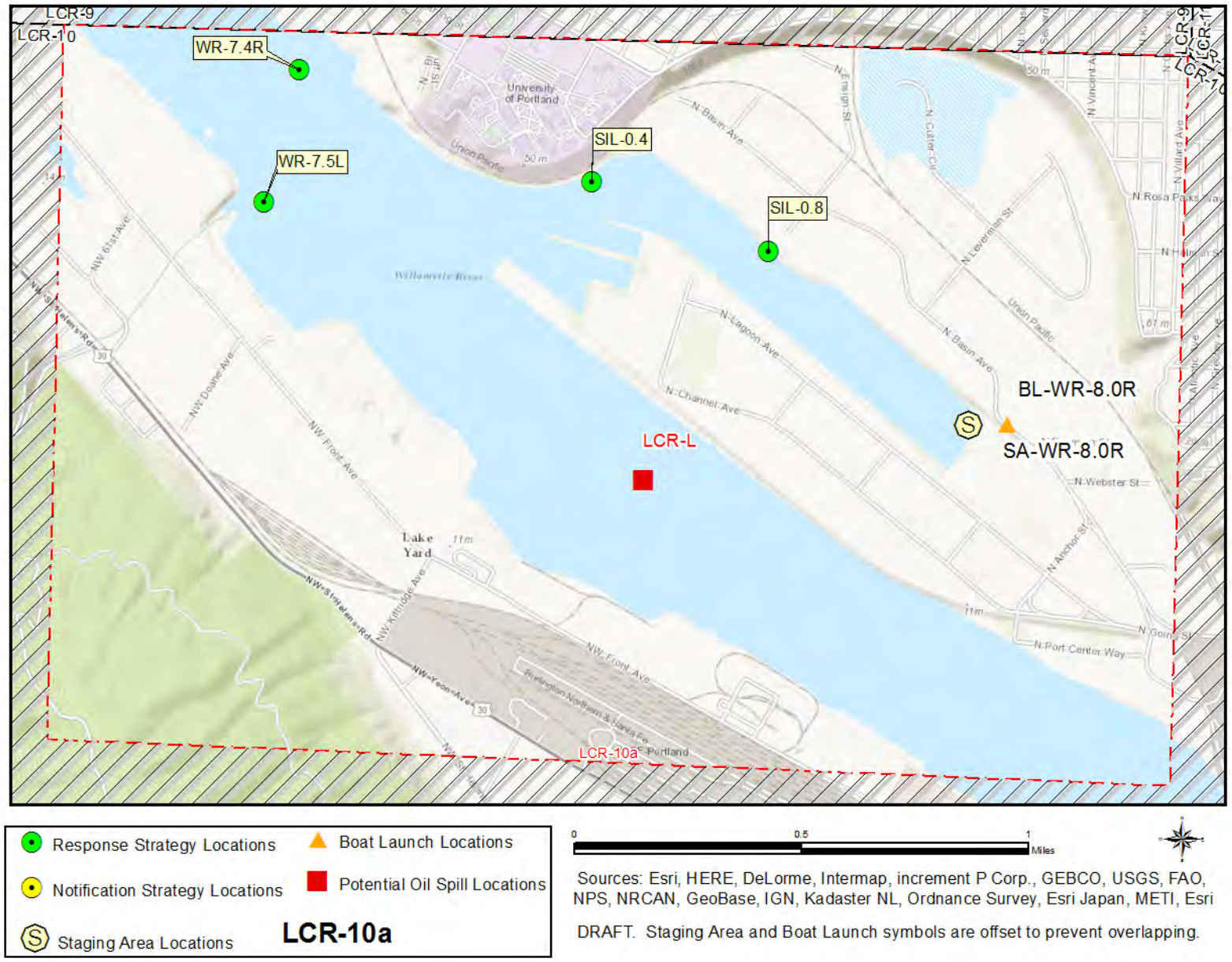
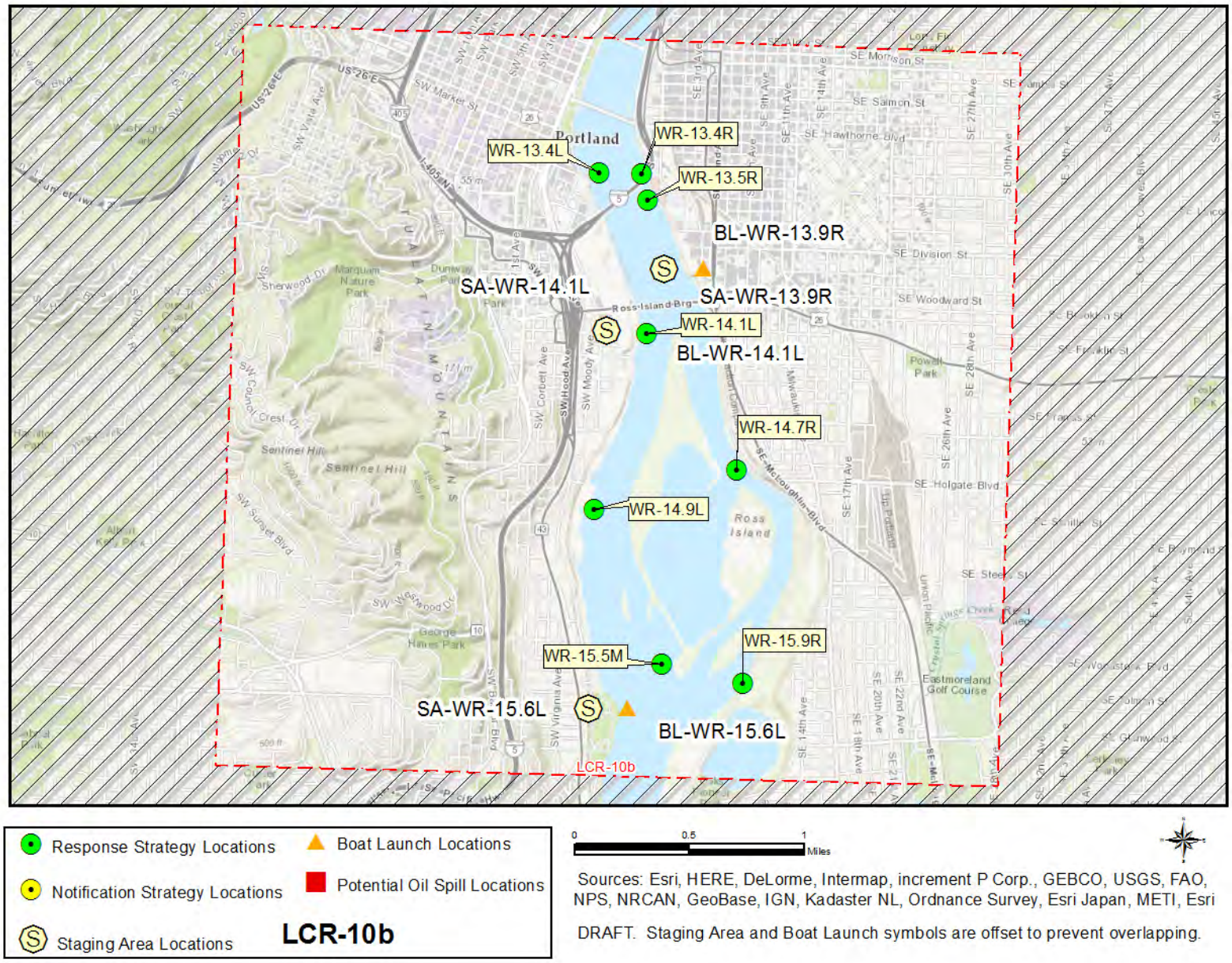
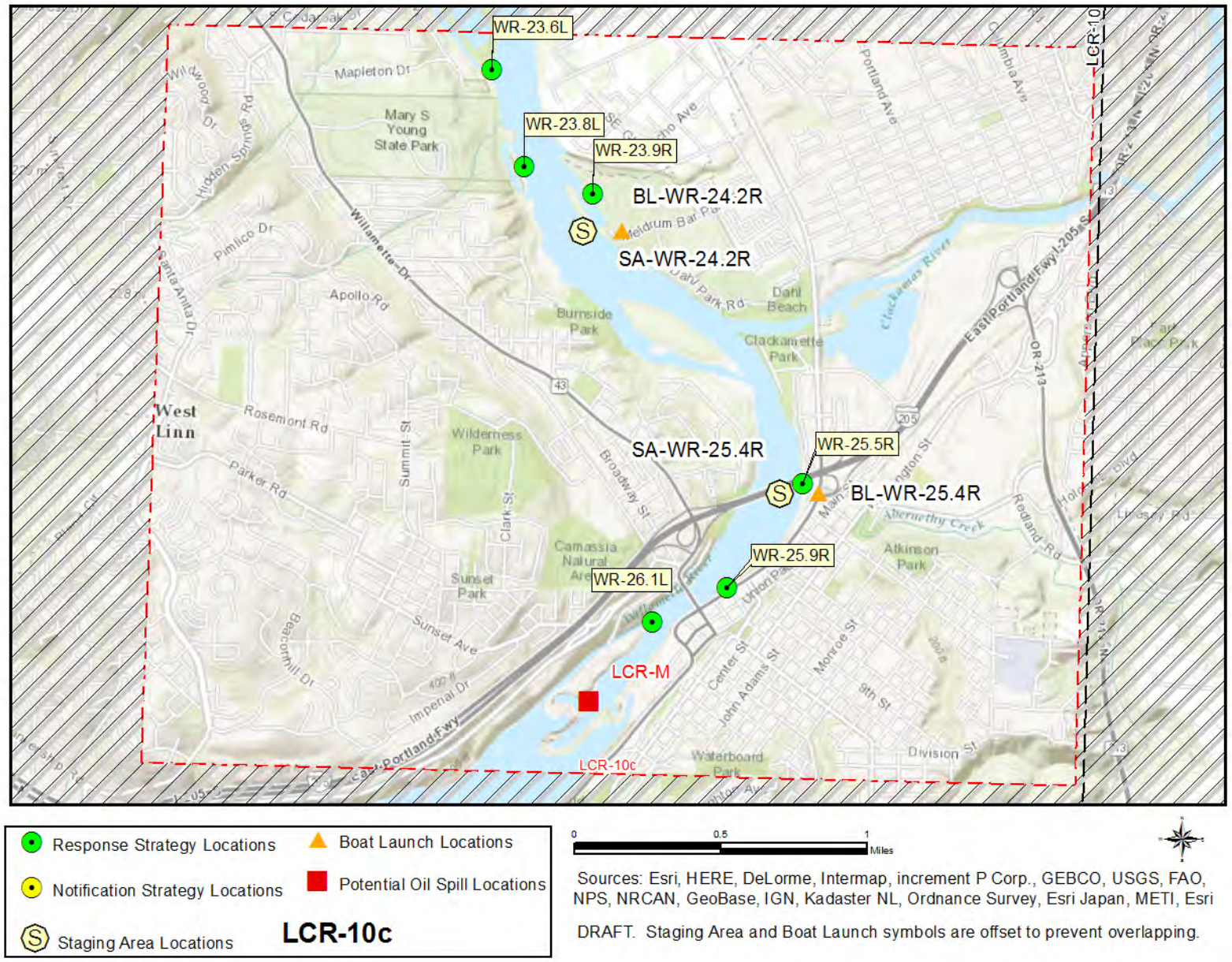
SIL-0.8
WR-7.5L
SA-WR-8.0R
WR-7.4R
LCR-L
BL-WR-8.0R
LCR-10a
WR-12.2R
WR-12.7R
LCR-10
WR-13.4L
LCR-10f
WR-13.5R
SA-WR-13.9R
WR-13.4R
SA-WR-14.1L
BL-WR-13.9R
WR-14.1L
BL-WR-14.1L
WR-14.9L
WR-14.7R
WR-15.9R
SA-WR-15.6L
WR-15.5M
BL-WR-15.6L
SA-WR-18.5R
WR-18.4R
WR-18.5R
BL-WR-18.5R
WR-21.1L-N
BL-WR-23.1L
WR-23.6L
WR-23.9R
SA-WR-23.1L
BL-WR-24.2R
SA-WR-24.2R
BL-WR-25.4R
WR-23.8L
WR-25.5R
WR-26.1L
SA-WR-25.4R
LCR-M
LCR-10c
WR-25.9R
Response Strategy Locations
Boat Launch Locations
Notification Strategy Locations
Potential Oil Spill Points
Staging Area Locations
LCR-10
0 0.5 1 2
Miles
Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri
Staging Area and Boat Launch symbols are offset to prevent overlapping.

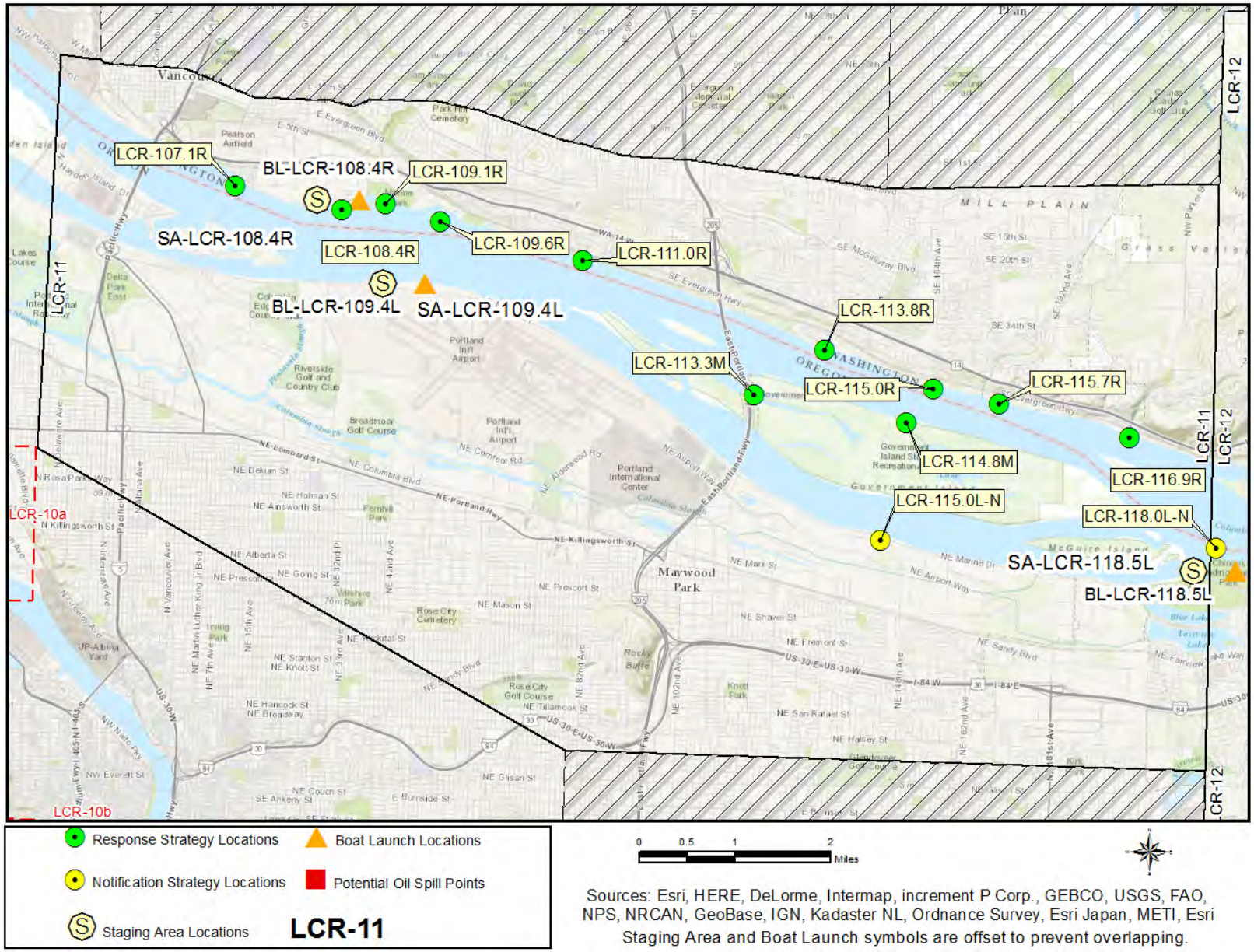

LCR-9
LCR-10
WR-7.4R
WR-7.5L
SIL-0.4
SIL-0.8
BL-WR-8.0R
SA-WR-8.0R
LCR-L
LCR-10a
University of Portland
Lake Yard
Willamette River
Response Strategy Locations
Notification Strategy Locations
Staging Area Locations
Boat Launch Locations
Potential Oil Spill Locations
LCR-10a
0
0.5
1
Miles
Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri
DRAFT. Staging Area and Boat Launch symbols are offset to prevent overlapping.


WR-13.4L
WR-13.4R
WR-13.5R
BL-WR-13.9R
SA-WR-14.1L
SA-WR-13.9R
WR-14.1L
BL-WR-14.1L
WR-14.7R
WR-14.9L
WR-15.5M
WR-15.9R
SA-WR-15.6L
BL-WR-15.6L
LCR-10b
Portland
Response Strategy Locations
Notification Strategy Locations
Staging Area Locations
Boat Launch Locations
Potential Oil Spill Locations
LCR-10b
0 0.5 1 Miles
Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri
DRAFT. Staging Area and Boat Launch symbols are offset to prevent overlapping.



Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri

DRAFT. Staging Area and Boat Launch symbols are offset to prevent overlapping.


LCR-107.1R
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LCR-109.1R
SA-LCR-108.4R
LCR-108.4R
LCR-109.6R
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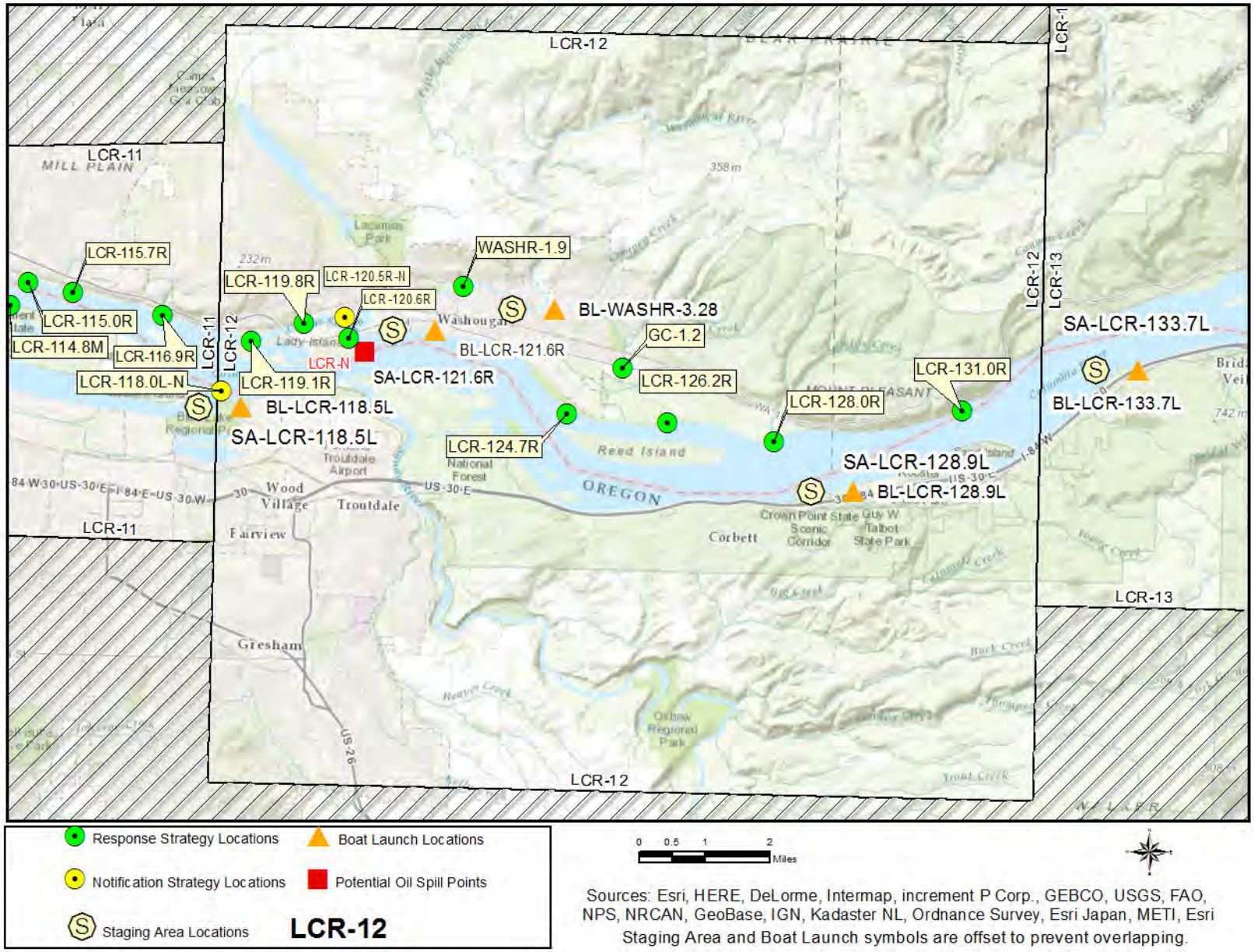
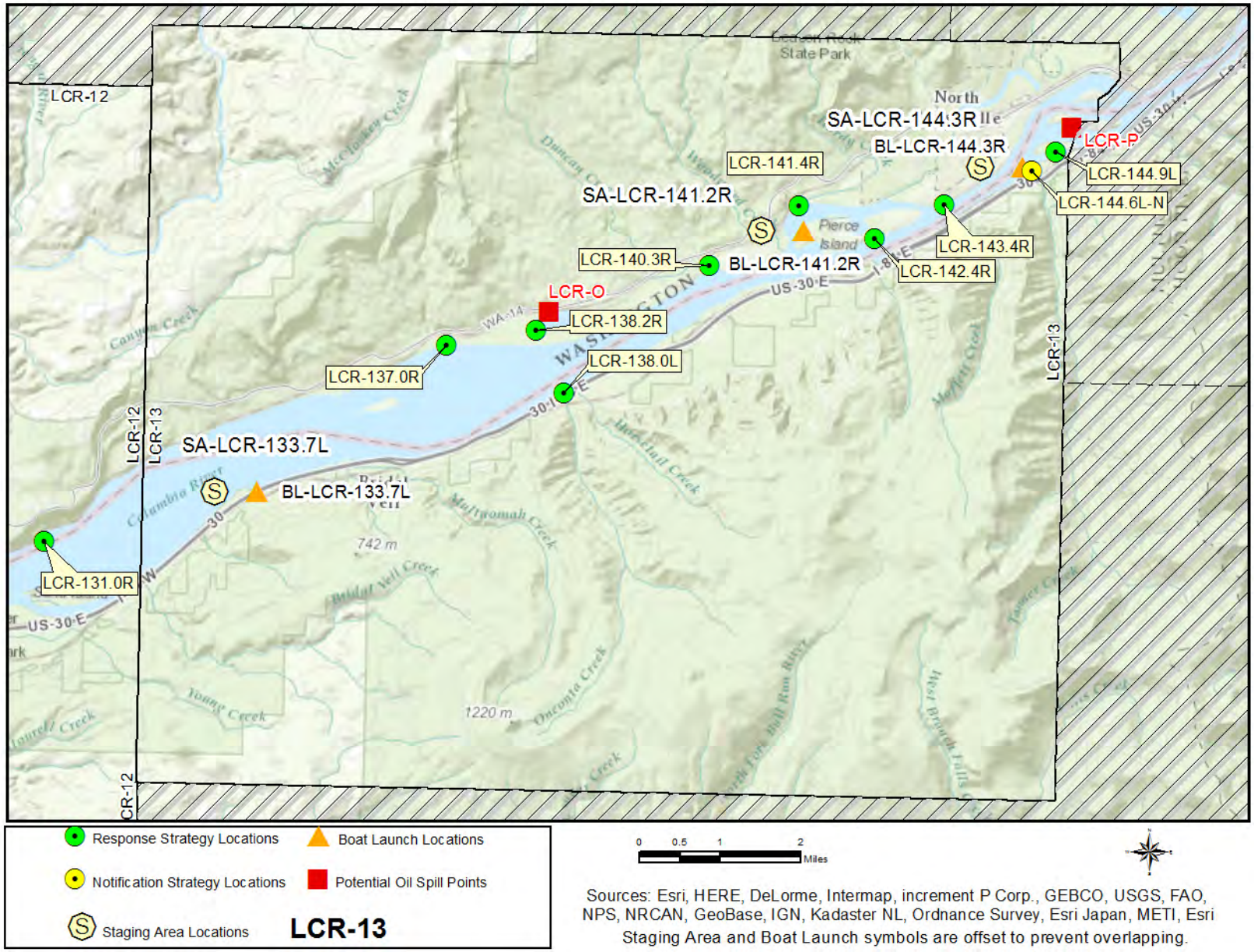
BL-LCR-109.4L
SA-LCR-109.4L
LCR-113.8R
LCR-113.3M
LCR-115.0R
LCR-115.7R
LCR-114.8M
LCR-116.9R
LCR-115.0L-N
LCR-118.0L-N
SA-LCR-118.5L
BL-LCR-118.5L
LCR-10a
LCR-10b
LCR-11
LCR-12
Response Strategy Locations
Boat Launch Locations
Notification Strategy Locations
Potential Oil Spill Points
Staging Area Locations
LCR-11
0 0.5 1 2
Miles
Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri
Staging Area and Boat Launch symbols are offset to prevent overlapping.



Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri

Staging Area and Boat Launch symbols are offset to prevent overlapping.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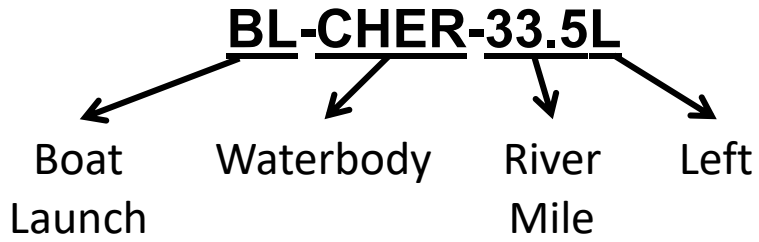
LCR-13
SA-LCR-144.3R
BL-LCR-144.3R
LCR-P
LCR-144.9L
LCR-144.6L-N
LCR-141.4R
SA-LCR-141.2R
LCR-143.4R
LCR-142.4R
LCR-140.3R
BL-LCR-141.2R
LCR-O
LCR-138.2R
LCR-138.0L
LCR-137.0R
SA-LCR-133.7L
BL-LCR-133.7L
LCR-131.0R
Response Strategy Locations
Boat Launch Locations
Notification Strategy Locations
Potential Oil Spill Points
Staging Area Locations
LCR-13
0 0.5 1 2
Miles
Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri
Staging Area and Boat Launch symbols are offset to prevent overlapping.

4.5 MATRICES

4.5.1 Naming Conventions (Short Names)

Each strategy, staging area, and boat launch location in this document has been given a unique "Short Name" which includes one to six letters denoting the associated waterbody. Following the letters are numbers that specify the location. On rivers or other linear waterbodies, the location is named by river mile: the distance from the mouth of the river or creek upstream to the site location. Some short names indicate whether the site is located on river right, river left, or mid-river by an "R", "L" or "M" after the river mile. On lakes, the numbers indicate the location by shoreline mile, typically starting at the northernmost point and increasing clockwise around the lake. In marine areas, the numbers do not have a geographic meaning. Notification strategies are indicated by an "-N" at the end of the name. Staging Areas and Boat Launches are indicated by an "SA-" or "BL-" prefix.



Associated waterbody short name designations used within this plan include:

BURKC = Burke Creek
BYBEC = Bybee Creek
CHINR = Chinook River
CRKDC = Crooked Creek
CWLZR = Cowlitz River
DEEPR = Deep River
ELOCR = Elochoman River
GC = Gibbons Creek
GRAYR = Grays River
KLMAR = Kalama River
L&C = Lewis and Clark River
LCR = Lower Columbia River
LEWR = Lewis River
LKRVR = Lake River
MC = Multnomah Channel
OWLCK = Owl Creek
SIL = Swan Island Lagoon
WAL = Wallooskee River
WASHR = Washougal River
WPPLC = Whipple Creek
WR = Willamette River
YOR = Youngs River

N = Notification Strategy
SA = Staging Area
BL = Boat Launch
L = River Left
R = River Right
M = River Middle

4.5.2 Response Strategy Matrices

Strategy Name	Location	Strategy Type	Boom Length	Boat Req?	Staging Area	Resources At Risk	Comments	Sector Map (Page #)	Strategy Details (Page#)
BURKC-0.05	Burke Creek (WA) 45.94033 -122.78492	Collection	Boom 200ft, Sorbent 100ft	Yes	Onsite Stage onsite in lift station parking area.	Downstream Resources, Wetland Habitat	Site is at Consolidated Dike Improvement District #2 lift station.	73	155
BYBEC-0.05	Bybee Creek (WA) 45.96749 -122.81455	Culvert Block	Sorbent 100ft	No	Onsite Stage from Dupont Road. Follow WSDOT guidelines for work in traffic zone.	Downstream Resources, Fish and Wildlife Resources	Access is via dead-end road near railroad tracks. Two culverts run under railroad tracks to the Columbia River.	73	157
CHINR-0.3	Chinook River (WA) 46.30388 -123.96730	Exclusion	Boom 100ft	No	Onsite Stage on shoulder of US-101 on river right.	Habitat Restoration Site/Project, Wetland Habitat	Site is at narrow channel formed by highway land bridge. WDFW-managed tide gates can be closed, but they can only be closed at slack tide and may take some time for responders to arrive on scene.	63	159
CRKDC-0.25	Crooked Creek (WA) 46.29590 -123.68101	Exclusion	Boom 200ft	Yes	Onsite Stage on shoulder of Altoona-Pillar Rock Rd. Use WSDOT guidelines for work zone traffic control.	Sensitive Wetland Area, Tidal Marshes	Road access on Altoona - Pillar Rock Rd (403): take to where it crosses Crooked Creek. Grays Bay is too shallow for access from Columbia River.	64	161

Strategy Name	Location	Strategy Type	Boom Length	Boat Req?	Staging Area	Resources At Risk	Comments	Sector Map (Page #)	Strategy Details (Page#)
CWLZR-1.0	BNSF Rail Yard (WA) 46.10443 -122.89124	Collection	Boom 1000ft	Yes	Onsite Stage at BNSF Rail Yard. Contact Longview Yard Master for access.	Downstream Resources	Expect trains on the track at any time/from either direction. Do not allow people/ equipment within 25' of tracks. Site is BNSF rail yard at the confluence of the Cowlitz, Columbia, and Coweeman Rivers.	71	163
DEEPR-0.9	Deep River (WA) 46.31419 -123.71348	Collection	Boom 900ft	Yes	Onsite Stage at WDFW boat launch on Oneida Rd.	Downstream Resources, Waterfowl Use Area, Wetland Habitat	Site is a WDFW-managed boat launch and parking area with restroom and docks. River widens and slows in this location. Discover Pass Required.	64	167
ELOCR-1.6	Elochoman River (WA) 46.22687 -123.40069	Exclusion	Boom 600ft	Yes	Onsite Stage on shoulder of Steamboat Slough Rd.	Wetland Habitat, Wildlife Refuge	Site access is on Steamboat Slough Rd. near Julia Butler Hansen Refuge for Columbia White Tail Deer. Many sloughs and wetlands in this area.	66	169
GC-1.2	Gibbons Creek at Hwy 14 (WA) (FBS MP-28.75) 45.57110 -122.31584	Containment	Boom 100ft	No	Onsite Stage on south shoulder of highway on west side of creek	Downstream Resources, Freshwater Wildlife, Sensitive Resources Nearby	Call BNSF. Call USACE. Expect trains on the track at any time/from either direction. Do not allow people/ equipment within 25' of tracks. East side of bridge will allow access into Steigerwald Lake National Wildlife Refuge, heading towards river.	83	171

Strategy Name	Location	Strategy Type	Boom Length	Boat Req?	Staging Area	Resources At Risk	Comments	Sector Map (Page #)	Strategy Details (Page#)
GRAYR-1.9	Grays River (WA) 46.30789 -123.67185	Collection	Boom 500ft	Yes	Onsite Stage onsite on Altoona-Pillar Rock Rd.	Waterfowl Use Area, Wetland Habitat	Site is at sharp bend in Grays River at intersection of Altoona-Pillar Rock Rd. and Mattson Rd. Remnants of dock and log boom are present.	64	173
KLMAR-0.7	WDFW Boat Launch on Kalama River (WA) 46.03867 -122.86470	Collection, Deflection	Boom 700ft	Yes	Onsite Stage at SA-KLMAR-0.7, WDFW boat launch parking area.	Downstream Resources	Site is a WDFW boat launch used frequently by boaters and fishermen. River bends, widens, and slows in this location.	72	175
L&C-1.2	Lewis and Clark River (OR) 46.15003 -123.86035	Collection	Boom 1000ft	Yes	Remote Stage and launch at East Mooring Basin	Foraging Shorebirds and Seabirds, National Park, Wintering Waterfowl	Access by boat from East Mooring Basin.	63	177
L&C-1.7	Jeffers Slough (OR) 46.14461 -123.86393	Exclusion	Boom 500ft	Yes	Remote Stage and launch at East Mooring Basin BL-LCR-15.8L	Foraging Shorebirds and Seabirds, National Park, Sensitive Resources, Wintering Waterfowl	Access by boat from launch at Yacht Club near bridge or at Tides Point across from Daggett Point. Access also possible through property of Astoria Marine Construction. Low-flow only.	63	179
L&C-2.3	Barrett Slough (OR) 46.13731 -123.86807	Exclusion	Boom 300ft	Yes	Remote Stage and launch at East Mooring Basin	Foraging Shorebirds and Seabirds, National Park, Wintering Waterfowl	Access by boat from launch at East Mooring Basin. Low flow only.	63	181

Strategy Name	Location	Strategy Type	Boom Length	Boat Req?	Staging Area	Resources At Risk	Comments	Sector Map (Page #)	Strategy Details (Page#)
L&C-2.6	Green Slough (OR) 46.13408 -123.87378	Exclusion	Boom 300ft	Yes	Remote Stage and launch at East Mooring Basin BL-LCR-15.8L	Foraging Shorebirds and Seabirds, National Park, Wintering Waterfowl	Access by boat at high tide from launch at East Mooring Basin. Low flow only.	63	183
LCR-2.2R	Cape Disappointment State Park (WA) 46.28629 -124.05104	Collection	Boom 600ft	Yes	Onsite Stage onsite at SA-LCR-2.2R	Marshland(s), Public Lands/Facilities, Recreational Use Area, Sensitive Resources Nearby, State Park	Site is a boat launch and parking area with breakwall protecting boat ramps.	63	185
LCR-2.4R	USCG Station Cape Disappointment (WA) 46.28073 -124.04419	Collection	Boom 600ft	Yes	Onsite Stage onsite at USCG Station Cape Disappointment	Public Lands/Facilities, Sensitive Resources Nearby, State Park	Site is USCG Station with restricted access. Contact USCG Station for access.	63	187
LCR-3.5R	Wallacut River (WA) 46.31580 -124.02048	Collection, Exclusion	Boom 200ft	Yes	Onsite Stage onsite at 1664 US-101, Ilwaco, WA	Fish and Wildlife Resources, Wetland Habitat	Best access by road on private property. Contact property owner before deploying strategy.	63	189
LCR-6.8L	Jetty Lagoon West (OR) 46.21506 -123.97890	Exclusion	Boom 500ft	Yes	Remote Stage at SA-LCR-8.7L Hammond Marina, launch at same BL-LCR-8.7L.	Salmonids, Waterfowl and Shorebird Concentrations, Wetland Habitat	Boat access only. Flow through the opening can be high during tidal exchanges, add boom as necessary to prevent entrainment.	63	191

Strategy Name	Location	Strategy Type	Boom Length	Boat Req?	Staging Area	Resources At Risk	Comments	Sector Map (Page #)	Strategy Details (Page#)
LCR-7.1L	Jetty Lagoon East (OR) 46.21438 -123.97765	Exclusion	Boom 500ft	Yes	Remote Stage at SA-LCR-8.7L Hammond Marina, launch at same BL-LCR-8.7L.	Salmonids, Waterfowl and Shorebird Concentrations, Wetland Habitat	Boat access only. Flow through the opening can be high during tidal exchanges, add boom as necessary to prevent entrainment.	63	193
LCR-7.5L	Swash Lake (OR) 46.21088 -123.97387	Exclusion	Boom 500ft	Yes	Remote Stage at SA-LCR-8.7L Hammond Marina, launch at same BL-LCR-8.7L.	Waterfowl and Shorebird Concentrations, Wetland Habitat	Creek connects Jetty Lagoon to Swash Lake to the south. Mouth of creek is very shallow at low water and may not be accessible except for high water. Pilings and jetty to NE of strategy.	63	195
LCR-8.4R	Chinook Point 46.25171 -123.92438	Deflection	Boom 500ft	Yes	Remote Stage at SA-LCR-6.1R, Port of Chinook	Public Recreation Site/Area, State Park	Chinook Pt. is a rocky outcropping with pocket sand beaches at Fort Columbia State Park. This strategy will be very difficult to anchor without installing a permanent anchor point. Contact WA State Parks before installing anchor.	63	197
LCR-8.5R	Chinook Point (WA) 46.25115 -123.92267	Deflection	Boom 500ft	Yes	Remote Stage at SA-LCR-6.1R, Port of Chinook	Public Recreation Site/Area, State Park	Chinook Pt. is a rocky outcropping with pocket sand beaches at Fort Columbia State Park. This strategy will be very difficult to anchor without installing a permanent anchor point. Contact WA State Parks before installing anchor.	63	199

Strategy Name	Location	Strategy Type	Boom Length	Boat Req?	Staging Area	Resources At Risk	Comments	Sector Map (Page #)	Strategy Details (Page#)
LCR-10.1L	Tansy Point (OR) 46.19152 -123.92457	Collection, Deflection	Boom 400ft	Yes	Remote Stage at Hammond Marina SA-LCR-8.7L; launch same BL-LCR-8.7L	Economic Resource	Boat access and by land at wood chipping company (need permission of company). Will work with a NW wind and a flood tide.	63	201
LCR-10.8L	Inner Skipanon Waterway (OR) 46.17977 -123.90937	Exclusion	Boom 800ft	Yes	Remote Stage + launch at Warrenton Marina SA-SKPR-1.4, approximately 1 mile upriver	Salmonid Concentrations and Habitat	Access via sandy spit collection points. Low flow only.	63	203
LCR-10.9L	Outer Skipanon Waterway (OR) 46.18169 -123.90788	Collection, Deflection	Boom 600ft	Yes	Remote Stage + launch at Warrenton Marina BL-SKPR-1.4, approximately 1 mile upriver	Salmon Concentrations and Habitat	Boat can only reach site during high tide.	63	205
LCR-19.0L	Clatsop Community College Dock 46.18984 -123.74557	Exclusion	Boom 1000ft	Yes	Remote Stage at SA-LCR-17.7L, Tongue Point Boat Launch	Economic Resource	Access by boat or vehicle from the USCG Station.	64	207
LCR-19.2L	John Day River (OR) 46.18146 -123.74119	Exclusion	Boom 800ft	Yes	Remote Stage at SA-JDAYR-0.5 John Day Boat Launch	Sensitive Nesting Species, Waterfowl, Wetlands	Do not allow people/equipment within 25' of any railroad track. Access via boat (at high tide).	64	209

Strategy Name	Location	Strategy Type	Boom Length	Boat Req?	Staging Area	Resources At Risk	Comments	Sector Map (Page #)	Strategy Details (Page#)
LCR-19.3L	Twilight Marsh (Eskeline Creek) (OR) 46.17040 -123.69934	Exclusion	Boom 100ft, Sorbent 100ft	Yes	Remote Stage at SA-JDAYR-0.5 John Day boat ramp, launch at same BL-JDAYR-0.5.	Sensitive Nesting Species	Do not allow people/equipment within 25' of any railroad track. Access via boat at high tide.	64	211
LCR-19.9L	Marys Creek (OR) 46.17319 -123.66829	Exclusion	Boom 100ft, Sorbent 100ft	Yes	Remote Stage at SA-JDAYR-0.5 John Day boat ramp, launch at same BL-JDAYR-0.5.	Salmon Concentrations and Habitat	Do not allow people/equipment within 25' of any railroad track. Access via boat (at high tide)	64	213
LCR-20.0L	Bear Creek (OR) 46.17191 -123.66568	Exclusion	Boom 200ft	Yes	Remote Stage at SA-JDAYR-0.5 John Day boat ramp, launch at same BL-JDAYR-0.5.	Salmon Concentrations and Habitat	Access via boat at high tide.	64	215
LCR-20.3L	Ferris Creek (OR) 46.17137 -123.65548	Exclusion	Boom 300ft	Yes	Remote Stage at SA-JDAYR-0.5 John Day boat ramp, launch at same BL-JDAYR-0.5	Salmon Concentrations and Habitat	Do not allow people/equipment within 25' of any railroad track. Access via boat (at high tide)	64	217
LCR-26.4M	NW Karlson Island (OR) 46.20831 -123.61158	Exclusion	Boom 400ft	Yes	Remote Stage at SA-LCR-17.7L Tongue Point, launch from same BL-LCR-17.7L	Freshwater Marsh, High Productivity Area, Sensitive Nesting Species, Waterfowl Concentrations	Access from water only	64	219

Strategy Name	Location	Strategy Type	Boom Length	Boat Req?	Staging Area	Resources At Risk	Comments	Sector Map (Page #)	Strategy Details (Page#)
LCR-27.2L	Big Creek (OR) 46.18462 -123.59612	Exclusion	Boom 200ft	Yes	Remote Stage at SA-LCR-17.7L Tongue Point, launch from same BL-LCR-17.7L	Salmonid Concentrations and Habitat, Wetlands	Do not allow people/equipment within 25' of railroad tracks. Boat access only. River banks are sturdy and provide good anchor points.	64	221
LCR-27.5L	Warren Slough (OR) 46.18928 -123.58784	Exclusion	Boom 500ft	Yes	Remote Stage at SA-LCR-17.7L Tongue Point, launch from same BL-LCR-17.7L	Sensitive Resources, Sensitive Wetland Area	Site is at wide slough opening to the north and a smaller slough opening to the south. Strategy is exclusion for both openings.	64	223
LCR-27.9L	Grizzly Slough (OR) 46.20330 -123.56667	Exclusion	Boom 500ft	Yes	Remote Stage at SA-LCR-17.7L Tongue Point, launch from same BL-LCR-17.7L	Sensitive Wetland Area	Boat access only through Blind Slough, just downstream of swing bridge.	64	225
LCR-29.0L	Blind Slough Net Pens (OR) 46.20277 -123.54434	Exclusion	Boom 500ft	Yes	Remote Stage at SA-LCR-17.7L Tongue Point, launch from same BL-LCR-17.7L	Fish Pens	Site is fish net pens on Blind Slough, just west of bridge. Land access from dock at 43201 Penttila Ln, Astoria, OR, 97103	64	227
LCR-29.2L	Gnat Creek (OR) 46.19904 -123.53310	Exclusion	Boom 300ft	Yes	Remote Stage at SA-LCR-17.7L Tongue Point, launch from same BL-LCR-17.7L	Sensitive Wetland Area	Site is boat access only, but may be accessible by land through private property. There is an unverified boat ramp on Ziak-Gnat Creek Rd.	64	229
LCR-33.2M	Welch Island sloughs (OR) 46.25610 -123.48577	Exclusion	Boom 400ft	Yes	Remote Stage at Skamokawa Vista Park, SA-LCR-33.5R	National Wildlife Refuge, Sensitive Wetland Habitat	Boat access only from Skamokawa Vista Park	65	231

Strategy Name	Location	Strategy Type	Boom Length	Boat Req?	Staging Area	Resources At Risk	Comments	Sector Map (Page #)	Strategy Details (Page#)
LCR-33.3M	Welch Island sloughs (OR) 46.25307 -123.48468	Exclusion	Boom 400ft	Yes	Remote Stage at Skamokawa Vista Park, SA-LCR-33.5R	National Wildlife Refuge, Sensitive Wetland Habitat	Boat access only from Skamokawa Vista Park.	65	233
LCR-33.5R	Skamokawa Creek and Brooks Slough (WA) 46.26812 -123.45657	Collection, Exclusion	Boom 600ft	Yes	Onsite Stage at SA-LCR-33.5R, Skamokawa Vista Park	Economic Resource, Wetland Habitat	Site is at Skamokawa Vista Park beach on creek right and private property on creek left. To the extent possible, coordinate with neighbors before deploying strategy.	65	235
LCR-33.7R	Steamboat Slough - (WA) 46.26664 -123.45372	Collection, Diversion	Boom 1000ft	Yes	Onsite Stage at parking lot for hotel. Launch boat from Skamokawa Vista Park, BL-LCR-33.5R.	Shorebird Concentrations, Wetland Habitat, Whitetail Deer Habitat, Wildlife Refuge	Site at hotel with docks and parking area for staging vac truck. Notify hotel operator of any response actions on this property.	65	237
LCR-34.4M	NW entrance to Red Slough (OR) 46.24094 -123.47880	Exclusion	Boom 800ft	Yes	Remote Stage at SA-LCR-33.5R, Skamokawa Vista Park	Emergent Wetlands	Between Welch and Tenasillahe Islands. Boat access only.	65	239
LCR-34.6M	Welch Island sloughs (OR) - east side of island 46.24827 -123.45883	Exclusion	Boom 500ft	Yes	Remote Stage at Skamokawa Vista Park, SA-LCR-33.5R	National Wildlife Refuge, Sensitive Wetland Habitat	Boat access only to sloughs on east side of Welch Island.	65	241

Strategy Name	Location	Strategy Type	Boom Length	Boat Req?	Staging Area	Resources At Risk	Comments	Sector Map (Page #)	Strategy Details (Page#)
LCR-34.7M	Red Slough - NW Tenasillahe Island (OR) 46.23524 -123.47741	Exclusion	Boom 600ft	Yes	Remote Stage at SA-LCR-33.5R, Skamokawa Vista Park	Emergent Wetlands	Boat access only between Welch and Tenasillahe Islands (OR).	65	243
LCR-35.0M	Red Slough- E side of Tenasillahe Island (OR) 46.24289 -123.45164	Exclusion	Boom 800ft	Yes	Remote Stage at SA-LCR-33.5R, Skamokawa Vista Park	Emergent Wetlands	Boat access only, between Welch and Tenasillahe Islands.	65	245
LCR-35.0R	JBH Refuge Levee Breach #1 (WA) 46.25047 -123.43421	Exclusion	Boom 800ft	Yes	Onsite Stage on Steamboat Slough Rd. (road is closed to vehicle traffic).	Shorebird Concentrations, Whitetail Deer Habitat, Wildlife Refuge	Site is where USACE recently (2014) breached old levee to allow flow into wetland area. Breach is ~170yds. across at full bank levels, and there is a channel dug to -2ft. so that it always has water in it.	65	247
LCR-35.3R	JBH Refuge Levee Breach #2 (WA) 46.24624 -123.43134	Exclusion	Boom 800ft	Yes	Onsite Stage on Steamboat Slough Rd. (road is closed to vehicle traffic- contact JBH Refuge for access)	Shorebird Concentrations, Whitetail Deer Habitat, Wildlife Refuge	Site is where USACE recently (2014) breeched old levee to allow flow into wetland area. This levee breach is ~170yds. across at bankfull levels and only has water over it at high tides.	66	249
LCR-35.7R	Steamboat Slough - E end (WA) 46.24415 -123.43014	Collection, Diversion	Boom 800ft	Yes	Onsite Stage onsite in parking/staging area off of Steamboat Slough Rd.	Shorebird Concentrations, Whitetail Deer Habitat, Wildlife Refuge	Collection location at sand beach off of Steamboat Slough Rd. Contact JBH Refuge for access.	66	251

Strategy Name	Location	Strategy Type	Boom Length	Boat Req?	Staging Area	Resources At Risk	Comments	Sector Map (Page #)	Strategy Details (Page#)
LCR-36.0R	Elochoman Slough - N Entrance (WA) 46.23922 -123.42152	Collection, Exclusion	Boom 800ft	Yes	Onsite Stage on Steamboat Slough Rd. (road is closed to vehicle traffic-contact JBH Refuge for access)	Shorebird Concentrations, Whitetail Deer Habitat, Wildlife Refuge	Elochoman Slough runs at about 1-1.5kts. Heavy vegetation and debris on banks.	66	253
LCR-37.2R	Elochoman Slough - middle entrance (WA) 46.22165 -123.41397	Exclusion	Boom 800ft	Yes	Remote Stage at SA-LCR-38.6R, Elochoman Slough Marina	Shorebird Concentrations, Wetland Habitat, Whitetail Deer Habitat, Wildlife Refuge	Current is relatively slow (1-1.5 knots) in slough. Log rafts may be present in this area.	66	255
LCR-37.7M	Tenasillahe Island (OR) 46.21236 -123.45018	Collection, Deflection	Boom 500ft	Yes	Remote Stage at SA-LCR-38.6R, Elochoman Slough Marina	Emergent Wetlands	Boat access only from Elochoman Slough Marina, Cathlamet. Current is 2-4 knots, strong winds. Log rafts may be present in this area.	65	257
LCR-38.2L	Clifton Channel (OR) 46.20789 -123.45253	Collection, Deflection	Boom 500ft	Yes	Remote Stage at SA-LCR-38.6R, Elochoman Slough Marina	Emergent Wetlands	Vehicle access from Clifton Road and railroad access along bank.	65	259
LCR-38.5M	Clifton Channel Mouth North (OR) 46.20333 -123.43492	Deflection	Boom 800ft	Yes	Remote Stage at Elochoman Slough Marina, SA-LCR-38.6R	Emergent Wetlands	Boat access only. Current is 2-4 knots, and strong winds. Log rafts may be present in this area.	65	261

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Strategy Name	Location	Strategy Type	Boom Length	Boat Req?	Staging Area	Resources At Risk	Comments	Sector Map (Page #)	Strategy Details (Page#)
LCR-38.6R	Elochoman Slough - S Entrance (WA) 46.20540 -123.39002	Collection, Exclusion	Boom 800ft	Yes	Onsite Stage at Elochoman Slough Marina, SA-LCR-38.6R	Marsh Habitat, Shorebird Concentrations, Whitetail Deer Habitat, Wildlife Refuge	South entrance of Elochoman Slough at the Elochoman Slough Marina (Cathlamet, WA). Slough runs through large wetland area and Julia Butler Hansen Refuge for the Whitetail Deer.	66	263
LCR-38.8L	Clifton Channel Mouth South (OR) 46.19778 -123.43586	Deflection	Boom 500ft	Yes	Remote Stage at SA-LCR-38.6R, Elochoman Slough Marina	Emergent Wetlands	Current is 2-4 knots, strong winds. Log rafts may be present in this area.	65	265
LCR-40.5M	Puget Island/ Birnie Slough - W end (WA) 46.19466 -123.40031	Collection, Exclusion	Boom 800ft	Yes	Remote Stage and launch from Elochoman Slough Marina, BL-LCR-38.6R	Economic Resource, Houseboats, Recreational Boating	Strategy is at the mouth of Birnie Slough, just downstream from private docks.	67	267
LCR-41.3M	Puget Island/ Welcome Slough (WA) 46.17168 -123.40544	Exclusion	Boom 600ft	Yes	Remote Stage at Svenson Park Boat Launch, SA-LCR-41.8M	Economic Resource	Mouth of Welcome Slough, which has many private homes, docks, and recreational vessels.	67	269
LCR-41.6L	Wauna (OR) 46.15999 -123.40512	Collection	Boom 1000ft	Yes	Onsite Stage onsite at Wauna Mill.	Downstream Habitat, Downstream Resources, National Wildlife Refuge	Site access is through Wauna mill.	67	271

Strategy Name	Location	Strategy Type	Boom Length	Boat Req?	Staging Area	Resources At Risk	Comments	Sector Map (Page #)	Strategy Details (Page#)
LCR-42.5L	Driscoll Slough (OR) (Hanson Slough) 46.15155 -123.39653	Exclusion	Boom 400ft	Yes	Remote Stage at Westport boat ramp, SA-LCR-43.8L. Launch from same BL-LCR-43.8L.	Wetland Habitat	Site is accessed through Wauna Mill. Contact site managers before deploying strategy.	67	273
LCR-43.2L	Westport Slough (OR) 46.14370 -123.38341	Collection, Exclusion	Boom 800ft	Yes	Remote Stage at Westport Boat Ramp, SA-LCR-43.8L	Salmonid Concentrations and Habitat	Site is at mouth of Westport Slough along active ferry route for Cathlamet-Westport ferry.	67	275
LCR-44.0M	Puget Island/ Birnie Slough - E End (WA) 46.17590 -123.35605	Deflection	Boom 500ft	Yes	Remote Stage at SA-LCR-38.6R, Elochoman Slough Marina	Economic Resource, Wetland Habitat	East entrance of Birnie Slough is shoaled and shallow in places. Anchor points will change depending on water level.	67	277
LCR-44.1M	Puget Island/ Birnie Slough - E End (WA) 46.17360 -123.35285	Deflection	Boom 500ft	Yes	Remote Stage at SA-LCR-38.6R, Elochoman Slough Marina	Economic Resource, Wetland Habitat	East entrance of Birnie Slough is shoaled and shallow in places. Anchor points will change depending on water level.	67	279
LCR-44.3M	Puget Island/ Net Rack Slough - (WA) 46.15079 -123.35499	Exclusion	Boom 500ft	Yes	Onsite Stage onsite at private residence	Backwater Habitat, Wetland Habitat	Site is at private residence at mouth of slough. Property owner is Arthur Vick. Make effort to contact with homeowner before deploying strategy.	67	281

Strategy Name	Location	Strategy Type	Boom Length	Boat Req?	Staging Area	Resources At Risk	Comments	Sector Map (Page #)	Strategy Details (Page#)
LCR-45.0M	Puget Island/East End Sloughs/S of Jackson Inlet 46.16441 -123.34156	Exclusion	Boom 300ft	Yes	Remote Stage at SA-LCR-38.6R, Elochoman Slough Marina	Backwater Habitat, Shorebird Concentrations, Wetland Habitat	Boat access only. This is the northernmost of two slough openings.	67	283
LCR-45.2M	Puget Island/East End Sloughs (WA) 46.16176 -123.33794	Exclusion	Boom 500ft	Yes	Remote Stage at SA-LCR-38.6R, Elochoman Slough Marina	Backwater Habitat, Shorebird Concentrations, Wetland Habitat	Boat access only. This is the southernmost of two slough entrances at this location.	67	285
LCR-48.1M	Wallace Island Slough - NW end (OR) 46.14060 -123.27616	Exclusion	Boom 600ft	Yes	Remote Stage at Westport boat ramp, SA-LCR-43.8L. Launch from same BL-LCR-43.8L.	Mudflat Habitat, Waterfowl, Whitetail Deer Habitat	Boat access only. Water depth is likely to be very shallow. When the river is low, booming will likely not be necessary or feasible.	66	287
LCR-48.6M	Wallace Island Slough - SW end (OR) 46.13738 -123.26420	Exclusion	Boom 500ft	Yes	Remote Stage at Westport boat ramp, SA-LCR-43.8L. Launch from same BL-LCR-43.8L.	Mudflat Habitat, Whitetail Deer Habitat, Whitetail Deer Habitat	Boat access only. Water is very shallow in this area and at low water booming may not be feasible or necessary.	66	289
LCR-48.8M	Wallace Island Slough - S center (OR) 46.13720 -123.25141	Exclusion	Boom 500ft	Yes	Remote Stage at Westport boat ramp, SA-LCR-43.8L. Launch from same BL-LCR-43.8L.	Wetland Habitat, Whitetail Deer Habitat, Wildlife Refuge	Boat access only. Water is very shallow in this area. At low water, booming may not be feasible or necessary.	66	291

Strategy Name	Location	Strategy Type	Boom Length	Boat Req?	Staging Area	Resources At Risk	Comments	Sector Map (Page #)	Strategy Details (Page#)
LCR-49.1M	Wallace Island Slough - North center (OR) 46.14255 -123.25016	Exclusion	Boom 400ft	Yes	Remote Stage at Port Westward boat launch, SA-LCR-53.8L. Launch from same BL-LCR-53.8L.	Marsh Habitat, National Wildlife Refuge, Waterfowl, Whitetail Deer Habitat	Boat access only. Water is very shallow. At low water, access to strategy may not be possible.	66	293
LCR-49.7L	Clatskanie River - E side (OR) 46.13935 -123.23099	Exclusion	Boom 600ft	Yes	Remote Stage at Port Westward boat launch, SA-LCR-53.8L. Launch from same BL-LCR-53.8L.	Osprey Nest(s), Salmon Concentrations and Habitat, Wetlands	Site is at the mouth of the Clatskanie River at the Columbia River. May also be referred to as Beaver Slough. Strategy works together with collection at LCR-49.8L.	66	295
LCR-49.8L	Clatskanie River - W side (OR) 46.14176 -123.23053	Collection	Boom 600ft	Yes	Remote Stage at Port Westward boat launch, SA-LCR-53.8L. Launch from same BL-LCR-53.8L.	Osprey Nest(s), Salmon Concentrations and Habitat, Wetlands	Contact property owner before deploying. Site is at the confluence of Clatskanie River with Lower Columbia River and is surrounded by private agricultural property. May also be referred to as Beaver Slough. Strategy works together with exclusion at LCR-49.7L.	66	297
LCR-50.5L	Upstream Wallace Island (OR) 46.14687 -123.22859	Exclusion	Boom 1800ft	Yes	Remote Stage at Port Westward, SA-LCR-53.8L. Launch from same BL-LCR-53.8L.	Osprey Nest(s), Salmon Concentrations and Habitat, Wetlands	Side channel of Columbia River with forested islands	66	299

Strategy Name	Location	Strategy Type	Boom Length	Boat Req?	Staging Area	Resources At Risk	Comments	Sector Map (Page #)	Strategy Details (Page#)
LCR-53.8R	Mill Creek (WA) 46.18850 -123.17569	Collection	Boom 1000ft	Yes	Onsite Stage onsite at large gravel parking area on W side of creek and N side of highway.	Downstream Resources	Strong currents, particularly during outgoing tides, may make collection difficult. Vehicle access from Highway 4 to parking area on west side of creek.	66	301
LCR-54.2R	Abernathy Creek (WA) 46.19092 -123.16740	Exclusion	Boom 300ft	Yes	Remote Stage at Port Westward boat launch, SA-LCR-53.8L. Launch from same BL-LCR-53.8L.	Herons and Other Wading Birds, Salmon Concentrations and Habitat, Sensitive Resources Nearby, Sensitive Shoreline and Back-Beach, Shorebirds	Strategy site has limited vehicle access but is best accessed via boat. Do not use stakes or anchor posts in this area.	69	303
LCR-54.4M	Gull/ Crims Islands - W opening (OR) 46.18419 -123.15950	Exclusion	Boom 500ft	Yes	Remote Stage at Port Westward boat launch, SA-LCR-53.8L. Launch from same BL-LCR-53.8L.	Wetland Habitat	Water in this area is very shallow. At low water, strategy may not be feasible or necessary.	69	305
LCR-55.1M	Crims Island-South Side (OR) 46.17278 -123.15106	Exclusion	Boom 700ft	Yes	Remote Stage at Port Westward boat launch, SA-LCR-53.8L. Launch from same BL-LCR-53.8L.	Mudflat Habitat, Wetlands Restoration Site	Water is very shallow in this area. During low water, strategy may not be feasible or necessary.	69	307

Strategy Name	Location	Strategy Type	Boom Length	Boat Req?	Staging Area	Resources At Risk	Comments	Sector Map (Page #)	Strategy Details (Page#)
LCR-55.3M	Gull Island-North Side (OR) 46.18309 -123.14644	Exclusion	Boom 800ft	Yes	Remote Stage from Willow Grove County Park, SA-LCR-57.8R	Mudflat Habitat, Wetland Habitat	Boat access only. This strategy is only needed during high flow conditions.	69	309
LCR-55.4L	John Slough (OR) 46.16923 -123.14627	Exclusion	Boom 200ft	Yes	Remote Stage at Port Westward boat launch, SA-LCR-53.8L. Launch from same BL-LCR-53.8L.	Wetland Habitat	Best access to this strategy is by boat, but there is limited vehicle access from Kallunki Rd. Water is very shallow in this area. Strategy may not be feasible at low water.	69	311
LCR-55.5M	Gull/Crims Islands - East opening (OR) 46.18175 -123.14447	Exclusion	Boom 400ft	Yes	Remote Stage at Willow Grove County Park, SA-LCR-57.8R	Wetland Habitat	Boat access only. Water is very shallow in this area and access will not be possible during low water. Strategy is only necessary during high water.	69	313
LCR-55.6M	Crims Island Channel (OR) 46.17158 -123.14226	Exclusion	Boom 300ft	Yes	Remote Stage at Port Westward boat launch, SA-LCR-53.8L. Launch from same BL-LCR-53.8L.	Wetland Habitat, Wetlands Restoration Site	Boat access only. This strategy is needed for all water levels.	69	315

Strategy Name	Location	Strategy Type	Boom Length	Boat Req?	Staging Area	Resources At Risk	Comments	Sector Map (Page #)	Strategy Details (Page#)
LCR-55.7R	Germany Creek (WA) 46.18975 -123.12534	Exclusion	Boom 100ft	Yes	Remote Stage at SA-LCR-57.8R, Willow Grove County Park	Osprey Nest(s), Salmonid Concentrations and Habitat, Sensitive Resources, Sensitive Shoreline and Back-Beach	Best access for this strategy is by boat, although there is limited landside access from WA-4. Do not use anchor posts in this area, particularly on east side of creek.	69	317
LCR-55.9R	Coal Creek Slough (WA) 46.18961 -123.11635	Exclusion	Boom 500ft	Yes	Remote Stage at SA-LCR-57.8R, Willow Grove County Park	Slough and Marsh Habitat, Wetland Habitat	Boat access only. Site is at the mouth of Coal Creek Slough.	69	319
LCR-58.7M	Fisher Island/ Hump Island (WA) 46.16916 -123.07608	Exclusion	Boom 800ft	Yes	Remote Stage at SA-LCR-57.8R, Willow Grove County Park	Wetland Habitat	This strategy is most necessary on incoming tide or a strong upriver wind. Boat access only. Water is very shallow in this area for much of the year.	68	321
LCR-58.8R	Fisher Island Slough - W end (WA) 46.17179 -123.07372	Collection	Boom 1000ft	Yes	Remote Stage at SA-LCR-57.8R, Willow Grove County Park	Downstream Resources, Wetland Habitat	Deploy both segments of boom if the strategy will be in place over multiple tidal cycles. Site can be accessed by vehicle via Willow Grove Road, but best access is via boat. Shoulders of road are narrow.	68	323
LCR-58.9M	Fisher Island - W end (WA) 46.17110 -123.07090	Exclusion	Boom 600ft	Yes	Remote Stage at Willow Grove County Park, SA-LCR-57.8R	Wetland Habitat	Boom length required will vary depending on water level in the marsh.	68	325

Strategy Name	Location	Strategy Type	Boom Length	Boat Req?	Staging Area	Resources At Risk	Comments	Sector Map (Page #)	Strategy Details (Page#)
LCR-58.95M	Fisher Island - West End (WA) 46.17043 -123.07205	Deflection	Boom 500ft	Yes	Remote Stage at Willow Grove County Park, SA-LCR-57.8R	Wetland Habitat	Boat access from the ramp at Willow Grove Park.	68	327
LCR-59.8L	Walker Island (OR) 46.15128 -123.06239	Collection	Boom 600ft	Yes	Remote Stage at SA-LCR-57.8R, Willow Grove County Park	Downstream Resources	Boat access only. At 30 feet from shore water is about 25 feet deep. Do not allow people/equipment within 25' of railroad tracks.	68	329
LCR-60.2M	Fisher Island - E end (WA) 46.16526 -123.05029	Exclusion	Boom 700ft	Yes	Remote Stage at SA-LCR-57.8R, Willow Grove County Park	Wetland Habitat	Boat access only. This strategy may be difficult to implement under high flow conditions.	68	331
LCR-64.0M	Lord Island - E end (OR) 46.12177 -122.99828	Collection, Exclusion	Boom 1600ft	Yes	Remote Stage at SA-LCR-57.8R, Willow Grove County Park	Waterfowl Use Area, Wetland Habitat	This strategy may only be feasible during low water and low flow conditions.	68	333
LCR-64.4L	Slaughters Dike (OR) 46.11830 -122.99029	Collection	Boom 600ft	Yes	Onsite Stage at SA-LCR-67.1L, Rainier City Marina. Launch at same BL-LCR-67.1L or from beach onsite.	Downstream Resources	Good vehicle access with sandy beach for recovery.	68	335
LCR-65.9R	Port of Longview (WA) 46.10691 -122.95932	Collection	Boom 700ft	Yes	Remote Stage at Gerhart Gardens Park, SA-CWLZR-1.6	Downstream Resources	Protected area under Lewis and Clark Bridge at the Port of Longview.	70	337

Strategy Name	Location	Strategy Type	Boom Length	Boat Req?	Staging Area	Resources At Risk	Comments	Sector Map (Page #)	Strategy Details (Page#)
LCR-66.2R	Port of Longview (WA) 46.10407 -122.95160	Collection	Boom 800ft	Yes	Onsite Stage onsite at Port of Longview.	Downstream Resources	Vehicle access from Longview to the port docks. Boat access from the Ramp at Willow Grove Park or Rainier.	70	339
LCR-70.0M	Cottonwood Island - E side slough (WA) 46.08176 -122.87675	Exclusion	Boom 600ft	Yes	Remote Stage at Sportsmen's Club, SA-LCR-72.7R	Wetland Habitat	Boat access only. Slough entrance is very shallow.	71	341
LCR-71.4R	Carrolls Channel - S end (WA) 46.05817 -122.86829	Exclusion	Boom 1000ft	Yes	Remote Stage at Sportsmen's Club, SA-LCR-72.7R	Wetland Habitat	Boat access only. Water is shallow with little current.	72	343
LCR-71.5M	Carrolls Channel - S End (WA) 46.05537 -122.87633	Collection	Boom 1400ft	Yes	Remote Stage at SA-LCR-72.7R, Sportsmen's Club	Downstream Habitat, Wetland Habitat	Boat access only. Large beach area.	72	345
LCR-71.6R	Carrolls Channel - S end (WA) 46.05253 -122.87491	Collection, Deflection	Boom 800ft	Yes	Remote Stage at SA-LCR-72.7R, Sportsmen's Club	Downstream Resources, Wetland Habitat	Vehicle access from east shore, Port of Kalama property.	72	347
LCR-73.7L	Goble Creek (OR) 46.02052 -122.87656	Exclusion	Boom 100ft	Yes	Remote Stage at SA-LCR-74.5L, Goble Marina. Launch at same BL-LCR-74.5L.	Salmon Concentrations and Habitat	Railroad tracks and US-30 cross Goble Creek at this site. Salmon habitat. Peak times are Sept - Oct, Apr - May.	71	349
LCR-76.0L	Tide Creek (OR) 45.99420 -122.86667	Exclusion	Boom 1000ft	Yes	Remote Stage at Port of Kalama Marina, SA-LCR-75.2R	Salmon Concentrations and Habitat, Wetland Habitat	Boat access only. Log rafts in area may complicate deployment. Numerous pilings in water.	71	351

Strategy Name	Location	Strategy Type	Boom Length	Boat Req?	Staging Area	Resources At Risk	Comments	Sector Map (Page #)	Strategy Details (Page#)
LCR-78.9R	Mill Creek Outfall 45.95777 -122.80413	Collection	Boom 200ft, Sorbent 200ft	Yes	Remote Stage and launch from Port of Kalama Marina, BL-LCR-75.2R	Canadian Goose Nesting Habitat, Downstream Resources, Waterfowl (Wintering)	Confluence of Mill Creek and Columbia River just downstream of Martin Island. Mill Creek is submerged under I-5 and BNSF tracks and enters river via outfall pipe.	73	353
LCR-79.5R	Martin Island - N end (WA) 45.95598 -122.80060	Exclusion	Boom 800ft	Yes	Remote Stage at Woodland Bottoms, SA-LCR-82.1R	Canadian Goose Nesting Habitat, Waterfowl (Wintering)	Boat access only. Shallow water and pilings at north end of Martin Island.	73	355
LCR-79.8L	Goat Island - N end (OR) 45.94802 -122.82068	Exclusion	Boom 700ft	Yes	Remote Stage at Woodland Bottoms, SA-LCR-82.1R. Launch at same BL-LCR-82.1R.	Geese (Summer), Waterfowl (Wintering)	Boat access only. This strategy is mainly needed if oil is moving upriver due to wind or tidal current.	73	357
LCR-81.0M	Martin Island - S end (WA) 45.93539 -122.79825	Exclusion	Boom 800ft	Yes	Remote Stage at Woodland Bottoms, SA-LCR-82.1R	Geese (Summer), Waterfowl (Wintering)	Boat access only. Need a shallow water skiff. Dredge dump site, very shallow. Pilings in slough prevent access from north.	73	359
LCR-81.2R	Burke Island - S end (WA) 45.92988 -122.79852	Exclusion	Boom 400ft	Yes	Remote Stage at Woodland Bottoms, SA-LCR-82.1R. Launch at same BL-LCR-82.1R.	Geese (Summer), Waterfowl (Wintering)	Boat access only. Use caution around the long row of wood pilings just north of the strategy.	73	361

Strategy Name	Location	Strategy Type	Boom Length	Boat Req?	Staging Area	Resources At Risk	Comments	Sector Map (Page #)	Strategy Details (Page#)
LCR-81.8L	Goat Island - S end (OR) 45.92590 -122.81556	Exclusion	Boom 900ft	Yes	Remote Stage at Woodland Bottoms, SA-LCR-82.1R	Geese (Summer), Waterfowl (Wintering)	Boat access only. Water is shallow with moving sand bars. Amount of boom needed will vary greatly depending on flow conditions.	73	363
LCR-82.4L	Deer Island Slough (OR) 45.91417 -122.81704	Exclusion	Boom 400ft	Yes	Remote Stage at Woodland Bottoms, SA-LCR-82.1R. Launch at same BL-LCR-82.1R.	Creek Habitat, Freshwater Clams, Wetland Habitat	Boat access only. Shallow water and pilings in area. Slough opening will vary greatly in width depending on water flow.	73	365
LCR-85.6M	Goerig Slough (WA) 45.87282 -122.78510	Exclusion	Boom 1000ft	Yes	Remote Stage at St. Helens Marina, SA-LCR-85.8L	Downstream Resources	Pilings are present across the entire channel. Shallow water during summer and fall.	75	367
LCR-85.8M	Goerig Slough (WA) 45.86952 -122.78161	Exclusion	Boom 800ft	Yes	Remote Stage at St. Helens Marina, BL-LCR-85.8L.	Downstream Resources	Boat access from the south only. Piling walls prevent boat access into Goerig Slough. Very shallow during summer and fall.	75	369
LCR-86.2R	Port of Woodland at Austin Point 45.86051 -122.78109	Collection	Boom 800ft	Yes	Onsite Stage onsite on undeveloped sandy beach.	Downstream Resources	Good sandy beach with vehicle access and ability to launch small workboat from shore.	75	371
LCR-87.3R	Gee Creek (WA) 45.84815 -122.77770	Exclusion	Boom 100ft	Yes	Remote Stage at Stevens' Moorage, SA-LEWR-0.4	National Wildlife Refuge, Sensitive Resources Nearby, Wetland Habitat	Boat access only. Will likely require a shallow-draft boat.	75	373

Strategy Name	Location	Strategy Type	Boom Length	Boat Req?	Staging Area	Resources At Risk	Comments	Sector Map (Page #)	Strategy Details (Page#)
LCR-87.5R	Ridgefield NWR/ Bachelor Is. Slough (WA) 45.84418 -122.78059	Deflection	Boom 700ft	Yes	Remote Stage at SA-LKRVR-1.0, Port of Ridgefield	Sensitive Resources Nearby, Waterfowl and Shorebird Concentrations, Wetland Habitat, Wildlife Refuge	North entrance to Bachelor Island Slough/Lake River. Shoreline is heavily vegetated. Sensitive resources in area.	75	375
LCR-87.6R	Ridgefield NWR/ Bachelor Is. Slough (WA) 45.84185 -122.78120	Deflection	Boom 700ft	Yes	Remote Stage at SA-LKRVR-1.0, Port of Ridgefield	Bald Eagle Nesting, Great Blue Heron Rookeries, National Wildlife Refuge, Sandhill Crane (Wintering), Sensitive Resources Nearby, Waterfowl, Wetland Habitat	North entrance to Lake River/Bachelor Island Slough. Boat access only. Will need boat to tend boom due to heavy boat traffic.	75	377
LCR-91.0R	Ridgefield NWR/ Bachelor Is. Slough (WA) 45.79324 -122.77448	Exclusion	Boom 700ft	Yes	Remote Stage at Port of Ridgefield Marina, SA-LKRVR-1.0	Bald Eagle Nests, Great Blue Heron Rookeries, National Wildlife Refuge, Sandhill Crane (Wintering), Sensitive Resources Nearby, Waterfowl, Wetland Habitat	South entrance of Bachelor Island Slough. Boat access only. Oil may collect naturally at this site.	74	379

Strategy Name	Location	Strategy Type	Boom Length	Boat Req?	Staging Area	Resources At Risk	Comments	Sector Map (Page #)	Strategy Details (Page#)
LCR-92.3R	Campbell Lake (WA) 45.78263 -122.76911	Exclusion	Boom 300ft	Yes	Remote SA-LKRVR-1.0 / Lake River	National Wildlife Refuge, Sandhill Crane Roost Area, Sensitive Resources Nearby, Waterfowl, Wetland Habitat	Boat access only. Use ramp at the Ridgefield Marina or St Helens.	74	381
LCR-94.3R	Post Office Lake (WA) 45.75425 -122.75797	Exclusion	Boom 200ft	Yes	Remote Stage at Langsdorf Landing, SA-LCR-97.7R	National Wildlife Refuge, Sensitive Resources Nearby, Waterfowl, Wetland Habitat	Boat access only. Site is adjacent to decommissioned dike road, but it is largely eroded away.	74	383
LCR-94.5L	Willow Bar Island (OR) 45.75319 -122.76813	Collection, Exclusion	Boom 600ft	Yes	Remote Stage at Langsdorf Landing, SA-LCR-97.7R	State Protected Area/Lands, Wetland Habitat	If necessary, site can be accessed land-side from Brown Road on Sauvie Island.	74	385
LCR-94.8R	Ridgefield Levee Breach #1 45.74761 -122.75813	Exclusion	Boom 300ft	Yes	Remote Stage at SA-LCR-97.7R, Langsdorf Landing	Sensitive Resources Nearby, Waterfowl and Shorebird Concentrations, Wildlife Refuge	Site is decommissioned dike road at Ridgefield National Wildlife Refuge where drainage has eroded the road and dike to create breach that could open to Post Office Lake at high water.	74	387

Strategy Name	Location	Strategy Type	Boom Length	Boat Req?	Staging Area	Resources At Risk	Comments	Sector Map (Page #)	Strategy Details (Page#)
LCR-95.0R	Ridgefield Levee Breach #2 45.74477 -122.75804	Exclusion	Boom 500ft	Yes	Remote Stage at SA-LCR-97.7R, Langsdorf Landing	Sensitive Resources Nearby, Waterfowl and Shorebird Concentrations, Wildlife Refuge	Site is decommissioned dike road at Ridgefield National Wildlife Refuge where drainage has eroded the road and dike to create breach that could open to Post Office Lake at high water.	74	389
LCR-97.0R	NW Lower River Road 45.71624 -122.76053	Collection	Boom 500ft	Yes	Remote Stage at SA-LCR-97.7R, Langsdorf Landing.	Downstream Resources, Sensitive Resources Nearby	Property is owned by New Columbia Gardens. Contact for access.	74	391
LCR-97.5R	Caterpillar Island - N end (WA) 45.70888 -122.76006	Exclusion	Boom 400ft	Yes	Remote Stage at Langsdorf Landing, SA-LCR-97.7R	Houseboats, Sensitive Resources Nearby, Wetland Habitat	Site is boat access only. Recreational vessels and houseboats on slough.	74	393
LCR-98.4L	Dairy Creek (OR) 45.69826 -122.77601	Exclusion	Boom 300ft	Yes	Remote Stage at SA-LCR-97.7R	Habitat Restoration Site/Project, Wetland Habitat	Dairy Creek feeds into Sturgeon Lake, which is an important wildlife area. Log jams and debris are present upstream from mouth. At low water, this strategy may not be feasible or necessary.	76	395
LCR-98.6R	Caterpillar Island - S end (WA) 45.69395 -122.76462	Exclusion	Boom 600ft	Yes	Remote Stage at Langsdorf Landing, SA-LCR-97.7R	Sensitive Resources Nearby, Wetland Habitat	Boat access only. Sensitive resources in the vicinity.	76	397

Strategy Name	Location	Strategy Type	Boom Length	Boat Req?	Staging Area	Resources At Risk	Comments	Sector Map (Page #)	Strategy Details (Page#)
LCR-99.9R	Frenchman's Bar Park (WA) 45.67702 -122.76812	Collection	Boom 500ft	Yes	Onsite Stage onsite at Frenchman's Bar Park.	Downstream Resources, Public Recreation Site/Area, Sensitive Resources Nearby	Strategy site is Frenchman's Bar Park. Sandy beach and recreational area with paved parking and vehicle access to river.	76	399
LCR-100.8R	Vancouver Lake/ Flushing Channel (WA) 45.66549 -122.75889	Collection, Exclusion	Boom 1000ft	Yes	Onsite Stage onsite at Frenchman's Bar Park.	Downstream Resources, Sensitive Resources Nearby, Wetland Habitat	Vehicle access from Lower River Road. Boat access from Vancouver or Portland. Notify Environmental Unit when deploying strategies in this area.	76	401
LCR-107.1R	Waterfront Park on SE Columbia Way 45.61485 -122.65596	Collection	Boom 1000ft	Yes	Remote Stage at SA-LCR-108.4R, Marine Park in Vancouver	Economic Resource, Economic Resource, Habitat and Waterfowl, Public Recreation Site/Area	Site is upstream from a public park along SE Columbia Way. Sensitive resources exist in this area. Contact the Environmental Unit for guidance before deploying this strategy.	82	403
LCR-108.4R	Marine Park Boat Ramp - upstream of Ryan Point 45.61164 -122.63282	Collection	Boom 800ft	Yes	Onsite Marine Park Boat Ramp, Vancouver, SA-LCR-108.4R	Downstream Resources	Marine Park Boat Ramp access via Marine Parkway.	82	405
LCR-109.1R	Marine Park wetland (WA) 45.61276 -122.62344	Exclusion	Boom 800ft	Yes	Remote Stage at Marine Park, SA-LCR-108.4R	Economic Resource, Freshwater Wetlands	Site is directly to the east of Marine Park in Vancouver and to the south of the Water Resources Education Center.	82	407

Strategy Name	Location	Strategy Type	Boom Length	Boat Req?	Staging Area	Resources At Risk	Comments	Sector Map (Page #)	Strategy Details (Page#)
LCR-109.6R	Wintler Park (WA) 45.61028 -122.61143	Collection	Boom 500ft	Yes	Remote Marine Park Boat Ramp, SA-LCR-108.4R	Downstream Resources	Boat access from the ramp at Marine Park. Vehicle access off of Highway 14.	82	409
LCR-111.0R	Hillcrest Community Club Park (WA) 45.60498 -122.58069	Collection	Boom 900ft	Yes	Onsite Stage onsite at community park.	Downstream Resources, Economic Resource, Economic Resource, Habitat and Waterfowl, Public Recreation Site/Area	Site is a private park owned by the Hillcrest Community Club. Gate is unlocked, but access is restricted to community members and guests.	82	411
LCR-113.3M	Government Island Slough (OR) 45.58530 -122.54299	Exclusion	Boom 500ft	Yes	Remote Stage at SA-LCR-109.4L, M. James Gleason Memorial Boat Ramp. Launch from same BL-LCR-109.4L.	Critical Waterfowl Area, Wetland Habitat	Length of boom needed will vary depending on water level.	82	413
LCR-113.8R	Steamboat Landing (WA) 45.59237 -122.52786	Deflection, Exclusion	Boom 800ft	Yes	Remote Stage at SA-LCR-109.4L, M. James Gleason Memorial Boat Ramp. Launch from same BL-LCR-109.4L	Boat Basin/Marina, Marina, Sensitive Resources Nearby	Boat access from Vancouver or Portland, land access from SE Evergreen Highway. There is a strong eddy which moves water east (upriver) along the shoreline.	82	415

Strategy Name	Location	Strategy Type	Boom Length	Boat Req?	Staging Area	Resources At Risk	Comments	Sector Map (Page #)	Strategy Details (Page#)
LCR-114.8M	Jewit Lake Intake (OR) 45.58176 -122.50987	Exclusion	Boom 100ft	Yes	Remote Stage at SA-LCR-109.4L, M. James Gleason Memorial Boat Ramp. Launch from same BL-LCR-109.4L	Lake Habitat	Site is just downriver from Port of Portland Government Island dock. Boat access only from Vancouver or Portland. Water enters Jewit Lake through weir only during high river flow.	82	417
LCR-115.0R	Fisher's Landing (WA) 45.58689 -122.50429	Exclusion	Boom 600ft	Yes	Remote Stage from Chinook Landing Marine Park, SA-LCR-118.5L. Launch from same BL-LCR-118.5L.	Fish and Wildlife Resources, Sensitive Resources	Site is at rocky promontory. Sensitive resources exist at this site. Use only trees or driftwood for natural anchors. Do not anchor using boulders or anchor posts. Contact Environmental Unit for guidance.	82	419
LCR-115.7R	Gentry's Landing (WA) 45.58495 -122.49015	Deflection	Boom 1200ft	Yes	Remote Stage at Chinook Landing Marine Park, SA-LCR-118.5L. Stage at same BL-LCR-118.5L.	Downstream Habitat, General Fish and Wildlife Resources, Sensitive Resources	Sensitive resources exist at this site. Use docks or trees for natural anchors. Do not anchor using boulders or anchor posts. Contact Environmental Unit for guidance.	82	421
LCR-116.9R	Sentry Gravel Pit (WA) 45.58030 -122.46173	Collection	Boom 400ft	Yes	Remote Stage at SA-LCR-118.5L, Chinook Landing Marine Park. Launch from same BL-LCR-118.5L.	Downstream Habitat, Sensitive Resources Nearby	Site is west of private residence. Make contact with neighbors before deploying strategy.	82	423

Strategy Name	Location	Strategy Type	Boom Length	Boat Req?	Staging Area	Resources At Risk	Comments	Sector Map (Page #)	Strategy Details (Page#)
LCR-119.1R	Camas Slough (WA) 45.57510 -122.43349	Collection, Deflection	Boom 1400ft	Yes	Remote Stage at SA-LCR-118.5L, Chinook Landing Marine Park. Launch from same BL-LCR-118.5L.	Downstream Resources, Walleye Spawning Area	Boat access from the Port of Camas. Vehicle access from Highway 14, contact Georgia Pacific Camas mill at 360-834-3021. At low flow, it is possible to boom off Camas Slough to prevent transfer of oil in or out of the slough.	83	425
LCR-119.8R	Camas Slough - E of Hwy-14 (WA) 45.57931 -122.41695	Collection	Boom 1600ft	Yes	Remote Stage at SA-LCR-118.5L, Chinook Landing Marine Park. Launch from same BL-LCR-118.5L.	Downstream Resources	Boat access from the Port of Camas. Vehicle access from Highway 14, contact the Georgia Pacific Camas mill at 360-834-3021 for access.	83	427
LCR-120.6R	Mouth of Washougal River (WA) 45.57635 -122.40261	Collection, Exclusion	Boom 1200ft	Yes	Remote Stage at Port of Camas, SA-LCR-121.6R	Downstream Resources, Salmonid Concentrations and Habitat, Walleye Spawning Area	Main current and channel run along the Lady Island shoreline. Water to the NE of the small island is very shallow.	83	429
LCR-124.7R	Cottonwood Beach Park (WA) 45.56051 -122.33326	Diversion	Boom 800ft	Yes	Onsite Stage onsite at Cottonwood Beach Park	County Park, Economic Resource, Recreational Use Area	Site is a beach park and waterfront trail with a natural outcropping to the southeast that can be used to divert oil into the main channel. Deploy only at low water when beach is exposed.	83	431

Strategy Name	Location	Strategy Type	Boom Length	Boat Req?	Staging Area	Resources At Risk	Comments	Sector Map (Page #)	Strategy Details (Page#)
LCR-126.2R	Gibbons Creek at Columbia River (FBS MP-29.75) 45.55905 -122.30139	Containment	Boom 100ft	No	Remote Stage at Rooster Rock State Park, SA-LCR-128.9L. Launch from same BL-LCR-128.9L.	Downstream Habitat, Freshwater Wildlife	Notify USFWS (Steigerwald Lake National Wildlife Refuge) at 360-607-2698, 360-835-8767, or 360-887-4106.	83	433
LCR-128.0R	Lawton Creek at Columbia River (WA) (FBS MP-31.4) 45.55548 -122.26756	Collection, Exclusion	Boom 1100ft	Yes	Remote Stage at Rooster Rock State Park, SA-LCR-128.9L. Launch from same BL-LCR-128.9L	Downstream Habitat, Freshwater Wildlife, Sensitive Resources Nearby	Site is creek outfall and natural outcropping on Columbia River. Water level varies widely here.	83	435
LCR-131.0R	Near Cape Horn N of Sand Island (FBS MP-34.0) 45.56321 -122.20827	Collection	Boom 800ft	Yes	Remote Stage at Rooster Rock State Park, SA-LCR-128.9L. Launch from same BL-LCR-128.9L.	Downstream Habitat, Freshwater Wildlife, Sensitive Resources Nearby	Site is at outcropping adjacent to BNSF railroad where it runs along the banks of the Columbia River.	83	437
LCR-137.0R	Franz Lake (WA) 45.59999 -122.10654	Exclusion	Boom 300ft	Yes	Remote Stage at Dalton Point (Rooster Rock State Park), SA-LCR-133.7L. Launch from same BL-LCR-133.7L.	Bald Eagle Nesting, National Wildlife Refuge, Salmon Concentrations and Habitat, Wintering Waterfowl	Site is at opening to Franz Lake, which is a National Wildlife Refuge. Opening will appear to be a creek or slough.	84	439

Strategy Name	Location	Strategy Type	Boom Length	Boat Req?	Staging Area	Resources At Risk	Comments	Sector Map (Page #)	Strategy Details (Page#)
LCR-138.0L	Horsetail / Oneonta Creeks (OR) 45.59176 -122.07642	Exclusion	Boom 100ft	Yes	Remote Stage at Dalton Point (Rooster Rock State Park), SA-LCR-133.7L. Launch from same BL-LCR-133.7L.	Salmon Concentrations and Habitat, Sensitive Nesting Species	Site is culvert opening to Oneonta and Horsetail Creeks which runs under I-84.	84	441
LCR-138.2R	Franz Lake (WA) (FBS MP-41.0) 45.60291 -122.08386	Exclusion	Boom 100ft	Yes	Onsite Stage onsite at Franz Lake viewpoint on WA-14.	Downstream Habitat, Freshwater Wildlife	Rail MP-41.0. Site is USFWS National Wildlife Refuge (Franz Lake Wildlife Refuge). Contact Refuge at 360-607-2698, 360-835-8767, or 360-887-4106. Water levels may affect access; lake is shallow. Without permission from BNSF, do not allow people/ equipment within 25' of track.	84	443
LCR-140.3R	McGowans Channel (WA) (FBS MP-43.3) 45.61512 -122.03989	Collection, Exclusion	Boom 200ft	Yes	Onsite Stage onsite at boat ramp.	Downstream Habitat, Freshwater Wildlife, Sensitive Resources Nearby	Rail MP-43.3. Boat ramp on-site, approx. 1000ft. from strategy location. Requires permission from Skamania Landing Owners Association.	84	445
LCR-141.4R	Hardy Slough/ Creek (WA) 45.62627 -122.01710	Exclusion	Boom 500ft	Yes	Onsite Stage onsite at SA-LCR-141.2R, Beacon Rock State Park	Salmon Concentrations and Habitat, Salmon Spawning Creek, Wildlife Refuge	Site is at the mouth of Hardy Slough in the vicinity of Beacon Rock State Park.	84	447

Strategy Name	Location	Strategy Type	Boom Length	Boat Req?	Staging Area	Resources At Risk	Comments	Sector Map (Page #)	Strategy Details (Page#)
LCR-142.4R	Channel between Ives and Pierce Islands (WA) 45.62050 -121.99782	Deflection	Boom 400ft	Yes	Remote Stage at SA-LCR-141.2R, Beacon Rock State Park	Sensitive Resources, State Park, Wetland Habitat	Site is channel between Pierce and Ives Islands. Currents can be swift in this location.	84	449
LCR-143.4R	Hamilton Island (WA) 45.62693 -121.98015	Deflection	Boom 700ft	Yes	Onsite Stage onsite at parking lot at the end of Fort Cascade Drive on Hamilton Island.	Downstream Resources, Salmon Spawning Creek, Sensitive Resources, State Park	This strategy may not be feasible if the water flow is too high or the current too strong. This strategy is only necessary if there is water flowing between Hamilton and Ives Islands. River conditions in this location are solely dependent on dam operations.	84	451
LCR-144.9L	Bonneville Dam Navigation Locks (OR) 45.63664 -121.95187	Collection	Boom 600ft	Yes	Remote Stage at SA-LCR-144.3R	Fish and Wildlife Resources, Salmon Habitat, State Park	Site is below Bonneville Dam locks. There is minimal current in the channel.	84	453
LEWR-0.35	Lewis River (B) (WA) 45.85718 -122.77556	Collection	Boom 600ft	Yes	Onsite Stage onsite at Stevens' Moorage, SA-LEWR-0.4	Downstream Resources, Wetland Habitat	Site is accessed through Stevens' Moorage boat ramp and RV park. Contact property owner before launching boat and deploying strategy.	75	455
LEWR-0.4	Lewis River (A) (WA) 45.85811 -122.77383	Collection	Boom 600ft	Yes	Onsite Stage onsite at Stevens' Moorage, SA-LEWR-0.4	Downstream Resources, Wetland Habitat	Site access is through Stevens' Moorage, a privately owned boat launch and RV park. Contact manager before deploying strategy.	75	457

Strategy Name	Location	Strategy Type	Boom Length	Boat Req?	Staging Area	Resources At Risk	Comments	Sector Map (Page #)	Strategy Details (Page#)
LKRVR-10.8	Lake River - Felida Moorage 45.70572 -122.72207	Exclusion	Boom 800ft	Yes	Onsite Stage onsite in parking area for moorage and boat launch.	Downstream Resources, Federally Protected Area/Lands, Houseboats, Migratory Bird Populations, Sensitive Resources Nearby, Waterfowl Concentrations	Privately-owned houseboat moorage and boat ramp at 122nd Street in Vancouver. River is tidally-influenced and flows out of Vancouver Lake.	76	461
MC-0.1	Multnomah Channel entrance (OR) 45.61638 -122.79307	Collection	Boom 2000ft	Yes	Remote Stage at Fred's Marina, SA-MC-1.0. Launch from same, BL-MC-1.0.	Cranes, Eagle Winter Feeding Area, Marsh, Shorebirds, Waterfowl	Site is at south entrance to Multnomah Channel. New restoration site on north side of channel. Houseboats and marina with private vessels to the west.	77	463
MC-0.2	Willamette River Entrance to Sauvie Island 45.62076 -122.79547	Exclusion	Boom 700ft	Yes	Remote Stage at Fred's Marina, SA-MC-1.0. Launch from same, BL-MC-1.0.	Cranes, Eagle Winter Feeding Area, Marsh, Shorebirds, Shorebirds, Waterfowl	Site is at north entrance to Multnomah Channel. New restoration site on N end of channel (tip of Sauvie Island) and marina with private vessels to the west.	77	465
MC-0.4	Multnomah Channel - Sauvie Island Restoration Site 45.62020 -122.80048	Exclusion	Boom 500ft	Yes	Remote Stage at Fred's Marina, SA-MC-1.0. Launch from same, BL-MC-1.0.	Habitat Restoration Site/Project, Waterfowl and Salmonid Concentrations and Habitat	Multnomah Channel at entrance to new restoration site on Sauvie Island. Across river from marina with private vessels and houseboats along south shore of channel.	77	467

Strategy Name	Location	Strategy Type	Boom Length	Boat Req?	Staging Area	Resources At Risk	Comments	Sector Map (Page #)	Strategy Details (Page#)
MC-0.5	Multnomah Channel Moorages 45.61907 -122.80168	Deflection	Boom 1000ft	Yes	Remote Stage at Fred's Marina, SA-MC-1.0. Launch from same, BL-MC-1.0.	Downstream Resources, Houseboats, Marina, Wildlife Refuge	Site is at south entrance to Multnomah Channel. Restoration site to the north and marina with houseboats and private vessels to the west.	77	469
MC-1.5	Multnomah Channel - Sauvie Isl. Bridge 45.62842 -122.81695	Collection	Boom 1000ft	Yes	Remote Stage at Fred's Marina, SA-MC-1.0. Launch from same, BL-MC-1.0.	Cranes, Eagle Winter Feeding Area, Houseboats, Marsh, Shorebirds, Sturgeon, Waterfowl	Gate access to levee on channel right just off bus station parking lot at NW Sauvie Island Rd and NW Gillihan.	77	471
OWLCK-1.8	Owl Creek 46.09101 -122.87121	Culvert Block	Boom 100ft, Sorbent 100ft	No	Onsite Stage onsite at gravel access road.	Downstream Resources, Wetland Habitat	Site is access through restricted access road to railroad and industrial sites.	71	473
SIL-0.4	Swan Island Lagoon (OR) 45.56993 -122.72417	Exclusion	Boom 800ft	Yes	Remote Stage at Swan Island Boat Ramp, SA-WR-8.0R	Downstream Resources	Do not allow people/equipment within 25' of track. Military and commercial activity. Site is at mouth of channel at north side of Port of Portland at Swan Island.	79	475
SIL-0.8	Swan Lagoon - Mocks Bottom Outfall (OR) 45.56788 -122.71607	Containment	Boom 100ft	Yes	Remote Stage at Swan Island Boat Ramp, BL-WR-8.0R	Downstream Resources	Site is at Port of Portland Dredge Base Property and NRC Office Property.	79	477

Strategy Name	Location	Strategy Type	Boom Length	Boat Req?	Staging Area	Resources At Risk	Comments	Sector Map (Page #)	Strategy Details (Page#)
WAL-1.0	Wallooskee River at bridge (OR) 46.14899 -123.79864	Collection, Exclusion	Boom 500ft	Yes	Remote Stage at Astoria East Mooring Basin, SA-LCR-15.8L. Launch from same, BL-LCR-15.8L.	Crustaceans, Great Blue Heron Rookeries, Marine Fisheries, Salmon, Sensitive Nesting Species, Sturgeon, Waterfowl	Site is best accessed by boat, although there is landside access via Highway 202. Highway has no shoulders for safe access.	63	479
WASHR-1.9	Sandy Swimming Hole (WA) 45.58828 -122.36690	Collection	Boom 300ft	Yes	Onsite Stage onsite at Sandy Swimming Hole	Downstream Resources, Economic Resource, Wetland Habitat	Site is a well-known public swimming hole in Washougal. There is a natural back-eddy to facilitate collection of oil. Small parking area and vehicle access to water down gated ramp. Contact City of Washougal for access.	83	481
WPPLC-0.8	Whipple Creek at NW Krieger Road (WA) 45.75366 -122.74368	Sorbent	Sorbent 200ft	No	Onsite Stage truck (no trailers) on shoulder of road at pullout located about 200ft north of creek.	Salmon - Coho, Sensitive Resources Nearby, Steelhead, Waterfowl and Shorebird Concentrations, Wetland Habitat, Wildlife Refuge	Do not allow people or equipment within 25' of railroad tracks. May be able to temporarily park equipment trailer at Clark County Sheriff's Office (West Precinct), 505 NW 179th Street, ~3.3mi from strategy site near I-5; call 360-397-2211.	74	483

Strategy Name	Location	Strategy Type	Boom Length	Boat Req?	Staging Area	Resources At Risk	Comments	Sector Map (Page #)	Strategy Details (Page#)
WR-0.9R	Columbia Slough (Smith & Bybee Lakes) (OR) 45.64388 -122.76888	Exclusion	Boom 700ft	Yes	Remote Stage at SA-MC-1.0, Fred's Marina. Launch at same BL-MC-1.0.	Wetlands Restoration Site	Boat access only. Boom length required will vary with water levels; min 400' for lower water flow, maximum 1000ft.	76	485
WR-3.7R	International Terminals Slip (OR) 45.61101 -122.78374	Collection	Boom 800ft	Yes	Remote Stage at SA-MC-1.0 Fred's Marina; launch from same BL-MC-1.0.	Downstream Resources	Strategy is collection in dredged channel on east bank of the Willamette River near Port of Portland.	77	487
WR-3.8L	Owens Corning Dock (OR) 45.60868 -122.78805	Collection	Boom 800ft	Yes	Remote Stage at SA-MC-1.0 Fred's Marina; launch from same BL-MC-1.0.	Downstream Resources	Active industrial sites on both banks of the river in this location. Significant commercial and industrial activity.	77	489
WR-4.2R	Port of Portland Terminal 4 - Slip 3 North 45.60388 -122.77956	Collection	Boom 800ft	Yes	Remote Stage at SA-WR-5.8R Cathedral Park; launch from same BL-WR-5.8R.	Downstream Resources	Strategy is collection at dredged channel at Port of Portland.	77	491
WR-4.3R	Port of Portland Terminal 4 - Slip 3 South 45.60362 -122.77820	Exclusion	Boom 600ft	Yes	Remote Stage at SA-WR-5.8R Cathedral Park; launch from same BL-WR-5.8R.	Downstream Resources	Port of Portland	77	493

Strategy Name	Location	Strategy Type	Boom Length	Boat Req?	Staging Area	Resources At Risk	Comments	Sector Map (Page #)	Strategy Details (Page#)
WR-4.5R	Port of Portland Terminal 4 - Berth 412 (OR) 45.59844 -122.77606	Collection	Boom 800ft	Yes	Remote Stage at SA-WR-5.8R Cathedral Park; launch from same BL-WR-5.8R.	Downstream Resources	Strategy is collection at southern tip of	77	495
WR-5.8R	St. John's Bridge East (OR) 45.58805 -122.76628	Collection	Boom 800ft	Yes	Onsite Stage at Cathedral Park, SA-WR-5.8R.	Downstream Resources	Strategy site is just downstream of Cathedral Park, on the Willamette River.	77	497
WR-5.9L	Riverside Industrial Park (OR) 45.58566 -122.76724	Collection	Boom 800ft	Yes	Remote Stage at Cathedral Park, SA-WR-5.8R	Downstream Resources	Strategy is collection at active industrial facility. Large vessels and barges may be present.	77	499
WR-6.9L	BNRR Bridge - West End (OR) 45.57556 -122.74806	Collection	Boom 800ft	Yes	Remote Stage at Swan Island Boat Ramp, SA-WR-8.0R	Downstream Resources	Best access is by boat; shoreside access is limited by private property.	77	501
WR-6.9R	McCormick & Baxter Restoration Site (OR) 45.57689 -122.74228	Exclusion	Boom 2000ft	Yes	Remote Stage at Cathedral Park, SA-WR-5.8R	Habitat Restoration Site/Project	Boat access only. Shoreside access limited by private property.	77	503
WR-7.4R	Triangle Park Slip (OR) 45.57325 -122.73762	Collection	Boom 800ft	Yes	Remote Stage at Swan Island Boat Ramp, SA-WR-8.0R	Downstream Resources	Strategy is SE of shoreline restoration site and is a natural collection point.	79	505
WR-7.5L	Elf Atochem Dock (OR) 45.56900 -122.73904	Collection	Boom 800ft	Yes	Remote Stage at Swan Island Boat Ramp, SA-WR-8.0R	Downstream Resources	Strategy could be extended to enclose the Portland Tanker Basin as containment.	79	507

Strategy Name	Location	Strategy Type	Boom Length	Boat Req?	Staging Area	Resources At Risk	Comments	Sector Map (Page #)	Strategy Details (Page#)
WR-12.2R	Steel Bridge (OR) 45.52776 -122.66748	Exclusion	Boom 300ft	Yes	Remote Stage at Swan Island Boat Ramp, SA-WR-8.0R	Downstream Resources	Do not allow people/equipment within 25ft. of track. Site is at intersection of railroad and highway. Shoreside access is possible, but best access is by boat.	78	509
WR-12.7R	Eastbank Esplanade Outfalls (OR 45.52692 -122.66631	Collection	Boom 400ft	Yes	Remote Stage at Swan Island Boat Ramp, SA-WR-8.0R	Downstream Resources	Do not allow people/equipment within 25ft. of railroad track. I-5 underdeck slopes to river at this location; Walkways and floating decks are present at Eastbank Esplanade.	78	511
WR-13.4L	River Place Marina (OR) 45.50941 -122.67133	Deflection	Boom 800ft	Yes	Remote Stage at SA-WR-13.9R Ross Island Sand & Gravel; launch from same BL-WR-13.9R.	Marina	Site is at heavily used marina with significant recreational traffic.	80	513
WR-13.4R	OMSI - Marquam Bridge (OR) 45.50943 -122.66755	Collection	Boom 500ft	Yes	Remote Stage at SA-WR-13.9R Ross Island Sand & Gravel; launch from same BL-WR-13.9R.	Downstream Resources	Site is at Marquam Bridge, across the river from the River Place Marina.	80	515

Strategy Name	Location	Strategy Type	Boom Length	Boat Req?	Staging Area	Resources At Risk	Comments	Sector Map (Page #)	Strategy Details (Page#)
WR-13.5R	OMSI Docks (OR) 45.50780 -122.66694	Exclusion	Boom 600ft	Yes	Remote Stage at Ross Island Sand & Gravel, SA-WR-13.9R	Economic Resource	Site is intended to protect historic submarine at OMSI and accompanying docks. There will likely be pedestrian traffic in the area.	80	517
WR-14.1L	Zidell Yard (OR) 45.49937 -122.66672	Collection	Boom 500ft	Yes	Onsite Stage onsite at Zidell Marine Shipyard (SA/BL-WR-14.1L)	Downstream Resources	Site is at Zidell shipbuilding yard.	80	519
WR-14.7R	Ross Island E Channel (OR) 45.49093 -122.65830	Collection	Boom 900ft	Yes	Remote Stage at Ross Island Sand & Gravel, SA-WR-13.9R; launch from same BL-WR-13.9R.	Downstream Resources, Osprey Nest(s)	Ross Island Sand & Gravel has boat ramp/ house on property at 4315 S.E. McLoughlin Blvd. (503) 239-5504.	80	521
WR-14.9L	Ross Island W Channel (OR) 45.48820 -122.67102	Collection	Boom 500ft	Yes	Remote Stage at SA-WR-14.1L Zidell Shipyard; launch from same BL-WR-14.1L.	Downstream Resources	Strategy may be accessed shoreside via paved riverwalk. There may be pedestrian traffic present.	80	523
WR-15.5M	Ross Island W Channel (OR) 45.47858 -122.66448	Deflection	Boom 1000ft	Yes	Remote Stage at Willamette Park, SA-WR-15.6L	Shallow Water Habitat	Boat access only. Strategy is at southernmost tip of Ross Island.	80	525
WR-15.9R	Ross Island E Channel (OR) 45.47750 -122.65728	Exclusion	Boom 100ft	Yes	Remote Stage at Willamette Park, SA-WR-15.6L	Recreational Use Area, Waterfowl Feeding Area, Wetland Habitat	Site is at Oaks Bottom Wildlife Refuge and Springwater Trail Levee	80	527

Strategy Name	Location	Strategy Type	Boom Length	Boat Req?	Staging Area	Resources At Risk	Comments	Sector Map (Page #)	Strategy Details (Page#)
WR-18.4R	Johnson Creek (OR) 45.44428 -122.64419	Exclusion	Boom 600ft	Yes	Remote Stage from Milwaukie Riverfront Park SA-WR-18.5R; launch from same BL-WR-18.5R.	Fall Salmon (Chinook), Salmon Trout Enhancement Program Area, Sensitive Resources, Winter Steelhead	Launch from BL-WR-18.5R	78	529
WR-18.5R	Kellogg Creek (OR) 45.44174 -122.64332	Exclusion	Boom 300ft	Yes	Onsite Stage onsite at parking area near creek mouth or Milwaukie Park.	Fall Salmon (Chinook), Fish Ladder(s), Salmon - Coho, Sensitive Resources, Winter Steelhead	Site is operated by Clackamas Water Environment Services - Kellog Creek Sewage Treatment Plant	78	531
WR-23.6L	Cedar Island (OR) 45.38488 -122.62470	Exclusion	Boom 500ft	Yes	Remote Stage at SA-WR-23.1L, Cedaroak Boat Ramp, launch at same BL-WR-23.1L.	Osprey, Shallow Water Habitat, Turtles		81	533
WR-23.8L	Unnamed Slough near Bolton (OR) 45.38013 -122.62227	Exclusion	Boom 1300ft	Yes	Remote Stage at SA-WR-24.2R Meldrum Bar Park, launch from same BL-WR-24.2R.	Shallow Water Habitat	Boat access only. Beware of floating dock adjacent to strategy location.	81	535

Strategy Name	Location	Strategy Type	Boom Length	Boat Req?	Staging Area	Resources At Risk	Comments	Sector Map (Page #)	Strategy Details (Page#)
WR-23.9R	Meldrum Slough (OR) 45.37891 -122.61734	Exclusion	Boom 100ft	Yes	Remote Stage at SA-WR-24.2R Meldrum Bar Park, launch from same BL-WR-24.2R.	Waterfowl, Wetland Habitat	Boat access only. Strategy is at the southern opening to Meldrum Slough.	81	537
WR-25.5R	Abernethy Creek Outfall (OR) 45.36482 -122.60212	Collection, Exclusion	Boom 100ft	No	Onsite Stage onsite at Sportcraft Marina.	Downstream Resources, Sensitive Resources	Strategy is at Sportcraft Marina, which has a boat ramp, parking area, and a marina with covered slips. Outfall is a culvert.	81	539
WR-25.9R	Hwy 43 Bridge (OR) 45.35958 -122.60723	Collection	Boom 1000ft	Yes	Remote Stage at SA-WR-25.4R, Sportcraft Marina. Launch at same BL-WR-25.4R.	Downstream Resources	Collection point is under Highway 99 viaduct.	81	541
WR-26.1L	Falls Locks (OR) 45.35777 -122.61239	Containment	Boom 200ft	Yes	Remote Stage at SA-WR-25.4R, Sportcraft Marina. Launch at same BL-WR-25.4R.	Downstream Resources	Approximately 100 feet of boom is present at the dam facility (as of 10/3/2013) to keep floating debris from backing into locks. There is an eddy and slack water in this area when the locks are closed.	81	543
YOR-3.3R	Youngs River Fish Pens #1 (OR) 46.17016 -123.83728	Exclusion	Boom 1600ft	Yes	Remote Stage at Astoria East Mooring Basin, SA-LCR-15.8L. Launch from same, BL-LCR-15.8L.	Salmon	Strategy is intended to protect fish pens. Water is shallow and shoaled here.	63	545

Strategy Name	Location	Strategy Type	Boom Length	Boat Req?	Staging Area	Resources At Risk	Comments	Sector Map (Page #)	Strategy Details (Page#)
YOR-3.6L	Cook Slough (OR) 46.16188 -123.83116	Exclusion	Boom 100ft	Yes	Onsite Stage onsite from Wireless Road.	Wetland Habitat	Site is accessed through private property. Make contact with land owner before deploying strategy.	63	547
YOR-4.0R	Youngs River Fish Pens #2 (OR) 46.17106 -123.82487	Exclusion	Boom 800ft	Yes	Remote Stage at Astoria East Mooring Basin, SA-LCR-15.8L. Launch from same, BL-LCR-15.8L.	Economic Resource, Salmon	Entrance to Youngs River can be shallow at low water.	63	549
YOR-4.1R	Youngs River Fish Pens #3 (OR) 46.17052 -123.82273	Exclusion	Boom 800ft	Yes	Remote Stage at Astoria East Mooring Basin, SA-LCR-15.8L. Launch from same, BL-LCR-15.8L.	Economic Resource, Salmon	Mouth of Youngs River can be shallow at low water.	63	551

4.5.3 Notification Strategy Matrices

Strategy Name	Location	Strategy Type	Resources at Risk	Implementation	Comments	Sector Map (Page #)	Strategy Details (Page#)
BURRC-0.05-N	Burris Creek Lift Station (WA) 45.93911 -122.78471	Notification	Downstream Resources, Economic Resource	Call Consolidated Diking Improvement District No. 2 of Cowlitz County (CDID #2) at 360-225-8935 or 360-772-3246 and notify them of spills in the area that might impact Burris Creek and the lift stations.	Notify Consolidated Diking Improvement District #2 (CDID #2) of spills that could impact the lift stations on Burris Creek.	73	557
CHINR-0.3-N	Chinook River Tide Gates (WA) 46.30397 -123.96693	Notification	Habitat Restoration Site/Project, Wetland Habitat	Call WDFW Project Manager and notify of a spill potentially impacting the Chinook River. They will initiate internal notifications, close tide gates if deemed necessary, and take actions to protect resources under their control.	Call WDFW to request that they close the tide gates at the Chinook River Bridge.	63	559
LCR-19.0L-N	Clatsop Community College Dock Fish Pen 46.18991 -123.74803	Notification	Fish Pens, Salmon - Chinook, Salmon - Coho	Call Clatsop County Fisheries Management at 503-325-6452 and inform them that a spill has occurred.	Notify Clatsop County Fisheries Management/ODFW of spills that could impact Tongue Point Fish Pens	64	561
LCR-29.0L-N	Blind Slough Net Pens 46.20335 -123.54442	Notification	Fish Pens, Salmon - Chinook, Salmon - Coho	Call Clatsop County Fisheries Management at 503-325-6452 and inform them that a spill has occurred.	Notify Clatsop County Fisheries Management/ODFW of spills that could impact Blind Slough Fish Pens	64	563

Strategy Name	Location	Strategy Type	Resources at Risk	Implementation	Comments	Sector Map (Page #)	Strategy Details (Page#)
LCR-42.4L-N	Georgia Pacific Wauna Mill 46.15229 -123.39783	Notification	Water Intakes	Call Georgia Pacific at 503-455-3271 and inform them that a spill has occurred.	Notify Georgia Pacific of spills that could impact their water intake at Wauna Mill.	67	565
LCR-53.8L-N	Port of St. Helens - Point Westward 46.18190 -123.17602	Notification	Water Intakes	Call Port of St. Helens at 971-203-9733 and inform them that a spill has occurred.	Notify Port of St. Helens of spills that could impact their industrial well and water intake at Point Westward.	66	567
LCR-55.1L-N	PGE Beaver Generating Facility 46.17181 -123.15790	Notification	Water Intakes	Call Portland General Electric (PGE) at 503-728-7211 and inform them that a spill has occurred.	Notify PGE of spills that could impact their industrial water intake at the Beaver Generating Facility near Port Westward.	69	569
LCR-67.8L-N	City of Rainier Water Intake 46.09021 -122.93332	Notification	Water Intakes	Call City of Rainier at 503-410-2180 and inform them that a spill has occurred.	Notify City of Rainier of spills that could impact their municipal water intake on the Columbia River.	70	571
LCR-71.5L-N	City of Prescott 46.03849 -122.88782	Notification	Water Intakes	Call City of Prescott at 503-397-1744 and inform them that a spill has occurred.	Notify City of Prescott of spills that could impact their municipal well near the Columbia River/rail line.	72	573
LCR-73.1L-N	PGE Trojan Park 46.03154 -122.88307	Notification	Water Intakes	Call PGE at 503-556-7089 and inform them that a spill has occurred.	Notify PGE of spills that could impact their drinking water and industrial intake at Trojan Park on the Columbia River.	72	575

Strategy Name	Location	Strategy Type	Resources at Risk	Implementation	Comments	Sector Map (Page #)	Strategy Details (Page#)
LCR-83.8L-N	City of St. Helens Drinking Wells 45.89453 -122.80776	Notification	Water Intakes	Call City of St. Helens at 503-397-3532 and inform them that a spill has occurred.	Notify City of St. Helens of spills that could impact their drinking water well (groundwater) near the Columbia River.	73	577
LCR-100.8R-N	Flushing Channel Pumping Station 45.66919 -122.74533	Notification	Downstream Resources, Lake Habitat	Call Port of Vancouver to notify them of a spill on the Columbia River that could impact the Flushing Channel pumping station. They will shut down the pumps to prevent transfer of oil between the Columbia River and Vancouver Lake.	Contact Port of Vancouver to shut down pumping station between Columbia River and Vancouver Lake.	76	579
LCR-115.0L-N	City of Portland - East Portland Wellfield 45.56381 -122.51480	Notification	Water Intakes	Call the Portland Water Bureau at 503-823-7648 and inform them that a spill has occurred.	Notify Portland Water Bureau of spills that could impact their wellfield on the banks of the Columbia River near Troutdale.	82	581
LCR-118.0L-N	Oregon Watermaster 45.56845 -122.44183	Notification	Water Intakes	Notify the following entities that may divert municipal water from the Columbia River below Bonneville Dam. City of Rainier 503-397-1521, City of St. Helens 503-397-1521, Port of St. Helens 503-369-0856, Port of Portland 503-460-4747	Notify municipalities to close water intakes potentially impacted by a spill on the Columbia River.	83	583

Strategy Name	Location	Strategy Type	Resources at Risk	Implementation	Comments	Sector Map (Page #)	Strategy Details (Page#)
LCR-120.5R-N	Georgia Pacific Paper Mill 45.58091 -122.40404	Notification	Economic Resource, Water Intakes	Call 24-hour main phone at mill to notify of spill potentially impacting their water intakes. Mill personnel will take actions to protect the resources under their control and will initiate the decision process to shut down water intakes if necessary.	Notify Georgia Pacific Paper Mill of spills in the Columbia River potentially impacting paper mill water intakes.	83	585
LCR-144.6L-N	Bonneville Hatchery 45.63321 -121.95770	Notification	Fish Hatchery, Salmon - Chinook, Salmon - Coho, Steelhead, Water Intakes	Call ODFW Bonneville Hatchery at 541-374-8393 and inform them that a spill has occurred.	Notify Bonneville Hatchery of spills that could impact their water intakes below the Bonneville Dam.	84	587
LKRVR-1.84-N	Ridgefield National Wildlife Refuge (WA) 45.80703 -122.74312	Notification	Federally Protected Area/Lands, Waterfowl Concentrations	Call Ridgefield National Wildlife Refuge main office during business hours (7am - 5pm) or Project Leader after hours.	Notify Ridgefield National Wildlife Refuge of spills impacting the Columbia River and Lake River	74	589
WR-21.1L-N	Willamette River - Oswego Creek (OR) 45.41024 -122.66090	Notification	Downstream Resources	Call Lake Oswego Corporation to notify them of a spill potentially impacting Lake Oswego.	Notify Lake Oswego Corporation to close locks and prevent transfer of oil from Lake Oswego to Willamette River.	78	591
YOR-3.3-N	Youngs Bay Fish Pens 46.17088 -123.83733	Notification	Fish Pens, Salmon - Chinook, Salmon - Coho	Call Clatsop County Fisheries Management at 503-325-6452 and inform them that a spill has occurred.	Notify Clatsop County Fisheries Management/ODFW of spills that could impact Youngs Bay Fish Pens	63	593

4.5.4 Staging Area Matrices

Strategy Name	Location	Position	Nearest Address	Contact	Strategies Served	Comments	Sector Map (Page #)	Strategy Details (Page#)
SA-JDAYR-0.5	John Day Park Boat Ramp	46.17805 -123.75107	E Columbia River Hwy Astoria, OR 97103	Clatsop County OR 503-325-9306	LCR-19.2L, LCR-19.3L, LCR-19.9L, LCR-20.0L, LCR-20.3L	Large paved parking area 66,400 sq ft	64	599
SA-KLMAR-0.7	Sportman Loop Lower (WDFW) - Kalama River	46.03901 -122.86651	222 Kalama River Rd. Kalama, WA 98625	WDFW Region 5 Vancouver 2108 Grand Boulevard Vancouver, WA 98661 360-696-6211	KLMAR-0.7	WDFW Boat Ramp Parking and Staging	72	601
SA-LCR-2.2R	Cape Disappointment State Park (WA)	46.28538 -124.05266	322 Coast Guard Rd Ilwaco, WA 98624	WA State Parks and Recreation Commission Cape Disappointment State Park, WA 360-902-8844	LCR-2.2R	Capt Disappointment State Park Parking and Staging	63	603
SA-LCR-6.1R	Port of Chinook Marina	46.27372 -123.94655	743 Water Street Chinook, WA 98614	Port of Chinook Port Manager WA 360-777-8797	LCR-8.4R, LCR-8.5R	Port of Chinook Marina Parking and Staging	63	605
SA-LCR-8.7L	Hammond Marina	46.20237 -123.95274	1085 Iredale Street Warrenton, OR 97121	Warrenton Harbor Master Marinas (Warrenton/Hammond) 225 S. Main Avenue, PO Box 250, Warrenton, OR 97146 503-861-3197	LCR-6.8L, LCR-7.1L, LCR-7.5L, LCR-10.1L	Adjoining Seafarer's Park and Fort Stevens State Park	63	607

Strategy Name	Location	Position	Nearest Address	Contact	Strategies Served	Comments	Sector Map (Page #)	Strategy Details (Page#)
SA-LCR-15.8L	East Mooring Basin	46.19465 -123.80234	37th Street Astoria, OR 97103	Port of Astoria Executive Director 10 Pier One, Suite 308 Astoria, OR 97103	L&C-1.2, L&C-1.7, L&C-2.3, L&C-2.6, WAL-1.0, YOR-3.3R, YOR-4.0R, YOR-4.1R	Large asphalt parking area with 54 trailer spaces and restrooms.	63	609
SA-LCR-17.7L	Tongue Point - Cathlamet Channel	46.19804 -123.76275	Railroad Avenue Astoria, OR 97103	Port of Astoria Executive Director 10 Pier One, Suite 308 Astoria, OR 97103	LCR-19.0L, LCR-26.4M, LCR-27.2L, LCR-27.5L, LCR-27.9L, LCR-29.0L, LCR-29.2L	Massive paved parking area in an industrial complex.	64	611
SA-LCR-33.5R	Skamokawa Vista Park (WA)	46.27012 -123.45792	33 Vista Park Road Skamokawa, WA 98647	Skamokawa Vista Park 13 Vista Park Rd. Skamokawa, WA 98647 360-795-8605	LCR-33.2M, LCR-33.3M, LCR-33.5R, LCR-34.4M, LCR-34.6M, LCR-34.7M, LCR-35.0M	Skamokawa Vista Park Parking and Staging	65	613

Strategy Name	Location	Position	Nearest Address	Contact	Strategies Served	Comments	Sector Map (Page #)	Strategy Details (Page#)
SA-LCR-38.6R	Elochoman Slough Marina	46.20484 -123.38820	200 3rd Street Cathlamet, WA 98612	Elochoman Slough Marina WA 360-795-3501	LCR-37.2R, LCR-37.7M, LCR-38.2L, LCR-38.5M, LCR-38.6R, LCR-38.8L, LCR-40.5M, LCR-44.0M, LCR-44.1M, LCR-45.0M, LCR-45.2M	Elochoman Slough Marina Parking and Staging	66	615
SA-LCR-41.8M	Svenson Park Boat Launch (WA)	46.16802 -123.39738	101 W. Sunny Sands Rd. Cathlamet, WA 98612	Wahkiakum Port District #2 Port Office, WA 360-795-8605	LCR-41.3M	Small paved parking area. Restrooms + water.	67	617
SA-LCR-43.8L	Westport Boat Ramp	46.13665 -123.37297	Old Mill Town Rd Westport, OR 97016	Clatsop County OR 503-325-9306	LCR-42.5L, LCR-43.2L, LCR-48.1M, LCR-48.6M, LCR-48.8M	Large paved area with restrooms.	67	619
SA-LCR-53.8L	Port Westward (Columbia Pacific)	46.18149 -123.17373	81566 Kallunki Rd Clatskanie, OR 97016	Columbia Pacific Bio-Refinery Port Westward Clatskanie, OR 503-728-7000	LCR-49.1M, LCR-49.7L, LCR-49.8L, LCR-50.5L, LCR-54.2R, LCR-54.4M, LCR-55.1M, LCR-55.4L, LCR-55.6M	Empty gravel parking area 90'x160'=14,400 sq ft, no facilities	66	621

Strategy Name	Location	Position	Nearest Address	Contact	Strategies Served	Comments	Sector Map (Page #)	Strategy Details (Page#)
SA-LCR-57.8R	Willow Grove County Park (WA)	46.17651 -123.09958	6950 Willow Grove Road Longview, WA 98632	Cowlitz County Willow Grove Beach 360-577-3030 Cowlitz County Facilities Maintenance 360-577-3174	LCR-55.3M, LCR-55.5M, LCR-55.7R, LCR-55.9R, LCR-58.7M, LCR-58.8R, LCR-58.9M, LCR-58.95M , LCR-59.8L, LCR-60.2M, LCR-64.0M	Willow Grove County Park Parking and Staging	68	623
SA-LCR-67.1L	Rainier City Marina	46.09353 -122.94321	106 West B Street Rainier, OR 97048	City of Rainier, OR Contact for Rainier City Marina Rainier, OR 503-556-7301	LCR-64.4L	Paved parking area 280'x190'=53,200 sq ft	70	625
SA-LCR-72.7R	Sportsmen's Club (WDFW) - Kalama River	46.03873 -122.87512	32 Sportsmen's Club Rd Kalama, WA 98625	WDFW Region 5 Vancouver 2108 Grand Boulevard Vancouver, WA 98661 360-696-6211	LCR-70.0M, LCR-71.4R, LCR-71.5M , LCR-71.6R	Sportsmen's Club Parking and Staging	72	627
SA-LCR-74.5L	Scipio's Goble Landing	46.01607 -122.87428	70360 Columbia River Hwy Rainier, OR 97048	Scipio's Goble Landing Goble Marina 70360 Columbia River Hwy Rainier, OR 97048 503-556-6510	LCR-73.7L	Paved parking area 150'x650'=97,500 ' sq ft, Boat fuel (non-ethanol unleaded) available.	71	629
SA-LCR-75.2R	Port of Kalama Marina (WA)	46.00540 -122.84818	380 W Marine Drive Kalama, WA 98625	Port of Kalama WA 360-673-2325	LCR-76.0L, LCR-78.9R	Port of Kalama Parking and Staging	71	631

Strategy Name	Location	Position	Nearest Address	Contact	Strategies Served	Comments	Sector Map (Page #)	Strategy Details (Page#)
SA-LCR-82.1R	Woodland Bottoms	45.91962 -122.80246	1635 Dike Road Woodland, WA 98674	No Information	LCR-79.5R, LCR-79.8L, LCR-81.0M, LCR-81.2R, LCR-81.8L, LCR-82.4L	Woodland Bottoms Parking and Staging	73	633
SA-LCR-85.8L	St. Helens Marina (Private)	45.86730 -122.79902	134 N River Street St. Helens, OR 97051	St. Helens Marina 134 N River St St. Helens, OR 97051 503-397-4162	LCR-85.6M, LCR-85.8M	11,200 sq. ft. paved parking area with an additonal 110'x150'=16,500 sq. ft. gravel lot across the street	75	635
SA-LCR-97.7R	Langsdorf Landing Fishing Area (WA)	45.70596 -122.76067	10000 Northwest Lower River Road Vancouver, WA 98660	WDFW Region 5 Vancouver 2108 Grand Boulevard Vancouver, WA 98661 360-696-6211	LCR-94.3R, LCR-94.5L, LCR-94.8R, LCR-95.0R, LCR-97.0R, LCR-97.5R, LCR-98.4L, LCR-98.6R	Langsdorf Landing Parking and Staging	76	637
SA-LCR-108.4R	Marine Park (Vancouver)	45.61318 -122.63428	SE Marine Park Way & Columbia Way Vancouver, WA 98661	City of Vancouver Parks and Recreation 360-487-8337 City of Vancouver Operations Center 360-487-8177	LCR-107.1R, LCR-108.4R, LCR-109.1R, LCR-109.6R, LCR-111.0R	Marine Park Parking and Staging	82	639

Strategy Name	Location	Position	Nearest Address	Contact	Strategies Served	Comments	Sector Map (Page #)	Strategy Details (Page#)
SA-LCR-109.4L	M. James Gleason Memorial Boat Ramp	45.60085 -122.61879	4325 NE Marine Drive Portland, OR 97211	Oregon Metro Parks OR 503-797-1850	LCR-113.3M, LCR-113.8R, LCR-114.8M	Very large paved parking area 205,250 sq. ft. with restrooms.	82	641
SA-LCR-118.5L	Chinook Landing Marine Park	45.56038 -122.44261	NE Fairview Ave Fairview, OR 97024	Oregon Metro Parks OR 503-797-1850	LCR-115.0R, LCR-115.7R, LCR-116.9R, LCR-119.1R, LCR-119.8R	Very large paved parking area 225,000 with restrooms	83	643
SA-LCR-121.6R	Port of Camas - Washougal (WA)	45.57846 -122.38177	24 South A Street Washougal, WA 98671	Port of Camas-Washougal WA 360-835-2196	LCR-120.6R	Port of Camas-Washougal Parking and Staging	83	645
SA-LCR-128.9L	Rooster Rock State Park	45.54471 -122.24868	Rooster Rock State Park Road Corbett, OR 97019	OR State Parks Rooster Rock State Park OR 503-695-2261	LCR-126.2R, LCR-128.0R, LCR-131.0R	Huge paved parking area 800,000 sq ft. with restrooms	83	647
SA-LCR-133.7L	Dalton Point Boat Ramp	45.57293 -122.15942	Dalton Point Rd Corbett, OR 97019	OR State Parks Rooster Rock State Park OR 503-695-2261	LCR-137.0R, LCR-138.0L	2880 sq ft. of paved parking area	84	649
SA-LCR-141.2R	Beacon Rock State Park	45.62123 -122.02177	Doetsch Ranch Rd. Stevenson, WA 98648	Washington State Parks and Recreation Commission Beacon Rock State Park WA 360-902-8844	LCR-141.4R, LCR-142.4R	Beacon Rock State Park Parking and Staging	84	651
SA-LCR-144.3R	Fort Cascades Boat Ramp	45.63652 -121.96538	Dam Access Rd. North Bonneville, WA 98639	USACE Park Ranger Office Cascade Locks, OR 97014 541-374-8344	LCR-144.9L	Fort Cascades Boat Ramp Parking and Staging	84	653

Strategy Name	Location	Position	Nearest Address	Contact	Strategies Served	Comments	Sector Map (Page #)	Strategy Details (Page#)
SA-LEWR-0.4	Stevens' Moorage RV Park and Boat Launch	45.85815 -122.77479	4005 Dike Road Woodland, WA 98674	Stevens' Moorage General Manager 4005 Dike Rd. Woodland, WA 98674 360-989-7367	LCR-87.3R, LEWR-0.35, LEWR-0.4	Stevens' Moorage Parking and Staging	75	655
SA-LKRVR-1.0	Port of Ridgefield Marina (WA)	45.81652 -122.75011	5 Mill Street Ridgefield, WA 98642	Port of Ridgefield WA 360-887-3873	LCR-87.5R, LCR-87.6R, LCR-91.0R, LCR-92.3R	Port of Ridgefield Marina Parking and Staging	70	657
SA-MC-1.0	Fred's Marina	45.61885 -122.80533	12800 NW Marina Way Portland, OR 97231	Fred's Marina 12800 NW Marina Way Portland, OR 503-286-5537	MC-0., MC-0., WR-0.9R, WR-3.7R, WR-3.8L	Paved parking area 37,950 sq ft	77	659
SA-SKPR-1.4	Warrenton Marina	46.16430 -123.92087	553 Ensign Drive Warrenton, OR 97146	Warrenton Harbor Master Marinas (Warrenton/ Hammond) 225 S. Main Avenue, PO Box 250, Warrenton, OR 97146 503-861-3197	LCR-10.8L, LCR-10.9L	Huge paved parking area 50,000 sq ft.	63	661
SA-WR-5.8R	Cathedral Park (OR)	45.58771 -122.76388	6635 N Baltimore Ave Portland, OR 97203	City of Portland Parks and Recreation 1120 SW Fifth Ave., Suite 1302 Portland, OR 97204 503-823-7529	WR-4.2R, WR-4.3R, WR-4.5R, WR-5.8R, WR-5.9L, WR-6.9L, WR-6.9R	Cathedral Park Parking and Staging	77	663

Strategy Name	Location	Position	Nearest Address	Contact	Strategies Served	Comments	Sector Map (Page #)	Strategy Details (Page#)
SA-WR-8.0R	Swan Island Boat Ramp (OR)	45.56252 -122.70578	5561 N. Basin Ave. Portland, OR 97217	No Information	SIL-0.4, SIL-0.8, WR-7.4R, WR-7.5L, WR-12.2R, WR-12.7R	Swan Island Boat Ramp Parking and Staging	79	665
SA-WR-13.9R	Ross Island Sand and Gravel	45.50348 -122.66334	2611 SE 4th Avenue Portland, OR 97202	Ross Island Sand & Gravel Company 4315 SE McLoughlin Blvd Portland, OR 97202	WR-13.4L , WR-13.4R, WR-13.5R, WR-14.7R	Commercial business, 23,400 sq ft grass/gravel parking area	80	667
SA-WR-14.1L	Zidell Marine (Shipyard)	45.49950 -122.66834	3121 SW Moody Avenue Portland, OR 97239	Zidell Corporation Zidell Marine 31231 SW Moody Ave Portland, OR 97239 503-228-8691	WR-14.9L	Commercial shipyard	80	669
SA-WR-15.6L	Willamette Park (OR)	45.47563 -122.66907	6336 SW Beaver Ave Portland, OR 97239	City of Portland Parks and Recreation 1120 SW Fifth Ave., Suite 1302 Portland, OR 97204 503-823-7529	WR-15.5M, WR-15.9R	Willamette Park Parking and Staging	80	671
SA-WR-18.5R	Milwaukie Riverfront Park	45.44322 -122.64338	10993 SE McLoughlin Blvd Milwaukie, OR 97222	City of Milwaukie Jefferson Street Boat Ramp 10722 SE Main Street Milwaukie, OR 97222 503-786-7508	WR-18.4R	Paved parking area 42,000 sq ft	78	673

Strategy Name	Location	Position	Nearest Address	Contact	Strategies Served	Comments	Sector Map (Page #)	Strategy Details (Page#)
SA-WR-23.1L	Cedaroak Boat Ramp	45.39052 -122.62937	4600 Elmran Drive West Linn, OR 97068	West Linn Parks & Recreation Cedaroak Boat Ramp 4600 Elmran Drive West Linn, OR 97068 503-557-4700	WR-23.6L	Large paved parking area 60,000 sq ft	78	675
SA-WR-24.2R	Meldrum Bar Park	45.37704 -122.61644	Meldrum Bar Park Road Gladstone, OR 97027	Gladstone Parks & Recreation Meldrum Bar Park Gladstone, OR 503-557-2769	WR-23.8L, WR-23.9R	Paved parking area 30,000 sq ft.	81	677
SA-WR-25.4R	Sportcraft Marina	45.36434 -122.60214	1701 Clackamette Drive Oregon City, OR 97045	Sportcraft Landing Sportcraft Marina 1701 Clackamette Dr Oregon City, OR 503-655-0981	WR-25.5R, WR-25.9R, WR-26.1L	Very large paved parking area 40,000 sq ft	81	679

4.5.5 Boat Launch Matrices

Strategy Name	Name	Position	Nearest Address	Contact	Strategies Served	Comments	Sector Map (Page #)	Strategy Details (Page#)
BL-JDAYR-0.5	John Day Park Boat Ramp	46.17805 -123.75107	E Columbia River Hwy Astoria, OR 97103	Clatsop County, OR 503-325-9306	LCR-19.2L, LCR-19.3L, LCR-19.9L, LCR-20.0L, LCR-20.3L	Double concrete ramp with one floating dock	64	685
BL-KLMAR-0.7	Sportman Loop Lower (WDFW) - Kalama River	46.03901 -122.86651	222 Kalama River Rd. Kalama, WA 98625	WDFW Region 5 Vancouver 2108 Grand Boulevard Vancouver, WA 98661 360-696-6211	KLMAR-0.7	WDFW Boat Ramp	72	687
BL-LCR-2.2R	Cape Disappointment State Park (WA)	46.28538 -124.05266	322 Coast Guard Rd Ilwaco, WA 98624	WA State Parks and Recreation Commission Cape Disappointment State Park, WA 360-902-8844	LCR-2.2R, LCR-2.4R	Cape Disappointment State Park Boat Ramp	63	689
BL-LCR-6.1R	Port of Chinook Marina	46.27372 -123.94655	743 Water Street Chinook, WA 98614	Port of Chinook Port Manager, WA 360-777-8797	LCR-8.4R, LCR-8.5R	Port of Chinook Marina Boat Launch	63	691
BL-LCR-8.7L	Hammond Marina	46.20237 -123.95274	1085 Iredale Street Warrenton, OR 97121	Warrenton Harbor Master Marinas (Warrenton/ Hammond) 225 S. Main Avenue, PO Box 250, Warrenton, OR 97146 503-861-3197	LCR-6.8L, LCR-7.1L, LCR-7.5L, LCR-10.1L	Concrete Ramp with 4 Lanes	63	693

Strategy Name	Name	Position	Nearest Address	Contact	Strategies Served	Comments	Sector Map (Page #)	Strategy Details (Page#)
BL-LCR-15.8L	East Mooring Basin	46.19465 -123.80234	37th Street Astoria, OR 97103	Port of Astoria Executive Director 10 Pier One, Suite 308 Astoria, OR 97103	L&C-1.2, L&C-1.7, L&C-2.3, L&C-2.6, WAL-1.0, YOR-3.3R, YOR-4.0R, YOR-4.1R	Double boat ramps and short dock next to larger marina.	63	695
BL-LCR-17.7L	Tongue Point - Cathlamet Channel	46.19804 -123.76275	Railroad Avenue Astoria, OR 97103	Port of Astoria Executive Director 10 Pier One, Suite 308 Astoria, OR 97103	LCR-19.0L, LCR-26.4M, LCR-27.2L, LCR-27.5L, LCR-27.9L, LCR-29.0L, LCR-29.2L	Wide concrete boat launch next to massive paved area. Docks nearby.	64	697
BL-LCR-33.5R	Skamokawa Vista Park (WA)	46.27012 -123.45792	33 Vista Park Road Skamokawa, WA 98647	Skamokawa Vista Park 13 Vista Park Rd. Skamokawa, WA 98647 360-795-8605	LCR-33.2M, LCR-33.3M, LCR-33.5R, LCR-33.7R, LCR-34.4M, LCR-34.6M, LCR-34.7M, LCR-35.0M, LCR-35.0R, LCR-35.3R, LCR-35.7R	Skamokawa Vista Park Boat Launch	65	699

Strategy Name	Name	Position	Nearest Address	Contact	Strategies Served	Comments	Sector Map (Page #)	Strategy Details (Page#)
BL-LCR-38.6R	Elochoman Slough Marina	46.20484 -123.38820	200 3rd Street Cathlamet, WA 98612	Elochoman Slough Marina, WA 360-795-3501	ELOCR-1.6, LCR-36.0R, LCR-37.2R, LCR-37.7M, LCR-38.2L, LCR-38.5M, LCR-38.6R, LCR-38.8L, LCR-40.5M, LCR-44.0M, LCR-44.1M, LCR-44.3M, LCR-45.0M, LCR-45.2M	Elochoman Slough Marina Boat Launch	66	701
BL-LCR-41.8M	Svenson Park Boat Launch (WA)	46.16802 -123.39738	101 W. Sunny Sands Rd. Cathlamet, WA 98612	Wahkiakum Port District #2 Port Office WA 360-795-8605	LCR-41.3M, LCR-41.6L	Concrete ramp with floating dock.	67	703
BL-LCR-43.8L	Westport Boat Ramp	46.13665 -123.37297	Old Mill Town Rd Westport, OR 97016	Clatsop County, OR 503-325-9306	LCR-42.5L, LCR-43.2L, LCR-48.1M, LCR-48.6M, LCR-48.8M	Limited depth. Wide concrete ramp with docks on either side.	67	705

Strategy Name	Name	Position	Nearest Address	Contact	Strategies Served	Comments	Sector Map (Page #)	Strategy Details (Page#)
BL-LCR-53.8L	Port Westward (Columbia Pacific)	46.18149 -123.17373	81566 Kallunki Rd Clatskanie, OR 97016	Columbia Pacific Bio-Refinery Port Westward Clatskanie, OR 503-728-7000	LCR-49.1M, LCR-49.7L, LCR-49.8L, LCR-50.5L, LCR-53.8R, LCR-54.2R, LCR-54.4M, LCR-55.1M, LCR-55.4L, LCR-55.6M	Small concrete boat launch with floating dock	66	707
BL-LCR-57.8R	Willow Grove County Park (WA)	46.17651 -123.09958	6950 Willow Grove Road Longview, WA 98632	Cowlitz County Willow Grove Beach 360-577-3030 Cowlitz County Facilities Maintenance 360-577-3174	LCR-55.3M, LCR-55.5M, LCR-55.7R, LCR-55.9R, LCR-58.7M, LCR-58.8R, LCR-58.9M, LCR-58.95M, LCR-59.8L, LCR-60.2M, LCR-64.0M	Willow Grove County Park Boat Launch	68	709
BL-LCR-67.1L	Rainier City Marina	46.09353 -122.94321	106 West B Street Rainier, OR 97048	City of Rainier, OR Rainier City Marina Rainier, OR 503-556-7301	LCR-64.4L	Double concrete ramp with a floating dock	70	711
BL-LCR-72.7R	Sportsmen's Club (WDFW) - Kalama River	46.03873 -122.87512	32 Sportsmen's Club Rd Kalama, WA 98625	WDFW Region 5 Vancouver 2108 Grand Boulevard Vancouver, WA 98661 360-696-6211	LCR-70.0M, LCR-71.4R, LCR-71.5M, LCR-71.6R	Sportsmen's Club Boat Ramp	72	713

Strategy Name	Name	Position	Nearest Address	Contact	Strategies Served	Comments	Sector Map (Page #)	Strategy Details (Page#)
BL-LCR-74.5L	Scipio's Goble Landing	46.01607 -122.87428	70360 Columbia River Hwy Rainier, OR 97048	Scipio's Goble Landing Goble Marina 70360 Columbia River Hwy Rainier, OR 97048 503-556-6510	LCR-73.7L	Single concrete boat ramp with floating docks and slips at marina.	71	715
BL-LCR-75.2R	Port of Kalama Marina (WA)	46.00540 -122.84818	380 W Marine Drive Kalama, WA 98625	Port of Kalama, WA 360-673-2325	LCR-76.0L, LCR-78.9R	Port of Kalama Boat Launch	71	717
BL-LCR-82.1R	Woodland Bottoms	45.91962 -122.80246	1635 Dike Road Woodland, WA 98674	No Information	LCR-79.5R, LCR-79.8L, LCR-81.0M, LCR-81.2R, LCR-81.8L, LCR-82.4L	Woodland Bottoms Boat Ramp - natural launch off sand beach	73	719
BL-LCR-85.8L	St. Helens Marina (Private)	45.86730 -122.79902	134 N River Street St. Helens, OR 97051	St. Helens Marina 134 N River St St. Helens, OR 97051 503-397-4162	LCR-85.6M, LCR-85.8M	Two concrete ramps with two floating docks and lots of slip space in the marina.	75	721

Strategy Name	Name	Position	Nearest Address	Contact	Strategies Served	Comments	Sector Map (Page #)	Strategy Details (Page#)
BL-LCR-97.7R	Langsdorf Landing Fishing Area (WA)	45.70596 -122.76067	10000 Northwest Lower River Road Vancouver, WA 98660	WDFW Region 5 Vancouver 2108 Grand Boulevard Vancouver, WA 98661 360-696-6211	LCR-94.3R, LCR-94.5L, LCR-94.8R, LCR-95.0R, LCR-97.0R, LCR-97.5R, LCR-98.4L, LCR-98.6R, LCR-99.9R, LCR-100.8R	Langsdorf Landing Boat Launch	76	723
BL-LCR-108.4R	Marine Park (Vancouver)	45.61318 -122.63428	SE Marine Park Way & Columbia Way Vancouver, WA 98661	City of Vancouver Parks and Recreation 360-487-8337 City of Vancouver Operations Center 360-487-8177	LCR-107.1R, LCR-108.4R, LCR-109.1R, LCR-109.6R, LCR-111.0R	Marine Park Boat Launch	82	725
BL-LCR-109.4L	M. James Gleason Memorial Boat Ramp	45.60085 -122.61879	4325 NE Marine Drive Portland, OR 97211	Oregon Metro Parks, OR 503-797-1850	LCR-113.3M, LCR-113.8R, LCR-114.8M	Four concrete boat ramps with three floating docks	82	727
BL-LCR-118.5L	Chinook Landing Marine Park	45.56038 -122.44261	NE Fairview Ave Fairview, OR 97024	Oregon Metro Parks, OR 503-797-1850	LCR-115.0R, LCR-115.7R, LCR-116.9R, LCR-119.1R, LCR-119.8R	Six concrete boat ramps with a floating dock	83	729
BL-LCR-121.6R	Port of Camas - Washougal (WA)	45.57846 -122.38177	24 South A Street Washougal, WA 98671	Port of Camas-Washougal WA 360-835-2196	LCR-120.6R, LCR-124.7R	Port of Camas-Washougal Boat Ramp	83	731

Strategy Name	Name	Position	Nearest Address	Contact	Strategies Served	Comments	Sector Map (Page #)	Strategy Details (Page#)
BL-LCR-128.9L	Rooster Rock State Park	45.54471 -122.24868	Rooster Rock State Park Road Corbett, OR 97019	OR State Parks Rooster Rock State Park, OR 503-695-2261	LCR-126.2R, LCR-128.0R, LCR-131.0R	Triple concrete boat ramp with floating dock	83	733
BL-LCR-133.7L	Dalton Point Boat Ramp	45.57293 -122.15942	Dalton Point Rd Corbett, OR 97019	OR State Parks Rooster Rock State Park, OR 503-695-2261	LCR-137.0R, LCR-138.0L	Double concrete ramps	84	735
BL-LCR-141.2R	Beacon Rock State Park	45.62123 -122.02177	Doetsch Ranch Rd. Stevenson, WA 98648	Washington State Parks and Recreation Commission Beacon Rock State Park, WA 360-902-8844	LCR-141.4R, LCR-142.4R	Beacon Rock State Park Boat Ramp	84	737
BL-LCR-144.3R	Fort Cascades Boat Ramp	45.63652 -121.96538	Dam Access Rd. North Bonneville, WA 98639	USACE Park Ranger Office Cascade Locks, OR 97014 541-374-8344	LCR-143.4R, LCR-144.9L	Fort Cascades Boat Ramp	84	739
BL-LEWR-0.4	Stevens' Moorage RV Park and Boat Launch	45.85815 -122.77479	4005 Dike Road Woodland, WA 98674	Stevens' Moorage General Manager 4005 Dike Rd. Woodland, WA 98674 360-989-7367	LCR-87.3R, LEWR-0.35, LEWR-0.4	Stevens' Moorage Boat Launch - Use caution at low water!	75	741
BL-LKRVR-1.0	Port of Ridgefield Marina (WA)	45.81652 -122.75011	5 Mill Street Ridgefield, WA 98642	Port of Ridgefield, WA 360-887-3873	LCR-86.2R, LCR-87.5R, LCR-87.6R, LCR-91.0R, LCR-92.3R	Port of Ridgefield Marina Boat Launch	70	743

Strategy Name	Name	Position	Nearest Address	Contact	Strategies Served	Comments	Sector Map (Page #)	Strategy Details (Page#)
BL-MC-1.0	Fred's Marina	45.61885 -122.80533	12800 NW Marina Way Portland, OR 97231	Fred's Marina 12800 NW Marina Way Portland, OR 503-286-5537	MC-0.1, MC-0.2, MC-0.4, MC-0.5, MC-1.5, WR-0.9R, WR-3.7R, WR-3.8L	Double concrete ramps with two floating docks and slips available at marina	77	745
BL-SKPR-1.4	Warrenton Marina	46.16430 -123.92087	553 Ensign Drive Warrenton, OR 97146	Warrenton Harbor Master Marinas (Warrenton/ Hammond) 225 S. Main Avenue, PO Box 250, Warrenton, OR 97146 503-861-3197	LCR-10.8L, LCR-10.9L	Double concrete ramp with two floating docks and ~400 slips at marina	63	747
BL-WASHR-3.28	Hathaway Park	45.58369 -122.34425	799 25th Street Washougal, WA 98671	City of Washougal Emergency Notification 1701 C Street Washougal, WA 98671 360-735-9509	WASHR-1.9	Hathaway Park Boat Launch	83	749
BL-WR-5.8R	Cathedral Park (OR)	45.58771 -122.76388	6635 N Baltimore Ave Portland, OR 97203	City of Portland Parks and Recreation 1120 SW Fifth Ave., Suite 1302 Portland, OR 97204 503-823-7529	WR-4.2R, WR-4.3R, WR-4.5R, WR-5.8R, WR-5.9L, WR-6.9L, WR-6.9R	Cathedral Park Boat Launch	77	751

Strategy Name	Name	Position	Nearest Address	Contact	Strategies Served	Comments	Sector Map (Page #)	Strategy Details (Page#)
BL-WR-8.0R	Swan Island Boat Ramp (OR)	45.56252 -122.70578	5561 N. Basin Ave. Portland, OR 97217	No Information	SIL-0.4, SIL-0.8, WR-7.4R, WR-7.5L, WR-12.2R , WR-12.7R	Swan Island Boat Ramp	79	753
BL-WR-13.9R	Ross Island Sand and Gravel	45.50348 -122.66334	2611 SE 4th Avenue Portland, OR 97202	Ross Island Sand & Gravel Company 4315 SE McLoughlin Blvd Portland, OR 97202	WR-13.4L, WR-13.4R, WR-13.5R, WR-14.7R	Single concrete ramp	80	755
BL-WR-14.1L	Zidell Marine (Shipyard)	45.49950 -122.66834	3121 SW Moody Avenue Portland, OR 97239	Zidell Corporation Zidell Marine 31231 SW Moody Ave Portland, OR 97239 503-228-8691	WR-14.1L, WR-14.9L	Three commercial size concrete ramps	80	757
BL-WR-15.6L	Willamette Park (OR)	45.47563 -122.66907	6336 SW Beaver Ave Portland, OR 97239	City of Portland Parks and Recreation 1120 SW Fifth Ave., Suite 1302 Portland, OR 97204 503-823-7529	WR-15.5M, WR-15.9R	Willamette Park Boat Launch	80	759
BL-WR-18.5R	Milwaukie Riverfront Park	45.44322 -122.64338	10993 SE McLoughlin Blvd Milwaukie, OR 97222	City of Milwaukie Jefferson Street Boat Ramp 10722 SE Main Street Milwaukie, OR 97222 503-786-7508	WR-18.4R, WR-18.5R	Single concrete ramp, no floating dock but can pull up to the shoreline	78	761

Strategy Name	Name	Position	Nearest Address	Contact	Strategies Served	Comments	Sector Map (Page #)	Strategy Details (Page#)
BL-WR-23.1L	Cedaroak Boat Ramp	45.39052 -122.62937	4600 Elmran Drive West Linn, OR 97068	West Linn Parks & Recreation Cedaroak Boat Ramp 4600 Elmran Drive West Linn, OR 97068 503-557-4700	WR-23.6L	Double concrete boat launch with two floating docks	78	763
BL-WR-24.2R	Meldrum Bar Park	45.37704 -122.61644	Meldrum Bar Park Road Gladstone, OR 97027	Gladstone Parks & Recreation Meldrum Bar Park Gladstone, OR 503-557-2769	WR-23.8L, WR-23.9R	Double concrete ramps with floating dock, as well as dirt ramp Less than 100' to the west.	81	765
BL-WR-25.4R	Sportcraft Marina	45.36434 -122.60214	1701 Clackamette Drive Oregon City, OR 97045	Sportcraft Landing Sportcraft Marina 1701 Clackamette Dr Oregon City, OR 503-655-0981	WR-25.5R, WR-25.9R, WR-26.1L	Double concrete ramp with floating dock. Large marina.	81	767

CHAPTER 6

Resources at Risk

6.1 CHAPTER INTRODUCTION

This chapter provides a summary of natural, cultural, and economic resources at risk in the Lake Washington area. It provides general information on habitat, fish, and wildlife resources, and locations in the area where sensitive natural resource concerns exist. It offers a summary of cultural resources that include fundamental procedures for the discovery of cultural artifacts and human skeletal remains. General information about flight restrictions, hazing, and oiled wildlife can be found near the end of this chapter. A list of economic resources in the area is provided in the chapter's appendix.

This chapter is purposely broad in scope and should not be considered comprehensive. Some of the sensitive resources provided in this chapter are listed because they could not be addressed in Chapter 4 (Response Strategies and Priorities). Additional information from private organizations or federal, state, tribal, and local government agencies should also be sought during spills and considered.

The information provided in this chapter can be used in:

- Assisting the Environmental Unit (EU) and Operations in developing additional response strategies beyond those found in Chapter 4.
- Providing resource-at-risk "context" to responders, clean-up workers, and others during the initial phase of a spill response in the GRP area.
- Briefing responders and incident command staff that may be unfamiliar with sensitive resource concerns in the GRP area.
- Providing background information for personnel involved in media presentations and public outreach during a spill incident.

6.2 NATURAL RESOURCES AT RISK - SUMMARY

Most biological communities are susceptible to the effects of oil spills. Plant communities on land, eelgrass and marsh grasses in estuaries, and kelp beds in the ocean; microscopic plants and animals; and larger animals, such as fish, amphibians and reptiles, birds, mammals, and a wide variety of invertebrates, are all at potentially at risk from smothering, acute toxicity, and/or the chronic long-term effects that may result from being exposed to spilled oil. The Lower Columbia River subbasin affords a wide variety of aquatic, riparian, and upland habitats. These varied habitats support a complex diversity of wildlife species, including large and small mammals; song birds, birds of prey, upland birds, shorebirds and waterfowl; reptiles; and amphibians. Some

species are resident throughout the year; others are migratory either within the subbasin or, in many cases, seasonally migrate outside the subbasin. Many wildlife species found in the subbasin are classified as threatened, endangered, sensitive, or of special concern under the federal Endangered Species Act or under Oregon or Washington State guidelines.

Classification types are listed below, with the abbreviation of each type provided in the brackets (to the right of the classification). State classifications apply to both Washington and Oregon unless noted otherwise.

- Federal Endangered (FE)
- Federal Threatened (FT)
- Federal Candidate (FC)
- Federal Species of Concern (FCo)
- State Endangered (SE)
- State Threatened (ST)
- State Candidate (SC)
- State Monitored (SM)
- State Sensitive (SS)

Sensitive species that may occur within this area, at some time of year, include the following federal and state listed species.

Birds:

- Bald eagle [SS (WA)]
- Brandt's cormorant [SC (WA)]
- Brown pelican [FCo/SE (WA)]
- Common loon [SS (WA)]
- Golden eagle [SC (WA)]
- Marbled murrelet [FT/ST(WA)]
- Peregrine falcon [FCo/SS (WA)]
- Sandhill crane [SE (WA)]
- Slender-billed white-breasted nuthatch [SC (WA)]
- Guadalupe murrelet [FC]
- Northern spotted owl [FT/SE (WA)/ST (OR)]
- Short-tailed albatross [FE/SC (WA)/SE (OR)]
- Streaked horned lark [FT/SE (WA)]
- Western snowy plover [FT/SE (WA)/ST (OR)]

- Yellow-billed Cuckoo [FT/SC (WA)]
- Purple martin [SC (WA)]
- Sandhill crane [SE (WA)]
- Vaux's swift [SC (WA)]
- Oregon vesper sparrow [SC (WA)]
- Tufted puffin [SE (WA)]

Mammals:

- Columbian white-tailed deer [FE/SE (WA)]
- Gray whale [SS (WA)]
- Fisher [FC/SE (WA)]

Fish:

- Bull trout [FT/SC (WA)]
- Coastal cutthroat trout [FCo]
- Columbia River chum salmon [FT/SC (WA)]
- Green sturgeon [FT]
- Leopard dace [SC (WA)]
- Lower Columbia River Chinook salmon [FT/SC (WA)]
- Lower Columbia River Coho salmon [FT/SE (OR)]
- Lower Columbia River steelhead [FT/SC (WA)]
- Mid-Columbia River steelhead [FT/SC (WA)]
- Pacific eulachon smelt [FT/SC (WA)]
- Pacific lamprey [FCo]
- River lamprey [FCo]
- Snake River fall Chinook salmon [FT/SC (WA)/ST (OR)]
- Snake River sockeye [FE/SC (WA)]
- Snake River spring/summer Chinook [FT/SC (WA)]
- Snake River steelhead [FT/SC (WA)]
- Upper Columbia River Chinook [FE/SC (WA)]
- Upper Columbia River steelhead [FT/SC (WA)]
- Upper Willamette River Chinook [FT]
- Upper Willamette River steelhead [FT]

Reptile/ Amphibians:

- Green sea turtle [FT/ST (WA)]
- Larch Mountain salamander [SS (WA)]
- Leatherback sea turtle [FE/SE (WA)]
- Loggerhead sea turtle [FE/ST (WA)]
- Olive Ridley sea turtle [FT/SE (OR)]
- Oregon spotted frog [FT/SE (WA)]
- Pacific Ridley Sea Turtle [FT/SE (OR)]
- Western (Pacific) pond turtle [SE (WA)]
- Western toad [SC (WA)]

Plants:

- Bradshaw's desert-parsley [FE/SE (OR)]
- Nelson's checker-mallow [FT/ST (OR)]
- Willamette daisy [FE/SE (OR)]
- Whitebark pine [FC/SC (OR)]
- Golden paintbrush [FT]
- Kincaid's lupine [FT/ST (OR)]
- Water Howellia [FT/ST (OR)]

Invertebrates:

- Oregon silverspot butterfly [FT/SE (WA)/ST (OR)]
- Fender's blue butterfly [FE/SE (OR)]
- California floater (mussel) [SC (WA)]

6.2.1 General Resource Concerns

6.2.1a - Habitats

- **Shallow estuarine bays** serve a number of important ecological functions. Mud and sand flats in these bays support large numbers of benthic and epibenthic organisms and are important foraging areas for salmonids, crabs, fishes, and shorebirds.
- **Eelgrass beds** provide important nursery and foraging areas for crabs, salmonids, other fishes and waterfowl.
- **Intertidal shoals** from Puget Island downstream to the river mouth provide critical haulout habitat for harbor seals.

- **Wetlands** in this region range from brackish water marshes near the mouth of the river, to forested fresh water swamps at the upper end of the estuary near Welch Island. All wetland types support a diverse array of bird, insect and fish and wildlife species.
- **Sloughs and backwater channels** provide feeding and resting areas for a variety of birds, including waterfowl and herons and are rearing areas for juvenile fish.
- **Islands** provide important nesting habitat for a variety of bird species, as well as habitat for a variety of mammals, including Columbian white-tailed deer [FE/SE (WA)].
- **Stream mouths** are concentration areas for anadromous fish and are feeding areas for a variety of marine birds.
- **Riparian vegetation** is heavily used by a variety of wildlife and may also improve nearshore fish habitat.
- **Human-made structures** such as pilings, rock jetties or log rafts may be used as roosting or nesting areas for a variety of marine birds and raptors or as haulout areas for sea lions and harbor seals.
- Numerous **habitat restoration sites** exist along the lower Columbia River and its tributaries. Often, significant resources have been invested in these locations to improve stream conditions specific to salmon recovery.

6.2.1b - Fish and Shellfish

- **Juvenile and/or adult salmonids** are present in the river below Bonneville Dam throughout the year. Millions of juvenile salmonids use estuarine waters as a rearing and foraging area as they prepare for migration to the ocean. Returning adult salmonids support significant tribal, commercial and recreational fisheries.
- **Anadromous fish** (other than salmon) in this region include American shad, Green sturgeon [FT], and Pacific eulachon smelt [FT/SC (WA)].
- **Forage fish** seasonally abundant in the estuary include Northern anchovy, Pacific herring, Longfin smelt, Surf smelt, and Pacific sandlance.
- The Columbia River **estuary** serves as a major nursery area for larval and juvenile marine fish, including English sole, Sand dab, Butter sole, Sand sole, and Starry flounder.
- The Columbia River **estuary** serves as a major nursery area for juvenile Dungeness crab. Crabs that rear in the estuary contribute significantly to the adult population along the outer coast. Other shellfish occurring in the estuarine portion of the river include Eastern soft-shell clams, Horse clams, Manila clams and cockles.
- **Resident fish** present year-round in freshwater portions of the river include white sturgeon, walleye, largemouth bass, crappie, perch, bullheads and northern pike minnow.

6.2.1c - Wildlife

- The Columbia River **estuary** is a major seabird concentration area with tens of thousands of birds either nesting, feeding or roosting throughout the lower ten miles of the river during

the spring and summer months. Key among these are: Caspian terns, Double-crested cormorants, Brown pelicans [FCo/SE (WA)] and several species of gulls. Seabirds of various species, including Marbled murrelets [FT/ST(WA)], feed in the mouth of the estuary throughout the year.

- All stretches of this GRP region support significant waterfowl concentrations from fall through spring. Hundreds of thousands of geese, swans and dabbling ducks may occupy this region during peak periods. Resident and migratory waterfowl heavily utilize the islands, sloughs, wetlands and adjacent uplands of the region from fall through spring. Numerous islands in this sub-region also provide nesting habitat for resident waterfowl.

- The Columbia River estuary is a shorebird site of world significance, supporting over 100,000 birds during peak migration periods.

- Bald eagles [SS (WA)] and Great blue herons are nesting residents and may be found year-round throughout the region. Peregrine falcons [FCo/SS (WA)] are commonly found as winter and spring visitors to the lower estuary.

- Resident and migratory songbirds heavily utilize riparian habitats year-round and are susceptible to oiling if riparian vegetation and shorelines become contaminated.

- The lower river is home to thousands of harbor seals from fall through mid-spring, with haulout sites as far upstream as Puget Island. In addition, the south jetty at the mouth of the river is a significant haulout site for both California sea lions and Steller sea lions [FCo/ST (WA)]. During late winter and early spring, both harbor seals and California sea lions move upstream following seasonally abundant prey. Both species target eulachon smelt runs (primarily that of the Cowlitz River) and California and Steller sea lions range as far upstream as Bonneville Dam in search of salmon and sturgeon.

- Migrating Gray whales [SS (WA)] occasionally feed in the river mouth during the northward migration from March through June.

- Columbian white-tailed deer [FE/SE (WA)] are present on all islands and mainland shorelines between Lord and Walker Islands (near Longview) downstream to Tenasillahee Island (near Skamokawa).

- Other mammals common to the region include beaver, river otter, mink and raccoon. Because of their habitat preferences, all of these species are vulnerable to contact with spilled oil.

6.2.2 Specific Geographic Areas of Concern.

Columbia River, RM 1-34 (see Figure 1)

1. Cape Disappointment (~RM 1): Seabird nesting on cliffs. Audubon Important Bird Area. Cape Disappointment State Park.

2. Jetty Lagoon (~RM 2): Extensive wetland and intertidal mudflat habitats. Rearing habitat for juvenile salmonids and Dungeness crab. Concentration area for migratory and wintering waterfowl and shorebirds. Fort Canby State Park.

3. Baker Bay and vicinity (~RM 3): Extensive eelgrass and intertidal mudflat habitats. Salmonid spawning streams and rearing habitat for juvenile salmonids and Dungeness crab. This area supports the largest nesting colony of Caspian terns in the U.S. (over 10,000 pairs), Washington's largest breeding concentration of Double-crested cormorants (~6000 pairs) and nearly 10,000 pairs of nesting gulls. Significant concentration area for Brown pelicans [FCo/SE (WA)] from summer through fall and for migrating and wintering waterfowl and shorebirds. Audubon Important Bird Area.

4. Youngs Bay (~RM 12): Extensive wetland and intertidal mudflat habitats. Rearing habitat for juvenile salmonids and Dungeness crab. Concentration area for migratory and wintering waterfowl and shorebirds. Fort Clatsop National Monument.

5. Grays Bay (~RM 20): Intertidal mudflat and wetland habitats. Salmonid spawning streams and rearing habitat for juvenile salmonids. Concentration area for wintering/migratory waterfowl and shorebirds. Nesting and foraging area for Bald eagles [SS (WA)]. Harbor seal haulout area.

6. Lewis and Clark National Wildlife Refuge - Cathlamet Bay (~RM 20-34): Refuge islands from Welch Island downstream to Tongue Point provide a diverse array of habitats that support juvenile salmonid rearing and very large concentrations of migratory and wintering waterfowl and shorebirds. Bald eagles [SS (WA)] and harbor seals are present year-round.

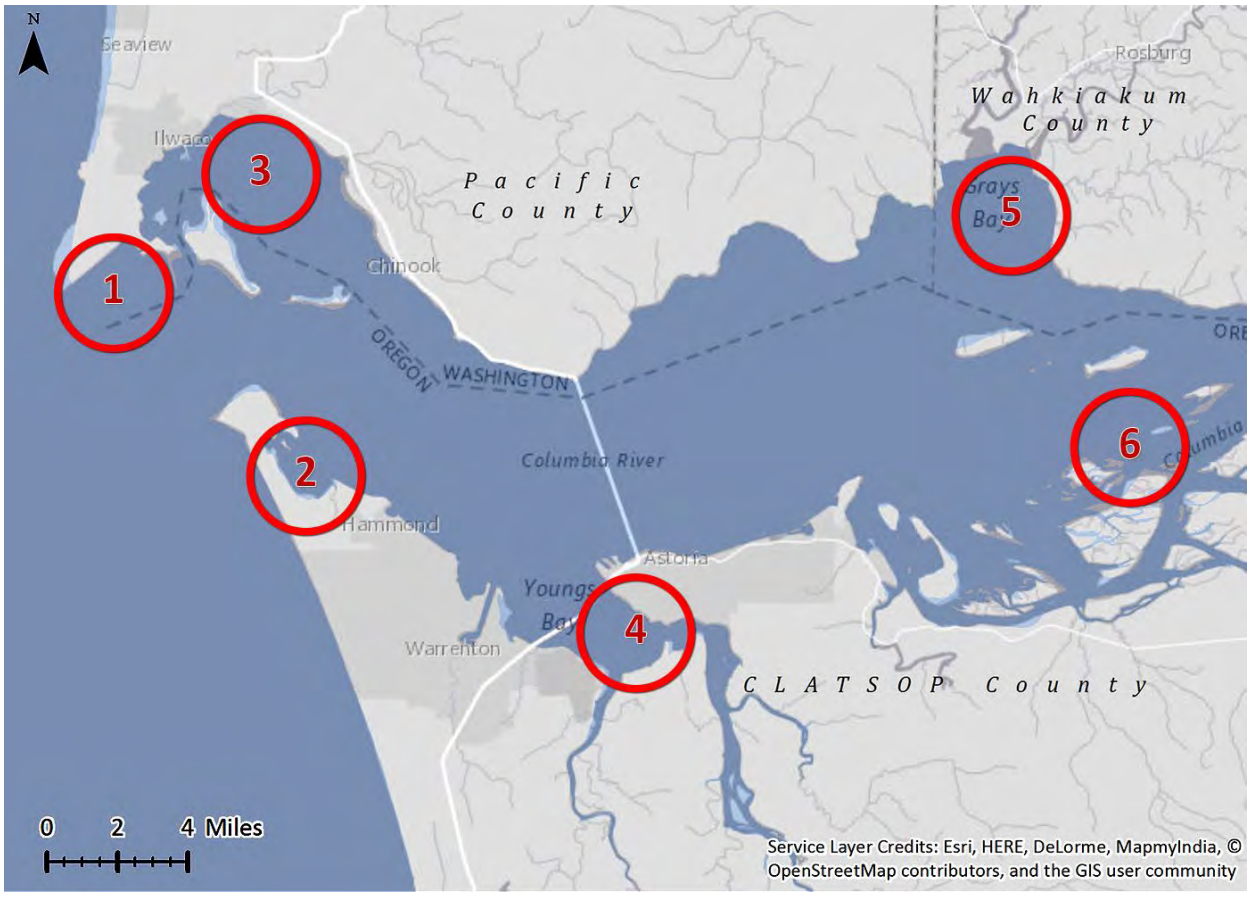


Figure 6-1: Columbia River, RM 1-34

Columbia River, RM 34-63 (see Figure 2)

7. Julia Butler Hansen National Wildlife Refuge (~RM 34-37): Core habitat area for Columbian white-tailed deer [FE/SE (WA)] both on the mainland west of Cathlamet, as well as on Hunting, Price and Tenasillahe Islands. Forested tidal swamp habitat. Concentration area for wintering waterfowl and important habitat for cavity nesting ducks.

8. Puget Island and Vicinity (RM 39-45): Juvenile salmonid rearing habitat. Concentration area for migrating and wintering waterfowl. Nesting area for Bald Eagles [SS (WA)] and Great Blue herons. Harbor seal haulout area.

9. Wallace Island and Vicinity (~RM 50): Complex association of island, river and slough habitats with rich riparian habitat and freshwater marsh habitat. Rearing habitat for juvenile salmonids. Resident nesting, migrating and wintering waterfowl. Wallace Island and portions of the adjacent mainland are part of the Julia Butler Hansen National Wildlife Refuge.

10. Lord Island/Walker/Hump/Fisher Islands and Vicinity (RM 58-63): Wetland and slough habitats. Fish rearing habitat. Concentration area for migrating and wintering waterfowl.

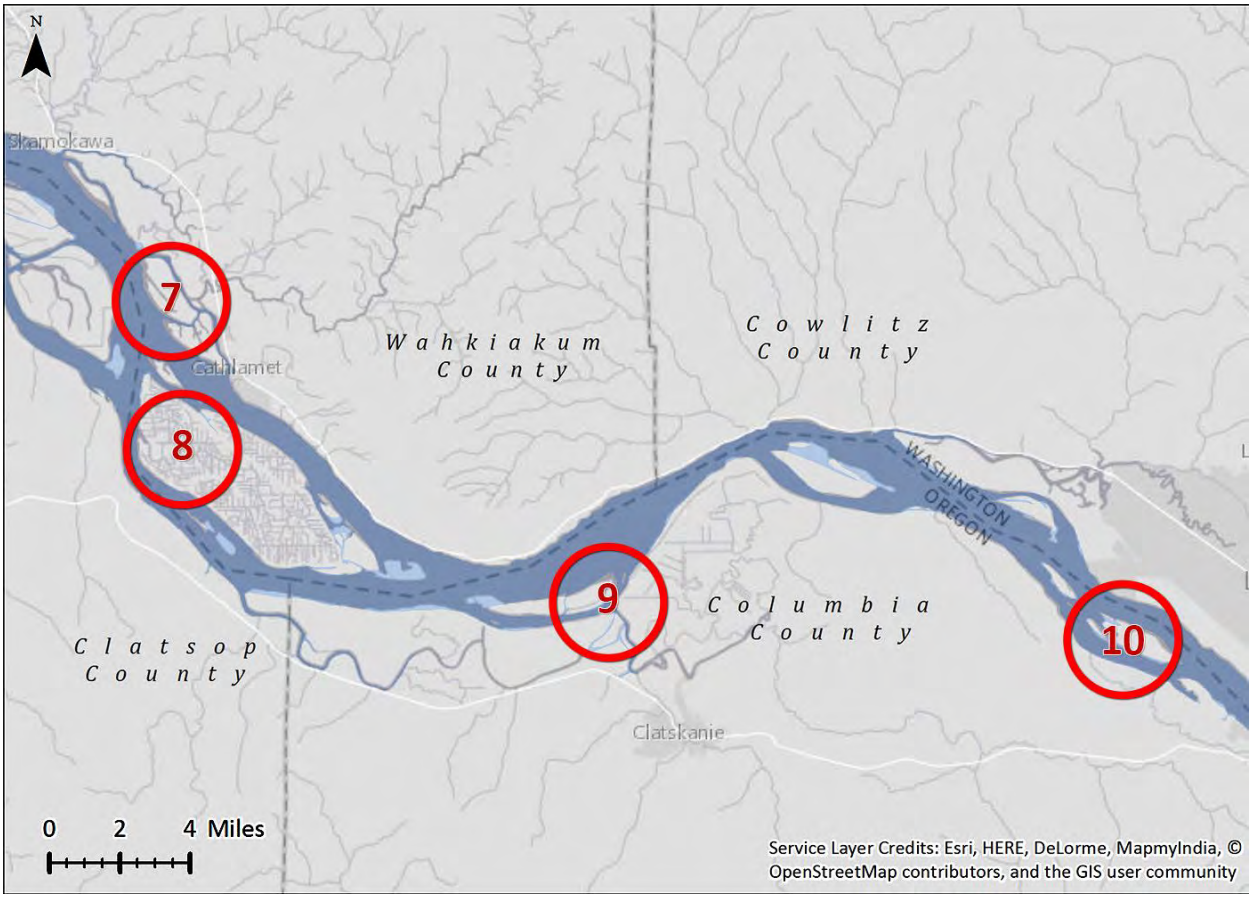


Figure 6-2: Columbia River, RM 34-63

Columbia River, RM 69-92 (see Figure 3)

11. Cowlitz River Mouth/Carrolls Channel/Kalama River mouth (~ RM 69-73): Salmonid spawning rivers. Concentrations of waterfowl, seabirds, harbor seals and California sea lions coincide with winter run of Pacific eulachon smelt [FT/SC (WA)].
12. Martin/Burke Islands and Vicinity (~RM 79-81): Riparian habitat. Juvenile salmonid rearing habitat in off-river channels. Concentration area for breeding, migrating and wintering waterfowl. Area supports cavity nesting ducks.
13. Sauvie Island Wildlife Area and Multnomah Channel (~RM 85-100): Riparian habitat. Juvenile salmonid rearing habitat in off-river channels. Concentration area for migrating and wintering waterfowl, shorebirds and Sandhill cranes [SE]. Resident nesting waterfowl, Bald eagles [SS (WA)] and Great Blue herons. Oregon Dept. Fish and Wildlife lands. Audubon Important Bird Area.
14. Ridgefield National Wildlife Refuge (~ RM 87-92): Riparian habitat. Salmonid spawning stream and juvenile salmonid rearing habitat in off-river channels. Concentration area for migrating and wintering waterfowl, shorebirds and Sandhill cranes [SE(W)]. Resident nesting waterfowl, Bald eagles [SS (WA)] and Great Blue herons. Audubon Important Bird Area.
15. Frenchman's Bar/Shillapoo Wildlife Area (~RM 96-99): Riparian habitat, pasture and agland that supports wintering and migrating concentrations of waterfowl, shorebirds and Sandhill cranes [SE (WA)]. Juvenile salmonid rearing habitat in off-river channels.

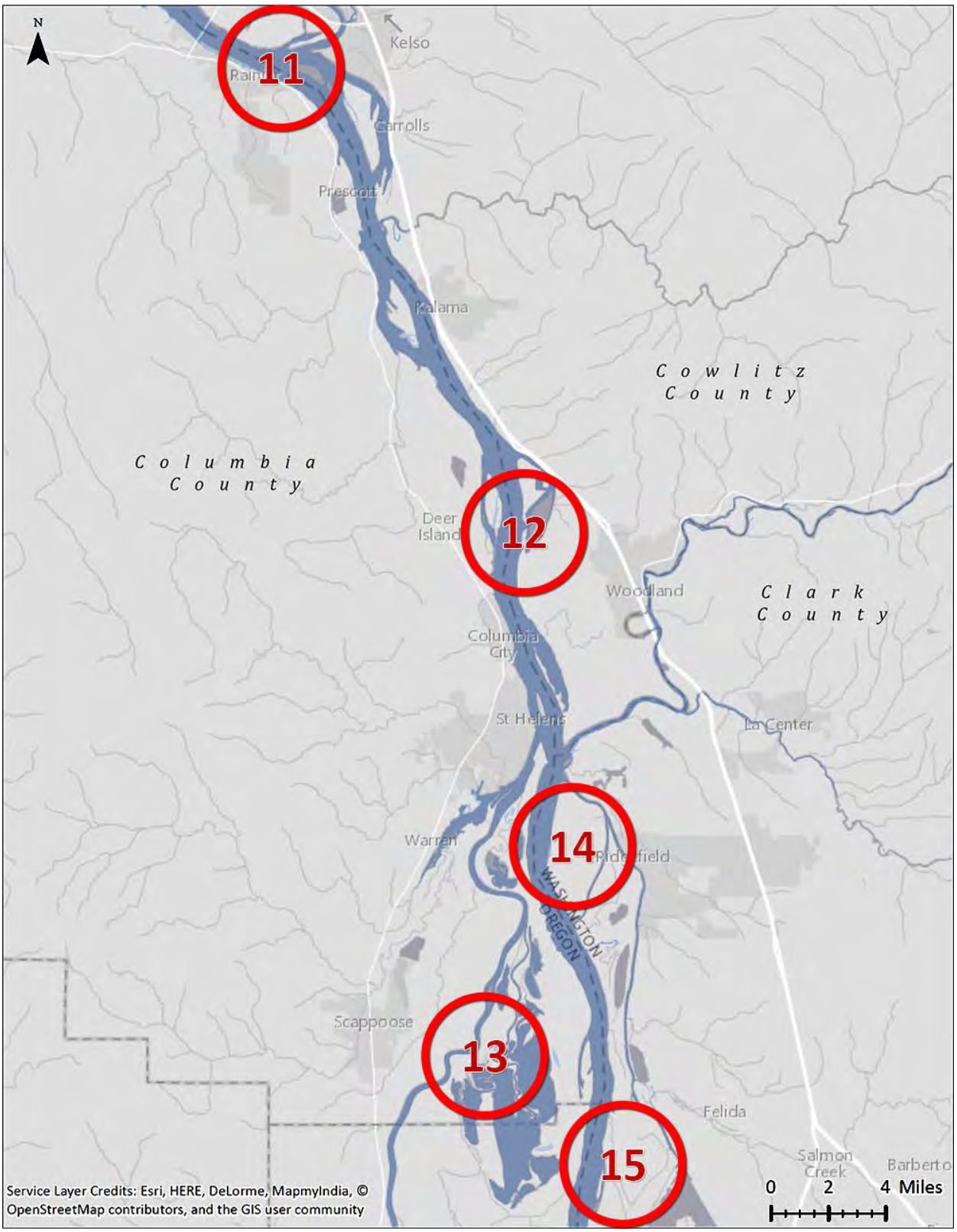


Figure 6-3: Columbia River, RM 69-92

Columbia River, RM 115-132 (see Figure 4)

16. Government Island (~ RM 115): Waterfowl concentration area. Great Blue Heron nesting colony. Government Island State Park. Audubon Important Bird Area.

17. Sandy River (~RM 121): Spawning habitat for salmonids and Pacific eulachon smelt [FT/SC (WA)].

18. Steigerwald National Wildlife Refuge / Reed Island Park (~RM 126): Riparian habitat. Salmonid spawning stream and juvenile salmonid rearing habitat in off-river channels. Concentrations of migrating and wintering waterfowl and Sandhill cranes [SE (WA)] on refuge, and waterfowl on nearby islands and river channels. Resident nesting Great Blue herons on nearby Reed Island. Audubon Important Bird Area.

19. Sand Island Slough (~RM 132): Riparian habitat. Salmonid spawning stream and juvenile salmonid rearing habitat in off-river channels. Concentrations of migrating and wintering waterfowl in channel behind Sand Island. Rooster Rock State Park.

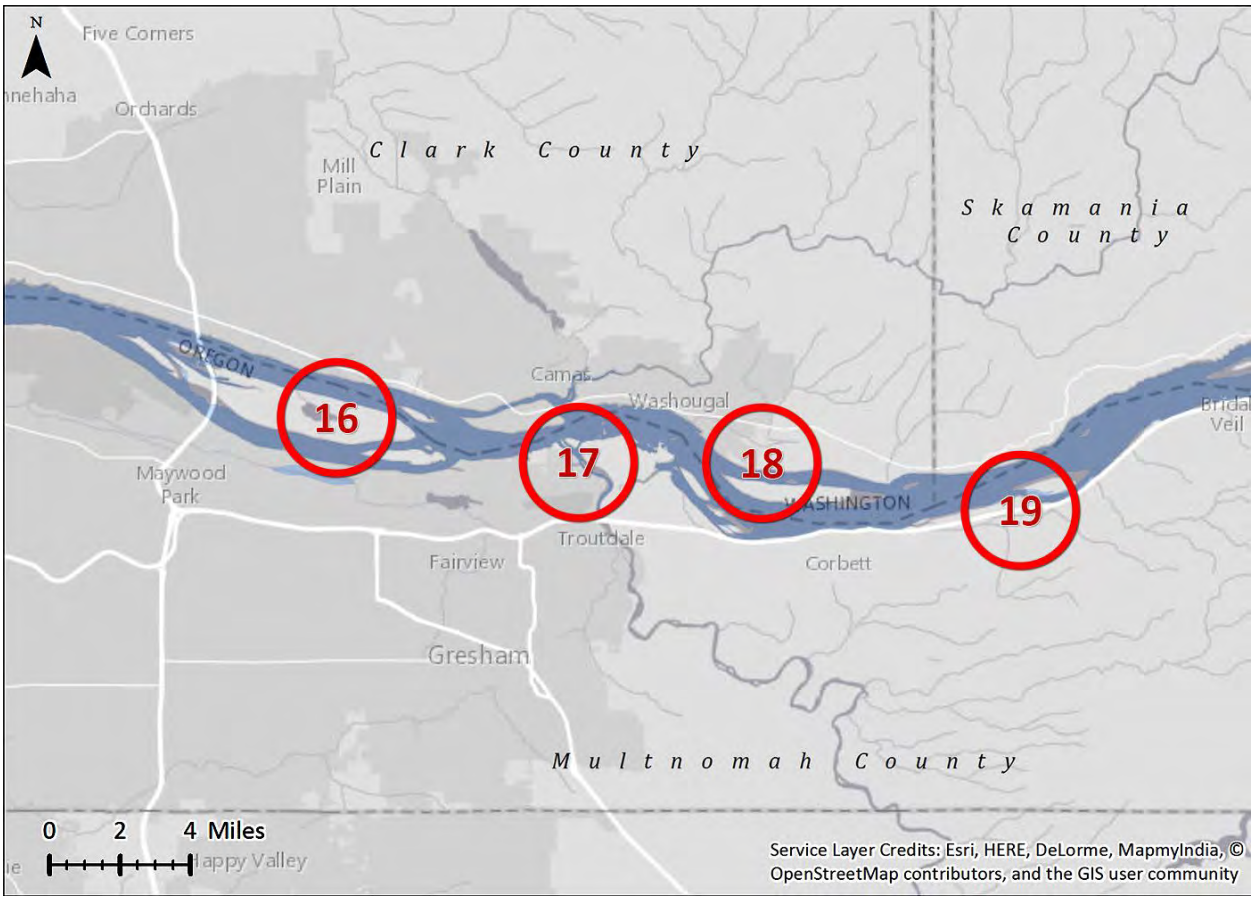


Figure 6-4: Columbia River, RM 115-132

Columbia River, RM 138-142 (see Figure 5)

20. Franz Lake National Wildlife Refuge (~RM 138): Riparian habitat. Salmonid spawning stream and juvenile salmonid rearing habitat in off-river channels. Concentrations of migrating and wintering waterfowl on refuge, nearby islands and river channels.

21. Pierce National Wildlife Refuge (~RM 142): Riparian habitat. Salmonid spawning stream and juvenile salmonid rearing habitat in off-river channels. Concentrations of migrating and wintering waterfowl on refuge, nearby islands and river channels.

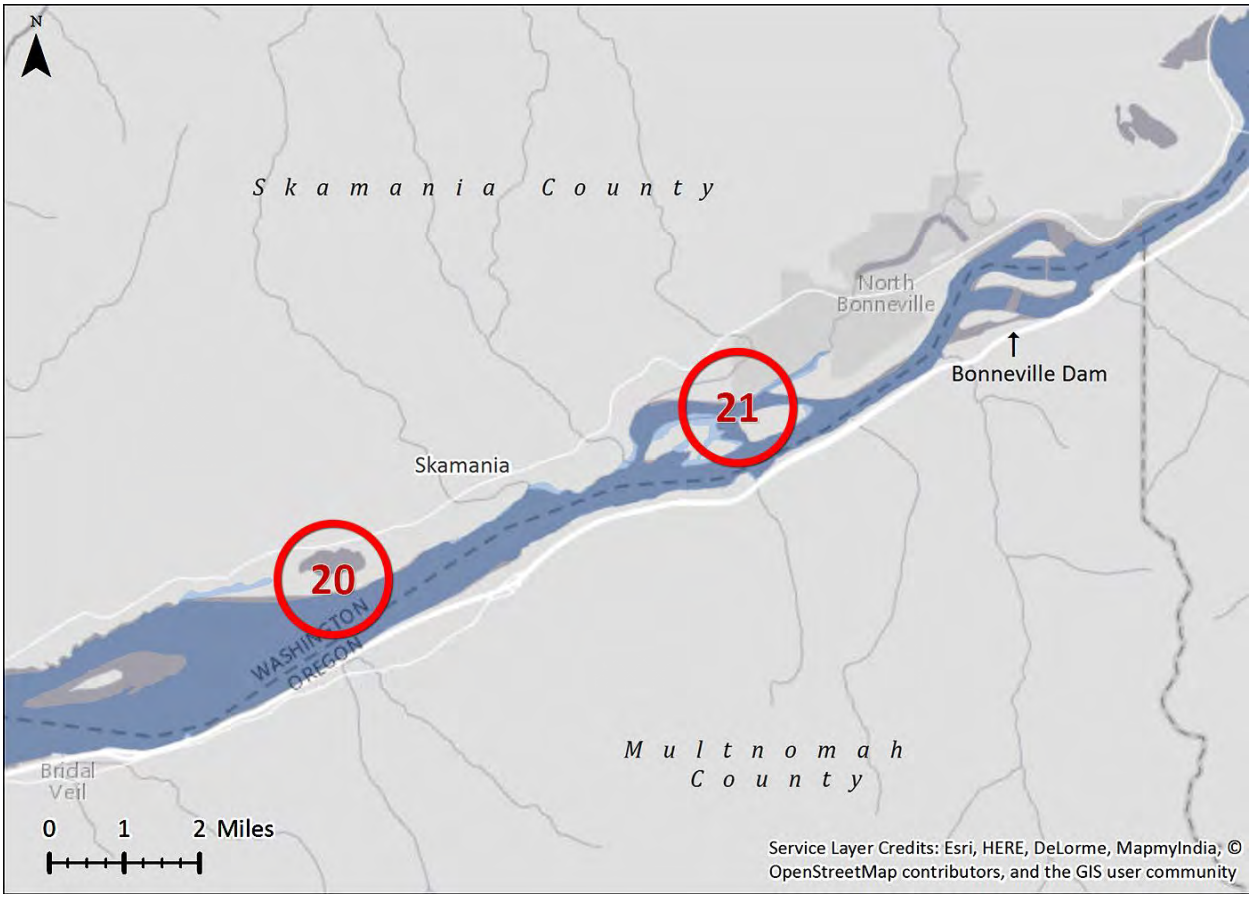


Figure 6-5: Columbia River, RM 138-142

6.3 CULTURAL RESOURCES AT RISK - SUMMARY

Culturally significant resources are present within the Lower Columbia River area. Information regarding the types of cultural resources and their locations is maintained by both the Washington Department of Archeology and Historic Preservation (WDAHP) and the Oregon State Historic Preservation Office (OR SHPO). This sensitive information is made available to the Washington Department of Ecology for oil spill preparedness and response planning. The Tribal Historic Preservation Offices (THPOs) of the Confederated Tribes of the Umatilla Indian Reservation, Confederated Tribes of the Yakama Indian Nation, Cowlitz Indian Tribe, Grand Ronde Confederated Tribes, Shoalwater Bay Indian Tribe and Warm Springs Confederated Tribes may also be able to provide information on cultural resources at risk in the area and should be contacted, along with WDAHP and the OR SHPO, through normal trustee notification processes when significant oil spills, or smaller spills above reportable thresholds, occur on the Columbia River.

During a spill response, after the Unified Command is established, information related to specific archeological concerns will be coordinated through the Environmental Unit. In order to ensure that tactical response strategies do not inadvertently harm culturally sensitive sites, WDAHP and the OR SHPO should be consulted before disturbing any soil or sediment during a response action. WDAHP, the OR SHPO, and/or the Tribes may assign a person, or provide a list of professional archeologists that can be contracted, to monitor response activities and cleanup operations for the protection of cultural resources at risk. Due to the sensitive nature of such information, details regarding the location and type of cultural resources present are not included in this document.

WDAHP	(360) 586-306	Rob.Whitlam@dahp.wa.gov
OR SHPO	(503) 986-0674	Dennis.Griffin@oregon.gov
Confederated Tribes of the Umatilla Indian Reservation	(541) 276-4348	NaturalResources@ctuir.org
Confederated Tribes of the Yakama Indian Nation	(509) 865-5121	kate@yakama.com
Cowlitz Indian Tribe	(360) 577-6962	culture@cowlitz.org
Grand Ronde Confederated Tribes	(503) 879-1630	eirik.thorsgard@grandronde.org
Shoalwater Bay Indian Tribe	(360) 267-0731 (360) 267-8212	edavis@shoalwaterbay-nsn.gov Tjohnson@shoalwaterbay-nsn.gov
Warm Springs Confederated Tribes	(541) 553-3257	jp.patt@wstribes.org

6.3.1 Discovery of Human Skeletal Remains

Any human remains, burial sites, or burial-related materials that are discovered during a spill response must be treated with respect at all times. Refer to Section 9403 of the Northwest Area Contingency Plan for National Historic Preservation Act Compliance Guidelines during an emergency response.

6.3.2 Procedures for the Discovery of Cultural Resources:

All work must be stopped immediately and the Incident Commander and Cultural Resource Specialist notified if any person monitoring work activities or involved in spill response believes that they have encountered cultural resources. The area of work stoppage must be adequate to provide for the security, protection, and integrity of the material or artifact(s) discovered.

Prehistoric Cultural Resources (May include, but not limited to, any of the following items):

- Lithic debitage (stone chips and other tool-making byproducts)
- Flaked or ground stone tools
- Exotic rock, minerals, or quarries
- Concentrations of organically stained sediments, charcoal, or ash
- Fire-modified rock
- Rock alignments or rock structures
- Bone (burned, modified, or in association with other bone, artifacts, or features)
- Shell or shell fragments
- Petroglyphs and pictographs
- Fish weirs and traps
- Culturally modified trees
- Physical locations or features (traditional cultural properties)

Historic cultural material (May include any of the following items over 50 years old):

- Bottles, or other glass
- Cans
- Ceramics
- Milled wood, brick, concrete, metal, or other building material
- Trash dumps
- Homesteads, building remains
- Logging, mining, or railroad features
- Piers, wharves, docks, bridges, dams

6.4 ECONOMIC RESOURCES AT RISK SUMMARY

Socio-economic sensitive resources are facilities or locations that rely on a body of water to be economically viable. Because of their location, they could be severely impacted if an oil spill were to occur. Economically sensitive resources are separated into three categories: critical infrastructure, water dependent commercial areas, and water dependent recreation areas. Appendix 6A of this chapter provides a list of economic resources for this GRP area.

6.5 GENERAL INFORMATION

6.5.1 Flight Restriction Zones

Flight restriction zones may be recommended by the Environmental Unit (Planning Section) for the purpose of minimizing disturbance that could result in injury to wildlife during an oil spill. By keeping a safe distance or altitude from identified sensitive areas, pilots can minimize the risk of aircraft/ bird collisions, prevent the accidental hazing of wildlife into oiled areas, and avoid causing abandonment of nests or marine mammal pupping areas. Implementation of Flight Restriction Zones will take place within the Air Operations Branch (Operations Section) after a Unified Command is formed. The Planning Section's Environmental Unit will work with the Air Ops Branch Director to resolve any potential conflicts with flight activities that are essential to the spill response effort. Typically, the area within a 1,500 ft radius and below 1,000 ft in altitude is restricted to flying in areas that have been identified as sensitive. However, some areas have more restrictive zones. In addition to restrictions associated with wildlife, Tribal authorities may also request notification when overflights are likely to affect culturally sensitive areas within reservations. See Section 9301.3.2 and Section 9301.3.3 of the Northwest Area Contingency Plan for more information on the use of aircraft and helicopters in open water and shoreline responses.

6.5.2 Hazing

After a Unified Command is formed, the Wildlife Branch (Operations Section) in consultation with the appropriate trustee agencies and the Environmental Unit will evaluate hazing options for the purpose of keeping un-oiled birds and marine mammals away from oil during a spill. Hazing options might include the use of acoustic or visual deterrent devices, boats, aircraft or other situation-appropriate tools.

For more information see the Northwest Wildlife Response Plan (NWACP Section 9310) and Northwest Area Wildlife Deterrence Resources (NWACP Section 9311).

6.5.3 Oiled Wildlife

Attempting to capture oiled wildlife can be hazardous to both the animal and the person attempting the capture the animal. Response personnel should not approach or attempt to recover oiled wildlife. Responders should report their observations of oiled wildlife to the Wildlife Branch so appropriate action can be taken. Information provided should include the location, date, and time of the sighting, and the estimated number and kind of animals observed. Early on in the response, before a Unified Command is established, oiled wildlife sightings should be reported to Washington Emergency Management Division. For more information see the Northwest Wildlife Response Plan (NWACP Section 9310).

APPENDIX 6A

List of Economic Resources

*Oregon DEQ staff have access to the OR-IRIS database, which tracks resources such as water intakes, marinas, shellfish harvesting areas, parks and beaches, etc. The OR-IRIS database is updated more frequently than this GRP.

Category	Name	Location/Address	Latitude	Longitude	Contact	Phone	E-mail
A1 – Drinking Water Intakes	City of Rainier	East 3rd Street, Rainier OR 97048	46.0918	-122.9307	City of Rainier	503-410-2180	
A1 – Drinking Water Intakes	City of Prescott	Prescott Beach Drive, Rainier OR 97048	46.0536	-122.8858	McMullen Water Systems	503-397-1744	
A1 – Drinking Water Intakes	City of St. Helens	100 E Street, Columbia City OR 97051	45.8947	-122.8053	City of St. Helens	503-397-3532	
A1 – Drinking Water Intakes	City of Portland - East Portland Wellfield	East Portland Wellfield, Portland OR 97218	45.5630	-122.5157	Water Bureau	503-823-7648	
A2 - Energy/Power Generation Water Intakes	USACE Bonneville Dam	100 NE Sturgeon Lane, Bonneville OR	45.6394	-121.9532	USACE	541-374-8838	
B1 - Industrial Intakes	Georgia Pacific Wauna Mill	92326 Taylorville Road, Clatskanie OR 97016	46.1521	-123.3943	Georgia Pacific	503-455-3271	
B1 - Industrial Intakes	PGE Beaver Generating Facility	80997 Kallunki Road, Clatskanie OR 97016	46.1731	-123.1562	PGE	503-728-7211	
B1 - Industrial Intakes	PGE Trojan Plant	71760 Columbia River Hwy, Rainier OR 97048	46.0315	-122.8784	PGE	503-556-7089	

Category	Name	Location/Address	Latitude	Longitude	Contact	Phone	E-mail
B1 - Industrial Intakes	Port of St. Helens	Kallunki Road, Clatskanie OR 97051	46.1839	-123.1725	Port of St. Helens (Port Westward)	971-203-9733	
B3 - Aquaculture	Youngs Bay Fish Pens	1820 SE Front Avenue, Astoria OR 97103	46.1698	-123.8368	Clatsop County Fisheries Mgmt	503-325-6452	
B3 - Aquaculture	Clatsop Community College Dock Fish Pen	6550 Liberty Lane, Astoria OR 97103	46.1897	-123.7457	Clatsop County Fisheries Mgmt	503-325-6452	
B3 - Aquaculture	Blind Slough Net Pens	Pentilla Road (off Berendse Rd), Knappa OR 97103	46.2029	-123.5444	Clatsop County Fisheries Mgmt	503-325-6452	
B6 - Fish Hatcheries (Federal, State, and Private)	Bonneville Hatchery	70543 NE Herman Loop	45.6332	-121.9569	ODFW	541-374-8393	
B7 - Specially Designated Residential, Commercial and Industrial Areas (Includes Floating Homes and Live Aboard Marinas)	Multnomah Channel Floating Homes	South/West Bank of Length of Multnomah Channel	45.6191	-122.8017	n/a	n/a	

Appendix M
Training Log for Personnel Response and Discharge Prevention Meetings

Training Date: _____

Training Duration: _____

Training Location: _____

Training Topic: _____

Training Session Presented By: _____

Training Session Attendees: _____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

NOTES/DISCUSSION TOPICS: _____
_____
_____
_____
_____
_____
_____
_____
_____

SUBJECT/ISSUES IDENTIFIED AND REQUIRED ACTIONS/IMPLEMENTATION DATES: __
_____
_____
_____
_____
_____
_____

Appendix N
Exercise Logs

IC One-Call Notification Exercise

Date Performed:

Incident Commander (IC):

Name of Person Notified:

Is this person identified in the FRP as an IC or Alternate? Yes ___No___

Time Initiated:

Time in which IC or Alternate responded:

Method Used to Contact:

Telephone:

Pager:

Radio:

Other:

Description of notification procedure/Emergency Scenario:

_____

_____

_____

Identify which of the core components of the FRP were exercised during this particular exercise:

_____

_____

_____

Evaluation:

_____

_____

_____

Changes to be implemented:

_____

_____

_____

Time table for implementation:

_____

_____

Certifying Signature: _____

Position: _____

Retain this form for a minimum of 3 years and make available to the USCG upon request

Spill Management Team Tabletop Exercise Documentation Form

1. Date(s) performed:

2. Exercise or actual response? _____

   If an exercise, announced or unannounced? _____

3. Location of tabletop:

4. Time started: _____

   Time completed: _____

5. Response plan scenario used:
   Average Most Probable Discharge: _____

   Maximum Most Probable Discharge: _____

   Worst Case Discharge: _____

   Size of (simulated) spill (bbls or gals): _____

6. Describe how the following objectives were exercised:
   a) Spill management team's knowledge of oil-spill response plan:

   b) Proper notifications:

   c) Communications system:

   d) Spill management team's ability to access contracted oil spill removal organizations:

e) Spill management team's ability to coordinate spill response with On-Scene Coordinator, state, and applicable agencies:

f) Spill management team's ability to access sensitive site and resource information in the Area Contingency Plan:

7. Attach a description of lessons learned, procedures and schedule for implementation, and persons responsible for follow up of corrective measures (if any were required).

Certifying Signature: _____

Position: _____

Retain this form for a minimum of 3 years and make available to the USCG upon request

Equipment Deployment Exercise Documentation Form

1. Date(s) performed:

2. Deployment Frequency:
3. Last Deployment Date:
4. Exercise or actual response?

   If an exercise, announced or unannounced?

5. Deployment location(s): _____

   _____

   _____

   _____

   _____

   _____

   _____

   _____

   _____

6. Time started: _____

   Time OSRO called:_____

   Time on-scene: _____

   Time boom deployed: _____

   Time recovery equipment arrives on scene: _____

   Time completed: _____

7. Equipment deployed was:

   Facility owned equipment: YES NO

   OSRO-owned: YES NO

   If OSRO-owned, which company? _____

   BOTH, Facility owned and OSRO equipment deployed: YES NO

8. List the type and amount of all equipment (e.g. boom and skimmers) deployed and number of support personnel employed:

9. Describe the goals of the equipment deployment and list any Area Contingency Plan strategies tested. (Attach a sketch of equipment deployments and booming strategies):

10. For deployment of facility-owned equipment, was the amount of equipment deployed at least the amount necessary to respond to your facility's average most probable spill (USCG calculation)?

    a) Was the equipment deployed in its intended operating environment?

11. For deployment of OSRO-owned equipment, was a representative sample (at least 1000 feet of each boom type and at least one of each skimmer type) deployed?

    a) Was the equipment deployed in its intended operating environment?

12. Are all facility personnel that are responsible for response operations involved in a comprehensive training program, and all pollution response equipment involved in a comprehensive maintenance program?

    YES NO

    a) If yes, briefly describe the training and maintenance program:

    _____
    _____
    _____
    _____
    _____

13. Was the equipment deployed by personnel responsible for its deployment in the event of an actual spill?

    YES NO

14. Was all deployed equipment operational?

    YES NO

***If not, attach a separate sheet listing the equipment and why it was not operational.*

15. Attach a description of lessons learned, procedures and schedule for implementation, and person(s) responsible for follow up of corrective measures.

Certifying Signature: _____

Position: _____

****Retain this form for a minimum of 3 years and make available to the USCG upon request.****

First Responder Boat and Boom Deployment Drill

Purpose

The purpose of this drill is to have the response team members demonstrate the ability to respond to a reported spill and move and contain the spilled material from one side of the Columbia River into a containment/recovery area on the opposite bank. The purpose of the exercise is to ensure that the IC at the facility is prepared to respond to the spill within one hour. Specific items that the spill responders will be expected to demonstrate are:

1. Organizational skills
   - team organization
   - communications
2. Equipment operation
3. Containment
4. Safe working habits

Environmental Setting

This exercise will take place on the Columbia River downstream of the dock where denatured ethanol is loaded via pipeline to barges. There are sand and gravel beaches on both the north and south sides of the river. The exercise is conducted during the daylight hours and in warm water temperature.

Exercise Scenario

The facility is notified that the average most probable discharge (United States Coast Guard calculation) of denatured ethanol occurred from the pipeline where it is situated on the dock to the Columbia River. The average most probable discharge for the facility is 50 barrels released into the river.

Objective

By using the spill response boat and the fast water boom, move spilled material from the point of entry to a collection point on the south side of the river.

Available Equipment

1. 1,000 feet of boom
2. 2,000 feet of 3/8 inch rope
3. reflector vests
4. one 20-foot open aluminum boat with center console controls, 90 horsepower outboard motor and a tow bar for boom deployment
5. one life ring or throw rope

6. 2-way radios
7. one first aid kit
8. USCG approved life vests

Components

a. Respond to the reported spill within one hour.
b. Use spill response boat.
c. Use booms as deflecting devices.
d. Use ropes to adjust the boom's location and efficiency.
e. Use the booms to protect the shoreline and collect product.
f. Check that spill response equipment is in working order, adequate for the objective and properly maintained.
g. A critique describing lessons learned, procedures and a schedule for implementation, and person(s) responsible for follow up of any corrective measures will follow the drill.

Safety

A safety meeting will be held by the IC and EHS&S Manager prior to beginning the drill. Personnel working in or near the water will wear USCG-approved life vests at all times. The boat should also have a set of oars in addition to the outboard motor. The spill response boat will be operated by a qualified spill responder. Team members who handle ropes should wear gloves. Hip or chest waders should be worn while working in the river. Everyone is responsible for safe working habits. If you feel the drill is unsafe – **STOP THE EXERCISE AND INFORM THE INCIDENT COMMANDER.**

Appendix O
Communications Plan

The following sections outline CPBR's on-site communications system, which is used during normal operations and in the event of an emergency.

Facility Personnel
Radios will be the primary means of communication. CPBR radios meet the Class 1, Division 1, Group D requirements defined in 46 CFR 110.80 for intrinsically safe radios. The radios will be in constant use for operational, quality, maintenance, and other uses.

In the event of radio failure, CPBR will use alternate means of communication. Signals can be given using the camera systems on the dock, one individual can remain at the scene while the other goes to the nearest phone. Most CPBR employees and all IC's/Alternate ICs' have cell phones.

A telephone system is also installed in the administration building, production building including the control room, and maintenance building.

Communications to Vessel
CPBR will communicate with docked vessels through the CPBR Person-in-Charge (PIC) at the dock. The CPBR PIC will be on the dock at all times while a vessel is moored. The PIC will carry a radio and cell phone. CPBR also maintains a marine radio in the Control Room. In the event that a spill occurs that could affect the Columbia River, CPBR will notify the PIC via radio and the barge via marine radio. In the event that a spill occurs on the Columbia River, the PIC will notify the IC via radio, cell phone, or via the barge's marine radio.

Appendix P
Site-Specific Safety and Health Plan
Oil Spill Response Health and Safety Plan

COLUMBIA PACIFIC BIO-REFINERY

Oil Spill Response Health and Safety Plan

Columbia Pacific Bio-Refinery
81200 Kallunki Road
Clatskanie, Oregon
97016

December 6, 2023

Table of Contents

PART 1 - GENERAL

1.01 Scope of Work

The following work practices and guidance have been developed for the purposes of employee and contractor protection during a response to an oil spill at Columbia Pacific Bio-Refinery (CPBR). Crude oil recovery tasks included in this Oil Spill Response Health and Safety Plan (Health and Safety Plan) include**:**

- Vacuum Truck Operations
- Heavy Equipment Operations
- Surface Water Recovery
- Pipeline Repair
- Air, Water and Soil Sampling
- Management/Observation/Documentation
- Decontamination

Oil spill recovery operations will be managed from the CPBR Operations Command Center (Control Room) at 81200 Kallunki Road, Clatskanie, Oregon 97016. The following attachments provide additional contact, safety information, and Job Safety Analysis (JSAs) related to oil spill response operations at CPBR.

1.02 Applicable Standards

United States Department of Labor Publications

- 29 Code of Federal Regulations (CFR) Part 1910 Occupational Safety and Health Standards for General Industry
- 29 CFR Part 1926 Occupational Safety and Health Regulations for Construction
- 49 CFR Part 195 Department of Transportation Pipeline and Hazardous Materials Safety

State and Local Publications

- ODEQ Regulations

CPBR Plans and Procedures

- ODEQ/USCG Facility Response Plan/Oil Spill Contingency Plan
- USEPA Spill Prevention, Control and Countermeasure Plan
- USEPA Facility Response Plan
- CPBR Contractor Safety Program

1.03 Documentation

This Health and Safety Plan will be maintained in the Operations Command Center under the control of the Incident Commander (IC) and the Environmental and Safety Manager. A working copy shall be maintained in the Operations Command Center; these copies will be the working copies utilized in the field. The working copies will be signed by CPBR employees and contractors during all on-site activities. Additionally, the Health and Safety Plan will be communicated to contractors during the contractor safety orientation so they may become familiar with the plan and site hazards.

PART 2 - PRODUCTS

See SDS in the control room for complete information on the characteristics of the products involved in oil spill response at CPBR.

PART 3 - EXECUTION

3.01 Introduction

The purpose of this plan is to provide measures to prevent incidents and injuries to site workers from possible contamination that may be encountered during oil recovery activities. Any employee or contractor is responsible to stop any work that they believe places any worker in imminent danger.

The following table in can be used to contact the ICs via phone, email, or fax 24 hours a day. Personnel in Table 1 office directly at CPBR and are responsible for management of spill response activities.

Table 1
Facility Contact Information

Name	**24-hour Phone/Email**
Columbia Pacific Bio-Refinery 81200 Kallunki Road; Clatskanie, Oregon, 97016	503-728-7000 (Office) 503-728-7065 (Fax)
Incident Commanders and Alternates	
Plant Manager (IC)	_____
General Manager (Alternate IC)	_____
Environmental and Safety Manager (Alternate IC)	_____
Other Alternate ICs – Process Supervisors	_____ _____

The ICs shall discuss/delegate compliance with the Health and Safety Plan to all emergency response personnel who shall be working at the site(s) during assessment and recovery operations. All site workers shall sign the log in Appendix A to signify they understand the Health and Safety Plan. Personnel shall not be allowed on-site until thoroughly briefed on anticipated hazards and any additional safety practices to be followed.

3.02 Potential Hazards

Field personnel may be exposed to both chemical and physical hazards while working at CPBR. The potential chemical hazards at the site are exposure to crude oil and denatured ethanol. Exposure pathways to chemical hazards include skin contact, inhalation of vapors, and ingestion.

Potential physical hazards include excavation into buried utilities, contact with overhead power lines, all hazards associated with heavy equipment operations, vacuum trucks, and the recovery of contaminated soil, vegetation, and surface/groundwater. Additional physical hazards are manual lifting of booms and other containment equipment; slips, trips, and falls from uneven terrain; and fire. Other hazards that employees and contractors may be exposed to at the site include heat stress; heat exhaustion, and heat stroke; hazards associated with operating a motorized vehicle; and water hazards (i.e. drowning) associated with working adjacent to the river, including fast moving water.

A generic job task hazard assessment (Appendix B) has been developed to cover the overall job's hazards however, additional site-specific work site hazards will be identified (with appropriate control measures) at the onset of each unique spill response event.

3.03 Site Control

Only personnel with appropriate training may enter spill response work zones.

General Rules

1. Contractors operating in the spill response work zone that are recovering oil shall use caution tape/barricades/fencing, etc. to cordon off sufficient space around the work (minimum 50-feet from the last visible crude oil/free phase product) area to prevent unprotected or unauthorized personnel from entering the work area.

2. No eating, drinking, smoking, gum or tobacco chewing, or any other practice in the work area that increases the probability of hand-to-mouth transfer of contaminants. The Environmental and Safety Manager will designate safe areas away from the work area where eating can be done. The entire CPBR site is designated a no smoking zone during spill response.

3. Hands shall be thoroughly washed upon leaving the work area and before eating, drinking, or any other non-working activity.

4. During recovery activities, on site workers shall act as the safety backup to each other.

5. Entrance and exit locations shall be designated and emergency escape routes away from the operations areas shall be delineated by the Environmental and Safety Manager. The following hand signals will be used where verbal communications cannot occur or are not practical:

Signal	Translation
Hand gripping throat	Out of air/can't breathe
Grip partners wrist or both hands around waist	Leave area immediately
Hands on top of head	Need assistance
Thumbs up	O.K., I'm all right, I Understand
Thumbs down	No, negative
Raised clenched fist	Stop

6. Potable water shall be available on-site for drinking and cleaning purposes.

7. There shall be at a minimum of two 30#, or four 20# ABC dry-chemical fire extinguisher on-site at each operational area.

8. All excavations (if needed) shall be in accordance with OSHA and all applicable regulations. These regulations include that workers shall not enter any excavation deeper than 4 feet, unless acceptable sloping, shoring, or other means of protection are provided. Open excavations deeper than 4 feet shall not be entered unless appropriate entry precautions are taken with trained staff.

9. Employees will not be permitted to work alone in a deemed "hot zone" or adjacent (within six feet) to water.

10. When employees will be working during the night light plants will be utilized to ensure the site is appropriately illuminated.

Personal Protective Equipment

Based on the evaluation of potential hazards, the level of protection deemed appropriate for this site is general level D for all operations as follows (unless air monitoring dictates that PPE upgrades or ventilation are required):

- Hard Hat
- Safety Glasses
- Steel-Toed Boots
- Disposable suits (e.g. Tyvek)/booties, as needed
- Rubber or Latex Gloves, as needed

The level of protection may be upgraded if monitoring results or other indications of increased levels of contamination become evident during any phase of work. Work within the hot zone requires FR clothing. The hot zone is identified as 50 feet within the visible product. The hot zone may be extended based on air monitoring results.

Any items that come into contact with contaminants shall either be disposed of properly or thoroughly washed before reuse.

Working Near Water

OSHA Construction Industry Standards (1926) state: "employees working over or near water, where the danger of drowning exists, shall be provided a Coast Guard-approved PFD (Personal Flotation Device)." An approved PFD will be required to be worn any time an employee is in a boat. A PFD may also be required at the discretion of the Environmental and Safety Manager when working adjacent to swift moving water, or when entering slow moving water above the waist during daylight hours. When working at night, all employees working on or adjacent (within six feet) to water shall wear a Coast Guard- approved PFD.

Monitoring

Ambient air monitoring will be provided on a continuous basis with a personal four gas monitor (LEL, H2S, CO, 02). Periodic samples with be performed with a PID, Drager CMS, or Ultra Rae devices in the breathing zone and area of the recovery workers for benzene. The results shall be documented on the gas test record form, daily or field reports, or through computer data retrievable (download) methods.

Personal samples will be taken in representative locations using both passive methods, 3M badges, and active methods, sampling pumps and charcoal tubes for 25 contaminants. The acceptable level for work on this site under level D protection is 0.5 ppm for benzene.

Permissible exposure limits (PEL)

Reference the SDS in the control room for PELs. Should levels exceed the established PELs all personnel shall move upwind, stop work activities, and contact the IC and Environmental and Safety Manager.

Respiratory Protection

CPBR has established a respiratory protection program will be followed as per OSHA regulations in 1910.134. The respiratory protection program addresses the specific hazards at the CPBR facility. General rules for respiratory use are as follows:

Medical Evaluations
All new field employees who may be required to wear a tightfitting respirator must have an initial medical evaluation that is reviewed by a physician (i.e., baseline pulmonary function test or spirometry examination).

Respirator Fit
Physical conditions (e.g., facial hair or temple pieces on glasses) must allow an effective facial seal with the respirator. All workers, including field and office employees, who may be required to wear respiratory protection that depends on an effective seal must be clean-shaven where the facepiece contacts the skin; this may require trimming or removing mustaches.

Fit Testing
Before wearing a respirator, employees must be fit-tested for the brand and model used. Before each use of a respirator, perform a positive and negative pressure field fittest to check the seal of the face mask.

Inspection and Maintenance

Inspect and maintain respiratory equipment in accordance with the manufacturer's specifications. Visually inspect all respirators before and after each use.

Cartridges

For shared respiratory equipment, disinfect after each use and clean as necessary. For all other respirators, sanitize after each use and clean as necessary. Workers may perform minor maintenance on hoseline breathing equipment (e.g., replace headbands, valves, gaskets, hoses, and clamps). Major maintenance and repairs must be performed by (a) a qualified worker (i.e., trained in cleaning, inspecting, and maintaining respirators), or (b) a certified technician from the supplier or manufacturer. Replace organic vapor (OV) cartridges and organic vapor/acid gas (OV/AG) cartridges after a total of 6 hours of use.

Immediately replace OV/AG cartridges if:

- used for escape from H_2S concentrations >10 ppm
- damaged
- there is odor breakthrough

Replace filters when plugged, damaged, or soiled, or when breathing is difficult. If used in environments containing oil aerosols, replace oil-resistant filters after a total of 40-hours of use or 30 days, whichever comes first.

Hearing Protection

CPBR has developed a Hearing Protection Program, which will be followed during response activities. In general, hearing protection will be utilized during recovery operations when noise levels exceed 85 decibels.

3.04 Equipment

Bonding and Grounding

All vacuum trucks and other similar equipment utilized when collecting crude will be appropriately grounded and bonded.

Operation of Boats

When operating boats during the day, the following criteria must be met:

- Verification must be performed of the site to confirm understanding of site safety plan by the individual in charge of the site.
- A JSA/hazard assessment must be performed to identify specific hazards and controls at the site prior to work beginning.
- A shore watch with the responsibility of tracking hazards in the water, and to coordinate boats in the event an individual would fall overboard.
- A rope and buoy will be with the shore watch at all times.

Operation of Boats after Dusk

Boats may be operated after dusk only if it is necessary to deploy boom, or in the event that damages to boom will need to be repaired. In the event a boat is operated after dusk, all of the above items must be met in addition to the following conditions:

- Only sites that have already been confirmed to be free of underwater obstacles and other hazards through a job hazard assessment during daylight hours will be allowed to have boats operating on them at night.
- A minimum of two light plants will be utilized for each work crew
- A stable boat, preferably a flat bottom, will be utilized if possible
- A secondary manned boat must be in the water at the location to potentially act as a rescue boat.
- Boats must be equipped with running lights appropriate for night use and a spotlight
- All employees must wear appropriate PPE, including a Coast Guard approved PFD
- Radio contact must be maintained between the shore watch and boats.

3.05 Emergency Procedures and First Aid

The following emergency contacts will be used as appropriate.

Primary Emergency Contacts	
Police	911/ 503-728-2145
Fire	911/ 503-728-2025
Ambulance (all times)	911
Columbia Emergency Planning Association (CEPA/LEPC)	503-397-1244
Other Contacts	
Columbia County Sherriff's Office	503-366-4611
Oregon State Fire Marshal	503-378-3473 (business hours)
Oregon State Police	503-378-3720 (business hours) 503-375-3555 (N. Dispatch)
Oregon OSHA	503-378-3272
PeaceHealth St. John Medical Center 1615 Delaware St, Longview, WA 98632	360-414-2000
NOAA National Weather Service (Portland office)	503-261-9246
Local television station (for evacuation notification) KGW	503-226-5000
Local radio station (for evacuation notification) KTJC	360-501-6044
ODEQ Northwest Regional Office	503-229-5263
Port Westward	503-728-7470
Portland General Electric (Beaver Control Room)	503-728-7251
Port of Columbia County (local water supply)	503-397-2888 After Hours: 503-396-3314

Incident Reporting

In the event of any incident or close call, CPBR will investigate to identify both the immediate and all underlying causes using its Incident Investigation Program. Any incident resulting in personal injury, close call, or property damage shall be verbally reported immediately to the IC or Environmental and Safety Manager.

First Aid

Most injuries sustained shall be initially treated on-site if appropriate based on the nature of the illness/injury. Response to medical emergencies shall follow direction in the CPBR Quick Reference Sheets (Appendix C).

A fully-stocked first aid kit shall be available to all recovery personnel to treat minor injuries. An ambulance (911) shall be called for emergencies and transportation to a hospital. All efforts will be made to ensure that there is at least one individual trained in first aid/CPR at each location. The SDS of chemicals on-site should be reviewed for contact hazards. Immediately report all safety problems to the IC. The IC shall keep a permanent record of all such occurrences and shall report serious problems to the Environmental and Safety Manager. All occurrences shall be documented by the completion of an accident report.

Evacuation

If the site activities require evacuation because of fire, security purposes, personnel injury, excessive vapors, or lightning hazards, the IC shall immediately implement the Evacuation Plan (see Quick Reference Sheets in Appendix C).

Inclement Weather

In the event of inclement weather, the IC shall immediately implement actions in the Quick Reference Sheets (Appendix C). If potential or imminent weather is in the forecast, these hazards need to be identified and controls implemented in the hazard assessment.

Training Requirements

All personnel shall be up-to-date on the requirements set forth in 29 CFR 1910.120. It is the responsibility of all recovery personnel to maintain the required training and annual 8 hours of refresher training for all personnel.

Decontamination Procedures

Personnel
Decontamination of personnel is to be provided with mild detergent and clean water rinse. Boot covers and gloves are to be rinsed prior to removal or disposed of properly. Gloves are to be changed as needed or at a minimum at least daily.

Every site will have a poly area, cleaning detergent and absorbent materials to assist in decontamination processes. Decontamination units will be added throughout the work area as necessary.

Equipment

Following work activity, all other field/sampling equipment shall be properly decontaminated with a phosphate-free solution and water rinse.

APPENDIX A

OIL SPILL RESPONSE HEALTH AND SAFETY PLAN REVIEW LOG

COMPANY NAME	SIGNATURE	DATE

APPENDIX B

JOB SAFETY ANALYSIS

Global Job Safety Analysis (JSA)

Originator (Print Name) _____ **Area/Shop** _____ **Date** _____

Location of Work: _____

Task Description: _____

Emergency Phone #: Control Room (503) 728-7014 / Radio Channel 5 **Emergency Evacuation Location:** IC to Determine

TASK STEPS

(To be filled out by person performing job)

1) See Job Checklist
2)
3)
4)
5)
6)
7)
8)
9)
10)

Maintenance Team Leader _____

Resource Planning

The job is NOT complete until the area is cleaned up!!

POTENTIAL HAZARDS			
A Electrocution/Shock	**H** Hot Surfaces	**O** Slippery/Uneven Surfaces	**V** Chemicals (MSDS Review)
B Fall from Heights	**I** Pinch Points	**P** Machinery - Rotate/Moving	**W** Restricted Access/Confined Space
C Work Overhead	**J** Flying Particles	**Q** Lead Paint/Hex Chromium	**X** Poor Lighting
D Lifting: Manual	**K** Vehicle Traffic	**R** Silica Dust/Asbestos	**Y** Heat Stress
E Lifting: Mechanical	**L** Railway Traffic	**S** Cold Temperatures	**Z** Compressed Air
F Excavations	**M** Welding Fume	**T** Poor Work Position	**AA** Rough/Sharp Material
G Noise	**N** Welding Arc	**U** Flammable Materials	**BB** Other:

ENTER LETTER OF POTENTIAL HAZARD AND CORRECTIVE ACTIONS FOR EACH JOB STEP

LETTER	ACTIONS TAKEN TO ENSURE SAFETY (USE REVERSE OF THIS SHEET IF ADDITIONAL SPACE IS NECESSARY)

Operations Signature: David McDaniel **Time of Review: 4/15/2013**

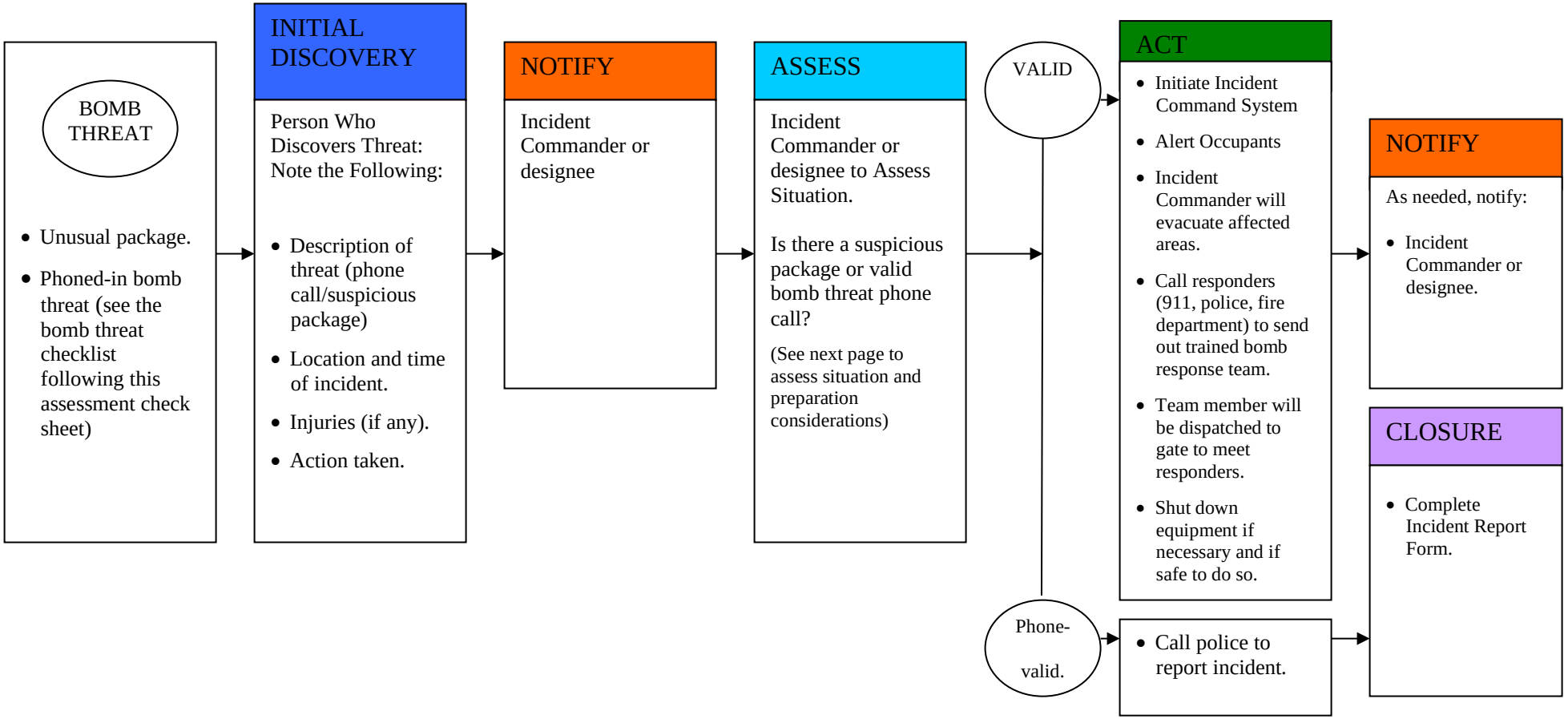
Lockout Box ID

"Building a Values-Driven Safety Culture"

APPENDIX C

EMERGENCY RESPONSE QUICK REFERENCE SHEETS

Bomb Threat



IMPORTANT PHONE NUMBERS		
		Oregon OSHA (Portland Office) . (503) 229-5910

Bomb Threat

Situation Assessment Fact Sheet

The following information has been provided as a guide for the situation assessment. This information is not a complete list of all factors required to be considered.

Initial Discovery of threat.

- Obtain information as to the time of the call and the exact words used. Did the caller or reporter describe what type of bomb it is, where it is and what time it will explode? Did the caller give a motive? Was the caller male or female? Was there any background noise? **See attached bomb threat checklist for detailed questions to ask when a bomb threat is called in.**

- For suspicious and/or unusual packages: Get detailed information on the source of the threat as may be available including the description of any suspicious items, markings or identifying addresses, **BUT DO** NOT TOUCH OR MOVE ANY SUSPICIOUS PACKAGE OR ITEM.

- For written bomb threats: save all materials for evidence.

Notify the Incident Commander or designee of the threatening situation and provide detailed information about it.

- The Incident Commander or designee will implement Incident Command System and notify Fire Department/Police. A designated team member will be dispatched to the gate to meet the responders.

- The Incident Commander or designee will make the decision whether to evacuate all or a portion of the facility. The Incident Commander will issue the Evacuation notice and immediately notify plant personnel via the in-plant intercom system and coordinate response actions with the Police. All evacuated personnel are to go to the evacuation Rally point and remain there until told to go back by the Incident Commander or designee. Designated team members will take a head count of the personnel working in their areas.

- Once evacuated, prevent re-entry back into the facility until the situation has been assessed. If possible, turn off all gas and fuel lines.

CPBR will plan ahead in the consideration of a bomb threat and when a bomb threat has been identified, as follows:

- Personnel familiar with the surrounding area should be able to quietly identify items which appear to be out of place.

- Two-way radios will not be used. Therefore, “runners” designated by the Incident Commander or designee must be used to communicate within the plant.

- Designate a control center location with a focal point for telephone or radio communications with communication procedures and telephone numbers.

- Do not put a suspicious article in water, or in a desk drawer or a filing cabinet.

- If possible, open windows and doors to assist in venting in case of an explosion.

- Bomb searches will be conducted by trained personnel.

BOMB THREAT CHECKLIST

Exact time of call _____AM or PM

Exact words of caller

_____

_____

_____

QUESTIONS TO ASK (ask questions to keep caller on the line)

1. When is bomb going to explode? _____

2. Where is the bomb? _____

3. What does it look like? _____

4. What kind of bomb is it? _____

5. What will cause it to explode? _____

6. Did you place the bomb? _____

7. Why? _____

8. Where are you calling from? _____

9. What is your address? _____

10. What is your name? _____

CALLER'S VOICE (circle)

Calm	Disguised	Nasal	Angry	Broken
Stutter	Slow	Sincere	Lisp	Rapid
Giggling	Deep	Crying	Squeaky	Excited
Stressed	Accent	Loud	Slurred	Normal

If voice is familiar, whom did it sound like? _____

Were there any background noises? _____

Remarks: _____

Person receiving call: _____

Telephone number call received at: _____

Date: _____

Oil Spill Response

INITIAL DISCOVERY

Person Who Discovers Oil Spill: Note the Following:

Provide:

- Type of incident.
- Location and time of spill.
- Amount of material spilled (if known).
- See next page for initial release assessment protocol.

NOTIFY

IC or Alternate.

ASSESS

Incident Commander or Alternate to Assess Situation.

Health & Safety threat to personnel, plant or community?

An immediate threat to worker is when a spill of oil threatens life or exposure to acute health impacts to unprotected workers whether by routes of ingestion, inhalation, or dermal absorption. Personnel must evacuate the hazard area immediately.

See next page to conduct Incident Assessment.

THREAT

NON THREAT

ACT Safety

- Initiate Incident Command System
- Shut down equipment if necessary.
- Extinguish all sources of flame or sparks near affected area (smoking, welding, burning, etc.).
- Check for explosion hazard.
- Check personnel exposure.
- Call responders (911, etc.) for potential fire, explosion.
- Team member will be dispatched to gate to meet responders.
- Alert hospital if necessary.

ACT Notify

Notify NRC:
800-424-8802

- Any amount with a sheen to the Columbia River.

Notify ODEQ:
800-452-0311

- Any amount with a sheen to the Columbia River.
- Any amount over 42 gallons on land.

Notify Washington EMD:
800-258-5990

- Any amount with a sheen to the Columbia River (shared water with Oregon)
- Other notifications as required.

ACT Response

- Incident Commander Notify Oil Spill Response Organization

Cowlitz Clean Sweep
(360) 423-6316

- Facility personnel contain the spill if on land (if safe to do so).
- Qualified Individual at facility deploy on-site spill response boat and containment boom within one-hour of spill to the Columbia River.

Response Completion

Properly contain, clean and dispose of residue.

CLOSURE

- Complete incident report.
- Complete Agency reporting, if required.
- Complete Incident Response Critique.

IMPORTANT PHONE NUMBERS

Department Supervisor ..... Access Paging System

Incident Commanders..... See Back of Page

Emergencies (Fire, Police, Ambulance) 911

USEPA National Response Center (NRC) 800-424-8802

Oregon Department of Environmental Quality (ODEQ)
Oregon Emergency Response System 800-452-0311
ODEQ Emergency Response (24 hour).....800-452-4011
ODEQ Regional Office…….(503) 229-5614
Washington Emergency Management Division
(EMD)…… 800-258-5990

Columbia County Sheriff…… 503-397-2511

Health and Safety
Oregon OSHA (Portland Office) (503) 229-5910

Utilities
Electric: ……..503-728-2163
Natural Gas: …….800-826-7724

Oil Spill Response

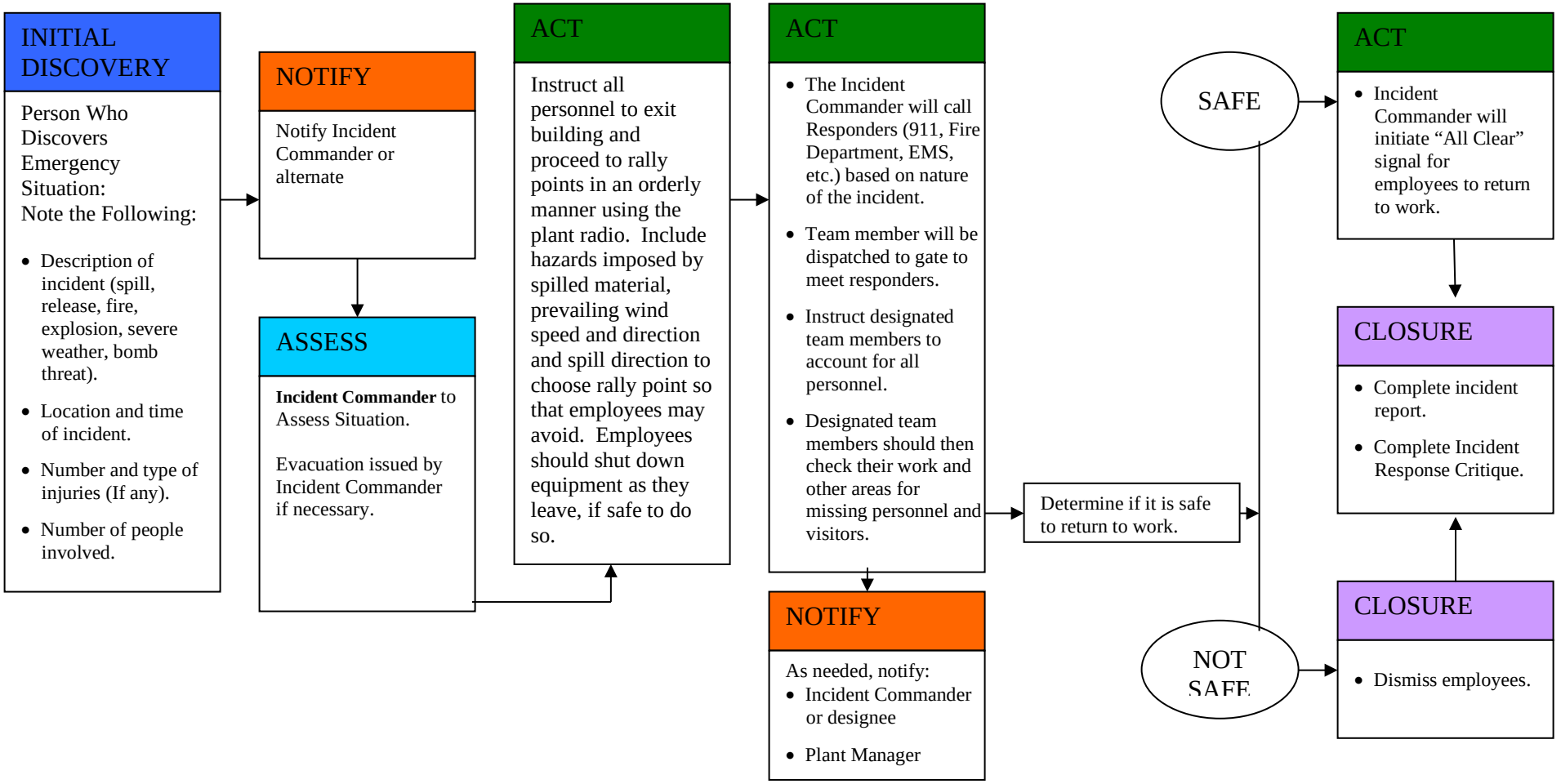
Situation Assessment Fact Sheet

The following information has been provided as a guide for the situation assessment. This information is not a complete list of all factors required to be considered.

The Discoverer of the oil spill/release will determine the following and notify the Incident Commander or alternate:

- What type of regulated oil has spilled;
- Where is the spill location;
- Type of spill – on land or water;
- Approximate spill rate (e.g., gallons per minute);
- Approximate area (square feet) of liquid pool,
- Is the spill contained;
- What is the estimated time to contain the spill;
- Duration (an estimate in minutes as to how long before the spill source can be stopped).
- Are there health and/or physical (such as explosion or fire) hazards? Is the release to the environment which results in the presence of oil and/or hazardous material vapors within buildings, structures, or underground utility conduits at a concentration equal or greater than 10% of the LEL?
- If it can be done safely, minimize spreading of the release by using absorbent booms, socks, or oil dry material. Otherwise, leave the area and wait for emergency response personnel to arrive.
- Notify the facility Incident Commander or designee to implement the Incident Command System. The Incident Commander or designee will compute the release of a hazardous substance and the associated reportable quantity and make the appropriate notifications. Volatile organics may vaporize, requiring the computation of release of these compounds to the atmosphere.
- In the event of an evacuation, the Incident Commander or designee and designated team members will ensure that all unauthorized personnel are kept from entering the evacuated areas. All personnel are to go to the designated rally point and remain there until told to go back by the Incident Commander or designee. Designated team members will take a head count of the personnel working in their areas. See **Evacuation Procedures**.
- The Incident Commander or designee will identify and assess the character, source(s), amount, and extent of the spill.
- The Incident Commander or designee will determine the level of response required to respond to the spill. In the event of a spill to the Columbia River, deploy the spill response boat and containment boom within one hour of discovery.
- The Incident Commander will notify the OSRO(s).
- An emergency zone around the hazard area shall be established to prevent unauthorized entry. If necessary, a designated team member will isolate the area prior to team arrival. At no time are any team members to risk their lives to isolate the area.
- Following the spill cleanup operations, an assessment shall be made as to the proper handling of recovered materials. Laboratory analysis of the recovered material may be necessary to determine the appropriate disposal method for the material.
- Once the emergency event has been properly assessed, controlled, contained and secured, the Incident Commander will be responsible for ensuring proper treatment, storage and disposal of any wastes, equipment or other materials generated by the incident in accordance with federal, state and local requirements.

Evacuation Plan Procedures



IMPORTANT PHONE NUMBERS

Department Supervisor ..... Access Paging System

Incident Commanders..... See Back of Page

Emergencies (Fire, Police, Ambulance) 911

USEPA National Response Center (NRC) 800-424-8802

Oregon Department of Environmental Quality (ODEQ)
Oregon Emergency Response System 800-452-0311
ODEQ Emergency Response (24 hour).....800-452-4011
ODEQ Regional Office……(503) 229-5614

Columbia County Sheriff…… 503-397-2511

Utilities
Electric: 503-728-2163
Natural Gas: 800-826-7724

Health and Safety
Oregon OSHA (Portland Office) . (503) 229-5910

Evacuation Plan

Situation Assessment Fact Sheet

The following information has been provided as a guide for the situation assessment. This information is not a complete list of all factors required to be considered. **CPBR will plan ahead in the consideration of evacuations, as follows:** Personnel should ensure that tools, carts and associated items are not blocking aisles, if possible, to preventions obstructions during evacuations.

Evacuation actions:

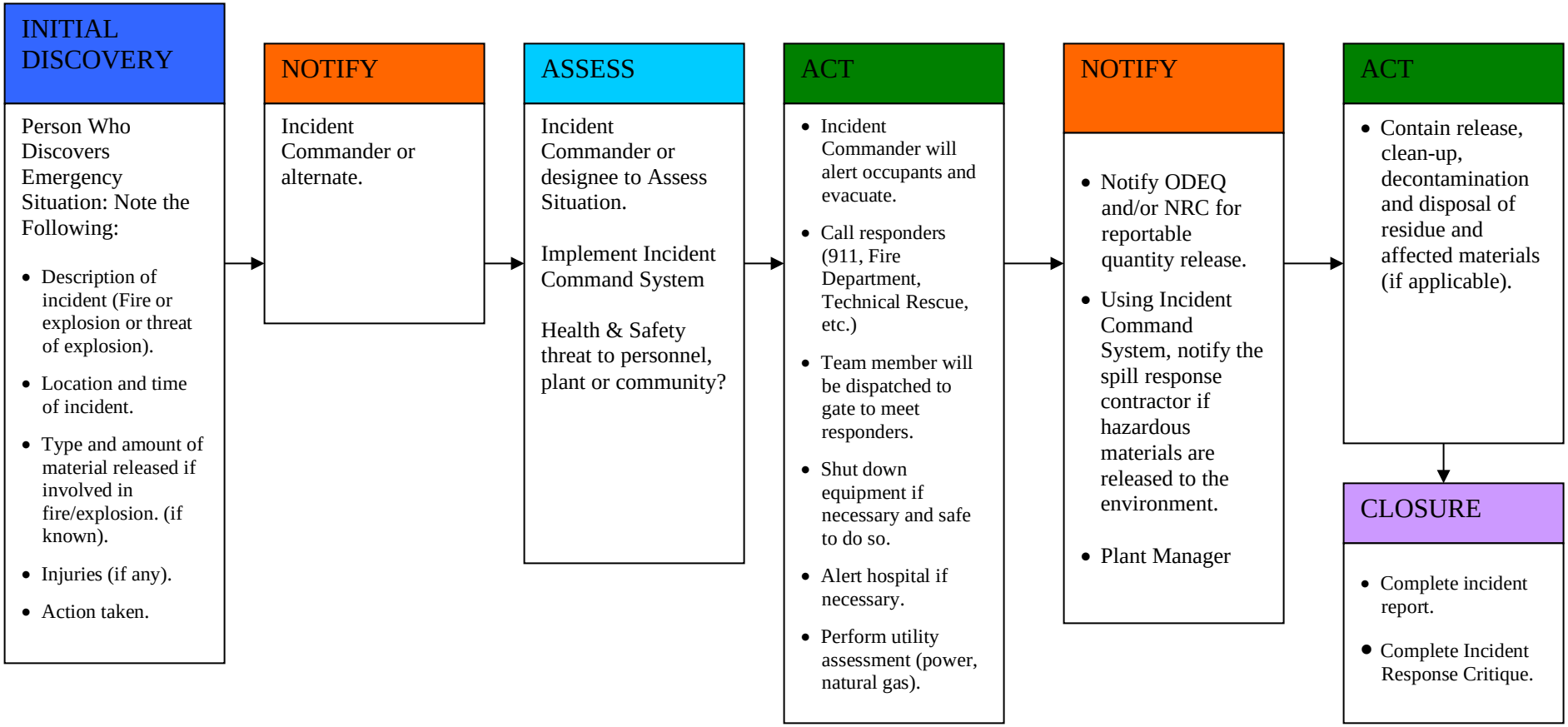
- Be aware of wind direction. Wind socks are located at the facility to determine wind direction. Keep the evacuation area upwind, as necessary. The Incident Commander or designee or Plant Manager will locate an alternate evacuation area if wind direction changes.
- All vehicle traffic within the plant will cease in order to allow safe exit of personnel and movement of emergency equipment. Vehicles will be parked off the main aisles without blocking exit aisles or doors. The keys must remain with the vehicles.
- All personnel, visitors and contractors will immediately leave the plant area and proceed to the primary or alternate rally point. The evacuation routes are posted throughout the plant and are shown on Figure 4. Depending on the specifics of the incident, take effort to avoid locations of stored hazardous materials that may be involved in the incident. These materials are shown on Figure 4.
- If needed, all personnel, visitors and contractors will be directed to an offsite rally point at the CPBR guard station equipped with phone and parking if the onsite rally point is within the danger zone for the specific incident.
- The Administrative Assistant will be responsible for taking the visitor log list and a current employee list to the rally point.
- No persons shall remain or re-enter the location unless specifically authorized by the Incident Commander or designee.
- The Control Room can be used to shelter-in-place, if necessary.
- In cases where buildings are being evacuated, operators should shut down their machinery, if safe and possible.
- The Incident Commander or designee and designated team members will take a head count using employee and contractor lists at the rally point to determine if there are any missing persons.
- No attempt to find persons not accounted for will involve endangering lives of others by re-entry into emergency areas. Rescue services for injured persons will be obtained, where required.
- The Incident Commander will relay all pertinent information to the emergency responders.
- Re-entry into the area will be made only after clearance is given by the Incident Commander or Incident Commander or designee. An "All Clear" signal will be given for re-entry into the plant; and
- In all questions of accountability, designated team members will be held responsible for those persons reporting to them. Visitors will be the responsibility of those personnel they are seeing. Contractors are the responsibility of those persons administering the individual contracts.
- Personnel must not leave the assembly area until the “all clear” signal is given, or until they are released to go home.
- Injured personnel should be transported to St. John Hospital in Longview if necessary and ambulance is not available.
- In the event that the primary evacuation route is blocked or determined not to be appropriate, an alternate route will be followed. The primary and alternate evacuation routes are as follows:

Primary Rally Point/Command Center: Proceed to your nearest exit, as indicated within the various work areas of the facility and exit the buildings. After exiting the buildings proceed to designated rally point in an orderly fashion. The rally point is in the administration parking lot.

Alternate Rally Point/Command Center: If directed to use the alternate evacuation route, please proceed to the nearest exit, as directed within the various work areas of the facility and exit the building. After exiting the buildings proceed to the alternate rally point in an orderly fashion. The alternate rally point is at the security guard station.

Incident Commanders

Fire/Explosion



IMPORTANT PHONE NUMBERS

Department Supervisor ..... Access Paging System

Incident Commanders..... See Back of Page

Emergencies (Fire, Police, Ambulance) 911

USEPA National Response Center (NRC) 800-424-8802

Oregon Department of Environmental Quality (ODEQ)
Oregon Emergency Response System 800-452-0311
ODEQ Emergency Response (24 hour).....800-452-4011
ODEQ Regional Office……(503) 229-5614

Columbia County Sheriff…… 503-397-2511

Utilities
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Natural Gas: 800-826-7724

Health and Safety
Oregon OSHA (Portland Office) . (503) 229-5910

Fire/Explosion

Situation Assessment Fact Sheet

The following information has been provided as a guide for the situation assessment. This information is not a complete list of all factors required to be considered.

- Using Incident Command System, the Incident Commander or designee will evaluate the need for evacuation.
- Identify the impact to human health, the environment or the plant if the fire were to spread.
- What type of fire is it (electrical, chemical, other)?
- Keep unnecessary people away from the area.
- Consider if it is safe or desirable to shut off power to the area.
- Contact the Incident Commander or designee to determine if fire control materials (water, foam, etc.) must be treated as a spill material.
- Monitor equipment and building systems after restart.

***For small fires**:*

- If the building or equipment is on fire, area personnel should check the area for hazardous material/hazardous waste storage or other flammable materials and remove all suspected materials from the area, if possible.
- Response personnel to prevent unauthorized entry into the area shall establish an emergency zone around the hazard area.
- Only personnel trained in the use of fire extinguishers per 29 CFR 1910.157 should extinguish flames with fire extinguishers.
- If a hazardous material release was involved with the fire, emergency response personnel will follow spill response guidelines specified in Hazardous Material Release Response Section. Response personnel must use non-sparking tools when cleaning up a spill of flammable material.

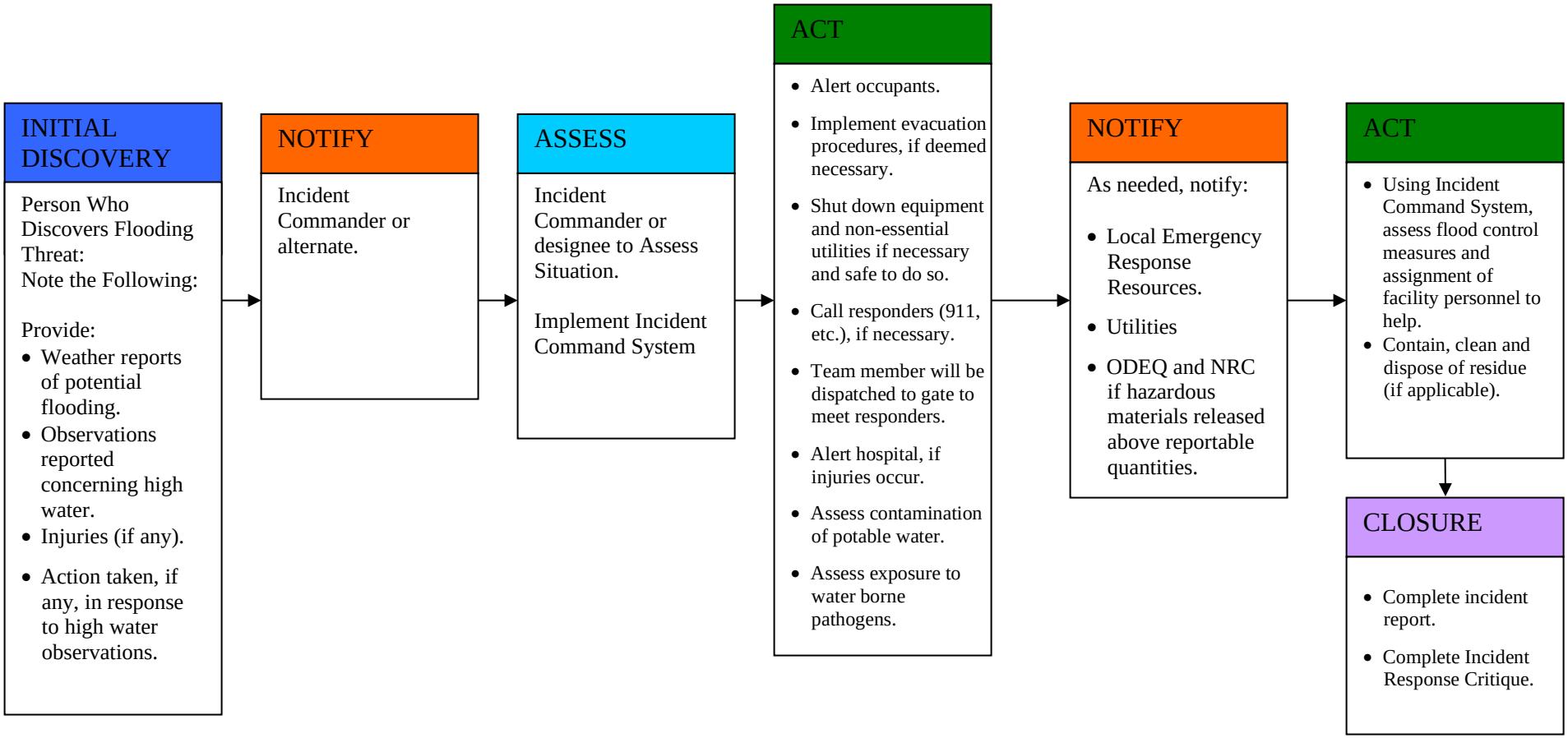
For Fires that require off-site help:

- Notify the Incident Commander or designee to decide whether emergency evacuation is needed.
- The Incident Commander will issue an immediate evacuation as determined through the Incident Command System following **Evacuation procedures.**
- Notify the Fire Department.
- Team member will be dispatched to gate to meet responders.
- All personnel, except those designated by the Incident Commander or designee, shall evacuate the area immediately via the nearest exit and assemble in the rally point.
- If a hazardous material is involved in the fire, an attempt should be made to determine the nature of the burning material using knowledge of the container contents.
- When the Fire Department arrives, primary responsibility will be delegated to them. The Incident Commander should stand by to assist the Fire Department if needed.
- Emergency response personnel will contain and collect material and contaminated fire water runoff with earthen dikes, sand, absorbent, etc. via the spill response procedures.
- During an evacuation, the Incident Commander or designee and designated team members will ensure that all unauthorized personnel are kept from entering the evacuated areas. All personnel are to go to the Rally point and remain there until told to go back by the Incident Commander or designee. Designated team members will take a head count of the personnel working in their areas. See **Evacuation Procedures** for further information.
- The Incident Commander or designee will evaluate whether the hazardous material release is recordable and notify ODEQ and NRC, if applicable.
- If a hazardous material release was involved with the fire, emergency response personnel will follow spill response guidelines specified in **Hazardous Material Release Response Section**. If there is a release to the environment, the Emergency Spill Response Contractor will be notified by the Incident Commander.

<u>Incident Commanders</u>

<u>Alternate Qualified Incident Commanders</u>

Flooding



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Flooding

Situation Assessment Fact Sheet

The following information has been provided as a guide for the situation assessment. This information is not a complete list of all factors required to be considered.

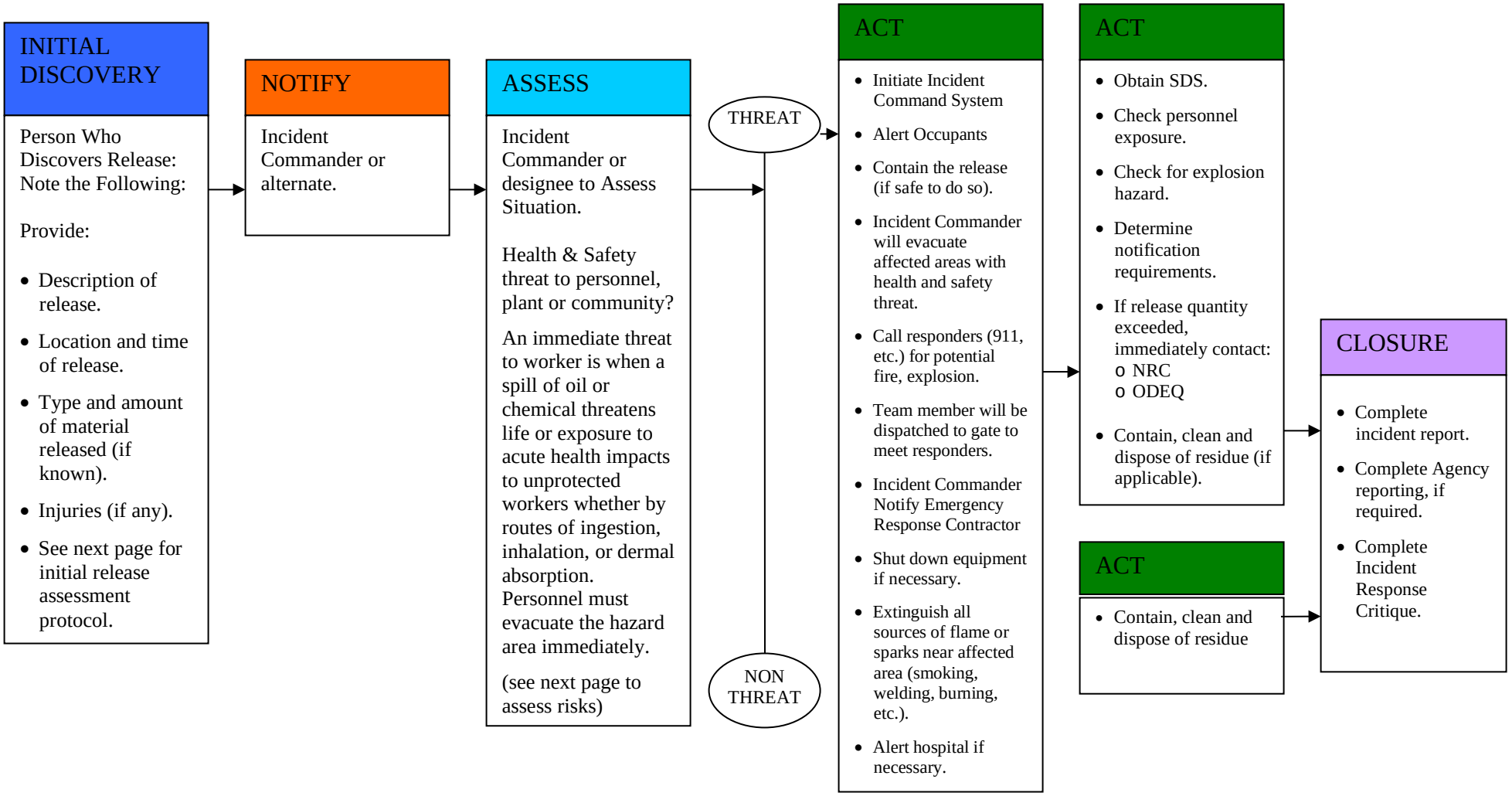
- Listen to the radio for weather updates.
- Listen for disaster sirens and warning signals.
- Be aware that flash flooding can occur. If there is any possibility of a flash flood, move immediately to higher ground. Do not wait for instructions to move.
- Be aware of streams, drainage channels, and other areas known to flood suddenly. Flash floods can occur in these areas with or without such typical warnings as rain clouds or heavy rain.
- If the plant is flooded, work with plant maintenance and/or trades to de-energize equipment (if safe to do so). Do not touch electrical equipment if you are wet or standing in water.
- Do not walk through moving water. Six inches of moving water can make you fall. If you have to walk in water, walk where the water is not moving. Use a stick to check the firmness of the ground in front of you.
- Do not drive into flooded areas. If floodwaters rise around your car, abandon the car and move to higher ground if you can do so. Be aware of areas where flood waters may have receded and weakened road surfaces.
- Stay away from and report downed power lines.
- Stay away from disaster areas unless authorities ask for volunteers.

- Consider health and safety needs. Wash your hands frequently with soap and clean water if you come in contact with flood waters.
- If water supply has been contaminated, post signs warning people not to drink the water. Contact the Incident Commander or designee to arrange for flushing, disinfection and testing of the water lines.

<u>Incident Commanders</u>

<u>Alternate Qualified Incident Commanders</u>

Hazardous Material Release



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Hazardous Material Release

Situation Assessment Fact Sheet

The following information has been provided as a guide for the situation assessment. This information is not a complete list of all factors required to be considered.

The Discoverer of the spill/release will determine the following and notify the Incident Commander or designee and Plant Manager:

- What type of material is leaking or being released (acid, caustic, flammable substance);
- Where is the release location;
- Type of release (i.e., liquid and/or vapor and or aerosol);
- Approximate release rate (e.g., gallons per minute);
- Approximate area (square feet) of liquid pool,
- Is the leak contained;
- What is the estimated time to contain the leak;
- Is the leak repairable;
- Duration (an estimate in minutes as to how long before the release can be stopped).
- Are there health and/or physical (such as explosion or fire) hazards? Is the release to the environment which results in the presence of oil and/or hazardous material vapors within buildings, structures, or underground utility conduits at a concentration equal or greater than 10% of the LEL?
- If it can be done safely, minimize spreading of the release by using absorbent booms, socks, or oil dry material. Otherwise, leave the area and wait for emergency response personnel to arrive. **Note: Do not use organic material such as peat moss or saw dust on acid spills.**
- Notify the facility Incident Commander or designee to implement the Incident Command System. The Incident Commander or designee will compute the release of a hazardous substance and the associated reportable quantity and make the appropriate notifications. Volatile organics may vaporize, requiring the computation of release of these compounds to the atmosphere.
- In the event of an evacuation, the Incident Commander or designee and designated team members will ensure that all unauthorized personnel are kept from entering the evacuated areas. All personnel are to go to the designated rally point and remain there until told to go back by the Incident Commander or designee. Designated team members will take a head count of the personnel working in their areas. See **Evacuation Procedures**.
- The Incident Commander or designee will identify and assess the character, source(s), amount, and extent of released materials.
- The Incident Commander or designee will determine the level of response required to approach the chemical release. The Incident Commander or designee will use Material Safety Data Sheets and professional judgment to define the level of emergency response to be used. OSHA requires that all handling of hazardous materials be conducted by certified trained technicians.
- The Incident Commander will notify the Emergency Response Contractor.
- An emergency zone around the hazard area shall be established by the Emergency Response Contractor to prevent unauthorized entry. If necessary, a designated team member will isolate the area prior to team arrival. At no time are any team members to risk their lives to isolate the area.
- Following the spill cleanup operations, an assessment shall be made as to the proper handling of recovered materials. Laboratory analysis of the recovered material may be necessary to determine the appropriate disposal method for the material.
- Once the emergency event has been properly assessed, controlled, contained and secured, the Incident Commander will be responsible for ensuring proper treatment, storage and disposal of any wastes, equipment or other materials generated by the incident in accordance with federal, state and local requirements.

<u>Incident Commanders</u>

<u>Alternate Qualified Incident Commanders</u>

Medical Emergency

INITIAL DISCOVERY

Person who discovers a medical Emergency:
Note the Following:

Provide:

- Description of incident (what happened).
- Location and time of incident.
- Action taken.
- Number and type of injuries (if any).
- Number of people involved.

NOTIFY

Incident Commander or alternate.

ASSESS

Incident Commander or designee to Assess Situation.

The Incident Commander or designee will implement the Incident Command System.

Determine cause and take precautionary measures to protect team members, contractors and visitors from further medical injury.

(see next page to assess risks)

ACT

- Provide medical attention (if safe) – use proper Personal Protective Equipment to protect from bloodborne pathogens.
- Call responders (911, ambulance) for emergency medical incident.
- Team member will be dispatched to gate to meet responders.
- Alert hospital, if necessary.
- Shut down equipment if necessary and safe to do so and use emergency equipment if necessary (fire extinguishers, spill control).
- Provide MSDS to Emergency Medical Services/Hospital.
- Contact spill response contractor to contain, cleanup and dispose of medical waste residue (if applicable).

NOTIFY

As needed, notify:

- Incident Commander or designee
- Plant Manager

CLOSURE

- Complete incident report
- Complete OSHA 300 log, if the medical emergency is a recordable incident.
- Complete Incident Response Critique.

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Medical Emergency

Situation Assessment Fact Sheet

The following information has been provided as a guide for the situation assessment. This information is not a complete list of all factors required to be considered.

When a medical emergency is discovered: Notify the Incident Commander or designee and Plant Manager and describe the type of injury and location and time of injury. If situation is life threatening, any personnel in the immediate area may summon emergency aid from the outside by calling 911. If a head, neck, or back injury is involved, only a professional medical team shall move the victim unless the situation is life threatening.

The Incident Commander or designee will determine cause of the injury/medical emergency and will implement the Incident Command System to respond to incidences where other personnel may be exposed to injury or health and safety hazards that could result in further medical emergencies.

GENERAL

- Be aware of hazards associated with bloodborne pathogens. Do not come into contact with bodily fluids. Wear proper protective clothing (safety goggles, protective gloves, etc.)
- Facility response personnel will not enter small buildings during emergencies when the possibility of asphyxiation exists or confined spaces at any time. Regulatory requirements relative to confined space entry (29 CFR 1910.146) must be met. Such entry will be performed by outside personnel such as the Clatskanie Fire Department, who are trained in the use of self-contained breathing apparatus.
- Maintain accurate records of the names, medical history and medical progress of all injuries in the plant.
- Dispatch a responsible person to direct the Emergency Medical Service (EMS)/ambulance at the gate when they arrive.
- Make a detailed report of the injury. A statement is to be taken from any person(s) that witnessed the incident.

DECONTAMINATION

- Assure all contaminated clothing is turned over to the Incident Commander or designee for proper treatment and disposal.
- The Environmental Manager should serve as the focal point transferring information (including SDSs) to the hospital emergency department administrator about the properties of the hazardous substances or conditions at the scene.
- Ensure first responders are trained to appropriate level.

CLEANUP

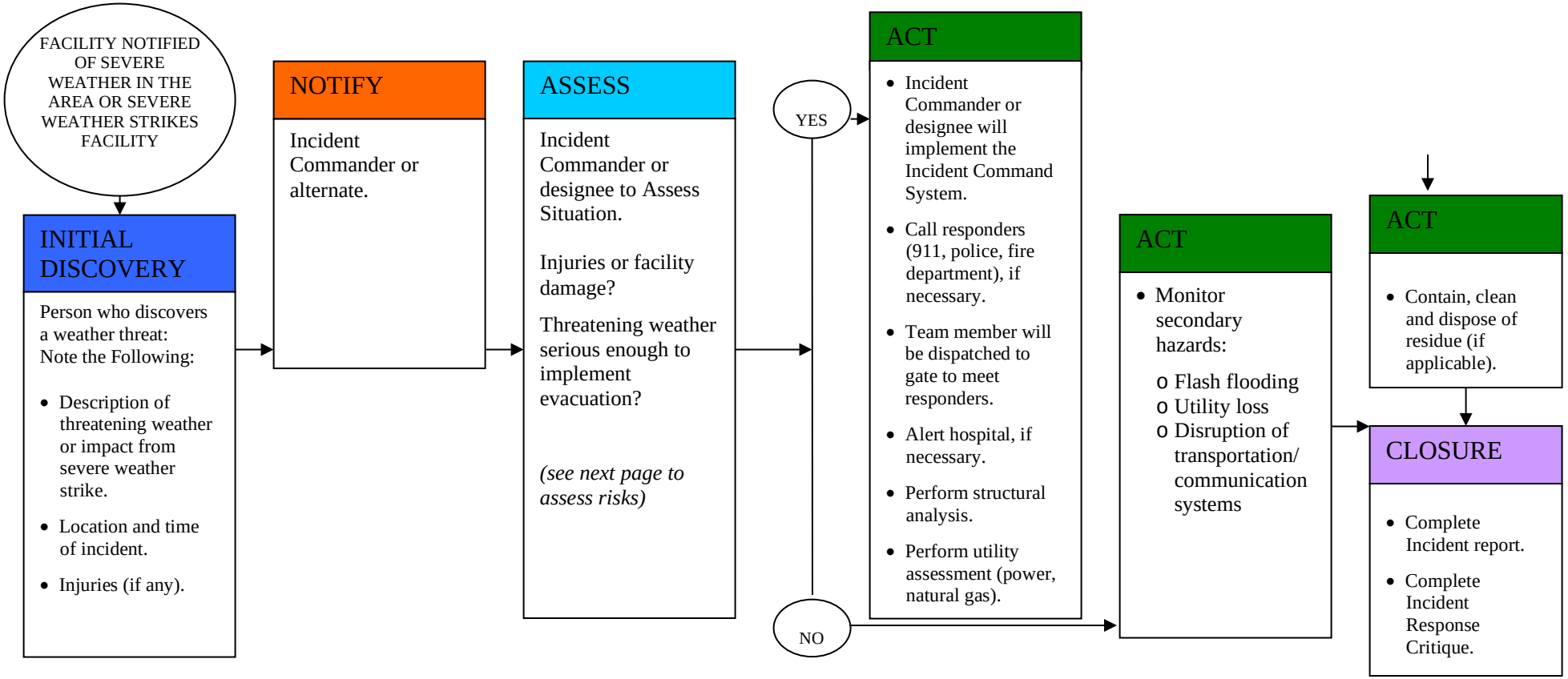
- Cleanup immediately by persons trained in decontaminating procedures.
- Identify infectious material spills with a warning sign.
- Disinfect work surfaces, parts, materials, equipment and flooring that was involved.
- Personnel not involved in decontamination process should not handle any items before disinfection and disposal.

Complete incident report and OSHA 300 log, if the medical emergency is a recordable incident.

Incident Commanders

Alternate Qualified Incident Commanders

Severe Weather (lightning, high winds, hail, heavy rain, tornado)



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Severe Weather (lightning, high winds, hail, heavy rain, tornado)

Situation Assessment Fact Sheet

The following information has been provided as a guide for the situation assessment. This information is not a complete list of all factors required to be considered.

- If necessary, shut down equipment and seek shelter in an orderly fashion.
- Avoid using telephones for other than emergency purposes.
- Personnel working outdoors should seek shelter inside buildings. Do not seek shelter under trees, towers or other tall metal or conductive structures.
- Severe weather shelters are identified on facility maps by exits.
- The Incident Commander or designee, in consultation with the Plant Manager, will decide if shutdown of the facility will be required.
- The Incident Commander or designee shall coordinate the appropriate facility shutdown procedures to be followed. Production personnel will be notified of shutdown procedures via the in-plant intercom system. Personnel may be notified by telephone not to report to work in the event of a plant shutdown.
- Once the shutdown operations are completed, the Incident Commander or designee will notify the Plant Manager or designated team member of the status of the shutdown.
- Following a severe weather emergency, the Incident Commander or designee should inspect the facility to verify it is safe for entry and operations.

Incident Commanders

Alternate Qualified Incident Commanders

Title: General Manager

Appendix Q
Acronyms and Definitions

CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 U.S.C. 9601 et seq); also known as Superfund
CEO	Chief Executive Officer
CFO	Chief Financial Officer
CFR	Code of Federal Regulations
CPBR	Columbia Pacific Bio-Refinery, LLC
EHS&S	Environmental, Health, Safety, and Security
EPA	United States Environmental Protection Agency
FRP	Facility Response Plan
HAZWOPER	Hazardous Waste Operations and Emergency Response (29 CFR 110.120)
IC	Incident Command/Incident Commander
ICS	Incident Command System
LCRGRP	Lower Columbia River Geographic Response Plan
LEPC	Local Emergency Planning Committee
MTR	Marine Transportation Related
NAICS	North American Industry Classification System
NCP	National Contingency Plan
NIMS	National Incident Management System
NRC	National Response Center
NWACP	Northwest Area Contingency Plan
OAR	Oregon Administrative Rule
OEM	Oregon Emergency Management
ODEQ	Oregon Department of Environmental Quality
OERS	Oregon Emergency Response System
OSC	On-Scene Coordinator
OSHA	Occupational Safety and Health Administration
OSRO	Oil Spill Removal Organization
PGE	Portland General Electric
PIC	Person in Charge
PPE	Personal protective equipment
PREP	National Preparedness for Response Exercise Program
QI	Qualified Individual
RM	river mile
SARA	Federal Superfund Amendments and Re-authorization Act of 1986
SDS	Safety Data Sheet
SIC	Standard Industrial Code
USCG	United States Coast Guard
WEMD	Washington Emergency Management Division

Barrel (bbl): A common unit of measure of liquid (volumetric) in the petroleum industry; it equals 42 U.S. standard gallons or 0.136 tons at 60 degrees Fahrenheit or approximately 160 liters.

Barrier or containment barrier: Any non-floating structure that is constructed to contain or divert spilled oil. Barriers are generally improvised and, unlike booms, are usually left in place until cleanup is complete. Sorbent materials may be used in the barrier construction to simultaneously recover spilled oil. Barriers are most frequently used in streams or ditches too shallow for conventional floating booms, and are almost always staked downstream of the spill site.

Berm: (1) A raised shoulder or dike around a tank or tank farm, providing a reservoir if any oil is discharged from the tanks. (2) A low impermanent, nearly horizontal or landward-sloping beach, shelf, ledge, or narrow terrace on the backshore of a beach, formed of material thrown up and deposited by storm waves; it is generally bounded on one side or the other by a beach ridge or beach scarp. Some beaches have no berm; others may have one or several.

Boom (containment): A device or material used to contain and hold oil or other substances from spreading. Basic components of an oil containment boom are flotation, a skirt, ballast, and tension member.

Chemical agents: Those elements, compounds, or mixtures that coagulate, disperse, dissolve, emulsify, foam, neutralize, precipitate, reduce, solubilize, oxidize, concentrate, congeal, entrap, fix, make the pollution mass more rigid or viscous, or otherwise facilitate the mitigation of deleterious effects or removal of the pollutant from the water. Term includes dispersants, surface-collecting agents, biological additives, burning agents, and sinking agents.

Chemical dispersion: The distribution of oil into the upper portion of the water column caused by the application of a chemical. With respect to oil spills, this term refers to the creation of oil-in-water emulsions by the use of chemicals made for this purpose. In regard to shoreline cleanup, chemical dispersion is the process of spraying chemical dispersants to remove stranded oil from rocky shoreline areas that are not considered biological sensitive. Dispersants are usually sprayed on the contaminated surfaces at low tide and allowed to mix with the oil through natural wave action on the incoming tide. This forms an oil-in-water emulsion, which is subsequently flushed from the shoreline with water hoses or through natural wave action.

Cleanup: For the purpose of this document, cleanup refers to the removal and/or treatment of oil, hazardous substances, and/or the waste or contaminated materials generated by the incident. Cleanup includes restoration of the site and its natural resources.

Containment: The process of preventing the spread of oil beyond the area where it has been spilled in order to minimize pollution and facilitate recovery.

Decontamination: The removal of hazardous substances from personnel and their equipment necessary to prevent adverse health effects.

Discharge: Includes but is not limited to any spilling, leaking, pumping, pouring, emitting, emptying, or dumping.

Dispersant(s): The term used to describe chemical or other agents that, when agitated with oil, break the oil into small droplets/particles, then disperse into the water column. A dispersant is a chemical that lowers the interfacial tension between floating oil and water, ideally to near zero. These conditions facilitate the formation of oil droplets with little mixing energy. Once formed, these droplets can be dispersed and degraded in the environment at a faster rate than would occur as a surface slick. Use of dispersants is subject to OSC approval, with approval of the EPA representative to the RRT, and the concurrence of the state with jurisdiction over the navigable waters polluted by the spill.

Environmental sensitivity: The susceptibility of a local environment or area to any disturbance, which might decrease its stability or result in either short- or long-term adverse impact. Environmental sensitivity generally includes physical, biological, and socio-economic parameters.

Facility Response Plan: Site-specific oil spill response plans that address natural resource protection, response strategies, and logistical support. The response strategies are designed around the physical features (such as environmentally sensitive areas) and the natural, cultural, and economic resources of the region. The plans are to be used during the first 12 to 24 hours of a spill response.

Hazardous Waste Operations and Emergency Response (HAZWOPER): Regulations (29 CFR 110.120) developed by OSHA that cover the health and safety of workers at hazardous waste sites, including emergency response operations at oil spills.

Incident Commander (IC): The person responsible for coordinating and directing all phases and functional components of a spill response.

Incident Command System (lCS): A method by which the response to an extraordinary event, including a spill, is categorized into functional components and responsibilities for each component assigned to the appropriate individual or agency.

Initial cleanup: Remedial action at a site to eliminate acute hazards associated with a spill. An Initial cleanup action is implemented at a site when a spill of material is an actual or potentially-imminent threat to public health or the environment, or difficulty of cleanup increases significantly without timely remedial action. All sites must be evaluated to determine whether initial cleanup is needed. The goal of initial cleanup is total cleanup; however, this will not be possible in all cases due to site conditions (e.g., a site where overland transport or flooding may occur).

ln-situ burning: One of four oil spill response options in an offshore environment (the others being mechanical cleanup, chemical dispersants, and bioremediation). Controlled on-site burning, with the aid of a specially-designed fire containment boom and/or mechanical source. Factors influencing combustion include thickness, reduction, vapor loss, dispersion, emulsion formation,

oil submersion, wind, waves, air and water temperature, rain or snow, etc. Requires federal and state approval.

Liaison Officer: For major incidents, a position filled by a state or federal agency representative that reports directly to the Command Unit, serving as the first point of contact for response agencies and volunteers.

Mechanical removal: Includes the use of pumps, skimmers, booms, earthmoving equipment, and other mechanical devices to contain the discharge of oil, and to recover the discharge from the water or adjoining shorelines.

Non-persistent oils or Group 1 oils: A petroleum-based oil that, at the time of shipment, consists of hydrocarbon fractions: At least 50 percent of which by volume, distill at a temperature of 340 degrees C (645 degrees F); and At least 95 percent of which by volume distill at a temperature of 370 degrees C (700 degrees F); and A non-petroleum oil, other than an animal fat or vegetable oil, with a specific gravity less than 0.8.

Oil: Petroleum, in any form, including crude oil, fuel oil, sludge, oil refuse, and refined products. "Oil" for the purposes herein does not include animal or vegetable based oil.

Oil Spill Response Organization (OSRO): An exclusive term referring to all internal and external manpower resources involved in response operations and response support activities.

Oily debris: Includes sorbent pads/boom, protective clothing/gear, soil, sand, rocks, logs, kelp, plastics, mousse, oil/water mixture, and animal carcasses.

Oily waste: Oil-contaminated waste resulting from an oil spill or oil spill response operations.

On-Scene Coordinator (OSC): The person responsible for the spill response activities of a single or group of agencies. This person is responsible for coordinating that agency's or group's activities with those of the other OSC's through the ICS and the IC. There may be more than one OSC at a spill (e.g., federal OSC, state OSC, and responsible party OSC), but only one IC.

Owner or Operator: (1) in the case of a vessel, any person owning, operating, or chartering the vessel; (2) in the case of an onshore or offshore facility, any person owning or operating the facility; and (3) in the case of an abandoned vessel or onshore or offshore facility, the person who owned or operated the vessel or facility immediately before its abandonment.

Personal protective equipment (PPE): Any gear, clothing, or other equipment used to protect personnel from known and or suspected hazards.

Public Information Officer (PIO): The member of the Command Staff responsible for overseeing communications with the news media and public. There is only one Public Information Officer during each incident shift, who may oversee the work of subordinate public information officers. The Public Information Officer must be a representative of a state or federal government agency.

Pollutant: Any material entering the water that is not a normal part of the local environment or is in a concentration that is not normal to the local environment.

Recovery: In oil spill cleanup, the entire process of any operation contributing to the physical removal of spilled oil from land, water, or shoreline environments. General methods of recovery of oil from water are the use of mechanical skimmers, sorbents, and manual recovery by the cleanup work force. The main method of recovery of oil spilled on land or shorelines is excavation of oiled materials.

Remove or removal: Moving or eliminating oil or hazardous substances from waters and shorelines, or taking actions as necessary to minimize or mitigate damage to the public health or welfare, including but not limited to fish, shellfish, wildlife, public and private property, shorelines, and beaches.

Resources: All personnel and major items of equipment available or potentially available for assignment to incident tasks on which status is maintained.

Respirator: A device designed to protect the wearer from the inhalation of harmful atmospheres.

Safety Data Sheet (SDS): Data sheet required by law that describes the characteristics, properties, and hazards associated with a specific material.

Sensitivity maps: Maps used by the On-Scene Commander and oil spill response team that designate areas of biological, social, and economic importance in a given region. These maps often prioritize sensitive areas so that, in the event of an extensive spill, these areas can be protected or cleaned up first. Sensitivity maps usually contain other information useful to the response team such as the location of shoreline access areas, landing strips, roads, communities, and the composition and steepness of shoreline areas. Maps of this type often form an integral part of local or regional contingency plans.

Sheen: An iridescent (rainbow) appearance on the surface of the water. A very thin layer of oil (less than 0.0001 inches or 0.003 millimeters in thickness) floating on the water surface. Sheen is the most commonly-observed form of oil during the later stages of a spill. Depending on thickness, sheens range in color from dull brown for the thickest sheens to rainbows, grays, silvers, and near transparency in the case of the thinnest sheens.

Shoreline sensitivity: The susceptibility of environment to any disturbance that might decrease its stability or result in short or long-term adverse impacts. Shorelines that are most susceptible to damage from stranded oil are usually equally sensitive to cleanup activities that may alter physical habitat or disturb associated flora and fauna. The most sensitive shoreline environments are marshes and lagoons, while exposed coastline, subject to heavy wave action, is generally least affected by oil and/or cleanup activities.

Site-Specific Health and Safety Plan: A written plan that addresses the safety and health hazards for each phase of site operations and includes the requirements and procedures for employee protection at a remediation site.

Solvent: A chemical substance, usually a liquid, that will dissolve or disperse other substances.

Sorbent: Any material that absorbs oil or to which oil adheres. A sorbent should be oleophilic and hydrophobic (i.e., absorbs petroleum or products from 0 to 25 times its weight, and repels water). Sorbents are available in many forms (sheets, booms, sweeps, blankets, and loose material) and may be made of polymer beads, synthetic hydrocarbon polymers, cellulose, plastic fiber, and straw.

Spill: An unauthorized discharge of oil or hazardous substance.

Spill response: All actions taken in carrying out responsibilities to spills of oil and hazardous materials (e.g., receiving and making notifications; information gathering and technical advisory phone calls; preparation for and travel to/from spill sites; direction of cleanup activities; damage assessments; report writing, enforcement investigations and actions; cost recovery; and program development).

Tank barge: Any tank vessel not equipped with means of self-propulsion, generally used for transporting petroleum products.

Unified Command (UC): The structure used when multiple government jurisdictions and the responsible party are involved in incident response.

Appendix R
Cross-Reference Index

Regulatory Requirement	Section in FRP/OSCP Text
OAR 340 141-0100	All
OAR 340 141-0130(1)	All
OAR 340 141-0130(2)	All
OAR 340 141-0130(3)	All
OAR 340 141-0130(4)	All
OAR 340 141-0130(5)	ERAP at front of plan
OAR 340 141-0140(1)(a)-(c)	OSCP Submittal Agreement on Page 3
OAR 340 141-0140(1)(d)	OSCP Submittal Agreement on Page 3
OAR 340 141-0140(2)	Revision Record located on Page 4
OAR 340 141-0140(3)	TOC on Page 1, Cross-Reference in Appendix R
OAR 340 141-0140(4)	Sections 1.0 & 2.2.1.1-4
OAR 340 141-0140(5)	Section 4.0
OAR 340 141-0140(6)	Section 1.3 & All
OAR 340 141-0140(7)	Sections 1.1, 1.3, 2.1 & 2.3
OAR 340 141-0140(8)	Section 2.3.1.1 & Appendix I
OAR 340 141-0140(9)	Sections 1.1 & 2.3.1.1
OAR 340 141-0140(10)	Sections 2.2.1-2 & 2.3.1
OAR 340 141-0140(11)	Sections 2.1.1 & Appendix B
OAR 340 141-0140(12)	Sections 1.3, 2.3.1.3, 3.1.3, & Appendices B, D, & I
OAR 340 141-0140(13)	Sections 2.3.1, 2.3.1.1 & Appendix H
OAR 340 141-0140(14)	Sections 1.3, 2.1.1 & Appendix O
OAR 340 141-0140(15)	Sections 2.3.1.2 & 2.3.1.3
OAR 340 141-0140(16)	Appendices E & F, Figure 3
OAR 340 141-0140(17)	Sections 2.1.1, 2.1.2, 2.3.1 & Appendix B
OAR 340 141-0140(18)	Section 2.3.1 & Appendix H
OAR 340 141-0140(19)	N/A, no nonstandard methods
OAR 340 141-0140(20)	Sections 1.3, 2.3.1.1, 2.3.1.2, 2.3.1.3 & Figures 4-5
OAR 340 141-0140(21)	N/A, no dispersants, coagulants, bioremediants, or other chemical agents
OAR 340 141-0140(22)	N/A, no in-situ burning
OAR 340 141-0140(23)	Sections 2.3.1, 2.3.1.3 & 2.5
OAR 340 141-0140(24)	Sections 1.1, 2.3.1.2, 2.3.1.3 & 2.5
OAR 340 141-0140(25)	Sections 2.3.1.1, 2.3.1.2 & 2.3.1.3
OAR 340 141-0140(26)	Section 4.3 & Appendix J
OAR 340 141-0140(27)	Sections 3.2 & 3.3
OAR 340 141-0140(28)	Sections 2.2, 2.2.1, 2.2.2, Appendix A & Figures 7-9
OAR 340 141-0140(29)	Section 2.4 & Appendix L
OAR 340 141-0140(30)	Section 2.3.1.3 & Appendix B
OAR 340 141-0140(31)	Section 2.3, 2.3.1 & Appendix B
OAR 340 141-0140(32)	N/A
OAR 340 141-0140(33)	Appendix Q
OAR 340 141-0160(1)	CPBR SPCC Plan (also submitted)
OAR 340 141-0160(2)	CPBR SPCC Plan (also submitted)
OAR 340 141-0160(3)(a)	SPCC Section 5.8
OAR 340 141-0160(3)(b)	SPCC Section 5.1.1

Regulatory Requirement	Section in FRP/OSCP Text
OAR 340 141-0160(3)(c)	SPCC Section 5.8
OAR 340 141-0160(3)(d)(1)	SPCC Sections 5.5, 5.6, 5.7 & Appendix A
OAR 340 141-0160(3)(d)(2)	SPCC Sections 5.6, 5.7, & Appendix A
OAR 340 141-0160(3)(d)(3)	SPCC Sections 5.3, 5.6 & Appendix A
OAR 340 141-0160(3)(d)(4)	SPCC Sections 5.3 & 5.5
OAR 340 141-0160(3)(d)(5)	SPCC Section 5.5
OAR 340 141-0160(3)(d)(6)	SPCC Sections 5.1.1 & 5.5
OAR 340 141-0160(3)(e)(1)	SPCC Sections 6.2, 6.3, & Appendix C; OSPC Sections 2.3.1.2, 2.3.1.3 & Appendices H & L
OAR 340 141-0160(3)(e)(2)	OSPC Sections 2.3.1.2, 2.3.1.3 & Appendix L
OAR 340 141-0160(3)(f)(1)	SPCC Section 5.3 & Appendix A
OAR 340 141-0160(3)(f)(2)	SPCC Sections 5.7, 6.1 & Appendix A
OAR 340 141-0160(3)(f)(3)	SPCC Sections 5.3, 5.5, 5.6, 5.8, 6.1 & Table 3
OAR 340 141-0160(3)(f)(4)	SPCC Section 5.7; OSCP Sections 2.3.1.1-2.3.1.3 & 3.1.1
OAR 340 141-0160(3)(f)(5)	SPCC Sections 5.7 & 5.8
OAR 340 141-0160(3)(f)(6)	SPCC Sections 5.3 & 5.7
OAR 340 141-0160(3)(f)(7)	SPCC Sections 5.1, 5.4 & Appendix A; OSCP Section 2.2.1 & Table 4
OAR 340 141-0160(3)(f)(8)	SPCC Section 5.7
OAR 340 141-0160(3)(f)(9)	SPCC Sections 5.3 & 5.6
OAR 340 141-0160(3)(f)(10)	SPCC Sections 3.1, 5.2.1, Figures 4 &5
OAR 340 141-0160(3)(f)(11)	SPCC Section 5.7
OAR 340 141-0160(3)(g)(1)	SPCC Section 5.9
OAR 340 141-0160(3)(g)(2)	SPCC Section 5.9
OAR 340 141-0160(3)(g)(3)	SPCC Section 5.9
OAR 340 141-0160(3)(g)(4)	SPCC Sections 5.3 & 5.9
OAR 340 141-0160(3)(h)(1)	SPCC Section 6.3.1
OAR 340 141-0160(3)(h)(2)	SPCC Section 6.3.1
OAR 340 141-0160(3)(h)(3)	SPCC Section 6.3.1
OAR 340 141-0160(3)(h)(4)	SPCC Section 6.3.1
OAR 340 141-0160(3)(h)(5)	SPCC Section 6.3.1
OAR 340 141-0160(3)(i)(1)	SPCC Sections 3, 4, 5, 6 & Appendix D; OSCP Section 2.2.1 & Appendix F
OAR 340 141-0160(3)(i)(2)	SPCC Section 5; OSCP Sections 2.2.2 & 2.3
OAR 340 141-0160(3)(i)(3)	SPCC Sections 3, 4, 5 & 6
OAR 340 141-0160(3)(i)(4)	SPCC Section 1.2
OAR 340 141-0160(3)(i)(5)	SPCC Section 3.1, 5.5 & Appendix A
OAR 340 141-0160(3)(j)	SPCC Sections 2.1, 5 & 6; OSCP Sections 2.3 & 3.0