4.4 Environmental Health Risks—Terminal (Onsite)

This section addresses the potential environmental health risks associated with operations at the terminal (onsite). This section first describes the environmental health risks that would exist under the no-action alternative to provide context for how risks would change with the addition of the proposed action. It then describes the potential risks related to oil spills, fires, and explosions associated with terminal operations under the proposed action. This section describes the existing planning, preparedness, and response framework intended to address risks at the terminal and identifies additional applicant mitigation measures to further address risks. The section concludes with a discussion of the unavoidable and significant adverse impacts of the proposed action and an explanation of financial responsibility for emergency response and cleanup activities if an incident occurred at the terminal.

4.4.1 What are the existing risks?

This section describes the potential environmental health risks that could occur under the no-action alternative, which would represent a continuation of the existing risks. The environmental health risks at the existing facility include the potential for exposure of people and the environment to the liquids and chemicals that are currently stored, handled, and transported on site. Exposure to these materials could occur due to incidents caused by human error, equipment failure, or in extreme cases, natural disasters, such as earthquakes or other seismic-related events. Depending on the circumstances of an incident and the properties of the chemicals, the people, plants, and animals in the environment could suffer direct toxic impacts or secondary impacts from exposure to vapors. In some cases, incidents could result in the potential for fires or explosions.

Under the no-action alternative, the methanol distribution facilities would continue similar to existing conditions. As described in Chapter 3, Section 3.14, *Hazardous Materials*, the environmental health risks would be related primarily to exposure to hazardous materials such as fuels used in facility vehicles, solvents, cleaning agents, paints, oil filters, used oil, batteries, aerosol cans, and fire-fighting foam. Spills of these chemicals and those stored in bulk, including methanol, could occur as the result of human error (e.g., improper use, not following required handling and storage protocols) or equipment failure (e.g., leaking vehicles or minor hose leaks). As noted in Section 3.14, most spills that occurred under these circumstances would be expected to be relatively small and easily contained.

The greatest potential for larger-scale spills would be related to incidents involving materials that are handled, stored, or transported in bulk. Under the no-action alternative, these would continue to include methanol. During existing operations, the greatest potential for impact from larger-scale spills would be associated with vessel transfers. This is because vessels carry the greatest volumes at one time and they travel and transfer oil exclusively over water where spills are not as easily contained.

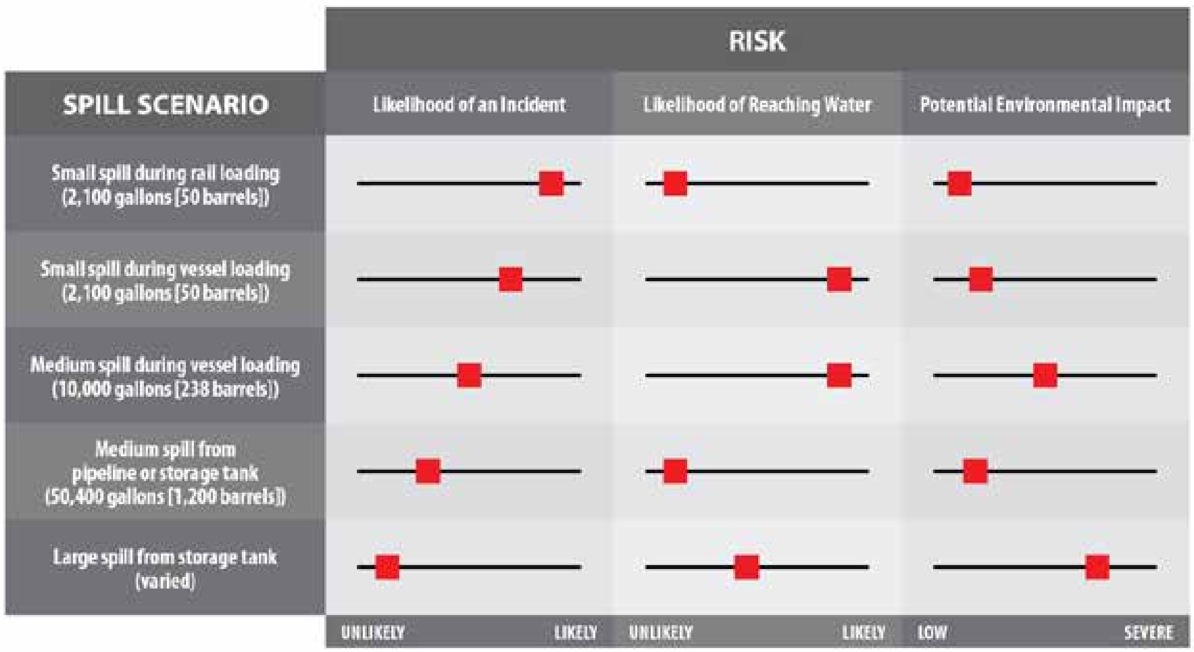
As it is not possible to predict the timing or magnitude of an incident, the following spill scenarios were considered to provide an understanding of risks under the no-action alternative.

- **Small rail-unloading spill scenario:** spill of 2,100 gallons (50 barrels) on the project site.

- **Small vessel-loading spill scenario:** spill of 2,100 gallons (50 barrels) into Grays Harbor.
- **Medium vessel-loading spill scenario:** spill of 10,000 gallons (238 barrels) into Grays Harbor.
- **Medium pipeline or storage tank spill scenario:** spill of 50,400 gallons (1,200 barrels) on the project site.
- **Large spill from storage tank failure scenario:** spill of 3.4 million gallons (80,000 barrels, contents of entire storage tank).

The relative risks of these spill scenarios are shown graphically in Figure 4.4-1 and summarized below. The potential impacts of exposure to spills are addressed in Section 4.7, *Impacts on Resources.*

Figure 4.4-1. Environmental Health Risks from Potential Spills at the Terminal (Onsite)—No-Action Alternative



The likelihood of each spill scenario occurring under the no-action alternative and related risks is summarized below.

- The **small rail-unloading spill scenario** could occur once in 25 years. Reported data have shown that most of these spills would be fewer than 200 gallons. Because the spill amount is less than the unloading area containment, the spill is expected to be contained.
- The **small vessel-loading spill scenario** could occur once in 37 years. Reported data have shown that most of these spills would be fewer than 200 gallons. Some methanol is likely to be contained on the facility, on the deck of the vessel, or on the dock but could spill to surface waters or to the ground.

- The **medium vessel-loading spill scenario** could occur once in 588 years. A small amount of the methanol would be contained on the facility or vessel but the remainder could spill to water.
- The **medium pipeline or storage tank spill scenario** could occur once in 2,500 years. This volume of spill could occur in the event of a pipeline rupture or a smaller storage tank failure. Depending on the event, it is possible that the existing containment areas would contain the majority of a spill of this size; however, if extensive infrastructure damage were to occur, widespread environmental damage could occur.
- The **large storage tank spill scenario** could occur once in 50,000 years. This release of the entire contents of a storage tank resulting from storage tank or containment failure could occur as a result of a material failure, containment failure, or a seismic or tsunami event. Some of the methanol would be caught in the containment area but the remaining oil could spill to land or water. If extensive infrastructure damage were to occur, widespread environmental damage would be likely.

The impacts of releases of these chemicals into the environment are addressed in Chapter 3, Section 3.14, *Hazardous Materials*. For additional details about the analysis of risks under the no-action alternative, see Appendix M, *Risk Assessment Technical Report*.

4.4.2 What are the potential risks?

Under the proposed action, additional risks would include the possibility of spills of oil could adversely affect people and the natural environment. The greatest potential for larger-scale spills would occur during the proposed rail unloading, storage, and vessel-loading activities. Under the proposed action, the likelihood of a spill occurring would be greater compared with the no-action alternative, primarily because of the increased number of storage tanks and corresponding increased total volume of crude oil stored on site and increased rail and vessel-unloading and loading activities. Additionally, there would be new environmental health risks related to the potential exposure of people and the natural environment to crude oil.

This section describes the proposed facilities and activities that could result in increased risks of a spill, determines the change in the likelihood of a spill occurring under the proposed action, identifies mitigating factors currently in place to minimize the impacts of an incident, and describes the potential extent of a spill and the response actions that would occur. This section also describes the risks of fires or explosions related to the proposed action and the response actions that would occur in the event of a fire or explosion at the project site.

Westway currently has four storage tanks on the northern portion of the site. Each tank has the capacity to hold approximately 80,000 barrels. Under the proposed action, up to five 200,000-barrel floating-roof tanks would be added to store crude oil. The tanks are required to have containment areas able to collect the capacity of the largest tank plus precipitation. However, containment could fail in a catastrophic event. Leaks from the tank or piping within the containment would be expected to remain in the containment and be collected for proper disposal. Tanks are typically isolated using valves unless in use, so a leak or rupture from piping outside of the containment would likely be limited to the quantity of the substance in the piping.

Rail car and vessel unloading and loading would also occur under the proposed action. The rail unloading area would also include a containment area with a capacity to hold the contents of one rail car (typically 30,000 gallons) plus precipitation. Rail-unloading activities (up to approximately 27,594 times annually) would comprise the greatest number of active transfers because of the number of rail cars that must be unloaded on a daily basis. Spills could also occur during the vessel-loading activities (up to 119 additional loadings[1] annually) with releases directly to the water or to containment. Small-quantity containment areas are required at valve connections for transfer operations. Rail activities are more common than vessel activities and this higher frequency poses a greater potential for releases from unloading hoses or connection failures.

4.4.2.1 Oil Spills

Oil Spill Risk

Historically, no oil or hazardous materials spills to the water have occurred from the project site since the applicant began activities in Grays Harbor. In 2009, one biodiesel spill of 5,000 gallons occurred at Imperium Terminal Services, and the oil was confined to the containment area with no impact on water. The cause for the spill was mechanical failure.

A summary of west coast oil spill data for 2014 reported 1,193 spills, of which 15 spills were over 10,000 gallons. More than 79% of the spills were to land. Over the past 13 years, the major spill causes were identified as equipment failure (55%) and human error (30%) (Pacific States/ British Columbia Oil Spill Task Force 2015).

Although no major spills have been reported at the project site, the proposed action would result in increased risks of such spills. As noted previously, it is not possible to predict the timing or magnitude of an incident; therefore, the following spill scenarios were considered to provide an understanding of risks under the proposed action.

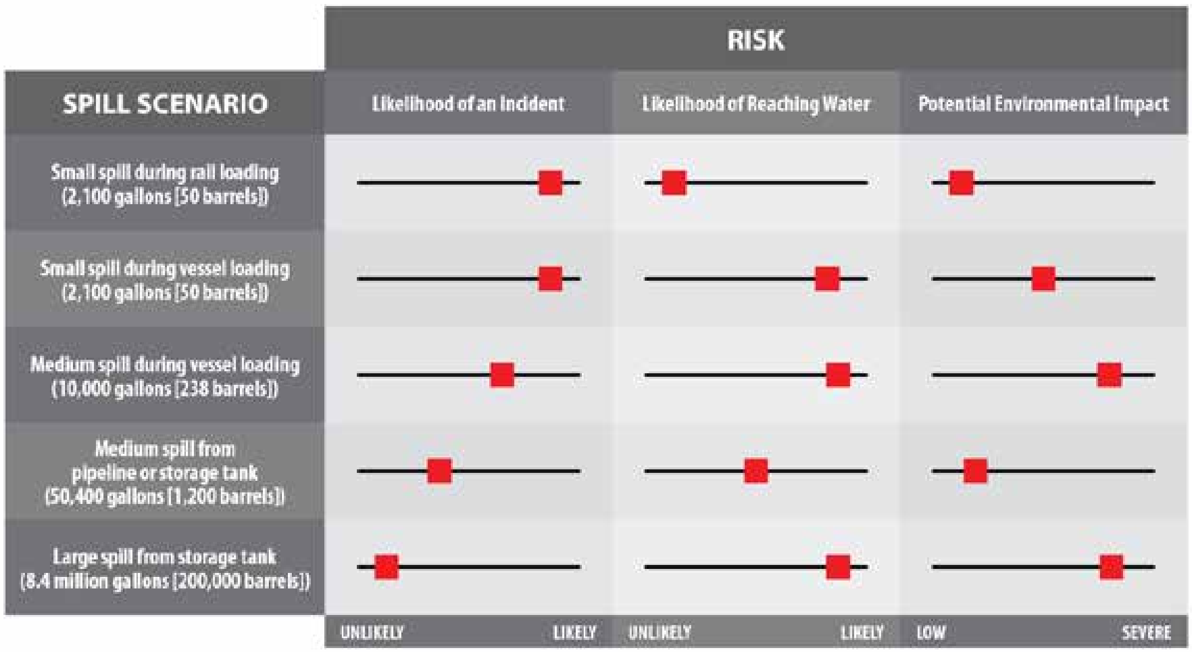
- **Small rail-unloading spill scenario:** spill of 2,100 gallons (50 barrels) on the project site.
- **Small vessel-loading spill scenario:** spill of 2,100 gallons (50 barrels) into Grays Harbor.
- **Medium vessel-loading spill scenario:** spill of 10,000 gallons (238 barrels) into Grays Harbor.
- **Medium pipeline or storage tank spill scenario:** spill of 50,400 gallons (1,200 barrels) on the project site.
- **Large storage tank failure spill scenario:** spill of 8.4 million gallons (200,000 barrels, the entire contents of one full storage tank).

The proposed action would increase daily operations, particularly the frequency of loading vessels and unloading rail cars. As such, the proposed action would result in the potential for more frequent spills of bulk liquids relative to the no-action alternative, although the orders of magnitude are very similar.

[1] As noted in Section 3.17, *Vessel Traffic*, any combination of tank barges and tankers, including those listed in Table 3.17-9, could be used to transport bulk liquids from Terminal 1. For the purposes of this analysis, the maximum number anticipated would be associated with the use of all tank barges. As discussed in Section 4.6, *Environmental Health Risks—Vessel Transport*, reducing the number of vessel trips by using larger vessels would lower the likelihood of a spill; however, in the event that a spill occurred, the spill could be larger.

The likelihood of very large releases from storage tank failures would remain low. The relative risks are shown graphically in Figure 4.4-2 and summarized below. The potential impacts of exposure to spills are addressed in Section 4.7, *Impacts on Resources*.

Figure 4.4-2. Environmental Health Risks from Potential Spills at the Terminal (Onsite)—Proposed Action



The likelihood of each spill scenario occurring under the proposed action and related risks are summarized below.

- The **small rail-unloading spill scenario** could occur once in 9 years. The spill amount is less than the unloading area containment so the spill is expected to be contained.
- The **small vessel-loading spill scenario** could occur once in 8 years. Some oil is likely to be contained on the facility, on the deck of the vessel, or on the dock but could spill to surface waters or to ground.
- The **medium vessel-loading spill scenario** could occur once in 136 years. A small amount of the oil would be contained on the facility or vessel but the remaining oil could spill to water.
- The **medium pipeline or storage tank spill scenario** could occur once in 2,000 years. Depending on the cause of the event, it is possible that the existing containment areas would contain the majority of a spill of this size; however, if extensive infrastructure damage were to occur, widespread environmental damage could occur.
- The **large storage tank failure spill scenario** could occur once in 40,000 years. This release of the entire contents of a storage tank resulting from storage tank or containment failure could occur as a result of a material failure, containment failure, or seismic or tsunami event. Some of

the oil would be caught in the containment area but the remaining oil could spill to land or water.

For more information about the likelihood of these spills occurring, see Appendix M, *Risk Assessment Technical Report*.

To provide additional information about the risks of a spill and to inform prevention, preparedness, and response planning, oil spill modeling was completed for a subset of the spill scenarios. As presented in Appendix N, *Oil Spill Modeling,* the modeling demonstrates that the movement of spilled oil in the harbor can vary dramatically, depending on the location of the spill, material spilled, weather conditions, and hydrologic flow conditions.

Depending on these conditions and assuming no efforts were taken to contain the spill, modeling showed that oil could move from the project site to the far shores of the estuary within 24 hours or could remain near the spill site. The potential impacts of exposure to spills on human health and the environment would vary depending on the specific circumstances of the spill. These impacts are addressed in Section 4.7, *Impacts on Resources*.

Oil Spill Prevention

As discussed in Section 4.2, *Applicable Regulations*, facilities that store and handle oil and hazardous substances must meet federal and state design standards, equipment, training, and operation requirements to prevent spilled oil or hazardous materials from reaching the environment. Washington State has specific regulatory spill prevention, training, and pollution containment equipment standards for Class 1 facilities such as large, fixed, shoreside facilities that transfer materials to or from tank vessels. The facility would be designated a Class 1 facility under the proposed action and subject to Class 1 spill prevention, training and operational standards.

Storage Tank Containment

The proposed facilities would be designed and constructed in accordance with 40 CFR 112, 33 CFR 154, and WAC 173-180A. The applicant would be required to install appropriate containment and diversionary structures or equipment such as dikes, berms, and retaining walls to prevent discharged oil from reaching navigable waters. The containment must be capable of containing the contents of the largest tank plus precipitation.

Design Standards

State construction and design standards for facilities (WAC 173-180) include oil transfer requirements, containment boom, fixed lighting, effective voice communication requirements, emergency shutdown equipment and procedures, storage tank and pipeline construction and inspection standards, and hose and loading arm specifications. Oil and hazardous material pollution containment equipment, such as sorbent materials and boom, would be positioned in the facility and accessible to employees (33 CFR 154.545).

All hazardous substances must be accounted for in the facility design standards in accordance with state and federal laws and regulations to prevent incidents and to minimize the environmental impact of incidents. For example, all storage tanks and rail car unloading areas would be protected with fire-fighting foam capabilities (foam blanketing fire protection). Tanks would be equipped with high-level alarms, over-pressure protection, floating roofs, and emergency overflows into containment (Imperium Terminal Services 2013:25). Floating roofs could provide vapor containment to reduce air toxics by sitting on the surface of the tank contents, reducing the potential for vapor generation.

Spill Containment Training

Washington State requires that a specific training and certification program be in place for certain employees at Class 1 facilities. The purpose of the training is to reduce the risk of oil spills due to human error (WAC 173-180-510). Personnel involved in oil transfers must be trained in emergency response and oil transfer procedures (WAC 173-180 Part E, Training and Certification and 33 CFR 154). Personnel are stationed near shutoff equipment to quickly stop the flow of oil in the case of a spill and begin notifications and initial responses.

Oil Spill Response

Applicant Contingency Planning

The site contingency plan required for the proposed action required of the applicant will provide specific oil spill response actions and will include information on the specific equipment, valves, pipelines, and loading arms. Typical actions for responding to a spill are as follows.

- Notify companies and agencies that are responsible for the cleanup effort.
- Get trained personnel and equipment to the site quickly.
- Ensure the safety of responders and the public.
- Define the size, position, and content of the spill; its direction and speed of movement; and its likelihood of affecting sensitive habitats.
- Stop the flow of oil, if possible, and preventing ignition.
- Contain the spill to a limited area.
- Remove the oil.
- Dispose of the oil once it has been removed from the water or land.
- Investigate immediate and contributing causes for the spill.
- Apply lessons learned to prevent future spills.

Geographic Response Plans

As mentioned in Section 4.2, *Applicable Regulations*, the Grays Harbor and the Chehalis River Geographic Response Plans (GRPs) contain specific response strategies in the event of an oil spill (from any source) into or threatening waters and related environmental resources within the study area. For example, the Grays Harbor GRP contains response strategies relevant to an oil spill that would affect the lower Chehalis River (including response strategies related to tributaries or wetlands that connect to the river), the North and South Bays, and Bowerman Basin (near Grays Harbor airport). Response strategies for coastal shorelines along the Pacific Ocean west of Grays Harbor are also included (Ocean City, Ocean Shores, Westport, Cohasset Beach, and Grayland) in case of an oil spill that drifts outside of the harbor entrance or that leaks from a vessel located near the harbor entrance. The Chehalis River GRP geographically covers the river from Cosmopolis, picking up where the Grays Harbor GRP ends, and follows the river southeast to Centralia, concluding at Pe Ell.

GRPs are not the only actions taken in a response, for example spill containment and on water recovery are the first priorities and are not described in GRPs. Response strategies described in the GRPs encompass the placement of a boom to close off access of spilled oil into environmentally sensitive sites (such as the Oyhut Wildlife Recreation Area near the harbor entrance), to deflect oil moving on the river or within the harbor into a containment area for collection (with vacuum trucks and sorbent materials), or to divert oil away from areas that are sensitive and/or hard to clean. Culvert blocks or underflow dams are also response strategies presented in the GRPs to aid in shoreline protection and oil collection. The GRPs contain supplemental information related to the response strategies that support their implementation. For example, the Grays Harbor GRP includes a table with recommended boom lengths, appropriate boom deflection angles, and the number of required anchors to support boom placement for a range of different current speeds. Predesignated staging area locations (for equipment and personnel) and relevant logistics for their use are clearly described.

The response strategies are prioritized in the GRPs to reflect the sensitivity of threatened environmental resources or potential public health concerns (as in the case of spill proximity to populated areas or water intakes). In some cases economic considerations may dictate response priorities (for example preventing oil from affecting shellfish harvest areas or a marina). These priorities are considered prior to a spill and reflected accordingly in the GRPs to prevent a delay in the allocation of response assets during a spill response.

Each GRP identifies potential spill origin points in order to plan for a variety of potential spill sources. There is no attribution in the GRPs for the cause of the spill at the spill origin points. Each spill origin point has a multitude of associated response strategies within the GRPs due to the likelihood that spilled oil will spread on and flow with water until it is contained and removed. For example, the Grays Harbor GRP contains over 40 site-specific strategies to combat the spread of spilled oil from spill origin point designations GH-C, located near Grays Harbor entrance, and GH-B, located near the mouth of the Chehalis River, and in the lower southeast quadrant of Grays Harbor. These site-specific strategies are designed for individual areas, not for the entire Grays Harbor area.

In addition to the site-specific information contained in the GRPs, relevant information in other sections of the larger Northwest Area Contingency Plan (Section 4.2.2.2, *Northwest Area Contingency Plan*) supplements the site-specific strategies. For example, *Chapter 3000 – Operations* contains a section titled *Operational Safety Issues Associated with Bakken Crude Oil*. Another section, *Northwest Area Shoreline Countermeasures Manual and Matrices*, contains an in-depth description of 10 shoreline types (ranging from fine- to medium-grained sand beaches to salt and freshwater marshes) and appropriate cleanup considerations for each type.

4.4.2.2 Explosions

Explosion Risk

One explosion at Imperium Terminal Services was reported on December 2, 2009, when a 10,000-gallon tank containing heated glycerin exploded because of over-pressurization. The explosion damaged a 5,000-gallon tank of sulfuric acid (U.S. Environmental Protection Agency 2009 and Butorac pers. comm.). No one was injured and no sulfuric acid or glycerin reached the water because of the incident.

Many of the materials to be handled under the proposed action are flammable but they are generally in a liquid and not gaseous form. Typically, terminal activities resulting in a spill would have limited potential to result in ignition because terminals are designed to reduce ignition potential. Liquid materials would pool on the ground with only limited vapor generation—particularly compared to other common materials like propane. The risks of fires or explosions at the terminal are presented graphically below in Figure 4.4-3. Additional information regarding the risks of fire and explosions during rail transport is provided in Appendix M, *Risk Assessment Technical Report*.

Figure 4.4-3. Environmental Health Risks from Potential Fires/Explosions at the Terminal (Onsite)—Proposed Action

Explosion Prevention

The facilities would meet national and state design codes for fire protection. These include tank separation distances, containment requirements, pressure relief valves, and fire suppression or protection systems. Numerous containment areas on the project site would control or limit where a release could spread; these also would reduce the chance of an ignited release effecting other equipment or traveling off site via land or water. Shutoff valves would limit the quantity of material released. In addition, ignition and possible explosions would be limited through a range of physical and procedural precautions and facility personnel would be appropriately trained as required by existing regulations. Fire suppression and firefighting equipment would be located on site.

Measures that reduce the chance of ignition include but are not limited to the following:

- Install floating roofs to limit vapor generation in confined areas.
- Eliminate ignition sources.
- Use nonsparking tools and explosion-proof equipment.
- Separate tanks by appropriate distance.
- Ground all equipment.

Explosion Response

Should a release occur, the emergency response plan would address the roles, responsibilities, and actions to take, depending on how much was spilled, and where and whether ignition has already occurred. The National Fire Protection Agency has issued codes and standards affecting all types of facilities and storage including oil handling facilities. They also regularly analyze historic events to improve their codes and standards (National Fire Protection Agency 2014, 2015). Typical responses to an explosion are as follows.

- Implement emergency response plan.
- Protect public health and safety.
- Make notifications.
- Conduct hazard assessment and risk evaluation.
- Conduct continuous air monitoring, as appropriate.
- Confine the spill.
- For fire suppression, isolate or evacuate based on the product (e.g., the Emergency Response Guide No. 128 for petroleum crude oil recommends isolation and initial evacuation for 0.5 mile in all directions).
- Begin fire suppression operations.
- Clean up spill.
- Investigate immediate and contributing causes for the incident.
- Apply lessons learned to prevent future incidents.

4.4.3 What mitigation measures would reduce impacts related to terminal operations at the project site?

This section describes the applicant mitigation and other measures that would reduce onsite impacts on environmental health and safety from construction and routine operation of the proposed action. These mitigation measures are in addition to regulatory compliance and best practices discussed above.

4.4.3.1 Applicant Mitigation

The applicant will implement the following mitigation.

- To improve response times and communication in the event of an incident that could affect tribal resources, the applicant will include tribal contacts (names and/or phone numbers) in notification protocols in the oil spill contingency plan.

- To reduce the impacts from an oil spill, the applicant will establish and implement a procedure for blocking all drains on the dock prior to oil transfers and observing the area for discharges before removal.

- To improve oil recovery in the case of a spill during vessel loading at the dock, the applicant will retain a licensed engineer to perform an independent engineering analysis and feasibility study. The engineer will determine the number of days it is safe and effective to preboom oil transfers and will identify site-specific improvements to maximize successful prebooming. The applicant will ensure the study is submitted to the Washington State Department of Ecology (Ecology) for review. If approved, Ecology will amend the applicant's oil spill contingency to require prebooming and improvements consistent with the study.

  If improvements to allow for prebooming are determined to be unfeasible by Ecology and until changes are in place, the applicant will implement alternative measures, including but not limited to the following (in addition to those already required by regulation) to mitigate the absence of preventative boom in the water during transfers: stage dedicated response vessels, additional containment and cleanup equipment, and trained personnel at the terminal dock and/or at a nearby staging area during oil transfers. At a minimum, this alternative must include the following elements.

  - One oil spill response vessel with crew, skimmer, and at least 1,000 feet of boom at the dock.

  - On-water tank barge storage devices (not including bladders) prestaged at the dock with the skimmer to ensure a minimum of 450 barrels of recovery ready to be deployed.

- To reduce the risk of a spill, the applicant will require the facility person-in-charge (certified facility operator for oil transfers) to verify all connections are properly functioning for each oil transfer prior to the commencement of a transfer.

- To reduce the risks and impacts from an oil spill, prior to beginning the proposed operations the applicant will conduct a study to identify an appropriate level of financial responsibility for the potential costs for response and cleanup of oil spills, natural resource damages, and costs to state and affected counties and cities for their response actions. The study should address the factors in Revised Code of Washington 88.40.025, Evidence of Financial Responsibility for Onshore or Offshore Facilities, including a reasonable worst-case spill volume, the cost of cleaning up the spilled oil, the frequency of operations at the facility, prevention measures employed by the facility that could reduce impact through spill containment, immediate discovery and shutoff times, and the damages that could result from the spill (including restoration). The study should identify any constraints related to the commercial availability and affordability of financial responsibility. Based on the study, Ecology shall determine the appropriate level of financial responsibility and require the applicant to demonstrate their financial responsibility to the satisfaction of Ecology. Proof of financial responsibility will be included as documentation in the applicant's contingency plan.

- To improve preparedness for incidents, including oils spills, explosions, and fires, the applicant will ensure an emergency preparedness workshop is conducted prior to beginning project operations. The applicant will coordinate the workshop with Ecology. The workshop will be no more than 1 day in length and be held prior to beginning operations and annually thereafter. The initial workshop will focus on familiarizing local emergency responders, tribes, and communities with the contents of the Northwest Area Contingency Plan, the Grays Harbor and Chehalis Geographic Response Plans, other local response plans, the facility response plan, and the measures that are in place for a rapid and effective spill response.

4.4.3.2 Other Measures to Be Considered

Potential impacts associated with the proposed action could be further reduced by implementing the following measures.

- To reduce the risk of spills during transfer operations, the Port of Grays Harbor should verify that all personnel handling oil transfer equipment are trained in accordance with WAC 173-180 Part E (Training and Certification for Class 1 and Class 2 Facilities).
- To improve communications to the public in the case of an incident, the Port of Grays Harbor should develop a formal system for notifying potentially affected residents and businesses. The notification process should also address Spanish speakers and accommodate low-literacy readers.[2]
- To ensure adequate and appropriate resources are available to accommodate increased crude oil transfers at the project site, on trains and vessels, Ecology should review, and if necessary revise, contingency planning standards for Grays Harbor to require those resources.
- To improve response times and communication if an incident could affect tribal resources, the following measures should be considered.
    - The Chehalis Tribe and the Quinault Indian Nation should identify members or staff to be contacted in the case of an incident with potential impacts on tribal resources.
    - Ecology, PS&P, and the Port of Grays Harbor should notify tribal contacts.

4.4.4 Would the proposed action result in unavoidable and significant adverse environmental impacts related to terminal operations at the project site?

A large oil spill or explosion would likely cause unavoidable and significant adverse environmental impacts. As described above, the likelihood of a large spill or related explosion is low; however, the potential for significant consequences to the environment and human health in the case of a large

[2] Chapter 7, *Economics, Social Policy and Cost-Benefit Analysis*, provides information on common languages in the study area.

spill or explosion is high. The specific impacts would vary based on the location, amount spilled, type of liquid, and weather conditions. Examples of these impacts are described in Section 4.7, *Impacts on Resources*. Regulatory requirements for prevention of, preparedness for, and response to a large spill or explosion and mitigation measures to reduce impacts are detailed above. However, no mitigation measures would completely eliminate the possibility of a large spill or explosion, nor would they completely eliminate the adverse consequences of a large spill or explosion.

4.4.5 Who would pay for the response and cleanup of an onsite spill?

Generally, the polluter pays for costs and damages associated with oil spills. The federal government has established high limits on that liability. Washington State places no limits on liability of polluters to third parties, allowing recovery of cleanup costs and natural resource damages beyond the federal limit (Table 4.4-1). To cover removal costs above the federal limits of liability, the U.S. Congress established a one billion dollar Oil Spill Liability Trust Fund to pay for expeditious oil removal and uncompensated damages.

Washington State law requires owners or operators of facilities to provide evidence of their financial ability to pay for damages that might occur during a reasonable worst-case spill of oil from the facility into the navigable waters of the state. The method to determine this is described in Section 4.4.3.1, *Applicant Mitigation*.

Washington State law requires the party responsible for a spill of oil or hazardous substances to state waters to pay for the following costs.

- Their own costs to cleanup and remove oil spills.
- Damages to persons or property, including natural resources.
- Reimbursement to the state for necessary expenses for investigating, containing, removing, or treating oil related to an incident.

The responsible party may also be required to pay a penalty for violation of state law or rule.

Table 4.4-1. Limits of Liability for Spill Removal Costs

Reference	Applicability	Limits of Liability
33 U.S.C. 2704(a)(4)	Oil handling facilities	$350 million or less taking into account size, storage capacity, oil throughput, proximity to sensitive areas, type of oil handled, history of discharges, and other factors relevant to risks posed by the class or category of facility this limit may be reduced to less than $350 million but not less than $8 million.
RCW 88.40	Oil handling facilities	Washington State places no limits on liability.

U.S.C. = United States Code; RCW = Revised Code of Washington