Interim Action Work Plan
Sea K Fish Cleanup Site
Blaine, Washington

July 7, 2023

Prepared for

Port of Bellingham
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LIST OF ABBREVIATIONS AND ACRONYMS

AO ..... agreed order
bgs ..... below ground surface
BMP ..... best management practice
CSM ..... conceptual Site model
CUL ..... cleanup level
CWA ..... Clean Water Act
cy ..... cubic yards
DAHP ..... Washington State Department of Archaeology and Historic Preservation
Ecology ..... Washington State Department of Ecology
FS ..... feasibility study
ft ..... foot/feet
IA ..... interim action
IAWP ..... interim action work plan
JARPA ..... Joint Aquatic Resources Permit Application
Landau ..... Landau Associates, Inc.
MTCA ..... Model Toxics Control Act
NAVD88 ..... North American Vertical Datum of 1988
NWP 38 ..... Nationwide Permit 38
Port ..... Port of Bellingham
project plan ..... RI Project Plan
project plan No. 2 ..... RI Supplemental Project Plan No. 2
RCW ..... Revised Code of Washington
RI ..... remedial investigation
Site ..... Sea K Fish Cleanup site
SPCC ..... spill, prevention, control, and countermeasures
TESC ..... temporary erosion and sediment control
TPH ..... total petroleum hydrocarbons
USACE ..... US Army Corps of Engineers
WDFW ..... Washington Department of Fish and Wildlife
WDNR ..... Washington Department of Natural Resources

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1.0 INTRODUCTION

At the request of the Port of Bellingham (Port), Landau Associates, Inc. (Landau) prepared this Interim Action Work Plan (IAWP) detailing the strategy to inform an upland Interim Action (IA) design for the Sea K Fish Cleanup site (Site) in Blaine, Washington. The Port is currently in the process of completing a remedial investigation/feasibility study (RI/FS) at the Site under an Agreed Order (AO; No. DE 19573), in cooperation with the Washington State Department of Ecology (Ecology). The Site is located on aquatic lands owned by the State of Washington and managed by the Port under a Port Management Agreement with the Washington Department of Natural Resources (DNR; Aquatic Parcel ID: No. 22-080025, Parcel 1).

Several historical investigations have identified total petroleum hydrocarbons (TPH) in Site soil and groundwater. RI activities to date have been conducted based on the RI Project Plan (project plan; Landau 2021) and the subsequent Supplemental Project Plan (Landau 2022), approved by Ecology on June 30, 2021 (Ecology 2021), and March 24, 2022, respectively (Matthews 2022). Current ongoing RI activities include additional data collection to inform the IA design discussed in this documentation, as outlined in the RI Supplemental Project Plan No. 2 (project plan No.2; Landau 2023).

1.1 Scope and Purpose of the Interim Action Work Plan

On June 11, 2022, the Port received a letter from Ecology indicating that migration of petroleum-related contamination in soil at the Site continues to impact groundwater and near-shore sediments, which is affecting the local benthic community (Ecology 2022). Ecology notes that the existing AO language established between the Port and Ecology provides for the use of an IA under the following conditions:

> *… an interim action is a remedial action that is technically necessary to reduce a threat to human health or the environment by eliminating or substantially reducing one or more pathways for exposure to a hazardous substance, that corrects a problem that may become substantially worse or cost substantially more to address if the remedial action is delayed, or that is needed to provide for completion of a site hazard assessment, remedial investigation/feasibility study, or design of a cleanup action plan.*

Ecology further identifies that the spread of contamination presents an ongoing threat to the Site and believes that an IA, to address the source of contamination impacting the Site and the wider environment, is required. Therefore, Ecology directed the Port to prepare an IAWP, including a scope of work and schedule, for review and approval. Additional IA design-related data-gathering needs necessary to support this requirement are ongoing, as detailed in project plan No. 2 (Ecology approval received on February 28, 2023). The data generated with current implementation of project plan No. 2 will help finalize an effective IA design for the Site.

1.2 Interim Action Design Elements

In advance of final design-related data collection and evaluation, the final IA is anticipated to generally include some or all of the following primary elements:

- Site preparation, including advance Site surveys, tenant coordination, utility locates/ management, staging area preparation, Site access coordination, etc.
- Decommissioning and demolition of Site structures, including remaining remnants of the southern building (if required) and the shoreline pier and vertical timber bulkhead.
- Installation of a new perimeter sheetpile bulkhead, stabilizing structures, and/or revetment to support shoreline restoration and upland excavation, based on the results of the structural and coastal evaluation.
- Excavation and offsite disposal of approximately 3,000 cubic yards (cy) of TPH-impacted soil from the upland area of the Site.
- Final restoration of the shoreline, including final stabilization of installed bulkhead features and adjustment to shoreline slope, if required.
- Site restoration, including placement of engineered backfill, grading, utility replacement, final surface paving, and pier replacement.
- Demobilization from Site, including removal of staging and support areas.
- Post-construction survey and completion reporting.

2.0 CURRENT SITE CONDITIONS AND ONGOING INVESTIGATION

The Site is located in Blaine Harbor, which is at the northern end of Drayton Harbor, in the northwest quarter of Section 1, Township 40 North, Range 1 West, Willamette Meridian. The properties encompassed by the Site generally include 225 and 205 Sigurdson Avenue in Blaine, Washington, at the location shown on Figure 1.

The Site has been used since the early 1950s for seafood processing including activities related to offloading finfish and shellfish from boats, processing and sorting fresh and frozen seafood, refrigeration and storage, and packaging and loading the seafood for export off Site. Historical cleanup activities at the Site have included the removal of underground storage tanks (USTs) and a fish press, and limited environmental investigations conducted in 2007 and 2008 (3 Kings Environmental 2007; Farallon 2008). Based on information in these reports and the presence of an intermittent sheen discharging at the shoreline to the surface waters of Blaine Harbor, the Port conducted additional investigations in June and July 2019, in advance of RI activities that are ongoing.

The Site shoreline consists of either creosote-treated timber piles and vertical bulkheads or armored slopes of rock and gravel, in various states of condition. Two primary buildings are located at the Site and the creosote-treated piers support portions of the Site buildings, which are considered over-water structures. The building to the north houses the active Starfish operations, and the southern building has been recently condemned by the City of Blaine due to the deteriorating condition of the bulkhead upon which it is built. Starfish currently uses portions of the southern building for equipment storage only. A current Site plan, including various former features, is provided on Figure 2.

2.1 Geologic and Hydrogeologic Setting

A discussion of Site geologic and hydrogeologic dynamics is included in project plan No. 2. Data currently being gathered will further refine the understanding of Site geology and hydrogeology especially as it relates to IA design strategy and the logistical needs for IA construction.

General geologic information for the Site and the surrounding area obtained from the *Geologic Map of the Bellingham 1:100,00 Quadrangle, Washington* (Lapen 2000) indicates that Site subsurface conditions consist of fill underlain by glaciomarine drift. This understanding of geologic conditions is supported by previous explorations by Landau in the project vicinity (Landau 2020). The fill material predominantly consists of dredge spoils generated during historical deepening of the marina and construction of the surrounding areas. Glaciomarine drift can have various distributions of gravel, sand, silt, and clay; however, finer sediments (silt and clay with fine sand) are most typical, with coarse sand and gravel occurring as dropstones.

Hydrogeology at the Site has only been generally characterized to date. Based on current understanding, depths-to-groundwater at the Site range seasonally between roughly 9 and 11 feet (ft)

below ground surface (bgs) and are highly tidally influenced. Groundwater at—or potentially affected by contamination at—the Site is not currently used for drinking water. It is not considered to be a reasonable future source of drinking water due to its proximity to marine surface water, its limited productivity, and the high probability that it would have a high salinity content following extended periods of groundwater extraction making it unsuitable as a domestic water supply.

2.2 Interim Action Cleanup Levels

As the RI/FS is currently being prepared, final cleanup standards (i.e., cleanup levels and points of compliance) have not been established for Site contaminants through the Model Toxics Control Act (MTCA) process and in coordination with Ecology. As discussed in project plan No. 2, the preliminary screening levels established in the RI project plan for TPH compounds (collectively gasoline-, diesel- and oil-range organic compounds) will be applied as IA cleanup levels (CULs) and direct the basis for IA strategy and design. These IA CULs for TPH compounds, based on MTCA Method A values for unrestricted land use, are considered sufficiently protective of future exposure pathways and are anticipated to reflect the final CULs upon completion of the RI/FS process.

2.3 Nature and Extent of Contamination and the Source Area

The current understanding of the nature and extent of Site contamination, including a summary of investigations of soil, groundwater, and porewater quality, and the corresponding results, are detailed in project plan No. 2. Although various constituents were identified at the Site during RI activities, the nature and extent of TPH constituents in soil and groundwater represent the largest component of Site contamination (see Figure 3). Therefore, addressing impacts from TPH concentrations at the Site, including the ongoing discharge to harbor surface water and sediment, is the primary focus for the IA design strategy.

Additional characterization of Site conditions, including further investigation of soil and groundwater quality, geotechnical investigations, and shoreline and coastal assessments, is currently underway. The rationale and approach to these ongoing investigations are detailed in project plan No. 2. Investigation results will be documented in IA design-related materials, as appropriate, as the information will be used to finalize the basis for IA design and its implementation.

Based on the current understanding of Site conditions, the source area of TPH contamination is located roughly between 10 and 15 ft bgs, at the approximate lateral extent identified on Figure 3. Figure 4 shows the locations of cross sections A-A' and B-B,' in planar view, which were developed to aid in data gap evaluation and further inform RI- and design-related investigation strategy. The two cross sections, prepared at 3 times vertical exaggeration, are shown on Figures 5 and 6, respectively.

The location of the cross section shown on Figure 5 roughly parallels the northwest to northeast extent of the contaminant source area, based on the current understanding of the nature and extent of Site TPH contamination. The extent to which the source area extends to the bulkhead on the

western shoreline of the Site is currently being evaluated during implementation of project plan No. 2. The exact vertical extent of the source area, and the potential presence of "clean" overburden and underlying soil, is also not clearly defined and is being further evaluated through current investigation activities. Tidal fluctuations in adjacent Blaine Harbor, based on mean lower-low water and mean higher-high water elevations (in NAVD88[1]), are also indicated on Figure 5.

Figure 6 shows a cross section that aligns roughly in parallel to the direction of the seep discharge to Blaine Harbor. Similar to the presentation on Figure 5, the exact vertical extent of the source area is not known and is currently being evaluated as a component of project plan No. 2. The full extent of contamination upgradient of the seep's discharge location, proximal to the northern building on the Site, is also being evaluated during the current investigation to inform an effective IA design.

Based on ongoing Site investigation activities, these cross sections will be further refined, as appropriate, to support the rationale for the final IA design strategy and support IA implementation.

2.4 Interim Action Conceptual Site Model

The Conceptual Site Model (CSM) for the Site is shown on Figure 7. The CSM presents the relative location (i.e., depth from ground surface) of the known extent of Site TPH contamination resulting in the ongoing seep discharge to the bay (at 2 times vertical exaggeration).

Pathways for exposure to Site upland contamination include incidental dermal contact by Site workers during day-to-day operations and potential releases to indoor/outdoor air from impacted soil vapor. The seep discharge at the shoreline establishes exposure paths to local ecological receptors through the ongoing release of contamination to surface water, surface sediment, and native biota and to human receptors through the consumption of local food resources exposed to Site contamination.

Implementation of the IA will greatly reduce if not potentially eliminate the current impacts to both human and ecological receptors through the existing exposure pathways.

[1] NAVD88 = North American Vertical Datum of 1988.

3.0 INTERIM ACTION COMPONENTS

The proposed IA elements, described in further detail in this section, will generally include the following:

- Pre-design Site evaluation and data collection (currently ongoing)
- Site preparation, at a minimum to include the following:
  - Pre-construction Site survey (bathymetric and upland surveys)
  - Tenant coordination
  - Utility locates and advanced management (i.e., re-routing, temporary removal, etc.)
  - Staging area installation
  - Access routing/restrictions.
- Decommissioning and demolition of Site structures (requiring both upland and in-water access and equipment use), including:
  - Remaining remnants of the southern building (pending results of the demolition program currently underway)
  - Pier and pile removal
  - Vertical creosote-treated bulkhead removal, extent based on structural assessment and final design.
- Installation of a new perimeter sheetpile wall bulkhead, stabilizing features, and/or a revetment to support Site restoration and upland excavation
- Upland Site excavation, including:
  - Source removal excavation (approximately 3,000 cy) of TPH-impacted soil, to an approximate maximum depth of 15 ft bgs, including necessary slope and shoring for health and safety protection and infrastructure stability
  - Temporary staging and sorting of excavated material in advance of offsite disposal or segregation for potential local reuse
  - Groundwater pumping, storage, and management, depending on depth of final excavation footprint and seasonal height of groundwater at the time of excavation.
- Final shoreline restoration, including final stabilization of installed sheetpile bulkhead and adjustment to shoreline slope, if required.
- Site restoration, including placement of engineered backfill, grading, utility replacement, final surface paving, and pier replacement. Additional soil stabilization may be required, based on final design.
- Demobilization from the Site, including removal of staging and support operations.
- Post-construction survey to confirm that IA design requirements were achieved.
- Completion reporting.

Figures 8 through 10 provide a conceptual presentation of the various construction phases of the planned IA, including preparation and demolition (Figure 8), upland soil excavation and shoreline stabilization (Figure 9), and final Site restoration (Figure 10).

3.1 Description of the Interim Action

The following subsections provide additional detail on each of the primary elements of the planned IA design, the focus of which is to remove the upland source area to eliminate the seep and ongoing migration to local surface water and sediment of Site contamination.

3.1.1 Site Preparation and Source Area Access

As previously discussed, it is assumed that the bulk of the southern building, if not its entirety, will have been demolished in advance of the start of IA construction activities. It is also assumed that the northern building on the Site will remain-in-place for ongoing and future tenant use; however, the ultimate disposition of the northern building will be determined based on the results of the ongoing structural and coastal assessment of the pier elements on which part of the building sits and the specific requirements of the final IA design to access the upland source area and remove the contamination source.

In advance of final design and upon completion of current design-related data-gathering, a pre-construction Site survey will be conducted to provide sufficient density of survey data to inform an effective design. The survey will include both bathymetric and additional upland survey work. The surveys will consist of additional surveying activities along the shoreline and at key existing shoreline features, such as the pier and creosote-timber bulkhead, if accessible. This new pre-construction survey data will be combined with the existing survey data set held by Wilson Engineering to aid in finalizing the IA design and to confirm that the restored shoreline and finished grades were constructed per design.

The Port will coordinate with the Site's tenant in advance of IA activities to evaluate options for continued Site operational use during IA construction and to coordinate Site access and established restriction controls. Utility locates will be conducted and utility network mapping will be prepared to determine which utilities will need to be temporarily removed and replaced or those that can be temporarily re-routed until construction is complete.

The contractor team will also work with the Port and the tenant to establish work zones for equipment and lay-down as well as staging areas for the storage, handling, sorting, and general management of excavated soil in advance of storing, segregation, and offsite transport for disposal. If required, an additional staging area will also be established for temporary storage and management of contaminated groundwater that may have to be pumped from the excavation during the course of IA construction; groundwater management requirements will be finalized with the IA design and will

be largely dictated by seasonal groundwater highs at the time of construction. Figure 8 provides a conceptual presentation of the Site preparation elements in advance of IA construction.

3.1.2 Shoreline Management and Demolition

In general, the remnants of the Site's southern building (if applicable) and the existing pier structure will be demolished prior to the removal of the remaining pier and vertical creosote-timber bulkhead. Figure 8 provides a conceptual presentation of the related demolition elements in advance of final IA construction.

Demolition of the pier structure will be completed using barge-mounted floating equipment. Decking and framing will be loaded on barges for proper offsite disposal or recycling, if practicable. Timber piles will be extracted but may be cut off below the mudline if complete extraction is not feasible or practicable due to deteriorated material conditions or access issues. Creosote-treated timber elements will be cut into segments and disposed of at appropriate offsite facilities, based on the requirements of the contractor work plan and as directed by the in-water work permits.

Nets, floating oil booms, and floating work platforms will be used to prevent demolition materials from entering Blaine Harbor. Materials inadvertently entering the water will be removed from the seafloor immediately by the contractor team.

After demolition of the pier structure but in advance of demolition of the vertical timber bulkhead (based on final IA design), a new sheetpile bulkhead structure will be installed waterward of the existing timber bulkhead to retain the existing upland TPH-impacted soil and creosote-treated materials and prevent unsuitable materials from entering Blaine Harbor. Demolition of the vertical creosote-timber bulkhead will commence once installation of the new sheetpile wall is complete. It is anticipated that additional shoreline stabilization work, to establish final shoreline restoration, will occur after the upland Site excavation elements of the IA design are complete.

Replacement of the existing creosote timber bulkhead structure may be conducted by alternate means depending on the final design and approach for upland stability due to seismic concerns. Depending on the results of the geotechnical investigation and engineering analyses, ground improvement methods could be used as an alternative to traditional methods for resistance to lateral loads (e.g., deadman anchors, batter buttress piles, etc.).

3.1.3 Excavation and Soil Management

After the shoreline stabilization process is completed, excavation of the upland area of TPH-impacted soil will commence. Remaining pavement and/or concrete will be removed and disposed of off Site, as required, to manage access to the areas scheduled for excavation. Additional shoring or stabilization of buildings and related infrastructure to remain-in-place will be installed in advance of planned subsurface construction work.

Based on the current understanding of the impacted soil area (both the lateral and vertical extent), approximately 3,000 cy of TPH-contaminated soil will be excavated during source removal. The maximum targeted depth of excavation is 15 ft bgs, depending on seasonal groundwater conditions and access constraints. The excavation will be conducted from the upland and no over-water work will be required for soil removal and management. Shoring will be used to prioritize health and safety protection and maintain the stability of adjacent infrastructure during the course of excavation.

Excavated soil will either be loaded directly onto trucks for offsite disposal or stored temporarily in a staging area adjacent to the Site. Depending on the quality of the material to be managed, some volumes of stockpiled soil may be sorted and segregated for potential local reuse (e.g., clean overburden). The stockpile area will be covered at all times when not in active use and secured nightly, as needed, with tarps, plastic sheeting, sandbags, etc. to eliminate the chance of material spillage. The exact volume of soil requiring offsite disposal will be finalized based on the results of design-related soil characterization currently underway at the Site.

Assessment of soil quality during the course of investigation, including sample collection for quick-turn chemical analyses of the excavation's sidewalls and bottom, along with visual and olfactory observations, will be used to determine when the appropriate volume of TPH-impacted material has been removed based on the final design objectives. However, adjustments to the planned extent of lateral and vertical excavation may be adjusted in the field based on access constraints, threats to health and safety, or potential stability concerns to existing onsite structures.

As required, groundwater entering the base of the excavation will be either actively pumped directly into vacuum trucks during excavation advancement or pumped to and stored temporarily in the staging area in advance of necessary management or offsite disposal. Tidal fluctuations and seasonal groundwater levels at the time of IA construction will greatly influence the potential need for groundwater management. The appropriate approach to groundwater management will be finalized by the contractor team based on the timing of IA construction and proposed final depth of excavation. Figure 9 provides a conceptual presentation of the soil excavation and management elements associated with IA construction.

3.1.4 Upland and Final Shoreline Restoration

Upon completion of the excavation program, including appropriate excavated soil management (i.e., offsite disposal, segregation for re-use, etc.), the excavation will be backfilled and returned to final grade per the IA design. The quality of engineered backfill to be used will be determined based on the results of the ongoing design-related geotechnical investigation at and in the vicinity of the Site. Depending on the extent of the excavation required at the Site and the results of the ongoing geotechnical seismic evaluation, batter buttress piles or ground improvement methods (such as deep soil mixing) may be required to resist lateral loads on the newly installed bulkhead. After engineered

backfill placement and appropriate compacting and grading, Site utilities and related near-surface infrastructure will be restored in advance of surface completion.

Once the upland excavation and backfill process is complete (including behind the new bulkhead), additional bulkhead reinforcement (i.e., tie-backs, batter buttress piles, or similar techniques) will likely be installed to meet long-term seismic design requirements. After the final bulkhead reinforcement elements are installed, the Site's overall surface will be restored (i.e., asphalt, concrete, or a combination) based on final IA design requirements and operational requirements.

Restoration of the pier structure is anticipated for the exact over-water footprint of the previously removed creosote-treated pier. The new over-water pier structure is anticipated to include a precast and cast-in-place concrete deck supported by driven precast, prestressed concrete piles or steel pipe piles. The number of piles and depths of embedment will be determined based on the geotechnical subsurface investigations and the Site-specific seismic evaluation that are currently being conducted. Figure 10 presents a conceptual presentation of the proposed final Site restoration upon completion of the planned IA.

3.2 Best Management Practices

The IA involves shoreline infrastructure management, upland excavation, and Site-wide restoration. The IA will be implemented using both land- and water-based equipment. The following subsections describe typical best management practices (BMPs), to be finalized with the design- and construction-related documentation, that will be followed during implementation of the IA.

3.2.1 Upland Best Management Practices

The following BMPs may be used as part of the upland IA; their specific need and applicability will be finalized during preparation of the design- and construction-related documentation:

- BMPS will be implemented to prevent tracking potentially contaminated soil onto paved areas, roadways, and to offsite areas. Tracking soil from active work areas onto other areas of the Site or public rights-of-way will not be allowed. When earthwork equipment exits the work area, soil will be removed from the tires and body of the trucks and equipment to avoid depositing potential-contaminated soil outside the work area.
- Dust control methods will be applied, as needed, to minimize the generation of dust from construction operations and equipment and to prevent airborne dust from dispersing into the atmosphere. Water trucks, hoses, or spray nozzles may be used for application of water, as required by the specific activity and weather conditions.
- The contractor team will prepare a Site-specific Health and Safety Plan and will follow decontamination procedures described in the plan. Tools, equipment, and heavy machinery that contact potentially contaminated soil will be decontaminated before they contact clean backfill and other related materials or are taken out of the active work area.
- The contractor team will conduct the work in such a manner as to minimize the potential release of materials and pollution into the surrounding environment and Blaine Harbor. Fuel

and oil spills will be addressed in a timely manner to not allow released fluids to infiltrate or leave the work area. Potential pollutants, including waste materials and construction debris, will be handled and disposed of in a manner that does not cause contamination of soil, surface water, sediment, or stormwater. Vehicles and construction equipment will be regularly inspected to detect potential leaks or evidence of spills. Spill prevention measures, such as drip pans, absorbent pads, etc., will be used when conducting maintenance and repair of vehicles or equipment on Site.

- A Temporary Erosion and Sediment Control (TESC) Plan and Water Management Plan will be prepared by the contractor team and implemented, as necessary. The TESC Plan will address methods to install, maintain, and upgrade erosion prevention, containment, and countermeasure BMPs during active construction. This would include TESC surface runoff, stabilization of open excavation areas, and stockpile management.
- Stockpiling of soil will be minimized and open excavation areas will be secured from access outside of periods of active construction. If contaminated soil is stockpiled on Site instead of being loaded directly for offsite transport and disposal, it will be stockpiled on and covered with plastic sheeting and secured from blowing wind at all times except during active unloading and loading of the material. Materials to be stockpiled would be contained within an area bermed with temporary curbing.

3.2.2 In-Water Work Best Management Practices

The following BMPs may be employed during implementation of the in-water work associated with the IA. The list of BMPs to support IA construction will be developed with the final design- and construction-related documentation.

- In-water work will occur during the joint regulatory agency-approved fish protection work windows for the project (see Section 3.7.3), as negotiated with Ecology, the US Army Corps of Engineers (USACE), and the Washington Department of Fish and Wildlife (WDFW), as appropriate, during the regulatory process for the project.
- Turbidity and other water quality parameters will be monitored to demonstrate that contractor team activities remain in compliance with Washington State Surface Water Quality Standards (Chapter 173-201A of the Washington Administrative Code) and in accordance with the Ecology-issued Water Quality Certification.
- Appropriate BMPs will be employed to minimize sediment mobilization and distribution during in-water work.
- If determined to be necessary, additional enhanced BMPs may be used to further control turbidity, including silt curtains and boom assemblies, based on the active requirements of the construction project.
- Barges will be managed to not exceed capacity and be operated to maintain an even keel and avoid listing. If necessary, filter fabric or other appropriate materials will be placed over the barge scuppers to help prevent inadvertent release of materials to the harbor.
- Barge and related vessel personnel will be trained in hazardous materials handling and spill response and will be equipped with appropriate response tools, including absorbent oil booms. If a spill occurs, spill cleanup and containment efforts will be executed immediately and will take priority over any ongoing project work.

- The contractor team will inspect fuel hoses, oil/fuel transfer valves, and fittings on a regular basis for drips or leaks to prevent spills into Blaine Harbor.
- Grounding of in-water work vessels and equipment will not be allowed.
- The contractor team will be responsible for preparation and management of a Spill, Prevention, Control, and Countermeasures (SPCC) Plan to be used during the course of project implementation, which will include the following information:
  - The SPCC Plan will identify construction planning elements and recognize potential spill sources at the project Site. The SPCC Plan will outline responsive actions in the event of a spill or release and will describe notification and reporting procedures. The SPCC Plan will outline contractor team management elements, such as personnel responsibilities, project Site security, Site inspections, and training.
  - The SPCC Plan will outline what measures will be taken by the contractor team to prevent the release or spread of hazardous materials (either found inadvertently on Site and encountered during construction but not identified in contract documents, or any hazardous materials that the contractor stores, uses, or generates on Site during remediation activities). These items may include, but are not limited to, gasoline, diesel, oils, and chemicals. Hazardous materials are defined in Revised Code of Washington (RCW) 70.106.010 under ”hazardous substances.”
  - The contractor team will maintain the applicable equipment and material designated in the SPCC Plan.

The following pile and shoreline infrastructure removal BMPs, adapted from US Environmental Protection Agency and DNR guidance, will also be employed for pile and shoreline infrastructure removal:

- The removal of creosote-treated piles and timber bulkhead elements will be consistent with conditions issued as part of the Derelict Creosote Pile Removal Project Hydraulic Project Permit Approval, issued to the DNR Northwest Region (Control No. 106398-3, August 8, 2007).
- The contractor team will initially vibrate the pile/timber bulkhead elements to break the friction bond between pile/bulkhead and soil/sediment.
- To help minimize turbidity, the contractor team will engage the extraction equipment to the minimal extent required to initiate vertical movement, and will disengage equipment use once the pile/material has been mobilized and is moving upward.
- The piles and related shoreline infrastructure, per the requirements of the shoreline design, will be removed in a single, slow, and continuous motion, to the extent practicable.
- Although full pile removal is the priority, pile cutoff will be an acceptable alternative where vibratory extraction or pulling is not feasible. If a pile is broken or breaks during extraction, a chain or other equipment will be used, if feasible, to attempt to entirely remove the broken pile. If the entire pile cannot be removed, the pile will be cut at or below the mudline.
- Upon removal of the pile or related shoreline infrastructure, the materials will be moved as quickly as possible from over water to the barge for subsequent offload for disposal or recycling, if possible.

In the event that new, clean backfill material needs to be placed along the shoreline during Site restoration, the following measures will be used:

- The placement of material will generally occur starting at lower elevations and working to higher elevations.
- Based on the requirements of the final design, set volume, tonnage, lead line measurements, and bathymetric information or similar will be used to confirm adequate coverage during and after material placement.
- Imported materials will be pre-approved by Ecology and may consist of clean, granular material free of roots, organic material, contaminants, and all other deleterious material, or other approved structure fill to be used for enhanced shoreline stabilization and restoration.

3.3 Monitoring

Compliance monitoring requirements associated with implementation of the IA consist of protection monitoring during active IA activities, performance monitoring to demonstrate that the IA is in accordance with the approved project plans and design, and confirmation monitoring following remedy completion to confirm the long-term effectiveness of the intended IA design.

3.3.1 Protection Monitoring

Protection monitoring will be conducted during active IA construction to confirm the protection of human health and the environment. Protection monitoring requirements will be described in a Health and Safety Plan, which will address worker activities during the proposed IA remediation, and the Water Quality Monitoring Plan, which will address potential impacts to turbidity in the surrounding waters during the planned IA.

3.3.2 Performance Monitoring

Performance monitoring activities will be conducted for both upland and in-water project elements prior to design finalization and during IA implementation. Performance monitoring for the upland area will consist of the following:

- Additional, ongoing pre-IA design Site investigation (e.g., soil and groundwater quality, geotechnical investigations, tide studies, etc.) will supplement the performance monitoring that is typically conducted during remediation activities.
- Soil sampling will be conducted during upland area remediation to demonstrate that the excavation and related upland activities meet the IA objectives. The sampling strategy will be described in a post-excavation confirmation sampling plan to be included as part of the design- and construction-related documentation.
- Quality control monitoring for IA activities will be conducted (e.g., surveys, etc.), if required based on final design.

Performance monitoring related to in-water work will consist of the following:

- Turbidity monitoring and monitoring for potential sediment mobilization will be conducted during shoreline activities to demonstrate that the IA is implemented as designed.
- Additional performance monitoring requirements specifically associated with final permit approvals, if appropriate.

3.3.3 Confirmation Monitoring

Confirmation monitoring activities will be conducted for both upland and in-water project elements following completion of the IA. This monitoring could involve groundwater monitoring and long-term monitoring to demonstrate the stability of the engineered backfill in the upland area. Post-construction surveys (both bathymetric and upland surveys) will be conducted. Monitoring requirements will be established in the final design- and construction-related documentation and likely align with future RI activities aimed to establish the final Site remedy.

3.4 Cultural Resources

Ecology provided recommendations for the type of future Site activity that would require additional archaeological observations. The agency recommended further archaeological monitoring only during IA activities associated with removal of upland contaminated soil and work along the shoreline during pile removal and Site restoration. In the upland area, the interface between historical-period fill and native materials is likely below 15 ft bgs, which is beneath the maximum depth of the planned upland excavation.

An Inadvertent Discovery Plan will be completed to address monitoring protocols and procedures to be used in the event of an inadvertent discovery of an archaeological resource and/or human remains during the proposed remedial excavation and shoreline activities. If apparent archaeological artifacts are encountered, the Port will be notified immediately. The Port will then notify Ecology, the Washington State Department of Archaeology and Historic Preservation (DAHP), DNR, the Lummi Nation, and the Nooksack Tribe, and if appropriate, will invite the parties to attend an onsite inspection with the professional archaeologist under contract with the Port. If confirmed, an archaeologist will document the discovery in a report for submittal to DAHP to allow access control to information regarding potentially sensitive locations, in accordance with Chapter 27.53 RCW.

In the event of an inadvertent discovery of potential human remains, project activities will stop immediately in the area of discovery and the apparent remains will be covered and secured against further disturbance. The City of Blaine Police Department and the Whatcom County Medical Examiner will be notified immediately, along with DAHP, DNR, and authorized Tribal representatives. If appropriate, a management plan will be developed by a professional archaeologist in accordance with applicable state laws.

3.5 Permitting and Substantive Requirements

The planned IA engineering design and construction will be conducted under the AO between Ecology and the Port under the jurisdictional authority of MTCA. Therefore, the planned IA is exempt from the procedural requirements of state and local permits that would normally be required for similar projects, per RCW 70.105D.090. However, MTCA requires that any proposed action must demonstrate substantive compliance with appropriate state and local permits, as they relate specifically to the project being designed and constructed. As an example, substantive compliance will be demonstrated for the City of Blaine's Shoreline Substantial Development permit requirements, in addition to clearing, grading, and/or demolition permits and approvals, as required by the final IA design.

In addition to complying with the substantive provisions of the City's permits, additional permits and approvals will be required for construction of the IA design. A Joint Aquatic Resources Permit Application (JARPA) will be submitted at the 30 percent design phase to initiate coordination to obtain the required permit approvals, which at a minimum will include the following:

- USACE approval under Section 404 of the federal Clean Water Act (CWA) and Section 10 of the Rivers and Harbors Act. The Port anticipates that the project will qualify for coverage under Nationwide Permit 38 (NWP 38) for the Cleanup of Hazardous and Toxic Waste.
- With NWP 38 coverage, the project will automatically be certified under Ecology's CWA Section 401 Certification and Coastal Zone Management Consistency requirements. The project must still comply with the General Conditions under Section 401 of Ecology's CWA.

  As part of permit compliance, a Water Quality Certification Work Plan will need to be prepared by the contractor team to direct required monitoring and reporting on potential water quality impacts during active project construction.
- USACE permission under 33 United States Code Section 408.
- Coverage under Ecology's National Pollutant Discharge Elimination System Construction Stormwater General Permit, in the event that the Site upland staging and process area is larger than 1 acre.
- DNR Aquatic Land Use Authorization.

3.6 Interim Action Construction Completion Reporting

After completion of the IA, the Port will prepare an IA Construction Completion Report for review and consideration by Ecology representatives. The report will summarize the completed IA, including the related monitoring information. In general, the report will include the following:

- Field-related documentation, including relevant field notes, observations during the course of IA implementation, and a photographic log.
- Analytical testing results and associated documentation. At a minimum, this will include tables and figures showing relevant analytical results and laboratory reports from the accredited laboratories supporting the IA project.
- Deviations from approved IA design and construction work plans, if appropriate.

- Final upland- and shoreline infrastructure-related survey information.
- Information on the final extent and depth of upland area excavation and related Site restoration.
- Documentation and figures (if appropriate) indicating zones of contamination left-in-place upon completion of the IA (both lateral and vertical extent).

The draft IA Construction Completion Report will be submitted to Ecology within 60 calendar days after completion of the IA and receipt and validation (if required) of IA-related monitoring information.

3.7 Interim Action Schedule and Construction Phasing

The following subsections detail information on the planned schedule for IA implementation, including information on project sequencing and related regulatory schedule drivers.

3.7.1 Interim Action Schedule

The following schedule is anticipated for implementation of the planned IA:

Event or Document	Anticipated Calendar Date
Submittal of Agency Review Interim Action Work Plan and Public Comment	April 19, 2023 Public Comment Period tentatively scheduled for May 22 through July 5, 2023
Conduct Proposed Interim Action Design Sampling	April 1, 2023 through June 30, 2023
Submit 30 percent Construction Documents for the Interim Action	August 1, 2023
Permitting including JARPA Submittal	August 1, 2023
Prepare 90 percent and 100 percent Construction Documents for the Interim Action	August 1, 2023 through January 31, 2024
Bid and Award Process	February 1 through March 31, 2024
Interim Action Construction	July 15 through November 30, 2024
Submit Draft Interim Action Construction Completion Report	January 31, 2025

3.7.2 Interim Action Sequencing

The IA will be conducted at and adjacent to an active commercial operation, and will include the demolition and removal of selected Site structures to support the requirements of the IA design. Therefore, the overall IA design will need to be sequenced accordingly. The IA is generally anticipated to be implemented based on the following sequencing:

- Pre-construction survey programs, including bathymetric and upland survey data-gathering

- Site preparation, including tenant coordination, utility management, Site access coordination, and staging area setup
- Site structure decommissioning and demolition, including remaining remnants of the southern building (if required), and the existing creosote-treated pier and vertical timber bulkhead
- Installation of a new sheetpile bulkhead to support both shoreline restoration and upland excavation requirements
- Excavation of TPH-impacted soil for appropriate offsite disposal or applicable re-use
- Final shoreline restoration, including stabilization of the newly installed bulkhead upon completion of upland excavation activities
- Site restoration, including placement of engineered backfill, grading, utility replacement, final surface paving, and pier replacement.

3.7.3 In-Water Work Windows

In-water work will occur only during the USACE's and WDFW's established in-water work windows for Blaine Harbor. The allowable in-water work windows for the project area, based on the seasonal presence of juvenile salmonids (as regulated by WDFW), is limited to work below the ordinary high water mark in the dry between July 15th and July 31st and in-water work between August 1st and March 14th. The in-water work window based on protection of Chinook salmon and bull trout (as regulated by the USACE) is limited to between July 2nd and March 2nd, and July 16th and February 15th, respectively.

Therefore, the combined in-water work window that will govern activities during planned IA construction is between August 1st and February 15th.

3.8 Integration with Final Cleanup Action

Upon completion of the planned IA, newly-derived Site data (pre-design RI data and IA construction monitoring results) will be combined with the existing historical dataset and re-evaluated to re-establish the understanding of Site conditions as they relate to developing an appropriate final Site remedy. This re-evaluation process will be ongoing during the design and implementation phases of the IA, as appropriate, to continue to advance the RI process.

Based on the final IA design, it is anticipated that some soil contamination will remain-in place, largely due to access constraints (both laterally and vertically) at the Site. Once the understanding of Site conditions is re-established upon completion of IA construction, a data gaps work plan (if warranted) will be developed to outline what additional data may be necessary to finalize the RI and support effective evaluation of a final remedy in the FS. Finalization of the RI/FS report is anticipated for summer 2025.

4.0 USE OF THIS DOCUMENT

This Interim Action Work Plan has been prepared for the exclusive use of the Port of Bellingham and applicable regulatory agencies for specific application to the Sea K Fish Cleanup site interim action. No other party is entitled to rely on the information, conclusions, and recommendations included in this document without the express written consent of Landau. Further, the reuse of information, conclusions, and recommendations provided herein for extensions of the project or for any other project, without review and authorization by Landau, shall be at the user's sole risk. Landau warrants that within the limitations of scope, schedule, and budget, our services have been provided in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing in the same locality under similar conditions as this project. Landau makes no other warranty, either express or implied.

5.0 REFERENCES

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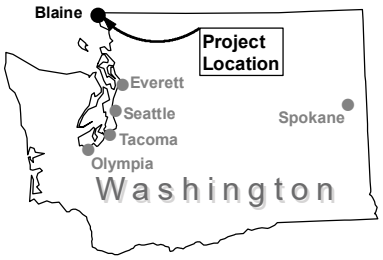

Data Source: Esri World Imagery.

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Sea K Fish Cleanup Site Blaine, Washington	**Vicinity Map**	Figure 1

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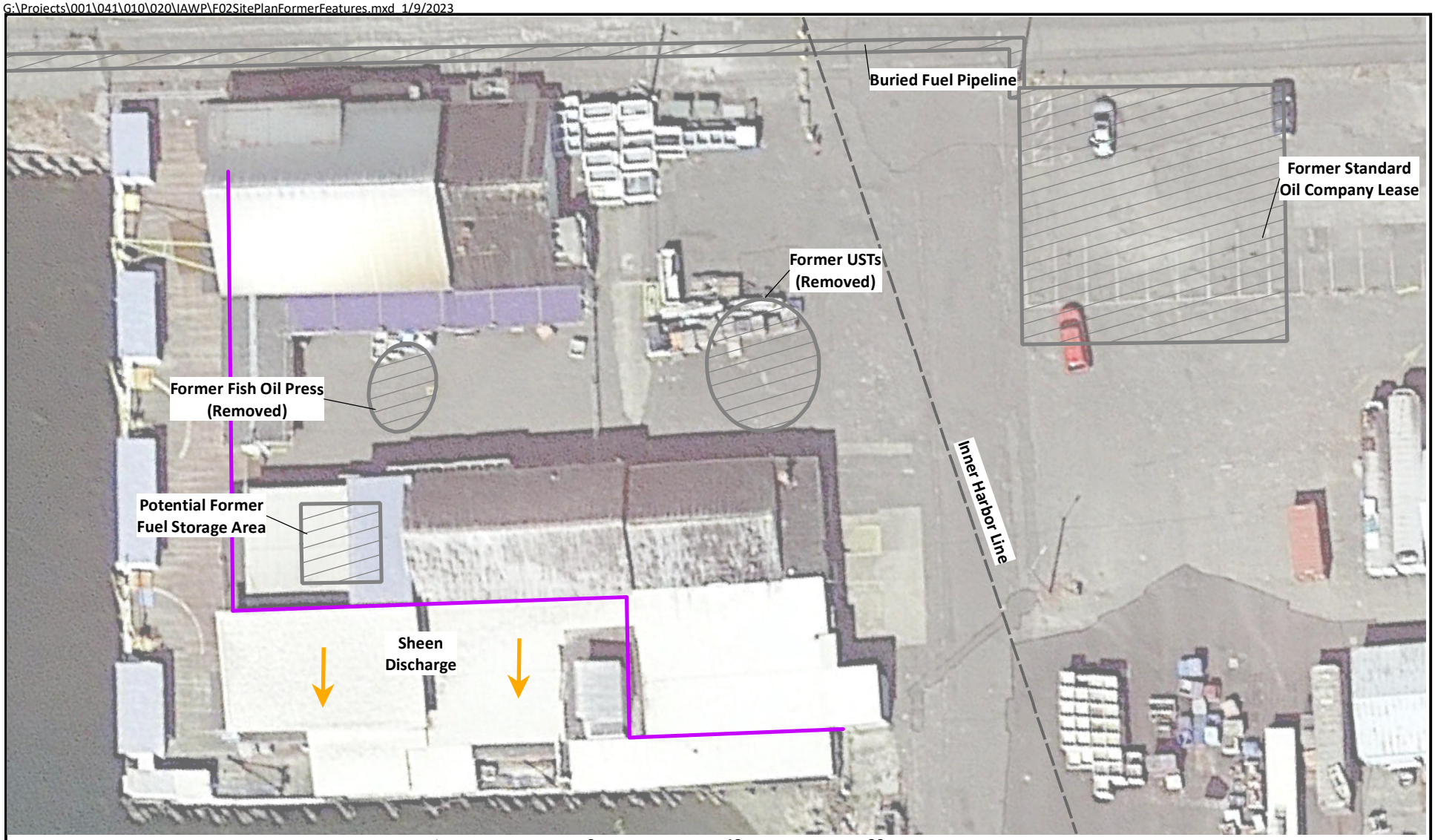

Legend

- Shoreline/Bulkhead
- Inner Harbor Line

N

0 40 80

Scale in Feet

Data Source: Google Earth Pro.

Notes

1. USTs = underground storage tanks.
2. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

LANDAU ASSOCIATES

Sea K Fish Cleanup Site Blaine, Washington	**Site Plan and Former Features**	Figure 2

Interim Action Cleanup Levels		
TPH Constituents	Soil (mg/kg)	Groundwater (µg/L)
Gasoline-range	100	800
Diesel-range	2,000	500
Oil-range	2,000	500

Notes

1. LNAPL = light non-aqueous phase liquid
2. µg/L = micrograms per liter
3. mg/kg = milligrams per kilogram
4. TPH = total petroleum hydrocarbons
5. USTs = underground storage tanks
6. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

Legend

- Soil and Groundwater Sampling Location
- Groundwater Sampling Location
- Porewater Sampling Location
- Soil Boring Location
- Approximate Extent of TPH Constituent Exceedances in Soil, Groundwater, and/or Observed LNAPL
- Shoreline/Bulkhead
- Inner Harbor Line

Color Coding Key

- SK-SB-5 — Concentration Exceeded Site Targeted Soil and/or Groundwater Cleanup Levels for TPH Constituents
- SK-SB-1 — Concentration was Below Site Targeted Soil and/or Groundwater Cleanup Levels for TPH Constituents
- SK-SB-2 — LNAPL Observed, No Samples Collected for TPH Analysis
- SK-PW-1 — TPH Constituents Detected Above Laboratory Reporting Limit

0 30 60

Scale in Feet

Data Source: Google Earth Pro.

LANDAU ASSOCIATES

Sea K Fish Cleanup Site Blaine, Washington	**Approximate Extent of TPH Contamination and Source Area**	Figure 3

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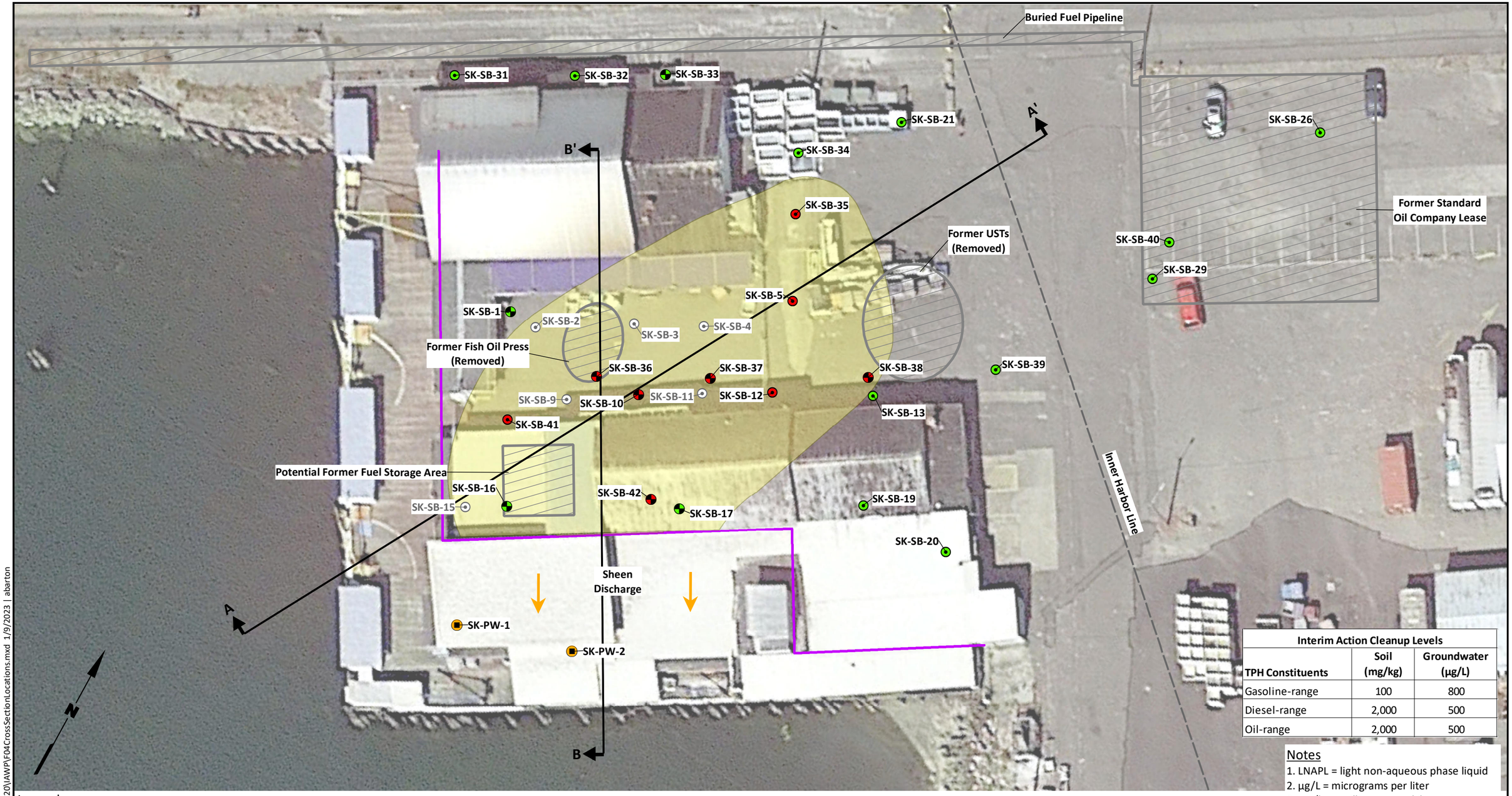

Interim Action Cleanup Levels		
TPH Constituents	Soil (mg/kg)	Groundwater (µg/L)
Gasoline-range	100	800
Diesel-range	2,000	500
Oil-range	2,000	500

Notes
1. LNAPL = light non-aqueous phase liquid
2. µg/L = micrograms per liter
3. mg/kg = milligrams per kilogram
4. TPH = total petroleum hydrocarbons
5. USTs = underground storage tanks
6. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

Legend
- Soil and Groundwater Sampling Location
- Porewater Sampling Location
- Soil Sampling Location
- Approximate Extent of TPH Constituent Exceedances in Soil and Groundwater and Observed LNAPL
- Inner Harbor Line
- Shoreline/Bulkhead

Color Coding Key
- SK-SB-5: Concentration Exceeded Site Targeted Soil Cleanup Levels for TPH Constituents
- SK-SB-1: Concentration was Below Site Targeted Soil Cleanup Levels for TPH Constituents
- SK-SB-2: LNAPL Observed
- SK-PW-1: TPH Constituents Detected Above Laboratory Reporting Limit

Cross Section Location

0 30 60
Scale in Feet

Data Source: Google Earth Pro.

LANDAU ASSOCIATES

Sea K Fish Cleanup Site Blaine, Washington	**Cross Section Locations**	Figure 4

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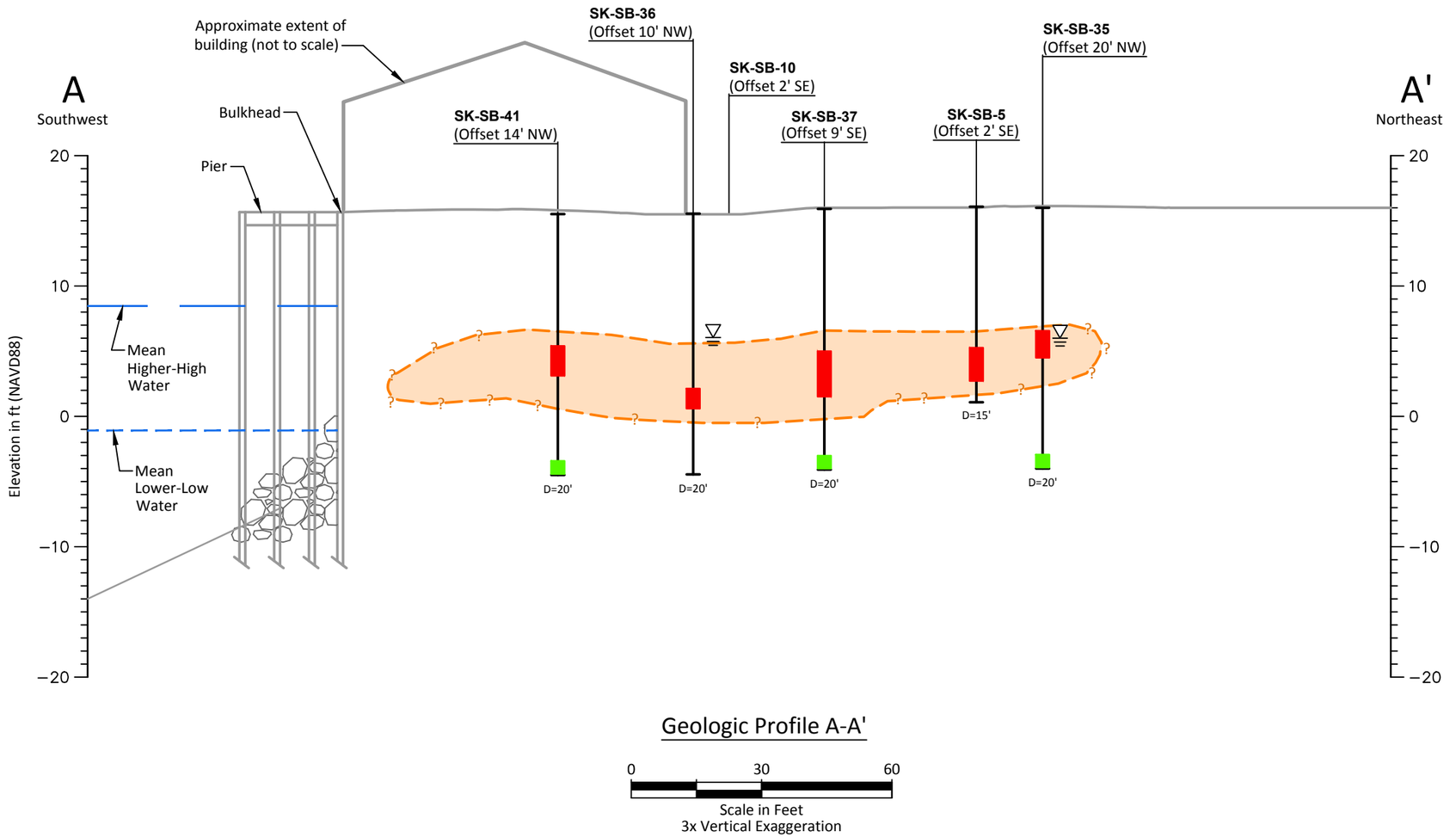


Geologic Profile A-A'

0 30 60

Scale in Feet
3x Vertical Exaggeration

Legend

SK-SB-41 (Offset 14' NW) — Project Exploration Designation; Offset Distance in Feet and Direction

- Top of Exploration
- Concentration Exceeded Site Targeted Soil Cleanup Levels for TPH Constituents
- Concentration was Below Site Targeted Soil Cleanup Levels for TPH Constituents
- Groundwater Level (At time of investigation)
- Well Screen Interval (If Installed)
- Bottom of Exploration
- D=20' — Depth of Exploration (in feet)

MHHW = Mean Higher-High Water
MLLW = Mean Lower-Low Water

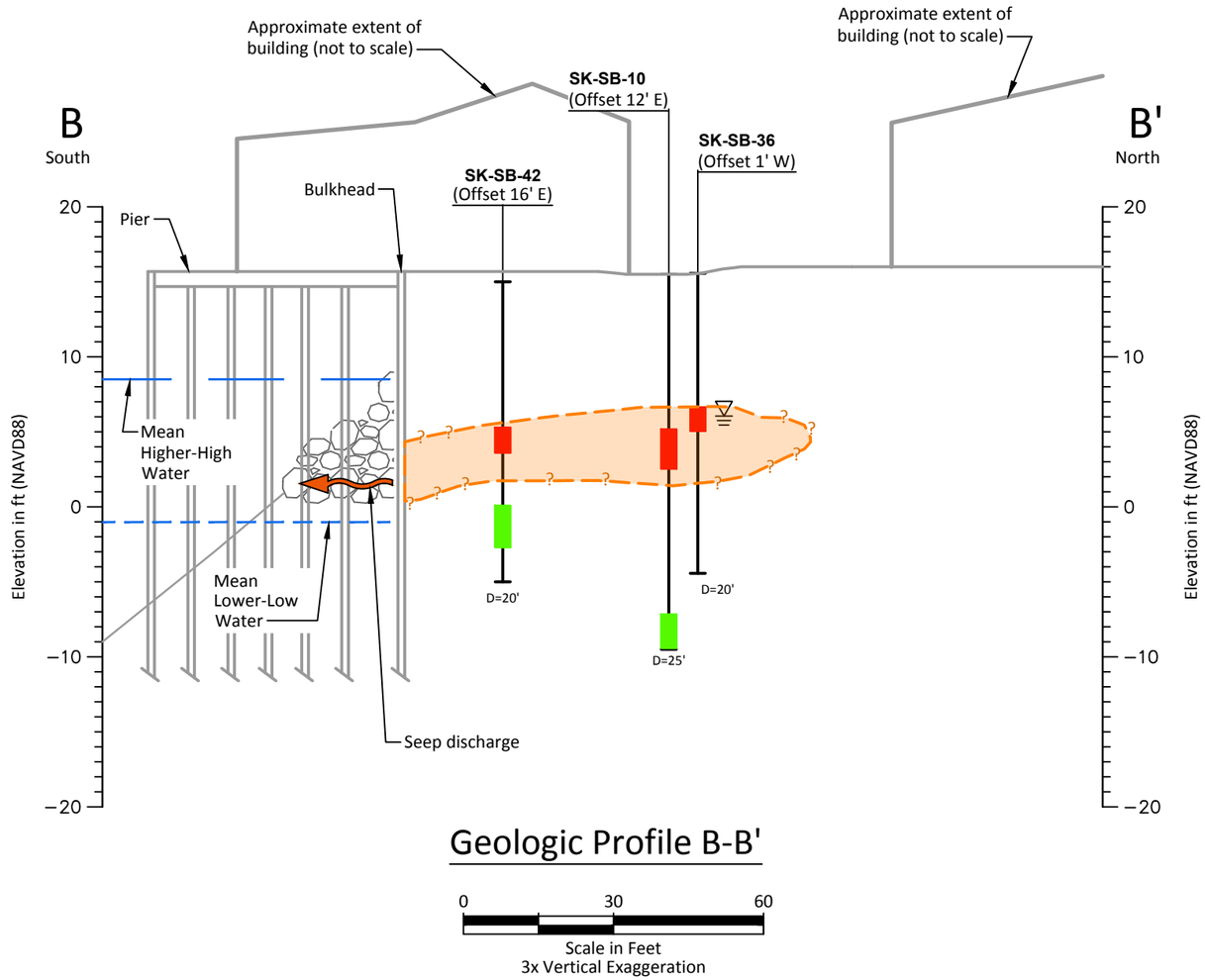
Notes

1. Soil descriptions are generalized, based on interpretation of field and laboratory data. Stratigraphic contacts are interpolated between borings and based on topographic features; actual conditions may vary.
2. For Cross Section location, see Figure 4.
3. MHHW and MLLW elevations (in NAVD88) as published by the National Oceanic and Atmospheric Administration (NOAA; accessed December 12, 2022). Mean tide data range from 1983 through 2001.
4. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

Source: WA DNR Lidar Portal

Sea K Fish Cleanup Site Blaine, Washington	**Cross-Section A-A'**	Figure 5

LANDAU ASSOCIATES



Geologic Profile B-B'

0 30 60

Scale in Feet
3x Vertical Exaggeration

Legend

SK-SB-41 — Project Exploration Designation
(Offset 14' NW) — Offset Distance in Feet and Direction

- Top of Exploration
- Concentration Exceeded Site Targeted Soil Cleanup Levels for TPH Constituents
- Concentration was Below Site Targeted Soil Cleanup Levels for TPH Constituents
- Groundwater Level (At time of investigation)
- Well Screen Interval (If Installed)
- Bottom of Exploration
- D=20' — Depth of Exploration (in feet)

MHHW = Mean Higher-High Water
MLLW = Mean Lower-Low Water

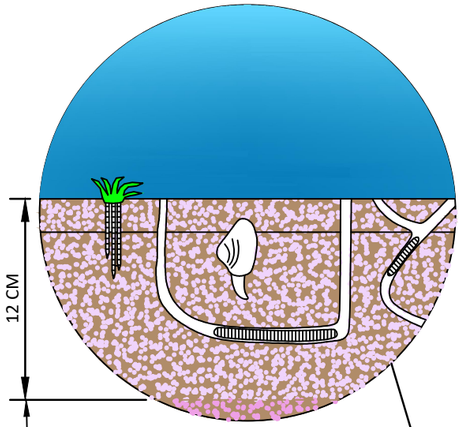
Notes

1. Soil descriptions are generalized, based on interpretation of field and laboratory data. Stratigraphic contacts are interpolated between borings and based on topographic features; actual conditions may vary.
2. For Cross Section location, see Figure 4.
3. MHHW and MLLW elevations (in NAVD88) as published by the National Oceanic and Atmospheric Administration (NOAA; accessed December 12, 2022). Mean tide data range from 1983 through 2001.
4. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

Source: WA DNR Lidar Portal

Sea K Fish Cleanup Site Blaine, Washington	**Cross-Section B-B'**	Figure 6

LANDAU ASSOCIATES



Mixing of Marine Sediment with Both Underlying and Recently Deposited Sediment Due to Bioturbation.

North

Approximate Extent of Building

SK-SB-42 (Offset 16' E)

SK-SB-36 (Offset 1' W)

SK-SB-10 (Offset 12' E)

Potential Exposure (Direct Contact) to Site Workers / Visitors

Pier

Bulkhead

Mean Higher-High Water

Mean Lower-Low Water

Riprap

Seep Discharge

Former UST / Former Fish Press

LNAPL Plume

D=20'

D=20'

D=25'

30

20

10

0

-10

-20

-30

ELEVATION IN FT (NAVD88)

Legend

SK-SB-36 — Project Exploration Designation

(Offset 1' NW) — Offset Distance in Feet and Direction

Top of Exploration

Concentration Exceeded Site Targeted Soil Cleanup Levels for TPH Constituents

Concentration was Below Site Targeted Soil Cleanup Levels for TPH Constituents

Groundwater Level (At Time of Investigation)

Well Screen Interval (If Installed)

Bottom of Exploration

D=20' — Depth of Exploration (in Feet)

LNAPL = Light Non-Aqueous Phase Liquid

TPH = Total Petroleum Hydrocarbons

UST = Underground Storage Tank

0 20 40

Scale in Feet
2x Vertical Exaggeration

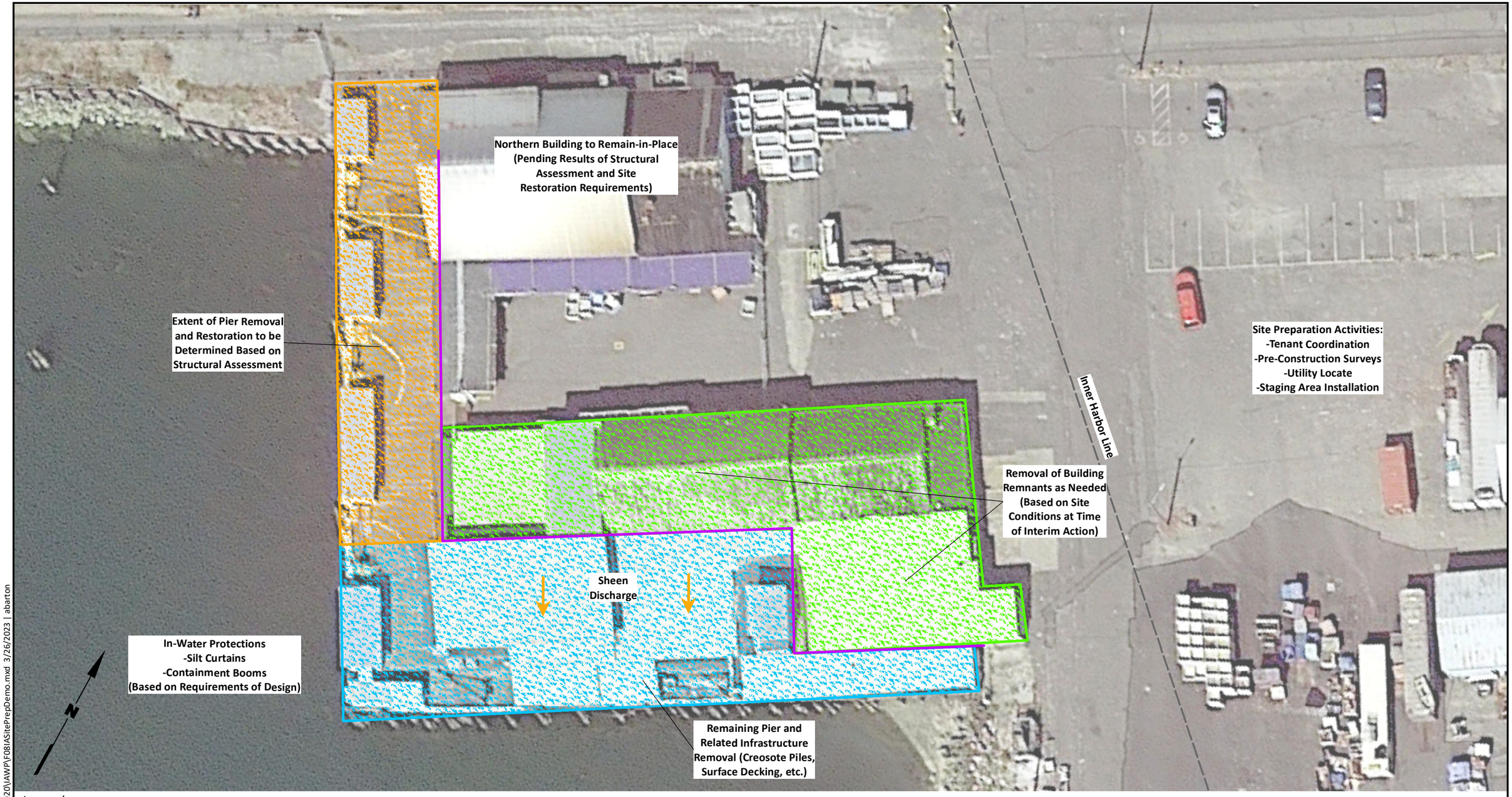
Note

1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

Source: WA DNR Lidar Portal

Sea K Fish Cleanup Site Blaine, Washington	**Conceptual Site Model**	Figure 7

LANDAU ASSOCIATES



Legend

- Extent of Pier Removal and Restoration to be Determined Based on Structural Assessment
- Remaining Pier and Related Infrastructure Removal
- Remaining Building Removal
- Shoreline/Bulkhead
- Inner Harbor Line

0 30 60

Scale in Feet

Note

1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

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LANDAU ASSOCIATES

Data Source: Google Earth Pro.

Sea K Fish Cleanup Site Blaine, Washington	**Interim Action Preparation and Demolition**	Figure 8

Northern Building to Remain-in-Place
(Pending Results of Structural Assessment and Site Restoration Requirements)

Maximum Lateral Extent of Source Removal,
Pending Access Constraints.
Maximum Depth to 15 feet with Appropriate Slope-Back.
Excavation Dewatering Management, if required.

Soil Staging Area
Excavation Dewatering Management

Inner Harbor Line

In-Water Protections
-Silt Curtains
-Containment Booms
(Based on Requirements of Design)

New Sheetpile Wall Bulkhead Installation and Shoreline Stabilization in Advance of Upland Excavation

Sheen Discharge

N

Legend

- Source Removal
- Soil Staging Area/Groundwater Treatment
- Approximate Extent of TPH Constituent Exceedances in Soil, Groundwater, and/or Observed LNAPL
- Stabilized Shoreline
- Inner Harbor Line

0 25 50

Scale in Feet

Notes

1. LNAPL = light non-aqueous phase liquid
2. TPH = total petroleum hydrocarbons
3. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

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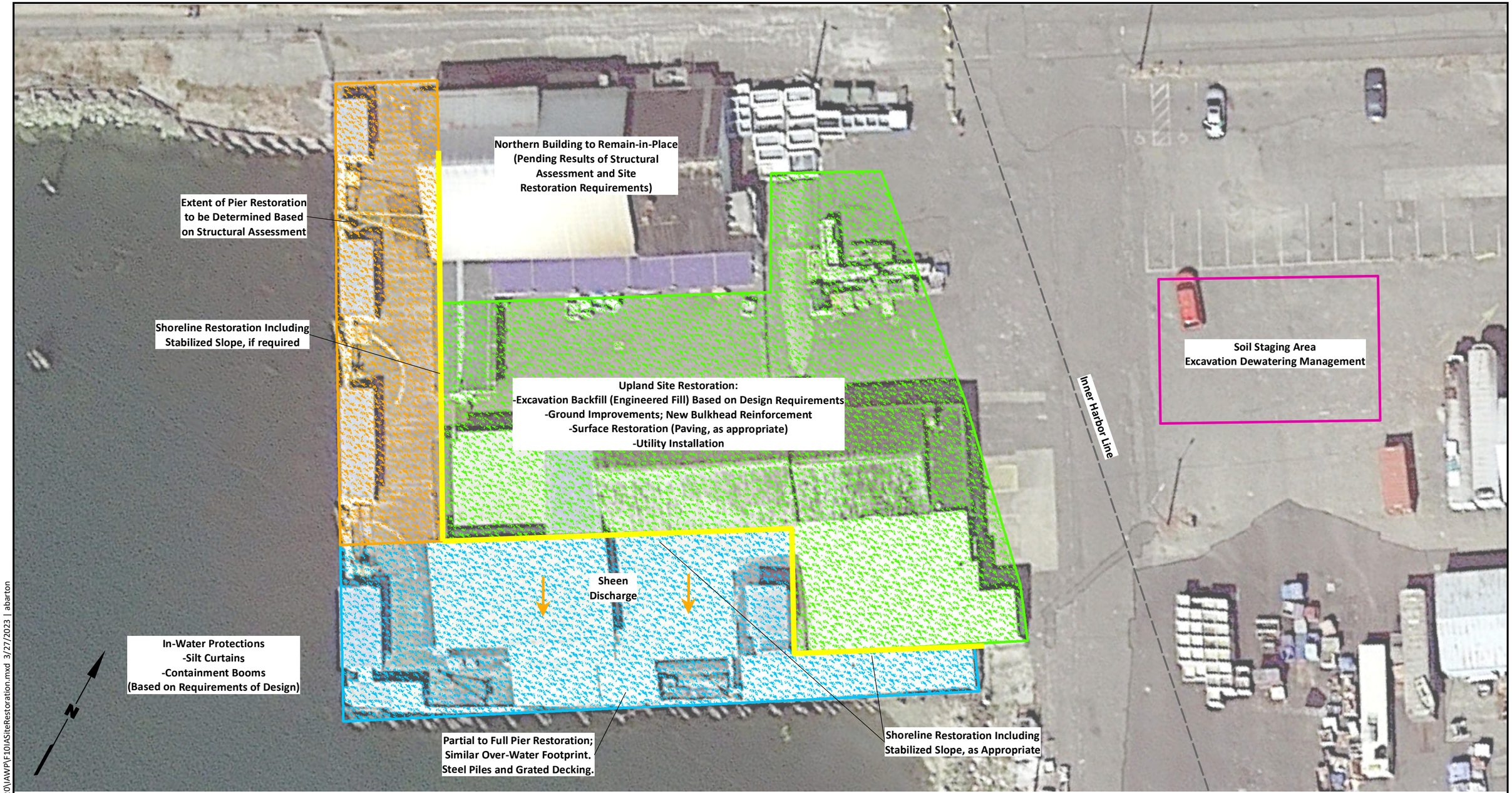
LANDAU ASSOCIATES

Data Source: Google Earth Pro.

Sea K Fish Cleanup Site Blaine, Washington	**Interim Action Excavation Management**	Figure 9



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Legend

- Partial to Full Pier Restoration
- Restored/Resurfaced Area
- Extent of Pier Removal and Restoration to be Determined Based on Structural Assessment
- Restored Shoreline
- Inner Harbor Line

0 30 60

Scale in Feet

Note

1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

LANDAU ASSOCIATES

Data Source: Google Earth Pro.

Sea K Fish Cleanup Site Blaine, Washington	**Interim Action Site Restoration**	Figure 10