LANDAU ASSOCIATES

October 20, 2021

Washington State Department of Ecology
Toxics Cleanup Program – Policy and Technical Support
PO Box 47600
Olympia, WA 98504

Attn: Mr. Andy Kallus and Mr. Jason Cook

Transmitted via email to: *akal461@ecy.wa.gov* and *asco461@ecy.wa.gov*

Re: K-C Site and ExxonMobil/ADC Site Soil Removal, Stockpiling, and Disposal Plans
Norton Terminal Development & MTCA 3rd Interim Action
Everett, Washington

Dear Andy and Jason:

On behalf of the Port of Everett, this letter and the attached documents present plans detailing implementation means and methods and additional proposed sampling for the Norton Terminal Development and MTCA 3rd Interim Action (the Project). The Soil Removal, Stockpiling, and Disposal Plan (Soil Plan; Attachment 1) was prepared by the Project's construction contractor as a required by the Kimberly-Clark Worldwide Site Soil and Groundwater Management Plan (SGMP; LAI 2021b) and the ExxonMobil/ADC Site Soil and Groundwater Management Plan (LAI 2021c). A Sampling and Analysis Plan (SAP; Attachment 2) was prepared by ExxonMobil to detail sampling to be conducted by ExxonMobil on the ExxonMobil/ADC Site during implementation of the Project.

The Port and its representatives have reviewed the Soil Plan during the submittal review process and determined that the Soil Plan and the BMPs listed within meet the contract documents, which were written to be consistent with Project requirements presented in the Interim Action Work Plan Kimberly-Clark Worldwide Site Upland Area 3rd Interim Action (IAWP; LAI 2021a). The construction contractor has also been provided and acknowledged receipt of the IAWP and created the attached Soil Plan in adherence to the documents included in the IAWP.

The SAP was prepared by ExxonMobil to detail soil sampling activities to occur during the Project within the ExxonMobil/ADC Site. Details of the SAP were coordinated with and was approved by Ecology. ExxonMobil will be responsible for implementation of the SAP, and the Port will coordinate with ExxonMobil as is reasonable to allow for implementation.

LANDAU ASSOCIATES, INC.

Dylan Frazer, LG
Associate Geologist

DHF/ljl
[P:\121\049\R\SOIL PLAN SUBMITTAL LETTER_102021.DOCX]

Attachments

Attachment 1. Soil Removal, Stockpiling, and Disposal Plan (Strider Construction, 10/13/2021)
Attachment 2. Sampling and Analysis Plan (Cardno 2021)

References

LAI. 2021a. Final Interim Action Work Plan, Kimberly-Clark Worldwide Site Upland Area, 3rd Interim Action, Port of Everett, Everett, Washington. Landau Associates, Inc. August 5.

LAI. 2021b. Final Soil and Groundwater Management Plan, Maritime Industrial Expansion at Norton Terminal, Port of Everett, Everett, Washington. Landau Associates, Inc. June 22.

LAI. 2021c. Technical Memorandum: Soil and Groundwater Management Plan—Norton Terminal MIE, ExxonMobil/ADC Site, Everett, Washington. Landau Associates, Inc. June 15.

ATTACHMENT 1

Soil Removal, Stockpiling, and Disposal Plan (Strider Construction, 10/13/21)

Oct 13, 2021

NORTON TERMINAL DEVELOPMENT & MTCA 3RD INTERIM ACTION
SOIL REMOVAL, STOCKPILING, AND DISPOSAL PLAN

Strider Construction Co., Inc. has prepared the following Soil Removal, Stockpiling, and Disposal Plan for the Norton Terminal Development & MTCA 3rd Interim Action project in alignment with Contract Documents, specification section 02 61 00 – Management of Excavated Material, K-C Worldwide (KC; FSID 9) Site Soil and Groundwater Management Plan located in Appendix C of the Contract Documents, Exxon/ADC Soil and Groundwater Management Plan located in Appendix B of the Contract Document. The below plan is broken up into two sections, K-C Site and ExxonMobil ADC Site (FSID 2728).

K-C SITE:

Potential Hazardous Materials:

Below materials within the K-C Site may contain concentrations exceeding the CULs and have been previously been encountered. See also Attachment 1 of the K-C Soil and Groundwater Management Plan per Appendix C of the Contract Documents.

- Crushed Demolition Debris: Material generated during the demolition of former structures from previous operations on the site. Sampling of this debris showed cPAHs, metals, and PCBs above the MTCA cleanup levels. If this material is encountered then will be characterized for offsite disposal.
- General Construction Debris: Soil mixtures containing greater than 50 percent by volume of general construction debris, including asphalt, brick, wire, wood debris (including creosote pilings), and asbestos-containing material is present at the site in isolated areas within the hydraulic fill.
- Underground Storage Tanks and Petroleum Hydrocarbons: There may be undocumented USTs in the vicinity of the former buildings and may contain heating oil or other petroleum products, such as gasoline, diesel, and motor oil. Contamination may be present in soil or ground water and typically exhibits one or more of the following characteristics: iridescent sheen, black and greasy appearance, petroleum order, or dark staining in soil.

General Soil Management Requirements

Any activities that may result in workers coming into contact with potentially contaminated soil need to follow:

- Site Specific Health and Safety Plan (Under Separate Cover).
- Port of Everett (POE) will document excavation activities and submit to Ecology.
- No excavated soil is to be reused outside of the site boundaries without adequate testing to confirm is the soil does not exceed and MTCA soil CULs.

- Contaminated soil will be disposed at an off-site permitted facility.
    - Disposal facilities:
        - Subtitle D – Republic Services
        - Subtitle C – Waste Management
- Soil unsuitable but tested as not contaminated, hauled to:
    - SSG Mineral Resources
    - Iron Mountain
- Work conducted along the shoreline will be completed in accordance with JARPA and the in accordance with the Contract Documents. Work includes the construction of outfalls basin 'A' and 'M'. Requirements presented in the JARPA include that shoreline work will be constructed in the dry, at low tides in a single tide cycle, and backfill prior to arrival of incoming tide. Imported material will only consist of quarry spalls and armor rocks; no granular soils/sand or gravel will be placed within the shoreline. If shoreline work cannot be completed in a single tide cycle, exposed soils will be stabilized with rock prior to tidal submersion. Work to continue during the next low tide.
- Soil disturbance activities will be managed using appropriate temporary erosion and sedimentation controls per the (TESC, SWPPP and other measures as shown in the Contract Documents). Measures may include but not limited to dust control, stockpile management, construction access measures, etc.

Means and Methods/Soil Management:
Excavation within the KC-Site consists of trenching for the installation of new utilities which includes concrete structures and vaults. Trenching will be to the lines and grades as shown in the Stormwater, Water/Sewer, and electrical plan sheets for the project unless changes have been made by the engineer. See Attachment 6 for overall project site.

Prior to excavation work on the K-C Site a survey will be performed to designate the areas of excavation. Strider will provide POE notice when excavation activities will take place, most likely during weekly meetings and going over the two week look ahead schedule.

Excavation will be performed by a John Deere 225 excavator(s), John Deere 554 Loader, off highway trucks (or similar size/model). The site where recent sand fill has been placed will be removed first and placed aside for reuse as backfill material. All other excavated material below or outside of the sand fill locations will be field screened by the POE (who is solely responsible for field screening per the Contract Documents) to determine if the soil is potentially contaminated or not. Photos showing a representative range of possible encountered contaminated material have been reviewed as shown in the K-C Site Soil and Groundwater Management Plan. If the excavated material is determined to be potentially contaminated as determined by POE representative and based on (e.g., visual, odor, air monitoring with PID, etc.) or unsuitable material is encountered, the material will be hauled to the designated soil stockpile area (Attachment 1). From there POE will test the material to determine its waste designation for offsite disposal. In the event a POE representative(s) is not in the immediate area the contractor will immediately notify POE personnel for direction.

Non-contaminated soil which has been indicated to be geotechnically suitable and passes the environmental field screening may be used as backfill for trenches and/or concrete structures. Excavation material will be stockpiled into separated windrows based on the soil horizon. For example, the top layer of excavation will be placed farther away from the trench compared to the bottom layer(s) which will be reused in the trench first. Any excess material left from backfill operations in the immediate area of excavation may be used at other locations on the site as deemed acceptable by the POE assuming material can be placed within the original soil type horizon. Excess material to be used later will be placed at stockpile location by its soil horizon. Excess material not used for the project will be assigned a waste designation for appropriate offsite disposal.

Shoreline riprap will be managed by removing existing riprap in the vicinity of the outfall work and separating out any co-mingled materials (i.e., riprap, concrete rubble, other debris, etc.). Riprap and all other debris will be hauled to its designated stockpile location(s) and later to be hauled to offsite disposal facility.

If excavated soil is determined to be potentially contaminated and/or contaminated by field screening or comes from a known area of residual contamination the soil will hauled and staged at the designated stockpile area separately from unaffected soil. Co-mingled materials may be separated based on specific characteristics and waste disposal requirements which could include the following:

- Construction and demolition debris
- Wood waste/wood chips
- Concrete debris
- Potentially contaminated soil
- Unsuitable material that does not have characteristics of potential contamination

Potential contaminated soil will be staged within a drop cell constructed with a perimeter berm topped with a liner (see Attachment 4 for design layout). POE will perform tests on the potentially contaminated soil to determine the waste designation and disposal requirements. Material testing will be coordinated with waste disposal facility to determine whether testing in addition to identified contaminates of concern for the Site will be required for waste designation. POE will contract with the disposal facility for contaminated soil disposal and pay all tipping fees directly per 02 61 00 3.08D.

Stockpiles will be placed within the lined drop cell as described above and be covered with 20-Mil plastic sheeting, rope, and sandbags. Any stormwater that accumulates within the berm area will be collected and pumped into a storage tank(s). Water may be tested to see if it meets the criteria to be discharged into the City of Everett sanitary sewer and/or will be treated prior to discharge to sewer. If any free product that accumulates in the contaminated stockpile location will be pumped to a storage weir tank. Any free product may be absorbed with absorbent pads on top of the water or be pumped out of the tank to be disposed to an offsite disposal facility (MarVac may be utilized).

A John Deere 225 (or similar size/model) excavator will be used to load out contaminated soil from the stockpile location. Excavator will sit adjacent to the pile and direct load into the tractor trailer container to be hauled to disposal facility. Care will be taken when loading contaminated material (and make sure it meets paint filter criteria) into containers to minimize spillage between the bucket and container. In the event saturated soil is being loaded a plastic liner may be used in the bed of trucks and/or containers prior to hauling. If spillage does occur, it will quickly be picked back up via shovel or excavator bucket ensuring all soil that comes in contact with the dropped contaminated soil is picked up as well and treated as contaminated.

If excavation activities encounter soils that may contain significant or unanticipated hazardous materials (i.e. free product) or is associated with unanticipated crushed material not removed during the project conducted in 2020, the discovery will be documented, Ecology will be notified, and the POE and Ecology will determine if additional actions are necessary.

Imported fill for the site will be tested for hazardous substances which may include but not limited to, CSBC, gravel borrow, pipe zone bedding, etc. Chemical testing will be performed on all imported material, at a rate of five samples for the first 1,000 CY and one sample for each additional 1,000 CY to verify that material meets import fill criteria. Samples will be analyzed for the following:

- Gasoline-range hydrocarbons
- Diesel-range total petroleum hydrocarbons
- Oil-range total petroleum hydrocarbons
- Metals (Arsenic, Copper, Lead, Mercury, Nickel, Zinc)
- PAH by EPA 8270 SIM
- PCBs by EPA 8082

Groundwater Management

Groundwater at the site may contain hazardous substances such as liquid phase petroleum hydrocarbons. Groundwater will be tested during construction to determine how it will be managed. Potential options for managing groundwater from dewatering include:

- Onsite infiltration
- Discharge to the City Sanitary Sewer
- Containment in temporary storage tanks and haul offsite to disposal treatment facility

Prior to excavation activities the plan would be to perform test pits to determine the depth of ground water and rate of flow into the excavation. This will determine if the area of work will require the use of sump pumps or well points which will be installed early on to lower the water table in the location of the excavation.

If sump pumps (2” or 3” submersible pumps) are utilized, for example in an isolated excavation area, they will be installed in shallow perforated casing pipe. Casing pipe will be excavated into position and installed with a surrounding gravel pack (likely backfilled with drain rock or quarry spalls as necessary). For utility trench excavations sumps may be placed at intervals (along the length of the trench depending on findings from test pits). Water from

sumps will be pumped to storage tanks if water needs to be treated or pumped to an infiltration area away from the work zone or at Contractor designated areas on site if water meets the criteria for infiltration.

If the water table to found to be high a well point vacuum system will be installed to dewater a work zone prior to excavation. The plan would be to install approximately 300-400 foot runs of wells spaced at approximately five to six feet apart for trench locations or around isolated excavation locations. Well points will be 15 to 20 feet deep. Dewatering vacuum pumps that may be used are BBA Pump PT150 Diesel and/or Thompson 8" Rotary Wellpoint pump or similar. Well points will be connected via header pipe using PVC pipe connected to the pump(s) which will send the water to storage tanks if needed to be treated or pumped to an infiltration area away from the work zone if the water meets the criteria for infiltration.

Construction water will be field tested to determine if it meets or does not meet the criteria for infiltration. Testing will be performed daily at excavation site or more frequent if conditions at the site change. A HACH Pocket Pro+ pH Tester (or similar type of tester) will be used. If pH is (between 6.5 and 8.5), does not have an odor, and no sheen then water will be infiltrated onsite (maintaining a minimum 200LF buffer from the shoreline). Water to be infiltrated will be conveyed through a combination of PVC, HDPE pipe or lay-flat hose to discharge locations upgradient and away from the work zone through a level spreader or other means of dispersing the water.

If construction water does not meet the pH levels as described above and does have a sheen or odor then the dewater will be pumped into storage tanks (testing may occur if needed) and/or treated to meet the requirements needed to discharge to the City of Everett sanitary sewer. Water will be conveyed through a combination of PVC, HDPE or lay-flat hose pipe to storage settling tanks, treated prior to discharge to City of Everett sanitary sewer. See (Attachment2) discharge authorization with the City of Everett. If non-aqueous phase liquids (NAPL) are found in the dewatering, water will be pumped to a weir storage tank. Any free product may be absorbed with absorbent pads on top of the water or pumped out of the tank to be disposed to an offsite disposal facility (MarVac may be utilized).

All field measurements of pH and sheen observations will be documented.
See (Attachment 3) diagram of potential treatment system(s). Any sampling and analysis of construction water will be performed at ALS Environmental or other laboratory.

Stormwater Management
Stormwater will be infiltrated onsite. Stormwater will be managed during the soil excavation activities in a way that prevents the spread of contamination, and in a manner that complies with the Construction Stormwater General Permit and Storm water permit for the project. The project includes a stormwater pollution prevention plan (SWPPP) prepared specific to the work proposed in this Project (Attachment 6). TESC elements presented in the project plans and the best management practices (BMPs) presented in the SWPPP will apply to stormwater management throughout the Project.

Dust Control

Management of onsite dust will be performed utilizing the following but not limited to:

- Applying water to wet the ground surface.
- Construct Stabilized Construction entrances to prevent mud/debris begin tracked onto City streets
- Sweep/cleanup paved surfaces promptly so dirt does not turn in to dust
- During dry days limit the speed of construction vehicles through the site
- Other methods for dust control may also be used if needed (ie misting cannons, sprinklers, etc.)

Attachments

- Attachment 1 – Soil Stockpile Area
- Attachment 2 – Discharge Authorization City of Everett
- Attachment 3 - Construction Water Treatment Diagrams Locations
- Attachment 4 – Stockpile Design
- Attachment 5 – Equipment Decon
- Attachment 6 – Site Maps
- Attachment 7 – SWPPP

Information from Contract Documents

- Appendix C of the Contract Documents 'K-C Site Soil and Groundwater Management Plan Maritime Industrial Expansion at Norton Terminal

EXXON MOBIL/ADC SITE:

Excavation within the ExxonMobil/ADC Site consists of trenching for the installation of new utilities and includes demo and caping existing utilities. Trenching will be limited to the lines and grades as shown in the plan sheets related to Federal Ave unless changes are made by the Engineer (See Attachment 6).

Existing Conditions:
The site consists of contamination above preliminary cleanup levels in soil and groundwater. Contaminates of concern:

- Gasoline-range hydrocarbons
- Diesel-range total petroleum hydrocarbons
- Oil-range total petroleum hydrocarbons
- Total PAHs (soil) and cPAHs (groundwater)
- Benzene, ethylbenzene, total-xylenes
- 1-methylnapthalene

General Soil Management Requirements
Any activities that may result in workers coming into contact with potentially contaminated soil need to follow:

- Site Specific Health and Safety Plan (Under Separate Cover).
- Port of Everett (POE) will document excavation activities and submit to Ecology.
- All soil excavated from the site is assumed to be contaminated and will be disposed at an off-site permitted facility.
    - Disposal facilities:
        - Subtitle D – Republic Services
        - Subtitle C – Waste Management
- Soil will be excavated from the site and hauled to an onsite stockpile location to be tested by the Port of Everett (POE) to determine the waste characteristic prior to offsite disposal. The soil is expected to be non-hazardous solid waste but there may be liquid-phase petroleum hydrocarbons present. Material testing will be coordinated with the appropriate disposal facility above to determine whether testing in addition to identified contaminates of concern for the Site will be required for waste designation.
- Construction equipment used in the Exxon/ADC (Federal Ave Area) for excavation, transport, and handling of soil will be cleaned and decontaminated prior to being demobilized or use for the K-C Site. See Equipment Decontaminated Plan under separate cover.
- Soil disturbance activities will be managed using appropriate temporary erosion and sedimentation controls per the (TESC measures in the plans and/or other BMPS when needed). Measures may include but not limited to dust control, stockpile management, construction access measures, etc.
- Work will be coordinated with POE to allow Exxon Mobil representatives access to trench areas for sampling.

Means and Methods/Soil Management:

Prior to excavation work on the K-C Site survey will be performed to designate the areas of excavation. See Attachment 6 for site map. Strider will provide POE notice when excavation activities will take place, most likely during weekly meetings and going over the two-week look ahead schedule. Existing asphalt will be removed (in chunks), stockpiled and hauled to Granite Construction's paving division as part of their asphalt recycling program. Excavation will be performed by a John Deere 225 (or similar size/model) excavator. Excavated soil within Federal Ave is assumed to be contaminated. All excavated material will be loaded into trucks and hauled to the contaminated soils stockpile location. Contaminated soil will be tested by POE to determine its waste designation for offsite disposal. POE will contract with the disposal facility for contaminated soil disposal and pay all tipping fees directly per 02 61 00 3.08D.

Trench excavations:

- Water Line – Trench depth approximately five feet by three feet wide
    - Approximately 400 CY of material to be excavated
- Power/Communication - Trench depth approximately four feet deep by two feet wide
    - Approximately 200 CY of material to be excavated

Contaminated soils will be staged at the designated stockpile area within a drop cell constructed with a perimeter berm topped with a 20-mil liner (see Attachment 4 for design layout). Stockpiles will be placed within the lined drop cell covered with 20-Mil plastic sheeting, rope, and sandbags. Any stormwater that accumulates within the berm area will be collected and pumped into a storage tank(s). Water may be tested to see if it meets the criteria to be discharged into the City of Everett sanitary sewer and/or will be treated prior to discharge to sewer. If free product accumulates in the contaminated stockpile location will be pumped to a storage weir tank. Any free product may be absorbed with absorbent pads on top of the water or pumped out of the tank to be disposed to an offsite disposal facility (MarVac may be utilized).

A John Deere 225 (or similar size/model) excavator will be used to load out contaminated soil from the stockpile location. Excavator will sit adjacent to the pile and direct load into the tractor trailer container to be hauled to disposal facility. Care will be taken when loading contaminated material (and make sure it meets paint filter criteria) into containers to minimize spillage between the bucket and container. In the event saturated soil is being loaded a plastic liner may be used in the bed of trucks and/or containers prior to hauling. If spillage does occur, it will quickly be picked back up via shovel or excavator bucket ensuring all soil that comes in contact with the dropped contaminated soil is picked up as well and treated as contaminated.

If excavation activities encounter soils that may contain significant or unanticipated hazardous materials (i.e. free product), the discovery will be documented, Ecology will be notified, and POE and Ecology will determine if additional actions are necessary.

Imported fill for the site will be tested for hazardous substances which may include but not limited to, CSBC, gravel borrow, pipe zone bedding, etc. Chemical testing will be performed on all imported material, at a rate of five samples for the first 1,000 CY and one sample for each additional 1,000 CY to verify that material meets import fill criteria. Samples will be analyzed for the following:

- Gasoline-range hydrocarbons
- Diesel-range total petroleum hydrocarbons
- Oil-range total petroleum hydrocarbons
- Metals (Arsenic, Copper, Lead, Mercury, Nickel, Zinc)
- PAHs by EPA 8270 SIM (Table 1 in Exxon/Mobil Soil GW Management Plan)
- PCBs by EPA 8082

Prior to backfilling, a nonwoven geotextile will be placed at the limits of excavation to separate existing contaminated soils from clean imported fill.

When work is completed in Federal Ave (e.g. excavation, etc.) all equipment will be cleaned and decontaminated prior to demobilizing equipment or relocating to the K-C Site. Equipment Decontaminated Plan (Attachment 5).

Subtitle D material will be hauled using tractor-trailer to an approved facility by container to Republic Services in Everett. Documentation of waste disposal will be provided to the POE.

If soil is classified as hazardous waste material will be placed into containers and hauled off by an outside trucking service.

Groundwater Management

All groundwater/dewatering is assumed to be contaminated and may contain Liquid phase petroleum hydrocarbons. Dewatering water will be pumped to storage tanks and treated prior to discharged into the City of Everett sanitary sewer system. Collected liquid phase petroleum hydrocarbons will be disposed or recycled in accordance with applicable regulations (MarVac may be used for offsite disposal).

Prior to excavation activities the plan would be to perform some test pits to determine the depth of ground water and rate of flow into the excavation. This will determine if the area of work will require the use of sump pumps or well points which will be installed early on to lower the water table in the location of the excavation.

If sump pumps (2" or 3" submersible pumps) are utilized, most likely in isolated excavation area, they will be installed in shallow perforated casing pipe. Casing pipe will be excavated into position and installed with a surrounding gravel pack (likely backfilled with drain rock or quarry spalls as necessary). For utility trench excavations sumps may be placed at intervals (along the length of the trench depending on findings from test pits). Water from sumps will be sent to storage tanks to be treated and discharge to the City of Everett sanitary sewer system.

If water table is found to be high, a well point vacuum system will be installed to dewater a given excavation area prior to work. The plan would be to install approximately 300-400 foot runs of wells spaced at approximately five to six feet apart for trench locations or around isolated excavation locations. Well points will be 15 to 20 feet deep. Water draw-down will vary based on the existing water table observed in the test pits that will be performed prior to work as stated above. An estimated radius of influence will approximated around 10-100 feet as it will depend on the soil permeability, depth of water draw-down, etc. Dewatering vacuum pumps that may be used are BBA Pump PT150 Diesel and/or Thompson 8" Rotary Wellpoint pump or similar. Well points will be connected via header pipe using PVC pipe connected to the pump(s) which will send the water to storage tanks to be treated and discharge to the City of Everett sanitary sewer system.

See (Attachment 3) diagram of potential treatment system(s). Any sampling and analysis of construction water will be performed at ALS Environmental or other laboratory.

Stormwater Management

The site contains an asphalt impervious roadway with gravel shoulders. Stormwater will be collected and directed to areas adjacent to the impervious area that can infiltrate. Stormwater will be managed during the soil excavation activities in a way that prevents the spread of contamination, and in a manner that complies with the Construction Stormwater General Permit and the Storm water permit for the project. The project includes a stormwater pollution prevention plan (SWPPP) prepared specific to the work proposed in this Project (Attachment 7). TESC elements presented in the project plans and the best management practices (BMPs) presented in the SWPPP will apply to stormwater management throughout the Project.

Dust Control

Management of onsite dust will be performed utilizing the following but not limited to:

- Applying water to wet the ground surface.
- Construct Stabilized Construction entrances to prevent mud/debris begin tracked onto City streets
- Sweep/cleanup paved surfaces promptly so dirt does not turn in to dust
- During dry days limit the speed of construction vehicles through the site

Attachments

- Attachment 1 – Soil Stockpile Area
- Attachment 2 – Discharge Authorization City of Everett
- Attachment 3 - Construction Water Treatment Diagrams Locations
- Attachment 4 – Stockpile Design
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- Attachment 6 – Site Maps
- Attachment 7 – SWPPP

Information from Contract Documents

- Appendix B of the Contract Documents 'ExxonMobil/ADC Soil and Groundwater Management Plan

Attachment 1
Soil Stockpile Area

OTHER CONSTRUCTION PROJECTS

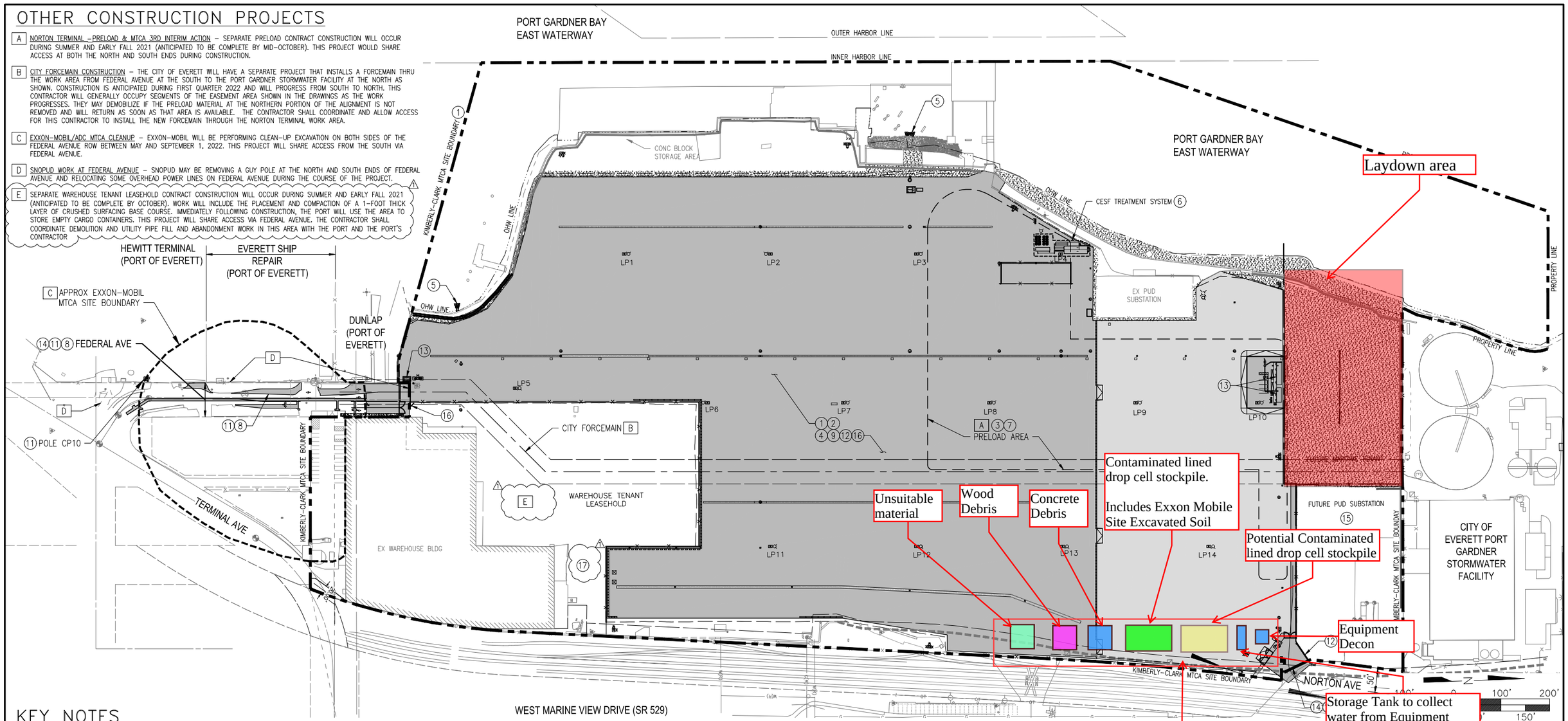
A NORTON TERMINAL – PRELOAD & MTCA 3RD INTERIM ACTION – SEPARATE PRELOAD CONTRACT CONSTRUCTION WILL OCCUR DURING SUMMER AND EARLY FALL 2021 (ANTICIPATED TO BE COMPLETE BY MID-OCTOBER). THIS PROJECT WOULD SHARE ACCESS AT BOTH THE NORTH AND SOUTH ENDS DURING CONSTRUCTION.

B CITY FORCEMAIN CONSTRUCTION – THE CITY OF EVERETT WILL HAVE A SEPARATE PROJECT THAT INSTALLS A FORCEMAIN THRU THE WORK AREA FROM FEDERAL AVENUE AT THE SOUTH TO THE PORT GARDNER STORMWATER FACILITY AT THE NORTH AS SHOWN. CONSTRUCTION IS ANTICIPATED DURING FIRST QUARTER 2022 AND WILL PROGRESS FROM SOUTH TO NORTH. THIS CONTRACTOR WILL GENERALLY OCCUPY SEGMENTS OF THE EASEMENT AREA SHOWN IN THE DRAWINGS AS THE WORK PROGRESSES. THEY MAY DEMOBILIZE IF THE PRELOAD MATERIAL AT THE NORTHERN PORTION OF THE ALIGNMENT IS NOT REMOVED AND WILL RETURN AS SOON AS THAT AREA IS AVAILABLE. THE CONTRACTOR SHALL COORDINATE AND ALLOW ACCESS FOR THIS CONTRACTOR TO INSTALL THE NEW FORCEMAIN THROUGH THE NORTON TERMINAL WORK AREA.

C EXXON-MOBIL/ADC MTCA CLEANUP – EXXON-MOBIL WILL BE PERFORMING CLEAN-UP EXCAVATION ON BOTH SIDES OF THE FEDERAL AVENUE ROW BETWEEN MAY AND SEPTEMBER 1, 2022. THIS PROJECT WILL SHARE ACCESS FROM THE SOUTH VIA FEDERAL AVENUE.

D SNOPUD WORK AT FEDERAL AVENUE – SNOPUD MAY BE REMOVING A GUY POLE AT THE NORTH AND SOUTH ENDS OF FEDERAL AVENUE AND RELOCATING SOME OVERHEAD POWER LINES ON FEDERAL AVENUE DURING THE COURSE OF THE PROJECT.

E SEPARATE WAREHOUSE TENANT LEASEHOLD CONTRACT CONSTRUCTION WILL OCCUR DURING SUMMER AND EARLY FALL 2021 (ANTICIPATED TO BE COMPLETE BY OCTOBER). WORK WILL INCLUDE THE PLACEMENT AND COMPACTION OF A 1-FOOT THICK LAYER OF CRUSHED SURFACING BASE COURSE. IMMEDIATELY FOLLOWING CONSTRUCTION, THE PORT WILL USE THE AREA TO STORE EMPTY CARGO CONTAINERS. THIS PROJECT WILL SHARE ACCESS VIA FEDERAL AVENUE. THE CONTRACTOR SHALL COORDINATE DEMOLITION AND UTILITY PIPE FILL AND ABANDONMENT WORK IN THIS AREA WITH THE PORT AND THE PORT'S CONTRACTOR



KEY NOTES

1. THE PROJECT HAS A DUAL PURPOSE AS A COMBINED DEVELOPMENT OF NORTON TERMINAL AND A 3RD INTERIM ACTION CLEANUP FROM THE FORMER KIMBERLY-CLARK OPERATIONS. THE NORTON TERMINAL IS WITHIN THE KIMBERLY-CLARK MTCA SITE. SEE SPECIFICATIONS FOR FURTHER ENVIRONMENTAL REQUIREMENTS.
2. SEE SHEET G2.1 AND THE SPECIFICATIONS FOR FURTHER INFORMATION ON REMAINING KNOWN BELOW GRADE FOUNDATIONS FROM THE FORMER KIMBERLY-CLARK FACILITY.
3. THE CONTRACTOR SHALL BE AWARE THAT THE NORTHERN PORTION OF THE SITE HAS KNOWN WOOD WASTE DEPOSITS THAT IMPACT VARIOUS SITE DESIGN ELEMENTS. SEE SPECIFICATIONS FOR FURTHER REQUIREMENTS.
4. SEE SPECIFICATIONS FOR TERMINAL OPENING AND SUBSTANTIAL COMPLETION MILESTONE REQUIREMENTS.
5. OUTFALL REPLACEMENT (SEE STORMWATER DRAWINGS) IS SUBJECT TO IN-WATER CONSTRUCTION WINDOWS AND SHALL BE COMPLETED BETWEEN JULY 16 AND FEBRUARY 15. WORK SHALL ALSO BE PERFORMED IN THE "DRY" AT LOW TIDES. SEE SPECIFICATIONS FOR FURTHER ENVIRONMENTAL REQUIREMENTS AND BMPS.
6. CESF TREATMENT SYSTEM SHALL BE COMPLETE AND OPERATIONAL PRIOR TO OFF-SITE DISCHARGE OF STORM WATER RUNOFF. CONTRACTOR SHALL INFILTRATE ALL STORMWATER ON-SITE UNTIL NEW PAVEMENT IS PLACED. ANY NEW PAVED AREAS SHALL TEMPORARILY CONVEY RUNOFF TO AN INFILTRATION AREA OR TO THE CESF SYSTEM FOR TREATMENT PRIOR TO OFF-SITE DISCHARGE. SEE SPECIFICATIONS AND TESC DRAWINGS FOR FURTHER REQUIREMENTS.
7. PRELOAD IS ANTICIPATED TO BE COMPLETE IN FIRST QUARTER 2022. CONTRACTOR SHALL ASSUME THAT SOME PORTIONS OF PRELOAD MAY NEED TO STAY IN PLACE UNTIL MID-MARCH 2022. IT IS ANTICIPATED THAT PORTIONS OF THE PRELOAD MAY BE AVAILABLE FOR RELOCATION SOONER BASED ON RESULTS OF SETTLEMENT MONITORING.
8. CONTRACTOR SHALL COMPLETE INSTALLATION OF THE NEW WATERLINE, ELECTRICAL AND COMMUNICATIONS DUCTBANKS (INCLUDING ASSOCIATED TRENCHING, BACKFILL & REPAVING) LOCATED WITHIN THE FEDERAL AVENUE ROW PRIOR TO THE MAY 1, 2022 START OF EXXON-MOBIL CLEANUP. CONTRACTOR SHALL NOTE THAT WORK WITHIN FEDERAL AVENUE IS WITHIN THE EXXON-MOBIL/ADC MTCA SITE AS SHOWN ON G1.4. SEE SPECIFICATIONS FOR FURTHER ENVIRONMENTAL REQUIREMENTS.
9. THE CONTRACTOR SHALL COMPLETE THE PROJECT ON-SITE COMMUNICATIONS DUCTBANKS, VAULTS AND POLES PRIOR TO AUGUST 1, 2022 AND ALLOW THE PORT ACCESS TO THIS INFRASTRUCTURE TO PULL COMMUNICATIONS CABLES AND INSTALL EQUIPMENT ONTO POLES PRIOR TO TERMINAL OPENING. SEE ELECTRICAL DRAWINGS FOR FURTHER DETAILS.
10. DUE TO EXXON-MOBIL CONSTRUCTION, THE CONTRACTOR SHALL WAIT TO INSTALL NEW FEDERAL AVENUE SLIDE GATE FROM HEWITT TERMINAL (AND ASSOCIATED ELECTRICAL POWER) UNTIL SEPTEMBER 1, 2022.
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12. THE CONTRACTOR WILL INSTALL THE BELOW GRADE INFRASTRUCTURE FOR THE SNOPUD EQUIPMENT WITHIN NORTON TERMINAL AND SHALL COORDINATE WITH SNOPUD TO ALLOW INSTALLATION OF THEIR EQUIPMENT AND CABLING. SEE ELECTRICAL DRAWINGS FOR DETAILS.
13. CONTRACTOR SHALL NOTE THAT THE MODULAR LONGSHORE BUILDINGS AND GUARD SHACK WILL BE DEFERRED SUBMITTALS FROM THE CITY BASED ON CONTRACTOR DESIGN. CONSTRUCTION CAN NOT BEGIN UNTIL THE CONTRACTOR OBTAINS REQUIRED PERMITS FROM THE CITY. SEE ARCHITECTURAL SPECIFICATIONS.
14. SEE SHEET
15. FUTURE SNO CONTRACTOR
16. SEE SPECIFI POTENTIAL C NORTH AND
17. REFER TO SHEET C1.1 FOR AREA AVAILABLE TO CONTRACTOR FOR LAYDOWN/STOCKPILE AREA ON NORTH SIDE OF WAREHOUSE.

VERT DATUM: NAVD 88
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IF SHEET IS LESS THAN 22x34 REDUCE SCALE ACCORDINGLY

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NO.	DATE	BY	REVISION
2	07/28/2021	NW	ADDENDUM 4
1	06/21/2021	NW	ISSUED FOR BID

NATHAN A. WATSON STATE OF WASHINGTON 37014 REGISTERED PROFESSIONAL ENGINEER 6/21/2021

PROJECT ENGINEER: N. WATSON	SCALE: 1" = 100'
DESIGNED BY: J. BECKER	DATE: 06/21/2021
DRAWN BY: K. EDWARDS, D. YU	CHECKED BY: N. WATSON
APPROVED BY:	

PORT OF EVERETT

NORTON TERMINAL DEVELOPMENT & MTCA 3RD INTERIM ACTION CONSTRAINTS AND PHASING PLAN

DWG. NO. **G5.1**
CIP NO. 1-8-900-05
PROJECT NO. MT-NT-2021-02.2
SHEET NO. 10 OF 149

BID SET

Attachment 2
Discharge Authorization
City of Everett

EVERETT
WASHINGTON

September 16, 2021

Taylor Lenderman
Strider Construction
4721 Northwest Dr
Bellingham WA 98226

Subject: Discharge Authorization No. MD-41-2021
2600 Federal Avenue, Everett WA 98201
Expires: September 30, 2022

Dear Mr. Lenderman:

Strider Construction, is hereby authorized to discharge site related water from site remediation. Discharge will be allowed for the permit duration. The discharge will be allowed upon the City's receipt of the signed acceptance of this letter and with the proper notification to the City that the work will proceed. No other water sources are allowed to be discharged under this authorization, other than what is listed above.

This authorization is based on the information you provided; we understand that this work is an ongoing. Discharge will be allowed based on compliance with the conditions of this authorization.

The point of discharge will be within the city's sewer collection system as directed by your City representative.

You will be billed for the amount discharged to the city sewers based on the total flow. Your sewer bill will be invoiced monthly and will be calculated on our current sewer rate (currently $8.176 per 100 cubic feet) plus the industrial surcharge of $0.19 per thousand gallons of flow.

You must meter and track the amount discharged to the city sewers. You must also know the approximate flow rate at all times, as we will need to know especially during wet weather

This Discharge Authorization is issued with the following conditions:

1) You must comply with the general use and discharge requirements of the Industrial Pretreatment Ordinance #3070-08 as amended (attached), as well as any applicable Federal and State regulations.

2) The City solely reserves the right to modify, suspend, or terminate this authorization at any time once issued.

3) Your City representative and point of contact for discharge is Brian Doolan at 425-257-8828 (cell at 425-501-5124) or bdoolan@everettwa.gov. You need to notify Brian prior to discharge and when your project is completed. You must also report monthly flows to Brian.

Public Works

3200 Cedar Street
Everett, WA 98201

425.257.8800
425.257.8882 fax

everettpw@everettwa.gov
everettwa.gov/pw

4) Discharge can only occur during non-rain impacted flow periods. Your point of contact will receive notification to immediately stop discharging within 30 minutes.

5) The point of discharge shall be as directed by the City's project representative and limited to a flow of 200 gallons per minute or less. Higher rates must be first approved by Brian Doolan and be for limited durations.

6) Discharge will only be for water related to construction at the specific location identified in the DA application. Other sources must be pre-approved.

7) All flow shall be routed through a system to remove any free floatables and settleable solids or be free of floatable and settleable solids. Strider Construction will monitor and prevent that there are no floatable and settleable solids in discharge and shall use an onsite storage tank for pre-settlement needs related to high sediment or turbidity prior to discharge to the City's sewers. The City will inspect the tank and volume prior to discharge; with the ability and permission to inspect during the work as needed. Contact Brian for inspection of the tank at least a working day prior to your discharge request.

8) At any time, the City can direct the point of discharge to an alternative location that best suits the City.

9) Discharge operations shall comply with the City's Noise Ordinance.

10) Strider Construction is solely responsible for spills of any kind related to the discharge operations, including reporting to Department of Ecology, clean-up, and any repairs or restoration, and costs for City to oversee and respond. The City must be notified immediately of any spill.

11) City of Everett personnel may take samples of the effluent for analysis and may inspect your site to verify compliance at any time.

12) Maximum rate of flow shall not cause capacity problems in the receiving sewer or at any point downstream of the discharge; the City may modify the flow rate at any time.

13) The discharge is subject to these limits:

As	0.5	mg/L
Cd	0.24	mg/L
Cr	5.0	mg/L
Cu	3.0	mg/L
Pb	1.9	mg/L
Hg	0.1	mg/L
Ni	2.83	mg/L
Ag	0.49	mg/L
Zn	4.0	mg/L
CN-	0.65	mg/L
Nonpolar FOG	200	mg/L

Should lab samples indicate higher than allowed discharge limits, then a treatment plan to bring the discharge below the allowable limits will be required.

All discharge data from the site shall be reported. The total amount of flow to the sanitary sewer shall be reported at the completion of the discharge along with the data required. Please send reports to the following:

Brian Doolan
M & O Supervisor
City of Everett
3200 Cedar Street
Everett, WA 98201

14) The City reserves the right to bill Strider Construction fees for city work beyond our normal site monitoring for sewer related regulatory compliance or for overseeing this discharge authorization.

15) Strider Construction must install a meter to monitor the flow rate of discharge and report the monthly volumes to Brian Doolan. Brian must inspect and approve the meter installation prior to discharge. The meter shall not be removed or replaced without notifying the City first. Strider Construction will not exceed 200 gallons per minute and must keep a log for the discharge volumes noted. The log and amount of flow must be submitted to Brian at the end of the project.

Please contact me at 425 257-8828 (bdoolan@everettwa.gov) if you have any questions.

Sincerely,

Brian Doolan, PE
Maintenance & Operations Supervisor

Accepted By:

Date: 9/16/2021

Attachment: General Permit Provisions
Pretreatment Ordinance

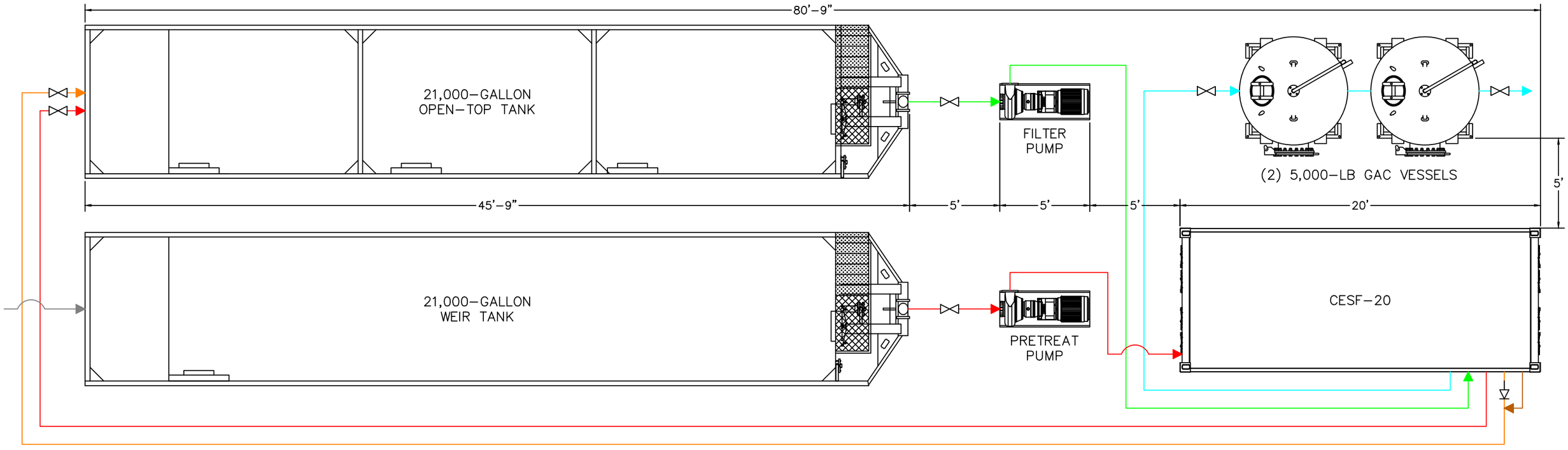
cc: Gene Bennett, City of Everett
Jeff Marrs City of Everett
Chron File
IPT File

Attachment 3
Construction Water Treatment Diagrams Locations

Exxon/Mobile Site
Modify if needed

LEGEND

- RAW
- PRETREAT
- FILTER INFLUENT
- FILTER EFFLUENT
- FILTER BYPASS
- BACKFLUSH
- RECIRC
- DISCHARGE
- BUTTERFLY VALVE
- CHECK VALVE



Clear Water SERVICES

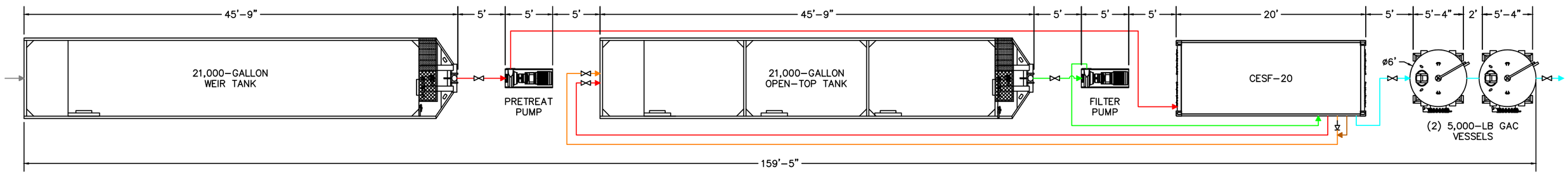
PORT OF EVERETT NORTON TERMINAL
PROJECT NO. WAI21POENT
PROCESS FLOW DIAGRAM
OPTION 1

DATE	REVISIONS

SHEET 1
1 OF 2

DATE: 9/9/2021 | DESIGNER: CWS | FILE NAME: WAI21POENT_PFD.dwg

Exxon/Mobile Site
Modify if needed



Clear Water SERVICES

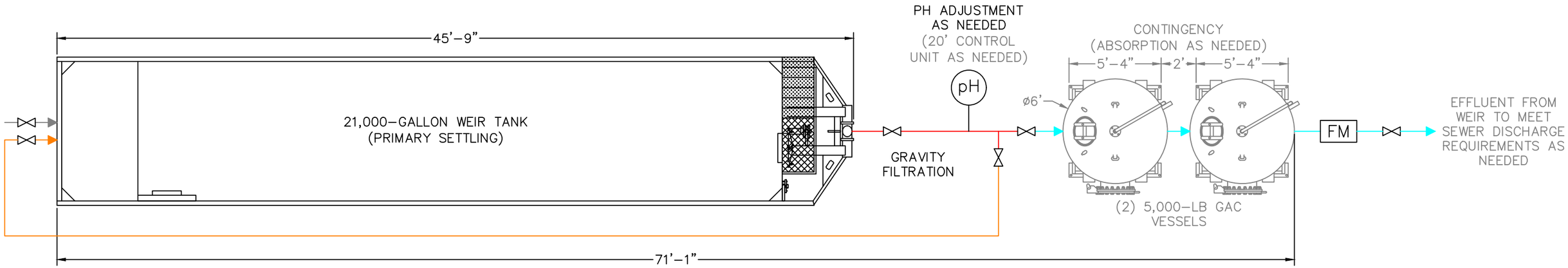
PORT OF EVERETT NORTON TERMINAL
PROJECT NO. WAI21POENT
PROCESS FLOW DIAGRAM
OPTION 2

DATE	REVISIONS

SHEET 2
2 OF 2

DATE: 9/9/2021 | DESIGNER: CWS | FILE NAME: WAI21POENT_PFD.dwg

K-C Site
Modify if needed



LEGEND

- RAW INFLUENT
- GRAVITY DECANT
- RECIRC
- DISCHARGE
- BUTTERFLY VALVE
- FM FLOW METER

Clear Water SERVICES

PORT OF EVERETT NORTON TERMINAL
PROJECT NO. WAI21POENT
PROCESS FLOW DIAGRAM
DISCHARGE TO SEWER

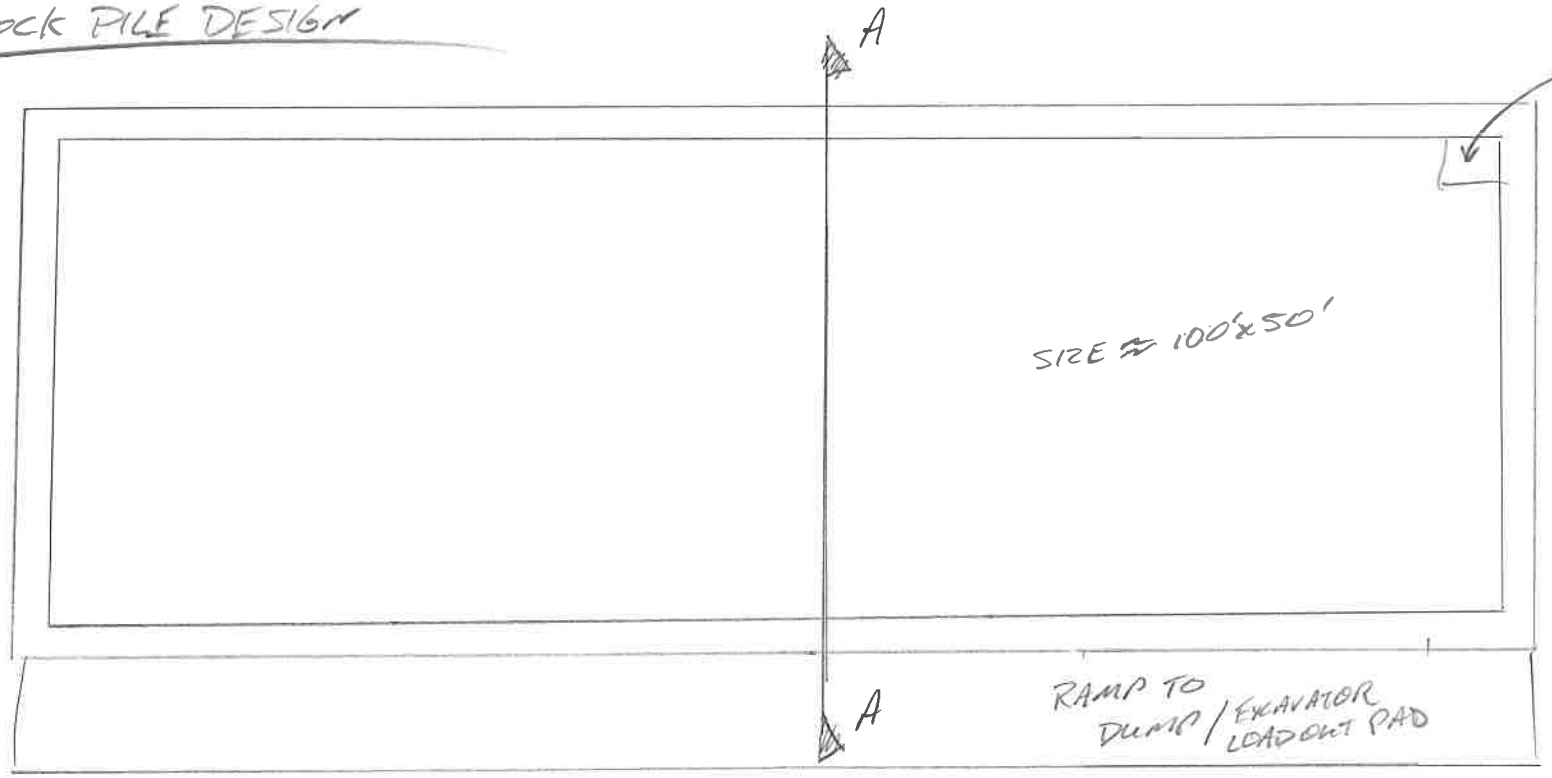
DATE	REVISIONS

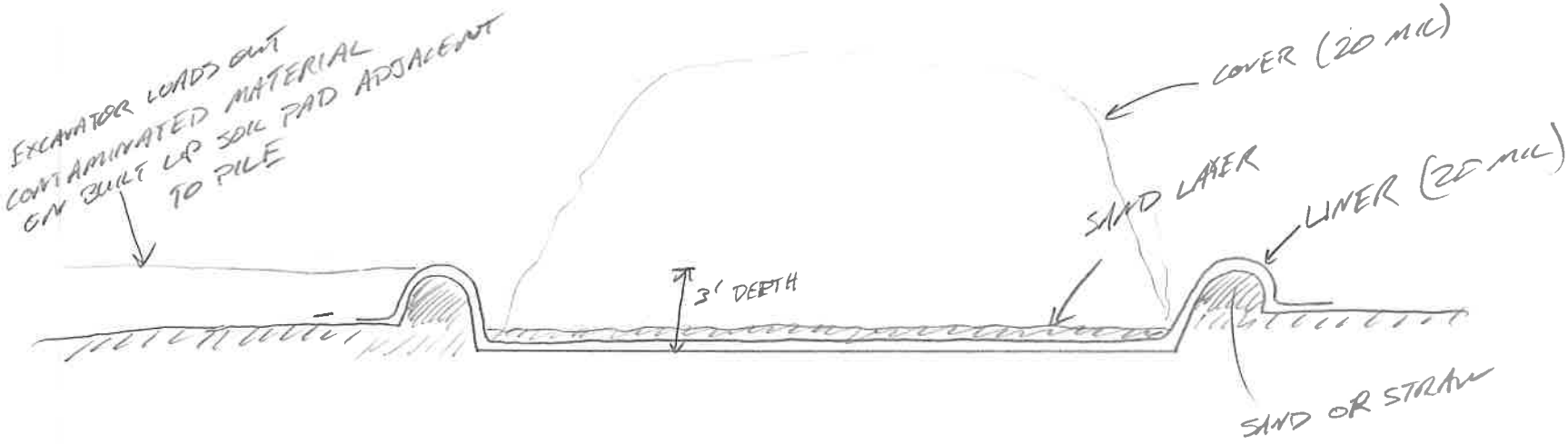
SHEET 1
1 OF 1

DATE: 9/16/2021 | DESIGNER: CWS | FILE NAME: WAI21POENT_PFD.dwg

Attachment 4
Stockpile Design

STOCK PILE DESIGN





(A) CROSS SECTION

NOTE:
MAXIMUM STOCKPILE VOLUME 1000 CY UNLESS APPROVED BY ENGINEER

Attachment 5
Equipment Decon

September 21, 2021

NORTON TERMINAL DEVELOPMENT & MTCA 3RD INTERIM ACTION
CONSTRUCTION EQUIPMENT DECONTAMINATION PLAN

Strider Construction Co., Inc. has prepared the following Construction Equipment Decontamination Plan for the Norton Terminal Development & MTCA 3rd Interim Action project in alignment with specifications sections
01 35 45 – Equipment Decontamination

1.03 A1 Layout of Contamination Reduction Zones and Decontaminated Zones

- Not able to determine/identify locations of exclusion zones across the K-C site (as contaminated area(s) are not identified). Contaminated areas (trench locations and/or single excavations areas) will not be known until excavated material is tested and shown to be contaminated. The top of the site is considered clean, clean material (sand) on top of the K-C Site and pavement within the Federal Ave area. Excavation activities will be performed sitting on top of clean material. When material is identified as contaminated, trench locations that will be open for a period of time (setting vaults and stormwater structures, etc.) the area will be marked off indicating the exclusion zone and the area outside will be considered the contamination reduction zone.
  The intent is not to have equipment tracks/wheels enter the excavation trench locations. Equipment bucket(s), dump truck bed(s) which may come in contact with contaminated material will be hauled/packed to the decontamination area to be decontaminated when switching to any 'clean' task(s).
- Excavated material within the ExxonMobile site is assumed to be contaminated. The exclusion zone would be the trench locations and outside would be the contamination reduction zone.
- See Attachment 1 for decontamination area.

1.03 A2 Decontamination Equipment and Supplies

- 20Mil Reinforced Liner(s) Plastic
- Sand bags Hand Shovels
- Brooms Pressure Washer
- 2" Sump Pump Water Tank/Hand wash station
- Detergent Degreaser

1.03 A3 Procedures for Decontamination

At the completion of contaminated excavation and loadout activities and prior to switching to any 'clean' tasks, equipment decontamination will occur onsite at the location shown in the attached plan sheet. Decontamination of equipment will take place within the contained drop cell see Attachment 2 for detail. Plan would be to utilize dry methods (shovel and broom) when appropriate. If necessary, the wet method would be utilized to complete the removal of material not able to be removed just by the dry method (e.g., utilizing a pressure washer). Any material resulting from decontamination will be collected within the contained area and hauled

to the contaminated soil stock pile prior to being loaded and hauled to the proper disposal facility.

1.03 A4 Procedures for Obtaining Water, Containing, and Handling Decontaminated Water

Wet methods will be used when dry method is not appropriate. Water will be supplied by a Water Truck and/or to fill up adjacent water tanks to the decontamination area. Equipment to be decontaminated will stage within the drop cell constructed with a berm topped with a liner. The berm and liner will collect and capture liquids and sediments removed from the equipment. Water will be pumped from the containment area to a settling tank nearby (see Attachment 1). If the water is able to be treated then it will dispose into City sewer, if not then water will be disposed to offsite location (Possibly MarVac will be utilized for disposal).

1.03 A5 Identify Procedural Differences between K-C Site and Federal Ave.

Decontamination procedures will most likely be the same process for both sites as described above. It will be a field decision on what procedure would be best for decontamination, wet or dry method.

Some differences could include:
K-C Site:
Decontamination procedures will most likely be performed using a broom/shovel which may include water (pressure washer, etc.) to remove material from equipment.

Federal Ave Site:
Decontamination procedures will most likely be performed using degreaser and/or detergents along with pressure washer as the site may contain oil and free product in the soils.

Attachment 1

OTHER CONSTRUCTION PROJECTS

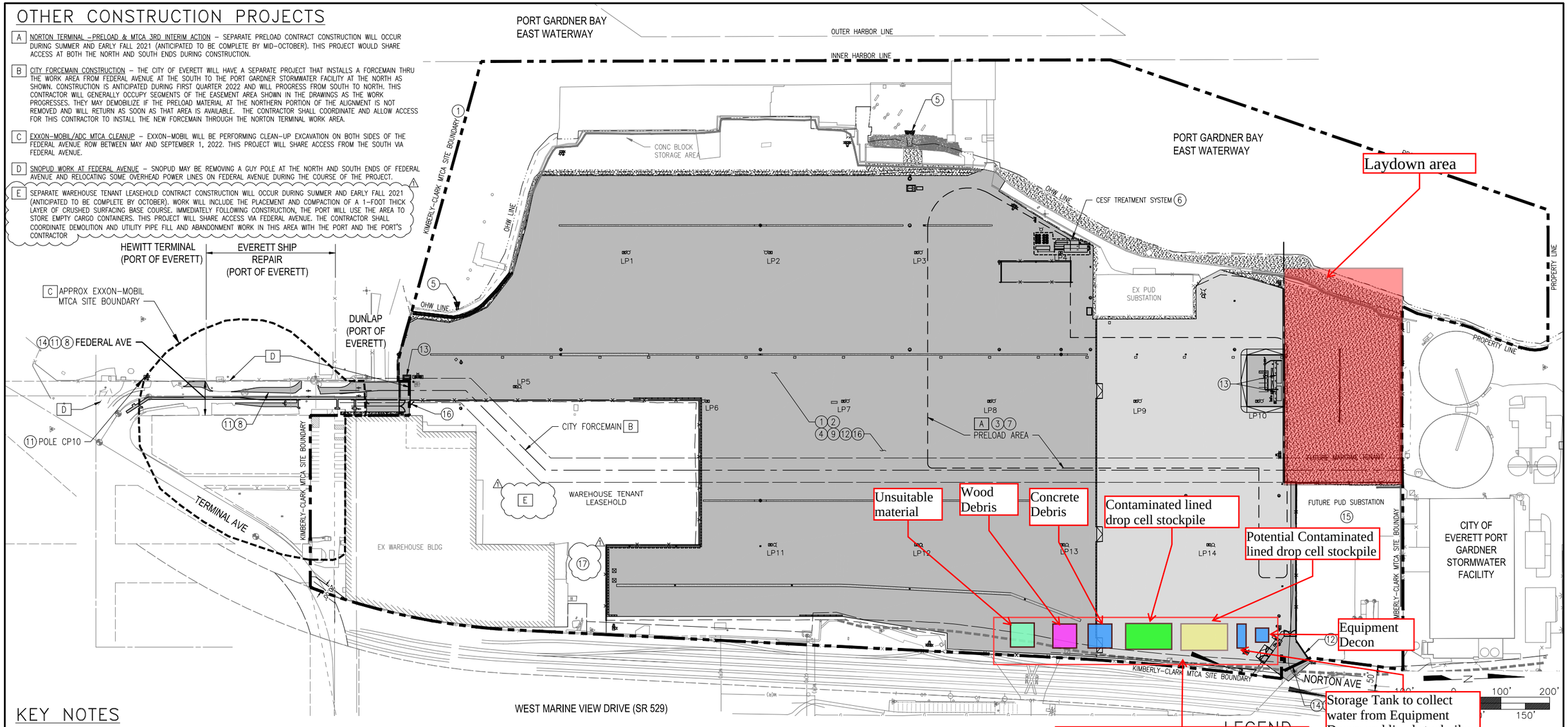
A NORTON TERMINAL – PRELOAD & MTCA 3RD INTERIM ACTION – SEPARATE PRELOAD CONTRACT CONSTRUCTION WILL OCCUR DURING SUMMER AND EARLY FALL 2021 (ANTICIPATED TO BE COMPLETE BY MID-OCTOBER). THIS PROJECT WOULD SHARE ACCESS AT BOTH THE NORTH AND SOUTH ENDS DURING CONSTRUCTION.

B CITY FORCEMAIN CONSTRUCTION – THE CITY OF EVERETT WILL HAVE A SEPARATE PROJECT THAT INSTALLS A FORCEMAIN THRU THE WORK AREA FROM FEDERAL AVENUE AT THE SOUTH TO THE PORT GARDNER STORMWATER FACILITY AT THE NORTH AS SHOWN. CONSTRUCTION IS ANTICIPATED DURING FIRST QUARTER 2022 AND WILL PROGRESS FROM SOUTH TO NORTH. THIS CONTRACTOR WILL GENERALLY OCCUPY SEGMENTS OF THE EASEMENT AREA SHOWN IN THE DRAWINGS AS THE WORK PROGRESSES. THEY MAY DEMOBILIZE IF THE PRELOAD MATERIAL AT THE NORTHERN PORTION OF THE ALIGNMENT IS NOT REMOVED AND WILL RETURN AS SOON AS THAT AREA IS AVAILABLE. THE CONTRACTOR SHALL COORDINATE AND ALLOW ACCESS FOR THIS CONTRACTOR TO INSTALL THE NEW FORCEMAIN THROUGH THE NORTON TERMINAL WORK AREA.

C EXXON-MOBIL/ADC MTCA CLEANUP – EXXON-MOBIL WILL BE PERFORMING CLEAN-UP EXCAVATION ON BOTH SIDES OF THE FEDERAL AVENUE ROW BETWEEN MAY AND SEPTEMBER 1, 2022. THIS PROJECT WILL SHARE ACCESS FROM THE SOUTH VIA FEDERAL AVENUE.

D SNOPUD WORK AT FEDERAL AVENUE – SNOPUD MAY BE REMOVING A GUY POLE AT THE NORTH AND SOUTH ENDS OF FEDERAL AVENUE AND RELOCATING SOME OVERHEAD POWER LINES ON FEDERAL AVENUE DURING THE COURSE OF THE PROJECT.

E SEPARATE WAREHOUSE TENANT LEASEHOLD CONTRACT CONSTRUCTION WILL OCCUR DURING SUMMER AND EARLY FALL 2021 (ANTICIPATED TO BE COMPLETE BY OCTOBER). WORK WILL INCLUDE THE PLACEMENT AND COMPACTION OF A 1-FOOT THICK LAYER OF CRUSHED SURFACING BASE COURSE. IMMEDIATELY FOLLOWING CONSTRUCTION, THE PORT WILL USE THE AREA TO STORE EMPTY CARGO CONTAINERS. THIS PROJECT WILL SHARE ACCESS VIA FEDERAL AVENUE. THE CONTRACTOR SHALL COORDINATE DEMOLITION AND UTILITY PIPE FILL AND ABANDONMENT WORK IN THIS AREA WITH THE PORT AND THE PORT'S CONTRACTOR



KEY NOTES

1. THE PROJECT HAS A DUAL PURPOSE AS A COMBINED DEVELOPMENT OF NORTON TERMINAL AND A 3RD INTERIM ACTION CLEANUP FROM THE FORMER KIMBERLY-CLARK OPERATIONS. THE NORTON TERMINAL IS WITHIN THE KIMBERLY-CLARK MTCA SITE. SEE SPECIFICATIONS FOR FURTHER ENVIRONMENTAL REQUIREMENTS.
2. SEE SHEET G2.1 AND THE SPECIFICATIONS FOR FURTHER INFORMATION ON REMAINING KNOWN BELOW GRADE FOUNDATIONS FROM THE FORMER KIMBERLY-CLARK FACILITY.
3. THE CONTRACTOR SHALL BE AWARE THAT THE NORTHERN PORTION OF THE SITE HAS KNOWN WOOD WASTE DEPOSITS THAT IMPACT VARIOUS SITE DESIGN ELEMENTS. SEE SPECIFICATIONS FOR FURTHER REQUIREMENTS.
4. SEE SPECIFICATIONS FOR TERMINAL OPENING AND SUBSTANTIAL COMPLETION MILESTONE REQUIREMENTS.
5. OUTFALL REPLACEMENT (SEE STORMWATER DRAWINGS) IS SUBJECT TO IN-WATER CONSTRUCTION WINDOWS AND SHALL BE COMPLETED BETWEEN JULY 16 AND FEBRUARY 15. WORK SHALL ALSO BE PERFORMED IN THE "DRY" AT LOW TIDES. SEE SPECIFICATIONS FOR FURTHER ENVIRONMENTAL REQUIREMENTS AND BMPS.
6. CESF TREATMENT SYSTEM SHALL BE COMPLETE AND OPERATIONAL PRIOR TO OFF-SITE DISCHARGE OF STORM WATER RUNOFF. CONTRACTOR SHALL INFILTRATE ALL STORMWATER ON-SITE UNTIL NEW PAVEMENT IS PLACED. ANY NEW PAVED AREAS SHALL TEMPORARILY CONVEY RUNOFF TO AN INFILTRATION AREA OR TO THE CESF SYSTEM FOR TREATMENT PRIOR TO OFF-SITE DISCHARGE. SEE SPECIFICATIONS AND TESC DRAWINGS FOR FURTHER REQUIREMENTS.
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(425) 259-3164

kpff
1601 5th Avenue, Suite 1300
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(206) 382-0600 Fax (206) 382-0500
PROJECT NO. 1600120

NO.	DATE	BY	REVISION
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1	06/21/2021	NW	ISSUED FOR BID

NATHAN A. WATSON — STATE OF WASHINGTON — 37014 — REGISTERED PROFESSIONAL ENGINEER — 6/21/21

PROJECT ENGINEER: N. WATSON	SCALE: 1" = 100'
DESIGNED BY: J. BECKER	DATE: 06/21/2021
DRAWN BY: K. EDWARDS, D. YU	CHECKED BY: N. WATSON
APPROVED BY:	

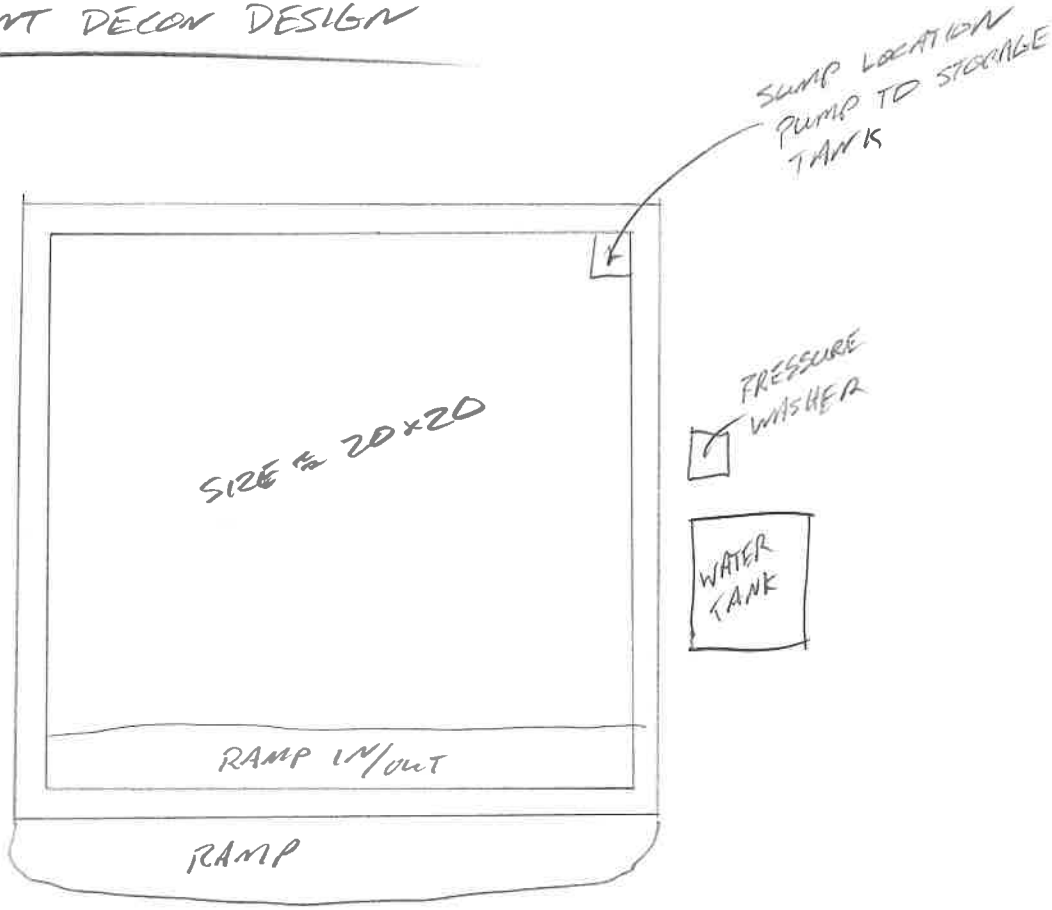
PORT OF EVERETT
NORTON TERMINAL DEVELOPMENT & MTCA 3RD INTERIM ACTION CONSTRAINTS AND PHASING PLAN

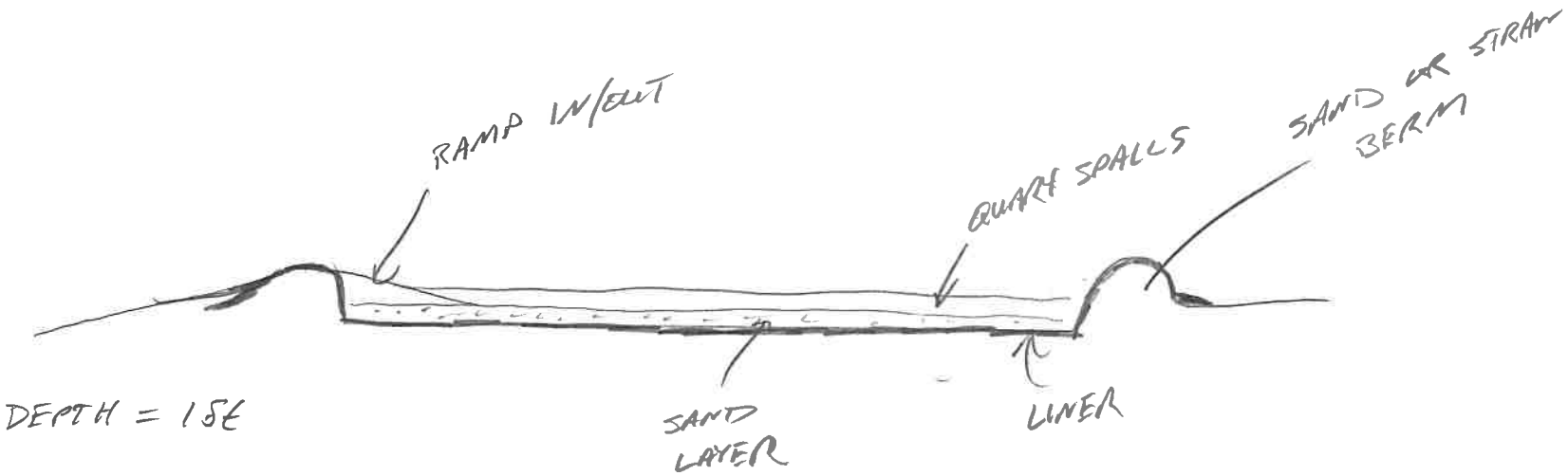
DWG. NO. **G5.1**
CIP NO. 1-8-900-05
PROJECT NO. MT-NT-2021-02.2
SHEET NO. 10 OF 149

BID SET

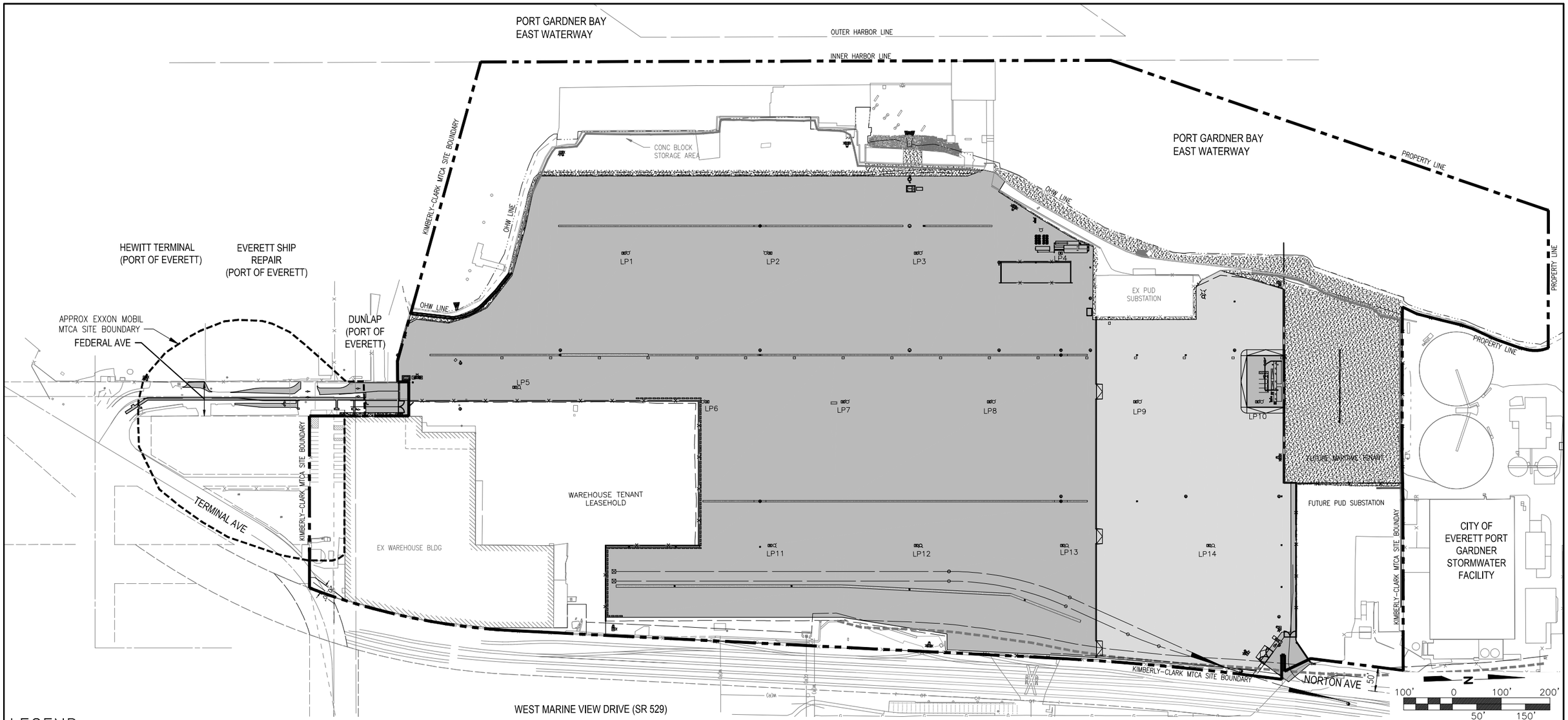
Attachment 2

EQUIPMENT DECON DESIGN





Attachment 6
Site Maps



LEGEND

KIMBERLY-CLARK MTCA SITE BOUNDARY

EXXON MOBIL MTCA SITE BOUNDARY

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2	05/07/2021	NW	FOR CITY REVIEW

NO.	DATE	BY	REVISION

NATHAN A. WATSON
STATE OF WASHINGTON
27014
REGISTERED PROFESSIONAL ENGINEER
6/21/21

PROJECT ENGINEER: N. WATSON	SCALE: 1" = 100'
DESIGNED BY: J. BECKER	DATE: 05/07/2021
DRAWN BY: K. EDWARDS, D. YU	CHECKED BY: N. WATSON
APPROVED BY:	

PORT OF EVERETT

NORTON TERMINAL DEVELOPMENT & MTCA 3RD INTERIM ACTION MTCA BOUNDARY SITE PLAN

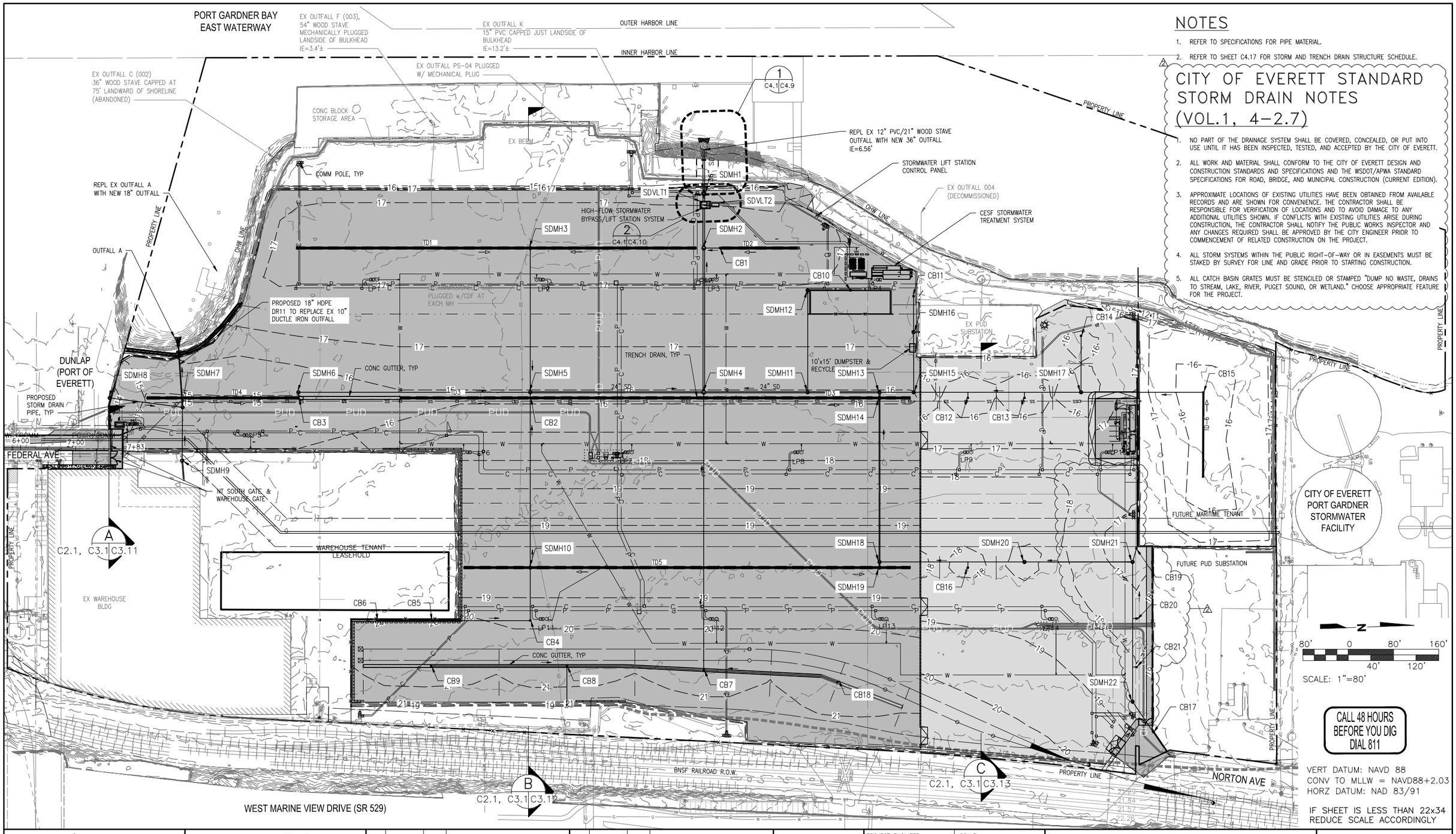
DWG. NO. **G1.4**

CIP NO. 1-8-900-05

PROJECT NO. MT-NT-2021-02.2

SHEET NO. 05 OF 149

BID SET



NOTES

1. REFER TO SPECIFICATIONS FOR PIPE MATERIAL.
2. REFER TO SHEET C4.17 FOR STORM AND TRENCH DRAIN STRUCTURE SCHEDULE.

CITY OF EVERETT STANDARD STORM DRAIN NOTES (VOL.1, 4-2.7)

1. NO PART OF THE DRAINAGE SYSTEM SHALL BE COVERED, CONCEALED, OR PUT INTO USE UNTIL IT HAS BEEN INSPECTED, TESTED, AND ACCEPTED BY THE CITY OF EVERETT.
2. ALL WORK AND MATERIAL SHALL CONFORM TO THE CITY OF EVERETT DESIGN AND CONSTRUCTION STANDARDS AND SPECIFICATIONS AND THE WSDOT/APWA STANDARD SPECIFICATIONS FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION (CURRENT EDITION).
3. APPROXIMATE LOCATIONS OF EXISTING UTILITIES HAVE BEEN OBTAINED FROM AVAILABLE RECORDS AND ARE SHOWN FOR CONVENIENCE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF LOCATIONS AND TO AVOID DAMAGE TO ANY ADDITIONAL UTILITIES SHOWN. IF CONFLICTS WITH EXISTING UTILITIES ARISE DURING CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE PUBLIC WORKS INSPECTOR AND ANY CHANGES REQUIRED SHALL BE APPROVED BY THE CITY ENGINEER PRIOR TO COMMENCEMENT OF RELATED CONSTRUCTION ON THE PROJECT.
4. ALL STORM SYSTEMS WITHIN THE PUBLIC RIGHT-OF-WAY OR IN EASEMENTS MUST BE STAKED BY SURVEY FOR LINE AND GRADE PRIOR TO STARTING CONSTRUCTION.
5. ALL CATCH BASIN GRATES MUST BE STENCILED OR STAMPED "DUMP NO WASTE, DRAINS TO STREAM, LAKE, RIVER, PUGET SOUND, OR WETLAND." CHOOSE APPROPRIATE FEATURE FOR THE PROJECT.

CALL 48 HOURS BEFORE YOU DIG DIAL 811

VERT DATUM: NAVD 88
CONV TO MLLW = NAVD88+2.03
HORZ DATUM: NAD 83/91

IF SHEET IS LESS THAN 22x34 REDUCE SCALE ACCORDINGLY

Port of EVERETT
P.O. BOX 538
EVERETT, WA 98206
(425) 259-3164

kpff
1601 5th Avenue, Suite 1300
Seattle, Washington 98101
(206) 382-0600 Fax (206) 382-0500
PROJECT NO. 1600120

NO.	DATE	BY	REVISION
2	07/09/2021	NW	ADDENDUM 1
1	06/21/2021	NW	ISSUED FOR BID
0	05/07/2021	NW	FOR CITY REVIEW

NATHAN A. WATSON — STATE OF WASHINGTON — 21014 — REGISTERED PROFESSIONAL ENGINEER — 6/4/2021

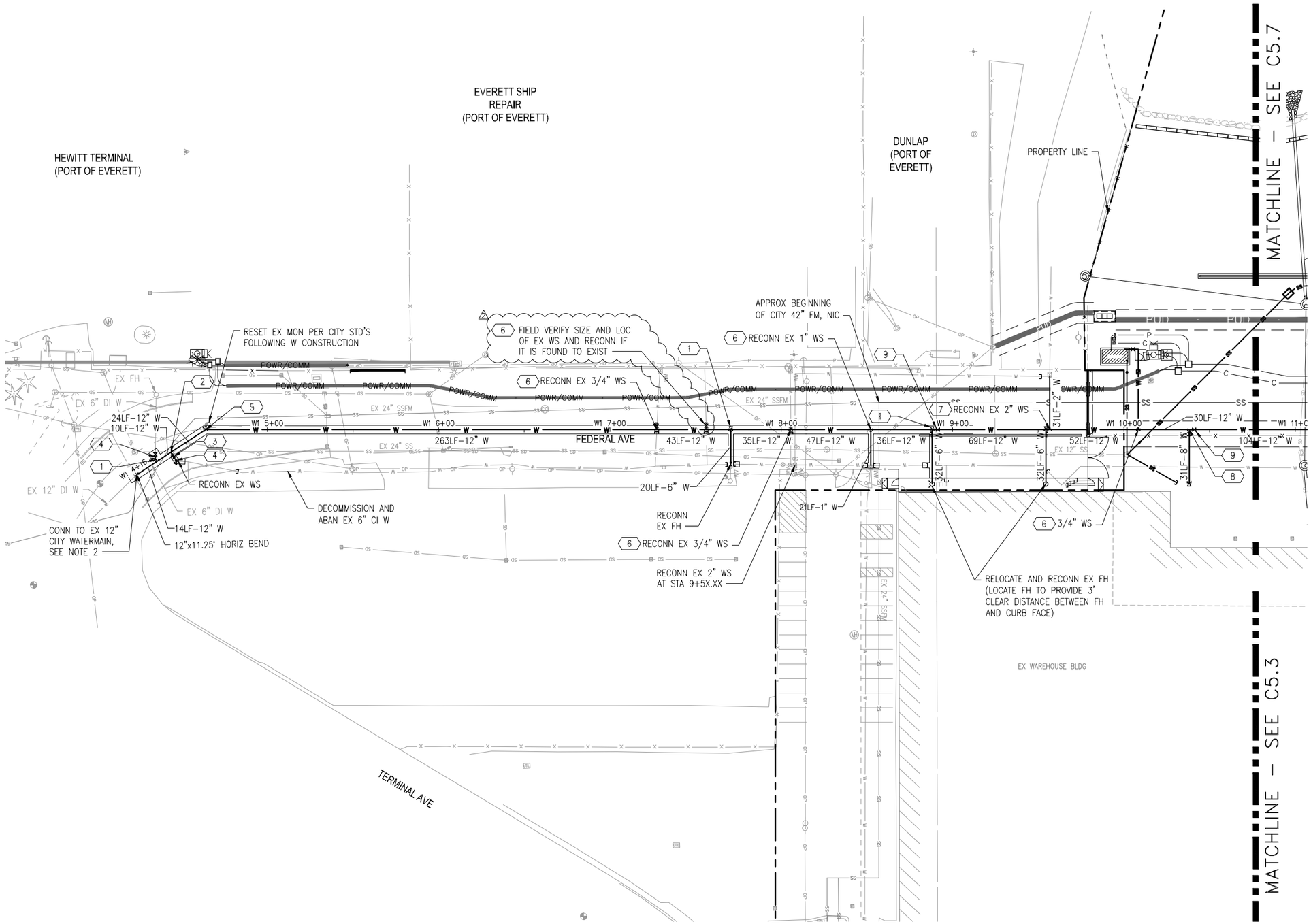
PROJECT ENGINEER: N. WATSON	SCALE: 1" = 80'
DESIGNED BY: J. BECKER	DATE: 05/07/2021
DRAWN BY: K. EDWARDS, D. YU	CHECKED BY: N. WATSON
APPROVED BY:	

PORT OF EVERETT

NORTON TERMINAL DEVELOPMENT & MTCA 3RD INTERIM ACTION STORMWATER OVERALL PLAN

DWG. NO. **C4.1**
CIP NO. 1-8-900-05
PROJECT NO. MT-NT-2021-02.2
SHEET NO. 45 OF 149

BID SET

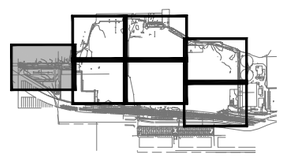


NOTES

1. CONTRACTOR SHALL RESTORE ASPHALT PAVEMENT TO MATCH EXISTING WHERE DEMOLITION OF PAVEMENT IS NECESSARY TO COMPLETE WATER PIPE INSTALLATION OR RESTORATION OF WATER SERVICES. SEE SHEET D1.2 AND D1.3 FOR RELATED DEMOLITION.
2. THE CONTRACTOR SHALL POTHOLE AND VERIFY THE LOCATION OF THE EXISTING 12"x6" REDUCER. THE CONTRACTOR SHALL REPLACE THE REDUCER WITH A 12"x11.25° HORIZONTAL BEND AND EXTEND THE 12" W. CITY OF EVERETT PUBLIC WORKS TO MAKE CONN TO EXISTING WATER MAIN UNDER SEPARATE UTILITY PERMIT WITH FEE BASED ON COST ESTIMATE PREPARED BY CITY. FEE TO BE PAID BY PORT (NOT CONTRACTOR).
3. 6" AND 12" WATERMAIN PIPE AND WATER PIPE ON DOWNSTREAM SIDE OF WATER METERS SHALL BE HIGH DENSITY POLYETHYLENE (HDPE), SDR 9, RATED 250 PSI PIPE AND SHALL BE LISTED AND APPROVED FOR POTABLE WATER

CONSTRUCTION NOTES

1. RECONN EXISTING FH PER COE STD DWG 507
2. 12"x12"x6" TEE
3. 6" GV
4. 6"x45° HORIZONTAL BEND
5. 12"x30° HORIZONTAL BEND
6. PER COE STD DWG 501
7. PER COE STD DWG 502
8. 12"x12"x8" TEE
9. 12" GV, SEE DETAIL 3, C5.20



30' 0 30' 60'
15' 45'

SCALE: 1"=30'

CALL 48 HOURS BEFORE YOU DIG DIAL 811

VERT DATUM: NAVD 88
CONV TO MLLW = NAVD88+2.03
HORZ DATUM: NAD 83/91

IF SHEET IS LESS THAN 22x34 REDUCE SCALE ACCORDINGLY

Port of EVERETT
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EVERETT, WA 98206
(425) 259–3164

kpff
1601 5th Avenue, Suite 1300
Seattle, Washington 98101
(206) 382-0600 Fax (206) 382-0500
PROJECT NO. 1600120

NO.	DATE	BY	REVISION
3	07/09/2021	NW	ADDENDUM 1
2	06/21/2021	NW	ISSUED FOR BID
1	05/07/2021	NW	FOR CITY REVIEW

NATHAN A. WATSON STATE OF WASHINGTON 37014 REGISTERED PROFESSIONAL ENGINEER 6/4/21

PROJECT ENGINEER: N. WATSON	SCALE: 1" = 30'
DESIGNED BY: J. BECKER	DATE: 05/07/2021
DRAWN BY: K. EDWARDS, D. YU	CHECKED BY: N. WATSON
APPROVED BY:	

PORT OF EVERETT

NORTON TERMINAL DEVELOPMENT & MTCA 3RD INTERIM ACTION
WATER AND SEWER DETAIL PLAN
(1 OF 9)

DWG. NO. **C5.2**
CIP NO. 1–8–900–05
PROJECT NO. MT–NT–2021–02.2
SHEET NO. 68 OF 149

BID SET

Attachment 7
SWPPP

Construction Stormwater General Permit (CSWGP)

Stormwater Pollution Prevention Plan (SWPPP)

for

Norton Terminal Development & MTCA 3rd Interim Action
Former Kimberly Clark Site
Port of Everett

Relevant Regulatory Authority:
Department of Ecology
Northwest Regional Office

Permittee / Owner	Developer	Operator / Contractor
Port of Everett	Port of Everett	Strider Construction

Port of Everett, Kimberly-Clark Worldwide Site Upland Area, Everett, WA

Certified Erosion and Sediment Control Lead (CESCL)

Name	Organization	Contact Phone Number
Jeremy Cox	Strider Construction	360-303-2787
Cole Potter	Strider Construction	360-303-5906
Taylor Lenderman	Strider Construction	360-303-3634

SWPPP Prepared By

Name	Organization	Contact Phone Number
Joe Kalmar	Landau Associates	425-329-0281

SWPPP Preparation Date
6/1/2021
Revised 10/13/201

Project Construction Dates

Activity / Phase	Start Date	End Date
Phase 1—Construct South Haul Road and Preload Ground Improvement	07/2021	09/2021
Phase 2—Selective Demolition	11/2021	01/2023
Phase 3 – Utility Work	11/2021	01/2023
Phase 4 – Paving	After 11/2021 (dry weather dependent)	
Phase 5 – Final paving & stormwater treatment	01/2023 expected construction completion	

List of Acronyms and Abbreviations

Acronym / Abbreviation	Explanation
303(d)	Section of the Clean Water Act pertaining to Impaired Waterbodies
BMP(s)	Best Management Practice(s)
CESCL	Certified Erosion and Sediment Control Lead
CO_2	Carbon Dioxide
CSWGP	Construction Stormwater General Permit
CWA	Clean Water Act
DMR	Discharge Monitoring Report
DO	Dissolved Oxygen
Ecology	Washington State Department of Ecology
EPA	United States Environmental Protection Agency
ERTS	Environmental Report Tracking System
ESC	Erosion and Sediment Control
GULD	General Use Level Designation
NPDES	National Pollutant Discharge Elimination System
NTU	Nephelometric Turbidity Units
NWRO	Northwest Regional Office of the Department of Ecology
pH	Power of Hydrogen
RCW	Revised Code of Washington
SPCC	Spill Prevention, Control, and Countermeasure
su	Standard Units
SWMMWW	Stormwater Management Manual for Western Washington
SWPPP	Stormwater Pollution Prevention Plan
TESC	Temporary Erosion and Sediment Control
TMDL	Total Maximum Daily Load
WAC	Washington Administrative Code
WSDOT	Washington Department of Transportation
WWHM	Western Washington Hydrology Model

Project Information (1.0)

Project/Site Name: Norton Terminal Development & MTCA 3rd Interim Action
Street/Location: 2600 Federal Ave
City: Everett **State:** WA **Zip code:** 98201
Receiving waterbody: Port Gardner Bay, East Waterway

Existing Conditions (1.1)

Total acreage (including support activities such as off-site equipment staging yards, material storage areas, borrow areas).

Total acreage: 46 acres (upland area located landward of OHW)

Disturbed acreage: approximately 46 acres

Existing structures: All former mill structures were demolished in 2012 down to their foundation elements except for a warehouse having a footprint of about 131,820 square feet that remains at the south east corner of the site. The warehouse is currently vacant. Foundations from the former mill structures remain below a sand backfill material that was imported and placed over the majority of the site as part of a 2nd Interim Action in fall 2020.

Landscape topography: The site is relatively flat. Prior interim cleanup actions have graded the site to form a narrow 'bowl' shape that is oriented north-south and is located about 200-feet from the shoreline. The northwest and southwest corners of the site slope towards the west to an existing berm along the shoreline.

Drainage patterns: Stormwater on the K-C upland site has been reported to fully infiltrate with no discharge from the site since the former mill structures were removed in 2012. During significant precipitation events, stormwater has been observed to pond in the graded 'bowl' condition and at the northwest and southwest corners of the site where stormwater is eventually infiltrated into the ground. The Exxon/ADC site is covered with impervious material. Stormwater on the Exxon/ADC site will be collected and directed to areas adjacent to the impervious area that can infiltrate.

Existing Vegetation: The site is a former industrial property that has been cleared and graded in association with prior interim cleanup actions. Limited landscaping occurs on the site and vegetation is limited to opportunistic species adapted to disturbed areas (i.e. weeds and blackberry) and overgrown landscape areas including some medium sized trees on the northwest edge and near the northeast access at Norton Avenue.

Critical Areas (wetlands, streams, high erosion risk, steep or difficult to stabilize slopes): None.

List of known impairments for 303(d) listed or Total Maximum Daily Load (TMDL) for the receiving waterbody:

Based on review of Ecology's 303(d) list, the East Waterway adjacent to the project Site is listed for sediment (parameter: sediment bioassay). Port Gardner is not listed on Ecology's list of TMDLs in Snohomish County. Applicable 303(d) map and listing for Port Gardner, East Waterway, is provided in Appendix F.

Table 1 – Summary of Site Pollutant Constituents: Appendix G includes a list of suspected and/or known contaminants associated with site soil.

Proposed Construction Activities (1.2)

Description of site development (example: subdivision):
The project includes two interrelated proposed actions—an interim action cleaup under MTCA and development of a secure marine cargo terminal (named Norton Terminal) through the Port of Everett Maritime Industrial Expansion (MIE) program. Site redevelopment will be limited to the upland area above ordinary high water. Development will include grading and paving of the site and installation of utilities including water, sewer, electrical, communications, lighting andstormwater collection, conveyance and treatment, including outfall replacement.

Description of construction activities (example: site preparation, demolition, excavation):

Construction Activities are split into 5 main phases:

- Phase 1: south haul road and preload stockpiling for ground improvement.
- Phase 2: selective demolition
- Phase 3: installation of utilities (storm drain, sewer, water, power and communications) and earthwork including grading site to pavement subgrade
- Phase 4: phased site paving, stormwater treatment system installation
- Phase 5: final paving (transition to final post-construction conditions)

At the completion of construction and final site paving of approximately 30 acres of the site, the facility will transition from coverage under the CSWGP to coverage under the Industrial Stormwater General Permit (ISGP). For that post-construction phase, precipitation falling on final site paving will be collected by the permanent storm drain system where it will be routed to a new Chitosan-Enhanced Sand Filtration (CESF) system for treatment before discharge to East Waterway. The existing berm along wharf will be maintained, where a portion of the site will remain undeveloped to accommodate a future wharf renovation project. An area at northwest corner of site is reserved for a future maritime tenant. This area will be covered with compacted gravel. Surface runoff will be collected by a gravel interceptor trench and routed to the CESF system for treatment.

Description of site drainage including flow from and onto adjacent properties:

Under the previous cleanup action (Second Interim Action), the following activities were completed and now constitute the existing condition prior to this proposed construction:

- Plugging outfalls and pipes along the shoreline to prevent discharge from the site.
- Grading the site to form a slight bowl condition about 200-feet from the shoreline. This condition maintains stormwater on-site where it is infiltrated into the ground.
- Construction of a berm along the shoreline as an added measure of protection. The berm is approximately 2-feet high and 3-feet wide at its top.
- Placement of a granular/sand backfill material over the site that allows stormwater to infiltrate.

See Site Maps in Appendix A. Construction activites are split into 5 main phases as described above. During Phases 1-3, the existing berm will be maintained. Stormwater will infiltrate onsite; no discharge will come from the site.

During Phase 4, the existing berm will be maintained. Stormwater from non-paved areas of the site will infiltrate and not discharge. Prior to Phase 5, Stormwater from paved areas of the site will be collected and treated by a Chitosan-Enhanced Sand Filtration unit (CESF) before discharge to the East Waterway.

Description of final stabilization (example: extent of revegetation, paving, landscaping):

Final developed conditions (Phase 5):

- Maintains existing berm along wharf where a portion of the site will remain undeveloped to accommodate a future wharf renovation project.
- Pave approximately 30 acres of the site. Precipitation falling on final site paving will be collected by the permanent storm drain system where it will be routed to the CESF system for treatment before discharge to East Waterway.
- An area at northwest corner of site is reserved for a future maritime tenant. This area will be covered with compacted gravel. Surface runoff will be collected by a gravel interceptor trench and routed to the CESF system for treatment.

***Contaminated Site Information*:**
Proposed activities regarding contaminated soils or groundwater (example: on-site treatment system, authorized sanitary sewer discharge):

Contamination at the Site upland has been thoroughly investigated under close supervision of Department of Ecology Toxics Cleanup Program (TCP) staff since 2012, including collection of thousands of soil samples, groundwater monitoring at more than 130 monitoring wells, and sampling sediment porewater and seeps along the intertidal shoreline. Figure 1 depicts locations for the hundreds of explorations completed for soil and/or groundwater sampling at the Site.1 In addition, a pair of MTCA interim actions (2013–2014 and 2020) accomplished

substantial cleanup of the Site—specifically removing soil contamination that posed the greatest risk to groundwater quality. Finally, approximately 250,000 tons of demolition debris (crushed concrete predominantly) that created high-pH groundwater was fully removed from the Site in 2020. Following the removal actions, widespread, low-level contamination in soil and groundwater remains across much of the Site. The Port's Third Interim Action will construct a low-permeability pavement section across a portion of the Site that will minimize long-term infiltration into site soil.

Contamination exists at the K-C Site above preliminary cleanup levels in soil and groundwater; contaminants of concern include metals, carcinogenic polycyclic aromatic hydrocarbons (cPAHs), polycyclic aromatic hydrocarbons (PAHs), semivolatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), and petroleum hydrocarbons

Contamination exists at the Exxon/ADC Site above preliminary cleanup levels in soil and groundwater; contaminants of concern include gasoline-range, diesel-range, and oil-range total petroleum hydrocarbons (TPH-G, TPH-D, and TPH-O, respectively), benzene, ethylbenzene, and xylenes, 1-methylnapthalene, and carcinogenic polycyclic aromatic hydrocarbons (cPAHs); liquid-phase petroleum hydrocarbons are also present in soil.

Information related to site soil contamination is provided in Appendix G.

Construction Stormwater Best Management Practices (BMPs) (2.0)

The SWPPP is a living document reflecting current conditions and changes throughout the life of the project. These changes may be informal (i.e. hand-written notes and deletions). Update the SWPPP when the CESCL has noted a deficiency in BMPs or deviation from original design.

The 13 Elements (2.1)

Applicable construction BMPs from the Stormwater Management Manual for Western Washington are provided in Appendix B.

Element 1: Preserve Vegetation / Mark Clearing Limits (2.1.1)

List and describe BMPs:

A. Before beginning land-disturbing activities, including clearing and grading, clearly mark all clearing limits, sensitive areas and their buffers, and trees that are to be preserved within the construction area.
B. Retain the duff layer, native topsoil, and natural vegetation in an undisturbed state to the maximum degree practicable

Site Response: Clearing limits have already marked by existing chain link fence and concrete block barrier and berm perimeter protection as part of prior interim cleanup actions. Vegetation on site consists mostly of invasive species that will not be preserved.

Installation Schedules: Not applicable, already installed.

Inspection and Maintenance plan: Weekly inspections will include examining the condition of construction area perimeter fencing, ecology blocks, and earthen berms. Any necessary repairs will be noted (form in Appendix D) and promptly implemented.

Element 2: Establish Construction Access (2.1.2)

List and describe BMPs:

A. Limit construction vehicle access and exit to one route, if possible.
B. Stabilize access points with a pad of quarry spalls, crushed rock, or other equivalent BMPs, to minimize tracking sediment onto roads.
C. Locate wheel wash or tire baths on site, if the stabilized construction entrance is not effective in preventing tracking sediment onto roads.
D. If sediment is tracked off site, clean the affected roadway thoroughly at the end of each day, or more frequently as necessary (for example, during wet weather). Remove sediment from roads by shoveling, sweeping, or pickup and transport of the sediment to a controlled sediment disposal area.
E. Conduct street washing only after sediment removal in accordance with Special Condition S9.D.2.d.
F. Control street wash wastewater by pumping back on site or otherwise preventing it from discharging into systems tributary to waters of the State.

Site Response: Construction access will be provided in conformance with City of Everett Standard Drawing 201. Wheel wash will be provided as needed.

Installation Schedules: The haul road will be constructed during Phase 1 of construction, July-September 2021.

Inspection and Maintenance plan: The condition of the haul road, and the potential need to establish a wheel wash to better control truck tracking of sediment, will be assessed during each weekly inspection (form in Appendix D).

Element 3: Control Flow Rates (2.1.3)

List and describe BMPs:

A. Protect properties and waterways downstream of construction sites from erosion and the associated discharge of turbid waters due to increases in the velocity and peak volumetric flow rate of stormwater runoff from the project site, as required by local plan approval authority.
B. Where necessary to comply with Special Condition S9.D.3.a, construct stormwater infiltration or detention BMPs as one of the first steps in grading. Assure that detention BMPs function properly before constructing site improvements (for example, impervious surfaces).
C. If permanent infiltration ponds are used for flow control during construction, protect these facilities from sedimentation during the construction phase.

Site Response: Precipitation falling on site has been maintained by infiltration with no surface water discharge since the mill was demolished in 2012. Precipitation will continue to be controlled by infiltration across the site during construction.

Installation Schedules: Not applicable, already in place.

Inspection and Maintenance plan: Confirmation of continued infiltration of all site stormwater will be part of the weekly inspection (form in Appendix D).

Responsible Staff: The site CESCL is responsible for conducting the weekly inspections.

Element 4: Install Sediment Controls (2.1.4)

List and describe BMPs:

The Permittee must design, install and maintain effective erosion controls and sediment controls to minimize the discharge of pollutants. At a minimum, the Permittee must:

A. Construct sediment control BMPs (sediment ponds, traps, filters, infiltration facilities, etc.) as one of the first steps in grading. These BMPs must be functional before other land disturbing activities take place.
B. Minimize sediment discharges from the site. The design, installation and maintenance of erosion and sediment controls must address factors such as the amount, frequency, intensity and duration of precipitation, the nature of resulting stormwater runoff, and soil characteristics, including the range of soil particle sizes expected on the site.
C. Direct stormwater runoff from disturbed areas through a sediment pond or other appropriate sediment removal BMP, before the runoff leaves a construction site or before discharge to an infiltration facility. Runoff from fully stabilized areas may be discharged without a sediment removal BMP, but must meet the flow control performance standard of Special Condition S9.D.3.a.
D. Locate BMPs intended to trap sediment on site in a manner to avoid interference with the movement of juvenile salmonids attempting to enter off-channel areas or drainages.
E. Provide and maintain natural buffers around surface waters, direct stormwater to vegetated areas to increase sediment removal and maximize stormwater infiltration, unless infeasible.
F. Where feasible, design outlet structures that withdraw impounded stormwater from the surface to avoid discharging sediment that is still suspended lower in the water column.

Site Response: Construction access will be provided in conformance with City of Everett Standard Drawing 201. As part of prior interim cleanup actions, the site has been graded to form a closed, internal depression that infiltrates all precipitation falling on the site. There is no surface water discharge from the site. As an added measure of protection, a concrete block barrier and berm has been constructed along the site's west and north boundary. Each of these elements will be maintained during construction. Temporary silt fence will be used to supplement the existing berm protection and compost socks, wattles, or sand bags will be used around soil stockpile management areas. Outfall replacement excavation will be performed in dry weather during low tide in a single tide cycle. If the work cannot be completed in a single tide cycle, exposed soils will be temporarily stabilized with rock or other approved measures prior to tidal submersion. Work will continue during the next low tide period.

Installation Schedules: The haul road will be constructed during Phase 1 of construction, July-September 2021. Construction phases 2-5 are scheduled for November 2021 – January 2023.

Inspection and Maintenance plan: Inspection to confirm that erosion control BMPs are in place are part of the weekly inspection (form in Appendix D).

Responsible Staff: The site CESCL is responsible for conducting the weekly inspections.

Element 5: Stabilize Soils (2.1.5)

West of the Cascade Mountains Crest

Season	Dates	Number of Days Soils Can be Left Exposed
During the Dry Season	May 1 – September 30	7 days
During the Wet Season	October 1 – April 30	2 days

Soils must be stabilized at the end of the shift before a holiday or weekend if needed based on the weather forecast.

List and describe BMPs:

A. The permittee must stabilize exposed and unworked soils by application of effective BMPs that prevent erosion. Applicable BMPs include but are not limited to: temporary and permanent seeding, sodding mulching, plastic covering, erosion control fabrics and matting, soil application of polyacrylamide (PAM), the early application of gravel base on areas to be paved, and dust control.
B. The Permittee must control stormwater volume and velocity within the site to minimize soil erosion.
C. The Permittee must control stormwater discharges, including both peak flow rates and total stormwater volume, to minimize erosion at outlets and to minimize downstream channel and stream bank erosion.
D. The Permittee must stabilize soils at the end of the shift before a holiday or weekend if needed based on the weather forecast.
E. The Permittee must stabilize soil stockpiles from erosion, protected with sediment trapping measures, and where possible, be located away from storm drain inlets, waterways, and drainage channels.
F. The Permittee must minimize the amount of soil exposed during construction activity.
G. The Permittee must minimize the disturbance of steep slopes.
H. The Permittee must minimize soil compaction and, unless infeasible, preserve topsoil.

Site Response: Stockpile management areas will be stabilized with plastic covering. Dust control BMP's will be implemented.

Outfall replacement work will be constructed in the 'dry' during low tide in a single tide cycle. If the work cannot be completed in a single tide cycle, exposed soils will be temporarily stabilized with rock or other approved measures prior to tidal submersion. Work will continue during the next low tide period.

Upon completion of project, the majority of site will be covered with pavement, except for separately delineated leasehold areas along north end and warehouse area at south east corner which will be developed by a future tenant. Precipitation will continue to infiltrate into the ground at these areas until developed.

Anticipated project dates: Start date: June 2021 End date: January 2023

Inspection and Maintenance plan: There will be construction activity during the wet season for this project, and soil stabilization BMPs will be inspected weekly and maintained as needed.

Responsible Staff: The site CESCL is responsible for conducting the weekly inspections and completing the inspection form (Appendix D).

Element 6: Protect Slopes (2.1.6)

Will steep slopes be present at the site during construction?
No

List and describe BMPs:

A. The Permittee must design and construct cut-and-fill slopes in a manner to minimize erosion. Applicable practices include, but are not limited to, reducing continuous length of slope with terracing and diversions, reducing slope steepness, and roughening slope surfaces (for example, track walking).
B. The Permittee must divert off-site stormwater (run-on) or groundwater away from slopes and disturbed areas with interceptor dikes, pipes, and/or swales. Off-site stormwater should be managed separately from stormwater generated on the site.
C. At the top of slopes, collect drainage in pipe slope drains or protected channels to prevent erosion.
D. West of the Cascade Mountains Crest: Temporary pipe slope drains must handle the peak 10-minute flow rate from a Type 1A, 10-year, 24-hour frequency storm for the developed condition. Alternatively, the 10-year, 1-hour flow rate predicted by an approved continuous runoff model, increased by a factor of 1.6, may be used. The hydrologic analysis must use the existing land cover condition for predicting flow rates from tributary areas outside the project limits. For tributary areas on the project site, the analysis must use the temporary or permanent project land cover condition, whichever will produce the highest flow rates. If using the Western Washington Hydrology Model (WWHM) to predict flows, bare soil areas should be modeled as “landscaped” area”.
E. Place excavated material on the uphill side of trenches, consistent with safety and space considerations.
F. Place check dams at regular intervals within constructed channels that are cut down a slope.

Site Response: Not applicable, site is flat.

Installation Schedules: N/A

Inspection and Maintenance plan: N/A

Responsible Staff: N/A

Element 7: Protect Drain Inlets (2.1.7)

List and describe BMPs:

A. Protect all storm drain inlets made operable during construction so that stormwater runoff does not enter the conveyance system without first being filtered or treated to remove sediment.
B. Clean or remove and replace inlet protection devices when sediment has filled one-third of the available storage (unless a different standard is specified by the product manufacturer).

Site Response: Storm drain inlet protection will be provided in Federal Avenue during watermain extension work.

Existing inlet protection at warehouse loading dock area will be maintained. All other on-site inlets were removed during prior interim cleanup actions.

Element 8: Stabilize Channels and Outlets (2.1.8)

Provide stabilization, including armoring material, adequate to prevent erosion of outlets, adjacent stream banks, slopes, and downstream reaches, will be installed at the outlets of all conveyance systems.

List and describe BMPs:

A. Design, construct and stabilize all on-site conveyance channels to prevent erosion from the following expected peak flows:
B. West of the Cascade Mountains Crest: Channels must handle the peak 10-minute flow rate from a Type 1A, 10-year, 24-hour frequency storm for the developed condition. Alternatively, the 10-year, 1-hour flow rate indicated by an approved continuous runoff model, increased by a factor of 1.6, may be used. The hydrologic analysis must use the existing land cover condition for predicting flow rates from tributary areas outside the project limits. For tributary areas on the project site, the analysis must use the temporary or permanent project land cover condition, whichever will produce the highest flow rates. If using the WWHM to predict flows, bare soil areas should be modeled as "landscaped area."

Site Response: Outfall replacements will be stabilized with a riprap energy dissipator.

Element 9: Control Pollutants (2.1.9)

The following pollutants are anticipated to be present on-site:

Table 2 – Pollutants

Pollutant (and source, if applicable)
See Appenix G for a listing of pollutant parameters present in site soil.

List and describe BMPs:

A. Handle and dispose of all pollutants, including waste materials and demolition debris that occur on site in a manner that does not cause contamination of stormwater.
B. Provide cover, containment, and protection from vandalism for all chemicals, liquid products, petroleum products, and other materials that have the potential to pose a threat to human health or the environment. On-site fueling tanks must include secondary con-tainment. Secondary containment means placing tanks or containers within an imper-vious structure capable of containing 110% of the volume contained in the largest tank within the containment structure. Double-walled tanks do not require additional sec-ondary containment.
C. Conduct maintenance, fueling, and repair of heavy equipment and vehicles using spill prevention and control measures. Clean contaminated surfaces immediately following any spill incident.
D. Discharge wheel wash or tire bath wastewater to a separate on-site treatment system that prevents discharge to surface water, or to the sanitary sewer, with local sewer district approval.
E. Apply fertilizers and pesticides in a manner and at application rates that will not result in loss of chemical to stormwater runoff. Follow manufacturers' label requirements for application rates and procedures.
F. Use BMPs to prevent contamination of stormwater runoff by pH-modifying sources. The sources for this contamination include, but are not limited to: recycled concrete stockpiles, bulk cement, cement kiln dust, fly ash, new concrete washing and curing waters, waste streams generated from concrete grinding and sawing, exposed aggregate processes, dewatering concrete vaults, concrete pumping and mixer washout waters.
G. Adjust the pH of stormwater if necessary to prevent violations of water quality standards.
H. Assure that washout of concrete trucks is performed off site or in designated concrete washout areas only. Do not wash out concrete truck drums or concrete handling equip-ment onto the ground, or into storm drains, open ditches, streets, or streams. Washout of small concrete handling equipment may be disposed of in a formed area awaiting con-crete where it will not contaminate surface or ground water. Do not dump excess con-crete on site, except in designated concrete washout areas. Concrete spillage or

concrete discharge directly to ground water or surface waters of the State is prohibited. Do not wash out to formed areas awaiting infiltration BMPs.

I. Obtain written approval from Ecology before using chemical treatment other than CO2, dry ice, or food grade vinegar to adjust pH.
J. Uncontaminated water from water-only based shaft drilling for construction of building, road, and bridge foundations may be infiltrated provided the wastewater is managed in a way that prohibits discharge to surface waters. Prior to infiltration, water from water-only based shaft drilling that comes into contact with curing concrete must be neutralized until pH is in the range of 6.5 to 8.5 (su).

Site Response: A soil & groundwater management plan will be developed to properly handle and dispose of waste materials.

The project will utilize BMP C153 Material Delivery, Storage, and Containment to implement good housekeeping measures. Specific source control BMP's will include:

- Regular inspection of all vehicles, equipment and petroleum storage/dispensing areas to detect any leaks or spills, and to identify maintenance needs for spill prevention.
- Spill prevention measures such as drip pans will be used for maintenance and repair of vehicles and equipment.
- BMP C151 Concrete Handling Measures will be utilized as needed.
- BMP C106 Wheel Wash Implementation will be utilized as needed.
- Portable sanitation facilities will be regularly maintained.
- Solid waste other than soil will be stored in clearly marked containers.

Installation Schedules: The site depression and ponding/infiltration within the unpaved site is already in place, along with a perimeter soil berm. The berm will be extended as part of the first phase of work.

Inspection and Maintenance plan: If ever stormwater is found to be ponding up against the soil berms and flowing over, around, or permeating through the soil berms (most likely in the southwest and the northwest portions of the site, then pumps will be utilized to retain and control that stormwater. Stormwater will either be pumped back into lower depression areas of the site for infiltration or will be pumped to onsite tanks for temporary containment until it can be later infiltrated into site soil or hauled to a licensed facility offsite for proper treatment and disposal.

Responsible Staff: The site CESCL has lead responsibility to ensure that no stormwater is discharging from the site to surface water.

Will maintenance, fueling, and/or repair of heavy equipment and vehicles occur on-site?

The contractor has not yet been selected for the construction work, and this section of the SWPPP will need to be updated with any plans that the contractor has for maintenance, fueling, and/or repair of heavy equipment and vehicles to occur onsite. If yes, description of spill prevention and control measures that are to be in place while conducting maintenance, fueling, and repair of heavy equipment and vehicles must be added to this SWPPP.

If yes, the total volume of fuel on-site and capacity of impervious secondary containment for each fuel tank will also need to be provided.

List and describe BMPs:

A. Handle and dispose of all pollutants, including waste materials and demolition debris that occur on site in a manner that does not cause contamination of stormwater.
B. Provide cover, containment, and protection from vandalism for all chemicals, liquid products, petroleum products, and other materials that have the potential to pose a threat to human health or the environment. Minimize storage of hazardous materials on-site. Safety Data Sheets (SDS) should be supplied for all materials stored. Chemicals should be kept in their original labeled containers. On-site fueling tanks must include secondary containment. Secondary containment means placing tanks or containers within an impervious structure capable of containing 110% of the volume of the largest tank within the containment structure. Double-walled tanks do not require additional secondary containment.
C. Conduct maintenance, fueling, and repair of heavy equipment and vehicles using spill prevention and control measures. Clean contaminated surfaces immediately following any spill incident.

Site Response: A soil & groundwater management plan will be developed to properly handle and dispose of waste materials.
The project will utilize BMP C153 Material Delivery, Storage, and Containment to implement good housekeeping measures. Specific source control BMP's will include:

- Regular inspection of all vehicles, equipment and petroleum storage/dispensing areas to detect any leaks or spills, and to identify maintenance needs for spill prevention.
- Spill prevention measures such as drip pans will be used for maintenance and repair of vehicles and equipment.
- BMP C151 Concrete Handling Measures will be utilized as needed.
- BMP C106 Wheel Wash Implementation will be utilized as needed.
- Portable sanitation facilities will be regularly maintained.
- Solid waste other than soil will be stored in clearly marked containers.

Will wheel wash or tire bath system BMPs be used during construction?
Yes, as needed.

List and describe BMPs:

A. Discharge wheel wash or tire bath wastewater to a separate on-site treatment system that prevents discharge to surface water, such as closed-loop recirculation or upland land application, or to the sanitary sewer with local sewer district approval.

Wheel wash wastewater that can no longer be reused and requires disposal will be hauled offsite to a licensed facility for proper treatment and disposal, until authorization is attained for onsite disposal to the sanitary sewer. Once approval is obtained from the City for onsite

disposal to the sanitary sewer system, that approval letter will be included under Correspondence in Appendix C.

Will pH-modifying sources be present on-site?

Yes

Table 3 – pH-Modifying Sources

	None
X	Bulk cement
	Cement kiln dust
	Fly ash
X	Other cementitious materials
X	New concrete washing or curing waters
X	Waste streams generated from concrete grinding and sawing
	Exposed aggregate processes
X	Dewatering concrete vaults and abandoned pipes
X	Concrete pumping and mixer washout waters
	Recycled concrete
	Other (i.e. calcium lignosulfate) [please describe]

List and describe BMPs:

A. Apply fertilizers and pesticides in a manner and at application rates that will not result in loss of chemical to stormwater runoff. Follow manufacturers' label requirements for application rates and procedures.
B. Use BMPs to prevent contamination of stormwater runoff by pH-modifying sources. The sources for this contamination include, but are not limited to: recycled concrete stockpiles, bulk cement, cement kiln dust, fly ash, new concrete washing and curing waters, waste streams generated from concrete grinding and sawing, exposed aggregate processes, dewatering concrete vaults, concrete pumping and mixer washout waters.
C. Adjust the pH of stormwater if necessary to prevent violations of water quality standards.
D. Assure that washout of concrete trucks is performed off site or in designated concrete washout areas only. Do not wash out concrete truck drums or concrete handling equipment onto the ground, or into storm drains, open ditches, streets, or streams. Washout of small concrete handling equipment may be disposed of in a formed area awaiting concrete where it will not contaminate surface or ground water. Do not dump excess concrete on site, except in designated concrete washout areas. Concrete spillage or concrete discharge directly to ground water or surface waters of the State is prohibited. Do not wash out to formed areas awaiting infiltration BMPs.
E. Obtain written approval from Ecology before using chemical treatment other than CO2, dry ice, or food grade vinegar to adjust pH.
F. Uncontaminated water from water-only based shaft drilling for construction of building, road, and bridge foundations may be infiltrated provided the wastewater is managed in a

way that prohibits discharge to surface waters. Prior to infiltration, water from water-only based shaft drilling that comes into contact with curing concrete must be neutralized until pH is in the range of 6.5 to 8.5 (su).

Site Response: A soil & groundwater management plan will be developed to properly handle and dispose of waste materials.
The project will utilize BMP C153 Material Delivery, Storage, and Containment to implement good housekeeping measures. Specific source control BMP's will include:

- Regular inspection of all vehicles, equipment and petroleum storage/dispensing areas to detect any leaks or spills, and to identify maintenance needs for spill prevention.
- Spill prevention measures such as drip pans will be used for maintenance and repair of vehicles and equipment.
- BMP C151 Concrete Handling Measures will be utilized as needed.
- BMP C106 Wheel Wash Implementation will be utilized as needed.
- Portable sanitation facilities will be regularly maintained.
- Solid waste other than soil will be stored in clearly marked containers.

If stormwater may discharge from the site that is outside the pH range of 6.5 to 8.5 due to exposure to cement, carbon dioxide gas or dry ice will be used to reduce the pH to within that range. Approval from Ecology will be sought before any other type of pH adjustment chemical treatment.

Responsible Staff: The site CESCL will have lead responsibility

Concrete trucks must not be washed out onto the ground, or into storm drains, open ditches, streets, or streams. Excess concrete must not be dumped on-site, except in designated concrete washout areas with appropriate BMPs installed.

Element 10: Control Dewatering (2.1.10)

Excavations for utility installations that require dewatering will treat groundwater and discharge to City sewer in conformance with an approved discharge authorization. Upon Ecology permission, excavation dewatering may also be discharged on-site where it will be allowed to re-infiltrate into the ground.

Table 4 – Dewatering BMPs

X	Infiltration
X	Transport off-site in a vehicle (vacuum truck for legal disposal)
X	Ecology-approved on-site chemical treatment or other suitable treatment technologies
X	Sanitary or combined sewer discharge with local sewer district approval (last resort)
X	Use of sedimentation bag with discharge to ditch or swale (small volumes of localized dewatering)

List and describe BMPs:

A. a. Permittees must discharge foundation, vault, and trench dewatering water, which have characteristics similar to stormwater runoff at the site, in conjunction with BMPs to reduce sedimentation before discharge to a sediment trap or sediment pond.
B. b. Permittees may discharge clean, non-turbid dewatering water, such as well-point groundwater, to systems tributary to, or directly into surface waters of the State, as specified in Special Condition S9.D.8, provided the dewatering flow does not cause erosion or flooding of receiving waters. Do not route clean dewatering water through stormwater sediment ponds. Note that “surface waters of the State” may exist on a construction site as well as off site; for example, a creek running through a site.

Site Response: Excavations that require dewatering will treat groundwater and discharge to City sewer in conformance with an approved discharge authorization. Upon Ecology permission, excavation dewatering may also be discharged on-site where it will be allowed to re-infiltrate into the ground.

Element 11: Maintain BMPs (2.1.11)

All temporary and permanent Erosion and Sediment Control (ESC) BMPs shall be maintained and repaired as needed to ensure continued performance of their intended function.

Maintenance and repair shall be conducted in accordance with each particular BMP specification (see *Volume II of the SWMMWW*).

Visual monitoring of all BMPs installed at the site will be conducted at least once every calendar week and within 24 hours of any stormwater or non-stormwater discharge from the site (form in Appendix D). If the site becomes inactive and is temporarily stabilized, the inspection frequency may be reduced to once every calendar month.

All temporary ESC BMPs shall be removed within 30 days after final site stabilization is achieved or after the temporary BMPs are no longer needed.

Trapped sediment shall be stabilized on-site or removed. Disturbed soil resulting from removal of either BMPs or vegetation shall be permanently stabilized.

Additionally, protection must be provided for all BMPs installed for the permanent control of stormwater from sediment and compaction. BMPs that are to remain in place following completion of construction shall be examined and restored to full operating condition. If sediment enters these BMPs during construction, the sediment shall be removed and the facility shall be returned to conditions specified in the construction documents.

TESC will include the following elements:

1. Maintain site's existing perimeter protection consisting of concrete block barrier and berm protection. Berm protection will be extended at site's south and north ends to provide a continuous barrier with no gaps.
2. Maintain infiltration of all on-site drainage and allow no surface water discharge from the site's exposed soils. Surface water discharge to the East Waterway will not commence until after the final top course of asphalt pavement is in place. Precipitation falling on the new asphalt pavement will be routed through the CESF treatment system prior to discharge to East Waterway. Precipitation falling on the site's exposed soils during construction will be infiltrated into the ground and will not result in a surface water discharge.
3. Supplement existing site perimeter protection as needed with temporary silt fence per City of Everett Standard Drawing 214.
4. Provide construction entrance per City of Everett Standard Drawing 201.
5. Provide wheel wash as necessary.
6. Excavations that require dewatering will treat groundwater and discharge to City sewer in conformance with an approved discharge authorization. Upon Ecology permission, excavation dewatering may also be discharged on-site where it will be allowed to re-infiltrate into the ground.
7. Dust control will be implemented per standard BMP's.
8. Cover protection of stockpiled materials will be implemented per standard BMP's.
9. Concrete handling BMPS's will be implemented.
10. Street sweeping will be implemented per standard BMP's.

Element 12: Manage the Project (2.1.12)

The project will be managed based on the following principles:

- Projects will be phased to the maximum extent practicable and seasonal work limitations will be taken into account.
- Inspection and monitoring:
    - Inspection, maintenance and repair of all BMPs will occur as needed to ensure performance of their intended function.
    - Site inspections and monitoring will be conducted in accordance with Special Condition S4 of the CSWGP. The current version of the CSWGP can be downloaded from the link listed in Appendix E. Sampling locations are indicated on the Site Map. Sampling station(s) are located in accordance with applicable requirements of the CSWGP.
- Maintain an updated SWPPP.
    - The SWPPP will be updated, maintained, and implemented in accordance with Special Conditions S3, S4, and S9 of the CSWGP.

As site work progresses the SWPPP will be modified routinely to reflect changing site conditions. The SWPPP will be reviewed monthly to ensure the content is current.

Table 5 – Management

X	Design the project to fit the existing topography, soils, and drainage patterns
X	Emphasize erosion control rather than sediment control
X	Minimize the extent and duration of the area exposed
X	Keep runoff velocities low
X	Retain sediment on-site
X	Thoroughly monitor site and maintain all ESC measures
X	Schedule major earthwork during the dry season
	Other (please describe)

Site Response: Erosion & sedimentation control BMPs for this project shall be managed on the following principles:

- Inspection, maintenance and repair of BMPs will occur, as needed, to ensure performance of their intended function.
- The SWPPP will be modified whenever there is a change in the design, construction, operation, or maintenance at the construction site that could have a significant effect on the discharge of pollutants to waters of the state.
- The SWPPP shall be modified if, during inspections, it is determined that the SWPPP is ineffective in eliminating or significantly minimizing pollutants in stormwater. The SWPPP (including inspection form – Appendix D) shall be modified as necessary to include additional or modified BMPs to correct problems identified.

Element 13: Protect Low Impact Development (LID) BMPs (2.1.13)

Site Response: Not applicable—No LID BMPs will be constructed or impacted.

Pollution Prevention Team (3.0)

Table 7 – Team Information

Title	Name(s)	Phone Number
Certified Erosion and Sediment Control Lead (CESCL)	Jeremy Cox	360-303-2787
Resident Engineer	Elise Gronewald, Port of Everett	425-388-0630
Emergency Ecology Contact	Amy Jankowiak, Dept. of Ecology	425-594-4259
Emergency Permittee/ Owner Contact	Elise Gronewald, Port of Everett	425-388-0630
Non-Emergency Owner Contact	Elise Gronewald, Port of Everett	425-388-0630
Monitoring Personnel	Jeremy Cox	360-303-2787
Ecology Regional Office	Northwest Regonal Office	425-649-7000

Monitoring and Sampling Requirements (4.0)

Monitoring includes visual inspection, sampling for water quality parameters of concern, and documentation of the inspection and sampling findings in a site log book. A site log book will be maintained for all on-site construction activities and will include:

- A record of the implementation of the SWPPP and other permit requirements
- Site inspections
- Stormwater sampling data

The site log book must be maintained on-site within reasonable access to the site and be made available upon request to Ecology or the local jurisdiction.

Numeric effluent limits may be required for certain discharges to 303(d) listed waterbodies. See CSWGP Special Condition S8 and Section 5 of this template.

Complete the following paragraph for sites that discharge to impaired waterbodies for fine sediment, turbidity, phosphorus, or pH:

The receiving waterbody, Port Gardner Bay, East Waterway, is impaired for: sediment; parameter: sediment bioassay.

All stormwater and dewatering discharges from the site are subject to benchmarks of 8.5 su for pH and/or 25 NTU for turbidity. Any dewatering water measured with pH greater than 9.0 cannot be infiltrated onsite (regardless of treatment) and must be discharged to the sanitary sewer (if approved) or taken offsite for proper treatment and disposal (see section 4.2.2). If Ecology issues an Administrative Order that imposes specific monitoring requirements and/or an effluent limit (e.g., for TSS), then this SWPPP must be updated to reflect those added requirements and limitations.

Site Inspection (4.1)

Site inspections will be conducted at least once every calendar week and within 24 hours following any discharge from the site. An inspection form is provided in Appendix D. If the site is temporarily stabilized and inactive, the required frequency is reduced to once per calendar month.

Stormwater Quality Sampling (4.2)

As discussed in this SWPPP this site has demonstrated the ability to infiltrate all stormwater, and no stormwater discharge to surface water is expected during most of the construction period. The site topography and the site perimeter berms are indicated on the site maps (see Drawing C1.1 in Appendix A). There will be no need for stormwater quality sampling when there is no construction stormwater discharge to surface water. An exception to that statement will be when the new asphalt pavement is installed and the CESF treatment system is installed and operational. The discharge sampling point at that time will be the effluent of the CESF system.

A sampling plan for CESF system discharge of construction stormwater during the end of the construction period (see Drawing C4.1 in Appendix A for planned paved conditions and location of planned CESF stormwater treatment system), and for any other time when an unexpected construction stormwater discharge to surface water might occur, is provided below.

Turbidity Sampling (4.2.1)

CSWGP requirements include calibrated turbidity meter use to sample site construction stormwater discharges to surface water. Sampling will be conducted at all discharge points at least once per calendar week.

Method for sampling turbidity: by Standard Methods or field measurement.

Table 8 – Turbidity Sampling Method

X	Turbidity Meter/Turbidimeter (required for disturbances 5 acres or greater in size)
	Transparency Tube (option for disturbances less than 1 acre and up to 5 acres in size)

The benchmark for turbidity value is 25 nephelometric turbidity units (NTU).

If the discharge's turbidity is 26 to 249 NTU, the following steps will be conducted:

1. Review the SWPPP for compliance with Special Condition S9. Make appropriate revisions within 7 days of the date the discharge exceeded the benchmark.
2. Immediately begin the process to fully implement and maintain appropriate source control and/or treatment BMPs as soon as possible. Address the problems within 10 days of the date the discharge exceeded the benchmark. If installation of necessary treatment BMPs is not feasible within 10 days, Ecology may approve additional time when the Permittee requests an extension within the initial 10-day response period.
3. Document BMP implementation and maintenance in the site log book.

If the turbidity exceeds 250 NTU at any time, the following steps will be conducted:

1. Telephone or submit an electronic report to the applicable Ecology Region's Environmental Report Tracking System (ERTS) within 24 hours. https://www.ecology.wa.gov/About-us/Get-involved/Report-an-environmental-issue
    - Northwest Region (King, Kitsap, Island, San Juan, Skagit, Snohomish, Whatcom): (425) 649-7000
2. Immediately begin the process to fully implement and maintain appropriate source control and/or treatment BMPs as soon as possible. Address the problems within 10 days of the date the discharge exceeded the benchmark. If installation of necessary treatment BMPs is not feasible within 10 days, Ecology may approve additional time when the Permittee requests an extension within the initial 10-day response period
3. Document BMP implementation and maintenance in the site log book.
4. Continue to sample discharges daily until one of the following is true:
    - Turbidity is 25 NTU (or lower).
    - Compliance with the water quality limit for turbidity is achieved.

    - 1 - 5 NTU over background turbidity, if background is less than 50 NTU
    - 1% - 10% over background turbidity, if background is 50 NTU or greater
- The discharge stops or is eliminated.

pH Sampling (4.2.2)

pH monitoring is required for “Significant concrete work” (i.e. greater than 1000 cubic yards poured concrete or recycled concrete over the life of the project).The use of engineered soils (soil amendments including but not limited to Portland cement-treated base [CTB], cement kiln dust [CKD] or fly ash) also requires pH monitoring.

For significant concrete work, pH sampling will start the first day concrete is poured and continue until it is cured, typically three (3) weeks after the last pour.

For engineered soils and recycled concrete, pH sampling begins when engineered soils or recycled concrete are first exposed to precipitation and continues until the area is fully stabilized.

If the measured pH is between 8.5 and 9.0, the following measures will be taken:

1. Prevent high pH water from entering storm sewer systems or surface water.
2. Adjust or neutralize the high pH water to the range of 6.5 to 8.5 su using appropriate technology such as carbon dioxide (CO_2) sparging (liquid or dry ice).
3. Written approval will be obtained from Ecology prior to the use of chemical treatment other than CO_2 sparging or dry ice.

Monitoring for pH is required for dewatering water generated during excavation beneath the groundwater table. If the measured pH is greater than 9.0, the water generated cannot be treated and infiltrated onsite, rather it shall be discharged to the sanitary sewer under terms of a discharge authorization from the City of Everett or shall be removed from the site for off-site management at an appropriate offsite treatment and disposal facility. A copy of any sanitary sewer discharge authorization from City of Everett is to be kept in Appendix C of this SWPPP.

Method for sampling pH: by Standard Methods or field measurement.

Table 8 – pH Sampling Method

X	pH meter
X	pH test kit
X	Wide range pH indicator paper

Other Stormwater Quality Sampling (4.3)

In addition to turbidity and pH, the April 2021 Proposed Agreed Order Parameters Memorandum (Aspect Consulting 2021, included in Appendix G) recommended that the following parameters be included for monitoring in a CSWGP Agreed Order for the Port’s planned project:

- Total metals arsenic, copper, lead, nickel, and zinc by U.S. Environmental Protection Agency (EPA) 200.8 and mercury by EPA 1631E
- Total polychlorinated biphenyls (PCBs) by EPA 608.3
- Carcinogenic polycyclic aromatic hydrocarbons (cPAHs) by EPA 625.1, that individually are:
    - Benzo(a)anthracene
    - Benzo(b)fluoranthene
    - Benzo(k)fluoranthene
    - Benzo(a)pyrene
    - Chrysene
    - Dibenzo(a-h)anthracene
    - Indeno(1,2,3-cd)pyrene.

Discharge to 303(d) or Total Maximum Daily Load (TMDL) Waterbodies (5.0)

The construction stormwater management plan is for infiltration of all construction stormwater, in which case the impairment of receiving water body is not applicable. However, Port Gardner, East Waterway, adjacent to the project Site is currently listed as impaired for sediment (see map in Appendix F for reference). Therefore, this section of the SWPPP will be updated if there is a change in stormwater management such that there is an expected chance of construction stormwater discharge to East Waterway. In that event, Section S8 of the Permit would apply, including weekly sampling of turbidity with a numeric effluent limit (not benchmark) of 25 NTU.

Reporting and Record Keeping (6.0)

Record Keeping (6.1)

Site Log Book (6.1.1)

A site log book will be maintained for all on-site construction activities and will include:

- A record of the implementation of the SWPPP and other permit requirements
- Site inspections
- Sample logs

Records Retention (6.1.2)

Records will be retained during the life of the project and for a minimum of three (3) years following the termination of permit coverage in accordance with Special Condition S5.C of the CSWGP. The current version of the CSWGP can be downloaded from the link listed in Appendix E.

Permit documentation to be retained on-site:

- CSWGP
- Permit Coverage Letter
- SWPPP
- Site Log Book

Permit documentation will be provided within 14 days of receipt of a written request from Ecology. A copy of the SWPPP or access to the SWPPP will be provided to the public when requested in writing in accordance with Special Condition S5.G.2.b of the CSWGP.

Updating the SWPPP (6.1.3)

The SWPPP will be modified if:

- Found ineffective in eliminating or significantly minimizing pollutants in stormwater discharges from the site.
- There is a change in design, construction, operation, or maintenance at the construction site that has, or could have, a significant effect on the discharge of pollutants to waters of the State.

The SWPPP will be modified within seven (7) days if inspection(s) or investigation(s) determine additional or modified BMPs are necessary for compliance. An updated timeline for BMP implementation will be prepared.

Reporting (6.2)

Discharge Monitoring Reports (6.2.1)

Cumulative soil disturbance is one (1) acre or larger; therefore, Discharge Monitoring Reports (DMRs) will be submitted to Ecology monthly. If there was no discharge during a given monitoring period the DMR will be submitted as required, reporting "No Discharge". The DMR due date is fifteen (15) days following the end of each calendar month.

DMRs will be reported online through Ecology's WQWebDMR System.

To sign up for WQWebDMR go to:
https://www.ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Water-quality-permits-guidance/WQWebPortal-guidance

Notification of Noncompliance (6.2.2)

If any of the terms and conditions of the permit is not met, and the resulting noncompliance may cause a threat to human health or the environment, the following actions will be taken:

1. Ecology will be notified within 24-hours of the failure to comply by calling the applicable Regional office ERTS phone number (Regional office numbers listed below).
2. Immediate action will be taken to prevent the discharge/pollution or otherwise stop or correct the noncompliance. If applicable, sampling and analysis of any noncompliance will be repeated immediately and the results submitted to Ecology within five (5) days of becoming aware of the violation.
3. A detailed written report describing the noncompliance will be submitted to Ecology within five (5) days, unless requested earlier by Ecology.

Specific information to be included in the noncompliance report is found in Special Condition S5.F.3 of the CSWGP.

Anytime turbidity sampling indicates turbidity is 250 NTUs or greater, the Ecology Regional office will be notified by phone within 24 hours of analysis as required by Special Condition S5.A of the CSWGP. The current version of the CSWGP can be downloaded from the link listed in Appendix E.

- Northwest Region at (425) 649-7000 for Island, King, Kitsap, San Juan, Skagit, Snohomish, or Whatcom County

Include the following information:

1. Your name and / Phone number
2. Permit number
3. City / County of project
4. Sample results
5. Date / Time of call
6. Date / Time of sample
7. Project name

In accordance with Special Condition S4.D.5.b of the CSWGP, the Ecology Regional office will be notified if chemical treatment other than CO_2 sparging is planned for adjustment of high pH water.

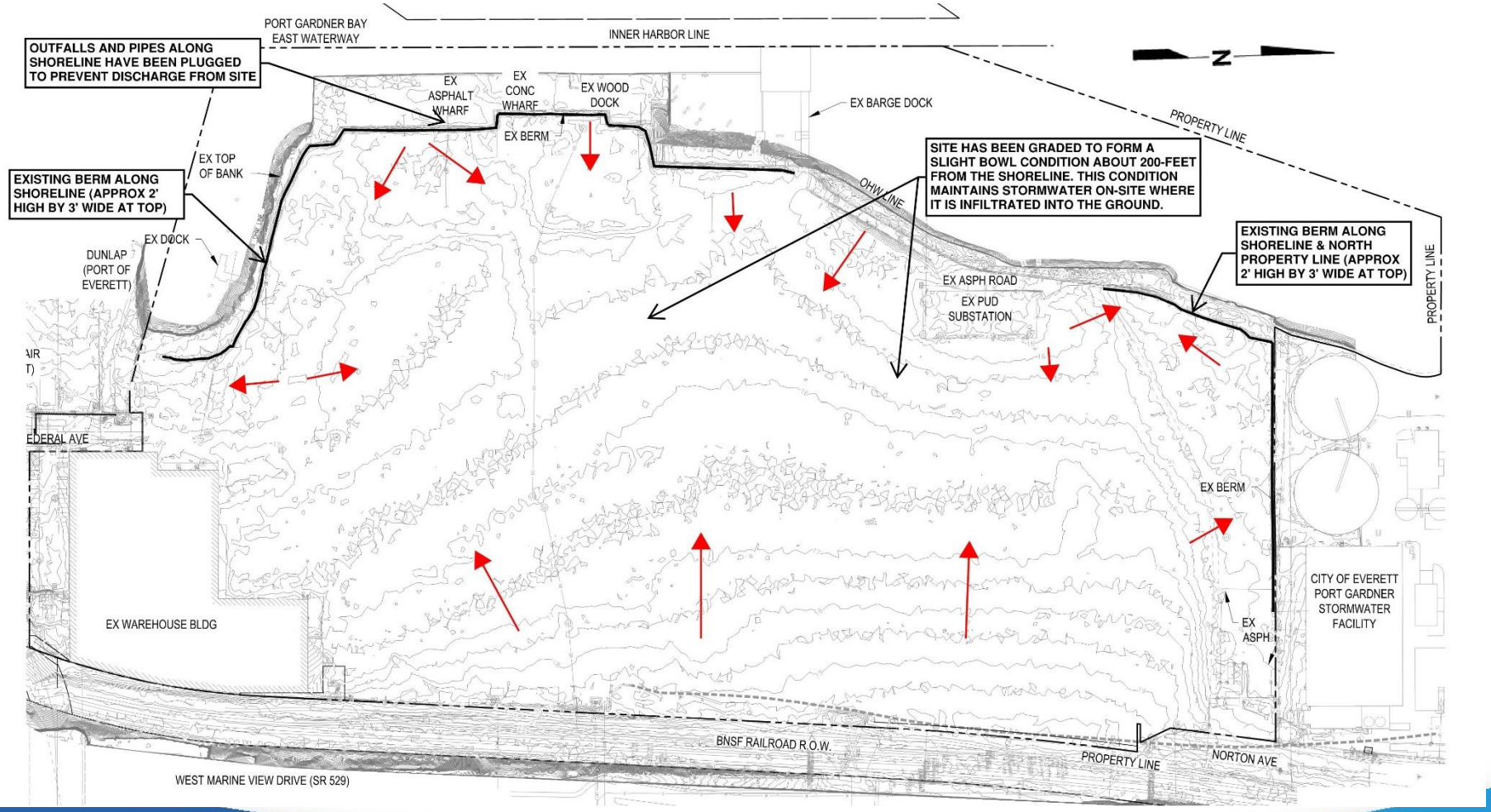
Appendix/Glossary

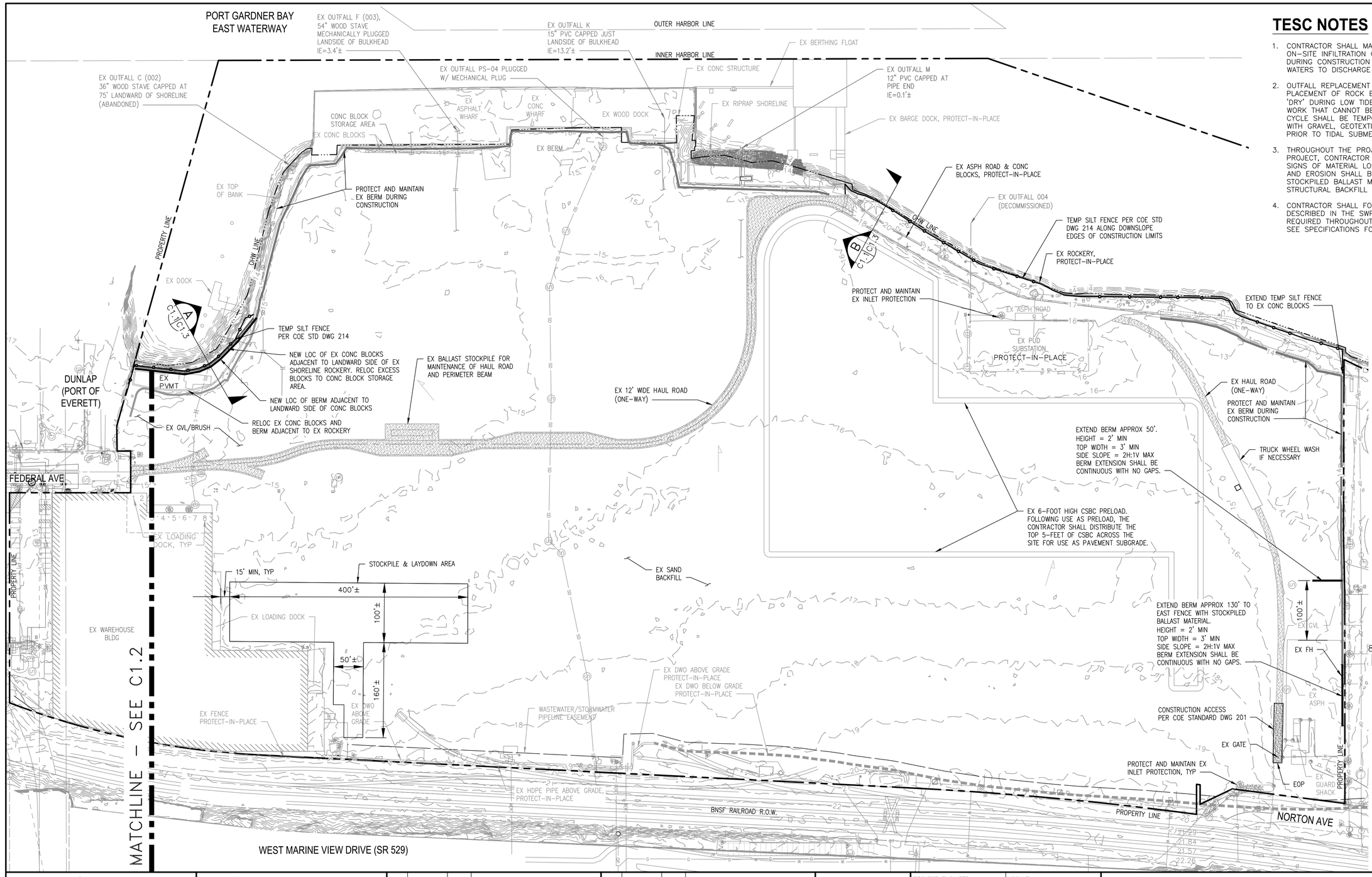
A. Site Maps
B. BMP Details
C. Correspondence
D. Site Inspection Form
E. Construction Stormwater General Permit (CSWGP)
F. 303(d) List Waterbodies / TMDL Waterbodies Information
G. Contaminated Site Information
H. Engineering Calculations

APPENDIX A

Site Maps

Existing Conditions Site Plan





TESC NOTES

1. CONTRACTOR SHALL MANAGE AND MAINTAIN EXISTING ON-SITE INFILTRATION OF ALL ON-SITE STORMWATER DURING CONSTRUCTION AND SHALL NOT ALLOW SURFACE WATERS TO DISCHARGE FROM THE SITE.
2. OUTFALL REPLACEMENT WORK – ALL EXCAVATION AND PLACEMENT OF ROCK BELOW OHW WILL OCCUR IN THE 'DRY' DURING LOW TIDE WITHIN A SINGLE TIDE CYCLE. WORK THAT CANNOT BE COMPLETED IN A SINGLE TIDE CYCLE SHALL BE TEMPORARILY COVERED AND STABILIZED WITH GRAVEL, GEOTEXTILE OR OTHER APPROVED METHODS PRIOR TO TIDAL SUBMERSION.
3. THROUGHOUT THE PROJECT DURATION AND AT END OF PROJECT, CONTRACTOR SHALL REVIEW PERIMETER BERM FOR SIGNS OF MATERIAL LOSS AND EROSION. MATERIAL LOSS AND EROSION SHALL BE REPAIRED WITH ON-SITE STOCKPILED BALLAST MATERIAL PROVIDED BY THE PORT OR STRUCTURAL BACKFILL IMPORTED BY CONTRACTOR.
4. CONTRACTOR SHALL FOLLOW ALL TESC MEASURES DESCRIBED IN THE SWPPP AND UPDATE THE SWPPP AS REQUIRED THROUGHOUT THE DURATION OF THE CONTRACT. SEE SPECIFICATIONS FOR FURTHER REQUIREMENS.

LEGEND

- GROUND SLOPE DIRECTION
- TEMP INLET PROTECTION PER COE STD DWG 210
- EX TEMP INLET PROTECTION
- TEMP SILT FENCE PER COE STD DWG 214

N

80' 0 80' 160'
40' 120'

SCALE: 1"=80'

CALL 48 HOURS BEFORE YOU DIG DIAL 811

VERT DATUM: NAVD 88
CONV TO MLLW = NAVD88+2.03
HORZ DATUM: NAD 83/91

IF SHEET IS LESS THAN 22x34 REDUCE SCALE ACCORDINGLY

FOR CITY REVIEW

Port of EVERETT
P.O. BOX 538
EVERETT, WA 98206
(425) 259-3164

kpff
1601 5th Avenue, Suite 1300
Seattle, Washington 98101
(206) 382-0600 Fax (206) 382-0500
PROJECT NO. 1600120

NO.	DATE	BY	REVISION
1	05/07/2021	NW	FOR CITY REVIEW

NO.	DATE	BY	REVISION

PROJECT ENGINEER: N. WATSON	SCALE: 1" = 80'
DESIGNED BY: J. BECKER	DATE: 05/07/2021
DRAWN BY: K. EDWARDS, D. YU	CHECKED BY: N. WATSON
APPROVED BY:	

PORT OF EVERETT

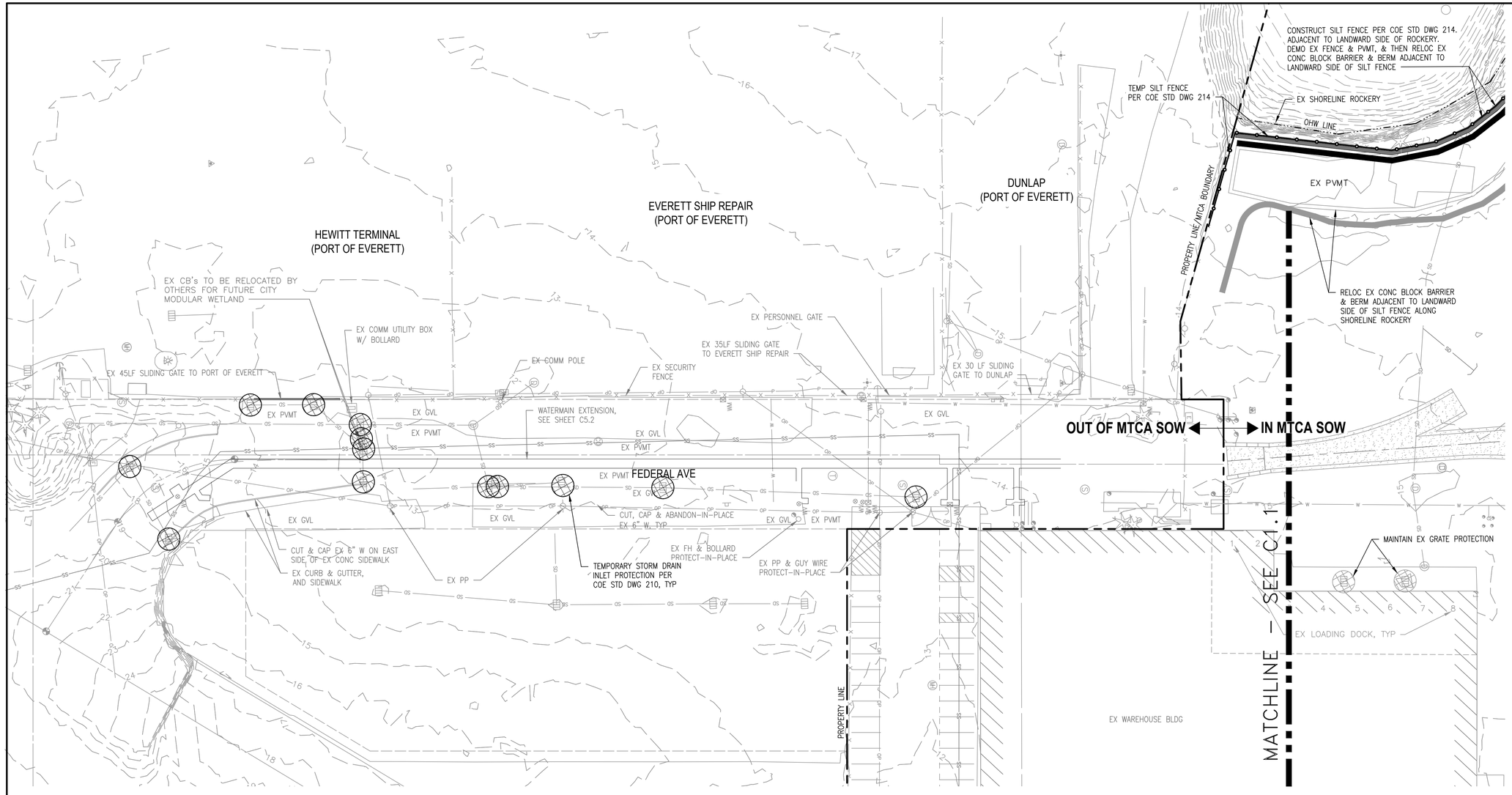
NORTON TERMINAL DEVELOPMENT & MTCA 3RD INTERIM ACTION TEMPORARY EROSION AND SEDIMENT CONTROL PLAN

DWG. NO. **C1.1**

CIP NO. 1-8-900-05

PROJECT NO. MT-NT-2021-02.2

SHEET NO. XX OF XX



TESC NOTES

1. CONTRACTOR SHALL INSTALL AND MAINTAIN TESC BMPS AS SHOWN DURING TRENCHING AND OTHER CONSTRUCTION ON FEDERAL AVENUE THAT DISTURB EXISTING PAVEMENT. SEE SPECIFICATIONS FOR FURTHER REQUIREMENTS.

LEGEND

- GROUND SLOPE DIRECTION
- TEMP INLET PROTECTION PER COE STD DWG 210
- EX TEMP INLET PROTECTION
- TEMP SILT FENCE PER CITY STD DWG 214

N

30' 0 30' 60'
15' 45'

SCALE: 1"=30'

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HORZ DATUM: NAD 83/91

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PROJECT NO. 1600120

NO.	DATE	BY	REVISION
1	05/07/2021	NW	FOR CITY REVIEW

NO.	DATE	BY	REVISION

PROJECT ENGINEER: N. WATSON	SCALE: 1" = 30'
DESIGNED BY: J. BECKER	DATE: 05/07/2021
DRAWN BY: K. EDWARDS, D. YU	CHECKED BY: N. WATSON
APPROVED BY:	

PORT OF EVERETT

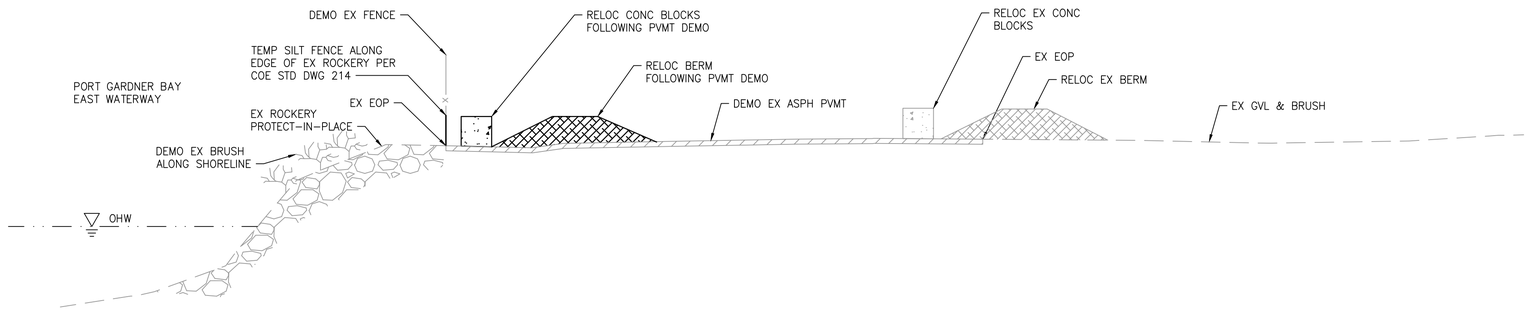
NORTON TERMINAL DEVELOPMENT & MTCA 3RD INTERIM ACTION TEMPORARY EROSION AND SEDIMENT CONTROL PLAN

DWG. NO. **C1.2**

CIP NO. 1-8-900-05

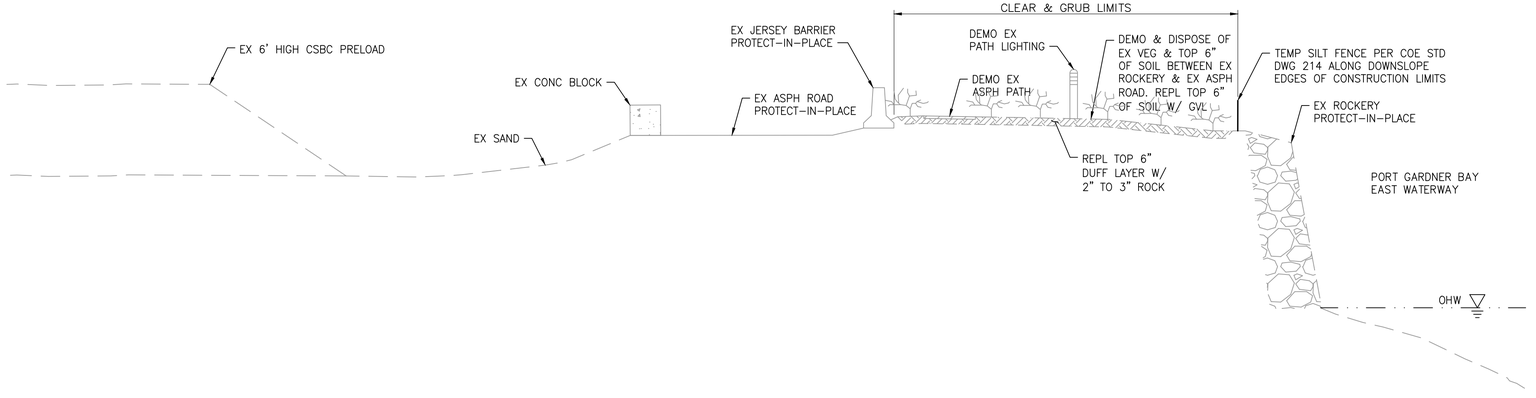
PROJECT NO. MT-NT-2021-02.2

SHEET NO. XX OF XX



A SECTION

C1.1 | C1.3 SCALE: 1" = 5' HORIZ, 1"=5' VERT



B SECTION

C1.1 | C1.3 SCALE: 1" = 5' HORIZ, 1"=5' VERT

5' 0 5' 10'
2.5' 7.5'

CALL 48 HOURS BEFORE YOU DIG DIAL 811

VERT DATUM: NAVD 88
CONV TO MLLW = NAVD88+2.03
HORZ DATUM: NAD 83/91

IF SHEET IS LESS THAN 22x34 REDUCE SCALE ACCORDINGLY

FOR CITY REVIEW

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PROJECT NO. 1600120

NO.	DATE	BY	REVISION
1	05/07/2021	NW	FOR CITY REVIEW

NO.	DATE	BY	REVISION

PROJECT ENGINEER: N. WATSON	SCALE: AS SHOWN
DESIGNED BY: J. BECKER	DATE: 05/07/2021
DRAWN BY: K. EDWARDS, D. YU	CHECKED BY: N. WATSON
APPROVED BY:	

PORT OF EVERETT

NORTON TERMINAL DEVELOPMENT & MTCA 3RD INTERIM ACTION TEMPORARY EROSION AND SEDIMENT CONTROL SECTIONS

DWG. NO. **C1.3**
CIP NO. 1-8-900-05
PROJECT NO. MT-NT-2021-02.2
SHEET NO. XX OF XX

NOTES

1. REFER TO SPECIFICATIONS FOR PIPE MATERIAL

PORT GARDNER BAY
EAST WATERWAY

EX OUTFALL F (003), 54" WOOD STAVE MECHANICALLY PLUGGED LANDSIDE OF BULKHEAD IE=3.4'±

EX OUTFALL K 15" PVC CAPPED JUST LANDSIDE OF BULKHEAD IE=13.2'±

OUTER HARBOR LINE

INNER HARBOR LINE

EX BERTHING FLOAT

EX OUTFALL C (002) 36" WOOD STAVE CAPPED AT 75' LANDWARD OF SHORELINE (ABANDONED)

EX OUTFALL PS-04 PLUGGED W/ MECHANICAL PLUG

EX CONC STRUCTURE

EX OUTFALL M 12" PVC CAPPED AT PIPE END IE=0.1'±

EX ASPHALT WHARF

EX CONC WHARF

EX WOOD DOCK

EX RIPRAP SHORELINE

EX BARGE DOCK, PROTECT-IN-PLACE

CONC BLOCK STORAGE AREA

EX CONC BLOCKS

EX BERM

REPL EX 12" PVC/21" WOOD STAVE OUTFALL WITH NEW 36" OUTFALL IE=6.56'

PROPERTY LINE

STORMWATER LIFT STATION CONTROL PANEL

TRENCH DRAIN HIGH POINT RIM=16.02 IE=15.41

EX OUTFALL 004 (DECOMMISSIONED)

CESF STORMWATER TREATMENT SYSTEM

COMM POLE, TYP

EX TOP OF BANK

REPL EX OUTFALL A WITH NEW 18" OUTFALL

TRECH DRAIN HIGH POINT RIM=16.02 IE=15.41

RIM=16.02 IE=14.49 TD IE=13.02 (12")

FLOW STORMWATER SS/LIFT STATION SYSTEM

TRENCH DRAIN CB RIM=16.02 IE=14.49 TD IE=13.02 (12")

OHW LINE

PROPOSED OUTFALL A

EX DOCK

TD-1 410LF TRENCH DRAIN

290LF TRENCH DRAIN

TD-2 138 TRENCH DRAIN

EX 21" WOOD STAVE PIPE CAPPED W APPROX 75' LANDWARD OF BULKHEAD

DECOMMISSIONED PS04 PLUGGED W/ CDF AT EACH MH

EX ASPH ROAD

CB TYPE 1 RIM=15.00 IE=12.26 (8" E) IE=11.62 (12" S)

EX ROCK BULKHEAD

TRENCH DRAIN CB RIM=14.90 IE=13.37 TD IE=11.90 (12")

PROPOSED 18" ALUMINUM CMP TO REPLACE EX 10" DUCTILE IRON OUTFALL

CARGO CONTAINER CONTAINMENT AREA

TRENCH DRAIN CB RIM=15.80 IE=13.37 TD IE=10.80 (12")

TRENCH DRAIN HIGH POINT RIM=15.80 IE=15.19

CB TYPE 2, 48" DIA RIM=16.60 IE=10.09 (12" N)

DUNLAP (PORT OF EVERETT)

TRENCH DRAIN HIGH POINT RIM=15.10 IE=14.49

CB TYPE 2, 48" DIA RIM=15.02 IE=10.86 (12")

TRENCH DRAIN, TYP

TRENCH DRAIN HIGH POINT RIM=15.80 IE=14.49

10'x15' DUMPSTER & RECYCLE AREA

10'x46' LONGSHOREMAN TRAILER (FOR RESTROOM/SHOWER)

PROPOSED STORM DRAIN PIPE, TYP

TD-4

TD-3

24" SD

TD-3

266LF TRENCH DRAIN

180LF CONCRETE GUTTER

226LF TRENCH DRAIN

336LF TRENCH DRAIN

282LF TRENCH DRAIN

55LF TRENCH DRAIN

4 PARKING STALLS (1 ADA & 3 STANDARD STALLS)

TRECH DRAIN CB RIM=14.90 IE=13.77 TD IE=11.20 (12")

TRENCH DRAIN CB TYPE 2, 48" DIA RIM=15.80 IE=13.37 TD IE=10.40 (18")

FEDERAL AVE

NT SOUTH GATE & WAREHOUSE GATE

EX LOADING DOCK, TYP

10'x30' LONGSHOREMAN TRAILER (FOR BREAKROOM/OFFICE)

CITY OF EVERETT PORT GARDNER STORMWATER FACILITY

FUTURE MARITIME TENANT

A
C2.1, C3.1 C3.11

WAREHOUSE TENANT LEASEHOLD

112LF TRENCH DRAIN

CONC BLOCK BARRIER W/ REFLECTIVE POLES ALONG EDGE OF FULL-DEPTH PVMT

TD-5

336LF TRENCH DRAIN

282LF TRENCH DRAIN

55LF TRENCH DRAIN

FUTURE PUD SUBSTATION

CB TYPE 1 RIM=16.32 IE=13.32

CB TYPE 1 RIM=15.92 IE=12.92

192LF CONC GUTTER

TRENCH DRAIN HIGH POINT RIM=18.03 IE=17.42

EX WAREHOUSE BLDG

EX LOADING DOCK

EX GVL

3' TO 4' HIGH CONC BLOCK WALL

CB TYPE 1 RIM=XX.XX IE=12.40

CONC GUTTER, TYP

EX DWO ABOVE GRADE PROTECT-IN-PLACE

EX DWO BELOW GRADE PROTECT-IN-PLACE

242LF-12" SD, S=0.3%

240LF-12" SD, S=0.3%

FUTURE RR SIDING TRACK 2 NIC

EX DWO ABOVE GRADE

EX FENCE PROTECT-IN-PLACE

CB TYPE 1 RIM=20.30 IE=17.30

WASTEWATER/STORMWATER PIPELINE EASEMENT

CB TYPE 1 RIM=20.30 IE=16.58

CB TYPE 1 RIM=20.30 IE=16.58 12" N IE=15.85 12" S IE=15.85 12" W

361LF CONC GUTTER

CB TYPE 1 RIM=20.30 IE=17.30

30' WIDE ASPH TRANSITION RAMP AT 5% SLOPE, TYP 3 LOCATIONS

EX ASPH

EX GUARD SHACK

EX HDPE PIPE ABOVE GRADE, PROTECT-IN-PLACE

B
C2.1, C3.1 C3.12

BNSF RAILROAD R.O.W.

C
C2.1, C3.1 C3.13

PROPERTY LINE

NORTON AVE

WEST MARINE VIEW DRIVE (SR 529)

N

80' 0 80' 160'
40' 120'

SCALE: 1"=80'

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VERT DATUM: NAVD 88
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DESIGNED BY: J. BECKER	DATE: 05/07/2021
DRAWN BY: K. EDWARDS, D. YU	CHECKED BY: N. WATSON
APPROVED BY:	

PORT OF EVERETT

NORTON TERMINAL DEVELOPMENT & MTCA 3RD INTERIM ACTION STORMWATER OVERALL PLAN

DWG. NO. **C4.1**

CIP NO. 1-8-900-05

PROJECT NO. MT-NT-2021-02.2

SHEET NO. XX OF XX

APPENDIX B

BMP Detail

BMP C106: Wheel Wash

Purpose

Wheel washes reduce the amount of sediment transported onto paved roads by washing dirt from the wheels of motor vehicles prior to the motor vehicles leaving the construction site.

Conditions of Use

- Use a wheel wash when BMP C105: Stabilized Construction Access is not preventing sediment from being tracked off site.
- Wheel washing is generally an effective BMP when installed with careful attention to topography. For example, a wheel wash can be detrimental if installed at the top of a slope abutting a right-of-way where the water from the dripping truck can run unimpeded into the street.
- Pressure washing combined with an adequately sized and surfaced pad with direct drainage to a large 10-foot x 10-foot sump can be very effective.
- Wheel wash wastewater is not stormwater. It is commonly called process water, and must be discharged to a separate on-site treatment system that prevents discharge to waters of the State, or to the sanitary sewer with local sewer district approval.
- Wheel washes may use closed-loop recirculation systems to conserve water use.
- Wheel wash wastewater shall not include wastewater from concrete washout areas.
- When practical, the wheel wash should be placed in sequence with BMP C105: Stabilized Construction Access. Locate the wheel wash such that vehicles exiting the wheel wash will enter directly onto BMP C105: Stabilized Construction Access. In order to achieve this, BMP C105: Stabilized Construction Access may need to be extended beyond the standard installation to meet the exit of the wheel wash.

Design and Installation Specifications

Suggested details are shown in Figure II-3.2: Wheel Wash. The Local Permitting Authority may allow other designs. A minimum of 6 inches of asphalt treated base (ATB) over crushed base material or 8 inches over a good subgrade is recommended to pave the wheel wash.

Use a low clearance truck to test the wheel wash before paving. Either a belly dump or lowboy will work well to test clearance.

Keep the water level from 12 to 14 inches deep to avoid damage to truck hubs and filling the truck tongues with water.

Midpoint spray nozzles are only needed in extremely muddy conditions.

Wheel wash systems should be designed with a small grade change, 6- to 12-inches for a 10-foot-wide pond, to allow sediment to flow to the low side of pond to help prevent re-suspension of sediment. A drainpipe with a 2- to 3-foot riser should be installed on the low side of the pond to allow for easy cleaning and refilling. Polymers may be used to promote coagulation and flocculation in a closed-loop system. Polyacrylamide (PAM) added to the wheel wash water at a rate of 0.25 - 0.5 pounds per 1,000 gallons of water increases effectiveness and reduces cleanup time. If PAM is already being used for dust or erosion control and is being applied by a water truck, the same truck can be used to change the wash water.

Maintenance Standards

The wheel wash should start out each day with fresh water.

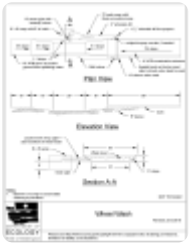
The wheel wash water should be changed a minimum of once per day. On large earthwork jobs where more than 10-20 trucks per hour are expected, the wheel wash water will need to be changed more often.

Approved as Functionally Equivalent

Ecology has approved products as able to meet the requirements of this BMP. The products did not pass through the Technology Assessment Protocol – Ecology (TAPE) process. Local jurisdictions may choose not to accept these products, or may require additional testing prior to consideration for local use. Products that Ecology has approved as functionally equivalent are available for review on Ecology's website at:

https://ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Stormwater-permittee-guidance-resources/Emerging-stormwater-treatment-technologies

Figure II-3.2: Wheel Wash



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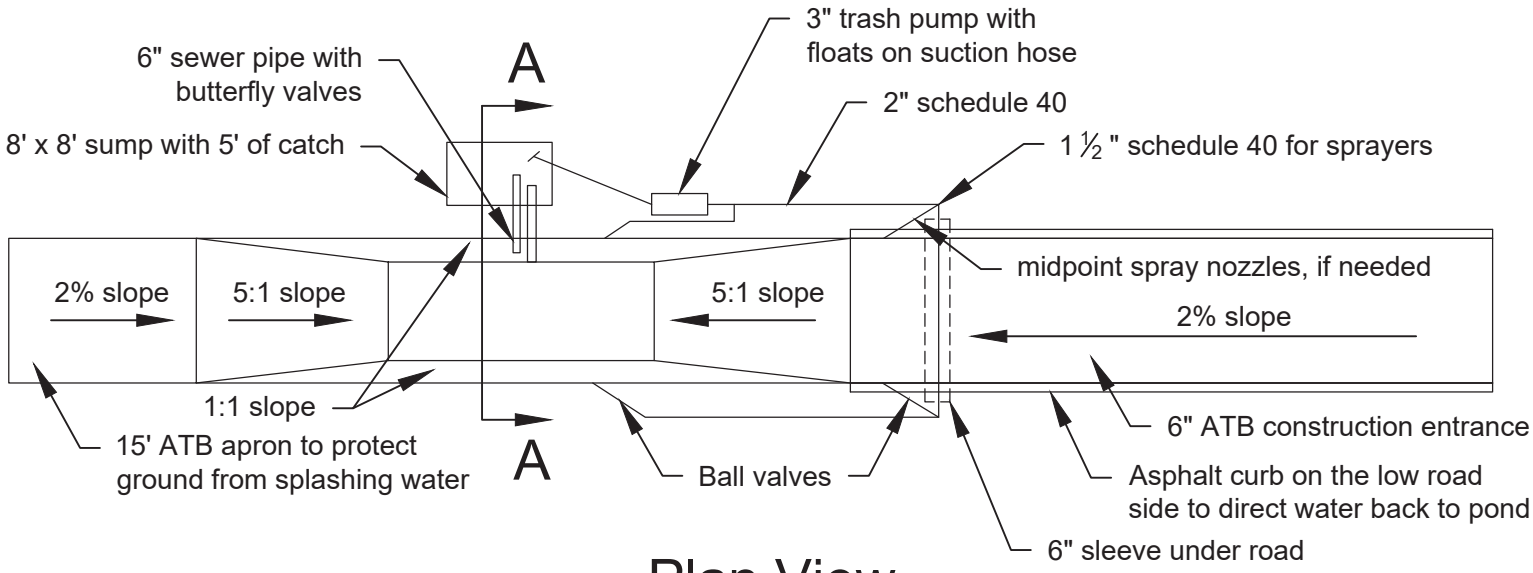
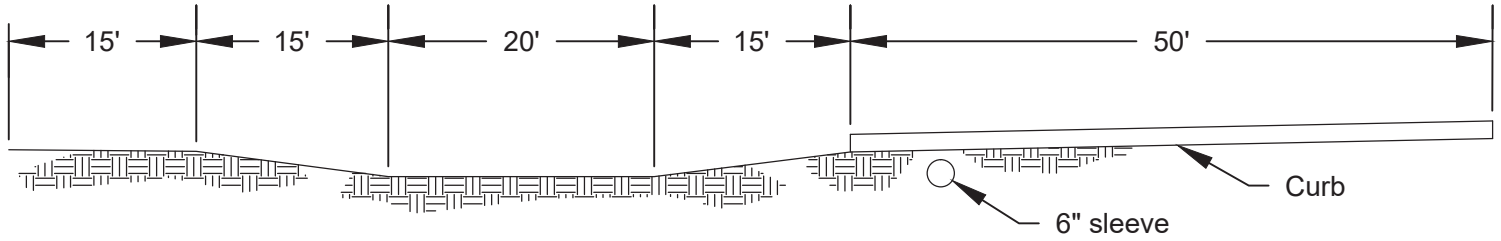
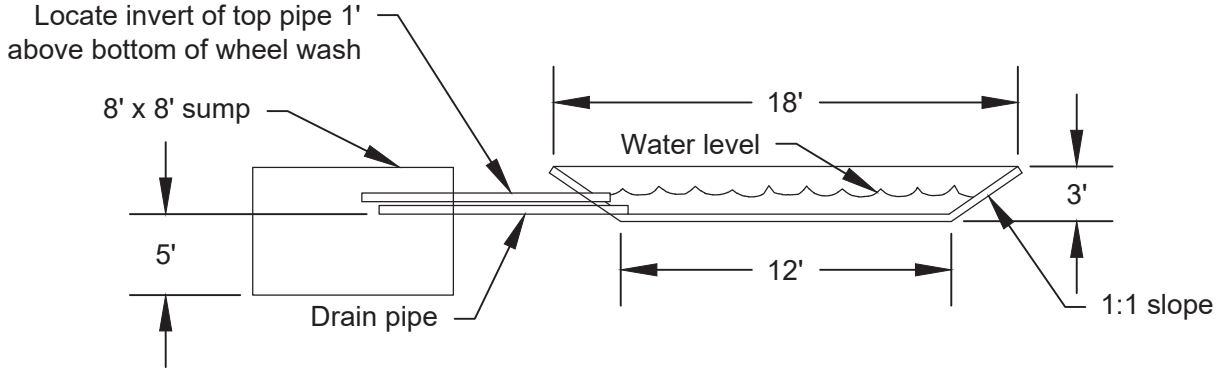


Plan View



Elevation View



Section A-A

Notes:

1. Build 8' x 8' sump to accomodate cleaning by trackhoe.

NOT TO SCALE

DEPARTMENT OF ECOLOGY
State of Washington

Wheel Wash

Revised June 2016

BMP C151: Concrete Handling

Purpose

Concrete work can generate process water and slurry that contain fine particles and high pH, both of which can violate water quality standards in the receiving water. Concrete spillage or concrete discharge to waters of the State is prohibited. Use this BMP to minimize and eliminate concrete, concrete process water, and concrete slurry from entering waters of the State.

Conditions of Use

Any time concrete is used, utilize these management practices. Concrete construction project components include, but are not limited to:

- Curbs
- Sidewalks
- Roads
- Bridges
- Foundations
- Floors
- Runways

Disposal options for concrete, in order of preference are:

1. Off-site disposal
2. Concrete wash-out areas (see BMP C154: Concrete Washout Area)
3. De minimus washout to formed areas awaiting concrete

Design and Installation Specifications

- Wash concrete truck drums at an approved off-site location or in designated concrete washout areas only. Do not wash out concrete trucks onto the ground (including formed areas awaiting concrete), or into storm drains, open ditches, streets, or streams. Refer to BMP C154: Concrete Washout Area for information on concrete washout areas.

- Return unused concrete remaining in the truck and pump to the originating batch plant for recycling. Do not dump excess concrete on site, except in designated concrete washout areas as allowed in BMP C154: Concrete Washout Area.

- Wash small concrete handling equipment (e.g. hand tools, screeds, shovels, rakes, floats, trowels, and wheelbarrows) into designated concrete washout areas or into formed areas awaiting concrete pour.
- At no time shall concrete be washed off into the footprint of an area where an infiltration feature will be installed.
- Wash equipment difficult to move, such as concrete paving machines, in areas that do not directly drain to natural or constructed stormwater conveyance or potential infiltration areas.
- Do not allow washwater from areas, such as concrete aggregate driveways, to drain directly (without detention or treatment) to natural or constructed stormwater conveyances.
- Contain washwater and leftover product in a lined container when no designated concrete washout areas (or formed areas, allowed as described above) are available. Dispose of contained concrete and concrete washwater (process water) properly.
- Always use forms or solid barriers for concrete pours, such as pilings, within 15-feet of surface waters.
- Refer to BMP C252: Treating and Disposing of High pH Water for pH adjustment requirements.
- Refer to the Construction Stormwater General Permit (CSWGP) for pH monitoring requirements if the project involves one of the following activities:
    - Significant concrete work (as defined in the CSWGP).
    - The use of soils amended with (but not limited to) Portland cement-treated base, cement kiln dust or fly ash.
    - Discharging stormwater to segments of water bodies on the 303(d) list (Category 5) for high pH.

Maintenance Standards

Check containers for holes in the liner daily during concrete pours and repair the same day.

Washington State Department of Ecology
2019 Stormwater Management Manual for Western Washington (2019 SWMMWW)
Publication No.19-10-021

BMP C153: Material Delivery, Storage, and Containment

Purpose

Prevent, reduce, or eliminate the discharge of pollutants to the stormwater system or watercourses from material delivery and storage. Minimize the storage of hazardous materials on-site, store materials in a designated area, and install secondary containment.

Conditions of Use

Use at construction sites with delivery and storage of the following materials:

- Petroleum products such as fuel, oil and grease
- Soil stabilizers and binders (e.g., Polyacrylamide)
- Fertilizers, pesticides and herbicides
- Detergents
- Asphalt and concrete compounds
- Hazardous chemicals such as acids, lime, adhesives, paints, solvents, and curing compounds
- Any other material that may be detrimental if released to the environment

Design and Installation Specifications

- The temporary storage area should be located away from vehicular traffic, near the construction entrance(s), and away from waterways or storm drains.
- Safety Data Sheets (SDS) should be supplied for all materials stored. Chemicals should be kept in their original labeled containers.
- Hazardous material storage on-site should be minimized.
- Hazardous materials should be handled as infrequently as possible.
- During the wet weather season (Oct 1 – April 30), consider storing materials in a covered area.
- Materials should be stored in secondary containments, such as an earthen dike, horse trough, or even a children’s wading pool for non-reactive materials such as detergents, oil, grease, and paints. Small amounts of material may be secondarily contained in “bus boy” trays or concrete mixing trays.

- Do not store chemicals, drums, or bagged materials directly on the ground. Place these items on a pallet and, when possible, within secondary containment.
- If drums must be kept uncovered, store them at a slight angle to reduce ponding of rainwater on the lids to reduce corrosion. Domed plastic covers are inexpensive and snap to the top of drums, preventing water from collecting.
- Liquids, petroleum products, and substances listed in 40 CFR Parts 110, 117, or 302 shall be stored in approved containers and drums and shall not be overfilled. Containers and drums shall be stored in temporary secondary containment facilities.
- Temporary secondary containment facilities shall provide for a spill containment volume able to contain 10% of the total enclosed container volume of all containers, or 110% of the capacity of the largest container within its boundary, whichever is greater.
- Secondary containment facilities shall be impervious to the materials stored therein for a minimum contact time of 72 hours.
- Sufficient separation should be provided between stored containers to allow for spill cleanup and emergency response access.
- During the wet weather season (Oct 1 – April 30), each secondary containment facility shall be covered during non-working days, prior to and during rain events.
- Keep material storage areas clean, organized and equipped with an ample supply of appropriate spill clean-up material (spill kit).
- The spill kit should include, at a minimum:
    - 1-Water Resistant Nylon Bag
    - 3-Oil Absorbent Socks 3”x 4’
    - 2-Oil Absorbent Socks 3”x 10’
    - 12-Oil Absorbent Pads 17”x19”
    - 1-Pair Splash Resistant Goggles
    - 3-Pair Nitrile Gloves
    - 10-Disposable Bags with Ties
    - Instructions

Maintenance Standards

- Secondary containment facilities shall be maintained free of accumulated rainwater and spills. In the event of spills or leaks, accumulated rainwater and spills shall be collected and placed into drums. These liquids

shall be handled as hazardous waste unless testing determines them to be non-hazardous.

- Re-stock spill kit materials as needed.

Washington State Department of Ecology
2019 Stormwater Management Manual for Western Washington (2019 SWMMWW)
Publication No.19-10-021

APPENDIX C

Correspondence (Ecology, City of Everett)

APPENDIX D

Site Inspection Form

Port of Everett - Construction Stormwater Site Inspection Form

Project Name **Norton Terminal Development** Permit # **WAR_____** Inspection Date _____ Time _____

Name of Certified Erosion Sediment Control Lead (CESCL)
Print Name: _____

Approximate rainfall amount since the last inspection (in inches): _____

Approximate rainfall amount in the last 24 hours (in inches): _____

Current Weather Clear ☐ Cloudy ☐ Mist ☐ Rain ☐ Wind ☐ Fog ☐

A. Type of inspection: Weekly ☐ Post Storm Event ☐ Other ☐

B. Phase of Active Construction (*check all that apply*):

Pre Construction/installation of erosion/sediment controls	☐	Clearing/Demo/Grading	☐	Infrastructure/storm/roads	☐
Concrete pours	☐	Vertical Construction/buildings	☐	Utilities	☐
Offsite improvements	☐	Site temporary stabilized	☐	Final stabilization	☐

C. Questions:

1. Were all areas of construction and discharge points inspected?	Yes ___	No ___
2. Did you observe the presence of suspended sediment, turbidity, discoloration, or oil sheen	Yes ___	No ___
3. Was a water quality sample taken during inspection? (*refer to permit conditions S4 & S5*)	Yes ___	No ___
4. Was there a turbid discharge 250 NTU or greater, or Transparency 6 cm or less?*	Yes ___	No ___
5. If yes to #4 was it reported to Ecology?	Yes ___	No ___
6. Is pH sampling required? pH range required is 6.5 to 8.5.	Yes ___	No ___

If answering yes to a discharge, describe the event. Include when, where, and why it happened; what action was taken, and when.

_____

_____

_____

_____

*If answering yes to # 4 record NTU/Transparency with continual sampling daily until turbidity is 25 NTU or less/ transparency is 33 cm or greater.

Sampling Results: Date: _____

Parameter	Method (circle one)	Result			Other/Note
		NTU	cm	pH	
Turbidity	tube, meter, laboratory				
pH	Paper, kit, meter				

Port of Everett - Construction Stormwater Site Inspection Form

D. Check the observed status of all items. Provide "Action Required "details and dates.

Element #	Inspection	BMPs Inspected			BMP needs maintenance	BMP failed	Action required (describe in section F)
		yes	no	n/a			
1 Clearing Limits	Before beginning land disturbing activities are all clearing limits established with Construction area perimeter fencing, ecology blocks, and earthen berms?						
2 Construction Access	Construction access stabilized with quarry spalls to prevent sediment from being tracked onto roads?						
	Sediment tracked onto the road way fully cleaned at the end of the day or more frequent as necessary?						
3 Control Flow Rates	Unpaved areas still effectively infiltrating all onsite stormwater to prevent any discharge to surface water?						
4 Sediment Controls	Stabilized construction access still adequate to prevent sediment from being tracked onto roads and wheel wash still not needed?						
	All perimeter sediment controls (ecology block barrier and berms) installed, and maintained in accordance with the Stormwater Pollution Prevention Plan (SWPPP).						
5 Stabilize Soils	Have exposed un-worked soils been stabilized with effective BMP to prevent erosion and sediment deposition?						
	Are stabilized stockpiles located away from drain inlet, waterways, and drainage channels?						
	Have soils been stabilized at the end of the shift, before a holiday or weekend if needed based on the weather forecast?						

Port of Everett - Construction Stormwater Site Inspection Form

Element #	Inspection	BMPs Inspected			BMP needs maintenance	BMP failed	Action required (describe in section F)
		yes	no	n/a			
6 – Protect Slopes	Not applicable						
7 Drain Inlets	Storm drain inlet protection provided in Federal Avenue during watermain extension work?						
	Inlet protection at warehouse loading dock area maintained?						
	New storm trench drain rim 9" above gravel during construction?						
8 – Stabilize Outlets	Outfall replacements stabilized with a riprap energy dissipator?						
9 Control Pollutants	Waste materials/demolition debris handled & disposed of to prevent stormwater contamination?						
	Cover and 110% secondary containment volume provided for all chemicals, liquid & petroleum products, and other material?						
	Contaminated surfaces cleaned immediately after a spill incident?						
	All stormwater contained by berms and infiltrated onsite?						
	Any dewatering water pH 8.5-9.0 adjusted to 6.5-8.5 w/ CO_2, or if >9.0 discharged to sanitary sewer or hauled offsite for treatment?						
	If wheel wash, wastewater is handled and disposed of properly?						
10 Control Dewatering	Concrete washout in designated areas. No washout or excess concrete on the ground.						
	Dewatering has been done to an approved source and in compliance with the SWPPP.						
	Were there any clean non turbid dewatering discharges?						
11 Maintain BMP	Are all temporary and permanent erosion and sediment control BMPs maintained to perform as intended?						

Port of Everett - Construction Stormwater Site Inspection Form

Element #	Inspection	BMPs Inspected			BMP needs maintenance	BMP failed	Action required (describe in section F)
		yes	no	n/a			
12 Manage the Project	Has the project been phased to the maximum degree practicable?						
	Has regular inspection, monitoring and maintenance been performed as required by the permit?						
	Has the SWPPP been updated, implemented and records maintained?						
13 Protect LID	Not applicable.						

E. Check all areas that have been inspected. ✔

All in place BMPs ☐ All disturbed soils ☐ All concrete wash out area ☐ All material storage areas ☐
All discharge locations ☐ All equipment storage areas ☐ All construction entrances/exits ☐

F. Elements checked "Action Required" (section D) describe corrective action to be taken. List the element number; be specific on location and work needed. Document, initial, and date when the corrective action has been completed and inspected.

Element #	Description and Location	Action Required	Completion Date	Initials

Attach additional page if needed

Sign the following certification:

"I certify that this report is true, accurate, and complete, to the best of my knowledge and belief"

Inspected by: (print) _____ (Signature) _____ Date: _____

Title/Qualification of Inspector: _____

Construction Stormwater General Permit (CSWGP)

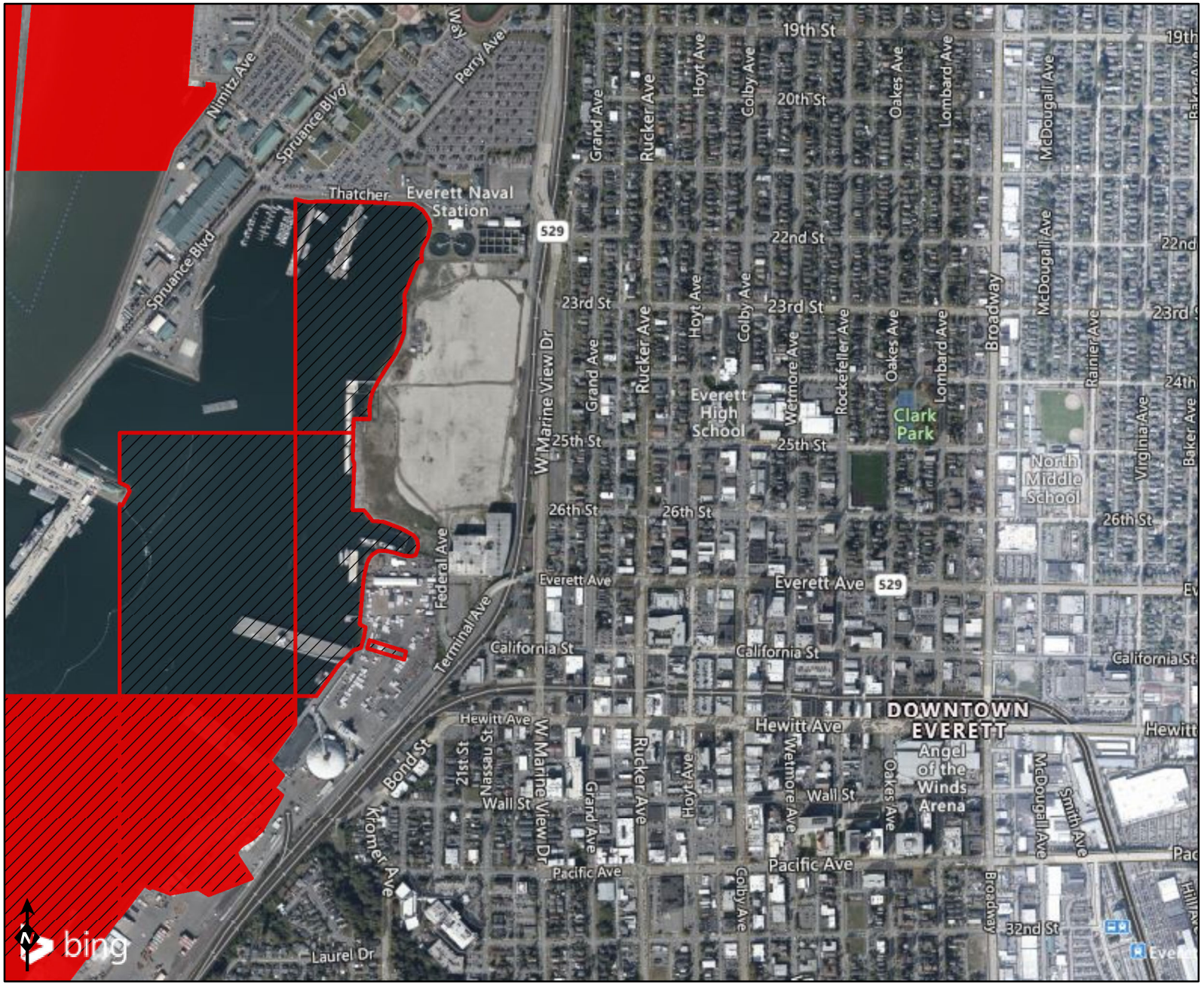
Download latest copy of CSWGP from:
https://www.ecology.wa.gov/Regulations-Permits/Permits-certifications/Stormwater-general-permits/Construction-stormwater-permit

APPENDIX F

303(d) List Waterbodies / TMDL Waterbodies Information

May 17, 2021

Port Gardner, East Waterway, Everett, WA



Assessed Water/Sediment

Water
- Category 5 - 303d
- Category 4C
- Category 4B
- Category 4A
- Category 2
- Category 1

Sediment
- Category 5 - 303d
- Category 4C
- Category 4B
- Category 4A
- Category 2
- Category 1

Miles
0 0.125 0.25 0.5

DEPARTMENT OF ECOLOGY
State of Washington

DEPARTMENT OF ECOLOGY State of Washington

Washington State Water Quality Assessment
303(d)/305(b) List

Listing ID: 504391

Main Listing Information

Listing ID: 504391 **Waterbody Name:** PORT GARDNER AND INNER EVERETT HARBOR **Medium:** Sediment **Parameter:** Sediment Bioassay **WQI Project:**
None
Designated Use: None **Collection Date:** 10/6/2008

Current Category:
5

View Category History

Assessment Unit

Assessment Unit ID: 47122J2I1_SW **County:** Snohomish **WRIA:** 7 - Snohomish

Basis Statement

Data from the Department of Ecology's Environmental Information Management (EIM) system samples
H=PortGardner_08*A1-10*A1-10-S*10/6/2008
M=NONE
L=NONE
indicate a total of 2 points for 1 samples collected on or before October 6, 2008 exceeds the Sediment Management Standards CSL bioassay criterion. This grid is in an area being investigated for sediment contamination, therefore it is assessed as Category 5. Statute: MTCA. This grid is in an area commonly known as Everett East Waterway. Site to be further investigated.

Remarks

2010: Comment #1009 - old bioassay data; new bioassay data available. Data submitted Apr2010.

Data Sources

No Source Records

Map Link

Map Link

Back To Results

Submit questions or comments about this specific Listing:

***Your Name:**

Your Email:

***Comment/Question:**

Submit

If you wish to comment about something unrelated to this listing, please Contact Us.

APPENDIX G

Contaminated Site Information

Kimberly-Clark Worldwide Site

ExxonMobil ADC Site

Kimberly-Clark Worldwide Site

April 21, 2021

Erik Gerking, Director of Environmental Programs
Port of Everett
1205 Craftsman Way, #200
Everett, Washington 98201

Re: **Recommended Parameters for Administrative Order in Conjunction with Construction Stormwater General Permit Coverage**
Third Interim Action, Kimberly-Clark Worldwide Site Upland Area, Port of Everett
Project No. 210178

Dear Erik:

Aspect Consulting LLC (Aspect) is submitting this letter presenting the chemical compounds that we propose as appropriate parameters for an Administrative Order (AO) in conjunction with coverage under the Construction Stormwater General Permit (CSWGP) to be obtained for Port of Everett's (Port) Third Interim Action under the state Model Toxics Control Act (MTCA) for the Kimberly-Clark Worldwide Site Upland Area (Site). Monitoring for these parameters under the AO is intended to document that the construction activities are not creating a water quality impact to surface waters of the state.

Contamination at the Site upland has been thoroughly investigated under close supervision of Department of Ecology Toxics Cleanup Program (TCP) staff since 2012, including collection of thousands of soil samples, groundwater monitoring at more than 130 monitoring wells, and sampling sediment porewater and seeps along the intertidal shoreline. Figure 1 depicts locations for the hundreds of explorations completed for soil and/or groundwater sampling at the Site.[1] In addition, a pair of MTCA interim actions (2013–2014 and 2020) accomplished substantial cleanup of the Site—specifically removing soil contamination that posed the greatest risk to groundwater quality. Finally, approximately 250,000 tons of demolition debris (crushed concrete predominantly) that created high-pH groundwater was fully removed from the Site in 2020. Following the removal actions, widespread, low-level contamination in soil and groundwater remains across much of the Site. The Port's Third Interim Action will construct a low-permeability pavement section across a portion of the Site that will accelerate recovery of the residual groundwater contamination.

In short, the Site upland has been intensively studied, remedial actions have been carried out to remove grossly contaminated materials, and the remaining contaminants of concern (aka indicator hazardous substances under MTCA) are well defined.

Groundwater at the Site is not considered to be a drinking water source; rather, the highest beneficial use of the groundwater is discharge to marine surface waters of the adjacent East

[1] The explorations shown do not reflect completion of the 2020 interim action. Locations of the 2020 interim actions, including samples collected to verify removal of soil contamination are presented in *Report for Second Interim Action, Kimberly-Clark Worldwide Site Upland Area, Everett, Washington, March 3, 2021, available on Ecology's webpage for the Site at: https://apps.ecology.wa.gov/gsp/CleanupSiteDocuments.aspx?csid=2569.*

Waterway. Accordingly, the MTCA preliminary groundwater cleanup levels for the Site are the most stringent marine surface water quality standards applicable to the Site. This includes standards from Chapter 173-201A Washington Administrative Code (WAC), Clean Water Act Section 304(a), and the federal water quality criteria under 40 Code of Federal Regulations (CFR) 131.45. The Site preliminary cleanup levels (PCLs) for soil and groundwater are presented in Tables 1 and 2, respectively. PCLs were established for all parameters that were detected at the Site; many of those parameters did not have an exceedance of the PCL; thus, Indicator Levels are not necessary for all parameters with PCLs. The principal focus for the MTCA cleanup of the Site uplands, including selection of cleanup levels for both soil and groundwater, is to ensure the uplands are not an ongoing source of contaminants to the East Waterway.

Therefore, we propose that the MTCA contaminants of concern (indicator hazardous substances) determined through the years of investigation and cleanup are likewise appropriate Site-specific parameters for inclusion in the AO for the purpose of protecting surface water quality during the Port's Third Interim Action construction activities that will involve limited handling of the upland soil and groundwater. Tables 3 and 4 respectively present statistical summaries of groundwater data and soil data representative of current conditions following the interim actions and debris removal projects[2], including the exceedance frequency[3] for each compound. The compounds are sorted based on exceedance frequency, from high to low, in the tables.

Accordingly, we recommend that the following parameters, which have an exceedance frequency greater than 5 percent in either soil or groundwater at the Site, be included for monitoring in a CSWGP AO for the Port's planned project (highlighted in Tables 3 and 4):

- pH and turbidity by Standard Methods or field measurement
- Total metals arsenic, copper, lead, nickel, and zinc by U.S. Environmental Protection Agency (EPA) 200.8 and mercury by EPA 1631E
- Total polychlorinated biphenyls (PCBs) by EPA 608.3
- Carcinogenic polycyclic aromatic hydrocarbons (cPAHs)[4] by EPA 625.1, that individually are:
    - Benzo(a)anthracene
    - Benzo(b)fluoranthene
    - Benzo(k)fluoranthene

[2] Some groundwater results in Table 4 were collected from wells within areas excavated during the second interim action in 2020, so are no longer representative of current conditions in those areas.
[3] Equal to the number of samples exceeding the PCL divided by the total number of samples.
[4] The MTCA process establishes a PCL for the Total Toxic Equivalent Concentration (Quotient) of Benzo(a)pyrene (Total cPAHs TEQ) by applying toxicity equivalency factors to and then summing the individual cPAH concentrations. Consistent with standard practice of the Water Quality Program, we recommend establishing Indicator Levels for the individual cPAHs that comprise Total cPAHs TEQ.

- Benzo(a)pyrene
- Chrysene
- Dibenzo(a-h)anthracene
- Indeno(1,2,3-cd)pyrene

Note that PCBs emerged as an indicator hazardous substance for the Site during the 2017 groundwater monitoring, when elevated concentrations were detected in two monitoring wells. Those two locations, hundreds of feet from the shoreline, were subsequently remediated during the 2020 interim action.

As noted in Table 4, hydrogen sulfide and un-ionized ammonia are also contaminants of concern in nearshore groundwater within some areas of the Site. However, both compounds persist only in geochemically reducing (anaerobic) conditions and, upon contact with oxygen, are readily oxidized into nontoxic forms of sulfur and nitrogen, respectively, within minutes. As such, they will not be present at concentrations of concern in stormwater runoff and are not appropriate for inclusion in an AO.

We are available to discuss this further at your convenience.

Limitations

Work for this project was performed for the Port of Everett (Client), and this letter was prepared in accordance with generally accepted professional practices for the nature and conditions of work completed in the same or similar localities, at the time the work was performed. This letter does not represent a legal opinion. No other warranty, expressed or implied, is made.

All reports prepared by Aspect Consulting for the Client apply only to the services described in the Agreement(s) with the Client. Any use or reuse by any party other than the Client is at the sole risk of that party, and without liability to Aspect Consulting. Aspect Consulting's original files/reports shall govern in the event of any dispute regarding the content of electronic documents furnished to others.

Sincerely,

Aspect consulting, LLC

Steve Germiat, LHG
Principal Hydrogeologist
sgermiat@aspectconsulting.com

Owen Reese, PE
Principal Water Resources Engineer
oreese@aspectconsulting.com

Attachments:
Table 1 – Groundwater Preliminary Cleanup Levels
Table 2 – Soil Preliminary Cleanup Levels
Table 3 – Statistical Summary of Groundwater Quality Data Representing Current Site Conditions
Table 4 – Statistical Summary of Soil Quality Data Representing Current Site Conditions
Figure 1 – Explorations Locations Prior to 2020 Interim Action

V:\210178 Port of Everett MIE Stormwater\Deliverables\Indicator Compounds and Levels Letter\Proposed AO Parameters Memo_2021.04.21.docx

TABLES

Table 1. Groundwater Preliminary Cleanup Levels

Project No. 210178, K-C Worldwide Site Upland Area, Everett, Washington

	APPLICABLE GROUNDWATER CRITERIA													
	Marine Surface Water Criteria for Establishing Method B Surface Water Cleanup Levels[a]													
	Aquatic Protection		Human Health Protection											
ANALYTE (BY GROUP)	Surface Water ARAR - Aquatic Life - Ch. 173-201A WAC (ma-wac)	Surface Water ARAR - Aquatic Life - National Recommended WQ Criteria (CWA 304a) (ma-cwa 304a)	Surface Water ARAR - Human Health - National Recommended WQ Criteria (CWA 304a) (hh-cwa 304a)	Surface Water ARAR - Human Health - Ch. 173-201A WAC (hh-wac)	Surface Water ARAR - Human Health - 40 CFR 131.45 (CWA 303c) (hh-cwa 303c)	Surface Water, Method B Human Health, Most Restrictive, Standard Formula (sw-b)	Surface Water, Method B Human Health, Most Restrictive, Adjusted for ARARs[b] (hh)	Surface Water Screening Level for Marine Protection (marine)		Potable Groundwater Screening Level[c] (pot)	Groundwater Screening Level Protective of Vapor Intrusion for Industrial Use (Method C)[a] (vi-c)	Applicable Practical Quantitation Level (PQL)[d] (pql)	Groundwater Preliminary Cleanup Level and Basis	
Total Petroleum Hydrocarbons														
Gasoline Range Hydrocarbons in ug/L										1000		100	1000	*(pot)*
Diesel Range Hydrocarbons in ug/L										500		50	500	*(pot)*
Oil Range Hydrocarbons in ug/L										500		250	500	*(pot)*
TPH (D+O) in ug/L										500		250	500	*(pot)*
Metals														
Antimony in ug/L			640	180	90	1000	90	90	*(hh)*			0.05	90	*(marine)*
Arsenic in ug/L	36	36	0.14	10	0.14	0.098	0.14	5	*footnote e*			0.5	5	*(marine)*
Barium in ug/L										2000		0.5	2000	*(pot)*
Cadmium in ug/L	9.3	7.9				41	41	7.9	*(ma-cwa 304a)*			0.02	7.9	*(marine)*
Chromium (Total) in ug/L						240000	240000	240000	*(hh)*			0.2	240000	*(marine)*
Copper in ug/L	3.1	3.1				2900	2900	3.1	*(ma-wac)*			0.1	3.1	*(marine)*
Lead in ug/L	8.1	8.1						8.1	*(ma-wac)*			0.02	8.1	*(marine)*
Mercury in ug/L	0.025	0.94						0.025	*(ma-wac)*		1.9	0.0005	0.025	*(marine)*
Nickel in ug/L	8.2	8.2	4600	190	100	1100	100	8.2	*(ma-wac)*			0.2	8.2	*(marine)*
Selenium in ug/L	71	71	4200	480	200	2700	200	71	*(ma-wac)*			1	71	*(marine)*
Silver in ug/L	1.9	1.9				26000	26000	1.9	*(ma-wac)*			0.02	1.9	*(marine)*
Thallium in ug/L			0.47	0.27	6.3	0.22	0.22	0.22	*(hh)*			0.02	0.22	*(marine)*
Zinc in ug/L	81	81	26000	2900	1000	17000	1000	81	*(ma-wac)*			0.5	81	*(marine)*
Conventionals														
Formaldehyde in ug/L								1600	*footnote f*			100	1600	*(marine)*
Un-Ionized Ammonia in mg/L	0.035							0.035	*(ma-wac)*			0.01	0.035	*(marine)*
Free (Hydrogen) Sulfide in mg/L		0.002						0.002	*(ma-cwa 304a)*			0.001	0.002	*(marine)*
pH in standard units	7.0 to 8.5	6.5 to 8.5						6.5 to 8.5	*(ma-wac)*				6.5 to 8.5	*(marine)*
Volatile Organic Compounds														
1,1-Dichloroethene in ug/L			20000	4100	4000	23000	4000	4000	*(hh)*		280	0.5	280	*(vi-c)*
1,2,4-Trimethylbenzene in ug/L										80	62	1	62	*(vi-c)*
1,3,5-Trimethylbenzene in ug/L										80	62	1	62	*(vi-c)*
1,4-Dichlorobenzene in ug/L			900	580	200	21	200	200	*(hh)*		49	0.05	49	*(vi-c)*
2-Butanone in ug/L										4800	3,800,000	10	4800	*(pot)*
2-Chlorotoluene in ug/L										160		1	160	*(pot)*
4-Chlorotoluene in ug/L												1		
Acetone in ug/L										7200		10	7200	*(pot)*
Benzene in ug/L			16	1.6	1.6	23	1.6	1.6	*(hh)*		24	0.35	1.6	*(marine)*
cis-1,2-Dichloroethene (DCE) in ug/L										16		0.5	16	*(pot)*
Ethylbenzene in ug/L			130	270	31	6800	31	31	*(hh)*		6100	0.5	31	*(marine)*
Isopropylbenzene in ug/L										800	1600	2	800	*(pot)*
m,p-Xylenes in ug/L										1000	680	0.5	680	*(vi-c)*
Methylene chloride in ug/L			1000	250	100	3600	100	100	*(hh)*		11000	2	100	*(marine)*
n-Propylbenzene in ug/L										800		1	800	*(pot)*
o-Xylene in ug/L										1600	960	0.5	960	*(vi-c)*
p-Isopropyltoluene in ug/L										800	1600	1	800	*(pot)*
sec-Butylbenzene in ug/L										800		1	800	*(pot)*
Styrene in ug/L										100	18000	0.5	100	*(pot)*
tert-Butylbenzene in ug/L										800		1	800	*(pot)*

Table 1. Groundwater Preliminary Cleanup Levels

Project No. 210178, K-C Worldwide Site Upland Area, Everett, Washington

	APPLICABLE GROUNDWATER CRITERIA													
	Marine Surface Water Criteria for Establishing Method B Surface Water Cleanup Levels[a]													
	Aquatic Protection		Human Health Protection											
ANALYTE (BY GROUP)	Surface Water ARAR - Aquatic Life - Ch. 173-201A WAC (ma-wac)	Surface Water ARAR - Aquatic Life - National Recommended WQ Criteria (CWA 304a) (ma-cwa 304a)	Surface Water ARAR - Human Health - National Recommended WQ Criteria (CWA 304a) (hh-cwa 304a)	Surface Water ARAR - Human Health - Ch. 173-201A WAC (hh-wac)	Surface Water ARAR - Human Health - 40 CFR 131.45 (CWA 303c) (hh-cwa 303c)	Surface Water, Method B Human Health, Most Restrictive, Standard Formula (sw-b)	Surface Water, Method B Human Health, Most Restrictive, Adjusted for ARARs[b] (hh)	Surface Water Screening Level for Marine Protection (marine)		Potable Groundwater Screening Level[c] (pot)	Groundwater Screening Level Protective of Vapor Intrusion for Industrial Use (Method C)[a] (vi-c)	Applicable Practical Quantitation Level (PQL)[d] (pql)	Groundwater Preliminary Cleanup Level and Basis	
Toluene in ug/L			520	410	130	19000	130	130	(hh)		34000	0.5	130	(marine)
Vinyl chloride in ug/L			1.6	0.26		3.7	0.26	0.26	(hh)		3.5	0.2	0.26	(marine)
Xylenes, total										1000	680	3	680	(vi-c)
Polycyclic Aromatic Hydrocarbons (PAHs)														
Acenaphthene in ug/L			90	110	30	640	30	30	(hh)			0.012	30	(marine)
Acenaphthylene in ug/L			90	110	30	640	30	30	(hh)			0.012	30	(marine)
Anthracene in ug/L			400	4600	100	26000	100	100	(hh)			0.012	100	(marine)
Benzo(g,h,i)perylene in ug/L			30	460	8	2600	8	8	(hh)			0.012	8	(marine)
Fluoranthene in ug/L			20	16	6	90	6	6	(hh)			0.012	6	(marine)
Fluorene in ug/L			70	610	10	3500	10	10	(hh)			0.012	10	(marine)
Phenanthrene in ug/L			400	4600	100	26000	100	100	(hh)			0.012	100	(marine)
Pyrene in ug/L			30	460	8	2600	8	8	(hh)			0.012	8	(marine)
1-Methylnaphthalene in ug/L										1.5		0.05	1.5	(pot)
2-Methylnaphthalene in ug/L										32		0.05	32	(pot)
Naphthalene in ug/L						4700	4700	4700	(hh)		89	0.012	89	(vi-c)
Benz(a)anthracene in ug/L												0.01		
Benzo(a)pyrene in ug/L												0.01		
Benzo(b)fluoranthene in ug/L												0.01		
Benzo(k)fluoranthene in ug/L												0.01		
Chrysene in ug/L												0.01		
Dibenzo(a,h)anthracene in ug/L												0.01		
Indeno(1,2,3-cd)pyrene in ug/L												0.01		
Total cPAHs TEQ in ug/L			0.00013	0.0021	0.000016	0.22	0.000016	0.000016	(hh)			0.015	0.015	(pql)
Other Semivolatile Organics														
2,4,6-Trichlorophenol in ug/L			2.8	0.28	0.28	3.9	0.28	0.28	(hh)			0.5	0.5	(pql)
2,4-Dimethylphenol in ug/L			3000	97	97	550	97	97	(hh)			0.5	97	(marine)
3 & 4 Methylphenol										400		1	400	(pot)
Benzoic acid in ug/L										64000		2.5	64000	(pot)
Benzyl alcohol in ug/L										800		0.5	800	(pot)
Benzyl butyl phthalate in ug/L			0.1	0.58	0.013	8.2	0.013	0.013	(hh)			0.5	0.5	(pql)
Bis(2-ethylhexyl) phthalate in ug/L			0.37	0.25	0.046	3.6	0.046	0.046	(hh)			0.8	0.8	(pql)
Carbazole in ug/L												0.5		
Dibenzofuran in ug/L										16		0.05	16	(pot)
Diethyl phthalate in ug/L			600	5000	200	28000	200	200	(hh)			0.5	200	(marine)
Dimethyl phthalate in ug/L			2000	130000	600		600	600	(hh)			0.5	600	(marine)
Di-n-butyl phthalate in ug/L			30	510	8	2900	8	8	(hh)			0.5	8	(marine)
Pentachlorophenol in ug/L	7.9	7.9	0.04	0.1	0.002	1.5	0.002	0.002	(hh)			0.5	0.5	(pql)
Phenol in ug/L			300000	200000	70000	560000	70000	70000	(hh)			0.5	70000	(marine)

Table 1. Groundwater Preliminary Cleanup Levels

Project No. 210178, K-C Worldwide Site Upland Area, Everett, Washington

	APPLICABLE GROUNDWATER CRITERIA												
	Marine Surface Water Criteria for Establishing Method B Surface Water Cleanup Levels[a]												
	Aquatic Protection		Human Health Protection										
ANALYTE (BY GROUP)	Surface Water ARAR - Aquatic Life - Ch. 173-201A WAC (ma-wac)	Surface Water ARAR - Aquatic Life - National Recommended WQ Criteria (CWA 304a) (ma-cwa 304a)	Surface Water ARAR - Human Health - National Recommended WQ Criteria (CWA 304a) (hh-cwa 304a)	Surface Water ARAR - Human Health - Ch. 173-201A WAC (hh-wac)	Surface Water ARAR - Human Health - 40 CFR 131.45 (CWA 303c) (hh-cwa 303c)	Surface Water, Method B Human Health, Most Restrictive, Standard Formula (sw-b)	Surface Water, Method B Human Health, Most Restrictive, Adjusted for ARARs[b] (hh)	Surface Water Screening Level for Marine Protection (marine)		Potable Groundwater Screening Level[c] (pot)	Groundwater Screening Level Protective of Vapor Intrusion for Industrial Use (Method C)[a] (vi-c)	Applicable Practical Quantitation Level (PQL)[d] (pql)	Groundwater Preliminary Cleanup Level and Basis	
Polychlorinated Biphenyls (PCBs)													
Total PCBs in ug/L (Sum of Aroclors)	0.03	0.03	6.4E-05	1.7E-04	7.0E-06	1.0E-04	7.0E-06	7.0E-06	*(hh)*			0.05	0.05	*(pql)*
Total PCBs in ug/L (Sum of Congeners)	0.03	0.03	6.4E-05	1.7E-04	7.0E-06	1.0E-04	7.0E-06	7.0E-06	*(hh)*			0.0091	0.0091	*(pql)*
Dioxins/Furans													
Total 2,3,7,8 TCDD (TEQ) in ug/L			5.1E-09	6.4E-08	1.4E-08	1.0E-08	5.10E-09	5.1E-09	*(hh)*			6.3E-05	6.3E-05	*(pql)*

Notes:

Preliminary cleanup levels are presented for compounds that were detected in either soil or groundwater during collection of data used in the RI (2012-present).

ug/L - micrograms per liter

a Criteria values taken from Ecology's online CLARC database (updated July 2015).

b Surface water Method B human health levels established using the standard Method B formula in MTCA were compared to state and federal human-health-based ARARs. The most stringent ARAR that is sufficiently protective under MTCA (i.e., less than a risk of 10^{-5} and a hazard quotient of 1) is selected as the screening level for human health protection (*hh*). If there are multiple contaminants, then the cumulative risk and HI must not exceed a risk of 10-5 or a hazard index of 1.

c Upland Area groundwater is not a practicable source of potable groundwater, but, for the purposes of the RI, potable groundwater screening levels are applied for those compounds without a marine surface water screening level,.

d Analytical method reporting limits. PQLs for total cPAH (TEQ) and total TCDD (TEQ) are adjusted for TEFs.

e Based on background groundwater concentrations in Washington state (WAC 173-340-900, Table 720-1).

f Formaldehyde value based on protection of aquatic life (Anchor Environmental, 2008). Value is coincidentally equal to potable water screening level.

Table 2. Soil Preliminary Cleanup Levels

Project No. 210178, K-C Worldwide Site Upland Area, Everett, Washington

ANALYTE (BY GROUP)	Groundwater Preliminary Cleanup Level (ug/L) (see Table 1)	APPLICABLE SOIL CRITERIA: Soil Protective of Groundwater: Calculated Values: Unsaturated Soil Concentration Protective of Leachability to Groundwater for Industrial Land Use (mg/kg)[b] (gwl-u)	Saturated Soil Concentration Protective of Leachability to Groundwater for Industrial Land Use (mg/kg)[c] (gwl-s)	Groundwater Exceedances Confirmed Empirically for Analyte?[d] (Y = yes; blank = no)	Soil, Method A, Industrial Land Use, Table Value (mg/kg)[e] (mA)	Soil Protective of Human Direct Contact[f]: Soil, Method C, Most-Restrictive Standard Formula Value, Direct Contact, Industrial Land Use (mg/kg)[a] (mC)	Natural Background Concentration (mg/kg)[g] (back)	Practical Quantitation Level (PQL) (mg/kg)[h] (pql)	Soil Preliminary Cleanup Level (mg/kg) and Basis: Unsaturated Soil	Saturated Soil
Total Petroleum Hydrocarbons [k]										
Gasoline Range Hydrocarbons	1000			Y	100			5	100 (mA)	100 (mA)
Diesel Range Hydrocarbons	500			Y	2000			25	2000 (mA)	2000 (mA)
Oil Range Hydrocarbons	500			Y	2000			100	2000 (mA)	2000 (mA)
TPH (D+O)	500			Y	2000			100	2000 (mA)	2000 (mA)
Metals										
Antimony	90	81	4.1			1400		1	1400 (mC)	1400 (mC)
Arsenic	5	2.9	0.15	Y		88	20	1	20 (back)	20 (back)
Barium	2000	1600	83			700000		1	700000 (mC)	700000 (mC)
Cadmium	7.9	1.1	0.055			3500	1	1	3500 (mC)	3500 (mC)
Chromium (Total)	240000	4800000	240000			5.3E+06	48	1	5300000 (mC)	5300000 (mC)
Copper	3.1	1.4	0.069	Y		140000	36	1	36 (back)	36 (back)
Lead	8.1	1600	81	Y	1000		24	1	1000 (mA)	81 (gwl-s)
Mercury	0.025	0.026	0.0013	Y		1050	0.07	0.1	0.1 (pql)	0.1 (pql)
Nickel	8.2	11	0.54	Y		70000	48	1	48 (back)	48 (back)
Selenium	71	7.4	0.38			18000		1	18000 (mC)	18000 (mC)
Silver	1.9	0.32	0.016			18000		1	18000 (mC)	18000 (mC)
Thallium	0.22	0.31	0.016			35		1	35 (mC)	35 (mC)
Zinc	81	100	5	Y		1100000	85	1	100 (gwl-u)	85 (back)
Volatile Organic Compounds										
1,1-Dichloroethene	280			Y		180000		0.05	180000 (mC)	180000 (mC)
1,2,4-Trimethylbenzene	62					35000		0.05	35000 (mC)	35000 (mC)
1,3,5-Trimethylbenzene	62					35000		0.05	35000 (mC)	35000 (mC)
2-Butanone	4800					2100000		0.5	2100000 (mC)	2100000 (mC)
2-Chlorotoluene	160					70000		0.05	70000 (mC)	70000 (mC)
4-Chlorotoluene								0.05		
Acetone	7200					3200000		0.05	3200000 (mC)	3200000 (mC)
Benzene	1.6					2400		0.05	2400 (mC)	2400 (mC)
cis-1,2-Dichloroethene (DCE)	16					7000		0.05	7000 (mC)	7000 (mC)
Ethylbenzene	31					350000		0.05	350000 (mC)	350000 (mC)
Isopropylbenzene	800					350000		0.05	350000 (mC)	350000 (mC)
m,p-Xylenes	680			Y		700000		0.1	700000 (mC)	700000 (mC)
Methylene chloride	100					21000		0.05	21000 (mC)	21000 (mC)
n-Propylbenzene	800					350000		0.05	350000 (mC)	350000 (mC)
o-Xylene	960			Y		700000		0.05	700000 (mC)	700000 (mC)
p-Isopropyltoluene	800					350000		0.05	350000 (mC)	350000 (mC)
sec-Butylbenzene	800					350000		0.05	350000 (mC)	350000 (mC)
Styrene	100					700000		0.05	700000 (mC)	700000 (mC)
tert-Butylbenzene	800					350000		0.05	350000 (mC)	350000 (mC)
Toluene	130					280000		0.05	280000 (mC)	280000 (mC)

Table 2. Soil Preliminary Cleanup Levels

Project No. 210178, K-C Worldwide Site Upland Area, Everett, Washington

ANALYTE (BY GROUP)	Groundwater Preliminary Cleanup Level (ug/L) (see Table 1)	APPLICABLE SOIL CRITERIA: Soil Protective of Groundwater: Calculated Values: Unsaturated Soil Concentration Protective of Leachability to Groundwater for Industrial Land Use (mg/kg)[b] (gwl-u)	Saturated Soil Concentration Protective of Leachability to Groundwater for Industrial Land Use (mg/kg)[c] (gwl-s)	Groundwater Exceedances Confirmed Empirically for Analyte?[d] (Y = yes; blank = no)	Soil, Method A, Industrial Land Use, Table Value (mg/kg)[e] (mA)	Soil Protective of Human Direct Contact[f]: Soil, Method C, Most-Restrictive Standard Formula Value, Direct Contact, Industrial Land Use (mg/kg)[a] (mC)	Natural Background Concentration (mg/kg)[g] (back)	Practical Quantitation Level (PQL) (mg/kg)[h] (pql)	Soil Preliminary Cleanup Level (mg/kg) and Basis: Unsaturated Soil	Saturated Soil
Vinyl chloride	0.26			Y		88		0.05	88 (mC)	88 (mC)
Xylenes (total)	680			Y		700000		0.05	700000 (mC)	700000 (mC)
Polycyclic Aromatic Hydrocarbons (PAHs)										
Acenaphthene	30			Y		210000		0.03	210000 (mC)	210000 (mC)
Acenaphthylene	30					210000		0.03	210000 (mC)	210000 (mC)
Anthracene	100					1100000		0.03	1100000 (mC)	1100000 (mC)
Benzo(g,h,i)perylene	8					110000		0.03	110000 (mC)	110000 (mC)
Fluoranthene	6					140000		0.03	140000 (mC)	140000 (mC)
Fluorene	10					140000		0.03	140000 (mC)	140000 (mC)
Phenanthrene	100					1100000		0.03	1100000 (mC)	1100000 (mC)
Pyrene	8					110000		0.03	110000 (mC)	110000 (mC)
1-Methylnaphthalene	1.5					4500		0.03	4500 (mC)	4500 (mC)
2-Methylnaphthalene	32			Y		14000		0.03	14000 (mC)	14000 (mC)
Naphthalene	89			Y		70000		0.03	70000 (mC)	70000 (mC)
Benz(a)anthracene								0.01		
Benzo(a)pyrene								0.01		
Benzo(b)fluoranthene								0.01		
Benzo(k)fluoranthene								0.01		
Chrysene								0.01		
Dibenzo(a,h)anthracene								0.01		
Indeno(1,2,3-cd)pyrene								0.01		
Total cPAHs TEQ	0.015			Y		131		0.015	131 (mC)	131 (mC)
Other Semivolatile Organics										
1,4-Dichlorobenzene	49					24000		0.03	24000 (mC)	24000 (mC)
2,4-Dimethylphenol	97					70000		0.3	70000 (mC)	70000 (mC)
3 & 4 Methylphenol	400					175000		0.18	175000 (mC)	175000 (mC)
Benzoic acid	64000					14000000		3	14000000 (mC)	14000000 (mC)
Benzyl alcohol	800					350000		0.03	350000 (mC)	350000 (mC)
Benzyl butyl phthalate	0.5					69000		0.03	69000 (mC)	69000 (mC)
Bis(2-ethylhexyl) phthalate	0.8					9400		0.3	9400 (mC)	9400 (mC)
Carbazole								0.06		
Dibenzofuran	16			Y		3500		0.03	3500 (mC)	3500 (mC)
Diethyl phthalate	200					2800000		0.03	2800000 (mC)	2800000 (mC)
Dimethyl phthalate	600							0.03		
Di-n-butyl phthalate	8					350000		0.03	350000 (mC)	350000 (mC)
Pentachlorophenol	0.5			Y		330		0.3	330 (mC)	330 (mC)
Phenol	70000					1100000		0.3	1100000 (mC)	1100000 (mC)

Table 2. Soil Preliminary Cleanup Levels

Project No. 210178, K-C Worldwide Site Upland Area, Everett, Washington

		APPLICABLE SOIL CRITERIA								
		Soil Protective of Groundwater							Soil Preliminary Cleanup Level (mg/kg) and Basis	
		Calculated Values				Soil Protective of Human Direct Contact[f]				
ANALYTE (BY GROUP)	Groundwater Preliminary Cleanup Level (ug/L) (see Table 1)	Unsaturated Soil Concentration Protective of Leachability to Groundwater for Industrial Land Use (mg/kg)[b] *(gwl-u)*	Saturated Soil Concentration Protective of Leachability to Groundwater for Industrial Land Use (mg/kg)[c] *(gwl-s)*	Groundwater Exceedances Confirmed Empirically for Analyte?[d] (Y = yes; blank = no)	Soil, Method A, Industrial Land Use, Table Value (mg/kg)[e] *(mA)*	Soil, Method C, Most-Restrictive Standard Formula Value, Direct Contact, Industrial Land Use (mg/kg)[a] *(mC)*	Natural Background Concentration (mg/kg)[g] *(back)*	Practical Quantitation Level (PQL) (mg/kg)[h] *(pql)*	Unsaturated Soil	Saturated Soil
Polychlorinated Biphenyls (PCBs)										
Total PCBs	0.05	2.4	1.2	Y	10	66		0.10	2.4 *(gwl-u)*	1.2 *(gwl-s)*
Dioxins/Furans										
Total 2,3,7,8 TCDD (TEQ)[j]	6.3E-05					1.7E-03	5.2E-06	5.0E-06	1.7E-03 *(mC)*	1.7E-03 *(mC)*

Notes:

Preliminary cleanup levels are presented for compounds that were detected in either soil or groundwater during collection of data used in the RI (2012-present).

a Values obtained from Ecology's CLARC database, July 2015 update.

b Calculated values from three-phase model, per MTCA Equation 747-1, with groundwater value (Cw) as most stringent land-use-specific groundwater cleanup level, site-specific f_{oc} = 0.0078, and MTCA-default dilution factor = 20. WAC 173-340-747 provides multiple additional means to evaluate soil concentrations protective of groundwater.

c Calculated values from three-phase model, per MTCA Equation 747-1, with groundwater value (Cw) as most stringent land-use-specific groundwater cleanup level, site-specific f_{oc} = 0.0078, and MTCA-default dilution factor = 1. WAC 173-340-747 provides multiple additional means to evaluate soil concentrations protective of groundwater.

d If the existing empirical groundwater data demonstrate no groundwater exceedances for a compound, the soil-leachability-to-groundwater pathway is considered incomplete for that compound, and the calculated soil-protective-of-groundwater criteria are not included for establishing that compound's preliminary soil screening levels.

e Because Upland Area groundwater is not a practicable source of drinking water, many Method A soil cleanup levels are not applicable. Method A soil cleanup levels are used for TPH, lead, and arsenic (natural background).

f Direct contact soil cleanup levels are applicable for soils to 15-foot depth.

g Natural background values for metals from Natural Background Soil Metals Concentrations in Washington State (Ecology, 1994), except arsenic which is from MTCA (WAC 173-340-900, Table 720-1). Natural background value for dioxins/furans from Natural Background for Dioxins/Furans in Washington Soils—Technical Memorandum #8 (Ecology, 2010).

h Analytical method reporting limits. PQLs for total cPAH (TEQ) and total TCDD (TEQ) are adjusted for TEFs.

i Total PCBs is the summation of detected aroclors.

j K_{oc} and Hcc values for 2,3,7,8-TCDD are from EPA Regional Screening Level table, and are in the Oak Ridge National Lab Risk Assessment database.

k Area-specific (and petroleum product-specific) Method C soil TPH PCLs developed for selected areas using VPH/EPH data in acordance with WAC 173-340-745(5), as described in the text and Appendix B, are not presented here.

Table 3. Statistical Summary of Groundwater Quality Data Representing Current Site Conditions

Project No. 210178, K-C Worldwide Site Upland Area, Everett, Washington

Group	Analyte	Number of Samples	Number of Detections	Detection Frequency	Max Detected Concentration	Units	(PCLs) (all exposure pathways)			
							Groundwater PCL	Number of Locations with Exceedances	Number of Samples with Exceedances	Exceedance Frequency
Conventionals	Hydrogen Sulfide	8	8	100%	0.97	mg/L	0.002	6	6	75.0%
PCBAro	Total PCBs (Sum of Aroclors)	3	2	67%	0.084	ug/L	0.04	1	2	66.7%
PCBCong	Total PCBs (sum of congeners)	8	8	100%	0.434	ug/L	0.0091	3	3	37.5%
Metals	Copper	308	293	95%	269	ug/L	3.1	50	112	36.4%
Metals	Arsenic	194	182	94%	202	ug/L	5	32	56	28.9%
Metals	Nickel	155	155	100%	308	ug/L	8.2	23	41	26.5%
Conventionals	Un-ionized Ammonia (as N)	82	82	100%	10.7	mg/L	0.035	10	18	22.0%
Metals	Mercury	241	192	80%	4.24	ug/L	0.025	21	45	18.7%
cPAHs	Total cPAHs TEQ	362	82	23%	0.404	ug/L	0.015	20	40	11.0%
Metals	Lead	199	162	81%	121	ug/L	8.1	7	11	5.5%
Metals	Zinc	173	168	97%	356	ug/L	81	3	9	5.2%
VOCs	Vinyl chloride	83	6	7%	0.96	ug/L	0.26	4	4	4.8%
Other SVOCs	Pentachlorophenol	83	3	4%	7.3	ug/L	0.5	2	3	3.6%
TPHs	TPH (D+O Range)	328	100	30%	2500	ug/L	500	4	10	3.0%
Other SVOCs	Dibenzofuran	83	9	11%	62	ug/L	16	1	2	2.4%
VOCs	1,1-Dichloroethene	83	3	4%	5.9	ug/L	3.2	1	2	2.4%
TPHs	Diesel Range Hydrocarbons	328	99	30%	990	ug/L	500	3	6	1.8%
ncPAHs	Naphthalene	377	155	41%	210	ug/L	89	4	6	1.6%
ncPAHs	2-Methylnaphthalene	83	7	8%	37	ug/L	32	1	1	1.2%
Other SVOCs	2,4,6-Trichlorophenol	83	1	1%	0.56	ug/L	0.5	1	1	1.2%
Other SVOCs	Bis(2-ethylhexyl) phthalate	83	1	1%	0.96	ug/L	0.8	1	1	1.2%
TPHs	Oil Range Hydrocarbons	328	4	1%	2200	ug/L	500	1	3	0.9%
TPHs	Gasoline Range Hydrocarbons	207	34	16%	1100	ug/L	1000	1	1	0.5%
Metals	Antimony	54	16	30%	29.6	ug/L	180	0	0	0.0%
Metals	Beryllium	54	5	9%	0.018	ug/L	270	0	0	0.0%
Metals	Cadmium	56	19	34%	0.776	ug/L	8.8	0	0	0.0%
Metals	Chromium (Total)	56	43	77%	110	ug/L	240000	0	0	0.0%
Metals	Selenium	56	19	34%	25.6	ug/L	71	0	0	0.0%
Metals	Silver	56	11	20%	0.031	ug/L	1.9	0	0	0.0%
Metals	Thallium	54	2	4%	0.026	ug/L	0.22	0	0	0.0%
Conventionals	Formaldehyde	2	0	0%	NA	ug/L	1600	0	0	0.0%
ncPAHs	Acenaphthene	362	253	70%	58	ug/L	90	0	0	0.0%
ncPAHs	Acenaphthylene	362	47	13%	0.73	ug/L	90	0	0	0.0%
ncPAHs	Anthracene	362	149	41%	6.4	ug/L	400	0	0	0.0%
ncPAHs	Benzo(g,h,i)perylene	362	14	4%	0.14	ug/L	30	0	0	0.0%
ncPAHs	Fluoranthene	362	184	51%	6.4	ug/L	16	0	0	0.0%
ncPAHs	Fluorene	362	203	56%	35	ug/L	70	0	0	0.0%
ncPAHs	Phenanthrene	362	168	46%	41	ug/L	400	0	0	0.0%
ncPAHs	Pyrene	362	191	53%	4.2	ug/L	30	0	0	0.0%
ncPAHs	1-Methylnaphthalene	9	3	33%	1.1	ug/L	1.5	0	0	0.0%
cPAHs	Benz(a)anthracene	362	64	18%	0.55	ug/L	-	0	0	0.0%
cPAHs	Benzo(a)pyrene	362	35	10%	0.28	ug/L	-	0	0	0.0%
cPAHs	Benzo(b)fluoranthene	361	40	11%	0.3	ug/L	-	0	0	0.0%
cPAHs	Benzo(k)fluoranthene	362	20	6%	0.13	ug/L	-	0	0	0.0%
cPAHs	Chrysene	362	77	21%	0.53	ug/L	-	0	0	0.0%
cPAHs	Dibenzo(a,h)anthracene	362	3	1%	0.047	ug/L	-	0	0	0.0%
cPAHs	Indeno(1,2,3-cd)pyrene	362	17	5%	0.16	ug/L	-	0	0	0.0%
Other SVOCs	1,4-Dioxane	2	0	0%	NA	ug/L	10	0	0	0.0%
Other SVOCs	2,4,5-Trichlorophenol	83	0	0%	NA	ug/L	3600	0	0	0.0%
Other SVOCs	2,4-Dichlorophenol	83	0	0%	NA	ug/L	190	0	0	0.0%
Other SVOCs	2,4-Dimethylphenol	83	4	5%	23	ug/L	97	0	0	0.0%
Other SVOCs	2,4-Dinitrophenol	83	0	0%	NA	ug/L	3500	0	0	0.0%
Other SVOCs	2,4-Dinitrotoluene	83	0	0%	NA	ug/L	3.4	0	0	0.0%
Other SVOCs	2,6-Dinitrotoluene	83	0	0%	NA	ug/L	0.25	0	0	0.0%
Other SVOCs	2-Chloronaphthalene	83	0	0%	NA	ug/L	1000	0	0	0.0%
Other SVOCs	2-Chlorophenol	83	0	0%	NA	ug/L	100	0	0	0.0%
Other SVOCs	2-Methylphenol	83	0	0%	NA	ug/L	400	0	0	0.0%
Other SVOCs	2-Nitroaniline	83	0	0%	NA	ug/L	160	0	0	0.0%
Other SVOCs	2-Nitrophenol	83	0	0%	NA	ug/L	-	0	0	0.0%
Other SVOCs	3 & 4 Methylphenol	83	5	6%	68	ug/L	400	0	0	0.0%
Other SVOCs	3-Nitroaniline	83	0	0%	NA	ug/L	-	0	0	0.0%
Other SVOCs	4,6-Dinitro-2-methylphenol	83	0	0%	NA	ug/L	-	0	0	0.0%
Other SVOCs	4-Bromophenyl phenyl ether	83	0	0%	NA	ug/L	-	0	0	0.0%
Other SVOCs	4-Chloro-3-methylphenol	83	0	0%	NA	ug/L	-	0	0	0.0%
Other SVOCs	4-Chloroaniline	83	0	0%	NA	ug/L	3	0	0	0.0%
Other SVOCs	4-Chlorophenyl phenyl ether	83	0	0%	NA	ug/L	-	0	0	0.0%
Other SVOCs	4-Nitroaniline	83	0	0%	NA	ug/L	-	0	0	0.0%
Other SVOCs	4-Nitrophenol	83	0	0%	NA	ug/L	-	0	0	0.0%
Other SVOCs	Benzoic acid	80	4	5%	37	ug/L	64000	0	0	0.0%
Other SVOCs	Benzyl alcohol	83	0	0%	NA	ug/L	800	0	0	0.0%
Other SVOCs	Benzyl butyl phthalate	83	0	0%	NA	ug/L	0.5	0	0	0.0%
Other SVOCs	Bis(2-chloro-1-methylethyl) ether	83	0	0%	NA	ug/L	37	0	0	0.0%
Other SVOCs	Bis(2-chloroethoxy)methane	83	0	0%	NA	ug/L	-	0	0	0.0%
Other SVOCs	Bis(2-chloroethyl) ether	83	0	0%	NA	ug/L	0.53	0	0	0.0%
Other SVOCs	Carbazole	83	4	5%	2.3	ug/L	-	0	0	0.0%
Other SVOCs	Diethyl phthalate	83	1	1%	4.1	ug/L	600	0	0	0.0%
Other SVOCs	Dimethyl phthalate	83	0	0%	NA	ug/L	2000	0	0	0.0%
Other SVOCs	Di-n-butyl phthalate	83	1	1%	1	ug/L	30	0	0	0.0%
Other SVOCs	Di-n-octyl phthalate	83	0	0%	NA	ug/L	160	0	0	0.0%
Other SVOCs	Hexachlorobenzene	83	0	0%	NA	ug/L	0.05	0	0	0.0%
Other SVOCs	Hexachlorobutadiene	120	0	0%	NA	ug/L	8.1	0	0	0.0%
Other SVOCs	Hexachlorocyclopentadiene	83	0	0%	NA	ug/L	0.48	0	0	0.0%

Table 3. Statistical Summary of Groundwater Quality Data Representing Current Site Conditions

Project No. 210178, K-C Worldwide Site Upland Area, Everett, Washington

Group	Analyte	Number of Samples	Number of Detections	Detection Frequency	Max Detected Concentration	Units	(PCLs) (all exposure pathways)			
							Groundwater PCL	Number of Locations with Exceedances	Number of Samples with Exceedances	Exceedance Frequency
Other SVOCs	Hexachloroethane	83	0	0%	NA	ug/L	3.3	0	0	0.0%
Other SVOCs	Isophorone	83	0	0%	NA	ug/L	600	0	0	0.0%
Other SVOCs	Nitrobenzene	83	0	0%	NA	ug/L	690	0	0	0.0%
Other SVOCs	N-Nitroso-di-n-propylamine	83	0	0%	NA	ug/L	0.51	0	0	0.0%
Other SVOCs	N-Nitrosodiphenylamine	83	0	0%	NA	ug/L	6	0	0	0.0%
Other SVOCs	Phenol	83	9	11%	77	ug/L	200000	0	0	0.0%
VOCs	Benzene	192	3	2%	0.92	ug/L	1.6	0	0	0.0%
VOCs	Ethylbenzene	192	8	4%	2.6	ug/L	130	0	0	0.0%
VOCs	Toluene	192	4	2%	6.9	ug/L	410	0	0	0.0%
VOCs	m,p-Xylenes	83	2	2%	2.9	ug/L	680	0	0	0.0%
VOCs	o-Xylene	83	3	4%	9.8	ug/L	960	0	0	0.0%
VOCs	Xylenes (total)	180	9	5%	13	ug/L	680	0	0	0.0%
VOCs	1,1,1,2-Tetrachloroethane	83	0	0%	NA	ug/L	1.7	0	0	0.0%
VOCs	1,1,1-Trichloroethane	83	0	0%	NA	ug/L	12000	0	0	0.0%
VOCs	1,1,2,2-Tetrachloroethane	83	0	0%	NA	ug/L	4	0	0	0.0%
VOCs	1,1,2-Trichloroethane	83	0	0%	NA	ug/L	10	0	0	0.0%
VOCs	1,1-Dichloroethane	83	0	0%	NA	ug/L	7.7	0	0	0.0%
VOCs	1,1-Dichloropropene	83	0	0%	NA	ug/L	-	0	0	0.0%
VOCs	1,2,3-Trichlorobenzene	83	0	0%	NA	ug/L	-	0	0	0.0%
VOCs	1,2,3-Trichloropropane	83	0	0%	NA	ug/L	0.5	0	0	0.0%
VOCs	1,2,4-Trichlorobenzene	120	0	0%	NA	ug/L	2	0	0	0.0%
VOCs	1,2,4-Trimethylbenzene	83	2	2%	4.9	ug/L	61	0	0	0.0%
VOCs	1,2-Dibromo-3-chloropropane	83	0	0%	NA	ug/L	2	0	0	0.0%
VOCs	1,2-Dibromoethane (EDB)	83	0	0%	NA	ug/L	0.05	0	0	0.0%
VOCs	1,2-Dichlorobenzene	120	0	0%	NA	ug/L	1300	0	0	0.0%
VOCs	1,2-Dichloroethane (EDC)	83	0	0%	NA	ug/L	37	0	0	0.0%
VOCs	1,2-Dichloropropane	83	0	0%	NA	ug/L	15	0	0	0.0%
VOCs	1,3,5-Trimethylbenzene	83	1	1%	2.2	ug/L	80	0	0	0.0%
VOCs	1,3-Dichlorobenzene	120	0	0%	NA	ug/L	960	0	0	0.0%
VOCs	1,3-Dichloropropane	83	0	0%	NA	ug/L	-	0	0	0.0%
VOCs	1,4-Dichlorobenzene	120	0	0%	NA	ug/L	21	0	0	0.0%
VOCs	2,2-Dichloropropane	83	0	0%	NA	ug/L	-	0	0	0.0%
VOCs	2-Butanone	83	2	2%	12	ug/L	4800	0	0	0.0%
VOCs	2-Chlorotoluene	83	0	0%	NA	ug/L	160	0	0	0.0%
VOCs	2-Hexanone	83	0	0%	NA	ug/L	-	0	0	0.0%
VOCs	4-Chlorotoluene	83	0	0%	NA	ug/L	-	0	0	0.0%
VOCs	4-Methyl-2-pentanone	83	0	0%	NA	ug/L	640	0	0	0.0%
VOCs	Acetone	83	4	5%	110	ug/L	7200	0	0	0.0%
VOCs	Bromobenzene	83	0	0%	NA	ug/L	-	0	0	0.0%
VOCs	Bromodichloromethane	83	0	0%	NA	ug/L	17	0	0	0.0%
VOCs	Bromoform	83	0	0%	NA	ug/L	140	0	0	0.0%
VOCs	Bromomethane	83	0	0%	NA	ug/L	28	0	0	0.0%
VOCs	Carbon tetrachloride	83	0	0%	NA	ug/L	1.6	0	0	0.0%
VOCs	Chlorobenzene	83	0	0%	NA	ug/L	640	0	0	0.0%
VOCs	Chloroethane	83	0	0%	NA	ug/L	40000	0	0	0.0%
VOCs	Chloroform	83	0	0%	NA	ug/L	12	0	0	0.0%
VOCs	Chloromethane	83	0	0%	NA	ug/L	340	0	0	0.0%
VOCs	cis-1,2-Dichloroethene (DCE)	83	0	0%	NA	ug/L	16	0	0	0.0%
VOCs	cis-1,3-Dichloropropene	83	0	0%	NA	ug/L	-	0	0	0.0%
VOCs	Dibromochloromethane	83	0	0%	NA	ug/L	13	0	0	0.0%
VOCs	Dibromomethane	83	0	0%	NA	ug/L	80	0	0	0.0%
VOCs	Dichlorodifluoromethane	83	0	0%	NA	ug/L	12	0	0	0.0%
VOCs	Isopropylbenzene	83	1	1%	1.2	ug/L	800	0	0	0.0%
VOCs	Methyl tert-butyl ether (MTBE)	83	0	0%	NA	ug/L	24.3	0	0	0.0%
VOCs	Methylene chloride	83	0	0%	NA	ug/L	250	0	0	0.0%
VOCs	n-Hexane	8	0	0%	NA	ug/L	-	0	0	0.0%
VOCs	n-Propylbenzene	83	2	2%	1.5	ug/L	800	0	0	0.0%
VOCs	p-Isopropyltoluene	83	4	5%	200	ug/L	800	0	0	0.0%
VOCs	sec-Butylbenzene	83	1	1%	2.2	ug/L	800	0	0	0.0%
VOCs	Styrene	83	1	1%	2	ug/L	100	0	0	0.0%
VOCs	tert-Butylbenzene	83	0	0%	NA	ug/L	800	0	0	0.0%
VOCs	Tetrachloroethene (PCE)	83	0	0%	NA	ug/L	3.3	0	0	0.0%
VOCs	trans-1,2-Dichloroethene	83	0	0%	NA	ug/L	250	0	0	0.0%
VOCs	trans-1,3-Dichloropropene	83	0	0%	NA	ug/L	-	0	0	0.0%
VOCs	Trichloroethene (TCE)	83	0	0%	NA	ug/L	8.4	0	0	0.0%
VOCs	Trichlorofluoromethane	83	0	0%	NA	ug/L	260	0	0	0.0%
VOCs	Vinyl acetate	2	0	0%	NA	ug/L	8000	0	0	0.0%

Notes

Yellow-highlighted constituents have frequency of exceedance of PCL greater than 5%.

PCL: Preliminary cleanup level addressing all applicable exposure pathways.

Table 4. Statistical Summary of Soil Quality Data Representing Current Site Conditions

Project No. 210178, K-C Worldwide Site Upland Area, Everett, Washington

Group	Analyte	Number of Sample Locations	Number of Samples	Number of Detections	Detection Frequency	Max Detected Concentration	Units	(PCLs) (all exposure pathways)				
								Unsaturated Soil PCL	Saturated Soil PCL	Number of Locations with Exceedances	Number of Samples with Exceedances	Exceedance Frequency
Metals	Mercury	591	807	132	16%	3.8	mg/kg	0.1	0.1	118	126	15.6%
Metals	Copper	557	778	795	102%	173	mg/kg	36	36	85	96	12.3%
Metals	Zinc	505	713	746	105%	973	mg/kg	100	85	64	82	11.5%
cPAHs	Total cPAHs TEQ	817	1057	442	42%	7.77	mg/kg	3.2	0.16	48	52	4.9%
TPHs	TPH (D+O Range)	775	1046	136	13%	29000	mg/kg	2000	2000	31	33	3.2%
TPHs	Gasoline Range Hydrocarbons	347	471	55	12%	4000	mg/kg	100	100	14	14	3.0%
Metals	Lead	455	671	692	103%	924	mg/kg	1000	81	13	15	2.2%
Metals	Arsenic	442	651	627	96%	43	mg/kg	20	20	11	12	1.8%
PCBs	Total PCBs (Sum of Aroclors)	289	367	58	16%	24	mg/kg	2.4	0.12	4	4	1.1%
ncPAHs	2-Methylnaphthalene	140	233	37	16%	1.5	mg/kg	13	0.63	2	2	0.9%
Metals	Nickel	427	616	645	105%	135	mg/kg	48	48	5	5	0.8%
ncPAHs	Naphthalene	813	1077	275	26%	79	mg/kg	17	0.86	8	8	0.7%
VOCs	Xylenes (total)	290	374	7	2%	7.1	mg/kg	28	1.4	2	2	0.5%
Metals	Antimony	185	241	46	19%	9.42	mg/kg	1400	1400	0	0	0.0%
Metals	Barium	4	8	8	100%	68.6	mg/kg	700000	700000	0	0	0.0%
Metals	Beryllium	114	170	0	0%	NA	mg/kg	7000	7000	0	0	0.0%
Metals	Cadmium	341	417	3	1%	2.41	mg/kg	3500	3500	0	0	0.0%
Metals	Chromium (Total)	137	197	231	117%	75.8	mg/kg	5300000	5300000	0	0	0.0%
Metals	Selenium	125	185	0	0%	NA	mg/kg	18000	18000	0	0	0.0%
Metals	Silver	125	185	0	0%	NA	mg/kg	18000	18000	0	0	0.0%
Metals	Thallium	114	170	0	0%	NA	mg/kg	35	35	0	0	0.0%
Conventionals	Formaldehyde	34	34	24	71%	12	mg/kg	700000	700000	0	0	0.0%
ncPAHs	Acenaphthene	804	1045	244	23%	72	mg/kg	210000	210000	0	0	0.0%
ncPAHs	Acenaphthylene	804	1044	55	5%	0.33	mg/kg	-	-	0	0	0.0%
ncPAHs	Anthracene	804	1045	219	21%	25	mg/kg	1100000	1100000	0	0	0.0%
ncPAHs	Benzo(g,h,i)perylene	804	1044	332	32%	4.3	mg/kg	-	-	0	0	0.0%
ncPAHs	Fluoranthene	804	1045	486	47%	74	mg/kg	140000	140000	0	0	0.0%
ncPAHs	Fluorene	804	1045	209	20%	79	mg/kg	140000	140000	0	0	0.0%
ncPAHs	Phenanthrene	804	1045	440	42%	210	mg/kg	-	-	0	0	0.0%
ncPAHs	Pyrene	804	1045	541	52%	45	mg/kg	110000	110000	0	0	0.0%
ncPAHs	1-Methylnaphthalene	17	37	10	27%	2.6	mg/kg	4500	4500	0	0	0.0%
cPAHs	Benz(a)anthracene	817	1057	378	36%	9.3	mg/kg	-	-	0	0	0.0%
cPAHs	Benzo(a)pyrene	817	1057	367	35%	6.3	mg/kg	-	-	0	0	0.0%
cPAHs	Benzo(b)fluoranthene	817	1057	412	39%	3.2	mg/kg	-	-	0	0	0.0%
cPAHs	Benzo(k)fluoranthene	817	1057	217	21%	1.4	mg/kg	-	-	0	0	0.0%
cPAHs	Chrysene	817	1057	424	40%	12	mg/kg	-	-	0	0	0.0%
cPAHs	Dibenzo(a,h)anthracene	817	1057	110	10%	0.98	mg/kg	-	-	0	0	0.0%
cPAHs	Indeno(1,2,3-cd)pyrene	817	1057	312	30%	1.5	mg/kg	-	-	0	0	0.0%
Other SVOCs	1,4-Dioxane	45	45	0	0%	NA	mg/kg	1312.5	1312.5	0	0	0.0%
Other SVOCs	2,4,5-Trichlorophenol	133	218	0	0%	NA	mg/kg	350000	350000	0	0	0.0%
Other SVOCs	2,4,6-Trichlorophenol	133	218	0	0%	NA	mg/kg	3500	3500	0	0	0.0%
Other SVOCs	2,4-Dichlorophenol	133	219	0	0%	NA	mg/kg	11000	11000	0	0	0.0%
Other SVOCs	2,4-Dimethylphenol	133	219	1	0%	0.16	mg/kg	70000	70000	0	0	0.0%
Other SVOCs	2,4-Dinitrophenol	133	219	0	0%	NA	mg/kg	7000	7000	0	0	0.0%
Other SVOCs	2-Chloronaphthalene	133	218	0	0%	NA	mg/kg	280000	280000	0	0	0.0%
Other SVOCs	2-Chlorophenol	133	219	0	0%	NA	mg/kg	18000	18000	0	0	0.0%
Other SVOCs	2-Methylphenol	133	219	0	0%	NA	mg/kg	180000	180000	0	0	0.0%
Other SVOCs	2-Nitroaniline	133	218	0	0%	NA	mg/kg	35000	35000	0	0	0.0%
Other SVOCs	2-Nitrophenol	133	219	0	0%	NA	mg/kg	-	-	0	0	0.0%
Other SVOCs	3 & 4 Methylphenol	133	219	1	0%	1.3	mg/kg	175000	175000	0	0	0.0%
Other SVOCs	3-Nitroaniline	133	218	0	0%	NA	mg/kg	-	-	0	0	0.0%
Other SVOCs	4,6-Dinitro-2-methylphenol	133	219	0	0%	NA	mg/kg	-	-	0	0	0.0%
Other SVOCs	4-Bromophenyl phenyl ether	133	219	0	0%	NA	mg/kg	-	-	0	0	0.0%
Other SVOCs	4-Chloro-3-methylphenol	133	219	0	0%	NA	mg/kg	-	-	0	0	0.0%
Other SVOCs	4-Chloroaniline	133	219	0	0%	NA	mg/kg	660	660	0	0	0.0%
Other SVOCs	4-Chlorophenyl phenyl ether	133	219	0	0%	NA	mg/kg	-	-	0	0	0.0%
Other SVOCs	4-Nitroaniline	133	219	0	0%	NA	mg/kg	-	-	0	0	0.0%
Other SVOCs	4-Nitrophenol	133	219	0	0%	NA	mg/kg	-	-	0	0	0.0%
Other SVOCs	Benzoic acid	133	218	0	0%	NA	mg/kg	14000000	14000000	0	0	0.0%
Other SVOCs	Benzyl alcohol	133	219	1	0%	0.69	mg/kg	350000	350000	0	0	0.0%
Other SVOCs	Benzyl butyl phthalate	133	219	1	0%	0.065	mg/kg	69000	69000	0	0	0.0%
Other SVOCs	Bis(2-chloro-1-methylethyl) ether	133	219	0	0%	NA	mg/kg	1900	1900	0	0	0.0%
Other SVOCs	Bis(2-chloroethoxy)methane	133	219	0	0%	NA	mg/kg	-	-	0	0	0.0%
Other SVOCs	Bis(2-chloroethyl) ether	133	219	0	0%	NA	mg/kg	120	120	0	0	0.0%
Other SVOCs	Bis(2-ethylhexyl) phthalate	133	218	2	1%	1	mg/kg	9400	9400	0	0	0.0%
Other SVOCs	Carbazole	133	219	4	2%	0.29	mg/kg	-	-	0	0	0.0%
Other SVOCs	Dibenzofuran	133	219	30	14%	1.6	mg/kg	3500	3500	0	0	0.0%
Other SVOCs	Diethyl phthalate	133	219	0	0%	NA	mg/kg	2800000	2800000	0	0	0.0%
Other SVOCs	Dimethyl phthalate	133	218	2	1%	0.1	mg/kg	-	-	0	0	0.0%
Other SVOCs	Di-n-butyl phthalate	133	219	2	1%	1.2	mg/kg	350000	350000	0	0	0.0%
Other SVOCs	Di-n-octyl phthalate	133	218	0	0%	NA	mg/kg	35000	35000	0	0	0.0%
Other SVOCs	Hexachlorobenzene	133	219	0	0%	NA	mg/kg	82	82	0	0	0.0%
Other SVOCs	Hexachlorobutadiene	324	461	0	0%	NA	mg/kg	1700	1700	0	0	0.0%
Other SVOCs	Hexachlorocyclopentadiene	133	218	0	0%	NA	mg/kg	21000	21000	0	0	0.0%
Other SVOCs	Hexachloroethane	133	219	0	0%	NA	mg/kg	2500	2500	0	0	0.0%
Other SVOCs	Isophorone	133	219	0	0%	NA	mg/kg	140000	140000	0	0	0.0%
Other SVOCs	Nitrobenzene	133	219	0	0%	NA	mg/kg	7000	7000	0	0	0.0%
Other SVOCs	N-Nitroso-di-n-propylamine	133	219	0	0%	NA	mg/kg	19	19	0	0	0.0%
Other SVOCs	N-Nitrosodiphenylamine	133	219	0	0%	NA	mg/kg	27000	27000	0	0	0.0%
Other SVOCs	Pentachlorophenol	133	219	0	0%	NA	mg/kg	0.3	0.3	0	0	0.0%
Other SVOCs	Phenol	133	219	1	0%	0.34	mg/kg	1100000	1100000	0	0	0.0%
Other SVOCs	2,4-Dinitrotoluene	133	219	0	0%	NA	mg/kg	420	420	0	0	0.0%
Other SVOCs	2,6-Dinitrotoluene	133	218	0	0%	NA	mg/kg	88	88	0	0	0.0%
VOCs	Benzene	316	421	1	0%	0.036	mg/kg	2400	2400	0	0	0.0%

Table 4. Statistical Summary of Soil Quality Data Representing Current Site Conditions

Project No. 210178, K-C Worldwide Site Upland Area, Everett, Washington

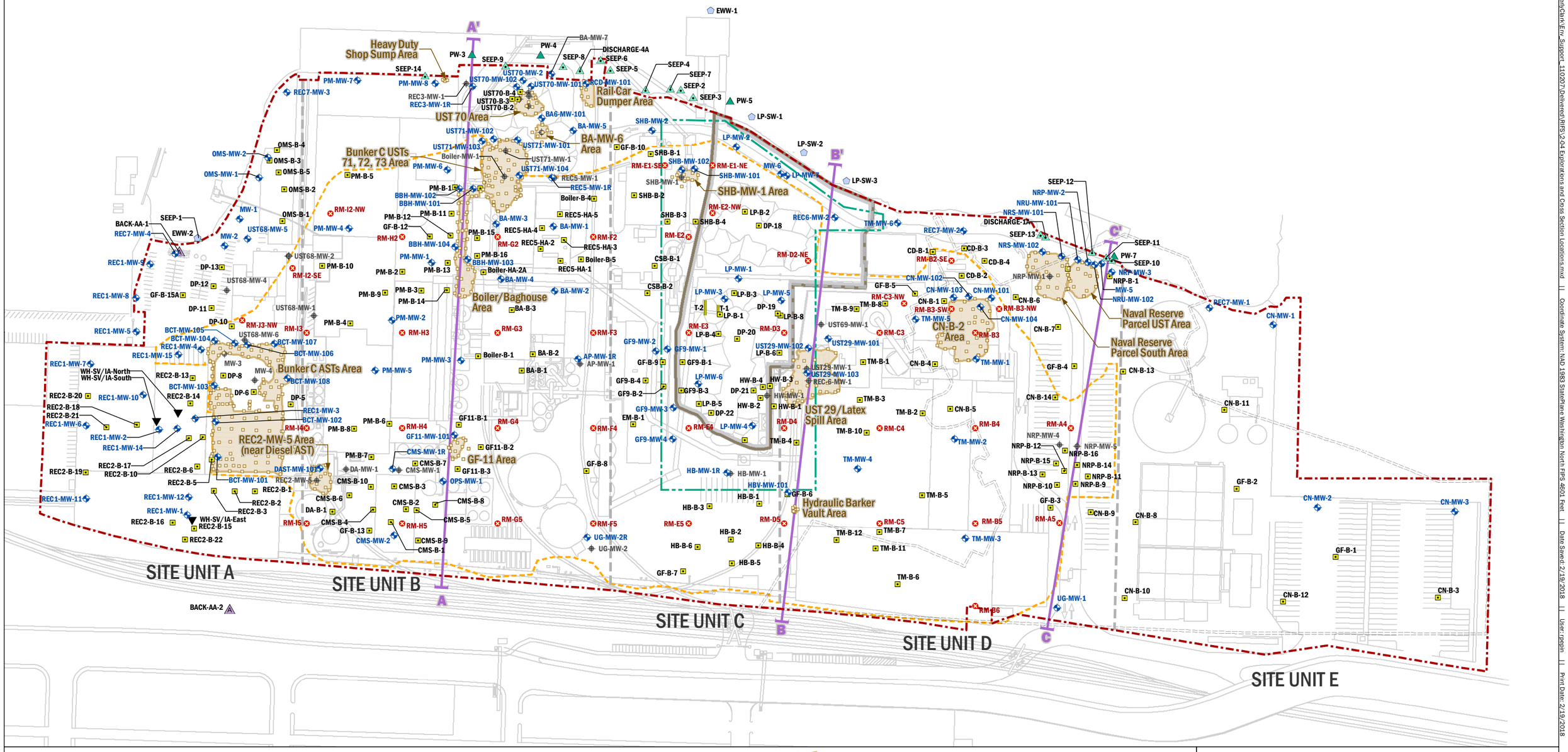
Group	Analyte	Number of Sample Locations	Number of Samples	Number of Detections	Detection Frequency	Max Detected Concentration	Units	(PCLs) (all exposure pathways)				
								Unsaturated Soil PCL	Saturated Soil PCL	Number of Locations with Exceedances	Number of Samples with Exceedances	Exceedance Frequency
VOCs	Ethylbenzene	316	421	7	2%	1.44	mg/kg	350000	350000	0	0	0.0%
VOCs	Toluene	316	421	2	0%	0.666	mg/kg	280000	280000	0	0	0.0%
VOCs	m,p-Xylenes	300	395	9	2%	2.78	mg/kg	-	-	0	0	0.0%
VOCs	o-Xylene	300	395	8	2%	4.32	mg/kg	-	-	0	0	0.0%
VOCs	1,1,1,2-Tetrachloroethane	298	393	0	0%	NA	mg/kg	5000	5000	0	0	0.0%
VOCs	1,1,1-Trichloroethane	298	393	0	0%	NA	mg/kg	7000000	7000000	0	0	0.0%
VOCs	1,1,2,2-Tetrachloroethane	298	393	0	0%	NA	mg/kg	660	660	0	0	0.0%
VOCs	1,1,2-Trichloroethane	298	393	0	0%	NA	mg/kg	2300	2300	0	0	0.0%
VOCs	1,1-Dichloroethane	298	393	0	0%	NA	mg/kg	23000	23000	0	0	0.0%
VOCs	1,1-Dichloroethene	298	393	0	0%	NA	mg/kg	180000	180000	0	0	0.0%
VOCs	1,1-Dichloropropene	298	393	0	0%	NA	mg/kg	-	-	0	0	0.0%
VOCs	1,2,3-Trichlorobenzene	298	393	0	0%	NA	mg/kg	-	-	0	0	0.0%
VOCs	1,2,3-Trichloropropane	298	393	0	0%	NA	mg/kg	4.4	4.4	0	0	0.0%
VOCs	1,2,4-Trichlorobenzene	324	461	0	0%	NA	mg/kg	4500	4500	0	0	0.0%
VOCs	1,2,4-Trimethylbenzene	298	393	5	1%	0.089	mg/kg	-	-	0	0	0.0%
VOCs	1,2-Dibromo-3-chloropropane	298	393	0	0%	NA	mg/kg	160	160	0	0	0.0%
VOCs	1,2-Dibromoethane (EDB)	298	393	0	0%	NA	mg/kg	66	66	0	0	0.0%
VOCs	1,2-Dichlorobenzene	324	461	0	0%	NA	mg/kg	320000	320000	0	0	0.0%
VOCs	1,2-Dichloroethane (EDC)	298	393	0	0%	NA	mg/kg	1400	1400	0	0	0.0%
VOCs	1,2-Dichloropropane	298	393	0	0%	NA	mg/kg	3600	3600	0	0	0.0%
VOCs	1,3,5-Trimethylbenzene	298	393	3	1%	0.087	mg/kg	35000	35000	0	0	0.0%
VOCs	1,3-Dichlorobenzene	324	461	0	0%	NA	mg/kg	-	-	0	0	0.0%
VOCs	1,3-Dichloropropane	298	393	0	0%	NA	mg/kg	-	-	0	0	0.0%
VOCs	1,4-Dichlorobenzene	324	461	2	0%	0.039	mg/kg	24000	24000	0	0	0.0%
VOCs	2,2-Dichloropropane	298	393	0	0%	NA	mg/kg	-	-	0	0	0.0%
VOCs	2-Butanone	298	393	0	0%	NA	mg/kg	2100000	2100000	0	0	0.0%
VOCs	2-Chlorotoluene	298	393	2	1%	7.6	mg/kg	70000	70000	0	0	0.0%
VOCs	2-Hexanone	298	393	0	0%	NA	mg/kg	-	-	0	0	0.0%
VOCs	4-Chlorotoluene	298	393	1	0%	0.11	mg/kg	-	-	0	0	0.0%
VOCs	4-Methyl-2-pentanone	298	393	0	0%	NA	mg/kg	280000	280000	0	0	0.0%
VOCs	Acetone	298	393	8	2%	1.5	mg/kg	3200000	3200000	0	0	0.0%
VOCs	Bromobenzene	298	393	0	0%	NA	mg/kg	-	-	0	0	0.0%
VOCs	Bromodichloromethane	298	393	0	0%	NA	mg/kg	2100	2100	0	0	0.0%
VOCs	Bromoform	298	393	0	0%	NA	mg/kg	17000	17000	0	0	0.0%
VOCs	Bromomethane	298	393	0	0%	NA	mg/kg	4900	4900	0	0	0.0%
VOCs	Carbon tetrachloride	297	392	0	0%	NA	mg/kg	1900	1900	0	0	0.0%
VOCs	Chlorobenzene	298	393	0	0%	NA	mg/kg	70000	70000	0	0	0.0%
VOCs	Chloroethane	298	393	0	0%	NA	mg/kg	-	-	0	0	0.0%
VOCs	Chloroform	298	393	0	0%	NA	mg/kg	4200	4200	0	0	0.0%
VOCs	Chloromethane	298	393	0	0%	NA	mg/kg	-	-	0	0	0.0%
VOCs	cis-1,2-Dichloroethene (DCE)	298	393	0	0%	NA	mg/kg	7000	7000	0	0	0.0%
VOCs	cis-1,3-Dichloropropene	298	393	0	0%	NA	mg/kg	-	-	0	0	0.0%
VOCs	Dibromochloromethane	298	393	0	0%	NA	mg/kg	1600	1600	0	0	0.0%
VOCs	Dibromomethane	298	393	0	0%	NA	mg/kg	35000	35000	0	0	0.0%
VOCs	Dichlorodifluoromethane	297	390	0	0%	NA	mg/kg	700000	700000	0	0	0.0%
VOCs	Isopropylbenzene	298	393	6	2%	0.48	mg/kg	350000	350000	0	0	0.0%
VOCs	Methyl tert-butyl ether (MTBE)	299	394	0	0%	NA	mg/kg	73000	73000	0	0	0.0%
VOCs	Methylene chloride	298	393	2	1%	1.1	mg/kg	21000	21000	0	0	0.0%
VOCs	n-Hexane	10	21	0	0%	NA	mg/kg	-	-	0	0	0.0%
VOCs	n-Propylbenzene	298	393	6	2%	1.7	mg/kg	350000	350000	0	0	0.0%
VOCs	p-Isopropyltoluene	298	393	7	2%	1.5	mg/kg	-	-	0	0	0.0%
VOCs	sec-Butylbenzene	298	393	7	2%	1.9	mg/kg	350000	350000	0	0	0.0%
VOCs	Styrene	298	393	0	0%	NA	mg/kg	700000	700000	0	0	0.0%
VOCs	tert-Butylbenzene	298	393	1	0%	0.055	mg/kg	350000	350000	0	0	0.0%
VOCs	Tetrachloroethene (PCE)	298	393	0	0%	NA	mg/kg	21000	21000	0	0	0.0%
VOCs	trans-1,2-Dichloroethene	298	393	0	0%	NA	mg/kg	70000	70000	0	0	0.0%
VOCs	trans-1,3-Dichloropropene	298	393	0	0%	NA	mg/kg	-	-	0	0	0.0%
VOCs	Trichloroethene (TCE)	298	393	0	0%	NA	mg/kg	1800	1800	0	0	0.0%
VOCs	Trichlorofluoromethane	298	393	0	0%	NA	mg/kg	1100000	1100000	0	0	0.0%
VOCs	Vinyl acetate	45	45	0	0%	NA	mg/kg	3500000	3500000	0	0	0.0%
VOCs	Vinyl chloride	298	393	0	0%	NA	mg/kg	88	88	0	0	0.0%
Dioxins/Furans	Total 2,3,7,8 TCDD [TEQ]	25	30	30	100%	0.0000433	mg/kg	0.0017	0.0017	0	0	0.0%

Notes

Yellow-highlighted constituents have frequency of exceedance of PCL greater than 5%.

PCL: Preliminary cleanup level addressing all applicable exposure pathways.

FIGURE



Explorations reflect conditions prior to the 2nd Interim Action in 2020.

Exploration Locations Prior to 2020 Interim Action

RI/FS
K-C Worldwide Site Upland Area
Everett, Washington

Aspect Consulting	FEB-2018	BY: SJG / RAP	FIGURE NO. 1
	PROJECT NO. 110207	REVISED BY: ---	

GIS Path: T:\projects_8\Kimberly\Clark\Env_Support_110207\Delivered\RIFS\2-04 Explorations and Cross Section Locations.mxd || Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet || Date Saved: 2/19/2018 || User: rpepin || Print Date: 2/19/2018

ExxonMobil ADC Site

ExxonMobil ADC Summary

The ExxonMobil ADC Site was a former petroleum bulk storage and distribution facility located south of and adjacent to the Kimberly-Clark Worldwide Site in Everett, Washington. Extensive characterization and sampling activities have been conducted at the Site since 1985. Analyses conducted in soil and groundwater include volatile organic compounds (VOCs); semivolatile organic compounds (SVOCs); TPH-Gasoline (TPH-G), -Diesel (TPH-D), and –Oil (TPH-O); and select metals.

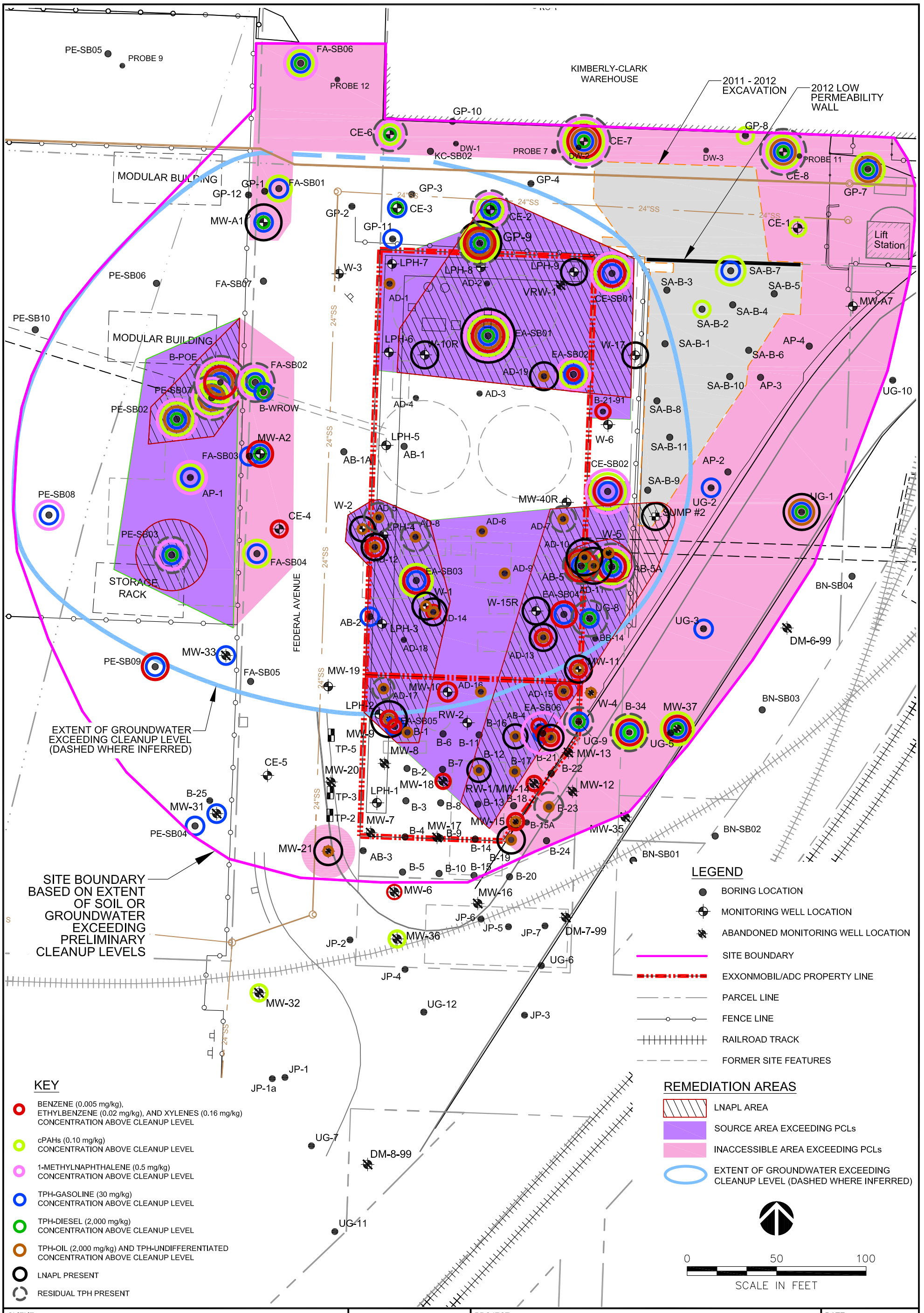
Liquid-phase petroleum hydrocarbons (LPH) have been observed in groundwater wells, trenches, sumps, and excavations at the Site since environmental investigations began. The LPH varies in nature from TPH-G to TPH-D to heavier TPH-O fractions, and all of the LPH is generally characterized as "weathered" in various laboratory reports.

The Site has been delineated based on the results of the past investigations. The Site includes the Property and extends onto adjacent areas owned by the City of Everett (e.g., Federal Avenue), BNSF, K-C, and the Port of Everett.

The groundwater and soil contaminants of concern (COCs) to be addressed at the Site are listed in the table below.

- benzene
- ethylbenzene
- xylenes
- 1-methylnaphthalene
- TPH-G
- TPH-D
- TPH-O
- Carcinogenic Polycyclic Aromatic Hydrocarbons (cPAHs)

The maps provided on the next page show petroleum contamination identified at the Site. The first map is from the August 23, 2019 Focused Feasibility Study report. The next set of maps, which shows petroleum contamination in soil and locations of LPH plotted on aerial photos, was generated by Ecology in 2018 based on results from past investigations.



CLIENT

EXXONMOBIL AND AMERICAN DISTRIBUTION COMPANY

Wood Environment & Infrastructure Solutions, Inc.
600 University Street, Suite 600
Seattle, Washington 98101

PROJECT

EXXONMOBIL/ADC PROPERTY
ECOLOGY SITE ID 2728

TITLE

SOURCE AREAS

DATE: SEPTEMBER 2018

PROJECT NO.: 6103180009

REV NO.: 1

FIGURE No.: 12-1

DRAWN BY: APS CHECKED BY: LV

S:\6103-0009\001_DataInvestIgatIonReport\Everett_EXM-SourceAreas-Internal_091118_.dwg - AFW_11x17_P - Sep. 11, 2018 3:55pm - adam.stenberg

Diesel/Oil Range in Soil

- <2,000 mg/kg
- >2,000 to <5,000 mg/kg
- >5,000 to <7,500 mg/kg
- >7,500 to <10,000 mg/kg
- >10,000

Gasoline Range in Soil

- <30 mg/kg
- >30 to <300 mg/kg
- >300 to <1,000 mg/kg
- >1,000 mg/kg

Hot Spot Areas

Hot Spot Areas in utility corridors or ROWs

Johnston Petroleum Bld. Footprint

Independent excavation area

LPH observed in wells or dewatering wells during the city force main project

Soils at residual saturation identified by ExxonMobil ADC

LPH observed during city CSO force main project or the side sewer connection as part of a 1993 recovery trench.

Extent of soil contamination.

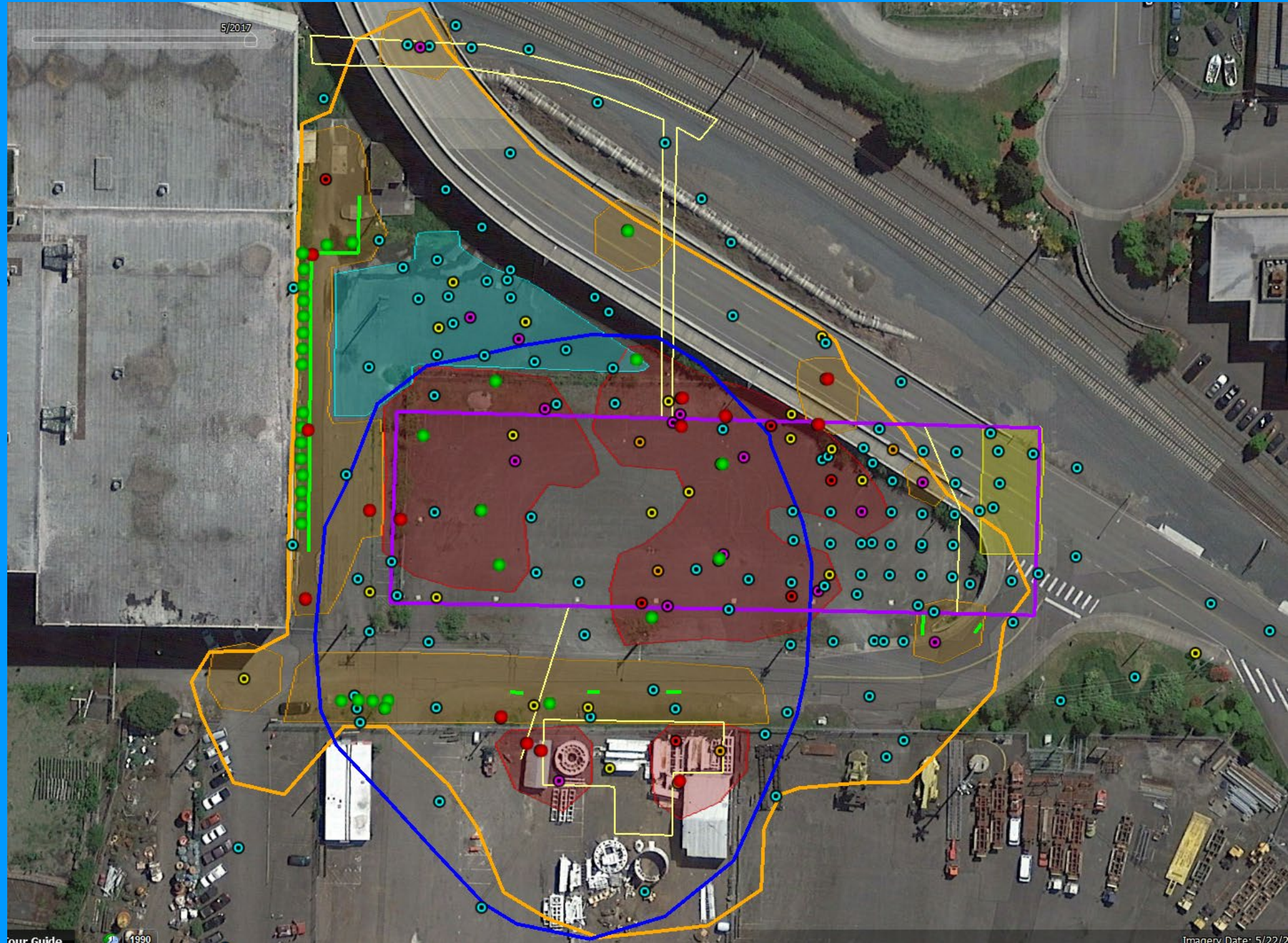
Dissolved phase plume as presented in the draft FFS.

Block 619 Boundary

Utilities were identified from the draft FFS

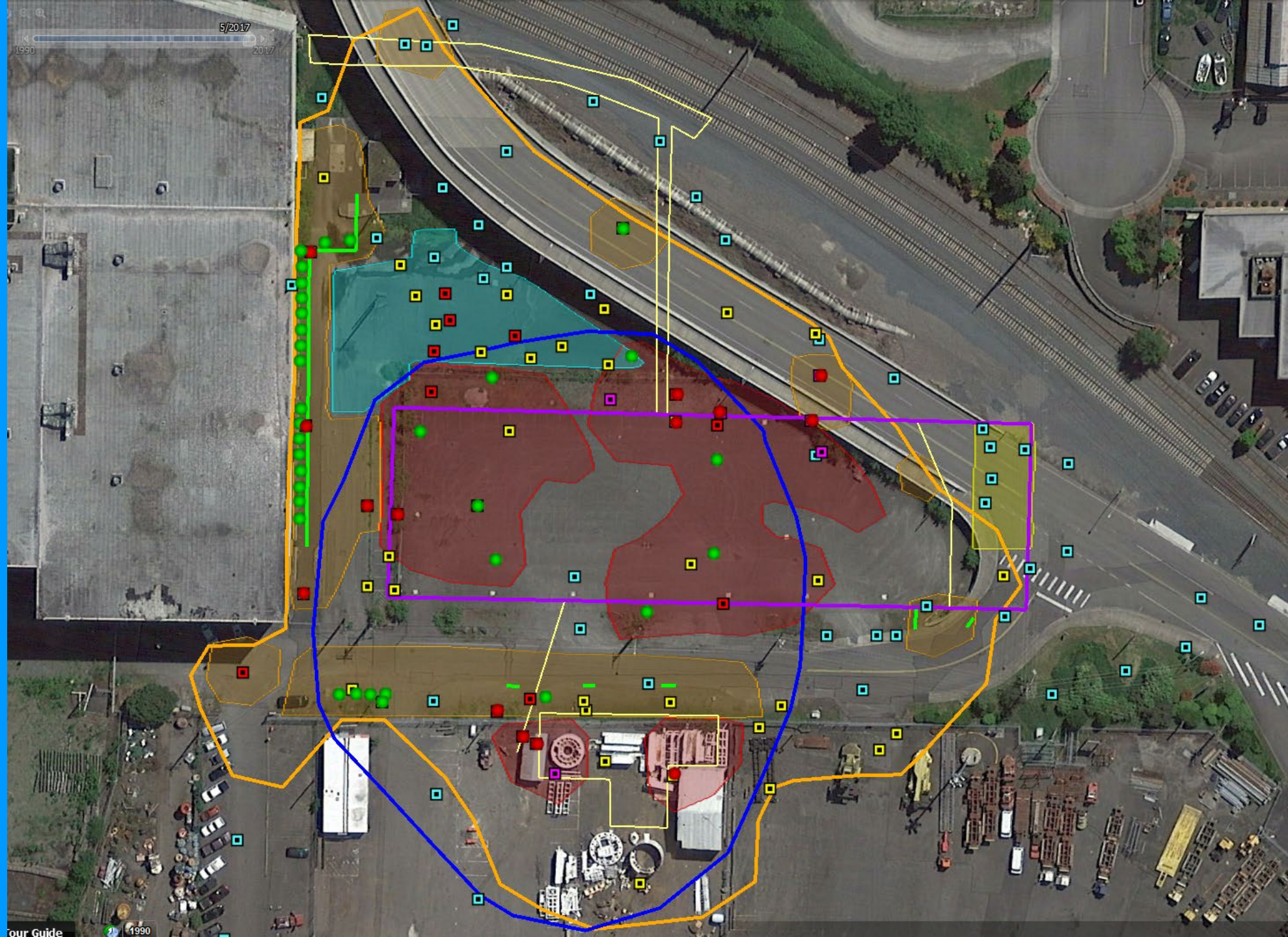
Diesel/Oil Range in Soil

- <2,000
- >2,000 to <5,000
- >5,000 to <7,500
- >7,500 to <10,000
- >10,000



Gasoline Range in Soil (mg/kg)

- <30
- >30 to <300
- >300 to <1,000
- >1,000



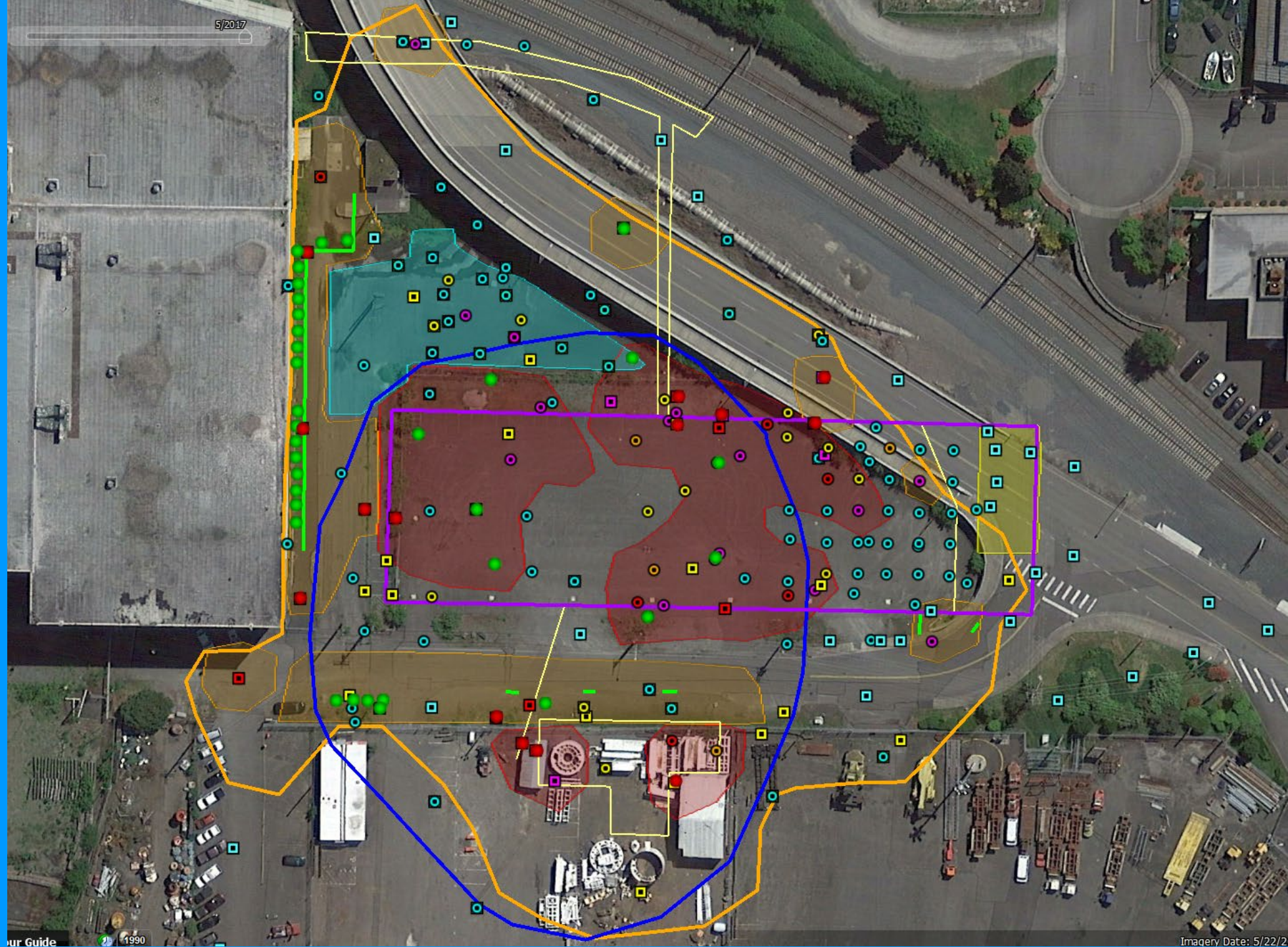
Diesel/Oil and Gasoline Range in Soil

Diesel/Oil (mg/kg)

- <2,000
- >2,000 to <5,000
- >5,000 to <7,500
- >7,500 to <10,000
- >10,000

Gasoline Range (mg/kg)

- <30
- >30 to <300
- >300 to <1,000
- >1,000



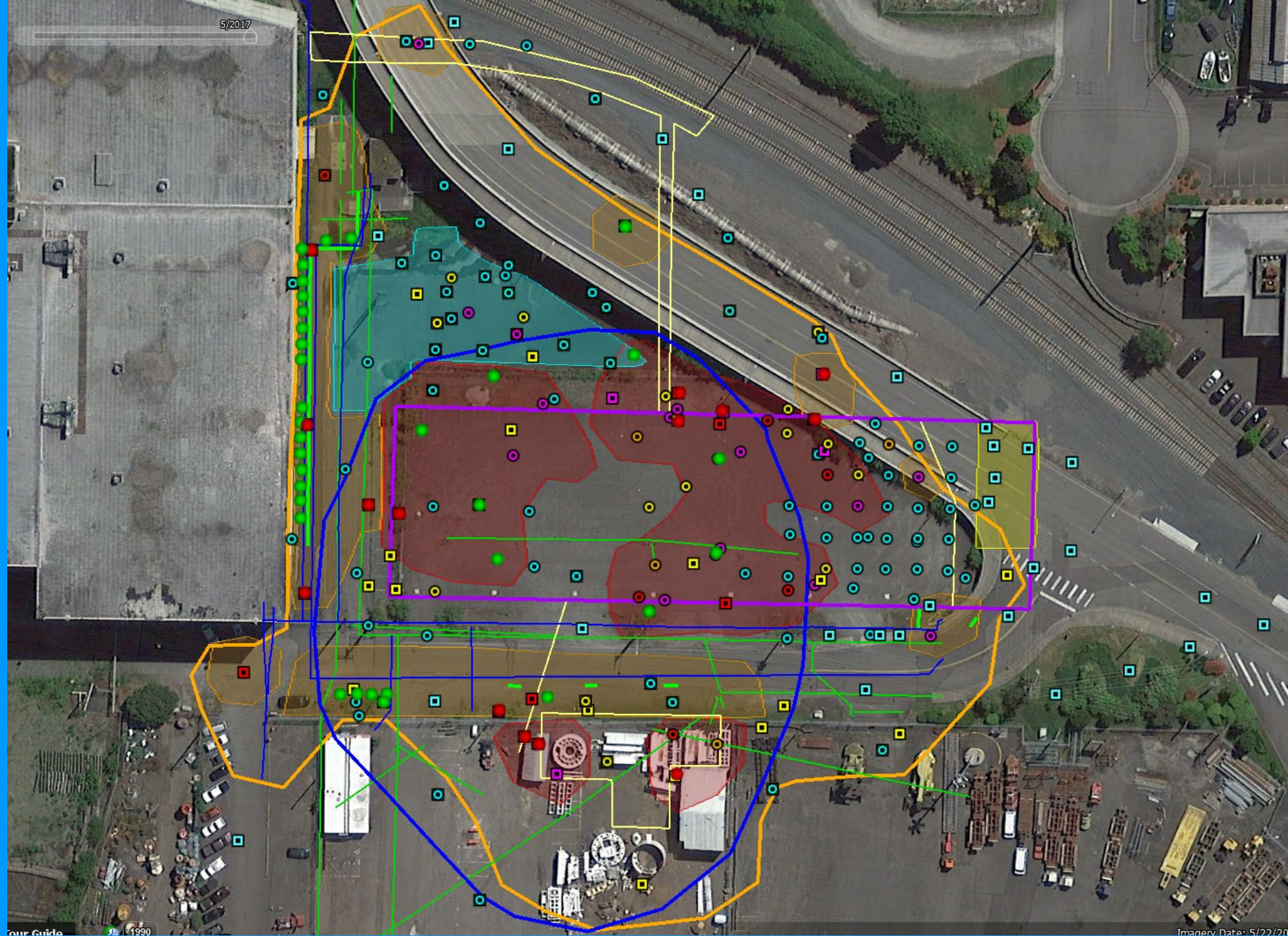
Diesel/Oil and Gasoline Range in Soil – with utilities

Diesel/Oil (mg/kg)

- <2,000
- >2,000 to <5,000
- >5,000 to <7,500
- >7,500 to <10,000
- >10,000

Gasoline Range (mg/kg)

- <30
- >30 to <300
- >300 to <1,000
- >1,000



Engineering Calculations

(Not Applicable)

ATTACHMENT 2

Sampling and Analysis Pan (Cardno 2021)

Cardno

309 South Cloverdale Street
Unit A13
Seattle, WA 98108
USA

Phone +1 800 499 8950

www.cardno.com

October 19, 2021
Cardno 03144702.R07

Mr. Erik Gerking
Port of Everett
Director of Environmental Programs
erikg@portofeverett.com

SUBJECT **Federal Avenue Trenching – Sampling and Analysis Plan**
ExxonMobil ADC
Agreed Order No.: DE 6184
2717/2731 Federal Avenue
Everett, Washington

Mr. Gerking:

At the request of ExxonMobil Environmental and Property Solutions, on behalf of ExxonMobil Oil Corporation (ExxonMobil) and American Distribution Company (ADC), Cardno prepared the enclosed *Federal Avenue Trenching – Sampling and Analysis Plan*. This Sampling and Analysis Plan (SAP) will be included as an appendix to Strider Construction Company, Inc.'s *Norton Terminal Development & MTCA 3rd Interim Action Soil Removal, Stockpiling, and Disposal Plan,* dated September 25, 2021 (Strider, 2021). The SAP documents planned sampling activities to support the proposed Port of Everett utility work.

Please contact Mr. Bobby Thompson, Cardno Project Manager for this site, at 206 510 5855 with any questions.

Sincerely,

Cameron Penner-Ash
Assistant Project Manager
Cardno
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Email: cameron.penner-ash@cardno.com

Bobby Thompson
Project Manager
Cardno
Direct Line +1 206 510 5855
Email: robert.thompson@cardno.com

ENCLOSURE

Cardno's *Federal Avenue Trenching – Sampling and Analysis Plan,* dated October 19, 2021

References
Acronym List

Plate 1	Site Location Map
Plate 2	Generalized Site Plan
Plate 3	Site Boundary Map
Plate 4	Draft Maritime Industrial Expansion Norton Terminal – 60% Design Water and Sewer Plan

Appendix A	Field Protocol
Appendix B	Example Field Forms
Appendix C	Example Chain-of-Custody Record

cc: w/ enclosures
Mr. Jason Cook, Washington State Department of Ecology *(Email)*

Federal Avenue Trenching – Sampling and Analysis Plan

ExxonMobil ADC
Agreed Order No.: DE 6184
2717/2731 Federal Avenue
Everett, Washington

Site Information

Site Name:	ExxonMobil ADC
Address:	2717/2731 Federal Avenue Everett, Washington
Township/Section/Range:	Township 29 North, Section 19, Range 5 East
Northern Tax Parcels:	00437161900101 00437161900100
Southern Tax Parcels:	00437161901000
Current Property Owners:	Northern Parcel – American Distribution Company (ADC) Southern Parcel – ExxonMobil Oil Corporation (ExxonMobil)
Agency/Regulatory ID No:	Washington Department of Ecology (Ecology) / FSID #2728 Agreed Order No.: DE 6184

At the request of the Port of Everett, and as directed by the Washington State Department of Ecology (Ecology), this Sampling and Analysis Plan (SAP) was prepared for the ExxonMobil ADC (Site), located at 2717/2731 Federal Avenue, Everett, Snohomish County, Washington. The purpose of the sampling activities is to characterize soil conditions for the soil that will remain in place beneath the planned utility runs in the City of Everett right-of-way (ROW) beneath and adjacent to Federal Avenue. The utility work is being performed by Strider Construction Company, Inc. (Strider) for the Port of Everett. Cardno is solely performing the sampling activities to characterize soil conditions along the utility trench bottoms. Strider is responsible for all other utility work as described in the *Norton Terminal Development & MTCA 3rd Interim Action Soil Removal, Stockpiling, and Disposal Plan* (Work Plan), dated September 25, 2021 (Strider, 2021). The location of the Site is shown on Plates 1 and 2.

Historical releases of hydrocarbons to soil and groundwater at the Site were related to the former bulk storage, transfer, and distribution of petroleum and petroleum-related products. Light non-aqueous phase liquid (LNAPL) has been observed in soil and groundwater beneath the Site (including on neighboring properties). The ExxonMobil ADC Site is defined as the ExxonMobil and ADC properties and the surrounding right-of-ways and properties that were affected by the migration of hydrocarbons in soil and groundwater (Plate 3).

Trenching and Soil Sampling Activities

Trenching and utility installation activities will be conducted by Strider in accordance their Work Plan (Strider, 2021). Strider plans to extend an existing water main line, extend an existing storm drain line, and run electrical conduit from the Port of Everett northward (Plate 4). As the proposed trenching and utility installation is occurring within the defined ExxonMobil ADC Site boundary (Plates 3 and 4), Ecology has requested that soil sampling along the bottom of the trenches be conducted to characterize soil that will remain in place following the utility work. Section 6.6.3 of Ecology's *Guidance for Remediation of Petroleum Contaminated Sites,* dated June 2016 (Ecology, 2016), states:

> *For long piping runs outside the main excavation where there are no joints, take samples from the bottom of any exposed trench on no less than 50 foot intervals if conditions allow.*

In accordance with this guidance, Cardno anticipates the collection of approximately 20 individual soil samples along the bottom of the three utility trenches in order to characterize soil that will remain in place following the utility work. Samples will be collected from locations where PID or field screening indicates the presence of

residual concentrations of hydrocarbons, and with a maximum interval of the soil samples of 50 feet per trench per Ecology guidance. Soil samples will be collected in accordance with Cardno's standard protocol included in Appendix A.

Laboratory Analyses

Soil samples will be shipped to Eurofins Calscience, LLC (Eurofins), a state-certified laboratory, located in Garden Grove, California. The samples will be analyzed for the contaminants listed in the following table.

Federal Avenue Trenching Soil Samples				
Analyte	**Analytical Method**	**Container**	**Preservative**	**Hold Time**
TPHg	NWTPH-Gx	3-40mL VOAs	Sodium Bisulfate, Methanol	14 Days
TPHd	NWTPH-Dx	2-4oz Glass Jars	None	7 Days
TPHmo	NWTPH-Dx	2-4oz Glass Jars	None	7 Days
BTEX	EPA Method 8260C	3-40mL VOAs	Sodium Bisulfate, Methanol	14 Days
Carcinogenic PAHs	EPA Method 8270C SIM	2-4oz Glass Jars	None	14 Days
1-Methylnapthalene	EPA Method 8260C	3-40mL VOAs	Sodium Bisulfate, Methanol	14 Days

Quality Assurance/Quality Control

Field Quality Assurance/Quality Control Samples

Two field duplicates and one equipment blank will be collected in the field for QA/QC. One trip blank will be provided by the laboratory in each sample cooler. The field duplicates will be collected immediately following sample collection from two sampling locations along the proposed trench using identical collection procedures. The equipment blank will be collected by running distilled water over decontaminated soil collection equipment.

Laboratory Quality Assurance/Quality Control Samples

The laboratory runs method blanks and laboratory control spikes with every batch of samples. If sample volume permits, the laboratory also prepares and runs matrix spikes with each batch of samples. Analytical results of laboratory QA/QC samples will be provided in the analytical report(s).

Data Validation

Cardno will complete a data validation and usability review of the above contaminant analyses for conformance with the requirements established in the USEPA National Functional Guidelines (NFGs) and in association with Ecology guidelines. If QC results are found outside the criteria proposed in the QAPP, the validator will apply appropriate qualifiers to the associated analytical results following the guidance in the NFGs (USEPA, 2017).

Sample Documentation

A Daily Field Report (DFR) will be completed by sampling technicians on site to provide a daily record of events, observations, and measurements during the soil sampling event. Sample name, date, time, preservation, and identification of the sampling technician will also be recorded in the DFRs. An example of a DFR is included in Appendix B.

Sample container labels provided by the laboratory will be completed by the sampling technician at the time of sample collection and include the sample name, date, time, preservation, and identification of the sampling technician.

Photographs will be taken at the sampling technician's discretion to document changes in Site conditions or at the request of the project manager to satisfy other site characterization goals.

Sample Handling

Sample Containers, Preservation, and Storage

Sample containers, preservation, and hold times applicable to this Site are summarized in the Laboratory Analyses section. Upon collection, samples will be stored on ice in a thermally-insulated ice chest, accompanied by a COC record.

Sample Packing and Shipping

Sample containers will be wrapped in bubble wrap within a plastic liner bag and placed into a bubble wrap-lined ice chest. After packing sample containers and the trip blank provided by the laboratory into the ice chest, two to three bags of loose ice will be placed into the plastic liner bag and sealed using a cable tie (zip tie).

The COC record will be placed inside the ice chest. Packing tape will be placed around the body of the ice chest and around the seal of the lid. Custody seals will be signed, dated, and placed on the front and back of the cooler crossing the line of the seal. Ice chests will be shipped overnight to the designated laboratory.

Sample Custody

The COC record will include the sample name, date, time, type, matrix, and preservative; the number of sample containers; the requested laboratory analyses; and the requested turn-around time for results (Appendix C).

Management of Investigation-Derived Waste

If any soil and decontamination water is generated during sampling activities, they will be temporarily stored on-Site in DOT-approved 55-gallon drums. Soil and decontamination water will be transported by a licensed contractor to a disposal facility for treatment or disposal following profiling and characterization. The disposal facility will be selected from ExxonMobil's Approved Waste Sites List. Waste documentation for soil and water will be included in a future memorandum. Protocols for waste management are included in Appendix A.

Equipment Management

Equipment Maintenance

Non-dedicated equipment used for soil sampling activities (i.e., photoionization detectors and four gas meters) will be maintained per manufacturer recommendations. Equipment will be inspected prior to use in the field and will be repaired or replaced as appropriate. Equipment will be calibrated per manufacturer recommendations prior to use in the field.

Equipment Decontamination

Disposable nitrile gloves are worn by sampling technicians during soil collection activities. Gloves are changed between sampling locations and equipment decontamination activities. Equipment used to collect soil samples during trenching activities (i.e., hand trowels, shovels, etc.) are scrubbed in a liquinox solution, and pre- and final-rinsed in distilled water.

Report

Cardno will submit a memorandum to Ecology detailing the results of soil sample collection within 60 days of receipt of validated laboratory analytical documents.

Limitations

For documents cited that were not generated by Cardno, the data taken from those documents is used "as is" and is assumed to be accurate. Cardno does not guarantee the accuracy of this data and makes no warranties for the referenced work performed nor the inferences or conclusions stated in these documents.

This document and the work performed have been undertaken in good faith, with due diligence and with the expertise, experience, capability, and specialized knowledge necessary to perform the work in a good and workmanlike manner and within all accepted standards pertaining to providers of environmental services in Washington at the time of investigation. No soil engineering or geotechnical references are implied or should be inferred. The evaluation of the geologic conditions at the site for this investigation is made from a limited number of data points. Subsurface conditions may vary away from these data points.

Please contact Mr. Bobby Thompson, Cardno Project Manager for this site, at 206 510 5855 with any questions.

Sincerely,

Cameron Penner-Ash
Assistant Project Manager
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Email: cameron.penner-ash@cardno.com

Bobby Thompson
Project Manager
Cardno
Direct Line +1 206 510 5855
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References

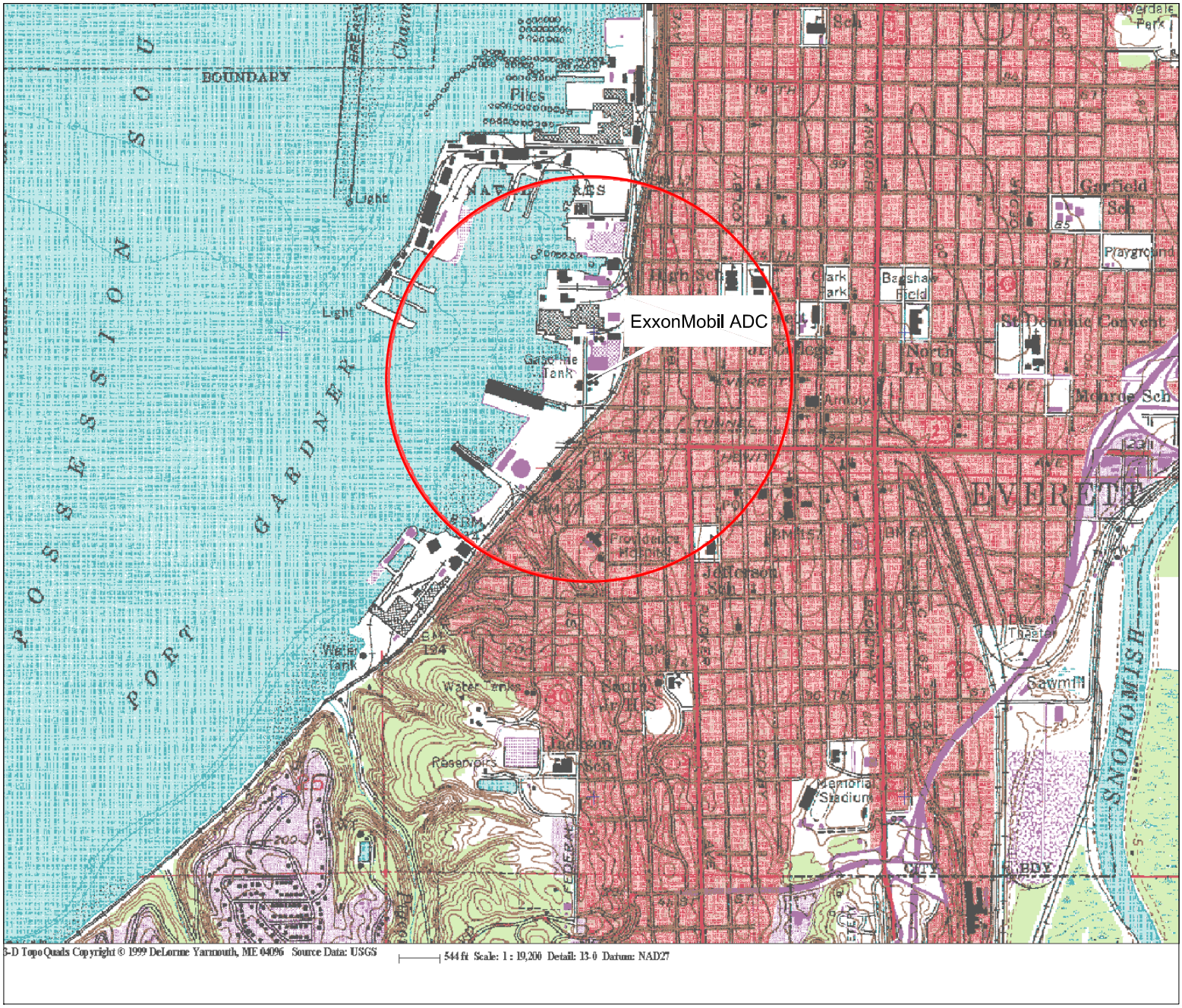
State of Washington Department of Ecology (Ecology). June 2016. *Guidance for Remediation of Petroleum Contaminated Sites.*

Strider Construction Company, Inc. (Strider). September 25, 2021. *Norton Terminal Development & MTCA 3rd Interim Action Soil Removal, Stockpiling, and Disposal Plan.*

United States Environmental Protection Agency (USEPA). January 2017. *National Functional Guidelines for Superfund Organic Methods Data Review, USEPA-540-R-2017-002.*

Acronym List

µg/L	Micrograms per liter
µg/m^3	Micrograms per cubic meter
µs	Microsiemens
1,2-DCA	1,2-dichloroethane
acfm	Actual cubic feet per minute
AS	Air sparge
AST	Aboveground storage tank
bgs	Below ground surface
BTEX	Benzene, toluene, ethylbenzene, and total xylenes
cfm	Cubic feet per minute
COC	Chain-of-Custody
CPT	Cone Penetration (Penetrometer) Test
DIPE	Di-isopropyl ether
DO	Dissolved oxygen
DOT	Department of Transportation
DPE	Dual-phase extraction
DTW	Depth to water
EDB	1,2-dibromoethane
EPA	Environmental Protection Agency
ESL	Environmental screening level
ETBE	Ethyl tertiary butyl ether
FID	Flame-ionization detector
fpm	Feet per minute
GAC	Granular activated carbon
gpd	Gallons per day
gpm	Gallons per minute
GWPTS	Groundwater pump and treat system
HIT	High-intensity targeted
HVOC	Halogenated volatile organic compound
J	Estimated value between MDL and PQL (RL)
LEL	Lower explosive limit
LPC	Liquid-phase carbon
LRP	Liquid-ring pump
LUFT	Leaking underground fuel tank
LUST	Leaking underground storage tank
MCL	Maximum contaminant level
MDL	Method detection limit
mg/kg	Milligrams per kilogram
mg/L	Milligrams per liter
mg/m^3	Milligrams per cubic meter
MPE	Multi-phase extraction
MRL	Method reporting limit
msl	Mean sea level
MTBE	Methyl tertiary butyl ether
MTCA	Model Toxics Control Act
NAI	Natural attenuation indicators
NAPL	Non-aqueous phase liquid
NEPA	National Environmental Policy Act
NGVD	National Geodetic Vertical Datum
NPDES	National Pollutant Discharge Elimination System
O&M	Operations and Maintenance
ORP	Oxidation-reduction potential
OSHA	Occupational Safety and Health Administration
OVA	Organic vapor analyzer
P&ID	Process and Instrumentation Diagram
PAH	Polycyclic aromatic (or polyaromatic) hydrocarbon
PCB	Polychlorinated biphenyl
PCE	Tetrachloroethene or perchloroethylene
PID	Photo-ionization detector
PLC	Programmable logic control
POTW	Publicly-owned treatment works
ppmv	Parts per million by volume
PQL	Practical quantitation limit
psi	Pounds per square inch
PVC	Polyvinyl chloride
QA/QC	Quality assurance/quality control
RBSL	Risk-based screening levels
RCRA	Resource Conservation and Recovery Act
RL	Reporting limit
scfm	Standard cubic feet per minute
SSTL	Site-specific target level
STLC	Soluble threshold limit concentration
SVE	Soil vapor extraction
SVOC	Semi-volatile organic compound
TAME	Tertiary amyl methyl ether
TBA	Tertiary butyl alcohol
TCE	Trichloroethene
TOC	Top of well casing elevation; datum is msl
TOG	Total oil and grease
TPH	Total petroleum hydrocarbons
TPHd	Total petroleum hydrocarbons as diesel
TPHg	Total petroleum hydrocarbons as gasoline
TPHmo	Total petroleum hydrocarbons as motor oil
TPHs	Total petroleum hydrocarbons as stoddard solvent
TRPH	Total recoverable petroleum hydrocarbons
UCL	Upper confidence level
USCS	Unified Soil Classification System
USGS	United States Geologic Survey
UST	Underground storage tank
VCP	Voluntary Cleanup Program
VOC	Volatile organic compound
VPC	Vapor-phase carbon



FN 0314470001

EXPLANATION

1/2-mile radius circle

N

APPROXIMATE SCALE

0 0.5 1 mile

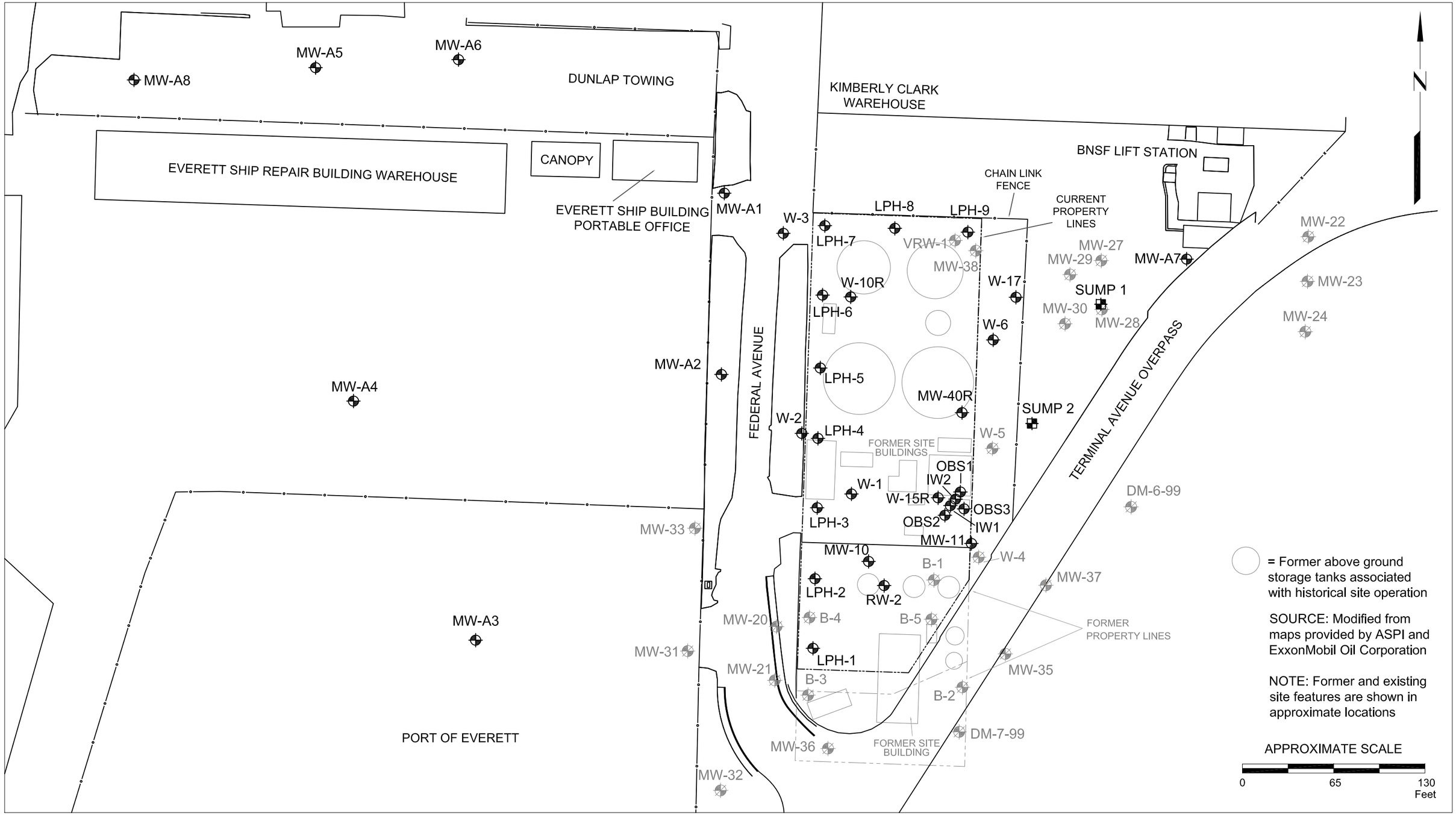
Cardno®

SITE LOCATION MAP

ExxonMobil ADC
2717/2731 Federal Avenue
Everett, Washington

PROJECT NO.
031447

PLATE
1
CPA: 09/24/21



FN 0314470002

GENERALIZED SITE PLAN

ExxonMobil ADC
2717/2731 Federal Avenue
Everett, Washington

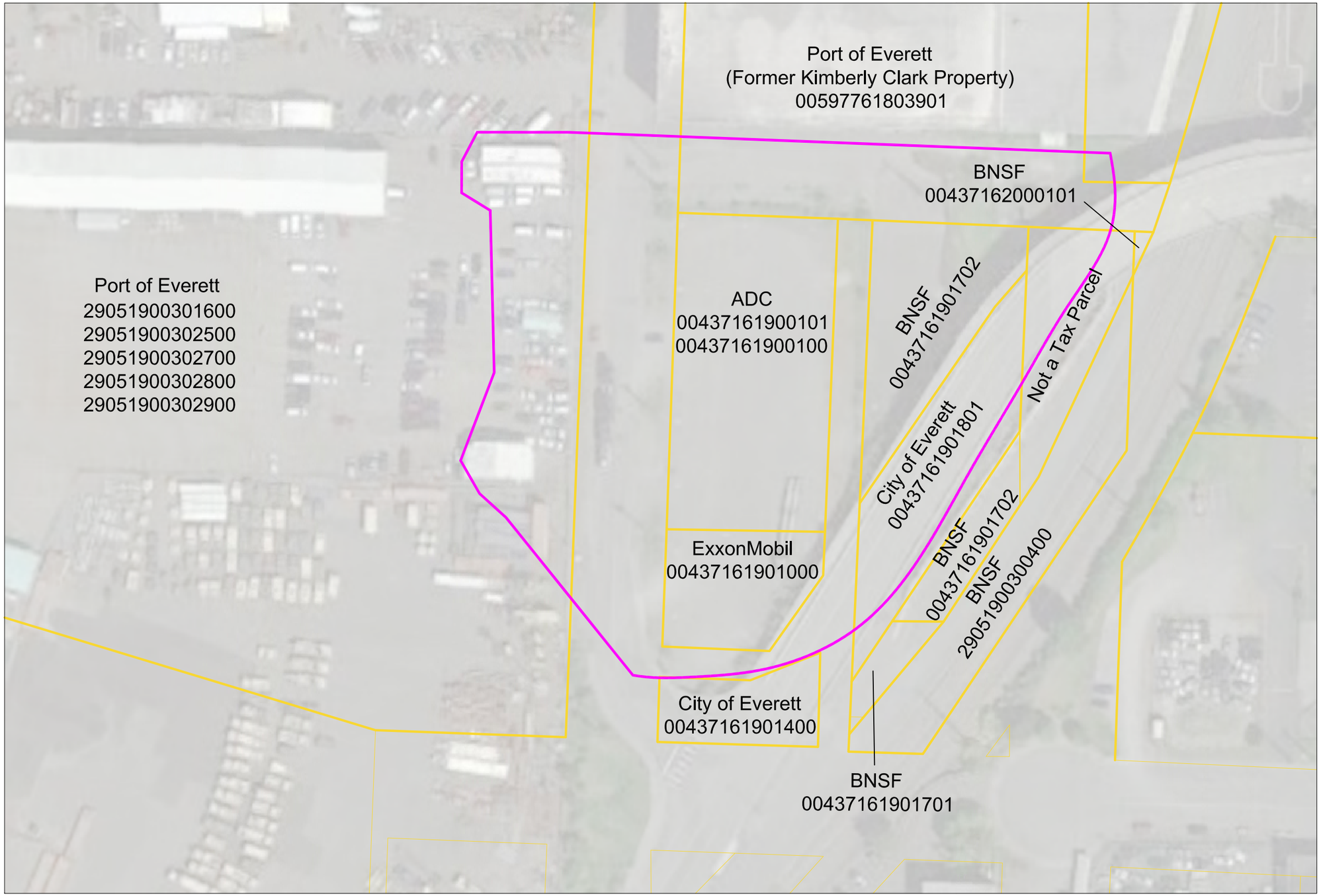
EXPLANATION

- MW-A8 — Groundwater Monitoring Well
- OBS1 — Observation Well
- SUMP 2 — Groundwater Sump
- MW-38 — Destroyed Groundwater Monitoring Well

PROJECT NO. 031447

PLATE 2

PEP: 07/16/21



N

EXPLANATION

MTCA Site Boundary

Tax Parcel Boundary

SOURCE: Modified from maps provided by the Snohomish County Assessor

FN 0314470002

APPROXIMATE SCALE

0 75 150 Feet

Cardno®

SITE BOUNDARY MAP

ExxonMobil ADC
2717/2731 Federal Avenue
Everett, Washington

PROJECT NO.
031447

PLATE
Plate 3

RRT: 10/19/21

PORT OF EVERETT

EVERETT SHIP REPAIR
(PORT OF EVERETT)

DUNLAP
(PORT OF EVERETT)

PROPOSED MANHOLE AND STORM DRAIN EXTENSION

PROPOSED CONDUITS ON PORT PROPERTY

FEDERAL AVE RIGHT-OF-WAY

PROPOSED WATERMAIN EXTENSION

RELOCATE GUY POLE

43LF–12" W

35LF–12" W

47LF–12" W

35LF–12" W

RECONN EX ¾" WS

RECONN EX FH

33LF–12" W

268LF–12" W

17LF–12" W

RECONN EX 2" WS

FEDERAL AVE

603LF–12" W

LEFT MERGE

YIELD

PORT ONLY

STOP

STOP

3"x8" REDUCER

RECONN EX FH ASSEMBLY AND WS

RECONN EX FH

RECONN EX ¾" WS

RECONN EX 1" WS

CONN SEWER TO EX SMH1995U05

15' WIDE

EX POST INDICATOR VALVE, TYP (7)

EX FIRE HYDRANT, TYP

EX CITY WATERMAIN

MATCHLINE
SEE SHEET C5.1

N

30' 0 30' 60'
15' 45'

SCALE: 1"=30'

CALL 48 HOURS BEFORE YOU DIG DIAL 811

VERT DATUM: NAVD 88
CONV TO MLLW = NAVD88+2.03
HORZ DATUM: NAD 83/91

DRAFT - NOT FOR CONSTRUCTION

60% SUBMITTAL
IF SHEET IS LESS THAN 22x34
REDUCE SCALE ACCORDINGLY

Port of EVERETT
P.O. BOX 538
EVERETT, WA 98206
(425) 259–3164

kpff
1601 5th Avenue, Suite 1300
Seattle, Washington 98101
(206) 382-0600 Fax (206) 382-0500
PROJECT NO. 1600120

NO.	DATE	BY	REVISION	NO.	DATE	BY	REVISION

PROJECT ENGINEER: N. WATSON	SCALE: 1" = 30'
DESIGNED BY: J. BECKER	DATE: 12/04/2020
DRAWN BY: K. EDWARDS, D. YU	CHECKED BY: N. WATSON
APPROVED BY:	

PORT OF EVERETT

MARITIME INDUSTRIAL EXPANSION
NORTON TERMINAL – 60% DESIGN
WATER AND SEWER PLAN

DWG. NO. C5.2
CIP NO. 1–8–900–05
PROJECT NO. TBD
SHEET NO. XX OF XX

ExxonMobil ADC

Cardno 03144702.R07

APPENDIX A
FIELD PROTOCOL

Cardno
Soil Sampling
Field Protocol

Preliminary Activities

Advance notification is made as required by the agency(s) prior to the start of work. Fieldwork is conducted under the advisement of a registered professional geologist and in accordance with an updated site-specific safety plan prepared for the project, which is available at the job site during field activities.

Soil Sampling Procedures

Soil samples will be collected from the bottom of open trenches with hand tools and will be placed into clean, un-used plastic bags.

Soil samples are preserved in glass jars, VOAs, or other manner required by the local regulatory agency (e.g., Environmental Protection Agency Method 5035). Samples are placed in a cooler chilled to 4º Celsius and transported to a state-certified laboratory. The samples are transferred under chain-of-custody (COC) protocol.

Field Screening Procedures

Cardno places the soil sample into a plastic re-sealable bag. The bag is placed away from direct sunlight for approximately 20 minutes, after which the tip of a photo-ionization detector (PID) or similar device is inserted through the plastic bag to measure organic vapor concentrations in the headspace. The PID measurement is recorded on the boring log. At a minimum, the PID or other device is calibrated on a daily basis in accordance with manufacturer's specifications using a hexane or isobutylene standard. The calibration gas and concentration are recorded on a calibration log. Instruments such as the PID are useful for evaluating relative concentrations of volatilized hydrocarbons, but they do not measure the concentration of petroleum hydrocarbons in the soil matrix with the same precision as laboratory analysis. Cardno trained personnel describe the soil in the bag according to the Unified Soil Classification System and record the description on the boring log, which is included in the final report.

Air Monitoring Procedures

Cardno performs a field evaluation for volatile hydrocarbon concentrations in the breathing zone using a calibrated PID or lower explosive level meter.

Decontamination Procedures

Cardno or the subcontractor decontaminates soil and water sampling equipment between collection of each sample with a non-phosphate solution, followed by a minimum of two tap water rinses. De-ionized water may be used for the final rinse.

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APPENDIX B
EXAMPLE FIELD FORMS

Daily Field Report

Project ID #: **Cardno Job #:**

Subject: **Date:**

Equipment Used: **Sheet:** **of**

Name(s):

Time Arrived On Site: **Time Departed Site:** **Total Travel:**

Heat Stress Management and Fluid Replacement Chart

Name	Hour 1		Hour 2		Hour 3		Hour 4		Hour 5		Hour 6		Hour 7		Hour 8	
	qty	bpm	qty	bpm	qty	bpm	qty	bpm	qty	bpm	qty	bpm	qty	bpm	qty	bpm

Water = access to 32 oz (1 qt) per hour is required, staff should hydrate hourly with at least 8 oz (1 c)

Heat Stress Monitoring

- If heart rate is <110 beats per minute (bpm) at break = ok to continue work
- If heart rate >110 bpm = stop work for individual and review Appendix G of the HASP "Heart Rate Monitoring – What to do:"

309 South Cloverdale Street, A13, Seattle, WA 98108 Office: 206-269-0104

Daily Field Report

Cardno Job #:

Date:

Project ID #:

Sheet: of

309 South Cloverdale Street, A13, Seattle, WA 98108 Office: 206-269-0104

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APPENDIX C

EXAMPLE CHAIN-OF-CUSTODY RECORD

eurofins | Calscience
7440 LINCOLN WAY
GARDEN GROVE, CA 92841-1432
TEL: (714) 895-5494 . FAX: (714) 894-7501

Site Name	ExxonMobil ADC
Provide MRN for retail or AFE for major projects	
Retail Project (MRN)	
Major Project (AFE)	
Project Name	ExxonMobil ADC / 0314476040

CHAIN OF CUSTODY RECORD

DATE: _____

PAGE: _____ OF _____

ExxonMobil Engr: **Jennifer Sedlachek**

LABORATORY CLIENT:
Cardno

ADDRESS:
309 South Cloverdale Street Unit A13

CITY:
Seattle, WA 98108

TEL: **206-510-5855** FAX: **N/A**

GLOBAL ID #/ COELT LOG CODE:

P.O. 0314476040; Agreement# A2604415

PROJECT CONTACT:

LAB USE ONLY

SAMPLER(S):

COOLER RECEIPT
Temp = _____ °C

TURNAROUND TIME
☐ SAME DAY ☐ 24 HR ☐ 48 HR ☐ 72 HR ☐ 5 DAYS ☐ 10 DAYS

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY)
☐ RWQCB REPORTING ☐ ARCHIVE SAMPLES UNTIL _____/_____/_____

SPECIAL INSTRUCTIONS:

REQUESTED ANALYSIS

LAB USE ONLY	SAMPLE ID	Field Point Name	SAMPLING DATE	SAMPLING TIME	MAT-RIX	NO. OF CONT.	CONTAINER TYPE

Relinquished by: (Signature)	Received by: (Signature)	Date, & Time:
Relinquished by: (Signature)	Received by: (Signature)	Date, & Time:
Relinquished by: (Signature)	Received by: (Signature)	Date, & Time:

Cardno

Cardno is an ASX-200 professional infrastructure and environmental services company, with expertise in the development and improvement of physical and social infrastructure for communities around the world. Cardno's team includes leading professionals who plan, design, manage, and deliver sustainable projects and community programs. Cardno is an international company listed on the Australian Securities Exchange [ASX:CDD].

Cardno Zero Harm

Cardno ZERO HARM EVERY JOB. EVERY DAY.

At Cardno, our primary concern is to develop and maintain safe and healthy conditions for anyone involved at our project worksites. We require full compliance with our Health and Safety Policy Manual and established work procedures and expect the same protocol from our subcontractors. We are committed to achieving our Zero Harm goal by continually improving our safety systems, education, and vigilance at the workplace and in the field. Safety is a Cardno core value and through strong leadership and active employee participation, we seek to implement and reinforce these leading actions on every job, every day.

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