

August 24, 2006
10077.015

Oregon Department of Environmental Quality
Northwest Region
2020 SW Fourth Avenue
Suite 400
Portland, Oregon 97201-4987

VIA Email/First Class

**Subject: Revised Contaminated Media Management Plan
Former Mobil/Niemi Oil Bulk Plant IRAM
Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon
DEQ ECSI File #2277**

Dear Ms. Coates:

Enclosed are four copies of the above-referenced document. This document is being submitted to DEQ on behalf of the Astoria Area-Wide Cooperating Parties with revisions addressing the comments contained in your letter dated July 17, 2006.

Please call me at (503)768-5121 if you have any questions or comments.

Sincerely,
EnviroLogic Resources, Inc.



Thomas J. Calabrese, RG, CWRE
Principal Hydrogeologist
Project Manager

cc: Distribution list attached

Ms. Anna Coates
August 24, 2006
Page 2

**ASTORIA AREA-WIDE PETROLEUM SITE
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CONTAMINATED MEDIA MANAGEMENT PLAN

**Port of Astoria Property Redevelopment
Former Mobil/Niemi Oil Bulk Plant
Astoria Area-Wide Petroleum Site
Astoria, Oregon
DEQ ECSI File #2277**

August 24, 2006

**Prepared for:
Astoria Area-Wide PRP Group**

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CONTAMINATED MEDIA MANAGEMENT PLAN

**Port of Astoria Property Redevelopment
Former Mobil/Niemi Oil Bulk Plant
Astoria Area-Wide Petroleum Site
Astoria, Oregon**

August 24, 2006

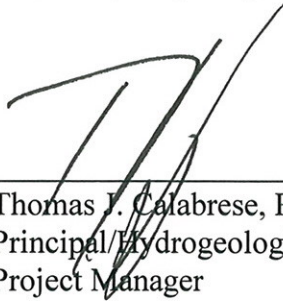
This plan has been prepared by *EnviroLogic Resources, Inc.*, of Portland, Oregon.

EnviroLogic Resources, Inc. Project No. 10077.015

By



Jason C. Howard
Project Hydrogeologist



Thomas J. Calabrese, RG
Principal Hydrogeologist
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CONTAMINATED MEDIA MANAGEMENT PLAN

Port of Astoria Property Redevelopment Former Mobil/Niemi Oil Bulk Plant Astoria Area-Wide Petroleum Site Astoria, Oregon

1.0 INTRODUCTION

This document presents a Contaminated Media Management Plan (CMMP) related to the redevelopment of the former Mobil/Niemi Oil bulk petroleum storage plant located at 490 Industry Street, Astoria, Oregon. The former Mobil/Niemi Oil bulk plant and adjoining properties owned by the Port of Astoria (the Port) are located within the Astoria Area-Wide Petroleum Site. The site location is shown on Figure 1.

1.1 BACKGROUND

The Port has owned the former Mobil/Niemi Oil bulk plant and adjoining properties since the early 1900s. The Port previously leased the property to Mobil Oil Company and its predecessors from approximately the early 1920s through 1976, and to the Ed Niemi Oil Company from 1976 until 1999. The former Mobil/Niemi Oil bulk plant and surrounding Port and other properties within the larger Astoria Area-Wide Petroleum Site are shown on Figure 2. The CMMP has been prepared to provide guidance for contractors who may need to manage petroleum-contaminated soil, ground water, or light non-aqueous phase liquid (LNAPL or free product) during redevelopment of the former Mobil/Niemi Oil bulk plant. Riverland, LLC, is conducting the redevelopment including the former Mobil/Niemi Oil bulk plant and the layout of the proposed redevelopment is shown on Figure 3.

Investigation and potential cleanup of the various properties, including the former Mobil/Niemi Oil bulk plant, at the Astoria Area-Wide site is being conducted under a unilateral order issued by the Oregon Department of Environmental Quality (DEQ) in December 2001. The Order

(DEQ Unilateral Order No. ECSR-NWR-01-11) was issued to certain current and former facility operators, property owners, and leaseholders. These owners and operators have formed the Astoria Area-Wide Petroleum Site PRP Group to fund and perform a Remedial Investigation/Feasibility Study (RI/FS) and the other work required by the Order. Thus far, several investigations and interim measures have been completed for the Astoria Area-Wide site as required by the Order, including the removal of an underground heating oil storage tank and an underground storage tank (UST) for secondary containment in connection with the former overhead petroleum truck loading rack at the former Mobil/Niemi bulk plant.

Mobil Oil and Niemi Oil operated a bulk plant at 490 Industry Street, Astoria, Oregon, located on Port property. The former Mobil/Niemi Oil bulk plant was constructed in 1925, and operated until some time in the 1990s. The former bulk plant facilities have been removed and the area to be redeveloped at the former Mobil/Niemi Oil bulk plant is primarily vacant land. Previous site investigations have identified the presence of primarily gasoline and diesel-range hydrocarbons, and associated constituents, at the former Mobil/Niemi Oil bulk plant and on the adjoining property to the east, including LNAPL. The LNAPL consists of weathered petroleum products. Based on previous soil and ground-water sampling at the former Mobil/Niemi Oil bulk plant and surrounding Port properties, the nature and extent of petroleum-impacted soil, ground water, and LNAPL is known. Construction and excavation workers working at the former Mobil/Niemi Oil bulk plant on future excavation projects may encounter petroleum-impacted soil, ground water, or LNAPL.

1.2 OBJECTIVES

The purpose of this CMMP is to provide site-specific information and guidance to contractors that may encounter petroleum-contaminated media, including LNAPL, during redevelopment activities at the former Mobil/Niemi Oil bulk plant. Specifically, this document includes:

- Identified locations of residual petroleum impacts in soil and/or ground water;
- Approximate extent of LNAPL at the property;
- Descriptions of petroleum constituents and concentrations remaining in soil and

- ground water as of the last applicable sampling dates;
- Recommended protocols for monitoring potential environmental contaminants during excavation activities;
- Options for management of petroleum-impacted soil encountered during future excavation activities;
- Options for management of petroleum-impacted ground water encountered during future excavation activities; and,
- Options for appropriate personal protective equipment (PPE).

1.3 SITE DESCRIPTION

The redevelopment site includes the former Mobil/Niemi Oil bulk plant and vacant land used for marine-related storage. The surface of the site is generally a combination of dirt, gravel, asphalt and concrete. The topography of the site is fairly level with some localized variation. The redevelopment site is bounded on the north-northwest by Portway; to the west-southwest by Hamburg Street; to the south-southeast by railroad tracks, a train storage shed, and Industry Street; and to the east-northeast by undeveloped land used for marine-related storage. This CMMP applies only to the former Mobil/Niemi Oil bulk plant property. Contaminated media management needs for other properties at the Astoria Area-Wide Petroleum Site will be evaluated by DEQ on a case-by-case basis.

Storm water that lands on the former Mobil/Niemi Oil bulk plant property infiltrates where the surface is unimproved or improvements have been removed. Runoff enters catch basins along Portway. These catch basins pass through the Port's storm water conveyance system to discharge to the Columbia River in Slip 1.

2.0 CONTAMINANT INFORMATION

Chemical constituents in soil and ground water at the former Mobil/Niemi Oil bulk plant are petroleum-related compounds. Based on previous assessments, residual petroleum is primarily present in soil in the central portion of the planned development site resulting from releases at the former Mobil/Niemi Oil bulk plant. Residual contaminants detected in soil and ground water include: total petroleum hydrocarbons (TPH); benzene, toluene, ethylbenzene and xylene (BTEX); 1,2,4-trimethylbenzene (1,2,4-TMB) and 1,3,5-trimethylbenzene (1,3,5-TMB); polynuclear aromatic hydrocarbons (PAHs); lead (Pb); and, iso-propylbenzene and n-propylbenzene.

Thirty-two soil borings were completed in the vicinity of the planned redevelopment as part of Phase 1 and Phase 2 soil characterization activities for the former Mobil/Niemi Oil bulk plant. Phase 1 soil analytical results are presented in the Technical Memorandum, Phase 1 Soil Characterization (*EnviroLogic Resources, 2003*). Phase 2 soil analytical results are presented in the Technical Memorandum, Phase 2 Soil Characterization (*EnviroLogic Resources, 2004*).

As part of site characterization activities, nine monitoring-wells have been installed on the property proposed for redevelopment, including the former Mobil/Niemi Oil bulk plant. These wells are MW-30(A), MW-31(A), MW-35(A), MW37(A), MW-39(A), MW-40(A), MW-44(A), MW-45(A) and MW-51(A). Most of these wells have been monitored quarterly for at least one year as part of the Astoria Area-Wide ground-water monitoring program. The results for ground-water sampling are presented in the Technical Memorandum, Quarterly Ground-Water Monitoring, Third Quarter 2004 – 4th Round (*EnviroLogic Resources, 2004*). Three monitoring-wells at the former Mobil/Niemi Oil bulk plant, MW-37(A), MW-40(A) and MW-44(A), have contained measurable LNAPL accumulations of 0.01 feet, 0.07 feet, and 0.45 feet, based on June 2004 monitoring data. Accordingly, the average thickness of LNAPL is 0.17 feet.

Soil and ground-water samples collected during site investigations have detected elevated petroleum-related compounds. In general, petroleum impacted soil is primarily present at depths

greater than three feet at the former Mobil/Niemi Oil bulk plant. Similarly, ground-water contamination and/or LNAPL may be encountered at the water table that is approximately seven feet below grade. The concentrations of gasoline range and diesel range petroleum hydrocarbons detected in soil samples is presented on Figures 4 through 7. The concentration of gasoline range hydrocarbons detected in ground-water samples during the fourth quarterly monitoring event is shown on Figure 8. The extent of LNAPL at the former Mobil/Niemi Oil bulk plant is also shown on these figures.

Based on the results of soil sampling conducted to date, DEQ risk based concentrations (RBC) in soil have not been exceeded at the former Mobil/Niemi Oil bulk plant for the construction or excavation worker exposure pathways (RBC_{ss}). The exposure pathways considered for the construction and excavation worker include soil ingestion, dermal contact and inhalation. Ground-water sampling results indicate that ground water RBC exceedences exist for the construction or excavation worker exposure pathway (RBC_{we}). Four monitoring wells [MW-30(A), MW-37(A), MW-40(A) and MW-44(A)] with LNAPL or RBC_{we} exceedences have been identified. The ground water RBC_{we} exceedences detected in samples from these monitoring wells were for gasoline-range hydrocarbons, naphthalene, and/or 1,2,4-trimethylbenzene. The locations of RBC exceedences at the former Mobil/Niemi Oil bulk plant for the construction and excavation worker exposure pathways are shown on Figure 3. These RBCs are only applicable for construction and excavation activities during former Mobil/Niemi Oil bulk plant redevelopment and for other soil disturbances in the future. Other RBCs and corresponding areas of concern for the vapor intrusion into building(s) exposure pathway are being separately remedied under the RI/FS process.

If development activities, including utility trenching do not extend to a depth greater than 7 feet below existing ground surface it is not likely ground water or LNAPL will be encountered during the dry season (May through October) at the former Mobil/Niemi Oil bulk plant. Ground water and/or LNAPL may be encountered at shallower depths during the wet season (November through April). A specific evaluation of the proposed utility depths relative to ground-water levels should be performed when final building plans are made available.

Our understanding of the former Mobil/Niemi Oil bulk plant site and information presented on the attached figures is based on known soil and ground water analytical data that are considered representative of the sample locations and thought to be representative of the site. However, not all areas of the site have been sampled and elevated concentrations of petroleum-related compounds may be present at locations not currently identified given the potential for multiple source areas.

3.0 CONTAMINATED MEDIA MANAGEMENT

Petroleum hydrocarbons could be present in soil at the former Mobil/Niemi Oil bulk plant if the soil exhibits one or more of the following physical characteristics: 1) grey to black (i.e. reduced soil) staining; 2) incidental petroleum odors; and 3) measurable organic vapor emissions using a portable vapor/gas detector (e.g., photoionization or flame ionization detector). Petroleum hydrocarbons could be present in ground water if the ground water exhibits one or more of the following physical characteristics: 1) incidental petroleum odors; 2) rainbow-colored sheen on top of the water; 3) frothy or emulsified appearance; and 4) amber or dark oily globules on the water surface. LNAPL could be present if subsurface conditions exhibit one or more of the following physical characteristics: 1) incidental to strong petroleum odors; 2) rainbow-colored leachate from soils; and 3) amber-, brown-, black- or other-colored petroleum-like product accumulates on any encountered ground water. The contractor performing the excavation work will initially conduct classification of soils during construction activities at the former Mobil/Niemi Oil bulk plant. *EnviroLogic Resources* field personnel will provide guidance on classification when questions arise and be responsible for final classification based on analytical data and determining final disposition of materials.

3.1 SOIL CLASSES

This section presents a relative classification system for potential contamination that can be used in the field during future excavation at the former Mobil/Niemi Oil bulk plant. Classification of soil into one of the three classes would be based on one or more of the above-mentioned physical characteristics. Soil at the site will fall into one of the following three classes:

3.1.1 Non-Contaminated Soils

This class includes soil that does not contain petroleum hydrocarbons and does not exhibit characteristics of petroleum-contaminated soil (described above).

3.1.2 Suspect-Contaminated Soils

This class refers to soil that is stained, exhibits an apparent petroleum fuel odor; and/or vapors are present above ambient background levels using a portable vapor/gas detector during excavation, or when the instrument probe is inserted into a plastic bag containing a soil sample and trapped air (headspace vapor screening).

3.1.3 Obviously-Contaminated Soils

This class refers to soil that has an obvious fuel-related discoloration heavy in nature, strong petroleum or fuel odor, may exhibit a heavy petroleum-like sheen when immersed in water, and/or headspace vapors readings approach the lower explosive limit for gasoline.

3.2 SOIL EXCAVATION

The contractor will notify the representative of the Astoria Area-Wide PRP Group if suspect or obviously contaminated soil is encountered during excavation activities at the former Mobil/Niemi Oil bulk plant and requires special handling. The Oregon DEQ will be notified by the Astoria Area-Wide PRP Group.

If the contractor's employees do not have the proper Hazardous Waste Site Operations and Emergency Response (HAZWOPER) training per Occupational Safety and Health Administration (OSHA) and state law, the contractor will immediately stop work in that area and relocate his or her work force to a portion of the project where petroleum impacted media has not been identified. The contractor will undertake measures to prevent the public from entering the area at the former Mobil/Niemi Oil bulk plant where residual petroleum impact is encountered in soil or ground water (i.e. traffic control, temporary fencing, barricades, steel plates, plastic sheeting, etc.).

The contractor will be prepared to decontaminate excavation equipment that has contacted

petroleum-impacted soil, ground water, or LNAPL, if necessary. A designated decontamination area will be established by the contractor for construction equipment that comes in contact with petroleum-impacted media at the former Mobil/Niemi Oil bulk plant. Decontamination will be completed in a manner that minimizes the amount of wash water that is generated. Decontamination rinse water will be stored and disposed of as described in the Stockpiling and Staging section of this CMMP.

Given its area, the redevelopment property including the former Mobil/Niemi Oil bulk plant will require erosion control measures/best-management practices (listed in the 1200-C General NPDES permit for construction sites) to be implemented by the contractor in order to prevent the migration of petroleum impacted soil into catch basins or surface waters. These measures could include silt/sediment fences, straw wattles, bark bags, catch basin inserts, or other approved erosion control devices. The developer has obtained a NPDES-construction permit from DEQ Water Quality Section. A copy of this permit is contained in Appendix A, as it pertains to the former Mobil/Niemi Oil bulk plant. It should be noted that this permit does not specifically address contaminated media management for the former Mobil/Niemi Oil bulk plant, however, implementation of the associated erosion control measures should provide for the prevention of potentially contaminated sediments from entering waters of the state.

Site access controls will be established around the area at the former Mobil/Niemi Oil bulk plant where petroleum contaminated media are encountered or stockpiled. Ingress and egress will be controlled such that all personnel, vehicles and equipment utilize a specified entry and exit location to limit the potential for uncontrolled removal of contaminants or mixing of contaminants with clean areas. Personnel and equipment exiting the controlled area shall decontaminate according to the contractor's site-specific health and safety plan (HASp).

Vehicle and other equipment within the controlled areas at the former Mobil/Niemi Oil bulk plant generally may be relocated to other areas within the controlled areas without the need for complete decontamination. Limited decontamination procedures should be implemented, however, if vehicles or equipment are to be transferred from one location to another location

within the former Mobil/Niemi Oil bulk plant controlled access. Loose soils should be removed, and significant quantities of adhered soils should be removed from vehicles and equipment prior to significant relocation within the controlled areas.

To minimize decontamination efforts and expenses, only vital equipment should enter the controlled areas at the former Mobil/Niemi Oil bulk plant. Vehicles and equipment exiting the controlled portions of the former Mobil/Niemi Oil bulk plant will first pass through a dedicated, bermed steam cleaning pad and wheel wash area prior to entering the public right-of-way in order to remove any potential soil and ground water contamination, or LNAPL. If decontamination wash water is generated it will be containerized and stored on-site pending receipt of analytical results that indicate whether or not concentrations of petroleum-related constituents are below applicable DEQ risk-based concentrations. Based on analytical results, stored wheel wash water may be able to be reused for dust suppression purposes or, alternatively, wheel wash water may need to be transported off-site for approved disposal.

Washing of vehicles and equipment is not required for movement within the controlled access.

3.2.1 Monitoring & Record Keeping

The contractor or redevelopment property site representative will monitor all areas of construction and excavation activities at the former Mobil/Niemi Oil bulk plant for field evidence of petroleum-related contamination. Visual, olfactory, and other indications of contamination will be observed and recorded by the contractor or other field representatives in daily field logs, along with date, time, observations, photos, hand-drawn diagrams, persons contacted, and other pertinent information. Indicators of contamination include observations regarding odors, color, mottling, stains, sheen, or instrument readings.

If areas suspected of containing petroleum-contaminated media and debris are encountered at the former Mobil/Niemi Oil bulk plant, redevelopment work shall be suspended until a contractor familiar with this CMMP has assessed the areas relative to this CMMP and the contractor's site-

specific health and safety plan. If it is determined that the suspected areas contain petroleum-contaminated media and debris, necessary precautions or other actions will be taken by the contractor to limit the risk of exposure to workers and the public, and implement this CMMP.

Where dictated by field evidence, soils at the former Mobil/Niemi Oil bulk plant containing petroleum-contaminated media and debris will be categorized and segregated by the contractor from those soils without such evidence. Each temporary soil stockpile will be managed by the contractor depending upon the classification of the soil.

Where necessary for off-site transport to an approved destination, samples of the stockpiled petroleum-containing media and debris at the former Mobil/Niemi Oil bulk plant will be collected by *EnviroLogic Resources* staff and submitted to an environmental laboratory approved for the pertinent methods to assist in waste characterization and profiling. Copies of the laboratory analytical results reports will be made available to the approved disposal facility. Petroleum contaminated media and debris will be appropriately containerized for off-site transport to the solid waste or treatment, storage, and disposal facility (or staging area if necessary) by the contractor.

On-site reuse and/or off-site transport will not occur until *EnviroLogic Resources* has completed the necessary waste characterization and, where applicable, regulatory agency approvals have been received. It should be noted that, given the planned building design considerations for redevelopment of the former Mobil/Niemi Oil bulk plant that limit the reuse of excess excavation generated soils, both suspect- and obviously-contaminated soils will be disposed of off-site at Hillsboro Landfill.

The contractor will ensure that all entrants to the former Mobil/Niemi Oil bulk plant conform with this CMMP in conjunction with the contractor's site-specific health and safety plan, and comply with pertinent local, State and Federal rules and regulations that may also be applicable (e.g. fire code, underground storage tanks, asbestos, etc.). Pertinent regulatory agencies will be

notified of unanticipated events by the contractor, *EnviroLogic Resources* staff, or a redevelopment property site representative where required.

3.3 STOCKPILING, STAGING AND SAMPLING

Suspect- and obviously-contaminated soil generated during redevelopment of the former Mobil/Niemi Oil bulk plant will be handled in accordance with all applicable laws, regulations, guidance, policy and best-management practices. Documentation should be sufficient that the approximate volume or tonnage of stockpiled suspect- and obviously-contaminated soil is known.

3.3.1 Stockpiling and Staging

Non-contaminated soil and suspect- or obviously-contaminated soil will be segregated into separate areas.

Suspect- and obviously-contaminated soil will not be placed directly on paved or bare ground surface. The contractor will place appropriate (e.g. 6-mil minimum) plastic sheeting on the ground beneath suspect- or obviously-contaminated stockpiles. Temporary stockpiles will be bermed and covered with appropriate (e.g. 6-mil) plastic sheeting and the adjacent area will be sloped in order to direct any surface runoff from rainfall away from the stockpile area. The contractor will drain wet soils from excavations below the water table at the former Mobil/Niemi Oil bulk plant on appropriate plastic sheeting sloped and configured such that the contractor can collect draining water and transfer it to an appropriate container. The contractor will complete this work in a manner that assures that collected water with petroleum does not leave the former Mobil/Niemi Oil bulk plant stockpile system or drain into surface water catch basins or ditches.

All necessary precautions will be taken to assure the stability of the stockpile in the containment area and prevent soil/sediment from moving out of the containment area into other portions of the former Mobil/Niemi Oil bulk plant site. The contractor will plan accordingly and work around

soil stockpiles during this period, providing for adequate security, and proceed with other work activities pending determination of stockpiled soil disposition.

Excavated petroleum contaminated media and debris may be temporarily stored at the former Mobil/Niemi Oil bulk plant for up to 30 calendar days. Special DEQ authorization is required to store stockpiled soil more than 30-days.

3.3.2 Soil Sampling And Analyses

EnviroLogic Resources will be prepared to collect and analyze samples from stockpiles of non-contaminated, suspect- and obviously-contaminated soil and, based on testing results, determine the appropriate disposition before stockpiled soil is exported (described later in this CMMP). Where applicable, representative sampling will be conducted by *EnviroLogic Resources*, or a Hazardous Waste Site Operations and Emergency Response (HAZWOPER)-trained contractor under *EnviroLogic Resources*' oversight, in accordance with the applicable sections of the RI/FS Work Plan and Sampling and Analyses Plan previously approved by DEQ (*EnviroLogic Resources*, 2002). Otherwise, *EnviroLogic Resources*, or a HAZWOPER-trained contractor under *EnviroLogic Resources*' oversight will generally conduct sampling consistent with Test Methods for Evaluating Solid Waste (SW-846, US EPA,

Disposal options for stockpiled soil will be evaluated and selected by *EnviroLogic Resources* based on the analytical results associated with representative soil samples collected from each soil stockpile. Analytical requirements for stockpile soil samples are typically determined by the facility receiving the waste. An accredited analytical laboratory should perform chemical analysis. Analytical results for non-contaminated soils will be provided to DEQ for evaluation and approval of the proposed fill materials, prior to reuse at the former Mobil/Niemi Oil bulk plant.

The facility receiving petroleum-contaminated soil from the former Mobil/Niemi Oil bulk plant generally has sampling frequency requirements. As a general guideline, and unless otherwise

requested by DEQ or the receiving facility, a minimum of one sample is required for stockpiles smaller than 100 cubic yards (cy). For stockpiles between 101 to 500 cy of soil, a minimum of three samples should be collected. The sampling frequency will be the same regardless of the initial classification of soil as non-, suspect-, or obviously-contaminated. Samples should be collected from the soil that is furthest from the surface of the stockpile, or that is otherwise most likely to contain the highest concentrations of remaining contamination, if any. After receiving laboratory analytical results, *EnviroLogic Resources* and the contractor will evaluate whether any further special handling is required and what end uses may be appropriate for the soil.

Soils verified to be non-contaminated based on the results of laboratory analyses, and authorized by DEQ for reuse, will primarily be utilized during site grading. It is not anticipated that excess clean soils will be generated at this time, given that the planned redevelopment at the former Mobil/Niemi Oil bulk plant will be essentially at or near the existing site elevation and grade. The contractor will manage clean soils under the aforementioned erosion control measures/best management practices to prevent storm water related discharges. In addition, if atmospheric conditions indicate that airborne dust is visibly being generated during former Mobil/Niemi Oil bulk plant site disturbances, the contractor will implement dust control measures to mitigate the off-site transport and redistribution of soils and associated contaminants, if any, in the form of dust. Water will be sprayed on specified vehicle routes to prevent the generation of visible airborne dust from the former Mobil/Niemi Oil bulk plant. Applying gravel and limiting vehicle speeds are other dust control measures that will be implemented as needed.

3.4 GROUND WATER

Based on the existing subsurface information, ground water may be encountered in excavations at the former Mobil/Niemi Oil bulk plant that are deeper than approximately seven feet below existing ground surface and as shallow as four feet during the wet season between November through April. The developers current building plans, essentially depicted as slab on grade, indicate that the deeper utility trenching, particularly storm water and sanitary sewer lines, may be necessary at the former Mobil/Niemi Oil bulk plant to depths at, approaching, or slightly

below the water table.

If ground water, including perched ground water, is encountered in excavations and is suspected of containing petroleum, the contractor will pump such water from the excavation and containerize the water in a temporary aboveground storage tank for later testing by *EnviroLogic Resources* and disposal per the Astoria Area-Wide project requirements for waste water. Representative samples of recovered water will only be collected by *EnviroLogic Resources* staff, or a HAZWOPER-trained contractor under *EnviroLogic Resources*' oversight, and tested to identify appropriate options for disposal. Options for disposal of recovered ground water containing petroleum include off-site treatment, on-site treatment with subsequent discharge into the municipal sanitary and/or storm water sewer system subject to approval and a permit from appropriate regulatory entities (e.g. City of Astoria-Public Works, Oregon DEQ).

3.5 LNAPL

LNAPL may also be encountered in excavations at the former Mobil/Niemi Oil bulk plant that are deeper than approximately seven feet below grade. Direct contact with LNAPL in soil or ground water presents potential risks to site workers, therefore, appropriate personal protective equipment (PPE) will be utilized by site workers whenever working around LNAPL in accordance with the contractor's site-specific HASP. If LNAPL is encountered and recovered from the excavations, the contractor will contain the LNAPL in an appropriate tank, container, or other approved vessel within a dedicated accumulation area, until off-site transport to an approved treatment, recycling, or disposal facility can be arranged. LNAPL may be stored for up to 180 days if less than 2,200 pounds are generated during one calendar month, or for up to 90 days if more than 2,200 pounds are generated during one calendar month. Secondary containment, marking, labeling and other protocols will be followed as required. Given that the average thickness of free product is 0.17 feet, it is not anticipated that significant quantities of LNAPL, if any, will be encountered or generated during construction activities. For future comparison purposes, one-gallon of petroleum LNAPL weighs approximately 7-8 pounds, or conversely, between 275-315 gallons of LNAPL weighs 2,200 pounds.

4.0 CONTRACTOR HEALTH AND SAFETY

Personnel who may contact potentially hazardous materials at the former Mobil/Niemi Oil bulk plant will be HAZWOPER-trained per Occupational Safety and Health Administration (OSHA). A HAZWOPER-trained contractor representative will be on-site at the former Mobil/Niemi Oil bulk plant for all redevelopment related activities involving excavation, trenching or other site disturbances to the subsurface. Air monitoring will be conducted with appropriate portable field sampling equipment to evaluate for contaminant concentrations that may require Level C or higher levels of respiratory protection. Appropriate PPE may be necessary to prevent contact with potentially hazardous materials while working in the vicinity of contaminated media. Based on historic assessment data, Level D PPE generally is suitable for personnel working near contaminated media at the site. However, it may be necessary to upgrade the PPE to Level C if conditions are dusty or if air monitoring indicates a potential health risk. A copy of *EnviroLogic Resources* site-specific HASP is contained in Appendix B. The contractor's site-specific HASP will be provided to DEQ in the future once finalized by the pertinent contractor for the former Mobil/Niemi Oil bulk plant.

The following is a list of potentially applicable Level D PPE and monitoring equipment:

- Eyewash splash kit or nearby eyewash facility;
- First aid kit;
- Fire extinguisher;
- Hard hat;
- Steel toe rubber boots;
- Neoprene or nitrile outer gloves, vinyl inner gloves;
- Safety glasses/goggles;
- No respiratory protection required;
- Cotton coverall or rain suit; and,
- Combustible gas meter and/or photoionization meter for worker breathing zone air monitoring.

Level C PPE is the same as Level D with the addition of :

- Full-face or half-face air-purifying respirator;
- Organic vapor and HEPA dust cartridges; and,
- Polyethylene-coated or saran-coated (SARANEX) Tyvek coveralls.

The contractor will provide the PPE appropriate for the work and for the contaminants encountered at the former Mobil/Niemi Oil bulk plant.

5.0 PROJECT MANAGEMENT

Coordination of the Port redevelopment activities at the former Mobil/Niemi Oil bulk plant that are subject of this CMMP will be conducted by qualified field staff (i.e. a competent person) under the supervision of Thomas J. Calabrese, RG, of *EnviroLogic Resources*. Mr. Calabrese functions as the point of contact between DEQ and the PRP group. Contact information is as follows:

Thomas J. Calabrese, RG, CWRE
Principal/Hydrogeologist
EnviroLogic Resources, Inc.
P.O Box 80762
Portland, Oregon 97280-1762
Ph: 503-768-5121
Cell: 503-799-8011
Fax: 503-768-5122
tomcalabrese@h2ogeo.com

This work will be conducted at the former Mobil/Niemi Oil bulk plant under protocols approved by DEQ in this CMMP and any addenda prepared by *EnviroLogic Resources* as needed given site-specific conditions that may be encountered during field activities.

6.0 REDEVELOPMENT SCHEDULE

Port redevelopment work activities at the former Mobil/Niemi Oil Bulk Plant and adjoining Port property that are covered under this CMMP are planned to begin in May 2006. If revisions to this CMMP are requested by DEQ, a modified CMMP or addendum will be prepared incorporating the requested revisions and distributed to DEQ and pertinent parties of the PRP Group.

This CMMP for the planned Former Mobil/Niemi Bulk Plant property redevelopment activities, or other site soil disturbances in the future, demonstrates that unacceptable levels of risk to construction and excavation workers, and the public, can be effectively managed at the former Mobil/Niemi Oil bulk plant given the application and maintenance of best management practices, PPE, engineering, and/or other controls.

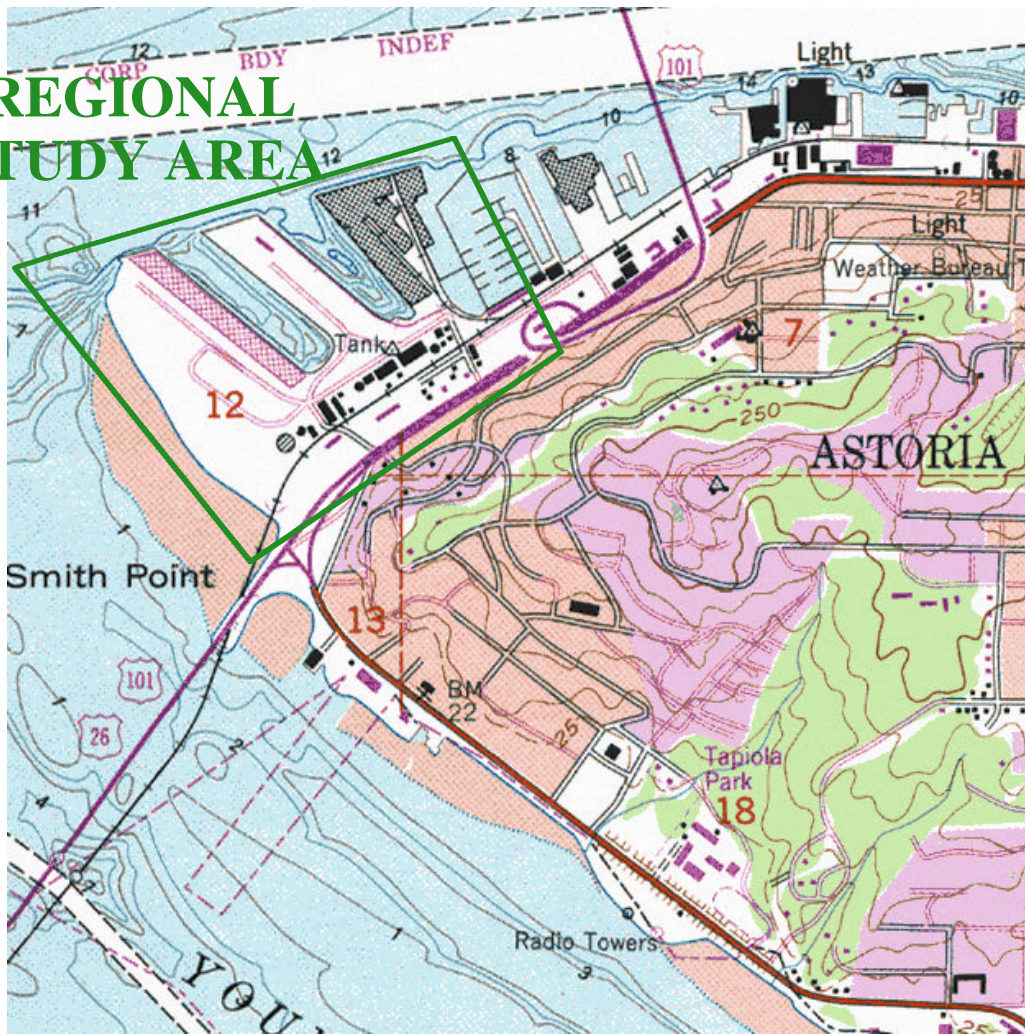
7.0 REFERENCES

- EnviroLogic Resources, Inc.*, July 15, 2002, RI/FS and IRAM Development Work Plan, Phase 1, Astoria Area-Wide Petroleum Site, Astoria, Oregon.
- EnviroLogic Resources, Inc.*, January 20, 2003, Technical Memorandum, Phase 1 Soil Investigation, Remedial Investigation/Feasibility Study, Astoria Area-Wide Petroleum Site, Astoria, Oregon.
- EnviroLogic Resources, Inc.*, November 1, 2004, Technical Memorandum, Phase 2 Soil Investigation, Remedial Investigation/Feasibility Study, Astoria Area-Wide Petroleum Site, Astoria, Oregon.
- EnviroLogic Resources, Inc.*, November 23, 2004, Technical Memorandum, Quarterly Ground-Water Monitoring, Third Quarter 2004 - 4th Round, Remedial Investigation/Feasibility Study, Astoria Area-Wide Petroleum Site, Astoria, Oregon.
- EnviroLogic Resources, Inc.*, December 23, 2004, IRAM Work Plan, Port of Astoria Property Redevelopment, Former Mobil/Niemi Oil Bulk Plant, Astoria Area-Wide Petroleum Site, Astoria, Oregon.
- Oregon DEQ, 1999a, Risk-Based Decision Making [RBDM] for the Remediation of Petroleum-Contaminated Sites. Oregon Department of Environmental Quality, September 23, 2003: Table Updated January 2005.
- Oregon DEQ, 1998, Guidance for Identification of Hot Spots. Oregon Department of Environmental Quality, Waste Management and Cleanup Division, April 1998: Technical Guidance Document.
- US EPA, 1998, Managing Remediation Waste Successfully Through the RCRA Regulatory Maze. U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response (OSWER), 1998: Seminar Guidance Document.
- US EPA, 1998, Management of Remediation Waste Under RCRA. U.S. Environmental Protection Agency, OSWER Publication No. EPA/530/F-98/026, October, 1998: Technical Guidance Document.
- US EPA, 1999, Corrective Action for Solid Waste Management Units at Hazardous Waste Management Facilities. U.S. Environmental Protection Agency, OSWER, October, 1999: Technical Guidance Document.
- US EPA, 2001, Handbook of Groundwater Protection and Cleanup Policies for RCRA Corrective Action. U.S. Environmental Protection Agency, OSWER Publication No. EPA/530/R-01/015, September 2001: Technical Guidance Document.

US EPA, 2004, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (SW-846), Revision 6, U.S. Environmental Protection Agency, GPO Publication No. 955-001-00000-1, Rev. 6 November 2004: Technical Guidance Document.

FIGURES

REGIONAL STUDY AREA



(from USGS, Astoria [1984], OR 7.5' Quadrangles)

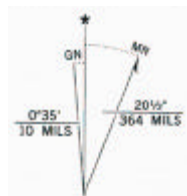
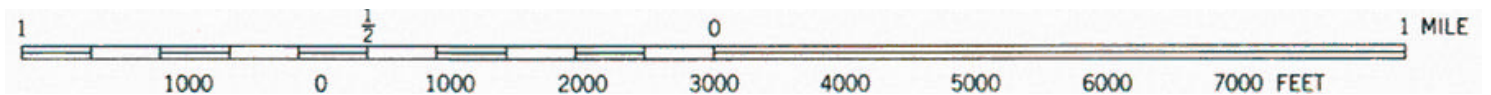


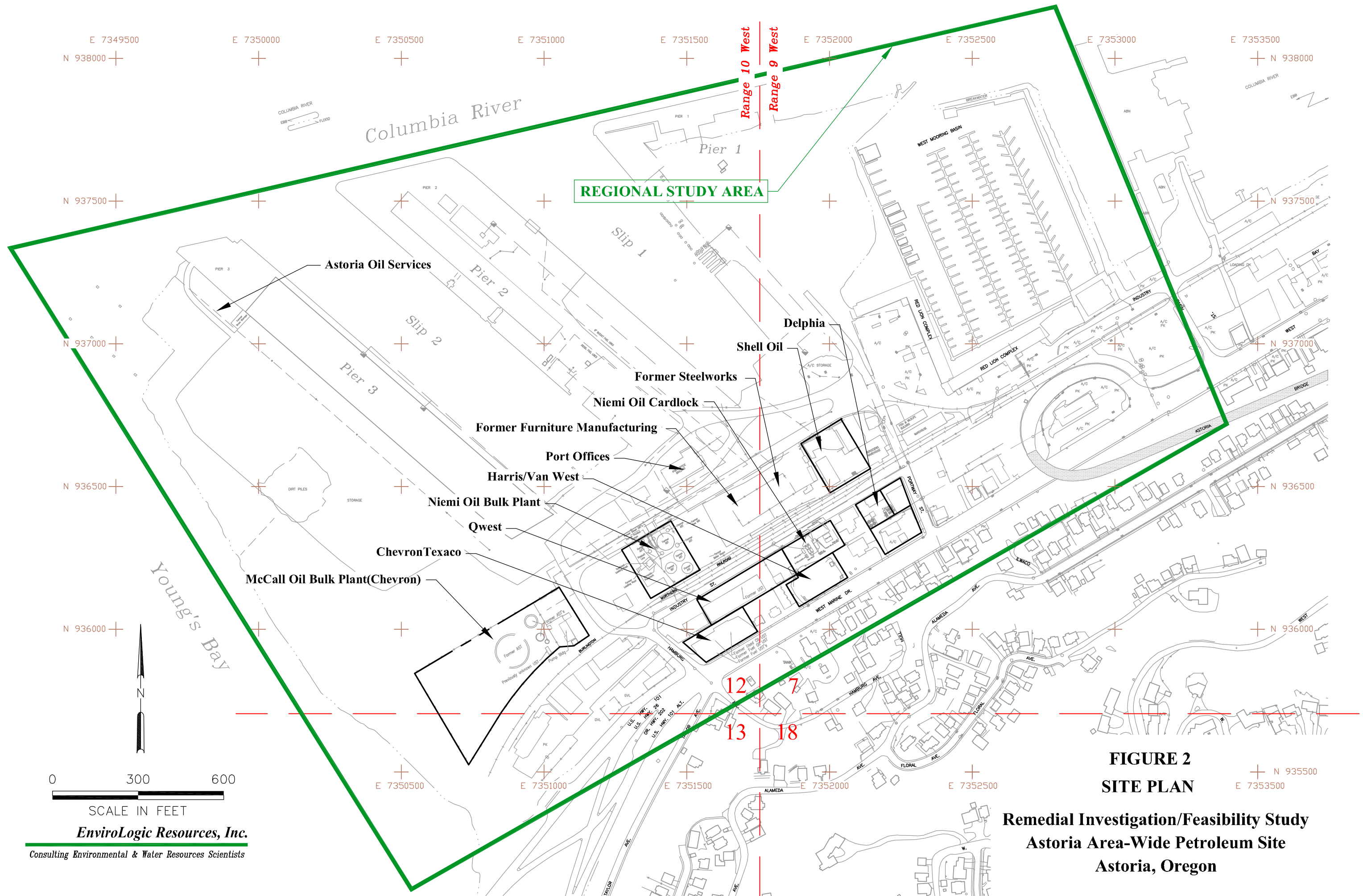
FIGURE 1

SITE LOCATION

Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon

EnviroLogic Resources, Inc.

Consulting Environmental & Water Resources Scientists



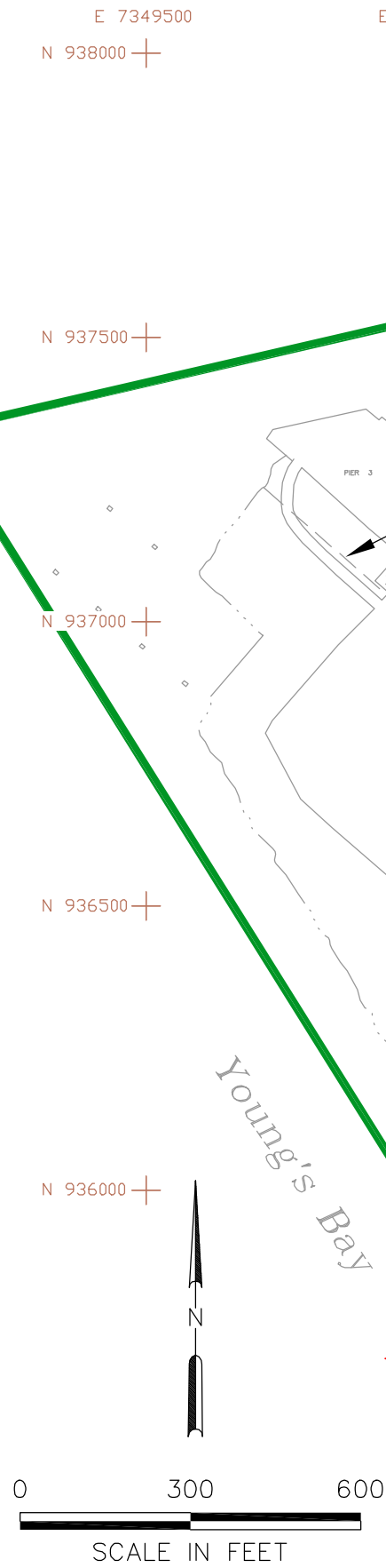
REGIONAL STUDY AREA

Range 10 West

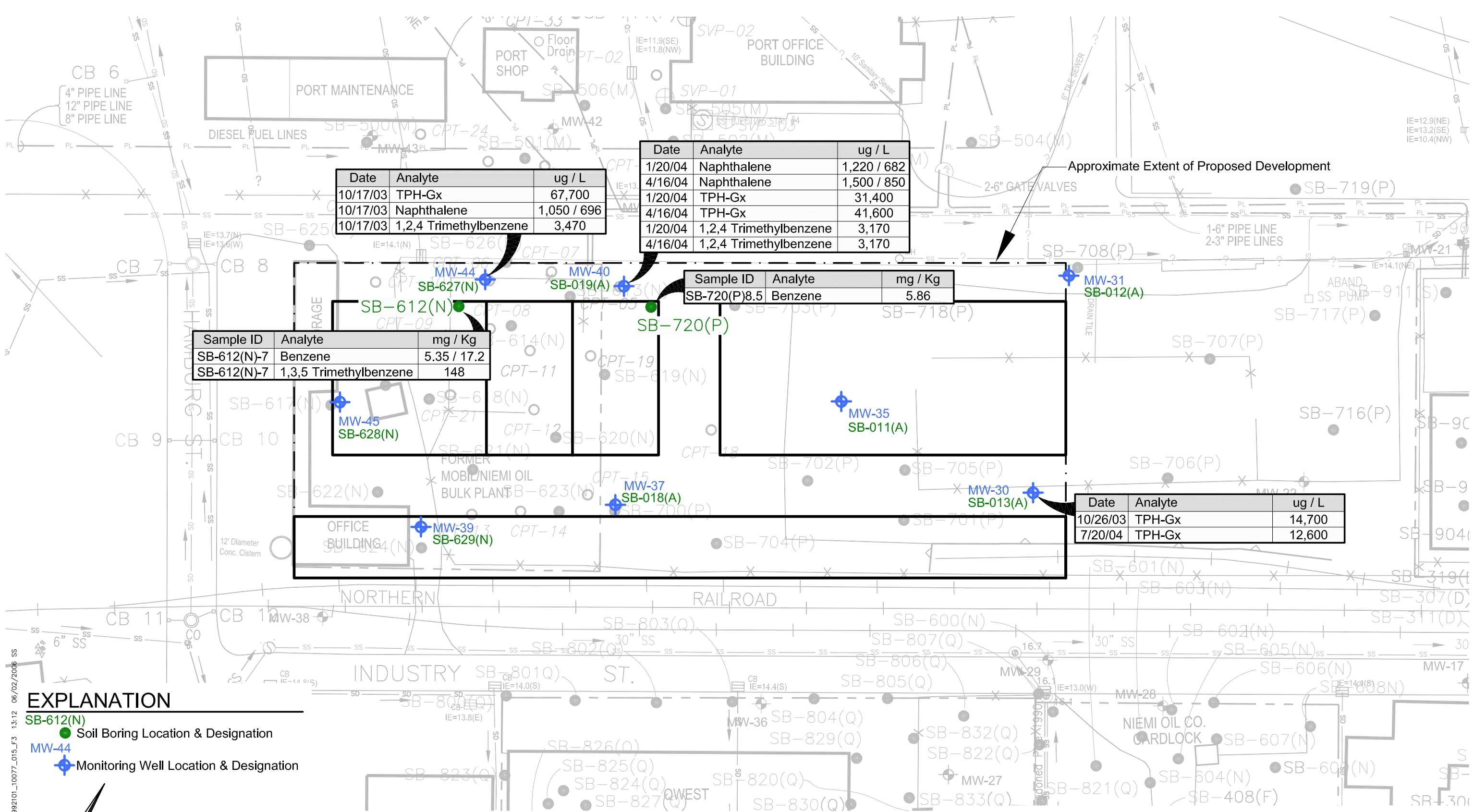
Range 9 West

**FIGURE 2
SITE PLAN**

**Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon**



EnviroLogic Resources, Inc.
Consulting Environmental & Water Resources Scientists



Date	Analyte	ug / L
10/17/03	TPH-Gx	67,700
10/17/03	Naphthalene	1,050 / 696
10/17/03	1,2,4 Trimethylbenzene	3,470

Date	Analyte	ug / L
1/20/04	Naphthalene	1,220 / 682
4/16/04	Naphthalene	1,500 / 850
1/20/04	TPH-Gx	31,400
4/16/04	TPH-Gx	41,600
1/20/04	1,2,4 Trimethylbenzene	3,170
4/16/04	1,2,4 Trimethylbenzene	3,170

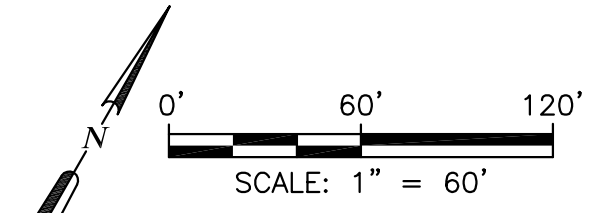
Sample ID	Analyte	mg / Kg
SB-612(N)-7	Benzene	5.35 / 17.2
SB-612(N)-7	1,3,5 Trimethylbenzene	148

Sample ID	Analyte	mg / Kg
SB-720(P)8.5	Benzene	5.86

Date	Analyte	ug / L
10/26/03	TPH-Gx	14,700
7/20/04	TPH-Gx	12,600

EXPLANATION

- SB-612(N) Soil Boring Location & Designation
- ⊕ MW-44 Monitoring Well Location & Designation



Analyte	RBC Value
Generic Gasoline\	12,000 ug / L
Naphthalene	680 ug / L
1,2,4 Trimethylbenzene	1,300 ug / L

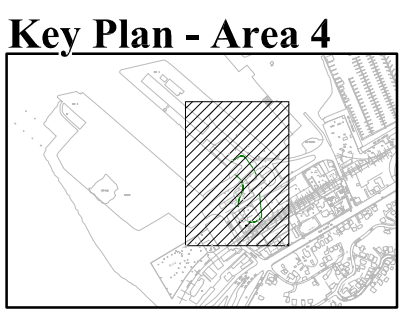
FIGURE 3

**SITE DEVELOPMENT LAYOUT & RBC EXCEEDENCE
Former Mobil / Niemi Oil Bulk Plant
Contaminated Media Management Plan Line
Astoria Area-Wide Petroleum Site**

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Explanation

- Soil Boring Location and Designation
- Concentration in mg/Kg
 - Not Analyzed
 - Detection Limit Greater Than 10
 - 0-10
 - >10-100
 - >100-1,000
 - >1,000-10,000
- Estimated Lateral Extent of LNAPL



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EnviroLogic Resources, Inc.
Consulting Environmental & Water Resources Scientists

FIGURE 4

**GASOLINE RANGE HYDROCARBONS IN SOIL
AREA 4 - LESS THAN 3 FEET
Former Mobil / Niemi Oil Bulk Plant
Contaminated Media Management Plan Line
Astoria Area-Wide Petroleum Site**

Explanation

- Soil Boring Location and Designation
- Concentration in mg/Kg
 - Not Analyzed
 - Detection Limit Greater Than 10
 - 0-10
 - >10-100
 - >100-1,000
 - >1,000-10,000
- Estimated Lateral Extent of LNAPL

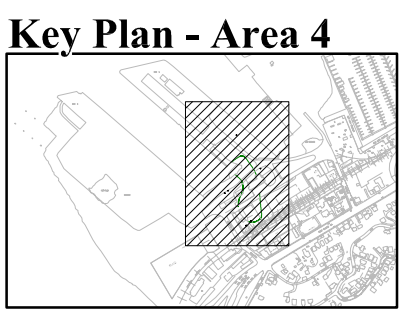
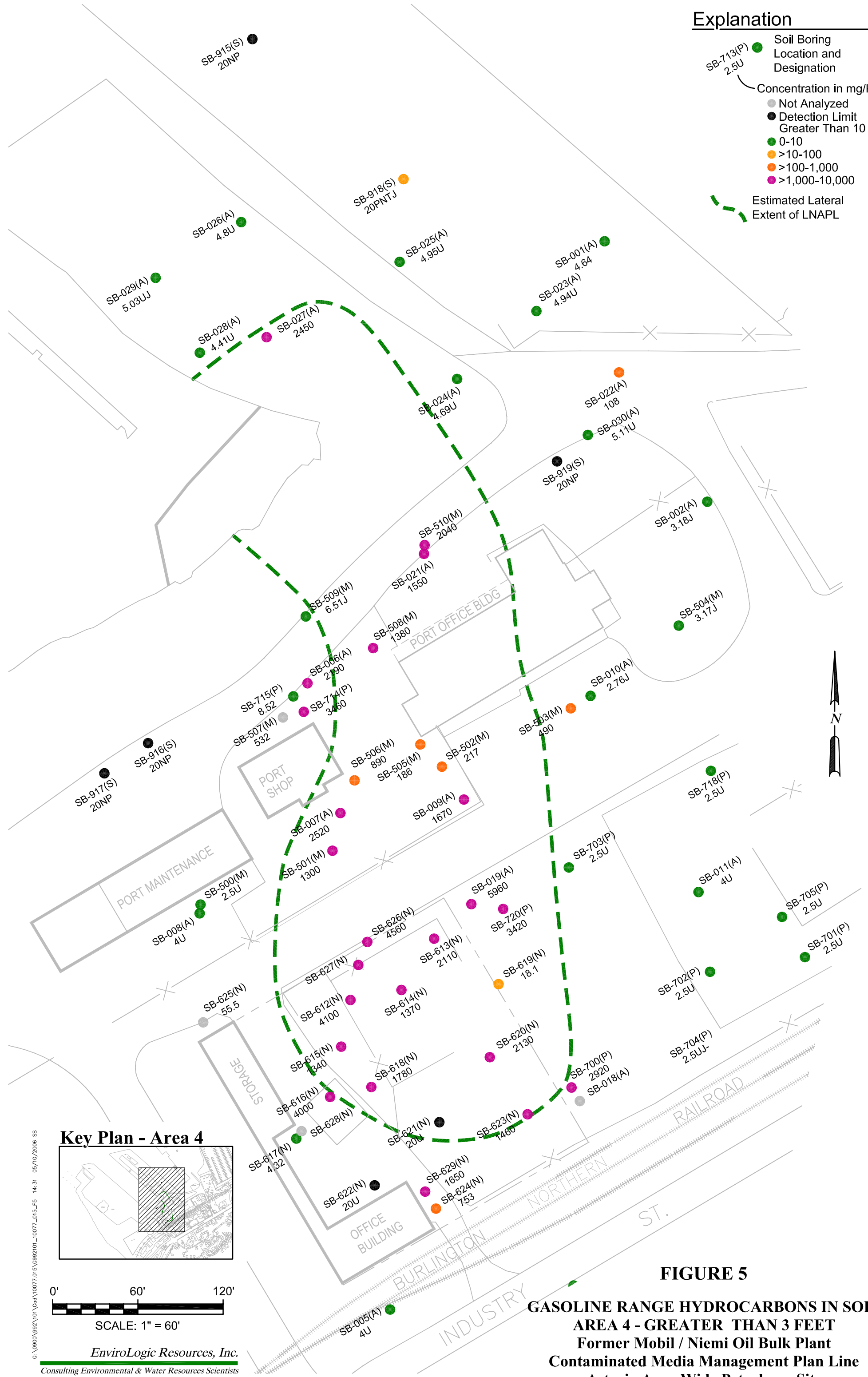


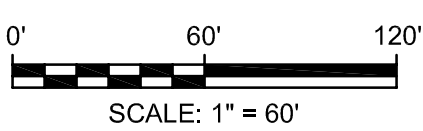
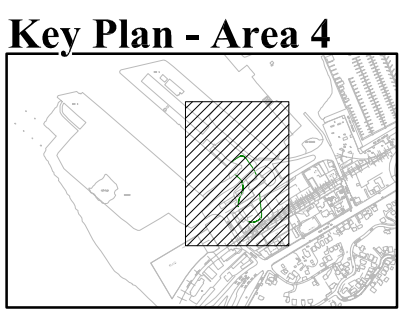
FIGURE 5

**GASOLINE RANGE HYDROCARBONS IN SOIL
AREA 4 - GREATER THAN 3 FEET
Former Mobil / Niemi Oil Bulk Plant
Contaminated Media Management Plan Line
Astoria Area-Wide Petroleum Site**

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Explanation

- Monitoring Well Location and Designation
- Concentration in ug/L
 - Not Analyzed
 - 0-1,000
 - >1,000-10,000
 - >10,000-100,000
- Estimated Lateral Extent of LNAPL



EnviroLogic Resources, Inc.
Consulting Environmental & Water Resources Scientists

FIGURE 6

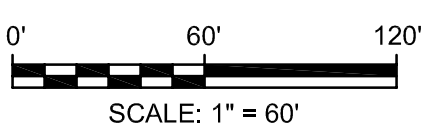
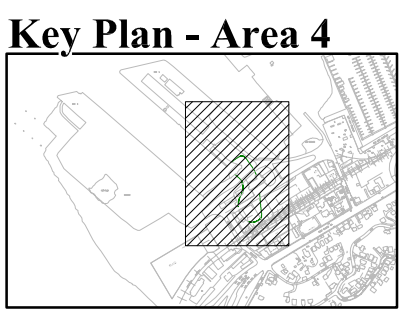
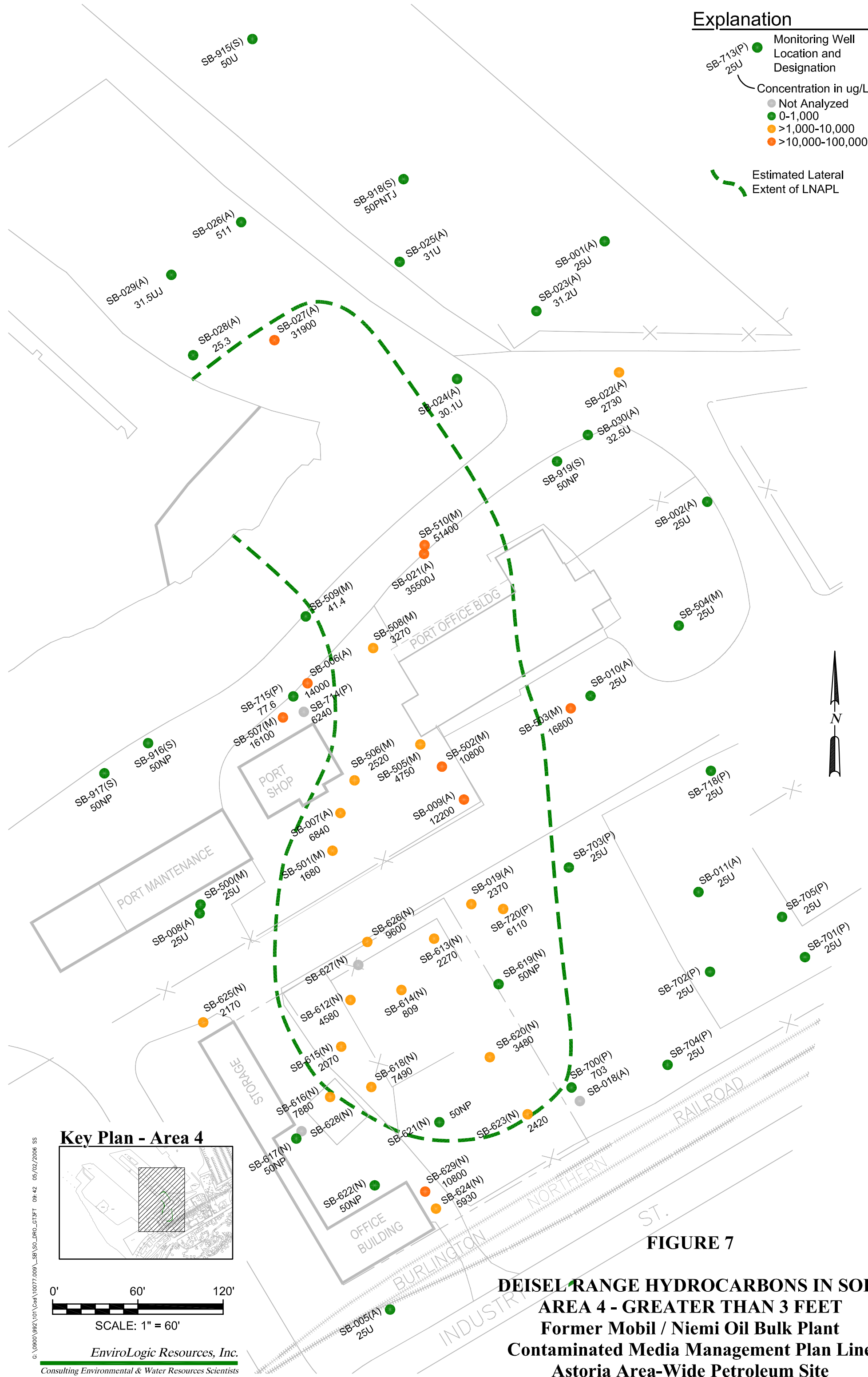
**DEISEL RANGE HYDROCARBONS IN SOIL
AREA 4 - LESS THAN 3 FEET
Former Mobil / Niemi Oil Bulk Plant
Contaminated Media Management Plan Line
Astoria Area-Wide Petroleum Site**

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Explanation

- Monitoring Well Location and Designation
- Concentration in ug/L
 - Not Analyzed
 - 0-1,000
 - >1,000-10,000
 - >10,000-100,000

--- Estimated Lateral Extent of LNAPL




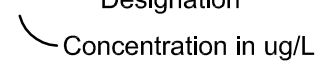
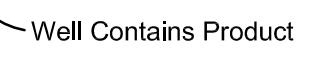
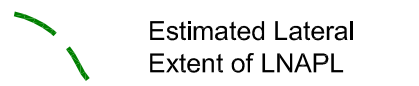
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EnviroLogic Resources, Inc.
Consulting Environmental & Water Resources Scientists

FIGURE 7

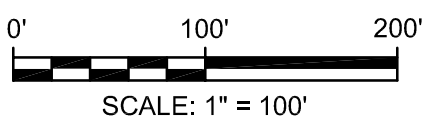
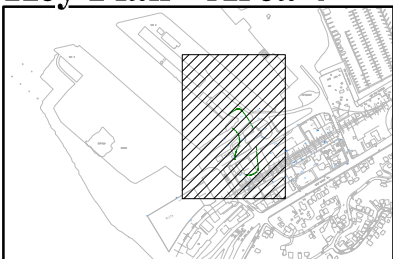
**DEISEL RANGE HYDROCARBONS IN SOIL
AREA 4 - GREATER THAN 3 FEET
Former Mobil / Niemi Oil Bulk Plant
Contaminated Media Management Plan Line
Astoria Area-Wide Petroleum Site**

Explanation

-  MW-4(M) Monitoring Well Location and Designation
-  Concentration in ug/L
-  Well Contains Product
-  Estimated Lateral Extent of LNAPL



Key Plan - Area 4



EnviroLogic Resources, Inc.

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Consulting Environmental & Water Resources Scientists



FIGURE 8

**GASOLINE RANGE HYDROCARBONS IN GROUND WATER
AREA 4 - 2004 Q3**

**Former Mobil / Niemi Oil Bulk Plant
Contaminated Media Management Plan Line
Astoria Area-Wide Petroleum Site**

APPENDICES

APPENDIX A

DEQ WATER QUALITY NPDES-CONSTRUCTION PERMIT (RIVERLANDS, LLC)



Oregon

Theodore R. Kulongoski, Governor

Department of Environmental Quality

Northwest Region Portland Office

2020 SW 4th Avenue, Suite 400

Portland, OR 97201-4987

(503) 229-5263

FAX (503) 229-6945

TTY (503) 229-5471

May 17, 2006

JASON PALMSBERG
RIVER LAND CO LLC
255 WEST GRAND AVE
ASTORIA OR 97103

tom@h2ogeo.com

Re: Construction Storm Water Control Permit
ORR10A-324
File No. 115370
County: Clatsop
Site: River Land Co. Business Park

Dear Mr. Palmsberg:

The Oregon Department of Environmental Quality (DEQ) has received your application and application fees for registration for coverage under the National Pollutant Discharge Elimination System (NPDES) Construction Storm Water Discharge Permit 1200-C. The purpose of the Construction Storm Water Discharge Permit is to prevent violations of the State Water Quality Standards and minimize adverse impacts to the environment. This statewide Permit term is five years, beginning December 28, 2005 and expiring November 30, 2010, regardless of when you apply for registration within the 5 year time period.

DEQ is approving your registration of the requested Permit. Please be aware that in addition to the application fees that you have already submitted you will be assessed an annual fee for each additional year of construction activity as long as this permit is in effect.

For phased developments, an erosion control plan for any phases not submitted with your original application must be submitted to this regional DEQ office (Attention: Storm Water) 30 days prior to commencement of construction activities. The plan(s) will be reviewed, and if acceptable, you will be notified of approval by e-mail if your email address is on file with DEQ.

Permit Provisions

Please review your 1200-C Permit copy carefully. In general the Permit:

- prohibits visible or measurable quantities of sediments from leaving the construction site,
- requires erosion control measures be inspected by the permittee – see the Permit for specific activity timelines,
- requires daily visual monitoring when runoff is occurring,
- requires that records of these inspections be kept on site, and
- requires all erosion control measures remain in place through the duration of construction.

If the construction site is 5 acres or greater *and* Permit registration occurs:

- after May 31, 2006, a 14-day public review period is required after DEQ review and approval of the Erosion and Sediment Control Plan (ESCP) but prior to DEQ approving the Permit registration, and
- after September 30, 2006, one of two options must be met for storm water discharges to streams impaired for turbidity or sediment:
 - weekly storm water runoff sampling for turbidity when runoff is occurring, *or*
 - additional best management practices must be added.



Legal Owner Responsibilities

If during project development legal responsibility shifts from the present permittee (you) to another party, this permit must be transferred to the new responsible party. There is a \$60 filing fee associated with permit transfer, as well as a one page application that must be submitted to DEQ.

Also, it is the responsibility of the owner of the property to properly maintain petroleum separator/trap devices if they are in use at your site.

Construction Storm Water Discharge Permit Termination Process

Be sure to submit the Permit Termination Request Form (*Notice of Termination Form*) to this regional DEQ office when your construction activity is completed. If a Termination Form is not received, you **will be billed** the annual fee for each additional year this permit remains in effect.

Construction Storm Water Discharge Permit coverage may be terminated when the following conditions are met:

- the permittee has constructed and completed all of the buildings;
 - the site is stabilized, i.e. landscaped with vegetation growing, and no exposed soil is present,
 - with no further grading or soil disturbances occurring, and
 - temporary erosion and/or sediment controls have been removed and properly disposed, *or*
- the permittee is selling individual home lots of less than one acre;
 - the utilities, roads, and initial grading are complete, and
 - temporary seeding has occurred, vegetation is growing and no exposed soil is present, and
 - temporary erosion and/or sediment controls have been removed and properly disposed.

In conclusion, this 1200-C Permit does not authorize excavation or fill in state waterways, including wetlands, and does not replace the requirement for receiving authorization to do this type of work under Section 404 of the Clean Water Act.

Please check the DEQ website at <http://www.deq.state.or.us/wq/wqpermit/stormwaterhome.htm> for forms or information. If you have any questions about this 1200-C Permit, please contact Dennis Jurries by phone at (503) 229-5937 or email at jurries.dennis@deq.state.or.us.

Sincerely,



Dennis Jurries, PE
DEQ NWR Storm Water Engineer
2020 SW 4th Avenue, Suite 400
Portland, OR 97201

Enclosure
cc: File

**GENERAL PERMIT
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
STORMWATER DISCHARGE PERMIT**

Oregon Department of Environmental Quality
811 SW Sixth Avenue, Portland OR 97204
Telephone: (503) 229-5279 or 1-800-452-4011 (toll free in Oregon)

Issued pursuant to ORS 468B.050 and Section 402 of the Federal Clean Water Act

REGISTERED TO: 5/17/06 GEN 12C CLATSOP/NWR
File No. 113570 ORR10A-324

River Land Co., LLC
255 West Grand Ave.
Astoria, OR 97103
Site: River Land Co. Business Park

SOURCES COVERED BY THIS PERMIT:

Construction activities including clearing, grading, excavation, and stockpiling that will disturb one or more acres and may discharge to surface waters or conveyance systems leading to surface waters of the state. Also included are activities that disturb less than one acre that are part of a common plan of development or sale if the larger common plan of development or sale will ultimately disturb one acre or more and may discharge to surface waters or conveyance systems leading to surface waters of the state. Oregon Administrative Rules (OAR) 340-045-0015 and 0033(5) require all owners or operators responsible for these sources to register under this permit or obtain an individual permit.

This permit does not authorize in-water or riparian work regulated by the Federal Clean Water Act Section 404 permit program. These types of activities are regulated by the Oregon Department of State Lands, U.S. Army Corp of Engineers, and the Department of Environmental Quality Section 401 certification program. Unless specifically authorized by this permit, by another National Pollutant Discharge Elimination System (NPDES) or Water Pollution Control Facilities (WPCF) permit, or by OAR, any other direct or indirect discharge to waters of the state is prohibited, including discharges to an underground injection control (UIC) system.



Lauri Aunan, Administrator
Water Quality Division

Issued: December 28, 2005
Expiration Date: November 30, 2010

PERMITTED ACTIVITIES

Until this permit expires, is modified or revoked, the permit registrant is authorized to construct, install, modify, or operate erosion and sediment control measures and stormwater treatment and control facilities, and to discharge stormwater and certain specified non-stormwater discharges to surface waters of the state in conformance with all the requirements, limitations, and conditions set forth in the permit including attached schedules as follows:

	Page
Schedule A - Limitations and Controls for Stormwater and Non-Stormwater Discharges.....	3
Schedule B - Minimum Monitoring Requirements	12
Schedule C - Compliance Schedule.....	14
Schedule D - Special Conditions	15
Schedule E - (Not Applicable)	NA
Schedule F - General Conditions	18

PERMIT REGISTRATION

1. Renewal Requirements

- a. Activities Registered Under the Previous 1200-C Permit (issued February 2001).
 - i. Permit registrants must submit a complete permit renewal application to the department prior to the permit expiration date of December 31, 2005 to ensure uninterrupted permit coverage under this permit for construction activities continuing beyond December 31, 2005.
 - ii. An Erosion and Sediment Control Plan (ESCP) submitted prior to December 31, 2005 is not required to be resubmitted to the department or Agent except as required in Schedule C.
 - iii. Permit registrants that do not submit a renewal application by the previous 1200-C expiration date must submit a new application for coverage under this permit and follow condition #2 below.
- b. Renewal of Permit Registration under this Permit (December, 2005)
 - i. To maintain continuous permit registration during the renewal process, a permit registrant must submit a complete renewal application with a revised ESCP, if applicable, to the department 180 days prior to this permit expiration unless otherwise approved by the department.
 - ii. If the department fails to act on the application by the expiration date, permit registration is administratively extended until the department takes action on the application.
 - iii. If registration under the renewed permit is not required or appropriate, the department will notify the applicant.

2. New Construction Activities

- a. Applicants seeking registration under this permit must:
 - i. Submit a complete department-approved application form with an ESCP that complies with the permit requirements to the department or Agent at least thirty (30) days prior to the planned soil disturbance unless otherwise approved by the department.
 - ii. Prior to beginning any soil disturbance activity, receive written notice from the department or Agent that permit registration has been approved.
- b. The department or Agent will register the applicant after the ESCP has been approved by the department or Agent. For construction activities that disturb five (5) or more acres, a public notice period is required as provided in Condition 4 below. The ESCP is approved when the department or Agent provides written notice of approval.
- c. If the application for registration is denied by the department or Agent, a construction activity cannot be registered under this permit, or if the applicant does not wish to be regulated by this permit, the applicant may apply for an individual permit in accordance with OAR 340-045-0030.

3. Transfer of Permit Registration

To transfer permit registration, an owner or permit registrant must submit a department-approved transfer form prior to permit expiration and prior to transfer of ownership or operation.

4. Public Review Period on Application and ESCP

Permit registrants that submit an application and ESCP for construction activities that disturb five (5) or more acres after June 1, 2006 will be subject to a 14-day public review period before permit registration by the department or Agent. The public review period will begin after the department or Agent has determined that the application is complete.

SCHEDULE A
LIMITATIONS AND CONTROLS FOR STORMWATER DISCHARGES

1. Water Quality Standards

- a. The permit registrant must not cause a violation of instream water quality standards.
- b. If the permit registrant develops, implements, and revises its ESCP in compliance with Schedule A of this permit, the department assumes that the discharges authorized by this permit will not cause a violation of water quality standards unless the department obtains evidence to the contrary.
- c. In instances where the department determines that the permit registrant's stormwater discharges are causing a violation of water quality standards, the department may take enforcement action for violations of the permit and will require the permit registrant to do one or more of the following:
 - i. Develop and implement an Action Plan, which is considered an addendum to the ESCP, describing ESCP modifications that are necessary to prevent and control erosion and sediment discharges to meet water quality standards;
 - ii. Submit valid and verifiable data and information that are representative of ambient conditions and indicate that the receiving water is meeting water quality standards; or
 - iii. Curtail stormwater pollutant discharges to the extent possible and submit an individual permit application.

2. Water Quality Requirements for TMDL and 303(d) Listed Waterbodies

In addition to other applicable requirements of this permit, if sediment or turbid water from a permit registrant's construction project has the potential to discharge into waterbodies that are listed for turbidity or sedimentation on the most recently EPA-approved Oregon 303(d) list or that have an established Total Maximum Daily Load (TMDL) for sedimentation or turbidity, the permit registrant must implement one of the two following sets of actions, in accordance with Schedule C.

- a. Option #1: Collect and analyze samples for turbidity in stormwater runoff from the construction site as required by condition B.2. (p. 12) and compare the results to the benchmark value of 160 Nephelometric Turbidity Units (NTUs). The benchmark is used to determine if best management practices are effective; it is not an effluent limit. If any stormwater sample exceeds the benchmark, then the permit registrant must evaluate the best management practices (BMPs) and the adequacy of the ESCP and take corrective actions. If after such actions have been implemented and sample results still exceed the 160 NTU benchmark, the requirements of Option #2 below must be followed, and the permit registrant must submit an Action Plan to the department identifying the selected BMP(s) that will be implemented and the rationale for choosing the selected BMP(s).
- b. Option #2: In addition to the applicable BMPs required by condition A.7., implement one or more of the following BMPs to control and treat sediment and turbidity:
 - i. Compost berms, compost blankets, or compost socks;
 - ii. Erosion control mats (rolled or blown);
 - iii. Tackifiers used in combination with perimeter sediment control BMPs;
 - iv. Established vegetated buffers sized at 50 feet plus 25 feet per 5 degrees of slope;
 - v. Water treatment by electro-coagulation, chemical flocculation, or filtration; or
 - vi. Other substantially equivalent sediment or turbidity BMP approved by the department.

The selected BMP(s) must be specifically identified in the ESCP as addressing this condition of the permit, and the rationale for choosing the selected BMP(s) must also be provided.

3. Performance Requirements

- a. Prevent Discharge of Significant Amounts of Sediment. The permit registrant must prevent the discharge of significant amounts of sediment to surface waters or conveyance systems leading to surface waters. Significant amounts of sediment result from the actions or inactions of the permit registrant at a site and result in visual indications that sediment has left or is likely to leave the site. The following conditions describe significant amounts of sediment:
 - i. Earth slides or mud flows;
 - ii. Concentrated flows of stormwater such as rills, rivulets or channels that cause erosion when such flows are not filtered or settled to remove sediment;
 - iii. Turbid flows of stormwater that are not filtered or settled to remove turbidity;
 - iv. Deposits of sediment at the construction site in areas that drain to unprotected stormwater inlets or catch basins that discharge to surface waters. Inlets and catch basins with failing sediment controls due to lack of maintenance or inadequate design are considered unprotected;
 - v. Deposits of sediment from the construction site on public or private streets outside of the permitted construction activity; or
 - vi. Deposits of sediment from the construction site on any adjacent property outside of the permitted construction activity.

- b. Corrective Action. If significant amounts of sediment or turbidity (as described in A.3.a above) are visibly detected in: 1) the discharge to a conveyance system leading to surface waters; 2) the discharge to surface waters 50 feet downstream; or 3) the discharge in surface waters at any location where more than one-half of the width of the receiving surface waters is affected, the permit registrant must:
 - i. Immediately, but no later than 24 hours after initial detection, take corrective actions or implement additional effective BMPs until the significant amounts of sediment or turbidity are no longer visually detectable and to ensure that the requirements of Conditions A.1. and A.3.a. are met.
 - ii. Evaluate the ESCP to determine the cause of the discharge.
 - iii. Document in the inspection records the corrective actions taken.
 - iv. Submit an Action Plan to the department within ten (10) calendar days of the discharge identifying the correction actions taken to cease the discharge, if such actions require a change to the ESCP or a change in the method(s) of implementing the ESCP, (e.g., increased inspection frequency). Approval of the Action Plan by the department prior to implementation of corrective actions is not required. The Action Plan must be kept onsite as per condition B.3., p. 13.

- c. Authorized Stormwater Discharges. Subject to compliance with the terms and conditions of this permit, the permit registrant is authorized to discharge the following:
 - i. Stormwater associated with construction activity that is authorized by this permit.
 - ii. Stormwater from support activities at the construction site (e.g., concrete or asphalt operations, equipment staging yards, material storage areas, excavated material disposal areas, borrow areas) provided:
 - (1) The support activity is directly related to the construction site required to have NPDES permit coverage for discharges of stormwater associated with construction activity;
 - (2) The support activity is not a commercial operation serving multiple unrelated construction projects by different permit registrants, and does not operate beyond the completion of the construction activity at the last construction project it supports; and
 - (3) Appropriate controls and measures are identified in an ESCP covering the discharges from the support activity areas.

- d. Allowable Non-Stormwater Discharges. This permit authorizes the following non-stormwater discharges to surface water provided they are identified in the ESCP and all necessary controls are implemented to minimize sediment transport:
- i. Discharges from fire-fighting activities;
 - ii. Fire hydrant and potable water flushing (refer to department guidance);
 - iii. Waters used to wash vehicles where detergents or hot water are not used;
 - iv. Potable water including uncontaminated water line flushing;
 - v. Routine external building wash down that does not use detergents or hot water;
 - vi. Pavement wash waters where spills or leaks of toxic or hazardous materials have not occurred (unless all spilled material has been removed) and where detergents or hot water are not used;
 - vii. Uncontaminated air conditioning or compressor condensate;
 - viii. Construction dewatering activities;
 - ix. Foundation or footing drains where flows are not contaminated with process materials such as solvents; and
 - x. Landscape irrigation.

For other non-stormwater discharges, the permit registrant may ask the department to determine if another permit is needed. The disposal of wastes to surface water or onsite is not authorized by this permit. The permit registrant must submit a separate permit application for such discharges.

4. **Erosion and Sediment Control Plan (ESCP) and Action Plan Preparation and Submittal**
- a. Responsibilities of Permit Registrant. The permit registrant must ensure that an ESCP is prepared and revised as necessary for the construction activity regulated by this permit and submitted to the department or Agent as required by this permit.
 - b. Qualifications to Prepare ESCP.
 - i. For construction activities disturbing 20 or more acres, the ESCP must be prepared and stamped by an Oregon Registered Professional Engineer, Oregon Registered Landscape Architect, or Certified Professional in Erosion and Sediment Control (Soil and Water Conservation Society).
 - ii. If engineered facilities such as sedimentation basins or diversion structures for erosion and sediment control are required, the ESCP must be prepared and stamped by an Oregon Registered Professional Engineer.
 - c. Submittal of ESCP and if Required, Action Plans.
 - i. The permit registrant must submit the ESCP to the department or Agent prior to obtaining registration under this permit (see Permit Registration, Condition 2 of this permit, p. 2).
 - ii. If ESCP revisions are made after permit registration is approved, the permit registrant must submit revisions to the ESCP in the form of an Action Plan to the department, or if corrective actions are required by A.3.b., p. 4, within 24 hours of initial detection of the stormwater discharge.
 - (1) The Action Plan is considered an addendum to the ESCP.
 - (2) Approval of the Action Plan by the department prior to implementation of corrective actions is not required.
 - (3) An Action Plan may be required due to changes in the project design, local conditions, project schedule (e.g., schedule delays postpone earthwork to wet weather season so additional controls are needed), weather conditions or other appropriate reasons.
 - (4) The Action Plan must clearly identify any necessary changes (such as type or design) to the BMPs identified in the ESCP, their location, maintenance required, and any other revisions necessary to prevent and control erosion and sediment runoff.

- iii. If the permit registrant does not receive a response on the Action Plan from the department or Agent within ten (10) days of the Action Plan receipt, the proposed revisions are deemed approved.
- iv. The department or Agent may require the permit registrant to submit an Action Plan at any time if the ESCP is inadequate to prevent the discharge of significant amounts of sediment or turbidity to surface waters or to conveyance systems that discharge to surface waters. The permit registrant must submit the Action Plan according to the timeframe specified by the department or Agent.

5. ESCP Implementation

- a. The permit registrant must ensure that the ESCP is implemented for the construction activity regulated by this permit. Failure to implement any portion of the ESCP constitutes violation of the permit on the part of the permit registrant.
- b. The permit registrant must ensure that the ESCP is implemented according to the following sequence:
 - i. Before Construction.
 - (1) Identify, mark, and protect (by fencing off or other means) critical riparian areas and vegetation including important trees and associated rooting zones and vegetation areas to be preserved.
 - (2) Identify vegetative buffer zones between the site and sensitive areas (e.g., wetlands), and other areas to be preserved, especially in perimeter areas.
 - (3) Hold a pre-construction meeting of project construction personnel that includes the inspector required by condition A.6.b. to discuss of erosion and sediment control measures and construction limits.
 - ii. During and After Construction.
 - (1) Site Access Areas (construction entrances, roadways equipment parking areas).
Stabilize site entrances and access roads prior to earthwork.
 - (2) Install Sediment Control Measures.
Install perimeter sediment control, including storm drain inlet protection as well as all sediment basins, traps, and barriers which must be in place before vegetation is disturbed.
 - (3) Non-Stormwater Pollution Control Measures.
Concurrent with establishing construction access controls and sediment controls, the permit registrant must establish material and waste storage areas, concrete truck and other concrete equipment washout areas and other non-stormwater controls prior to the start of construction activities.
 - (4) Runoff Control.
Stabilize stream banks and construct the primary runoff control measures to protect areas from concentrated flows.
 - (5) Land Clearing, Grading and Roadways.
 - (a) Begin land clearing, excavation, trenching, cutting or grading after installing applicable sediment and runoff control measures.
 - (b) Provide appropriate erosion and sediment control BMPs for all roadways including gravel roadways.
 - (c) Install additional control measures as work progresses as needed.
 - (6) Surface Stabilization (temporary and permanent seeding, mulching).
Apply temporary or permanent soil stabilization measures immediately on all disturbed areas as grading progresses.
 - (7) Construction and Paving (install utilities, buildings, paving, etc.).
Erosion and sediment control measures must remain in place for the duration of construction, including protection for active storm drain inlets and appropriate non-stormwater pollution controls.
 - (8) Final Stabilization and Landscaping.

Provide permanent erosion prevention measures on all exposed areas and remove all temporary control measures as areas are stabilized.

6. ESCP Elements

The permit registrant must ensure that the ESCP contains the following elements:

- a. Local Government Requirements. Include any procedures necessary to meet applicable local government erosion and sediment control or stormwater management requirements.
- b. Inspections.
 - i. Inspections must be conducted by a person knowledgeable in the principles and practice of erosion and sediment controls who possesses the skills to assess conditions at the construction site that could impact stormwater quality, is knowledgeable in the correct installation of the erosion and sediment controls, and is able to assess the effectiveness of any sediment and erosion control measures selected to control the quality of stormwater discharges from the construction activity.
 - ii. Identify the person(s) or title and experience of the personnel that will conduct inspections. Provide the following for each person:
 - (1) Name;
 - (2) Contact phone number and, if available, e-mail address; and
 - (3) Description of experience and training.
- c. Narrative Site Description.
 - i. Nature of the construction activity, including a proposed timetable for major activities;
 - ii. Estimates of the total area of the permitted site and the area of the site that is expected to undergo clearing, grading or excavation;
 - iii. Nature of the fill material to be used, the insitu soils, and the erosion potential of such soils; and
 - iv. Names of the receiving water(s) for stormwater runoff.
- d. Site Map.
 - i. The site map kept on site must represent the actual BMP controls being used onsite, particularly those BMPs identified in the most recent Action Plan(s);
 - ii. The site map must show sufficient roads and features for the department or Agent to locate and access the site;
 - iii. Total property boundary including surface area of the development;
 - iv. Areas of total soil disturbance (including, but not limited to, showing cut and fill areas and pre and post development elevation contours);
 - v. Drainage patterns before and after finish grading;
 - vi. Location(s), size, and type of discharge point(s);
 - vii. Areas used for the storage of soils or wastes;
 - viii. Areas where vegetative practices are to be implemented;
 - ix. Location of all erosion and sediment control measures or structures;
 - x. Location of impervious structures after construction is completed. Include buildings, roads, parking lots, outdoor storage areas, etc., if any;
 - xi. Springs, wetlands and other surface waters located on-site;
 - xii. Boundaries of 100-year floodplains if determined and easily available;
 - xiii. Location of stormwater discharge points to receiving water(s) or stormwater conveyance systems if applicable;

- xiv. Location of storm drain catch basins and the location of catch basins with inlet protection, if applicable and a description of the type of catch basins used (e.g., curb inlet, field inlet, grated drain, combination, etc.);
- xv. Location of septic drain fields if applicable;
- xvi. Location of existing or proposed drywells or other UICs if applicable;
- xvii. Location of drinking water wells;
- xviii. Details of sediment and erosion controls including installation techniques; and
- xix. Details of detention ponds, storm drain piping, inflow and outflow details.

e. Implementation Schedule and Description of BMPs

Include in the ESCP the implementation schedule and description of BMPs to be used at the site. See Condition A.5. for implementation requirements and conditions A.7. and A.8. for minimum BMP requirements.

7. Required BMPs

The following controls and practices, if appropriate for the site, are required in the ESCP and must be implemented according to the schedule in the ESCP. If the permit registrant determines that any of these controls or practices is not appropriate, the rationale for the change must be provided in the ESCP.

a. Wet Weather BMPs.

- i. Generally construction activities must avoid or minimize excavation and bare ground activities that occur on slopes greater than five (5) percent during the period of October 1 through May 31.
- ii. Temporary stabilization of soils must be installed at the end of the shift before a holiday or weekend if needed based on weather forecast.

b. Runoff Controls.

In developing runoff control practices, at a minimum the following BMPs must be considered: slope drains, energy dissipaters, diversion of run-on, temporary diversion dikes, grass-lined channel (turf reinforcement mats), trench drains, drop inlets, and check dams.

c. Erosion Prevention Methods.

In developing erosion prevention methods, at a minimum the following BMPs must be considered:

- i. Clearing and Grading Practices.
 - (1) Provide structural erosion prevention during grading and earthwork-surface roughening and prevent erosion on graded surfaces.
 - (2) Top-soiling, temporary seeding and planting, permanent seeding and planting, mycorrhizae/ biofertilizers, mulches, compost blankets, erosion control blankets and mats, soil binders, soil tackifiers, sodding vegetative buffer strips, and protection of trees with protective construction fences.
- ii. Wind Erosion/Dust Control.
 - (1) All erosion and sediment controls not in the direct path of work must be installed before any land disturbance.
 - (2) Whenever practicable, clearing and grading must be done in a phased manner to prevent exposed inactive areas from becoming a source of erosion.
- iii. Vegetative Erosion Control Practices.
 - (1) Preserve existing vegetation and re-vegetate open areas when practicable before and after grading or construction.

- (2) Biotechnical erosion control measures: live staking, live fascines and brush wattles, stabilization mats, pole planting, brush box, fascines with sub-drains, live pole drains, and brush packing or live gully fill repair.
 - (3) All temporary sediment control practices must not be removed until permanent vegetation or other cover of exposed areas is established.
 - (4) If vegetative seed mix is used, identify the type of seed mix (percentages of the various seeds of annuals, perennials and clover).
- d. Sediment Controls.
- i. Peripheral Erosion and Sediment Controls.
 - (1) Sediment control must be provided along the site perimeter and at all operational internal storm drain inlets at all times during construction.
 - (2) Active inlets must be considered part of the site perimeter because they provide an avenue for sediment and other pollutants to leave the site.
 - ii. Erosion Control Practices.

In developing sediment control practices, include in the ESCP installation details and at a minimum the following must be considered: sediment fences, sand bag barrier, gravel bag berm, earth dikes, drainage swales, check dams, subsurface drains which daylight to the surface, pipe slope drains, rock outlet protection, sediment traps, rock and brush filters, compost berm/compost sock, fiber rolls/wattles, storm drain inlet protection, and temporary or permanent sedimentation basins.
 - iii. Reducing Sediment Tracking.
 - (1) Prior to any land disturbing activities each site must have graveled, paved, or constructed entrances, exits and parking areas with exit tire wash to reduce the tracking of sediment onto public or private roads.
 - (2) All unpaved roads located onsite must be graveled. Other effective erosion and sediment control measures either on the road or down gradient may be used in place of graveling.
 - (3) When trucking saturated soils from the site, either water-tight trucks must be used or loads must be drained on-site until dripping has been reduced to minimize spillage on roads.
- e. Non-Stormwater Pollution Controls.
- Non-Stormwater Pollution Controls BMPs must be in-place throughout the grading and construction phases. In developing non-stormwater pollution control practices, at a minimum the following must be considered:
- i. Pollution Prevention.
 - (1) BMPs used to prevent pollution of stormwater or to treat stormwater from the following activities: dewatering and ponded water management, paving operation controls, temporary equipment bridge, illicit connection, and illegal discharge.
 - (2) BMPs that will be used to prevent or minimize stormwater from being exposed to pollutants from spills, no discharge of concrete truck wash water, vehicle and equipment cleaning, vehicle and equipment fueling, maintenance, and storage, other cleaning and maintenance activities, and waste handling activities. These pollutants include fuel, hydraulic fluid, and other oils from vehicles and machinery, as well as debris, leftover paints, solvents, and glues from construction operations.
 - ii. Stockpile Erosion and Sediment Control Practices.
 - (1) Stockpiles located away from the construction activity but still under the control of the permit registrant must also be protected to prevent significant amounts of sediment or turbid water from discharging to surface waters.
 - (2) At the end of each workday the soil stockpiles must be stabilized, covered or other BMPs must be implemented to prevent discharges to surface waters.

- (3) In developing these practices, at a minimum the following must be considered: diversion of uncontaminated flows around stockpiles, use of cover over stockpiles, and installation of sediment fences around stockpiles
- iii. Solid Waste and Hazardous Materials Management.
 - (1) The department encourages the permit registrant to reuse and recycle construction wastes.
 - (2) Any use of toxic or other hazardous materials must include proper storage, application, and disposal.
 - (3) In developing these practices, at a minimum the following must be described in the ESCP and implemented where practical: written spill prevention and response procedures, employee training on spill prevention and proper disposal procedures; regular maintenance schedule for vehicles and machinery; and material delivery and storage controls, training and signage, material use, covered storage areas for waste and supplies.
 - (4) The permit registrant must manage hazardous wastes, used oils, contaminated soils, concrete management, sanitary waste management, liquid waste management, or other toxic substances discovered or generated during construction activities in accordance with state and federal regulations. In some cases, department approval for management and disposal may be required.
- f. Inspection and Maintenance.

To provide for continued performance, BMPs must be inspected before, during, and after significant storm events. During grading and construction, the permit registrant is responsible for maintaining the stormwater pollution control BMPs. The permit registrant must establish and promptly implement procedures for maintenance and repair of erosion and sediment control measures.

 - i. General Site Maintenance.
 - (1) Significant amounts of sediment that leave the site must be cleaned up within 24 hours and placed back on the site and stabilized or disposed of properly. In addition, the source(s) of the sediment must be controlled to prevent continued discharge within 24 hours. Any instream clean up of sediment must be performed according to requirements and timelines set by the Oregon Department of State Lands.
 - (2) Sediment must not be intentionally washed into storm sewers or drainage ways. Vacuuming or dry sweeping must be used to clean up released sediments.
 - (3) If fertilizers are used to establish vegetation, the application rates must follow manufacturer's guidelines and the application must be done in such a way to minimize nutrients discharging to surface waters.
 - ii. Maintenance of Erosion and Sediment Controls.
 - (1) For a sediment fence, the trapped sediment must be removed before it reaches one third of the above ground fence height.
 - (2) Other sediment barriers (e.g., biobags): the sediment must be removed before it reaches two inches of accumulation in any area above the sediment barrier(s).
 - (3) For catch basin protection, cleaning must occur when sediment retention capacity has been reduced by fifty percent.
 - (4) For a sediment basin, removal of trapped sediments must occur when design capacity has been reduced by fifty percent.
 - iii. Stormwater Treatment System Requirement.

If a stormwater treatment system (e.g., electro-coagulation, chemical flocculation, filtration, etc.) for sediment removal is employed, an operation and maintenance plan must be submitted to the department for approval before start up of the treatment system. Upon department approval of the plan, the permit registrant must implement the plan.

**SCHEDULE B
 MINIMUM MONITORING REQUIREMENTS**

1. Visual Monitoring Requirement

- a. The following must be inspected by the permit registrant:
 - i. All areas of the site disturbed by construction activity to ensure that BMPs are in working order.
 - ii. Discharge point(s) identified in the ESCP for evidence of or the potential for the discharge of pollutants, and to ascertain whether erosion and sediment control measures are effective in preventing significant impacts to surface waters. Where discharge points are inaccessible, nearby downstream locations must be inspected to the extent that such inspections are practicable.
 - iii. BMPs identified in the ESCP and any ESCP revisions documented in Action Plan(s) to assess whether they are functioning properly.
 - iv. Locations where vehicles enter or exit the site for evidence of off-site sediment tracking.
 - v. Areas used for storage of materials that are exposed to precipitation for evidence of spillage or other potential to contaminate stormwater runoff.

- b. All ESCP controls and practices must be inspected visually according to the following schedule:

Site Condition	Minimum Frequency
1. Active period	Daily when stormwater runoff, including runoff from snow melt, is occurring.
2. Prior to the site becoming inactive or in anticipation of site inaccessibility	Once to ensure that erosion and sediment control measure are in working order. Any necessary maintenance and repair must be made prior to leaving the site.
3. Inactive periods greater than seven (7) consecutive calendar days	Once every two (2) weeks.
4. Periods during which the site is inaccessible due to inclement weather	If practical, inspections must occur daily at a relevant and accessible discharge point or downstream location.

2. Turbidity Monitoring Requirements for TMDL and 303(d) Listed Waterbodies per Option #1 in Condition A.2.a., p. 3.

In addition to the requirements in condition B.1. above, permit registrants discharging into waterbodies that are listed for turbidity or sedimentation on the most recently EPA approved Oregon 303(d) list or have an established TMDL for sedimentation or turbidity are subject to the following requirements if Option #1 (condition A.2.a.) is being followed:

Parameter	Minimum Frequency	Monitoring Points	Type of Sample ¹	Test Method ²
Turbidity (NTU)	At a minimum one stormwater sample that represents the flow and characteristics of the stormwater discharge must be collected at each monitoring point on a weekly basis when stormwater runoff is detectable.	All stormwater discharge points indicated on the site map see A.6.d.xiii., p. 7.	Grab	Field turbidimeter

¹ Occurring during regular working hours at the construction site.

² The permit registrant must use sampling procedures, testing methods and turbidity meter calibration methods approved by the department.

3. Recordkeeping Requirements

- a. Documentation of Visual Inspection. All visual inspections must be documented in writing as follows:
 - i. Inspection date and inspector's name.
 - ii. At the designated discharge location(s) inspections of the quality of the discharge for any turbidity, color, sheen, or floating materials.
 - (1) Inspect and record color and turbidity or clarity in: 1) the discharge to a conveyance system leading to surface waters, 2) the discharge to surface waters 50 feet downstream, or 3) the discharge in surface waters at any location where more than one-half of the width of the receiving surface waters is affected.
 - (2) For turbidity and color, describe any apparent color and the clarity of the discharge, and any apparent difference in comparison with the surface waters. For a sheen or floating material, describe whether this is present or absent. If present, it could indicate concern about a possible spill or leakage from vehicles or materials storage.
 - iii. If a site is inaccessible due to inclement weather, record the inspections noted at a relevant discharge point or downstream location if practical.
 - iv. Location(s) of BMPs that need to be maintained, inspections of all BMPs, including erosion and sediment controls, chemical and waste controls, locations where vehicles enter and exit the site, status of areas that employ temporary or final stabilization control, soil stockpile area, and non-stormwater pollution (e.g., paints, oils, fuels, adhesives) controls.
 - v. Location(s) of BMPs that failed to operate as designed or proved inadequate for a particular location;
 - vi. Location(s) where additional BMPs are needed that did not exist at the time of inspection; and
 - vii. Corrective action required and implementation dates.
- b. ESCP including Action Plan(s) Retained Onsite. A copy of the ESCP and the Action Plan must be retained on-site and made available on request to the department, Agent, or the local municipality. During inactive periods of greater than seven (7) consecutive calendar days, the ESCP must be retained by the permit registrant but does not need to be at the construction site.
- c. Inspection and Monitoring Results. All inspection records and monitoring results must be kept on-site and maintained by the permit registrant, made available to the department, Agent, or local municipality upon request, and must include:
 - i. The construction site name as it appears on the registrant's permit and the file or site number.
 - ii. All Action Plans that describe reasons for required changes or modifications to the ESCP and/or other corrective measures implemented during the previous reporting period.
 - iii. Turbidity sampling results required by Condition B.2., p. 12 if applicable.
- d. Retention of Inspection and Monitoring Results for Three (3) Years:
 - i. All inspection records and monitoring results must be retained for at least three (3) years after project completion.
 - ii. In addition, these records must be delivered or made available to the department within three (3) working days of request.

**SCHEDULE C
COMPLIANCE SCHEDULE**

Potential discharges into waterbodies that are on the most recent EPA-approved Oregon 303(d) list for turbidity or sedimentation or have a TMDL for turbidity or sedimentation

- 1. Permit registrants who obtained permit coverage prior to October 1, 2006 must:**
 - a. For EPA-approved TMDLs or 303(d) listings existing at the time permit application is made, comply with the requirements in Condition A.2. by October 1, 2006.
 - b. For future TMDLs or 303(d) listings approved by EPA after permit application is made, comply with the requirements in Condition A.2. no later than ninety (90) days after EPA-approval of the TMDL or 303(d) list.

- 2. Permit registrants obtaining coverage after October 1, 2006 must:**
 - a. For EPA-approved TMDLs or 303(d) listings existing at the time permit application is made, comply with the requirements of Condition A.2. upon obtaining coverage under the permit. If Option #2 is selected, the BMP(s) must be specifically identified in the ESCP as addressing this condition of the permit and the rationale for choosing the selected BMP(s) must also be provided.
 - b. For future TMDLs or 303(d) listings approved by EPA after permit application is made, comply with the requirements in Condition A.2. no later than ninety (90) days after EPA-approval of the TMDL or 303(d) list.

**SCHEDULE D
SPECIAL CONDITIONS**

1. In the event of any inconsistency between Schedules A through D and F, Schedules A through D will apply.
2. Registration under this permit does not relieve the permit registrant from all other permitting and licensing requirements. Prior to beginning construction activities, the permit registrant must obtain all other necessary approvals.
3. **Required Actions Prior to Termination of Permit Registration**
 - a. The following conditions must be met before permit registration is terminated:
 - i. There is no reasonable potential for discharge of a significant amount of construction related sediment or turbidity to surface waters.
 - ii. Construction materials, waste, and temporary erosion and sediment controls have been removed and disposed of properly. This includes any sediment that was being retained by the temporary erosion and sediment controls.
 - iii. All soil disturbance activities by the permittee have been completed and all stormwater discharges from construction activities that are authorized by this permit are eliminated.
 - iv. All temporary erosion and sediment controls have been removed and properly disposed.
 - v. All disturbed or exposed areas of the site must be fully stabilized as defined in Condition D.4 m. below.
 - b. The permit registrant must complete and submit a Notice of Termination form to the department or Agent after the conditions in D.3.a. above have been satisfied. The department or Agent will not act on a request for termination until all outstanding compliance issues are resolved.
4. **Permit-specific Definitions**
 - a. *Action Plan* means an addendum to the ESCP that describes ESCP modifications.
 - b. *Agent* means a governmental entity that has an agreement with the department to assist with implementation of this general permit.
 - c. *Best Management Practices or BMPs* means schedules of activities, prohibitions of practices, maintenance procedures, and other physical, structural or managerial practices to prevent or reduce the pollution of waters of the state. BMPs include treatment systems, erosion and sediment control, source control, and operating procedures and practices to control site runoff, spillage or leaks, and waste disposal.
 - d. *Borrow Area* means the area from which material is excavated to be used as fill material in another area.
 - e. *Clean Water Act or CWA* means the Federal Water Pollution Control Act (FWPCA) enacted by Public Law 92-500, as amended by Public Laws 95-217, 95-576, 96-483, and 97-117; USC 1251 et seq.
 - f. *Department or DEQ* means the Oregon Department of Environmental Quality.
 - g. *Detention* means the temporary storage of stormwater to improve quality or reduce the volumetric flow rate of discharge or both.
 - h. *Dewatering* means the removal and disposal of surface water or groundwater for purposes of preparing a site for construction.
 - i. *Discharge Point* means the location where stormwater leaves the site. It includes the location where stormwater is discharged to surface water or a stormwater conveyance system.
 - j. *Erosion* means the movement of soil particles or rock fragments by water or wind.
 - k. *Erosion and Sediment Control BMPs* means BMPs that are intended to prevent erosion and sedimentation, such as preserving natural vegetation, seeding, mulching and matting, plastic covering,

filter fences, and sediment traps and ponds. Erosion and sediment control BMPs are synonymous with stabilization and structural BMPs.

- l. *Erosion Prevention Methods* means a wide range of erosion prevention practices, materials and methods to be applied during earthwork activities including structural methods, techniques to prevent erosion on already graded surfaces, and biotechnical erosion control methods. The best way to control the discharge of sediment and related pollutants from a construction site is to prevent erosion from occurring in the first place.
- m. *Final Stabilization or Fully Stabilized* means the completion of all soil disturbing activities at the site by the permit registrant, and the establishment of a permanent vegetative cover, or equivalent permanent stabilization measures (such as riprap, gabions or geotextiles) to prevent erosion.
- n. *Hazardous Materials* means the materials defined in 40 CFR part 302 Designation, Reportable Quantities, and Notification.
- o. *Local Government* means any county, city, town, or service district.
- p. *National Pollutant Discharge Elimination System or NPDES* means the national program under Section 402 of the Federal Clean Water Act for regulation of point source discharges of pollutants to waters of the United States.
- q. *Non-Stormwater Pollution Controls* means general site and materials management measures that directly or indirectly aid in minimizing the discharge of sediment and other construction related pollutants from the construction site.
- r. *Permit Registrant* means the owner or operator of the construction activity regulated by this permit who receives notice of registration under this general permit. Owners or operators may be individuals or other legal entities.
- s. *Pollutant* as defined in 40 CFR §122.2 means dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, domestic sewage sludge (biosolids), munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, soil, cellar dirt and industrial, municipal, and agricultural waste discharge into water. It does not mean sewage from vessels within the meaning of section 312 of the FWPCA, nor does it include dredged or fill material discharged in accordance with a permit issued under section 404 of the FWPCA.
- t. *Pollution or Water Pollution* as defined by ORS 468B.005(3) means such alteration of the physical, chemical or biological properties of any waters of the state, including change in temperature, taste, color, turbidity, silt or odor of the waters, or such discharge of any liquid, gaseous, solid, radioactive or other substance into any waters of the state, which will or tends to, either by itself or in connection with any other substance, create a public nuisance or which will or tends to render such waters harmful, detrimental or injurious to public health, safety or welfare, or to domestic, commercial, industrial, agricultural, recreational or other legitimate beneficial uses or to livestock, wildlife, fish or other aquatic life or the habitat thereof.
- u. *Runoff Controls* means BMPs that are designed to control the peak volume and flow rate and to prevent scour due to concentrated flows.
- v. *Sediment* means solid unconsolidated rock and mineral fragments that come from the weathering of rocks and are transported by water, air, or ice and form layers on the Earth's surface. Sediments can also result from chemical precipitation or secretion by organisms.
- w. *Site* means the area where the construction activity is physically located or conducted.
- x. *Source Control BMPs* means physical, structural or mechanical devices or facilities that are intended to prevent pollutants from entering stormwater. A few examples of source control BMPs are erosion control practices, maintenance of stormwater facilities, constructing roofs over storage and working areas, and directing wash water and similar discharges to the sanitary sewer or a dead end sump.
- y. *Stormwater Conveyance* means a sewer, ditch, or swale that is designed to carry stormwater; a stormwater conveyance may also be referred to as a storm drain or storm sewer.

- z. *Stormwater as defined by 40 CFR §122.26(b)(13)* means stormwater runoff, snow melt runoff, and surface runoff and drainage.
- aa. *Surface Runoff* means that portion of stormwater that does not infiltrate into the ground or evaporates, but instead flows onto adjacent land or watercourses or is routed to stormwater conveyance systems.
- bb. *Surface Water* means all water naturally open to the atmosphere (e.g., rivers, lakes, reservoirs, ponds, streams, impoundments, oceans, estuaries, springs, etc.).
- cc. *Total Daily Maximum Load or TMDL* means a calculation of the maximum amount of a pollutant that a waterbody can receive and still meet state water quality standards. It is the sum of the allowable loads of a single pollutant from all contributing point and nonpoint sources. Percentages of the TMDL are allocated by the department to the various pollutant sources. The TMDL calculations must include a "margin of safety" to ensure that the waterbody can be protected in case there are unforeseen events or unknown sources of the pollutant. The calculation must also account for reasonable variation in water quality.
- dd. *Turbidity* means the optical condition of waters caused by suspended or dissolved particles or colloids that scatter and absorb light rays instead of transmitting light in straight lines through the water column. Turbidity may be expressed as nephelometric turbidity units (NTUs) measured with a calibrated turbidity meter.
- ee. *Underground Injection Control or UIC* means any system, structure, or activity that is created to place fluid below the ground or sub-surface (e.g., sumps, infiltration galleries, drywells, trench drains, drill holes, etc.)
- ff. *Water or Waters of the State as defined by ORS 468B.005(8)* means lakes, bays, ponds, impounding reservoirs, springs, wells, rivers, streams, creeks, estuaries, marshes, inlets, canals, the Pacific Ocean within the territorial limits of the State of Oregon and all other bodies of surface or underground waters, natural or artificial, inland or coastal, fresh or salt, public or private (except those private waters which do not combine or effect a junction with natural surface or underground waters), which are wholly or partially within or bordering the state or within its jurisdiction.

**SCHEDULE F
NPDES GENERAL CONDITIONS**

SECTION A. STANDARD CONDITIONS

1. Duty to Comply

The permit registrant must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of Oregon Revised Statutes (ORS) 468B.025, and 40 Code of Federal Regulations (CFR) §122.41(a), and is grounds for enforcement action; for permit termination, revocation or reissuance, or modification; or for denial of a permit renewal application.

2. Penalties for Water Pollution and Permit Condition Violations

ORS 468.140 allows the department to impose civil penalties up to \$10,000 per day for violation of a term, condition, or requirement of a permit. Additionally 40 CFR §122.41 (A) provides that any person who violates any permit condition, term, or requirement may be subject to a federal civil penalty not to exceed \$25,000 per day for each violation.

Under ORS 468.943 and 40 CFR §122.41(a), unlawful water pollution, if committed by a person with criminal negligence, is punishable by a fine of up to \$25,000 imprisonment for not more than one year, or both. Each day on which a violation occurs or continues is a separately punishable offense.

Under ORS 468.946, a person who knowingly discharges, places, or causes to be placed any waste into the waters of the state or in a location where the waste is likely to escape into the waters of the state is subject to a Class B felony punishable by a fine not to exceed \$200,000 and up to 10 years in prison. Additionally, under 40 CFR §122.41(a) any person who knowingly discharges, places, or causes to be placed any waste into the waters of the state or in a location where the waste is likely to escape into the waters of the state is subject to a federal civil penalty not to exceed \$100,000, and up to 6 years in prison.

3. Duty to Mitigate

The permit registrant must take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit that has a reasonable likelihood of adversely affecting human health or the environment. In addition, upon request of the department, the permit registrant must correct any adverse impact on the environment or human health resulting from noncompliance with this permit, including such accelerated or additional monitoring as necessary to determine the nature and impact of the non-complying discharge.

4. Duty to Reapply

If the permit registrant wishes to continue an activity regulated by this permit after the expiration date of this permit, the permit registrant must apply for and have the permit renewed. The application must be submitted at least 180 days before the expiration date of this permit. The department may grant permission to submit an application less than 180 days in advance but no later than the permit expiration date.

5. Permit Actions

This permit may be modified, revoked and reissued, or terminated for cause including, but not limited to, the following:

- a. Violation of any term, condition, or requirement of this permit, a rule, or a statute
- b. Obtaining this permit by misrepresentation or failure to disclose fully all material facts
- c. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge
- d. The permit registrant is identified as a Designated Management Agency or allocated a wasteload under a Total Maximum Daily Load (TMDL)
- e. New information or regulations
- f. Modification of compliance schedules
- g. Requirements of permit re-opener conditions
- h. Correction of technical mistakes made in determining permit conditions
- i. Determination that the permitted activity endangers human health or the environment
- j. Other causes as specified in 40 CFR §§122.62, 122.64, and 124.5

The filing of a request by the permit registrant for a permit modification, revocation or reissuance, termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

6. **Toxic Pollutants**
The permit registrant must comply with any applicable effluent standards or prohibitions established under Oregon Administrative Rules (OAR) 340-041-0033 for toxic pollutants within the time provided in the regulations that establish those standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.
7. **Property Rights**
The issuance of this permit does not convey any property rights of any sort, or any exclusive privilege, nor does it authorize any injury to persons of property or invasion of any other private rights, nor any infringement of federal, tribal, state, or local laws or regulations.
8. **Permit References**
Except for effluent standards or prohibitions established under Section 307(a) of the Clean Water Act and OAR 340-041-0033 for toxic pollutants, all rules and statutes referred to in this permit are those in effect on the date this permit is issued.
9. **Permit Fees**
The permit registrant must pay the fees required by OAR 340-045-0070 to 0075.

SECTION B. OPERATION AND MAINTENANCE OF POLLUTION CONTROLS

1. **Proper Operation and Maintenance**
The permit registrant must at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) that are installed or used by the permit registrant to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems that are installed by a permit registrant only when the operation is necessary to achieve compliance with the conditions of the permit.
2. **Duty to Halt or Reduce Activity**
For industrial or commercial facilities, upon reduction, loss, or failure of the treatment facility, the permit registrant must, to the extent necessary to maintain compliance with its permit, control production or all discharges or both until the facility is restored or an alternative method of treatment is provided. This requirement applies, for example, when the primary source of power of the treatment facility fails or is reduced or lost. It is not a defense for a permit registrant in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.
3. **Bypass of Treatment Facilities**
 - a. **Definitions**
 - (1) "Bypass" means intentional diversion of waste streams from any portion of the treatment facility. The term "bypass" does not apply if the diversion does not cause effluent limitations to be exceeded, provided the diversion is to allow essential maintenance to assure efficient operation or the diversion is due to nonuse of nonessential treatment units or processes at the treatment facility.
 - (2) "Severe property damage" means substantial physical damage to property, damage to the treatment facilities or treatment processes that causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.
 - b. **Prohibition of bypass.**
 - (1) Bypass is prohibited unless:
 - (a) Bypass was necessary to prevent loss of life, personal injury, or severe property damage;
 - (b) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate backup equipment should have been installed in the exercise of

- reasonable engineering judgment to prevent a bypass that occurred during normal periods of equipment downtime or preventative maintenance; and
- (c) The permit registrant submitted notices and requests as required under General Condition B.3.c.
- (2) The department may approve an anticipated bypass, after considering its adverse effects and any alternatives to bypassing, when the department determines that it will meet the three conditions listed above in General Condition B.3.b.(1).
- c. Notice and request for bypass.
- (1) Anticipated bypass. If the permit registrant knows in advance of the need for a bypass, a written notice must be submitted to the department at least ten days before the date of the bypass.
- (2) Unanticipated bypass. The permit registrant must submit notice of an unanticipated bypass as required in General Condition D.5.
4. Upset
- a. Definition. "Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permit registrant. An upset does not include noncompliance to the extent caused by operation error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventative maintenance, or careless or improper operation.
- b. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the requirements of General Condition B.4.c are met. A determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance is not final administrative action subject to judicial review.
- c. Conditions necessary for a demonstration of upset. A permit registrant who wishes to establish the affirmative defense of upset must demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:
- (1) An upset occurred and that the permit registrant can identify the causes(s) of the upset;
- (2) The permitted facility was at the time being properly operated;
- (3) The permit registrant submitted notice of the upset as required in General Condition D.5, hereof (24-hour notice); and
- (4) The permit registrant complied with any remedial measures required under General Condition A.3 hereof.
- d. Burden of proof. In any enforcement proceeding, the permit registrant seeking to establish the occurrence of an upset has the burden of proof.
5. Treatment of Single Operational Upset
- For purposes of this permit, A Single Operational Upset that leads to simultaneous violations of more than one pollutant parameter will be treated as a single violation. A single operational upset is an exceptional incident that causes simultaneous, unintentional, unknowing (not the result of a knowing act or omission), temporary noncompliance with more than one Clean Water Act effluent discharge pollutant parameter. A single operational upset does not include Clean Water Act violations involving discharge without a NPDES permit or noncompliance to the extent caused by improperly designed or inadequate treatment facilities. Each day of a single operational upset is a violation.
6. Overflows from Stormwater Conveyance Systems (privately owned)
- a. Definitions
- (1) "Overflow" means the diversion and discharge of waste streams from any portion of the wastewater conveyance system through a designed overflow device or structure, other than discharges to the wastewater treatment facility.
- (2) "Severe property damage" means substantial physical damage to property, damage to the conveyance system which causes it to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of an overflow.
- (3) "Uncontrolled overflow" means the diversion of waste streams other than through a designed overflow device or structure.

- b. Prohibition of overflows. Overflows are prohibited unless:
 - (1) Overflows were unavoidable to prevent an uncontrolled overflow, loss of life, personal injury, or severe property damage;
 - (2) There were no feasible alternatives to the overflows, such as the use of auxiliary conveyance systems, or maximization of conveyance system storage; and
 - (3) The overflows are the result of an upset as defined in General Condition B.4 and meeting all requirements of this condition.
 - c. Uncontrolled overflows are prohibited where wastewater is likely to escape or be carried into the waters of the State by any means.
 - d. Reporting required. Unless otherwise specified in writing by the department, all overflows and uncontrolled overflows must be reported orally to the department within 24 hours from the time the permit registrant becomes aware of the overflow. Reporting procedures are described in more detail in General Condition D.5.
7. Public Notification of Effluent Violation or Overflow
If effluent limitations specified in this permit are exceeded or an overflow occurs, upon request by the department, the permit registrant must take such steps as are necessary to alert the public about the extent and nature of the discharge. Such steps may include, but are not limited to, posting of the river at access points and other places, news releases, and paid announcements on radio and television.
8. Removed Substances
Solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of wastewaters must be disposed of in such a manner as to prevent any pollutant from such materials from entering waters of the state, causing nuisance conditions, or creating a public health hazard.

SECTION C. MONITORING AND RECORDS

1. Representative Sampling
Sampling and measurements taken as required herein must be representative of the volume and nature of the monitored discharge. All samples must be taken at the monitoring points specified in this permit, and shall be taken, unless otherwise specified, before the effluent joins or is diluted by any other waste stream, body of water, or substance. Monitoring points may not be changed without notification to and the approval from the department.
2. Flow Measurements
Appropriate flow measurement devices and methods consistent with accepted scientific practices must be selected and used to ensure the accuracy and reliability of measurements of the volume of monitored discharges. The devices must be installed, calibrated and maintained to insure that the accuracy of the measurements is consistent with the accepted capability of that type of device. Devices selected must be capable of measuring flows with a maximum deviation of less than ± 10 percent from true discharge rates throughout the range of expected discharge volumes.
3. Monitoring Procedures
Monitoring must be conducted according to test procedures approved under 40 CFR part 136, unless other test procedures have been specified in this permit.
4. Penalties of Tampering
The Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit may, upon conviction, be punished by a fine of not more than \$10,000 per violation, imprisonment for not more than two years, or both. If a conviction of a person is for a violation committed after a first conviction of such person, punishment is a fine not more than \$20,000 per day of violation, or by imprisonment of not more than four years, or both.
5. Reporting of Monitoring Results

Monitoring results must be summarized each month on a Discharge Monitoring Report form approved by the department. The reports must be submitted monthly and are to be mailed, delivered or otherwise transmitted by the 15th day of the following month unless specifically approved otherwise in Schedule B of this permit.

6. Additional Monitoring by the Permit registrant

If the permit registrant monitors any pollutant more frequently than required by this permit, using test procedures approved under 40 part CFR part 136 or as specified in this permit, the results of this monitoring must be included in the calculation and reporting of the data submitted in the Discharge Monitoring Report. Such increased frequency must also be indicated. For a pollutant parameter that may be sampled more than once per day (e.g., Total Chlorine Residual), only the average daily value must be recorded unless otherwise specified in this permit.

7. Averaging of Measurements

Calculations for all limitations that require averaging of measurements must utilize an arithmetic mean, except for bacteria which shall be averaged as specified in this permit.

8. Retention of Records

The permit registrant must retain records of all monitoring information, including: all calibration, maintenance records, all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit for a period of at least 3 years from the date of the sample, measurement, report, or application. This period may be extended by request of the department at any time.

9. Records Contents

Records of monitoring information must include:

- a. The date, exact place, time, and methods of sampling or measurements;
- b. The individual(s) who performed the sampling or measurements;
- c. The date(s) analyses were performed;
- d. The individual(s) who performed the analyses;
- e. The analytical techniques or methods used; and
- f. The results of such analyses.

10. Inspection and Entry

The permit registrant must allow the department or an authorized representative upon the presentation of credentials to:

- a. Enter upon the permit registrant's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;
- b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
- c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit, and
- d. Sample or monitor at reasonable times, for the purpose of assuring permit compliance or as otherwise authorized by state law, any substances or parameters at any location.

SECTION D. REPORTING REQUIREMENTS

1. Planned Changes

The permit registrant must comply with OAR chapter 340, division 52, "Review of Plans and Specifications" and 40 CFR §122.41(l)(1). Except where exempted under OAR chapter 340, division 52, no construction, installation, or modification involving disposal systems, treatment works, sewerage systems, or common sewers may be commenced until the plans and specifications are submitted to and approved by the department. The permit registrant must give notice to the department as soon as possible of any planned physical alternations or additions to the permitted facility.

2. Anticipated Noncompliance

The permit registrant must give advance notice to the department of any planned changes in the permitted facility or activity that may result in noncompliance with permit requirements.

3. Transfers



DEQ USE ONLY

Application #: _____

File #: _____

Mail ID #2/#9: _____

LLID/RM: _____

ACD Fee Paid: _____

DOC Conf: _____

Notes: _____

**APPLICATION FOR
NEW NPDES GENERAL PERMIT #1200-C**



Oregon Department of Environmental Quality

For construction activities, including clearing, grading, and excavation, that disturb 5 or more acres of land, or will disturb 5 or more acres over time as part of a common plan of development. (For 1 or more acres of disturbance starting 12/01/2002)

DEQ USE ONLY

Received: _____

Amount Received: _____

Check #: _____

Deposit #: _____

IND DOM UIC: _____

Notes: _____

A. REFERENCE INFORMATION

<p>1. <u>Riverland Company LLC</u> Applicant (Owner, Developer, or General Contractor)</p> <p><u>Mr. Jason Palmberg</u> Contact Name</p> <p><u>255 West Grand Avenue</u> Address</p> <p><u>Astoria</u> <u>OR</u> <u>97103</u> City State Zip</p> <p><u>503-791-1603</u> Telephone E-Mail Address</p>	<p>2. <u>Port of Astoria</u> Owner (if different from applicant)</p> <p><u>Mr. Peter Gearin</u> Contact Name</p> <p><u>#1 Portway</u> Address</p> <p><u>Astoria</u> <u>OR</u> <u>97103</u> City State Zip</p> <p><u>503-325-4521</u> Telephone E-Mail Address</p>
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<p>3. <u>JB Rankin Engineering Inc.</u> Architect/Engineering Firm</p> <p><u>James Rankin PE</u> Project Manager</p> <p><u>P.O. Box 187</u> Address</p> <p><u>Warrington</u> <u>OR</u> <u>97146</u> City State Zip</p> <p><u>503-861-0779</u> Telephone E-Mail Address</p>	<p>4. <u>Mr. Jason Palmberg</u> Applicant's Designated Erosion and Sediment Control Inspector</p> <p><u>SEE ABOVE</u> Contact Name</p> <p>_____ Address</p> <p>_____ City State Zip</p> <p>_____ Telephone E-Mail Address</p>
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5. Invoice to: Riverland Company LLC Telephone #: 503 791-1603

Billing Address: 255 West Grand Ave City, State, Zip Code: Astoria OR 97103

B. PROJECT INFORMATION

<p>1. Name of Project: <u>Riverland Company Business Park</u></p> <p>3. General Property Description</p> <p>Street Address: <u>#1 Portway (Adjacent to)</u></p> <p>Cross Street: <u>Portway/Hamburg Street</u></p> <p>City: <u>Astoria</u> Zip Code: <u>97103</u></p> <p>County: <u>Clatsop</u></p>	<p>2. Proposed Start Date: <u>May 1, 2006</u></p> <p>4. Legal Description</p> <p>Tax Lot No.: <u>B-10-13-100</u></p> <p>Section: <u>13</u> Township <u>BW</u> Range <u>10W</u></p> <p>Site Size (acres): <u>2.67 Acre</u></p> <p>Disturbed Area (acres): <u>3.1 Acre</u></p>
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Name of Applicant: Riverland Company LLC

Name of Project: Riverland Business Park

B. PROJECT INFORMATION

continued

5. Site Location by Latitude and Longitude

Latitude: 46 / 11 / 10
Degrees Minutes Seconds

Longitude: 123 / 51 / 23
Degrees Minutes Seconds

6. Nature of the Construction Activity

- Single Family/Duplex Residential
 Commercial
 Industrial
 Subdivision, Number of Lots: _____
 Utilities: _____
 Other: _____

7. Existing Site Runoff

- Creek/Stream: _____
 Ditch: _____
 Municipal Storm Sewer or Drainage System
 Other: DRAIN PIPE TO COLUMBIA RIVER

8. Proposed Site Runoff

- Creek/Stream: _____
 Ditch: _____
 Municipal Storm Sewer or Drainage System (See Note)
 Other: _____

Note: If storm water discharges to a municipally owned storm sewer, authorization from the municipality must accompany this application.

C. EROSION AND SEDIMENT CONTROL PLAN

1. Erosion and Sediment Control Plan Submittal

- Included with this application
 To be provided at a later date, approx. date: _____

2. Contact Name for Plan: James Rankin PE

Telephone: 503-861-0779

E-Mail: RANKIN_EPH@YAHOO.COM

D. LAND USE COMPATIBILITY STATEMENT

Attach a complete Land Use Compatibility Statement (LUCS) signed by the local land use authority. The application will not be processed without evidence that the proposal is approved by the local land use authority and meets statewide planning goals.

E. SIGNATURE OF LEGALLY AUTHORIZED REPRESENTATIVE

The legally authorized representative must sign the application. Please see the following definitions (see 40 CFR 122.22 for more detail if needed). Also, please also provide the information requested in brackets [].

- ◆ Corporation — president, secretary, treasurer, vice-president, or any person who performs principal business functions; or a manager of one or more facilities employing more than 250 persons or having gross annual sales or expenditures exceeding \$25 million that is authorized in accordance to corporate procedure to sign such documents
- ◆ Partnership — General partner [list of general partners, their addresses and telephone numbers]
- ◆ Sole Proprietorship — Owner(s) [each owner must sign the application]
- ◆ City, County, State, Federal, or other Public Facility — Principal executive officer or ranking elected official
- ◆ Limited Liability Company — Member [articles of organization]
- ◆ Trusts — Acting trustee [list of trustees, their addresses and telephone numbers]

I hereby certify that the information contained in this application is true and correct to the best of my knowledge and belief. In addition, I agree to pay all permit fees required by Oregon Administrative Rules 340-45. This includes a renewal application fee to renew the permit and a compliance determination fee invoiced annually by DEQ to maintain the permit.

Jason W. Palmberg

LLC Member

Name of Legally Authorized Representative (Type or Print)

Title

[Signature]

May 2, 2006

Signature of Legally Authorized Representative

Date

Send this form, Land Use Compatibility Statement, and \$560 fee to the appropriate DEQ regional office:

Make your check payable to the Department of Environmental Quality

DEQ Northwest Region
2020 SW 4th Ave., Suite 400
Portland, OR 97201-4987
(503) 229-5263 or 1-800-452-4011

DEQ Western Region
750 Front St. NE, Suite 120
Salem, OR 97301-1039
(503) 378-8240 or 1-800-349-7677

DEQ Eastern Region
700 SE Emigrant, Suite 330
Pendleton, OR 97801
(541) 276-4063 or 1-800-452-4011

**DEPARTMENT OF ENVIRONMENTAL QUALITY
LAND USE COMPATIBILITY STATEMENT (LUCS)**



State of Oregon
Department of
Environmental
Quality

WHAT IS A LUCS? The LUCS is the process DEQ uses to determine that DEQ permits and other approvals that affect land use are consistent with the local government comprehensive plan.

WHY IS A LUCS REQUIRED? Oregon law requires that state agency activities that impact land use be consistent with local comprehensive plans. DEQ Division 18 administrative rules identify agency actions that are defined as programs affecting land use. These programs must have a process for determining local plan consistency.

WHEN IS A LUCS REQUIRED? A LUCS is required for nearly all DEQ permits, some general permits, and certain approvals of plans or related activities that affect land use. These activities are listed in this form. In cases where a source needs more than one DEQ permit or approval, a single LUCS may be used.

A permit modification requires a LUCS when:

- there is a physical expansion on the property or the use of additional land is proposed
- there is a significant increase in discharges to water
- there is a relocation of an outfall outside of the source property, or
- there is any physical change or change of operation of an air pollutant source that results in a net significant emission rate increase as defined in OAR 340-28-110.

A permit renewal requires a LUCS if one has not previously been submitted, or if one of the above four permit modification factors apply.

HOW TO COMPLETE A LUCS:

- The LUCS form is included in the DEQ permit application or approval packet.
- Applicant fills out Section 1 of the LUCS and then submits it to the city or county planning office.
- The local planning office determines if the business or facility meets all local planning requirements.
- The local planning office must attach written findings of fact for local reviews or other necessary planning approvals that are required of the applicant.
- The applicant includes the completed LUCS and attachments with the permit application or approval request submittal.

WHERE TO GET HELP: Questions on the LUCS are to be directed to region staff responsible for processing the source permit or other approval application or, to Headquarters at 800-452-4011 or (503) 229-6408.

SECTION 1 - TO BE FILLED OUT BY APPLICANT

<p>1. Name of applicant <u>Riverland Company LLC</u> Telephone <u>503-791-1603</u></p> <p>Mailing address: <u>255 WEST Grand Ave</u> <u>ASTORIA OR 97103</u></p> <p>Tax Acct.# <u>-</u> Tax Lot # <u>100</u> Latitude _____ Longitude _____</p>	<p>Contact person <u>Jason Palmberg</u></p> <p>Location address: <u>#1 Portway Street (Adjacent to)</u> <u>(Part of Astoria)</u> <u>Astoria Oregon</u></p> <p>Township <u>B2N</u> Range <u>10W</u> Section <u>13</u></p>
<p>2. Describe type of business or facility and the services or products provided: <u>Four (4) Commercial Buildings. Total 47,425 square feet. Office and Storage</u> <u>Includes required parking, landscaping, and site improvements. Other uses may</u> <u>include light industrial and/or business services.</u></p>	

3. Circle the type of DEQ permits or approvals being applied for at this time:

- | | | |
|------------------------------|---|--------------------------------------|
| Air Notice of Construction | Solid Waste Compost Registration-Permit | WQ NPDES/WPCF Permit ** |
| Air Discharge Permit* | Solid Waste Letter Authorization Permit | Wastewater/Sewer Facility Plan *** |
| Title V Air Permit | Solid Waste Material Recovery Facility Permit | WQ Storm Water General Permit |
| Air Indirect Source Permit | Solid Waste Transfer Station Permit | Other WQ General Permit **** # _____ |
| Parking/Traffic Circ. Plan | Solid Waste Waste Tire Storage Permit | Fed. Permit WQ Certification |
| Solid Waste Disposal Permit | HW/PCB Storage/Trmt/Disch Permit | Pollution Control Bond Request |
| Solid Waste Treatment Permit | Wastewater Revolving Loan Request | |

* excludes portable facility permits ** for onsite const-installation permits use DEQ form F:\WLANDUSE.OSS
 *** includes review of plan changes that require use of new land **** general permits, 600, 700, 1200CA, and 1500 are exempt.

4. This application is for a: new permit permit renewal permit modification other: _____

SECTION 2 - TO BE FILLED OUT BY CITY OR COUNTY PLANNING OFFICIAL

5. The facility proposal is located: inside city limits inside the UGB outside UGB

6. Name of city or county that has land use jurisdiction*: City of Astoria
*jurisdiction means the legal entity that is responsible for land use decisions for the subject property or land use.

7. The business or facility complies with all applicable local land use requirements: yes no

7a. List all local reviews or approvals that were required of the applicant before the LUCS consistency was determined
(This does not include past requirements that do not relate to the pending DEQ permit request.):
Conditional Use Permit (CU05-09) approved 6/28/05 (copy attached)

7b. If no, identify reasons for noncompliance, or list requirement(s) that the applicant must comply with before LUCS consistency can be determined:
N/A

7c. Is local government currently processing remaining requirements to attain LUCS consistency: yes no N/A
Anticipated date of decision _____

7d. Is a public notice and hearing required? yes no Hearing date: N/A

8. Planning official reviewer's telephone number: 503-338-5183

SIGNATURES

<u>Rosemary Johnson</u>	<u>Rosemary Johnson</u>	<u>Planner</u>	<u>5/3/06</u>
Planning Official	Print Planning Official's Name	Title	Date

_____	_____	_____	_____
Planning Official	Print Planning Official's Name	Title	Date
<small>(depending upon city/county agreement on jurisdiction outside city limits but within UGB)</small>			

ATTENTION: A LUCS approval cannot be accepted by DEQ until all local requirements have been met. Written findings of fact for all local decisions addressed under 7 thru 7b must be attached to the LUCS.

Erosion and Sediment Control Plan Worksheet

Project Name: Riverland Company LLC Business Park
Prepared By: James Rankin, PE
Company Name: JB Rankin Engineering Inc
Telephone: 503-861-0779

Please answer the following questions as indicated. If needed, additional space is provided for you at the end of this form. You may also attach any information you feel is pertinent to the project.

1. Is your Erosion and Sediment Control Plan for an activity that covers 20 acres or more of disturbed land?
 YES NO

If yes, the plan must be prepared by an Oregon Registered Professional Engineer, Oregon Registered Landscape Architect, or Certified Professional in Erosion and Sediment Control (Soil and Water Conservation Society). Please complete question #4.

2. Does your Erosion and Sediment Control Plan require engineered facilities such as settling basins and/or diversion structures?
 YES NO

If yes, the plan must be prepared by an Oregon Registered Professional Engineer.

3. If you answered "YES" to question #1 or 2, please provide the following information and use the space provided to imprint your seal.

Name: _____
Address: _____

Telephone: _____

Imprint Seal Above

4. Describe the nature of the construction activity: FOUR (4) COMMERCIAL BUILDINGS,
TOTAL 47,425 SQUARE FEET FOR OFFICE AND STORAGE
WITH REQUIRED PARKING, DRAINAGE, LANDSCAPING AND SITE IMPROVEMENTS.
Other uses may include light industrial and/or business services.

5. Describe in detail the phases of construction and the erosion control measures to be implemented during each phase. Also complete the table on the next page to assist with the narrative description.

APRIL - MAY 2006: Initial clearing of site. Remove old buildings and storage products. No erosion control measures. Work by Port of Astoria.

MAY - JUNE 2006: Set-up concrete and asphalt crusher to reduce existing concrete and asphalt material to aggregate. Grade site. Begin installation of water, sewer, drains, and utility lines. Install silt fence.

JUNE - JULY 2006: Drive piling to support building frame. Construct concrete slabs for building floors. Asphalt pave parking areas, and install catchbasins. Maintain silt fence.

JULY - AUGUST 2006: Complete drainage work. Complete asphalt parking. Erect steel buildings. Maintain silt fence.

AUGUST - SEPTEMBER 2006: Complete steel buildings to make weather tight. Complete landscaping. Maintain silt fence. Install catchbasin silt sacks.

^{December}
SEPTEMBER - ~~October~~ 2006: Finish interior of buildings. Maintain silt fence and silt sacks until first significant rainfall event. Project complete.

7. Describe the origin and nature of fill material to be used: Existing concrete slabs
and asphalt driveways will be ground to create construction
aggregate. Existing sandy soils will also be used for
site fill.

8. Describe the soils present on the site and erosion potential of the soils.

a) Soil type(s): Sand. Deep and rapid draining soil.

b) Erosion Potential: Slight.

9. Submit two copies of site maps and constructions plans. The following checklist is provided for your convenience:

IS THE FOLLOWING INFORMATION PROVIDED AND DEFINED ON THE MAPS SUBMITTED TO THE DEQ?	YES	NO	NOT APP.
a. The complete development, including any phases.	X		
b. The areas of soil disturbance on the site, including areas that will be cleared, graded or excavated.	X		
c. The areas of cut and fill.	X		
d. The drainage patterns and slopes of the land both before and after major grading activities.	X		
e. The location of existing and proposed storm drains and outfalls.	X		
f. The receiving waterbody for drainage from the site.	X		
g. The areas used for storage of soils or wastes.	X		
h. The location of all erosion and sediment control facilities and/or structures.	X		
i. The areas on the site where vegetative practices will be used.	X		
j. The location of existing and future impervious structures and areas.	X		
k. The location and name of all springs, wetlands, and surface waterbodies near the project.	X		
* l. The boundaries of the 100 year flood plain if known.		X	
m. The location of graveled access entrance and exit drives and graveled parking areas to be used by construction vehicles.	X		
n. The locations of graveled roads traveled by more than 25 vehicles per day.	X		
o. Installation details of vegetative and other erosion control practices (vegetative buffer strips, seeding, mulching, erosion blankets, etc.).	X		
p. Installation details of sediment control practices (silt fences, straw bale dikes, storm drain inlet protection, etc.).	X		

* Located in Flood Zone C (Area of minimal flooding)
 Parcel # 41-0028-0005 B 8/1/78

Rosemary Johnson
 Planner

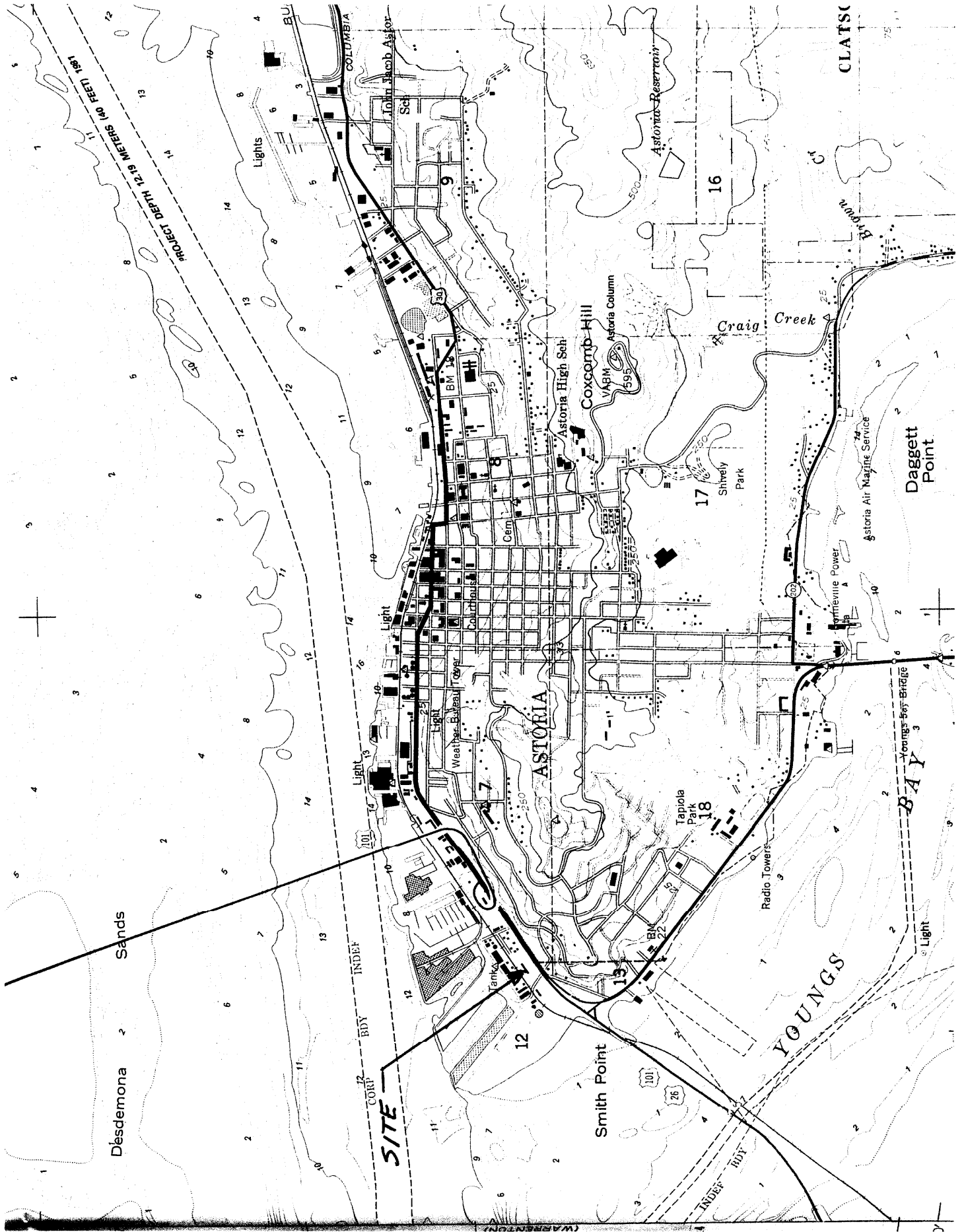
10. Describe the truck drippage precautions you will take to prevent discharge of water from trucks hauling wet soils or stone excavated from the site: _____

There are no gravel roads in this area. Existing streets are asphalt paved. Trucking of wet soils from site is not anticipated. Existing soil is rapid draining sand. Construction will be completed before winter rains begin.

11. Describe the procedures you will use to assure prompt maintenance and repair of graded surfaces and erosion and sediment control measures: _____

Limit construction to good weather days. Construction will be completed before winter rains begin.

Evaluate erosion control measures after every significant rain fall event. Correct, modify and/or repair as may be required.



Désdemona Sands

SITE

ASTORIA

Smith Point

YOUNGS BAY

CLATSOP

Daggett Point

Youngs Bay Bridge

Radio Towers

Tapiola Park

Coxcomb Hill

Astoria High Sch

Astoria Column

Astoria Reservoir

Shively Park

Astoria Air Marine Service

Garfield Power

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APPENDIX B

SITE-SPECIFIC HEALTH & SAFETY PLAN

(EnviroLogic Resources, 2006)

APPENDIX B
SITE-SPECIFIC HEALTH AND SAFETY PLAN

**Port of Astoria Property Redevelopment
Former Mobil/Niemi Oil Bulk Plant
Astoria Area-Wide Petroleum Site
Astoria, Oregon
DEQ ECSI File #2277**

Prepared by

EnviroLogic Resources, Inc.
**P.O. Box 80762
Portland, Oregon 97280-1762
(503) 768-5121
www.h2ogeo.com**

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1.0 INTRODUCTION

This site-specific Health and Safety Plan (HASP) has been prepared by *EnviroLogic Resources, Inc.* to guide redevelopment activities that will be conducted at the former Mobil/Niemi Oil bulk plant that is part of the Astoria Area-Wide Petroleum Site in Astoria, Oregon (Figure B1). All personnel are hereby advised that the fieldwork associated with the redevelopment of the former Mobil/Niemi Oil bulk plant may result in exposure to chemical and physical hazards. The requirements in this HASP are designed to minimize the risk of chemical exposure or physical injuries by a combination of personal protective equipment (PPE), engineering controls, and safe work practices.

This HASP presents the protocols that will be required to provide for worker health and safety during the investigative activities to be conducted at the former Mobil/Niemi Oil bulk plant site. Specifically, this plan presents:

- A description of known existing site conditions;
- A description of the project health and safety organization;
- Safety rules and procedures;
- Criteria for hazard and risk analysis;
- A description of levels of personal protection and required equipment;
- Air monitoring procedures;
- Emergency response information;
- Training requirements; and
- Requirements for routine health care and health monitoring.

The requirements outlined in this plan are considered the minimum health and safety requirements relating to the potential for exposure to soil and ground water contamination identified at the former Mobil/Niemi Oil bulk plant. All fieldwork will be performed in accordance with Occupational Safety and Health Administration (OSHA) Standard 29 CFR 1910.120, which regulates hazardous waste site operations; as well as Oregon requirements outlined in the Oregon Administrative Rules (i.e. OAR 437). This HASP does not address physical worker safety issues that may be associated with excavation,

trenching, and shoring (OAR 437-03, Subdivision P) or work in confined spaces (OAR 437-02, Subdivision E).

1.1 WORK AND CHEMICALS COVERED BY THE HASP

Redevelopment activities planned for the former Mobil/Niemi Oil bulk plant site and covered by this HASP will begin in Summer 2006 and may occur periodically thereafter as necessary. Redevelopment activities covered by this plan may include:

- Site preparation activities, including grading, excavating and subsurface utility trenching, wherein potential petroleum contaminated media and debris, or petroleum product(s), may be encountered and temporarily stored on-site pending receipt of necessary waste characterization analytical results;
- Management of potentially hazardous wastes stored on-site, including containerization, collection of soil and ground water samples for waste characterization analyses, and loading for off-site transport to an authorized disposal location;
- Excavation and removal of former concrete foundations and stockpiling of surrounding soils that may potentially be impacted with petroleum ; and,
- Unplanned future subsurface disturbances necessary for the redeveloped site (i.e. landscaping or utility work).

This HASP does not cover former Mobil/Niemi Oil bulk plant redevelopment activities that are limited to walking across any exclusion zone designated in this plan when the activities noted above are not in progress in that exclusion zone, and if the activities in progress in any other exclusion zone at the site do not represent a reasonable risk of exposure.

Petroleum-related chemicals are the only expected constituents of concern at the former Mobil/Niemi Oil bulk plant site. Table B1, in Section 4.2, lists the potential constituents of concern, with their maximum previously detected concentrations (if known) at the site and health-based exposure information. The symptoms listed as a result of exposure are generally associated with acute (short term) exposures to high concentrations of a constituent. Such symptoms may not be associated with the lower level exposure that would be the most likely exposure scenario encountered during redevelopment

work. Lack of or failure to notice these symptoms does not indicate that exposure is not occurring. Also, symptoms of exposure are not available for some of the constituents. Therefore, use of prescribed PPE and monitoring instruments in accordance with this plan is required in order for exposure to these constituents to be kept as low as possible.

1.2 HASP APPLICABILITY AND ADHERENCE

All individuals performing fieldwork at the former Mobil/Niemi Oil bulk plant must read, understand, and comply with this health and safety plan. All Astoria Area-Wide Potentially Responsible Parties (PRP) group consultants have the primary responsibility for site safety of their own personnel. All PRP employees that enter controlled areas at the former Mobil/Niemi Oil bulk plant must have the applicable levels of training, medical testing, and PPE required in this HASP. PRP consultants may choose to adopt their own HASP as long as it meets the minimal requirements presented in this HASP. If any information presented in this plan is unclear, the reader should contact the site safety officer for clarification prior to participating in any field activity at the former Mobil/Niemi Oil bulk plant. Once the information has been read and understood, the individual must sign the Acknowledgment (Attachment B-1), which will then be placed in the job file.

Similarly, all PRP consultants and subcontractors for EnviroLogic Resources' may prepare their own HASP that is at least as protective as this plan, or they may adopt this plan as their own. Copies of an acknowledgment form similar to that provided as Attachment B-1 must be provided to *EnviroLogic Resources'* site health and safety officer prior to the commencement of field activities regardless.

Activities conducted as part of redevelopment at the former Mobil/Niemi Oil bulk plant shall be conducted without creating health and safety risks for nearby workers or the public. All on-site personnel shall be attentive to the potential for release of, and potential for exposure to, contaminated materials associated with field activities and shall immediately bring all such matters to the attention of the appropriate site safety officer. Decontamination procedures and other elements of the field procedures (e.g., access to/from work areas by heavy equipment) have been developed to be protective of both worker and public health and safety.

Failure to comply with this HASP is grounds for immediate dismissal from the site

1.3 RESPONSIBLE INDIVIDUALS

Safety during redevelopment activities at the former Mobil/Niemi Oil bulk plant will be the responsibility of the *EnviroLogic Resources*' project manager and the designated on-site safety officer. The site safety officer, or designee, will be present at the site at all times during field activities related to redevelopment. For particular field work, *EnviroLogic Resources* may designate a subcontractor representative where the field work is being conducted to act as a local site safety officer.

1.4 HASP MODIFICATIONS

This plan is flexible, and allows unanticipated site-specific problems to be addressed, while providing adequate and suitable worker protection. The plan may be modified at any time, based on the judgment of the respective site safety officer or the project safety officer, as appropriate. Minor changes to the plan regarding day-to-day activities (e.g., location of decontamination station, etc.) may be made by the site safety officer as redevelopment needs at the former Mobil/Niemi Oil bulk plant may dictate. Substantive changes to procedures (e.g., monitoring frequency, etc.) must also receive the concurrence of both the site safety officer and the project safety officer. Any modifications to the plan will be documented using Attachment B-2 (Modification to Health and Safety Plan) and will be presented to the on-site workers during a safety briefing.

2.0 SITE ORGANIZATION AND OPERATION

The areas of the Astoria Area-Wide to be redeveloped, which includes the **former Mobil/Niemi Oil bulk plant**, and the type of activities involved in the redevelopment are diverse. Additionally, the distribution of contamination at the **former Mobil/Niemi Oil bulk plant** is non-uniform in nature. These factors may preclude the use of a single work zone boundary, **although a single work zone boundary may be appropriate at the onset of redevelopment site preparation activities.**

The designated level of protection for each work area on-site may be downgraded (C to D) if monitoring data obtained prior to or during work activities indicate that such a downgrade is appropriate. Conversely, the level of protection must be upgraded if monitoring conducted during work activities so indicates (Section 7 presents air monitoring action levels). Figure B-1 should be regarded only as an indication of the general work area, actual boundaries may vary slightly with work activity requirements and appropriate exclusion zones will be designated for each work area.

2.1 WORK ZONES

Each work area will consist of a controlled access exclusion zone, and a peripheral support zone. Each zone in each work area will be established on an activity-by-activity basis prior to initiation of work and will be clearly delineated (marked by tape, fencing, or suitable barrier).

Exclusion Zone: The outer perimeter of each work area defines the outer perimeter of the exclusion zone for that work area. Only authorized field personnel will be allowed in each exclusion zone. The initial level of protection required in the exclusion zone may be adjusted as conditions change. Levels of protection are discussed in more detail in Section 5.

Support Zone: Located adjacent to the exclusion zone, the support zone is where all personnel will be outfitted in specified PPE before entering the work area defined by the exclusion zone. The support zone includes clean equipment storage and personnel resting and eating facilities.

2.2 SITE SECURITY

Much of the area at the former Mobil/Niemi Oil bulk plant where redevelopment activities will occur is restricted-access industrial area. For work activities that are conducted in areas of the site with public access, the work area will be blocked off and posted to prevent potential risks of exposure to the public.

3.0 SAFETY RULES AND PROCEDURES

Safety is the responsibility of every individual involved in redevelopment efforts at the former Mobil/Niemi Oil bulk plant. Whether in the office or in the field, properly followed procedures are essential for personal safety and to minimize injuries or accidents involving equipment. Potential hazards while working at the site include, but are not limited to:

- Exposure to toxic and/or hazardous chemicals;
- Physical hazards from use of sampling, and testing equipment;
- Physical hazards from heavy equipment; and
- Physical hazards from working conditions (e.g., heat stress, hypothermia);

3.1 SAFETY RULES

All personnel working in the field will follow the rules and procedures listed below:

- All personnel will conduct themselves in a professional manner at all times.
- Personnel will not be admitted into an operational exclusion zone without necessary safety equipment in proper working condition and requisite training.
- All personnel must comply with the established safety procedures. Anyone working on-site for one of the responsible parties, or under contract with EnviroLogic Resources, who does not comply with this health and safety plan may be immediately dismissed from the site.
- Working while under the influence of intoxicants, narcotics, or controlled substances is prohibited. Personnel should not take prescription drugs if the potential for contact with toxic substances exists, unless approved in writing by a physician.
- Firearms, ammunition, fireworks, explosives, and otherwise dangerous or reactive materials are prohibited.
- Climbing or standing on machinery (other than heavy equipment or service vehicles) or equipment is prohibited unless authorized by the site safety officer.

- Long hair must be contained inside a hard hat, if applicable. Facial hair that interferes with proper operation and fit of respiratory protection gear is not allowed when working under Level C or stricter.
- A team system will be used within an exclusion zone. During site operations, each worker is a safety backup for his/her team partners and should make all personnel aware of dangerous situations that may develop. Subcontractors may act as teammates when the redevelopment-related work requires only one consultant staff member in order to be completed satisfactorily.
- Eating, drinking, chewing gum or tobacco, smoking, or any practice that increases the probability of hand-to-mouth transfer and ingestion of material is prohibited in an exclusion zone.
- Smoking or consumption of food and beverages is allowed only within designated areas in the support zones.
- Disposable clothing (e.g. Tyvek® coveralls, etc.) will be used whenever necessary and appropriate to minimize the risk of cross contamination.
- The number of personnel and the amount of equipment in contaminated areas will be minimized to allow for efficient site operations.
- Only trained and authorized personnel will collect samples.
- Contact with contaminated or potentially contaminated material should be avoided. Efforts will be made to stage site activity upwind of investigative equipment, activities, and materials.
- Proper decontamination procedures must be followed before leaving an exclusion zone and the site, unless medical emergencies dictate otherwise (Section 3.2.3). All decontamination residual materials, and any other potentially contaminated materials, will be handled properly and kept on-site or at a designated secure stockpile area.
- Only approved work clothes or equipment will be allowed within the exclusion zones.
- Exchange of PPE will not be allowed.

3.2 SAFETY PROCEDURES

Safety procedures to be used in the conduct of the work at the former Mobil/Niemi Oil bulk plant are presented below.

3.2.1 Before Starting Work

Prior to beginning redevelopment activities, review site information updates. These updates will be provided by the site safety officer and will provide any new information concerning:

- Scope of work;
- Expected hazards;
- Special conditions;
- Sampling procedures;
- Location of phones;
- Emergency medical information;
- Level of personal protection required;
- Finish eating and extinguish smoking materials prior to suiting up;
- Attend daily safety briefings and worker question and answer period, if applicable;
- Check safety gear and equipment operation. Suit up as required to begin activities; and
- Measure and delineate exclusion zone (unless established previously).

3.2.2 Activities in the Exclusion Zone

For all activities in the exclusion zone the following will apply:

- At a minimum PPE of Level D (modified) (Section 5) will be worn.
- For activities capable of creating volatile airborne contamination, levels of PPE will be adjusted according to results of work zone air monitoring (Section 6).
- Whenever possible, personnel will be stationed upwind of field activities capable of creating airborne contamination.

- If any physical discomfort is experienced (e.g., abnormalities, nausea, lightheadedness), immediately stop work, tell the other team members, and leave the area.
- If any PPE fails, immediately leave the area.
- One person must never be left alone in an exclusion zone.
- Use maximum care in handling samples. If the sampling site is not accessible using gear available (i.e., water too high, slippery or steeply sloped surface, holes, etc.), confer with the EnviroLogic Resources project manager and/or site safety officer, as appropriate, to arrange an alternate sampling site or appropriate equipment/procedures to obtain samples safely.
- Immediately wipe off spills and dirt from sampling containers.

3.2.3 Decontamination Procedures for Exiting the Exclusion Zone

All personnel and equipment must be properly decontaminated before entering a support zone from an exclusion zone. All contaminated equipment and materials will leave only through the contamination reduction zone or will be contained on-site; any potentially contaminated materials to be stockpiled will be kept in designated, secure locations.

3.2.3.1 Routine Decontamination Procedures

A decontamination area will be set up in the contamination reduction zone at the border of each exclusion zone. Prior to leaving the exclusion zone:

- Portable sampling equipment will be washed or placed in/on plastic for vehicle transport to equipment decontamination area.
- Heavy-equipment accessories will be placed on a trailer for transport to the decontamination area.
- Noticeable loose and adhered soils will be brushed and/or washed off heavy-equipment and support vehicles before moving to the decontamination area, to minimize transport of potentially contaminated materials from the exclusion zone.

In the contaminant reduction zone, sampling, drilling, and other equipment will be decontaminated as follows:

- Sampling equipment will be decontaminated as outlined in the work plan.
- All heavy-equipment must be thoroughly decontaminated prior to leaving the site, with particular care taken in decontaminating those parts of the heavy-equipment that have come in direct contact with contaminants, such as tracks, tires, shovels, grapples, and scoops. High-pressure steam cleaning will be used for these, aided by physical scrubbing with disposable brushes when necessary to loosen caked materials. All portions of the equipment, including the undercarriage, chassis, and cab, will also be inspected and cleaned as necessary.
- Vehicles and equipment exiting the controlled portions of the former Mobil/Niemi Oil bulk plant will first pass through a dedicated, bermed steam cleaning pad and wheel wash area prior to entering the public right-of-way in order to remove any potential soil and ground water contamination, or LNAPL. If decontamination wash water is generated it will be containerized and stored on-site pending receipt of analytical results.
- Any vehicle used for transportation in an exclusion zone will be equipped with seat covers that can be easily wiped down. All such vehicles must be decontaminated prior to leaving the exclusion zone. Decontamination will include at a minimum high pressure washing of the exterior and, as necessary, wet wiping the interior and scrubbing of the exterior.
- PPE will be removed and washed and/or containerized prior to leaving the contaminant reduction zone.
- Certain parts of respirators, such as the harness assembly or cloth components, are difficult to decontaminate. If grossly contaminated, they will be discarded. Rubber components will be soaked in a mild, non-corrosive soap and water solution and scrubbed with a brush. Respirators will be sanitized by rinsing in a detergent solution followed by a clear rinse, then hung to air dry.

3.2.3.2 Emergency Decontamination Procedures

In case of an emergency, gross contamination procedures will be speedily implemented if possible. If a life-threatening injury occurs and the injured person cannot undergo decontamination procedures without incurring additional injuries or risk, he or she will be transported wrapped in plastic sheeting if time allows and if consistent with the injury. The medical facility will be: 1) informed, in advance if

possible, that the injured person has not been decontaminated, and 2) given information regarding the most probable contaminants.

3.2.4 Disposal of Contaminated Fluids and Materials

All equipment and materials used for decontamination or personal protection will be cleaned or collected for appropriate disposal. All non-disposable equipment will be decontaminated on-site. Disposables will be containerized. Contaminated liquids will be collected in storage tanks or containers and stockpiled in a secure location. Storage and/or disposal will be conducted in accordance with the DEQ-approved Contaminated Media Management Plan regarding redevelopment activities.

3.2.5 Housekeeping

Work areas at the former Mobil/Niemi Oil bulk plant will be kept as clean and orderly as possible at all times. Ordinary refuse will be placed in suitable rubbish bins or trash containers at the site. The storage or introduction of extraneous materials will be minimized in the exclusion zone to minimize the decontamination load and reduce possibilities for cross-contamination.

3.2.6 Visitors

Authorized visitors will only be allowed to observe operations from the support zone or beyond, and must obey all instructions of the site safety officer and/or *EnviroLogic Resources*' representative. Representatives from the Oregon Department of Environmental Quality (DEQ), the Oregon OSHA, and U.S. Environmental Protection Agency (EPA) must also possess appropriate health and safety equipment at the time of the visit, and have a HASP at least as stringent as this plan, or adopt this plan as their own.

4.0 POTENTIAL HAZARDS

The potential exists for both physical and chemical hazards during planned site activities. These hazards are explained below.

4.1 PHYSICAL HAZARDS

The working conditions during redevelopment at the former Mobil/Niemi Oil bulk plant could involve (but may not be limited to) the following potential physical hazards: moving or falling objects, weather-related hazards, electrical hazards, and vehicular traffic. Moving or falling objects are hazards present in the vicinity of operating heavy-equipment. Steel-toed boots, and safety glasses will be worn at all times within the exclusion zone. Appropriate weather gear should be worn. Clearance from overhead power lines will be checked prior to and during heavy-equipment operation. In addition, the redevelopment properties are adjacent to operating facilities and hazards related to material movement and shipping may be present in the immediate vicinity. If the operators of these adjacent facilities have specific safety policies regarding the former Mobil/Niemi Oil bulk plant, these are herein incorporated by reference, once received by *EnviroLogic Resources*.

PHYSICAL HAZARD EVALUATION

Noise levels > 85 dB Wear ear protection during heavy-equipment operation.	Heavy lifting	Excavation hazards Keep clear of heavy-equipment.	Moving equipment Be alert for vehicles and heavy-equipment
Unstable surface	Slips/Trips	Fall hazards	High temperatures
Low temperatures	Repetitive motion activities (soft tissue)	High particulate levels Use a dust monitor if applicable	Sharp objects (needles, glass, etc.)
Silica dust	Falling objects	Flying objects	

4.2 CHEMICAL HAZARDS

This section describes the potential former Mobil/Niemi Oil bulk plant chemicals of concern and the hazards associated with them. Petroleum distillate fuels are mixtures of aliphatic and aromatic hydrocarbons, the constituent concentrations of which can vary significantly dependent upon the crude feedstock, refining process, and seasonal variations. The predominant types of compounds in fuels are paraffins (e.g., pentane, hexane), naphthenes (e.g., cyclohexane) and aromatics (e.g., benzene, toluene, polycyclic aromatics). Gasoline contains about 80 percent paraffins, 6 percent naphthenes, and 14 percent aromatics. JP-1 and 4 jet fuels contain up to 48 percent paraffin, 38 percent naphthenes, and 20 percent aromatics. Fuel oils and certain jet fuels (JP-3 and 5) contain about 10 percent paraffin, up to 23 percent naphthenes, and up to 78 percent non-volatile aromatic hydrocarbons. To improve their burning properties, compounds such as tetraethyl-lead (TEL), tetramethyl lead (TML), methyl tertbutyl ether (MTBE), 1,2-dichloroethane (1,2-DCA, also referred to as ethylene dichloride [EDC]) and ethylene dibromide (EDB) are often added to both automotive and aviation fuels.

Petroleum distillate fuels exhibit relatively low acute inhalation and dermal toxicity. Concentrations of 160 to 270 ppm gasoline vapor have been reported to cause eye, nose, and throat irritation in people after several hours of exposure. Levels of 500 to 900 ppm have been reported to cause irritation and dizziness in one hour and 2,000 ppm has been reported to cause mild anesthesia in 30 minutes. Gasoline, kerosene, and some jet fuels will cause severe eye irritation on contact with the eye and low to moderate skin irritation on contact with the skin. Methanol can be toxic by either skin or inhalation exposure, and is unique in that it attacks the optic nerve. Methanol blindness can be irreversible.

Ingestion of 10 to 15 grams (2 to 3 teaspoons) of gasoline has caused death in children. In adults, ingestion of 20 to 50 grams may produce severe symptoms of poisoning. The most dangerous aspect of ingestion of these motor fuels is the development of chemical pneumonia from the aspiration of gasoline or other fuels into the lungs. Aspiration of very small quantities of these motor fuels into the lungs is often fatal. Some gasoline additives, such as 1,2-DCA, EDB, TEL and TML are highly toxic materials; however, their concentrations in gasoline are so low that their contribution to the overall toxicity of gasoline is negligible in most instances.

Benzene is a minor component of petroleum distillate fuels with concentrations ranging from non-detectable to 5%, with gasoline typically at 1%. Benzene has been classified as a known human carcinogen by the American Conference of Governmental Industrial Hygienists (ACGIH) based on the increased incidence of leukemia in certain oil refinery workers.

Petroleum distillate fuels are flammable. Under certain conditions, this property presents a greater risk than toxicity. Six of the fuels covered by this procedure are classified by the Federal Department of Transportation as flammable liquids as all six typically have flash points of 100 degrees F or less. These fuels are gasoline, gasohol, Jet B, JP-1, JP-4, and No. 1 fuel oil. Lower explosive limits of the fuels range from 0.6 to 1.4 percent (6,000 to 14,000 ppm).

Chemical components of petroleum products may be found in the subsurface during redevelopment activities and sampling at the former Mobil/Niemi Oil bulk plant. These may include volatile organic compounds (VOCs), volatile aromatic hydrocarbons (BTEX), polycyclic aromatic hydrocarbons (PAHs), and metals. Potential exposure routes during field activities are through inhalation, skin, and eye contact. To a lesser degree, ingestion of contaminants and direct contact with the circulatory system (through cuts, abrasions, etc.) could also occur.

Dermal hazards could arise if product (liquid or vapors) comes into contact with the hand or body (skin) during field activities. A low hazard level exists where there is no contact, and when proper dermal protection is worn. The use of protective clothing and chemical-resistant gloves is required at all times when handling potentially or known contaminated soil and/or ground water.

Respiratory hazards related to the above-listed chemicals might arise if vapors, gases, dust, or mist are released into the breathing zone during redevelopment activities and/or sampling at the former Mobil/Niemi Oil bulk plant. VOCs are central nervous system depressants that produce similar symptoms in victims via skin absorption or inhalation of moderate vapor-phase concentrations. General symptoms of exposure, both acute and chronic, may include euphoria, headache, weakness, dizziness, nausea, narcosis, and possibly coma. Certain constituents are also skin and eye irritants, while benzene is a known human carcinogen.

PAHs have the lowest OSHA Permissible Exposure Limits (PELs) (0.2 part per million [ppm]). However, the chemical properties (i.e., low vapor pressures, etc.) of these heavier PAHs are such that they do not readily volatilize. Also, the hydrocarbon fuels that contain these heavier PAHs (fuel oils [diesel] and certain jet fuels [JP-3 and 5]) contain about 10 percent paraffin, up to 23 percent naphthenes, and up to 78 percent non-volatile aromatic hydrocarbons. As these PAHs have such a low potential for

volatization, the action levels on Table B-2 are based on benzene, which has the lowest OSHA PEL of the volatile constituents (1 ppm).

TABLE B-1

**SUMMARY OF ANTICIPATED CHEMICAL HAZARDS
(Soil and Ground Water)**

COMPOUND	Odor Threshold (ppm)	OSHA PEL/ TLV TWA (ppm)	OSHA STEL (ppm)	OSHA IDLH (ppm)	LEL (%)	IP (eV)	Other hazards
Total TPH	NA	NA	NA	NA	NA	NA	C,E,F,P
Volatile Petroleum Constituents							
Benzene	12	1	5	250	1.2	9.24	C,E,F,P
1,2-Dibromoethane		20	50	100	NA	9.45	P
1,2-Dichloroethane				{50}	6.2	11.05	P
				NIOSH			
Ethylbenzene	NA	100	125	800	0.8	8.76	F,P
Methyl-t-butly Ether		40	200	--	NA	NA	NA
Toluene	0.17-2.9	100	150	500	1.1	8.82	E,F,P,R
Xylenes	0.62-5.4	100	150	900	0.9	8.44-8.56	F,P
Polyaromatic Hydrocarbons		mg/m ³					
Acenaphthene		--	--	--	NA	NA	
Anthracene		0.2	--	80	0.6	Vary	C,P
Benz[a]anthracene		--	--	--	NA	NA	C,P
Benzo[b]fluoranthene		0.2	--	--	NA	NA	C,P
Benzo[k]fluoranthene		0.2	--	--	NA	NA	C,P
Benzo[a]pyrene		0.2	--	80	Vary	Vary	C,P
Chrysene		0.2	--	80	Vary	Vary	C,P
Fluoranthene		0.2	--	--	NA	NA	
Fluorene		--	--	--	2.6	10.37	
Indeno[1,2,3- cd]pyrene		0.2	--	--	NA	NA	C,P
Naphthalene	12.0-14.68	10	15	250	0.9	8.12	E,F,P

Notes: Because PAHs have such a low potential for volatilization, the action levels on Table C-2 are based on benzene, which has the lowest OSHA PEL of the volatile constituents (1 ppm).

--	-	none established	NA	-	not available
C	-	carcinogen	P	-	poison
GW	-	groundwater	IDLH	-	immediately dangerous to life and health
PEL	-	permissible exposure level	*	-	5 minute maximum in 3 hours
IP (eV)	-	ionization potential	SC	-	suspected carcinogen
N/A	-	not applicable	STEL	-	short-term exposure level
F	-	flammable	R	-	Reactive
COR	-	Corrosive	E	-	Explosivity

Values are either from the American Conference of Governmental Industrial Hygienists Threshold Limit Value (TLV), or the OSHA PEL, whichever is most stringent. The TLV is the time-weighted average (TWA) concentration for a 40-hour week or 8-hour work shift, to which all workers may be repeatedly exposed without adverse effect. The PEL is the OSHA permissible exposure limit, and is also a TWA. The Short-Term Exposure Limit (STEL) is the concentration at which workers can be continually exposed for a short period of time. Exposures at the STEL should not be longer than 15 minutes and should not be repeated more than four times in an 8-hour period, unless noted. There should be at least one hour between each 15-minute exposure at the STEL.

4.3 ANALYSIS OF SITE HAZARDS AND RISKS

Results of previous investigations at the former Mobil/Niemi Oil bulk plant have identified petroleum product chemicals as the contaminants of concern. The planned redevelopment activities will involve physical hazards inherent with working outside and in the presence of heavy-equipment.

There is a potential for field personnel to become exposed to contaminants in the defined work areas. Dermal, inhalation, and incidental ingestion exposures are possible. The general risk of exposure at the former Mobil/Niemi Oil bulk plant is low to moderate.

Current soil and ground-water contamination could lead to dermal contact during intrusive activities, such as excavation and soil or ground-water sampling. Dermal protection, as defined in Section 5, will, therefore, be required for any such activities. Volatilization of a few identified contaminants could pose

risk of inhalation exposures. Action levels and the associated respiratory protection for potential inhalation exposures will be based initially on constituent concentrations presented in Table B-1 and will be adjusted thereafter based on air monitoring data to be collected during redevelopment activities (Section 6).

5.0 CONTROL OF HAZARDS

The control of identifiable hazards is primarily through safe work habits and proper preparation to lessen risk of injury.

5.1 GENERAL SAFE WORK PRACTICES

Eating, drinking, chewing gum or tobacco, smoking, or any practice that increases the probability of hand-to-mouth transfer and ingestion of material is prohibited in the work zone. All personnel should exit the work area and thoroughly wash their hands and faces with mild soap and water before eating or drinking. Absolutely no smoking is allowed in work areas.

5.2 TRAINING AND SAFE WORK PRACTICES

All field personnel for this project will have attended a 40-hour health and safety training course for conducting work at hazardous waste sites and annual 8-hour training updates. This course satisfies the initial training requirements of 29 CFR 1910.120 (OSHA regulation of hazardous waste site operations). Subcontractors are responsible for training of their employees.

Explosion proof or intrinsically safe equipment must be used in areas designated as hazardous (potentially explosive). At least one class ABC fire extinguisher will be placed in a safe area. One first aid kit will be placed in a safe area.

5.3 LEVELS OF PROTECTION

The EPA defined PPE levels of protection in their 1984 Standard Operating Guide. Only Level D and Level C should be necessary while performing field activities at the former Mobil/Niemi Oil bulk plant. If more stringent protection is required, that information will be communicated in a site update.

Level D protection is required during all field activities. It may become necessary during the course of the work to upgrade to Level C in the immediate work area. This decision will be determined by the site Health and Safety Officer. Protective safety equipment for Levels D and C include the following:

Level D - Mandatory

- Steel-toed boots

- Approved hard hat
- Approved safety glasses with side shields, splash shield, or chemical splash goggles
- Long pants

Level D - At discretion of Site Health & Safety Officer

- Tyvek[®] coveralls, or
- Plastic-coated Tyvek[®] coveralls

Level C

- All required Level D protective equipment, and
- Air-purifying respirator (i.e. cartridge-equipped half- or full-face respirator)

Air-purifying respirators are to be used only in conjunction with air monitoring in the breathing zone and with strict adherence to action levels listed in Section 7. It is anticipated that respirators will provide adequate protection for the conditions that will be encountered during redevelopment activities. However, if action levels exceed a respirator's capacity, the work will be suspended until monitoring indicates conditions are once again safe for work in approved respirators.

5.4 RESPIRATOR USE AND MAINTENANCE

Respirators issued to individuals will be cleaned and disinfected at least daily, if used. Where more than one person uses the same respirator, the respirator will be cleaned and disinfected after each use. Respirators will be inspected during cleaning, and any necessary repairs will be made at that time. Damaged respirators will not be worn. After cleaning, respirators will be placed in clean, plastic bags and stored in a clean location convenient to work areas.

6.0 AIR MONITORING

Air monitoring and visual observations of the site are required to determine the effectiveness of the engineering controls, to re-evaluate levels of protection, and determine if site conditions have changed. At a minimum, monitoring will be done at the beginning of the work shift and periodically as described below. Air monitoring will be conducted during all redevelopment activities within the activity zone, including excavation, sampling, and decontamination of equipment. By comparing the information obtained from the monitoring with the action levels described below, the safety of environmental conditions in the work zone will be assessed.

6.1 AIR MONITORING EQUIPMENT

A photo-ionization detector (PID), equipped with a 10.6 eV bulb, will be used to monitor for nonspecific volatile compounds in all work zones during the sampling program. Additionally, in the active tank farm areas, a combustible gas indicator (CGI) and an oxygen meter will be used to monitor explosive conditions.

6.2 AIR MONITORING PROCEDURES

Prior to initially entering the work area, monitoring will be conducted at the boundary of the work area and proceed inward to establish the level of protection needed for the planned activities. If appropriate, explosive conditions will be assessed following the procedures described in Section 6.4.

All air monitoring for VOCs will be performed at shoulder height (in the breathing zone). During periodic monitoring, readings will be taken in the breathing zone on those workers most likely to be exposed to potential hazardous concentrations of contaminants.

Initial air monitoring will be used to establish the appropriate level of respiratory protection (action levels are provided in Table B-2). The level of PPE may be modified based on subsequent monitoring results. The PPE requirements established through the monitoring program will apply to the area within a 30-ft radius of where the contaminants are measured.

6.3 FREQUENCY OF AIR MONITORING

Air monitoring will be performed at the beginning of each day, before the startup of any work tasks, to identify ambient conditions. During work tasks, periodic monitoring will be performed at a minimum of once every 30 minutes. Additional monitoring will be performed whenever work begins at a different location, when meteorological conditions such as wind direction or ambient temperature demonstrate a sustained and noticeable change, or when vapors from either drilling or sampling are detected by site workers.

6.4 WORK CONDUCTED AT THE FORMER MOBIL/NIEMI OIL BULK PLANT

During redevelopment work, prior to initiating work activities and during intrusive activities, the potential for explosive conditions will be monitored using a CGI. Calibrate the CGI prior to each day's activities according to manufacturer's instructions. Monitor initially during all drilling and excavation work and record levels in the health and safety logbook at least every ½ hour. Set the alarm to auditory. If odor, taste, or discomfort is detected by the crew, monitor continuously, or if any of the action levels noted in Table B-2 are exceeded, monitoring is to be done continuously. If explosive conditions are identified at any time, work activities will cease and the area will be evacuated. Re-entry will only be allowed following progressive monitoring inward from the boundary of the work area that indicates that explosive conditions have been mitigated. Mitigation measures may include use of fans to dissipate vapors.

6.5 MAINTENANCE AND CALIBRATION OF MONITORING EQUIPMENT

All personnel who will be using field monitoring equipment will be briefed on the operation, limitations, and maintenance of these devices. All maintenance and calibration procedures will be conducted in accordance with the manufacturers guidelines by a designated individual familiar with the devices. Field personnel will only perform routine maintenance (e. g., changing batteries or lamps). The manufacturer or equipment supplier will perform any additional maintenance.

Air-monitoring equipment will be inspected and calibrated before the start of the shift. Failure of any of the equipment listed below must be reported to the site health and safety officer immediately. Work in the exclusion zone is not to continue beyond the monitoring cycle if equipment is not working properly.

6.6 RECORDKEEPING

A project field book documenting air-monitoring results will be kept each day for the duration of the job. In the field book, the calibration and maintenance records, and air monitoring results with the type and time of monitoring will be recorded.

In addition to routine air monitoring, field screening of soil samples with the PID will be conducted to better understand the magnitude and degree of hazard associated with the materials being sampled. The results of field screening will also be recorded in the field book or in test pit/boring logs, as appropriate, in the same manner as outlined above.

7.0 AIR MONITORING ACTION LEVELS

Air monitoring results for inhalation risk and explosive conditions will be used to evaluate the work zone. If inhalation risk action levels are exceeded, respiratory protection will be required. If explosive conditions are present, mitigation measures will be necessary before work can commence or continue.

7.1 INHALATION RISK ACTION LEVELS

Air quality monitoring will be conducted during redevelopment of the former Mobil/Niemi Oil bulk plant by site personnel when performing invasive field activities. Action levels for potential air contaminants have been developed that will require employees to upgrade their level of PPE prior to the possibility of significant exposure. The toxicity action levels on Table B-2 are set to comply with OSHA PELs that may be encountered on the site. Workers must be evacuated from the area when organic vapor concentrations exceeding respiratory protective equipment protection factors are encountered.

TABLE B-2
AIR MONITORING PROCEDURES AND TOXICITY ACTION LEVELS

Instrument	Reading^a	Action^b	Comments
OVM	Detection of 1 ppm (above ambient) or greater in breathing zone sustained for 2 minutes	Dräger test for benzene. If 1 ppm benzene detected with Dräger tube, upgrade to level C	Try ventilating area, always work upwind
Dräger tube test (benzene)	Over 1 ppm benzene sustained in breathing zone	After upgrade to Level C, continue to monitor breathing zone with Dräger tube. If 10 ppm or greater benzene , leave exclusion zone. Return only if levels decrease to below 10 ppm.	Try ventilating area, always work upwind
OVM	Detection of 10 ppm (above ambient) in breathing zone sustained for 2 minutes and determined not to be benzene	Upgrade to Level C and continue to monitor breathing zone with Dräger tube. If 50 ppm, leave exclusion zone. Return only if levels decrease to below 50 ppm.	Try ventilating area, always work upwind

7.1.1 Outside Potential Source Areas

The organic vapor action levels for field activities outside potential source areas are shown on Table B-2. Benzene has the lowest PEL (1 ppm) for any of the volatile contaminants previously found at the site (Table B-1). If benzene is not present, the PEL for naphthalene (associated with diesel) is 10 ppm, and the action level for this hydrocarbon constituent is set to account for this and other constituents that may

be present. While monitoring with the PID, any consistent readings in the breathing zone that are at the levels specified in Table B-2 above the upwind background level sustained in the breathing zone for 2 minutes shall be the action level for donning half-face air purifying respirators equipped with organic vapor/particulate cartridges. Cartridges will be replaced either immediately upon any indication of break through or as shown on the respirator cartridge change chart below.

7.1.2 Within Potential Source Areas

The organic vapor action levels for field activities inside potential source areas are shown on Table B-2. Benzene has the lowest OSHA PEL (1 ppm) for any of the volatile contaminants expected at the site (Table B-1). If benzene is not present, the PEL for naphthalene (associated with diesel) is 10 ppm. The action level for this hydrocarbon constituent is set accordingly.

While monitoring with the PID, readings in the breathing zone at the levels specified in Table C-2 shall be the action level for donning half-face air purifying respirators equipped with organic vapor/particulate cartridges. Cartridges will be replaced either immediately upon any indication of break through. Action levels are provided in Table C-2.

Note: Project personnel are not permitted to deviate from the specified levels of protection without the prior approval of the site safety officer.

If organic vapor concentrations return to below the action levels on Table B-2, the level of PPE will be downgraded to Level D protection. The site safety officer must approve the downgrade.

7.2 EXPLOSIVE CONDITIONS ACTION LEVELS

Explosive conditions will be monitored with a CGI and oxygen meter as described in Section 6.4. Results will be used to identify explosive conditions according to the following:

**TABLE B-3
EXPLOSIVE CONDITION LEVELS**

PARAMETER	ACTION LEVEL	ACTION
CGI	≤ 10% LEL	None.
	> 10% LEL	Explosive conditions present. Stop work, secure area. Take mitigative measures, if appropriate.
Oxygen Level	< 19.5	Stop work and evacuate area immediately. Take mitigative measures, if appropriate.
	> 19.5, < 23.5	None, continue monitoring
	> 23.5	Remove and shut-off ignition sources.

The CGI alarm must be set to sound at the action level. For this work it is highly recommended that hexane or methane to a pentane standard be used for calibration. When measurements with a CGI indicate the presence of combustible gas levels equal to or exceeding the explosivity action level in the work area, the following action must be taken:

1. Extinguish all possible ignition sources in the work area and shut down all powered equipment.
2. Move personnel at least 100 feet away from work area.
3. Contact site manager immediately.
4. Contact the health and safety coordinator or officer responsible for the field work.
5. At the instruction of the site health and safety coordinator or officer and after waiting 15 minutes for organic vapors to dissipate, the site safety officer may use the CGI to, cautiously and with prudence, approach the worksite to determine the extent and concentration of organic emissions. The SSO shall not enter (or allow any personnel to enter) any area where CGI readings exceed the explosivity action level, nor shall the site safety officer make any approach if there is possibility of fire or explosion.

6. Personnel may reenter the work area only by clearance from the site safety officer after the cause of the emission has been determined and the source abated.
7. Prepare incident report and submit to the site safety officer.

8.0 EMERGENCY PROCEDURES

The potential hazards associated with the activities to be performed at the former Mobil/Niemi Oil bulk plant site are both physical and chemical, and their potential severity should not be underestimated. The site health and safety officer will conduct a safety meeting before commencement of work on each working day to inform and remind all workers of site-specific hazards and the emergency plan. Any site updates will also be discussed at such time.

If a life-threatening emergency occurs, immediately start emergency response actions. If necessary and appropriate follow the modified decontamination procedures described in Section 3.2.3.2.

8.1 EMERGENCY NOTIFICATION PROCEDURES

In the case of any emergency, the site safety officer is to be notified immediately. If the situation is life threatening and notification of the site safety officer would delay emergency response, field personnel may initiate the appropriate emergency contacts prior to notifying the site safety officer. The site safety officer will then:

- 1) Call appropriate emergency services numbers (ambulance, fire, etc.) if not already done and provide the following information:
 - Name and location of person reporting
 - Nature and location of accident/incident
 - Name and affiliation of injured party
 - Description of injuries
 - Status of medical aid effort
 - Details of any chemicals involved
 - Summary of the accident, including the suspected cause and the time it occurred and temporary control measures taken to minimize further risk

Note: *This information is not to be released under any circumstances to parties other than the site safety officer, project safety officer, EnviroLogic Resources project manager, PRP representatives, and bona fide emergency response team members.*

- 2) Call the *EnviroLogic Resources*' project manager and the Port of Astoria (contact numbers are listed in Table B-4) and provide information noted in Item 1 above.
- 3) The site safety officer will complete a written accident/incident report using Attachment B-3, within 24 hours, sending copies to each of the project managers.

8.2 RESOURCES IN CASE OF EMERGENCY

Resources to be used in cases of emergency include:

- **List of Emergency Contacts:** Table B-4 includes both the appropriate emergency services (top of table) and the appropriate redevelopment project contacts (bottom of table).
- **Nearest Phone:** As of the date of this plan, telephones are located at the Port office. The site health and safety officer will also have a mobile phone. The location of this phone will be communicated during tail-gate meetings.
- **Onsite Emergency Equipment:** An first aid kit and a ABC-type portable fire extinguisher will accompany each field vehicle.
- **Offsite Emergency Services:** Phone numbers for off-site emergency services are listed in Table B-4. *Copies of this table must be located in each vehicle.*

8.3 EMERGENCY CONTACT NUMBERS

In the event of fire, explosion, injury, or other accident, contact an appropriate site emergency response group. Site emergency telephone numbers are below:

TABLE B-4

EMERGENCY CONTACT NUMBERS

CONTACT	NUMBER
PARAMEDICS	911
FIRE DEPARTMENT	911

HOSPITAL EMERGENCY CENTER

Columbia Memorial Hospital

(503) 325-4321

POISON CONTROL CENTER

Health & Safety Coordinator *EnviroLogic Resources, Inc.*

(800) 523-2222 or (415) 476-6600

(503) 768-5121

Developer Riverlands, LLC

(503) 791-1603

PORT OF ASTORIA

(503) 325-4521

8.4 ROUTE TO HOSPITAL

DIRECTIONS	DISTANCE
1: Start out going Northeast on MARINE DR/US-101 towards OREGON COAST HWY.	0.10 miles
2: Stay straight to go onto MARINE DR/US-30.	0.93 miles
3: Turn RIGHT onto 8TH ST/US-30 E.	0.06 miles
4: Turn LEFT onto COMMERCIAL ST/US-30 E.	0.41 miles
5: COMMERCIAL ST/US-30 E becomes MARINE DR/US-30.	0.38 miles
6. Turn RIGHT on 20 th ST	
7. Turn LEFT on EXCHANGE ST	
Total Estimated Time:	Total Distance:
7 minutes	1.87 miles

(Reference Figure B-2)

9.0 NON-LIFE THREATENING EMERGENCIES

In emergency situations which **are not** life threatening, normal decontamination procedures should be followed when possible. However, decontamination procedures may be modified according to the specific circumstances. Outer protective clothing should be removed if doing so would not cause delays or aggravate the injury. Respirators should only be removed: 1) if the victim has stopped breathing, or 2) after the victim has been removed from a breathing hazard area.

9.1 INJURIES AND ILLNESS

Non-life threatening bodily injuries that occur as a result of an accident during redevelopment activities at the site will be handled in the following manner:

- The victim will be administered to by an individual who holds current first-aid certification, if necessary; or
- The local paramedics and the local hospital (Columbia Memorial Hospital) will be notified as appropriate, depending on the nature of the emergency. Emergency contact numbers are listed in Table B-4, in Section 8.3.

9.1.1 Heat Stress

Heat-related illnesses can occur at any time when protective clothing is worn. Workers wearing semi-permeable or impermeable encapsulating clothing should be monitored for heat stress through regular checks of heart rate and by more comprehensive monitoring when the temperature in the redevelopment work area is above 55-60°F. A pulse rate in excess of 150 beats per minute may indicate heat exhaustion, although this rate will vary among workers. All personnel shall know what their baseline pulse rate is before working in elevated temperatures, so as to monitor themselves. If heat stress occurs, decontamination should be minimized and treatment begun immediately, unless the victim is obviously contaminated.

9.1.2 Cold Stress

Redevelopment work may be conducted during the winter months, when site personnel may be subject to low temperatures, rain, and winds. In these conditions, field teams must be prepared to wear proper

protective clothing and to recognize symptoms of cold stress. Cold stress can be manifested as both hypothermia and frostbite.

Hypothermia is a cold-induced decrease in the core body temperature that can increase physical hazards associated with redevelopment activities through decreased attentiveness and manual dexterity. Hypothermia produces shivering, numbness, drowsiness, muscular weakness, and, if severe enough, death.

Frostbite results for the constriction of blood vessels in the extremities, decreasing the supply of warming blood to these areas. This drop in blood supply may result in the formation of ice crystals in the tissues, causing tissue damage. The symptoms of frostbite are white or grayish skin, blisters, or numbness.

Site redevelopment personnel should review the information provided in their first aid training for response to cold stress problems.

9.1.3 Flu-Like Symptoms

Any site personnel experiencing flu-like symptoms should notify the site safety officer. Such symptoms may be sufficient cause for ceasing operations until the redevelopment work area is evaluated and a "return to operations" order is given by the site safety officer.

9.2 FIRE

Fire extinguishers (ABC-type) will be kept in each vehicle and piece of heavy-equipment or, where infeasible, will be staged immediately nearby. This equipment will be used only to respond to small fires. In the event of major fires, explosions, or fire/explosion hazard conditions, all personnel will immediately evacuate the area. The site safety officer will evaluate the need for further evacuation and/or emergency services.

9.4 SITE EVALUATION AND EVACUATION

The site safety officer will be responsible for determining if circumstances exist which require further evaluation and/or evacuation. The site safety officer should always assume worst-case conditions until proven otherwise. Specific evacuation procedures and warning signs and signals will be covered in the

health and safety training session prior to beginning redevelopment work at the former Mobil/Niemi Oil bulk plant.

Two levels of evacuation may be considered:

- Withdrawal from the immediate work area on-site
- Evacuation of the surrounding area

9.1.3 Evacuation of Work Zone

Withdrawal to a safe upwind location will be required under the following circumstances:

- Detection of volatile organics and/or toxic gases at concentrations above action levels for the level of protection being worn (Section 7)
- Occurrence of a minor accident. Field operations will resume after first aid and decontamination procedures have been administered
- Malfunction or failure of protective equipment, clothing, or respirator.

Site personnel will use the following hand signals for communication within the work zone if respiratory protection is being used:

- Thumbs up: Okay
- Thumbs down: Not okay
- Hands on wrist: Exit exclusion zone
- Hands on throat: Cannot breath

9.1.3 Evacuation from Surrounding Areas

There are no foreseeable conditions, based on current knowledge of the site that would require evacuation of the surrounding area for the planned redevelopment. The site coordinators, in consultation with the site safety officer and, as feasible, the *EnviroLogic Resources*' project manager, will be responsible for determining if circumstances exist for area-wide evacuation, and should always assume reasonable worst-case conditions until proven otherwise. Fire and police departments must be

contacted in such cases. If evacuation is necessary, it will be implemented with the assistance of the appropriate emergency response personnel.

Procedures for reporting accidents/incidents are provided in Section 8.1. They will be performed in the order indicated.

10.0 TRAINING

All personnel performing redevelopment work activities at the former Mobil/Niemi Oil bulk plant shall have completed formal health and safety training, which complies with 29 CFR 1910.120 and OAR Chapter 437 (certificates of successful completion of training will be maintained in job files), and shall verify on-the-job training for those tasks they are assigned to perform. All operations will be reviewed and unfamiliar or otherwise non-routine operations will be rehearsed, where feasible, prior to performing the actual procedures.

REQUIRED TRAINING

All employees as well as contractor employees assigned to perform redevelopment work activities covered by this procedure must be currently approved for hazardous waste field work, including:

- Current medical clearance to conduct hazardous waste field work and to wear a respirator;
- Successful completion of a respirator fit test within the last 12 months for the make and model of the respirator assigned to that individual for use at the redevelopment;
- Completion of training as required by Title 29 Code of Federal Regulations (CFR) 1910.120(e), including:
 - ⇒ 40 hours of hazardous waste site operations worker basic instruction within the last 12 months, or,
 - ⇒ 8 hours of hazardous waste site operations worker refresher training within the last 12 months, subsequent to completion of 40 hours of basic hazardous waste site operations worker training.

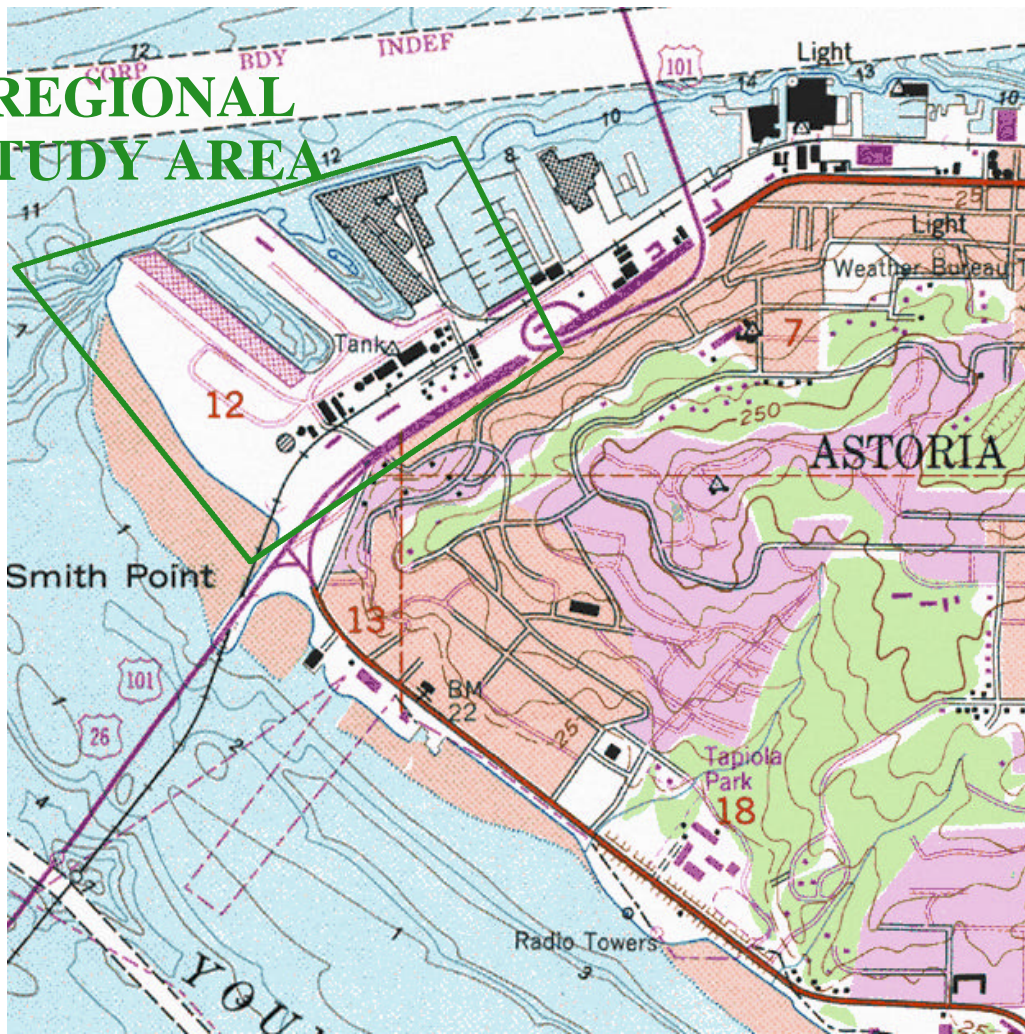
11.0 ROUTINE HEALTH CARE AND MONITORING

All persons working in an exclusion zone must have a medical evaluation to determine their baseline medical status prior to any site work. Follow-up examinations are appropriate if exposures are known or suspected to have occurred during redevelopment work. The site safety officer will maintain documentation of medical evaluations for all site workers.

12.0 REFERENCES

- ACGIH. 1992. Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices, 1991-1992. American Council of Governmental Industrial Hygienists, Cincinnati, OH.
- American Conference of Governmental Industrial Hygienists. 1992. Threshold Limit Values and Biological Exposures Indices for 1992-1993.
- OSHA. 1991. Air Contaminants - Permissible Exposure Limits. Title 29 Code of Federal Regulations, Part 1910.1000. Occupational Safety and Health Administration.
- Oregon, State of. 1990. Toxic and Hazardous Substances: Air Contaminants (1910.1000). Oregon Administrative Rules (OAR) 437-02, Subdivision Z. Department of Insurance and Finance, Oregon Occupational Safety and Health Division.
- U.S. Environmental Protection Agency. 1984. Standard Operating Safety Guides. Environmental Response Branch, Hazardous Response Support Division, November.
- U.S. Department of Health and Human Services. 2003. NIOSH Pocket Guide to Chemical Hazards.
- U.S. Department of Health and Human Services. 1985. Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities. Public Health Service, Centers of Disease Control, National Institute for Occupational Safety and Health, October.
- U.S. Department of Labor, Occupational Safety and Health Administration. 1989. Hazardous Waste Operations and Emergency Response. Final Rule Federal Register 29 CFR Part 1910.

REGIONAL STUDY AREA



(from USGS, Astoria [1984], OR 7.5' Quadrangles)

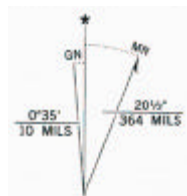
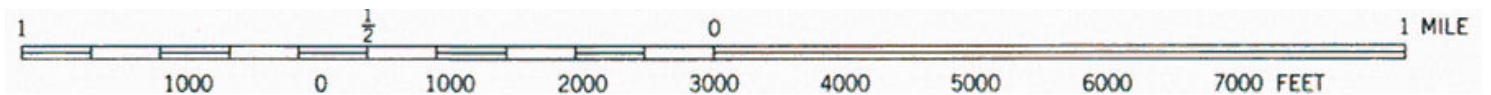


FIGURE 1

SITE LOCATION

**Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon**

EnviroLogic Resources, Inc.

Consulting Environmental & Water Resources Scientists

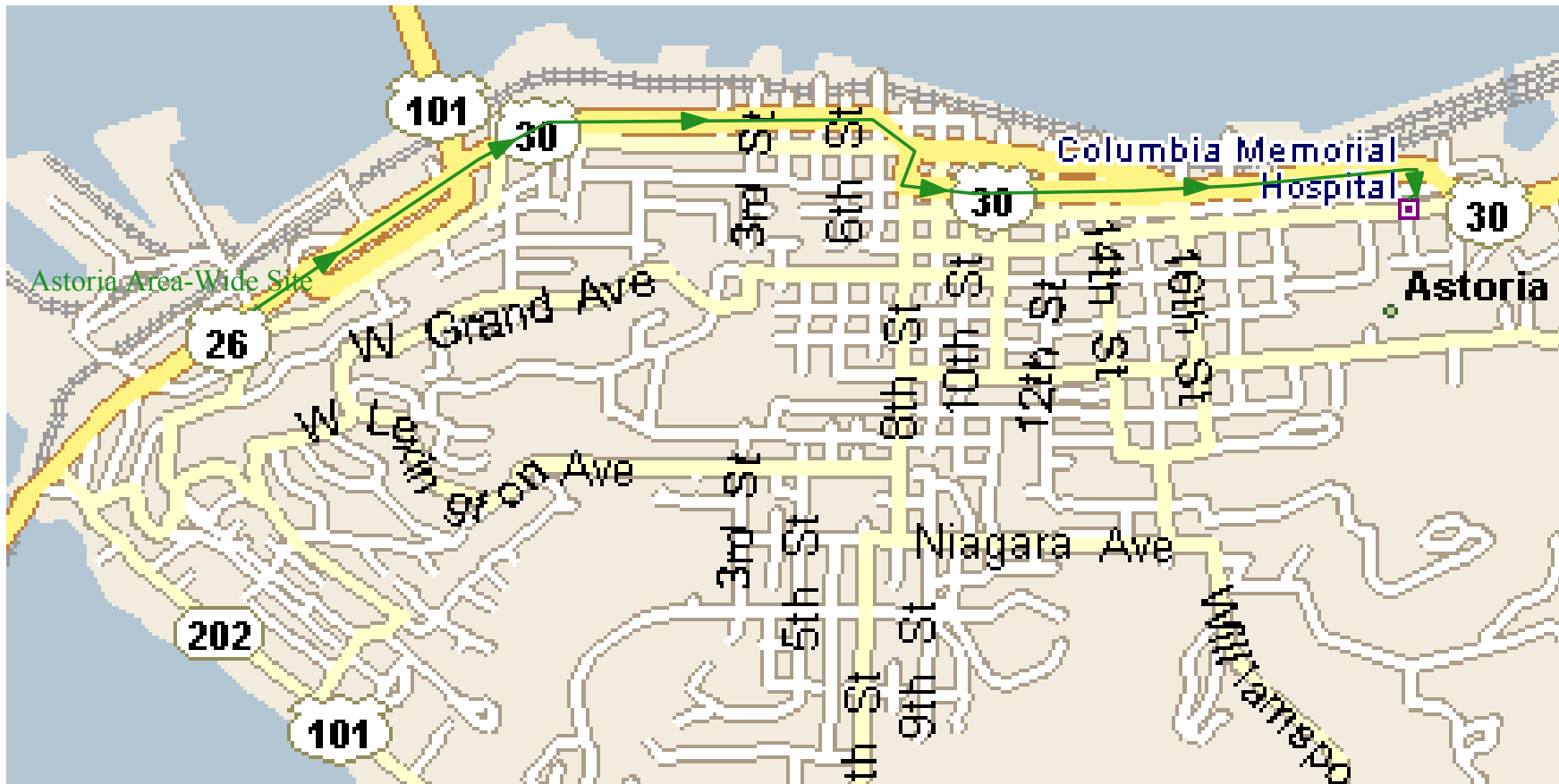


FIGURE B-2

ROUTE TO HOSPITAL

**Former Mobil/Niemi Oil Bulk Plant IRAM
Contaminated Media Management Plan
Astoria Area-Wide Petroleum Site
Astoria, Oregon**

ATTACHMENT B-1
HASP ACKNOWLEDGEMENT FORM

The following have read and understand the former Mobil/Niemi Oil bulk plant site health and safety plan and agree to comply with the requirements described within:

POSITION	NAME	SIGNATURE
<i>EnviroLogic Resources, Inc.</i> Project Manager	Thomas J. Calabrese, R.G.	_____
<i>EnviroLogic Resources, Inc.</i> Health and Safety Officer	Thomas J. Calabrese, R.G.	_____
Backup HSO	Jason C. Howard	_____
Site Specific Backup HSO	PRP Site Representative	_____

REPRESENTING	NAME	SIGNATURE	DATE
_____	_____	_____	_____
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REPRESENTING

NAME

SIGNATURE

DATE

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_____	_____	_____	_____

REPRESENTING

NAME

SIGNATURE

DATE

ATTACHMENT B-2
HASP MODIFICATION FORM

Date Modification made: _____

Modification: _____

Reasons for modification: _____

Site Personnel Briefed:

Name: _____ Date: _____

Name: _____ Date: _____

Name: _____ Date: _____

Name: _____ Date: _____

Name: _____ Date: _____

Name: _____ Date: _____

Name: _____ Date: _____

Approvals:

Site Safety Officer: _____

Manager: _____

Others: _____

ATTACHMENT B-3
EMPLOYEE EXPOSURE/INJURY INCIDENT REPORT FORM

(Attach additional page(s) if necessary)

Date: _____ Time: _____

Name: _____ Employer: _____

Site Name and Location: _____

Site Weather (clear, rain, snow, etc.): _____

Nature of Illness / Injury: _____

Symptoms: _____

Action Taken: Rest: _____ First Aid: _____ Medical: _____

Transported by: _____

Witnessed by: _____

Hospital's Name: _____

Treatment: _____

Comments: _____

What was the person doing at the time of the accident / incident? _____

Personal Protective Equipment Worn: _____

Cause of Accident / Incident: _____

What immediate action was taken to prevent recurrence? _____

Additional comments:

Employee's Signature:

Supervisor's Signature:

Date

Date

Site Safety Representative's Signature

Date

ATTACHMENT B-4
TAILGATE SAFETY MEETING FORM

This form is to be used as a guideline for briefing on-site consultant and subcontractor personnel regarding the potential hazards associated with the site. The tailgate safety meeting is a supplement to, and not a replacement for, the site-specific HSP.

Date: _____ **Time:** _____ **Project No.** _____

Client: _____ **Site Address:** _____

Safety Topics Presented

Protective Clothing/Equipment: _____

Chemical Hazards: _____

Physical Hazards: _____

Special Equipment: _____

Decontamination Procedures: _____

Emergency Procedures: _____

Additional Information / Comments: _____

Meeting Attendance

- | | |
|----------|-----------|
| 1. _____ | 7. _____ |
| 2. _____ | 8. _____ |
| 3. _____ | 9. _____ |
| 4. _____ | 10. _____ |
| 5. _____ | 11. _____ |
| 6. _____ | 12. _____ |