GeoEngineers

APPENDIX A
INTERIM ACTION WORK PLAN

INTERIM ACTION WORK PLAN
PORT ANGELES MILL SITE
PORT ANGELES, WASHINGTON

APRIL 27, 2006

FOR
RAYONIER PROPERTIES, LLC.

GeoEngineers

Interim Action Work Plan
Port Angeles Mill Site
Port Angeles, Washington
File No. 0137-015-01

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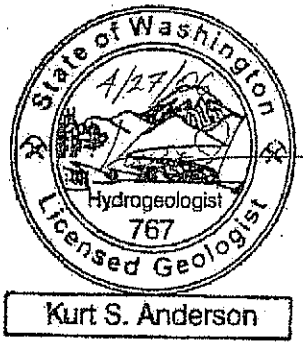

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1.0 INTRODUCTION

This work plan was prepared on behalf of Rayonier Properties, LLC (Rayonier) by GeoEngineers, Inc., in accordance with Washington Administrative Code (WAC) 173-340-430 and describes the interim action to be conducted at Rayonier's Port Angeles Former Mill site located at 700 North Ennis Street in Port Angeles, Washington (site). The site occupies approximately 80 acres of land on the Strait of Juan de Fuca.

This work plan summarizes the methods and procedures selected for interim remedial actions to address contaminants of concern (COCs) in soil in the former Wood Mill and Fuel Oil Tank #1 areas at the former mill site.

1.1 OBJECTIVES

The primary objective for this interim action is to remove and dispose of soil containing diesel- and lube oil-range petroleum hydrocarbons (TPH) at concentrations greater than cleanup levels at the former Wood Mill and Fuel Oil Tank #1 areas of the site. TPH is considered to be potentially mobile in subsurface soils with the capacity to migrate outside of current TPH-impacted areas of the site. The purpose of this interim action is to prevent the potential contamination of additional subsurface soil and/or the former log pond at the site due to the migration of TPH.

The secondary objective of this interim action is to remove compounds potentially associated with TPH where they exist at concentrations greater than their corresponding interim action cleanup levels. Washington State Department of Ecology's (Ecology's) Model Toxics Control Act (MTCA) identifies polychlorinated biphenyls (PCBs), carcinogenic polycyclic aromatic hydrocarbons (cPAHs) and naphthalene as compounds potentially associated with TPH (WAC 173-340-900, Table 830-1). These TPH-associated compounds will be considered COCs for this interim action. Interim action cleanup levels for COCs are presented in Table 3.1 of this work plan.

While other contaminants may be present in soil at concentrations of regulatory significance within the proposed areas of excavation, they are significantly less mobile than TPH and do not coincide with the objectives outlined above. Contaminants other than TPH and the associated compounds of PCBs, cPAHs and naphthalene will not be considered COCs for this interim action. COCs listed in Tables 2.1 and 2.2 will dictate the limits of remedial excavation during this interim action. The locations of the former Wood Mill and former Fuel Oil Tank #1 are presented in Figure 2.

1.2 SCOPE

An estimated 7,700 cubic yards (in-place volume) of soil with COCs exceeding applicable Ecology cleanup levels (Tables 2.1 and 2.2) remain beneath the former Wood Mill and Fuel Oil Tank #1 areas. The COCs in soil in the former Wood Mill area are mostly present in a 3-foot thick subsurface lens located at depths between 8- and 15-feet beneath the ground surface (bgs) in an area measuring approximately 100-feet long by 80-feet wide. The COCs in soil in the former Fuel Oil Tank #1 area are present at depths between ground surface and approximately 12-feet bgs in an area estimated to be approximately 100 feet in diameter beneath the former tank. The area of soil to be excavated may vary from the estimates shown and the actual limits of the excavation will be guided by chemical analysis of soil samples processed in an on-site mobile laboratory.

1.3 Site Description And Background

The Port Angeles former mill facility operated as a pulp and paper mill from 1930 until it was closed in 1997. The former mill site fronts the beach and shoreline on the Strait of Juan de Fuca in Port Angeles. Ennis Creek runs approximately one-half mile through the site. Following the closure, the EPA conducted an Expanded Site Investigation (ESI) that identified COCs in areas of marine sediment, soil and groundwater that exceeded applicable state criteria for the protection of human health and/or the environment.

Rayonier has completed several studies/interim cleanups at the site since the completion of the ESI to address identified COCs. A summary of the site studies and interim cleanup actions completed by Rayonier in the Uplands area of the site are presented in the draft report entitled, *Remedial Investigation for the Uplands Environment of the Former Rayonier Mill Site*, dated January 2006 (Integral Consulting, Inc.).

1.4 Work Plan Organization

This interim action work plan was prepared in general accordance with Ecology Guidance for Interim Actions (WAC 173-340-430). The organization of the work plan is as follows:

- Section 1: Introduction – Provides objectives, scope, site description and background, work plan organization and regulatory framework.
- Section 2: Summary of previous investigations – Presents affected media and contaminants of concern in the former Wood Mill and Fuel Oil Tank #1 areas.
- Section 3: Cleanup Levels – Provides cleanup levels for each contaminant of concern.
- Section 4: Interim Actions – Discusses interim action alternatives and selected methods and procedures for conducting on-site remedial actions.
- Section 5: Sampling and Analysis – Discusses sampling locations and laboratory analyses, field sampling methods and procedures and QA/QC requirements.
- Section 6: Documentation – Outlines documentation procedures concerning daily on-site activities and collection, handling, storage, shipping and tracking of soil samples.
- Section 7: Reporting
- Section 8: Schedule
- Section 9: References

1.5 Regulatory Framework

Both the EPA and Ecology have conducted routine regulatory compliance inspections at the former Rayonier pulp mill site. In 1997, the EPA initiated a site assessment and hazard ranking scoring process for the former Rayonier pulp mill site to determine if the site should be recommended for the National Priorities List (NPL) under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA). An ESI was conducted in support of this effort (E&E 1998). Although the former Rayonier pulp mill site scored high enough to qualify for consideration to be listed on the NPL, the EPA opted to defer the listing and allow a CERCLA protective cleanup to proceed under the direction of Ecology. The EPA, Ecology and the Lower Elwha Klallam Tribe ("the Tribe") formally agreed to the deferral in a Deferral Agreement signed in 2000.

As a result of the Deferral Agreement, site evaluation and remediation at the former Rayonier pulp mill site is being conducted under MTCA and implementing regulations (WAC 173-340). MTCA requires that all cleanup activities, including interim actions, comply with applicable state and federal laws and regulations, including requirements that Ecology determines to be applicable or relevant and appropriate requirements (ARARs). Potential ARARs for this interim action are summarized below:

- MTCA (Chapter 70.105D, Revised Code of Washington [RCW]; Chapter 173-340 WAC). This chapter is promulgated under the MTCA. It establishes administrative processes and standards to identify, investigate, and clean up facilities where hazardous substances have come to be located.
- RCW 27.44.040, Protection of Indian graves; This statute makes it a class C felony for any person to knowingly remove, mutilate, deface, injure or destroy any cairn or grave of any native Indian, or any glyptic or painted record of any tribe.
- Federal Endangered Species Act (ESA) (16 USC 1531 et seq.; 50 CFR Parts 17 and 402). The regulations identify those species of wildlife and plants determined to be endangered or threatened with extinction. The bald eagle has been identified as a threatened species that may occur in the project area (Integral, 2006). Participants in this interim action shall abide by the prohibitions of Section 9 of the Endangered Species and regulations adopted thereunder, which prohibit take of a threatened species.
- Washington State Solid Waste Management Act (Chapter 70.95 RCW; Chapter 173-351 WAC). The purpose of this regulation is to establish minimum statewide standards for all municipal solid waste landfills in order that jurisdictional health departments can enact ordinances equally as or more stringent than this regulation and to have jurisdictional health departments implement such ordinances through a permit system. These minimum statewide criteria ensure the protection of human health and the environment.

2.0 SUMMARY OF PREVIOUS INVESTIGATIONS

Several site investigations and interim cleanup and removal actions have been completed at the site since 1991. A comprehensive summary of the previous site studies and remedial actions can be referenced in the draft report entitled, *Remedial Investigation for the Uplands Environment of the Former Rayonier Mill Site,* dated January 2006 (Integral Consulting, Inc.).

2.1 FORMER WOOD MILL

The former wood mill is located in the northwestern portion of the site (Figure 2 and Figure 3) and was used to process raw logs into wood chips for later use in the pulping process. Logs were delivered to the site by rafting, train and/or truck and stored in the adjacent log pond or log yard prior to being processed in the wood mill. The logs were debarked and chipped within the wood mill. The chips were then transferred to another area of the site where they were combined with a fortified ammonium bisulfite cooking liquor and treated at high pressure and temperature in "digesters" to reduce the chips to a cellulose fiber (pulp). Waste materials from the wood mill operations, in the form of bark and wood chips not suitable for pulping, were sent to the hog fuel pile where they were later burned in hog fuel boilers. The hog fuel boilers and recovery boiler generated process steam, which supplied power for the site's energy needs (Integral, 2006).

2.1.1 Affected Media

Soil – COCs were identified in soil samples (station WM20) at concentrations greater than cleanup levels in the former Wood Mill area during the 2003 Remedial Investigation (RI) completed in the upland area of the site. Two samples were obtained from station WM20 that exceeded applicable interim action cleanup levels: 1) a discrete sample obtained from approximately 3 inches bgs; and 2) a composite sample consisting of a direct-push core sample obtained from approximately 3 inches bgs to groundwater.

Groundwater – Groundwater from a monitoring well in a downgradient location (MW-54) was sampled and analyzed for COCs during the RI; COCs either were not detected or were detected at concentrations less than

applicable cleanup levels for the site. However, groundwater has been observed to be in contact with soil that has been impacted by concentrations of COCs that are greater than the corresponding interim action cleanup levels.

2.1.2 Contaminants of Concern

Three COCs were identified in the former Wood Mill area during the RI that exceeded their corresponding interim action cleanup levels: 1) the sum of diesel- and lube oil-range hydrocarbons (TPH); 2) PCBs; and 3) cPAHs. Naphthalene was analyzed in the samples obtained from the area during the study, but concentrations of the analyte did not exceed the interim action cleanup level. The concentrations for each COC detected in soil samples obtained from the former Wood Mill area are provided in Table 2.1:

Table 2.1

Contaminants of Concern (COCs)					
Station Name	Depth Below Ground Surface	TPH (mg/kg)	PCBs (mg/kg)	cPAHs (mg/kg)	Naphthalene (mg/kg)
WM20	3 inches	3,380	2.78	10	4.2
WM20	3 inches to groundwater*	3,310	0.554	2.3	1.4

Note:
*The actual depth of the sample is unknown

Other contaminants in the interim action area include dioxins. Dioxins in soil were analyzed for the 17 toxic dioxin congeners during the 2003 RI and a toxicity equivalency factor (TEF) applied to the data to compare them to the tetrachloro dibenzo-p-dioxin toxicity equivalent quotient (TCDD TEQ). The TCDD TEQ concentration of the discrete soil sample obtained from station WM20 in the former Wood Mill area at a depth of approximately 3 inches bgs (2.0×10^{-4} milligrams per kilogram [mg/kg]) and of the composite soil sample obtained between approximately 3 inches bgs and groundwater (1.3×10^{-4} mg/kg) exceeded cleanup levels for the site. Dioxins are significantly less mobile than TPH and it is not the objective of this interim action to cleanup and remove soil affected by these constituents. Dioxins, therefore, are not considered COCs for this interim action.

2.2 Former Fuel Oil Tank #1

Former Fuel Oil Tank #1 is located in the southwestern portion of the site (Figure 2 and Figure 4). Fuel Tank # 1 contained bunker C oil for use as emergency fuel and startup fuel for the boilers.

2.2.1 Affected Media

Soil – Two COCs were identified in soil samples (station LY21) at concentrations greater than interim action cleanup levels in the former Fuel Oil Tank #1 area during the RI completed in the upland area of the site. Two samples were obtained from station LY21 that exceeded applicable interim action cleanup levels: 1) a discrete sample obtained from approximately 3 inches bgs; and 2) a composite sample consisting of a direct-push core sample obtained from approximately 3 inches bgs to groundwater. Additionally, physical evidence (soil staining) of petroleum contamination was observed at ground surface in the general area of the former tank.

Groundwater – Groundwater in the general vicinity of this area has not been sampled.

2.2.2 Contaminants of Concern

Sampling of soil in the former Fuel Oil Tank #1 area during the 2003 RI identified two COCs that exceeded the corresponding interim action cleanup levels: TPH and cPAHs. Naphthalene was analyzed in the samples obtained from the area during the study, but concentrations of the analyte did not exceed interim action cleanup levels. PCBs were not analyzed in samples obtained from station LY21. The range of concentrations for the COCs detected in soil samples obtained from the area are provided in Table 2.2.

Table 2.2

Contaminants of Concern (COCs)					
Station Name	Depth Below Ground Surface	TPH (mg/kg)	PCBs (mg/kg)	cPAHs (mg/kg)	Naphthalene (mg/kg)
LY21	3 inches	36,200	–	20.2	2.3
LY21	3 inches to groundwater*	20,400	–	18.4	4.7

Note:
*The actual depth of the sample is unknown:
"–" = not tested

As in the former Wood Mill area of the site, other contaminants in soil were identified in the former Fuel Oil Tank #1 area at concentrations that were greater than the corresponding interim action cleanup levels. TCDD TEQ concentrations were documented in soil samples at 1.8×10^{-3} mg/kg (3 inches bgs) and 9.0×10^{-5} mg/kg (between 3 inches bgs and groundwater); and, the concentration of lead was documented in soil at 429 mg/kg (3 inches bgs). Dioxins and lead are significantly less mobile than TPH and it is not the objective of this interim action to cleanup and remove soil affected by these constituents. Dioxins and lead, therefore, are not considered COCs for this interim action.

3.0 CLEANUP LEVELS

Chemical concentrations detected in soil samples obtained from the site in previous studies were compared to their corresponding interim action cleanup levels to establish an estimated areal extent of COCs in soil in the former Wood Mill and Fuel Oil Tank #1 areas. The cleanup levels selected for this interim action were developed and published by Ecology (WAC 173-340). The cleanup levels represent the concentration of COCs that are protective of human health and the environment for identified potential exposure pathways, based on the highest beneficial use and the reasonable maximum exposure for each affected media. Potential exposure pathways and exposure scenarios are described in the draft report entitled, *Remedial Investigation for the Uplands Environment of the Former Rayonier Mill Site*, dated January 2006 (Integral Consulting, Inc.).

Soil cleanup levels selected for this interim action are as follows:

Table 3.1

Interim Action Cleanup Levels		
Contaminant of Concern	Soil Cleanup Level (mg/kg)	Reference
The sum of diesel- and lube oil-range hydrocarbons (TPH)	2,000	MTCA Method A for unrestricted land use
PCBs	0.5	MTCA Method B for unrestricted land use
cPAHs	0.14	MTCA Method B for unrestricted land use
Naphthalene	1,600	MTCA Method B for unrestricted land use

4.0 INTERIM ACTIONS

4.1 INTERIM ACTION OBJECTIVE

The objective of this interim action is to remove soils containing concentrations of TPH and associated compounds (PCBs, cPAHs and naphthalene) that are greater than the corresponding interim action cleanup levels from the former Wood Mill and Fuel Oil Tank #1 areas of the site. Although other contaminants have been documented in these areas at concentrations of regulatory significance, the objective of this interim action is the removal of soil with characteristically mobile contaminants, specifically TPH and those compounds associated with TPH. The extent of soil removal in the former Wood Mill and Fuel Oil Tank #1 areas will be based upon COCs and their corresponding interim action cleanup levels.

4.2 INTERIM ACTION APPROACH

This approach addresses the remediation of COCs through the excavation of soil and debris in the former Wood Mill and Fuel Oil Tank #1 areas of the site. Soil and debris removed from these areas would be transferred to the City of Port Angeles Sanitary Landfill (City Landfill) where debris removed from the site would be placed in a subsurface disposal cell, compacted to reduce its volume, and covered with soil. Soil removed from the site would be placed in the lower portion of the upper soil cap at the landfill and under the soil and membrane layers when the landfill is closed in the latter portion of 2006. Contaminant concentrations in soil that have been found within the two areas are acceptable to representatives of the City for disposal at the municipal landfill.

4.2.1 Notify Utilities Underground Location Center

Coordinate with the excavation contractor to contact the Underground Utilities Location Center ("one call") to locate and mark underground utilities in public right-of-ways in the area. Review available site drawings with the Owner's representative to identify underground utilities at the site. Arrange for a private locating service to locate and mark any underground utilities not marked by the one call service and for the City of Port Angeles to locate their pressurized sewer line that crosses the former mill site.

4.2.2 Mobilization and Setup

Mobilization and setup for this interim action will include supplies, personnel and equipment necessary to excavate, dewater, stockpile, load and haul COC-affected soil from the site. Designated areas will be setup for an exclusion zone, decontamination zone and a clean zone in accordance with the attached Health and Safety Plan (see Appendix A). Additionally, a designated truck loading area will be setup for the controlled loading of soil for transport to the City Landfill. Loose soil on the exterior of the trucks will be removed prior to leaving the truck loading area to reduce the likelihood of cross-contamination of non COC-affected areas of the site. Excavated soil and/or debris not directly loaded into trucks will be stockpiled at the site in bermed and visqueen-lined stockpile areas for storage. Pumps and hoses will be available at the site in the event that water removal from the base of the excavation is necessary. Oil-spill cleanup materials will be on site for unanticipated oil releases from vehicles and/or equipment at the site. The site currently has permanent chain-link fencing erected between Rayonier's property and publicly accessible areas outside the property boundaries of the site. This fencing will serve as barrier to prevent casual access to excavation areas at the site during this interim action.

4.2.3 Excavation of Contaminated Soil

A tracked excavator will be used to remove soil in the two excavation areas at the site. Based on chemical analysis of soil samples obtained from station WM20 during the 2003 RI completed by Integral Consulting, Inc. (Integral) of Mercer Island, Washington, COC-affected soil will be removed to the depth of groundwater. Groundwater has been observed between approximately 5- and 12-feet bgs at the site.

The vertical and lateral limits of excavation will be based upon visual and sheen screening (water sheen testing) results. Soil samples will be obtained for chemical analysis in an on-site mobile lab to confirm the field screening observations.

4.2.4 Excavation Dewatering

If dewatering is required, a temporary sump will be constructed in the excavation for the removal of groundwater. The groundwater will be pumped to an on-site tank(s) for possible treatment prior to transport to the City of Port Angeles' publicly-owned treatment works (POTW).

4.2.5 Backfilling

After the excavation has been completed and adequately documented with results of performance monitoring samples, the excavation will be backfilled. Quarry rock, or equivalent, will be placed at the base of the excavation below groundwater. Compactable backfill material will then be added in approximately 1-foot thick lifts and compacted with a vibratory roller until the excavation has been backfilled to match the surrounding grade. Compaction testing will *not* be performed during the placement and compaction of backfill materials within the excavation. Once completed, the area should *not* be considered to have been backfilled and compacted to the meet the requirements of an engineered structural fill.

4.2.6 Waste Handling

Soil removed from the excavation above the water table either will be loaded directly into trucks for transport to the City Landfill or temporarily stockpiled on site in a bermed area until loaded onto trucks for transport to the City Landfill. If rain is anticipated, the soil stockpile will be covered with plastic sheeting.

Soil removed from the excavation below the water table either will be placed upon previously excavated drier soil or will be transferred via truck to a sealed blacktop storage area on the site that will control any free water present in the soil. The soil will be loaded onto trucks for transfer to the City Landfill after it has been sufficiently dewatered and/or mixed with drier soils.

Water removed from the excavation during dewatering will be conveyed for storage to one or more of Rayonier's on-site 144,000-gallon capacity storage tank(s). Upon conclusion of excavation and dewatering activities at the site, the water will be transferred to the City of Port Angeles' POTW for treatment. The water will be sampled and analyzed as per the City's requirements prior to transfer to the POTW.

Concrete, metal and wood debris removed during excavation activities for this interim action will be transferred to the City Landfill where it will be buried in a subsurface cell, compacted to reduce its volume, and covered with soil. Plastic sheeting, ordinary trash and personal protection equipment (PPE) used at the site also will be sent to the City Landfill for disposal.

5.0 SAMPLING AND ANALYSIS

The objective of the sampling and analysis is to confirm that concentrations of COCs at the final limits of the two excavations are less than site cleanup levels. Chemical analytical data will be compared to interim action cleanup levels that are presented in Table 3.1 in Section 3.0 of this work plan.

Other contaminants in soil (dioxins and lead) that have been previously documented in soils within the footprint of the proposed excavation areas will be further characterized to evaluate soil conditions following soil excavation and removal. These soil samples will be collected for characterization purposes only and will not be used to dictate the extent of soil excavation.

5.1 SAMPLING LOCATIONS AND LABORATORY ANALYSES

Sampling locations (frequency) and laboratory analyses for the COCs in this interim action are summarized in Table 5.1.1 below. Table 5.1.2 summarizes the sampling locations and laboratory analyses for other contaminants at the site.

Table 5.1.1

Sampling Locations And Laboratory Analyses (COCs) In Former Wood Mill and Fuel Oil Tank #1 Areas		
Description	**Chemical Analyses**	**Sample Frequency**
Excavation Base and Sidewalls	TPH by NWTPH-Dx PCBs by EPA 8082 cPAHs by EPA 8270C SIM Naphthalene by EPA 8270C SIM	One discrete sample spaced approximately 40-foot on center (staggered). Soil samples will be obtained from locations representative of unexcavated soil.

Table 5.1.2

Sampling Locations And Laboratory Analyses (other contaminants)			
	Chemical Analyses		
Description	**Former Wood Mill Area**	**Former Fuel Oil Tank #1 Area**	**Sample Frequency**
Excavation Base	Dioxins by EPA 1613B	Dioxins by EPA 1613B Lead by EPA 6020	Minimum of one base sample from each of the two excavation areas.

5.1.1 Former Wood Mill Confirmation Sampling

Confirmation soil sampling will be completed to characterize soil conditions for COCs at the final limits of excavation in the former Wood Mill area. Soil samples will be obtained from the base of the excavation at an approximately 40-foot staggered spacing interval. Approximately 11 soil samples will be collected from the base for chemical analysis from an estimated excavation area of approximately 110 feet long by 75 feet wide. Approximately 12 soil samples will be obtained from the sidewalls of the excavation at a spacing interval of approximately 40 feet in the estimated 15-foot deep excavation. Each of the samples from the former Wood Mill area will be submitted for chemical analysis as shown in Table 5.1.1 above.

Additional chemical analytical testing for other (low-mobility) potential contaminants in soil will be completed in the former Wood Mill area as shown in Table 5.1.2 above. A minimum of one sample will be obtained at the base of the excavation directly beneath the former soil sample location WM20.

5.1.2 Former Fuel Oil Tank #1 Confirmation Sampling

Confirmation soil sampling will be completed to characterize soil conditions for COCs at the final limits of excavation in the former Fuel Oil Tank #1 area in a similar manner, location and frequency as summarized in Section 5.1.1 above. Approximately 5 soil samples will be collected from the base of the excavation area of approximately 100 feet in diameter beneath the former Fuel Oil Tank #1. Approximately 8 soil samples will be obtained from the sidewalls of the estimated 12-foot deep excavation. Each of the samples from the former Fuel Oil Tank #1 area will be submitted for chemical analysis of COCs as shown in Table 5.1.1 above.

Additional chemical analytical testing for other (low-mobility) potential contaminants in soil will be completed in the former Fuel Oil Tank #1 area as shown in Table 5.1.2 above. A minimum of one sample will be obtained at the base of the excavation directly beneath the former soil sample location LY21.

5.1. WASTEWATER SAMPLING

Wastewater generated as a result of excavation dewatering or equipment decontamination will be sampled and analyzed to meet City disposal characterization requirements. Water will be transferred to the City's POTW upon receiving authorization from City representatives.

5.2 FIELD SAMPLING METHODS AND PROCEDURES

5.2.1 Decontamination Procedures

Reusable sampling/monitoring equipment (trowels, shovels, etc.) that comes in contact with soil and/or groundwater will be decontaminated before each use. Decontamination procedures for this equipment will consist of the following: 1) wash with non-phosphate detergent solution (Liquinox and distilled water); 2) rinse with distilled water; and 3) place the decontaminated equipment on clean plastic sheeting or in a plastic bag. Field personnel will limit cross-contamination by changing gloves between samples. Wash water used to decontaminate the sampling equipment will be stored on-site in labeled 55-gallon drums for subsequent transfer into on-site tanks where groundwater removed during excavation activities is stored.

5.2.2 Soil Sampling

Soil samples will be collected using a backhoe, a track-mounted excavator bucket or by hand directly from the excavation limits. Discrete soil samples will be obtained by hand using a decontaminated stainless steel sampling spoon. In general, the samples will be obtained from undisturbed soil located approximately 3 inches to 6 inches into undisturbed soil in the sidewalls or base of the excavation. Each sample location will be mapped.

A portion of each sample will be retained for logging and field screening and selected samples will be submitted for chemical analysis. EPA- and Ecology-recommended sample handling procedures will be followed including, but not limited to: immediately placing soil samples in 4- or 8-ounce laboratory-prepared glass sample containers; filling each 4- or 8-ounce container completely to minimize headspace; placing soil in a 40-mL vial containing a laboratory pre-weighed volume of methanol; and/or placing the sample containers in labeled and iced coolers during transport to the laboratory. Chain of custody procedures will be followed during sample storage and in transport to the testing laboratory. Field records indicating the sample identification and the origin of the sample will be maintained.

5.2.3 Sample Designation

Soil samples obtained from the excavation will be given unique names and those names recorded in the soil sample log. The following example demonstrates the sample designation strategy: for soil sample WM-EX-1-[04-21-06]-8, **"WM"** refers to a sample obtained in the former *Wood Mill* area; **"EX"** designates it as an *excavation* sample; **"1"** denotes it as the *first* sample in the excavation area; **"[04-27-06]"** indicates the sample was obtained on *April 27, 2006*; and **"8"** refers to the *depth (in feet) below ground surface* that the sample was obtained.

5.2.4 Sample Containers and Preservation

Table 5.2.4 below summarizes the sample containers, preservation method and holding time associated with each analysis anticipated during this interim action.

Table 5.2.4

Sample Containers And Preservation

Analysis Type	Method	Matrix	Sample Container	Preservative	Holding Time
TPH	NWTPH-Dx	Water	4 oz. Soil Jar	Cool 4° C	28 Days to Extract
TPH	NWTPH-Dx	Soil	4 oz. Soil Jar	Cool 4° C	28 Days to Extract
Metals	SW-846 6020	Water	500 ml HDPE	HNO_3 - pH<2	6 Months
Metals	SW-846 6020	Soil	4 oz. Soil Jar	Cool 4° C	6 Months
PCBs	SW-846 8082	Water	125 ml Amber B.R.	Cool 4° C	7 Days to Extract
PCBs	SW-846 8082	Soil	4 oz. Soil Jar	Cool 4° C	14 Days to Extract
SVOCs	SW-846 8270C SIM	Water	1 Liter Amber B.R.	Cool 4° C	7 Days to Extract
SVOCs	SW-846 8270C SIM	Soil	4 oz. Soil Jar	Cool 4° C	14 Days to Extract
Dioxins/Furans	EPA Method 1613B	Water	1 Liter Amber, Teflon®-lined cap	Cool 4° C 0.008% $Na_2S_2O_3$	30 Days to Extract 45 Days After Extraction
Dioxins/Furans	EPA Method 1613B	Soil	4 oz. Soil Jar, Teflon®-lined cap	Cool 4° C 0.008% $Na_2S_2O_3$	30 Days to Extract 45 Days After Extraction

5.2.5 Sample Packaging and Shipping

For samples that are analyzed at a non-local analytical laboratory, the samples will be transported and delivered in coolers. Field personnel will transport and deliver samples that are being submitted to a local laboratory for analysis. Samples that are being submitted to an out-of-town laboratory for analysis will be placed in a cooler with protective material (bubble wrap, matting or similar material) to prevent breakage. Reusable cold packs will be placed over the top of the samples to keep the samples cool. An original chain of custody, placed in a plastic zip-loc type bag, will accompany each cooler with an inventory of each sample within the cooler. The cooler will be transported by a commercial express mailing service on an overnight basis. The field coordinator will monitor that the cooler has been properly secured using clear plastic tape and custody seals.

The sample shipment will be sent via overnight express service that can guarantee overnight delivery.

5.3 QA/QC REQUIREMENTS

Throughout the project, environmental measurements will be conducted to produce data that are scientifically valid, of known and acceptable quality, and meet established objectives. Quality assurance/quality control (QA/QC) procedures will be implemented so that precision, accuracy, representativeness, completeness, and comparability (PARCC) of all data generated meet the specified data quality objectives.

5.3.1 Data Quality Objectives

The QA goal for this project is to collect environmental monitoring data of known, acceptable, and documentable quality. The QA objectives established for the project to meet this goal are to:

- Implement the procedures outlined herein for field sampling, sample custody, equipment operation and calibration, laboratory analysis, and data reporting that will facilitate consistency and thoroughness of data generated.
- Achieve the acceptable level of confidence and quality required so that all data generated are scientifically valid and of known and documented quality. This will be accomplished by establishing criteria for PARCC and by evaluating data against these criteria.

Specific data quality objectives (DQOs) to evaluate data quality and usability are provided in the sections below. These QA objectives will be used during the following two stages of this interim action:

- Project Implementation - to act as a guide for quality assurance reviews and as the specifications for assessing the quality of data generated.
- Project Completion - to serve as a basis for determining whether the project has attained established goals.

Soil and water quality QA/QC control limits were obtained from the proposed Ecology certified analytical laboratories. The proposed laboratories are Libby Environmental, LLC of Olympia, Washington and Columbia Analytical Services, Inc. of Houston, Texas.

5.3.1.1 Analytes and Matrices of Concern

Soil samples will be obtained for chemical analysis during this interim action. Tables 5.1.1 and 5.1.2 summarize the sample analytes to be tested for at each study area at the site. The COCs will be analyzed using the analytical methods presented in Table 5.3.1.2.

5.3.1.2 Detection Limits

All analytical methods have quantitative limitations at a given statistical level of confidence that is often expressed as the method detection limit (MDL). Individual instruments often can detect but not accurately quantify compounds at lower concentrations than the MDL, referred to as the instrument detection limit (IDL). Although results reported near the MDL or IDL provide insight to site conditions, quality assurance dictates that analytical methods achieve a consistently reliable level of detection known as the practical quantitation limit (PQL).

The soil and water PQLs presented in Table 5.3.1.2 for each analyte were provided by the proposed laboratories and are at or below their respective MTCA cleanup levels.

Table 5.3.1.2

TARGET DETECTION LIMITS						
			Soil		Water	
Analysis Type	Analyte	Method	PQL	Units	PQL	Units
TPH	Diesel-Range	NWTPH-Dx	20	mg/kg	0.200	mg/l
TPH	Lube Oil-Range	NWTPH-Dx	40	mg/kg	0.400	mg/l
Metals	Lead	SW-846 6020	1.0	mg/kg	0.001	mg/l
PCBs	Arochlor-1016	SW-846 8082	100	µg/kg	0.1	µg/l
PCBs	Arochlor-1221	SW-846 8082	100	µg/kg	0.1	µg/l
PCBs	Arochlor-1232	SW-846 8082	100	µg/kg	0.1	µg/l
PCBs	Arochlor-1242	SW-846 8082	100	µg/kg	0.1	µg/l
PCBs	Arochlor-1248	SW-846 8082	100	µg/kg	0.1	µg/l
PCBs	Arochlor-1254	SW-846 8082	100	µg/kg	0.1	µg/l
PCBs	Arochlor-1260	SW-846 8082	100	µg/kg	0.1	µg/l
SVOCs	Benzo(a)anthracene	SW-846 8270C SIM	5.0	µg/kg	0.1	µg/l
SVOCs	Benzo(a)pyrene	SW-846 8270C SIM	5.0	µg/kg	0.1	µg/l
SVOCs	Benzo(b)fluoranthene	SW-846 8270C SIM	5.0	µg/kg	0.1	µg/l
SVOCs	Benzo(k)fluoranthene	SW-846 8270C SIM	5.0	µg/kg	0.1	µg/l
SVOCs	Chrysene	SW-846 8270C SIM	5.0	µg/kg	0.1	µg/l
SVOCs	Dibenz(a,h)anthracene	SW-846 8270C SIM	5.0	µg/kg	0.1	µg/l
SVOCs	Indeno(1,2,3-cd)pyrene	SW-846 8270C SIM	5.0	µg/kg	0.1	µg/l
SVOCs	Naphthalene	SW-846 8270C SIM	5.0	µg/kg	0.1	µg/l
Dioxins/Furans	2378-TCDD	EPA Method 1613B	2.5	ng/kg	25	pg/l
Dioxins/Furans	12378-PeCDD	EPA Method 1613B	5.0	ng/kg	50	pg/l
Dioxins/Furans	123478-HxCDD	EPA Method 1613B	5.0	ng/kg	50	pg/l
Dioxins/Furans	123478-HxCDD	EPA Method 1613B	5.0	ng/kg	50	pg/l
Dioxins/Furans	123789-HxCDD	EPA Method 1613B	5.0	ng/kg	50	pg/l
Dioxins/Furans	1234678-HpCDD	EPA Method 1613B	5.0	ng/kg	50	pg/l
Dioxins/Furans	OCDD	EPA Method 1613B	5.0	ng/kg	50	pg/l
Dioxins/Furans	2378-TCDF	EPA Method 1613B	5.0	ng/kg	50	pg/l
Dioxins/Furans	12378-PeCDF	EPA Method 1613B	5.0	ng/kg	50	pg/l
Dioxins/Furans	23478-PeCDF	EPA Method 1613B	5.0	ng/kg	50	pg/l
Dioxins/Furans	123678-HxCDF	EPA Method 1613B	5.0	ng/kg	50	pg/l
Dioxins/Furans	123789-HxCDF	EPA Method 1613B	5.0	ng/kg	50	pg/l
Dioxins/Furans	123478-HxCDF	EPA Method 1613B	5.0	ng/kg	50	pg/l
Dioxins/Furans	234678-HxCDF	EPA Method 1613B	5.0	ng/kg	50	pg/l
Dioxins/Furans	1234678-HpCDF	EPA Method 1613B	5.0	ng/kg	50	pg/l
Dioxins/Furans	1234789-HpCDF	EPA Method 1613B	5.0	ng/kg	50	pg/l
Dioxins/Furans	OCDF	EPA Method 1613B	10.0	ng/kg	100	pg/l

Notes:

mg/kg = milligrams per kilogram
µg/kg = micrograms per kilogram
ng/kg = nanograms per kilogram
mg/l = milligrams per liter
µg/l = micrograms per liter
pg/l = picograms per liter

5.3.1.3 Precision

Precision measures the reproducibility of measurements under a given set of conditions and applies to field duplicate or split samples, replicate analyses, and duplicate spiked environmental samples (matrix spike duplicates). The closer the measured values are to each other, the more precise the measurement process. In general, exceedence of precision goals indicates poor consistency between results. Precision error may also affect data usefulness. Good precision gives relative consistency and comparability between different samples. Precision will be expressed as the relative percent difference (RPD) between analyte concentrations in the two samples being evaluated. RPD is calculated by:

$$RPD\,(\%) = \frac{|D_1 - D_2|}{(D_1 + D_2)/2} X\ 100,$$

Where

D1 = Concentration of analyte in sample.

D2 = Concentration of analyte in duplicate sample.

The RPD will be compared to the criteria presented in Table 5.3.1.3. Persons performing the evaluation must review one or more pertinent documents (EPA, 1999 or EPA, 2002) that address criteria exceedances and courses of action.

Table 5.3.1.3

RELATIVE PERCENT DIFFERENCE (RPD) CRITERIA[1]

Analysis Type	Analyte	Method	RPD Limits	
			Water	Soil
TPH	Diesel-Range	NWTPH-Dx	<35	<35
TPH	Lube Oil-Range	NWTPH-Dx	<35	<35
Metals	Lead	SW-846 6020	<20	<20
PCBs	Arochlor-1016	SW-846 8082	<20	<20
PCBs	Arochlor-1221	SW-846 8082	<20	<20
PCBs	Arochlor-1232	SW-846 8082	<20	<20
PCBs	Arochlor-1242	SW-846 8082	<20	<20
PCBs	Arochlor-1248	SW-846 8082	<20	<20
PCBs	Arochlor-1254	SW-846 8082	<20	<20
PCBs	Arochlor-1260	SW-846 8082	<20	<20
SVOCs	Benzo(a)anthracene	SW-846 8270C SIM	<20	<20
SVOCs	Benzo(a)pyrene	SW-846 8270C SIM	<20	<20
SVOCs	Benzo(b)fluoranthene	SW-846 8270C SIM	<20	<20
SVOCs	Benzo(k)fluoranthene	SW-846 8270C SIM	<20	<20
SVOCs	Chrysene	SW-846 8270C SIM	<20	<20
SVOCs	Dibenz(a,h)anthracene	SW-846 8270C SIM	<20	<20
SVOCs	Indeno (1,2,3-cd)pyrene	SW-846 8270C SIM	<20	<20
SVOCs	Naphthalene	SW-846 8270C SIM	<20	<20
Dioxins/Furans	2378-TCDD	EPA Method 1613B	≤50	≤50
Dioxins/Furans	12378-PeCDD	EPA Method 1613B	≤50	≤50
Dioxins/Furans	123678-HxCDD	EPA Method 1613B	≤50	≤50
Dioxins/Furans	123478-HxCDD	EPA Method 1613B	≤50	≤50
Dioxins/Furans	123789-HxCDD	EPA Method 1613B	≤50	≤50
Dioxins/Furans	1234678-HpCDD	EPA Method 1613B	≤50	≤50
Dioxins/Furans	OCDD	EPA Method 1613B	≤50	≤50
Dioxins/Furans	2378-TCDF	EPA Method 1613B	≤50	≤50
Dioxins/Furans	12378-PeCDF	EPA Method 1613B	≤50	≤50
Dioxins/Furans	23478-PeCDF	EPA Method 1613B	≤50	≤50
Dioxins/Furans	123678-HxCDF	EPA Method 1613B	≤50	≤50
Dioxins/Furans	123789-HxCDF	EPA Method 1613B	≤50	≤50
Dioxins/Furans	123478-HxCDF	EPA Method 1613B	≤50	≤50
Dioxins/Furans	234678-HxCDF	EPA Method 1613B	≤50	≤50
Dioxins/Furans	1234678-HpCDF	EPA Method 1613B	≤50	≤50
Dioxins/Furans	1234789-HpCDF	EPA Method 1613B	≤50	≤50
Dioxins/Furans	OCDF	EPA Method 1613B	≤50	≤50

Notes:
[1] Applies to replicates, matrix spike duplicates, and laboratory control spike (blank spike) duplicates

5.3.1.4 Accuracy

Accuracy measures the closeness of the measured value to the true value and is a measure of bias in the analytic process. The closer the measurement value is to the true value, the greater the accuracy. Accuracy is often measured with the addition of a known compound to a sample. The amount of known compound reported in the sample and the percent recovery assist in determining the performance of the analytical system in correctly quantifying the compounds of interest. Since most environmental data collected represent one point spatially and temporally rather than an average of values, accuracy plays a greater role than precision in assessing the results. In general, if the percent recovery is low, non-detect results may indicate that compounds of interest are not present when in fact these compounds are present. Detected compounds may be biased low or reported at a value less than actual environmental conditions. The reverse is true when percent recoveries are high. Non-detect values are considered accurate while detected results may be higher than the true value.

Accuracy will be expressed as the percent recovery of a surrogate compound (also know as "system monitoring compound"), a matrix spike result, or from a standard reference material where:

$$Recovery = \frac{Sample\ Result}{Spike\ Amount} X\ 100$$

5.3.1.5 Representativeness, Completeness and Comparability

Representativeness expresses the degree to which data accurately and precisely represent the actual site conditions. The determination of the representativeness of the data will be performed by completing the following:

- Comparing actual sampling procedures to those delineated within this interim work plan.
- Comparing analytical results of field duplicates to determine the variations in the analytical results.
- Invalidating non-representative data or identifying data to be classified as questionable or qualitative. Only representative data will be used in subsequent data reduction, validation, and reporting activities.

Completeness establishes if a sufficient amount of valid measurements were obtained to meet project objectives. The number of samples and results expected establishes the comparative basis for completeness. Completeness goals are 90% useable data for all samples/analyses planned. If the completeness goal is not achieved an evaluation will be made to determine if the data is adequate to meet study objectives. The anticipated frequency of samples and analytes are presented in Table 5.1.

Comparability expresses the confidence with which one set of data can be compared to another. The use of standard techniques for both sample collection and laboratory analysis should allow the data to be compared to other data sets. Although numeric goals do not exist for comparability, a statement on comparability will be prepared to determine overall usefulness of data sets, following the determination of both precision and accuracy.

5.3.2 Field Quality Control

Field QC samples serve as a control and check mechanism to monitor the consistency of sampling methods and the influence of off-site factors on environmental samples. Field quality control will be checked through the use of equipment rinsates samples and field duplicate samples.

5.3.2.1 Equipment Rinsates

Equipment rinsates indicate if sampling equipment decontamination procedures are performed adequately between adjacent sampling locations. If equipment is not thoroughly cleaned between samples, then cross contamination may occur. One equipment rinsate of a commonly used sampling apparatus, such as a

sampling spoon, will be collected during this interim action in each of the two interim action areas at the site. The rinsate will be collected after cleaning and decontamination of the sampling apparatus under normal operating conditions. Collection of a rinsate sample will be conducted by pouring purified water over the apparatus and into the sample containers.

5.3.2.2 Field Duplicates

In addition to replicate analyses performed in the laboratory, field duplicates also serve as measures for precision. Under ideal field conditions, field duplicates (referred to as splits), are created when a volume of the sample matrix is thoroughly mixed, placed in separate containers, and identified as different samples. This tests both the precision and consistency of laboratory analytical procedures and methods, and the consistency of the sampling techniques used by field personnel.

One field duplicate (approximately 5% of total number of samples) will be collected during this interim action in each of the two interim action areas at the site.

6.0 DOCUMENTATION

Field documentation provides important information surrounding project activities. The following methods will be used to record project-related events during this interim action: site logbooks; photographs; sample logs; sample labels; custody seals; and chain-of-custody forms.

6.1 Site Logbooks

All field personnel will maintain daily field logs while on-site. The field logs will be prepared in a bound logbook. All entries in the field logs will be made in waterproof ink and corrections will consist of line-out deletions that are initialed and dated. Individual logbooks will become part of the project files at the conclusion of this interim action.

Entries into the logbook will consist of, but be not limited to: dates, times and locations of specific activities occurring at the site; weather; team members and their responsibilities; levels of safety protection; visitors to the site; summary of pertinent meetings or discussions with regulatory agency and/or contractor personnel; deviations from sampling plans, site safety plans, and/or QA/QC procedures; changes in personnel and responsibilities with reasons for the changes; and calibration readings for any equipment used and equipment model and serial number.

6.2 Photographs

Digital photographs will be taken to record progress throughout the interim action. These photos will be stored in the project file and available for future reference.

Select photographs will be taken to record significant events or specific areas of interest during the interim action. These photos will be logged into a photographic log in which the date, time, location, description of photograph and name of the photographer will be recorded.

6.3 Sample Summary Logs

A sample summary log will be maintained by the field representative to record pertinent to the collection of each sample. The sample summary logs will become part of the project files at the conclusion of this interim action.

At a minimum, the following information will be recorded during the collection of each sample:

- Sample location and description
- Site or sampling area sketch showing sample location and measured distances

- Sampler's name(s)
- Date and time of sample collection
- Designation of sample as composite or discrete
- Type of sample (soil, sediment or water)
- Type of sampling equipment used
- Field instrument readings
- Field observations and details that are pertinent to the integrity/condition of the samples (e.g., weather conditions, performance of the sampling equipment, sample depth control, sample disturbance, etc.)
- Preliminary sample descriptions (e.g., lithologies, noticeable odors, colors, field screening results)
- Sample preservation

6.4 SAMPLE LABELS

All sample containers will be labeled with the following information at the time of collection: 1) project name and number; 2) sample name, which will include a reference to depth, if appropriate; and 3) date and time of collection.

6.5 CUSTODY SEALS

Chain of custody seals are used to detect tampering with sample shipping containers. The custody seals will be used when a sample cooler is sent by courier or shipping service to the testing laboratory. Two custody seals will be signed, dated and placed on the cooler in a manner that opening the cooler will destroy the seals. Transparent tape will be placed over the top of the seal such that the tape encircles the cooler at the hinges.

6.6 CHAIN-OF-CUSTODY FORMS

Field personnel are responsible for the security of samples from the time the samples are taken until the samples have been received by the shipper or laboratory. A chain of custody form will be completed at the end of each field day for all samples being shipped to the laboratory. Information to be recorded on the chain of custody form includes:

- Project name and number.
- Sample identification number.
- Date and time of sampling.
- Type of sample (soil, water, etc.) and number of containers from each sampling point, including preservatives used.
- Depth of subsurface soil sample.
- Analyses to be performed.
- Names of sampling personnel and transfer of custody acknowledgment spaces.
- Shipping information including shipping container number.

The original chain of custody record will be signed by a member of the field team and assigned a unique tracking number. This number shall consist of the date and numbered sequentially for each chain of custody completed during the field investigation. Field personnel shall retain carbon copies and place the original and remaining copies in a plastic bag, which will be placed inside the cooler prior to sealing the container for shipment. This record will accompany the samples during transit by carrier to the laboratory.

6.7 SITE-SPECIFIC DOCUMENTATION

Site-specific documentation will be maintained during this interim action and will include the following:

- Daily field reports
- Soil volumes removed from each area of the site
- Tipping receipts from each disposal facility
- Chemical analytical results to document soil conditions at the site
- Site plan detailing limits of excavation and soil sample locations
- Dewatering activities
- Volume of imported materials (backfill) to the site
- Backfill placement and compaction data
- Daily drawings showing areal extent of excavation progress including soil sample locations

7.0 REPORTING

An Interim Action Report will be prepared to summarize the field activities, final limits of excavation, soil disposal documentation, soil sample locations, chemical analytical results and conclusions/recommendations regarding the interim action.

8.0 SCHEDULE

Soil excavation is anticipated during the summer of 2006. On-site remedial actions are expected to take approximately three weeks to complete.

9.0 REFERENCES

Integral Consulting, Inc., January 2006, Remedial Investigation for the Uplands Environment of the Former Rayonier Mill Site.

Foster Wheeler, June 2002, Volume IV: Interim Action Work Plan – Final, Former Rayonier Pulp Mill Site, Port Angeles, Washington.

Washington State Department of Ecology, February 2001, Model toxics control act — cleanup

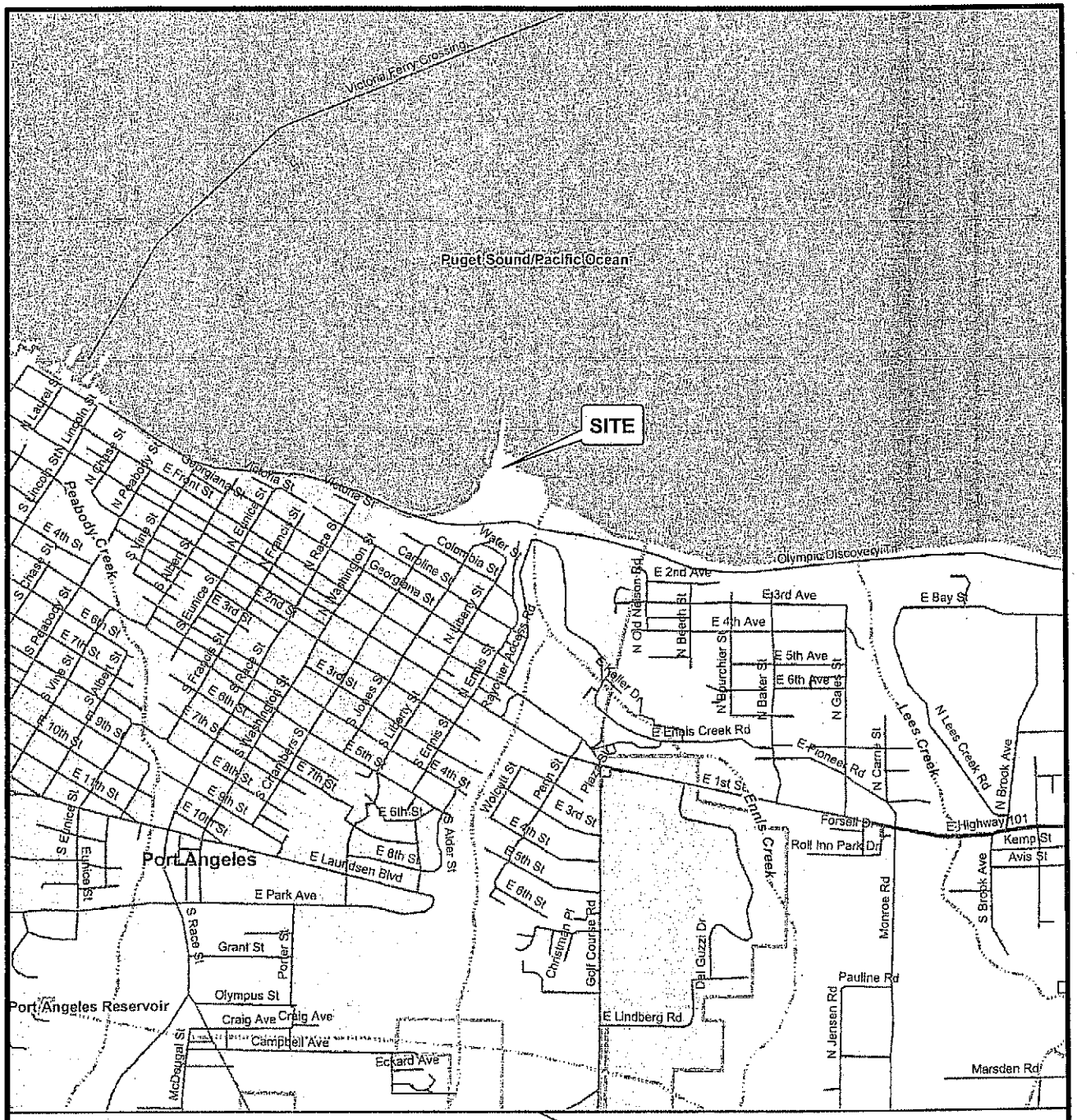
Chapter 173-340 WAC.

United States Environmental Protection Agency, October 1997, Protection of Archaeological Resources, 43 CFR 7

United States Environmental Protection Agency, February 1977, Endangered and Threatened Wildlife And Plants, 50 CFR 17

EPA, 1999. USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review. EPA 540/R-99/008. October 1999.

EPA, 2002. USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review. EPA 540-R-01-008. July 2002.



RAYONIER'S FORMER MILL SITE
PORT ANGELES, WASHINGTON

All locations are approximate.

0 1,000 2,000 Feet

Lambert Conformal Conic
Washington State Plane North
North American Datum 1983

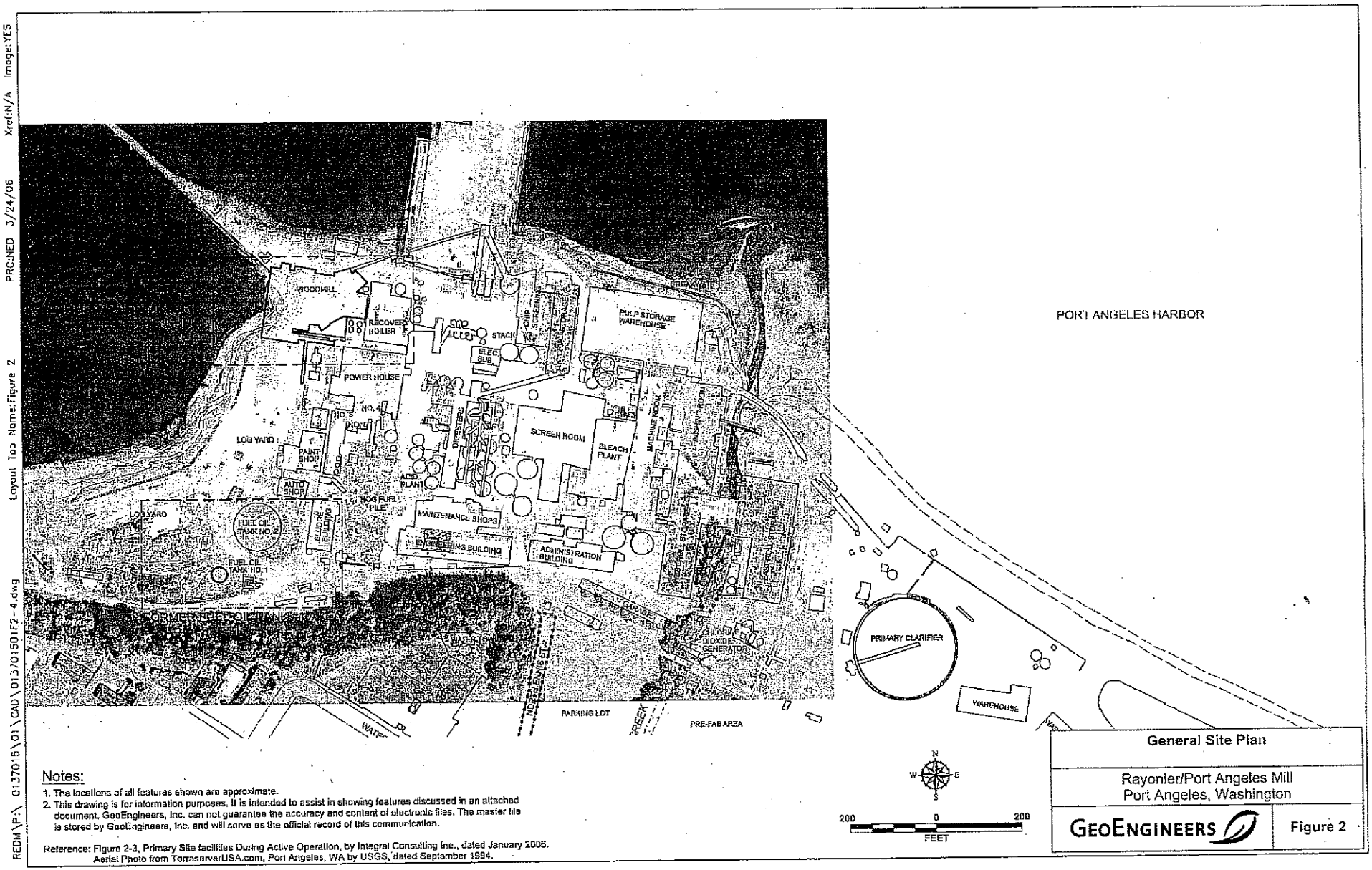
Data Sources: Interstates, state routes, and roads from TIGER 2000.
County boundaries, cities, and waterbodies from Department of Ecology.

GeoEngineers

VICINITY MAP

FIGURE 1

Office: REDM Path: P:\0137\015\01\CAD\0137-015-01_VM_Fig1.mxd Map Revised: March 23, 2006 PRC:maa



Notes:

1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. can not guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

Reference: Figure 2-3, Primary Site facilities During Active Operation, by Integral Consulting Inc., dated January 2006.
Aerial Photo from TerraserverUSA.com, Port Angeles, WA by USGS, dated September 1994.

General Site Plan

Rayonier/Port Angeles Mill
Port Angeles, Washington

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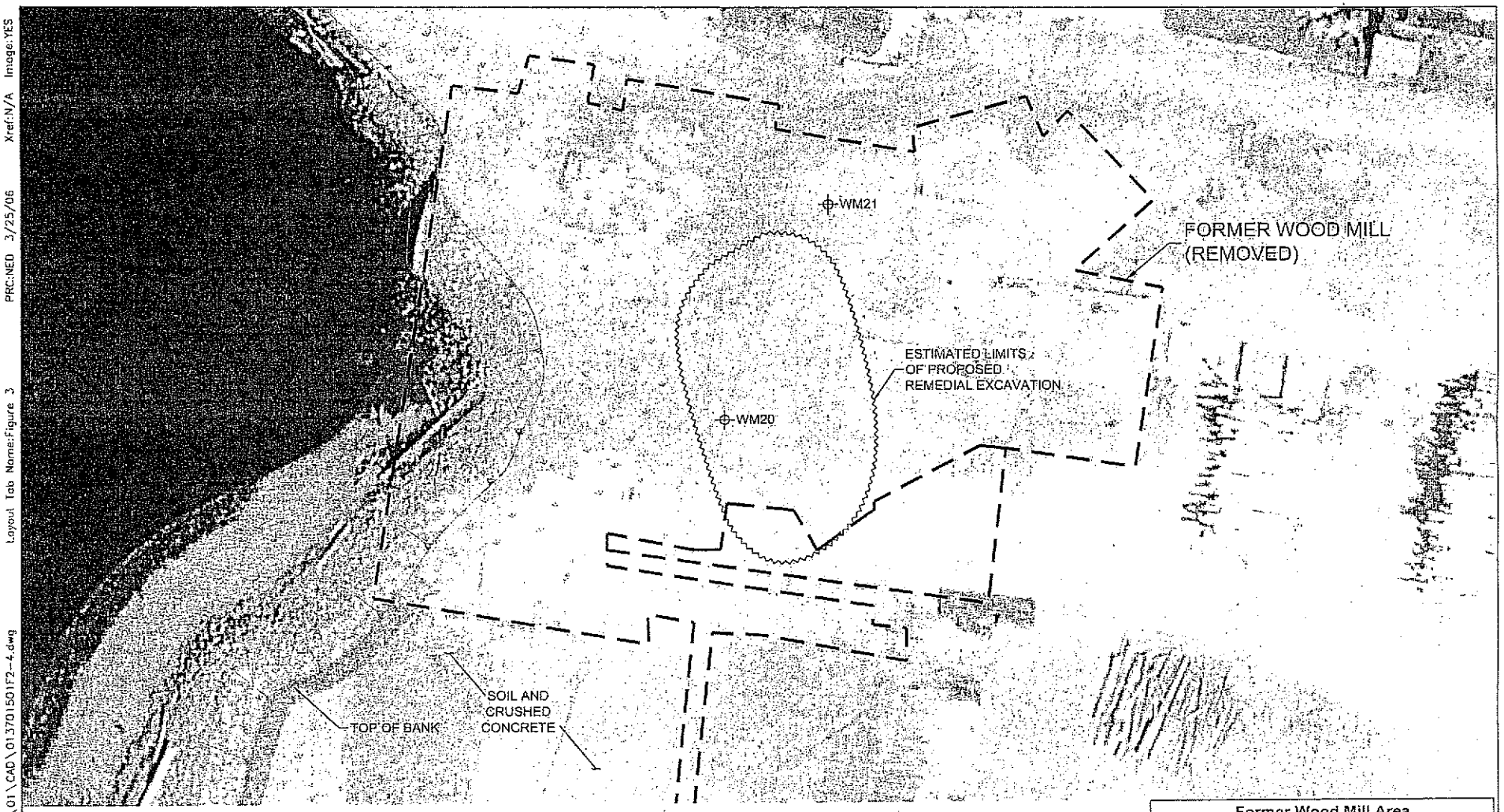
Figure 2



Notes:

1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. can not guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

Reference: Figure 2-3, Primary Site facilities During Active Operation, by Integral Consulting Inc., dated January 2006.

Legend:

WM20 REMEDIAL INVESTIGATION SAMPLE LOCATION

N W E S

30 0 30
FEET

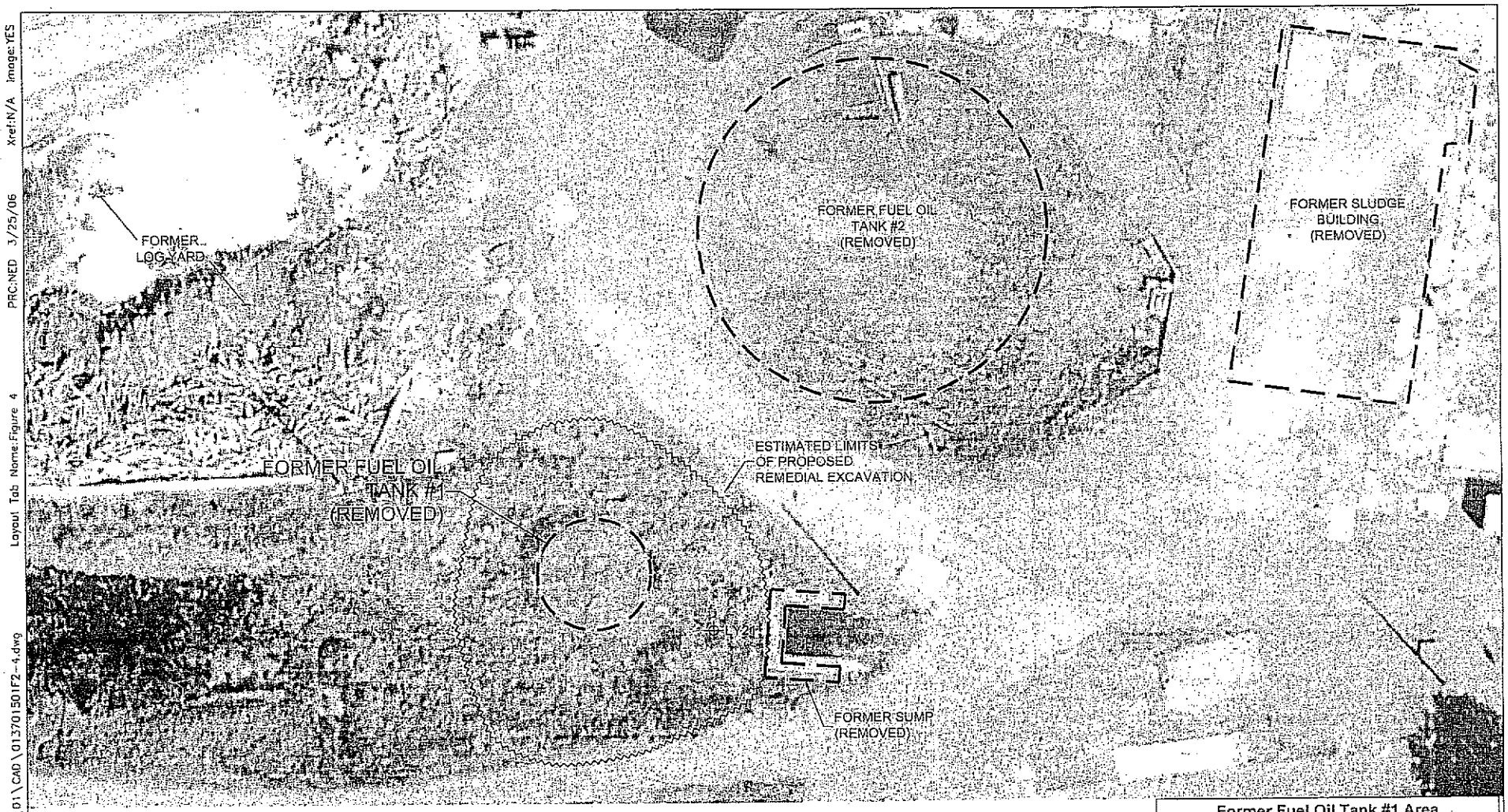
Former Wood Mill Area

Rayonier/Port Angeles Mill
Port Angeles, Washington

GeoEngineers

Figure 3

REDM \P:\ 0137015\01\CAD\0137015012-4.dwg Layout Tab Name:Figure 3 PRC:NED 3/25/06 Xref:N/A Image:YES



Notes:

1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. can not guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

Reference: Figure 2-3, Primary Site facilities During Active Operation, by Integral Consulting Inc., dated January 2006.

Legend:

LY21 REMEDIAL INVESTIGATION SAMPLE LOCATION

N W E S

30 0 30
FEET

Former Fuel Oil Tank #1 Area

Rayonier/Port Angeles Mill
Port Angeles, Washington

GeoEngineers | Figure 4

REDM \P:\ 0137015\01\CAD\0137015012-4.dwg Layout Tab Name:Figure 4 PRC:NED 3/25/06 Xref:N/A Image:YES

GeoEngineers

APPENDIX A
HEALTH AND SAFETY PLAN

GEOENGINEERS, INC.
SITE HEALTH AND SAFETY PLAN CHECKLIST
REMEDIAL EXCAVATION AT RAYONIER PROPERTIES

This checklist is to be used in conjunction with the GeoEngineers' Safety program manual. Together, the program and this checklist comprise the site safety plan for this site. This plan is to be used by GeoEngineers personnel on this site. If the work entails potential exposures to other substances or unusual situations, additional safety and health information will be included and the plan will be approved by the GeoEngineers Health and Safety Manager. All plans are to be used in conjunction with current standards and policies outlined in the GeoEngineers Health and Safety Program Manual.

1. General Project Information

Project Name:	Remedial excavation at Rayonier Properties
Project Number:	0137-015-01
Type of Project:	Environmental Remedial Excavation
Start/Completion:	July- August, 2006
Subcontractors:	To be determined

Liability Clause - This Site Safety Plan is intended for use by GeoEngineers Employees only. It does not extend to the other contractors or subcontractors working on this site. If requested by subcontractors, this site safety plan may be used as a minimum guideline for those entities to develop safety plans or procedures for their own staff to work under. In this case, Form C-3 shall be signed by the subcontractor.

2. Scope Of Work

The general scope of work is as follows: on site will be to excavate soil identified as contaminated during the previous studies completed at the site. The remedial excavation will occur in the former Wood Mill and Fuel Oil Tank #1 areas at the site.

3. Personnel/Contact Information Phone Numbers

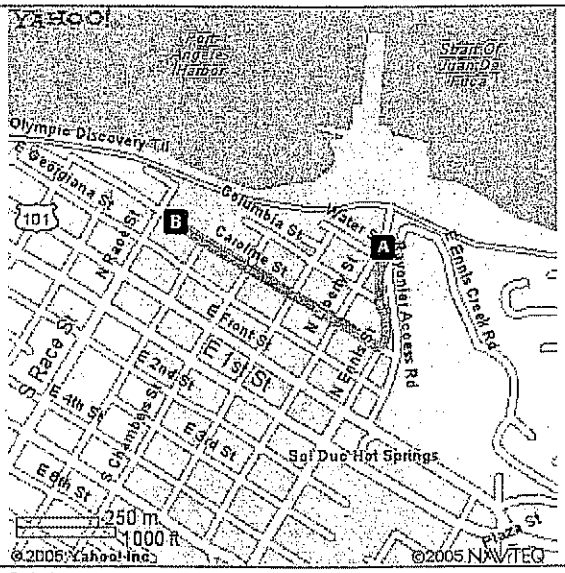
TITLE	NAME	TELEPHONE NUMBERS
Site Safety and Health Supervisor	Paul Craig	(206) 793-4589, cell
Project Manager	Paul Craig	(206) 793-4589, cell
Health and Safety Program Manager	Leah Alcyon, CIH	(425) 861-6098, office
Field Engineer/Geologist	Paul Craig	(206) 793-4589, cell
Client	Mr. Jack Anderson	(360) 808-1805, cell

Site safety and health supervisor -- The individual present at a hazardous waste site responsible to the employer and has the authority and knowledge necessary to establish the site-specific health and safety plan and verify compliance with applicable safety and health requirements.

4. EMERGENCY INFORMATION

Hospital Name and Addre

Olympic Medical Center
(360) 417-7000
939 Caroline Street
Port Angeles, WA 98362

Phone Numbers (Hospital Emergency Room):	**(360) 417-7000**
Distance: less than 1 mile.	
Route to Hospital Map: 1. Start at **700 N ENNIS ST, PORT ANGELES** going toward **COLUMBIA ST** - go **0.2** mi 2. Turn Right on **CAROLINE ST** - go **0.5** mi 3. Arrive at **939 CAROLINE ST, PORT ANGELES,** on the Right	
Ambulance:	9-1-1
Poison Control:	Seattle (206) 253-2121; Other (800) 732-6985
Police:	9-1-1
Fire:	9-1-1
Location of Nearest Telephone:	Cell phones are carried by field personnel.
Nearest Fire Extinguisher:	Located in the GEI vehicle on site.
Nearest First-Aid Kit:	Located in the GEI vehicle on site.

4.1 Standard Emergency Procedures

1. Get help -
   - send another worker to phone 911 (if necessary)
   - as soon as feasible, notify GeoEngineers' project manager
2. Reduce risk to injured person -
   - turn off equipment
3. Get help -
   - send another worker to phone 911 (if necessary)
   - as soon as feasible, notify GeoEngineers' project manager
4. Reduce risk to injured person -
   - turn off equipment
   - move from injury location (if possible)
   - keep warm
   - perform CPR (if necessary)
5. Transport injured person to medical treatment facility (if necessary) -
   - by ambulance (if necessary) or GeoEngineers vehicle
   - stay with person at medical facility
   - keep GeoEngineers manager appraised of situation and notify human resources manager of situation

5. PERSONNEL TRAINING RECORDS

Name of Employees	Level of Training (24/ 40 hr)	Date of Last Training	Hazwoper Supervisor Training	First Aid/ CPR	Respirator Fit Test
Paul Craig	40 hr	15 Sept 05	Dec 2002	April 28, 04	Sept 15, 05

6. KNOWN (OR ANTICIPATED) HAZARDS

Note: A hazard assessment will be completed at every site prior to beginning field activities. Updates will be included in the daily log. This list is a summary of hazards listed on the form.

6.1 Physical Hazards

_____	Drill rigs and Concrete Coring, including working inside a warehouse
x	Backhoe
x	Track hoe
_____	Crane
x	Front End Loader
x	Excavations/trenching (1:1 slopes for Type B soil)
_____	Shored/braced excavation if greater than 4 feet of depth
_____	Overhead hazards/power lines
x	Tripping/puncture hazards (debris on-site, steep slopes or pits)
_____	Unusual traffic hazard – Street traffic

6.2 Physical Hazard Mitigation Measures or Procedures

- Work areas will be marked with reflective cones, barricades and/or caution tape. Personnel will wear blaze orange vests for increased visibility by vehicle and equipment operators.
- Field personnel will be aware constantly of the location and motion of heavy equipment. A safe distance will be maintained between personnel and the equipment. Personnel will be visible to the operator at all times and will remain out of the swing and/or direction of the equipment apparatus. Personnel will approach operating heavy equipment only when they are certain the operator has indicated it is safe to do so.
- Heavy equipment and/or vehicles used on this site will not work within 20 feet of overhead utility lines without first ensuring that the lines are not energized. This distance may be reduced to 10 feet depending on the client and the use of a safety watch.
- Personnel entry into unshored or unsloped excavations deeper than four feet is not allowed. Any trenching and shoring requirements will follow guidelines established in WAC 296-155, the Washington State Construction standards or OSHA 1926.651 Excavation Requirements. In the event that a worker is required to enter an excavation deeper than four feet, a trench box or other acceptable shoring will be employed or the side walls of the excavation will be sloped according to the soil type and guidelines as outlined in OSHA/WISHA regulations. If the shoring/sloping deviates from that outlined in the WAC, it will be designed and stamped by a PE. Prior to entry

personnel will conduct air monitoring as described later in this plan. All hazardous encumbrances and excavated material will be stockpiled at least two feet from the edge of a trench or open pit. If concentrations of volatile gases accumulate within an open trench or excavation, the means of entering shall adhere to confined space entry and air monitoring procedures outlined under the air monitoring recommendations in this plan and the GeoEngineers Safety Program Manual.

- Personnel will avoid tripping hazards, steep slopes, pit and other hazardous encumbrances. If it becomes necessary to work within 6 feet of the edge of a pit, slope, pier or other potentially hazardous area, appropriate fall protection measures will be implemented by the SSO in accordance with OSHA/WISHA regulations and the GEI Safety Program manual.

Engineering controls:

No entry	Trench shoring (1:1 slope for Type B Soils)
X	Locate work spaces upwind
	Other soil covers (as needed)
	Other (specify)_____

6.3 Chemical Hazards (potentially present at site)

Petroleum Hydrocarbons:

	Naphthalenes or paraffins
	Aromatic hydrocarbons (benzene, ethylbenzene, toluene, xylenes)
X	Lube oil-range hydrocarbons
X	Diesel-range hydrocarbons
	Waste oil
	Other petroleum fuels (list) _____

6.4 Hazards from Other Organic Compounds (present or potentially present at site)

X	Chlorinated hydrocarbons (Polychlorinated biphenyls [PCBs]).
X	PAHs (polycyclic aromatic hydrocarbons)
X	Dioxins
	Other

6.5 Metals (Potentially present at site)

X	Lead
	Copper
	Chromium
	Zinc
	Other metals (See known chemical characteristics in Site History

Known chemical characteristics (maximum/average concentrations for routine monitoring):	Soil Chemistry (mg/kg)	Water Chemistry (µg/l)
Dioxins	1.8x10-3 mg/Kg (ppm) max reading or 1.8 ppb	
Lead	429 mg/kg maximum concentration detected	
TPH	36,000 mg/kg maximum concentration detected	
PCBs	2.78 mg/kg maximum concentration detected	
TCDD TEQ (dioxins)	1.8 x 10^{-3} mg/kg maximum concentration detected	

Summary of Petroleum Hazards

Compound/ Description	Exposure Limits/IDLH[b]	Exposure Routes	Toxic Characteristics[d]
Diesel Fuel—liquid with a characteristic odor	None established by OSHA, but ACGIH has adopted 100 mg/m3 for a TWA (as total hydrocarbons)	Ingestion, inhalation, skin absorption, and skin and eye contact	Irritated eyes, skin, and mucus membrane; fatigue; blurred vision; dizziness; slurred speech; confusion; convulsions; and headache, and dermatitis
PCBs (as Aroclor 1254)—colorless to pale-yellow viscous liquid with a mild, hydrocarbon odor	PEL 0.5 mg/m3 TLV 0.5 mg/m3 REL 0.001 mg/m3 IDLH 5.0 mg/m3	Inhalation (dusts or mists), skin absorption, ingestion, skin and/or eye contact	Irritated eyes, chloracne, liver damage, reproductive effects, potential carcinogen

Health Hazards of Dioxins

Generally, dioxin exposures to humans are associated with increased risk of severe skin lesions such as chloracne and hyperpigmentation, altered liver function and lipid metabolism, general weakness associated with drastic weight loss, changes in activities of various liver enzymes, depression of the immune system, and endocrine- and nervous-system abnormalities. It is a potent teratogenic and fetotoxic chemical in animals. A very potent promoter in rat liver cancers, TCDD also causes cancers of the liver and other organs in animals. Populations occupationally or accidentally exposed to chemicals contaminated with dioxin have increased incidences of soft-tissue sarcoma and non-Hodgkin's lymphoma.

Dioxin-contaminated soil may result in dioxins occurring in a food chain. This is especially important for the general population. It has been estimated that about 98% of exposure to dioxins is through the oral route. Exposure as a vapor is normally negligible because of the low vapor pressure typical of these compounds. In the 1980s, a concentration level of 1 ppb 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) in soil was specified as "a level of concern," based on cancer effects. However, recent studies indicate that end points other than cancer (such as those listed above) are also of concern based on a projected intake from 1 ppb TCDD in soil.

6.6 Chemical Hazard Mitigation Measures or Procedures

- Half face combination organic vapor/HEPA or P100 cartridge respirators will be available on site to be used as necessary. P100 cartridges are only to be used if PID measurements are below the site action limit. P100 cartridges are used for protection against dust, metals, asbestos, while the combination organic vapor/HEPA cartridges are protective against both dust and vapor. Ensure that the PID or TLV will detect the chemicals of concern on site.
- Level D PPE will be worn at all times on site. Potentially exposed personnel will wash gloves, hands, face, and other pertinent items to prevent hand-to-mouth contact. This will be done prior to hand-to- mouth activities including eating, smoking, etc.

- Adequate personnel and equipment decontamination will be used to decrease potential ingestion and inhalation.
- Individual PELs or action limits are not expected to be exceeded given the planned activities.
- If there are waste oil contaminants in the soil and conditions are damp, airborne dust is not likely to be an issue. If conditions are dry and dust is visible during site activities, personnel will use P100 cartridges on their respirator.

6.7 Biologic Hazards

_____	Poison Ivy or other vegetation	_____
_____	Insects or snakes	_____
_____	Used hypodermic needs or other infectious hazards	**Do not pick up or contact**
_____	Others	_____

6.8 Biologic Hazard Mitigation Measures or Procedures

Site personnel shall avoid contact with or exposures to potential biological hazards encountered.

6.9 Additional Hazards (Update in Daily Log)

Include evaluation of:

- *Physical Hazards* (excavations and shoring, equipment, traffic, tripping, heat stress, cold stress and others)
- *Chemical Hazards* (odors, spills, free product, airborne particulates and others present)
- *Biologic Hazards* (snakes, spiders, other animals, discarded needles, poison ivy and others present)

7. List Of Field Activities

Check the activities to be completed during the project

X	Site reconnaissance
_____	Exploratory borings
_____	Construction monitoring
_____	Surveying
_____	Test pit exploration
_____	Monitor well installation
_____	Monitor well development
X	Soil sample collection
X	Field screening of soil samples
X	Vapor measurements
_____	Ground water sampling
_____	Ground water depth and free product measurement
_____	Product sample collection
X	Soil stockpile testing
X	Remedial excavation
_____	Underground storage tank removal monitoring
_____	Remediation system monitoring
_____	Recovery of free product

8. SITE DESCRIPTION (ATTACH ANY ADDITIONAL SITE PLAN DETAILS AND CHEMICAL ANALYSES)

8.1 Site History: Fill in written description here

Address/Location:	700 North Ennis Street in Port Angeles, WA
Site topography:	Site bordered by residential and commercial areas on a high bluff on the south, harbor to the north and pedestrian path on the old RR
Predominant wind direction:	Northerly
Site drainage:	Creek flows through site
Utility check complete:	To be completed prior to on-site remedial activities – see documentation Utility Checklist
Traffic or vehicle access control plans:	NA
Site access control (exclusion zone) defined by:	Fencing

Hot zone/exclusion zone (Define): ***Within 10 feet of excavation***
Area near the excavation will be considered the exclusion zone

Contamination reduction zone (Define): ***Decontamination will be set up and area will be delineated***
Water will be brought to site to be used for decontamination.

8.2 Personnel Protective Equipment

Personnel Protective Equipment. Minimum level of protective equipment for these sites is Level D. After the initial and/or daily hazard assessment has been completed, select the appropriate protective gear (PPE) to preserve worker safety. Task-specific levels of PPE shall be reviewed with field personnel during the pre-work briefing conducted prior to the start of site operations.

Check applicable personal protection gear to be used:

X Hardhat (if overhead hazards, or client requests)
X Steel-toed boots (if crushing hazards are a potential or if client requests)
X Safety glasses (if dust, particles, or other hazards are present or client requests)
X Hearing protection (if it is difficult to carry on a conversation 3 feet away)
X Rubber boots (if wet conditions)

Gloves (specify):

X Nitrile
____ Latex
____ Liners
____ Leather
____ Other (specify) _____

Protective clothing:

X **Tyvek (if dry conditions are encountered, Tyvek is sufficient)**
____ Saranex (personnel shall use Saranex if liquids are handled or splash may be an issue)
X Cotton
X Rain gear (as needed)
X Layered warm clothing (as needed)

Inhalation hazard protection:

X Level D
____ Level C (respirators with organic vapor filters/ P100 filters)

Limitations of Protective Clothing

PPE clothing ensembles designated for use during site activities shall be selected to provide protection against known or anticipated hazards. However, no protective garment, glove, or boot is entirely chemical-resistant, nor does any PPE provide protection against all types of hazards. To obtain optimum performance from PPE, site personnel shall be trained in the proper use and inspection of PPE. This training shall include the following:

- Inspect PPE before and during use for imperfect seams, non-uniform coatings, tears, poorly functioning closures, or other defects. If the integrity of the PPE is compromised in any manner, proceed to the contamination reduction zone and replace the PPE.
- Inspect PPE during use for visible signs of chemical permeation such as swelling, discoloration, stiffness, brittleness, cracks, tears, or other signs of punctures. If the integrity of the PPE is comprised in any manner, proceed to the contamination reduction zone and replace the PPE.
- Disposable PPE should not be reused after breaks unless it has been properly decontaminated.

Respirator Selection, Use, and Maintenance

GeoEngineers has developed a written respiratory protection program in compliance with OSHA requirements contained in 29 CFR 1910.134. Site personnel shall be trained on the proper use, maintenance, and limitations of respirators. Site personnel that are required to wear respiratory protection shall be medically qualified to wear respiratory protection in accordance with 29 CFR 1910.134. Site personnel that will use a tight-fitting respirator must have passed a qualitative or quantitative fit test conducted in accordance with an OSHA-accepted fit test protocol. Fit testing must be repeated annually or whenever a new type of respirator is used.

Respirator Cartridges

If site personnel are required to wear air-purifying respirators, the appropriate cartridges shall be selected to protect personnel from known or anticipated site contaminants. The respirator/cartridge combination shall be certified and approved by NIOSH. A cartridge change out schedule shall be developed based on known site contaminants, anticipated contaminant concentrations, and data supplied by the cartridge manufacturer related to the absorption capacity of the cartridge for specific contaminants. Site personnel shall be made aware of the cartridge change out schedule prior to the initiation of site activities. Site personnel shall also be instructed to change respirator cartridges if they detect increased resistance during inhalation or detect vapor breakthrough by smell, taste, or feel although breakthrough is not an acceptable method of determining the change out schedule. At a minimum, cartridges should be changed a minimum of once daily.

Respirator Inspection and Cleaning

The Site Safety Officer shall periodically (i.e., weekly) inspect respirators at the project site. Site personnel shall inspect respirators prior to each use in accordance with the manufacturer's instructions. In addition, site personnel wearing a tight-fitting respirator shall perform a positive and negative pressure user seal check each time the respirator is donned to ensure proper fit and function. User seal checks shall be performed in accordance with the GeoEngineers respiratory protection program or the respirator manufacturer's instructions.

Respirators shall be hygienically cleaned as often as necessary to maintain the equipment in a sanitary condition. At a minimum, respirators shall be cleaned at the end of each work shift. Respirator cleaning procedures shall include an initial soap/water cleaning, a water rinse, a sanitizing soaking, and a final water rinse. One capful of bleach per one gallon of water can be used to create the sanitizing soak solution. When not in use, respirators shall be stored to protect against damage, hazardous chemicals, sunlight, dust, excessive temperatures, and excessive moisture. In addition, respirators shall be stored to prevent deformation of the face piece and exhalation valve.

Facial Hair and Corrective Lenses

Site personnel with facial hair that interferes with the sealing surface of a respirator shall not be permitted to wear respiratory protection or work in areas where respiratory protection is required. Normal eyeglasses can not be worn under full-face respirators because the temple bars interfere with the sealing surface of the respirator. Site personnel requiring corrective lenses will be provided with spectacle inserts designed for use with full-face respirators. Contact lenses should not be worn with respiratory protection.

9. Air Monitoring Plan

Work upwind if at all possible.

Check instrumentation to be used:

_____ TLV Monitor (flammability only, for methane and petroleum vapors)

_____ PID (Photoionization Detector)

_____ Other (i.e., detector tubes): _____

Check monitoring frequency/locations: and type (specify: work space, borehole, breathing zone):

_____ **15 minutes - Continuous during soil disturbance activities or handling samples**

_____ 15 minutes

_____ 30 minutes

_____ Hourly (in breathing zone during excavations, drilling, sampling)

Additional personal air monitoring for specific chemical exposure:

Action levels:

- The workspace will be monitored using a PID (photoionization detector). These instruments must be properly maintained, calibrated and charged (refer to the instrument manuals for details). Zero this meter in the same relative humidity as the area it will be used in and allow at least a ten minute warm-up prior to zeroing. Do not zero in a contaminated area. The PID can be tuned to read chemicals specifically if there are not multiple contaminants on site. Can tune to detect one chemical with response factor entered into equipment but PID picks up all Volatile Organic Compounds present. Ionization potential (IP) of chemical has to be less than lamp (11.7/ 10.6eV) and PID does not detect methane. The ppm readout on the instrument is relative to the IP of isobutylene (calibration gas) so conversion must be made in order to estimate ppm of chemical on site.
- An initial vapor measurement survey of the site should be conducted to detect "hot spots" if contaminated soil is exposed at the surface. Vapor measurement surveys of the workspace should be conducted at least hourly or more often if persistent petroleum-related odors are detected. Additionally, if vapor concentrations exceed 5 ppm above background continuously for a five minute period as measured in the breathing zone, upgrade to Level C PPE or move to a non-contaminated area.

Air Monitoring Action Levels

Contaminant	Activity	Monitoring Device	Frequency of Monitoring Breathing Zone	Action Level	Action
Organic Vapors	Environmental Remedial Actions	PID	Start of shift; prior to excavation entry; every 30 to 60 minutes and in event of odors	Background to 5 parts per million (ppm) in breathing zone	Use Level D or Modified Level D PPE
Organic Vapors	Environmental Remedial Actions	PID	Start of shift; prior to excavation entry; every 30 to 60 minutes and in event of odors	5 to 25 ppm in breathing zone	Upgrade to Level C PPE
Organic Vapors	Environmental Remedial Actions	PID	Start of shift; prior to excavation entry; every 30 to 60 minutes	> 25 ppm in breathing zone	Stop work and evacuate the area. Contact CIH for guidance.
Combustible Atmosphere	Environmental Remedial Actions	PID	Start of shift; prior to excavation entry; every 30 to 60 minutes	<10% LEL or <1000 ppm	Depends on contaminant. The PEL is usually exceeded before the LEL.
Combustible Atmosphere	Environmental Remedial Actions	PID Or 4 gas meter	Start of shift; prior to excavation entry; every 30 to 60 minutes	>10% LEL or >1000 ppm	Stop work and evacuate the site. Contact CIH for guidance.
Oxygen Deficient/Enriched Atmosphere	Environmental Remedial Actions Confined Spaces	Oxygen meter Or 4 gas meter	Start of shift; prior to excavation entry; every 30 to 60 minutes	>19.5<23.5%	Continue work if inside range. If outside range, exit area and contact CIH.

10. Decontamination Procedures

Decontamination consists of removing outer protective tyvek clothing and washing soiled boots and gloves using bucket and brush provided on site in the contamination reduction zone. Inner gloves will then be removed and respirator, hands and face will be washed in either a portable wash station or a bathroom facility in the support zone. Employees will perform decontamination procedures and wash prior to eating, drinking or leaving the site. ***Used PPE to be placed in on-site drum.***

Specify other site specific decontamination procedures:

Water will be available on site for washing. Restroom facilities will be in city area.

11. Waste Disposal Or Storage

PPE disposal (specify): To drums to be stored on-site pending characterization and disposal.

Drill cutting/excavated sediment disposal or storage:

_____ On-site, pending analysis and further action
__x__ Secured in drums
_____ Other (describe destination, responsible parties): _____

12. Documentation Expected To Be Completed

NOTE: The Field Log is to contain the following information:

Updates on hazard assessments, field decisions, conversations with subs, client or other parties.

Action level for upgrading PPE and rationale

Meteorological conditions (temperature, wind direction, speed, etc.).

Required forms:

Field Log

Health and Safety Plan acknowledgment by GEI employees (Form C-2)

Contractors Health and Safety Plan Disclaimer (Form C-3)

Conditional forms available at GeoEngineers office: Accident Report (Form C-4)

13. APPROVALS

1. Plan Prepared	_____	_____	
	Signature	Date	
2. Plan Approval	_____	_____	
	PM Signature	Date	
3. Health & Safety Officer	Leah Alcyon, CIH	_____	
	Health & Safety Program Manager	Date	

FORM C-1
HEALTH AND SAFETY MEETING

REMEDIAL EXCAVATION AT RAYONIER PROPERTIES

All personnel participating in this project must receive initial health and safety orientation. Thereafter, brief tailgate safety meetings as deemed necessary by the site Safety Officer.

The orientation and the tailgate safety meetings shall include a discussion of emergency response, site communications and site hazards.

Company	Employee	Date	Topics	Attendee	Name	Initials

FORM C-2
SITE SAFETY PLAN – GEOENGINEERS' EMPLOYEE ACKNOWLEDGMENT

REMEDIAL EXCAVATION AT RAYONIER PROPERTIES

(All GeoEngineers' site workers complete this form, which should remain attached to the safety plan checklist and filed with other project documentation).

I, _____, do hereby verify that a copy of the current Safety Plan has been provided by GeoEngineers, Inc., for my review and personal use. I have read the document completely and acknowledge a full understanding of the safety procedures and protocol for my responsibilities on site. I agree to comply with all required, specified safety regulations and procedures. I understand that I will be informed immediately of any changes that would affect site personnel safety.

Signed _____ Date _____

Range of Dates From: _____
To: _____

Signed _____ Date _____

Range of Dates From: _____
To: _____

Signed _____ Date _____

Range of Dates From: _____
To: _____

Signed _____ Date _____

FORM C-3
SUBCONTRACTOR AND SITE VISITOR SITE SAFETY FORM

REMEDIAL EXCAVATION AT RAYONIER PROPERTIES

I, _____, verify that a copy of the current site Safety Plan has been provided by GeoEngineers, Inc. to inform me of the hazardous substances on site and to provide safety procedures and protocols that will be used by GeoEngineers' staff at the site. By signing below, I agree that the safety of my employees is the responsibility of the undersigned company.

Signed _____ Date _____

Firm: _____

Signed _____ Date _____

Firm: _____

Signed _____ Date _____

Firm: _____

Signed _____ Date _____

Firm: _____

Signed _____ Date _____

Firm: _____

Signed _____ Date _____

Firm: _____