

**Union Pacific Railroad Company**

**Draft Remedial Action Plan**

Union Pacific Railroad Company  
Waterfront Lease Site  
Eureka, California

January 2011

<b>EXHIBIT NO. 14</b>
<b>APPLICATION NO.</b> 1-11-007 UNION PACIFIC RAILROAD PROPOSED REMEDIAL ACTION PLAN (EXCERPT) (1 of 64)

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4,4'-DDT	4,4'-dichlorodiphenyltrichloroethane
µg/dl	micrograms per deciliter
AOC	Area of Concern
AC	asphaltic concrete
ARAR	applicable or relevant and appropriate requirement
BBL	Blasland, Bouck & Lee, Inc.
bgs	below ground surface
BMP	best management practice
bss	below sediment surface
CalEPA	California Environmental Protection Agency
CAO	Cleanup and Abatement Order
CDFG	California Department of Fish and Game
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CHHSL	California Human Health Screening Level
CNDDDB	California Natural Diversity Database
CNPS	California Native Plant Society
COI	constituent of interest

# ARCADIS

## Acronyms and Abbreviations

CSM	conceptual site model
CY	cubic yards
DEIR	Draft Environmental Impact Report
DI	deionized water
DTSC	Department of Toxic Substances Control
EPC	exposure point concentration
ERA	Ecological Risk Assessment
ERL	low-effects range
ERM	median-effects range
FS/IRAW	Feasibility Study and Interim Remedial Action Work Plan
HASP	Health and Safety Plan
HHRA	Human Health Risk Assessment
HI	hazard index
HQ	hazard quotient
HSC	Health and Safety Code
HBHRC	Humboldt Bay Harbor Recreation and Conservation District
HTL	High Tide Line
LOAEL	lowest-observed adverse effects level
MCL	maximum contaminant level
MEK	2-butanone (methyl ethyl ketones)

# ARCADIS

## Acronyms and Abbreviations

mg/kg	milligram per kilogram
mg/L	milligram per liter
MHW	mean high water
MLOE	multiple lines of evidence
MNR	monitored natural recovery
MTBE	methyl tert-butyl ether
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NGVD	National Geodetic Vertical Datum
NOAA	National Oceanic and Atmospheric Administration
NOAEL	no observed adverse effects level
NPDES	National Pollutant Discharge Elimination System
NWPRR	Northwestern Pacific Railroad
OEHHA	Office of Environmental Health Hazard Assessment
O&M	operation and maintenance
PAH	polycyclic aromatic hydrocarbon
PCB	polychlorinated biphenyl
PPE	personal protective equipment
ppb	part per billion
ppm	part per million
RAO	remedial action objective

# ARCADIS

## Acronyms and Abbreviations

RAP	Remedial Action Plan
RSL	Regional Screening Level
RWQCB	North Coast Regional Water Quality Control Board
SEM-AVS	simultaneously extracted metal acid-volatile sulfide
sf	square feet
SP	solid phase
SQuiRTs	Screening Quick Reference Tables
STLC	soluble threshold limit concentration
SVOC	semivolatile organic compound
SWI	sediment-water interface
SWMU	solid waste management unit
TBC	to-be-considered
TCDD	2,3,7,8- tetrachlorodibenzo-p-dioxin
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	toxicity equivalent
TMV	toxicity, mobility, and volume
TOC	total organic carbon
TPH	total petroleum hydrocarbons
TPHd	total petroleum hydrocarbons quantified as diesel
TPHg	total petroleum hydrocarbons quantified as gasoline

## ARCADIS

## Acronyms and Abbreviations

TPHmo	total petroleum hydrocarbons quantified as motor oil
TRV	toxicity reference value
TSCA	Toxic Substances Control Act
TTLC	Total Threshold Limit Concentration
UCL	upper confidence limit
UPRR	Union Pacific Railroad Company
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
UST	underground storage tank
VOC	volatile organic compound
WET	Waste Extraction Test

**Union Pacific Railroad Company**

**Implementation Plan for the  
Waterfront Lease Site  
Eureka, California**

Appendix D to the Administrative Draft Remedial  
Action Plan

January 2011

**D.1 Introduction**

This appendix presents the Implementation Plan, including design features, permit requirements, and best management practices (BMPs), for the proposed remedial alternative in the Remedial Action Plan (RAP) for the Union Pacific Railroad (UPRR) Waterfront Lease Site located in Eureka, California (the site, Figure 1). There are some common elements that should be included in an Implementation Plan, as applicable. The following elements, listed in the order, are considered applicable for this project:

- Identification of any necessary permits and requirements
- Description of equipment to be used to excavate, handle, and transport contaminated material
- A sampling plan addressing sampling during implementation to confirm achievement of the performance objectives
- An Air Monitoring Plan
- A Transportation Plan identifying routes of travel and final destination of the RAP wastes generated and disposed
- A Transportation/Traffic Management Plan
- A Water Quality Monitoring Plan

Only the Transportation/Traffic management Plan is not included in this plan. That plan, as well as a biological assessment report and mitigation and monitoring plans for wetlands and eelgrass will be submitted separately at a later date. A stormwater pollution prevention plan (SWPPP) and a site-specific health and safety plan (HASP) are also required prior to implementation; these plans are to be developed by the Contractor performing the work.

**D.1.1 Permitting**

The following permits are needed to implement the proposed RAP:

- Coastal Development Permit (CDP)

- The City of Eureka will issue a CDP for the Upland Area.
- The California Coastal Commission (CCC) will issue a CDP for the Waterfront Area.
- U.S. Army Corps of Engineers Nationwide (NW) 38 (Cleanup of Hazardous and Toxic Waste) Permit<sup>1</sup>
- Humboldt Bay Harbor, Recreation and Conservation District Permit
- Other permits:
  - Grading Permit from the City of Eureka
  - North Coast Unified Air Quality Management District (NCUAQMD) Permit
  - Encroachment Permit and Wastewater Treatment Plant (WWTP) Permit
  - Humboldt County permits associated with well abandonment
  - City of Eureka permit associated with hydrant use
  - Notice of Intent (NOI) under the National Pollutant Discharge Elimination System (NPDES) General Permit No. CAS000002, Order No. 2009-0009-DWQ, General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities
- In addition, the waste treatment contractor will obtain permits required for the planned operation of an onsite transportable treatment unit (e.g., City of Eureka Permit for Water Use, and a California Department of Toxic Substances Control [DTSC] Permit for a Transportable Treatment Unit). Informal consultation with the

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<sup>1</sup> Note that the NW38 permit does not require a 401 certification (it is pre-certified) and the RWQCB confirmed this at the meeting held on August 26, 2010.

National Marine Fisheries Service and California Department of Fish and Game will also be required.

**D.1.2 Required Plans**

The following plans will be submitted as part of permit applications and prior to implementation.

**D.1.2.1 Storm Water Pollution Prevention Plan**

A SWPPP will be prepared by the Contractor for construction activities pursuant to the general permit. The SWPPP addresses stormwater pollution abatement associated with soil excavation at remedial action areas, stockpiling of soils and sediments, transport of the soil across the site for temporary storage, and hauling to the disposal facility as well as for the building demolition and other debris removal activities. The SWPPP also addresses the requirements for restoring the site and installing BMPs for the rainy season following construction.

**D.1.2.2 Water Quality Monitoring Plan**

The Water Quality Monitoring Plan outlines how water quality conditions will be measured in Humboldt Bay during sediment excavation activities and the mitigation measures necessary to ensure water quality objectives are maintained as detailed in the Water Quality Control Plan for the North Coast Region (North Coast Regional Water Quality Control Board 2007).

**D.1.2.3 Transportation/Traffic Management Plan**

The Transportation/Traffic Management Plan describes requirements for transportation and disposal of excavated soils and sediments and fulfills specific applicable requirements of the Code of Federal Regulations (CFR), Title 49, Transportation, Parts 100 to 199, and the California Health and Safety Code, Section 25169.3.

**D.1.2.4 Biological Assessment Report**

The Biological Assessment Report will evaluate the potential presence or absence of special status species and sensitive habitats on or adjacent to the site, the potential for proposed activities to impact special status species or sensitive habitats, and the avoidance, minimization, and mitigation measures (AMMs) that will be undertaken

during proposed activities. AMMs are summarized in Section D.2.5. The Biological Assessment report will be submitted during the permitting process.

#### D.1.2.5 Mitigation and Monitoring Plans

Temporarily impacted intertidal and adjacent vegetated wetland areas will be restored immediately following completion of proposed activities. During the permitting process, a wetland mitigation and monitoring plan will be submitted to the appropriate agencies for approval. The mitigation and monitoring plan will detail proposed mitigation activities summarized in Section D.3.10.1 to offset temporary impacts associated with the proposed activities. Additionally, if eelgrass beds or patches are present in the footprint of proposed activities, then UPRR will submit an eelgrass mitigation and monitoring plan to the appropriate agencies for approval.

#### D.1.2.6 Contractor Health and Safety

No aspect of operations is of greater importance to UPRR than injury and illness prevention. A site-specific health and safety plan (HASP) will be developed for this project by the Contractor and will ensure that every reasonable step is taken to eliminate or control hazards to minimize the possibility of injury, illness, or incident. This Implementation Plan includes some aspects that ensure community health and safety such as dust and erosion control measures, environmental monitoring, and transportation planning. The contractor's HASP will include additional safety procedures and will be submitted to the RWQCB for review and approval prior to implementation.

The HASP will prescribe the safety procedures that must be followed during activities at the site. Operational changes that could affect the health and safety of personnel, the community, or the environment will not be made without the prior approval of the UPRR and the Health and Safety Officer. The HASP will be reviewed periodically to ensure that it is current and technically correct. Any changes in site conditions and/or the scope of work will require a review and modification to the HASP. Such changes will be completed in the form of an addendum or a revision to the plan. The provisions of the HASP will be mandatory for all contractor personnel and subcontractors assigned to the project. Subcontractors may prepare their own site-specific HASPs that must meet the basic requirements of the prime contractor's HASP. All visitors to the site must review, acknowledge, and abide by the requirements of the HASP.

**D.2 Mobilization and Site Preparation**

Prior to initiating remedial action construction, the Contractor will mobilize project personnel, equipment, and materials and prepare the site. At a minimum, it is anticipated that the following site preparation activities will be performed:

- Verify existing site conditions.
- Identify the location of, and relocate as necessary, aboveground and underground utilities, equipment, or large surface debris present onsite.
- Mobilize personnel, equipment, and materials to the site.
- Clear and grub areas and remove debris as necessary to perform the remedial action activities.
- Demolish the existing structure (see discussion in Section D.2.2).
- Construct temporary facilities and equipment and material staging/dewatering areas.
- Prepare equipment and personnel decontamination areas.
- Establish erosion and sedimentation control measures (as discussed in Section D.2.1.).
- Construct temporary access roads (as needed) for ingress and egress of construction equipment as well as offsite transportation of excavated materials.
- Install temporary fencing or barriers as necessary to protect and secure the work areas.
- Demarcate work areas.

**D.2.1 Erosion and Sedimentation Controls and Other BMPs**

Erosion and sediment control and stormwater management will follow the BMPs described in the SWPPP. Applicable general BMPs that will be implemented during the remedial activities include, but are not limited to:

- Conduct excavation activities during the non-rainy season from April 1 through October 31. Site restoration activities may occur after October 31, if necessary.
- Ensure all physical controls are in place to minimize stormwater contamination. Verify physical barriers are in place and in good working order. Visually inspect daily.
- Check all equipment for leaks and immediately clean all leaks, drips, and other spills using dry methods (i.e., absorbent materials) if possible to prevent soil or groundwater contamination or residue on paved surfaces.
- As possible, refuel and perform minor maintenance on vehicles and heavy equipment in one designated, contained location away from onsite storm drains, immediately cleaning any spills. Refueling may occur in more than one location, depending on where equipment is operating.
- Perform major maintenance, repairs, and washing of equipment away from the construction area.
- Conduct major repair work at an offsite location.
- Do not hose down pavement or surfaces where materials have spilled. Use dry cleanup methods (i.e., absorbent materials) if possible. Limit water volume to amount necessary for dust suppression.
- Implement dust suppression in accordance with Section D.2.2.2.5 below.
- Store materials or products in original manufacturer containers and under roof cover if possible.
- Keep storage areas orderly to facilitate inspection.

- Limit stockpiles to the extent possible. Some temporary stockpiling will be necessary near active excavation areas, and for soil treatment or dewatering purposes. Use stormwater contamination prevention and dust suppression BMPs around stockpiles.
- Keep materials out of rain to prevent source runoff contamination. Schedule clearing or earth-moving activities for dry-weather periods. Cover exposed soil piles or construction materials with plastic sheeting or temporary roofs. Before rainfall, sweep and remove materials from surfaces that slope to storm drains.
- Dispose construction wastes in covered dumpsters or recycling receptacles.
- Practice source reduction. Order only necessary material.
- Use recyclable materials if possible. Arrange for pickup of recyclable materials (e.g., concrete, asphalt, scrap metal, solvents, degreasers, cleared vegetation, and paper).
- Dispose all wastes properly. Materials that cannot be recycled will be taken to the appropriate landfill or disposed of as hazardous waste. Do not store or leave waste materials in the street or near storm drains. Hazardous waste will be placed in the Potentially Hazardous Waste Storage Areas.
- Train employees or subcontractors to use BMPs.

Additional details and BMPs for specific activities are provided below:

- Design excavation slopes to be generally stable, to limit to the extent practicable sloughing of slopes during removal activities prior to backfill placement.
- Use silt fences around the sediment AOC areas to mitigate turbidity increases to the surrounding water body during sediment removal activities.
- Perform sediment removal activities during periods of low tide to limit to the extent possible removing material through the water column.

- Backfill removal areas during the same low tide period to minimize resuspension of sediments from the excavation, and to limit to the extent possible placing backfill through the water column.
- A silt fence will be used during upland excavations to mitigate runoff from the upland area to the waterfront area during excavation activities.
- Store solid soil treatment reagents (e.g., phosphate fertilizer, Portland cement) in enclosed silos. Store liquid soil treatment reagents (e.g. liquid buffered phosphate) in polyethylene tanks with secondary containment.
- Check all equipment for leaks and immediately clean all leaks, drips, and other spills. Clean up solid reagents using broom and shovel. Clean up liquid reagents using pumps or dry methods (i.e., absorbent materials), as appropriate.

#### D.2.2 Building Demolition

The existing building is a 6,400-square-foot single-story structure built in approximately 1962. It is approximately 20 feet high and is constructed of corrugated sheet metal supported by steel beam framing and concrete base with embedded steel rails driven into subsurface. The roof is constructed of sheet metal and translucent fiberglass panels.

##### D.2.2.1 Pre-Demolition Activities

Prior to initiating work activities, a lead-based paint (LBP) and asbestos containing material (ACM) assessment will be conducted to identify the need for asbestos and/or LBP abatement. In addition, prior to demolition, other decommissioning activities, such as utility and water disconnects, removal of regulated material (bulbs, ballasts) and any oil-containing equipment, and an inspection noting features of interest will be performed.

A pre-demolition survey walk-through will be performed by personnel familiar with aspects of demolition work. The purpose of the pre-demolition survey is to review the structural condition of the building, assess any possibility of unplanned collapse of any portion of the building or adjacent structure(s), determine sequence of demolition, confirm utilities have been disconnected, and identify any hazards that may remain after completion of demolition activity. As required under California Code of Regulations (CCR) Title 8, Division 1, Chapter 4, Subchapter 4, Article 31, Section

1734, the survey will be documented and maintained on the job site and made available to personnel and proper authority upon request. The survey must be maintained throughout the duration of the demolition activity.

#### D.2.2.2 Demolition Activities

This section discusses tasks that will be performed as part of the demolition activities. The following activities will be conducted, as applicable, for each of the structures in this phase of the project:

- Asbestos and LBP abatement
- Building demolition
- Waste and reuse material characterization, handling, and segregation
- Waste material offsite transport and disposal

Detailed descriptions of the above-identified activities are presented in the following subsections.

##### D.2.2.2.1 Asbestos Abatement

In the event that ACM is discovered and needs to be abated, prior to commencement of work, California Occupational Safety and Health Administration (CAL/OSHA) will be notified 24 hours prior to any abatement work commencing. If any friable ACM are encountered and require removal by mechanical means, then a 10-day notification will be made to the NCUAQMD. In general, under regulatory levels, ACM detection at 1 percent or greater by weight would require full abatement and waste disposal as ACM, 0.1 to 1 percent would also require full abatement but disposal as construction debris, and ACM less than 0.1 percent can be disposed of as demolition debris. Copies of the notifications will be included in the project completion documentation. All abatement activities will follow state and federal requirements, if necessary.

U.S. Environmental Protection Agency (USEPA) regulation 40 Code of Federal Regulations (CFR) 61 pertains to activities that involve the presence or removal of asbestos. This regulation requires that notification be made to the local Air Quality Management District (AQMD) no less than 10 days prior to commencement of removal activities. The notification must be updated if the original estimate of asbestos to be

removed is adjusted by 20 percent or more. Likewise, a new notification must be made if the planned starting date of demolition or renovation activities changes, and the 10-day notification period is still required in this situation. If the demolition activities are continuous, this notification can be valid for the entire project. An individual trained in accordance with 40 CFR 61, Subpart M, must also be present on the site during asbestos removal or renovation activities.

A specified list of information, presented in the USEPA Notification of Demolition and Renovation, must be presented in the notification for projects removing an amount greater than or equal to the following thresholds: 80 linear meters (260 linear feet) of regulated ACM on pipes; 15 square meters (160 square feet [sf]) on other facility components; and 1 cubic meter (35 cubic feet) of facility components where the length or area could not be measured previously or there is no asbestos.

The list includes:

- Contact information for the site owner and the contractor performing the demolition activities
- Indication of whether activities are demolition or renovation
- A description of the affected portion of the facility including size, age, and present and prior uses of the facility
- Whether the notification is an original or if it was revised
- The detection procedure followed to locate ACM at the facility
- An estimate of the amount of regulated ACM to be removed and an estimate of Category I and II non-friable ACM to be left in place
- The location of the facility
- The start and completion dates of construction operations
- A plan of action if unexpected regulated ACM is found during construction operations or if ACM becomes crushed, pulverized, or otherwise impacted to produce a health risk (USEPA 2003)

Applicable regulations regarding construction activities are presented in Chapter 4 of the CFR Title 8, Subsection 4 titled Construction Safety Orders. The most appropriate articles within Subsection 4 are: Article 3 (General), which relates to worker safety and comfort issues for all construction work sites, and Article 4 (Dusts, Fumes, Mists, Vapors, and Gases). Should previously unidentified ACM be encountered, then Sections 1528-1531, which outline safe handling procedures for asbestos, would also apply.

#### *D.2.2.2.2 Lead-Based Paint Abatement*

LBP is defined as paint with a lead concentration of greater than 5,000 milligrams per kilogram (mg/kg; equivalent to parts per million [ppm]); while lead-containing paint (LCP) has a lead concentration greater than the reporting limit but less than 5,000 mg/kg. Appropriate abatement procedures will be followed based on the results of the pre-demolition LBP assessment. Under regulatory levels, LCP at levels higher than 600 ppm would require removal of loose and flakey material prior to demolition.

#### *D.2.2.2.3 Above-Grade Demolition*

All above-grade structures will be demolished to the slab-on-grade. The demolition will proceed from the top down. All demolition will be performed under the supervision of a qualified person with authority to secure maximum safety for employees engaged in demolition work and performed by a combination of heavy equipment and manual labor in a controlled systematic manner.

The building will be demolished to slab-on-grade by crimping corrugated sheet metal and steel beam framing with shears. Prior to any demolition, the NCUAQMD and any other required entities will be notified.

#### *D.2.2.2.4 Below-Grade Demolition*

Slab demolition will be achieved by using a hydraulic excavator(s) with a concrete pulverizer, hydraulic hammer, or impact roller tower behind a tractor to break up the concrete slabs. Dust suppression will be conducted when moving material and when dust is produced (see below). The RWQCB has also requested that samples of the area beneath the foundation be collected following demolition (some areas beneath the structure have not been sampled). Such sampling will be performed, and any additional soil removal that is warranted (based on a comparison of the data to remedial goals) will be completed. Given that the structure is 40 feet wide and 6,400 square feet in

total, one sample location will be placed within a total of 8 cells approximately 40 x 20 feet in dimensions. Samples will be collected at the surface, 2 feet, and 4 feet bgs. The surface and 2 feet bgs sample will be analyzed for lead and PCBs initially and the 4 foot sample held for possible analysis. The results and any modifications to the remedial design will be provided to the RWQCB for approval prior to commencing with excavation in this area.

#### *D.2.2.2.5 Dust Suppression*

Dust suppression will be accomplished by spraying/misting the active demolition area with water during building and slab demolition. A sufficient amount of water will be used to provide adequate dust suppression and to promote desensitization of any potential energetic residues. An optimal amount of water will be misted to suppress dust but also to prevent runoff.

#### *D.2.2.2.6 Waste and Reuse Material Characterization, Handling, and Segregation*

Waste materials generated during the demolition activities will be characterized, handled, segregated, and containerized into appropriate waste streams to consolidate waste materials with similar waste characteristics. This will facilitate either offsite transport and disposal or recycling/salvage. Different waste media will be generated during the demolition activities. These wastes include, but are not limited to, sheet metal, steel, ACM, concrete, and other construction debris. Recyclables such as steel beams will be segregated and placed in appropriate bins for shipment to a recycle facility. Roll-off dumpsters will be provided for disposal of uncontaminated trash and rubbish (office-related wastes and other general wastes). Dumpsters will be provided to maintain good housekeeping practices during demolition and operations and will be emptied on a regular basis.

Potentially contaminated materials (e.g., stained concrete) will be visually identified and will be sampled and analyzed in accordance to the specific landfill requirements. Contaminated and hazardous materials will be stockpiled separately from those designated for recycling.

The following requirements address material stockpiles:

- Cover stockpiles and other construction materials with heavy-duty plastic. Protect from rainfall and prevent runoff with temporary roofs or heavy-duty plastic and berms.

- Holes and imperfections in the asphalt surface cover of the proposed stockpile areas shall be repaired prior to stockpile placement to prevent surface water infiltration.

Each waste stream will be classified for management and disposal based on available site information, visual observations, and analytical results from samples of the wastes that will be collected prior to disposal. This information will be used to determine appropriate waste management categories based on applicable waste management regulations.

#### *D.2.2.2.7 Waste Material Offsite Transport and Disposal*

Waste material transport and offsite disposal activities will be conducted in accordance with applicable regulations. Waste materials generated during demolition activities will be transported by approved transporters. Scrap waste generated will be processed at the nearest appropriate facility. During the demolition activities, traffic control measures will be required in the vicinity of the site to facilitate safe and orderly execution of the demolition, as described in the forthcoming Transportation/Traffic Management Plan.

The following documentation activities associated with the offsite transport and disposal of waste materials generated during demolition will be conducted:

- Establishing waste profiles for each waste stream, as required by the selected landfills
- Preparing waste manifests (or bills of lading, as appropriate) for each offsite shipment of waste material generated during the demolition activities
- Certificates of Destruction/Disposal/Reclamation will be maintained

#### **D.2.3 Well Abandonment**

The ten monitoring wells will be destroyed prior to excavation. Each monitoring well will be filled with bentonite chips and hydrated several feet above the screened interval. During upland soil excavation activities, the wells will be broken off at excavation depth and removed by heavy equipment (e.g., excavator). This unique abandonment technique has been discussed with Humboldt County staff, and permits reflecting this technique will be obtained before excavation activities begin.

**D.2.4 Debris Removal and Management****D.2.4.1 Vegetation Removal**

Prior to initiating remediation activities, vegetation will be cleared from the site. Vegetation clearance will consist of removal of trees and shrubs rooted in the upland portions of the site above the high tide line and mowing of tall grasses. Herbaceous vegetation will be cleared outside of the avian non-breeding season (breeding season runs from approximately March through September). During the bird non-breeding season (i.e., September 1 through January 31), physical (e.g., netting) and/or visual (e.g., flashing tape) bird deterrents will also be placed on trees planned for removal. Avian surveys will be conducted prior to final vegetation clearance where the trees will be removed no more than 3 days prior to their removal. If no nesting activity is identified, then trees will be removed. If nesting activity is identified, then tree removal will not occur until the young have fledged from the nest(s) or the nest(s) has been naturally predated. The site will remain in a maintained vegetation state through the completion of remediation activities.

Vegetation grubbing activities will include weed and tree trimming and mowing using a rubber tire tractor equipped with a scraper box. Vegetation debris will be placed in a City of Eureka roll-off bin and transported by truck for disposal at a local landfill.

**D.2.4.2 Upland Area**

Larger debris encountered at the site (e.g., engine parts, scrap metal) will be removed prior to excavation and segregated for offsite disposal. Debris will be transported for offsite disposal in accordance with applicable regulations. In addition, metal debris is intermingled with surface soils at the site. Upon excavation, surface soils will be sifted with a series of screens to separate out the metal debris. Debris will be segregated and transported for offsite disposal in accordance with applicable regulations. Debris will likely be transported to the Waste Management Landfill located in Anderson, California for disposal.

**D.2.4.3 Waterfront Area**

Due to the historical use of the site as a metals recycler, a variety of metallic debris is present within the waterfront area. In addition to metallic debris, non-metallic debris, including logs, pilings, concrete, cobble, or other organic material, may be encountered during excavation activities.

A staging area will be established on the upland portion of the site for stockpiling oversized debris. Oversized debris will consist of debris that is large enough to handle directly using the excavator bucket, generally greater than 4 feet in any dimension. This area will be lined and bermed so that any sediment adhering to the debris does not come into contact with the upland site soils. The staging area will be constructed so that debris can be rinsed to remove mass sediment adhering to the debris, with the rinse water collected and pumped into the onsite water treatment system.

Prior to beginning excavation activities, any oversized debris visually observed on the sediment surface will be removed with the excavator. Once excavation activities begin, oversized debris will only be segregated from the excavated sediment if it can be removed directly using the excavator bucket. Any debris that is entrained within the sediment that is completely contained within the excavator bucket will not be deliberately screened out of the sediment. This smaller debris will be handled in the same manner as the excavated sediment; it will be placed in the sediment dewatering stockpile, mixed with stabilization agent as necessary to lower the moisture content, and handled for offsite transportation and disposal to the applicable facility pending waste characterization.

The sediment area of concern (AOC) encompasses a number of pilings present in the waterfront area. Pilings will be cut off at the mudline during the sediment removal activities.

#### **D.2.5 Biological Resources Monitoring**

Biological resources monitoring will be implemented to avoid and minimize impacts to biological resources during remedial activities. Biological resources potentially impacted by the activities include: special status plants and animals, essential fish habitat, eelgrass, and intertidal and vegetated wetlands. Potential impacts that may result from proposed activities and biological monitoring procedures that will be implemented to avoid and minimize those impacts will be detailed in a Biological Assessment Report (to be prepared). Proposed biological monitoring activities are summarized below. Appropriate natural resource agencies will need to review and approve the proposed biological monitoring activities; therefore, activities summarized below may change upon final agency approval.

- Special Status Plants

### D.3 General Excavation Procedures, Soil and Sediments Management, and Monitoring

General procedures for soil and sediment excavation and management, as well as monitoring of the work environment and confirmation sampling, are described in the following sections.

#### D.3.1 General Excavation Procedures and Soil/Sediments Management

##### D.3.1.1 Upland Area

Based upon the current zoning for the site (waterfront commercial) and the extent and types of site contaminants, the objective of the RAP is to remediate upland soils to conditions that would allow future land use consistent with the community's vision for this site (parking lot and open space/park). Based on the evaluation presented in this RAP, site remediation activities will consist of soil excavation and offsite transportation and disposal. Excavation limits will be based on results of confirmation soil sampling (discussed in Section D.3.4.).

Approximate excavation limits, based on previous investigations at the site, are presented on Figures 4a through 4c of the main text. Available analytical data indicate approximately 13,580 CY of soil will be excavated and classified as follows:

- Concentrations of polychlorinated biphenyls (PCBs) exceed the Toxic Substances Control Act (TSCA) threshold in an estimated 200 CY (400 tons) of soil (Figure 4a), once excavated, this soil will be a TSCA-regulated waste. As shown on Figure 4a, soils within three areas, totalling approximately 6,000 sf, will be excavated to a depth of approximately 1 foot below ground surface (ft bgs).
- Concentrations of lead exceed the TCLP threshold in an estimated 3,800 CY (5,700 tons) of soil (Figure 4b). Once excavated, this soil will be a Resource Conservation and Recovery Act (RCRA)-regulated hazardous waste. As shown on Figure 4b, soils within an area of approximately 37,500 sf will be excavated to a depth of approximately 1 ft bgs, soils within an area of approximately 12,000 sf will be excavated to a depth of approximately 4 ft bgs, and soils within an area of approximately 3,000 sf will be excavated to a depth of approximately 6 ft bgs.
- Concentrations of lead and zinc exceed Total Threshold Limits Concentration (TTL) thresholds in an estimated 9,580 CY (15,300 tons) of soil (Figure 4c),

once excavated, this soil will be a California-regulated non-RCRA hazardous waste. As shown on Figure 4c, soils within an area of approximately 54,000 sf will be excavated to a depth of approximately 2 ft bgs, soils within an area of approximately 30,000 sf will be excavated to a depth of approximately 4 ft bgs, soils within an area of approximately 20,000 sf will be excavated to a depth of approximately 6 ft bgs, and soils within an area of approximately 1,600 sf will be excavated to a depth of approximately 10 ft bgs.

In addition, the soil berm along the waterfront will be excavated.

A designated work area boundary will be established for excavation activities. Initially, the designated work area boundary will be established at a setback distance of 55 feet from the area of work. The designated work area boundary will be adjusted based on air monitoring results. Volatile organic compounds (VOCs) have not been detected at concentrations of concern at the site. However, a photoionization detector (PID) calibrated to isobutylene (or other appropriate calibration gas) will be available onsite and will be used periodically to monitor the breathing zone of workers at the excavations. Airborne dust will be monitored during excavation, loading, and hauling activities (see dust control and monitoring activities described in Section D.3.3.2). Air monitoring will be conducted in accordance with the HASP, which will be developed prior to implementation. Potential air monitoring locations are identified on Figure 7. Work will be initiated with Level D personal protective equipment (PPE). A PID reading of 1 ppm in the workers' breathing zone sustained for 2 minutes will prompt an upgrade to Level C PPE.

The following protocol will be used for excavation of impacted soil:

- It is anticipated that a Caterpillar 330 track-mounted excavator or similar device will be used during excavation.
- Soil and sorbent berms will be constructed at the perimeter of excavations to restrict surface runoff into or out of excavated areas.
- Upon excavation, surface soils will be sifted with a series of screens to separate metal debris from the site soil. Debris will be segregated and transported for offsite disposal in accordance with applicable regulations.
- Temporary staging areas will be set up within fenced areas for excavated soil stockpiling. Excavated material will be placed on plastic sheeting and covered by

plastic sheeting to prevent migration of contaminants, shield the material from elements, and mitigate fugitive dust and stormwater runoff and runoff. Separate staging areas will be set up for each anticipated waste classification (TSCA; RCRA; and non-RCRA, California-regulated).

- Excavation will proceed as follows: soils expected to be TSCA-regulated will be excavated first and stockpiled in the area west of the site warehouse, then soils expected to be RCRA-regulated will be excavated and treated to non-RCRA levels (as described in Section D.3.6.). Finally, the non-RCRA, California-regulated soils will be excavated and backfilled in sections based on the anticipated excavation depth.
- Based on current estimated waste quantities, RCRA-regulated soil will be treated onsite via chemical fixation prior to offsite transportation and disposal. Onsite treatment of RCRA-regulated waste to non-RCRA concentrations prior to offsite transportation and disposal will be cost-effective provided more than approximately 4,000 tons of RCRA waste is generated. Current estimates indicate approximately 5,700 tons of RCRA-regulated waste will be generated during site remediation. If the actual volume of RCRA-regulated waste is less than 4,000 tons, this waste will not be treated onsite; instead, it will be shipped to an appropriate landfill (e.g., the US Ecology landfill located in Grandview, ID) for offsite disposal as a RCRA-regulated waste. Treatment details are provided in Section D.3.6.
- Composite waste classification samples will be collected from each stockpile at the following frequency: one sample per 250 CY for the first 1,000 CY, one sample per 500 CY for quantities between 1,000 and 5,000 CY, and one sample per 1,000 CY for quantities greater than 5,000 CY. Samples will be submitted for leaching tests using the standard California Waste Extraction Test (WET) and standard Toxicity Characteristic Leaching Procedure (TCLP) methods. Additional waste classification details are provided in Section D.3.5.
- Upon receipt of waste classification sampling results, excavated material will be loaded onto trucks for offsite transportation and disposal. Trucks will be instructed to enter near the excavation and directed to exit away from the excavation once loaded. Drivers will be instructed to maintain a safe distance from the edge of the excavation.
- Excavated soil that is proposed to be taken offsite will be transported to a Class I or II landfill by a licensed hazardous waste hauler. As detailed in Section D.3.8,

TSCA-regulated waste (and RCRA-regulated waste, if not treated onsite) will be transported to the US Ecology landfill located in Grandview, Idaho for offsite disposal; California-regulated waste and treated RCRA waste will be transported to the ECDC landfill located in East Carbon, Utah. Waste going to landfills located in California will go directly by truck, waste going to hazardous waste landfills in Idaho and Utah will be trucked to Richmond, California and transferred to railcars for transportation to the appropriate landfill.

- Following excavation, the excavated areas will be backfilled and/or sloped or graded to blend with surrounding areas as required by the CDP and grading permits.

Excavation activities at the site will be performed under the direction of a competent construction manager. Excavations extending to depths up to 6 feet bgs will be sloped, as appropriate to stabilize the excavation, with a maximum allowable slope of 1.5 foot horizontal to 1 foot vertical (assuming Type C soils). In two small areas of the site, the excavation is expected to extend to a depth of 10 feet bgs. Additional engineering controls (i.e., shoring, bracing) will be installed in excavations extending more than 6 feet bgs.

Entry into excavations greater than 1 foot bgs is not anticipated to be required. However, if entry into deeper excavations is needed, it will be authorized only in accordance with the HASP and the safe work practices confined space entry procedures as specified in an Entry Permit completed by the Field Team Leader. The Entry Permit will specify the confined space monitoring to be performed and the conditions for acceptable entry. Entry is defined as any part of a person's body passing through the plane of the opening of the excavation.

Although the presence of additional hazardous/unknown materials beyond those identified in previous investigations is not anticipated, the remedial contractor will be prepared to deal with them if encountered. A hazardous materials staging area will be prepared for any buried structures or unknown material uncovered during the course of the excavation. Unknown material includes any material that does not meet the requirements/description of waste presented in the approved landfill waste profile. Any encountered material will be stored, sampled, and disposed of in accordance with appropriate state and federal regulations.

During periods of inactivity longer than 12 hours, excavation bottoms and sidewalls may be covered with heavy-duty plastic sheeting or other covering to minimize dust

emissions to the atmosphere. Open excavations will be demarcated with barricades and caution tape during periods of inactivity and at the end of each workday to reduce the potential of personnel falling into the excavations.

Upon receipt of acceptable confirmation sampling results, excavations will be backfilled with clean imported soil. The source of imported backfill material will be identified, sampled, and analyzed for constituents of potential concern (COPCs) prior to onsite use. Coarse-grained soils with a minor amount of fines added to bind the soil are preferred for use as backfill, because they are easier to compact and allow water to more readily drain into surrounding soils. Backfill will be placed and compacted in 1-foot lifts, and compaction testing will be performed to confirm the target compaction (to meet 90% modified proctor to the extent feasible) is achieved. The excavation contractor will use compaction equipment suitable for the resulting excavations. Drainage controls will be installed to manage site runoff, and shoreline protection will be placed along the slope transition between the upland and waterfront areas. The soil surface will be re-vegetated (e.g., hydroseeded) to minimize erosion following backfilling.

#### D.3.1.2 Waterfront Area

As described in the RAP, an AOC and three discrete hot spots were identified within the waterfront area using a multiple lines-of-evidence (MLOE) approach to determine the nature and extent of sediment impacts. To remediate the sediment AOC and hot spots, excavation and backfilling of the sediments with offsite disposal was chosen as the preferred remedy. Figures 5 and 6 show the lateral and vertical extent of the AOC and hot spots.

The sediment AOC and hot spots encompass approximately 3,000 cubic yards (CY) of in-situ sediment. To perform the excavations in a safe and constructible manner, the side slopes of the sediment AOC may be sloped. Slopes of 3 horizontal to 1 vertical (3H:1V) from the base of the excavation have been assumed for conceptual design purposes, which would result in removal of approximately an additional 800 CY of sediment. The volumes and side slopes are approximate and will be finalized during design. Additionally, a bathymetric survey will be conducted prior to proceeding on the waterfront sediment work; any significant differences in offshore conditions will be identified and the final plan for excavation discussed with and approved by the RWQCB prior to beginning excavation work.

The excavation and backfilling will be conducted in the following manner:

- Prior to construction, a silt fence will be installed outside of the sediment AOC and side slopes that will form during sediment excavation. The silt fence will consist of a chain link fence with metal posts lined with geotextile fabric on the bay side. The top-of-fence elevation will be selected based on published tide predictions, general tidal bench marks, and recorded historical water levels. Sufficient "freeboard" will be added based on engineering judgment. The geotextile fabric will serve as a filter that will keep suspended sediment in the enclosed areas while allowing water to pass through. The filter fabric will be attached to the chain link fence using wire ties. The filter fabric will be placed to cover the chain link fence from top to bottom. The filter fabric will be peg fixed to the sediment surface using rebar pegs. The fence will be inspected regularly, and additional wire ties and rebar pegs will be placed as necessary to control shifting due to tidal actions. The silt fence will completely encompass the AOC and will extend to the upland, so that water in the excavation area will flow through the fence and not around the ends. This will also prevent fish from becoming trapped within the area surrounded by the silt fence. By lining the fencing with geotextile fabric on the bay side, fish will not be trapped between the fencing and the geotextile when the tide recedes. The silt fence will be maintained throughout the work, including replacing geotextile fabric as needed.
- The sediment AOC will be divided into subareas that are sized to allow for excavation and backfilling of a complete subarea within one low-tide period. The subarea sizes will be finalized during design, but will take into account the expected schedule for construction; the associated tidal cycles during this schedule; the expected production rates of excavation, confirmation surveying, and backfilling; and the distance from the subareas to the sediment dewatering stockpile and clean fill stockpiles to allow for travel time between the subareas and the upland staging areas. Subareas will be slightly overlapped so that some clean backfill material from the subarea completed the previous day is excavated with the adjacent subarea, to ensure that cross-contamination of the clean backfill material coming into contact with the remaining in-situ sediment does not occur.
- A long-reach excavator will be used from the banks of the upland to excavate the sediment and place it into trucks used for onsite transport of the sediment. If there are areas of the AOC that can only be reached by moving the long-reach excavator out onto the mudflats, crane mats will be used to reduce the ground pressure on the mudflats and prevent equipment from sinking into the sediment.
- Small hotspots and the area under the pier will be excavated using a smaller bucket and possibly smaller equipment (i.e., a bobcat). The area under the pier will

be excavated by digging a hole on the northern side of the pier and then reaching under the pier and pulling the material out toward the mudflat. The excavation under the pier will only extend as far as is feasible without causing any damage or undermining the pier structure.

- When working near or beneath the City pier, the pier will need to be closed to the public to ensure public safety. The pier structure will be inspected after work has been completed and the pier will be reopened once it has been determined that there has been no damage to the structure.
- Prior to backfilling, a licensed surveyor will confirm that the sediment has been excavated to the design elevation.
- After confirmation that the design elevations have been achieved within the subarea, clean backfill will be placed using the long-reach excavator operating from the banks of the upland area. The backfill will be supplied using a truck designated for onsite transport of the clean backfill material. A licensed surveyor would again be used to confirm that the pre-excavation elevations have been achieved during backfill placement.
- Excavated sediment will be transported to an onsite staging area designed for dewatering the sediment using gravity draining of stockpiles. Water management from the dewatering area is discussed in Section D.3.8. Sediment transport will be conducted using sealed or lined trucks and upland areas will be protected appropriately (i.e., plastic sheeting or other means) to ensure that clean areas are not recontaminated.
- Amendments such as Portland cement or lime may be used if gravity draining of the sediment does not reduce the moisture content of the sediment sufficiently for waste disposal. Addition of these amendments has been assumed; however, ultimately, a decision will be made in the field regarding the necessity of these amendments, depending on the final moisture content of the dewatered sediments.
- Waste characterization and offsite transport and disposal of the sediment are discussed in Sections D.3.5 and D.3.7.

**D.3.2 Dust Control**

During excavation activities, there is potential to generate airborne dust. Dust control measures will include:

- 1) Excavation activities will be suspended if winds exceed 15 miles per hour (mph) sustained (for 15 minutes) or 25 mph (instantaneous gusts).
- 2) Vehicles entering or exiting construction areas will travel at a speed that minimizes dust emissions, but not to exceed 15 mph. Construction workers will park in designated parking area(s) to reduce dust emissions.
- 3) Water will be applied by means of trucks, hoses, and/or sprinklers prior to any upland removal and excavation activities to minimize dust emissions. A water truck will be onsite at all times to support dust control as appropriate.
- 4) Water will be applied to disturbed areas approximately four times per day to minimize dust emissions.
- 5) The upland disturbed work area will be sprayed with water at the end of the work shift to form a thin crust. This application will be in addition to the minimum rate of application (approximately four times per day).
- 6) Trucking areas will be washed down at least once per day unless conditions indicate a greater frequency is appropriate. Parking areas, staging areas, and traffic pathways on the site shall be cleaned, as necessary, to control dust emissions. Adjacent public streets shall also be cleaned, if necessary, when soil materials from the site are visible. Unpaved areas may be graveled to reduce dust emissions.
- 7) Stockpiles will be placed atop and covered with heavy-duty plastic sheeting when they are not actively being managed. Stockpile covering will be in good condition, joined at the seams, and securely anchored to minimize headspace where vapors may accumulate.
- 8) When not covered, stockpile surfaces will be kept visibly moist by water spray.

The objectives of these BMPs are to minimize generation of visible dust and prevent dust from migrating offsite. In addition, as discussed previously, trucks hauling soil and

other loose material will be covered and trucks and tires will be brushed off to minimize tracking of dirt onto the site or public roads.

### D.3.3 Environmental Monitoring

#### D.3.3.1 Upland Area

Environmental monitoring will be conducted throughout the remedial construction activities. Environmental monitoring activities, described below, are anticipated primarily to include dust monitoring (described below) and ambient air monitoring for VOCs (described in Section D.3.1.2) although these are not constituents of concern. Dust monitoring equipment that measures particulate matter of 10 microns or less (PM<sub>10</sub>, respirable dust) will be employed during excavation activities to evaluate the effectiveness of the BMPs listed above. Locations of the dust monitoring devices for the truck routes will be selected based on the prevailing wind direction in relation to the day's routes.

Work will begin using Level D PPE, which provides no respiratory protection. A reading on the dust monitors of less than 0.5 milligram per cubic meter (mg/m<sup>3</sup>) requires no additional protection. Readings of 0.5 to 5 mg/m<sup>3</sup> require donning of dust masks and a reading greater than 5 mg/m<sup>3</sup> requires that work stop and the source of the dust be investigated. Corrective actions will be taken to reduce readings to below 5 mg/m<sup>3</sup> or below 0.5 mg/m<sup>3</sup>, if possible, before work is allowed to resume. Additional information regarding environmental monitoring activities is included in the HASP.

#### D.3.3.2 Waterfront Area

Environmental monitoring during the sediment removal activities will consist of water quality (turbidity) monitoring outside of the silt fences, to confirm that the BMPs employed during the sediment removal activities are functioning as intended. Water quality monitoring is described in the attached Water Quality Monitoring Plan (Attachment 1).

### D.3.4 Verification Soil Sampling Program (for Upland Areas only)

Verification sampling will be conducted to confirm that the upland excavations have achieved the remedial goals. Verification samples will not be collected within the waterfront area, as the sediment AOC has been adequately delineated through characterization sampling in the horizontal and vertical directions. The RWQCB does

not require post-excavation samples to be collected from the waterfront area, except as listed below.

#### D.3.4.1 Sampling Approach

Verification samples will be collected from the floor in the excavation areas at a frequency of one sample per 5,000 sf in excavations up to 5,000 sf in area. For excavations more than 10,000 sf in area, one floor/bottom sample per 2,500 sf will be collected. For excavations between 5,000 and 10,000 sf, two or three floor/bottom samples will be collected, depending on the size and shape of the excavation. Sidewall verification samples will be collected at a frequency of one sample per 100 linear feet of sidewall, with a minimum of one per sidewall in smaller excavations. Sample locations will be determined in the field for each excavation segment. In shallow excavations, a sample will be collected using a shovel, trowel, or hand auger. In excavations of 3 feet or greater depth, the excavator bucket will be used to retrieve soil at the sample location, and a sample of the soil will be collected from the bucket after it is brought to the surface. Samples will be analyzed for arsenic and lead using USEPA Method 6010, PCBs using USEPA Method 8082, and polycyclic aromatic hydrocarbons (PAHs) using USEPA Method 8100.

#### D.3.4.2 Data Evaluation

Results of verification samples will be compared to remedial goals established for the protection of human and ecological receptors derived in Section 3 of the RAP, which include a maximum for PCBs based on TSCA criteria and risk-based criteria implemented as described in this paragraph and in the RAP. The remedial goals will be used initially to screen results from individual confirmation samples, but will also be compared to post-remedy exposure estimates (i.e., 95% Upper Confidence Limits [95%UCLs]). Remedial goals include "ceiling" or not-to-exceed values as well as values based on overall exposure to receptors that are meant to be implemented as 95%UCLs, as described below.

The site will be divided into units (i.e., areas that will be excavated/backfilled in the phases ) for this comparison because the site will be excavated and backfilled in sections, as described in Section D.3.1.2. As the excavation proceeds in each area, first removing TSCA/PCB soils, then RCRA soils, then finally the remaining soils, the excavations will be sampled according to the sampling approach discussed above. Individual results above "ceiling" values will automatically be re-excavated and re-sampled. Following this step, the data from the final set of confirmation samples will be

used to calculate 95%UCLs using USEPA's ProUCL software. If any 95%UCL exceeds the cleanup goals, then those samples that are likely driving the exceedances (i.e, the ones with the highest concentrations) will be identified and those areas re-excavated and re-sampled. This step will be repeated until a value at or below the cleanup goal is achieved.

This approach is conservative for a number of reasons: (1) receptors will be exposed to a large area and not just these smaller excavation areas; (2) receptors would potentially be exposed to deeper/adjacent soils below the excavation which were all shown to be below the cleanup goals; and (3) clean backfill that will be placed into the excavation is not factored in.

Data and calculation from the verification sampling program will be shared with the RWQCB during implementation and also documented in the completion report, which will provide the area-specific and the sitewide 95%UCLs.

#### D.3.4.3 Re-excavation Approach

If the analytical results of the post-excavation verification samples for a unit indicate that constituents of concern remain in soil at 95%UCLs greater than the remedial goals, an area representative of the area of the sample will be re-excavated to at least 0.5 foot below the excavation surface or laterally (depending on whether it was a sidewall or bottom sample that exceeded) around the sample location(s) causing the exceedance. Additional verification samples will then be collected from the floor and/or wall of the newly excavated area, as necessary, and this process will be repeated as necessary to achieve the remedial goals on a 95%UCL basis.

Note that if excavating is required beyond the current fence line (but within the property boundary), the fenced area will be extended and the excavation will continue as necessary. No excavation outside the property boundary is currently anticipated.

#### D.3.4.4 Waterfront Sediments

Note that confirmation samples will be collected in the Waterfront sediment area at the hotpot location under the pier. The samples will be collected with the excavator bucket (so its integrity may be somewhat uncertain) and will be for documentation purposes only.

**D.3.5 Waste Characterization****D.3.5.1 Upland Area**

The soil impacted by lead has been characterized to be, once excavated, RCRA-regulated hazardous waste in an estimated 3,800 CY of soil and a California-regulated non-RCRA hazardous waste in an estimated 9,500 CY of soil based on analyses conducted of soil samples collected in the planned excavation area.

The PCB-contaminated soil exceeds the TSCA waste threshold of 50 mg/kg in an estimated 200 CY of soil. The remaining PCB-contaminated soil that exceeds the 1mg/kg TSCA action level for a performance-based cleanup is co-located with soil which will be excavated because of lead impacts.

Samples will be collected from the stockpiled soils for waste characterization purposes. Composite samples will be collected from temporary soil stockpiles at a rate of one sample every 500 CY. Samples will be analyzed for arsenic and lead using USEPA Method 6010, PCBs using USEPA Method 8082, and PAHs using USEPA Method 8100.

**D.3.5.2 Waterfront Area**

Based on existing data, the sediment is expected to be characterized as non-hazardous waste. In previous sampling events, PCB concentrations were detected below 50 mg/kg total PCBs, which is the TSCA waste threshold. These concentrations are also below the RCRA and California hazardous waste thresholds. Lead concentrations have the potential to exceed the California Soluble Threshold Leaching Concentrations (STLC) based on the lead results from select samples within the AOC. However, the use of stabilization agents may decrease the leachability of any elevated lead concentrations.

Samples will be collected from the dewatered, stabilized sediment for waste characterization purposes. Composite samples will be collected from temporary soil stockpiles at a rate of one sample every 500 CY. Samples will be analyzed for arsenic and lead using USEPA Method 6010, PCBs using USEPA Method 8082, and PAHs using USEPA Method 8100.

### D.3.6 Onsite Treatment of RCRA-regulated Waste

Current estimates indicate approximately 5,700 tons of RCRA-regulated waste will be generated during site remediation. Provided the actual volume of RCRA-regulated waste is at least 4,000 tons, this waste will be treated onsite to non-RCRA levels prior to shipment for offsite disposal. Details of proposed treatment activities are discussed in this section. If the actual volume is less than 4,000 tons, this waste will likely not be treated onsite and it will instead be shipped to an appropriate landfill (i.e., the US Ecology landfill located in Grandview, ID) for offsite disposal as a RCRA-regulated waste.

Based on the constituents encountered in site soils, it appears these soils can be blended with a chemical reagent (such as liquid buffered phosphate) and water to create a chemical fixation process to stabilize the soil and reduce TCLP concentrations. Prior to beginning excavation activities, a bench-scale test will be performed using a sample of site soils to confirm the effectiveness of treatment, and to determine the appropriate reagent. For the bench test, a series of samples will be collected and treated using a range of reagent mixtures. Reagents to be tested will likely include liquid buffered phosphate and various blends of solid phosphate fertilizer and Portland cement. Treated soils will then be sent to a laboratory for TCLP testing to confirm that treatment effectively reduces constituents to concentrations less than their TCLP threshold limits. Results of the bench-scale test will be used to select and appropriate reagent mixture for the site.

Once bench-scale testing confirms treatment of site soils will reduce constituents to concentrations less than TCLP threshold limits, a transportable treatment unit (TTU) will be mobilized to the site. The TTU will screen and mix site soils to duplicate the ratios of the bench-scale testing. Reagent will be mixed with water in a Baker-style tank then metered into the TTU's pugmill mixing chamber using flow meters and standard liquid pumps. Typically, the solid reagent quantity is approximately 2 to 5% of the input material, by weight. Based on current estimates approximately 5,700 tons of soil will be treated, so approximately 150 to 250 tons of solid reagent will be used in RCRA treatment. Soil will be thoroughly mixed with water and reagent inside the pugmill chamber, and the thoroughly mixed material will exit the pugmill and be conveyed from the system for stockpile management and analytical confirmation testing. The TTU is expected to process approximately 800 to 1,000 tons per day. Belt scales on the TTU will weigh incoming material to track the actual amount of soil treated each day. At the end of each day, a composite sample will be collected from the stockpile of soils treated that day and sent to a laboratory for TCLP analysis to confirm treatment was

successful. Upon receipt of analytical results confirming that soils no longer exceed RCRA levels, soils will be loaded onto trucks for offsite transportation and disposal as discussed in Section D.3.7.

#### **D.3.7 Offsite Disposal**

Excavated material will be temporarily stockpiled in an area (or areas) in the vicinity of the excavation. Each stockpile area will be lined with heavy-duty plastic. In addition, stockpiles will be covered with heavy-duty plastic at the end of each day and when not being actively worked on. Sandbags, or other weights, will be used to keep the plastic cover in place.

The excavated material will be loaded into trucks and transported under an appropriate waste manifest or bill-of-lading to an appropriately permitted landfill, depending on the characteristics of the waste. TSCA and non-RCRA (treated) wastes will be loaded into trucks lined with intermodal polyethylene bags. The bags will be sealed onsite and will be transported via truck to a permitted rail transfer facility located at 1000 Harbor Way South, Richmond, California. At the railyard the sealed bags will be loaded directly into gondola railcars using a tipper machine that slides the sealed waste bag from the truck container into a gondola railcar with no material touching the ground at the railyard. Similarly, non-RCRA, California-regulated waste will be transported via truck to the Richmond rail transfer facility, where it will be loaded directly into lined gondola railcars and covered.

The planned disposal facilities accept waste directly from rail. From the Richmond railyard, TSCA-regulated materials will be transported directly to the US Ecology landfill located in Grandview, Idaho, while the non-RCRA (treated) and the non-RCRA, California-regulated waste will be transported directly to ECDC landfill located in East Carbon, Utah. If the actual volume of RCRA waste is less than 4,000 tons, this waste will likely not be treated onsite and it will instead be shipped to an appropriate landfill (i.e., the US Ecology landfill located in Grandview, ID) for offsite disposal as a RCRA-regulated waste. Non-hazardous waste will be transported via truck to the Waste Management landfill in Anderson, California. The soils will be wetted, as necessary, to reduce the potential for dust generation during loading and transportation activities.

After each truck is filled, it will be inspected to ensure that the waste soil is securely covered and that the tires of the haul trucks are reasonably free of accumulated soil prior to leaving the site. Ingress/egress points from the site, routes to be travelled through the City of Eureka, vehicle staging areas to be used, estimated vehicle

movements per day, and vehicle scheduling information are detailed in the Transportation/Traffic Management Plan.

### **D.3.8 Liquids Handling and Disposal**

#### **D.3.8.1 Upland Area**

Most upland excavation activities can be completed with only minimal liquid handling. However, areas to be excavated to 10 feet bgs will require provisions for liquid handling because the excavation will extend below the water table. In areas excavated below the water table, water will be pumped out of the excavation and containerized as appropriate (e.g., Baker tank). Characterization samples will be collected and submitted for laboratory analysis for arsenic and lead using USEPA Method 6010, PCBs using USEPA Method 8082, and PAHs using USEPA Method 8100. Based on results of water characterization sampling, water will be treated using a mobile onsite treatment unit (if necessary) and, discharged to the City of Eureka sanitary sewer system (under an appropriate permit), or transported for offsite disposal. The water will also be reused to the extent possible onsite for dust control purposes (only for dust control on contaminated material stockpiles).

#### **D.3.8.2 Waterfront Area**

Decant water will be generated from gravity dewatering of the excavated sediment. Dewatering will be accomplished by stockpiling the material in a staging area designed and constructed for dewatering. The staging area will be lined and bermed so that the decant water does not infiltrate onsite. The area will be sloped to a sump so the decant water can collect and be pumped into tanks onsite for storage. A mobile water treatment unit, likely consisting of sand filtration to reduce solids, will be used for primary treatment of the water to meet applicable requirements before it is discharged into the City of Eureka sanitary sewer system via permit. The system will most likely be run as a batch process. The details and sizing of the mobile water treatment unit and batch treatment process will be determined during design. At the end of the project, the sand from the sand filter will be disposed of at an appropriate offsite disposal facility along with other waste materials that will be generated during remedial action implementation. This will either be done based on waste classification testing or the waste material will be disposed of along with the most highly contaminated soils excavated at the site.

**D.3.9 Equipment Decontamination**

Equipment used to excavate and manage the affected soil and sediment will be decontaminated prior to leaving the site. The equipment will be primarily decontaminated by sweeping or brushing to remove visible soil and sediment. Soil and sediment that cannot be removed by this procedure will be removed from equipment by washing in a prepared decontamination area. The decontamination area will consist of a lined, bermed containment pad to contain decontamination wash water. Decontamination wash water will be collected, characterized, and appropriately discharged, disposed, or recycled in accordance with applicable federal, state, and local requirements. The onsite mobile water treatment unit may be used to treat the decontamination wash water, with subsequent discharge to the City of Eureka sanitary sewer system.

**D.3.10 Excavation Backfilling and Site Restoration**

All backfill will be verified as clean in accordance with guidance from the DTSC (2001).

**D.3.10.1 Upland Area**

Upland excavations will be backfilled with clean, imported fill material. Backfill material will be from a nearby borrow source (i.e., quarry or similar source). The source of backfill cannot be indentified at this time, as the availability of backfill varies and UPRR would allow the Contractor to determine the best source(s). The Contractor will determine the source of the material, based on the specification for the fill, and provide the appropriate data to UPRR and the RWQCB for approval before implementation. The clean fill material will be stockpiled onsite for a short period prior to placement. The fill material will be placed with a rubber-tired backhoe and compacted to 90 percent standard proctor (to the extent feasible). The excavated area will then be restored to match existing grade, and the area will be revegetated with a native plant seed mix using a hydroseeder (see Attachment 2 for a general specification; the Contractor will use the method described herein or a similar/equivalent method).

**D.3.10.2 Waterfront Area**

The waterfront area will be backfilled with clean, imported fill material that is similar in physical properties to the in-situ sediment. The Contractor will determine the source of the material, based on the specification for the fill. The clean fill material will be stockpiled onsite so that backfill can be placed within the same low-tide period that the

in-situ material is excavated. The waterfront area will be backfilled to the existing grade, except in areas where it is sloped to meet the grade of the upland site. These areas may be filled to below the existing grade, if necessary. Additionally, during design, the necessity for shoreline stabilization will be evaluated. If shoreline stabilization is placed, the backfill underlying the shoreline stabilization will be filled to an elevation to accommodate the thickness of the shoreline stabilization, so that the final grade of the top of the shoreline stabilization will meet the existing grade.

Intertidal mudflat areas and small areas of adjacent vegetated wetlands will be temporarily disturbed during proposed activities. During the permitting process, a Wetland Mitigation and Monitoring Plan will be submitted to the appropriate agencies for approval. This plan will detail proposed mitigation activities summarized below to offset temporary impacts associated with the proposed activities. Immediately following completion of proposed activities, intertidal areas will be backfilled to original grade using clean material with a similar grain size and carbon content to that currently present, as described above. Adjacent vegetated wetlands will be restored in place as intertidal areas are graded to meet upland elevations. Restored areas will be revegetated, as appropriate, with native vegetation. Restoration activities will result in mitigation of temporary impacts at a ratio of at least 1:1 and with a similar or greater functional value.

Eelgrass surveys will be conducted within 30 days of initiating dredging activities in the offshore area. If surveys indicate that eelgrass beds or patches are within the dredging footprint and will be impacted by proposed activities, then UPRR will submit an Eelgrass Mitigation and Monitoring Plan to the appropriate agencies for approval.

#### **D.3.11 Transportation/Traffic Management Plan**

The forthcoming Transportation/Traffic Management Plan (Attachment 3) describes the procedures for offsite transport of waste associated with remedial activities at the site. The plan will outline the protocol and procedures to be followed to protect human health and the environment during transportation activities to remove concrete, demolition debris, soil, and sediment from the site and to import clean soil for backfilling excavations. The Transportation/Traffic Management Plan fulfills specific applicable requirements of CFR, Title 49, Transportation, Parts 100 to 199, and the California Health and Safety Code, Section 25169.3. In addition, all work will be performed in accordance with the HASP and this document.

**D.3.12 Project Duration, Work Hours, and Schedule**

Work at the site will generally be conducted Monday through Saturday, typically from 7 a.m. to 6 p.m., although work could be extended to run from 6 a.m. to 7 p.m. Upland work will not be conducted during nighttime hours, but in-water work will need to be conducted during the night when low tides occur at night. Work during nighttime hours will be minimized to the extent possible and UPRR will notify adjacent residences which could be affected by light and noise. The work schedule for the waterfront area will be coordinated around low-tide periods. Depending on the tasks, Saturday hours may be shorter.

Work will begin no sooner than April 1 and will be completed by October 31. The upland work will likely be completed first and the waterfront work second, beginning no sooner than July, to accommodate "fish windows" (Frey, pers. comm. 2010) and to occur during a period when more low tide periods are within daylight hours.

Based on the time needed for hauling materials from the site, approximately 22 to 24 weeks will be needed to complete the project. To complete restoration by October 31, work would need to begin by late May.

**Union Pacific Railroad Company**

**Water Quality Management Plan  
for the Waterfront Lease Site  
Eureka, California**

Attachment 1 to the Implementation Plan

November, 2010

## 1. Introduction

The goal of water quality monitoring is to control potential increases in turbidity levels in Humboldt Bay that are attributable to sediment removal activities at the Union Pacific Railroad (UPRR) Waterfront Lease Site located in Eureka, California (the site). Real-time turbidity data will be collected using hand-held meters from locations outboard of the sediment removal area. Increased turbidity could potentially affect a patch of eel grass that is aligned parallel to the shoreline, approximately 20 to 40 feet outboard of the sediment removal area boundary (refer to Figure 11 of the Remedial Action Plan). Monitoring will generally be performed within 10 to 20 feet of the eel grass patch. Increases in turbidity are not expected to occur during sediment removal and backfilling activities because these activities will be performed "in the dry" at low tide. Increases in turbidity could potentially occur following backfilling, when tidal water re-enters the removal area. A silt fence will be in place to minimize turbidity outside of removal area. This plan provides the details of the monitoring and corrective actions that will be implemented in case turbidity levels exceed the criteria provided in this plan.

## 2. Monitoring Approach

Monitoring will generally be performed in three phases:

- **Baseline Monitoring:** Turbidity monitoring will be performed prior to startup of any in-water construction at the site. The baseline monitoring will establish background turbidity levels to which monitoring results during construction can be compared. It will also establish changes in turbidity levels at various times during the tide cycle, which will help target times in the tide cycle for monitoring events during construction.
- **Initial Monitoring:** During the first 1 to 2 days of construction, turbidity will be monitored nearly continuously before, during, and after sediment removal activities at three locations. The monitoring locations are described further below.
- **Subsequent Monitoring:** Following the initial monitoring, the data from the baseline monitoring and initial monitoring will be evaluated and times for monitoring events will be targeted. It is expected that subsequent monitoring will entail only one to two events per day at strategically targeted times based on previous monitoring data.

### **3. Monitoring Locations**

#### **3.1 Distance from Shore**

For all monitoring events and locations, the distance from shore will be targeted such that the monitoring location is generally:

- Within 10 to 20 feet to the north of the mean low water (MLW) line; and
- Within 10 to 20 feet of the eel grass patch.

The MLW line and the eel grass patch are shown on Figure 11 of the Remedial Action Plan.

#### **3.2 Locations along Shoreline**

##### **3.2.1 Baseline Monitoring**

Baseline monitoring will be performed at one location at the approximate midpoint between the eastern and western extents of the removal area.

##### **3.2.2 Initial and Subsequent Monitoring**

Monitoring locations will include "upstream" and "downstream" locations. For the purpose of this monitoring, and considering that the site is located in a tidal estuary, these terms are defined based on the direction of flow as follows:

- "Upstream" is defined as the direction against the direction of flow:
  - During incoming tides: West of the active work area
  - During outgoing tides: East of the active work area
- Downstream is defined as the direction of the flow:
  - During incoming tides: East of the active work area
  - During outgoing tides: West of the active work area

During initial and subsequent monitoring, turbidity data will be collected from three locations along the shoreline:

- 200 feet upstream from the active work area
- Immediately outboard of the active work area
- 200 feet downstream from the active work area

Some field adjustments may be necessary depending on actual site conditions.

Turbidity readings will be collected near the sediment surface, but at least 1 foot above the sediment surface.

#### **4. Monitoring Frequency**

Monitoring will generally be performed at the frequency and using the schedules outlined below, unless it is not safe to perform the monitoring. For example, monitoring will only occur during daylight hours and only if it is safe to be on the water (e.g., monitoring will not occur when a small craft advisory has been issued).

##### **4.1 Baseline Monitoring**

The baseline monitoring will be performed for approximately 12 hours during daylight hours and will likely start early in the morning. The baseline monitoring is intended to cover approximately one half tidal cycles. Readings will be taken approximately every 15 to 30 minutes. If the quality of the data appears to be adequate and representative, the baseline monitoring will be stopped after the first day. If additional data are deemed necessary, a second day of monitoring will be added.

##### **4.2 Initial Monitoring**

During initial monitoring, readings will be taken semi-continuously. One crew/boat will take readings at the locations described above. Monitoring at each location is expected to require 20 to 30 minutes, including navigation, anchoring, and taking readings. Therefore, collecting one subset of data (three monitoring points) is expected to take between approximately 1.5 and 2 hours. Accordingly, each location is expected to be monitored two to three times during incoming and then again during outgoing tides. Initial monitoring is expected to start shortly before startup of sediment

excavation (first day of excavation) and end late in the afternoon on the same day. If additional data are needed, a second day of monitoring will be added.

#### **4.3 Subsequent Monitoring**

The monitoring frequency and timing for the subsequent monitoring will be established based on the data collected during baseline monitoring and initial monitoring. The greatest potential for increased turbidity attributable to excavating and backfilling is expected to be associated with incoming water immediately following sediment removal/backfilling activities in an active work area. Accordingly, it is expected that subsequent monitoring will be performed after backfilling of each active work area. It is further expected that one monitoring event will be performed during incoming water and one event will be performed during outgoing water, following removal activities (not during). This anticipated schedule will be adjusted as necessary during the in-water removal activities based on all of the monitoring data collected up to that point in time.

#### **5. Equipment**

It is anticipated that a small boat will be used to access monitoring points. Equipment to be used for collecting water quality measurements will typically include the following:

- Health and safety equipment
- Boat and motor
- Turbidity probe (YSI 6920 V2 or similar)
- Depth sounder (i.e., a lead line / measuring tape with attached weight)
- Field notebook and monitoring logs (Appendix A)

It is anticipated that hand-held, manually operated field turbidity probe(s) will be used for monitoring. These units will be calibrated, operated, and maintained according to the manufacturer's instructions and will be capable of collecting point turbidity readings from water as deep as 15 feet. The probe(s) will be able to measure turbidity at a resolution of +/- 1 nephelometric turbidity unit (NTU).

In addition to turbidity, weather and tide conditions will be noted on the monitoring logs provided in Appendix A.

### 6. Compliance Criteria

As specified in the Water Quality Control Plan for the North Coast Region (North Coast Regional Water Quality Control Board 2007<sup>1</sup>), turbidity shall not be increased more than 20 percent above naturally occurring background levels.

### 7. Corrective Actions

If the compliance criterion described above is exceeded, the instrument calibration will be checked, and a second set of measurements will be collected immediately at all monitoring locations. An exceedance of the compliance criterion will be confirmed if the criterion is exceeded for a second time at the monitoring location(s). The exceedance need not be confirmed at the same location as the original exceedance, as currents and tides may limit the ability to reach the original monitoring location.

In the event of an exceedance of a water quality compliance criterion, operations associated with the sediment removal may need to be modified. Appropriate steps to correct the exceedance and improve water quality conditions will be taken immediately and may include:

- Modified construction management practices (e.g., placement of a sand layer above the sediment backfill to minimize sediment resuspension)
- Inspection and/or modification of engineering controls (e.g., silt fence)
- Other appropriate measures

If modification of operations does not result in attaining water quality compliance criterion, removal activities may be stopped.

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<sup>1</sup> North Coast Regional Water Quality Control Board. 2007. Water Quality Control Plan for the North Coast Region. January.

MATERIALS AND PERFORMANCE - SECTION 02210

TOPSOIL & SEEDING

PART 1 - GENERAL

1.01 DESCRIPTION

A. Work Specified

1. The furnishing and placement of topsoil, fertilizer, seed, and/or mulch.
2. The maintenance required until acceptance.

PART 2 - PRODUCTS

2.01 MATERIALS

A. If topsoil is needed (i.e., if backfill is not suitable to support native plants), imported topsoil shall be used that consists of unfrozen friable clayey loam free from clay lumps, stones, roots, sticks, stumps, brush, and foreign objects. The topsoil shall have a pH ranging between 5.0 and 7.5 and an organic content between 5 and 20 percent, as determined by laboratory testing of representative samples.

B. Fertilizer shall be standard quality commercial carrier of available plant food elements. A complete, prepared, and packaged material containing a minimum of 6 percent nitrogen, 20 percent phosphoric acid, and 20 percent potash shall be required.

1. Each bag of fertilizer shall bear the manufacturer's guaranteed statement of analysis.

C. Seed mixtures shall be commercial stock of the current season's crop and shall be delivered in unopened containers bearing the guaranteed analysis of the mix.

1. All seed shall meet the State standards of germination and purity.

2. Seed can be purchased from:

LeBallisters seed & fertilizers

1250 Sebastopol Rd.

Santa Rosa, Ca 9507

(707) 526-6733

Pacific Coast Seed

533 Hawthorne Place

Livermore, CA 94551

(925) 373-4417

3. Approximately four acres shall be seeded at rate of 35 lbs./acre, totaling 140lbs of grass mix.
4. Estimated seed costs are as follows: \$13.75/lb. x 140 lbs. = \$1,925.00
5. The required erosion control species and pounds per acre are presented below.

MATERIALS AND PERFORMANCE - SECTION 02210

TOPSOIL & SEEDING

Common Name	Scientific Name	Rate of app. lbs./ per acre	Totals
Tufted Hairgrass	<i>Deschampsia caespitosa</i>	1.75	7 lbs.
Molate Fescue	<i>Festuca rubra</i>	17.5	70 lbs.
Meadow Barley(salt)	<i>Hordeum brachyantherum</i>	10.5	42 lbs.
Three Weeks Fescue	<i>Vulpia microstachys</i>	5.25	21 lbs.
<b>Totals</b>		<b>35 lbs.</b>	<b>140 lbs</b>

6. Mulch shall be stalks of oats, wheat, rye, or other approved crops free from noxious weeds.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. The area to receive topsoil (if deemed necessary) shall be graded to a depth of not less than 6 inches, or as specified, below the proposed finished surface. If the depth of topsoil existing prior to construction was greater than 6 inches, the topsoil shall be replaced not less than the greater depth.
- a. All debris and inorganic material shall be removed and the surface loosened for a depth of 2 inches prior to the placing of the topsoil.
  - b. The topsoil shall not be placed until the subgrade is in suitable condition and shall be free of excessive moisture and frost.
  - c. All topsoil shall be free from stones, sticks, and other foreign substances and shall not be placed in a frozen or muddy condition.
  - d. Seeding and mulching shall not be done during high winds (greater than 15 miles per hour).
- B. The fertilizer shall be applied uniformly. After the topsoil surface has been fine graded, the seed mixture shall be uniformly applied.
- C. The mulch shall be hand or machine spread to form a continuous blanket over the seed bed. Excessive amounts or bunching of mulch will not be permitted.
1. Mulch shall be anchored by an acceptable method.
  2. Unless otherwise specified, mulch shall be left in place and allowed to disintegrate.
  3. Any anchorage or mulch that has not disintegrated at time of first mowing shall be removed. Anchors may be removed or driven flush with ground surface.

MATERIALS AND PERFORMANCE - SECTION 02210

TOPSOIL & SEEDING

- D. Seeded areas shall be watered as often as required to obtain germination and to obtain and maintain a satisfactory sod growth. Watering shall be in such a manner as to prevent washing out of seed.
- E. Hydroseeding may be accepted as an alternative method of applying fertilizer, seed, and mulch.

3.02 MAINTENANCE

- A. All erosion rills or gullies within the topsoil layer shall be filled with additional topsoil and graded smooth, and reseeded and mulched.
- B. The Contractor shall be responsible for repairs to all erosion of the seeded areas until all new grass is firmly established and reaches a height of not less than 4 inches. All bare and poorly vegetated areas must be reseeded and mulched.

- END OF SECTION -



Infrastructure · Water · Environment · Buildings

Mr. Craig Hunt  
Engineering Geologist  
California Regional Water Quality Control Board, North Coast Region  
5550 Skylane Boulevard, Suite A  
Santa Rosa, CA 95403

Subject:  
RAP Addendum  
Union Pacific Railroad Company  
Eureka, CA – Waterfront Lease  
RWQCB Case Nos. 1NHU318 and 1NHU117

Dear Mr. Hunt:

This Remedial Action Plan (RAP) Addendum (the Addendum) has been prepared by ARCADIS, U.S., Inc. (ARCADIS) on behalf of the Union Pacific Railroad Company (UPRR) regarding the Waterfront Lease Site located at 701 First Street in Eureka, California (the Site; Figure 1).

### Purpose

The purpose of this Addendum is to describe changes proposed for the implementation of the remedy as outlined in the RAP<sup>1</sup>. The elements being modified include:

- Alternate disposal sites have been identified and a revised Transportation Plan has been developed.
- An alternate method to isolate the Waterfront work area, control turbidity, and prevent impacts to fish species and eelgrass is proposed.

### Disposal Sites and Transportation Plan

Excavated materials were proposed in the RAP to be disposed of at specific landfills, including some rail transportation. Based on new information, alternate disposal sites

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<sup>1</sup> ARCADIS. 2011. Draft/Final Remedial Action Plan. Eureka, CA – Waterfront Lease. January 24.

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ENVIRONMENT

Date:  
August 24, 2011

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Our ref:  
RC000720.0003

are now being proposed. Rail transport will not be used for the newly proposed disposal sites so the trucks will not need to be lined with intermodal polyethylene bags.

The following are the newly proposed disposal facilities:

- TSCA-regulated materials will be transported via truck to the Waste Management Landfill in Arlington, Oregon.
- Non-RCRA (treated) and the non-RCRA, California-regulated waste will be transported via truck to the Rogue Disposal and Recycling, Inc., Dry Creek Landfill in White City, Oregon.
- Non-hazardous waste will be transported via truck to the Waste Management Landfill in Anderson, California.

The other procedures will be conducted as described in the RAP and according to the revised Transportation Plan (attached). The proposed changes have no significant impact on the project, including no change of traffic impacts as the routes for trucks entering and leaving the site will remain the same.

#### **Isolation of Waterfront Work Area**

The RAP had specified the use of a silt fence to (1) minimize suspended sediment from exiting the excavation area to protect water quality and also minimize potential indirect impacts to eelgrass beds associated with reduced light penetration through the water column, and (2) prevent fish from entering the excavation area. A PORTADAM™ system is proposed as an option as described in the attached memo. The PORTADAM system will perform the same functions as the silt fence and will be installed similarly to the silt fence (i.e., during low tide and in sections to prevent fish entrapment).

The PORTADAM has a number of advantages compared to a silt fence including providing a complete seal once installed and allowing dredging work to occur during any tidal conditions. This will allow the work to be completed more quickly, further minimizing any potential for water quality impacts, eliminating potential fish entrapment in the excavation area (tidal flux will not occur), and eliminating the need for night work (thus eliminating the need for lighting systems and noise barriers/monitoring).

### Permitting and Schedule

Originally, the City of Eureka was slated to be the lead agency under the California Environmental Quality Act (CEQA) and the Coastal Development Permit (CDP) for the Upland Area. The California Coastal Commission (CCC) was originally slated to issue the CDP for the Waterfront Area. The decision was recently made for the Humboldt Bay Harbor, Recreation and Conservation District (Harbor District) to be the lead agency under CEQA and for the CDP for the upland and waterfront areas to be consolidated under the CCC. The other permitting processes will remain the same.

The approximate schedule for activities is as follows:

- CEQA document and Harbor District permitting completed by late October 2011
- CDP issued by the CCC by the end of 2011
- U.S. Army Corps of Engineers Nationwide (NW) 38 (Cleanup of Hazardous and Toxic Waste) Permit<sup>2</sup> to be issued in late March 2012 (this permit issuance is being delayed due to the revisions to the Nationwide Permits in process now and is scheduled to be completed in March 2012; the permit will be issued once this process is complete).
- The other (ministerial) permits listed in Section 1.1 of the RAP will also be obtained, as appropriate.
- Vegetation removal will be completed by the end of January 2012 to avoid impacts to nesting birds.
- Mobilization is planned to take place in late-April / early-May 2012.
- Upland work will be completed first and Waterfront work not beginning until July 1, 2012 to avoid impacts to fish species; waterfront work will be completed by the end of September 2012.
- Site restoration activities will be completed by the end of October 2012.

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<sup>2</sup> Note that the NW38 permit does not require a 401 certification (it is pre-certified) and the RWQCB confirmed this at the meeting held on August 26, 2010.

ARCADIS

Mr. Craig Hunt  
August 24, 2011

**Closing**

Please contact the undersigned with any questions or comments.

Sincerely,

ARCADIS U.S., Inc.



Bridgette DeShields  
Principal Scientist



James Eisert, PG (No. 7000), CHG  
(No. 779)  
Principal Hydrogeologist

Attachments:

Attachment 1 Transportation Plan  
Attachment 2 PORTADAM Memorandum

Cc: Melissa Kraemer, CCC  
Bob Merrill, CCC  
Vicki Frey, CDFG  
David Hull, Humboldt Harbor District  
David Ammerman, USACE  
Lisa Shikany, City of Eureka  
Walt Wilson, NOAA/NMFS  
Jim Diel, UPRR

## 1. Background

On behalf of the Union Pacific Railroad Company (UPRR), ARCADIS has prepared this Transportation Plan, which describes the procedures that will be utilized during off-site transport of materials from the Waterfront Lease Site (also known as the Former G&R Metals Facility) located at 701 First Street in Eureka, Humboldt County, California (the site; Figure 1).

Remedial actions at the site will include demolition of an existing steel-framed warehouse structure, removal of its concrete foundation, excavation of soil and sediment, and backfilling of excavations with clean material. All work will be conducted during the dry season, and active work at the site will be completed in a single season. Remedial actions at the site will be conducted to comply with Provision No. 7 of Cleanup and Abatement Order (CAO) No. R1-2002-0095 issued for the site by the North Coast Regional Water Quality Control Board (RWQCB) on October 3, 2002.

## 2. Purpose and Objective

This Transportation Plan describes the protocol and procedures to be followed to protect human health and the environment during transportation activities to remove demolition waste and excavated materials from the site. It also fulfills specific applicable requirements of the Code of Federal Regulations (CFR) Title 49, Transportation, Parts 100 to 199, and the California Health and Safety Code, Section 25169.3. In addition, work will be performed in accordance with the Site Health and Safety Plan (HASP). This Transportation Plan has been developed following the guidance in Transportation Plan: Preparation Guidance for Site Remediation, Interim Final 1994, published by the California Environmental Agency and Department of Toxic Substances.

## 3. Characteristics of Material to be Transported

Three types of materials will be transported from the site: non-hazardous waste, Toxic Substances Control Act- (TSCA-) regulated excavated waste, and non-Resource Conservation and Recovery Act (RCRA) California regulated hazardous waste.

- **Non-hazardous waste.** Removal of the warehouse and its foundation will generate mostly steel and concrete waste, with small quantities of fiberglass paneling, interior finishings from the small office space in the warehouse, and other

materials. Other non-hazardous wastes will include excavated sediment and the large metallic debris scattered about the site.

- **TSCA-regulated waste.** Concentrations of polychlorinated biphenyls (PCBs) exceed the TSCA threshold of 50 milligrams per kilogram (mg/kg) in an estimated 250 cubic yards (cy; 400 tons) of soil. Once excavated, this soil will be a TSCA-regulated waste, and will be transported according to applicable federal regulations.
- **California-regulated hazardous waste.** Approximately 15,350 cy (23,300 tons) of soil and sediment to be excavated will be classified as a California-regulated hazardous waste soil due to concentrations of lead and zinc.

The TSCA and California-regulated hazardous waste will be composed of excavated soil and sediment. The excavated sediments will be dewatered and mixed with a stabilizing agent to reduce the moisture content of the material before transportation.

Approximately 5,300 tons of RCRA-regulated waste will be generated during site remediation. This waste will be blended with a chemical reagent (such as liquid buffered phosphate) and water to create a chemical fixation process to stabilize the soil and reduce toxicity characteristic leachate procedure (TCLP) concentrations to a level so that it can be disposed of as a California-regulated hazardous waste.

**4. Destination of Waste Material**

Excavated materials, demolition wastes, and debris from the project site will be transported to and disposed of in appropriate facilities depending upon the characterization of the materials.

Non-hazardous waste will be disposed of at the Waste Management landfill located in Anderson, California. The contact information for this facility is as follows:

18703 Cambridge Road  
Anderson, California 96007  
Phone: 1.530.347.5236  
Fax: 1.530.347.7056

TSCA waste will be permanently disposed of by burial at Waste Management's Arlington, Oregon landfill. The contact information for this facility is as follows:

Waste Management Inc.  
17629 Cedar Springs Lane  
Arlington, Oregon 97812  
Phone: 1.541.454.2030  
Fax: 1.541.454.3247

California-regulated hazardous waste will be permanently disposed of by burial at Rogue Disposal and Recycling, Inc.'s White City, Oregon landfill. The contact information for this facility is as follows:

Rogue Disposal and Recycling, Inc.  
8001 Table Rock Road  
White City, Oregon 97503  
Phone: 1.541.826.4949

## 5. Transportation Mode

Wastes will be transported by truck. Material transportation companies will be registered hazardous waste transporters in possession of a U.S. Environmental Protection Agency- (USEPA-) issued Identification Number and registered with the California Department of Toxic Substances Control. All drivers will possess a California Commercial Drivers License with a HAZMAT endorsement and a Hazardous Materials Transportation License as issued by the California Highway Patrol.

All vehicles used to transport material from the site will be properly registered, operated, and placarded in compliance with local, state, and federal requirements. Hazardous waste will be transported in general accordance with 49 CFR, Parts 100 to 199; 40 CFR, Parts 261 to 265; California Code of Regulations (CCR) Title 22, Division 4.5; CCR Title 13, Division 2; Oregon Administrative Rule (OAR) 340-100; and all other applicable state and federal regulations in effect at the time of transport.

The haul trucks will be typical of those used in the construction industry. Trailers will be covered with a heavy-duty plastic or other suitable material to minimize the potential for release of demolition debris or excavated materials during transport (as per California Vehicle Code Section 23114, Spilling Loads on Highways and Oregon

Revised Statute 818.300). Trailers with closed tops may also be used in place of open-top trailers.

## 6. Vehicle Routing

Trucks traveling to the project site and between the project site and the landfill facilities in Oregon and California will utilize designated truck routes where feasible. At the request of the City of Eureka, vehicles will access the project site from Highway 101/the 4<sup>th</sup> Street-5<sup>th</sup> Street couplet using I Street, and will egress along H Street.

Transportation routes to the waste disposal facilities have been selected to minimize the amount of time spent en route and within populated areas. The site and the exit route are within a Waterfront Commercial District. Vehicle traffic will transit adjacent to or through Office and Multi-Family Residential Districts, Waterfront Commercial District, and the Central Commercial-Live Work District. H and I Streets currently host commercial vehicle traffic traveling to and from the commercial establishments located along Waterfront Drive in the immediate vicinity of the site.

### Access to the Site

Vehicles will enter the City of Eureka on Highway 101, a Terminal Access (STAA) route, from either the north or south. If entering Eureka from the north, trucks will travel south on Highway 101/4<sup>th</sup> Street, turning right on I Street and traveling six blocks to the intersection of I Street and Waterfront Drive. At this intersection, vehicles will turn left to enter the site. If entering Eureka from the south, trucks will travel north on Highway 101/5<sup>th</sup> Street, turning left on I Street and traveling seven blocks to the intersection of I Street and Waterfront Drive. At this intersection, vehicles will turn left to enter the site (Figure 1).

### Egress from the Site

Vehicles will egress from the site via H Street. Depending upon activities at the site, vehicles may first exit to Waterfront Drive/1<sup>st</sup> Street, traveling north to the intersection with H Street, and then turning right onto H Street. Vehicles will travel seven blocks to the intersection of H Street and Highway 101/5<sup>th</sup> Street, where they will turn left onto Highway 101/5<sup>th</sup> Street. Vehicles would then follow Highway 101 north to exit Eureka (Figure 1).

**Travel to and from the Waste Management Inc. Landfill in Arlington, Oregon**

Vehicles will travel the large majority of vehicle miles between the site and the Waste Management Inc. landfill in Arlington, OR on California Legal Advisory Routes, Terminal Access (STAA), Oregon Group 1 highways, and National Network (STAA) routes. Vehicles will travel north on Highway 101 for approximately 88 miles, continuing on Highway 199 for approximately 80 miles before entering I-5 in Grants Pass. Vehicles will then travel north on I-5 for approximately 230 miles, joining I-205 for approximately 22 miles, before traveling east on I-84 for approximately 130 miles. The final 0.7 mile will be travelled on OR-19 to the landfill facility. Travel from the landfill facility to Eureka will be as described above, but in reverse order (Figure 2).

**Travel to and from Rogue Disposal and Recycling, Inc.'s Dry Creek Landfill in White City, Oregon**

Vehicles will travel the large majority of vehicle miles between the site and Rogue Disposal and Recycling, Inc.'s Dry Creek Landfill in White City, Oregon on California Legal Advisory Routes, Oregon Group 1 highways, Terminal Access (STAA), and National Network (STAA) routes. Vehicles will travel north on Highway 101 for approximately 88 miles, continuing on Highway 199 for approximately 80 miles before entering I-5 in Grants Pass. Vehicles will then travel south on I-5 for approximately 23 miles before exiting the highway on Exit 33. The final approximately 6.8 miles of the route will be on local roads. Travel from the landfill to Eureka will be as described above, but in reverse order (Figure 2).

**Travel to and from the Waste Management Landfill, Anderson, California**

Vehicles will travel the large majority of vehicle miles between the project site and the Waste Management Landfill in Anderson, California on California Legal and California Legal Advisory Routes. Vehicles will travel north on Highway 101 for approximately 10 miles, merging onto CA-299 and following it for approximately 140 miles. Vehicles will then travel south on Interstate Highway 5 for approximately 9 miles. The final approximate 6 miles of the route will be on local roads and segments of state highways. Travel from the landfill to Eureka will be as described above, but in reverse order (Figure 2).

## 7. Traffic Control and Loading Procedures

### Traffic Control

Site traffic would utilize the signal-controlled intersections at 4<sup>th</sup> and H, 4<sup>th</sup> and I, 5<sup>th</sup> and H, and 5<sup>th</sup> and I.

Flagmen will provide traffic control adjacent to the site. Flagmen will be located at the intersections of I Street and Waterfront Drive and G and H Streets and Waterfront Drive. Flagmen will temporarily stop traffic on Waterfront Drive as necessary to ensure the safe entry and exit of construction vehicles to and from the site. Each temporary stop would last no more than the time necessary for the construction traffic to either fully enter the site or to fully merge onto Waterfront Drive or H Street upon exiting. In addition to controlling traffic flow, flagmen will also be responsible for ensuring the safe passage of pedestrians and bicycle traffic along Waterfront Drive during project activities.

Flagmen would also be used during demolition and excavation activities at the site. During demolition and excavation, it may be necessary to temporarily close the westbound lane of Waterfront Drive along the southern boundary of the site. The fence that currently runs along the southern boundary of the site may be extended into the westbound lane to ensure the safety of the public and site workers and to accomplish the remedial goals of the project. Any lane closure would be conducted in compliance with local and state requirements. In the event of a lane closure, flagmen would be stationed at both ends of the closure area to ensure the safe passage of vehicles, pedestrians, and bicyclists along Waterfront Drive.

Trucks transporting clean soil to, or waiting to transport excavated material from, the site will be staged at an off-site location outside the core area of Eureka to prevent a backup of vehicles attempting to enter or exit the site. As vehicles are needed at the site, a vehicle movement coordinator will contact the drivers, at which time the vehicle will move directly from the off-site location to the site. This coordination of vehicle traffic will effectively mitigate congestion on local roads and the associated noise and air pollutant emissions that could result. The off-site staging location will be chosen by the transportation contractor; the City of Eureka and CalTrans Division 1 will be consulted to identify a suitable off-site staging location(s).

Vehicle traffic to and from the site will be timed and coordinated, to the extent feasible, to avoid the traffic-intensive hours of 0700 to 0900h (a.m. peak) and 1600 to 1800h

(p.m. peak). It is projected that approximately 30 trucks will enter and exit the site on a given day, depending upon the pace of excavation/demolition activities and the amount of material to be transported.

**Loading Procedures**

Soil and sediment will be excavated utilizing long-reach excavators and other equipment, and transported around the site utilizing an off-road dump truck. The box of the off-road dump truck will be lined to prevent the spillage of excavated materials. Upon excavation, surface soils will be sifted with a series of screens to separate metal debris from the site soil. Sifted debris will be segregated and stockpiled prior to transportation off site.

Temporary staging areas will be set up within fenced areas for excavated soil stockpiling. Excavated material will be placed on plastic sheeting and covered by plastic sheeting to prevent migration of contaminants, shield the material from elements, and mitigate fugitive dust and stormwater runoff. Separate staging areas will be set up for TSCA- and California-regulated hazardous waste classifications.

Composite waste classification samples will be collected from each stockpile at the frequency specified by the disposal facility. Upon receipt of waste classification sampling results, excavated material will be loaded onto trucks by excavators for off-site transportation and disposal. The beds of the trucks would be covered with tarps or other similar closure after loading to prevent the escape of material during transportation (per California Vehicle Code Section 23114 and Oregon Revised Statute 818.300).

Stockpiled materials may be wetted during loading to prevent the generation of fugitive dust. After each truck is loaded, it will move to a 'dry bath' area, where it will be inspected to ensure that the load is securely covered and that the tires of the haul trucks are reasonably free of accumulated soil prior to leaving the site. Trucks will be decontaminated in the 'dry bath' area by sweeping or brushing to remove visible soil and sediment.

While efforts will be made to ensure that site materials are removed from the tires and bodies of trucks prior to their egress from the site, it is possible that some material will be tracked onto public roads. Trucking areas will be swept at least once per day unless conditions indicate a greater frequency is appropriate. Parking areas, staging areas,

and traffic pathways on the site will be cleaned, as necessary, to control dust emissions. Adjacent public streets will also be cleaned, if necessary, when soil materials from the site are visible. Unpaved areas may be graveled to reduce dust emissions. Airborne dust will be monitored during excavation, loading, and hauling activities.

#### **Vehicle Placarding and Manifesting**

Vehicle placarding and manifesting will be completed and confirmed in the 'dry bath' area on-site as appropriate. The Hazardous Material Transportation Act (HMTA), 40 CFR 171-179 and 390-397, lists PCBs as "Other Regulated Material-E" (ORM-E); therefore, the TSCA-regulated soil excavated from the site will be handled as an ORM-E.

CalEPA/DSTC Uniform Hazardous Waste Manifests will be used for all shipments of regulated waste from the site. The USEPA identification numbers of the generator, the transporter, and the receiving facility will appear on each manifest. Manifests will be prepared by the Transportation Coordinator and signed by the Project Coordinator or his designee on behalf of UPRR. Manifest and load numbers will be logged into a manifest tracking system. All dump trucks will be properly placarded in compliance with 49 CFR 172 and Title 13 CCR Division 2, Chapter 6 before leaving the site. Placards will be placed on the sides and back of each truck and will comply with U.S. Department of Transportation (DOT) specification HM-126F and California Vehicle Code Section 27903.

Transport vehicles with non-hazardous waste will carry a non-hazardous waste manifest and will be clearly marked with a non-hazardous waste placard.

#### **8. Site Worker Parking**

Site workers will be instructed to use City of Eureka-owned parking lots that provide free parking. This will eliminate the possibility of site materials being tracked off site by employee vehicles, will reduce parking congestion on surrounding streets, and will reduce congestion on the site, allowing for easier movement of vehicles and increased safety.

**9. Record Keeping**

The contractor's project manager or designee will maintain daily field logs. Each daily log will include the date, time, weight/volume of soil/soil classification, trucking company, driver, and type of vehicle used. Soils that are classified as California-hazardous or TSCA will be delivered with a Uniform Hazardous Waste Manifest. Materials that are classified as non-hazardous will be accompanied by a bill of lading to track the shipment.

Each individual manifest or bill of lading will be completely filled out and signed by UPRR or a UPRR representative and transporter prior to leaving the site. Upon arrival at the disposal or rail transfer facility, the manifest or bill of lading will be given to and signed by a disposal or transfer facility representative.

**10. Health and Safety Plan**

Workers on the site, including the drivers transporting waste, will be properly trained in hazardous waste operations in general accordance with CCR, Title 8, Section 5192 and 29 CFR 1910.120. A HASP will be prepared prior to implementation of the project and will include trucking instructions. Each driver will be provided a copy of the trucking instructions/procedures prior to or upon first entry onto the site. Upon entering the site, the transport vehicle will be informed of proper procedures by the field staff.

**11. Emergency Service Organizations**

In the event of an accident, emergency services such as fire, medical, or law enforcement will be requested by the driver either over the truck radio or by calling 911. The driver will also contact the contact person listed below:

Contact Person	Affiliation	Telephone Number and Email Address
Jim Diel	UPRR	1.916.789.5184 (work) 1.916.261.5765 (mobile) JEDIEL@up.com

## 12. Contingency Plan

In the event of an off-site spill, accident, or breakdown during transportation of site-related wastes, the driver will remain with the truck until law enforcement or other assistance arrives. The driver will place traffic cones and keep observers from the area. The driver will not attempt to clean up spilled material; an emergency response team will handle the event.

If an off-site spill occurs while the vehicle is in the State of Oregon, the driver will, pursuant to OAR 740-110-0040, immediately notify all of the following:

- Oregon Emergency Response System telephone: 1.800.452.0311 when initiating the call within Oregon; and 1.503.378.4124 when initiating the call from outside Oregon
- National Response Center (Telephone: 1.800.424.8802)
- Waste Generator (Contact Jim Diel, UPRR, 1.916.261.5765).

The transporter will also note on the manifest the time and location of the incident and the type and amount of the hazardous waste which has spilled, and will within 30 days after the incident, the transporter will file a Hazardous Materials Incident Report (DOT Form F5800.1) with the Oregon Department of Transportation.

The most likely potential for spillage is an airborne release of excavated materials during transport due to a loose covering. If this occurs, the driver will immediately and safely stop and secure the covering. If the covering has ripped and cannot be used, the driver will obtain a replacement covering before continuing the trip.

The transportation contingency plan will not be provided in advance to emergency service organizations because hazardous waste from the site is not expected to pose an immediate threat to human health or the environment.