



Oregon

Kate Brown, Governor

Department of Environmental Quality

Western Region

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Feb. 23, 2017

Mr. Gary Honeyman
Union Pacific Railroad
Environmental Site Remediation Group
221 Hodgeman Street
Laramie, WY 82072

**Re: Approval to implement September 2016 Updated Remedial Action Plan
Ashland Railroad Yard, Ashland
DEQ File #1146**

Dear Mr. Honeyman:

The Oregon Department of Environmental Quality approves the September 2017 Updated Remedial Action Plan prepared by CH2M Hill on Union Pacific's behalf for cleanup of the Ashland railroad yard.

DEQ's review of the plan is summarized in the attached memorandum, including DEQ's conclusion that the plan responds appropriately to the 2001 Record of Decision for the site.


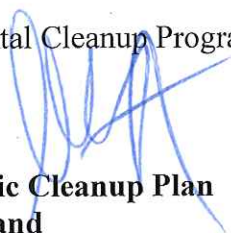
We look forward to seeing Union Pacific begin implementing the cleanup plan within the next few months. Please provide me with an update about Union Pacific's schedule by March 31, 2017.

Sincerely,

Greg Aitken
Project Manager

Encl: February 23, 2017 DEQ Staff Memorandum

ec: Aaron Hunt, Union Pacific
Mike Niemet & Mark Ochsner, CH2M Hill
Ann Seltzer, City of Ashland
DEQ File ECSI #1146

Date: Feb. 23, 2017
To: DEQ File No. 1146
Through: Donald E. Hanson, Environmental Cleanup Program Manager 
From: Greg Aitken, Project Manager 
Subject: **Approval of 2016 Union Pacific Cleanup Plan
Ashland Railroad Yard, Ashland**

1. Introduction

This memo supports DEQ's final approval of Union Pacific's September 2016 Remedial Action Plan, after consideration of comments during a January 2017 public comment period. The plan effectively implements the remedial action selected for soil contamination as described in DEQ's 2001 Record of Decision dated March 2001. The cleanup proposed by Union Pacific will result in the site being protective of human health and the environment, consistent with the cleanup standards specified in Oregon Revised Statute 465.315 and Oregon Administrative Rule 340-122-040.

Contaminants at the Ashland railyard include lead, arsenic, polynuclear aromatic hydrocarbons, and petroleum hydrocarbons in soil. DEQ's 2001 Record of Decision assumed future mixed commercial and residential site use, with no beneficial future use of shallow site groundwater given the availability of city water. The selected remedial alternative in the Record of Decision was excavation and off-site disposal of all soils exceeding residential cleanup levels; removal of facility operations features including ponds, building foundations, and monitoring/product recovery wells; and backfilling excavations with clean imported soil.

In 2006, Union Pacific submitted a cleanup plan to DEQ for excavation of about 35,500 cubic yards of soil to meet the cleanup objectives specified in the Record of Decision. After hearing significant objections from the community about the 3,300 truckloads of contaminated soil that would have been transported from the railyard on city streets, Union Pacific suspended work on the project. In 2010, Union Pacific resumed planning site cleanup of the railyard, and in 2016 submitted an updated plan that included use of railcars instead of trucks for offsite hauling of contaminated soils excavated from the railyard.

This memo summarizes DEQ's review of Union Pacific's 2016 Remedial Action Plan, and provides the basis for DEQ's conclusion that the plan responds appropriately to the requirements of the 2001 Record of Decision.

2. Site History, Contamination, and Selected Remedial Action

The Ashland railyard encompasses about 20 acres located at 536 A Street in the city of Ashland. It was used between 1887 and 1986 for fueling and repair of locomotives and railcars. The yard is currently

vacant, and it was fenced in 2006 to discourage trespassing. Though no longer evident (see Figure 1), at times in the past the railyard featured several prominent structures, including a hotel, passenger station, freight station, car repair shed, turntable, roundhouse, and a 3 million gallon aboveground bunker oil tank.

Properties next to the yard include a mixture of residential and commercial land uses, and the area has undergone significant revitalization as part of the Ashland Historic Railroad District. A mainline track and rail spur operated by Central Oregon & Pacific Railroad, Inc. are along the site's southern boundary.

Most railroad operations appear to have taken place many years ago in two main areas of the railyard (see Figure 2), as follows:

1) Locomotive fueling and service area, which included a former drip slab, roundhouse, and wastewater retention ponds. Steam locomotives were refueled from a 3,000,000 gallon bunker C oil tank in this area until diesel locomotives were brought into service in 1955. The drip slab was installed in the mid-1980s to contain diesel fuel and lubricating oils, and the roundhouse was used for welding, painting, lubricating, and cleaning of locomotive equipment. The ponds were used for retaining wastewater until they were decommissioned in 1978.

2) The car repair shed area had limited railcar maintenance activities, including welding, touch-up painting bearing replacement, and lubrication.

The environmental investigation of the site was completed in 1999 with DEQ's oversight, and it established the nature and extent of site contamination with collection and analysis of 138 soil samples, 12 groundwater samples, six sediment samples, and six surface water samples. The samples were analyzed for the chemicals known or suspected of having been used at the railyard given the nature of documented railroad operations and similarities with other railyards across the country. Sample results indicated that environmental contaminants occur in both of these two areas of the railyard, including:

- Lead and arsenic in surficial soils;
- Petroleum hydrocarbons in shallow soil and perched groundwater
- Polynuclear aromatic hydrocarbons in shallow soil

DEQ's concluded in its 2001 Record of Decision that these site contaminants could pose a risk to human health with future residential or commercial uses of Ashland Railroad yard. As long as the site remained vacant, however, DEQ determined that no unacceptable risks occurred for local residents or passers-by. DEQ also concluded that shallow groundwater contamination at the site would not pose a threat to human health because of the availability of city water to the property and the likelihood that groundwater contaminants would not migrate offsite. Shallow groundwater underlying the site occurs within silt and clay-rich sediments at a depth of up to 20 feet below ground surface. Groundwater yields are poor, and flow directions generally follow the northeasterly topographic gradient. Weathered bedrock underlying this perched groundwater was reported as dry, and is generally reported to extend several hundred feet in depth.

The 2000 Feasibility study evaluated the cleanup of the railroad yard to address potential future risk, including engineering controls and various contaminant treatment alternatives such as in situ bioremediation, phytoremediation, soil flushing, and excavation with offsite disposal.

DEQ determined in its 2001 Record of Decision that the best way to address site contamination would be to excavate contaminated soils from the contaminated areas of the railyard for offsite disposal at an

approved landfill, and to drain the former wastewater ponds and excavate contaminated soils and sediments from the ponds.

The 2001 selected remedial action also called for:

- Removal of the oil/water separator, tank saddles, and contaminated soils near the separator and saddles;
- Abandonment of the oil collection culverts and recovery wells, free-product observation probes, piezometer, and monitoring wells;
- Backfill man-made Ponds A and B;
- Excavate contaminated impacted soil in the Bunker C areas and dispose of the soils off site; and
- Remove ballast and residual petroleum associated with the former Drip Slab.

DEQ made its final decision to select these remedial actions for the Ashland railroad yard after inviting public comments and hosting a public meeting in 2001.

3. Previous Cleanup Actions

DEQ's file indicates that oil and diesel contaminated ballast and soil at the drip slab in locomotive fueling and service area was removed to a depth of about 3.5 feet in the mid-1980s. Recovery wells were also installed at this time to extract free product in the shallow perched groundwater and transfer it to an oil/water separator. Treated water was then discharged to the two ponds for evaporation. In the 1990s, the product recovery and oil-water separator system was decommissioned after the volume of free product diminished and could no longer be effectively extracted. The oil collection culverts, recovery wells, free-product observation probes, piezometers, and monitoring wells were also decommissioned. In 2013, Union Pacific removed the oil-water separator and product recovery tank, and tank saddles near the oil-water separator.

4. Updated Evaluation of Site Risks and Cleanup Objectives

The human health risk assessment incorporated in DEQ's 2001 Record of Decision used a standard methodology commonly followed at that time to evaluate individual contaminant concentrations detected in samples and compare them with DEQ's risk-based cleanup standards. The risk assessment divided the railroad property into four exposure areas to incorporate future development assumptions about the property. At the time the decision was issued, a conservative approach was used that assumed removal of all soil with individual sample data exceeding cleanup levels at each individual sample location, without calculating a site-wide exposure point concentration following DEQ guidance.

In 2010, Union Pacific re-examined site risks and the residual risks that would remain after implementing the excavation remedy selected in DEQ's 2001 Record of Decision. Union Pacific used updated cleanup standards and DEQ guidance, and they reconsidered the property as one exposure area associated with a single undivided residential tax lot rather than four individual exposure areas.

Current DEQ guidance considers that residual risk is acceptable when removal of contaminated soil results in an exposure point concentration based on the 90% Upper Confidence Limit of the mean of the

remaining samples is below the risk-based concentration for all constituents, and the cumulative risk is at or below 1×10^{-5} .

In 2010, DEQ approved Union Pacific's updated risk evaluation that incorporated a 90 percent Upper Confidence Limit methodology for determining soil excavation areas and volumes that are less than what was determined in DEQ's 2001 Record of Decision. The updated methodology is summarized below:

- All surface soil data (0-3 feet depth) was compared to residential cleanup values. Deeper soil data (3-15 foot depth) was considered separately and compared to DEQ's risk-based concentrations applicable to excavation workers, in accordance with DEQ guidance.
- The sample points with the highest concentrations were selectively and iteratively removed one at a time representative of soil removal activities. The concentration values were replaced with those representative of clean backfill materials. The 90 percent Upper Confidence Limit was re-calculated, and the process was repeated until the residual excess risk for the entire parcel under a residential setting was below the appropriate DEQ risk-based concentrations for residential exposure.

Using the approach described, approximately 18,700 cubic yards of soil were identified for excavation in order to achieve acceptable residual risk under DEQ's requirements. The updated risk evaluation and statistical examination of individual contaminant concentrations across the site resulted in re-configuration of the excavation areas as shown in Figure 3. These excavation areas are smaller than the areas anticipated in DEQ's 2001 Record of Decision, and the volume of contaminated soil proposed for excavation is less than the 35,500 cubic yards originally estimated in DEQ's 2001 Record of Decision. Nonetheless, DEQ believes that this modified excavation plan meets the remedial action objectives of the 2001 Record of Decision and does not fundamentally deviate from DEQ's selected remedial alternative.

5. Proposed Cleanup Plan

DEQ recommends that Union Pacific implement the following five cleanup actions, as they propose in their 2016 plan:

Cleanup Action #1: Excavate shallow contaminated soil

About 13,300 cubic yards of soil will be excavated from the two portions of the railroad yard property that were found to have most of the site contamination that was identified during previous environmental investigations. The two large areas targeted for excavation are distinguished in the cleanup plan as the "east" and "west" areas, and they largely coincide with the former Locomotive Fueling and Service Area and the Car Repair Shed (see Figure 3). The depth of each of the two excavation areas will be 2½ feet below the present ground surface.

Cleanup Action #2: Excavate Bunker C oil residue

About 5,400 cubic yards of soil saturated in residual Bunker C oil will be excavated from three areas near the former Locomotive Fueling and Service Area, as shown on Figure 3. The depths of these excavations will range from 3½ to 9 feet below the current ground surface.

Cleanup Action #3: Eliminate two wastewater ponds

The two former wastewater ponds will be drained of residual water and contaminated soils and sediment will be excavated. The ponds will be backfilled with clean fill to prevent surface water runoff accumulation.

Cleanup Action #4: Remove asbestos-containing materials

Asbestos-containing materials will be collected from two areas within and adjacent to the east excavation area. These materials include any suspected pieces of flooring material, fibrous insulation, and cementitious pipe, and will be segregated and disposed of separately from contaminated soil dug from site excavation work. Union Pacific added this cleanup action to those selected by DEQ in 2001, after it discovered isolated asbestos-containing materials at two locations in the east excavation area on e property in 2012.

Cleanup Action #5: Encumber Property Deed

Until a site development plan is proposed by the property owner, there is uncertainty about how the Ashland railroad property will be developed and used in the future. To ensure that residual site contamination does not threaten human health and the environment with any new development scenario, Union Pacific will accept an encumbrance on their property deed that requires risk assessment and environmental management plans be approved by DEQ before development of the railroad property can occur.

6. Implementation of Cleanup Plan

DEQ agrees with Union Pacific's plan to pursue these cleanup actions through a sequence of five distinct phases of work to best coordinate material handling, equipment availability, and minimization of construction nuisances to the community. The five phases of work and Union Pacific's estimated schedule are summarized below:

Phase 1 – Construct temporary rail spur and stockpile clean backfill – Spring 2017

Phase 1 will include the installation of a temporary rail spur in the central portion of the Site to allow for loading railcars away from the townhouses that are close to the main rail line.

This phase will also include hauling and stockpiling of clean backfill to the railyard using trucks. The best access route to the site is from Interstate 5 is via Oak Street and Clear Creek Drive. These city streets will be tested before and after trucking of backfill, to evaluate for possible roadway damage that could be caused by the estimated 1,100 truckloads that will be mobilized on city streets.

Phase 2 – Remove Bunker C oil residue and other localized soil contamination – Fall 2017

The three areas of Bunker C-saturated soils will be excavated during Phase 2, resulting in about 5,400 cubic yards of contaminated soil. Confirmation soil sampling and analysis will be performed to document the successful removal of contaminated soils from these three areas. Union Pacific will consult with DEQ staff before backfilling occurs to review the condition of excavation floors and sidewalls. If unexpectedly significant contamination remains, DEQ expects Union Pacific to consider the merits of

additional work to investigate and excavate unexpected contamination. This same approach will be taken in Phase 3 and 4 involving the west and east excavation areas.

Phase 2 of Union Pacific's proposed work includes excavation of petroleum-impacted shallow soils where several small abandoned structures were removed from the property in 2013. Residual water and contaminated sediments will also be excavated from the two former wastewater ponds at this time, before they are backfilled with clean fill.

The concrete foundation of the former car repair shed will be removed at this time to allow excavation of the west excavation area scheduled in Phase 4. Broken concrete from the foundation will be stockpiled. Foundations that are not within the excavation areas will be left in place, but any features that are above grade will be removed. This includes any remaining berms, piles of soil and debris, electrical supply lines and poles, fire hydrants, hose racks, and any other remaining above-ground features.

Phase 3 – Remove contaminated soil from east excavation area – Winter 2018

About 7,500 cubic yards of contaminated soil will be excavated from the east excavation area during Phase 3, and transported offsite with about 134 railcars. The depth of the excavation will be a uniform 2.5 feet below current ground surface. Vaults, pipelines, conduits, and other debris encountered within the excavation will be removed, stockpiled and disposed appropriately. Confirmation soil sampling will be performed to document residual soil contamination left in place after excavation work is completed. After excavation and confirmation sampling, the east excavation area will be backfilled with clean fill.

Phase 4 – Remove contaminated soil from west excavation area – Spring 2018

About 5,800 cubic yards of contaminated soil will be excavated from the west excavation area during Phase 4, and transported offsite with about 104 railcars. Vaults, pipelines, conduits, and other debris encountered within the excavation will be removed, stockpiled and disposed appropriately. The drainage ditch along the west boundary will be restored to drain surface water. Confirmation soil sampling will be performed to document residual soil contamination left in place after excavation work is completed. After excavation and confirmation sampling, the west excavation area will be backfilled with clean fill.

Phase 5 – Remove temporary rail spur, complete final site grading – Fall 2018

The temporary rail spur installed in Phase 1 will be removed and graded. Soil confirmation samples will be obtained from the railcar loading area after the track has been removed to verify that no contaminated soils were inadvertently released in this area. Final grading and equipment demobilization will occur at this time, along with hydro-seeding of bare soil to control erosion.

7. Project Completion

After the cleanup is completed in late 2018, DEQ understands that Union Pacific will submit a project completion report for review and approval in early 2019. If DEQ believes that the cleanup is complete, DEQ will request that Union Pacific encumbers the property deed with an Easement and Equitable Servitude that requires environmental risk assessment and DEQ approval before development of the railroad property can occur.

Once this deed restriction is recorded with Jackson County, DEQ will recommend a Certification of Completion and/or a No Further Action determination. A public review and comment opportunity will occur before DEQ makes its formal determination that no further action is necessary for the property, as long as it remains one contiguous parcel of land.

8. Approval

DEQ requests that Union Pacific proceed with site cleanup as described in their 2016 Remedial Action Workplan. This cleanup satisfies the requirements of DEQ's 2001 Record of Decision and responds to community requests to use railcars rather than trucks to haul contaminated soil from the railroad yard. It will result in the permanent removal of most of the legacy contamination at the railyard and will enable Union Pacific to potentially sell all, or a portion, of the property at some point in the future.

9. Public Participation

DEQ used its regulatory discretion under Oregon Administrative Rule 340-122-0100 (5) to expand public information and comment opportunities beyond the minimum required for approving implementation of Union Pacific's plan.

DEQ considered the substantive public comments received in response to the following public participation opportunities:

- 30-day formal public comment period offered from Jan. 1 to Jan. 31, 2017.
- Fact sheet with cover letter (see Attachment A) mailed to about 750 Ashland residents and businesses located close the site and along the routes to be used for trucking clean backfill to the site.
- Public information meeting hosted by DEQ in Ashland on Jan. 19, 2017.
- News release issued to the local media, which resulted in several media reports.
- Public notice published in the Ashland Daily Tidings, Medford Mail Tribune, The Oregon Bulletin and on DEQ's website.

Public comments and DEQ's responses are provided in Attachment B for the administrative record.

10. Final Decision

DEQ approves Union Pacific's September 2016 cleanup plan for the Ashland railroad property, and requests that it be implemented consistent with the proposed schedule.

Attachment A – December, 2016 Fact Sheet

Fact Sheet

Ashland Railroad Yard Cleanup

What's happening?

The Oregon Department of Environmental Quality is recommending implementation of Union Pacific Railroad's plan to begin clean up of the Ashland Railroad yard in mid-2017. The cleanup plan satisfies the requirements of DEQ's 2001 Record of Decision and responds to community requests to use railcars rather than trucks to haul contaminated soil from the railroad yard.

The railroad yard cleanup will remove most of the contamination from the site and enable Union Pacific to potentially sell all, or a portion, of the property at some point in the future. The plan was presented to the Ashland City Council during its Oct. 6, 2015 meeting.

Public information meeting Jan. 19, 2017
DEQ will host a public meeting to discuss the plan at 7:30 p.m. Thursday, Jan. 19, 2017 at the Ashland Community Center, at 59 Winburn Way. DEQ is also accepting public comments on the cleanup plan through Jan. 31, 2017.

Overview of the 2016 cleanup plan
Union Pacific's 2016 cleanup plan and other documents are available electronically at <http://www.deq.state.or.us/ia/ecsi/ecsi.htm> by searching for site ID No. 1146 or Site Name "UPRR-Ashland".

The plan includes the following key actions, consistent with DEQ's 2001 Record of Decision:

- Excavate about 17,500 cubic yards of shallow contaminated soils from two contaminated areas.
- Remove and dispose of contaminated soil and debris from two man-made ponds and a former locomotive drip slab.
- Transport contaminated materials to a permitted landfill using railcars.
- Backfill and re-grade excavated areas using clean soil brought into the railroad yard from offsite using trucks.
- Stockpile clean soil and contaminated soil temporarily onsite in order to coordinate with excavation activities and the delivery of railcars.

The work will take place in several phases and is currently scheduled to begin in mid-2017 after Union Pacific retains contractors and builds a temporary rail spur to allow for railcar loading at the center of the site.

Background

The Ashland railroad yard is a vacant 20-acre parcel owned by Union Pacific, which is responsible for environmental cleanup under DEQ's supervision. The railroad yard was operated by the Southern Pacific Railroad Company between 1887 and 1986 as a locomotive fueling, maintenance, and railcar repair facility near downtown Ashland. Most buildings were removed from the yard in the 1980s. A small portion of the railroad yard is currently leased to the Central Oregon and Pacific Railroad and is used on occasion for switching and storing railcars.

Environmental investigations in the 1990s revealed that shallow soil and groundwater in portions of the railroad yard are contaminated with petroleum hydrocarbons, polynuclear aromatic hydrocarbons, lead and arsenic. Contaminant levels are higher than DEQ's cleanup standards for human health if the property were to be developed for residential or commercial uses.



Vacant Ashland Railroad Yard

In 2001, after reviewing cleanup options for the property and soliciting public comments about the preferred cleanup method, DEQ decided that excavating contaminated soils and disposing of the soils at an approved landfill would be the best cleanup alternative for the site and would make future development possible for commercial and residential uses allowed under city zoning.

In 2006, Union Pacific proposed to excavate about 35,500 cubic yards of contaminated soil to meet DEQ's criteria for unrestricted residential use. DEQ did not approve the 2006 plan due to concerns raised by Ashland about the use of trucks to haul contaminated soil on city streets.



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**Attachment B – Public Comments Received During January 2017 Public Comment Period,
with DEQ responses**

1. Email received 12/30/2016:

I appreciate your advising us of the RR Yard cleanup, it's long past due. Please tell us the planned load size, hours of operation, daily frequency and weeks/months duration of diesel trucks bringing fresh soil loads up Oak street and returning empty during the project; and steps to be taken to prevent dust and road hazards. We live on Oak Street and were chagrined and surprised to learn that replacement soil is being hauled in over Oak rather than by rail car; while contamination was indeed to be avoided we Oak Street residents and neighbors who complained originally were always concerned also about the noise, and danger to us and our families of added heavy soil carriers not to mention the wear and tear that loaded trucks have on a major feeder like Oak in a City like Ashland which continues to neglect adequate street maintenance. As a daily cyclist up and down Oak and other streets, believe me I feel the surface conditions. I'm sending copies to Mayor and Council plus a few neighbors.

DEQ response:

I can't give you details yet about specific daily trucking operations related to this cleanup project, but I hear your concern and I will have that information available when the project begins later this year.

The City of Ashland has offered to post updated information weekly on their website about project status, including trucking and rail operations, when work begins.

As far as trucking of clean soil on city streets is concerned, I'll pass your concerns about noise, dust, and roadway damage over to Union Pacific for their consideration.

We understand that standard industry practices will be used for trucking operations, and that the city of Ashland will monitor roadways for damage and require Union Pacific to make repairs if necessary.

We believe that Union Pacific's decision to use railcars instead of trucks to haul the excavated soil from the property benefits local residents by reducing the total number of truckloads involved in this project by 50%, from 2,200 to 1,100 truckloads.

2. Email received Jan. 30, 2017:

I was glad to learn that Union Pacific will be removing contaminated soil from the railroad yard by train. How perfect and convenient! What I don't understand is giving them permission to bring clean fill in via Oak Street, where I live. Not only am I concerned about the noise and traffic of numerous loads (how many do you think?) on this residential street, but also the wear and tear on Ashland's streets. I am not able to attend the public meeting this Wednesday, so I wanted to alert you to the concern I and my neighbors have about this. Why would Union Pacific need to do it this way when they have a railroad right where it is needed.

DEQ response:

Please see DEQ's response to comment #1 above about the difficult logistics of using railcars to haul clean backfill into the railyard. Union Pacific's consultant estimates that about 1,100 truckloads of clean backfill will be needed for the railyard property. Since only clean backfill would be hauled in trucks, we don't believe there would be any environmental risks associated with this transport option. In addition, it is difficult to find clean fill sources adjacent to rail lines. We understand your concerns about noise and traffic nuisances, and we understand that Union Pacific will take extra measures to schedule the trucking operations in a manner that reduces these nuisances. We are also aware that the city of Ashland will require Union Pacific's contractors to undertake roadway testing and any necessary repairs.

3. Jan. 24 letter comment:

DEQ stated at the 1/19/2017 Ashland public meeting that there is "no off-site contamination". In reviewing the 1999 Remedial Investigation Report, I found that several soil samples were collected from 0 to 2.5 feet below ground surface off site, with low amounts of hydrocarbons, 5-10 parts per million (ppm) lead, and 1.1 to 2.1 ppm arsenic in soils northeast of the site. Deeper soil samples were not collected. Information from the Remedial Investigation Report identifies arsenic levels of 1.2-3.9 ppb in water samples collected from 5 off-site hydropunch wells, with additional concentrations of barium, chromium, lead and mercury in one of the wells. Several of the hydropunch wells-were reported-as dry. While, after reviewing the Remedial Investigation Report, I agree with DEQ that there is probably not a large extent of off-site contamination of soils and groundwater, there is documentation of its presence, both up and down gradient of the site.

DEQ response:

It is correct that there were low detections of various organic and inorganic analytes in some of the samples referenced here, but the concentrations were either below residential risk-based cleanup levels used to establish human health risks, or, in the case of metals, were comparable to established naturally occurring background levels for the Rogue Valley area.

4. Jan. 24 letter comment:

No remediation of the center portion of the site, including around the "natural pond" is required by DEQ in the 2016 Clean Up Plan. Contaminant concentrations in the sediments of the pond were recorded as follows: Arsenic - 16 ppm, lead -160 ppm, chromium -47-61 ppm, barium 147-225 ppm, cadmium - 0.35 ppm and mercury - 0.39 ppm. These levels, except for lead, were below the levels of concern for aquatic organisms in effect at the time. Other soil samples collected near the natural pond (also in the area not to be remediated) were found to have 310 to 1000 ppm lead and 2-15 ppm arsenic. According to the UPRR Feasibility Study Report of November 15, 2000, pp 2-16, the "Natural Pond" in the north center of the site is designated as wetlands with beneficial uses including the capacity to maintain aquatic life. It is possible that this wetland area and pond are fed by shallow groundwater at the site as well as by rainfall, and as such may continue to receive contamination from portions of the site that do not receive remediation, particularly the area of relatively heavy contamination just south of the pond.

DEQ response:

DEQ agrees that concentrations of metals in sediment from the "natural pond" are below human health and ecological screening values, except for lead. The referenced lead concentration of 1,000 ppm in a soil sample collected near the natural pond exceeds the residential risk-based concentration for residential exposure, so further environmental investigation and cleanup could be needed if this portion of the property were ultimately subdivided and used for residential purposes. Jan. 24 letter comment:

Groundwater contamination at the site has been noted at depths of 6 to 20 feet below surface. The fact that free floating product has been documented at the depth of this shallow groundwater indicates that the soils are heavily contaminated down to this groundwater level. Removing contaminated soils from the site to a depth of 2.5 feet will remove much of the surficial contaminated soil, but will leave residual soils saturated with hydrocarbons to continue to contaminate the shallow groundwater. I appreciate that DEQ is requiring the removal of soils in areas of residual Bunker C oil to be excavated to deeper depths in some selected areas. The 2016 Plan notes that "Confirmation soil sampling will be performed to document residual soil contamination left in place". If elevated concentrations of soil contamination are found below the depth of the planned excavation work, it would be most protective if additional soils with high contamination were removed at that time. At the 1/19/17 meeting in Ashland, CH2MHill stated that if additional contamination is found below 2.5 feet, it will be excavated. If that is an accurate statement, DEQ's 2016 Clean Up Plan verbiage should be updated to include that process.

DEQ response:

DEQ's final staff memorandum approving the cleanup plan will include the expectation that Union Pacific's environmental consultants will consult with DEQ staff before backfilling occurs to review the condition of excavation floors and sidewalls. If unexpectedly significant contamination remains, DEQ expects Union Pacific to consider the merits of additional work to investigate and excavate unexpected contamination.

5. Jan. 24 letter comment:

The ROD references a drinking water standard for arsenic (50 parts per billion (ppb)) that was in effect at the time the site water samples were taken (showing on site concentrations of 6-65 ppb). The new (2001) arsenic drinking water standard is 10 ppb, with a Maximum Contaminant Level Goal (MCLG) of 0 ppb, indicating a possible issue if arsenic contamination from shallow groundwater at the site is allowed to migrate to areas of groundwater use. In addition, the elevated arsenic concentrations in the "Natural Pond" (14-18 ppb), which is not included in the 2016 Clean Up Plan, may pose a higher hazard than considered at the time the ROD was written. If there are other standards, including Aquatic Criteria or Risk Based Concentrations that have changed since the ROD was written, these should be addressed in the Clean Up plan.

DEQ response:

DEQ recognizes that the drinking water standard and risk-based concentration for arsenic in groundwater have been lowered since publication of the ROD in 2001. Nonetheless, DEQ has ruled out current or future beneficial water use of shallow groundwater in the vicinity of the railyard property, and therefore believes that that this risk exposure pathway is not complete. Furthermore, DEQ is aware that arsenic

levels approach or in some cases exceed the drinking water standard in some drinking water supply wells in the Rogue Valley, due to naturally occurring arsenic in geologic materials common in the Rogue Valley. The arsenic detected in shallow groundwater during the 1999 Remedial Investigation of the railyard property likely originates from these natural sources.

6. Dec. 31, 2016 email comment

...In the background/overview section, Union Pacific's original plan called for removing 35,500 cubic yards of material; however, the current plan calls for removing only 17,500 cubic yards, less than half of the original figure. I am curious why 18,000 cubic yards of material that were identified as contaminated are apparently now deemed safe.

DEQ response:

The original estimate of 35,500 cubic yards was based on DEQ risk assessment guidance at the time which targeted reduction of contaminant levels at specific sample locations below DEQ's cleanup standards, uniformly across the property. The new, reduced estimate was determined in 2010 using updated DEQ guidance that allows for the use of statistics to establish how much excavation would be necessary to reduce an overall site-wide contaminant level below DEQ's cleanup standards, assuming that the property would be used as a single 20-acre residential lot. The benefit with this approach is that Union Pacific believes that the proposed cleanup will be sufficient to sell the property as a single tax lot, with DEQ's determination that it meets DEQ's cleanup standards as a single 20-acre residential lot. DEQ agreed to this approach, with the requirement that any future subdivision or development plan would need further environmental review and possible cleanup depending on residual contaminant levels remaining in certain portions of the property and information about how people would actually use the property in the future.

7. Dec. 31, 2016 email comment

Two areas are planned for cleanup across the site but I didn't see the data for the rest of the 20-acre site; shouldn't that data be included in this document?

DEQ response:

Environmental data from sampling across the property is available comprehensively in the 1999 Remedial Investigation prepared by Union Pacific's consultant. It is available on our website from this link: <http://bit.ly/2kfDJxh>

8. Dec. 31, 2016 email comment

A lot of thought and effort has gone into the cleanup plan. We appreciate your efforts to share this information with the community. These aspects of the plan were especially positive:

- *The use of railcars to transport the contaminated soils.*
- *Aggressive efforts to keep dust to a minimum, including scheduling the work during the cool and damp time of the year.*
- *Oversight by DEQ.*
- *Prevention of water runoff into the downhill neighborhood.*

It would be great if railcars could also be used to bring in the "clean" soil, but we understand the logistics make this difficult. Also, it was quite disturbing to hear that additional cleanup involving soil removal and replacement will likely be necessary once the railroad sells the property for development. At such time, the rail cars would not be available to transport the contaminated soil, it is our understanding. If such delayed cleanup cannot be avoided, isn't it possible that some sort of agreement could be made in which the railroad would use its cars for transporting the contaminated soil? After all, the railroad is responsible for the contamination.

DEQ response:

DEQ would like to clarify that "additional cleanup involving soil removal..." is not a foregone conclusion if the property is sold for development. If the property is subdivided and developed, DEQ will review environmental data and determine whether or not the potential for environmental risks occurs at the specific locations where people may come into contact with remaining site contamination (e.g., residential use). Given the costs of cleanup, DEQ's experience with developers of contaminated sites is that they will often look for ways to design development in a manner that avoids significant cleanup. For example, a developer may choose to locate paved parking areas over contaminated soils, rather than playgrounds where exposure would be a much bigger concern and expensive cleanup involving excavation might be required.

9. Jan. 25, 2017 email comment, edited for clarity:

Railroad property can be bought, as is, for solar, (placed on cement blocks) for ~\$1.5M. In the next 5 days! Know of anyone? That's 4Mw in an ideal location. UPRR Wyoming boss just wants to get rid of it, and super legally ("clean" sounds good). He doesn't care if UPRR makes or losses money on it. Setting solar on brownfields has been around for a long time. Nobody involved has ever heard of it. Solar dollars are real now.

Four futures:

- 1.) 20 gets solar as brownfield. Ownership stays with UPRR. UPRR gets all financial incentives and becomes an environmental hero.*
- 2.) Somebody else buys 20 "as is" for solar, gets all financial incentives and becomes an environmental hero.*
- 3.) Cleaned up and sold.*
- 4.) Cleaned up, solarized, and dripped farmed in between.*

*20 worth uncleaned: ~\$1.5M
20 worth cleaned: ~\$6.2M
Total cost to clean: ~\$3-5M*

DEQ response:

DEQ appreciates the public's interest in proposing specific ideas about how to develop the railyard property, but will leave questions and decisions about land use planning to the property owner (Union Pacific), land developers, and the city of Ashland. Inquiries for reliable information about marketing and valuation of the Ashland railroad yard property should be made directly to Union Pacific's Real Estate Division.

10. Jan. 25, 2017 email comment

I thought [the public meeting] went well and your team's explanation was thoroughly clear and it seemed like the audience left educated and mostly satisfied. Although there were not any kudos considering the effort to date, I sensed that's a foregone conclusion and the cleanup must proceed.

I would like two outcomes for this property as I'm sure DEQ does. First, to have the property cleaned and receive a clean bill of health for the level as designated. Second, to insure there is no future stigmatization with this property. This would include "clear title" with every future development application from DEQ.

DEQ response:

...it was a pleasure meeting you at our public meeting last week, and hearing your concern about long term perceptions of the railyard property. I understand your interest in ensuring that future land development incorporates future DEQ actions that lead to clear title and no stigmatization of property. We look forward to working with any future landowners and developers to accomplish that objective, as necessary.

11. Letter dated Jan. 9, 2017

1) First, I would like to thank you, your extended staff at DEQ and the Union Pacific Railroad Company staff whom have worked together since the 1990's to achieve the overarching goal of cleaning the site from any contaminating pollutants. Everyone's efforts have been professional and all documentation transparent and thorough.

2) My second question relates to the Work Plan's Schedule, Page 6-1, specifically the timing of Phase III and IV. Could the two phases be reversed? I ask this out of interest for the future residents of the two buildings noted above who will be occupying the buildings by the late summer of 2017 and their likely concern of possible dust during the initial removal and backfill periods. As such, based on the schedule and provisions noted within the Erosion and Storm Water Management section, 3.7, it occurs that it may be more prudent to flip the timing so that not only the removal occurs during the colder climate period, but so does the backfill. Further, one never knows about possible delays in construction or for that matter, the subject buildings' occupancy. If there was a delay with our construction, but not the remedial work, there's maybe a window of opportunity where residents are less exposed to potential dust issues as described.

3) Is there anything we should be communicating to our contractors and sub-contractors relating to the cleanup activities based on the site's close proximity to the cleanup areas and the contractors' "typical" extended outdoor hours? In case of heavy winds, which occur regularly in Ashland during the winter and spring months, is there any indicators that would cease removal activities and/or warnings of such conditions? Based on this question, could we obtain a list of contacts, on-site foreman and project manager cell phone numbers?

4) I'm encouraged by the Grading Plan, Section 3.8, specifically as it relates to matching the grade around the ponds to avoid water accumulation, grubbing of the Blackberries and the elimination of the steep berms that now face Rogue Place / Russell Drive. The berms in particular, sitting directly behind

the curb of the street are not only difficult to manage from a maintenance perspective, but they eliminate the ability to install a sidewalk for pedestrian refuge. As you can see from the City's Draft Master Plan, inserted below, the ponds/berm area are located within an area of the Master Plan (per City Standards) that call for a future building along the street (entrances at street grade) and future rear parking area, similar to what we're now constructing on Lot #6. As such, I'm simply pointing out that although it appears the Grading Plan intends to match the adjacent grade on Lot #6 and establish the initial grading for the site's eventual building construction, it might be prudent to verify the plan in order to avoid additional excavation of this site's future building, let alone sidewalk along the street curb.

5) I'm interested about the logistics of the backfilling, per Section 3.11. Could you confirm the backfilling would be from Clear Creek Drive and not Rogue Place or Russell Drive? Obviously, it's understood some access will be needed from these streets in order to backfill the adjacent ponds from the surrounding berms, but the plan is not very clear as to the primary access routes for the backfill material.

Again, thank you and those involved working to get this area cleaned. This site is a very important puzzle to the City of Ashland's future growth needs and will likely accommodate a significant majority of the City's economic vitality and workforce housing over the next 25 years.

DEQ response:

Union Pacific has indicated a willingness to consider your construction schedule in deciding when to excavate the east side of the railyard property. Please contact CH2M engineer Mike Niemet at (541) 768-3726 directly for further coordination. Union Pacific's work schedule is likely to evolve over the next few months and we expect they will be forthcoming with schedule updates using the City's website.

DEQ expects that railyard cleanup operations will be entirely contained within the Union Pacific property, with dust monitoring to be conducted in the work zone onsite as well as the site perimeter. However, we will ensure that Union Pacific's remediation contractor information will be readily available once work is started in case there is a need to contact them.

Union Pacific has told DEQ that since the fate of the railyard property is unknown at this time, they are unable to make assumptions regarding final grade elevations. We understand that their grading plan for cleanup work is intended solely to improve the ease of regular site maintenance activities.

12. Jan. 2, 2017 email

If the topsoil at this site is not removed and replaced with "clean soil", what evidence is there that the current concentrations of arsenic, lead and hydrocarbons in the soil at this site would pose a health hazard to potential future occupants?

DEQ response:

Until we know more about specific future land uses at specific locations on the railyard property, we can't determine the potential for human health risk. We do know based on soil sample results

that certain sample locations on the property exceed DEQ's residential and occupational risk-based concentrations and therefore could pose unacceptable risk for certain uses in specific areas. The two large proposed excavation areas generally include the highest contaminant levels found on the property, and may pose a risk for any use other than the current vacant, abandoned condition of the property. It is for that reason that Union Pacific has prioritized these areas for cleanup. Union Pacific has indicated to DEQ that this cleanup approach gives them more options for marketing the property if they decide to sell it.