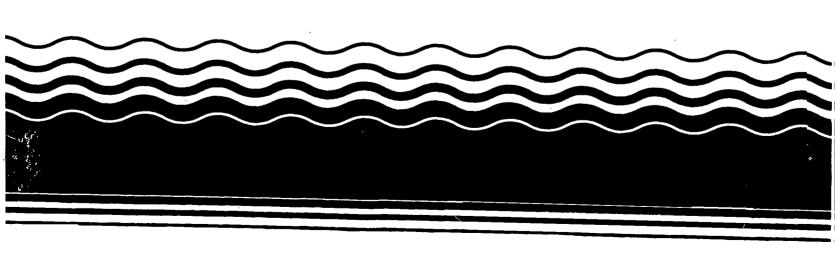
PB97-964506 EPA/541/R-97/128 January 1998

EPA Superfund Record of Decision:

Western Pacific Railroad Co. Oroville, CA 9/30/1997



Record of Decision

Western Pacific Railroad Oroville, California

September 30, 1997

U.S. Environmental Protection Agency Region IX, San Francisco

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RECORD OF DECISION

Western Pacific Railroad Superfund Site Oroville, California EPA ID# CAD980894679

PART I - DECLARATION

1.0 Statement of Basis and Purpose

This Record of Decision (ROD) presents the selected final remedial action at the Western Pacific Railroad Superfund Site (the Site) in Oroville, California. This document was developed in accordance with the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), 42 U.S.C. §§ 9601 et seq. and, to the extent practicable, in accordance with the National Oil and Hazardous Substances Pollution Contingency Plan (NCP).

This decision is based on the Administrative Record for the Site.

The State of California Department of Toxic Substances Control, as the lead state agency, concurs with this remedy.

2.0 Assessment of the Site

Actual or threatened releases of hazardous substances from this site, if not addressed by implementing the response action selected in the ROD, may present a threat to public health, welfare, or the environment.

3.0 Description of the Remedy

The remedy the Environmental Protection Agency has selected for soil includes excavation of approximately 2,000 tons of soil in the area with the highest levels of contamination. The remedy also includes restrictions on the future use of the property. This remedial action is the final action for the Site. This Record of Decision also selects the aquifer cleanup standard for the site. The selected remedy includes:

- excavation of the top 1 foot of soil in the most contaminated 1 acre;
- disposal of contaminated soil off-site in compliance with the Off-Site Rule;

- institutional controls including but not limited to restricting the future use of the site to industrial use only, and
- extraction and treatment of contaminated groundwater.

4.0 Statutory Determinations

Director, Superfund Division, EPA Region IX

The selected remedy is protective of human health and the environment, and complies with the Federal and State requirements that are legally applicable or relevant and appropriate to the remedial action, and is cost-effective. This remedy uses permanent solutions and alternative treatment technologies to the maximum extent practicable. However, because treatment of the low-level threats at the Site was not found to be practicable, this remedy does not satisfy the statutory preference for treatment as a principal element. Because this remedy will result in hazardous substances remaining on-site above health-based levels, the five year review will apply to this action.

Keith Taka	9-30-97
Keith Takata	Date

-2-

RECORD OF DECISION

Western Pacific Railroad Superfund Site
Oroville, California
EPA ID# CAD980894679

PART II - DECISION SUMMARY

1.0 Site Name, Location and Description

The Western Pacific Railroad Site is located at the south end of the City of Oroville in Butte County, California. The railroad property covers approximately 90 acres and is bounded on the west by 5th Avenue, on the east by Baggett Marysville Road, and on the south by 5th Way. The Union Pacific Railroad line runs north/south through the property (see Figure 1).

Of the 90 acres owned by Union Pacific Railroad, approximately 37 were evaluated by EPA for hazardous waste contamination based on historical site use. The 37-acre Study Area consists of two adjacent parcels at the east edge of the property where the historical site operations occurred. These two parcels are the Fueling Area and the Unfenced Site Area, approximately 10 and 27 acres, respectively (see Figure 2).

2.0 Site History and Enforcement

The Western Pacific Railroad Site was an active fueling and maintenance yard from the 1880's until 1970. Activities included locomotive fueling, routine maintenance, and railcar repair such as welding, painting, fabricating and machining of railcars. In 1970 Western Pacific Railroad (WPRR) ceased its maintenance and repair activities and leased the Fueling Area to Solano Railcar Company (SRC), an independent railcar firm. SRC's activities included sandblasting, painting, welding, and machining railcars up until approximately 1991. WPRR and the subsequent owner of the property, Union Pacific Railroad (UPRR), continued to use the fueling tracks and drip pans until 1991. In 1991 UPRR dismantled the remaining structures in the Fueling Area. The Fueling Area is currently inactive and surrounded by a fence. UPRR continues to run daily trains on the main rail line.

The Western Pacific Railroad Site was initially investigated by the California

Regional Water Quality Control Board (RWQCB) in the 1980's. In 1989 the RWQCB issued an Order to UPRR to investigate an on-site waste pond and the Site groundwater. In 1989 the waste pond was excavated and backfilled with clean fill; groundwater monitoring wells were installed in the fueling area; and a leaking underground storage tank at the southeast edge of the Fueling Area was removed.

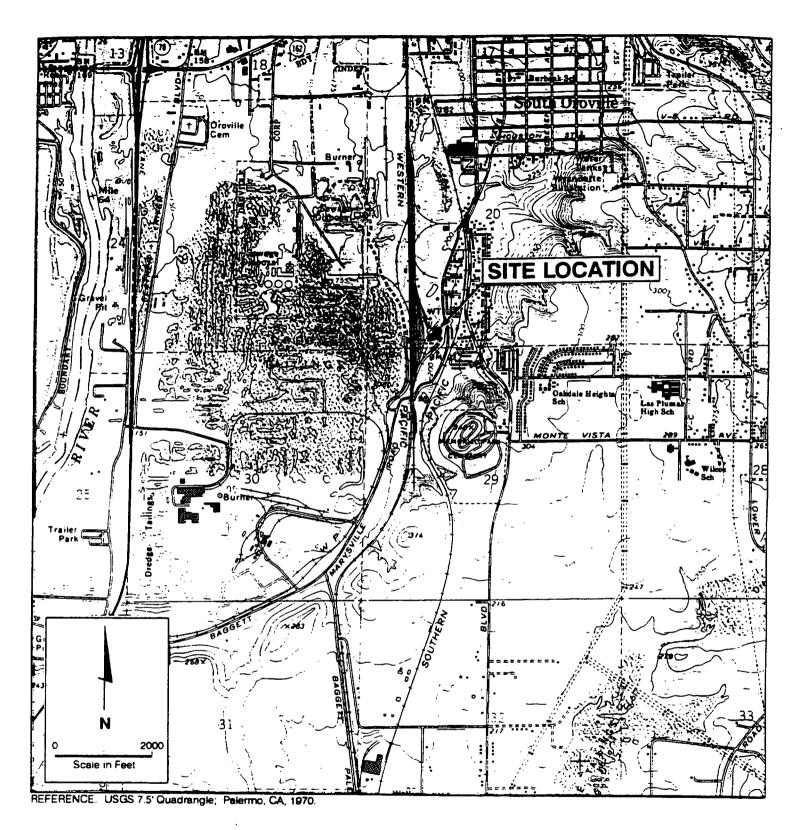
On August 30, 1990, the Site was added to the National Priorities List. EPA sent a General Notice letter of liability to UPRR on August 29, 1991. On August 27, 1993, EPA issued an Action Memo selecting groundwater extraction and treatment to contain contaminants of concern at the site. On August 27, 1993, EPA and UPRR signed an Administrative Order on Consent for Removal Action wherein UPRR agreed to implement a pump and treat system consistent with the Action Memo. On November 29, 1993, EPA sent UPRR a Special Notice letter asking UPRR to submit a good faith offer to conduct the remedial investigation and feasibility study for the Site. EPA and UPRR signed an Administrative Order on Consent on March 15, 1994, wherein UPRR agreed to conduct the remedial investigation and feasibility study.

In 1994, in compliance with the Removal Action Order, UPRR installed a system to pump and treat groundwater contaminated with volatile organic compounds. The source of these contaminants was the leaking underground storage tank in the Fueling Area. The primary contaminant is 1,1-DCE, with 1,1,1-TCA, 1,1-DCA and TCE present in lower concentrations. The system included one extraction well, an air stripper, and a reinjection well. In 1997, a second extraction well with a soil vapor extraction unit was installed in order to optimize the pump and treat system. The removal action currently being implemented has substantially reduced the concentrations of constituents of concern in the aquifer.

3.0 Highlights of Community Participation

EPA sent a fact sheet to the community in January 1994 announcing the installation of the groundwater pump and treat system. This fact sheet also discussed the future soil investigation at the Site. EPA released a second fact sheet in June 1997 to update the community on the groundwater cleanup and to inform the community of the results of the soil Risk Assessment and Feasibility Study. The Proposed Plan and the Administrative Record were released to the public in July 1997. These documents were made available to the public at the Butte County Library in Oroville and at the EPA Records Center in San Francisco. A public comment period was held from July 16, 1997 through August 15, 1997. In addition, a public meeting was held on July 29, 1997.

A response to comments received during the public comment period is included in the Responsiveness Summary, which is part of this Record of Decision.





SITE LOCATION MAP

Draft Focused Feasibility Study Report Western Pacific Railroad Superfund Site Oroville, California

4.0 Scope and Role of Response Action

This ROD addresses contaminated soils impacted by waste oil and other maintenance wastes and selects the final aquifer cleanup standards. It is anticipated that the groundwater cleanup standard will be achieved at the conclusion of the removal activities.

The selected remedial action is for the surface soil in the Fueling Area and will address the threat posed by polycyclic aromatic hydrocarbons (PAHs).

5.0 Summary of Site Characteristics

A remedial investigation (RI) was conducted at the Western Pacific Railroad Site by UPRR as required by the Administrative Order on Consent. RI activities included surface and subsurface soil sampling and surface water pathway investigation. Soil samples were taken over a 37-acre area east of the train tracks (see Figure 2). This study area is comprised of two parcels; the 10-acre "Fueling Area" and the 27-acre "Unfenced Area". The Fueling Area is where the railyard fueling and maintenance operations took place. Structures included a roundhouse and turntable, above- and below-ground storage tanks, below- and above-grade oil/water separators, fueling tracks and drip pans. All of the structures have been dismantled, and the area is currently inactive and surrounded by a fence. The Unfenced Area is presently undeveloped and contains a former railroad turnaround track. Portions of the Unfenced Area were used as a railroad Marshalling Yard and a lumber transfer station. No maintenance activities occurred in the Unfenced Area.

The surrounding land use is a mixture of residential and light industrial. There are residences directly across Baggett Marysville Road at the east and northeast portions of the Site and several residences to the south of the Site. The Koppers Superfund Site is approximately one mile southwest of the Site.

A public drinking water well owned by UPRR and leased to the California Water Service (CWS) is located just west of the tracks. CWS has agreed to take the well out of service until further notice by UPRR.

The regional surface water flow is west towards the Feather River, located approximately one mile west of the Site. A series of drainage ditches and culverts divert surface water runoff away from the Site.

During the remedial investigation the soils were analyzed for metals, polycyclic aromatic hydrocarbons (PAHs), benzene, toluene, ethylene and xylene (BTEX). The

results of the surface and near-surface (2.5 to 4.5 feet below ground surface) soil sampling are shown in the following tables:

Chemical of Concern in Surface Soil	Maximum Concentration	Mean Concentration (Exposure Point Concentration)
Arsenic	73.20 mg/kg	16.08 mg/kg
Copper	822 mg/kg	183.26 mg/kg
Chromium	284 mg/kg	74.31 mg/kg
Lead .	810 mg/kg	198.20 mg/kg
PAHs as benzo[A] pyrene equivalent (BAP)	28.29 mg/kg	1.90 mg/kg
Benzene *	2.1 μg/kg	
Toluene *	9.3 μg/kg	

^{*} Detected in one sample only

Chemical of Concern in Near- Surface Soil (2.5 to 4.5 ft bgs)	Maximum Concentration	Mean Concentration
Arsenic	11.7 mg/Kg	3.34 mg/Kg
Copper	14.8 mg/Kg	12.86 mg/Kg
Chromium	68.5 mg/Kg	62.64 mg/Kg
Lead	6.05 mg/Kg	4.94 mg/Kg
PAHs as benzo[A] pyrene equivalent (BAP)	.05 mg/Kg	.025 mg/Kg
BTEX	no detections	

The investigation identified areas of PAH-contaminated soils in the area adjacent to the waste oil separator. Groundwater monitoring wells in the area indicate that these chemicals have not migrated down to the groundwater. (The ongoing groundwater removal action is for the VOC plume from the former leaking underground storage tank at the southeast edge of the Fueling Area).

Based on the results of the remedial investigation, EPA has determined that there are no principal threat wastes at the Site. The contaminants at the Site are low level threat wastes because of their low concentration and low mobility.

6.0 Summary of Site Risks

The baseline risk assessment estimates what risks the Site poses if no action were taken. It provides the basis for taking action and identifies contaminants and the exposure pathways that need to be addressed by the remedial action. This section of the ROD summarizes the results of the baseline risk assessment for this site. Union Pacific Railroad prepared the risk assessment pursuant to the Administrative Order on Consent. The risk assessment is contained in the Final Remedial Investigation and Risk Assessment Report, Volume 1, Chapter 6, June 2, 1997.

Human Health Risk

6.1 Chemicals of Potential Concern

The chemicals of potential concern in the soil are PAHs, petroleum hydrocarbons as diesel, benzene, toluene, ethylbenzene, and xylene (BTEX), arsenic, chromium, and lead. The chemicals of potential concern in the airborne dust are BTEX, PAHs and 1,1-DCE.

6.2 Exposure Assessment

The current land use is industrial at the Site. The surrounding area is a mix of industrial and residential. The Koppers Superfund Site is less than a mile to the south of the Site. The future land use at the Site is assumed to be industrial. This is based on zoning in the area, the current use of the Site as a major rail line, the intentions of the owner, Union Pacific Railroad to continue to operate the rail line, and the abundance of suitable residential property outside of the industrial area.

The risk assessment evaluated potential human health risks under both current conditions and reasonable future conditions. The potentially exposed populations in the current use scenario are on-site workers, trespassers and off-site residents. The potentially exposed populations in the future use scenario are the same as for the current use scenario. The risk assessment did not evaluate residential exposure. Risk under a residential exposure scenario would be significantly higher.

Under the industrial use scenario, the potential exposure pathways are dermal contact, ingestion, and inhalation of vapors and airborne dust particles. The exposure duration was assumed to be 25 years, 250 days per year.

The risk assessment looked at three potential exposure pathways for the soil: inhalation of contaminated airborne dust, ingestion of contaminated soil, and dermal contact with contaminated soil. Exposure to contaminated groundwater was not

evaluated in this risk assessment because groundwater monitoring indicates there is no contamination in the Fueling Area other than the VOC plume, which is being cleaned up pursuant to a removal AOC. The chemicals of concern in the Fueling Area soil, PAHs, metals, and hydrocarbons, are relatively immobile. While there were a few detections in the groundwater of the more mobile chemicals (i.e., benzene and toluene) four years ago, there have been no detections of PAHs, hydrocarbons, and metals in the groundwater.

The risk assessment also evaluated the risk to off-site residents who might be exposed to vapors or chemicals carried off-site by airborne dust particles. The exposure frequency was assumed to be 350 days per year and the exposure duration was assumed to be 30 years, including 6 years during childhood.

The exposure pathways were quantified through the use of standard exposure factors and scenarios as defined in the *Human Health Evaluation Manual*, Supplemental Guidance: Standard Default Exposure Factors (OSWER Directive 9285.6-03, May 1991).

The following tables show the potential exposures and risk calculations for the Site. The concentrations are calculated as the 95% upper confidence limit (UCL).

Off-Site Resident: Risk via Particulate Inhalation					
Chemical of Concern Soil Concentration Hazard Quotient Cancel					
Benzo(a)pyrene	5 mg/kg	NA	4.35 x 10 ⁻⁹		
Arsenic	25 mg/kg	8.96 x 10 ⁻⁵	7.5 x 10 ⁻⁸		
Copper	278 mg/kg	7.97 x 10 ⁻⁶	NA		
Chromium	129 mg/kg	1.37 x 10	NA		
Benzene	.27 mg/kg	NA	6.67x10 ⁻¹²		
Toluene	1.3 mg/kg	1.25 x 10 ⁻⁸	NA		

Off-Site Resident: Risk via Vapor Inhalation			7	
Chemical of Concern Air Concentration Hazard Quotient Cancer Risk				
Benzene	.04 μg/m³	NA	5.22 x 10 ⁻⁷	
Toluene	.08 μg/m³	4.86 x 10 ⁻⁴	NA	

On-Site Worker: Risk via Vapor Inhalation			
Chemical of Concern Air Concentration Hazard Quotient Cancer Risk			
Benzene	.04µg/m³	NA	2.45 x 10 ⁻⁷
Toluene	.08µg/m³	1.49 x 10 ⁻⁴	NA

On-Site Worker: Total Risk via Particulate Inhalation, Soil Ingestion and Dermal Contact				
Chemical of Concern	Soil Concentration	Hazard Quotient	Cancer Risk	
B(A)P	5 mg/kg	NA	2.58 x 10 ⁻⁵	
Arsenic	20 mg/kg	4.4 x 10 ⁻²	8.53 x 10 ⁻⁶	
Chromium	129 mg/kg	7 x 10 ⁻⁵	NA	
Copper	248 mg/kg	3.6 x 10 ⁻³	NA	
Benzene	.27 mg/kg	NA	1.01 x 10 ⁻⁸	
Toluene	1.3 mg/kg	6.84 x 10 ⁻⁶	NA	

Lead hazard is determined by lead levels in the blood. The on-site soil concentration calculated for the risk assessment is 298.0 μ g/g. The calculated blood lead level for on-site workers is 3.7μ g/dl (deciliter), which is well below the action level of 10μ g/dl.

6.3 Toxicity Assessment

The risk assessment evaluated potential carcinogenic and non-carcinogenic risks to on-site workers, trespassers and off-site residents. Excess lifetime cancer risks are determined by multiplying the intake level with the cancer potency factor. These risks are probabilities that are generally expressed in scientific notation (e.g., 1x10⁻⁶). An excess lifetime cancer risk of 1x10⁻⁶ indicates that as a plausible upper bound, an individual has a one in a million chance of developing cancer as a result of site-related exposure to a carcinogen over a 70-year lifetime under specific exposure conditions at the Site

The total cancer risk for off-site residents is less than 1x10⁻⁶. The non-cancer risk to off-site residents was determined by assessing the child resident's exposure to vapor and airborne particulate from the Site. The child resident is considered to be the

most sensitive member of the population. The sum of all hazard quotients for air exposure for the child resident was less than 0.05. This represents a safe level of potential exposure, since a hazard quotient of 1.0 or less is generally considered to be protective of the most sensitive members of the population.

The total cancer risk associated with workers in the Fueling Area is 35×10^{-6} . The total cancer risk estimated for exposure in the Unfenced Site Area is 13×10^{-6} . The non-cancer health risk for on-site workers was also determined for exposure to site soil. The sum of all hazard quotients for soil exposure was less than 0.1 for both the Fueling Area and the Unfenced Site Area.

Although the risks under an industrial use scenario are within EPA's acceptable risk range, there is uncertainty regarding the long-term future land use at the site. EPA is taking action to ensure that the land use at the site does not result in exposure outside the risk range.

The current PAH levels preclude residential use of the property without remediation. The Region 9 Preliminary Remediation Goal (residential scenario) for the most toxic PAH, benzo(a)pyrene is 0.06 mg/kg. At the site the B(a)P levels detected in three composite surface samples from the most contaminated area are 20, 14 and 8.4 mg/kg.

Ecological Risks

The chemicals of concern and the media of concern were the same for the ecological risk as for the human health risk. The Site is located near the boundary of the Sacramento Valley and the Sierra Nevada foothills.

The primary habitat found on the Site is non-native grassland. The Fueling Area is highly disturbed with large areas of unvegetated concrete, gravel and weedy patches. In the Unfenced Area, a few foothill pines and other species associated with the Foothill Woodland plant community occur in a small portion of this area. The remainder of this area is dominated by non-native grasses and other weedy species.

Animals observed during site visits include jackrabbit, turkey vulture, western meadowlark and California ground squirrel. Other species that could be expected to occur include American crow, scrub jay, deer mouse, western fence lizard, and southern alligator lizard. No sensitive habitats or wildlife species were found on-site.

The Fueling Area lacks any habitat suitable for environmental receptors, because there are no completed pathways of exposure between potential points of contact and environmental receptors of concern.

The Unfenced Area generally contains low quality wildlife habitat and very few wildlife species. The very low levels of contamination in this area do not pose a threat to plants and wildlife.

7.0 Applicable or Relevant and Appropriate Requirements

The following federal regulations have been determined to be applicable requirements at the Western Pacific Railroad Site:

<u>Clean Air Act 40 CFR 61</u>: National Emission Standards for Hazardous Air Pollutants. Identifies and establishes emission standards for specific chemicals.

Resource Conservation and Recovery Act (RCRA) Chapter 11. §66261 et seq.: Regulations that apply to remedial action involving treatment, storage, or disposal of sites with contaminants that include arsenic and chromium.

RCRA Chapter 13. §66263 et seq.: Standards Applicable to Generators of Hazardous Waste. Requires appropriate disposal of RCRA wastes transported off-site.

RCRA Chapter 18. §66268 et seq.: Land Disposal Restrictions. Wastes are to be reviewed to determine if they should be restricted from land disposal.

The following State of California regulations have been determined to be applicable requirements at the Western Pacific Railroad Site:

California Air Resources Act. Health & Safety Code. Div.26 §39000 et seq.: Regulates both nonvehicular and vehicular sources of air contaminants in California. Emission from heavy equipment and excavation dusts will need to comply with local Air Pollution Control District standards.

Hazardous Substances Account Act (CA "Superfund" Law). H & S Code. Div. 20. Chapter 6.8. §25300 et seq.: Establishes state authority to clean up hazardous substance releases.

<u>Title 22 CCR. Div. 4.5. Chapter 11. §66261 et seq.</u>: Identification and listing of hazardous waste.

<u>State Water Board Resolution 68-16</u>: This applies to the reinjection of treated water into the aquifer. Extracted water should be treated to non-detect prior to reinjection into the aquifer.

State Water Board Resolution 92-49. Paragraph III. G: EPA has determined that the federal and more stringent State MCLs will satisfy the requirements of 92-49.

8.0 Description of Alternatives

Four remedial alternatives, including a no action alternative, were considered for the soil at the Site. Three of the four alternatives are presented here. The fourth alternative, Alternative 4, a large scale excavation, was screened out because the cost was excessive (over \$1,000,000) for the low levels of contamination present at the Site.

8.1 Alternative 1 - No Action

Alternative 1 provides no means of controlling on-site exposure to residual contaminants nor does it provide a means to ensure the future use of the property remains industrial. This alternative is not protective of human health.

There are no capital or operation and maintenance costs associated with this alternative.

8.2 Alternative 2 - Property Use Restriction

This alternative consists primarily of institutional controls. These controls would provide notice and restrict use of the land at the Site to industrial uses. The controls would be established by an effective and implementable mechanism such as (1) land use restrictions per California State Code; (2) an enforceable component of a bilateral agreement between UPRR and a regulatory agency; or (3) deed restrictions as part of a property conveyance. Site access controls would continue to include a fence and warning signs. Regular inspections of the Site would be required in the future to ensure the land use remains industrial.

The direct capital cost for Alternative 2 is \$0 because the fence and warning signs are currently in place. Indirect (administrative) capital costs associated with implementation of the land restriction agreement between EPA and UPRR is estimated to be \$10,000 total. Operation and maintenance costs for this alternative are approximately \$5,000 per year. The total 30-year present worth value of the Alternative 2 institutional controls is \$76,000.

8.3 Alternative 3 - Limited Excavation, Off-Site Disposal and Property Use Restriction

The objective of this alternative is to reduce potential exposure to carcinogenic PAHs (measured as B(a)P equivalent) in the soil, such that the total excess cancer risk for on-site workers is approximately 1.1×10^{-5} or less. This would be achieved by removing the top one foot of soil with the highest B(a)P concentrations in the Fueling Area and reducing the residual mean soil concentration for B(a)P to 0.41 mg/Kg or less. The area to be excavated is approximately 1 acre and is shown on Figure 3. Contaminated soil would be transported off-site by UPRR railcars and disposed of in a permitted facility in compliance with EPA's Off-Site Rule. The excavation area would be backfilled with clean fill. This alternative also includes the property use restrictions described in Alternative 2.

The field time estimated to implement the excavation portion of this alternative is less than one month. EPA and UPRR expect to have institutional controls in place within six months of the Record of Decision.

Costs were developed for a 30-year operating period. The direct capital cost for the Limited Excavation and Off-Site Disposal is approximately \$179,000. Indirect capital (administrative) costs associated with implementing this alternative are expected to be \$122,000. Annual operation and maintenance costs are estimated to be \$500 per year. The total 30-year present worth value of Alternative 3 is estimated to be \$307.000.

9.0 Summary of Comparative Analysis of Alternatives

The purpose of this section is to present a comparative analysis of the alternatives that were developed to remediate the soil. The comparative analysis is made based on nine criteria. This section is organized by evaluation criteria. The extent to which each of the three alternatives satisfies the criteria will be compared and contrasted.

9.1 Overall Protection of Human Health and the Environment

Alternative 3 provides the most protection because contaminants are removed from the Site, toxicity and volume of the contaminated soil is reduced, and risk is lowered. Institutional controls will protect human health in the future by limiting property use to industrial use only. Alternative 2, Property Restrictions, while adequately protecting human health and the environment, is less protective because contaminant levels are not reduced and the risk level is not lowered. Alternative 1, No Action, provides adequate protection of human health and the environment under the current

industrial use. However, it provides no controls to ensure the future use remains industrial and not residential.

9.2 Compliance with Applicable or Relevant and Appropriate Requirements

Alternative 2 complies with all ARARs and allows flexibility to provide additional controls for dust emissions as appropriate. Alternative 3 also complies with ARARs, including those that pertain to the removal and disposal of contaminated soil. Although Alternative 1 meets the ARARs, it leaves the contamination in place and offers no monitoring to ensure that air emissions and groundwater standards are met.

9.3 Long-Term Effectiveness and Permanence

Alternative 3 includes a permanent reduction in waste through off-site disposal at the Site so it provides better long-term effectiveness than Alternatives 1 and 2. Alternative 2 is less effective than Alternative 3 because it relies solely on institutional controls, and does not include the excavation of contaminated soil which will reduce human exposure to contamination. No long-term effectiveness is accomplished with Alternative 1 because no controls would be in place to restrict future use of the Site to industrial use only.

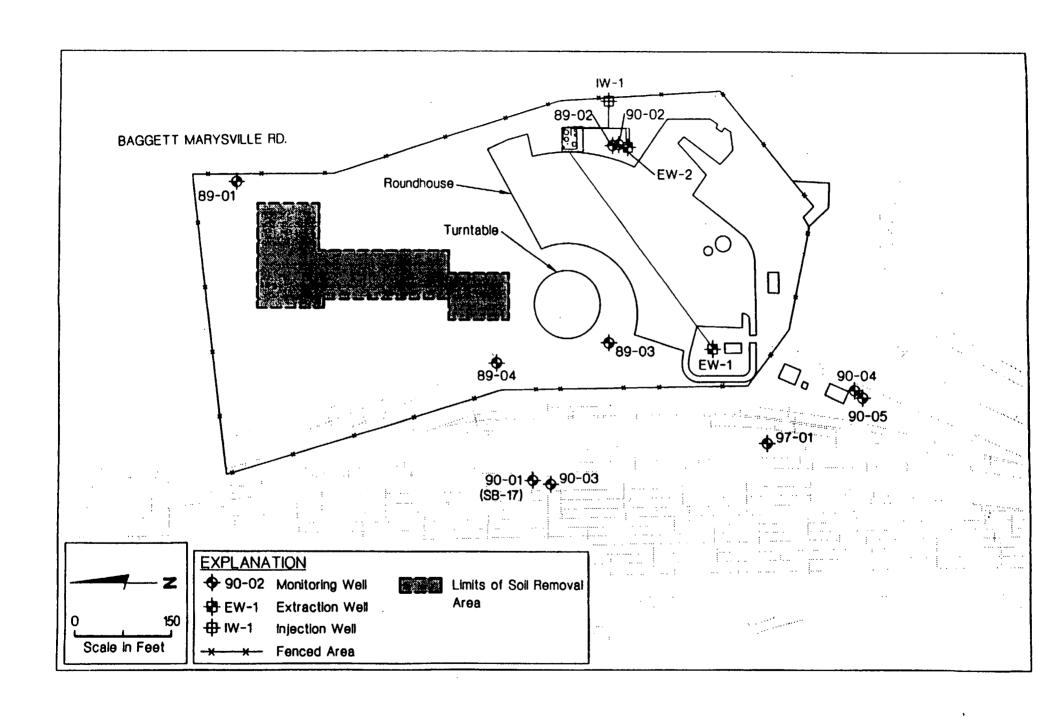
9.4 Reduction of Toxicity, Mobility and Volume Through Treatment

None of the alternatives reduces the toxicity, mobility or volume of the soil contaminated with PAHs through treatment. However, Alternative 3 will reduce the toxicity, mobility and volume of PAH-contaminated soil at the Site because the soil will be removed and transported off-site. This alternative is the only one that reduces toxicity, mobility and volume of the contaminated soil.

9.5 Short-Term Effectiveness

Alternative 1 is effective in the short-term because Union Pacific Railroad, the current property owner, has no plans to change the current site use, and the current concentrations of hazardous substances in the soil are at EPA's acceptable risk levels. Alternative 2 is equally effective in the short-term as Alternative 1.

Alternative 3 might have a slightly greater short-term risk to on-site workers and nearby residents than Alternatives 1 and 2 due to the potential for dispersion of contaminants during excavation and transportation of contaminated soil. However, the



actual excavation and backfilling is expected to take one week and effective measures can be taken to minimize any potential exposure to contaminants.

9.6 Implementability

All three alternatives are implementable. Alternative 1 requires no implementation. Alternative 2 involves primarily administrative tasks. Due to UPRR's willingness to cooperate with EPA to restrict future property use, the coordination and negotiation required for this alternative are feasible.

The technologies, materials, and services associated with the excavation, backfilling and off-site disposal as required by Alternative 3 are readily available. The administrative requirements of the institutional control portion of the remedy are similar to those of Alternative 2.

9.7 Cost

There are no costs associated with Alternative 1. Costs associated with Alternative 2 for a 30-year time period are estimated to be \$76,000. The 30-year present worth value for Alternative 3 is estimated to be \$307,600, including the property use restriction costs associated with this alternative.

Western Pacific Railroad Feasibility Study Alternatives Cost Summary				
	Description	Capital Costs	Annual O&M Costs	Present Worth
Alternative 1	No Action	\$0	\$0	\$0
Alternative 2	Property Restrictions	\$10,000	\$5,000	\$76,388
Alternative 3	Excavation and Property Restrictions	\$301,000	\$500	\$307,600

Note: Costs shown in the table are based on a 30-year period of operation.

9.8 State Acceptance

The California Department of Toxic Substances Control, as the lead State agency, concurs with this remedy. The Regional Water Quality Control Board also concurs with this remedy.

9.9 Community Acceptance

Comments made by the only community speaker at the public meeting questioned whether the proposed remedy, Alternative 3, was protective of human health and the environment. Comments in writing also questioned the protectiveness of the proposed remedy. The preference of commenters was for more soil to be excavated. The public uniformly favored excavation.

10.0 The Selected Remedy

The selected alternative for the soil is Alternative 3, excavation and institutional controls. This is because it is the most protective of human health and the environment, is the most effective in the long-term, and is cost-effective.

The major components of this remedy are:

- excavation of the top 1 foot of soil in the most contaminated 1 acre, and reducing the residual mean soil concentration for B(a)P to 0.41 mg/Kg or less.
- disposal of contaminated soil off-site in compliance with the Off-Site Rule, and
- institutional controls including but not limited to restricting the future use of the site to industrial use only .

The objective of this remedy is to reduce the risk to on-site workers at the Site and to reduce future potential exposure to carcinogenic PAHs by prohibiting residential use of the property. The clean-up standard for the PAH-contaminated soil is a residual mean soil concentration for B(a)P of .41 mg/Kg or less. This will reduce the cancer risk from exposure to this contaminant to workers to approximately 1x10⁻⁵.

The selected remedy for groundwater is extraction and treatment through air stripping. The final aquifer cleanup standards are the federal and more stringent State MCLs for 1.1-DCE, 1.1.1-TCA, 1.1-DCA, and TCE. If TPH as diesel is detected above the current detection limit of .50 ppb in the treated groundwater, granular activated carbon will be utilized.

11.0 Statutory Determination

The selected remedy is protective of human health and the environment, complies with applicable or relevant and appropriate requirements, and is cost-effective. This remedy utilizes permanent solutions, to the maximum extent practicable. It does not satisfy the statutory preference for treatment as a principal element because the cost of treating the contaminated soil is excessive for the threat posed by the site.

A five-year review, pursuant to Section 121(c) of CERCLA, 42 U.S.C. §9621(c), will be conducted at least once every five years after the initiation of the remedial action to ensure the remedy provides adequate protection of human health and the environment.

11.1 Protection of Human Health and the Environment

The selected remedy is protective of human health and the environment. The objective of the remedy is to reduce contamination in the Site soil and lower cancer risk so human health is protected. It provides for excavation of the most contaminated soil as well as institutional controls for long-term protection from residual contamination.

11.2 Applicable or Relevant and Appropriate Requirements (ARARs)

The selected remedy will comply with the identified applicable or relevant and appropriate requirements. These ARARs include federal and state environmental and public health regulations.

11.3 Cost-Effectiveness

The selected remedy is the most effective means of reducing contamination and risk proportionate to its cost.

11.4 Utilization of Permanent Solutions and Alternative Treatment Technologies to the Maximum Extent Practicable

The selected remedy provides for a permanent solution, and does not rely solely on institutional controls to protect human health and the environment. The remedy does not utilize alternative treatment technologies due to the high cost of such treatments.

12.0 Documentation of Significant Changes

The proposed plan for the Western Pacific Railroad Site was released for public comment in July 1997. The proposed plan identifies Alternative 3, excavation and institutional controls, as the preferred alternative. EPA reviewed all written and verbal comments submitted during the public comment period. Upon review of these comments, it was determined that no changes to the remedy, as it was originally identified in the proposed plan, were necessary.

RECORD OF DECISION

Western Pacific Railroad Superfund Site Oroville, California FPA ID# CAD980894679

PART III - Responsiveness Summary

1.0 Summary of Major Comments

Most public comments were made by residential neighbors who have cancer and question whether the selected remedy is protective of human health and the environment. Residents' primary concern is that contaminated dust will blow across the street and into their homes and yards.

2.0 Response to Written Comments

1. Letter from John Purcell, dated July 30, 1997 (Reference No. 1, Attachment A)
The letter includes comments on PAHs, arsenic, lead, diesel exhaust and cancer.

EPA's Response: EPA appreciates the concerns in this comment regarding the polycyclic aromatic hydrocarbons (PAHs) in the soil and the threat the soil at the site poses to human health. It is true that PAHs are carcinogenic (cause cancer). PAHs can enter the body through the lungs, through dermal (skin) contact and by swallowing food or dust particles that contain PAHs. PAHs are formed by the burning of oil, gas and other organic substances. Commons sources are fuel burning engines, wood burning stoves, cigarette smoke, creosote-treated wood and charcoal-broiled foods.

Using conservative assumptions about how long and how frequently people might be exposed to contamination in the soil, EPA estimated the risk (or likelihood) of increased cancer occurrence. The estimated "excess cancer risk" is described as the increase in probability of developing cancer during one's lifetime compared to the background probability of developing cancer (i.e., if no exposure to site contaminants occurred). The background probability in California is approximately one in three chances, or 330,000 in a million, of getting cancer from all other causes.

EPA uses a "target risk range" of 100 in one million to one in one million (10⁴ to 10⁶) to manage risks as part of a Superfund cleanup. Risks that fall within or below this range are acceptable, and therefore, generally do not warrant remedial action. Risks greater than 100 in one million (10⁴) generally warrant remedial action.

If EPA calculates a one in a million (10⁻⁶) excess cancer risk from a given exposure, that means if one million persons are exposed to the contaminant at a certain level over their lifetime, then one cancer above the background chance, or the 330,001st cancer, may appear in those million people from a particular exposure. To take into account the uncertainties in the science, the risk numbers calculated are based on conservative assumptions. In actuality, the risk is probably somewhat lower than calculated, and in fact, may be zero.

Results from the Western Pacific Railroad Risk Assessment indicate current total cancer risk from the Site to off-site residents is slightly less than 10⁶. In other words, slightly less than one exposed person out of 1 million could get cancer from contamination at the Site, based on our estimates. This risk to residents is well below EPA's unacceptable risk level of 100 in one million.

Extensive sampling of both the soil at the Site and of the vapors emitted from the soil show that the current level of PAHs at the Site is low and the health risk the soil poses falls within EPA's acceptable risk range. The soil near the fence along Baggett Marysville Road has lower levels of contamination than the soil near the former oilwater separator. This indicates that the greater the distance from the oil-water separator, the lower the levels of PAHs.

EPA believes that the selected remedy of removing the top one foot of contaminated soil will be just as effective at protecting human health as a remedy that removes soil to a greater depth. Human health and the environment are being protected from any future potential exposure to contamination from the Site.

The commenter also expresses concern about arsenic and lead from paint chips. While there are low levels of arsenic and lead in the soil, it is the PAHs that are present in higher levels and pose a greater threat to human health at the Site. However, the baseline risk assessment calculates total cancer risk from the Site and the numbers cited below include the risk from PAHs, arsenic and other chemicals.

The commenter expresses concern about the threat to human health from the exhaust of the engines that sit and idle along the rail line. EPA's risk assessment looked at risk from releases from historical operations. It did not evaluate risk associated with current operations such as exhaust from Union Pacific's train engines. EPA acknowledges the health threat from the burning of diesel fuel. Current laws passed by Congress prevent restrictions on emissions from mobile sources such as trains and airplanes. Under EPA's new proposed air standards, there will be additional requirements to limit the amount of particulates that can be released into the air. However, the proposed standard applies only to new and remanufactured locomotives and does not apply to existing locomotives.

2. Comment from Linda Purcell dated July 30, 1997 (Reference No. 2, Attachment A)
Letter includes comments on threats to human health, high lead blood levels, and
cancer.

EPA's Response: EPA appreciates these concerns regarding the long-term effectiveness and protectiveness of the selected remedy. The reader is referred to EPA's response to written comment No. 1. The commenter also expresses concern about drinking the water in her home. She does not indicate whether the water is from a private well on her property or from public supply lines. The groundwater at the Site is sampled on a regular basis. There is a plume of contaminated groundwater that is contained and will not spread any further than its current boundaries. A system is in place to pump and treat the contaminated groundwater. The groundwater in the Baggett Marysville Road area flows to the southwest, away from the residences. In July 1997, a private drinking water well of a residence on Baggett Marysville Road just south of the Site was sampled and no contamination was detected in the water. No contamination from the Site has ever been known to impact groundwater to the east of Baggett Marysville Road.

The commenter states that children in the neighborhood have high lead levels. Because the levels of lead in soils at the Site are relatively low, it is unlikely that the Site would be a source of high blood levels in the neighborhood children. The commenter also states that people have cancer in 4 out of 5 homes in the neighborhood. EPA has contacted the Butte County Public Health Office and will discuss this issue further with that office.

3. Comment from Florence N. Jones dated July 31, 1997 (Ref. No. 3, Attachment A)
Letter includes comments on contaminated soil.

EPA's Response: The reader is referred to EPA's response to written comment No. 1. The commenter also suggests that Union Pacific Railroad buy the homes and properties east of Baggett Marysville Road. The contamination levels decrease away from the oil-water separator and rail lines and the levels at the east edge of the property along Baggett Marysville Road are quite low and well within EPA's risk range. For the risk that the Site poses, EPA believes it is unnecessary for Union Pacific Railroad to purchase the homes and property to the east of Baggett Marysville Road.

4. Comment from Kimberly Cook, undated (Ref. No. 4, Attachment A)
Letter includes comments on people in the neighborhood with cancer.

EPA's Response: EPA understands the commenter's concern about the Site's potential threat to human health. The reader is referred to EPA's response to written comments Numbers 1 and 2. The remedy EPA selects here will reduce cancer threats posed by

the site, both through excavation and long-term institutional controls.

5. Letter from Valerie McGaha dated August 14, 1997 (Ref. No. 5, Attachment A)

Letter includes comment on cancer in the family.

EPA's Response: While EPA believes that the Site currently poses an acceptable level of risk to off-site residents, EPA believes that removing contaminated soil will lower the risk even more and be even more protective of human health and the environment.

3.0 Response to Formal Verbal Comments Made During the Public Meeting Held July 29, 1997

1. Comments from speaker John Purcell (Attachment B)

EPA's Response: The comments are largely the same as the written comment submitted by Mr. Purcell. EPA shares Mr. Purcell's concerns about the effectiveness and protectiveness of the remedy. EPA has selected the remedy because it is protective of human health and the environment.

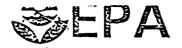
Mr. Purcell stated that he and neighbors have cancer. Although EPA is not in a position to respond as to causes of specific cases of cancer, the remedy EPA selects here, both contaminated soil excavation and removal and long-term use restrictions, will reduce any cancer threat posed by the site.

Mr. Purcell also commented that a neighborhood boy suffered from cracked hands after playing at the Site. EPA notes that a fence now surrounds the Fueling Area preventing access to the Site. The clean dirt that will replace the excavated soil will further limit exposure to contamination at the Site.

Lastly, signs will be posted on the fence in the Fueling Area warning people of the hazardous waste at the Site.

ATTACHMENT

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PUBLICE GOW MENTED TO THE

Cear Holl, Hadlock
How to you sleep at night my sweet? So pretty
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inside-Does a persone job mean so much for
the person to cover up so badle- Wien un
educated person knows that polycyclic
aromatic hydrocarbons (PAH'S) which are
chemicals found in fiel known to the state
of Culifornia to cause cancer, can stand and
give a news broadcast stating the fact
That everything will be alright - Just don't
cat the dirt! How lane for an educated
person- Holly, why are you as the
Is it for your job? I feel so sad for you
because you can not see the children-
Please Sign and Date: John Purcus 7-31-97
Please Sign and Date: John Pull 7-31-97 Signature Date
Name John Furcell
Address 4755 Buggett Desysial rdCity Ormille State Ca Zip 95966
Comments must be postmarked no later than AUCUST 15 1997



PUBLIC CONVENTED RM

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tracks and run with engines running
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Open your eyes and come back to your
Sences - It's reality and reality sucks!
Please Sign and Date: Ohn Purell 7-30-97 Date
Signature 7-30-97 Date
Name John Purelle
Address 4755 Bragett Marywill Mily Oroville State Ca Zip 95964
Comments must be postmarked no later than AUGUST 15, 1997



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levels in their bodys - It is a great health risk t
our human health! Leople have Concer in 4 out of 5
Trones - Your dust does n't stay behind your fence.
From The hazardous sight - it blows into our
homes and yards - Not just this year or for 10 ye
Dit just 25 years on 50 year: - Your dirt is on
Pleuse Sign and Date:
Pleuse Sign and Date: Signature
Name Linda Purcus
Address 4755 Buggett Mary wille Ad City Ormale State Ca Zip 95966
Comments must be postmarked no later than AUGUST 15, 1997



PUBLIC COMMENCE OR

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for the people of the railroad and the peop
who work for the railroad that know that
it is Cancer causing and will not do any
thing but cover up the problem with one
East of lie and say the problem is wind
But let me tell you friend, The poisons have
soaked into some of our lives as
soaked into some of our lives us a
silest killer known as "Cancer"
Please Sign and Date: Linda Purcul 7-31-97 Signature Date
Signature Date
Name LINDA PURCELL
Address 4755 Baggett Marysville Picity Oroville State Ca Zip 95966
Comments must be postmarked no later than AUGUST 15, 1997



PALBILIC CONVINENTED TO

You may submit this form and any additional written comments at today's meeting or you may fold and seal this form and send it to the address on the back.

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Comments must be postmarked no later than AUGUST 15, 199

Holly Hadlock Remedia! Project Manager U.S. E.P.A.

Re: Mercury Register Cancer in rail yard area

Holly, I read this article and it really concerned me. I live off of Monte Vista, and I was diagnoised with Cancer in Aug. 1995 at the age of 29. I've lived at this address for 13 years. There have been 4 people that I know on my street with cancer in the past 5 or 7 years, and I don't know very many of my neighbors. This concerns me. I would like to know what kind of surveys have been done? How do you know if the soil has been contained to that area? Are we getting cancer from the chemicals around us? I have children, am I endangering their lives by living in this area? Please send me the information that you have attained and look into this situation a little further. I think this may be a bigger problem than you may realize. I know the Copper plant had an explosion a few years back, that has always made me wonder even though they said it was nothing to worry about. I think that people try to cover up a lot of things. We also had a tornado that went through our neighborhood. You can't tell me containinated soil can't be blown through the air. I hope that you are a sincere person and not one of those people that this is 13. Sats - 12.00 (15. No. 10.10 Pt. - 10 智能性的 inestige 5 19 ft some and wers, I didn't just buich a cold, I got CANCER! I got it al a young age, the other three heighbors were in their 30's, one of them is dead. Thank you for taking the time to read my letter. I am looking forward to hearing from you.

Very Concerned

imperiy Cook

2371 Via Canela

Oro, (a. 95966

August 14, 1997

Holly Hadlock Remedial Project Manager, U.S. EPA Mailcode SFD-7-1 75 Hawthorne St. San Francisco CA 94105

re: Western Pacific Railroad Superfund Site

Dear Ms. Hadlock:

In 1977, my brother, Michael Denton Wilson, was diagnosed with Non-Hodgkins Lymphoma at age 14. Our family resided at 4715 Lincoln Blvd., Oroville, California.

Upon his diagnosis, he was referred to Stanford Medical Center in Palo Alto for treatment. Throughout his treatment, he underwent excruciating and exhausting testing, surgery, chemotherapy and extensive radiation therapy. He became blind and paralyzed and was essentially bed-ridden until his death in 1979.

Our family suffered greatly during his illness, not only from astronomical medical and travel expenses, but especially from the great tragedy of his suffering and eventual death at age 17. He was such and intelligent and artistic young man.

If this cleanup project could save one life and prevent one family the hardship and grief my family endured, progress will have been made.

Sincerely,

Valerie McGaha

ATTACHMENT

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3	In Re: Western Pacific Railroad) Superfund Site)
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7	Palermo, California, Tuesday, July 29, 1997
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9	REPORTER'S TRANSCRIPT
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24	Reporter by: Lesley E. Kay, C.S.R.
25	Certificate No. 6847

microphone over to Jackie and the reporter is taking this down. EPA will respond to them.

Thank you.

MS. LANE: Does anybody want to have a comment?

MR. PURCELL: Hello, everybody. I am John

Purcell. I live on Marysville Baggett Road straight

across the street from the cleanup site. There are

residents that now live there. Some of us have lived

there, probably, seven, eight, years. I've lived there,

probably, seven, eight, years. During that period of

time, I got lung cancer. They told me I'll probably die

April of next year. I tried to talk to people at the

Oroville Health Department and so on and it's kind of

like, "Thank you". They pass it on.

Now, do I say throw a rock? The railroad is pretty big. The people next to me -- my friends -- he had lung cancer. He had his lung taken out long ago. He's doing radiation because he has tumors in his brain. His son Brian went across the street, before they put the fence up. It took him 45 minutes and his hands were cracked to the bone and bleeding. The man next door has prostate cancer. I come to find out yesterday that the person on the corner has throat cancer. I found out a while ago that the people from, maybe, a couple of houses up, they went out to the

University of California Davis to have their lungs also operated on.

I smoked a lot of marijuana. I smoked a lot of cigarettes in my life. The doctors tell me, "John, you didn't get it from smoking marijuana. You didn't get it from smoking tobacco. You got it from an airborne bug that came from somewhere. What are you exposed to?" I tried to tell everybody I am exposed to the dust that blows from the dirt. How can they keep a fence -- put a fence up to keep the dust where it sits? Bring your fingers through my dust. Analyze my dust. See if it does have the things it does have.

You people at the railroad are slowly killing the people at Marysville Baggett Road. They're doing great deals for covering up things but they don't look at the people in the neighborhood. They don't look at the children that play in the water that comes draining off the fuel to go play with the pollywogs. They don't look at their cracked hands. How do I say it? It is on record at the hospital, that little boy's hands. The water runoff into the ditches where the kids play, I can see rainbows in the water. If I call up the people from the environmental control they'll come out and they put people in white suits and they clean it up but still the children play in that water. They put a fence around

that property. It doesn't have one sign telling anybody 1 to keep out of that area. 2 I don't know what to tell you people but I know 3 there's human lives. There are residents that live 4 there. We are trapped between two railroad tracks, the 5 one on Lincoln and the one further out. There's a 6 housing district there that must get blown dust from the 7 wind. 8 That's all I have to say. 9 Thank you. 10 MS. LANE: Thank you. 11 Are there any more comments? 12 (No response.) 13 MS. LANE: If there's no more comments or any 14 further comments, I'm going to close the meeting at this 15 time. But, if, in the future, between now and in August 16 17 15th, you have something further you'd like to talk to us, don't hesitate to call us or write us so we can 18 include it in the Summary. 19 20 Thank you, again, for coming out tonight and 21 taking the time to let us know what's happening in your 22 community. 23 -000-24 (Whereupon, the proceedings were concluded at the 25 hour of 7:45 p.m.)