

**FIVE-YEAR REVIEW REPORT FOR  
JOSEPH FOREST PRODUCTS SUPERFUND SITE  
WALLOWA COUNTY, OREGON**



**Prepared by**

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*9/30/14*

**Date**

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## ABBREVIATIONS and ACRONYMS

ARAR	Applicable or Relevant and Appropriate Requirement
Agency	United States Environmental Protection Agency
CD	Consent Decree
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
EPA	United States Environmental Protection Agency
CFR	Code of Federal Regulations
DEQ	Oregon Department of Environmental Quality
JFP	Joseph Forest Products (company)
IAG	Inter-Agency Agreement
MCL	Maximum Contaminant Level
MCLG	Maximum Contaminant Level Goal
mg/kg-day	milligrams per kilogram per day
NCP	National Contingency Plan
NPL	National Priorities List
O&M	Operation and Maintenance
PP	Proposed Plan
ppm	parts per million
PRP	Potentially Responsible Party
RA	Remedial Action
RAO	Remedial Action Objective
RD	Remedial Design
RfD	Reference dose
RI/FS	Remedial Investigation/Feasibility Study
ROD	Record of Decision
SDWA	Safe Drinking Water Act
USACE	US Army Corps of Engineers
µg/l	micrograms per liter

## EXECUTIVE SUMMARY

The remedy for the Joseph Forest Products Site in Wallowa County, Oregon included excavation and off-site disposal of contaminated soil and debris, institutional controls, and groundwater monitoring. The Site achieved construction completion with the signing of the Preliminary Close Out Report on September 27, 1993, and was deleted from the Superfund National Priorities List on November 4, 1999. The trigger for this five-year review was the completion of the second five-year review report on September 30, 2008.

The assessment of this five-year review found that the remedy at the Joseph Forest Products Superfund Site currently protects human health and the environment because all current threats at the Site have been addressed and exposure pathways that could result in unacceptable risks have been controlled through excavation and off-site disposal of contaminated soil and debris. The success of the remedial action was verified by groundwater monitoring and protectiveness has been re-confirmed by ongoing sampling conducted by the City of Enterprise at their water supply springs. Current site use is consistent with the remedial action. However, in order to ensure the remedy remains protective in the long-term, an adequate environmental notice regarding subsurface contamination in the drip pad area is to be recorded and will run with the land. United States Environmental Protection Agency (EPA) has attempted to work with the current property owner to ensure an adequate environmental notice is recorded. To date, no action has been taken by the current property owner. EPA will, again, formally follow up with property owner requesting that an adequate environmental notice be recorded. If the property owner remains unresponsive, EPA will determine subsequent actions to ensure an adequate environmental notice is recorded. In the meantime, zoning does not allow residential use of the property and current information indicates that the remedy is otherwise functioning as required.

**The Human Exposure Environmental Indicator Status** for the Site remains "Protection Achieved and Protective Remedy In Place" because exposures that could pose an unacceptable risk have been addressed.

**The Groundwater Migration Environmental Indicator is not applicable** for the Site because Site-related contamination has not been detected in groundwater above protective levels, including Safe Drinking Water Act Maximum Contaminant Levels (MCLs).

**The Cross Program Revitalization Measure Status** for the Site is "Protective for people under current conditions" due to the success and completion of the remedial action. Once the Institutional Controls are enhanced as recommended, the Site will fully meet the definition of "Ready for Anticipated Use."

## Five-Year Review Summary Form

### SITE IDENTIFICATION

**Site Name:** Joseph Forest Products

**EPA ID:** ORD068782820

**Region:** 10

**State:** OR

**City/County:** Wallowa

### SITE STATUS

**NPL Status:** Deleted

**Multiple OUs?**

No

**Has the site achieved construction completion?**

Yes

### REVIEW STATUS

**Lead agency:** EPA

**If "Other Federal Agency" was selected above, enter Agency name:**

**Author name (Federal or State Project Manager):** Chip Humphrey

**Author affiliation:** Remedial Project Manager (RPM), EPA

**Review period:** July 2013 – April 2014

**Date of site inspection:** March 29, 2014

**Type of review:** Statutory

**Review number:** 4

**Triggering action date:** Sept 2008

**Due date (five years after triggering action date):** Sept 2013

**Issues/Recommendations**

**OU(s) without Issues/Recommendations Identified in the Five-Year Review:**

None

**Issues and Recommendations Identified in the Five-Year Review:**

<b>OU(s): Sitewide</b>	<b>Issue Category: Institutional Controls</b>			
	<p><b>Issue:</b> EPA reviewed the warranty deed that was previously recorded as part of the last five-year review and the assessment of institutional controls for this report and determined that it did not include specific information regarding subsurface contamination in the drip pad area. In order to be protective in the long-term EPA believes that the existing environmental notice needs to be supplemented or replaced to provide this information and ensure that it is considered in future land use decisions and activities. This issue applies to Tax Lot 802 only.</p>			
<p><b>Recommendation:</b> Supplement or replace existing environmental notice to clearly identify the drip pad area subsurface contamination and handling requirements if the subsurface soils are disturbed and ensure that is considered in future land use decisions and activities.</p>				
<b>Affect Current Protectiveness</b>	<b>Affect Future Protectiveness</b>	<b>Implementing Party</b>	<b>Oversight Party</b>	<b>Milestone Date</b>
No	Yes	Other	EPA	8/30/2017

**Sitewide Protectiveness Statement (if applicable)**

*For sites that have achieved construction completion, enter a sitewide protectiveness determination and statement.*

**Protectiveness Determination:**  
Short-term Protective

**Addendum Due Date (if applicable):**  
NA

**Protectiveness Statement:**

The remedy at the Joseph Forest Products Superfund Site currently protects human health and the environment because all current threats at the Site have been addressed and exposure pathways that could result in unacceptable risks have been controlled through excavation and off-site disposal of contaminated soil and debris. The success of the remedial action was verified by groundwater monitoring and protectiveness has been re-confirmed by ongoing sampling conducted by the City of Enterprise at their water supply springs. Current site use is consistent with the remedial action. However, in order to ensure the remedy remains protective in the long-term, an adequate environmental notice regarding subsurface contamination in the drip pad area is to be recorded and will run with the land. EPA has attempted to work with the current property owner to ensure an adequate environmental notice is recorded. To date, no action has been taken by the current property owner. EPA will, again, formally follow up with property owner requesting that an adequate environmental notice be recorded. If the property owner remains unresponsive, EPA will determine subsequent actions to ensure an adequate environmental notice is recorded. In the meantime, zoning does not allow residential use of the property and current information indicates that the remedy is otherwise functioning as required.

**Joseph Forest Products Superfund Site  
Joseph, OR  
Fourth Five-Year Review Report**

**I. Introduction**

The purpose of the five-year review is to determine whether the remedy at a site is protective of human health and the environment. The methods, findings, and conclusions of reviews are documented in Five-Year Review reports. In addition, Five-Year Review reports identify issues found during the review, if any, and identify recommendations to address them.

The Agency is preparing this Five-Year Review report pursuant to CERCLA §121 and the National Contingency Plan (NCP). CERCLA §121 states:

*If the President selects a remedial action that results in any hazardous substances, pollutants, or contaminants remaining at the site, the President shall review such remedial action no less often than each five years after the initiation of such remedial action to assure that human health and the environment are being protected by the remedial action being implemented. In addition, if upon such review it is the judgment of the President that action is appropriate at such site in accordance with section [104] or [106], the President shall take or require such action. The President shall report to the Congress a list of facilities for which such review is required, the results of all such reviews, and any actions taken as a result of such reviews.*

The Agency interpreted this requirement further in the NCP; 40 CFR §300.430(f)(4)(ii) states:

*If a remedial action is selected that results in hazardous substances, pollutants, or contaminants remaining at the site above levels that allow for unlimited use and unrestricted exposure, the lead agency shall review such action no less often than every five years after the initiation of the selected remedial action.*

This is the fourth five-year review for the Joseph Forest Products Site. The triggering action for this statutory review is the completion of the third five-year review in September 2008. The five-year review is required because hazardous substances, pollutants, or contaminants remain at the Site above levels that allow for unlimited use and unrestricted exposure.

The United States Environmental Protection Agency (EPA), Region 10, conducted the five-year review of the remedy implemented at the Joseph Forest Products Superfund Site (Site) in Wallowa County, Oregon. This review was conducted by the Remedial Project Manager (RPM) for the Site from June 2013 through April 2014. This report documents the results of the review.

## II. Site Chronology

**Table 2-1 Chronology of Site Events**

Event	Date
Oregon Department of Environmental Quality - Notice of Violation for unauthorized disposal of hazardous waste; Joseph Forest Products discontinues operations	1985
Site Inspection Report	May 1987
National Priorities List - Listing	March 1989
Removal Action start	March 1991
Removal Action completed	May 1992
Record of Decision	September 30, 1992
Inter-Agency Agreement with USACE for Remedial Action	January 1993
Contractor mobilized/site preparation	April 1993
Soil/debris Cleanup completed	June 1993
Preliminary Closeout Report	September 30, 1993
Post-construction groundwater monitoring completed	September 1996
First Five-Year Review	September 30, 1998
Final Closeout Report	August 1999
Site deleted from National Priorities List	November 4, 1999
Second Five-Year Report	September 30, 2003
Third Five-Year Review	September 30, 2008

### **III. Background**

#### **3.1 Physical Characteristics**

The Joseph Forest Products (JFP) Superfund Site is located about 3/4 mile northwest of the City of Joseph, in Wallowa County, Oregon. The Site is approximately 18 acres and encompasses an inactive wood-treating facility located at the site of a former lumber mill. The property is bounded by Russell Lane to the north, and private property to the south and west.

The Site is located within the City of Enterprise Watershed Protection Area. Two developed springs, located approximately 4,000 feet north of the JFP site, supply municipal water to the City of Enterprise (population 1,940). There is a natural spring on the JFP site, several seasonal springs in the drainage to the north, and a shallow well at the residence across Russell Lane to the north of the site. The Wallowa River flows within 400 feet of the site at its closest point on the eastern side.

#### **3.2 Land and Resource Use**

The historic land use of the Site was industrial since at least 1940. Current zoning for the property is industrial but there are no current industrial activities at the site. The property is currently used as pasture for cattle and the owner resides on the adjacent property to the east. According to the Wallowa County Comprehensive Land Use Plan the purpose of this zoning is to provide areas for industrial activities which may require large land areas and to preserve those areas from being developed with such uses as residential that would inhibit or eliminate the future potential for industrial development. In establishing cleanup requirements for the Site, EPA assumed that the Site would remain industrial.

The groundwater aquifer underlying the Site is a source of drinking water. The dominant groundwater flow direction is to the north.

#### **3.3 History of Contamination**

The Joseph Forest Products site was a former wood treatment facility which operated at this location from 1974 to 1985, using a vacuum-pressure (retort) treatment process. JFP used a water-based chromated copper arsenate preservative. The treatment building and surrounding buildings were destroyed by a fire in 1974. An estimated 200 gallons of concentrated treatment paste and approximately 3000 gallons of treatment solution in the storage tank were lost. It is assumed that the material was washed onto nearby soil during fire fighting operations. JFP did not resume treatment operations until late 1977.

#### **3.4 Initial Investigation**

The Oregon Department of Environmental Quality (DEQ) issued JFP a Notice of Violation for unauthorized disposal and storage of hazardous waste in 1985. JFP responded by removing empty containers and arranging for disposal of chemical wastes on site. The company

filed for bankruptcy and ceased operations in 1985. By late 1985, it had become apparent that JFP's insolvency would prevent any further corrective actions on the part of JFP.

A site inspection (SI) of the JFP site was conducted by the EPA TAT contractor during September and October of 1985. Sampling efforts continued from January through April 1986. The SI report was issued in May of 1987. Field activities during the SI included installation of monitoring wells and collection of samples of soil, surface water, and groundwater. Water level measurements from groundwater monitoring wells installed at the site indicate a moderate gradient toward to the northeast in the shallow surficial aquifer. The principal contamination of concern identified in the SI was elevated levels of metals, primarily arsenic, chromium, and copper, in soils at the Site. The highest levels of these metals detected were 12,400 mg/kg arsenic, 7830 mg/kg chromium, and 13,000 mg/kg copper. In addition, the SI results indicated detectable levels of total metals in some groundwater and surface water samples.

### **3.5 Basis for Taking Action**

#### **Remedial Planning and Removal Activities**

The Site was placed on the National Priorities List (NPL) in 1989. The EPA ARCS contractor was issued a work assignment by EPA to conduct a remedial investigation/feasibility study (RI/FS) of the site in January 1990.

Based on the results of the first phase of RI activities, EPA determined that a removal action was necessary because the highly contaminated soils posed a threat to the groundwater pathway. The removal action was carried out by the ERCS contractor in October and November 1991. Approximately 1,068 tons of highly contaminated soils (up to 104,000 ppm arsenic) adjacent to the treatment building and drip pad were excavated and transported to the ESI hazardous waste disposal facility for disposal. Security fencing was also installed around the treatment building to prevent access. During the excavation it was determined that the treatment building foundation and soil beneath the building were also contaminated, and that the contaminated material could not be removed without demolishing the treatment building.

The ARCS contractor also performed quarterly monitoring of the monitoring wells, on-site spring, and City of Enterprise supply springs. Although there were detectable levels of metals in the on-site wells, there was no evidence of contamination of the City water supply.

The RI/FS were completed in September, 1992. EPA issued a Proposed Plan (PP) describing the preferred alternative for site cleanup in August, 1992. There were no comments received during the public comment period.

## **IV. Remedial Actions**

### **4.1 Remedy Selection**

EPA issued a Record of Decision (ROD) on September 30, 1992 which selected the

following remedy:

- Excavation of contaminated surface and subsurface soil to specified cleanup levels, demolition of the treatment building, decontamination of the drip pad and treatment equipment, and off-site disposal of soils and debris.
- Excavation of abandoned Underground Storage Tanks (USTs), decontamination of the tanks if any residuals are present, and transport of the tanks off-site for disposal or salvage as scrap metal. Contaminated soil would be excavated and disposed off-site.
- Removal of asbestos from the abandoned wood drying building and off-site disposal in a trench meeting regulatory requirements for asbestos waste disposal.
- Use of institutional controls such as deed restrictions, or use of an environmental notice to ensure appropriate consideration of Site conditions in future land use decisions.
- Implement a groundwater monitoring program to verify that contaminant levels in all wells and the City of Enterprise water supply allow for unlimited use. After two years, evaluate monitoring results to determine whether monitoring shall be continued.

The cleanup levels for the site were developed based on risk-based remedial action objectives in the ROD. The levels established for arsenic were 36 mg/kg for surface soils and 336 mg/kg for subsurface soils beneath the treatment building (an area less than one-half acre adjacent to the concrete drip pad). Levels established for chromium and copper were 1,351 mg/kg and 10,000 mg/kg, respectively. The ROD noted that the cleanup level established for surface soil would allow industrial use of the Site in all areas, and residential use of the Site in all portions of the Site except for the treatment building area.

#### **4.2 Remedy Implementation**

EPA executed an Interagency Agreement (IAG) with the US Army Corps of Engineers (USACE) to conduct the cleanup as a removal action. The removal action described below was carried out by OHM Remediation Services under a contract with the USACE. On-site work was initiated on March 31, 1993.

The treatment building was torn down and completely removed and internal tanks were relocated to a staging area for cleaning. Contaminated pipes and pump equipment were stockpiled for disposal. The concrete slab and sump were broken and removed to a stockpile area.

The mixing tank, solution holding tank and retort vessel from the treatment building were cleaned using a vacublast system. The tanks were inspected prior to being picked up by a local scrap dealer for recycling. Decontamination of the drip pad was also completed using the

vacublast equipment.

Asbestos fabric removal was completed and a penetrating encapsulant was applied to the support beams and walls of the lumber drying building by an asbestos certified subcontractor. The underground storage tanks were removed and disposal was completed in accordance with Oregon State requirements.

Excavation of contaminated soils above specified cleanup levels, off-site disposal of contaminated soils and debris, and backfilling was completed on May 9, 1993. A total of 1,642 tons of soil and debris was disposed at the ESI hazardous waste disposal facility and 4,801 tons of contaminated soil and debris was disposed at the Finley Buttes special waste landfill.

EPA and the DEQ conducted a final inspection on August 16, 1993, and determined the contractors completed construction of the remedy in accordance with the Final Project Work Plan.

### **Remedial Action Objectives or Cleanup Objectives and Results**

The following describes the Remedial Action Objectives (RAOs) or cleanup objectives, cleanup levels, and monitoring results:

#### **1. Direct contact exposures: Prevent ingestion of contaminants of concern through direct contact exposures to contaminated soil and debris.**

The RAOs for soil ingestion were to prevent ingestion of chromium and copper in excess of the reference dose and to prevent ingestion of arsenic causing an excess cancer risk greater than  $10^{-4}$  to  $10^{-6}$ . These objectives were met during the cleanup by excavating contaminated soil so that post-cleanup concentrations of arsenic, chromium and copper in soil were less than the risk-based cleanup levels required by the ROD.

Prior to cleanup, the arsenic and chromium contamination in the Site soils were associated with an excess lifetime cancer risk of approximately  $5 \times 10^{-3}$ . The risk assessment estimated a Hazard Index value of 82 for noncancer health effects for the highly contaminated soil in the treatment building area. Cleanup standards for the Site were developed based on risk-based remedial action objectives in the ROD. EPA selected cleanup goals of 36 mg/kg arsenic for surface soil and 336 mg/kg arsenic for subsurface soil. EPA selected the more stringent cleanup level for surface soil because this is where the greatest potential for human contact exists. It is also approximately equal to the  $1 \times 10^{-4}$  risk level assuming future residential scenarios and, although the current zoning is for industrial use, there are residents located near the Site. The ROD also established chromium and copper cleanup levels of 1,351 mg/kg and 10,000 mg/kg, respectively, associated with Hazard Index of 1.

Confirmatory soil sampling verified that the Site has achieved the ROD cleanup objective, that arsenic has been removed to levels below 36 mg/kg for surface soil and 336 mg/kg for subsurface soil and that chromium and copper were removed to levels below 1,351 mg/kg and 10,000 mg/kg, respectively.

All physical cleanup actions specified in the ROD were implemented but the institutional controls are not adequate to ensure consideration of subsurface contamination in the drip pad area in future land use decisions. EPA has removed all other contamination detected to acceptable risk levels. Confirmatory groundwater sampling and backfilling the Site with clean soil provide further assurance that the Site no longer poses a current threat to human health or the environment. Any future threats will be mitigated by supplementing the institutional controls.

**2. Source control: Prevent migration of arsenic and chromium from soil resulting in groundwater concentrations above MCLs.**

The RAOs for groundwater protection were to prevent migration of arsenic and chromium from soil resulting in groundwater concentrations above MCLs. The MCLs were 50 ug/l for arsenic (the current standard is 10ug/l) and 100 ug/l for chromium. The soil cleanup met the objectives for groundwater protection by removing, through excavation and off-site disposal, the source of contamination to groundwater.

**3. Groundwater: Prevent ingestion of arsenic and chromium in excess of MCLs.**

Post-cleanup groundwater monitoring confirmed that the concentrations of arsenic and chromium were below the MCLs in groundwater at the Site.

The ROD required that the monitoring network of wells and springs be sampled semi-annually for a period of two years following completion of the remedial action. The primary purpose of the monitoring was to verify that the City's water supply has been adequately protected. The results from samples collected by EPA and DEQ since the cleanup was completed showed that none of the monitoring well locations or springs had measured levels of metal concentrations above the MCLs for either total or dissolved metals. The ROD also provided that monitoring results be evaluated after two years to determine whether monitoring should be continued. DEQ completed the final round of groundwater and surface water sampling in 1996. EPA and DEQ subsequently determined that the groundwater and surface water monitoring required by the ROD has been completed and no further monitoring will be required.

**4.3 Post-Construction Monitoring/Operation and Maintenance**

EPA and DEQ conducted semi-annual groundwater and surface water monitoring after completion of construction. The primary purpose of the monitoring was to verify that the City's water supply has been adequately protected from any residual contamination associated with the site. The results from samples collected by EPA and DEQ since the cleanup was completed showed that none of the monitoring well locations or springs had measured levels of metal concentrations above the Maximum Contaminant Limit or Secondary Maximum Contaminant Limit for either total or dissolved metals. Arsenic was detected in monitoring wells MW-1, MW-2, MW-4, and MW-5, but did not exceed the MCL of 50 ug/L that was in effect at the time. The detected arsenic levels were consistent with previous monitoring results that have shown arsenic to be a naturally occurring element in groundwater at the site. Arsenic was not detected

in the City's water supply springs. DEQ completed the final round of groundwater and surface water sampling in 1996.

The City of Enterprise continues to monitor their water supply Springs in accordance with State requirements

There are no ongoing cleanup operations or operation and maintenance of facilities at the Site. Any changes to land use will continue to be evaluated during the five-year review process.

**V. Progress Since the Last Five-Year Review**

Table 5-12 presents that status of the prior 2008 Third Five-Year Review Recommendation/Follow-Up Action Status.

Table 5-1 - Third Five-Year Review Recommendation/Follow-Up Action Status

	Recommendation/Follow-Up Action from Third Five-Year Review	Status	Notes	Reference
Sitewide	Existing environmental notice needs to be supplemented or replaced to provide information and ensure that it is considered in future land use decisions and activities.	On-going	To date, the environmental notice has not been recorded.	Letter, Chip Humphrey, EPA to Calvin Henry, Property Owner, dated August 26, 2011

Site conditions have not changed significantly at the Site since EPA's inspection of the Site for the last five-year review in 2008. There was a new large stockpile of uncontaminated soil and gravel at the southern end of the property that the property owner stated is being used on occasion to fill low spots. EPA previously sent the property owner information in 2011 to initiate discussions on changing the language in the environmental notice for the property. However, attempts to reach the property owner for follow-up were unsuccessful until just prior to the site visit for this five year review. The environmental notice applies to Tax Lot 802, the location of the former treatment building and drip pad.

**VI. Five-Year Review Process**

**6.1 Administrative Components**

The City of Enterprise and Oregon DEQ were contacted as part of the five-year review process. The five-year review was conducted by Chip Humphrey of EPA, Remedial Project Manager (RPM) for the JFP Site.

**6.2 Community Involvement**

EPA published a notice in the Wallowa County Chieftain on June 26, 2013 to solicit participation in the five-year review. No comments were received. The results of the review and

the report will be available to the public at the EPA Oregon Operations Office and on the EPA Region 10 website.

### **6.3 Standards Review**

EPA reviewed the standards that were in effect at the time of the ROD and current standards to determine whether there have been any changes and if they would affect the protectiveness of the remedy. The only standard that is relevant to the JFP Site that has changed since the ROD is the lowering of the MCL for arsenic from 50 ug/l to 10 ug/l. EPA reviewed recent monitoring results and verified that the levels in the City's water supply springs have been consistently below the revised standard of 10 ug/l.

### **6.4 Document Review**

This five-year review consisted of a review of relevant documents including the ROD, Final Closeout Report and the previous five-year review report. A list of the documents reviewed is included as Attachment 3 to this report.

### **6.5 Data Review**

Groundwater monitoring at the Joseph Forest Products Site was discontinued in 1996 following an evaluation of two years of post-cleanup monitoring results. Review of the data was described in the first five-year review report and the NPL site deletion notice. No new site-specific data was collected as part of this review. EPA reviewed the monitoring records for the City of Enterprise water supply springs for the past several years and determined that there were no exceedences of the drinking water MCLs. City representatives were also consulted regarding the city's ongoing monitoring of their drinking water supply springs, and they verified EPA's conclusion that there were no exceedences of current MCLs based on their monitoring results.

### **6.6 Site Inspection**

EPA conducted a visual inspection of the Site on March 29, 2014. One minor structure and a significant amount of scrap metal, junk and debris had been removed from the site since the previous five year review. The current property owner of Tax Lot 802 also occupies a residence that is located on property adjacent to and east of the Site. It was observed during the first five-year review in 1998 that most of the property had been covered by an estimated 1 to 3 feet of fill that appeared to be soil mixed with wood waste, and the property owner had seeded most of the property for pasture. During the recent Site visit, cattle were observed eating hay and grazing on the property but it did not appear that property use had otherwise changed. The drip pad area, the only area where subsurface contamination exceeded residential cleanup levels, had not changed since the last five-year review.

The property owner indicated he has had cattle on the property for several years and planned to continue this use in the future. The current and intended use of the property is an acceptable use of the property considering the final cleanup levels allow residential use of the property in all areas except for the drip pad area. At the completion of the cleanup, large rock

was placed as backfill on the areas with residual subsurface contamination to clearly identify these areas in the event that was any future excavation on these portions of the site. The addition of the additional fill material provides additional protection and greatly reduces the likelihood of exposure from direct contact with any residual contamination.

## **6.7 Institutional Controls Review**

The ROD required a deed restriction or an environmental notice to ensure appropriate consideration of Site conditions in future land use decisions. The majority of the Site, including all of the surface soils on Tax Lot 1000 and most of Tax Lot 802, were cleaned to levels that allowed unrestricted use. The exception was the area on Tax Lot 802 adjacent to the drip pad, a large concrete structure, where subsurface levels of contamination were based on levels that allowed for industrial use. In addition, there may be some contamination beneath the drip pad although EPA believes it is unlikely that there is extensive contamination beneath the drip pad based on the results of the drip pad decontamination work.

EPA conducted a title search as part of the last five year review. The title search identified the "effect of EPA cleanup activities" as an encumbrance on the property "including any notice to the public on the extent of the cleanup efforts taken on the property." The summary of Site activities included with the current version of the deed, however, did not specifically identify the drip pad area subsurface contamination or any special handling requirements if the subsurface soils are disturbed. In order to be protective in the long-term EPA believes that the existing environmental notice needs to be supplemented to provide this information and ensure that is considered in future land use decisions and activities.

The Wallowa County Comprehensive Land Use Plan designates acceptable land uses for this property. Zoning is the primary means of plan implementation. Zoning maps and land use plans are somewhat similar in that both delineate areas suitable for various uses, and attempt to assure use compatibility. Plans are more general and flexible, and provide long-range guidelines for orderly development. Zoning is specific and short-range, and is enforceable rather than a recommendation. Zoning ordinances must be a reflection of the land use plan. The Joseph Forest Products Site is currently zoned for industrial use.

The Site is also within the City of Enterprise Watershed Protection Area. This designation establishes that the minimum lot size for single family dwellings is 5 acres.

## **VII. Technical Assessment**

### **Question A: *Is the remedy functioning as intended by the decision documents?***

The results of the Site inspection and review of documents, Applicable or Relevant and Appropriate Requirements (ARARs), and risk assumptions, indicates that the remedy is functioning as intended by the ROD with the exception of the institutional controls. The excavation and off-site disposal of contaminated soil and debris has achieved the remedial objectives to prevent direct contact with or ingestion of contaminants. EPA reviewed recent

monitoring results and verified that the levels in the City's water supply springs are below 10 ug/l. In order to be protective in the long-term EPA believes that the existing environmental notice needs to be supplemented to identify the drip pad area subsurface contamination and handling requirements if the subsurface soils are disturbed and ensure that is considered in future land use decisions and activities.

**Question B:** *Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives (RAOs) used at the time of the remedy selection still valid?*

Since the remedy selection, there have been two minor changes to chromium values, and a change in the MCL value for arsenic.

Hexavalent chromium (Cr+6): The reference dose (RfD) was changed in 1998 to 0.003 mg/kg-day from the 0.005 mg/kg-day used in the baseline risk assessment. Inhalation unit risk is unchanged.

Trivalent chromium (Cr+3): RfD was changed to 1.5 mg/kg-day (from the 1.0 mg/kg-day used), and the RfC was withdrawn.

EPA evaluated these changes and determined that no changes to the determination of protectiveness are needed based on the updated values because chromium levels achieved during cleanup were well below the cleanup levels specified in the ROD. A cleanup goal based on the hexavalent chromium (Cr+6) RfD would be 0.6x the value that was used based on the baseline risk assessment. Trivalent chromium (Cr+3) would be 1.5x greater for oral exposures, so the original values would be protective. Actual chromium cleanup levels achieved were at least an order of magnitude below the cleanup levels established in the ROD, so the remedy is still considered protective.

There have been no changes in the physical conditions of the Site that would affect the protectiveness of the remedy. Semi-annual groundwater monitoring was discontinued following the evaluation period prescribed by the ROD and based on the results that showed no exceedence of MCLs in on-site or off-site groundwater monitoring well or at the City's water supply springs approximately 1 mile downgradient of the Site. The data was re-reviewed for the second five-year review because the MCL for arsenic had been lowered to 10 ug/l. Although arsenic was detected in specific groundwater wells during the post-cleanup monitoring period, it was not detected in the City's water supply springs. The latest monitoring results for the City springs were reviewed as part of this review and the levels reported are well below the MCL. The change in the arsenic MCL has not affected the protectiveness of the remedy.

#### Changes in Exposure Pathways, Toxicity, and Other Contaminant Characteristics

There have been numerous changes to the standardized risk assessment methodology since the completion of the risk assessment that was performed under the 1991 RI/FS. No significant changes in exposure pathways or toxicity that could affect the protectiveness of the remedy were identified during the five-year review.

**Question C: *Has any other information come to light that could call into question the protectiveness of the remedy?***

No other information came to light that could call into question the protectiveness of the remedy.

**Technical Assessment Summary**

According to the Site inspection and documents reviewed, the remedy is functioning as intended by the ROD with the exception of the Institutional Controls. There have been no changes in the physical conditions of the Site that would affect the protectiveness of the remedy. Cleanup levels for soil contamination cited in the ROD have been met. Minor changes in the toxicity factors for one the contaminants of concern (chromium) were identified since the last five-year review but they did not affect the protectiveness determination. As previously noted, EPA believes the Site is protective in the short-term but the Institutional Controls need to be supplemented to ensure long-term protectiveness.

**VIII. Issues**

EPA reviewed the warranty deed that was previously recorded as part of the last five-year review and the assessment of institutional controls for this five-year review and determined that it did not include specific information regarding subsurface contamination in the drip pad area. In order to be protective in the long-term EPA believes that the existing environmental notice needs to be supplemented or replaced to provide this information and ensure that it is considered in future land use decisions and activities. This issue is ongoing from the prior 2008 Five Year Review. EPA has attempted to work with the property owner informally and has formally requested the property owner to address the issue by implementing the recommendation and follow-up action listed in the prior 2008 Five-Year Review. To date, no action has been taken by the property owner. Table 8-1 lists the issue identified in this five-year review that affects future protectiveness.

**Table 8-1 – Issue Affecting Protectiveness**

Issue	Affects Protectiveness	
	Current	Future
<b>Site Wide</b>		
1. Existing environmental notice needs to be supplemented or replaced to provide information and ensure that it is considered in future land use decisions and activities.	No	Yes

**IX. Recommendations and Follow-Up Actions**

The below recommendation and follow-up action is ongoing from the prior 2008 Five

Year Review. EPA has attempted to work with the property owner informally and has formally requested the property owner to address the issue by implementing the recommendation and follow-up action listed in the prior 2008 Five Year Review. To date, no action has been taken by the property owner.

The EPA will continue to work with the current property owner to supplement or replace the existing environmental notice to ensure that it is adequately protective for current and future users of this Site. Table 9-1 below lists the recommendation and follow-up action to address the issue identified in Table 8-1.

**Table 9-1 Recommendation and Follow-Up Action**

Issue	Recommendation and Follow-Up Action	Responsible Party	Oversight Agency	Milestone Date	Follow-Up Action: Affects Protectiveness (Y/N)?	
					Current	Future
1	Supplement or replace existing environmental notice to clearly identify the drip pad area subsurface contamination and handling requirements if the subsurface soils are disturbed and ensure that is considered in future land use decisions and activities.	Owner	USEPA	8/30/17	No	Yes

## **X. Protectiveness Statement**

The remedy at the Joseph Forest Products Superfund Site currently protects human health and the environment because all current threats at the Site have been addressed and exposure pathways that could result in unacceptable risks have been controlled through excavation and off-site disposal of contaminated soil and debris. The success of the remedial action was verified by groundwater monitoring and protectiveness has been re-confirmed by ongoing sampling conducted by the City of Enterprise at their water supply springs. Current site use is consistent with the remedial action. However, in order to ensure the remedy remains protective in the long-term, an adequate environmental notice regarding subsurface contamination in the drip pad area is to be recorded and will run with the land. EPA has attempted to work with the current property owner to ensure an adequate environmental notice is recorded. To date, no action has been taken by the current property owner. EPA will again formally follow up with property owner requesting that an adequate environmental notice be recorded. If the property owner remains unresponsive, EPA will determine subsequent actions to ensure an adequate environmental notice is recorded. In the meantime, zoning does not allow residential use of the property and current information indicates that the remedy is otherwise functioning as required.

## **XI. Next Review**

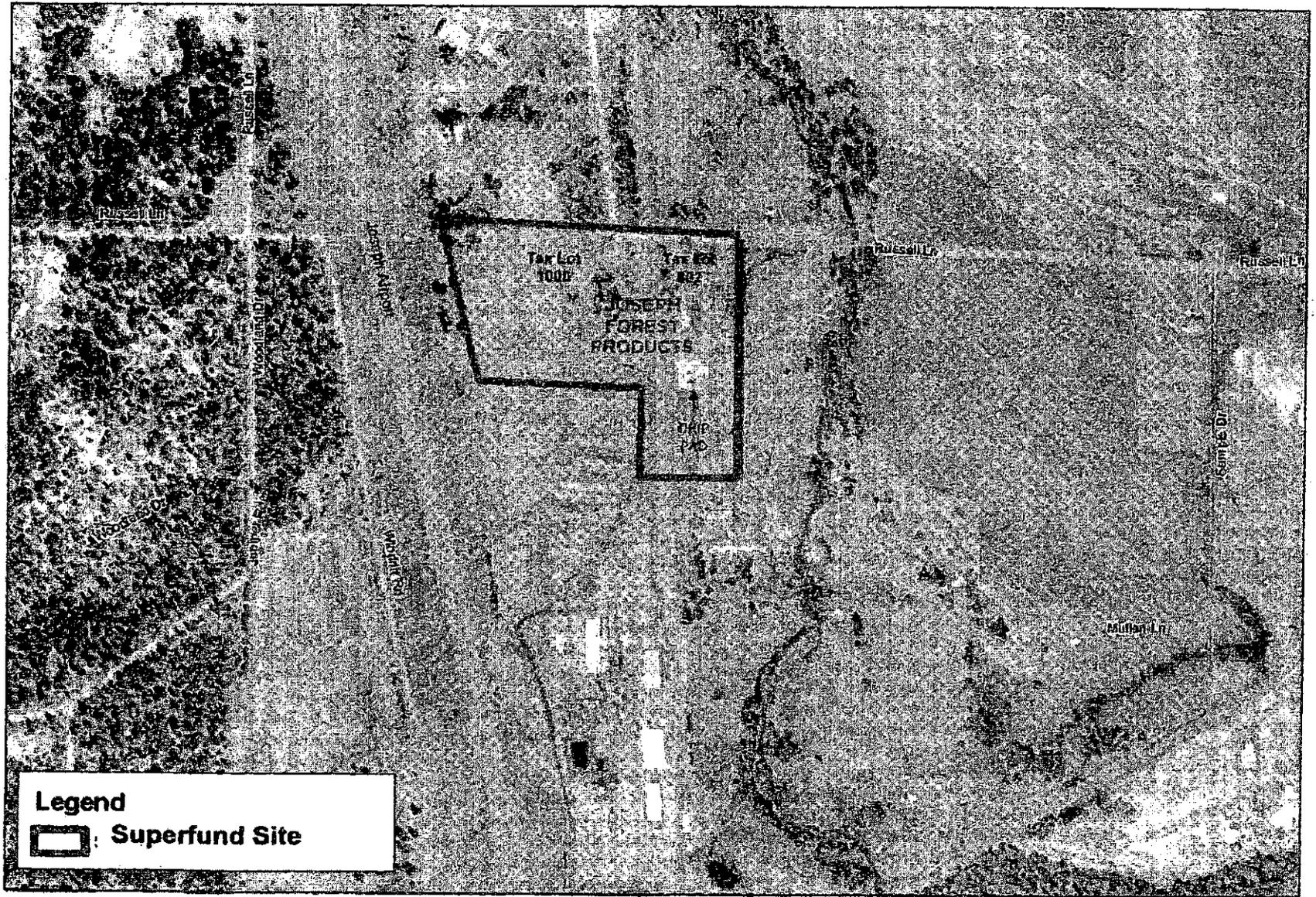
The next five-year review for the Joseph Forest Products Superfund Site is required by September 2019, five years from the signature date of this review.

### **Attachments**

Attachment 1 - Site Location Map

Attachment 2 - Area Designated for Institutional Controls

Attachment 3 - List of Documents Reviewed



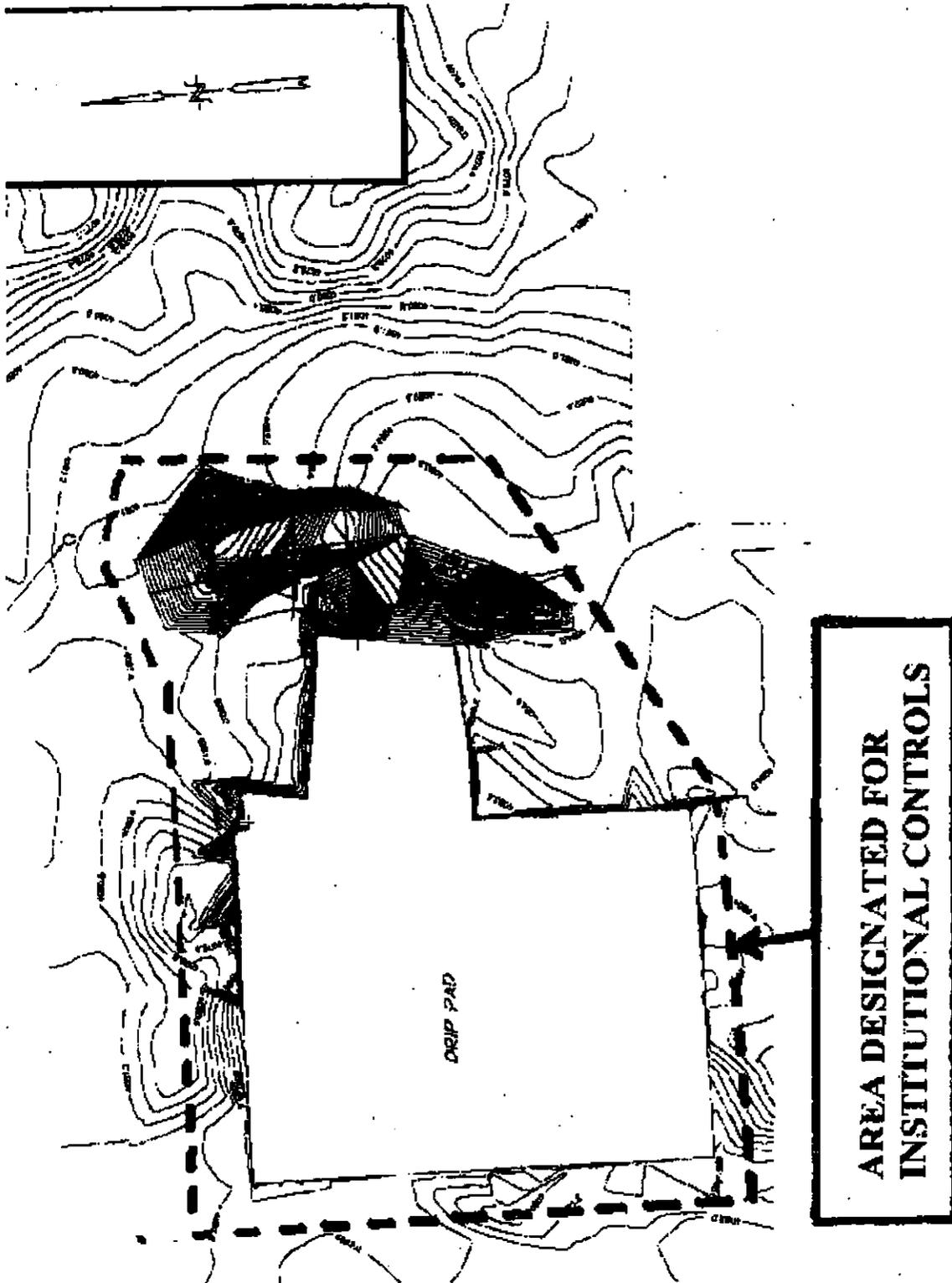
**Legend**  
[Black Outline] Superfund Site

0 100 200 400 600 Meters

Joseph Forest Products  
Superfund Site



Attachment 2



### **Attachment 3**

#### **List of Documents Reviewed**

Record of Decision, Joseph Forest Products Superfund Site, US Environmental Protection Agency, September 1992.

Final Project Work Plan for the Removal and Disposal of Contaminated Material, Joseph Forest Products, OHM Remediation Services February 1993.

Notice of Intent to Delete, Federal Register: August 31, 1999 (Volume 64, Number 168)

Third Five-Year Review, Joseph Forest Products Superfund Site, EPA September 2008

Title Search Summary, Joseph Forest Products Site