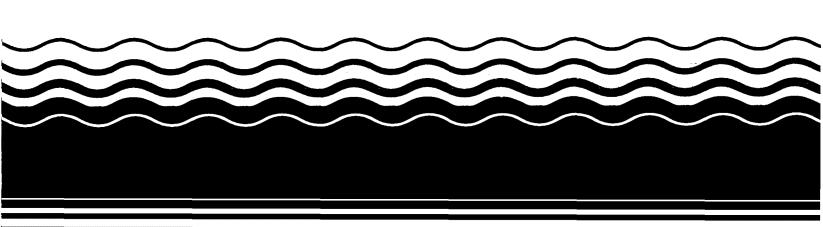
# SEPA Superfund Record of Decision:

Allied Plating, OR



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	REPORT DOCUMENTATION PAGE	1. REPORT NO. EPA/ROD/R10-93/059	2.	3.	Recipient's Accession No.
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15. Supplementary Notes

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#### 16. Abstract (Limit: 200 words)

The 12-acre Allied Plating site is a former chrome plating facility in Portland, Multnomah County, Oregon. The site can be divided into three areas, based on historical uses. These include an administrative and storage building; the layout area, which is occupied by a crane facility; and the low-lying impoundment area, which occupies the northern area of the site. Land use in the area is predominantly industrial, with a riparian (riverbank) area located to the north of the site. site lies 1,000 feet south of the Columbia Slough, a shallow, steep sided, slow moving body of water that flows across the northern edge of Portland. A single unconfined aquifer was identified beneath the site, which supplies ground water to upgradient facilities for irrigation and potato processing. Drinking water is supplied by the city of Portland and does not originate in the vicinity of the site. Prior to 1947, the site was vacant and most likely used as a pasture. In 1947, the site was leased for use as a wrecking yard, and, in 1957, was leased to Allied Plating. Allied Plating operated the site from 1957 until 1984, when onsite operations ceased. Prior to 1969, wastewater from the facility was discharged to the swale leading into the slough. In 1969, when backfilling isolated the property, liquid wastes from the plating process were discharged onsite directly to a pond within the impoundment area. The metals in

(See Attached Page)

#### 17. Document Analysis a. Descriptors

Record of Decision - Allied Plating, OR First Remedial Action - Final Contaminated Medium: None Key Contaminants: None

- b. Identifiers/Open-Ended Terms
- c. COSATI Field/Group

18. Availability Statement	19. Security Class (This Report) None	21. No. of Pages 122
	20. Security Class (This Page)	22. Price
	None	

EPA/ROD/R10-93/059 Allied Plating, OR First Remedial Action - Final

Abstract (Continued)

the plating wastewater precipitated out, forming a layer of plating waste at the bottom of the pond. Once onsite discharge ceased, the pond receded, leaving a dry area covered with plating waste. In 1978, as a result of the discharge of wastewater to the pond, the State required the installation of an onsite wastewater treatment system and discharge and RCRA permits. State studies in 1984 indicated that ground water in the vicinity of the site and soil in the impoundment area were contaminated with metals, including lead, nickel, and chromium. In 1992, EPA conducted a removal action at the impoundment area that involved excavating approximately 1,100 tons of soil and debris, with offsite stabilization and/or disposal; dewatering 70,000 gallons of pond water from the pond area, and disposing of 120 tons of the resultant filter cake; backfilling the pond and other areas within the impoundment area; and enacting a deed restrictions on the use of the shallow aquifer at the site. During the RI, it was determined that site contamination was mainly limited to the layer of plating waste. Subsequently in 1992, EPA conducted a second removal action to transport the plating waste offsite. This ROD addresses the impoundment area as a final action. Since the potential risks to human health and the environment have been reduced to acceptable levels by the earlier removal action, there are no primary contaminants of concern affecting this site.

The selected remedial for this site is no further action. The previous 1992 removal actions have reduced the health threats associated with site-related contaminants to acceptable levels.

PERFORMANCE STANDARDS OR GOALS:

Not provided.

Record of Decision Decision Summary, and Responsiveness Summary

for

No Further Action
Allied Plating Superfund Site

June 1993

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY 1200 SIXTH AVENUE SEATTLE, WASHINGTON 98101

# **Declaration for the Record of Decision**

#### Allied Plating, Portland, Oregon

#### Statement of Basis and Purpose

This decision document presents the No Further Action Decision for the Allied Plating site, in Portland, Oregon, which was chosen in accordance with the requirements of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA) and, to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). The Oregon Department of Environmental Quality concurs with the No Further Action decision. The information supporting this remedial action decision is contained in the administrative record for this site.

#### Description of the Selected Remedy

This Record of Decision is for No Further Action. The site has been remediated by a Removal Action which took place in October and November of 1992. The Removal Action addressed the threats posed by the site.

# **Declaration of Statutory Determinations**

No Further Action is needed for protection of human health and the environment.

Because the No Further Action decision will result in hazardous substances remaining on site above health based levels, a review will be conducted within five years after the commencement of the Removal Action to ensure that the remedy continues to provide adequate protection of human health and the environment.

EPA has determined that its response at this site is complete. Therefore, the site now qualifies for inclusion on the Construction Completion List.

Gerald A. Emison
Acting Regional Administrator

# DECISION SUMMARY ALLIED PLATING SUPERFUND SITE PORTLAND, OREGON

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Appendix A: Responsiveness Summary

Appendix B: Post Removal Risk Assessment

Appendix C: State Letter of Concurrence With the No Further Action

Decision

Appendix D: Administrative Record Index

#### **DECISION SUMMARY**

Site Name:

Allied Plating

Site Location: Portland, Oregon

#### I. INTRODUCTION

The Allied Plating site was placed on the National Priorities List in February 1990, under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, 42 U.S.C. §9601 et seq., as amended by the Superfund Amendments and Reauthorization Act of 1986 (CERCLA or Superfund).

In accordance with the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), the EPA performed a Remedial Investigation (RI) for the Allied Plating site. The RI, completed in April 1992, characterized contamination in soils and groundwater. The Baseline Risk Assessment, part of the RI, evaluated potential effects of the contamination on human health and the environment. Based on the information in the RI, EPA determined that the appropriate course of action was to conduct a Removal Action at the site. The Removal Action took place from October 20 to November 20, 1992, and successfully remediated the site.

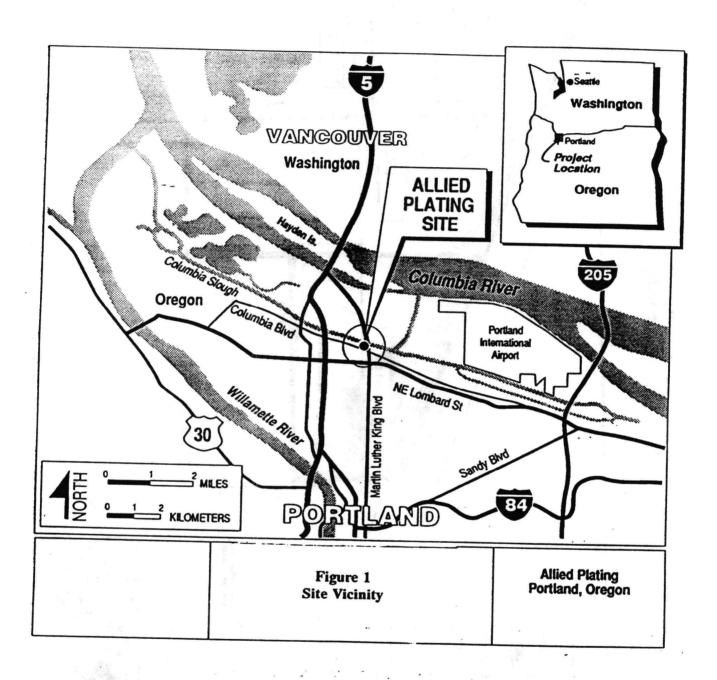
This ROD presents the No Further Action decision for the Allied Plating site, in Portland, Oregon, chosen in accordance with CERCLA, as amended by SARA, and to the extent practicable, the National Contingency Plan. The decision at the site is based on the administrative record.

#### II. SITE DESCRIPTION

#### A. Location and Description

The Allied Plating site is located at 8135 Martin Luther King, Jr. (MLK) Boulevard in an industrial and commercial district of northeastern Portland, Multnomah County, Oregon. It is approximately 1,000 feet north of the intersection of MLK Boulevard and N.E. Columbia Boulevard, and 1,000 feet south of the Columbia Slough (Slough), a local drainage channel that merges with the Willamette River and then the Columbia River. Figure 1 is a map of the north Portland area, showing the location of the site in relation to local features. Figure 2 shows the boundary of the site, the site layout, and the surrounding area.

The site covers approximately 12 acres, and can be divided into three areas based on their historical usage. The southernmost section contains the former



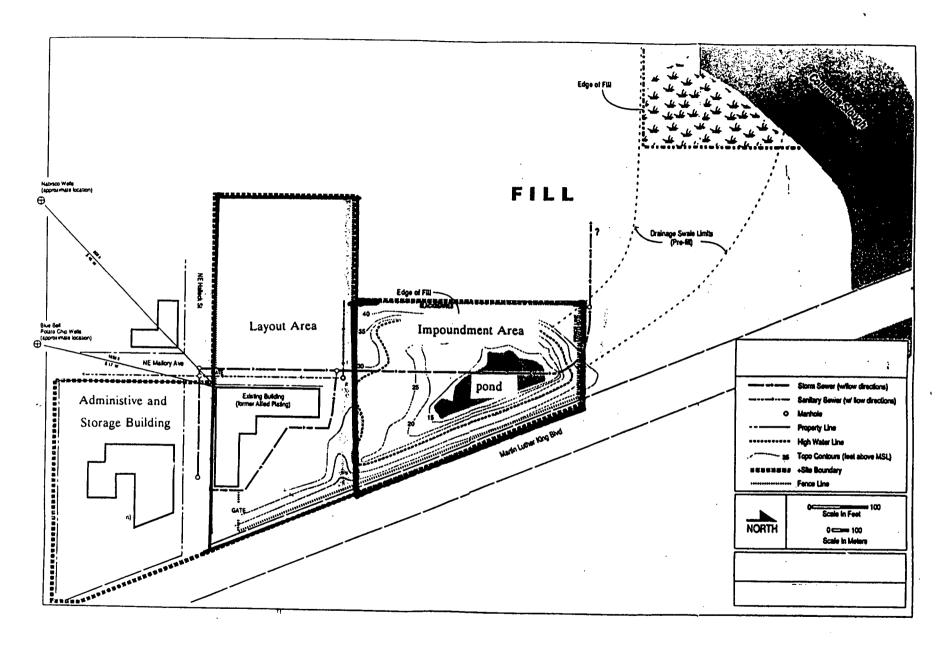


Figure 2 Site Map

administrative and storage building for the former Allied Plating business. This area is across the street from the location where plating activities occurred, and was not considered to be contaminated from operations. The "layout area" contains the former plating operations building and storage yard. This area is presently occupied by the Associated Truck and Crane Company as a repair and storage facility for cranes and various heavy equipment. The "impoundment area" is the northern, low lying area of the property. Prior to the Removal Action, it contained a pond formed from the discharge of wastewater from the plating business. This area is not used in current site operations.

#### B. Topography

The elevation of the site varies from approximately 12 to 40 feet above mean sea level, sloping downward to the north. Prior to 1969, the property drained overland to the north, into a swale that led directly into the Slough. Wastewater from the plating facility was discharged to this natural drainage. In 1969, extensive backfilling with dirt and construction debris north of the site partially covered the swale, cut off the natural drainage, and left the northern end of the site 20 to 30 feet lower than the surrounding off-site areas. Wastewater discharged from the facility began to collect in this low lying area (the impoundment area) forming a 1.5 acre pond. Surface runoff from the Allied Plating site and surface water draining from the adjacent area contributed to the pond. The pond was drained and filled during the Removal Action. The impoundment area still collects drainage for the area, and so water accumulates at the lowest point.

A combined sewer overflow (CSO) pipeline runs northerly under the impoundment area to an outfall in the Slough. The CSO line is a 36 inch square pipe constructed in 1928. During the 1992 Removal Action, a remote control video camera was used to inspect the pipeline. The pipeline was still in good condition, and not acting as a conduit for drainage from the pond.

#### C. Adjacent Land Uses

The site is located in an area of light industry. Two food processing plants, many small industrial and or manufacturing businesses, a hotel and a 15 unit apartment are located within 1000 feet of the site. To the northeast, on the other side of the Slough, is a mobile home park with 180 mobile homes.

#### D. Surface Water and Groundwater Resources

Prior to the Removal Action, the site contained a pond that was formed when backfilling isolated the site from natural drainage. At the time of the RI, the pond was approximately 260 feet long, 105 feet wide, and 3 feet deep. It contained an estimated 376,655 gallons of water. The pond received water from precipitation and runoff, and

recharge from groundwater. The pond was filled during the Removal Action. Surface water still collects in the impoundment area.

The Columbia Slough is located approximately 1000 feet from the site. The Slough is a shallow, steep sided, slow moving body of water that flows across the northern edge of the city of Portland and along the south bank of the Columbia River. From the site, the Slough flows west about six miles to the Willamette River. From this confluence, the Willamette flows approximately 2000 feet and enters the Columbia River.

A single unconfined aquifer, the Troutdale Aquifer, was identified beneath the site. The water level in the Troutdale was measured to be 10 feet above mean sea level, and was found approximately 10 feet below the surface of the impoundment area. The predominant groundwater flow direction was northwest. A localized shallow aquifer was found in the vicinity of the impoundment area. The water table in the shallow aquifer was 15 feet above mean sea level.

Groundwater is used by upgradient facilities for irrigation and potato processing. Drinking water is provided by the city of Portland and does not originate from the vicinity of the site.

#### E. Site Geology

Three geologic units were encountered during the RI. In order of depth from the surface, they are the Holocene alluvial deposits of the Columbia River, Pleistocene post-glacial deposits, and the Pliocene Troutdale formation. In addition, the site is underlain by fill such as metal scraps, demolition debris, and automotive debris.

There was no visible contamination in the area formerly containing the administration buildings, or in the layout area. The impoundment area was visibly contaminated. The area was covered with a friable, greenish material (plating waste) to a depth of 2 to 6 inches, and covered in dead grasses. Trees in the area were dead and the bark was visibly blue green. The water in the pond was dark green.

The impoundment area was remediated during the Removal Action (described in Section X). All contaminated soil, vegetation, and debris were removed. The impoundment area is currently graded and covered with rock.

# F. Ecological Conditions

The ecological conditions in the vicinity of the Allied site can be categorized into three types of habitats: an urban industrial area, a riparian (riverbank) area north of the backfill area, and the Columbia Slough. Section IX of this Decision Summary describes these habitats in detail.

#### III. SITE HISTORY AND ENFORCEMENT ACTIVITIES

Available data indicate that prior to 1947, the site was vacant land most likely utilized as pasture. The property was owned by the Hodes family. In 1947, the site was leased for use as a wrecking yard. In 1957, the building was leased by Mr. Ernest Stierly as the site for the Allied Plating, Inc., chrome plating facility which operated from that year until 1984 when the company declared bankruptcy and ceased operations.

Prior to 1969, wastewater from the facility was discharged to the swale leading to the Slough. After 1969, when backfilling isolated the property, liquid wastes from the plating process were discharged to the pond on site. The metals in the plating wastewater precipitated out, forming a layer of plating waste at the bottom of the pond. Aerial-photographs indicate that the pond covered the north end of the property while the company was discharging. When the company ceased discharging, the pond receded leaving a dry area covered with plating waste.

In 1978, as a result of the discharge of wastewater to the pond, Oregon Department of Environmental Quality (ODEQ) required a compliance schedule for the installation of an on site wastewater treatment system. In 1980, ODEQ required the facility to get an Oregon Water Pollution Control Facility (WPCF) permit, and as a result of the wastewater discharge, EPA required Allied Plating to submit a Resource Conservation and Recovery Act (RCRA) Part A (hazardous waste permit) application.

In 1981, the facility received interim status as a treatment, storage and disposal facility under RCRA, and in 1982 a WPCF permit was issued.

Mr. Stierly contracted with Sweet-Edwards & Associates to install three groundwater monitoring wells. These wells were required under Allied Plating's RCRA Part A interim status. After Allied Plating ceased operations in 1984, the company did not conduct any additional groundwater monitoring or sampling, and the wastewater treatment system required by ODEQ was never installed.

In September 1984, the U.S. EPA and ODEQ jointly requested closure and post closure plans from Mr. Stanley Hodes (the current site owner) as part of a requirement of a RCRA Part B permit. In January, 1985, the Oregon Department of Transportation (ODOT) was informed that the pond encroached on the right-of-way of State Highway 99E (MLK Boulevard) and that ODOT shared the responsibility for site cleanup.

Riedel Environmental Services (Riedel) was hired by the ODOT to prepare a closure plan for the site. Riedel installed 10 monitoring wells, hand-augered for soil samples at five locations, and collected two Slough sediment samples and five pond sediment samples. Results from the two studies showed that the groundwater in the vicinity of the site was contaminated with lead, nickel and chromium, and that there

were high concentrations of metals in the impoundment area soils (see Allied Plating RI/FS Scoping Report (prepared by URS for EPA, 1990) for the results of the previous site investigations).

The next two years consisted of submissions of plans and other communications from the property owner and ODOT to the U.S. EPA and ODEQ, and reviews, comments and requests for further information from the agencies to ODOT and the property owner. In November 1986, when the closure plans were not accepted, and actions under RCRA were not able to obtain site cleanup, EPA and ODEQ reached an agreement transferring program jurisdiction from RCRA to Superfund.

The site was proposed for inclusion on the National Priorities List January 22, 1987, and was listed February 2, 1990.

EPA conducted a Remedial Investigation (RI) at the site between January 1990 and April 1992. The RI determined that the contamination of the site was mainly limited to the layer of plating waste formed in the surface of the impoundment area. At the end of the RI, the site was evaluated for a potential Removal Action as part of the Superfund Accelerated Cleanup Model (SACM) Program. The site met the criteria for remediation by a Removal Action (described in Section X), and between October 20, and November 10, 1992, the plating waste in the impoundment area was excavated and shipped off site for disposal at Envirosafe Services, Inc., in Grandview, Idaho (a facility on EPA's off-site policy list of eligible disposal facilities).

# IV. COMMUNITY RELATIONS HISTORY

The RI and Proposed Plan for the Allied Plating site were released to the public in April 1993. These documents were made available to the public in the Administrative Record, located in the information repositories maintained in the EPA Records Center in Seattle, and at Portland State University's Miller Library and the N.E. Neighborhood Association in Portland, Oregon. The notice of availability of these documents was published in The Oregonian on April 29, 1993. A public comment period was held from April 28, to May 28, 1993. The Proposed Plan and newspaper notice offered the option of having a pubic meeting. However, a meeting was not requested by the public. There were no comments received during the comment period. The Responsiveness Summary, documenting that there were no comments received, is included as Appendix A.

To date, the following community relations activities have been conducted by EPA at the Allied Plating site:

February 1987	EPA distributed a fact sheet announcing the nomination of the site to the National Priorities List.
September 1987	Community Relations Plan published, which included interviews from the community and local officials.
March 1990	EPA released a fact sheet announcing the site was placed on the National Priorities List.
November 1990	EPA distributed a fact sheet announcing the beginning of the RI field work.
June 1991	EPA released a fact sheet describing the preliminary results of the RI.
October 1991	Community Relations Plan Schedule updated.
October 1992	EPA mailed a fact sheet announcing the beginning of the Removal Action at the site.
April 26, 1993	EPA mailed the Proposed Plan for No Further Action. In the Proposed Plan, EPA offered the opportunity for a public meeting. No request was made.
April 28, 1993	EPA published a newspaper notice in <u>The Oregonian</u> announcing the Public Comment Period and the opportunity for a public meeting.
April 26, 1993	Public Comment Period begins.
May 26, 1993	Public Comment Period ends.
June 1993	Responsiveness Summary prepared.

# V. SCOPE AND ROLE OF OPERABLE UNIT OR RESPONSE ACTION WITHIN SITE STRATEGY

This ROD addresses the decision for No Further Action at the Allied Plating site. The contaminated areas of the site were remediated by a Removal Action which took place from October 20, to November 10, 1993. During the Removal Action, all site contamination above EPA's selected health based cleanup levels was excavated and disposed of in the hazardous waste disposal facility, Envirosafe Services, Inc., in Grandview, Idaho.

#### VI. SUMMARY OF SITE CHARACTERISTICS

#### A. Purpose of the Remedial Investigation

The Purpose of the RI was to investigate the extent of contamination in all media potentially affected by site activities. The information from the RI and the resulting Risk Assessment were used to determine the need for, and the extent of, the Removal Action.

Contaminants were released into the environment through the discharge of wastewater by the plating facility to the northern part of the property, and potentially from the dumping of waste from the plating operations onto the property. Prior to backfilling activities, the wastewater flowed to the Slough through natural drainage. Following backfilling, the wastewater ponded on the property. Metals from the wastewater precipitated out forming a layer of plating waste covering the surface of the impoundment area.

The RI investigated contamination resulting from the direct discharge of wastewater or dumping of wastes, and the dispersal of these contaminants through the groundwater.

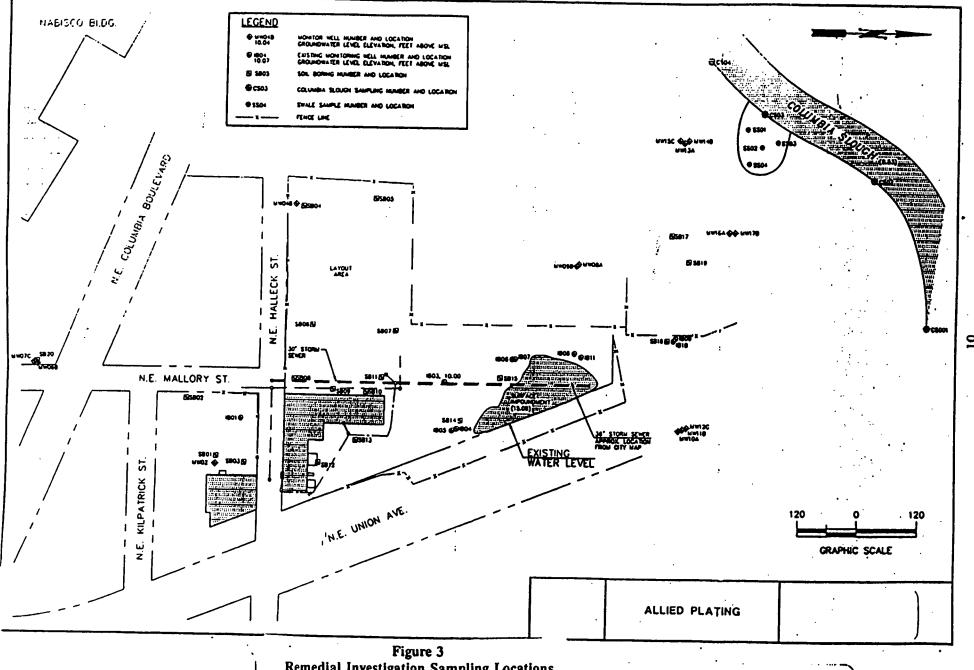
For the soil and sediments investigation phase, samples were taken of the surface soil (top 6"), shallow soil (to 3') and deep soil (greater than 3') in the site vicinity, the outfall swale sediment (the location where water drainage from the site had previously discharged to the Slough), and the Slough bottom sediment.

For the groundwater and surface water investigation phase, groundwater samples were collected from 10 wells installed during previous studies (IB series wells), 14 wells installed during the RI (MW series wells), and from three commercial wells. Surface water samples were taken from the pond and the Slough. Water samples were taken twice, once in January 1991, and again in April 1991. Figures 3 and 4 show the locations where the soil, surface water, and groundwater samples were taken.

#### B. Results of Soil and Sediment Investigation

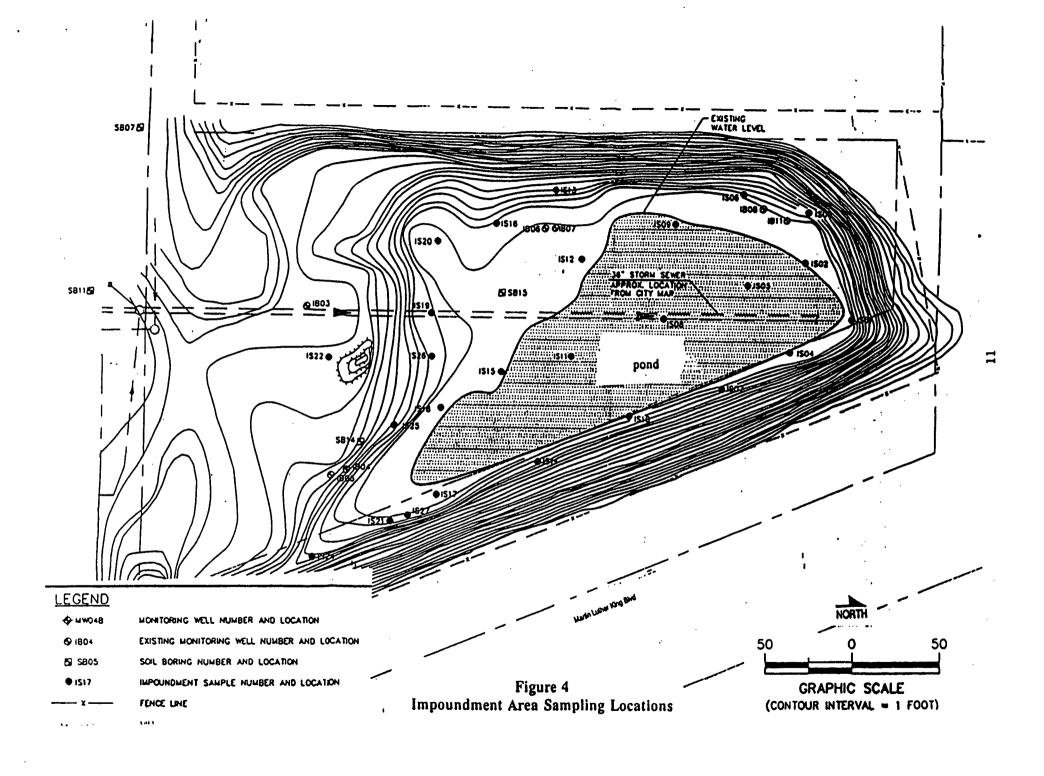
# 1. Inorganics

During the soil sampling phase of the RI, areas both on and off site were identified as background locations. These locations were selected because they were outside of the area of known or suspected contamination caused by the plating activities, and thus would represent vicinity soil quality. Contaminant levels found in the investigation were compared to background soil samples to determine whether they were the result of site



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Figure 3
Remedial Investigation Sampling Locations



activities or were from other industrial or natural sources. Inorganics found on site that were potentially attributable to the plating activities included antimony, arsenic, beryllium, cadmium, chromium, copper, lead, mercury, nickel, zinc and cyanide. However, chromium, copper and nickel were the only compounds with significant concentrations above background levels.

The RI determined that the majority of the contamination was limited to the impoundment area. Table 1 presents the range of values for inorganics detected in the surface, shallow, and subsurface impoundment area soils. All of the soil samples collected from the impoundment area exhibited levels of chromium, copper, and nickel above background concentrations. The greatest concentrations encountered were in samples of the plating waste layer with consistently high concentrations of chromium (to 20,700 ppm), copper (75,110 ppm), and nickel (to 15,700 ppm). Contamination was mainly limited to the top 6 to 12 inches. As depth increased, contaminant concentrations decreased.

Layout area surface samples exhibited relatively low levels of contamination. The maximum metal concentrations found were chromium (165 ppm), copper (794 ppm), and nickel (1930 ppm).

Offsite soil samples were collected at the approximate pre-backfill ground surface from areas north of the site to evaluate whether contaminants from the plating facility had migrated along the drainage swale before the placement of the backfill. With the exception of antimony (16.5 ppm) in one sample, and arsenic (9.8 ppm) and zinc (385 ppm) in another, all metals were at background levels.

Outfall swale soil samples contained cadmium (maximum 5 ppm), chromium (maximum 46 ppm) and copper (maximum 193 ppm) in excess of surface soil background values. The metal concentrations may be from pre-backfilling plating discharge or from other industrial sources. Columbia Slough bottom sediment metal concentrations were similar upgradient and downgradient from the site.

#### 2. Organics

In the impoundment area, toluene (maximum 2 ppb) and xylene (maximum 4 ppb) were detected at 4 locations. In addition, 1,2-dichloroethene (4 ppb) and trichloroethene (12 ppb) were detected in one sample. These levels are not significant. The source of the organics is unknown, but they are commonly used for industrial purposes. Polycyclic aromatic hydrocarbons (PAHs) were detected at very low concentrations (below required detection limits) at three locations. PAHs likely came from deposition of car and truck exhaust. Organics were not detected in the layout area soils.

Outfall surface soils and Slough sediments contained PAHs. When the samples were collected from the swale, an oil sheen was observed on the surface of the Slough.

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Table 1
Range of Inorganic Analytical Results
Impoundment Area Soils<sup>1</sup>

	Surface Soils	Shallow Soils	Deep soils
Analyte	Range	Range	Range
Antimony	<0.55-379	< 5.20-27.56	0.44-14.5
Arsenic	2.20-147	3.8-7.4	2.20-65.0
Beryllium	0.82-1.00	< 0.58-0.61	0.52-1.10
Cadmium .	< 0.61-10.4	. <.78-6.2	< 0.49-6.8
Chromium (Total)	107-20,700	57.1-520	43.1-5400
Cobalt	15.8-51.9	15.6-60.7	13.2-39.8
Copper	88.5-75,100	400-6720	253-15,600
Lead	26.3-573	9.0-518	9.40-975
Nickel	229-15,700	173-31,900	233-3230
Silver	<0.76-5.6	<1.0-2.6	< 0.20-15.7
Thallium	<0.48-<25	<0.52-<0.72	0.49-6.60
Zinc	116-1280	63.4-2090	64.2-2550
Cyanide	<0.64-229	0.83-<1.3	< 0.59-249

<sup>&</sup>lt;sup>1</sup>All values are in mg/kg.

It is likely that the PAHs in the surface soils of the swale resulted from PAHs in the Slough.

#### 3. Soil Results Summary

Site related contamination was primarily inorganic, and mainly limited to the surface soil of the impoundment area. This area was covered with a layer of plating waste. There was little or no site related contamination in the layout area, the outfall swale soils, or the Slough sediments.

Low levels of volatile organics were found in the impoundment area. The source of these contaminants is unknown, but probably the result of the industrial activities in the site vicinity. PAHs were found in the impoundment area, the outfall swale, and the Slough. The PAHs on the site probably resulted from contamination from MLK Boulevard. The source of the PAHs contamination in the swale sediment, and the sediment of the Slough is unknown; but likely was not related to historical activities at the site.

# C. Results of Groundwater and Surface Water Investigation

Samples of groundwater taken during early site investigations (see Section III) indicated that contamination from the site (chromium, nickel, and lead) was widespread in the Troutdale and shallow aquifers in the vicinity of the site. However, the results of the RI indicated that the contamination has dissipated.

#### 1. Water Level Elevations

The water table was found at two elevations. A shallow aquifer with water at 15 feet above mean sea level was found beneath the impoundment area (wells IB-6 and IB-8) and to the northeast of the site (well MW-10A). The Troutdale aquifer was found at 10 feet above mean sea level throughout the area. The pond water level was at 15 feet above mean sea level, the same level as the shallow aquifer.

### 2. Inorganics

Concentrations of inorganics exceeding background values were detected in all groundwater samples. Concentrations were relatively low, and only a few of the inorganic contaminants exceeded either promulgated or proposed Maximum Contaminant Levels (MCLs) for groundwater (drinking water standards).

The highest concentrations of potential plating waste derived contaminants (chromium, nickel, and lead) were detected in the monitoring wells installed in the shallow aquifer adjacent to the pond (wells IB06 and IB08). Table 2 presents the analytical results for samples collected from these wells. Only nickel was found above MCLs (exceeding the nickel standard of 100 ppm in IB-6). Samples collected from monitoring wells in the

Table 2
Inorganic Analytical Results
Monitoring Wells IB06 and IB08<sup>1</sup>

Monitoring	Well IB06	Monitoring Well IB08		
	April	January	April	
	1.8	<3.00	5.80	
	< 1.00	<1.00	<1.00	
	<3.00	<3.00	<3.00	
		17.9	15.8	
		. <1.00	<10.0	
		<5.00	5.50	
		67.9 :	49.9	
		14.5	7.60	
		5310	3960	
		29.0	45.0	
		<u> </u>	<2.00	
		The state of the s	20.2	
	Monitoring  January  4.10  <1.00  <3.00  <5.00  . <0.90  9.5  11.7  9.4  3010  655  <2.00  223	4.10     1.8       < 1.00	January         April         January           4.10         1.8         <3.00	

<sup>&</sup>lt;sup>1</sup>All values are in ug/kg.

Troutdale aquifer zone generally contained lower concentrations of the potential plating waste derived contaminants. Results from several wells are shown in Table 3.

Manganese concentrations in the Troutdale aquifer were significantly elevated above background levels both upgradient (i.e. 11,800 ppb in MW07C, and 17,300 ppb in MW04B) and downgradient (i.e. 17,700 ppb in MW-13A). The source of the manganese is unknown, but it was not associated with plating operations at the site.

Water samples collected from three water supply wells had detectable concentrations of arsenic, cobalt, copper, lead, and zinc. The localized groundwater flow in the area indicates that these contaminants were not migrating from the Allied site, and all results were below applicable MCLs.

The\_metal concentrations detected in the pond surface water samples were similar to levels detected in the shallow groundwater samples from the impoundment area (IB-6 and IB-8). The inorganics analytical results of the impoundment area surface water are presented in Table 4.

There were no significant trends in metal concentrations detected in the surface water samples collected from the Slough that can be associated with releases from the site. Nickel was detected downgradient from the site (maximum 24 ppb). However, there was no nickel detected in the groundwater from the wells nearest the Slough. The remaining contaminant levels were below detection limits or were similar upstream and downstream from the site.

#### 3. Organic Compounds

Two volatile organic compounds were detected above MCLs during the investigation. Trichloroethene was detected in water samples from MW12C (maximum 6 ppb) slightly above the MCL of 5 ppb during both sampling events. This well monitors groundwater in the Troutdale aquifer northeast of the impoundment area. This compound was not detected in the water samples collected from the other wells. Carbon tetrachloride was detected at 13.5 ppb in MW16A in the January water sample (above the MCL of 5 ppb). This compound was also detected in April water samples from five wells, ranging in concentration from 0.2 to 2.0 ppb. A number of other organic compounds were detected at low concentrations (below MCLs) in the wells including chloroethane, 1,2-dichloroethane, chlorobenzene, 1,2,4-trimethylbenzene, toluene, and tetrachloroethene. The organic contaminants were probably related to the industrial activities in the site vicinity.

Volatile organic compounds were not detected in the January pond water samples. Chloromethane was detected at low levels in the April sampling event (maximum 2.0 ppb).

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Table 3
Inorganic Analytical Results
Monitoring Wells MW08A, MW13A, and IB10<sup>1</sup>

	Monitoring Well MW08A		Monitoring Well MW13A		Monitoring Well IB10	
Analyte	January	April	January	April	January	April
Arsenic	<4.7	<2.00	7.30	9.90	6.60	<2.90
Beryllium	< 1.00	1.50	<1.00	1.30	< 1.00	< 1.00
Cadmium	<3.00	<2.20	4.50	4.10	<3.00	3.5
Chromium	< 5.00	<2.00	<5.00	2.90	<5.00	<2.00
Chromium <sup>+6</sup>	••		••		< 0.70	< 1.00
Cobalt	11.90	<16.9	9.40	6.40	<5.00	<2.00
Copper	12.0	<25.0	< 10.0	<7.00	<10.0	< 7.00
Lead	2.80	<2.00	4.60	8.00	4.00	4,5
Manganese	11,700	9690	11,900	9300	590	572
Nickel	< 20.0	<16.0	<20.0	<16.0	<20.0	< 16.0
Thallium	< 2.00	<1.00	<2.00	<2.00	<2.0	<2.00
Zinc	12.0	22.2	< 10.0	46.9	36.1	87.2

<sup>&</sup>lt;sup>1</sup>All values are in ug/kg.

 $\infty$ 

Table 4
Inorganic Analytical Results
Impoundment Area Surface Water<sup>1</sup>

	IS01		IS02		IS03	
Analyte	January	April	January	April	January	April
Arsenic	3.20	< 1.00	3.30	1.90	3.30	2.10
Beryllium	< 1.00	< 1.00	< 1.00	< 1.00	<1.00	1.00
Cadmium	<3.00	<4.40	<3.00	<2.0	<3.00	<2.00
Chromium	20.1	16.8	15.9	10.0	15.9	11.5
Chromium <sup>+6</sup>			23.8	2.00	••	. **
Cobalt	< 5.00	<2.00	<5.00	< 6.20	< 5.00	<2.10
Copper	188	121	171	113	167	110
Lead	<3.20	1.80	<3.90	<2.00	<4.10	<2.00
Manganese	125	70.7	115	83.1	114	87.6
Nickel	440	206	364	229	368	210
Thallium	<2.00	<2.00	<2.00	<1.00	2.00	<1.00
Zinc	57.0	23.9	49.6	32.4	47.0	34.9

<sup>1</sup>All values are in ug/kg.

Concentrations of three volatile organic compounds were detected in the Slough surface water samples collected during both sampling events. The maximum concentrations were cis-1, 2-dichloroethane (0.8 ppb), trichloroethane (2 ppb), and tetrachloroethane (3 ppb). No semi-volatile organic compounds were detected.

# 4. Surface Water and Groundwater Results Summary

Contamination levels resulting from site activities appear to have decreased from the levels found in samples taken prior to the RI (Section III). At the time of the RI, concentrations of site related inorganic contamination in the Troutdale aquifer monitoring wells were below MCLs. The shallow aquifer beneath the site contained elevated levels of nickel. Concentrations in IB-6 were above the MCL for nickel (100 ppb). Nickel concentrations in the pond water were also elevated. Manganese is the other contaminant of note in the groundwater. High levels were found in the Troutdale aquifer upgradient and downgradient from the site. The source of the manganese is unknown.

# VII. REGULATORY REQUIREMENTS FOR ADDRESSING SITE RISKS

EPA's National Oil and Hazardous Substance Contingency Plan (NCP), found in 40 C.F.R. Part 300, requires that the site's remediation goals are protective of human health and the environment. For water, contaminant concentrations are compared to existing criteria such as the Safe Drinking Water Act Maximum Contaminant Level Goals (MCLGs). However, there are no corresponding criteria for soils. Federal remediation standards for cancer-causing chemicals are usually established by setting contaminant concentrations at levels that ensure cancer risks are maintained at or below acceptable levels. The EPA acceptable risk range for an increase in the potential number of cases of cancer is between one-in-ten-thousand excess cancers per ten thousand people, and one-in-one-million excess cancers per one million people. For non carcinogenic toxic effects, the effects from the contaminants are measured by a "Hazard Index", and cleanup levels are set at a Hazard Index of 1. An exceedance of the Hazard Index of 1 indicates that there may be toxic effects from exposure. Adverse health effects would not be expected if the Hazard Index is less than or equal to 1.

# VIII. SUMMARY OF SITE RISKS

# A. Risk Assessment Rationale

The risks to human health and the environment at the Allied Plating Superfund Site Prior to the Removal Action are described in the site-specific Remedial Investigation Baseline Risk Assessment, which was completed in 1992 by URS Consultants, Inc., for EPA, using EPA guidance. This document contains a Human Health Risk Assessment (Risk Assessment) and an Ecological Evaluation. The Risk Assessment followed a four step process: 1) an evaluation of data to identify contaminants which are of potential concern at the site, 2) an exposure assessment to identify current and potential exposure

pathways and exposure estimates, 3) a toxicity assessments for the chemicals of potential concern to determine concentrations having adverse effects, and 4) a risk characterization, which integrates the three earlier steps to summarize the current and potential risks posed by hazardous substances at the site.

The results of this Risk Assessment were used to determine the need for a Removal Action at the site. Following the Removal Action, a final evaluation of the residual site risks was performed to ensure that the site met the selected cleanup objectives. The results of the gree Removal Action Risk Assessment are discussed below. The results of the final risk evaluation are discussed in Section X:

# B. Determination of Contaminants of Concern

The soils, groundwater and surface water at the Allied Plating Site were sampled during the RI for potential contaminants, including metals, inorganics, and volatile and semi-volatile organics. The results were compared to EPA Region 10 preliminary screening concentrations (comparison concentrations for determining the significance of a contaminant) for water and soil. For the most part, screening concentrations for soil were based on a carcinogenic risk of 1 x 10<sup>-7</sup> or a noncancer Hazard Index of 0.1; and those for water were based on a carcinogenic risk of 1 x 10<sup>-6</sup> or a noncancer Hazard Index of 0.1. The contaminants that were not eliminated on the basis of screening concentrations were included in the risk assessment as contaminants of potential concern.

The contaminants of potential concern identified in the risk assessment included the following: for soils, antimony, arsenic, beryllium, cadmium, chromium, cobalt, copper, lead, mercury, nickel, and cyanide; for groundwater, manganese.

# C. Exposure Assessment

The objective of the exposure assessment was to estimate the type and magnitude of exposures from the site. This included identifying land usage, exposure routes, potentially exposed populations, estimating exposure point concentrations (contaminant concentrations that the affected individual is exposed to), and describing assumptions about exposure frequency and duration of exposure.

# 1. Land Usage

The site is currently used for industrial purposes. It can be distinguished by two primary areas: the "Layout Area" and "Impoundment Area". The layout area is occupied by a crane maintenance facility. The impoundment area, occupying the northern end of the site, contained a pond, which was known to have received plating wastes from the Allied Plating facility. This area is not used as part of current site operations.

Drinking water in the vicinity of the site is provided by the city of Portland. Nearby water supply wells are used for industrial processes and irrigation.

In the future, it is most probable that the area will remain industrial. However, residential use of the area is a remote possibility. Therefore the risk assessment examined both a future industrial and a future residential scenario.

#### 2. Exposure Pathways

Land uses were used to determine exposure pathways for contact with the contaminants. Exposure pathways and associated assumptions for each land use are identified in Table 5 and Figure 5. These exposure pathways were then combined into the following scenarios:

Current Industrial Scenario: Employees would receive exposures dermally, via ingestion, or by inhalation of contaminants in soil. Because exposure to contaminated groundwater currently does not occur, groundwater was not assessed as a possible route of exposure.

Future Industrial Scenario: In addition to the exposures described above, the scenario assumes the ingestion of groundwater.

Future Residential Scenario: Residential exposure pathways are the same as the Future Industrial pathways. In addition, because residential usage of potable water is likely to include bathing, inhalation of volatile contaminants from groundwater was an additional pathway considered for the residential scenario.

#### 3. Exposure Point Concentrations:

Exposure point concentrations were estimated for average and reasonable maximum exposures. The average case exposure (ACE) represents average exposure associated with the site. The reasonable maximum exposure (RME) is a worst case estimate of exposure which is still within the range of possible exposures. EPA guidance recommends that decisions regarding remediation at Superfund sites should be based on RME estimates rather the average, since a significant portion of the population may experience exposures higher than the ACE. However, an evaluation based on the average is useful for illustrating the degree of uncertainty associated with the RME. ACE and RME cases were evaluated for the residential land use scenario. Only the RME case was evaluated for the industrial scenarios.

For the exposure point concentrations, the arithmetic averages of the contaminant concentrations were used for the purpose of estimating average exposures (ACE) and the upper 95 percent confidence limit of this average was used to estimate reasonable

Table 5 Summary of Pathway-Specific Exposure Assumptions<sup>a</sup>

Exposure Pathway:					Resi	0000000		
	Parameter	Units	Age Group	Scason	ACE	RMB	SVE	
Soil Ingestion	Exposure Prequency	days	•	•	275	350	250	
	Ingestion Rate	mg/day	child	•	•	200	-	
•			adult	•	100	100	50	
Part. Inhalation	PEF	m <sup>3</sup> /kg			1.5E+07 <sup>c</sup>	1.5E+07 <sup>c</sup>	<u> </u>	
	Inhalation Rate	m <sup>3</sup> /day			20	20	1.5E+.07	
	Exposure Frequency	days	7 .	<del></del>	275		. 20	
G. Water Ingestion	Ingestion Rate	L/day			1.4	350	250	
	Exposure Frequency	days	<del>                                     </del>			2.0	- 1	
Inhalation (VOC)	Inhalation Rate	m <sup>3</sup> /day			275	350	250	
	Volatilization C.	L/m <sup>3</sup>			15	15	•	
	Exposure Time	minutes			.5	· 5	•	
	Exposure Frequency	days			10 <sup>d</sup>	10 <sup>d</sup>	•	
All Pathways	Exposure Duration	ут	child		275	350	•	
	1	<b>,</b> .				6	•	
	Body Weight	- ha	adult		9	24	25	
		kg	child	_ • 1	•	15		
			adult		70	70	70	

Taken from U.S. EPA (1991h) and U.S. EPA (1991a) guidance unless otherwise indicated.

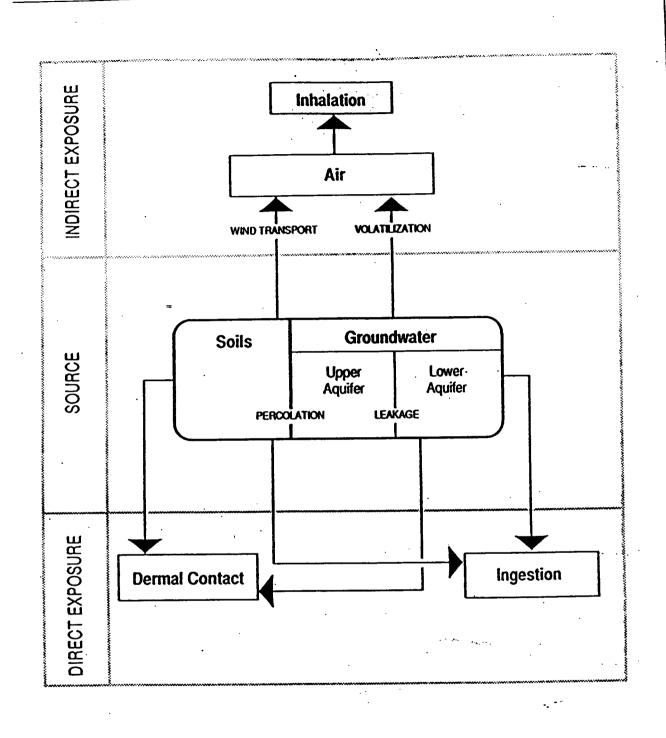
Current industrial scenario: 1900 cm<sup>2</sup>. Future industrial scenario: 5000 cm<sup>2</sup>.

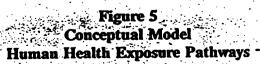
See Section 6.5.4 of RI.

Taken from U.S. EPA Interim Guidance for Dermal Risk Assessment (U.S. EPA, 1991c).

ACE

Average case exposure.
Reasonable maximum exposure. RME





Affied Plating Portland, Orego maximum exposure (RME). These values are shown in Table 6.

For <u>current land use</u>, the exposure point concentrations for soil were calculated using concentrations found in surface soil samples. The use of surface soil data assumes minimal disturbance of surface soil from site activities.

For <u>future land use</u>, the exposure point concentrations for soil were calculated using concentrations found in surface, shallow, and composite samples taken from depths ranging to 3 feet. The use of soil samples from these depths assumes that construction of industrial or residential facilities on the site, along with grading, will result in disturbance of soils resulting in exposure to different soil depths, and mixing of soils.

As the probability of using the shallow aquifer for a drinking water source was minimal, only data for the Troutdale aquifer wells located on site were used for the purposes of evaluating the risk of consuming groundwater under future land use scenarios.

#### D. Toxicity Assessment

#### 1. Cancer Risks

Excess lifetime cancer risks were determined for each exposure pathway by multiplying the exposure level by the chemical-specific cancer potency (slope) factors. Chemical-specific cancer potency factors have been developed by EPA from human epidemiological or animal studies. This information was obtained from EPA's Integrated Risk Information System (IRIS) and the Health Effects Assessment Summary Tables (HEAST). Risk estimates calculated from these potency factors reflect a conservative "upper bound" estimate of the risk posed by potentially carcinogenic compounds. That is, the true risk is very unlikely to be greater than the risk predicted and could be substantially lower. The resulting risk estimates are expressed in scientific notation (i.e. 1 x 10-6 for 1/1,000,000; indicating that, in this example, an individual is not likely to have greater than a one in one million chance of developing cancer over his/her lifetime as a result of site-related exposure). Current EPA practice assumes carcinogenic risks are additive between chemicals when assessing exposure to a mixture of hazardous substances. Therefore, cancer risks have been summed across chemicals and across exposure pathways.

The carcinogens at the site were arsenic, beryllium, cadmium, hexavalent chromium, and nickel.

#### 2. Noncancer risks

Potential concern for noncarcinogenic effects of a single contaminant in a single medium is expressed as a Hazard Quotient. A Hazard Quotient is calculated by dividing

Table 6
Exposure Point Concentrations

		e de la		5:07	e/le)			Crossoveter of (EVI)						
	in the second se		Shallow Surface Surfac				SEE Deep		(CCSS20)		S - 6 12/10 5 8			
Chemical	ACB	RMCE .	) ACB	RMB	ACE	RMB	3 (	SO BAG		R/G	Rec (178)	SH OT		EHI - 01
	5.11B+04	1.19B+05	1.98E+04	3.91B+04	5.32B+03	8.05E+03	4.70B+03	6.10B+03	-	-	NA .	1	NA .	1B+04
Antimony		8.01E+04	2.31B+04	3.43B+04	1.778+03	3.11E+03	3.39B+03	. 458B+03			0.05	1 -	4B+1	8B+03
Arsenic	4.46E+04			8.06E+02	9.35B+02	1.20E+03	8.58E+02	9,91B+02	6.21B-01	7.70B-01	0.02	2B+1	1B+1	1B+5
Beryllium	7.50E+02	8.95B+02	7,43B+02		8.04B+02	1.A1B+03	5.74B+02	8,70B+02	2.93B+00	3.27B+00	NA.	2B+0	2.78+3	NA
Cadmium	3.41B+03	5.74E+03	2.23E+03	3.06B+03		8.76E+04	3.20B+04	5.26B+04			NA.	4B+3	NA	4B+3
Chromlum+1	5.69B+06	1.06E+07	2.60B+06	4.10B+06	4.27B+04			1.79B+02	<del>                                     </del>		NA.	2B+1	4B+2	NA.
Chromium+6	4.09B+04	7.64B+04	1.87B+04	2.95E+04	3.07B+02	6.30E+02	2.30B+02	I	6.69B+00	9.00B+00	<del></del>		NA ·	1.6B+6
Cobalt .	3.23E+04	4.35E+04	2.57E+04	3.00B+04	2.61B+04	3.17E+04	2.23E+04	2.63B+04			NA.	3E+2	NA.	2B+6
Copper	1.89B+07	3.63E+07	8.89B+06	1.41B+07	3.24B+05	6.13B+05	2.62B+05	4.79B+05				NA NA	NA NA	NA.
Lead	1.80B+05	2.86E+05	1.75E+05	2.51B+05	5.18B+04	9.99B+04	3.99B+04	6.30E+04	5.A5E+00	7.34B+00	NA.			3B+6
Manganese		_		_	-	-	-	-	4.78B+03	6.68B+03	NA NA	1B+2	NA .	
	4.95B+06	8.50B+06	3.19E+06	5.05B+06	7.42B+05	1.41B+06	. 5.11B+05	9.12B+05	-	7-	NA	7B+1	2E+4	5B+5
Nickel	3.31B+03	6.83B+03	1.87E+03	3.07B+03	2.77B+02	3.06B+02	2.75B+02	3.05B+02	9.66B-01	1.00B+00	NA	0.3	NA NA	2B+3
Thailium	3318+03	- USDS 7 US	12.5.0				<del>                                     </del>	-	8.33B-01	1,47E+00	0.3	3B+0	5B+2	2B+4
Carbon Tetra-	-	-	1 -	[ -	]	· _		İ	i	<u> </u>	<u> </u>	<u> </u>		<del></del>
chioride			<del> </del>		-	_	-		5.71B-01	7.46B-01	0.3	2B+1	1E+4	3E+5
Chloroform			1.39E+03	1.59E+03			1.45B+03	1.50B+03	-	-	0.7	NA NA	6E+0	NA NA
cPAH	1.45E+03	1.47E+03	132E+U3	1375+03		ستسبا			1			<del></del>		

ACE = Average case exposure

RME = Reasonable maximum exposure

the human dose by the reference dose (RfD) or other suitable benchmark for noncarcinogenic health effects. RfDs, expressed in units of mg/kg-day, are estimates of lifetime daily exposure levels for humans, including sensitive individuals, that are not expected to cause an appreciable risk of harmful effects during a lifetime. Estimated intakes of chemicals from environmental media (e.g., the amount of a chemical ingested from contaminated drinking water), can be compared to the RfDs. RfDs are derived from human epidemiological studies or animal studies to which uncertainty factors have been applied (e.g., to account for the use of animal data to predict effects on humans). RfDs used in this risk assessment are from IRIS. The Hazard Quotients from site contaminants are then added within a media or across all media to which a population is likely to be exposed. This produces the Hazard Index. Adverse health effects are not expected to occur if the Hazard Index is less than 1. As the Hazard Index increases above 1, adverse effects become more likely.

The chemicals at the site which could cause noncancer toxic effects were antimony, arsenic, beryllium, cadmium, trivalent and hexavalent chromium, cobalt, copper, and nickel.

#### E. Risk Characterization

Estimated risks from all scenarios are shown in Table 7

#### 1. Sitewide Risks

The sitewide risks for current and future land use represent the sum of risks from exposure to impoundment area soil, layout soil, and groundwater on site.

Assumptions were used to estimate the proportion of time spent in each of the two areas on site based on site usage. These assumptions were as follows:

current industrial scenario: 5 percent of time spent in the impoundment area and 95 percent in the layout area

**future industrial scenario:** 50 percent of time spent in the impoundment area and 50 percent in the layout area, and ingestion of groundwater

future residential scenario (ACE): 25 percent of time spent in the impoundment area and 75 percent in layout area, and ingestion of groundwater

future residential scenario (RME): 50 percent of time spent in the impoundment area and 50 percent in the layout area, and ingestion of groundwater.

Carcinogenic risk for all scenarios was less than or equal to 1 x 10<sup>-4</sup>.

Table 7
Carcinogenic Risk and Non Carcinogenic Risk Indices for Risk Assessment Scenarios

	Sitewide	Riska	limpo.	nointai?	O LEGyo	ng Alten (1975)	ઉદ્યાદામાલ			
Scenario Time Frame	Hazard Index	Cancer Risk	Hazard Index	Cancer Risk	lfazaro Index	Conserving Ranks	Herori Indes	(ઉદ્ભાલક પ્રાથમિક		
Industrial	0.23	1x10 <sup>-3</sup>	1.18	8x10 <sup>-5</sup>	0.18	8x10 <sup>-6</sup>	•••	***		
future	2.2	4x10 <sup>-5</sup>	0.55	4x10 <sup>-5</sup>	0.14	8x10 <sup>-6</sup>	0.86	1x10 <sup>-5</sup>		
Residential future RME	4.39	1x10 <sup>-4</sup>	3.45	2x10 <sup>-4</sup>	0.49	4×10 <sup>-5</sup>	2,42	4x10 <sup>-5</sup>		
future ACE	1.3	1x10 <sup>-3</sup>	0.71	1x10-5	0.16	4x10 <sup>-6</sup>	1.01	5x10 <sup>-6</sup>		

Noncarcinogenic Hazard Indices exceed a Hazard Index of 1 except the current industrial land use scenario, which was less than 1.

The Risk Assessment determined that the risk associated with the site resulted from the contamination in the impoundment area. The risks from the two site areas and groundwater are discussed below.

### 2. Impoundment Area

The carcinogenic risks associated with the industrial and future residential ACE scenarios were less than 1x10<sup>-4</sup>. The future residential RME risk was greater than 1x10<sup>-4</sup>. The contaminants contributing to the majority of the carcinogenic risks were arsenic, nickel, chromium<sup>+6</sup>, and PAHs.

Hazard Indices for both the current industrial and future residential RME scenarios exceeded 1. The future industrial and future residential ACE scenarios were less than 1. The chemicals contributing to the majority of the Hazard Indices were copper, nickel, cobalt, arsenic, and antimony.

These risk values were based on exposure to an averaged concentration and include assumptions related to mixing the soil based on potential site activity. The plating waste in the impoundment area was present as a surface layer. Therefore a separate analysis was run to determine the risks associated with one of these "hot spots".

Table 8 shows the RME soil concentrations of inorganic contaminants of concern compared with the concentrations in Location IS26, a sample of plating waste in the impoundment area. The table also shows the noncarcinogenic Hazard Indices and the carcinogenic risks associated with these contaminant concentrations. The residential and industrial Hazard Indices exceed one (12.21 for residential exposure and 1.77 for industrial exposure). The majority of the risk resulted from copper, nickel and arsenic. The cancer risk from the plating waste were greater than 1x10<sup>-4</sup> for the residential scenario and less than 1x10<sup>-4</sup> for the industrial scenario.

### 3. Layout Area

The carcinogenic risk values for layout area soil were below 1x10<sup>-4</sup>. The major contaminants contributing to the risk were nickel, PAHs, arsenic, and beryllium.

Noncancer Hazard Indices were less than 1. Chemicals contributing to these Hazard Indices were cobalt, nickel, antimony, arsenic, and copper.

Table 8
Risk Results for Inorganic Contaminants of Potential Concern in Hot Spot

Osemical .	Sol	Imponedment Concentration (4)		(e);		Private of Agent Barrery		13 10.6		my Sal		The transfer of the same of th	Martine Marri	
~ <del>7.7.7.9</del> 00		Current Lad quitrial		Sept Mary Labor	and the same and t	N. Orien	304,125		กของใช้สาย	A. Carlon	. Kirring	SPECIFIC SPECIFICATION OF THE PROPERTY OF THE	· ęużsuń.	
	RVB **		TSDK/RVŒ意	RAG <sub>*</sub>	10.1C.(6)	SECRETARIES.	MIS X	300m	(©/O	SW/RAB	NA RIVER	150	1 7777	1.573
Antimony	1.19B+05	7.31E+04	0.66	0.15	0.10	_ :	-	3.91B+04	7.81B+04	2.00	0.36	0.72		
Arsenic	8.01E+04	1.448+05	1.80	0.13	0.23	2.98E-05	5.36B-05	3.43B+04	1.44B+05	4.20	0.42	1.76	9.80B-05	4.128-04
Beryllium	8.95E+02	8.20E+02	0.92	8.69E-05	0.00	7.02E-07	6.46B-07	8.06B+02	8.20E+02	1.02	5.9B-04	6.0B-04	5.48B-06	5.59E-06
Cadmium	5.74E+03	7.74E+03	1.35	0.003	0.00	1.64E-07	2.21B-07	3.06日+03	7.74E-03	2.53				
Chromium+3	1.06E+07	1.74E+07	1.64	0.005	0.01		.=	4.10E+06	1.74B+07	424	0.02	0.05	1.488-07-	3.74B-07
Chromium <sup>+6</sup>	7.64E+04	1.32E+05	1.72	0.007	0.01	1.46E-05	251E-05	2.95E+04	1.328+05	4,47	.0.02	0.08	- '	4257.44
Cobalt	4.35E+04	451E+04	1.04	0.16	0.17			3.00E+04	4.51E+04		0.03	0.09	9.52E-06	4.26B-05
Copper	3.63E+07	7.01E+07	1.93	0.48	0.93			1.41E+07	7.01B+07	1.50	0.16	0.24	<del> </del>	-
Lead	2.86E+05	4.01E+05	1.40				<del></del>	2.51E+05		4.97	1.39	6.91	-	-
Nickel	8.50E+06	9.39E+06	1.10	0.21	0.23	3.24E-05			4.018+65	1.60		-		
Thallium	6.83E+03	1.25E+04	1.83	0.04		327600	3.568-05	5.05E+06	9.39E+06	1.86	0.93	1.71	3.26E-05	6.06B-05
TOTAL			1.03	0.04	0.09	-	-	3.07E+03	1.25E+04	4.07	0.14	0.65	-	•

IS-26 is a sample of plating waste from the impoundment area

b Risk numbers have been rounded for the table, column totals calculated from unrounded numbers.

#### 4 Groundwater

The carcinogenic risks associated with groundwater ingestion were below 1x10<sup>-4</sup>. Beryllium contributed the majority of the risk. However, beryllium was not found on site at elevated levels, and therefore its presence in the groundwater was assumed to result from non-site related factors.

The Hazard Index under the future residential RME scenario exceeded 1. The majority of the risk was from manganese, which was located at high concentrations in the groundwater both upgradient and downgradient from the site.

The shallow aquifer beneath the impoundment area contained nickel above federal drinking water standards. Because the aquifer is shallow and not widespread, it is unlikely that the shallow aquifer would be used for a drinking water supply well. Therefore, the risk from nickel was not included in the Risk Assessment.

#### F. Risk Assessment Uncertainties

The accuracy of the risk characterization depends in large part on the accuracy and representativeness of the sampling, exposure, and toxicological data. Most assumptions were intentionally conservative, so the risk assessment will be more likely to overestimate risk than to underestimate it. Uncertainties and their origins are discussed below.

#### 1. Data Evaluation

Several of the factors adding uncertainty to the estimates tend to result in overestimation of the exposure. These include: the directed nature of the sampling program, the use of upper 95th percentile confidence limits or the reasonable maximum exposures (RME) for the source concentrations, the use of many 95th-percentile values in the exposure estimation calculations, and the use of the steady state assumption for source concentration estimates.

One factor that could lead to underestimation of the exposures is the use of sample quantitation limits that could result in missing low concentrations of some compounds that might pose significant risks. The cumulative effect of all exposure uncertainties most likely is to overestimate rather than underestimate the true potential exposures.

### 2. Toxicity Assessment Uncertainties

The basic uncertainties underlying the assessment of the toxicity of a chemical include uncertainties arising from the design, execution or relevance of the scientific studies that form the basis of the assessment; and uncertainties involved in extrapolating

from the underlying scientific studies to the exposure situation being evaluated, including variable responses to chemical exposures within human and animal populations, between species, and between routes of exposure. Risks were assumed to be additive across multiple chemicals. In reality, exposures to multiple chemicals can cause risks that are less than additive (antagonism) or more than additive (synergism). However, in the absence of data on a specific chemical mixture, the assumption of additive risk is commonly used. Assuming additive risks may underestimate or overestimate risk.

### G. Human Health Risk Conclusions

Based on the Risk Assessment, the Allied Plating facility was a moderate risk site. The plating waste layer in the impoundment area posed a Hazard Index above 1 for both the residential and industrial scenario (12.21 for residential and 1.77 for industrial), and a cancer risk greater than 1x10<sup>-4</sup> for the residential scenario (5.21x10<sup>-4</sup>).

The layout area posed an acceptable risk; Hazard Indices were less than 1 and carcinogenic risk was less than 1x10<sup>-4</sup>. Groundwater posed a carcinogenic risk less than 1x10<sup>-4</sup>. The Hazard Index associated with drinking the groundwater was associated with manganese which is not a site related contaminant, and therefore would not be the focus of any site specific remedy.

### IX. ECOLOGICAL ASSESSMENT

### A. Ecological Profile

Ecological conditions in the vicinity of the Allied Plating site can be categorized into the following three kinds of habitats:

An urban industrial area, which includes the site itself, a backfill area north of the site, and bordering properties to the south, east, and west of the site;

A riparian area (the bank of the Slough) that occurs to the north of the backfill area; and

The Columbia Slough.

The urban industrial area contains sparse habitat suitable for fish and wildlife populations. Bullfrogs were seen in the pond, and vegetation in this urban industrial area has been limited to shrubs, brush, and dense blackberry patches along fence rows.

Riparian communities occur nearly continuously along the entire length of the Slough. These vegetative communities are highly valued ecological resources because they act as a buffer between the slough waters and adjacent lands. Vegetative riparian

communities also provide habitat for a variety of wildlife species, and are important in the life history of numerous birds, mammals, fish, reptiles, amphibians, and insects.

The Columbia Slough is a turbid, slow-moving, tidally influenced stream. Animal communities that are highly dependent on the slough habitat include plankton, benthic invertebrates, fish, birds and mammals.

#### B. Data Evaluation

For soils and sediments, the focus of the qualitative evaluation was on relative concentrations of contaminants in soil as judged by comparisons with available information for background levels, or available sediment quality values. The major limitation to this approach is that relative ranking based on elevations above background may not represent relative ranking based on potential toxicity.

For surface water, the evaluation of chemical contaminants was based on comparisons with chemical-specific ambient water quality criteria (AWQC) for the protection of aquatic organisms.

### C. Ecological Assessment

Based on their site to background ratios of 10 to 100, and available toxicity information, the trace metals chromium, selenium, arsenic, and mercury in site soils from the impoundment area had the highest potential toxicity to wildlife.

Based on site-to-background and ratios of 10 to 100, PAHs were the substances of greatest concern from the riparian area. The PAHs are not site related.

For the Slough sediments, with the exception of 2-butanone, average concentrations of all chemicals of potential concern for which sediment quality values were available exceeded their corresponding sediment quality values. However, within the site vicinity, the upgradient and downgradient sediment contaminant concentrations were similar, therefore contamination could not be linked with certainty to the site.

For pond surface water, average concentrations of the following substances exceeded AWQC values: beryllium, cadmium, hexavalent chromium, copper, nickel and lead. These comparisons indicate that metal contamination concern in the pond water were potentially hazardous to aquatic biota.

For groundwater, the maximum concentrations of bis(2-ethylhexyl)phthalate and cadmium exceeded AWQC.

For the Columbia Slough, concentrations of cadmium and lead in the surface water exceeded AWQC values. However, because of the general poor water quality conditions

in the Slough, and the number of other potential contaminant sources, it is doubtful that increased levels of cadmium and lead in Slough surface waters can be attributed solely to historical activities at the Allied Plating site.

### X. REMOVAL ACTION

### A. Determination to Perform a Removal Action

The Risk Assessment determined that the impoundment area was responsible for the majority of the risks associated with the site. The layer of plating waste covering the impoundment area posed a potential health threat. The risk associated with the plating waste in the impoundment area met the criteria for a Removal Action. After consideration of other potential cleanup options, EPA determined that remediating the site as a pre-Record of Decision Removal Action was the preferred option.

The prospect of performing the pre-ROD Removal Action for final site cleanup was approved by the EPA Superfund Revitalization Organization at EPA Headquarters under the Superfund Accelerated Cleanup Model (SACM) program. A Removal Action Memo which approved the Removal Action was signed in October 1992. EPA signed an interagency agreement (IAG) with the U.S. Army Corps of Engineers (USACE), Missouri River Division, to perform the Removal Action at the Allied Plating site using the USACE Rapid Response Program. The Rapid Response Program is a quick turnaround contact mechanism for site cleanup.

### **B.** Action Levels

The selected goal of the Removal Action was to clean the site so that the Hazard Index would be less than or equal to 1, and the excess cancer risk would be less than or equal to  $1x10^{-4}$  for the industrial scenario. EPA determined that the use of the industrial scenario was appropriate based on the fact that the site and vicinity historically were, and currently are used for industrial purposes, and would likely stay that way in the future. In addition, future use of the property for building residences would require filling the impoundment area to the grade of the layout area or the grade of MLK Boulevard (between 5 and 30 feet of fill). Thus, there would not be contact with any residual contamination.

Based on information from the Risk Assessment, the contaminants which posed the majority of the site risk were antimony, arsenic, copper and nickel. Their removal would leave the site at an acceptable risk level. The action levels for the Removal Action were based on the assumption that these four major contaminants were present in equally distributed concentrations. Thus, with four contaminants, the cleanup levels were set at 1/4 the individual contaminant values equal to a Hazard Index of 1 (these values were lower than those corresponding to the acceptable cancer risk). The rationale for this approach is that the cleanup would result in a Hazard Index that at most would be 1

 $(4 \times 1/4)$ , this assumes an additive effect from the chemicals. Excavation continued until concentrations were below the following:

Antimony	200 mg/kg
Arsenic	150 mg/kg
Copper	20,000 mg/kg
Nickel	10,000 mg/kg

The site remediation progress was monitored and evaluated using an X-Ray Fluorescence Spectrophotometer (XRF), a field screening tool. Confirmational samples to provide substantiation that the removal objectives were met were sent to an EPA approved lab for analysis.

#### C. Removal Action Boundaries

The impoundment area was divided into four sections for the Removal Action (Figure 6). The delineations were based on the equipment and procedures needed for each area.

Flat Area - the west side of the pond, relatively dry area covered with dead, dry grass and approximately six inches of plating waste

Burn Pit - a shallow disposal pit at the south end of the pond containing burned debris, plating waste and soil

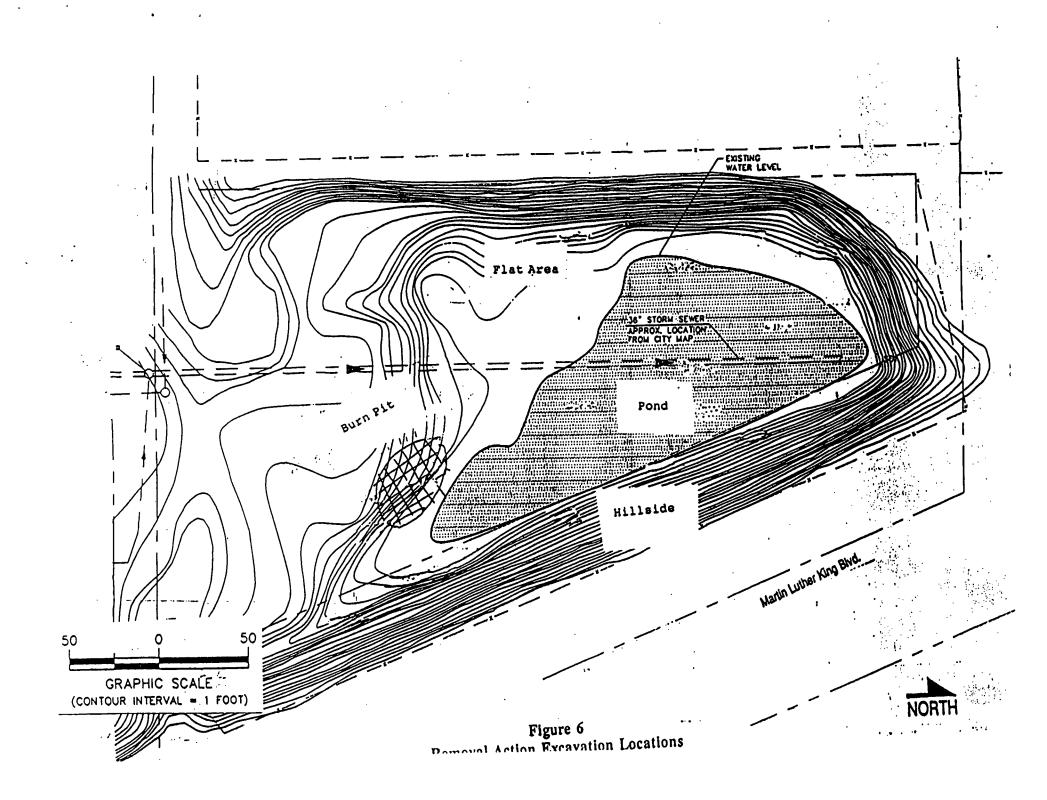
Pond - surface liquid impoundment containing approximately two feet of water and plating waste contaminated sediment

East Hillside - the steep slope leading to MLK Boulevard, covered with brush, debris, and a six inch layer of plating waste.

### D. Removal Activities

#### 1. Excavation of Contaminated material

Cleanup at the site commenced on Friday, October 23, 1992. The first step of cleanup was the dewatering and excavation of the pond. Because the summer preceding the Removal Action had been hot and dry, the pond volume was approximately 20% of the level found during the RI. A six inch pump was used to pump the liquids and sediments from the pond to a mixing tank where ferric chloride and lime were added to coagulate the solids. The resulting slurry was then pumped through a filter press to remove the solids. The filter cake (from the pond sediments) was stockpiled for disposal and the water placed into 20,000 gallon baker tanks for storage. When needed to aid in



sediment removal, the water was pumped through a filter, the pH was adjusted, and the water was piped back to the pond where the pressure from the resulting water jet was used to slurry the sediments.

During the dewatering process, as the water level dropped, an excavator pushed the exposed surfaces of the pond edges toward the center of the pond. The combination of slurrying the sediments, pumping out water and sediments, and "squeegeeing" of the sediments to the middle, allowed the edges of the pond to be continually backfilled with 12" to 18" diameter rock (brought in from a local quarry), bringing both ends toward the middle, culminating in complete backfill. At the end of the process, all of the pond water had been removed and stored in baker tanks. 70,000 gallons of pond water and 120 tons of filter cake produced from the dewatering operation were generated for disposal.

The flat area was excavated to a depth of six inches which included grass, plating waste and soil around the grass roots. Approximately 285 tons of soil and debris were excavated.

The burn pit was excavated to a depth of three feet and then backfilled with 6" to 9" diameter rock. Approximately 175 tons of soil and debris were excavated.

The excavator was used to scrape six inches to one foot from dry sediment areas around the perimeter of the pond during pond dewatering. Approximately 280 tons of soil were excavated.

Backfilling of the pond allowed access to the east hillside for the excavator to scrape six inches of debris, plating waste, and soil from along the sloped hillside area. The approximate volume of soil and debris removed for disposal on the east hillside was 190 tons.

The impoundment area (including the former pond) was then backfilled with one foot of 6" to 9" diameter rock. The rock was leveled and graded with a bulldozer so that no low areas were visible. Approximately 5600 tons of rock were placed as backfill. Following backfill, the east hillside was sprayed with a State specification grass seed mixture to prevent erosion.

### 2. Disposal

The solid waste was either classified as debris contaminated with F006 plating wastes for landfilling without treatment under the Hazardous Debris case-by-case capacity variance, or as soil contaminated with F006 waste requiring stabilization prior to landfilling. Approximately 1100 tons of material was disposed of at Envirosafe Services, Inc., in Grandview, Idaho.

The 70,000 gallons of water from the pond was disposed of at Tektronix, a treatment, storage and disposal facility in Beaverton, Oregon.

### 3. Final Site Analysis

Based on the results of the confirmational samples which were taken when the XRF samples indicated the areas were clean, the cleanup exceeded the cleanup goals. The results of the confirmational samples are shown in Table 9. The locations of these samples and the XRF samples are shown on Figure 7.

Following the completion of the Removal Action, EPA conducted a risk assessment on the contaminant concentrations remaining in the surface soils of the impoundment area. The analysis assumed a lifetime exposure to the remaining residual contaminant concentrations. The results are shown in Table 10 (see also Appendix B). Under the industrial scenario, the impoundment area poses a risk of 8x10<sup>-6</sup> and a Hazard Index of 0.35. For the residential scenario, the impoundment area poses a risk of 8x10<sup>-5</sup> and a Hazard Index of 2.5. These numbers are extremely conservative and were calculated to provide a worst case scenario. The actual risk likely would be much lower based on the fact that 1) the remaining contamination is now under one or more feet of rock, thus preventing direct exposure to it; and 2) the area fills with water, and is below the surrounding grade, and so future residential or industrial use would require additional backfilling, resulting in covering the residual contamination by an additional 5 or more feet of backfill.

#### 4. Deed Restriction

Following the Removal Action, the site owner placed a deed restriction on the property to prevent the use of the shallow aquifer for drinking water purposes. The deed restriction contains the following language:

The undersigned as owners of said tracts agree to burden the above described real property with a restriction prohibiting the use of a well for drinking water unless the top of the screened interval is deeper than 20' below mean sea level, and the water from the well is tested to ensure that it meets drinking water standards before use.

The required interval in the deed restriction will prevent screening of future wells in the shallow aquifer.

### XI. DETERMINATION THAT NO FURTHER ACTION IS APPROPRIATE

EPA's determination of No Further Action for the Allied Plating Site is based on the following:

28

Table 9
Removal Action Confirmational Sampling Results

Analyte	A1	A4	A7	A10	C6	C8A	C9	D1 .	D4	D7.	and the second second	(G)
Arsenic	17.8	16.4	20.4	17	29.8	23	40.9	12	24.7	19.6	12	33.6
Cadmium	2.66	2.07	1.97	1	1.91	2.12	4.72	1	3.73	2.17	0.91	3.72
Chromium ·	76.6	76.1	2220	2010	1150	1280 ·	5590	166	861	210	219	5110 -
Copper	553	460	4580	3200	7300	7290	12000	876	4270	1930	318	11800
Lead	226	169	96.5	73.1	71.4	43.1	203	103	158	127	72.7	234
Nickel	912	756	1720	973	2840	2300	4960	586	2210	5410	722	2260
Antimony	3	3	14	14	4.5	6.1	36.5	3	3	3	3 .	37.3
Cyanide	1.28	0.87	13.3	6.64	55.2	96.5	38.4	3.98	23.1	10.9	1.16	19.3

All values in mg/kg

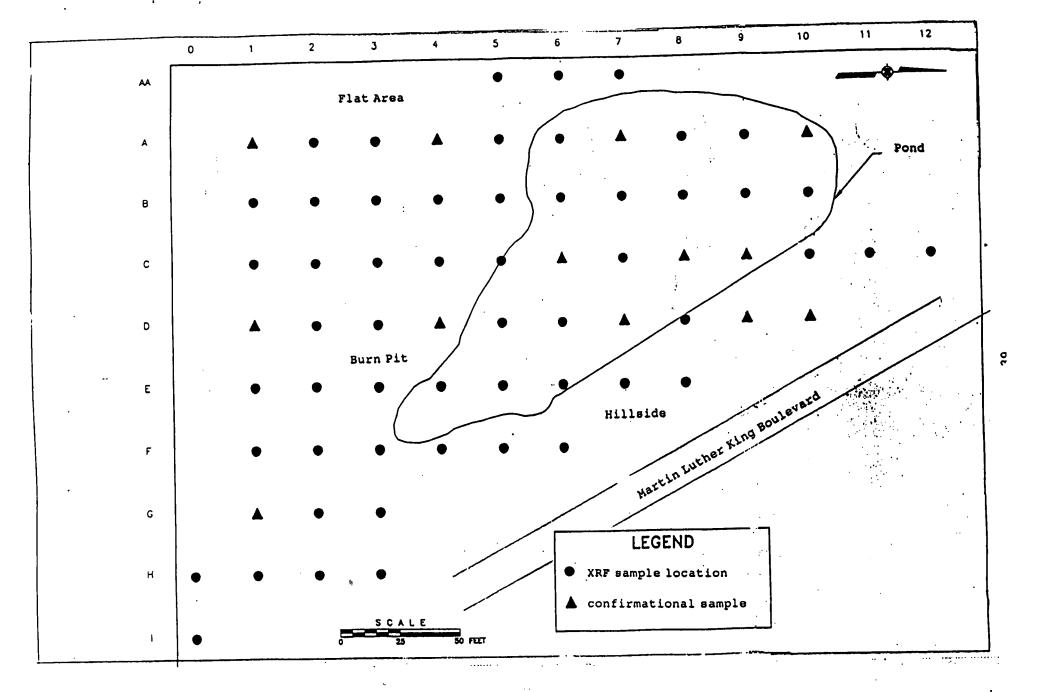


Figure 7
Removal Action
Screening and Confirmational Committee V

Table 10 Residual Risk for the Post Removal Impoundment Area

		Summary S	Statistics (va	ilues in mg/kg	Residentia	il Sechanio	Judinijala Semble		
Analyte	Min <sup>1</sup>	Max²	Mean³	95% UCL	Exp. Pt.	HQ	Risk	5 B0000	<b>ુ</b> લ્કોર
Antimony	3	37	11	26	26	0.2		0.03	
Arsenic	12	41	12	28 .	28	0.3	7.7x10 <sup>-5</sup>	0.05	8.2x10 <sup>-6</sup>
Cadmium	1 '	5	2	3	3	0.02		0.003	
Chromium	76	5590	1581	13,161	5590	0:06		0.008	
Copper	318	12,000	4548	21,817	12,000	1.2		0.16	
Lead	43	234	131	190	190	•••		***	
Nickel	586	5410	2137	3928	3928	0.7		0.10	
Cyanide	1	97	23	199	97	0.02		0.002	
				Risk Totals		2.6	7.7x10 <sup>-5</sup>	0.35	8.2x10 <sup>-6</sup>

95% upper confidence limit value calculated from the confirmational samples.

Minimum concentration measured in confirmation samples.
 Maximum concentration measured in confirmation samples.

<sup>&</sup>lt;sup>3</sup> Mean concentration calculated from confirmation samples.

Exposure Point Concentration: value is either the 95% UCL value of the confirmational samples, or if the 95% UCL value was greater than the maximum value, the maximum value was used.

- 1) The Removal Action achieved a soil cleanup level in the impoundment area which left the health threat associated with site related contaminants well below a 1x10<sup>-4</sup> excess cancer risk and a Hazard Index of 1 for the industrial scenario. EPA expects the site usage to remain industrial in the future.
- 2) The results of the Remedial Investigation and Risk Assessment indicated that all other areas of the site were below a 1x10<sup>-4</sup> risk and below a Hazard Index of 1 for all scenarios.
- 3) Site related groundwater contamination above federal drinking water standards was present in only one well, which was contaminated with nickel. The well was in the shallow aquifer in the vicinity of the pond. The concentration of nickel is expected to drop now that the source of contamination has been removed (the plating waste). No one is currently drinking the water, and the deed restriction should prevent future use of the groundwater.
- 4) Although the manganese in the groundwater poses a potential health threat, the contaminant is widespread in the groundwater in the area and is not related to the historical activities at the site.

Based on EPA's Risk Assessment for the site, which shows that the Removal Action resulted in a risk in the 10<sup>-6</sup> range, and a Hazard Index of less than 1 for the selected industrial scenario, EPA believes that no remedial action is necessary at this site to protect human health and the environment. In light of EPA's decision not to select a remedial action, the requirements of Section 121 of CERCLA including the ARARs provisions of Section 121(d)(2) of CERCLA are not triggered.

### XII. CESSATION OF GROUNDWATER MONITORING

Although nickel, a site related contaminant, was found in the groundwater beneath the site, EPA does not plan to perform additional groundwater monitoring. This decision is based on the following:

- 1) The plating waste which was the source of site related contamination in the groundwater has been removed from the site. Therefore, any remaining levels of contamination in the groundwater are expected to decrease.
- 2) Only one well contained nickel above federal drinking water standards. The well is in the shallow aquifer beneath the impoundment area. It is unlikely that this aquifer will be used for a water supply well. The residences and businesses in the area are on the city water supply, and the deed restriction should keep the shallow aquifer from being used in the future. Although both the shallow aquifer and deeper aquifer beneath the site contain concentrations of manganese above health based levels, the manganese is not site related.

### XIII. 5 YEAR REVIEW

A 5 year review will be conducted to ensure that the land use for the site remains industrial.

### XIV. EXPLANATION OF SIGNIFICANT DIFFERENCES

There are no differences from the preferred alternative in the Proposed Plan.

### Appendix A

### **Responsiveness Summary**

### **Allied Plating Responsiveness Summary**

#### I. Overview

The purpose of this Responsiveness Summary is to summarize and respond to comments received during the comment period held by the Environmental Protection Agency (EPA) from April 26, to May 26, 1993, regarding EPA's Proposed Plan for no further action for the Allied Plating Superfund site. The Proposed Plan was based on information in the Remedial Investigation report prepared for the site, and on the documented results of a Removal Action taken at the site from October 20, to November 10, 1992. These documents were made available to the public in the Administrative Record, located in the information repositories maintained in the EPA Records Center in Seattle, and at Portland State University's Miller Library, and the N.E. Neighborhood Association in Portland, Oregon. The notice of availability of these documents was published in The Oregonian on April 29, 1993. The Proposed Plan and newspaper notice offered the option of having a pubic meeting. However, a meeting was not requested by the public.

### II. Background on Community Involvement

To date, the following community relations activities have been conducted by EPA at the Allied Plating site:

February 1987	EPA distributed a fact sheet announcing the nomination of the site to the National Priorities List.
September 1987	Community Relations Plan published, which included interviews from the community and local officials.
March 1990	EPA released a fact sheet announcing the site was placed on the National Priorities List.
November 1990	EPA distributed a fact sheet announcing the beginning of the RI field work.
June 1991	EPA released a fact sheet describing the preliminary results of the RI.
October 1991	Community Relations Plan Schedule updated.
October 1992	EPA mailed a fact sheet announcing the beginning of the Removal Action at the site.

April 26, 1993	EPA mailed the Proposed Plan for No Further Action. In the Proposed Plan, EPA offered the opportunity for a public meeting. No request was made.
April 28, 1993	EPA published a newspaper notice in <u>The Oregonian</u> announcing the Public Comment Period and the opportunity for a public meeting.
April 26, 1993	Public Comment Period begins.
May 26, 1993	Public Comment Period ends.
June 1993	Responsiveness Summary prepared.

III. Summary of Public Comments and Lead Agency Response.

There were no public comments submitted during the public comment period held from April 26 to May 26, 1993. There was no request for a public meeting, and no oral comments were made.

### Appendix B

### **Post Removal Risk Assessment**



## UNITED STATES ENVIRONMENTAL PROTECTION AGENCY REGION 10

1200 Sixth Avenue Seattle, Washington 98101

June 3, 1993

**EECEIALD** 

JUN 0.4.1993

Reply to Attn. of: ES-098

SUPERFUND REMEDIAL BRANCH

**MEMORANDUM** 

SUBJECT: Residual Risk Calculations for Allied Plating Soil

FROM:

Carol Sweener

Health and Environmental Assessment Program, ESD

TO:

Kevin Rochlin, Remedial Project Manager

Superfund Remedial Branch, HWD

The attached tables provide calculations of risk for soil left on site after the removal.

Because a layer of gravel was emplaced following the removal so that the contaminated soil surface is covered, there is not a complete pathway for human exposure. Under these current conditions there is little exposure to this soil and therefore little risk. In response to your request for quantitative evaluation of risk based on the concentrations in the residual soil layer, calculations are shown in the attached tables using the concentration data that you provided. These exposures and risks would only occur if the gravel were removed or disturbed so that the soil surface became available for human contact.

Other assumptions inherent in the attached calculations include the following:

- Locations sampled are representative of the distribution of contaminant concentrations throughout the site, and distribution of contaminant concentrations is approximately lognormal.
- An exposed individual moves throughout the site with an equal chance of contacting soil with any of the concentrations from the distribution.
- The exposed individual lives or works at the site for a chronic time period and has a reasonably high contact rate and exposure frequency, consistent with reasonable maximum exposures (RME) in Superfund Standard Default Exposure Factors (OSWER Directive No. 9285.6-03, 1991).

#### Results

Table 1 shows concentrations of inorganics in soil for twelve sampling points (data provided by you) and summary statistics for this data set. Based on this data and assumptions identified above, exposure point concentrations were developed using 95% upper confidence limit on the mean (calculated according to OSWER Directive No. 9285.7-081), or, if this statistic exceeded the maximum sample, using the maximum sample concentration. Table 2 presents EPA reference doses and cancer potency slope factors for oral exposure to these contaminants, industrial exposure scenarios.

For the residential scenario, the highest hazard quotient (HQ) calculated is for copper, with a result of 1.2. The HQ for nickel is 0.7. Considering the low precision associated with reference doses, both of these HQs could be said to equal one. Exposures to copper exceeding the reference dose are associated with gastrointestinal distress, an adverse but not very severe effect. The reference dose for nickel incorporates uncertainty and modifying factors totaling 300, which means that the no observed effect level is lower than the exposure calculated here

For the industial scenario, no non-cancer hazard quotient exceeds 0.2.

## Uncertainties in this Assessment

- The chronic RME factors do not represent short-term higher exposures that may occur for a child with a high soil ingestion rate. Chronic risk calculations therefore may not be protective against effects from a contaminant such as cyanide with potential for acute or subchronic effects.
- These risk calculations represent exposure to contaminants through a single pathway, incidental ingestion of soil. Other pathways of exposure, such as dermal contact or inhalation of dust, would result in additional exposure to an individual at the site. However, these other pathways are expected to contribute much less than the ingestion pathway. The physical characteristics of the site are such that there is little potential for generation of airborne dust, as documented in the remedial investigation (RI) report, and therefore little potential for inhalation of contaminants. Dermal absorption of inorganic contaminants in general expected to be small relative to ingestion exposures for soil. Therefore, this single-pathway pathways of exposure.

- Different species of chromium have different toxicity, but speciation of chromium in soil is uncertain. Reference doses for non-cancer effects of chromium are different for hexavalent vs. trivalent chromium. Risk calculations in Table 2 provide an estimate assuming that most chromium in residual contaminated soil is trivalent, with one percent of chromium in soil hexavalent, consistent with information on speciation provided in the RI.
- EPA has not evaluated oral carcinogenicity of chromium.

Attachments (2)

Table 1. Allied Plating Residual Soil Contamination: Concentrations and Summary Statistics

<u>Chemical</u>	Conce	ntration	(mg/	(g) .												
Arsenic	18	16	12	17	20	34	25	30	0.0				Min	<u>Max</u>	Mean	95UCLlog
Cadmium	3	2	1	1	2	4	4		20	4 1	23	12	12	4 1	22	28
Chromium	77	76	166	2010	2220	5110	861	2 1150	2	5	2	1	1	5	2	3
Copper	553	460	876	3200	4580	11800		7300	210 1930	5590	1280	219	76	5590	1581	13161
Lead	226	169	103	73	97	234	158	71	1930	12000	7290	318	318	12000	4548	21817
Nickel	912	756	586	973	1720	2260	2210	2840	5410		43 2300	73 700	43	234	131	190
Antimony	3	3	3	14	14	37	3	5	3	37	6	722 3	586	5410	2137	3928
Cyanide	1	1	4	7	13	19	23	55	1.1	38	97	1	3	37 97	11	26
: Sample Location	A 4	A 4										•	•	3/	23.	199
SUMPLE FOCULOR	A1	A4	D1	A10	Α7	G1	D4	C6	D7	CQ	CR.A	D0 4				

Table 2. Allied Plating Residual Risks: Risk Calculations for Residential and Industrial Exposure to the Contaminated Soil Layer

						Tox	icity R	eferer	ice V	/alues					Risk Calculation Results				
•			Can	ncer Pol	ency				Non	-Cance	r Effec	ts	_	Exposure			•		
	•		Veight	of									Point	RESIDENTIAL		, <u>industrial</u>			
Chemical		<u>SFo</u>		Evidenc	e Sou	rce	Bil	<u>)                                    </u>	ŲF	XME C	nfiden	Source	<u>e</u>	Concentration	Ю	Risk	, <del>I</del> Ō	Risk	
Arsenic		1.7 E+0	(a)	Α	1	(p)	3.0	E-4 (d	:)	3	med	l	(b)	28	0.3	7.7 E-5	0.05	8.2 E-6	
Cadmlum		NA					5.0	E-4 (	:)	10	high	i	(b)	3	0.02		0.003		
Chromium C	r III	NA					1.0	E+0 (d	:) 1(	000	low	1	(b)	5590	0.06		0.008		
`` (	r. VI	NA					5.0	E-3 (d	:) 5	00	low	1	(b)	56					
Copper	:	· NA					3.7	E-2 (	;)			Н	(b)	12000	1.2		0.16		
Lead		NA				•	N							190	NA		-		
Nickel		NA						E-2 (	•	300 ;	med	ı	(p)	3928	0.7		0.10		
Antimony		NA						E-4 (	•	000	med	1 .	(b)	26	0.2		0.03		
Cyanide		NA					2.0	E-2 (	:) 5	500		l	(p)	97:	0.02		0.002		

Footnotes: (a) Cancer potency

(a) Cancer potency slope factor for oral exposure, /(mg/kg-day).

(b) Sources of toxicity data are: I = Integrated Risk Information System, EPA on-line database.

H = Health Effects Assessment Summary Tables, EPA-ECAO, 1992.

(c) Reference dose for oral exposure, mg/kg-day.

ALLTABLE

### Appendix C

# State Letter of Concurrence with the No Further Action Decision

### Appendix D

### **Administrative Record Index**

HEADING: 1. 0. . SITE IDENTIFICATION

SUB-HEAD: 1. 1. . Correspondence

1. 1. . - 0000014 Microfilm Reel Frame Begins 1 Ends 1

DATE: 03/08/78 PAGES: 1

AUTHOR: Stephen Carter/
ADDRESSEE: Robert S. Forman/

DESCRIPTION: Letter re: first draft of proposed pollution control system for

Allied Plating

1. 1. - 0000003 Microfilm Reel Frame Begins 1 Ends 1

DATE: 04/18/78 PAGES: 1

AUTHOR: William P. Sells/

ADDRESSEE: Ernest P. Stierly/Allied Plating

DESCRIPTION: Letter regarding elimination of all potentially hazardous waste

discharges to the holding ponds adjacent to Allied Plating

1. 1. - 0000004 Microfilm Reel Frame Begins 1 Ends 1

DATE: 04/26/78 PAGES: 1 AUTHOR: E.P. Stierly/Allied Plating

ADDRESSEE: William P. Sells/Oregon Dept. of Environmental Quality (DEQ)

DESCRIPTION: Letter stating that Mr. Stierly doesn't believe Allied Plating is discharging hazardous waste and requesting set of guidelines

as to what DEQ considers a hazardous waste

1. 1. - 0000005 Microfilm Reel Frame Begins 1 Ends 1

DATE: 06/14/78 PAGES:

AUTHOR: William P. Sells/DEQ

ADDRESSEE: Ernest P. Stierly/Allied Plating

DESCRIPTION: Reply to Stierly's 4/26/78 letter listing laboratory results

from samples taken from the holding pond, requesting Stierly to contact City of Portland in regards to connection to the City

sewer

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#### ALLIED PLATING - REMEDIAL ADMINISTRATIVE RECORD INDEX

- 0000006 Microfilm Reel Frame Begins 1 Ends 7 DATE: 07/20/78 PAGES:

AUTHOR: William P. Sells/DEQ

ADDRESSEE: Ernest P. Stierly/Allied Plating

DESCRIPTION: Letter documenting outcome of 7/13/78 meeting between Stierly

and DEQ

- 0000007 Microfilm Reel Frame Begins 1 Ends 1

DATE: 08/01/78 PAGES:

AUTHOR: Rodney Lewis, Jr./McMenamin, Joseph et al

ADDRESSEE: William Sells/DEQ

DESCRIPTION: Letter confirming conversation of 7/28/89, granting Allied Plating an extension to submit program for discharge of waste

- 0000008 Microfilm Reel Frame Begins 1 Ends 1

DATE: 09/20/78 PAGES:

AUTHOR: Robert E. Gilbert/DEQ

ADDRESSEE: Ernest P. Stierly/Allied Plating

DESCRIPTION: Letter staing that Stierly must submit a detailed plan by

10/20/78

1. 1. . - 0000010 Microfilm Reel Frame Begins 1 Ends 1

DATE: 10/11/78 PAGES: 2

AUTHOR: Rodney Lewis, Jr./McMenamin, Joseph, et al.

ADDRESSEE: William Sells/DEQ

DESCRIPTION: Letter requesting a meeting to discuss compliance with DEO

standards

- 0000009 Microfilm Reel Frame Begins 1 Ends

DATE: 10/18/78 PAGES: 2

AUTHOR: Rodney Lewis, Jr./McMenamin, Joseph, et al.

ADDRESSEE: William Sells/DEQ

DESCRIPTION: Letter explaining steps Allied Plating was taking to meet

compliance schedule timeline

DATE: 11/18/78 PAGES: 1
UTHOR: Patrick Paner/Mage Frame Begins 1 Ends 1

AUTHOR: Patrick Raney/Testing Laboratory

ADDRESSEE: Allied Plating/

DESCRIPTION: Cover memo for results of sampling

1. 1. . - 0000012 Microfilm Reel Frame Begins 1 Ends 1

DATE: 11/21/78 PAGES: 1

AUTHOR: William P. Sells/DEQ

ADDRESSEE: Rodney Lewis, Jr./Attorney at Law

DESCRIPTION: Letter agreeing to an extension of time to submit compliance

schedule

1. 1. - 0000013 Microfilm Reel Frame Begins 1 Ends
DATE: 12/04/78 PAGES: 2
AUTHOR: Rodney Lewis, Jr./McMenamin, Joseph, et al. 1

ADDRESSEE: William Sells/DEQ

DESCRIPTION: Letter regarding compliance schedule

1. 1. . - 0000015 Microfilm Reel Frame Begins 1 Ends 1

DATE: 02/01/79 PAGES: 1

AUTHOR: William P. Sells/DEQ ADDRESSEE: Rodney Lewis, Jr./

DESCRIPTION: Letter confirming receipt of 12/4/78 letter outlining compliance

schedule

1. 1. . - 0000016 Microfilm Reel Frame Begins 1 Ends
DATE: 06/14/79 PAGES: 2 1

AUTHOR: Bob Forman/ ADDRESSEE: Bill Sells/DEQ

DESCRIPTION: Cover letter for proposed system at Allied Plating

Frame Begins 1 Ends 1 1. 1. . - 0000017 Microfilm Reel

DATE: 10/10/79 PAGES: 1

AUTHOR: Fred Bromfeld/DEQ

ADDRESSEE: /

DESCRIPTION: Status of enforcement action taken by Northwest Region at Allied

Plating

1. 1. - 0000018 Microfilm Reel Frame Begins 1 Ends 1 DATE: 12/19/80 PAGES:

AUTHOR: Robert E. Gilbert/DEQ

ADDRESSEE: Ernest P. Stierly/Allied Plating

DESCRIPTION: Cover letter for application for Water Pollution Control

Facilities Permit

- 0000019 Microfilm Reel Frame Begins 1 Ends

DATE: 03/02/81 PAGES: AUTHOR: Robert E. Gilbert/DEQ PAGES:

ADDRESSEE: Ernest P. Stierly/Allied Plating

DESCRIPTION: Letter requesting additional information for Water Pollution

Control Facilities Permit

1. 1. . - 0000020 Microfilm Reel Frame Begins 1 Ends

DATE: 03/06/81 PAGES: 1 AUTHOR: E.P. Stierly/Allied Plating ADDRESSEE: Gentlemen/Allied Plating DESCRIPTION: Letter re: waste lagoon

1. 1. . - 0000021 Microfilm Reel Frame Begins 1 Ends 1

DATE: 03/06/81 PAGES: 2 AUTHOR: Kenneth D. Feigner/EPA

ADDRESSEE: Ernest P. Stierly/Allied Plating

DESCRIPTION: Letter stating that Mr. Stierly must determine whether waste

exhibitis any of characteristics of hazardous waste as defined

in the CFR

- 0000022 Microfilm Reel Frame Begins 1 Ends 1

DATE: 07/02/81 PAGES: 1

AUTHOR: Robert E. Gilbert/DEQ

ADDRESSEE: Ernest P. Stierly/Allied Plating

DESCRIPTION: Letter noting that if Allied Plating fails to submit information

immediately, the DEQ will initiate enforcement action

1. 1. . - 0000023 Microfilm Reel Frame Begins 1 Ends 1 DATE: 07/29/81 PAGES: 1 AUTHOR: Linda Dawson/EPA ADDRESSEE: Ernest P. Stierly/Allied Plating DESCRIPTION: Letter returning hazardous waste permit application for

- 0000024 Microfilm Reel 1. 1. Frame Begins 1 Ends DATE: 08/17/81 PAGES: 1 AUTHOR: Charles H. Gray/DEQ ADDRESSEE: Ernest P. Stierly/Allied Plating DESCRIPTION: Letter advising that failure to comply with request for information could result in imposition of civil penalties

- 0000025 Microfilm Reel Frame Begins 1 Ends 1 DATE: 02/05/82 PAGES: 2

AUTHOR: Charles Clinton/DEO

correction

ADDRESSEE: Ernest P. Stierly/Allied Plating

DESCRIPTION: Letter noting two options available for disposal of wastewater from Allied Plating

- 0000026 Microfilm Reel Frame Begins 1 Ends 1 DATE: 02/23/82 PAGES: 1
AUTHOR: Ernest P. Stierly/Allied Plating

ADDRESSEE: Charles R. Clinton/DEQ

DESCRIPTION: Letter choosing option 1 from Clinton's 2/5/82 letter

1. 1. - 0000027 Microfilm Reel Frame Begins 1 Ends 1 DATE: 07/13/82 PAGES: AUTHOR: Charles R. Clinton/DEQ

ADDRESSEE: Don Johnson/Allied Plating

DESCRIPTION: Letter re: groundwater monitoring

 - 0000028 Microfilm Reel Frame Begins 1 Ends 1

DATE: 10/17/83 PAGES: 1

AUTHOR: Charles Clinton/DEQ

ADDRESSEE: Ernest P. Stierly/Allied Plating

DESCRIPTION: Letter stating that if changes are made to the existing facility

a new permit application shall be submitted

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### ALLIED PLATING - REMEDIAL ADMINISTRATIVE RECORD INDEX

- 0000001 Microfilm Reel Frame Begins 0 Ends ٥ DATE: 11/04/83 PAGES: 2

AUTHOR: C.R. Clinton/

ADDRESSEE: File/

DESCRIPTION: Chronology 1973 - 1983

1. 1. . - 0000029 Microfilm Reel Frame Begins 1 Ends 1

DATE: 11/04/83 PAGES: 1

AUTHOR: Charles R. Clinton/DEQ ADDRESSEE: Folger Johnson/U.S. Bankruptcy Court

DESCRIPTION: Letter stating that DEQ would like to see that paying of consultants drill monitoring report be made a high priority

1. 1. . - 0000030 Microfilm Reel Frame Begins 1 Ends 3 DATE: 05/07/84 PAGES: 2

AUTHOR: C. R. Clinton/DEQ

ADDRESSEE: File/

DESCRIPTION: Update on status of Allied Plating

- 0000031 Microfilm Reel Frame Begins 1 Ends

DATE: 05/31/84 PAGES:

AUTHOR: V. Joe Poor/Pacific Metal Finishers, Inc.

ADDRESSEE: Fred Bolton/DEQ

DESCRIPTION: Letter stating that residue from Allied Plating may be

contaminated

- 0000032 Microfilm Reel DATE: 07/05/84 PAGES:

AUTHOR: Charles E. Findley/EPA

ADDRESSEE: Fred Hansen/DEQ

DESCRIPTION: Letter requesting that DEQ conduct a thorough investigation at

Allied Plating

1. 1. - 0000033 Microfilm Reel Frame Begins 1 Ends 1

Frame Begins 1 Ends

DATE: 08/01/84 PAGES: 1

AUTHOR: Fred Hansen/DEQ

ADDRESSEE: Charles E. Findley/EPA

DESCRIPTION: Letter stating that inspection of Allied Plating has turned up

no violation of hazardous waste regulations

ALLIED PLATING - REMEDIAL ADMINISTRATIVE RECORD INDEX Frame Begins 1 Ends 1 1. 1. . - 0000034 Microfilm Reel PAGES: 1 DATE: 08/08/84 AUTHOR: Charles R. Clinton/DEQ ADDRESSEE: V. Joe Poor/Pacific Metal Finishers, Inc. DESCRIPTION: Letter sharing results of sampling done at Allied Plating Frame Begins 1 Ends 1 1. 1. . - 0000035 Microfilm Reel DATE: 09/±7/84 PAGES: 3 AUTHOR: Charles E. Findley/EPA ADDRESSEE: Stan Hodes/Transmission Exchange Company DESCRIPTION: Letter requesting Part B application - 0000036 Microfilm Reel Frame Begins 1 Ends 1 DATE: 10/01/84 PAGES: 2 AUTHOR: Stan Hodes/ ADDRESSEE: Charles E. Findley/EPA DESCRIPTION: Letter stating Mr. Hodes' position as owner of Allied Plating site Frame Begins 1 Ends 1 - 0000037 Microfilm Reel PAGES: 4 DATE: 10/31/84 AUTHOR: Charles Findley/EPA ADDRESSEE: Stan Hodes/Transmission Exchange Co. DESCRIPTION: Letter stating that EPA cannot retract request for Part B 1. 1. . - 0000002 Microfilm Reel Frame Begins 0 Ends
DATE: 11/07/84 PAGES: 1 0 . AUTHOR: Fred Wolf/EPA ADDRESSEE: George Hofer/EPA DESCRIPTION: Report of observations and recommendations concerning the Allied Plating facility visited on 11/5/84 Frame Begins 1 Ends 1 1. 1. . - 0000038 Microfilm Reel PAGES: 2 DATE: 11/26/84 AUTHOR: Paul Day/EPA

DESCRIPTION: Record of Communication re: Storm Sewer Line - Allied Plating

ADDRESSEE: Bill Korsak/City of Portland

06/24/93 U. S. Environmental Protection Agency, Region 10 Page 7

Frame Begins 1 Ends 1 . - 0000039 Microfilm Reel PAGES: 6 DATE: 12/03/84

AUTHOR: H. Philip Eder/Eder & Schmidt

ADDRESSEE: Paul Day/EPA

DESCRIPTION: Letter transmitting questions from Stan Hodes

Frame Begins 1 Ends 1 . - 0000040 Microfilm Reel

PAGES: 2 DATE: 12/18/84

AUTHOR: Janet O'Hara/EPA

ADDRESSEE: H. Philip Eder/Eder & Schmidt

DESCRIPTION: Letter answering questions in Mr. Eder's 12/3/84 letter

1. 1. . - 0000041 Microfilm Reel 1 Frame Begins 1 Ends

DATE: 12/20/84 PAGES: 2 AUTHOR: H. Philip Eder/Eder & Schmidt

ADDRESSEE: Janet O'Hara/EPA

DESCRIPTION: Letter stating that if the law requires Mr. Hodes to clean up the material left upon his land then he is resigned to that fact

- 0000042 Microfilm Reel Frame Begins 1 Ends

DATE: 01/10/85 PAGES: AUTHOR: Charles E. Findley/EPA

ADDRESSEE: H. Philip Eder/Eder & Schmidt

DESCRIPTION: Letter advising that due date for Part B application

Frame Begins 1 Ends . - 0000043 Microfilm Reel

DATE: 01/17/85 PAGES: 2

AUTHOR: Ernest A. Schmidt/DEQ

ADDRESSEE: H.S. Coulter/Oregon Dept. of Transportation

DESCRIPTION: Letter requestion Dept. to submit documentation indicating

whether they have any owndership in the Allied Plating facility

- 0000044 Microfilm Reel Frame Begins 1 Ends

DATE: 02/18/85 PAGES: 1

AUTHOR: Bryan M. Johnson/Seton, Johnson & Odell

ADDRESSEE: Janet O'Hara/EPA

DESCRIPTION: Letter stating that Seton, Johnson & Odell has been retained by

Stan Hodes and requesting all technical information that EPA has

Frame Begins 1 Ends 1 1. 1. . - 0000045 Microfilm Reel

PAGES: 2 DATE: 02/22/85

AUTHOR: Janet B. O'Hara/EPA

ADDRESSEE: Bryan M. Johnson/Seton, Johnson & Odell DESCRIPTION: Cover letter for technical information

Frame Begins 1 Ends 1 . - 0000046 Microfilm Reel

PAGES: 2 DATE: 04/03/85

AUTHOR: Bryan M. Johnson/Seton, Johnson & Odell

ADDRESSEE: Harry Edmonds/City of Portland

DESCRIPTION: Letter regarding procedures for connecting to the city sanitary

sewer

Frame Begins 1 Ends 1 - 0000047 Microfilm Reel

DATE: 06/04/85 PAGES: 1

AUTHOR: Bryan M. Johnson/Seton, Johnson & Odell

ADDRESSEE: Janet O'Hara/EPA

DESCRIPTION: Letter stating that Seton, Johnson & Odell is no longer being

retained by Stan Hodes on the Allied Plating project

Frame Begins 1 Ends 1 1. 1. . - 0000048 Microfilm Reel

PAGES: DATE: 06/07/85

AUTHOR: Janet Baker O'Hara/EPA ADDRESSEE: Stanley Hodes/Transmission Exchange Co.

DESCRIPTION: Cover letter for data sent

Frame Begins 1 Ends 1. 1. . - 0000049 Microfilm Reel

DATE: 06/20/85 PAGES: 1
AUTHOR: Thomas E. Bottenberg/City of Portland

ADDRESSEE: Stan Hodes/

DESCRIPTION: Letter confirming City's position regarding the pumping of the

Allied Plating pond

1 Frame Begins 1 Ends - 0000050 Microfilm Reel

PAGES: 2 DATE: 07/09/85

AUTHOR: George C. Hofer/RCRA

ADDRESSEE: Stanley Hodes/Transmission Exchange Co.

DESCRIPTION: Letter requesting information to be supplied on the potential

for the public to be exposed to hazardous wastes through

releases at Allied Plating

- 0000052 Microfilm Reel Frame Begins 1 Ends 1

DATE: 07/17/85 PAGES: 2

AUTHOR: Clyde Carlson/Consulting Civil Engineer ADDRESSEE: Stanley Hodes/Transmission Exchange Co.

DESCRIPTION: Brief summary of Mr. Carlson's thoughts relative to the closure

of the hazardous site occupied by Allied Plating

. - 0000053 Microfilm Reel Frame Begins 1 Ends 1

PAGES: DATE: 08/07/85 AUTHOR: Charles E. Findley/EPA

ADDRESSEE: Owner/Operator/Allied Plating Inc.

DESCRIPTION: Requirements due to amended interim status land disposal

facilities

1. 1. . - 0000054 Microfilm Reel Frame Begins 1 Ends 1

DATE: 08/15/85 PAGES: 3

AUTHOR: Stan Hodes/

ADDRESSEE: Laura Hamilton/DEQ

DESCRIPTION: Letter advising DEQ of reason for Hodes delaying answer to the

"completeness review dated 5/24/85"

- 0000055 Microfilm Reel Frame Begins 1 Ends

DATE: 10/31/85 PAGES: 3

AUTHOR: J. B. Boyd/Oregon Dept. of Transportation

ADDRESSEE: Charles E. Findley/EPA

DESCRIPTION: Cover letter and attached sketch map of the fencing plan for

security at the Allied Plating site

- 0000056 Microfilm Reel Frame Begins 1 Ends 1

DATE: 01/27/86 PAGES: 2

AUTHOR: Terrence E. Beleunes/Century Environmental Services

ADDRESSEE: Tom Bottenburg/City of Portland

DESCRIPTION: Letter re: closure of hazardous waste impoundment at Allied

Plating

1. 1. . - 0000057 Microfilm Reel Frame Begins 1 Ends 1

DATE: 02/04/86 PAGES: 1

AUTHOR: Harry G. Edmonds/City of Portland

ADDRESSEE: Terrence E. Beleunes/Century Environmental Sciences

DESCRIPTION: Letter denying request to pump Allied Plating pond into the City

of Portland sanitary sewer system

. - 0000058 Microfilm Reel Frame Begins 1 Ends

PAGES: 1 DATE: 02/18/86

AUTHOR: J. B. Boyd/DOT

ADDRESSEE: Charles E. Findley/EPA

DESCRIPTION: Letter transmitting rough draft prepared by Reidel Environmental

- 0000059 Microfilm Reel Frame Begins 1 Ends 1

DATE: 03/20/86 PAGES:

AUTHOR: Laura Hamilton/DEQ

ADDRESSEE: George Toombs/Oregon State Health Division

DESCRIPTION: Letter forwarding data from the Allied Plating site, requesting

assistance in interpreting the data

. - 0000060 Microfilm Reel Frame Begins 1 Ends 1

DATE: 05/07/86 PAGES: 1

AUTHOR: Fred Hansen/DEQ ADDRESSEE: Larry Rulien/DOT

DESCRIPTION: Letter requesting meeting

1. 1. . - 0000061 Microfilm Reel Prame Begins 1 Ends 1

PAGES: 1 DATE: 05/15/86

AUTHOR: Janet O'Hara/EPA

ADDRESSEE: File/

DESCRIPTION: Summary of 5/12/86 Allied Plating Meeting

1. 1. . - 0000051 Microfilm Reel Frame Begins 1 Ends 1

DATE: 07/13/86 PAGES: 2

AUTHOR: Charles E. Findley/EPA

ADDRESSEE: Stanley Hodes/Transmission Exchange Co.

DESCRIPTION: Letter stating that all available information has been provided

to Hodes' consulting engineers

1. 1. . - 0000062 Microfilm Reel Frame Begins 1 Ends 1

DATE: 01/20/87 PAGES: 2

AUTHOR: Michael Watson/EPA ADDRESSEE: Joan Shafer/EPA

DESCRIPTION: Overview of data from Allied Plating

1. 1. - 0000063 Microfilm Reel Frame Begins 1 Ends 1
DATE: 01/27/87 PAGES: 15

PAGES: 15

AUTHOR: Stan Hodes/

ADDRESSEE: Ernesta Barnes/EPA

DESCRIPTION: Letter pointing out errors in EPA's 1/22/87 press release

1. 1. - 0000064 Microfilm Reel Frame Begins 1 Ends

DATE: 02/20/87 PAGES: 1

AUTHOR: Robie G. Russell/EPA

ADDRESSEE: Stan Hodes/

DESCRIPTION: Reply to Stan Hodes letter of 1/27/87

1. 1. - 0000065 Microfilm Reel Frame Begins 1 Ends 1

DATE: 03/02/87 PAGES:

AUTHOR: Stan Hodes/

ADDRESSEE: Robie G. Russell/EPA

DESCRIPTION: Replay to Robie Russell's 2/20/87 letter

1. 1. . - 0000066 Microfilm Reel
DATE: 03/04/87 PAGES: 1 Frame Begins 1 Ends 1

AUTHOR: Stan Hodes/

ADDRESSEE: Fred Hansen/DEQ

DESCRIPTION: Letter commenting on inspection report dated 1/7/87

ofilm Reel Frame Begins 1 Ends 1
PAGES: 1 1. 1. - 0000067 Microfilm Reel

DATE: 03/04/87

AUTHOR: Stan Hodes/ ADDRESSEE: Robie G. Russell/EPA

DESCRIPTION: Letter commenting on issue of radiation levels at Allied Plating

Frame Begins 1 Ends 1 - 0000068 Microfilm Reel

DATE: 03/09/87 PAGES:

AUTHOR: Stan Hodes/

ADDRESSEE: Russell H. Wyer/EPA

DESCRIPTION: Letter stating that data generated by the Oregon DOT and DEQ replaces old data and should be made a part of the record

1. 1. - 0000069 Microfilm Reel Frame Begins 1 Ends 1

DATE: 03/11/87 PAGES:

AUTHOR: Stan Hodes/

ADDRESSEE: Janet O'Hara/EPA

DESCRIPTION: Letter expressing interest in knowing more about engineering firm CH2MHill contracting with EPA to work on Allied Plating

- 0000070 Microfilm Reel Frame Begins 1 Ends 1

DATE: 03/12/87 PAGES:

AUTHOR: Stan Hodes/

ADDRESSEE: Russell H. Wyer/EPA

DESCRIPTION: Letter commenting on inspection report of 1/7/86

Frame Begins 1 Ends 1 - 0000071 Microfilm Reel

DATE: 03/13/87 PAGES:

AUTHOR: Fred Hansen/DEQ

ADDRESSEE: Stan Hodes/

DESCRIPTION: Reply to Mr. Hodes 3/4/87 letter concerning inspection report

Frame Begins 1 Ends . - 0000072 Microfilm Reel

PAGES: 1 DATE: 04/02/87

AUTHOR: Stan Hodes/ ADDRESSEE: Fred Hansen/DEQ

DESCRIPTION: Response to Mr. Hansen's 3/13/87 letter concerning the

inspection report

1 1. 1. . - 0000073 Microfilm Reel Frame Begins 1 Ends

PAGES: 2 DATE: 04/27/87

AUTHOR: Terrence Beleunes/

ADDRESSEE: Phil Wong/EPA

DESCRIPTION: Letter stating Century West's involvement with the Allied

Plating site, stressing that data released was not subject to a

final QA/QC audit

1. 1. - 0000074 Microfilm Reel Frame Begins 1 Ends 1

DATE: 05/01/87 PAGES: 1

AUTHOR: Philip Wong/EPA

ADDRESSEE: Terrence Belunes/Century West Engineering DESCRIPTION: Response to Mr. Belunes' letter of 4/27/87

1. 1. . - 0000075 Microfilm Reel Frame Begins 1 Ends 1

DATE: 05/-26/87 PAGES: 1

AUTHOR: Fred Hansen/DEQ

ADDRESSEE: Stan Hodes/

DESCRIPTION: Letter attempting to clarify Mr. Hodes' understanding of how

environmental protection programs work and his responsibilities

as a property owner

1. 1. - 0000076 Microfilm Reel Frame Begins 1 Ends 1

DATE: 06/03/87 PAGES: 1

AUTHOR: Stan Hodes/

ADDRESSEE: Robie G. Russell/EPA

DESCRIPTION: Letter stating that Mr. Hodes' permission will be required

before CH2MHill contractors will be allowed to enter the Allied Plating site, and stating other conditions that must be adhered

to

1. 1. - 0000077 Microfilm Reel Frame Begins 1 Ends 1

DATE: 06/16/87 PAGES: 3

AUTHOR: Stan Hodes/ ADDRESSEE: Fred Hansen/DEO

DESCRIPTION: Letter discussing Mr. Hodes acceptance of responsibility for

hazardous waste at Allied Plating site

1. 1. - 0000078 Microfilm Reel Frame Begins 1 Ends 1

DATE: 07/16/87 PAGES: 2

AUTHOR: Thomas Miller/DEQ ADDRESSEE: Phil Wong/DEQ

DESCRIPTION: Cover letter for "Groundwater Elevation Data", listing

observations made on 7/14/87 visit to site

1. 1. . - 0000079 Microfilm Reel Frame Begins 1 Ends 1 PAGES: 2 DATE: 07/17/87

AUTHOR: Tom Miller/DEQ

ADDRESSEE: Stanley Hodes/Transmission Exchange Co.

DESCRIPTION: Cover letter for groundwater water level measurements, stating observations made on 7/14/87 site visit, and expressing concern about potential worker exposure

1. 1. . - 0000080 Microfilm Reel Frame Begins 1 Ends 1 DATE: 07/17/87 PAGES: 2

AUTHOR: Edward G. Woods/DEQ

ADDRESSEE: Stan Hodes/Transmission Exchange

DESCRIPTION: Letter giving additional direction as to what activities are allowed at the site prior to finalizing the Superfund cleanup

. - 0000081 Microfilm Reel Frame Begins 1 Ends DATE: 11/10/87 PAGES: 1

AUTHOR: Tom Miller/DEQ ADDRESSEE: Phil Wong/EPA

DESCRIPTION: Letter requesting information that EPA may have on potentially Responsible Parties (PRPs) at the Allied Plating site

- 0000082 Microfilm Reel Frame Begins 1 Ends 1 DATE: 02/05/88 PAGES:

AUTHOR: Philip Millam/EPA ADDRESSEE: C. Scott Parish/EPA

DESCRIPTION: Memorandum re: Allied Plating NPL/RCRA Eliqibility

1. 1. . - 0000083 Microfilm Reel Frame Begins 1 Ends 1

DATE: 03/15/89 PAGES: 12

AUTHOR: Bruce Long/EPA ADDRESSEE: Chuck Shenk/EPA

DESCRIPTION: Memorandum re: Closure and Post-Closure costs for Allied

Plating, Portland, Oregon

1. 1. . - 0000084 Microfilm Reel Frame Begins 1 Ends 1

DATE: 11/15/89 PAGES: 2

AUTHOR: Stan Hodes/

ADDRESSEE: Philip Millam/EPA

DESCRIPTION: Letter requesting EPA to reconsider offer made by Mr. Hodes

attorney in 9/87

1. 1. - 0000085 Microfilm Reel Frame Begins 1 Ends 1

DATE: 11/16/89 PAGES: 2

AUTHOR: Stan Hodes/

ADDRESSEE: Philip Millam/EPA

DESCRIPTION: Letter requesting that EPA keep Mr. Hodes better informed of

issues regarding the Allied Plating site

1. 1. . - 0000086 Microfilm Reel Frame Begins 1 Ends 1

DATE: 12/04/89 PAGES: 3

AUTHOR: Stan Hodes/

ADDRESSEE: Philip G. Millam/EPA

DESCRIPTION: Letter explaining why the "Preliminary Health Assessment" is

fraudulent

1. 1. . - 0000087 Microfilm Reel Frame Begins 1 Ends 1

DATE: 12/14/89 PAGES: 2

AUTHOR: Philip Millam/EPA

ADDRESSEE: Stan Hodes/

DESCRIPTION: Letter explaining that EPA cannot accept Mr. Hodes offer for

settlement, and updating him on the status of the Allied Plating

site

1. 1. . - 0000088 Microfilm Reel Frame Begins 1 Ends 1

DATE: 12/22/89 PAGES: 16

AUTHOR: Stan Hodes/

ADDRESSEE: Philip Millam/EPA

DESCRIPTION: Letter commenting on issues relating to Allied Plating

1 Ends 1 Frame Begins 1. 1. . - 0000089 Microfilm Reel

PAGES: 1 DATE: 01/10/90

AUTHOR: Kevin Rochlin/EPA

ADDRESSEE: Stan Hodes/

DESCRIPTION: Cover letter for RI/FS Scoping Report

Frame Begins 1 Ends 1 . - 0000090 Microfilm Reel

3 PAGES: DATE: 08/27/90

AUTHOR: Stan Hodes/

ADDRESSEE: Kevin Rochlin/EPA

DESCRIPTION: Letter making observations and comments about Allied Plating

Frame Begins 1 Ends 1 1. 1. . - 0000091 Microfilm Reel

PAGES: 2 DATE: 09/28/90

AUTHOR: Stan Hodes/

ADDRESSEE: Kevin Rochlin/EPA

DESCRIPTION: Letter re: Money being wasted on current studies and future

plans for the Allied Plating site

1 Ends 1 1. 1. . - 0000092 Microfilm Reel Frame Begins

PAGES: 2 DATE: 10/02/90

AUTHOR: Stan Hodes/

ADDRESSEE: Kevin Rochlin/EPA

DESCRIPTION: Letter requesting copy of "Health Assessment" and "Preliminary

Natural Resource Survey"

Background - RCRA and Other Information SUB-HEAD: 1. 2. .

Frame Begins 1 Ends 1 . - 0000014 Microfilm Reel

DATE: 07/12/78 PAGES: 1

AUTHOR: DEQ/

ADDRESSEE: /

DESCRIPTION: Pollution Complaint made by Bob Purdy, OSHA

Frame Begins 0 Ends . - 0000001 Microfilm Reel

1 PAGES: DATE: 08/20/79

AUTHOR: EPA/

ADDRESSEE: /

DESCRIPTION: Inventory - Possible Sources of Hazardous Waste

1. 2. . - 0000002 Microfilm Reel Frame Begins 0 Ends 0 DATE: 10/01/79 PAGES: 13 AUTHOR: Oregon Dept. of Environmental Quality (DEQ)/ ADDRESSEE: / DESCRIPTION: Enforcement Referral DATE: 11/29/79 PAGES: 1
AUTHOR: EPA/ 1. 2. . - 0000003 Microfilm Reel AUTHOR: EPA/ ADDRESSEE: /
DESCRIPTION: Potential Hazardous Waste Site Log 1. 2. . - 0000004 Microfilm Reel Frame Begins 1 Ends 1 DATE: 05/06/80 PAGES: 2 AUTHOR: EPA/ ADDRESSEE: / DESCRIPTION: Hazardous Waste Site Evaluation of Section 311 Cleanup Requirements 1. 2. . - 0000005 Microfilm Reel Frame Begins 0 Ends 0 DATE: 12/19/80 PAGES: 16 AUTHOR: Lloyd A. Reed/EPA ADDRESSEE: Ernest P. Stiely/Allied Plating DESCRIPTION: RCRA Notification Letter 1. 2. . - 0000011 Microfilm Reel Frame Begins 1 Ends 1
DATE: 12/29/80 PAGES: 1 AUTHOR: Ernest P. Stierly/Allied Plating ADDRESSEE: / DESCRIPTION: Application for a Water Pollution Control Facilities Permit DATE: 05/21/81 PAGES: 1
AUTHOR: /DEO 1. 2. . - 0000012 Microfilm Reel AUTHOR: /DEQ ADDRESSEE: /

DESCRIPTION: Polution Complaint made by Ray White

1. 2. . - 0000013 Microfilm Reel Frame Begins 1 Ends

DATE: 04/02/82 PAGES: 4

AUTHOR: DEQ/

ADDRESSEE: / DESCRIPTION: Water Pollution Control Facilities Permit

1. 2. . - 0000006 Microfilm Reel Frame Begins 0 Ends 0

DATE: 02/22/83 PAGES: 3

AUTHOR: EPA/ ADDRESSEE: /

DESCRIPTION: File Review Checklist

Frame Begins 0 Ends 0 1. 2. . - 0000007 Microfilm Reel

DATE: 11/21/84 PAGES: 17

AUTHOR: Paul Day/EPA ADDRESSEE: George Hofer/EPA

DESCRIPTION: Allied Plating, RCRA Inspection and Part B Pre-Application

Meeting, November 5, 1984

1. 2. . - 0000008 Microfilm Reel Frame Begins 0 Ends 0

DATE: 12/13/84 PAGES: 2

AUTHOR: DEQ/

ADDRESSEE: Stanley Hodes, Shirley Hodes/

DESCRIPTION: Notice of Violation and Intent to Assess Civil Penalty

Frame Begins 0 Ends

. - 0000009 Microfilm Reel Fram DATE: 03/26/85 PAGES: 3 AUTHOR: Seton, Johnson & Odell Inc./

ADDRESSEE: Stan Hodes/

DESCRIPTION: Allied Plating Site Part B Permit Application to Close Abandoned

Hazardous Waste Surface Impoundment

Frame Begins 0 Ends n - 0000010 Microfilm Reel

PAGES: 85 DATE: 09/18/85

AUTHOR: Laura Hamilton/DEQ

ADDRESSEE: Stan Hodes/

DESCRIPTION: Letter stating DEQ's decision to evaluate exposure information

from Mr. Hodes and Oregon Dept. of Transportation

SUB-HEAD: 1. 3. . Notification/Site Inspection/CERCLIS

1. 3. . - 0000002 Microfilm Reel Frame Begins 1 Ends 1 DATE: / / PAGES: 1

AUTHOR: EPA/

ADDRESSEE: / DESCRIPTION: Surface Impoundments Site Inspection Report (Supplemental

Report)

- 0000001 Microfilm Reel Frame Begins 0 Ends Ω

DATE: 04/24/81 PAGES: 8 AUTHOR: EPA/

ADDRESSEE: /

DESCRIPTION: Form 1 General Information

- 0000003 Microfilm Reel Frame Begins 1 Ends

DATE: 11/14/85 PAGES: 7

AUTHOR: Neil Mullane, Laura Hamilton/DEQ

ADDRESSEE: /

DESCRIPTION: Inspection Report for Allied Plating conducted on 11/14/85

SUB-HEAD: 1. 4. . Preliminary Assessment (PA) Report

1. 4. . - 0000002 Microfilm Reel 0 Ends Frame Begins 0

DATE: 05/30/80 PAGES: 1

AUTHOR: EPA/ ADDRESSEE: /

DESCRIPTION: Potential Hazardous Waste Site Tentative Disposition

1. 4. . - 0000003 Microfilm Reel Frame Begins 1 Ends 1

DATE: 04/19/82 PAGES: 5

AUTHOR: /EPA

ADDRESSEE: /

DESCRIPTION: Potential Hazardous Waste Site Preliminary Assessment

1. 4. . - 0000001 Microfilm Reel Frame Begins 0 Ends 0

DATE: 07/01/89 PAGES: 1

AUTHOR: EPA/ ADDRESSEE: /

DESCRIPTION: Potential Hazardous Waste Site Identification and Preliminary

Assessment

SUB-HEAD: 1. 5. . Site Investigation

 - 0000001 Microfilm Reel Frame Begins 0 Ends 0

DATE: 04/23/82 PAGES: 13

AUTHOR: EPA/ ADDRESSEE: /

DESCRIPTION: Potential Hazardous Waste Site Inspection Report

1. 5. . - 0000002 Microfilm Reel Frame Begins 0 Ends 0

DATE: 08/26/82 PAGES: 10

AUTHOR: EPA/

ADDRESSEE: /

DESCRIPTION: Potential Hazardous Waste Site Inspection Report

- 0000003 Microfilm Reel Frame Begins 0 Ends 0

DATE: 01/07/87 PAGES: 10

AUTHOR: /

ADDRESSEE: /
DESCRIPTION: Inspection Report

1. 5. . - 0000004 Microfilm Reel Frame Begins 0 Ends

DATE: 02/26/87 PAGES: 12

AUTHOR: Laura Hamilton/DEQ

ADDRESSEE: Chuck Rice/EPA

DESCRIPTION: Cover letter and accompanying RCRA Site Inspection Report

SUB-HEAD: 1. 6. . Sampling Data

1. 6 0000002 Microfil DATE: / / PAC AUTHOR: / ADDRESSEE: / DESCRIPTION: Ground water sample	SES: 88	rame Begins	0 Ends	0
1. 6 0000003 Microfil DATE: / / PAG AUTHOR: DEQ/ ADDRESSEE: / DESCRIPTION: Various data submi	ES: 6	rame Begins	0 Ends	0
1. 6 0000004 Microfile DATE: / / PAG AUTHOR: / ADDRESSEE: / DESCRIPTION: Water Well Reports	ES: 37	ame Begins (	) Ends	0
1. 6 0000009 Microfilm DATE: / / PAGE AUTHOR: / ADDRESSEE: / DESCRIPTION: Allied Plating Wate		ame Begins     1	Ends	1
1. 6 0000010 Microfilm  DATE: 08/15/78 PAGE AUTHOR: /DEQ ADDRESSEE: / DESCRIPTION: Special Survey Data Laboratory Data She	Sheet Field Tabe			1
1. 6 0000005 Microfilm DATE: 03/04/81 PAGE: AUTHOR: Nilda Lum/Weyerhaeu: ADDRESSEE: / DESCRIPTION: Inorganic Regional I	ser Laboratory		Ends	1

1. 6. . - 0000012 Microfilm Reel Frame Begins 1 Ends 1

DATE: 08/20/81 PAGES: 1

AUTHOR: C. L. Chang/Aqua Tech Laboratory

ADDRESSEE: Allied Plating/

DESCRIPTION: Chemical analysis of plating wastewater, sample collection

7/24/81

1. 6. . - 0000011 Microfilm Reel Frame Begins 1 Ends 1

DATE: 01/12/82 PAGES: 1

AUTHOR: DEQ/

ADDRESSEE: /

DESCRIPTION: Ground Water Quality Sample Collection Form

1. 6. . - 0000001 Microfilm Reel Frame Begins 0 Ends

DATE: 02/01/85 PAGES: 91

AUTHOR: Ecology and Environment (E & E)/

ADDRESSEE: /

DESCRIPTION: Soil and Water Samping Data

1. 6. . - 0000006 Microfilm Reel ABE100 Frame Begins 1 Ends

DATE: 08/27/86 PAGES: 1
AUTHOR: George L. Toombs/Oregon Dept. of Human Resources

ADDRESSEE: Laura Hamilton/Oregon Dept. of Environmental Quality

DESCRIPTION: Results of groundwater collected 4/28-30/86

1. 6. . - 0000007 Microfilm Reel ABE100 Frame Begins 1 Ends 1

DATE: 06/03/87 PAGES: 14

AUTHOR: Stan Hodes/

ADDRESSEE: Russel H. Wyer/EPA

DESCRIPTION: Cover letter and enclosed water quality data summary

1. 6. . - 0000008 Microfilm Reel ABE100 Frame Begins 1 Ends 1

DATE: 04/26/90 PAGES: 10

AUTHOR: /

ADDRESSEE: /

DESCRIPTION: List of samples shipped and analyses

SUB-HEAD: 1. 7. . Century West Engineering Report 1. 7. . - 0000001 Microfilm Reel Frame Begins 0 Ends DATE: 09/04/87 PAGES: 25 AUTHOR: Century West Engineering Corp./ DESCRIPTION: Description of the Current Situation : Summary Report SUB-HEAD: 1. 7. 1. Appendices 1. 7. 1. - 0000001 Microfilm Reel Frame Begins 0 Ends DATE: / / PAGES: 36 AUTHOR: Century West Engineering/ ADDRESSEE: /
DESCRIPTION: Appendix B - Remedial Investigation Boring Logs 1. 7. 1. - 0000002 Microfilm Reel Frame Begins 0 Ends DATE: / / PAGES: 87 AUTHOR: Century West Engineering/ ADDRESSEE: / DESCRIPTION: Appendix C - APSI Sampling Plan 1. 7. 1. - 0000003 Microfilm Reel Frame Begins 0 Ends / / PAGES: 63 AUTHOR: Century West Engineering/ ADDRESSEE: / DESCRIPTION: Appendix D - Previous Lab Analysis 1. 7. 1. - 0000004 Microfilm Reel Frame Begins 0 Ends 0 DATE: / / PAGES: 184 AUTHOR: Century West Engineering/ ADDRESSEE: / DESCRIPTION: Appendix E - Results of Laboratory Analysis 1. 7. 1. - 0000005 Microfilm Reel Frame Begins 0 Ends 0 DATE: / / PAGES: 0 AUTHOR: Century West Engineering/ ADDRESSEE: / DESCRIPTION: Appendix F - Analytical Laboratory QA/QC Procedures

1. 7. 1. ~ 0000006 Microfilm Reel Frame Begins 0 Ends 0
DATE: / / PAGES: 14
AUTHOR: Century West Engineering/

AUTHOR: Century West Engineering/ADDRESSEE: /

DESCRIPTION: Appendix G - APSI - Monitoring Well Construction Diagrams

1. 7. 1. - 0000007 Microfilm Reel Frame Begins 0 Ends 0
DATE: / PAGES: 15
AUTHOR: Century West Engineering/

ADDRESSEE: /

DESCRIPTION: Appendix H - APSI Monitoring Wells Rising Head Test Results

1. 7. 1. - 0000008 Microfilm Reel Frame Begins 0 Ends 0
DATE: / / PAGES: 22

AUTHOR: Century West Engineering/

ADDRESSEE: /
DESCRIPTION: Appendix I - APSI Field Data Logs

1. 7. 1. - 0000009 Microfilm Reel Frame Begins 0 Ends 0 DATE: // PAGES: 58

AUTHOR: Century West Engineering/

ADDRESSEE: /

DESCRIPTION: Appendix J - APSI Closure Design Calculations

1. 7. 1. - 0000010 Microfilm Reel Frame Begins 0 Ends 0

DATE: / / PAGES: 11
AUTHOR: Century West Engineering/

ADDRESSEE: /

DESCRIPTION: Appendix K - APSI Post Closure Ground Water Monitoring Programs

SUB-HEAD: 1.8. . Comprehensive Groundwater Monitoring Program Evaluation

1. 8. . - 0000001 Microfilm Reel Frame Begins 0 Ends 0

DATE: 04/28/86 PAGES: 152

AUTHOR: DEQ/ ADDRESSEE: EPA/

DESCRIPTION: Comprehensive Groundwater Monitoring Program Evaluation

Inspection, Allied Plating Hazardous Waste Impoundment Site,

conducted 4/28-30/86

SUB-HEAD: 1. 9. . Closure/Post-closure Plan

- 0000001 Microfilm Reel Frame Begins 0 Ends

DATE: 01/27/86 PAGES: 114

AUTHOR: Century Environmental Services/ ADDRESSEE: Reidel Environmental Services/

DESCRIPTION: Closure/Post-Closure Plans, Allied Plating Site

HEADING: 2. 0. . REMEDIAL INVESTIGATION/FEASIBILITY STUDY

SUB-HEAD: 2.1. . Correspondence

2. 1. . - 0000023 Microfilm Reel 1 Frame Begins 1 Ends 1

DATE: / / PAGES: 1

AUTHOR: Kevin Rochlin/EPA

ADDRESSEE: Bob Banbickle/Dept. of Transportation

DESCRIPTION: Cover letter for information sent [Copy of revised Workplan

attached tooriginal]

2. 1. - 0000001 Microfilm Reel 1 Frame Begins 1 Ends 1

DATE: 01/25/90 PAGES: 1 AUTHOR: Edward J. Kowalski/EPA

ADDRESSEE: Lucinda Moyano/Oregon Attorney General's Office

DESCRIPTION: Cover letter for RI/FS Scoping Report

2. 1. - 0000002 Microfilm Reel 1 Frame Begins 1 Ends 1

DATE: 03/07/90 PAGES: 2

AUTHOR: Kevin Rochlin/EPA

ADDRESSEE: Stan Hodes/

DESCRIPTION: Cover letter and attached postal receipt for RI/FS Scoping

report

2. 1. . - 0000003 Microfilm Reel 1 Frame Begins 1 Ends 1

DATE: 09/26/90 PAGES: 1

AUTHOR: Kevin Rochlin/EPA

ADDRESSEE: Stan Hodes/

DESCRIPTION: Letter appraising Mr. Hodes of current travel situation

affecting EPA

2. 1. . - 0000004 Microfilm Reel 1 Frame Begins 1 Ends 1

DATE: 12/10/90 PAGES: 3

AUTHOR: Stanley Hodes/ ADDRESSEE: Kevin Rochlin/EPA

DESCRIPTION: Letter requesting copies of the RI/FS Workplan and RI/FS

Workplan Attachments

2. 1. - 0000005 Microfilm Reel 1 Frame Begins 1 Ends 1

DATE: 12/27/90 PAGES: 1

AUTHOR: Dan Saltzman/Environmental Management Solutions (EMS)

ADDRESSEE: Kevin L. Rochlin/EPA

DESCRIPTION: Letter formally notifying EPA that EMS will be serving as

technical advisors to Stan Hodes

2. 1. . - 0000006 Microfilm Reel 1 Frame Begins 1 Ends 1 DATE: 01/03/91 PAGES: 2

AUTHOR: Kevin Rochlin/EPA

ADDRESSEE: File/

DESCRIPTION: Memorandum re: Use of Specific Leaching Tests During the Allied

Plating Superfund Site RI/FS

- 0000007 Microfilm Reel 1 Frame Begins 1 Ends 1

DATE: 01/22/91 PAGES: 2

AUTHOR: Terry L. Steinborn/URS Consultants

ADDRESSEE: Kevin Rochlin/EPA

DESCRIPTION: Letter re: Filtration of Groundwater Samples at Allied Plating

site

2. 1. . - 0000008 Microfilm Reel 1 Frame Begins 1 Ends 1

DATE: 02/08/91 PAGES: 1

AUTHOR: Terry L. Steinborn/URS Consultants

ADDRESSEE: Kevin Rochlin/EPA

DESCRIPTION: Correction to letter of 1/22/91

- 0000009 Microfilm Reel 1 Frame Begins 1 Ends 1

DATE: 03/01/91 PAGES: 1

AUTHOR: Dan Saltzman/Environmental Management Solutions (EMS)

ADDRESSEE: Kevin Rochlin/EPA

DESCRIPTION: Letter reiterating EMS' desire to review 1st round groundwater

monitoring results prior to beginning 2nd round

- 0000010 Microfilm Reel 1 Frame Begins 1 Ends 1

DATE: 04/03/91 PAGES: 2

AUTHOR: URS Consultants/

ADDRESSEE: EPA/

DESCRIPTION: Additional Phase 2 soil sampling specifications

2. 1. . - 0000011 Microfilm Reel 1 Frame Begins 1 Ends 1 DATE: 04/23/91 PAGES: 4

AUTHOR: Larry H. Zinky/URS Consultants ADDRESSEE: Diana Phelan/Shannon & Wilson

DESCRIPTION: Letter containing modifications to the existing AP soil sampling

scenario

- 0000012 Microfilm Reel 1 Frame Begins 1 Ends 1 DATE: 05/06/91 PAGES: 8

AUTHOR: Larry H. Zinky/URS Consultants ADDRESSEE: Kevin Rochlin/EPA

DESCRIPTION: Letter re: Custody History of Archived Allied Plating

Impoundment Sediment Samples

- 0000013 Microfilm Reel 1 Frame Begins 1 Ends

DATE: 10/24/91 PAGES:

AUTHOR: Kevin Rochlin/EPA

ADDRESSEE: Stan Hodes/

DESCRIPTION: Letter updating Mr. Hodes on status of project at Allied Plating

2. 1. . - 0000014 Microfilm Reel 1 Frame Begins 1 Ends 1

DATE: 11/05/91 PAGES:

AUTHOR: Kevin Rochlin/EPA

ADDRESSEE: Mike Stevens/Associated Crane Company

DESCRIPTION: Letter apprising of status of moving the drums left during the

EPA's field sampling out of the crane yard

· - 0000015 Microfilm Reel 1 Frame Begins 1 Ends 1

DATE: 11/07/91 PAGES: 16

AUTHOR: Priscilla Anderson/URS Consultants

ADDRESSEE: Carol Sweeney/EPA

DESCRIPTION: Cover letter and attached key portions of "A Review and Analysis of Parameters for Assessing Transport of Environmentally

. . . .

Released Radionuclides through Agriculture"

برايان التشبي بدوا

# ALLIED PLATING - REMEDIAL ADMINISTRATIVE RECORD INDEX

2. 1. . - 0000016 Microfilm Reel 1 Frame Begins 1 Ends 1

DATE: 03/23/92 PAGES: 1

AUTHOR: Kevin Rochlin/EPA

ADDRESSEE: Robert Van Vickle/Oregon Dept. of Transportation

DESCRIPTION: Letter updating Mr. Van Vickle on progress of the Allied Plating

Remedial Investigation

2. 1. . - 0000017 Microfilm Reel 1 Frame Begins 1 Ends 1

DATE: 03/23/92 PAGES: 1

AUTHOR: Kevin Rochlin/EPA

ADDRESSEE: Stan Hodes/

DESCRIPTION: Letter updating Mr. Hodes on progress of the Allied Plating

Remedial Investigation

2. 1. . - 0000018 Microfilm Reel 1 Frame Begins 1 Ends 1

DATE: 05/21/92 PAGES: 2

AUTHOR: Stan Hodes/

ADDRESSEE: Kevin Rochlin/EPA

DESCRIPTION: Letter requesting specific documents

2. 1. . - 0000019 Microfilm Reel 1 Frame Begins 1 Ends 1

PAGES: 1 DATE: 06/12/92

AUTHOR: Kevin Rochlin/EPA

ADDRESSEE: Stan Hodes/

DESCRIPTION: Cover letter for RI/FS reports

. - 0000020 Microfilm Reel 1 Frame Begins 1 Ends

DATE: 06/15/92 PAGES: 1

AUTHOR: Kevin Rochlin/EPA

ADDRESSEE: Stan Hodes/

DESCRIPTION: Cover letter for additional copy of the Remedial Investigation

for the site

. - 0000021 Microfilm Reel 1 Frame Begins 1 Ends 1

PAGES: 7 DATE: 07/13/92

AUTHOR: Kevin Rochlin/EPA

ADDRESSEE: Jill Kiernan/Oregon Dept. of Environmental Quality

DESCRIPTION: Response to 6/25/92 letter regarding the Risk Assessment

2. 1. . - 0000022 Microfilm Reel 1 Frame Begins 1 Ends

DATE: 08/19/92 PAGES: 1

AUTHOR: Kevin Rochlin/EPA ADDRESSEE: Stan Hodes/

DESCRIPTION: Cover letter for 3 documents

2. 1. . - 1001008 Microfilm Reel DATE: 08/24/92 PAGES: 1 Frame Begins 1 Ends 1

AUTHOR: Division of State Lands (OR)/ ADDRESSEE: /

DESCRIPTION: Waterway Project Permit Review

SUB-HEAD: 2. 2. . Work Plan/Scoping Report

- 0000003 Microfilm Reel Frame Begins 0 Ends

DATE: 01/01/90 PAGES: 43

AUTHOR: URS Consultants/

ADDRESSEE: EPA/

DESCRIPTION: Allied Plating Site RI/FS Scoping Report

2. 2. . - 0000004 Microfilm Reel DATE: 01/01/90 PAGES: 223 Frame Begins 0 Ends 0

AUTHOR: URS Consultants/

ADDRESSEE: EPA/

DESCRIPTION: Allied Plating Site RI/FS Scoping Report Appendices

2. 2. . - 0000001 Microfilm Reel Frame Begins 0 Ends 0

DATE: 08/08/90 PAGES: 92

AUTHOR: URS Consultants/

ADDRESSEE: EPA/

DESCRIPTION: Work Plan for Remedial Investigation/Feasibility Study Workplan

- 0000002 Microfilm Reel Frame Begins 0 Ends 0

DATE: 08/08/90 PAGES: 272

AUTHOR: URS Consultants/

ADDRESSEE: EPA/

DESCRIPTION: Attachments Remedial Investigation/Feasibility Study Workplan

2. 2. . - 0000005 Microfilm Reel Frame Begins 1 Ends DATE: 04/01/91 PAGES: 165

AUTHOR: URS Consultants/

ADDRESSEE: EPA/

DESCRIPTION: Remedial Investigation/Feasibility Study Work Plan (Revised) (Appendix C has been placed in the confidential portion of the Administrative Record)

- 0000006 Microfilm Reel Frame Begins 1 Ends 1 DATE: 04/01/91 PAGES: 404

AUTHOR: URS Consultants/

ADDRESSEE: EPA/

DESCRIPTION: Attachments to Remedial Investigation/Feasibility Study Work

Plan (Updated)

- 0000007 Microfilm Reel Frame Begins 1 Ends DATE: 08/15/91 1 PAGES: 35

AUTHOR: URS Consultants/

ADDRESSEE: EPA/

DESCRIPTION: Allied Plating Remedial Investigation/Feasibility Study Work Plan (Revision No. 4)

SUB-HEAD: 2. 3. . Trip Report

- 0000002 Microfilm Reel Frame Begins 1 Ends DATE: 04/23/90 PAGES: 13

AUTHOR: Terry L. Steinborn/URS

ADDRESSEE: Kevin Rochlin/EPA

DESCRIPTION: URS Trip Report covering visit conducted 4/17 through 4/19/90

- 0000001 Microfilm Reel Frame Begins DATE: 06/07/90 0 Ends 0

PAGES: AUTHOR: Kevin Rochlin/EPA

ADDRESSEE: Stan Hodes/

DESCRIPTION: Cover letter and attached URS Trip Report for April 1990

SUB-HEAD: 2.4. . Confidential

2. 4. . - 0000001 Microfilm Reel Frame Begins 1 Ends 1 DATE: / / PAGES: 54

AUTHOR: URS Consultants/

ADDRESSEE: EPA/

DESCRIPTION: Appendix C: Remedial Investigation/Feasibility Study Project Budget (Confidential portion of Admin. Record)

SUB-HEAD: 2.5. . XRF Analysis

- 0000001 Microfilm Reel Frame Begins 1 Ends PAGES: 254 DATE: 07/07/92

AUTHOR: Kevin Rochlin/EPA

ADDRESSEE: /

DESCRIPTION: XRF Analysis of Surface Soil Contaminant Distribution and Depth at the Allied Plating Site Final Report

SUB-HEAD: 2.6. . Remedial Investigation

- 0000001 Microfilm Reel Frame Begins 1 Ends DATE: 04/13/92 PAGES: 235

AUTHOR: URS Consultants/Shannon & Wilson, Inc./MED-TOX Associates, Inc.

ADDRESSEE: EPA/

DESCRIPTION: Remedial Investigation Allied Plating Site, Portland, Oregon

. - 0000002 Microfilm Reel Frame Begins 1 Ends 1 DATE: 04/13/92 PAGES: 186

AUTHOR: URS Consultants/Shannon & Wilson, Inc./MED-TOX Associates, Inc.

ADDRESSEE: EPA/

DESCRIPTION: Remedial Investigation Appendices A, B, C, and D Allied Plating Site, Portland, Oregon

- 0000003 Microfilm Reel Frame Begins 1 Ends

DATE: 04/13/92 PAGES: 364

AUTHOR: URS Consultants/Shannon & Wilson, Inc./MED-TOX Associates, Inc.

ADDRESSEE: EPA/

DESCRIPTION: Remedial Investigation Appendix E Summary Data Tables, Allied Plating Site, Portland, Oregon

- 0000004 Microfilm Reel Frame Begins 1 Ends 1

DATE: 04/13/92 PAGES: 768

AUTHOR: URS Consultants/Shannon & Wilson, Inc./MED-TOX Associates, Inc.

ADDRESSEE: EPA/

DESCRIPTION: Remedial Investigation Appendix F Data Validation Reports,

Volume 1 Allied Plating Site, Portland, Oregon

. - 0000005 Microfilm Reel Frame Begins 1 Ends 1

DATE: 04/13/92 PAGES: 812

AUTHOR: URS Consultants/Shannon & Wilson, Inc./MED-TOX Associates, Inc.

ADDRESSEE: EPA/

DESCRIPTION: Remedial Investigation Appendix F Data Validation Reports,

Volume 2 Allied Plating Site, Portland, Oregon

. - 0000006 Microfilm Reel Frame Begins 1 Ends 1

DATE: 10/02/92 PAGES: 20

AUTHOR: URS Consultants/

ADDRESSEE: EPA/

DESCRIPTION: Appendix G Risk Assessment Tables Addendum

. - 0000007 Microfilm Reel 1 Ends 2. 6. Frame Begins 1

DATE: 10/12/92 PAGES: 78

AUTHOR: URS Consultants/

ADDRESSEE: EPA/

DESCRIPTION: Remedial Investigation Baseline Risk Assessment Addendum

Feasibility Study (Draft only) SUB-HEAD: 2.7. .

- 0000001 Microfilm Reel Frame Begins 1 Ends 1

PAGES: 109 DATE: 05/13/92

AUTHOR: URS Consultants/

ADDRESSEE: EPA/

DESCRIPTION: Draft Allied Plating Feasibility Study

SUB-HEAD: 2.8. . Remedial Action Alternatives Report

2. 8. . - 0000001 Microfilm Reel Frame Begins 1 Ends 1

DATE: 02/03/92 PAGES: 46

AUTHOR: URS Consultants/

ADDRESSEE: EPA/

DESCRIPTION: Allied Plating Preliminary Screening of Alternatives Report

Frame Begins 1 Ends 1 2. 8. . - 0000002 Microfilm Reel

DATE: 04/66/92 PAGES: 15

AUTHOR: John W. Buckley/URS Consultants

ADDRESSEE: Kevin Rochlin/EPA

DESCRIPTION: Cover letter and attached Draft On-Site Remedial Action

Alternatives

SUB-HEAD: 2. 9. . Work Plan for Removal and Disposal (incorporated

by reference)

Frame Begins 1 Ends 1 2. 9. . - 0000001 Microfilm Reel

DATE: 03/29/93 PAGES: 582

AUTHOR: Dept. of the Army, Corps of Engineers/

ADDRESSEE: EPA/

DESCRIPTION: (This document is incorporated by reference only - see Allied

Plating Removal Administrative Record File 1.6, document #

0010004 for actual copy) Volume 1 : Final Project Work Plan for

the Removal and Disposal of Contaminated Material

Frame Begins 1 Ends 1 . - 0000002 Microfilm Reel

DATE: 03/29/93 PAGES: 407

AUTHOR: Dept. of the Army, Corps of Engineers/

ADDRESSEE: EPA/

DESCRIPTION: (This document is incorporated by reference only - see Allied

Plating Removal Administrative Record File 1.6, document #

0010005 for actual copy) Volume 2: Final Project Work Plan for

the Removal and Disposal of Contaminated Material

Frame Begins 1 Ends 1 - 0000003 Microfilm Reel

DATE: 03/29/93 PAGES: 582

AUTHOR: Dept. of the Army, Corps of Engineers/

ADDRESSEE: EPA/

DESCRIPTION: (This document is incorporated by reference only - see Allied

Plating Removal Administrative Record File 1.6, Doc. # 0010006

for actual copy) Volume 3: Final Project Work Plan for the

Removal and Disposal of Contaminated Material

HEADING: 4. 0. . STATE COORDINATION

SUB-HEAD: 4.1. . Correspondence

Frame Begins 0 Ends 0 4. 1. . - 0000001 Microfilm Reel

PAGES: 2 DATE: 02/03/87

AUTHOR: Kathryn Davidson/EPA

ADDRESSEE: Delores Streeter/Intergovernmental Relations Division

DESCRIPTION: Letter notifying of potential Superfund project, 60 day comment

period

Frame Begins 1 Ends 1 4. 1. . - 0000002 Microfilm Reel

DATE: 03/17/87 PAGES: 3

AUTHOR: Delores Streeter/State of Oregon

ADDRESSEE: EPA/

DESCRIPTION: Oregon Intergovernmental Project Review

Frame Begins 1 Ends - 0000003 Microfilm Reel

PAGES: 6 DATE: 04/13/92

AUTHOR: Debbie Bailey/DEQ

ADDRESSEE: File/

DESCRIPTION: 4/8/92 meeting with City of Portland Representatives

. - 0000005 Microfilm Reel Frame Begins 1 Ends 1

DATE: 04/13/92 PAGES: 2

AUTHOR: Debbie Bailey/DEQ

ADDRESSEE: File/

DESCRIPTION: 4/8/92 meeting minutes

SUB-HEAD: 4.2. . ARARS

Frame Begins 1 Ends 1 4. 2. . - 0000001 Microfilm Reel

DATE: 01/15/92 PAGES: 200

AUTHOR: Sally Puent/Oregon Dept. of Environmental Quality (DEQ)

ADDRESSEE: Kevin Rochlin/EPA

DESCRIPTION: Cover letter and attached packet of information on the

preliminary list of ARARs - a summary describing the ARARs is

attached along with supporting documentation

HEADING: 5. 0. . ENFORCEMENT

SUB-HEAD: 5. 1. . Correspondence

. - 0000001 Microfilm Reel Frame Begins 0 Ends 0

DATE: 08/14/87 PAGES: 2

AUTHOR: D. Henry Elsen/EPA

ADDRESSEE: Lee M. Hess/Swire, Riebe & Hess

DESCRIPTION: Letter stating EPA's conditions for a good faith proposal, and

that unless these conditions are met, EPA will conduct the RI/FS

. - 0000002 Microfilm Reel Frame Begins 0 Ends 0

DATE: 08/26/87 PAGES: 3

AUTHOR: Lee M. Hess/Swire, Riebe & Hess

ADDRESSEE: D. Henry Elsen/EPA

DESCRIPTION: Letter setting out their client's (Stan Hodes) position

5. 1. - 0000003 Microfilm Reel Frame Begins 0 Ends

DATE: 08/27/87 PAGES: 2

AUTHOR: Lee M. Hess/Swire, Riebe...

ADDRESSEE: Henry Elsen/EPA

DESCRIPTION: Cover letter for Scope of Work submittal

5. 1. - 0000004 Microfilm Reel Frame Begins 0 Ends

DATE: 08/28/87 PAGES: 2

AUTHOR: D. Henry Elsen/EPa

ADDRESSEE: Lee. M. Hess/Swire, Riebe...

DESCRIPTION: Letter responding to Mr. Hess' letter of 8/26/87

. - 0000005 Microfilm Reel Frame Begins 0 Ends

DATE: 09/01/87 PAGES:

AUTHOR: Philip M. Wong/EPA

ADDRESSEE: File/

DESCRIPTION: Memorandum stating that if owner does not submit a proposal

within 60 days, then EPA will conduct the RI/FS, paperwork

initiated for EPA funding

5. 1. - 0000006 Microfilm Reel Frame Begins 0 Ends

DATE: 09/01/87 PAGES: 1

AUTHOR: D. Henry Elsen/EPA

ADDRESSEE: Lee M. Hess/Swire, Riebe...

DESCRIPTION: Letter stating that EPA will not extend the 9/8/87 deadline for

good faith proposal

5. 1. . - 0000007 Microfilm Reel Frame Begins 0 Ends 0

DATE: 09/08/87 PAGES: AUTHOR: Lee M. Hess/Swire, Riebe...

ADDRESSEE: Henry Elsen/EPA

DESCRIPTION: Cover letter and accompanying good faith proposal

- 0000008 Microfilm Reel Frame Begins 0 Ends 0

DATE: 09/15/87 PAGES: 1

AUTHOR: D. Henry Elsen/EPA

ADDRESSEE: Lee M. Hess/Swire, Riebe...

DESCRIPTION: Letter stating 2 conditions that must be met in order for EPA to

continue negotiations

- 0000011 Microfilm Reel 1 Frame Begins 1 Ends

DATE: 09/18/87 PAGES:

AUTHOR: Lee M. Hess/Swire, Riebe & Hess

ADDRESSEE: Edward J. Dunn/John R. Boomer/Richard J. Price/Jay T.

Waldron/Roger Westendorf/Lyle Cerney

DESCRIPTION: Letter and attachments discussing expense estimate from Century

West and deadline for submitting a detailed work plan to EPA

. - 0000009 Microfilm Reel Frame Begins 0 Ends

DATE: 09/25/87 PAGES: 6

AUTHOR: Lee M. Hess/Swire, Riebe

ADDRESSEE: Henry Elsen/EPA

DESCRIPTION: Cover letter and attached copy of Industrial Indemnity's letter

5. 1. . - 0000012 Microfilm Reel 1 Frame Begins 1 Ends 1

DATE: 01/28/88 PAGES:

AUTHOR: D. Henry Elsen/EPA

ADDRESSEE: Lee M. Hess/Swire, Riebe and Hess

DESCRIPTION: Letter stating that Hess' offer of settlement is under

consideration and that Monica Kirk is the attorney now assigned

to the case

5. 1. - 0000010 Microfilm Reel 1 Frame Begins 1 Ends 1
DATE: 02/11/88 PAGES: 5

AUTHOR: Monica Kirk/EPA

ADDRESSEE: Lee M. Hess/Swire, Riebe

DESCRIPTION: Letter re: Allied Plating Settlement, Consent for Access form enclosed

5. 1. . - 0000014 Microfilm Reel 1 Frame Begins 1 Ends 1
DATE: 03/10/88 PAGES: 4

AUTHOR: Lee M. Hess/Swire, Rieve & Hess

ADDRESSEE: Monica J. Kirk/EPA

DESCRIPTION: Cover letter and attached Voluntary Consent forr Blocks H and L

5. 1. - 0000013 Microfilm Reel 1 Frame Begins 1 Ends 1 DATE: 07/22/88 PAGES: 2

AUTHOR: Yone C. McNally/Oregon Dept. of Environmental Quality

ADDRESSEE: Monica Kirk/EPA

DESCRIPTION: Letter re: DEQ Administrative Actions Against Allied Plating, et al

5. 1. . - 0000015 Microfilm Reel 1 Frame Begins 1 Ends
DATE: 11/14/88 PAGES: 6

AUTHOR: Monica Kirk/EPA

ADDRESSEE: Lee M. Hess/Swire, Riebe & Hess

DESCRIPTION: Letter re: offer made on behalf of client, and noting that it is the property owner's responsibility to acquire access from Associated Crane and Truck Parts

5. 1. - 0000016 Microfilm Reel 1 Frame Begins 1 Ends 1
DATE: 11/02/89 PAGES: 1

AUTHOR: Stan Hodes/

ADDRESSEE: Philip Millam/EPA

DESCRIPTION: Letter re: EPA's letter of 10/30/89, noting present attorney and advising that he may not be able to meet stated deadline

- 0000017 Microfilm Reel 1 Frame Begins 1 Ends DATE: 11/09/89 PAGES:

AUTHOR: Marvin S. W. Swire/Sussman, Shank, Wapnick, Caplan & Stiles

ADDRESSEE: Monica Kirk/EPA

DESCRIPTION: Letter confirming that the time be extended to reply to communication asking for field studies on property

 - 0000018 Microfilm Reel 1 Frame Begins 1 Ends 1 DATE: 11/14/89 PAGES:

AUTHOR: Monica Kirk/EPA

ADDRESSEE: Marvin Swire/Sussman, Shank, et al

DESCRIPTION: Letter stating terms that EPA can consider, and confirming extension of time to respond to EPAs request for access to the

site

- 0000019 Microfilm Reel 1 Frame Begins 1 Ends 1

DATE: 11/17/89 PAGES:

AUTHOR: Jeffrey R. Spere/Sussman, Shank, et al

ADDRESSEE: Monica Kirk/EPA

DESCRIPTION: Letter granting access to portions of the property

5. 1. . - 0000020 Microfilm Reel 1 Frame Begins 1 Ends 1

DATE: 01/24/90 PAGES: 1 AUTHOR: Edward J. Kowalski/EPA

ADDRESSEE: Jeffrey R. Spere/Sussman, Shank, et al

DESCRIPTION: Letter inquiring whether RI/FS Scoping Report was received, and

stating that EPA needs a signed copy of an access agreement

SUB-HEAD: 5. 2. . Notice Letters and Responses

- 0000001 Microfilm Reel Frame Begins 0 Ends

DATE: 09/02/82 PAGES: AUTHOR: Alexandra B. Smith/EPA

ADDRESSEE: Ernst Stierly/Allied Plating

DESCRIPTION: CERCLA 104 (e) information request

5. 2. - 0000002 Microfilm Reel Frame Begins 0 Ends DATE: 01/31/85 PAGES: 1 AUTHOR: H.S. Coulter/Oregon Dept. of Transportation (DOT) ADDRESSEE: Ernest A. Schmidt/EPA DESCRIPTION: Letter re: state's ownership of property 5. 2. . - 0000003 Microfilm Reel Frame Begins 0 Ends O DATE: 03/05/85 PAGES: 1 AUTHOR: Robert A. Sandmann/DOT ADDRESSEE: Ernest A. Schmidt/EPA DESCRIPTION: Letter re: state's boundaries near Allied Plating, and requesting a meeting 5. 2. - 0000004 Microfilm Reel Frame Begins 0 Ends 0 DATE: 12/10/85 PAGES: 2 AUTHOR: J. B. Boyd/DOT ADDRESSEE: Charles E. Findley/EPA DESCRIPTION: Response to 11/20/85 Information Request 5. 2. . - 0000005 Microfilm Reel Frame Begins 0 Ends DATE: 05/05/87 PAGES: 4 AUTHOR: Charles E. Findley/EPA ADDRESSEE: J.B. Boyd/DOT DESCRIPTION: CERCLA 104 (e) notice letter Frame Begins 0 Ends 5. 2. . - 0000006 Microfilm Reel DATE: 05/05/87 PAGES: 4 AUTHOR: Charles E. Findley/EPA ADDRESSEE: Stan Hodes/ DESCRIPTION: CERCLA 104 (e) notice letter 5. 2. . - 0000007 Microfilm Reel Frame Begins 0 Ends DATE: 05/27/87 PAGES: 1 AUTHOR: D. Henry Elsen/EPA ADDRESSEE: Lee M. Hess/Swire, Riebe... DESCRIPTION: Cover letter for copies of information request sent to Hess's

client, Stan Hodes

5. 2. . - 0000008 Microfilm Reel Frame Begins 0 Ends DATE: 06/05/87 PAGES: 4

AUTHOR: J. B. Boyd/DOT ADDRESSEE: Philip Wong/EPA

DESCRIPTION: Response to 5/5/87 notice letter

- 0000009 Microfilm Reel Frame Begins 0 Ends 0

DATE: 06/05/87 PAGES: 1 AUTHOR: Lee M. Hess/Swire, Riebe... ADDRESSEE: Charles E. Findley/EPA

DESCRIPTION: Letter stating that 5/5/87 notice letter was not received until

5/29/87, requesting until 6/29 to submit response

 - 0000010 Microfilm Reel Frame Begins 0 Ends 0

DATE: 06/05/87 PAGES:

AUTHOR: Wendy A. Robinson/Dept. of Justice

ADDRESSEE: Henry Elsen/EPA

DESCRIPTION: Response to 5/5/87 notice letter sent to DOT

5. 2. . - 0000011 Microfilm Reel Frame Begins 0 Ends 0

DATE: 06/15/87 PAGES: 1

AUTHOR: D. Henry Elsen/EPA

ADDRESSEE: Lee M. Hess/Swire, Riebe...

DESCRIPTION: Letter granting extension to respond to 5/5/87 letter

- 0000012 Microfilm Reel Frame Begins 0 Ends

DATE: 06/17/87 PAGES: 3 AUTHOR: Lee M. Hess/Swire, Riebe

ADDRESSEE: Phil Wong/EPA

DESCRIPTION: Partial response to 5/5/87 notice letter

- 0000013 Microfilm Reel Frame Begins 0 Ends

DATE: 06/29/87 PAGES: 1 AUTHOR: Lee M. Hess/Swire, Riebe

ADDRESSEE: Phil Wong/EPA

DESCRIPTION: Supplement to previous response

5. 2. . - 0000014 Microfilm Reel Frame Begins 0 Ends

DATE: 07/01/87 PAGES: 1 AUTHOR: Lee M. Hess/Swire, Riebe

ADDRESSEE: Phil Wong/EPA

DESCRIPTION: Correction to error on deed

5. 2. . - 0000020 Microfilm Reel Frame Begins 1 Ends

DATE: 07/06/87 PAGES: 3

AUTHOR: Charles Findley/EPA

ADDRESSEE: Lee M. Hess (Attorney for Stanley Hodes)/Swire, Riebe & Hess DESCRIPTION: Letter stating that RI/FS is determined to be necessary at the Allied Plating Site, offering Mr. and Mrs. Hodes 60 days to make

a good faith proposal to conduct the RI/FS

- 0000021 Microfilm Reel Frame Begins 1 Ends 1

DATE: 07/06/87 PAGES: 3 AUTHOR: Charles Findley/EPA

ADDRESSEE: Herbert and Gloria Sugg/

DESCRIPTION: Letter stating that RI/FS is determined to be necessary at the

Allied Plating Site, offering Mr. and Mrs. Sugg 60 days in which

to make a good faith proposal to conduct the RI/FS

5. 2. . - 0000015 Microfilm Reel Frame Begins 0 Ends

DATE: 07/28/87 PAGES: 3

AUTHOR: John S. Karpinski/Attorney at Law

ADDRESSEE: Phillip Wong/EPA

DESCRIPTION: Response to 7/6/87 request for information

- 0000016 Microfilm Reel Frame Begins 0 Ends

DATE: 02/10/88 PAGES: AUTHOR: Charles E. Findley/EPA ADDRESSEE: Lee M. Hess/Swire, Riebe...

DESCRIPTION: Cercla 104 (b) request for information

- 0000017 Microfilm Reel Frame Begins 0 Ends

DATE: 10/30/89 PAGES:

AUTHOR: Phil Millam/EPA

ADDRESSEE: Stan Hodes/

DESCRIPTION: Notice letter that EPA will not accept settlement offer, will

not enter into negotiations for PRP RI/FS, and, is providing

formal notice of EPA conducted RI/FS

1 Ends 1

1

### ALLIED PLATING - REMEDIAL ADMINISTRATIVE RECORD INDEX

5. 2. . - 0000018 Microfilm Reel Frame Begins 0 Ends 0

DATE: 11/02/89 PAGES: 1

AUTHOR: Stan Hodes/ ADDRESSEE: Phil Millam/EPA

DESCRIPTION: Letter stating that Mr. Hodes may not be able to meet deadline of 11/20/89

. - 0000019 Microfilm Reel
DATE: 11/07/89 PAGES: 1 Frame Begins 0 Ends 0

AUTHOR: Monica Kirk/EPA

ADDRESSEE: Wendy A. Robinson/Oregon Dept. of Justice

DESCRIPTION: Letter notifying that EPA does not intend to commence a period

of negotiation with DOT

SUB-HEAD: 5. 3. . Access Agreements

- 0000001 Microfilm Reel Frame Begins 1 Ends 1

DATE: 09/06/90 PAGES: 7

AUTHOR: Kevin Rochlin/EPA ADDRESSEE: A.F. Grabhorn/

DESCRIPTION: Request for permission to drill and maintain monitoring wells;

enclosures

Frame Begins

Frame Begins 1 Ends

. - 0000002 Microfilm Reel DATE: 09/06/90 PAGES: 7

AUTHOR: Kevin Rochlin/EPA

ADDRESSEE: Ted and Elizabeth Lamm/

DESCRIPTION: Request for permission to drill and maintain monitoring wells;

enclosures

- 0000003 Microfilm Reel

DATE: 09/06/90 PAGES:

AUTHOR: Kevin Rochlin/EPA ADDRESSEE: Manager/Nabisco

DESCRIPTION: Request for permission to drill and maintain monitoring wells;

enclosures

5. 3. . - 0000004 Microfilm Reel Frame Begins 1 Ends 1 PAGES: 7

DATE: 09/06/90 AUTHOR: Kevin Rochlin/EPA

ADDRESSEE: Navistar International Corp./

DESCRIPTION: Request for permission to drill and maintain monitoring wells;

enclosures

5. 3. . - 0000005 Microfilm Reel Frame Begins 1 Ends 1

DATE: 09/06/90 PAGES: 7

AUTHOR: Kevin Rochlin/EPA

ADDRESSEE: Owner or Manager/Plew's Demolition and Construction, Inc.

DESCRIPTION: Request for permission to drill and maintain monitoring wells;

enclosures

 - 0000006 Microfilm Reel Frame Begins 1 Ends 1

DATE: 09/17/90 PAGES: 1

AUTHOR: Kevin Rochlin/EPA ADDRESSEE: Elizabeth Lamm/

DESCRIPTION: Confirmation that Mrs. Lamm has agreed to allow EPA to install

wells on her property

- 0000007 Microfilm Reel Frame Begins 1 Ends 1

DATE: 09/26/90 PAGES:

AUTHOR: Kevin Rochlin/EPA

ADDRESSEE: Owner or Manager/Plew's Demolition and Construction, Inc.

DESCRIPTION: Second request for permission to gain access and install

monitoring wells on Plew's property

. - 0000008 Microfilm Reel DATE: 09/26/90 PAGES: Frame Begins 1 Ends 1

PAGES: 4

AUTHOR: Kevin Rochlin/EPA

ADDRESSEE: Stan B. Collins/

DESCRIPTION: Request for permission to drill and maintain monitoring wells;

enclosures

....

# ALLIED PLATING - REMEDIAL ADMINISTRATIVE RECORD INDEX

- 0000009 Microfilm Reel Frame Begins 1 Ends DATE: 10/09/90 1 PAGES: 3

AUTHOR: Kevin Rochlin/EPA

ADDRESSEE: Al Grabhorn/

DESCRIPTION: Confirmation that Mr. Grabhorn has agreed to allow EPA to install wells on his property - signed agreement and letter

attached

5. 3. . - 0000010 Microfilm Reel Frame Begins 1 Ends

DATE: 10/09/90 PAGES: 3

AUTHOR: A.F. Morton/Nabisco Brands, Inc.

ADDRESSEE: Kevin Rochlin/EPA DESCRIPTION: Cover letter and attached signed "Consent for Access and

Right-of-Entry to Property"

5. 3. . - 0000011 Microfilm Reel Frame Begins 1 Ends 1

DATE: 10/11/90 PAGES: 3

AUTHOR: Kevin Rochlin/EPA

ADDRESSEE: Gene Plew/

DESCRIPTION: Letter requesting permission to access property and install monitoring well and stating that EPA has the authority to do

this

- 0000012 Microfilm Reel Frame Begins 1 Ends 1

DATE: 10/19/90 PAGES: 2

AUTHOR: Kevin Rochlin/EPA

ADDRESSEE: Gene Plew/

DESCRIPTION: Letter requesting access to two wells not included on original request for access

- 0000013 Microfilm Reel Frame Begins 1 Ends

DATE: 10/22/90 PAGES: 7

AUTHOR: Stan B. Collins/ ADDRESSEE: Kevin Rochlin/EPA

DESCRIPTION: Letter resending request for access to property

5. 3. . - 0000014 Microfilm Reel Frame Begins 1 Ends 1 DATE: 10/22/90 PAGES: 1

AUTHOR: Kevin Rochlin/EPA

ADDRESSEE: Terry Steinborn/URS Consultants

DESCRIPTION: Letter delaying field work for one week due to additional time

required to obtain court ordered access to the property

5. 3. - 0000015 Microfilm Reel Frame Begins 1 Ends DATE: 10/23/90 PAGES: 1

AUTHOR: Kevin Rochlin/EPA ADDRESSEE: A.F. Morton/Nabisco

DESCRIPTION: Letter acknowledging receipt of access agreement

- 0000016 Microfilm Reel Frame Begins 1 Ends 1

DATE: 10/26/90 PAGES: 1

AUTHOR: H. Philip Eder/Reeves, Kahn & Eder

ADDRESSEE: Dean B. Ingemansen/EPA

DESCRIPTION: Letter listing terms under which Eder's client (Stan Hodes) will

allow access to property

5. 3. - 0000017 Microfilm Reel DATE: 10/30/90 PAGES: 1 Frame Begins 1 Ends

PAGES: 1

AUTHOR: Kevin Rochlin/EPA

ADDRESSEE: Site file/

DESCRIPTION: Letter documenting 10/30/90 telephone conversation with

Associated Crane, lessee of the Allied Plating site

5. 3. . - 0000018 Microfilm Reel Frame Begins 1 Ends 1

DATE: 11/01/90 PAGES: 5

AUTHOR: Dean B. Ingemansen/EPA ADDRESSEE: Plew's Demolition/

DESCRIPTION: Letter explaining statutory authority under which EPA may gain

access to property, includes another request for access

- 0000019 Microfilm Reel Frame Begins 1 Ends 1

DATE: 11/09/90 PAGES: 3

AUTHOR: H. Philip Eder/Reeves, Kahn & Eder

ADDRESSEE: Dean B. Ingemansen/EPA

DESCRIPTION: Cover letter and attached signed "Consent for Accessand

Right-of-Entry to Property"

. . . .

# ALLIED PLATING - REMEDIAL ADMINISTRATIVE RECORD INDEX

5. 3. . - 0000020 Microfilm Reel Frame Begins 1 Ends 1 DATE: 11/16/90 PAGES: 1

AUTHOR: Franz Rotter/High Tech Recycling Systems Corporation

ADDRESSEE: /

DESCRIPTION: Signed "Consent for Access and Right-of-Entry to Property"

5. 3. . - 0000021 Microfilm Reel Frame Begins 1 Ends 1 DATE: 11/26/90 PAGES: 2

AUTHOR: Kevin Rochlin/EPA

ADDRESSEE: Goerge Helm/Street System Management

DESCRIPTION: Letter requesting permit to drill and sample 1 borehole at the intersection of NE Mallory Avenue and NE Halleck Street

SUB-HEAD: 5.4. . Deed Restriction

- 1001006 Microfilm Reel Frame Begins 1 Ends 1 DATE: 04/13/93 PAGES: 1

AUTHOR: Kevin Rochlin/EPA

ADDRESSEE: Stan Hodes/

DESCRIPTION: Letter requesting that deed restriction be placed on the

property as soon as possible

5. 4. - 1001007 Microfilm Reel Frame Begins 1 Ends DATE: 04/15/93

PAGES: 1 AUTHOR: Kevin Rochlin/EPA

ADDRESSEE: H. Philip Eder/Reeves, Kahn & Eder

DESCRIPTION: Addition to the Deed Restriction

· - 1001005 Microfilm Reel Frame Begins 1 Ends 1 DATE: 04/28/93 PAGES:

AUTHOR: H. Philip Eder/Reeves, Kahn & Eder

ADDRESSEE: Kevin Rochlin/EPA

DESCRIPTION: Cover letter and enclosed copy of the Declaration of Deed Restrictions

06/24/93 U. S. Environmental Protection Agency, Region 10

Page 52

# ALLIED PLATING - REMEDIAL ADMINISTRATIVE RECORD INDEX

HEADING: 6.0. . HEALTH ASSESSMENTS

SUB-HEAD: 6. 2. . ATSDR Health Assessments

6. 2. . - 0000001 Microfilm Reel Frame Begins 0 Ends DATE: 07/19/88

PAGES: AUTHOR: Agency for Toxic Substances and Disease Registry/(ATSDR)

ADDRESSEE: /

DESCRIPTION: Preliminary Health Assessment for Allied Plating, Portland,

Oregon

HEADING: 7. 0. . NATURAL RESOURCE TRUSTEES

SUB-HEAD: 7. 1. . Correspondence

7. 1. . - 0000001 Microfilm Reel Frame Begins 0 Ends 0
DATE: 10/20/88 PAGES: 7

AUTHOR: Robert Pavia/NOAA
ADDRESSEE: Bruce M. Diamond/NOAA

DESCRIPTION: NOAA's Preliminary Natural Resource Survey for Allied Plating (Confidential portion of this document located at EPA Region 10

Headquarters, Seattle, WA)

SUB-HEAD: 7. 2. . Preliminary Natural Resource Survey

7. 2. - 1001004 Microfilm Reel Frame Begins 1 Ends 1

DATE: 04/09/93 PAGES: 21

AUTHOR: Jonathan P. Deason/U.S. Dept. of the Interior

ADDRESSEE: Randall F. Smith/EPA

DESCRIPTION: Cover letter re: Preliminary Natural Resources Survey and attached "Background and Technical Support Information"

HEADING: 8. 0. . CONGRESSIONAL/PRESIDENTIAL INQUIRIES

SUB-HEAD: 8. 1. . Correspondence

- 0000001 Microfilm Reel Frame Begins 0 Ends 0 DATE: 03/07/85 PAGES: 3

AUTHOR: Stan Hodes/

ADDRESSEE: President Reagan/

DESCRIPTION: Letter to inform President of serious problem at Allied Plating

- 0000002 Microfilm Reel Frame Begins 0 Ends 0 DATE: 03/17/85 5

PAGES: AUTHOR: Stan Hodes/

ADDRESSEE: President Reagan/

DESCRIPTION: Letter stating the Hodes family's thoughts in regard to Allied

Plating

- 0000003 Microfilm Reel Frame Begins 0 Ends

DATE: 04/04/85 PAGES:

AUTHOR: Ernesta B. Barnes/EPA ADDRESSEE: Bob Packwood/U.S. Senate DESCRIPTION: Response to 3/19/85 letter

 - 0000012 Microfilm Reel Frame Begins 1 Ends

DATE: 02/02/87 PAGES: 1

AUTHOR: Joan Shafer/EPA

ADDRESSEE: Representative Ron Wyden/

DESCRIPTION: Cover letter for Superfund public docket for the Allied Plating

facility, 1/22/87 Federal Register announcing proposal to

include Allied Plating to the NPL

- 0000011 Microfilm Reel Frame Begins 1 Ends 1

DATE: 03/17/87 PAGES: 2

AUTHOR: Stan Hodes/ ADDRESSEE: The President/

DESCRIPTION: Letter stating Mr. Hodes' observations of situation at Allied

Plating

Frame Begins 0 Ends

### ALLIED PLATING - REMEDIAL ADMINISTRATIVE RECORD INDEX

8. 1. . - 0000004 Microfilm Reel Frame Begins 0 Ends 0

DATE: 04/09/87 PAGES: 1

AUTHOR: Fred Hansen/DEQ

ADDRESSEE: Mark Hatfield/U.S. Senate DESCRIPTION: Response to 3/31/87 letter

8. 1. . - 0000005 Microfilm Reel Frame Begins 0 Ends 0

DATE: 06/22/87 PAGES: 1

AUTHOR: Philip M. Wong/EPA ADDRESSEE: Ron Wyden/Congressman

DESCRIPTION: Cover letter transmitting copy of EPA's file on Allied Plating

8. 1. . - 0000006 Microfilm Reel DATE: 08/25/87 PAGES: 2

AUTHOR: Stan Hodes/

ADDRESSEE: President Reagan/

DESCRIPTION: Letter asking for a de minimis settlement

8. 1. . - 0000007 Microfilm Reel DATE: 10/07/87 PAGES: 1 Frame Begins 0 Ends

AUTHOR: Tom Miller/DEQ

ADDRESSEE: Margaret Carter/Representative, Oregon, Legislative District 18

DESCRIPTION: Letter transmitting Community Relations Plan

8. 1. . - 0000008 Microfilm Reel Frame Begins 0 Ends

DATE: 11/13/87 PAGES: 10

AUTHOR: Stanley Hodes/

ADDRESSEE: Mark Hatfield/U.S. Senate

DESCRIPTION: Letter re: hexavalent chrome, sample charts enclosed

8. 1. - 0000009 Microfilm Reel Frame Begins 0 Ends 0

DATE: 12/08/87 PAGES: 1

AUTHOR: Stan Hodes/

ADDRESSEE: Robie Russell/EPA

DESCRIPTION: Letter in response to 8/25/87 letter to President Reagan

- 0000010 Microfilm Reel Frame Begins 0 Ends 0

DATE: 03/30/88 PAGES: 1 AUTHOR: Tim Brincefield/EPA

ADDRESSEE: Merrie H. Buel/Field Representative for Congressman Ron Wyden

DESCRIPTION: Letter transmitting Community Relations Plan

- 0000014 Microfilm Reel Frame Begins 1 Ends 1

DATE: 12/19/89 PAGES:

AUTHOR: Mark O. Hatfield/United States Senate

ADDRESSEE: Robie Russell/EPA DESCRIPTION: Letter requesting review and response to attached letter from

Stan Hodes

- 0000013 Microfilm Reel Frame Begins 1 Ends 1

DATE: 01/05/90 PAGES:

AUTHOR: Robie G. Russell/EPA

ADDRESSEE: Honorable Mark O. Hatfield/United States Senate

DESCRIPTION: Letter in response to the 12/19/89 request from Hatfield's

constitutent, Stan Hodes

- - 0000015 Microfilm Reel Frame Begins 1 Ends 1

DATE: 04/25/90 PAGES:

AUTHOR: Stan Hodes/

ADDRESSEE: Richard Darman/Office of Management and Budget

DESCRIPTION: Letter stating that EPA has involved Mr. Hodes in an expensive

Remedial Investigation that by reasonable standards should not

take place

- 0000016 Microfilm Reel Frame Begins 1 Ends 3

DATE: 10/23/90 PAGES:

AUTHOR: Walter G. Gilbert/Office of the Inspector General

ADDRESSEE: Kevin Rochlin/EPA

DESCRIPTION: Cover letter and attached copy of letter sent to Stan Hodes

regarding his allegations of EPA mismanagement of the Allied

Plating Superfund Site

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## ALLIED PLATING - REMEDIAL ADMINISTRATIVE RECORD INDEX

HEADING: 9. 0. . PUBLIC PARTICIPATION

SUB-HEAD: 9.2. . Community Relations Plan

- 0000001 Microfilm Reel Frame Begins 0 Ends

DATE: 09/01/87 PAGES: 34

AUTHOR: EPA/ ADDRESSEE: /

DESCRIPTION: Final Community Relations Plan

9. 2. . - 0000002 Microfilm Reel Frame Begins 1 Ends DATE: 06/19/91 PAGES: 1

AUTHOR: EPA/

ADDRESSEE: /
DESCRIPTION: Superfund Community Relations Plan Addendum Site Schedule Update

SUB-HEAD: 9. 3. . Fact Sheets and Press Releases

9. 3. . - 0000002 Microfilm Reel Frame Begins 0 Ends 0

DATE: 01/22/87 PAGES: 5

AUTHOR: EPA/ ADDRESSEE: /

DESCRIPTION: News release

9. 3. . - 0000003 Microfilm Reel Frame Begins 0 Ends 0

DATE: 01/22/87 PAGES: 3

AUTHOR: EPA/

ADDRESSEE: / )ESCRIPTION: News release

- 0000001 Microfilm Reel Frame Begins 0 Ends 0

DATE: 02/02/87 PAGES: 1

AUTHOR: EPA/

ADDRESSEE: / ESCRIPTION: Fact Sheet Allied Plating

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# ALLIED PLATING - REMEDIAL ADMINISTRATIVE RECORD INDEX

9. 3. . - 0000004 Microfilm Reel Frame Begins 0 Ends DATE: 03/02/90

PAGES: 2

AUTHOR: EPA/ ADDRESSEE: /

DESCRIPTION: Fact Sheet Allied Plating

- 0000005 Microfilm Reel Frame Begins 1 Ends

DATE: 11/01/90 PAGES: 1

AUTHOR: EPA7 ADDRESSEE: /

DESCRIPTION: Superfund Fact Sheet: Allied Plating Superfund Site, Portland,

Oregon

- 0000006 Microfilm Reel Frame Begins 1 Ends

DATE: 06/19/91 PAGES: 2

AUTHOR: EPA/

ADDRESSEE: /

DESCRIPTION: Superfund Fact Sheet: Allied Plating: EPA is continuing to

investigate the extent of contamination at the Allied Plating

Superfund Site

. - 0000007 Microfilm Reel Frame Begins 1 Ends 1

DATE: 10/19/92 PAGES: 1

AUTHOR: EPA/

ADDRESSEE: /

DESCRIPTION: Superfund Fact Sheet: Allied Plating: On 10/21/92 EPA will

begin a removal action to excavate and dispose of contaminated

soil from the Allied Plating Superfund Site

SUB-HEAD: 9.4. . Newspaper Articles

9. 4. . - 0000001 Microfilm Reel Frame Begins 1 Ends

DATE: 01/23/87 PAGES: 1

AUTHOR: Michael Rollings/The Oregonian ADDRESSEE: /

ESCRIPTION: Newspaper article "EPA names Portland sludge pond for Superfund Cleanup"

SUB-HEAD: 9.5. . Public Notices

9. 5. . - 1001002 Microfilm Reel Frame Begins 1 Ends 1 DATE: PAGES: 1

AUTHOR: /

ADDRESSEE: /

DESCRIPTION: Newspaper notice announcing the Public Comment Period on

Proposed Plan for Allied Plating Superfund Site - 4/28-5/28/93

SUB-HEAD: 9.6. . Proposed Plan

9. 6. . - 1001001 Microfilm Reel Frame Begins 1 Ends

DATE: 04/29/63 PAGES: 5

AUTHOR: EPA/ ADDRESSEE: /

DESCRIPTION: The Proposed Plan - Public Comment Period 4/28-5/28/93

HEADING: 10. 0. . TECHNICAL SOURCES AND GUIDANCE DOCUMENTS

SUB-HEAD: 10. 1. . EPA Guidance

10. 1. . - 0000001 Microfilm Reel Frame Begins 0 Ends 0

DATE: 08/01/90 PAGES: 4

AUTHOR: EPA/ ADDRESSEE: /

DESCRIPTION: List of Guidances Used

SUB-HEAD: 10. 2. . State Guidance

10. 2. . - 0000001 Microfilm Reel Frame Begins 0 Ends 0

DATE: 09/09/88 PAGES: 88

AUTHOR: Fred Hansen/DEQ

ADDRESSEE: Environmental Quality Commission (EOC)/

DESCRIPTION: Agenda Item K, 9/9/88, EOC Meeting, Executive Summary of Staff

Report Requesting Adoption of Proposed Remedial Action Rules Regarding Degree of Cleanup and Selection of the Remedial

Action, OAR Chapter 340, Division 122

SUB-HEAD: 10. 3. . Technical Sources

10. 3. . - 0000001 Microfilm Reel Frame Begins 0 Ends 0

DATE: / / PAGES: 3

AUTHOR: /
ADDRESSEE: /

DESCRIPTION: 3 page excerpt on Chromium

10. 3. . - 0000002 Microfilm Reel Frame Begins 1 Ends 1

DATE: 07/06/90 PAGES: 11

AUTHOR: Pat Cirone/EPA

ADDRESSEE: Superfund Remedial Project Managers and OSC's/EPA

DESCRIPTION: Memorandum re: Detection Limits for Human Health Risk Assessment