

CSID 2539

NFA

**WORKSHEET 1
SUMMARY SCORE SHEET**

Note: This document currently has no provision for sediment scoring route.

Site Name/Location (Street, City, County, Section/Township/Range, TCP ID Number):

American Plating Inc.
2110 East D Street
Tacoma, WA 98421
Pierce County
T-20 R-3E Section-4
TCP ID: S-27-0004-001

Site Description (Include management areas, substances of concern, and quantities):

Site Description/History: The subject site, "American Plating", is a former electroplating facility that covers approximately 1 ½ acres at the head of the Thea Foss Waterway near downtown Tacoma. At the time of the Site Hazard Assessment (SHA), the site was vacant except for the remains of the former facility that generally consisted of two dilapidated buildings and a large concrete slab. The property was bound by the State Route 509 highway (fly-over ramp) to the north, East D Street (and railroad yards) to the East, a commercial scaffolding company to the south, and the Thea Foss waterway to the west.

The historical land use in the general vicinity of American Plating has primarily been utilized for commercial and industrial purposes. Prior to 1955, the subject site was occupied by various boat building companies. From 1955 to 1986 the property was leased to Seymour Electroplating, the Puget Sound Plating Company and American Plating, Inc. American Plating, Inc. (API) was established in 1976. In 1986 API filed Chapter 7 in Bankruptcy Court and all plating operations ceased. In September 1983, the greater geographic area (the Tacoma tideflats) was officially determined by the Environmental Protection Agency (EPA) to be an EPA-designated Superfund area. Although the site was not listed on the EPA's National Priorities List (NPL), it was addressed as a "part" of the EPA NPL site called the Commencement Bay Nearshore / Tideflats.

The electroplating processes formerly conducted at the site included zinc, cadmium, nickel, brass, chrome and copper plating. These processes involved the use of paints, solvents, petroleum distillates, cyanides and acidic or basic solutions. When API vacated the site in 1986, all plating solutions, chemicals and wastes were left on-site. As a result, the Washington State Department of Ecology (Ecology) acted as the lead regulatory agency and initiated the first site investigations and cleanup activities. In doing so, the EPA Technical Assistance Team (TAT) was contracted to conduct soil sampling activities and inventory all the chemicals and waste materials left on-site. Based on the results of TATs findings, Ecology determined that interim measures would be necessary to stabilize conditions at the site. In November 1986, Ecology entered into a Consent Order with the property owner, Mr. Lewis R. Jones, to proceed with emergency site stabilization measures. The stabilization measures were conducted by Northwest Enviro Services and included the collection of additional soil samples, the removal of hazardous chemicals and sludges, and the cleaning of storage tanks and floors at the facility. The emergency stabilization actions were completed by June 1987. In late 1987, Ecology signed a second Consent Order with Mr. Jones which required that a remedial investigation, including additional soil and groundwater sampling, be conducted for the site. At approximately the same time, due to concerns

over site access and control, the EPA over ruled and became the lead regulatory agency for the API site. The EPA's Consent Agreement and Final Order stated that API and Mr. Jones were both respondents, acting as owner and operators of a facility that stores or disposes of hazardous wastes, and that they were subject to specific RCRA requirements. Based on conditions outlined in the Consent Agreement and Final Order required by the EPA, Mr. Jones commissioned the environmental consulting firm of Applied Geotechnology Inc. (AGI) to perform further soil and groundwater investigations across the site and generate updated closure/post-closure plans for the facility. Between 1988 and early 1994 AGI performed a considerable amount of investigative work at the site. AGI's work is summarized in three separate reports that include: 1) the characterization of surface/subsurface soil conditions at the site; 2) the installation of 12 groundwater monitoring wells; 3) the characterization of groundwater conditions beneath the site; 4) a study of water seepage from the site into the adjacent waterway and; 5) an evaluation of the likely impacts caused to the adjacent waterway.

In July, 1994 SAIC (Science Applications International Corporation) submitted a "Final RCRA Facility Assessment, Preliminary Assessment Report", for the API facility, Tacoma WA, EPA I. D. No. WAD 08335-0231. In the report, SAIC provides a summary of the site file, data accumulated to date, a description of the facility and its former operations, the environmental setting of the facility, and a description of several solid waste management units (SWMUs) and areas of concern (AOCs) at the site.

Based on the results of the investigations discussed above, metals, cyanide and volatile organic compounds were detected in the site soils and/or groundwater at concentrations above their respective Model Toxics Control Act (MTCA) Method A (industrial) Cleanup Levels. The primary metals of concern in the site soils appear to be cadmium, chromium and lead. Although these constituents persisted at depth in some locations, the highest concentrations were detected in the upper three feet of the soil column. Metals were also detected in the groundwater beneath the site at concentrations that exceeded both Federal MCL/Action Levels and State MTCA Levels. The primary metals of concern in the site's groundwater appeared to be cadmium, chromium, lead and nickel. Of the volatile organic compounds detected in the site soils, only trichloroethylene (TCE), tetrachloroethylene (PCE) and cis-1,2-dichloroethene were detected at concentrations above their respective MTCA Cleanup Levels. Vinyl chloride and TCE were also detected in the groundwater at concentrations that exceeded their applicable Federal and State water standards. Water and sediment samples from the on-site seeps (and adjacent waterway) did contain low levels of some of the same contaminants found in the sites groundwater. However, at that time Ecology and the EPA concluded that there was not sufficient evidence to conclude that API was a confirmed source of the problem chemicals that persisted in the Thea Foss Waterway.

In January, 1995, the environmental consulting firm of PRC Environmental Management Inc. (a.k.a. Tetra Tech) submitted a Final comprehensive groundwater monitoring evaluation (CME) Report to satisfy RCRA requirements for the API site. The objective of the CME report was to evaluate the facility's maintenance procedures and the integrity of the site's individual groundwater monitoring wells. The results of PRC's groundwater sampling activities indicated that a concentration reduction had occurred for several of the contaminants that had been previously detected on-site. However, arsenic, cadmium, lead, nickel and vinyl chloride were still present in the groundwater at concentrations that exceeded their respective Marine Water Quality Criteria Standards, their Federal MCLs Standards and/or the State's MTCA Method A Cleanup Levels.

On October 17, 1995, the EPA and Ecology agreed that the transfer of all regulatory responsibilities to Ecology would benefit both agencies in achieving a more timely and appropriate cleanup at the site under MTCA. In doing so, the EPA agreed not to impose any permitting, closure, or corrective action requirements on the facility. However, the EPA did request that Ecology's Hazardous Waste and Toxics Reduction Program ensure that all the regulated units at the facility meet the RCRA closure standards.

Based on the above information, the American Plating site was added to Ecology's Site Information System (S.I.S. database) of known or suspected contaminated sites and recommended for an SHA. The SHA was initiated by the TPCHD in late 1997 to fulfill data requirements for subsequent scoring/ranking of the site under the Washington Ranking Method. Due to extensive site specific analytical data already present in the site file, the SHA Program determined that further site sampling was beyond the scope of the SHA. As a result, the ranked value for the American Plating site was based on the site specific laboratory analysis data which was documented by the environmental consulting firms of AGI, SAIC and PRC in final reports dated 1993 and 1994.

Special Considerations (Include limitations in site file data or data which cannot be accommodated in the model, but which are important in evaluating the risk associated with the site, or any other factor(s) over-riding a decision of no further action for the site):

PRC recommended that an underground storage tank beneath building #1 be removed and that further soil and groundwater investigations be conducted. Note: Other groundwater quality concerns and accedences have been recorded at the subject site since discovery. However, the SHA Program only used the primary contaminants of concern in the ranking process.

ROUTE SCORES:

Surface Water/Human Health: 16.4 Surface Water/Environ.: 34.2

Air/Human Health: 13.0 Air/Environmental: 29.5

Ground Water/Human Health: 49.0

WARMSSH
Rev. 7/12/94

OVERALL RANK: 2

WORKSHEET 2
ROUTE DOCUMENTATION

1. SURFACE WATER ROUTE

List those substances to be considered for scoring:

Source: 1-4

Cadmium, Chromium, Lead, Trichloroethylene and Vinyl Chloride.
Explain basis for choice of substance(s) to be used in scoring.

Cadmium, Chromium and Lead were all used in scoring the surface water route, as each of their measured concentrations in the surface soils exceeded its respective MTCA Method "A" (industrial) Cleanup Level, and all were available to the surface water route through less than perfect containment.

List those management units to be considered for scoring:

Source: 1

Surface soil contamination.

Explain basis for choice of unit to be used in scoring.

Source: 1-4

Contaminated surface soil was the management unit scored for the surface water route. The surface soil was scored on the basis that there was minimal containment and run-on/off control measures in place.

2. AIR ROUTE

List those substances to be considered for scoring:

Source: 1-4

Cadmium, Chromium, Lead, Trichloroethylene.

Explain basis for choice of substance(s) to be used in scoring.

Cadmium, Chromium and Lead were used in scoring the air route, as each of their measured concentrations exceeded its respective MTCA Method "A" (industrial) Cleanup Level, and all were available to the air route through less than perfect containment.

List those management units to be considered for scoring:

Source: 1

Surface soil contamination.

Explain basis for choice of unit to be used in scoring.

Source: 1,4

Contaminated surface soil was the management unit scored for the air route. The surface soil was scored on the basis that it contained the above referenced contaminants at elevated levels and that there was minimal containment or cover measures in place.

WORKSHEET 2 (CONTINUED)
ROUTE DOCUMENTATION

3. GROUND WATER ROUTE

List those substances to be considered for scoring:

Source: 1-4

Arsenic, Cadmium, Chromium, Lead, Trichloroethylene, Cis 1,2 Dichloroethene and Vinyl Chloride.

Explain basis for choice of substance(s) to be used in scoring.

Arsenic, Cadmium, Chromium, Lead, and Vinyl Chloride were all used in scoring the ground water route, as each of their measured concentrations exceeded its representative MTCA Method "A" (industrial soil or groundwater) Clean-up Level, and all were available to the ground water route through less than perfect containment.

List those management units to be considered for scoring:

Source: 1

Contaminated Soils.

Explain basis for choice of unit to be used in scoring.

Contaminated soil was the management unit scored for the ground water route. Contaminated soil was scored on the basis of the above referenced contaminants being detected in the site soils and/or groundwater at concentrations which exceeded their respective MTCA Method "A" Cleanup Levels.

WORKSHEET 4
SURFACE WATER ROUTE

1.0 SUBSTANCE CHARACTERISTICS

1.1 Human Toxicity

Substance	Drinking Water Standard		Acute Toxicity		Chronic Toxicity		Carcinogenicity		
	(ug/l)	Val.	(mg/kg-bw)	Val.	(mg/kg/day)	Val.	WOE	PF ⁺	Val.
1. Cadmium	5	8	225(rat)	5	0.0005	5	B1	--	ND
2. Chromium	100	6	-----	ND	0.005	3	A	--	ND
3. Lead	5	8	-----	ND	-----	ND	B2	--	ND

*Potency Factor

Source: 2
Highest Value: 8
(Max.=10)
+2 Bonus Points? 2
Final Toxicity Value 10
(Max.=12)

1.2 Environmental Toxicity

() Freshwater					
(X) Marine					
Substance	Acute Water Quality Criteria		Non-human Mammalian Acute Toxicity		Source: 10-14 Value: <u>6</u> <small>(Max.=10)</small>
	(ug/l)	Value	(mg/kg)	Value	
1. Cadmium	43	6	225(rat)	5	
2. Chromium	1100	2	-----	--	
3. Lead	140	4	-----	--	

1.3 Substance Quantity: Unknown Source: 0-14 Value: 1
Explain basis: Default value of "1" used. (Max.=10)

WORKSHEET 4 (CONTINUED)
SURFACE WATER ROUTE

2.0 MIGRATION POTENTIAL

- 2.1 Containment Source: 1,10-14 Value: 10
 Explain basis: Contaminated soils from spills or
discharges have a value of 10 for containment if
there are no run-on or run-off controls employed.
 (Max.=10)
- 2.2 Surface Soil Permeability: _____ Source: 14 Value: 3
clayey & silty Sands and silty Gravels.
 (Max.=7)
- 2.3 Total Annual Precipitation: 35.2 inches Source: 4 Value: 3
 (Max.=5)
- 2.4 Max. 2-Yr/24-hour Precipitation: approx. 2 inches Source: 1 Value: 2
 (Max.=5)
- 2.5 Flood Plain: Site not in flood plain. Source: 16 Value: 0
 (Max.=2)
- 2.6 Terrain Slope: <2% Source: 5 Value: 1
 (Max.=5)

3.0 TARGETS

- 3.1 Distance to Surface Water: <1,000 feet Source: 5 Value: 10
 (Max.=10)
- 3.2 Population Served within 2 miles (See WARM Scoring
 Manual Regarding Direction): √pop.=√ = -0- Source: 9 Value: 0
 (Max.=75)
- 3.3 Area Irrigated within 2 miles 0.75√no. acres= -0-
 (Refer to note in 3.2.): 0.75√-0- = 0.75(0)= -0- Source: 9 Value: 0
 (Max.=30)
- 3.4 Distance to Nearest Fishery Resource: 8,000 ft Source: 5 Value: 3
 (Max.=12)
- 3.5 Distance to, and Name(s) of, Nearest Sensitive
 Environment(s) City Park Source: 6 Value: 12
Located due west, across the Thea Foss Waterway.
<1,000 feet.
 (Max.=12)

4.0 RELEASE

- Explain basis for scoring a release to surface
 water: No release of any hazardous substance to
the surface water was able to be documented. Source: 10-14 Value: 0

WORKSHEET 5
AIR ROUTE

1.0 SUBSTANCE CHARACTERISTICS

1.1 Introduction (WARM Scoring Manual) - Please review before scoring

1.2 Human Toxicity

Substance	Air Standard		Acute Toxicity		Chronic Toxicity		Carcinogenicity		
	(ug/m ³)	Val.	(mg/m ³)	Val.	(mg/kg/day)	Val.	WOE	PF	Val.
1.Cadmium	0.00056	10	25(rat)	10	-----	ND	B1	6.1	6
2.Chromium	8.3E-05	10	-----	ND	5.7E-07	10	A	41	9
3.Lead	0.5	10	-----	ND	-----	ND	B2	---	ND

*Potency Factor Source: 1,10-14
Highest Value: 10
(Max.=10)
+2 Bonus Points? 2
Final Toxicity Value: 12
(Max.=12)

1.3 Mobility (Use numbers to refer to above listed substances)

1.3.1 Gaseous Mobility

Vapor Pressure(s) (mmHg): NA Source: -
Value: -
(Max.=4)

1.3.2 Particulate Mobility

Soil type: silty or clayey sand and gravel Source: 14
Erodibility: >30-80 tons/acre/year Value: 1
Climatic Factor: 1-10 (Max.=4)

1.4 Highest Human Health Toxicity/Mobility Matrix Value (from

Table A-7) equals **Final Matrix Value:** 6
(Max.=24)

1.5 Environmental Toxicity/Mobility

Source: 1,2

Substance	Non-human Mammalian Acute		(Table A-7)	
	Inhal. Toxicity (mg/m ³)	Value	Mobility (mmHg)	Value
1.Cadmium	25(rat)	10	(particulate)	1
2.Chromium	-----	ND	(Particulate)	-
3.Lead	-----	ND	(Particulate)	-

Highest Environmental Toxicity/Mobility Matrix Value

(From Table A-7) equals **Final Matrix Value:** 5
(Max.=24)

WORKSHEET 5 (CONTINUED)
AIR ROUTE

- 1.6 Substance Quantity: Unknown Source: 1,10-14 Value: 1
Explain basis: Default value of "1" used. (Max.=10)
- 2.0 MIGRATION POTENTIAL
- 2.1 Containment: Spills and /or discharges directly Source: 1,10-14 Value: 10
onto the ground surface. (Max.=10)
- 3.0 TARGETS
- 3.1 Nearest Population: < 1,000 feet. Source: 17 Value: 10
(Max.=10)
- 3.2 Distance to, and Name(s) of, Nearest Sensitive
Environment(s) City Park Source: 6 Value: 7
Located due west, across the Thea Foss Waterway. (Max.=12)
<1,000 feet.
- 3.3 Population within 0.5 miles: $\sqrt{\text{pop.}} = \sqrt{593} = 24$ Source: 15 Value: 24
(Max.=75)
- 4.0 RELEASE
- Explain basis for scoring a release to air: _____ Source: 1,10-15 Value: 0
No documentation was made of a release of any (Max.=5)
hazardous substances to the air route.

WORKSHEET 6
GROUND WATER ROUTE

1.0 SUBSTANCE CHARACTERISTICS

1.1 Human Toxicity

Substance	Drinking Water Standard		Acute Toxicity		Chronic Toxicity		Carcinogenicity		
	(ug/l)	Val.	(mg/kg-bw)	Val.	(mg/kg/day)	Val.	WOE	PF*	Val.
1. Arsenic	50	6	763(rat)	5	0.001	5	A	1.75	7
2. Cadmium	5	8	225(rat)	5	0.0005	5	B1	---	ND
3. Chromium	100	6	-----	ND	0.005	3	A	---	ND
4. Lead	5	8	-----	ND	-----	ND	B2	---	ND
5. Vinyl Chloride	2	8	500 (rat)	5	-----	ND	A	2.3	7

*Potency Factor

Source: 2,10-14
Highest Value: 8
(Max.=10)

+2 Bonus Points? 2

Final Toxicity Value: 10
(Max.=12)

1.2 Mobility (Use numbers to refer to above listed substances)

Cations/Anions: 1)=3 ; 2)=3 ; 3)=1 ; 4)=2 Source: 1 Value: 3
(Max.=3)

OR
Solubility(mg/l): 5)=2.7E+03 = 3

1.3 Substance Quantity: Unknown Source: 1,10-14 Value: 1
Explain basis: Default value of "1" used. (Max.=10)

2.0 MIGRATION POTENTIAL

2.1 Containment Source: 1,10-14 Value: 10
Explain basis: Contaminated soil from spills or discharges have a value of 10 for containment. (Max.=10)

2.2 Net Precipitation: 23.1 inches Source: 4 Value: 3
(Max.=5)

2.3 Subsurface Hydraulic Conductivity: Very Low Source: 14 Value: 1
to drinking water aquifer of concern. The upper (Perched) groundwater table at the site has been confirmed to be contaminated. (Max.=4)

2.4 Vertical Depth to Ground Water: 290 ft. to the drinking water aquifer of concern. Source: 8 Value: 2
(Max.=8)

WORKSHEET 6 (CONTINUED)
GROUND WATER ROUTE

3.0 TARGETS

- 3.1 Ground Water Usage: Sole source aquifer. Source: 3 Value: 10
(Max.=10)
- 3.2 Distance to Nearest Drinking Water Well: 8,600 ft. Source: 5,6 Value: 1
(Max.=5)
- 3.3 Population Served within 2 Miles: pop.=>10,000 Source: 7-9 Value: 100
(Max.=50)
- 3.4 Area Irrigated by (Groundwater) Wells within
2 miles: 0.75√no.acres = Source: 9 Value: 3
0.75√18 = 0.75 (4.2)= 3 (Max.=100)

4.0 RELEASE

- Explain basis for scoring a release to ground
water: Documentation was made and is available for
hazardous substances being released to the ground
water. Source: 10-14 Value: 5
(Max.=5)

SOURCES USED IN SCORING

1. Washington Department of Ecology, WARM Scoring Manual, April 1992.
2. Washington Department of Ecology, Toxicology Database for use in Washington Ranking Method Scoring, January 1992.
3. Tacoma-Pierce County Health Department, 1995 SHA, on-site observations/file review.
4. Washington Climate for Pierce County, National Weather Service Forecast Office.
5. U.S.G.S. Topo Map, 7.5 Min. Series, Photorev. 1981.
6. The Thomas Guide, Pierce County Street Guide and Directory, 1998 Edition.
7. DOH Public Water Supply System.
8. DOE/TPCHD Well Logs.
9. DOE Water Rights Information System (WRIS).
10. "Soil and Groundwater Investigation", American Plating, Inc., By Applied Geotechnology Inc., dated August 1988.
11. Volume 1 & Volume II "Phase II Soil and Groundwater Investigation", American Plating, Inc. By Applied Geotechnology Inc., dated May 1989.
12. "Supplemental Groundwater Investigation", American Plating Co. (WAD 083350231), By Applied Geotechnology Inc., dated February 11, 1994.
13. "Final RCRA Facility Assessment, Preliminary Assessment report, American Plating, Inc., Tacoma Washington. EPA I.D. No. WAD 08335 0231" prepared for the U.S. Environmental Protection Agency by Science Applications International Corporation
14. "Final Report for RCRA Groundwater Monitoring Evaluation", American Plating Co. (Lewis R. Jones), Tacoma, WA, Work Assignment R10003, Contract 68-W4-0004, RCRA Enforcement, Permitting, and Assistance, Zone III. Prepared By PRC Environmental Management, Inc., dated January 5, 1995.
15. Census Data Map and Tables, Provided by PALS - Advance Planning.
16. Firm Flood Insurance Rate Map, Tacoma Tideflats Panel.
17. "Drainage Map, Commencement Bay - Nearshore / Tideflats Area" (air Photo), dated January 1, 1995.