

CSID 164

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):

R.W. Investments
3376 Lincoln Avenue
(aka 2150 Taylor Way)
Tacoma, WA 98421
Pierce County
T-21 R-3E Section-35
TCP ID: S-27-6211-000

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

Site Description/History:

The Site Hazard Assessment (SHA) was conducted for the subject site, R.W. Investments (RWI), by the Tacoma-Pierce County Health Department (TPCHD) in late 1996. At that time, the parcels of concern, 032135-5-001 & -002, were relatively flat, encompassed an area slightly larger than three acres and were drained by a ditch that bordered the site to the south. The majority of the site was either paved or covered by the footprints of several large commercial warehouses. The property was bordered by Fields Corporation to the north, Holbrook's log storage yard also to the north (and west), Reichhold Chemical to the south, and 49th Avenue to the east. In general, the subject site and surrounding area was included in a larger geographic region known as the "Tacoma Tideflats Industrial area". In 1983 the entire Tacoma Tideflats Industrial area was promulgated a National Priorities List (NPL) site, thus receiving a superfund status designation by the EPA. By late 1996, the subject site and the names of the other above-referenced businesses had not been identified by the EPA as potentially responsible party's (PRP's) to the overall superfund area. However, both the "Field" and the "Reichhold" site were listed in the Department of Ecology's (Ecology) Site Information System (SIS database), of confirmed and suspected contaminated sites, and were also awaiting SHA's

Based on information documented in the site file, aerial photographs, and historical business directories, it appeared that the site was initially developed in 1965 to serve the needs of a small lumber company and a building contractor. According to the business directories, it also appeared that at least portions of the site continued to be associated with various milling and wood-turning activities until the mid-to-late 1980's. Two other tenants, Christopher Tool & Die and Pederson Boat Building Company, were also listed as occupants of a different portion of the site from approximately the mid 1970's until the early 1980's. Other known site occupants from the late 1980's until the mid-1990's, included Aurora Consolidators who were involved with transloading of cargo, and a company called Far West Trailer Repair. At the time of the SHA, the property was occupied by a company called Greer Steel. Greer Steel was a steel fabricating facility who specialized in manufacturing underground storage tanks.

In early 1992 RWI retained the environmental consulting firm of AGRA Earth & Environmental (AE&E) to conduct an environmental assessment of the subject property to determine if unreported dumping or spilling of hazardous materials had likely occurred as a result of former site use. As part of AE&E's initial investigation, three borings were advanced and completed as monitoring wells on site. Select soil samples were collected from the borings and water

samples were collected from the monitoring wells in March of 1992 and September of 1993. While the analytical results of AE&E's initial soil samples did not indicate a significant presence of TPH, leachable metals or Volatile Organic Compounds (VOCs) in the site soils, the groundwater results did report that ethylbenzene, styrene, hexachlorobutadiene and TPH (reported as gas and diesel) were present at concentrations that exceeded their respective Model Toxics Control Act (MTCA) Clean-up Levels. Therefore, based on the compounds detected in the groundwater, and AE&E's calculated groundwater flow direction, it was determined that the likely source of the contamination was from an area where a group of small storage sheds had been used to house liquid fiberglass resins and petroleum products.

On December 16, 1993, AE&E returned to the site in an attempt to confirm and remove the suspected source of groundwater contamination. Following the demolition and off-site removal of several small storage sheds, AE&E commenced with their excavation activities. During the excavation process, groundwater was encountered at a depth of approximately 2 1/2 feet below the ground surface. Throughout the excavation activities, resinous substances were encountered and strong odors reminiscent of airplane glue persisted in both the site soils and groundwater. Due to these strong odors the workers wore half face respirators with organic vapor filter cartridges throughout the majority of the excavation activities. The maximum depth of the excavation reached 5-6 feet and the level of the groundwater reportedly covered a significant portion of the work area. When AE&E's excavation activities were concluded, approximately 1,900 gallons of groundwater was pumped from the pit and six confirmational soil samples were collected from the limits of the excavation. The contaminated groundwater was disposed of at a permitted facility off-site and approximately 192 tons of contaminated soils were delivered to Regional Disposal Company in Seattle. The excavation was backfilled with a mixture of "clean" crushed rock and pit run gravel. Based on the analytical results, which were collected from the perimeter of the excavation, the site soils still contained significant levels of styrene (reported as high as 350 parts per million (ppm)). It should also be noted that the highest concentrations of styrene were detected in the northeast sidewall of the excavation. Further removal activities at this location were impeded due to the presence of a large warehouse building.

In April 1994, AE&E met with Ecology staff to discuss the status of their remedial activities and the appropriate cleanup standards for the known contaminants. Based on the location and industrial use of the subject site, Ecology determined that the acceptable groundwater cleanup levels for ethylbenzene and styrene would be 430 parts per billion (ppb) and 14.6 ppb respectively. The acceptable soil cleanup level for styrene was determined to be 1.46 ppm. As a result, AE&E recommended to the site owner that additional work be conducted at the site. AE&E's proposed scope of work included: 1) the placement of three additional borings and two additional monitoring wells; 2) additional soil and groundwater sampling and; 3) an evaluation of the ground water characteristics beneath the subject site. Based on information provided in the site file, it did not appear that any additional investigative or cleanup actions were conducted at the subject site, after that time. Subsequently, on November 4, 1994, the site was added to Ecology's Site Information System (SIS database) of suspected and known contaminated sites and recommended for a SHA.

The SHA was initiated by the TPCHD in mid-to-late 1996 to fulfill data requirements for subsequent scoring/ranking of the site under the Washington Ranking Method. Due to the existing site-specific analytical data, the SHA Program determined that further site sampling was beyond the scope of the SHA. As a result, the ranked value for the RWI site was based on the site specific laboratory analysis data documented by AGRA during their previous investigations.

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):

The SHA Program has determined that the known conditions at the subject site warrant additional investigative and/or cleanup work. Since the removal of "some" of the source contaminants has occurred, future groundwater sampling events may show a reduction in the contaminants that were previously identified in the groundwater. However the vertical and lateral limits of the "known" source of contaminants were never fully defined. According to AE&E's groundwater flow calculations, it is likely that additional soil and groundwater contamination is beneath one of the site's large warehouses and potentially further migrating to the north-northeast. Furthermore, the SHA program also recommends that future sampling events include screens for TPH compounds. Existing analytical data indicates that TPH may be present in the site's ground water at concentrations up to 19 times the acceptable level.

ROUTE SCORES:

Surface Water/Human Health: N.S. Surface Water/Environ.: N.S.

Air/Human Health: N.S. Air/Environmental: N.S.

Ground Water/Human Health: 50.7

WARMSSH
Rev. 7/12/94

OVERALL RANK: 3

WORKSHEET 2

ROUTE DOCUMENTATION

1. SURFACE WATER ROUTE

List those substances to be considered for scoring:

Source: 1-4

Not applicable to site / Not scored. Known contamination is reported to subsurface in nature only.

2. AIR ROUTE

List those substances to be considered for scoring:

Source: 1-4

Not applicable to site / not scored. Known contamination is reported to subsurface in nature only.

3. GROUND WATER ROUTE

List those substances to be considered for scoring:

Source: 1-4

TPH (Gasoline), Ethylbenzene, Hexachlorobutadiene, Styrene.

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

TPH (Gasoline), Ethylbenzene, Hexachlorobutadiene and Styrene were used in scoring the ground water route, as each of their measured concentrations exceeded its respective MTCA Cleanup 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 Soil.

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 following contaminants being detected in the groundwater (or soil) at concentrations that exceeded their respective MTCA Cleanup Levels.

TPH (Gasoline)-----Up to 19,000 ppb in water.
Ethylbenzene-----Up to 3,400 ppb in water.
Hexachlorobutadiene----Up to 14 ppb in water.
Styrene-----Up to 350 ppm in soil.

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. TPH (Gasoline)	5	8	3306	3	-----	ND	A	0.029	5
2. Hexachlorobutadiene	1	10	90	8	0.002	3	C	0.078	3
3. Styrene	5	8	316	5	0.2	1	B2	0.03	4
4. Ethylbenzene	700	4	3500	3	0.1	1	--	-----	ND

*Potency Factor Source: 2,4
Highest Value: 10
(Max.=10)
+2 Bonus Points? 2
Final Toxicity Value: 12
(Max.=12)

1.2 Mobility (Use numbers to refer to above listed substances)
 Cations/Anions: _____ Source: 1,2 Value: 3
(Max.=3)

OR
 Solubility(mg/l): 1)=3, 2)=0, 3)=2, 4)=2

1.3 Substance Quantity: Unknown Source: 3,4 Value: 1
(Max.=10)
 Explain basis: All contamination appeared to be subsurface in nature. Limited lab data was available to estimate a volume. Therefore, the the default value of "1" was used in the scoring.

2.0 MIGRATION POTENTIAL

2.1 Containment Source: 1,3,4 Value: 10
(Max.=10)
 Explain basis: Contaminated soil from spills or discharges has a value of 10 for containment.

2.2 Net Precipitation: 19.1" (Tacoma) Source: 5 Value: 2
(Max.=5)

2.3 Subsurface Hydraulic Conductivity: Clay, silty clay Source: 4,11 Value: 1
(Max.=4)

2.4 Vertical Depth to Ground Water: > 300 ft. Source: 4 Value: 1
(Max.=8)
For aquifer of concern.

WORKSHEET 6 (CONTINUED)
GROUND WATER ROUTE

3.0 TARGETS

- 3.1 Ground Water Usage: Pub. & Priv., alt. available Source: 10-12 Value: 4
(Max.=10)
- 3.2 Distance to Nearest Drinking Water Well: 4000 ft Source: 1,7 Value: 2
(Max.=5)
- 3.3 Population Served within 2 Miles: pop.= >10000=100 Source: 10,12 Value: 100
(Max.=100)
- 3.4 Area Irrigated by (Groundwater) Wells within
2 miles: 0.75 acres Source: 12 Value: 9
0.75/150 = 0.75 (12.3) = 9 (Max.=50)

4.0 RELEASE

Explain basis for scoring a release to ground water: Documentation was made, and is available
that a hazardous substance was released to
ground water. However, it should be noted that
the upper aquifer is unlikely to be intercon-
nected with the drinking water aquifer of concern. Source: 3,4, 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, 1996 SHA, on-site observations/file review.
4. RZA AGRA Inc., Engineering and Environmental Services. 1.) Description of Findings, Phase II Remediation, dated February 2, 1994, # 11-08158-01. 2.) Report to DOE summarizing Level II Environmental Site Assessment Conducted in March 1992 and additional subsurface characterization and remediation completed in 1993 and 1994. Report dated April 1, 1994. Report #11-08158-02 3.) Phase I Environmental Site Assessment, Dated October 1995, #11-08158-04.
5. Washington Climate for Pierce County, National Weather Service Forecast Office.
6. Soil Survey of Pierce County Washington, United States of Agriculture Soil Conservation Service.
7. U.S.G.S. Topo Map, 7.5 Min. Series, Photorev. 1981.
8. The Thomas Guide, Pierce County Street Guide and Directory, 1994 Edition.
9. Washington Atlas and Gazetteer.
10. DOH Public Water Supply System.
11. DOE/TPCHD Well Logs.
12. DOE Water Rights Information System (WRIS).
13. RZA AGRA Inc., Engineering and Environmental Services. Recommendations for Additional Work, dated May 16, 1994, #11p-07547-F.
14. Dept. of Fish & Wildlife, Habitat Biologist (Don Nauer), 863-7979.
15. Aerial Photographs, 1991.
16. A Catalog of Washington Streams and Salmon Utilization, Volume 1 Puget Sound, Washington State Department of Fisheries.
17. FIRM, National Flood Insurance Rate Map, City of Tacoma, Washington, Pierce County, Panel 25 of 45, #530148, Revised February 18, 1977.