

SHA

WORKSHEET 1
Summary Score Sheet

SITE INFORMATION:

Name: **Uptown Shopping Center**
Address: **1300 Block of George Washington Way**
City: **Richland** County: **Benton** State: **WA** Zip: **99352**
Section/Township/Range: **S2/T9N/R28E**
Latitude: **49° 17' 15"** Longitude: **119° 16' 30"**
TCP ID #: **13386651**

Site scored/ranked for the 8/24/05 update

SITE DESCRIPTION (management areas, substances of concern, and quantities):

The site, previously owned by the U.S. government, was obtained by private parties in the late 1950s and early 1960s with the development of the Uptown Shopping Center (USC). The City of Richland presently owns the parking lot and service alley encompassing the shopping center. During a 1993 Phase I Site Assessment, 32 underground storage tanks (USTs) were identified in and adjacent to the service alley; the tanks reportedly used to store heating oil. In addition to the USTs, past or present businesses that may have stored or used hazardous materials in the USC include print shops, dry cleaners, camera shops, paint stores, and automotive supply stores.

In 1993, the City of Richland retained a licensed tank removal contractor to remove and decommission the heating oil tanks. During excavation activities, each UST and its excavation were measured and photographed. Additionally, where tanks were known to exist under a building, test pits were dug to determine if soil contamination was present.

During field investigations, unsaturated soil samples were obtained from the tank excavations for field screening of volatile organic compounds (VOCs) using a photo-ionization detector (PID). Soil considered to be clean using this method was used as backfill.

After each UST was removed, two composite samples were collected from adjacent excavation sidewalls. One discrete sample was collected from the base of the excavation above the soil/groundwater interface in the unsaturated zone. All soil samples were analyzed for hydrocarbon identification or diesel-range petroleum hydrocarbons; four samples were analyzed for VOCs, including tetrachloroethylene (PCE), trichloroethane (TCE), and methylene chloride. Additionally, groundwater samples were collected from open excavations using a bailer. Free product was observed in several excavations. Approximately 500 cubic yards of contaminated soil was temporarily stockpiled and then transported to the City of Richland Municipal Landfill for storage and treatment. Laboratory analytical results for soil, groundwater, sludge and stockpile samples are found in the following table.

Tank(s) # & Sample Location	Depth (feet bgs)	Tank Removed?	WTRPH (ppm)	WTPHD (ppm)	Other specified (ppb)
T1 Base	4.0	y	42	--	--
T1 Sidewall	5.5	y	140,000	--	--
T2 Base	6.0	y	35,000	--	--
T2 Sidewall	4.0	y	8	--	--
T3 Base	5.5	y	1,200	--	--
T3 Sidewall	4.0	y	7	--	--
T4 Base	6.5	y	14,000	--	--
T4 Sidewall	5.5	y	5,700	--	--
T5 Base	6.5	y	23,000	--	--
T5 Sidewall	4.5	y	850	--	--
T6 Base	10.0	y	690	--	--
T6 Sidewall	7.0	y	26,000	--	--
T7 Base	8.0	n	220	--	--
T7 Sidewall	6.5	n	23	--	--
T8 Base	8.5	y	12,000	--	--
T10-16 Base	8.0	y	310	--	--
T10-16 Sidewall	5.0	y	18,000	--	--
T17 Groundwater	--	--	--	--	5,900 PCE 400 TCE
T17 Base	8.5	n	--	<12	--
T17 Sidewall	5.5	n	--	<12	--
T18 Base	10.5	y	--	3,800	--
T18 Sidewall	6.5	y	--	2,100	--
T19/20 Base	10.5	n	--	1,400	--
T19/20 Sidewall	9.0	n	--	14	--
T21/22 Base	9.5	y	18,000	6,400	--
T21/22 Sidewall	8.0	y	--	13,000	--
T23 Base	10.0	y	--	850	--
T23 Sidewall	7.0	y	--	<12	--
T24 Base	10.5	n	--	<12	--
T24 Sidewall	6.0	n	--	<12	--
T25 Base	10.5	n	--	<12	--
T25 Sidewall	6.5	n	--	<12	--
T26 Base	9.0	y	--	6,200	--
T26 Sidewall	5.0	y	--	3,100	--
T27 Base	9.0	y	--	4,700	--
T27 Sidewall	5.0	y	--	29	--
T28/29 Base	8.0	n	--	<13	--
T28/29 Sidewall	5.0	n	--	88	--
T30 Base	7.0	n	--	<13	--
T30 Sidewall	4.0	n	--	<13	--
T31 Base	8.0	y	--	<12	--
T31 Sidewall	6.0	y	--	<13	--
T32 Sludge	--	--	--	120,000	<2,500 PCE & TCE
T32 Groundwater	--	--	--	--	<1 PCE & TCE
T32 Stockpile	--	--	--	--	400 Methylene Chloride, <5 PCE & TCE
Method A Cleanup Level	--	--	NA	2,000	**

NA = MTCA does not provide a cleanup level for WTRPH, only ranges of petroleum hydrocarbons, such as diesel.

** = Soil cleanup levels are 20ppb methylene chloride, 20ppb PCE, and 30ppb TCE; groundwater samples collected from the base of an excavation are not a true representation of groundwater conditions and cannot be compared to MTCA cleanup levels; however, detection of groundwater contamination indicates that groundwater has been impacted

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):

Due to the significant contamination documented on-site being primarily subsurface, the surface water and air routes are not applicable for WARM scoring for this site. Thus, only the groundwater route will be scored.

ROUTE SCORES:

Surface Water/Human Health: NS
Air/Human Health: NS
Groundwater/Human Health: 36.7

Surface Water/Environmental: NS
Air/Environmental: NS

OVERALL RANK: 3

WORKSHEET 2
Route Documentation

1. **SURFACE WATER ROUTE – Not Scored**

2. **AIR ROUTE – Not Scored**

3. **GROUNDWATER ROUTE –**

a. List those substances to be considered for scoring: Source: 1

TPH-Diesel, PCE, TCE, Methylene Chloride

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

Analytical results from soil and groundwater sampling indicate the presence of these hazardous substances at levels which exceed our current Method A cleanup levels.

c. List those management units to be considered for scoring: Source: 1

Subsurface soil and groundwater

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

Spill/discharge caused soil and groundwater contamination

WORKSHEET 6
Groundwater Route

1.0 SUBSTANCE CHARACTERISTICS

1.2 Human Toxicity

Substance	Drinking Water Standard (µg/L)	Value	Acute Toxicity (mg/ kg-bw)	Value	Chronic Toxicity (mg/kg/day)	Value	Carcinogenicity		Value
							WOE	PF*	
1 TPH as Diesel	160	4	490	5	0.004	3	--	--	ND
2 PCE	5	8	800	5	0.01	3	0.8	0.051	4
3 TCE	5	8	2402	3	--	ND	0.8	0.011	4
4 Methylene Chloride	5	8	1600	3	0.06	1	0.8	0.0075	2

* Potency Factor

Source: 3, 4

Highest Value: 8

(Max = 10)

Plus 2 Bonus Points? 2

Final Toxicity Value: 10

(Max = 12)

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

Cations/Anions	OR	Solubility (mg/L)
1=	1=	3.0 mg/L = 1, but with floating product = 3
2=	2=	150 mg/L = 2
3=	3=	1,100 mg/L = 3
4=	4=	20,000 mg/L = 3

Source: 3, 4

Value: 3

(Max = 3)

1.3 Substance Quantity:

Explain basis: Approximately 500 cubic yards of contaminated soil were removed during excavation activities. Based on the concentrations of soil samples collected from the pits and the presence of free product on groundwater, it has been estimated that there is approximately 500 cubic yards of residual contaminated soil.

Source: 1, 4

Value: 7

(Max=10)

2.0 MIGRATION POTENTIAL

		Source	Value
2.1	Containment (explain basis): Contaminated area capped, score as a landfill; No liner = 3; Site is mostly asphalted = 0; No known leachate collection system present = 2	1, 4	5 (Max = 10)
2.2	Net precipitation: $4.7'' - 3.2'' = 1.5''$	4, 5	1 (Max = 5)
2.3	Subsurface hydraulic conductivity: The northern half of the alley consists of clean sand, gravelly sand, and moderately silty sand; the southern half consists of moderately plastic clay to non-plastic silt overlain by fine silty sand with thin gravel layers.	1	3 (Max = 4)
2.4	Vertical depth to groundwater: floating product was found on groundwater	1	8 (Max = 8)

3.0 TARGETS

		Source	Value
3.1	Groundwater usage: Public supply, but alternate sources available with minimum hookup requirements	4	4 (Max = 10)
3.2	Distance to nearest drinking water well: <u>713</u> feet	4, 7	4 (Max = 5)
3.3	Population served within 2 miles: $\sqrt{\text{pop.}} = \sqrt{7248} = 85.1$	4, 7, 8	85 (Max = 100)
3.4	Area irrigated by (groundwater) wells within 2 miles: $(0.75) * \sqrt{\# \text{ acres}} = 0.75 * \sqrt{1311} = 27$	4, 7	27 (Max = 50)

4.0 RELEASE

		Source	Value
	Explain basis for scoring a release to groundwater: groundwater has been impacted by contaminated soil, shown by analytical data	1	5 (Max = 5)

SOURCES USED IN SCORING

1. Underground Storage Tanks Removal Project, Limited Environmental Site Assessment, Huntingdon Engineering and Environmental Consulting Engineers and Scientists, June 8, 1994
2. Site Hazard Assessment Site Visit by Brian Deeken, August 20, 2004
3. Washington State Department of Ecology, Toxicology Database for Use in Washington Ranking Method Scoring, January 1992
4. Washington State Department of Ecology, WARM Scoring Manual, April 1992.
5. Washington Climate – Net Rainfall Table
6. US EPA SITEINFO GIS Query for Latitude/Longitude of site – Attached
7. Washington State Department of Ecology, Water Rights Application System (WRATS) printout for two-mile radius of site.

8. Washington State Department of Health, SADIE Database printout for public water supplies