

SITE HAZARD ASSESSMENT

WORKSHEET 1

Summary Score Sheet

SITE INFORMATION:

Spokane Transit Authority Fmr RR Property

SW ¼ SW ¼ of Section 13, Township 25 N., Range 43 E. W. M.

Latitude 47° 39' 40.64" Longitude 117° 20' 24.09"

Ecology Facility site ID: 2165959

Site scored/ranked for the August 22, 2007 update

August 7, 2007

Site Description:

The Spokane Transit Authority (STA) Former Union Pacific Railroad (UPR) site is located in a commercial/industrial area of Spokane, Washington, between Havana Street and Fancher Road. Union Pacific railroad owned the site since the 1970's, when it was purchased from the Chicago Milwaukee Railroad. The property formerly had been used for automobile storage, as a loading/unloading facility for UPRR, and as a source of aggregate. The site is currently vacant and the western portion is occasionally used as overflow parking for the fairgrounds. Avista Stadium Baseball Park, Spokane Interstate Fairgrounds and the Agricultural Extension/ Conservation Office are located west-northwest of the site, a rail line is south of the site, and Costco Wholesale and Home Depot is south-southeast of the site.

The property was divided into two parcels A and B. Parcels A and B comprises approximately 3.5 and 11 acres, respectively. The site is vacant land partially asphalted and partially fallow with highly permeable soils. Of note is a quarry pond located adjacent to the north border of parcel A that exposes the Spokane Valley Rathdrum prairie federally designated sole source aquifer.

A letter to GeoEngineers from Ecology dated November 26, 2002, pursuant to an Ecology memorandum dated November 14, 2002, indicated arsenic contaminated soils and arsenic contaminated groundwater exceeding Model Toxics Control Act (MTCA) Method A cleanup levels for both soil and groundwater. Arsenic contaminated soils remained after site remediation, at 45 feet below ground surface (bgs). Groundwater level at this location has been determined to be between 51 and 53 feet bgs.

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):

Specific human health risk concerns warrants this site to be ranked under MTCA Method A unrestricted use criteria. This site is adjacent to a high volume of public activity (Spokane Interstate Fairgrounds, Avista Stadium and County Extension office.). Additionally the site is utilized as overflow parking for fairground activities. Also of human health concern is the large quarry pond adjacent to and slightly within parcel A of the site. No surface water runoff controls are in place to deny contaminant entry and additionally the site soils are highly permeable. Because the surface water is not open to public use the surface water pathway will not be scored however because the pond provides a direct conduit to the Spokane Valley Rathdrum Prairie federally designated sole source aquifer the groundwater pathway risk scores will be maximized in the interest of protecting the region's sole source of drinking water.

Table 1. GROUNDWATER SAMPLING RESULTS

Boring No.	Analyte Found	Sample Result (ug/l or ppb)	Applicable Standard	(ug/l or ppb)
MW-4 7/01	Arsenic	4.95	MTCA A*	5
MW -4 11/01	Arsenic	9.19	MTCA A*	5
MW-2 2/02	Arsenic	6.50	MTCA A*	5
MW-4 2/02	Arsenic	6.68	MTCA A*	5

*MTCA A refers to the Model Toxics Control Act Table 720-1 Method A Cleanup Levels for Groundwater

ROUTE SCORES:

Surface Water/Human Health: NA Surface Water/Environ.: NA

Air/Human Health: NA Air/Environmental: NA

Ground Water/Human Health: 64.5

OVERALL RANK: 2

**WORKSHEET 2
ROUTE DOCUMENTATION**

1. SURFACE WATER ROUTE - Not Applicable/not scored.

The surface water pathway will not be scored on the basis that site conditions do not permit public access to the quarry pond. The quarry pond is an exposed portion of groundwater associated with the Spokane Valley Rathdrum Prairie Aquifer a federally designated sole source aquifer which provides drinking water to this region.

2. AIR ROUTE - Not Applicable/not scored.

The airborne pathway will not be scored on the basis that site contaminants are contained in subsurface soils or partially covered with asphalt.

3. GROUND WATER ROUTE

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

Arsenic

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

The contaminants exceed MTCA cleanup standards in soil and groundwater samples

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

Contaminated subsurface soil, and contaminated groundwater.

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

The contaminants were confirmed in subsurface soils during a Phase 2 environmental assessment at this site. Contaminants were confirmed in a Geo-Engineers groundwater monitoring report dated July 18, 2002 .

WORKSHEET 6
Groundwater Route

1.0 SUBSTANCE CHARACTERISTICS

1.1 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 Arsenic	10	8	763 (rat)	5	0.001 (RfD)	5	A=1	1.75= 7	7	

* Potency Factor

Source: 1,2,3

Highest Value: 8
(Max = 10)

Plus 2 Bonus Points? 0

Final Toxicity Value: 8
(Max = 12)

1.2 Mobility (use numbers to refer to above listed substances)	
Cations/Anions [Coefficient of Aqueous Migration (K)]	Solubility (mg/L)
1= K is >1.0 = 3	2=

Source: 3

Value: 3
(Max = 3)

1.3 Substance Quantity: _____
Explain basis: Quantity unknown a default value of one is assigned

Source:
Value: 1,3
(Max=10)

2.0 MIGRATION POTENTIAL

		Source	Value
2.1	Containment (explain basis): Spills discharges and contaminated soil and groundwater	3	<u>10</u> (Max = 10)
2.2	Net precipitation: 14" - 6.8 = 7.2 net precipitation	4	<u>1</u> (Max = 5)
2.3	Subsurface hydraulic conductivity: Sands/sandy gravels	5	<u>4</u> (Max = 4)
2.4	Vertical depth to groundwater: Obs. release to groundwater = 0'	1,6	<u>8</u> (Max = 8)

1.0 TARGETS

		Source	Value
3.1	Groundwater usage: Federally Designated Sole-source Aquifer	7	<u>10</u> (Max = 10)
3.2	Distance to nearest drinking water well: 2500 feet and >5000 – 10000 feet	8	<u>3</u> (Max = 5)
3.3	Population served within 2 miles: > 10,000		<u>100</u> (Max = 100)
3.4	Area irrigated by (groundwater) wells within 2 miles: 2816 acres (0.75)*√0 acres = $0.75\sqrt{2816} = 0.75(53) = \sim 40$	9	<u>40</u> (Max = 50)

2.0 RELEASE

		Source	Value
	Explain basis for scoring a release to groundwater: Geo-Engineers Groundwater Monitoring Report, July 18, 2002 (July 2001 through May 2002) Spokane Transit Authority – Former Union Pacific Railroad Property Spokane Washington. File No. 3351-002-03	1	<u>5</u> (Max = 5)

SOURCES USED IN SCORING

1a. Geo-Engineers Reports phase 1 and phase 2 reports circa 1998 through 2001. File No. 3351-002-002/043001.

1b. Geo-Engineers report Soil Assessment and Remediation Spokane Transit Authority-Former Union Pacific Railroad Property Spokane Washington. File No. 3351-002-03/081001.

1c. Geo-Engineers Groundwater Monitoring Report, July 18, 2002 (July 2001 through May 2002) Spokane Transit Authority – Former Union Pacific Railroad Property Spokane Washington. File No. 3351-002-03

1d. Letters and Memorandum State of Washington Department of Ecology Eastern Regional Office Toxics Cleanup Program November 14 and November 26, 2002

(Source data references 1a through 1d shall be annotated within the report as source 1)

2. Toxicology Database WARM

3. WARM Scoring Manual

4. Washington Climate, Spokane Co. WSU Dept. of Agriculture

5. Soil Survey of Spokane Co. Washington, USDA Soil Conservation Svc.

6. Washington Department of Ecology Well Logs

7. Aquifer Sensitive Area Overlay Zone Map, Spokane Co. Washington

8. Washington Dept. of Health, Drinking Water Information Network

9. WRATS Washington Department of Ecology

