

SITE HAZARD ASSESSMENT

WORKSHEET 1

Summary Score Sheet

**SITE INFORMATION:**

**Name:** Littlerock Grocery & Gas

**Address:** 6410 128<sup>th</sup> Ave. SW

**City:** Littlerock

**County:** Thurston

**State:** WA

**Zip:** 98556

**Section/Township/Range:** 02/16/3W

**Latitude:** 46.90193    **Longitude:** -122.01914

**Ecology FSID:** 36199886

Date Scored: December 20, 2013

**SITE DESCRIPTION:** This site is located at 6410 128<sup>th</sup> Ave. SW in Littlerock, WA. A review of the November 1, 1990 report, stated that the site had an active grocery store with retail gasoline service. Three underground storage tanks (UST's) approximately three years old were present on the western portion of the property. Each UST has a capacity of 8,000 gallons; two contain unleaded gasoline and the third contained leaded gasoline. On September 25, 1990, the integrity of the tanks was reported tested using "Ainlay Tank Tegrity Tester" technique. This testing performed by Ed's Service Station Maintenance, indicated all the UST's were "tight" and free from leakage.

A consultant was retained to sample and assess soil and groundwater conditions at this site for possible contamination. Two borings were done on the site for sampling of soil, groundwater was encountered at 8 feet bgs. There are two existing monitoring wells located in the southwest corner of the tank area (Well 1) and the other in the northeast corner (Well 2). Due to the seven-foot separation between the wells, only the downgradient well (Well 1) water samples were submitted for analysis.

Soil conditions encountered at the site are generally characterized by poorly-sorted, sandy gravel and silty sands. The two samples taken during the boring activities showed the concentration for gasoline below Method A Cleanup Level. The one groundwater sample had Benzene at 6,100 ppb, Toluene at 22,000 ppb, Ethylbenzene at 2,400 ppb and total xylenes at 13,600 ppb. All concentration are above Method A Cleanup level for groundwater.

There is a Group A well on site that serves the grocery store, that is classified as a Transient Non-Communal. The well is 118 feet deep and ground water flows from the northeast toward the west/southwest.

**SPECIAL CONSIDERATIONS**

Due to the contamination documented on-site being primarily subsurface, the surface water and air routes are not applicable for WARM scoring for this site.

**ROUTE SCORES:**

Surface Water/Human Health: NA

NA

Surface Water/Environmental: NA

Air/Human Health: NA

NA

Air/Environmental: NA

Groundwater/Human Health: 32.6

**Overall Rank: 3**

WORKSHEET 2  
Route Documentation

**1. SURFACE WATER ROUTE – NOT SCORED**

- a. List those substances to be considered for scoring: Source:
  
- b. Explain basis for choice of substance(s) to be used in scoring.
  
- c. List those management units to be considered for scoring: Source
  
- d. Explain basis for choice of unit to be used in scoring:

**2. AIR ROUTE – NOT SCORED**

- a. List those substances to be considered for scoring: Source:
  
- b. Explain basis for choice of substance(s) to be used in scoring:
  
- c. List those management units to be considered for scoring: Source:
  
- d. Explain basis for choice of unit to be used in scoring:

**3. GROUNDWATER ROUTE**

- a. List those substances to be considered for scoring: Source: 1  
Benzene, toluene, Ethylbenzene, and Xylene
  
- b. Explain basis for choice of substance(s) to be used in scoring:  
According to analytical results, the substances listed above were detected at concentrations exceeding MTCA Method A cleanup levels in groundwater.
  
- c. List those management units to be considered for scoring: Source: 1  
Groundwater
  
- d. Explain basis for choice of unit to be used in scoring:  
Documented release to groundwater

WORKSHEET 6  
Groundwater Route

**1.0 SUBSTANCE CHARACTERISTICS**

<b>1.2 Human Toxicity</b>										
Substance		Drinking Water Standard (µg/L)	Value	Acute Toxicity (mg/ kg-bw)	Value	Chronic Toxicity (mg/kg/day)	Value	Carcinogenicity		Value
								WOE	PF*	
1	Benzene	5	8	3306	3	-	-	0.29	-	5
2	Toulene	2000	2	5000	1	2	3	-	-	-
3	Xylene	10000	2	50	8	0.2	3	-	-	-

\* Potency Factor, ND-No Data

Source: 2,3

Highest Value: 8

(Max = 10)

Plus 2 Bonus Points? yes

**Final Toxicity Value: 10**

(Max = 12)

<b>1.2 Mobility (use numbers to refer to above listed substances)</b>	
Cations/Anions [Coefficient of Aqueous Migration (K)]	OR Solubility (mg/L)
1=	1= $1.8E+03 = 3$
2=	2= $5.4E+02 = 2$
3=	3= $2.0E+02 = 2$

Source: 2, 3

**Value: 3**

(Max = 3)

<b>1.3 Substance Quantity (volume):</b>	
Explain basis: Quantity unknown, use default value = 1	Source: 2, 3 <b>Value: 1</b> (Max=10)

## 2.0 MIGRATION POTENTIAL

		Source	Value
2.1	<b>Containment (explain basis):</b> Site and surrounding areas are paved, score as landfill: 1) No liner, Value 3. 2) Low permeability cover, Value 1. 3) No leachate collection, Value 2,	1	<b>6</b> (Max = 10)
2.2	<b>Net precipitation:</b> Nov-Apr (inches): 38.54" total precipitation, 11.74" evapotranspiration rate, 38.54-11.74 = 26.80 net precip.	4, 5	<b>3</b> (Max = 5)
2.3	<b>Subsurface hydraulic conductivity:</b> gravelly sandy loam	6	<b>3</b> (Max = 4)
2.4	<b>Vertical depth to groundwater:</b> Less than 25 feet, encountered at 8 feet	1	<b>8</b> (Max = 8)

## 3.0 TARGETS

		Source	Value
3.1	<b>Groundwater usage:</b> Public/private supply, but alternate sources available	3	4 (Max = 10)
3.2	<b>Distance to nearest drinking water well:</b> less than 600 feet	6	5 (Max = 5)
3.3	<b>Population served within 2 miles:</b> $\sqrt{650} = > 24.5$	7	25 (Max = 100)
3.4	<b>Area irrigated by (groundwater) wells within 2 miles:</b> 959 acres (0.75)* $\sqrt{959}$ =	8	<b>23</b> (Max = 50)

## 4.0 RELEASE

		Source	Value
	<b>Explain basis for scoring a release to groundwater:</b> Documented release	1	<b>5</b> (Max = 5)

## SOURCES USED IN SCORING

1. Preliminary Environmental Studies Littlerock Grocery, Geotech Consultants, November 1, 1990.
2. Washington Department of Ecology, *Toxicology Database for Use in Washington Ranking Method Scoring*, January 1992.
3. Washington Department of Ecology, *WARM Scoring Manual*, April 1992.
4. Western Regional Climate Center, Precipitation data from the Olympia, Washington Airport, June 1948 to September 2005.
5. Table 16-Estimated Evapotranspiration, E.M. 2462, p42, for Thurston County Airport.
6. Thurston County Geodata Center, Roads and Transportation Division, November 2013.
7. Washington State Department of Health, Drinking Water Division, Sentry Database, December 2013.
8. Washington Department of Ecology, Water Resources Program, Water Right Tracking System (WRTS), December 2013.
9. Conversation with Sara Brallier, Drinking Water, Thurston County Environmental Health, 12/11/13.