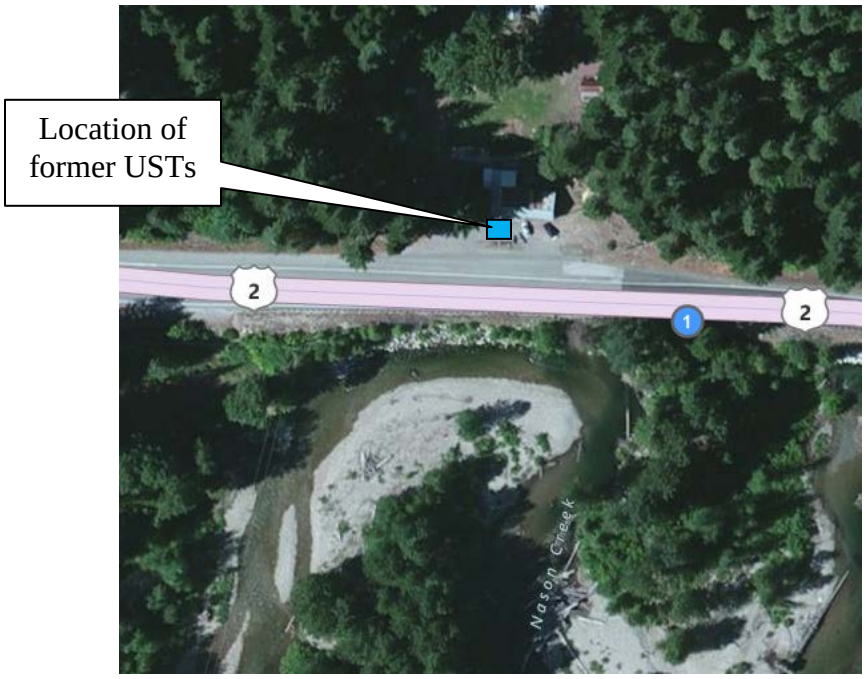
WORKSHEET 1
Summary Score Sheet

SITE INFORMATION:

Name: **Ray Rock Grocery Store**
Address: **19475 Hwy 2**
City: **Leavenworth** County: **Chelan** State: **WA** Zip: **98826**
Section/Township/Range: **04/T26N/R16E**
Latitude: **47.78782** Longitude: **-120.85497**
Facility/Site ID#: **71399884**
TCP Cleanup Site ID #: **10237**

Site scored/ranked for the August 2013 update

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



Following the removal of two 2000-gallon gasoline USTs, a site assessment was completed by Forsgren Associates on August 22, 1991. Four soil samples were collected from beneath the tanks and one product line and analyzed for TPH-G, BTEX and lead. The tank pit was backfilled prior to receiving the sampling results. Lab results of Samples 3 and 4 found benzene, ethylbenzene, xylenes, and gasoline and levels which exceed MTCA Method A cleanup standards.

On October 29, 1991, approximately eight cubic yards of contaminated soil were removed from the former tank pit. The letter report, dated December 30, 1991, indicates "soil samples were collected at

the time of re-excavation and submitted for analysis." According to a laboratory report, dated November 18, 1991, just one soil sample was analyzed for BTEX, TPH-G, and lead. Benzene (0.839 ppm) and lead (14.9 ppm) were detected, but only benzene exceeded Method A cleanup standards. It is not clear if this sample came from the tank pit or stockpiled soil.

An email from Brit Dudek, dated February 6, 2011, indicates that petroleum contaminated soil was landfarmed on the property and sampled to confirm contaminant levels had dropped below Ecology's cleanup levels. Mr. Dudek may be referring to the November 18 sample result as no other lab results were submitted to Ecology.

The information in Ecology's site file is incomplete and the site assessment is inadequate. It does not include soil sample depth, location of the confirmation sample or final disposition of "landfarmed" soils. Additionally, no soil samples were collected beneath the dispensers or all piping runs as required by the *Guidance for Site Checks and Site Assessments for Underground Storage Tanks*.

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.

Ecology conducted a site visit on April 24, 2013. Brit Dudek explained that there is no drinking water well onsite. Instead, the drinking water source is a surface water diversion. The nearest well is located on an adjacent property a half-mile or so east of the site. Based on the proximity of the former UST system to surface water, it is assumed that groundwater wells within a 2-mile radius would not be directly impacted by any contamination present at this site. In any case, the linear distance to the nearest drinking water well is assumed to be greater than 2640 feet.

ROUTE SCORES:

Surface Water/Human Health:	**n/a**	Surface Water/Environmental.:	**n/a**
Air/Human Health:	**n/a**	Air/Environmental:	**n/a**
Groundwater/Human Health:	**27.8**		

OVERALL RANK: 5

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

      Benzene

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

      Present at levels which exceed MTCA cleanup standards.

   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:

      Soil contamination resulting from a leaking underground storage tank system.

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	benzene	5	8	3306	3	--	ND	A	0.29	5

* *Potency Factor*

Source: 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)] OR	Solubility (mg/L)
1=	**1=** 3

Source: 3

Value: 3
(Max = 3)

1.3 Substance Quantity:

Explain basis: Conservative estimate = 10-100 cubic yards	Source: 3 **Value: 2** (Max=10)

2.0 MIGRATION POTENTIAL

		Source	Value
2.1	**Containment (explain basis):** Most of the area where the USTs were located appears to be paved. The former dispenser island is either paved or gravel.	7	**9** (Max = 10)
2.2	**Net precipitation:** 14.7 – 3.0 = 11.7"	5	**2** (Max = 5)
2.3	**Subsurface hydraulic conductivity:** Well log indicates top 15' to be "brown clay cobbles gravel".	8	**4** (Max = 4)
2.4	**Vertical depth to groundwater:** Groundwater was not reported to be encountered during tank removal, however, nearby Nason Creek will likely contribute to shallow groundwater. Assume <25'.	6	**8** (Max = 8)

3.0 TARGETS

		Source	Value
3.1	**Groundwater usage:** Private well on property drilled in 1997 to a depth of 265'. No other wells nearby.	8	**5** (Max = 10)
3.2	**Distance to nearest drinking water well:** > 2640 **feet** nearest well ~ 1/2-mile east of site	3	**2** (Max = 5)
3.3	**Population served within 2 miles:** √ **pop.** = √3 = 1.73 (to account for onsite well). Due to the proximity of the site to Nason Creek and the distance to other drinking water wells, it is assumed that impacted groundwater in this area would not likely affect other drinking water wells.	6, 7, 8	**2** (Max = 100)
3.4	**Area irrigated by (groundwater) wells within 2 miles:** **(0.75)*√# acres** = no irrigated acres affected by wells in this area	6	**0** (Max = 50)

4.0 RELEASE

	Source	Value
Explain basis for scoring a release to groundwater: Impacted groundwater has not been confirmed.	1	**0** (Max = 5)

SOURCES USED IN SCORING

1. Ray Rock Grocery Store Ecology file
2. Site visit by Krystal Rodriguez, April 24, 2013
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. GWIS application using aerial photography
7. Washington State Department of Health, Office of Drinking Water Sentry website printout for public water supplies
8. Ecology Well Log database