

WORKSHEET 1
Summary Score Sheet

SITE INFORMATION:

Name: **Bleyhl Farm Service Sunnyside**
Address: **1720 Eastway Drive**
City: **Sunnyside** County: **Yakima** State: **WA** Zip: **98944**
Section/Township/Range: **30/T10N/R23E**
Latitude: **N 46°19.401'** Longitude: **W 119°59.845'**
TCP ID #: **56531667**

Site scored/ranked for the August 17, 2004 update.

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

A former service station and bulk petroleum plant was located on the south side of the Bleyhl Farm Service Store (Bleyhl) in Sunnyside, WA. The three 12,000-gallon underground storage tanks (USTs) were located adjacent to the Bleyhl building. At the time the tanks were installed, groundwater was near the surface and the installers were unable to completely bury them. In order to cover the USTs, a concrete block retaining wall was built around them and the tanks were covered with sand. A concrete slab was then poured over the tank basin.

In January 1997, Bleyhl contacted West Central Environmental Consultants (WCEC) regarding a possible release from one of the UST systems. Inventory records indicated that approximately 2,000 gallons of unleaded gasoline were missing. A backhoe was used to dig a trench and determine exactly where the release had occurred. Upon discovering product weeping into the trench, the backhoe uncovered the gravel fill of the active piping and a large volume of free petroleum product flowed into the trench. At this time, the Sunnyside Fire Chief and two Ecology representatives responded to the spill. Product was pumped into 55-gallon drums using a pneumatic bladder pump, however, product continued to accumulate in the trench at a relatively rapid rate, according to the 1997 excavation report. Before leaving the site, the trench was backfilled to reduce the hazard of having exposed free product on site. Bleyhl closed the dispensing portion of the business soon thereafter. In early February 1997, all fuel was removed from the three USTs. Sumps set up in the trenches reportedly recovered 2,250 gallons of product (no water).

In February 1997, WCEC drilled seven soil borings to the south of the tank basin and around the gasoline dispenser to determine the extent of contamination on site. At the time, the water table was at 4-5 feet below ground surface (bgs). Five soil samples were collected from a depth of 3-4 feet bgs, which appeared to have the highest levels of contamination. The samples were analyzed for gasoline-range petroleum hydrocarbons (TPH-G) and BTEX (benzene, toluene, ethylbenzene, and total xylenes). In all soil samples, concentrations for TPH-G and BTEX exceeded their respective Model Toxics Control Act (MTCA) cleanup levels.

In March 1997, approximately 1,400 tons of petroleum contaminated soil (PCS) was removed from the site, which included the soils around the USTs and both the gasoline and diesel pump islands.

Additional free product was discovered and approximately 600-700 gallons were recovered. The excavation extended to a depth of 7 feet bgs under the tank basin and 5 feet bgs in other areas. All sidewall samples contained concentrations exceeding MTCA cleanup levels; the results are shown in the chart below. Soil samples collected from the stockpiles revealed the presence of diesel-range petroleum hydrocarbons (TPH-D) as well.

	TPH-G	TPH -O	TPH-D	Benzene	Toluene	Ethylbenzene	Xylenes
	ppm	ppm	ppm	ppb	ppb	ppb	ppb
PW 1-3.5	65.5	ND	31	830	3400	964	9480
PW 2-3	191	--	--	<500	8620	3450	30600
PW 3-3	31.1	--	--	272	1090	161	4170
PW 4	120	--	--	918	5600	2700	18300
PW 5	209	--	--	1260	13200	4080	40800
PW 6	95.2	ND	122	<500	3230	2780	19500
Method A	30	2000	2000	30	7000	6000	9000

Bold = Exceeds MTCA Method A cleanup levels

PW- excavation sidewall sample

-- = no data

Because soil contamination had come into contact with groundwater, three groundwater monitoring wells were installed in July 1997. Soil samples collected from BH-1 (MW-1) contained benzene and diesel at levels which exceed the MTCA cleanup standards.

In September 2003, groundwater monitoring was conducted; the following chart is a list of concentration (parts per billion or ppb) of contaminants detected in each well.

	WTPH-G	WTPH-D	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE
MW-1	114	<250	<0.5	2.69	<1	21.1	<5
MW-2	880	<250	532	<2	4.25	7.99	70.3
MW-3	1270	<250	600	<2	<1	85.3	<5
Method A	800	500	5	1000	700	1000	20

Bold = Exceeds MTCA Method cleanup levels

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. Additionally, the site is completely covered with asphalt. Thus, only the groundwater route will be scored.

The total population usage of groundwater for drinking water from all private and public supply wells is documented to be in excess of 10,000, so the maximum value of 100 will be used for that scoring value.

ROUTE SCORES:

Surface Water/Human Health: NA
Air/Human Health: NA
Groundwater/Human Health: 39.7

Surface Water/Environmental.: NA
Air/Environmental: NA

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: 1-3

Gasoline-range petroleum hydrocarbons (TPH-G), benzene, toluene, total xylenes, and MTBE

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

Analytical results from the soil sampling and the most recent groundwater monitoring event 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: 1-3

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	Benzene	5	8	3306	3	--	--	1.0	0.029	5
2	Toluene	2000	2	5000	3	0.2	1	--	--	ND
3	Ethylbenzene	700	4	3500	3	0.1	1	--	--	ND
4	Total Xylenes	10000	2	50	10	2	1	--	--	ND

* Potency Factor

Source: 3, 5, 6

Highest Value: 10

(Max = 10)

Plus 2 Bonus Points? 2

Final Toxicity Value: 12

(Max = 12)

1.2 Mobility (use numbers to refer to above listed substances)	
Cations/Anions	OR Solubility (mg/L)
1=	1= $1.8 \times 10^3 = 3$
2=	2= $5.4 \times 10^2 = 2$
3=	3= $1.5 \times 10^2 = 2$
4=	4= $2.0 \times 10^2 = 2$

Source: 5, 6

Value: 3

(Max = 3)

1.3 Substance Quantity:	
Explain basis: Inventory records indicated that approximately 2,000 gallons of unleaded gasoline were missing.	Source: <u>3</u> Value: <u>4</u> (Max=10)

2.0 MIGRATION POTENTIAL

		Source	Value
2.1	Containment (explain basis): Score as landfill; No liner = 3; Site is asphalted = 0; No known leachate collection system present = 2	2, 3, 6	5 (Max = 10)
2.2	Net precipitation: November – April = 4.1” – 2.3” = 1.8”	6, 7	1 (Max = 5)
2.3	Subsurface hydraulic conductivity: gravel fill overlying fine sandy silt	2, 6	3 (Max = 4)
2.4	Vertical depth to groundwater: Confirmed contamination = 0’	3, 6	8 (Max = 8)

3.0 TARGETS

		Source	Value
3.1	Groundwater usage: public supply, but alternate sources available with minimum hookup requirements	6, 10	4 (Max = 10)
3.2	Distance to nearest drinking water well: <u>4,043</u> feet	6, 10	2 (Max = 5)
3.3	Population served within 2 miles: $\sqrt{\text{pop.}} = \sqrt{14,010} = 118.4 = 100$	6, 10	100 (Max = 100)
3.4	Area irrigated by (groundwater) wells within 2 miles: $(0.75) * \sqrt{\#} \text{ acres} = 0.75 * \sqrt{319} = 13.4$	6, 9	13 (Max = 50)

4.0 RELEASE

		Source	Value
	Explain basis for scoring a release to groundwater: Documented by analytical data	3, 6	5 (Max = 5)

SOURCES USED IN SCORING

1. Interim Action and Excavation Report, *West Central Environmental Consultants*, April 21, 1997
2. Monitoring Well Installation and Quarterly Monitoring Report, *West Central Environmental Consultants*, July 24, 1997
3. September 2003 Semiannual Groundwater Monitoring Report, *West Central Environmental Consultants*, October 31, 2003
4. Site Hazard Assessment Drive-by by Krystal Rodriguez, March 4, 2004.
5. Washington State Department of Ecology, Toxicology Database for Use in Washington Ranking Method Scoring, January 1992
6. Washington State Department of Ecology, WARM Scoring Manual, April 1992.
7. Washington Climate – Net Rainfall Table

8. US EPA SITEINFO GIS Query for Latitude/Longitude of site – Attached
9. Washington State Department of Ecology, Water Rights Application System (WRATS) printout for two-mile radius of site.
10. Washington State Department of Health, SADIE Database printout for public water supplies