

CSID 3940

**Site Hazard Assessment
WORKSHEET 1
SUMMARY SCORE SHEET**

Site Name/Location (Street, City, County, Section/Township/Range, TCP ID Number):

Benedict Property Thurston County S4/T15/R3W
19223 Denmark St SW Tax Parcel: 13504340400
Rochester, WA 98579 Facility ID: ~~7914101~~ 3995580
Site scored for the February 22, 2006 Update

Site Description (Include management areas, substances of concern, and quantities): The site consists of 8 acres in rural Rochester, WA. There is a single family home, garage, and shop. The site is on septic and well water.

An aboveground heating oil tank developed a leak and approximately 80 gallons was released. The length of time of the leak is unknown. The fuel haulers liability insurance is covering the cleanup. A consultant was hired and they excavated about 5-10 cubic yards of the most contaminated material from the surface down to about four feet directly below where the tank had been. The remaining contamination showed diesel at a concentrations of 15,000 ppm.

The contractor installed perforated piping in the bottom of the excavation. They drilled four borings and encountered water at 20 feet below ground surface. They installed one well immediately down gradient of release area and did not detect anything in groundwater. They ran a weeklong pilot test for vapor extraction to collect respiration parameters to design a bioventing system. They are confident that an in-situ bioventing system will work. In March 2005, another sample was taken from the single monitoring well next to the release area. This sample did not show any diesel contamination. They figure that the system would take a year or two to complete the cleanup.

The homeowner elected to go with a small vapor extraction system instead of the recommended bioventing system. The small blower has been running since mid-December. A water sample from well immediately downgradient of spill has about 520 ppb of diesel in it. They plan to drill again in the spring 2006 to check soil concentrations and expect to see dramatic reductions due to vapor extraction and aeration of soil column.

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 contamination documented onsite being primarily subsurface, the surface water and air routes are not applicable for WARM scoring for this site. Ground water is the only route scored.

ROUTE SCORES:

Surface Water/Human Health: NS

Surface Water/Environ.: NS

Air/Human Health: NS

Air/Environmental: NS

Ground Water/Human Health: 19.5

OVERALL RANK: 5

SITE HAZARD ASSESSMENT
WORKSHEET 2
ROUTE DOCUMENTATION

1. SURFACE WATER ROUTE

List those substances to be considered for scoring. Source: NS

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

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

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

2. AIR ROUTE

List those substances to be considered for scoring. Source: NS

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

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

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

3. GROUND WATER ROUTE

List those substances to be considered for scoring. Source: 4

TPH-Diesel

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

The above substance was detected at elevated concentration in subsurface soils in excess of MTCA Method A clean-up levels.

List those management units to be considered for scoring. Source: 4
Subsurface soils

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

**Site Hazard Assessment
WORKSHEET 6
GROUND WATER ROUTE**

1.0 SUBSTANCE CHARACTERISTICS

1.1 Human Toxicity

Substance	Drinking Water Standard		Acute Toxicity		Chronic Toxicity		Carcinogenicity		
	(ug/m ³)	Val	(mg/kg/bw)	Val	(mg/kg/day)	Val	WOE	PF	Val
1.									
2. TPH-Diesel	160	4	490	5	0.004	3	ND		
3.									
4.									
5.									

Source: 1,2,4 Value: 5 (Max. =10)
+2 Bonus Points? NO
Final Toxicity Value: 5 (Max.=12)

1.2 Mobility

(Use numbers to refer to above listed substances)

Cations/Anions

Source: Value: - (Max. =3)

- 1.
- 2.
- 3.
- 4.
- 5.

OR Solubility

Source: 2 Value: 1 (Max. =3)

- 1.
2. 30
- 3.
- 4.
- 5.

1.3 Substance Quantity

Source: 4 Value: 1 (Max. =10)

Explain basis: <10 cubic yards

2.0 MIGRATION POTENTIAL

2.1 Containment

Source: 1,4 Value: 6 (Max. =10)

Explain Basis: Score as landfill, no liner -3

Low permeability cover -1, no leachate system - 2

2.2 Net Precipitation (inches): 26.80

Source: 7,8 Value: 3 (Max. =5)

Nov - April: Total Precip (38.54) - Evapotrans (11.74)

2.3 Subsurface Hydraulic Conductivity:
1.4x10⁻³

Source: 1,4 Value: 4 (Max. =4)

2.4 Vertical Depth to Ground Water:
20 feet

Source: 4 Value: 8 (Max. =8)

3.0 Targets

- 3.1 Ground Water Usage: Source: 6 Value: 4 (Max. =10)
Private supply, but alt sources available with
Minimal hookup
- 3.2 Distance to Nearest Drinking Well (ft): Source: 6 Value: 4 (Max. =5)
1,000 feet
- 3.3 Population Served within 2 miles: Source: 6 Value: 52 (Max. =100)
2700 people = 52
- 3.4 Area irrigated by Wells within 2 miles: Source: 3 Value: 0 (Max. =50)
Zero
- 3.0 RELEASE Source: 4 Value: 5 (Max. =5)
Explain basis for scoring a release to ground water:
Analytical results

SOURCES USED IN SCORING

1. Washington Ranking Method Scoring Manual, April 1990.
2. Toxicology Database for Use in Washington Ranking Method Scoring, January 1992.
3. Water Right Tracking System, DOE, reported by SFOX461 dated 1/9/06.
4. Sample Analytical Results Petroleum Hydrocarbons, Benedict Heating Oil Release, Rochester, WA July 2004.
5. Emails from Howard Small, GeoScience Management Inc. Arlington, WA dated 1/18/05, 3/14/05, 9/9/05 and 1/19/06.
6. Thurston County Geodata, Parcel map, 1.13.06.
7. Table 16-Estimated Evapotranspiration, E. m 2462, p42, for Thurston County Airport.
8. Western Regional Climate Center, Precipitation data from the Olympia, Washington Airport, June 1948 to September 2005.