



WORKSHEET 1
Summary Score Sheet

SITE INFORMATION:

Name: Lake Chelan Boat Company
Address: 1418 West Woodin Avenue
City: Chelan County: Chelan State: WA Zip: 98816
Section 14 / Township 27N / Range: 22E
Latitude: 47.83558⁰ N Longitude; 120.03802⁰ W

F.S. ID #: 93262331

Site scored/ranked for the February, 2012 update

SITE DESCRIPTION AND HISTORY.

The Lake Chelan Boat Company office is located at 1418 West Woodin Avenue on the south shore of Lake Chelan. The Lake Chelan Boat Company has operated a passenger and freight service between Chelan and Stehekin for many years from this location. A few private wells are located within two miles of the site, but there are no public drinking water wells within two miles. The City of Chelan uses Lake Chelan as its drinking water source. On November 7, 2011, a 10,000-gallon Underground Storage Tank (UST) used for diesel fuel was excavated and decommissioned under the supervision of Environmental Associates (EA). The tank was located approximately 75 feet from the shore of Lake Chelan, which was at its seasonal low (approximately 1094 feet above sea level).

SAMPLING AND ANALYSIS.

EA collected seven soil samples during the initial tank excavation from beneath the UST and from the stockpiled soil. The samples were sent to Friedman Bruya, Inc. in Seattle, WA for analysis of Total Petroleum Hydrocarbons-Diesel (TPH-D) and Total Petroleum Hydrocarbons-Lube oils (TPH-L).

None of these sample results exceeded the MTCA (Model Toxics Control Act) Method A cleanup levels for TPH-L. However, three of the samples taken beneath the UST had concentrations for TPH-D which exceeded the Method A cleanup level of 2000 mg/kg, with the highest result 24,000 mg/kg.

Special Considerations:

Because the remaining contamination is entirely subsurface, the surface water and air routes are not applicable for WARM scoring. Thus, only the groundwater route will be scored.

ROUTE SCORES:

Surface Water/Human Health:	<u>NS</u>	Surface Water/Environmental.:	<u>NS</u>
Air/Human Health:	<u>NS</u>	Air/Environmental:	<u>NS</u>
Groundwater/Human Health:	<u>6.3</u>		

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
Diesel
- b. Explain basis for choice of substance(s) to be used in scoring: Source: 1
The Environmental Associates report contained results showing that diesel was present in the soil at concentrations that exceeded MTCA Method A cleanup levels.
- c. List those management units to be considered for scoring: Source: 1
Contaminated soil
- d. Explain basis for choice of unit to be used in scoring: Source: 1
Diesel contamination was confirmed by laboratory testing.

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 TPH-diesel	160	4	490	5	0.004	3	ND	ND		
2										
3										
4										
5										
6										

* Potency Factor

Source: 1,4,5
Highest Value: 5
 (Max = 10)
Plus 2 Bonus Points? 0
Final Toxicity Value: 5
 (Max = 12)

1.2 Mobility (use numbers to refer to above listed substances)	
Cations/Anions	OR Solubility (mg/L)
1=	1= 30 (=1)
2=	2=
3=	3=
4=	4=

Source: 1,4,5
Value: 1
 (Max = 3)

1.3 Substance Quantity:	
Explain basis: Excavation 20 X 30 X 10 feet deep approximately 220 cubic yards	Source: <u>1,5</u> Value: <u>3</u> (Max=10)

2.0 MIGRATION POTENTIAL

		Source	Value
2.1	Containment (explain basis): Contaminated soil, no cover	1,5	10 (Max = 10)
2.2	Net precipitation: 7.1 minus 2.8 = 4.3 inches	6	1 (Max = 5)
2.3	Subsurface hydraulic conductivity: granite	2,5	1 (Max = 4)
2.4	Vertical depth to groundwater: > 300 feet	3,5	1 (Max = 8)

3.0 TARGETS

		Source	Value
3.1	Groundwater not, but usable	5,7	2 (Max = 10)
3.2	Distance to nearest drinking water well: <u>~3000</u> feet	5,8	2 (Max = 5)
3.3	Population served within 2 miles: $\sqrt{\text{pop.}} = \sqrt{111} = 10.5$	5,7	11 (Max = 100)
3.4	Area irrigated by (groundwater) wells within 2 miles: $(0.75) * \sqrt{10.5} \text{ acres} = \underline{2.8}$	5,7	3 (Max = 50)

4.0 RELEASE

		Source	Value
	Explain basis for scoring a release to groundwater: Release not confirmed.	1,5	0 (Max = 5)

SOURCES USED IN SCORING

1. Environmental Associates, Inc. draft report dated November, 2011..
2. Soil Survey of Chelan County, Washington (USDA).
3. Water well reports on file at Chelan-Douglas Health District
4. Washington Department of Ecology, Toxicology Database for Use in Washington Ranking Method Scoring, January 1992.
5. Washington Department of Ecology, WARM Scoring Manual, April 1992.
6. Washington Climate – Net Rainfall Table
7. Water Rights Application Tracking System (WRATS) printout for two-mile radius of site.
8. Washington Department of Ecology Well Log Image system
9. Site visit on December 14, 2011.



Lake Chelan Boat Company tank excavation December 14, 2011
Note areas of stained soil at far end



Lake Chelan Boat Company December 14, 2011 showing location of tank excavation with Lake Chelan in distance (about 75 feet north)