SITE HAZARD ASSESSMENT

WORKSHEET 1

Summary Score Sheet

SITE INFORMATION:

Site Name: Parks Maintenance Department
Address: 2920 Douglas Street, Longview
Ecology Facility Site ID No.: 99775267
Section/Township/Range: 08 N/02 W/32 WM
Latitude: 46.13233 Longitude: -122.96159

Site scored/ranked for the August 2014 update
Today's date: February 19, 2014

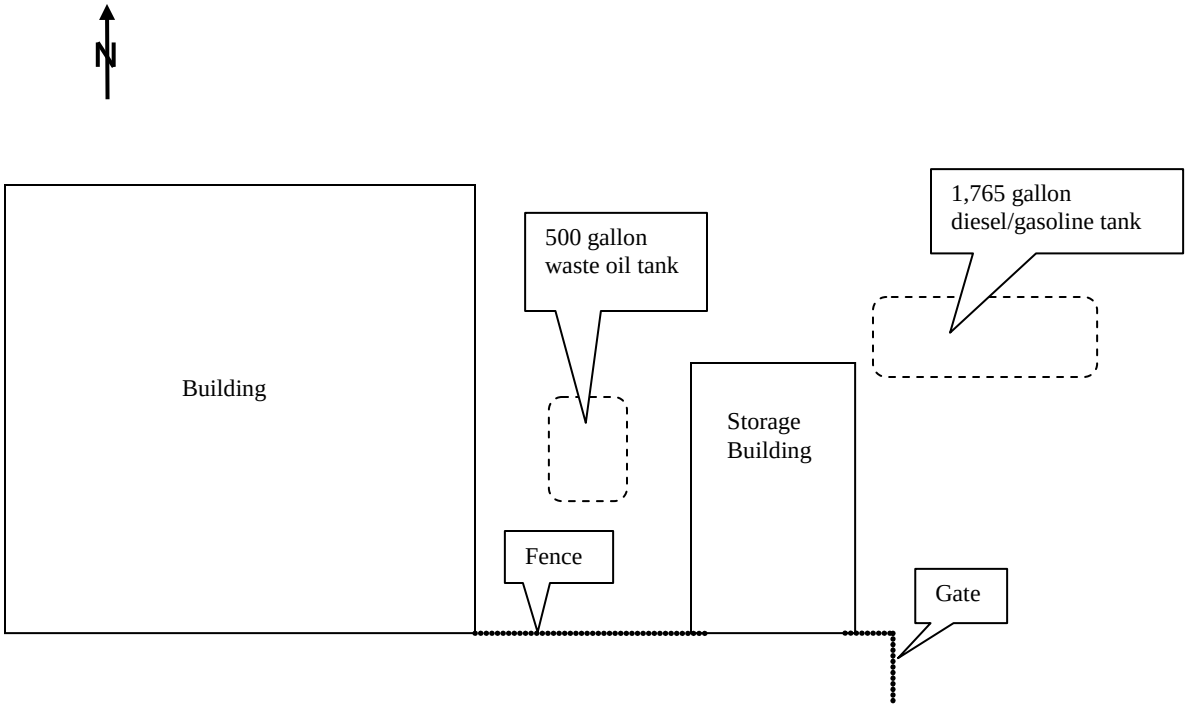
SITE DESCRIPTION:

The subject site consists of a 1.2 acre irregularly shaped parcel designated as "Govt SVC (Police/Fire ET)" in an area of Longview zoned for residential and commercial use. The site lies approximately ten feet above mean sea level. Washington Way, Douglas Street, and 30th Ave provide the north, south, and west boundaries for the site, respectively. Lake Sacajawea lies approximately 2,250 feet east of the subject site. The site currently houses the Park Maintenance Shop for the City of Longview. There are currently three buildings, various vehicles, and heavy machinery housed at the site.

In January of 1992, P.R. Worth Company removed two underground storage tanks (USTs) from the site. The tanks contained waste oil and gasoline with a combined total volume of 2,265 gallons. The gasoline tank had historically contained diesel. Petroleum contamination was discovered in the excavation.

In February of 1992, laboratory sample results from Columbia Analytical were received. The sample results showed hand corrected values without initials or an explanation. The initial results showed diesel, gasoline, benzene, and xylene above their respective MTCA Method A Cleanup Levels. The corrected values show only gasoline, benzene, and xylene contamination above their respective MTCA Method A Cleanup Levels.

The excavated soil was removed for disposal. The excavation was backfilled due to potentially compromising the integrity of a nearby building.


N
Building
500 gallon
waste oil tank
1,765 gallon
diesel/gasoline tank
Storage
Building
Fence
Gate


30th Ave
Washington Way
Washington Way
Washington Way
30th Ave
Longview
Parks and
Recreation Dept
Longview Park
Maintenance
Douglas St
Douglas St
20th Ave
Colorado St
Colorado St
N

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):

The scope of this Site Hazard Assessment did not include a hydrogeologic survey of the subject site and surrounding area. The groundwater contamination documented or inferred at the subject site is therefore considered to have the potential to impact any well located within the prescribed 2-mile radius and all such wells were used in the scoring process.

The documented contamination on this site is primarily subsurface. The Surface Water and Air routes have not been scored.

The City of Longview Water System, a water system supplied by surface water intakes in the Cowlitz River, is located within two miles of the subject site. This water system was unable to be included into the SHA scoring model due to subsurface soil contamination which is unavailable surface water pathway. The City of Longview Water serves a population of 40,878 residents. This water system is considered to be highly susceptible to contamination.

ROUTE SCORES:

Surface Water/Human Health: Not scored
Surface Water/Environmental.: Not scored
Air/Human Health: Not scored
Air/Environmental: Not scored
Groundwater/Human Health: **33.8 => 3**

OVERALL RANK: 3

WORKSHEET 2
Route Documentation

1. **SURFACE WATER ROUTE**
   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**
   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

      TPH as gasoline (from benzene), TPH as diesel (from naphthalene), and xylene

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

      TPH as gasoline (from benzene), TPH as diesel (from naphthalene), and xylene will be used due to their presence in subsurface soil at the site, confirmed through sample analysis.

   c. List those management units to be considered for scoring: Source: 2

      Spills, discharges, and contaminated soil

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

Spills, discharges, and contaminated soil will be the managements units used for scoring due to the impact caused by leaking underground storage tanks which have been covered by an impervious surface.

WORKSHEET 4

Surface Water Route

1.0 SUBSTANCE CHARACTERISTICS

1.1 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										
2										
3										
4										
5										
6										

* *Potency Factor*

Source:

Highest Value:
(Max = 10)

Plus 2 Bonus Points?

Final Toxicity Value:
(Max = 12)

1.2 Environmental Toxicity ( ) Freshwater ( ) Marine

	Substance	Acute Water Quality Criteria		Non-Human Mammalian Acute Toxicity	
		(µg/L)	Value	(mg/kg)	Value
1					
2					
3					
4					
5					
6					

Source:

Highest Value:
(Max = 10)

1.3 Substance Quantity	
Explain Basis:	Source: **Value:** (Max = 10)

2.0 MIGRATION POTENTIAL

		Source	Value
2.1	**Containment** **Explain basis:**		_ (Max = 10)
2.2	**Surface Soil Permeability:**		_ (Max = 7)
2.3	**Total Annual Precipitation:**		_ (Max = 5)
2.4	**Max 2yr/24hr Precipitation:**		_ (Max = 5)
2.5	**Flood Plain:**		_ (Max = 2)
2.6	**Terrain Slope:**		_ (Max = 5)

3.0 TARGETS

		Source	Value
3.1	**Distance to Surface Water:**		_ (Max = 10)
3.2	**Population Served within 2 miles (see WARM Scoring Manual Regarding Direction):**		_ (Max = 75)
3.3	**Area Irrigated by surface water within 2 miles : (0.75)*√ # acres =**		_ (Max = 30)
3.4	**Distance to Nearest Fishery Resource**		_ (Max = 12)
3.5	**Distance to, and Name(s) of, Nearest Sensitive Environment(s):**		_ (Max = 12)

4.0 RELEASE

Explain Basis:	Source: **Value:** (Max = 5)

WORKSHEET 5
Air Route

1.0 SUBSTANCE CHARACTERISTICS

1.1. Introduction (WARM Scoring Manual) – Please review before scoring

1.2 Human Toxicity

	Substance	Air Standard ($\mu g/m^3$)	Value	Acute Toxicity (mg/m^3)	Value	Chronic Toxicity (mg/kg/day)	Value	Carcinogenicity		Value
								WOE	PF*	
1										
2										
3										
4										
5										

* *Potency Factor*

Source:

Highest Value:
(Max = 10)

Plus 2 Bonus Points?

Final Toxicity Value:
(Max = 12)

1.3 Mobility (Use numbers to refer to above listed substances)

	1.3.1 Gaseous Mobility	1.3.2 Particulate Mobility		
	Vapor Pressure(s) (mmHg)	Soil Type	Erodibility	Climatic Factor
1				
2				
3				

Source:

Value:
(Max = 4)

Source:

Value:
(Max = 4)

1.4 Highest Human Health Toxicity/ Mobility Matrix Value (from Table A-7)
(Use highest of:)

Final Matrix Value:
(Max = 24)

1.5 Environmental Toxicity/Mobility –						
	Substance	**Non-human Mammalian Inhalation Toxicity (mg/m^3)**	**Acute Value**	**Mobility (mmHg)**	**Value**	**Matrix Value**
2						
6						

Highest Environmental Toxicity/Mobility Matrix Value (Table A-7) = **Final Matrix Value:**
(Max = 24)

1.6 Substance Quantity	
Explain Basis:	Source: **Value:** (Max = 10)

2.0 MIGRATION POTENTIAL

		Source	**Value**
2.1	**Containment:**		(Max = 10)

3.0 TARGETS

		Source	**Value**
3.1	**Nearest Population:**		(Max = 10)
3.2	**Distance to [and name(s) of] nearest sensitive environment(s):**		(Max = 7)
3.3	**Population within 0.5 miles:**		(Max = 75)

4.0 RELEASE

Explain Basis for scoring a release to air:	Source: **Value:** (Max = 5)

WORKSHEET 6
Groundwater Route

1.0 SUBSTANCE CHARACTERISTICS

1.1 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 as gasoline (from benzene)	5	8	3306	3	--	ND	A	0.029	5
2	TPH as diesel (from naphthalene)	20	4	490	5	0.004	3	--	--	ND
3	Xylene	10,000	2	50	10	2	1	--	--	ND
4										
5										
6										

* *Potency Factor*

Source: 1,2,3

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 [Coefficient of Aqueous Migration (K)] OR	Solubility (mg/L)
1=	1= 1.80E+03 = 3
2=	2= 3.00E+01 = 1
3=	3 = 2.00E+02 = 2
4=	4=
5=	5=
6=	6=

Source: 2,3

Value: 3
(Max = 3)

1.3 Substance Quantity:	
Explain basis: The substance quantity was based on the total volume of all the USTs documented to have been at the site. A value of 2,265 gallons was used for scoring.	Source: 1,2 **Value: 4** (Max=10)

2.0 MIGRATION POTENTIAL

		Source	Value
2.1	**Containment (explain basis):** Scored as a landfill with no liner, an impervious cover with unknown maintenance, no known collection system, and with disposal of free/bulk liquids	1,2	**9** (Max = 10)
2.2	**Net precipitation:** 50.1-60 inches	2,4,7	**5** (Max = 5)
2.3	**Subsurface hydraulic conductivity:** Maytown silt loam	2,7,8	**2** (Max = 4)
2.4	**Vertical depth to groundwater:** The average depth to groundwater within two miles of the subject site if 26 feet below ground surface	2,6,7,11	**6** (Max = 8)

2.0 TARGETS

		Source	Value
3.1	**Groundwater usage:** Private supply, but alternate unthreatened sources available with minimal hookup requirements	2,5,6	**4** (Max = 10)
3.2	**Distance to nearest drinking water well:** The nearest drinking water well is located approximately 500 feet west of the subject site	2,6,7	**5** (Max = 5)
3.3	**Population served within 2 miles:** Approximately 12 residents served by groundwater within two miles of the subject site	2,5,6,7	**3** (Max = 100)
3.4	**Area irrigated by (groundwater) wells within 2 miles:** **(0.75)*√** Approximately 146 acres irrigated by groundwater within two miles of the subject site	2,7,9,10	**9** (Max = 50)

3.0 RELEASE

	Source	Value
Explain basis for scoring a release to groundwater: The substances of concern were confirmed in the subsurface soils at the site. This makes them available to the groundwater route. However, no confirmation of contamination in the groundwater was provided.	1,2	**0** (Max = 5)

SOURCES USED IN SCORING

1. Washington State Department of Ecology Site Hazard Assessment File/TCP file
2. Washington State Department of Ecology, WARM Scoring Manual, April 1992
3. Washington State Department of Ecology, Toxicology Database for Use in Washington Ranking Method Scoring, January 1992
4. U.S. Department of Interior Geological Survey Topographical Map
5. Washington State Department of Health, Public Water System Database
6. Washington State Department of Ecology, Water Resources Explorer
7. Cowlitz County GIS map
8. Washington State Department of Agriculture, soil maps
9. Washington State Department of Ecology Water Rights Tracking System
10. GeoCommunicator, Land Survey Information System
11. Washington State Department of Ecology Well Log Viewer
12. Model Toxics Control Act, Statue and Regulation, November 2007