

SITE HAZARD ASSESSMENT

WORKSHEET 1

Summary Score Sheet

SITE INFORMATION:

Wesmar Company Inc
1451 N.W. 46th Street
Seattle, King County, WA 98107

Section/Township/Range: Sec 12/T25N/R03E

Latitude: 47° 39' 44"

Longitude: 122° 22' 29"

Ecology Facility Site ID No.: 2194

Site scored/ranked for the August 20, 2008 update
July 30, 2008

Background/Site Description

The Wesmar Company Inc. (aka Wesmar Chemical) site, hereinafter referred to as Wesmar, or site, is located approximately five miles northwest of downtown Seattle, Washington, just to the right of 15th Avenue N.W. after the Ballard Bridge crosses the Lake Washington Ship Canal. The site is located in a commercial/industrial area in the community of Ballard, and portions of the property are located within 200 feet of the shoreline for the ship canal.

The site is bounded by Northwest 46th Street to the north, by Bowman Refrigeration and warehouses to the east, by the Rolls Royce Naval Marine and the Seattle Community College Maritime Training Center to the south, and by the Lake Union Boat Repair to the west.

Bridge Group II, LLC (Bridge Group), currently owns the site property formerly occupied by Wesmar, a chemical product manufacturer and distributor, and Color Tech, Inc. (aka Color-Tech, Inc. and/or Colortech, Inc.), a metal coating business. Sanborn Fire Insurance Maps show activity at the site as early as 1905, when a lumber company operated on its western portion. By 1917, it appears that the Pacific Coast Pipe Company used the majority of the site to store and use the wood preservative creosote, with the eastern portion being occupied by the City of Seattle Pipe Storage Yard. By 1950, the site was occupied by the R.D. Bodle Fruit and Vegetable Cannery, being heated by a steam furnace fueled by an underground heating oil tank. Wesmar owned and operated on the site, along with Color Tech, since at least 1992. The use of hazardous materials on the property is apparent throughout the historic record, and a property reconnaissance indicated that this use is ongoing.

The site and surrounding area is supplied by the City of Seattle public water supplies and public sewer systems.

Environmental Investigations/Sampling

A limited subsurface investigation of the site was conducted by Bridge Group consultant Sound Environmental Strategies on September 29, 2005, wherein five soil borings (B-01 through B-05) were advanced using a direct-push drilling rig. The total depths of the borings ranged from six to 15 feet below ground surface (bgs). Relatively undisturbed soil samples were obtained from the borings at continuous intervals for analysis. Groundwater samples were collected from slotted casing temporarily inserted into each boring.

Concentrations of arsenic and tetrachloroethylene (perchloroethylene, or PCE) exceeded their respective Model Toxics Cleanup Act (MTCA) Method A unrestricted land use soil cleanup levels in subsurface soil samples collected in borings B-04 and B-02, respectively. Several polycyclic aromatic hydrocarbons (PAHs), such as anthracene, fluoranthracene, pyrene, benz(a)anthracene, chrysene, and benzo(a)pyrene, were detected in most of the borings, especially B-04 and B-05. Concentrations of several of these compounds exceeded the MTCA Method A unrestricted land use soil cleanup level for carcinogenic PAHs (cPAHs).

The MTCA Method A cleanup level for total petroleum hydrocarbons measured as diesel (TPH-diesel) in groundwater was exceeded in B-03, and also for several metals (arsenic, lead, and chromium) in several other borings. These results are summarized in Tables 1 and 2:

Table 1. SOIL SAMPLING RESULTS

Sample No.	Analyte Found	Sample Result (mg/kg)	Applicable Standard	(mg/kg)
B-04	Arsenic	25	MTCA A ULU*	20
B-04, B-05	Various cPAHs which will be scored as benzo(a)pyrene	> 0.1 total cPAHs	"	0.1
B-02	PCE	0.24	"	0.05

*MTCA A ULU refers to the Model Toxics Control Act Table 740-1 Method A Soil Cleanup Levels for Unrestricted Land Use

Table 2. GROUNDWATER SAMPLING RESULTS

Boring No.	Analyte Found	Sample Result (ug/L)	Applicable Standard	(ug/L)
B-03	TPH-Diesel	690	MTCA*	500
B-01 – B-05	Arsenic	7.5 - 204	"	5.0
B-01, B-04, B-05	Lead	36 - 260	"	15.0
B-01, B-04	Total Chromium	63 - 218	"	50

*MTCA A refers to the Model Toxics Control Act Table 720-1 Method A Cleanup Levels for Groundwater

The site will be scored and ranked under the Washington Ranking Method(WARM) using arsenic, benzo(a)pyrene, chromium, lead, PCE, and TPH-diesel as contaminants of concern.

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.

ROUTE SCORES:

Surface Water/Human Health: NS
Air/Human Health: NS
Groundwater/Human Health: 26.2

Surface Water/Environmental.: NS
Air/Environmental: NS

OVERALL RANK: 5

WORKSHEET 2
Route Documentation

1. SURFACE WATER ROUTE – NOT SCORED

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 – NOT SCORED

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: 1,2

Arsenic, benzo(a)pyrene, chromium, lead, PCE, and TPH-diesel

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

These substances were detected in on-site subsurface soil/groundwater samples at concentrations exceeding their respective MTCA cleanup levels.

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

Source: 1,2

Subsurface soil/groundwater.

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

The contaminating substances were detected in on-site subsurface soil and groundwater samples at concentrations exceeding their respective MTCA cleanup levels.

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 Arsenic	10	8	763	5	0.001 (Rfd)	5	A=1	1.75 = 7	7	
2 Benzo(a)pyrene	0.2	10	50	10	ND	-	B2= 0.8	12 = 9	7	
3 Chromium	100	6	ND	-	0.005	3	ND	ND	-	
4 Lead	15	6	ND	-	0.001 (NOAEL)	10	ND	ND	-	
5 PCE	0.5	8	800	5	0.01	3	B2= 0.8	.051 = 5	4	
6 TPH-diesel	160	4	490 (rat)	5	0.004 (Rfd)	3	ND	ND	-	

* Potency Factor

Source: 1,2,4

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= $K > 1.0 = 3$	1=
2=	2= $1.2E-03 = 0$
3= $K < 1.0 = 1$	
4= K is 0.1 to 1.0 = 2	3=
5=	4= $1.5E+02 = 2$
6=	5= $3.0E+01 = 1$

Source: 1,2,4,5

Value: 3

(Max = 3)

1.3 Substance Quantity:		
Explain basis:	Unknown, use default value = 1	Source: <u>5</u> Value: <u>1</u> (Max=10)

2.0 MIGRATION POTENTIAL

		Source	Value
2.1	Containment (explain basis): Contaminated area capped, scored as a landfill: i) No liner (3); ii) Low permeability cover (1); No leachate collection system (2)	1-3,5	<u>6</u> (Max = 10)
2.2	Net precipitation: 24.6" – 5.9" = 18.7"	6	<u>2</u> (Max = 5)
2.3	Subsurface hydraulic conductivity: Silts/sands/gravels	1,2	<u>3</u> (Max = 4)
2.4	Vertical depth to groundwater: Obs. release to groundwater = 0'	1,2	<u>8</u> (Max = 8)

3.0 TARGETS

		Source	Value
3.1	Groundwater usage: Public supply, unthreatened alts. avail.	7,8	<u>4</u> (Max = 10)
3.2	Distance to nearest drinking water well: <u>3000</u> feet	7,8	<u>2</u> (Max = 5)
3.3	Population served within 2 miles: $4 \times 3 = \sqrt{12} = 3.46$	7,8	<u>3</u> (Max = 100)
3.4	Area irrigated by (groundwater) wells within 2 miles: $(0.75) * \sqrt{0}$ acres = 0	7,8	<u>0</u> (Max = 50)

4.0 RELEASE

		Source	Value
Explain basis for scoring a release to groundwater:	Confirmed by presence of petroleum components in groundwater.	1,2	<u>5</u> (Max = 5)

SOURCES USED IN SCORING

1. Reconnaissance Investigation Report, Wesmar Property, 1451 Northwest 46th Street, Seattle, for the Washington, Bridge Group, LLC, Sound Environmental Strategies Corporation, March 14, 2007.
2. Agreed Order and Public Participation Plan, Wesmar Company, Inc. Site aka former Wesmar Ballard Facility, Ecology NWRO, December 2007.
3. Site Hazard Assessment Drive-by by Michael Spencer, Ecology TCP HQ, July 21, 2008.
4. Washington State Department of Ecology, Toxicology Database for Use in Washington Ranking Method Scoring, January 1992
5. Washington State Department of Ecology, WARM Scoring Manual, April 1992.
6. Washington Climate – Net Rainfall Table
7. Washington State Department of Ecology, Water Rights Application System (WRATS) printout for two-mile radius of site.
8. Washington Department of Health, Sentry Internet Database printout for public water supplies.
9. U.S.G.S. Topo map for site area.

