

SITE HAZARD ASSESSMENT

Worksheet 1

Summary Score Sheet

and TCE were 3,700 micrograms per liter (ug/L) and 57 ug/L respectively. Cis-1,2-dichloroethylene (cis-1,2-DCE) was also detected in groundwater at a concentration (49 ug/L) above the MTCA Method B cleanup level (non-carcinogen).

A hazardous waste compliance inspection was conducted at the Site in September 2010, and several compliance issues were noted, including staining on the floor, and improper chemical storage. These issues were addressed and the Site was in compliance during a follow-up inspection later in 2010.

In July 2010, a well construction coordinator with Ecology visited the Site and noticed two improperly constructed wells. A notice of correction was reportedly sent to the contractor who installed the wells, however it is unknown whether any actions to remedy the situation were undertaken.

PAST REMEDIATION ACTIVITIES:

No reports of remedial activities were available for review in Ecology's files.

CURRENT SITE CONDITIONS:

Groundwater at the Site contains PCE, TCE, and cis-1,2-DCE at concentrations above the MTCA Method A (or B) cleanup levels. Site soil also contains PCE at a concentration above the MTCA Method A cleanup level. PCE above the MTCA Method A cleanup level has also been detected in groundwater at a property to the west of the Site, and is suspected to be part of the same groundwater plume. The extent of soil and groundwater impacts have not been characterized.

The approximate depth to groundwater is 10 feet below ground surface, with groundwater flowing to the west (estimated based on surface topography). Subsurface soils are expected to be sand and silt.

SPECIAL CONSIDERATIONS:

Checked boxes indicate routes applicable for Washington Ranking Method (WARM) scoring

Surface Water

Release is expected to have occurred to subsurface soil.

Air

PCE, TCE, and cis-1,2-DCE have been detected in groundwater at concentrations above the MTCA Method A (or B) cleanup levels. The impacted groundwater is known to be located below several buildings.

Groundwater

PCE, TCE, and cis-1,2-DCE have been detected in Site groundwater.

The source of the release is unknown, but may be related to releases within the building, or from the UST located at the Site. The UST is reportedly used for storage of PCE.

ROUTE SCORES:

Surface Water/ Human Health:

Surface Water/ Environment:

Air/ Human Health: 44.9

Air/ Environment: 2.0

Groundwater/ Human Health: 35.9

Overall Rank: 3

SITE HAZARD ASSESSMENT
Worksheet 1
Summary Score Sheet

REFERENCES:

- 1 Kee, LLC, 2010, Limited Phase II Site Assessment Mt. Baker Cleaners 2864 S McClellan St Seattle, WA 98144. Prepared for Sung K Kim. September 17, 2010.
 - 2 King County GIS Center iMAP application, Property Information, Groundwater Program, and Sensitive Areas mapsets. Accessed October 2014.
<http://www.kingcounty.gov/operations/GIS/Maps/iMAP.aspx>
 - 3 Missouri Census Data Center, Circular Area Profiles - 2010 census data around a point location. <http://mcdc.missouri.edu/websas/caps10c.html>. Accessed October 2014.
 - 4 National Climatic Data Center 2011 Local Climatological Data for Seattle, Seattle Tacoma Airport. <http://www1.ncdc.noaa.gov/pub/orders/IPS-90B1F39F-6CFA-4A6B-AA82-5ED1FF897CCC.pdf>
 - 5 WARM Scoring Manual
 - 6 WARM Toxicological Database
 - 7 Washington Department of Transportation 24-hour Isopluvial Maps, January 2006 update. <http://www.wsdot.wa.gov/publications/fulltext/Hydraulics/Wa24hrIsopluvials.pdf>
 - 8 Washington State Department of Ecology, 2009, ERTS Report #613896. July 8, 2009.
 - 9 Washington State Department of Ecology, 2010, Compliance Certificate RCRA Site ID #WAD081927550. September 24, 2010.
 - 10 Washington State Department of Ecology, 2010, ERTS Report #620108. May 25, 2010.
 - 11 Washington State Department of Ecology, 2010, Letter Re: Complaint received by the Washington State Department of Ecology Regarding Mt. Baker Dry Cleaners - Inspection date: September 1, 2010. September 24, 2010.
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SITE HAZARD ASSESSMENT
Worksheet 2
Route Documentation

Cleanup Site ID: 11447

Mount Baker Cleaners

Facility/Site ID: 96127971

1. SURFACE WATER ROUTE

List those substances to be considered for scoring:

Not applicable

Explain the basis for choice of substances to be used in scoring:

List those management units to be considered for scoring:

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

2. AIR ROUTE

List those substances to be considered for scoring:

PCE, TCE, cis-1,2-DCE

Explain the basis for choice of substances to be used in scoring:

Prior detection in groundwater at concentrations above the MTCA Method A (or B) cleanup level

List those management units to be considered for scoring:

Soil vapor

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

Potential for vapor transport

3. GROUNDWATER ROUTE

List those substances to be considered for scoring:

PCE, TCE, cis-1,2-DCE

Explain the basis for choice of substances to be used in scoring:

Prior detection in groundwater at concentrations above the MTCA Method A (or B) cleanup level

List those management units to be considered for scoring:

Groundwater

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

Presence in Site groundwater

Worksheet 5

Air Route

CSID: 11447

Site Name: Mount Baker Cleaners

1.0 Substance Characteristics

1.1 Introduction (WARM Scoring Manual) - Please Review before scoring

1.2 Human Toxicity

Substance	Ambient Air Standard Value	Acute Toxicity Value	Chronic Toxicity Value	Carcinogenicity Value
Tetrachloroethylene	9	5	X	X
Trichloroethylene	10	3	X	4
Cis-1,2-dichloroethylene	1	3	X	X

Highest Value 10

Bonus Points? 2

Toxicity Value

1.3 Mobility

Gaseous Mobility	Max Value:	4
Particulate Mobility	Soil Type:	
	Erodibility:	
	Climatic Factor:	

Mobility Value

1.4 Final Human Health Toxicity/Mobility Matrix Value

HH Final Matrix Value

1.5 Environmental Toxicity/Mobility

Substance	Non-human Mammalian Inhalation Toxicity (mg/m3)	Acute Value	Mobility Value	Table A-7 Matrix Value
Tetrachloroethylene	4000	5	4	10
Trichloroethylene	15583	3	4	6
Cis-1,2-dichloroethylene	65000	3	4	6

Env. Final Matrix Value

1.6 Substance Quantity

Amount: Approximately 3,000 square feet

Basis: Estimated extent of impacted soil

Substance Quantity Value

Worksheet 5

Air Route

CSID: 11447

Site Name: Mount Baker Cleaners

2.0 Migration Potential

2.1 Containment

Containment Value

Explain Basis: At least 2 feet of soil cover
but no vapor collection system

3.0 Targets

3.1 Nearest Population

Population Distance Value

Less than 200 feet to the nearest dwelling

3.2 Distance to and name of nearest sensitive environments

Sensitive Environment Value

Approximately 450 feet to the Franklin High School field

3.3 Population within 0.5 miles

Population Value

5,118 population

4.0 Release

Release to Air Value

Explain basis for scoring a release to air:
No confirmed release to air

Pathway Scoring - Air Route, Human Health Pathway

$$AIR_H = (SUB_{AH} * 60/329) * [REL_A + (TAR_{AH} * 35/85)] / 24$$

Where:

$$SUB_{AH} = (\text{Human toxicity} + 5) * (\text{Containment} + 1) + \text{Substance Qty}$$

$$REL_A = \text{Release to Air}$$

$$TAR_{AH} = \text{Nearest Population} + \text{Population within 1/2 mile}$$

SUB _{AH}	176
REL _A	0
TAR _{AH}	81.5
AIR_H	44.9

Pathway Scoring - Air Route, Environmental Pathway

$$AIR_E = (SUB_{AE} * 60/329) * [REL_A + (TAR_{AE} * 35/85)] / 24$$

Where:

$$SUB_{AE} = (\text{Environmental Toxicity Value} + 5) * (\text{Containment} + 1) + \text{Substance Qty}$$

$$REL_A = \text{Release to Air}$$

$$TAR_{AE} = \text{Nearest Sensitive Environment}$$

SUB _{AE}	92
REL _A	0
TAR _{AE}	7.0
AIR_E	2.0

Worksheet 6
Groundwater Route

CSID: 11447

Site Name: Mount Baker Cleaners

1.0 Substance Characteristics

1.1 Human Toxicity

Substance	Drinking Water Standard Value	Acute Toxicity Value	Chronic Toxicity Value	Carcinogenicity Value
PCE	8	5	3	4
TCE	8	3	X	4
Cis-1,2-DCE	6	X	3	X

Highest Value 8
 Bonus Points? 2
 Toxicity Value

1.2 Mobility

Cations/Anions Max Value:
 Solubility Max Value: 3 Mobility Value

1.3 Substance Quantity

Amount: Approximately 350 cubic yards
 Basis: Estimated extent of impacted soil

Substance Quantity Value

2.0 Migration Potential

2.1 Containment

Explain Basis: Contaminated soil

Containment Value

2.2 Net Precipitation

>10 to 20 inches

Net Precipitation Value

2.3 Subsurface Hydraulic Conductivity

Sand with silt

Conductivity Value

2.4 Vertical Depth to Groundwater

10 feet

Confirmed release: Yes

Depth to Aquifer Value

3.0 Targets

3.1 Groundwater Usage

Irrigation and industrial

Aquifer Use Value

3.2 Distance to Nearest Drinking Water Well

>10,000 feet

Well Distance Value

3.3 Population Served within 2 Miles

0 people

Population Served Value

Worksheet 6
Groundwater Route

CSID: 11447

Site Name: Mount Baker Cleaners

3.4 Area Irrigated by GW Wells within 2 miles

Area Irrigated Value

6 acres

4.0 Release

Release to Groundwater Value

Explain basis for scoring a release to groundwater:

Confirmed release to groundwater

Pathway Scoring - Groundwater Route, Human Health Pathway

$$GW_H = (SUB_{GH} * 40 / 208) * [(MIG_G * 25 / 17) + REL_G + (TAR_{GH} * 30 / 165)] / 24$$

Where:

$SUB_{GH} = (\text{Human toxicity} + \text{mobility} + 3) * (\text{Containment} + 1) + \text{Substance Qty}$

$MIG_G = \text{Depth to Aquifer} + \text{Net Precip} + \text{Hydraulic Conductivity}$

$REL_G = \text{Release to Groundwater}$

$TAR_{GH} = \text{Aquifer Use} + \text{Well Distance} + \text{Population Served} + \text{Area Irrigated}$

SUB_{GH}	179
MIG_G	13
REL_G	5
TAR_{GH}	4.8
GW_H	35.9

Washington Ranking Method

Route Scores Summary and Ranking Calculation Sheet

Site Name: Mount Baker Cleaners

CSID: 11447

Site Address: 2864 South McClellan St

FSID: 96127971

HUMAN HEALTH ROUTE SCORES

Enter Human Health Route Scores for all Applicable Routes:

Pathway	Route Score	Quintile Group
Surface Water	ns	0
Air	44.9	5
Groundwater	35.9	3

H= 5
M= 3
L= 0

$$\frac{H^2 + 2M + L}{8} = \frac{25 + 6 + 0}{8}$$

**Human Health
Priority Bin Score:**
4
rounded up to next
whole number

ENVIRONMENT ROUTE SCORES

Enter Environment Route Scores for all Applicable Routes:

Pathway	Route Score	Quintile Group
Surface Water	ns	0
Air	2.0	2

H= 2
L= 0

$$\frac{H^2 + 2L}{7} = \frac{4 + 0}{7}$$

**Environment
Priority Bin Score:**
1
rounded up to next
whole number

Comments/Notes:

**FINAL MATRIX
RANKING**

3

FOR REFERENCE:

Final WARM Bin Ranking Matrix

Human Health Priority	Environment Priority					
	5	4	3	2	1	N/A
5	1	1	1	1	1	1
4	1	2	2	2	3	2
3	1	2	3	4	4	3
2	2	3	4	4	5	3
1	2	3	4	5	5	5
N/A	3	4	5	5	5	NFA

Quintile Values for Route Scores - February 2015 Values

Quintile	Human Health			Environment	
	Surface Water	Air	Ground Water	Surface Water	Air
5	>= 30.7	>= 37.6	>= 51.6	>= 50.9	>= 29.9
4	>= 23.1	>= 23.8	>= 40.9	>= 31.2	>= 22.5
3	>= 14.1	>= 15.5	>= 33.2	>= 23.6	>= 14.0
2	>= 7.0	>= 8.5	>= 23.5	>= 11.0	>= 1.6
1	<= 6.9	<= 8.4	<= 23.4	<= 10.9	<= 1.5

Quintile value associated with each route score entered above



Legend:

- Property location (approximate)
- UST location (approximate)
- ⊕ Soil boring/groundwater sample location (approximate)

Notes:

1. All locations are approximate, and not to scale.



Mount Baker Cleaners
2864 S McClellan Street
Seattle, WA 98144

Site Overview Map

CSID 11447
 CSID11447.vsd