CSID 5782

WORKSHEET 1
SUMMARY SCORE SHEET

Note: This document currently has no provision for sediment route scoring.

Site Name/Location (City, County, Section/Township/Range):

Miller/American Distri/Mobil, 2717 Federal Ave., Everett , Snohomish County, 29/29N/4E

Site Description (Include management areas, compounds of concern, and quantities):

Historical information indicates that in the 1920's Mobil Oil Corporation purchased property and constructed a bulk petroleum facility on the property. American Distributing Company leased and operated facility for over 50 years, and in 1974, A.P. Miller purchased part of the property from Mobil for use by American Distributing (AD) Company. Most of the available sample data is from Rittenhouse-Zeman (RZA), later RZA AGRA, reports on the adjacent property that Mobil currently owns. Data indicates the presence of benzenes, xylenes, TPH diesel, TPH gasoline, lead, and carcinogenic polycyclic aromatic hydrocarbons (PAHs) above Model Toxics Control Act (MTCA) cleanup levels in the ground water. Sampling of ground water was done between 1989 - 1995. Some of the wells were located adjacent to the property line that separates Mobil and Miller/AD property.

In 1990 a report done by Environmental Science and Engineering investigating the Miller/AD property described the presence of free phase waste petroleum in three monitoring wells. Also petroleum hydrocarbons diesel/other and benzene were found in soils above cleanup levels. No data concerning carcinogenic PAHs was found on the Miller/AD site.

In the fall of 1995 the United States Coast Guard (USCG) identified an release of heavy fuel oil from combined sewer overflow discharge location into Port Gardner Bay (Everett Harbor) about 400 feet northwest of the Miller/AD Site. Samples were collected by the USCG on October 5, 1995. Analytical results from the USCG analytical laboratory indicated that one of the samples was consistent with oil currently being released into Port Gardner Bay. Also the City of Everett videoed the combined sewer overflow line to the north of Miller/AD Property revealing petroleum contaminated ground water entering line.

In March of 1996 AGRA Earth and Environmental conducted geoprobe exploration and piezometers were installed along the alley where the combined sewer overflow line runs. Soil samples were collected as a part of the exploration. TPH other, TPH diesel, and TPH gasoline were found to exceed MTCA cleanup levels. BTEX was also analyzed for but did not exceed cleanup levels.

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 carcinogenic PAHs were found in monitoring wells located on the Mobil property adjacent to Miller/AD property. They will not be used in scoring either the groundwater or surface water pathways due of the lack of data which substantiates their presence in subsurface soils. The air pathway was not believed to be significant and was not scored due to subsurface contamination only.

ROUTE SCORES:

Surface Water/Human Health: 31.9 Surface Water/Environ.: 30.9

Air/Human Health: NS Air/Environmental: NS

Ground Water/Human Health: 37.4

OVERALL RANK: 2

WORKSHEET 2
ROUTE DOCUMENTATION

1. SURFACE WATER ROUTE

List those substances to be considered for scoring: Source: 1,12,13

TPH Diesel and TPH Gasoline

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

TPH Diesel and TPH Gasoline will be used in scoring the surface water route, as their measured concentrations exceed MTCA cleanup levels in the vicinity of the compromised combined stormwater/sewer overflow and are available due to less than perfect containment.

List those management units to be considered for scoring: Source: 12,13

Contaminated subsurface ground water

Explain basis for choice of unit to be used in scoring. Source: 12,13

Contaminated subsurface ground water will be used in scoring as the measured concentrations of TPH Diesel and TPH Gasoline was from this management unit. Contaminated ground water is entering the combined sewer overflow that empties into Port Gardner Bay.

2. AIR ROUTE

List those substances to be considered for scoring: Source:

Not applicable to site/not scored.

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

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

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

3. GROUND WATER ROUTE

List substances to be considered for scoring: Source: 2,3

TPH Diesel and TPH Gasoline

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

TPH Diesel and TPH Gasoline will be used in scoring the ground water route, as their measured concentrations exceed MTCA cleanup levels and are available due to less than perfect containment.

List management units to be considered in scoring: Source: 2,3

Contaminated subsurface soil and ground water

Explain basis for choice of unit used in scoring. Source: 2,3

Contaminated subsurface soil will be used in scoring as the measured concentration of TPH Diesel and TPH Gasoline was from this management unit. No containment was observed of this unit allowing contaminants to be available to the ground water pathway.

WORKSHEET 4
SURFACE WATER ROUTE

1.0 SUBSTANCE CHARACTERISTICS

1.1 Human Toxicity

Substance	Drinking Water Standard (ug/l)	Val.	Acute Toxicity (mg/kg-bw)	Val.	Chronic Toxicity (mg/kg/da)	Val.	Carcinogenicity WOE	PF	Val.
WTPH-D	20	6	490	5	0.004	3	X	X	X
WTPH-G	5	8	3306	3	X	X	A	0.169	5

Source: 3,4,13

Highest Value: 8

2 Bonus Points? 2

Final Toxicity Value 10

1.2 Environmental Toxicity

( ) Freshwater
(X) Marine

Substance	Acute Criteria (ug/l)	Val.	Non-human Mammalian Acute Toxicity (mg/kg)	Val.
WTPH-D	2350	2	490	5
WTPH-G	5100	2	3306	4

Source: 3,4,13 Value: 2

1.3 Substance quantity

Explain basis: Unknown

Source: 3,4,13 Value: 1

WORKSHEET 4 (CONTINUED)
SURFACE WATER ROUTE

2.0 MIGRATION POTENTIAL

2.1 Containment — Source: 1,3 Value: 10
Explain basis: No run-on/runoff control system

2.2 Surface Soil Permeability: Piped to adjacent surface water — Source: 3,9 Value: 7

2.3 Total Annual Precipitation 34.7 inches — Source: 3,5 Value: 3

2.4 Max. 2-Yr/24-hour Precipitation 1.5 inches — Source: 3 Value: 2

2.5 Flood Plain: no — Source: 3,11 Value: 0

2.6 Terrain Slope: culvert — Source: 1,3 Value: 3

3.0 TARGETS

3.1 Distance to Surface Water: 400 feet — Source: 1,3 Value: 10

3.2 Population Served within 2 miles: 0 — Source: 3,7,8,10 Value: 0

3.3 Area Irrigated within 2 miles: 0 — Source: 3,7,10 Value: 0

3.4 Distance to Nearest Fishery Resource: 400 feet — Source: 1,3 Value: 12

3.5 Distance to, and Name (s) of, nearest Sensitive Environment (s) 400 feet from Port Gardner Bay — Source: 1,3 Value: 12

4.0 RELEASE

Explain basis for scoring a release to surface water: — Source: 3,12 Value: 5

Fingerprinting by Coast Guard indicating that oil spill in bay similar to fingerprint of oil sample taken from soil onsite.
Also video footage of sewer line indicates that petroleum contaminated groundwater is entering sewer line adjacent to American Distributing property.

WORKSHEET 6
GROUND WATER ROUTE

1.0 SUBSTANCE CHARACTERISTICS

1.1 Human Toxicity

Substance	Drinking Water Standard (ug/l)	Val.	Acute Toxicity (mg/kg-bw)	Val.	Chronic Toxicity (mg/kg/da)	Val.	Carcinogenicity WOE	PF	Val.
WTPH-D	20	6	490	5	0.004	3	X	X	X
WTPH-G	5	8	3306	3	X	X	A	0.169	5

Source: 2,3,4,12
Highest Value: 8
2 Bonus Points? 2
Final Toxicity Value: 10

1.2 Mobility (Use numbers to refer to above listed substances) Source: 2,3,12 Value: 3
Cations/Anions

OR
Solubility (mg/l)

WTPH-G = 1800 mg/l

1.3 Substance Quantity Source: 2,3 Value: 5
Explain basis: 26,000 cubic yards of contaminated soil

2.0 MIGRATION POTENTIAL

2.1 Containment Source: 2,3 Value: 10
Explain basis: Discharge and contaminated soil

2.2 Net Precipitation: 16.9 inches Source: 3,5 Value: 2

2.3 Subsurface Hydraulic Conductivity: Silty Sands, fill Source: 3,11 Value: 4

2.4 Vertical Depth to Ground Water: 6 feet Source: 3,11 Value: 8

WORKSHEET 6
GROUND WATER ROUTE

3.0 TARGETS

3.1 Ground Water Usage: Ground water not usable. Source: 3,7,8,10 Value: 1

3.2 Distance to Nearest Drinking Water Well: Source: 3,8,10 Value: 0
>10,000 feet

3.3 Population Served within 2 Miles: Source: 3,7,8,10 Value: 0
None

3.4 Area Irrigated by (Groundwater) Wells Source: 3,7 Value: 0
within 2 miles: None

4.0 RELEASE

Explain basis for scoring a release to ground water: Source: 2,3 Value: 5
Analytical data indicates release to ground water.

Sources Used in Scoring

1. Snohomish Health District, Initial Investigation, American Distributing Co, Everett, WA, August, 1995.
2. AGRA Earth & Environmental, Ground Water Monitoring & Sampling Report, May, 1996.
3. Washington Department of Ecology, WARM Scoring Manual, April, 1992.
4. Washington Department of Ecology, Toxicology Database for Use in Washington Ranking Method Scoring, January 1992.
5. National Weather Service, Washington Climate Data, Snohomish County
6. U.S.G.S. Topo. Map, Everett Quad., 7.5 Min. Series, Photorev. 1981.
7. Washington Department of Ecology, Water Rights Information System (WRIS), November 4, 1992.
8. Washington Department of Health, Public Water System List, April 26, 1993.
9. AGRA Earth & Environmental, Geoprobe Soil Logs, March, 1996.
10. Washington Department of Ecology, Well Logs, 1995.
11. City of Everett Planning Department, Telephone Conversation, May 14, 1996.
12. U.S. Coast Guard, Report and Sample Data
13. AGRA Earth & Environmental, Geoprobe Sample Results, March, 1996.

PATHWAY SCORING FORMULAE WITH WEIGHTING AND NORMALIZATION FACTORS

Air Route - Human Health Pathway

AIR = (SUB X 60/329) X {REL + (TAR X 35/85} / 24 = **0.00**

where
- AIR = Pathway score for Air-Human Health =
- SUB = (Human Toxicity Value + 5) X (Containment +1) + Substance Quantity = 5
- REL = Release to Air = 0
- TAR = Nearest population + Population within 1/2 mile = 0

Air Route - Environmental Pathway

AIR = (SUB X 60/329) X {REL + (TAR X 35/85} / 24 = **0.00**

where
- AIR = Pathway score for Air-Environmental =
- SUB = (Env. Toxicity Value + 5) X (Containment +1) + Substance Quantity = 5
- REL = Release to Air = 0
- TAR = Nearest Sensitive Environment = 0

Surface Water Route - Human Health Pathway

SW = (SUB X 40/175) X {(MIG X 25/24)) + REL + (TAR X 30/115)} / 24 = **31.86**

where
- SW = Pathway Score for Surface Water-Human Health =
- SUB = (Human Toxicity + 3) X (Containment + 1) + Substance Quantity = 144
- MIG = Soil Permability + Annual Precip. + Rainfall Frequency + Floodplain + Slope = 15
- REL = Release to the Surface Water = 5
- TAR = Distance to Surface Water + Population Served by Surface Water + Area Irrigated = 10

Table 2 (Continued)

Surface Water Route - Environmental Pathway

SW = (SUB X 40/175) X {(MIG X 25/24)) + REL + (TAR X 30/115)} / 24 = **30.88**

where

SW = Pathway Score for Surface Water-Environmental =

SUB = (Env. Toxicity + 3) X (Containment + 1) + Substance Quantity = 56

MIG = Soil Permability + Annual Precip. + Rainfall Frequency + Floodplain + Slope = 15

REL = Release to the Surface Water = 5

TAR = Distance to Nearest Surface Water + Distance to Fisheries Resource + Distance to Sensitive Environment = 34

Ground Water Route - Human Health Pathway

GW = (SUB X 40/208) X {(MIG X 25/17) + REL + (TAR X 30/165)} / 24 = **37.37**

GW = Pathway Score For Ground Water-Human Health =

SUB = (Human Toxicity + Mobility + 3) X (Containment + 1) + Substance Quantity = 181

MIG = Depth to Aquifer + Net Precipitation + Hydraulic Conductivity = 14

REL = Release to the Ground Water = 5

TAR = Aquifer Use + Well Distance + Population Served + Area Irrigated = 1