CSID 1949

WORKSHEET 1
SUMMARY SCORE SHEET

Site Name/Location (Street, City, County, Section/Township/Range, TCP ID Number):

South Wilbur Petroleum Site
Front Ave. & Knox & Ann Streets
Wilbur, Lincoln County, WA 99185

Sec. 18/T26N/R33E
Ecology ID No.:E-22-3015-000
Latitude: 47°45'22.82"
Longitude: 118°42'18.18"

Assessed for August 31, 1999 Site List Update

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

The South Wilbur Petroleum site is located in the commercial district of Wilbur, south of the main business district, and Washington State Highway 2, and north of the Burlington Northern Railroad tracks. It is also bordered to the north by Goose Creek, to the west by a City Park, to the south by Bruce Avenue and to the east by South Brace Street. The site was first listed as the Washington State Department of Transportation (WSDOT) old Wilbur Maintenance Facility, as from the early 1930's until the early 1970's WSDOT utilized the western portion of the site for storage and maintenance of highway equipment. This facility was used mainly for storage from then until 1996, when all WSDOT equipment and personnel moved to a new Wilbur location, and the Town of Wilbur began leasing the property for storage purposes.

A 1000 gallon unleaded gasoline and a 1000 gallon diesel underground storage tank were used at the former WA DOT site for fueling purposes until decommissioning in June 1991. Analytical results at that time indicated minor amounts of petroleum contamination below the dispenser area, and approx. five cubic years of contaminated soil was removed and treated on site.

A Phase I/II Environmental Site Assessment by WSDOT in June 1995 indicated further investigation and possible remediation was necessary at the site, and it was added to Ecology's Confirmed and Suspected Contaminated Sites List (SIS List) in July 1966 as described above. Installation of monitoring wells, with soil and groundwater sampling, followed (July - August 1996, and May 1997). Results indicated the extent of gasoline and diesel constituent contamination went beyond the property boundaries, and the larger site area was re-listed as the South Wilbur Petroleum Site.

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):

Even though the predominant amount of documented contamination at the site is subsurface, the maximum containment value of 10 was scored for the surface water route, as there is enough hydrogeologic data, as well as preliminary analytical data, to show a very high likelihood of a hydraulic continuity between the contaminated water table aquifer and Goose Creek, adjacent to the north of the site.

ROUTE SCORES:

Surface Water/Human Health:	32.4	Surface Water/Environ.:	36.2
Air/Human Health:	17.3	Air/Environmental:	21.8
Ground Water/Human Health:	53.4		

OVERALL RANK: 1

WORKSHEET 2

ROUTE DOCUMENTATION

1. SURFACE WATER ROUTE

List those substances to be considered for scoring: Source:1,2

Benzene, ethylbenzene, toluene, and xylenes (BETX)

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

Analytical results from soil and groundwater samples, showing concentrations greater than their respective Method A MTCA cleanup levels.

List those management units to be considered for scoring: Source:1,2

Contaminated on-site subsurface soil, with expected hydraulic continuity of shallow ground water table aquifer with the adjacent Goose Creek.

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

Chemical analyses of on-site subsurface soils indicated significant concentrations of BETX components.

2. AIR ROUTE

List those substances to be considered for scoring: Source:1,2

Benzene, ethylbenzene, toluene, and xylenes (BETX)

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

Analytical results from soil and groundwater samples, showing concentrations greater than their respective Method A MTCA cleanup levels.

List those management units to be considered for scoring: Source:1,2

Contaminated on-site subsurface soil.

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

Chemical analyses of on-site subsurface soils indicated significant concentrations of BETX components, with no vapor collection system.

3. GROUND WATER ROUTE

List those substances to be considered for scoring: Source:1,2

Benzene, ethylbenzene, toluene, and xylenes (BETX)

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

Analytical results from soil and groundwater samples, showing concentrations greater than their respective Method A MTCA cleanup levels.

2. GROUND WATER ROUTE (Cont.)

List those management units to be considered for scoring: Source: 1,2

Contaminated on-site subsurface soil.

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

Chemical analyses of on-site subsurface soils indicated significant concentrations of BETX components.

WORKSHEET 3 (If Required)
SUBSTANCE CHARACTERISTICS WORKSHEET
FOR MULTIPLE UNIT/SUBSTANCE SITES

	Combination 1	Combination 2	Combination 3

Unit: **Section Not Applicable.**

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1. SURFACE WATER ROUTE

Substance(s):			
Human Toxicity Value:			
Environ. Toxicity Value:			
Containment Value:			
Rationale:			
Surface Water Human Subscore:	(+3)(+1)= ( )( ) = ___	(+3)(+1)= ( )( ) = ___	(+3)(+1)= ( )( ) = ___
Surface Water Environ. Subscore:	(+3)(+1)= ( )( ) = ___	(+3)(+1)= ( )( ) = ___	(+3)(+1)= ( )( ) = ___

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2. AIR ROUTE

Substance(s):			
Human Toxicity/Mobility Value:			
Environ. Toxicity/ Mobility Value:			
Containment Value:			
Rationale:			
Air Human Subscore:	(+3)(+1)= ( )( ) = ___	(+3)(+1)= ( )( ) = ___	(+3)(+1)= ( )( ) = ___
Air Environ. Subscore:	(+3)(+1)= ( )( ) = ___	(+3)(+1)= ( )( ) = ___	(+3)(+1)= ( )( ) = ___

3. GROUND WATER ROUTE

Substance(s):			
Human Toxicity Value:			
Containment Value:			
Rationale:			
Ground Water Subscore:	(+3)(+1)= ( )( ) = ___	(+3)(+1)= ( )( ) = ___	(+3)(+1)= ( )( ) = ___

Based on their respective highest scoring toxicity/containment combinations, the following management units will be used for route scoring:

Surface Water -
Air -
Ground Water -

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/day)	Val.	Carcino-genicity WOE	PF*	Val.
1. Benzene	5	8	3306	3	X	-	A	.029	5
2. Ethylbenzene	700	4	3500	3	0.1	1	D	ND	-
3. Toluene	2000	2	5000	3	0.2	1	D	ND	-
4. Xylene	10,000	2	50	10	2.0	1	D	ND	-
5. Diesel	20	6	490	5	0.004	3	-	ND	1

*Potency Factor

Source: 1-3
Highest Value: 10 (Max.=10)

+2 Bonus Points? 2
Final Toxicity Value: 12 (max.+12)

1.2 Environmental Toxicity

(X) Freshwater
( ) Marine

Substance	Acute Water Quality Criteria (ug/l)	Value	Non-human Mammalian Acute Toxicity (mg/kg)	Value
1. Benzene	5300	2		
2. Ethylbenzene	32,000	2		
3. Toluene	17,500	2		
4. Xylene	ND	-	5000(rat)	3
5. TPH-Diesel	2300	2		

Source: 1-3 **Value: 3** (max.+10)

1.3 Substance Quantity: Two 1000 gallon tanks Source: 1,2 **Value: 4** (max.+10)
Explain basis: _____

WORKSHEET 4 (CONTINUED)
SURFACE WATER ROUTE

2.0 MIGRATION POTENTIAL

2.1 Containment — Source: 1,2,4 **Value:** 10 (Max.=10)
Explain basis:
Unmaintained run-on/runoff control system
plus expected hydraulic continuity of shallow water table with adjacent stream
as well as confirmed surface water contamination attributed to site.

2.2 Surface Soil Permeability: Silts/sands = medium — Source: 1,2,4 **Value:** 3 (Max.=7)

2.3 Total Annual Precipitation: 12.8 inches — Source: 5 **Value:** 2 (Max.=5)

2.4 Max. 2-Yr/24-hour Precipitation: <1 inch — Source: 4 **Value:** 1 (Max.=5)

2.5 Flood Plain: 500 year flood plain — Source: 7 **Value:** 1 (Max.=2)

2.6 Terrain Slope: Adjacent, likely hydraulic cont. — Source: 2,4,6 **Value:** 5 (Max.=5)

3.0 TARGETS

3.1 Distance to Surface Water: Less than 1000'(adjac.) — Source: 2,4,6 **Value:** 10 (Max.=10)

3.2 Population Served within 2 miles (See WARM Scoring Manual Regarding Direction): $\sqrt{}$pop.=$\sqrt{}$0 = 0 — Source: 8 **Value:** 0 (Max.=75)

3.3 Area Irrigated within 2 miles 0.75$\sqrt{}$no. acres=
(Refer to note in 3.2.): 0.75$\sqrt{}$0 = 0 — Source: 9 **Value:** 0 (Max.=30)

3.4 Distance to Nearest Fishery Resource: Adjacent — Source: 2,6 **Value:** 12 (Max.=12)

3.5 Distance to, and Name(s) of, Nearest Sensitive Environment(s) Goose Creek - Fishery < 1000 feet — Source: 2,6 **Value:** 12 (Max.=12)

4.0 RELEASE

Explain basis for scoring a release to surface water: — Source: 1,2 **Value:** 5 (Max.=5)
By analysis, documented water contamination

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 (ug/m^3)	Val.	Acute Toxicity (mg/m^3)	Val.	Chronic Toxicity (mg/kg/day)	Val.	Carcino-genicity WOE	PF*	Val.
1. Benzene	0.12	10	31947(rat)	3	ND	-	A=1	0.029=5	5
2. Ethylbenzene	1448.6	1	ND	-	ND	-	ND		-
3. Toluene	1248.8	1	ND	-	0.57	1	ND		-
4. Xylenes	1448.6	1	8729(mouse)	5	0.085	1	ND		-
5. TPH-Diesel	166.5	4	ND	-	ND	1	ND		-

*Potency Factor

Source: 1-3
Highest Value: 10 (Max.=10)

+2 Bonus Points? -
Final Toxicity Value: 10 (Max.=12)

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

1.3.1 Gaseous Mobility
Vapor Pressure(s)(mmHg): 1) 9.5E+01 = 4 2) 7.0E+00 = 3; 3) 2.8E+01 = 4; 4) 1.0E+01=3 5) 8.2E-02 = 3
Source: 1-3
Value: 4 (Max.=4)

1.3.2 Particulate Mobility **N/A**
Soil type: _____
Erodibility: _____
Climatic Factor: _____
Source: ____
Value: ____ (Max.=4)

1.4 Highest Human Health Toxicity/Mobility Matrix Value (from Table A-7) equals **Final Matrix Value:** 20 (Max.=24)

1.5 Environmental Toxicity/Mobility Source: 1,2,4

Substance	Non-human Mammalian Acute Inhal. Toxicity (mg/m^3)	Value	Mobility (mmHg)	Value	(Table A-7) Matrix Value
1. Benzene	31947 (rat)	3	9.5E+01	4	6
1. Xylenes	8729 (mouse)	5	1.0E+01	3	8

Highest Environmental Toxicity/Mobility Matrix Value (From Table A-7) equals **Final Matrix Value:** 8 (Max.=24)

WORKSHEET 5 (CONTINUED)
AIR ROUTE

1.6 Substance Quantity: 2 X 1000 gallon tanks Source: 1,2,4 **Value: 4** (Max.=10)
Explain basis:

2.0 MIGRATION POTENTIAL

2.1 Containment: Vapor pathway potential at the site currently from subsurface contam. soil, with no functioning vapor collection system Source: 1,2,4 **Value: 5** (Max.=10)

3.0 TARGETS

3.1 Nearest Population: <1000 feet Source: 2,4,6 **Value: 10** (Max.=10)

3.2 Distance to, and Name(s) of, Nearest Sensitive Environment(s) City Park < 1000' Source: 2,4,6 **Value: 7** (Max.=7)

3.3 Population within 0.5 miles: √pop.=√(est.0.75)874=15 Source: 1-4,8 **Value: 26** (Max.=75)

4.0 RELEASE

Explain basis for scoring a release to air: None documented. Source: 1,2,6 **Value: 0** (Max.=5)

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/day)	Val.	Carcino-genicity WOE	PF*	Val.
1. Benzene	5	8	3306	3	X	-	A	.029	5
2. Ethylbenzene	700	4	3500	3	0.1	1	D	X	-
3. Toluene	2000	2	5000	3	0.2	1	D	X	-
4. Xylene	10,000	2	50	10	2	1	D	X	-

*Potency Factor

Source: 1-3
Highest Value: 10 (Max.=10)

+2 Bonus Points? 2
Final Toxicity Value: 12 (Max.=12)

1.2 Mobility (Use numbers to refer to above listed substances)
Cations/Anions: 1= 1.8E+03 = 3; 2= 1.5E+02 = 2 ; 3 = 5.4E+02 = 2; 4 = 2.0E+02 = 2. Source: 3 **Value: 3** (Max.=3)

OR
Solubility(mg/l): 1= ; 2= ; 3= ; 4= ; 5= ; 6= .

1.3 Substance Quantity: Two 1000 gallon tanks Source: 1,2 **Value: 4** (Max.=10)
Explain basis:

2.0 MIGRATION POTENTIAL

2.1 Containment Source: 2,4 **Value: 10** (Max.=10)
Explain basis: Spills/discharges/contaminated soil always = 10.

2.2 Net Precipitation: 5.2 inches Source: 5 **Value: 1** (Max.=5)

2.3 Subsurface Hydraulic Conductivity: Sandy silts Source: 2,4 **Value: 3** (Max.=4)

2.4 Vertical Depth to Ground Water: <25 feet Source: 1,2 **Value: 8** (Max.=8)

WORKSHEET 6 (CONTINUED)
GROUND WATER ROUTE

3.0 TARGETS

3.1 Ground Water Usage: Pub.supply,unthr. alts unavail. Source: 6,8 **Value: 9** (Max.=10)

3.2 Distance to Nearest Drinking Water Well: ¼ - ½ mile Source: 6,8 **Value: 3** (Max.=5)

3.3 Population Served within 2 Miles: √pop.= √1135 = 34 Source: 6,8 **Value: 34** (Max.=100)

3.4 Area Irrigated by (Groundwater) Wells within 2 miles: 0.75√no.acres= 0.75√215 =0.75(14.66) Source: 9 **Value: 11** (Max.=50)

4.0 RELEASE

Explain basis for scoring a release to ground water: Analytical evidence. Source: 1,2 **Value: 5** (Max.=5)

SOURCES USED IN SCORING

1. Undated Summary Report by Norm Payton, WA DOT, on 1995/96 Phase I and Phase II Environmental Site Assessments and site characterizations of the WA DOT Wilbur Maintenance Facility, Wilbur, WA.
2. Old Wilbur Maintenance Facility Investigation Report, Wilbur, Washington, Science Applications International Corporation (SAIC), April 9, 1999 (Draft).
3. Washington Department of Ecology, Toxicology Database for Use in Washington Ranking Method Scoring, January 1992.
4. Washington Department of Ecology, WARM Scoring Manual, April 1992.
5. Reference No. 5:
6. Site Drive-byes, March 11, 1999, and May 6, 1999.
7. Flood Insurance Rate Maps
8. US EPA SITEINFO Database, and DOH S.A.D.I.E. database.
9. Ecology Water Rights Application Tracking System (WRATS)