SITE HAZARD ASSESSMENT
WORKSHEET 1
SUMMARY SCORE SHEET

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

Safford Property (former)
26930 262nd Avenue SE
Ravensdale, WA 98051
King County
T-22N, R-6E, Sec-25
Facility Site ID: 3146354
Longitude: 121° 59' 22.3"
Latitude: 47° 21' 57.3"
Site Assessed for August 26, 2003 update

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

The Safford Property site is located at 26930 262nd Avenue SE, Ravensdale, WA. The property consists of a residential lot which, is approximately 22,000 square feet in size. The site is bordered to the west, north and east by large residential properties, and to the south by a large open area. A community water system and private sewer system serve the property.

The only structure on the site is a private residence. There are several vehicles under repair on the site with large amounts of vehicle parts scattered around the property. The area surrounding the residence is covered by grass with a large concrete pad located to the west of the house. There is a steep slope to the south of the concrete pad that contains drainage piping for what appears to be a natural spring. There is also a burn pit at the north end of the concrete pad.

During April of 2001, the King County Police Department raided the Safford Property as an illicit Methamphetamine drug lab. Found inside the house were chemicals, which included acetone, anhydrous ammonia, ether and lithium batteries. Areas around the concrete pad had some oil staining from work on vehicles on the site. After inspection of the site Jim Locke of Public Health-Seattle & King County (PHSKC) recommended to the Washington State Department of Ecology (Ecology) that the Safford Property be investigated as a possible contaminated site. On June 6, 2001 the Safford Property was listed on Ecology's Confirmed and Suspected Contaminated Sites list. During the fall of 2001 a contractor certified by Washington State performed a Methamphetamine drug lab cleanup of the property under the supervision of PHSKC. During the cleanup, the contractor noted no property contamination due to the drug lab activity, only contamination to the residence on the site.

Carsten Thomsen of PHSKC conducted an initial Site Hazard Assessment (SHA) visit on April 3, 2003. There were no apparent areas of soil contamination on the Safford property though the burn pit was still in place. Since no drug lab contamination was found on the property it was decided the site would be tested for contaminants related to vehicle maintenance activities and the burn pit.

On April 17, 2003 Carsten Thomsen and Yolanda Pon of PHSKC took three soil samples on the Safford property site. All three samples were collected at depths ranging from two to eight inches. The first sample was taken on the west edge of the large concrete pad. Sample two was taken in the burn pit and sample three was taken at the base of the steep slope on the south side of the concrete pad. All three samples were analyzed for Northwest Total Petroleum Hydrocarbons Diesel Extended (NWTPH-Dx)

and total metals. Sample two was also analyzed for Polynuclear Aromatic Hydrocarbons (PAH's).

As shown in the table below, sample one contained heavy oil with concentrations exceeding the Model Toxics Control Act (MTCA) Method A cleanup level of 2000 mg/kg (milligrams per kilogram). Sample two also contained the heavy metal cadmium at concentrations above the MTCA Method A cleanup level of 2 mg/kg. Sample three had lower concentrations of heavy oil that were below the MTCA Method A cleanup level.

	NWTPH-DX (mg/kg)	Cadmium (mg/kg)
Sample #1	**2900**	0.93
Sample #2	1700	**3.0**
Sample #3	99	ND
MTCA Method A Cleanup Level (mg/kg)	2000	2.0

ND= Not detected

On the basis of this SHA, completed by the PHSKC's Environmental Health division, this site will be scored for the surface water, air and groundwater routes under the MTCA regulations.

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): N/A

ROUTE SCORES:

Surface Water/Human Health: 10.1

Surface Water/Environ.: 25.9

Air/Human Health: 3.6

Air/Environmental: 16.2

Ground Water/Human Health: 41.3

OVERALL RANK: 4

WORKSHEET 2
ROUTE DOCUMENTATION

1. SURFACE WATER ROUTE

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

NWTPH-Heavy oil, Cadmium

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

All of the above substance concentrations are above MTCA Method A cleanup standards.

List those management units to be considered for scoring: Source: 3

Surface soil contamination

Explain basis for choice of unit to be used in scoring. Source: 3

Surface soil is exposed to weather with no containment.

2. AIR ROUTE

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

NWTPH-Heavy oil, Cadmium

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

All of the above substance concentrations are above MTCA Method A cleanup standards.

List those management units to be considered for scoring: Source: 3

Surface soil contamination

Explain basis for choice of unit to be used in scoring. Source: 3

Surface soil is exposed to weather with no containment.

WORKSHEET 2 (CONTINUED)
ROUTE DOCUMENTATION

3. GROUND WATER ROUTE

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

NWTPH-Heavy oil, Cadmium

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

All of the above substance concentrations are above MTCA Method A cleanup standards.

List those management units to be considered for scoring: Source: 3

Surface soil contamination

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

Surface soil is exposed to weather with no containment.

WORKSHEET 3
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.	Carcinogenicity WOE	PF*	Val.
1.NWTPH-Heavy oil	ND	-	ND	-	2.0	1	ND	-	-
2.Cadmium	5.0	8	225	5	0.0005	5	B1	ND	-

*Potency Factor

Source: 1,2
Highest Value: 8
(Max.=10)

+2 Bonus Points? no
Final Toxicity Value: 8
(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.NWTPH-Heavy oil	ND	-		
2.Cadmium	3.9	8		

Source: 1,2 **Value: 8**
(Max.=10)

1.3 Substance Quantity: unknown Source: 3 **Value: 1**
(Max.=10)
Explain basis:

2.0 MIGRATION POTENTIAL

2.1 Containment Source: 3 **Value: 4**
(Max.=10)
Explain basis: spill/discharge with ineffective run-on/runoff control

2.2 Surface Soil Permeability: clay-sand-loam mix Source: 3 **Value: 5**
(Max.=7)

2.3 Total Annual Precipitation: 37.5 inches Source: 5 **Value: 3**
(Max.=5)

2.4 Max. 2-Yr/24-hour Precipitation: 1-2 inches Source: 5 **Value: 2**
(Max.=5)

2.5 Flood Plain: not in flood plain Source: 6 **Value: 0**
(Max.=2)

2.6 Terrain Slope: > 2 to 5 % Source: 3 **Value: 2**
(Max.=5)

WORKSHEET 3 (CONTINUED)
SURFACE WATER ROUTE

3.0 TARGETS

3.1 Distance to Surface Water: 700 ft Source: 3 **Value: 10** (Max.=10)

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

3.3 Area Irrigated within 2 miles 0.75 √no. acres = (Refer to note in 3.2.): 0.75 (√385) = 15 Source: 8 **Value: 15** (Max.=30)

3.4 Distance to Nearest Fishery Resource: 700 ft Source: 3 **Value: 12** (Max.=12)

3.5 Distance to, and Name(s) of, Nearest Sensitive Environment(s) Rock Creek = 700 feet Source: 6 **Value: 12** (Max.=12)

4.0 RELEASE

Explain basis for scoring a release to surface water: none confirmed Source: 3 **Value: 0** (Max.=5)

WORKSHEET 4
AIR ROUTE

1.0 SUBSTANCE CHARACTERISTICS

1.1 Introduction

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.NWTPH-Heavy oil	ND	-	ND	-	ND	-	ND	-	-
2.Cadmium	.00056	10	25	10	ND	-	B1	6.1	6

*Potency Factor

Source: 1,2
Highest Value: 10
(Max.=10)

+2 Bonus Points? no
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= ; 2= ; 3= ; 4= ; 5= ; 6=
Source:
Value:
(Max.=4)

1.3.2 Particulate Mobility
Soil type: sandy clay loam
Erodibility: 56
Climatic Factor: 1-10
Source: 3
Value: 1
(Max.=4)

1.4 Highest Human Health Toxicity/Mobility Matrix Value (from Table A-7)
equals **Final Matrix Value: 5**
(Max.=24)

1.5 Environmental Toxicity/Mobility Source: 1

Substance	Non-human Mammalian Acute Inhal. Toxicity (mg/m^3)	Value	Mobility (mmHg)	Value	(Table A-7) Matrix Value
1.Cadmium	25 (rat)	10	0.0E+00	1	5

Highest Environmental Toxicity/Mobility Matrix Value
(From Table A-7) equals **Final Matrix Value: 5**
(Max.=24)

1.6 Substance Quantity: unknown Source: 3 **Value: 1**
Explain basis:
(Max.=10)

WORKSHEET 4 (CONTINUED)
AIR ROUTE

2.0 MIGRATION POTENTIAL

2.1 Containment: uncontaminated soil cover <2ft. thick Source: 3 **Value: 5** (Max.=10)

3.0 TARGETS

3.1 Nearest Population: dwelling = 225 ft Source: 3 **Value: 10** (Max.=10)

3.2 Distance to, and Name(s) of, Nearest Sensitive Environment(s) Rock Creek Park = 800 ft Source: 6 **Value: 7** (Max.=7)

3.3 Population within 0.5 miles: $\sqrt{}$pop.= $\sqrt{}$(30x3) = 9 Source: 3 **Value: 9** (Max.=75)

4.0 RELEASE

Explain basis for scoring a release to air: No confirmed release Source: 3 **Value: 0** (Max.=5)

WORKSHEET 5
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.NWTPH-Heavy oil	ND	-	ND	-	2.0	1	ND	-	-
2.Cadmium	5.0	8	225	5	0.0005	5	B1	ND	-

*Potency Factor

Source: 1,2
Highest Value: 8 (Max.=10)

+2 Bonus Points? no
Final Toxicity Value: 8 (Max.=12)

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

Cations/Anions: 1= N/A ; 2= 3 Source: 1 **Value: 3** (Max.=3)

OR

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

1.3 Substance Quantity: unknown Source: 3 **Value: 1** (Max.=10)

Explain basis:

2.0 MIGRATION POTENTIAL

2.1 Containment Source: 3 **Value: 10** (Max.=10)

Explain basis: spill/discharge onto ground

2.2 Net Precipitation: 32 inches Source: 5 **Value: 3** (Max.=5)

2.3 Subsurface Hydraulic Conductivity: clayey silt Source: 3 **Value: 2** (Max.=4)

2.4 Vertical Depth to Ground Water: 100 - 200 feet Source: 3 **Value: 3** (Max.=8)

WORKSHEET 5 (CONTINUED)
GROUND WATER ROUTE

3.0 TARGETS

3.1 Ground Water Usage: public supply, but alternate sources available with minimum hookup reqs — Source: 8 — **Value: 4** (Max.=10)

3.2 Distance to Nearest Drinking Water Well: 510 ft — Source: 8 — **Value: 5** (Max.=5)

3.3 Population Served within 2 Miles: √pop.= >10,000 — Source: 8 — **Value: 100** (Max.=100)

3.4 Area Irrigated by (Groundwater) Wells within 2 miles: 0.75 √no.acres = 0.75 (√ 134 acres) = 11 — Source: 7 — **Value: 9** (Max.=50)

4.0 RELEASE

Explain basis for scoring a release to ground water: none confirmed — Source: 3 — **Value: 0** (Max.=5)

SOURCES USED IN SCORING

1. Washington Ranking Method Toxicological Database
2. Analytical results for the Safford Property, OnSite Environmental, Inc., April 17, 2003
3. Site Hazard Assessment, Public Health - Seattle & King County, July 08, 2003
4. National Weather Service Data
5. Isopluvials of 2-YR, 24-HR precipitation, NOAA Atlas 2, Vol.IX
6. Sensitive Areas Coverage, King County Geographic Information System Data
7. Washington State Department of Health Public Water Supply Listing
8. Washington State Water Use Data