

CSID 2193

Site Hazard Assessment Summary Score Sheets

Site Name:	Rays Auto Wrecking	Section:	17
		Township:	28N
		Range:	5E
Site Address:	2707 100 th St SE	Ecology ID:	
City:	Everett	ERTS	530415
County:	Snohomish	Facility Site ID #	9575473 9951530
State:	WA	TCP ID	
Zip:	98208		
Lat:	47° 54' 25.67"	Site Scored/Ranked for mm/dd/yyyy:	February 23, 2005
Long:	122° 11' 43.96"		

Site Location and Description

Rays Auto Wrecking, referred to here after as the site, is located at 2707 100th St. SE, Everett, WA. The property is mostly flat with a slight downward slope to the south and east. The site is five acres in size. The site is surrounded on all sides by residential housing. On the south side of the site the site is bordered by 100th St SE. On the west side of the site, 27th Ave. NE exists. Immediately to the north and west larger scale housing developments exist. The site has been cleared of all substantial vegetation with the exception of several areas of Douglas fir.

According to Raymond Brown Jr., the site has been used as a junk/scrap yard since 1950. To this date the site maintains this use. A Snohomish County aerial photo from 1947 shows no development at the site. In 1955 a residence appears in the southwest corner of the site. There is no significant junkyard activity visible at this time. By 1967, the entire property is occupied with cars and scrapping activity. Photographs from 1967 to 2003 detail similar activity at the site.

Site History

On October 10, 2002, the Snohomish Health District (SHD) received a complaint regarding improper storage and handling of tires, automotive fluids and batteries at 2707 100th St SE.

On October 29, 2002, Hasina Wong and Geoffrey Crofoot, SHD, conducted a site visit. Upon arrival to the site, Wong and Crofoot encountered Ray Brown Sr. the property steward sitting in front of the yard's office. The property appears to be owned by Ray Brown's children. Snohomish County Assessors office records notes that Laina R Brown is the taxpayer of record and the current owner. Laina is the daughter of Ray Brown.

The SHD noted moderate risk waste (MRW) violations on the site. Drums without proper labeling and secondary containment were noted. Car batteries were observed in direct contact with the ground and not under cover. Radiators were observed in direct contact with the soil and also with no cover.

The SHD also noted contaminated soil in numerous areas at the site. Notably, the area around the car crusher appeared to be stained with petroleum product. The crusher is located northeast of the office. Areas of staining were noted north, south and east of the crusher. Immediately to the north of the crusher, two rows of three ecology blocks were observed. Between the rows of blocks significantly contaminated gravel and soil was observed.

Raymond Brown, the son of Ray Brown Sr., was present for the latter portion of the October 29, 2002, site visit. Raymond noted that the car crusher was not lined with any protective barrier. He noted that the crusher has been at the same location for at least 35 years. Raymond noted that at times, the crusher pit would accumulate standing water. It was unclear if the water accumulation was surface water run-on, rainwater or seeping ground water. Raymond noted that the standing water eventually seeps back into the ground surrounding the crusher.

Raymond noted that he had placed crushed rock in the vicinity of the crusher because it prevented surface soil from being contaminated with petroleum product leaking from crushed and non-crushed automobiles.

The SHD collected two soil samples during the October 29, 2002, site visit. Samples were collected at the time of the original site visit without the benefit of a sampling and analysis plan because it was unclear at the time if access to the site would be granted again. At the time of the initial site visit Ray Brown Sr. was verbally abusive to SHD personnel. The strategy for sampling at the time of the site visit was to collect surface soil samples in areas where contamination was clearly visible.

The first sample was collected in a lower area north and east of the car crusher. This site was selected because it was obviously an area that ponding occurred. Soil was difficult to collect due to the large volume of crushed rock, which had been imported to the site.

The second sample was collected north of the stained area previously mentioned between the rows of ecology blocks. This area was selected because it appeared to be an area where automotive fluids were drained. Spillage or drainage directly to the soil was obvious. Again, the soil in this area was difficult to obtain due to the imported crushed rock. All samples were collected within the first six inches of encountered material.

Both samples were analyzed for Arsenic, Cadmium, Chromium, Lead and Mercury. In addition, the samples were analyzed for NWTPH – HCID, which identifies hydrocarbons. Results are listed in table one.

Since the October 29, 2002, site investigation Hasina Wong has been working to resolve MRW issues at the site. On October 7, 2004, she and Geoffrey Crofoot conducted a final site visit concerning the ongoing MRW issues. At the time of the site visit significant improvement at the site was noted. Accumulation of waste tires at the site was well below the 800-tire limit. Waste oils, and other automotive products and wastes were stored with proper secondary containment and cover. Labeling of wastes was occurring. Waste radiators and car batteries were being handled properly. The only remaining issue cited in the October 31, 2002 notice of violation was removal of contaminated soils found at the site. The SHD signed off the case regarding the MRW violations. The remaining issue of contaminated soil will be addressed in the process of completing the site hazard assessment. **Surface Water and Ground Water Features**

At the time of the October 29, 2002, site visit, no standing water was noted. Subsequent visits by this office have noted ponding in the eastern portion of the property. New homes that now border this side of the property have noted ponding water flowing from the site to their properties.

Hilton Lake is located approximately 1900 feet to the south east of the site. Woods creek is located 3400 feet to the west at its closest. The northeastern edge of Silver Lake is 4700 feet to the southwest of the site. Various unnamed drainage ditches exist generally to the east of the site between 6400 feet and at Snohomish River. Ruggs Lake is due south of the site at 8500 feet. The Snohomish river is 10,100 feet to the northeast at its closest.

According to Ecology's on-line well log search tool, there are 16 drinking water wells with in a two-mile radius of the site. The closest is located approximately 3325 feet to the southeast at 3307 107th pl. SE.

Ground and Surface Water Uses

The SHD reviewed WDOE well logs, WDOE Water Right Application Tracking System (WRATS) and the Washington Department of Health SADIE systems for ground water and surface water uses. WRATS indicated 0 acres of land are irrigated with surface water. It does not appear that well water in the area is used for irrigation.

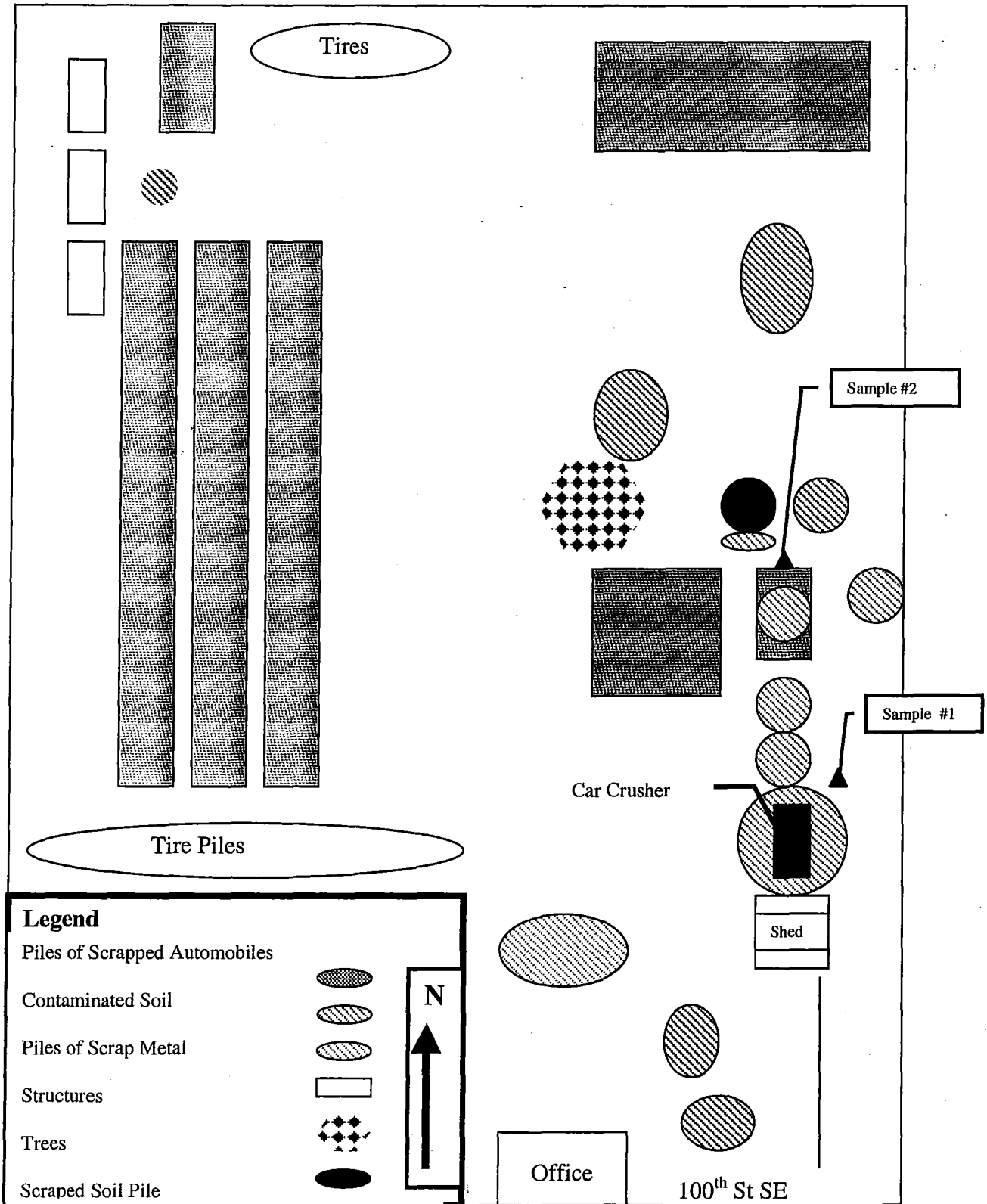
City of Everett water and sewer serve all the site residential properties immediately adjacent

Compounds of Concern and Sampling Results

The compounds of concern at the site heavy metals (As, Cd, Cr, Pb and Hg) and lube oil range hydrocarbons. Impacts to soil have been confirmed with soil sampling.

October 29, 2002 Soil Sampling @ Ray's Auto Wrecking			
	MTCA	Sample 1	Sample 2
Arsenic	20	7.66	ND
Cadmium	2	ND	ND
Total Chromium	NS	52.6	36.7
Lead	250	396	361
Mercury	2	.14	.11
NWTPH Dx Heavy Oils	2000	350	3600
All results are noted in mg/kg ND = no detect NS = no standard for unrestricted land use			

Figure 1
Rays Auto Wrecking
10/29/2002



Areas of Impact

The area of impact is soil. In particular, soils found in areas where leaking or spillage has occurred due to the site use of automotive dismantling. No samples were collected below ground surface at the base of the car crusher. However, due to the construction of the crusher, which lacks containment for escaping fluids, it is likely that significant contamination exists in this area. As previously noted, the crushing pit in the car crusher on occasion, collects standing water. This water is presumed to infiltrate surrounding soils.

Special Considerations

No special considerations to note at this time.

ROUTE SCORES:

Surface Water/Human Health:	<u>14.2</u>	Surface Water/Environ.:	<u>29.6</u>
Air/Human Health:	<u>24.7</u>	Air/Environmental:	<u>NS</u>
Ground Water/Human Health:	<u>16.3</u>		

OVERALL RANK: 4

WORKSHEET 2 - ROUTE DOCUMENTATION

1. SURFACE WATER ROUTE

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

NWTPH Dx, metals (Pb)

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

Analytical results from soil samples showed concentrations greater than their respective Method A MTCA cleanup levels for all of the above.

2. AIR ROUTE

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

NWTPH Dx, metals (Pb)

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

Analytical results from soil samples showed concentrations greater than their respective Method A MTCA cleanup levels for all of the above.

3. GROUND WATER ROUTE

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

NWTPH Dx, metals (Pb)

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

Analytical results from soil samples showed concentrations greater than their respective Method A MTCA cleanup levels for all of the above.

WORKSHEET 6 GROUND WATER ROUTE

1.0 SUBSTANCE CHARACTERISTICS

1.1 Human Toxicity

	Substance	Drinking Water Standard	Val.	Acute Toxicity	Val.	Chronic Toxicity	Val.	Carcinogenicity		
		(ug/l)		(mg/kg-bw)		(mg/kg-da)		WOE	PF	Val.
1	Lead	5	8	ND	X	ND	X	B2	ND	X
2	TPH Dx Heavy oil	ND	X	ND	X	2	1	ND	ND	X

Source: 1, 2, 3
Highest 8
2 Bonu: 0
Final Toxicity Value: 8

- 1.2 Mobility (Use numbers to refer to above listed substances)
Cations/Anions Pb is 2

Source: 1, 2, 3 Value: 2

OR
Solubility (mg/l)

- 1.3 Substance Quantity Unknown Quantity use Default of 1
Explain basis:

Source: 1, 2, 3 Value: 1

2.0 MIGRATION POTENTIAL

- 2.1 Containment Spill to soil
Explain basis:

Source: 1, 2, 3 Value: 10

- 2.2 Net Precipitation: 22.8-5.9= 16.9 inches

Source: 1, 2, 3, 4 Value: 2

- 2.3 Subsurface Hydraulic Conductivity: 10-7 to 10-5

Source: 1, 2, 3, 8 Value: 2

- 2.4 Vertical Depth to Ground Water: 50-100 feet

Source: _____ Value: 4

WORKSHEET 4
SURFACE WATER ROUTE

1.0 SUBSTANCE CHARACTERISTICS**1.1 Human Toxicity**

Substance	Drinking Water Standard	Val.	Acute Toxicity	Val.	Chronic Toxicity	Val.	Carcinogenicity		
	(ug/l)		(mg/kg-bw)		(mg/kg/da)		WOE	PF	Val.
1 Lead	5	8	ND	X	ND	X	B2	ND	X
2 TPH Dx Heavy oil	ND	X	ND	X	2	1	ND	ND	X

Source: _____

Highest Value: 82 Bonus Points? 0Final Toxicity Value 8**1.2 Environmental Toxicity**

	(X) Freshwater					
	() Marine					
	Acute			Non-human Mammalian		
	Criteria			Acute Toxicity		
Substance	(ug/l)	Val.	(mg/kg)	Val.	Source: _____	Value: <u>6</u>
1 Lead	82	6	x	x		
2 TPH Dx Heavy oil	ND	X	SN	x		

1.3 Substance quantity

Explain basis: Unknown quantity. Use default of 1.

Source: _____ Value: 1

WORKSHEET 4 (CONTINUED)
SURFACE WATER ROUTE

2.0 MIGRATION POTENTIAL

2.1 Containment	No containment	Source: _____ Value: <u>10</u>
Explain basis:	No run-on/run-off control system	

2.2 Surface Soil Permeability: Moderate. Sands with fines, silty sand, loam. Source: Value: 3

2.3	Total Annual Precipitation	34.7 inches/year	Source:	Value:	3
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2.4	Max. 2-Yr/24-hour Precipitation	1.5-2 inches /year	Source:	Value:	2
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2.5	Flood Plain:	no	Source:	Value:	0
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2.6 Terrain Slope:	4.2% slope to Hilton lake	Source:	Value:	2
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3.0 TARGETS

3.1 Distance to Surface Water: 1900 southeast to Hilton lake Source: Value: 7

3.2 Population Served	sq.root of 0	Source:	Value:	0
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3.3 Area Irrigated within 2 miles: .75(sq. root of 0)=0 Source: Value: 0

3.4 Distance to Nearest Fishery Resource: 3400 feet to branch of Woods Creek Source: _____ Value: 6

3.5 Distance to, and Name (s) of, nearest Sensitive Environment (s) 3,400 feet to an unnamed branch of Woods Creek Source: _____ Value: 6

4.0 RELEASE

Explain basis for scoring a release to surface water: No observed release to Surface Water Source: Value: 0

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/m3)	Val.	Acute Toxicity (mg/kg)	Val.	Chronic Toxicity (mg/kg/da)	Val.	Carcinogenicity		
							WOE	PF	Val.
1 Lead	0.5	10	ND	X	ND	X	B2	ND	X
2 TPH Dx Heavy oil	166.5	4	ND	X	ND	X	ND	ND	X

Source: _____
Highest Value: 10
2 Bonus Points? _____
Final Toxicity Value 10

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

1.3.1 Gaseous Mobility

Vapor Pressure (s):

NA

Source: _____ Value: 0

1.3.2 Particulate Mobility

Soil type: Sandy loam

Erodibility: 86

Climactic Factor: 1 to 10

1

Source: _____ Value: 1

1.4 Highest Human Health Toxicity/Mobility Matrix Value (from Table A-7)

equals

Final Matrix Value: 5

1.5 Environmental Toxicity/Mobility

Source: _____

Non-human Mammalian

Substance	Inhal. Toxicity (ug/m3)	Value	Mobility	Value	Matrix Value
1 Lead	No Data				
2 TPH Dx Heavy oil	No Data				

Highest Environmental Toxicity Matrix Value

Source: _____ Value: NS

WORKSHEET 5 (CONTINUED)
AIR ROUTE

1.6 Substance Quantity: Unknown use default of one.
Explain basis

Source: _____ Value: 1

2.0 MIGRATION POTENTIAL

2.1 Containment: No containment

Source: _____ Value: 10

3.0 TARGETS

3.1 Nearest Population: Less than 1000 feet to the east

Source: _____ Value: 10

3.2 Distance to, and Name (s) of, Nearest Sensitive
Environment (s) 1900 feet to wetlands associated with Hilton Lake

Source: _____ Value: 6

3.3 Population within 0.5 miles: sq rt of 3777 61

Source: _____ Value: 61

4.0 RELEASE

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

Source: _____ Value: 0

WORKSHEET 6 GROUND WATER ROUTE

1.0 SUBSTANCE CHARACTERISTICS

1.1 Human Toxicity

	Substance	Drinking Water Standard	Val.	Acute Toxicity	Val.	Chronic Toxicity	Val.	Carcinogenicity		
		(ug/l)		(mg/kg-bw)		(mg/kg/ds)		WOE	PF	Val.
1	Lead	5	8	ND	X	ND	X	B2	ND	X
2	TPH Dx Heavy oil	ND	X	ND	X	2	1	ND	ND	X

Source: 1, 2, 3Highest 82 Bonu: 0Final Toxicity Value: 8

- 1.2 Mobility (Use numbers to refer to above listed substances)
Cations/Anions Pb is 2

Source: 1, 2, 3 Value: 2

OR

Solubility (mg/l)

- 1.3 Substance Quantity Unknown Quantity use Default of 1
Explain basis:

Source: 1, 2, 3 Value: 1

2.0 MIGRATION POTENTIAL

- 2.1 Containment Spill to soil
Explain basis:

Source: 1, 2, 3 Value: 10

- 2.2 Net Precipitation: 22.8-5.9= 16.9 inches

Source: 1, 2, 3, 4 Value: 2

- 2.3 Subsurface Hydraulic Conductivity: 10-7 to 10-5

Source: 1, 2, 3, 8 Value: 2

- 2.4 Vertical Depth to Ground Water: 50-100 feet

Source: _____ Value: 4

WORKSHEET 6
GROUND WATER ROUTE

3.0 TARGETS

- | | | | |
|-----|---|---|---|
| 3.1 | Ground Water Usage: | Public and Private Supply with minimal hookup | Source: <u>7, 9, 10</u> Value: <u>4</u> |
| 3.2 | Distance to Nearest Drinking Water Well: | 3325 feet | Source: <u>9,</u> Value: <u>2</u> |
| 3.3 | Population Served within 2 Miles: | Sq Rt of 48 | Source: <u>15</u> Value: <u>7</u> |
| 3.4 | Area Irrigated by (Groundwater) Wells within 2 miles: | .75(sq. Rt 0) | Source: <u>6, 7, 9,</u> Value: <u>0</u> |

4.0 RELEASE

- | | |
|--|--|
| Explain basis for scoring a release to ground water: | Source: <u>1, 2, 3</u> Value: <u>0</u> |
| No confirmed release to ground water | |

Sources Used in Scoring

1. Washington Department of Ecology and SHD, "Stormlake Grocery Initial Investigation File."
2. Washington Department of Ecology, WARM Scoring Manual, April, 1992.
3. Washington Department of Ecology, Toxicology Database for Use in Washington Ranking Method Scoring, January 1992.
4. National Weather Service, Washington Climate Data, Snohomish County
5. U.S.G.S. Topo. Map, Everett Quad., 7.5 Min. Series, Photorev. 1973.
6. Washington Department of Ecology, Water Rights Application Tracking System
7. Washington Department of Health, SADIE
8. Soil Conservation Service, Soil Survey of Snohomish County Area, July 1983.
9. Washington Department of Ecology, Online Well Log Search
- 16 Department Of The Interior, US Geologic Survey, Geologic Map of the Everett 7.5 Minute Quad, James P. Minard, 1985
11. Snohomish County Aerial Photograph, S17 /T29N /R6E, 1947-2003.
12. Metro Scan for Windows, 2000
- 13 FIRM Flood Maps
- 14 Thomas Guide, 2004
15. EPA Geographinc Information Query System (version 97.1.8)

WORKSHEET 4
SURFACE WATER ROUTE

Rays Auto

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SUBSTANCE CHARACTERISTICS	
-	
Human Health Toxicity	8
Environmental Toxicity	6
Substance Quantity	1
Containment	10
-	
MIGRATION	
-	
Soil Permeability	3
Annual Precipitation	3
2-yr/24-hour Precip.	2
Flood Plain	0
Terrain Slope	2
-	
TARGETS	
-	
Distance to Surf. Water	7
Population Served	0
Area Irrigated	0
Distance to Fisheries	6
Sensitive Environment	6
-	-
RELEASE	0
=	=
SW HH ROUTE SCORE	14.2
SW Env. ROUTE SCORE	29.6
=	=
=	=

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WORKSHEET 5

AIR ROUTE

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SUBSTANCE CHARACTERISTICS

-

HH Tox/Mobility	5
Env Tox/Mobility	ns
Substance Quantity	1
Containment	10

-

TARGETS

-

Nearest Population	10
Sensitive Environment	6
Population within 1/2 mi	61

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RELEASE	0
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AIR HH ROUTE SCORE	24.7
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AIR ENV. ROUTE SCORE	12.8
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WORKSHEET 6
GROUND WATER ROUTE

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SUBSTANCE CHARACTERISTICS	
-	
Toxicity	8
Mobility	2
Substance Quantity	1
Containment	10
-	
MIGRATION	
-	
Net Precipitation	2
Hydraulic Conductivity	2
Depth to Ground Water	4
-	-
TARGETS	
-	
Aquifer Usage	4
Nearest Well Distance	2
Population Served	7
Area Irrigated	0
-	-
RELEASE	0
=	=
GW ROUTE SCORE	16.3
=	=
=	=

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SCORE SUMMARY

Rays Auto

-	=
Surface Water Human Health	14.2
Air Human Health	24.7
Ground Water Human Health	16.3
Surface Water Environment	29.6
Air Environment	NS

HUMAN HEALTH PRIORITY:

-

Select the high, middle, and low score from the three route scores for human he

Rays Auto

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High:	4.0
Medium:	3.0
Low:	1.0
Human Health Priority:	2.9

ENVIRONMENTAL PRIORITY:

-

Select the high and low score from the air and surface water routes for environrr

Rays Auto

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High:	3.0
Low:	0.0
Environmental Priority:	0.8