STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
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August 8, 2013

Sahand Sabalan, LLC
1402 3rd Ave, #828
Seattle, WA 98101

Re: SITE HAZARD ASSESSMENT: Facility Site ID # 64433154
Unocal 5472
3460 1st Ave S
Seattle, WA 98108
Property Tax # 7666205880
Cleanup Site ID 6439

Dear Sir or Madam:

The Washington State Department of Ecology (Ecology) is writing to inform you that the above referenced property was subject to a site hazard assessment (SHA) as required under the Model Toxics Control Act, on 6/28/2013. The site was determined to be contaminated with diesel, gasoline and oil, benzene, toluene, xylenes, and total lead. The site's hazard ranking, an estimation of the potential threat to human health and/or the environment relative to all other Washington state sites assessed at this time, has been determined by Ecology to be a 5, where a 1 represents the highest relative risk and 5 the lowest.

For your information, Ecology will be publishing ranking of this, and other recently assessed sites, in the August 2013 Special Issue of the Site Register. The hazard ranking will be used in conjunction with other considerations in determining Ecology's priority for future action at this site.

For inquiries regarding what may occur with your site now that it is on Ecology's Hazardous Sites List please contact Donna Musa at (425) 649-7136 or donna.musa@ecy.wa.gov.

Sincerely,

Donna Musa
Site Hazard Assessments
Toxics Cleanup Program

cc: Ted Benson, Ecology (ted.benson@ecy.wa.gov)

SITE HAZARD ASSESSMENT
Worksheet 1
Summary Score Sheet

SITE INFORMATION:

Cleanup Site ID: 6439

Unocal 5472

Facility/Site ID: 64433154

3460 1st Ave S

Seattle, King County, WA 98108

Section:	17	Latitude:	47.57177
Township:	24N	Longitude:	-122.33408
Range:	4E	Tax/Parcel ID:	7666205880

Site Scored/ranked for the August 2013 Hazardous Sites List Publication

SITE DESCRIPTION:

The Unocal 5472 site is a former service station located in Seattle, King County, Washington. The 0.52-acre property is located approximately 2644 feet from Duwamish River/East Waterway, and zoned for industrial use.

Adjacent properties include Viking Sprinklers to the north, a warehouse to the east, South Spokane Street and the West Seattle Bridge are to the south, and a Penske Truck Leasing operation is to the west, across 1st Avenue S.

The site is currently operated as a towing yard by Sahand Sabalan, LLC.

Cars and trucks are parked and impounded on the property.

The property is located at the northeast corner of 1st Avenue S, and South Spokane Street in Seattle, King County, Washington. The southwest corner of the property has been very recently developed with a newly constructed overpass/exit ramp between west-bound Spokane Street and northbound 1st Avenue South. This overpass is located directly over the southwest corner of the Former Unocal service station property.

The Puget Sound Initiative was established by the Governor's office in 2007 with the goal of restoring the health of Puget Sound by 2020. A leading source of pollution to Puget Sound is contaminated sites around its shorelines. Ecology's Toxics Cleanup Program has identified contaminated sites within one-half mile of the Sound. This site is a Puget Sound Initiative site.

SITE BACKGROUND:

A summary of prior operations/tenants at the subject property is presented below.

From	To	Operator/Tenant	Activity
1928	1968	McKales Service Station	Vehicle fueling and automotive service
1968	1992	Union Oil/Unocal Service Station Number 5472	Vehicle fueling and automotive service
1992	1999	Tosco	vacant property
1999	2000	First & Spokane Associates, LLC	vacant property
2000	2013	Sahand Sabalan, LLC	TBT towing or other vehicle storage operations

SITE CONTAMINATION:

In 1990 the Unocal 5472 site was reported to Washington Department of Ecology and placed on the LUST list with ID number 716.

Releases of gasoline, diesel, and oil to soil and groundwater were discovered between 1990 and 1992.

An initial investigation was conducted in February 1991 after 5 inches of free hydrocarbon product was reported in

SITE HAZARD ASSESSMENT
Worksheet 1
Summary Score Sheet

groundwater monitoring well MW-1. Free product was identified in 1990 when Rittenhouse-Zeman & Associates conducted an Environmental Site Assessment on behalf of Unocal, during which 5 borings were advanced and completed as groundwater monitoring wells.

PAST REMEDIATION ACTIVITIES:

In 1992, RZA AGRA oversaw the removal of 5 USTs and a hoist/sump on the property. Impacted soil and free product were observed in the exavations, and approximately 330 cubic yards of impacted petroleum contaminated soil were stockpiled on-site prior to disposal. Reportedly 2,500 gallons of diesel and water were pumped from the diesel tank excavation during the excavation and investigation. The depth to groundwater was approximately 8 feet below ground surface. Later in 1992, RZA AGRA conducted additional activities at the site, including test pitting, additional drilling and well installation activites. A vapor extration system feasibility test was conducted, as well as hydraulic conductivity testing. The findings indicated extensive diesel hydrocarbon contamination in subsurface soil.

In 1998 GeoEngineers conducted an 8 hour air sparge/vapor extraction (AS/VE) pilot test at the site and conducted a GPR survey which identified a potential 4 additional undocumented USTs at the property. Prior to this investigation, groundwater monitoring was conducted at the site. Later in 1998, GeoEngineers developed a Cleanup Action Plan for the site. The overall approach was in-situ remediation of petroleum contaminated soil and groundwater by removing the 4 undocumented USTs identified in the GPR survey, abandoning several wells and installing replacements downgradient of the site (to facilitate planned redevelopment activities), installing an AS/VE system of 18 sparge wells and 10 extraction wells, and conducting quarterly monitoring of groundwater conditions and the AS/VE system. In June 1999, 3 USTs were removed (a fourth was not located) and an oil drum located in an underground concrete vault. The AS/VE system was installed in late 1999 and was started in April 2000. During the first 4 months of operation, 12 gallons of hydrocarbon were removed with the system, and over 1,000 pounds of hydrocarbons were removed during nearly 4 years of system operation.

The most recent groundwater monitoring report in Ecology's file for the site reported results from first quarter 2012. Petroleum hydrocarbon concentration in groundwater were generally below detection limits or below MTCA Method A cleanup levels, with the exception of diesel range hydrocarbons (540 ug/L) at MW-12, which exceeded MTCA Method A.

CURRENT SITE CONDITIONS:

Several monitoring wells are still located at the site and were being monitored and sampled quarterly as of 1st quarter 2012. No drinking water wells are located at the site, immediately adjacent to the site, or within 2 miles of the site. There are no immediately adjacent EPA or Ecology sites. The northern extent of the Lower Duwamish Waterway Superfund Site is located south of the site, along the Duwamish Waterway, and the East Waterway Operable Unit of the Harbor Island Superfund Site is located approximately 1/3 mile west of the site. There are no natural surface water features at the site.

No visible contamination is present at the site.

The approximate depth to groundwater is 8 feet below ground surface, with groundwater flowing to the west. Subsurface soils are silty sand and sandy silt.

SPECIAL CONSIDERATIONS:

Checked boxes indicate routes applicable for WARM scoring

☐ **Surface Water**

Currently no indication of surface water or surface soil contamination

☑ **Air**

Prior operation of vapor extraction system

☑ **Groundwater**

Current residual soil and/or groundwater concentrations for one or more petroleum hydrocarbon compounds exceeds MTCA method A cleanp levels

SITE HAZARD ASSESSMENT
Worksheet 1
Summary Score Sheet

The most recent groundwater data on file from 1st quarter 2012. A vapor extraction system operated from April 2000 to September 2004, and removed approximately 1,164 pounds of hydrocarbons during operation.

ROUTE SCORES:

Surface Water/ Human Health:		Surface Water/ Environment:	
Air/ Human Health:	2.6	Air/ Environment:	0.9
Groundwater/ Human Health:	35.5		

Overall Rank: 5

REFERENCES:

WARM Toxicological Database

WARM Scoring Manual

Washington Department of Transportation 24-hour Isopluvial Maps, January 2006 update. http://www.wsdot.wa.gov/publications/fulltext/Hydraulics/Wa24hrIspoluvials.pdf

King County GIS Center iMAP application, Property Information, Groundwater Program, and Sensitive Areas mapsets. Accessed January 2013. http://www.kingcounty.gov/operations/GIS/Maps/iMAP.aspx

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

Washington State Department of Health Source Water Assessment Maps. March 2011 update. https://fortress.wa.gov/doh/eh/dw/swap/maps/

RZA AGRA, 1992, Underground Storage Tank, Hoist/Sump Removal Summary Report, Unocal Service Station # 5472. May 6 for Unocal.

Rittenhouse, Zeman & Associates, 1990,

Ecology Water Resources Explorer, accessed January 2013. https://fortress.wa.gov/ecy/waterresources/map/WaterResourcesExplorer.aspx

RZA AGRA, 1993, Subsurface Characterization and Additional Phase IIA Environmental Site Assessment, Unocal Service Station # 5472. March.

GeoEngineers, 1995, Annual Groundwater Monitoring Report Unocal Service Sation # 5472. March 7

GeoEngineers, 1998, Site Summary and Interim TPH Policy Evaluation former Tosco Service Station 5472. October 19.

GeoEngineers, 1998b, Cleanup Action Plan former Tosco Service Station 5472. November 25.

GeoEngineers, 1999, UST Removal former Tosco Service Station 5472. September 16.

GeoEngineers, 2000, Report of Remedial Systems Installation and Remedial Systems Monitoring November 1999-July 2000 former Unocal Site #5472. August 9.

SAIC, 2012, First Quarter 2012 Groundwater Monitoring and Sampling Report, 76 products facility 351443. April 30.

FEMA Map Service Center, accessed January 2013. https://msc.fema.gov/webapp/wcs/stores/servlet/FemaWelcomeView?storeId=10001&catalogId=10001&langId=-1

Missouri Census Data Center, Circular Area Profiles - 2010 census data around a point location. http://mcdc.missouri.edu/websas/caps10c.html. Accessed February 2013

SITE HAZARD ASSESSMENT
Worksheet 2
Route Documentation

Cleanup Site ID: 6439 Unocal 5472

Facility/Site ID: 64433154

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:

Gasoline, benzene, diesel

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

Historic detections in soil vapor

List those management units to be considered for scoring:

Soil vapor

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

Subsurface release and prior vapor extraction system operation.

3. GROUNDWATER ROUTE

List those substances to be considered for scoring:

Total petroleum hydrocarbons - diesel, gasoline and oil, benzene, toluene, xylenes, and total lead

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

Historic detections of TPH, BTEX and lead in soil and/or groundwater during site characterization. Free product has been previously reported in groundwater.

List those management units to be considered for scoring:

Subsurface soil and groundwater

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

Release to subsurface soil and past detections in soil and groundwater.

Worksheet 5

Air Route

CSID: 6439 **Site Name:** Unocal 5472

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
Benzene	10	3	X	5
Diesel	4	X	X	X

Highest Value 10

Bonus Points? 0

Toxicity Value 10

1.3 Mobility

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

Mobility Value 4

1.4 Final Human Health Toxicity/Mobility Matrix Value **HH Final Matrix Value** 20

1.5 Environmental Toxicity/Mobility

Substance	Non-human Mammalian Inhalation Toxicity (mg/m3)	Acute Value	Mobility Value	Table A-7 Matrix Value
Benzene	31947	3	4	6
Diesel	X	X	X	X

Env. Final Matrix Value 6

1.6 Substance Quantity

Amount: 300 square feet

Basis: Estimated surface area of affected groundwater at the site

Substance Quantity Value 5

Worksheet 5

Air Route

CSID: 6439 **Site Name:** Unocal 5472

2.0 Migration Potential

2.1 Containment Containment Value 0

Explain Basis: LUST site with contaminated subsurface soil

3.0 Targets

3.1 Nearest Population Population Distance Value 8

3.2 Distance to and name of nearest sensitive environments Sensitive Environment Value 5

2650 feet to East Waterway

3.3 Population within 0.5 miles Population Value 7

50 population

4.0 Release Release to Air Value 5

Explain basis for scoring a release to air

Prior observations of odor and past use of vapor extraction system

Pathway Scoring - Air Route, Human Health Pathway

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

Where:

SUB_{AH} =(Human toxicity + 5) * (Containment + 1) + Substance Qty	SUB_{AH}	30
REL_A = Release to Air	REL_A	5
TAR_{AH} = Nearest Population + Population within 1/2 mile	TAR_{AH}	15
	AIR_H	2.6

Pathway Scoring - Air Route, Environmental Pathway

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

Where:

SUB_{AE} =(Environmental Toxicity Value +5)*(Containment +1) +Substance Qty	SUB_{AE}	16
REL_A = Release to Air	REL_A	5
TAR_{AE} = Nearest Sensitive Environment	TAR_{AE}	5
	AIR_E	0.9

Worksheet 6

Groundwater Route

CSID 6439 **Site Name** Unocal 5472

1.0 Substance Characteristics

1.1 Human Toxicity

Substance	Drinking Water Standard Value	Acute Toxicity Value	Chronic Toxicity Value	Carcinogenicity Value
Benzene	8	3	X	5
Diesel	6	5	3	X

Highest Value	8
Bonus Points?	+2
Toxicity Value	10

1.2 Mobility

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

1.3 Substance Quantity

Amount: 1000 gallons

Basis: Estimated quantity of groundwater exceeding cleanup

Substance Quantity Value: 3

2.0 Migration Potential

2.1 Containment Containment Value: 10

Explain Basis: LUST site with contaminated subsurface soil

2.2 Net Precipitation 10-20 inches Net Precipitation Value: 2

2.3 Subsurface Hydraulic Conductivity Conductivity Value: 3

sand/silt

2.4 Vertical Depth to Groundwater Depth to Aquifer Value: 8

0 feet

3.0 Targets

3.1 Groundwater Usage Aquifer Use Value: 2

Groundwater used for industrial applications

3.2 Distance to Nearest Drinking Water Well Well Distance Value: 0

> 2 miles

3.3 Population Served within 2 Miles Population Served Value: 0

Not applicable

Worksheet 6

Groundwater Route

CSID 6439 **Site Name** Unocal 5472

3.4 Area Irrigated by GW Wells within 2 miles Area Irrigated Value 1.5

4 acres

4.0 Release Release to Groundwater Value 5

Explain basis for scoring a release to groundwater

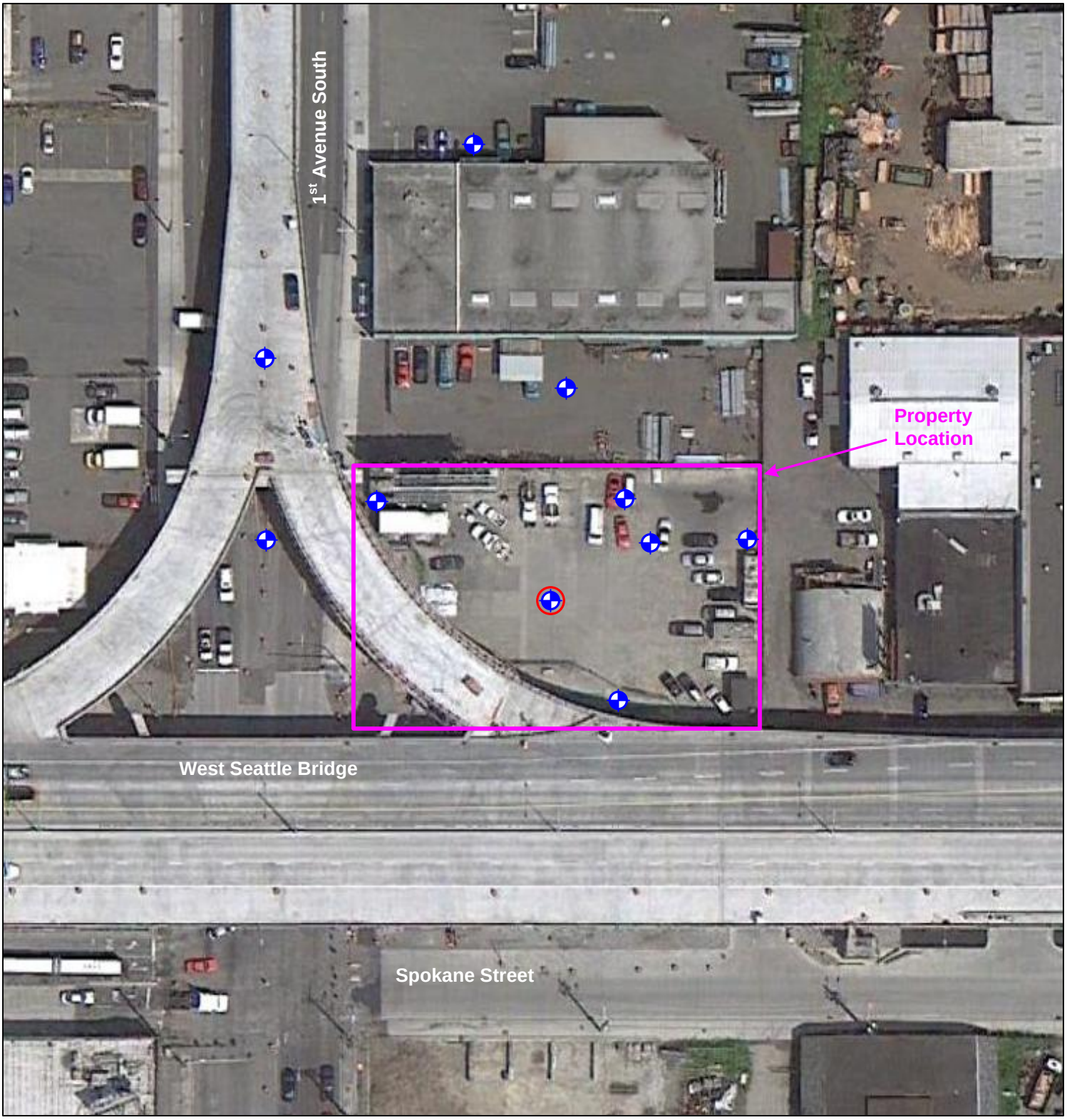
LUST release directly to groundwater - deepest contamination is below top of aquifer

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} =(Human toxicity + mobility + 3) * (Containment + 1) + Substance Qty	SUB_{GH}	179
MIG_G=Depth to Aquifer+Net Precip + Hydraulic Conductivity	MIG_G	13
REL_G = Release to Groundwater	REL_G	5
TAR_{GH} = Aquifer Use + Well Distance + Population Served + Area Irrigated	TAR_{GH}	3.5
	GW_H	35.5



Legend:

- Monitoring well (approximate)
- Monitoring well with most recent concentration of diesel exceeding MTCA Cleanup Level (540 ug/l; 2/17/12)

Notes:

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

N

Unocal 5472
3460 1st Ave South
Seattle, WA 98108

DEPARTMENT OF ECOLOGY
State of Washington

Site Overview Map

CSID 6439

CSID6439.vsd

Washington Ranking Method
Route Scores Summary and Ranking Calculation Sheet

Site Name: Unocal 5472 **CSID:** 6439

Site Address: 3460 1st Avenue South; Seattle 98108 **FSID:** 64433154

HUMAN HEALTH ROUTE SCORES

Enter Human Health Route Scores for all Applicable Routes:

Pathway	Route Score	Quintile Group
Surface Water	ns	0
Air	2.6	1
Groundwater	35.5	3

H=	3
M=	1
L=	0

$$\frac{H^2 + 2M + L}{8} = \frac{9 + 2 + 0}{8}$$

Human Health Priority Bin Score: **2**

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	0.9	1

H=	1
L=	0

$$\frac{H^2 + 2L}{7} = \frac{1 + 0}{7}$$

Environment Priority Bin Score: **1**

rounded up to next whole number

Comments/Notes:

FINAL MATRIX RANKING **5**

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 2013 Values

Quintile	Human Health: Surface Water	Human Health: Air	Human Health: Ground Water	Environment: Surface Water	Environment: Air
5	>= **27.0**	>= **32.0**	>= **50.1**	>= **47.0**	>= **32.0**
4	>= **18.5**	>= **21.1**	>= **40.4**	>= **30.3**	>= **26.1**
3	>= **12.4**	>= **13.1**	>= **31.6**	>= **21.4**	>= **21.1**
2	>= **7.5**	>= **7.1**	>= **22.4**	>= **11.0**	>= **14.6**
1	< **7.5**	< **7.1**	< **22.4**	< **11.0**	< **14.6**

Quintile value associated with each route score entered above