

SITE HAZARD ASSESSMENT

Worksheet 1

Summary Score Sheet

SITE INFORMATION:

Hurlen Construction

700 S Riverside Dr

Seattle, King County, WA 98108

Cleanup Site ID: 9114

Facility/Site ID: 42127616

Section: 29

Latitude: 47.53449

Township: 24N

Longitude: -122.32494

Range: 4E

Tax/Parcel ID: 7327905350

Site Scored/ranked for the February 2015 Hazardous Sites List Publication

SITE DESCRIPTION:

The Hurlen Construction site (Site) is a former construction company located in Seattle, King County, Washington. The 1.02-acre property is located adjacent to the Duwamish River, and zoned for industrial (IG1 U/65) use.

Adjacent properties include parcels used by Hurlen Construction to the southeast and west (tax parcels 7327907525 and 7327905280), and single family residences to the northwest. To the west of the Site are two properties owned by Seattle Public Utilities (640 South Riverside Drive, Cleanup Site ID (CSID) 2549, currently undergoing cleanup under the voluntary cleanup program (VCP)), which was reportedly planned to be the new South Park pump station and water quality facility. The Site is bordered by the Duwamish River to the northeast.

The Site is currently operated as Pacific Pile and Marine by Hurlen Logistics.

The site is currently used as the main yard of a civil and marine contracting company. Current activities at the site include loading and unloading of construction materials, vehicle fueling, maintenance, and storage.

The Site is located along the western bank of the Duwamish River, in the South Park area of Seattle, and is located within the Riverside Drive source control area. The area is primarily industrial. The Site is located northeast of the intersection of South Riverside Drive and South Holden Street.

The Site was reportedly used as residential property from approximately 1936 to 1960. During the 1960's, a wharf was constructed adjacent to the property.

Stormwater at the facility is conveyed to the 7th Avenue South storm drain system, except in the dock area, where runoff discharges directly to the Duwamish River. The Site is currently under an Industrial Stormwater General Permit (permit number WAR301516).

SITE BACKGROUND:

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

<u>From</u>	<u>To</u>	<u>Operator/Tenant</u>	<u>Activity</u>
	1985	Sonia T. Cole	
1985	2011	Harald L. Hurlen	Hurlen Construction/American Civil Constructors
2011	2014	Hurlen Logistics LLC	American Civil Constructors/Pacific Pile and Marine

SITE CONTAMINATION:

In 1993 the Hurlen Construction site was reported to Washington State Department of Ecology (Ecology) and placed on the Leaking Underground Storage Tank (LUST) list.

In 1993, one gasoline and one diesel underground storage tank (UST) (500 to 999-gallon, exact sizes unknown)

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were decommissioned and removed from the Site. Soil samples from the north sidewall and center of the base of the tank excavation reportedly contained measurable concentrations of aged gasoline (182 milligrams per kilogram (mg/kg) and 256 mg/kg) and xylenes (1,687 ug/kg and 256 ug/kg) above Model Toxics Control Act (MTCA) Method A cleanup levels. Approximately 60 cubic yards of soil were overexcavated from these areas, and placed in a bermed area for onsite treatment. The excavation was reportedly filled with clean soil. The current status of the excavated and stockpiled soil is unknown, however this soil is assumed to remain at the Site.

During the 1980's and 1990's, Hurlen Construction applied for four shoreline management permits to build a bulkhead, wharf, pier extension, marine lift, and a storage grid, and to dredge the area just offshore of the property. Riprap was placed offshore to create a bulkhead.

A surface spill reportedly occurred at the Site in 1997, when approximately ten gallons of fuel oil were released into the Duwamish River from a Hurlen Construction boat moored along the property. No further information regarding this release was available for review.

In 2008, part of an ecology block wall along the shoreline was removed in order to allow removal of old barges from the Duwamish River. A ramp of fill material was constructed into the water, and fill material reportedly sloughed off into the Duwamish. Photographs indicate that the fill material is primarily soil mixed with rock, wood, vegetation, and possibly metal parts. There is no documentation in Ecology's files that samples of the fill material were collected.

During a Seattle Public Utilities inspection in 2010, acids, antifreeze, caustic bases, paints, oils, solvents, and grease were reportedly stored at the facility in areas unprotected from stormwater. A visible sheen was reportedly present on the ground surface, along with visual evidence of leakage from storage areas. A forklift at the property was also reportedly leaking oil onto the ground.

PAST REMEDIATION ACTIVITIES:

Approximately 60 cubic yards of soil were reportedly intended to be treated onsite, however no reports of remedial actions regarding this soil were available for review in Ecology's files.

CURRENT SITE CONDITIONS:

Seattle Public Utilities previously noted that improperly stored waste was present at the Site, but the waste was reportedly removed when American Civil Constructors vacated the site in 2010. A small surface spill of oil was reportedly observed in 2010.

Groundwater conditions at the Site have not been characterized, but Site groundwater is likely influenced by close proximity to the Duwamish River, with tidal fluctuations.

Concentrations of gasoline and xylenes were detected above MTCA Method A cleanup levels in soil at the Site. Concentrations of gasoline and xylenes in the final sidewalls of the excavation were reportedly below MTCA Method A cleanup levels, however the excavated soil was reportedly stockpiled onsite for treatment. The current condition and location of this soil is unknown, however the affected soil is assumed to be present at the site as a waste pile.

The approximate depth to groundwater is estimated to be 5 to 10 feet below ground surface, with groundwater flowing to the northeast (estimated based on surface topography). Subsurface soils are sand and silt.

SPECIAL CONSIDERATIONS:

Checked boxes indicate routes applicable for Washington Ranking Method (WARM) scoring

☐ **Surface Water**

The Site is covered by a stormwater permit, and while there is evidence of surface impacts at the Site, the impacts are due to parameters regulated under the site's stormwater permit.

☒ **Air**

Release of volatile compounds occurred to subsurface soil, and stockpiled soil may be stored aboveground at the Site.

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☒ **Groundwater**

Gasoline and xylenes were detected in Site soil at concentrations above the MTCA Method A cleanup level, and have the potential to transport to groundwater.

Throughout the 1980's and 1990's, dredging occurred just offshore of the Site within the Duwamish waterway. The adjacent offshore sediments have been analyzed for polychlorinated biphenyls (PCBs), polycyclic aromatic hydrocarbons (PAHs), metals, and amphipod and microtox bioassays, however this information is not considered in this Site Hazard Assessment (SHA). Soil samples from the Site have not been analyzed for these constituents, so there is no information available to evaluate whether Site soils are contributing to sediment contaminant concentrations.

ROUTE SCORES:

Surface Water/ Human Health:

Surface Water/ Environment:

Air/ Human Health: 32.9

Air/ Environment: 2.7

Groundwater/ Human Health: 35.5

Overall Rank: 4

REFERENCES:

- 1 A-1 Pump Service, Inc., 1993, Site Assessment Re: UST Site ID #011414 Hurlen Construction Co. 700 South Riverside Drive Seattle, WA 98108. April 10, 1993.
- 2 Ecology Water Resources Explorer, accessed May 2014.
<https://fortress.wa.gov/ecy/waterresources/map/WaterResourcesExplorer.aspx>
- 3 King County GIS Center iMAP application, Property Information, Groundwater Program, and Sensitive Areas mapsets. Accessed March 2014.
<http://www.kingcounty.gov/operations/GIS/Maps/iMAP.aspx>
- 4 Missouri Census Data Center, Circular Area Profiles - 2010 census data around a point location. <http://mcdc.missouri.edu/websas/caps10c.html>. Accessed March 2014.
- 5 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>
- 6 Pell, John, 2008, Email Re: Violation on Duwamish River. May 5, 2008.
- 7 Science Applications International Corporation, 2012, Lower Duwamish Waterway RM 2.2 to 3.4 West Riverside Drive, Summary of Existing Information and Identification of Data Gaps. Prepared for Washington State Department of Ecology. April 2012.
- 8 Seattle Public Utilities, 2009, Joint Inspection Program Sediment Remediation Initial Inspection. January 11, 2009.
- 9 Thomas, Richard, 2008, Email Re: Violation on Duwamish River. May 13, 2008.
- 10 United States Environmental Protection Agency Region 10, 2008, Letter Re: Notice of Potential Liability Pursuant to Section 107(a) and Request for Information Pursuant to Section 104(e) of CERCLA, for the Lower Duwamish Waterway Superfund Site, Seattle, Washington. February 22, 2008.
- 11 United States Environmental Protection Agency Region 10, 2009, Letter Re: Supplemental Request for Information to Section 104(e) of CERCLA, for the Lower Duwamish Waterway Superfund Site, Seattle, Washington. November 30, 2009.
- 12 WARM Scoring Manual
- 13 WARM Toxicological Database
- 14 Washington Department of Transportation 24-hour Isopluvial Maps, January 2006 update.
<http://www.wsdot.wa.gov/publications/fulltext/Hydraulics/Wa24hrIsopluvials.pdf>

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Worksheet 2

Route Documentation

Cleanup Site ID: 9114

Hurlen Construction

Facility/Site ID: 42127616

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:

Site is covered by a stormwater permit, and no data is available for parameters not covered by the permit.

2. AIR ROUTE

List those substances to be considered for scoring:

Gasoline, xylenes

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

Prior detection in Site soil at concentrations above MTCA Method A cleanup levels

List those management units to be considered for scoring:

Soil vapor

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

Potential for vapor transport

3. GROUNDWATER ROUTE

List those substances to be considered for scoring:

Gasoline, xylenes

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

Prior detection in Site soils at concentrations above MTCA Method A cleanup levels

List those management units to be considered for scoring:

Groundwater

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

Potential for transport to groundwater

Worksheet 5**Air Route**

CSID: 9114

Site Name: Hurlen Construction

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
Gasoline	10	3	X	5
Xylenes	1	3	1	X
Highest Value				10
Bonus Points?				0
Toxicity Value				10

1.3 Mobility

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

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
Gasoline	31947	3	4	6
Xylenes	21714	3	3	5
Env. Final Matrix Value				6

1.6 Substance Quantity

Amount: Approximately 400 square feet

Basis: Estimated extent of remaining

petroleum-impacted soil (stockpiled)

Substance Quantity Value 3

Worksheet 5**Air Route**

CSID: 9114

Site Name: Hurlen Construction

2.0 Migration Potential**2.1 Containment**Containment Value

Explain Basis: No cover, and no vapor collection system present

3.0 Targets**3.1 Nearest Population**Population Distance Value

Approximately 470 feet to the nearest dwelling

3.2 Distance to and name of nearest sensitive environmentsSensitive Environment Value

0 feet to the Duwamish River

3.3 Population within 0.5 milesPopulation Value

776 population

4.0 ReleaseRelease to Air Value

Explain basis for scoring a release to air:

No confirmed release to air

Pathway Scoring - Air Route, Human Health Pathway

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

Where:

$$SUB_{AH} = (\text{Human toxicity} + 5) * (\text{Containment} + 1) + \text{Substance Qty}$$

$$REL_A = \text{Release to Air}$$

$$TAR_{AH} = \text{Nearest Population} + \text{Population within 1/2 mile}$$

SUB _{AH}	278
REL _A	0
TAR _{AH}	38
AIR _H	32.9

Pathway Scoring - Air Route, Environmental Pathway

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

Where:

$$SUB_{AE} = (\text{Environmental Toxicity Value} + 5) * (\text{Containment} + 1) + \text{Substance Qty}$$

$$REL_A = \text{Release to Air}$$

$$TAR_{AE} = \text{Nearest Sensitive Environment}$$

SUB _{AE}	124
REL _A	0
TAR _{AE}	7
AIR _E	2.7

Worksheet 6
Groundwater Route

CSID: 9114

Site Name: Hurlen Construction

1.0 Substance Characteristics

1.1 Human Toxicity

Substance	Drinking Water Standard Value	Acute Toxicity Value	Chronic Toxicity Value	Carcinogenicity Value
Gasoline	8	3	X	5
Xylenes	2	10	1	X

Highest Value 10

Bonus Points? 2

Toxicity Value

1.2 Mobility

Cations/Anions

Max Value:

Solubility

Max Value:

3

Mobility Value

1.3 Substance Quantity

Amount: 60 cubic yards

Basis: Estimated volume of remaining
petroleum-impacted soil

Substance Quantity Value

2.0 Migration Potential

2.1 Containment

Containment Value

Explain Basis: Contaminated soil in waste pile

2.2 Net Precipitation

>10 to 20 inches

Net Precipitation Value

2.3 Subsurface Hydraulic Conductivity

Sand and silt

Conductivity Value

2.4 Vertical Depth to Groundwater

0 to 25 feet

Confirmed release: No

Depth to Aquifer Value

3.0 Targets

3.1 Groundwater Usage

Aquifer Use Value

Private supply but alternate sources available with minimum hookup requirements

3.2 Distance to Nearest Drinking Water Well

8,690 feet

Well Distance Value

3.3 Population Served within 2 Miles

Population Served Value

12 people

Worksheet 6
Groundwater Route

CSID: 9114

Site Name: Hurlen Construction

3.4 Area Irrigated by GW Wells within 2 miles

Area Irrigated Value

0 acres

4.0 Release

Release to Groundwater Value

Explain basis for scoring a release to groundwater:

No confirmed release to groundwater

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

MIG_G = Depth to Aquifer + Net Precip + Hydraulic Conductivity

REL_G = Release to Groundwater

TAR_{GH} = Aquifer Use + Well Distance + Population Served + Area Irrigated

SUB_{GH}	200
MIG_G	14
REL_G	0
TAR_{GH}	8.5
GW_H	35.5

Washington Ranking Method

Route Scores Summary and Ranking Calculation Sheet

Site Name: Hurlen Construction

CSID: 9114

Site Address: 700 South Riverside Drive

FSID: 42127616

HUMAN HEALTH ROUTE SCORES

Enter Human Health Route Scores for all Applicable Routes:

Pathway	Route Score	Quintile Group
Surface Water	ns	0
Air	32.9	4
Groundwater	35.5	3

H=	4
M=	3
L=	0

$$\begin{array}{c} H^2 \\ 16 \end{array} + \begin{array}{c} 2M \\ 6 \end{array} + \begin{array}{c} L \\ 0 \end{array} = \frac{\quad}{8}$$

**Human Health
Priority Bin Score:**
3
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	2.7	2

H=	2
L=	0

$$\begin{array}{c} H^2 \\ 4 \end{array} + \begin{array}{c} 2L \\ 0 \end{array} = \frac{\quad}{7}$$

**Environment
Priority Bin Score:**
1
rounded up to next
whole number

Comments/Notes:

**FINAL MATRIX
RANKING**

4

FOR REFERENCE:

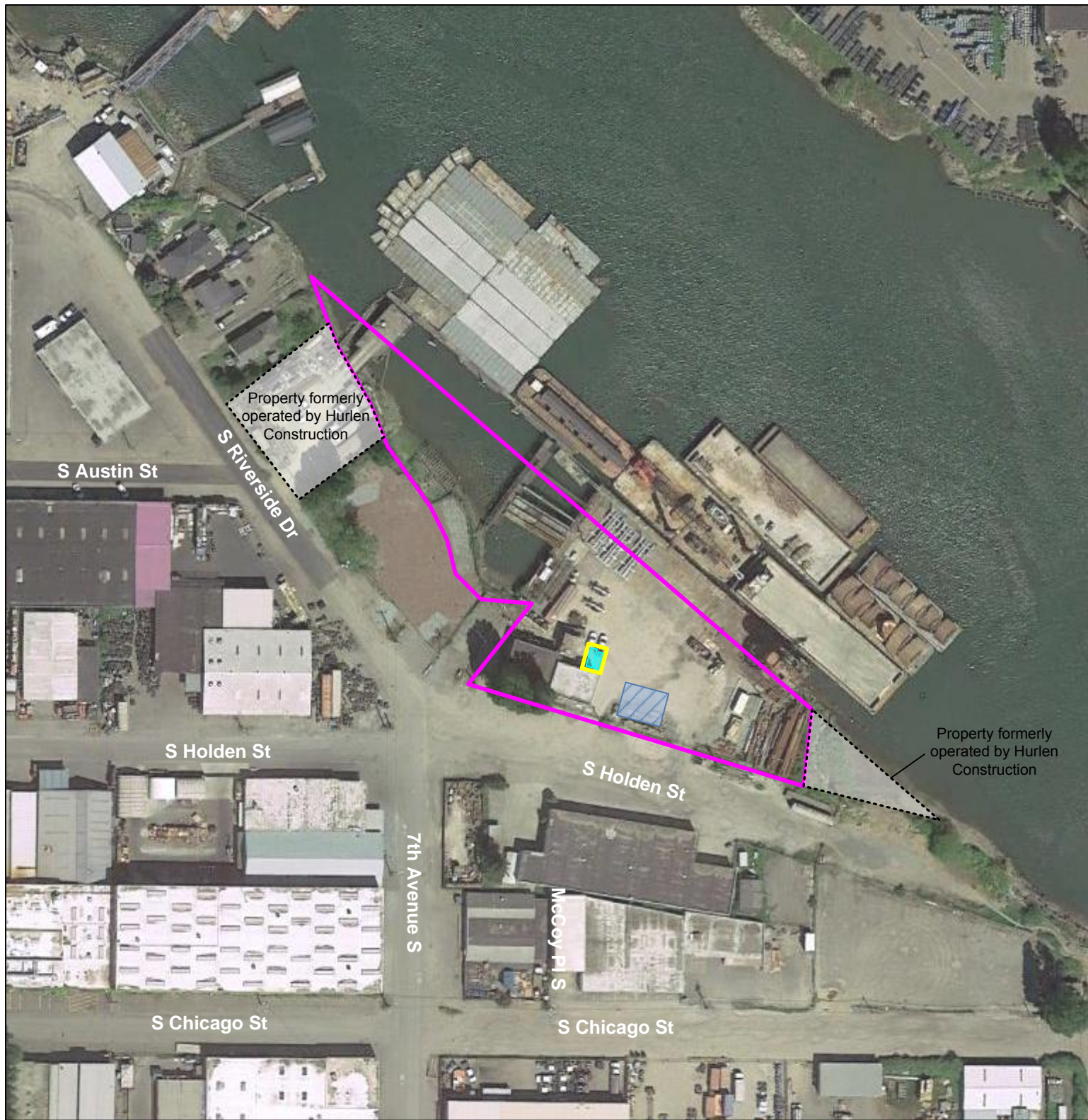
Final WARM Bin Ranking Matrix

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	N/A

Quintile Values for Route Scores - August 2014 Values

Quintile	Human Health			Environment	
	Surface Water	Air	Ground Water	Surface Water	Air
5	>= 30.7	>= 37.3	>= 51.9	>= 49.8	>= 30.3
4	>= 22.5	>= 23.0	>= 41.0	>= 30.9	>= 23.0
3	>= 13.0	>= 14.5	>= 33.1	>= 23.2	>= 14.1
2	>= 6.8	>= 8.1	>= 23.5	>= 10.7	>= 1.6
1	<= 6.7	< 8.1	<= 23.4	<= 10.6	<= 1.5

Quintile value associated with each route score entered above



Legend:

- Property location (approximate)
- Excavation area (approximate)
- Former building location (approximate)
- Former UST location (approximate)

Notes:

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



Hurlen Construction
700 South Riverside Drive
Seattle, WA 98108

Site Overview Map

CSID 9114
CSID9114.vsd