SITE HAZARD ASSESSMENT
Worksheet 1
Summary Score Sheet

SITE INFORMATION:

Cleanup Site ID: 12293

Borrelli Real Estate Investments

Facility/Site ID: 24470

4404 S 133rd St

Tukwila, King County, WA 98168

Section:	15	Latitude:	47.48501
Township:	23N	Longitude:	-122.27830
Range:	4E	Tax/Parcel ID:	2613200134

Site scored/ranked for the Hazardous Sites List Publication: August 2015

SITE DESCRIPTION:

The Borrelli Real Estate Investments site (Site) is a former gasoline service station and private residence located in Tukwila, King County, Washington. The 0.58-acre property is located approximately 1,750 feet from the Duwamish River, and zoned for commercial/light industrial (C/LI) use.

Adjacent properties include two warehouses to the south, a vacant property to the west, and several businesses (Ace Construction and Clark Mechanical) to the northeast. The Site is bordered on the northeast by South 131st Place, on the south by South 133rd Street, and on the west by 44th Avenue South.

The Site is currently operated as a vacant property by Borrelli Real Estate Investments LLC.

The Site was formerly a gasoline service station, however the dates of operation are unknown.

Aerial imagery of the Site from April 2015 suggests that the old station building and private residence have been demolished.

SITE BACKGROUND:

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

From	To	Operator/Tenant	Activity
	2013	Mary Ann Garvich and Thomas P. Scheffler et al.	
2013	2015	Borrelli Real Estate Investments LLC	

SITE CONTAMINATION:

In 2013 the Borrelli Real Estate Investments site was reported to Washington State Department of Ecology (Ecology) and placed on the Leaking Underground Storage Tank (LUST) list.

In 2013, Borrelli Real Estate Investments LLC purchased the property. A geophysical survey was performed in May 2013, and one anomaly was identified. The anomaly was suspected to be a 300-gallon gasoline underground storage tank (UST) associated with the Site's former use as a gasoline service station. The tank reportedly contained 300 gallons of a gasoline and water mixture, which was pumped out and removed from the Site. Groundwater was encountered at approximately 5 feet below ground surface (bgs), but was not sampled. The UST was removed, and soil samples were collected from the sidewalls and base of the excavation. Samples from the north and west sidewalls and from the south and east sidewalls were composited and analyzed for gasoline-range hydrocarbons, lead, and benzene, toluene, ethylbenzene and xylenes (BTEX).

The composite soil sample from the south and east sidewall contained concentrations of gasoline above MTCA Method A cleanup levels. One soil sample collected from the pump dispenser island also contained gasoline-range hydrocarbons above the MTCA Method A cleanup level.

PAST REMEDIATION ACTIVITIES:

SITE HAZARD ASSESSMENT
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Further reports of remediation activities or site characterization were not available for review in Ecology's files.

CURRENT SITE CONDITIONS:

Groundwater within the UST exacavation was observed, but not characterized. Gasoline is present in Site soil at concentrations above the MTCA Method A cleanup level; however, the extent of gasoline-impacted soil at the Site has not been characterized.

The approximate depth to groundwater is 5 to 15 feet below ground surface, with groundwater flowing to the east (estimated based on surface topography). Subsurface soils are sand and gravel fill overlying silts and clayey silts (observed in the UST exacavation).

SPECIAL CONSIDERATIONS:

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

☐ **Surface Water**

Release occurred in the subsurface.

☑ **Air**

Release of volatile compounds occurred to subsurface soils.

☑ **Groundwater**

Gasoline was detected in soil at a concentration above the MTCA Method A cleanup level. Groundwater was encountered, but has not been characterized.

ROUTE SCORES:

Surface Water/ Human Health:		Surface Water/ Environment:	
Air/ Human Health:	26.0	Air/ Environment:	1.5
Groundwater/ Human Health:	51.2		

Overall Rank: 4

REFERENCES:

1 Ecology Water Resources Explorer, accessed April 2015. https://fortress.wa.gov/ecy/waterresources/map/WaterResourcesExplorer.aspx

2 Environmental Associates, Inc., 2013, Underground Storage Tank Removal & Site Assessment, Former Gasoline Station, 4404 South 133rd Street, Tukwila, Washington. Prepared for Borrelli Real Estate Investments, LLC. 14 June.

3 Google Maps Imagery, Imagery Date April 19, 2015. Accessed July 2015.

4 King County GIS Center iMAP application, Property Information, Groundwater Program, and Sensitive Areas mapsets. Accessed April 2015. http://www.kingcounty.gov/operations/GIS/Maps/iMAP.aspx

5 Missouri Census Data Center, Circular Area Profiles - 2010 census data around a point location. http://mcdc.missouri.edu/websas/caps10c.html. Accessed April 2015.

6 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

7 WARM Scoring Manual

8 WARM Toxicological Database

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

10 Washington State Department of Ecology, 2013, Initial Investigation Field Report, ERTS # 642644. 22 July.

SITE HAZARD ASSESSMENT
Worksheet 2
Route Documentation

Cleanup Site ID: 12293 Borrelli Real Estate Investments

Facility/Site ID: 24470

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

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

Prior detection in Site soil at a concentration above the MTCA Method A cleanup level

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

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

Prior detection in Site soil at a concentration above the MTCA Method A cleanup level

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: 12293 **Site Name:** Borrelli Real Estate Investments

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

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
Gasoline	31947	3	4	6

Env. Final Matrix Value 6

1.6 Substance Quantity

Amount: Approximately 2,100 square feet

Basis: Estimated extent of impacted soil

Substance Quantity Value 4

Worksheet 5

Air Route

CSID: 12293 **Site Name:** Borrelli Real Estate Investments

2.0 Migration Potential

2.1 Containment Containment Value: 5

Explain Basis: At least 2 feet of soil cover and no vapor collection system present

3.0 Targets

3.1 Nearest Population Population Distance Value: 10

Approximately 325 feet to the nearest dwelling

3.2 Distance to and name of nearest sensitive environments Sensitive Environment Value: 7

Approximately 500 feet to Riverton Park

3.3 Population within 0.5 miles Population Value: 44

1,940 population

4.0 Release Release to Air Value: 0

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} =(Human toxicity + 5) * (Containment + 1) + Substance Qty	SUB_{AH}	154
REL_A = Release to Air	REL_A	0
TAR_{AH} = Nearest Population + Population within 1/2 mile	TAR_{AH}	54.0
	AIR_H	26.0

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}	70
REL_A = Release to Air	REL_A	0
TAR_{AE} = Nearest Sensitive Environment	TAR_{AE}	7.0
	AIR_E	1.5

Worksheet 6

Groundwater Route

CSID: 12293 **Site Name:** Borrelli Real Estate Investments

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

Highest Value 8

Bonus Points? 0

Toxicity Value 8

1.2 Mobility

Cations/Anions Max Value:

Solubility Max Value: 3 Mobility Value 3

1.3 Substance Quantity

Amount: Approximately 250 cubic yards

Basis: Estimated volume of impacted soil

Substance Quantity Value 3

2.0 Migration Potential

2.1 Containment Containment Value 10

Explain Basis: Contaminated soil

2.2 Net Precipitation >10 to 20 inches Net Precipitation Value 2

2.3 Subsurface Hydraulic Conductivity Conductivity Value 4

Sand and gravel overlying silt

2.4 Vertical Depth to Groundwater 5 feet

Confirmed release: No Depth to Aquifer Value 8

3.0 Targets

3.1 Groundwater Usage Aquifer Use Value 4

Private/Public supply, but alternate sources available with minimum hookup requirements

3.2 Distance to Nearest Drinking Water Well 1,700 feet

Well Distance Value 3

3.3 Population Served within 2 Miles Population Served Value 100

678,000 people; Site is located within 2 miles of King County Water District 43 wells

Worksheet 6

Groundwater Route

CSID: 12293 **Site Name:** Borrelli Real Estate Investments

3.4 Area Irrigated by GW Wells within 2 miles Area Irrigated Value 4

26 acres

4.0 Release Release to Groundwater Value 0

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	SUB_{GH}	157
MIG_G=Depth to Aquifer+Net Precip + Hydraulic Conductivity	MIG_G	14
REL_G = Release to Groundwater	REL_G	0
TAR_{GH} = Aquifer Use + Well Distance + Population Served + Area Irrigated	TAR_{GH}	110.8
	GW_H	51.2

Washington Ranking Method

Route Scores Summary and Ranking Calculation Sheet

Site Name: Borrelli Real Estate Investments **CSID:** 12293

Site Address: 4404 South 133rd Street, Tukwila, WA, 98168 **FSID:** 24470

HUMAN HEALTH ROUTE SCORES

Enter Human Health Route Scores for all Applicable Routes:

Pathway	Route Score	Quintile Group
Surface Water	ns	0
Air	26.0	4
Groundwater	51.2	4

H=	4
M=	4
L=	0

$$\frac{H^2 + 2M + L}{8} = \frac{16 + 8 + 0}{8}$$

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	1.5	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:

Site is located within 2 miles of several major wells

FINAL MATRIX RANKING **4**

FOR REFERENCE:

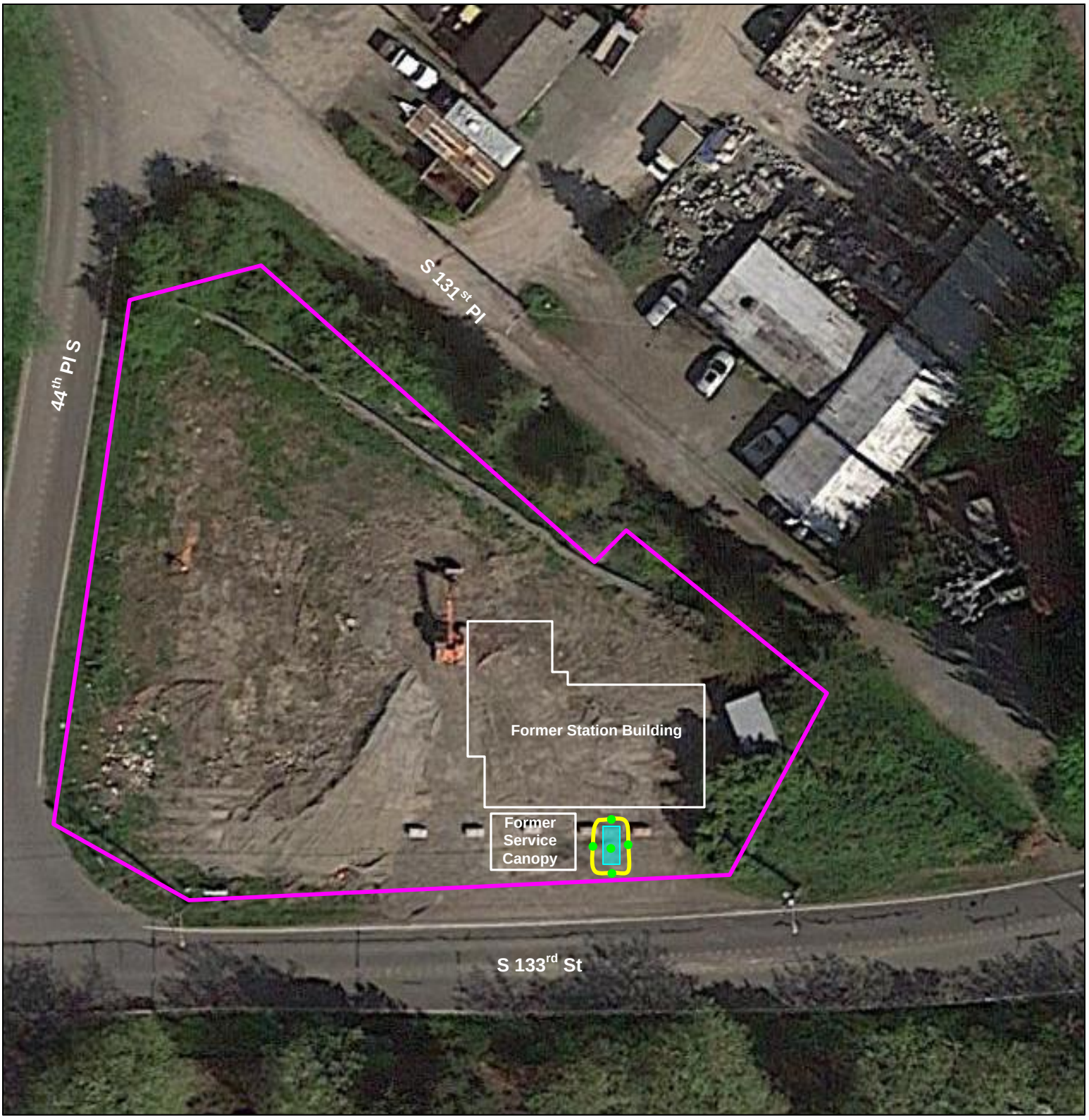
Final WARM Bin Ranking Matrix

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	NFA

Quintile Values for Route Scores - February 2015 Values

Quintile	Human Health: Surface Water	Air	Ground Water	Environment: Surface Water	Air
5	>= 30.7	>= 37.6	>= 51.6	>= 50.9	>= 29.9
4	>= 23.1	>= 23.8	>= 40.9	>= 31.2	>= 22.5
3	>= 14.1	>= 15.5	>= 33.2	>= 23.6	>= 14.0
2	>= 7.0	>= 8.5	>= 23.5	>= 11.0	>= 1.6
1	<= 6.9	<= 8.4	<= 23.4	<= 10.9	<= 1.5

Quintile value associated with each route score entered above



Legend:

- Property location (approximate)
- Excavation area (approximate)
- Former UST location (approximate)
- Soil sample (approximate)

Notes:

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

N

Borrelli Real Estate Investments
4404 South 133rd Street
Tukwila, WA 98168

DEPARTMENT OF ECOLOGY
State of Washington

Site Overview Map

CSID 12293
CSID12293.vsd