SITE HAZARD ASSESSMENT
Worksheet 1
Summary Score Sheet

SITE INFORMATION:

Cleanup Site ID: 7758

Gary Merlino Construction

Facility/Site ID: 7727938

9125 10th Avenue S

Seattle, King County, WA 98108

Section:	32	Latitude:	47.52109
Township:	24N	Longitude:	-122.32181
Range:	4E	Tax/Parcel ID:	2433700095, 2433700055, 2433700015, 2433200185

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

SITE DESCRIPTION:

The Gary Merlino Construction site (Site) is a former truck and farm equipment storage yard located in Seattle, King County, Washington. The 5.75-acre property is located approximately 2,900 feet from the Duwamish River, and zoned for industrial (IG2 U/65) use.

Adjacent properties include several industrial facilities and single family residences. To the south is King Electrical, and to the north and west are single family residences. A vacant commercial lot is to the east of the property. Public roadways border the Site on the north, west, and east sides.

The Site is currently operated as a Gary Merlino Construction contractor yard by Anmarco.

The Site currently houses the operations of a general construction contractor and tenants using warehouse space, all of which are construction related. Activities at the Site include concrete mixing, welding, and storage of construction supplies. Many large trucks arrive at and leave the facility daily.

The Site is located between 8th and 10th Avenue South, predominantly north of South Barton Street, and south of South Director Street. The northeast corner of the property is bordered by West Marginal Way South, also known as Highway 99. The property is part of the Sea King Industrial Park source control area.

The majority of the Site is paved, except for the southwest portion of the property. Drainage onsite is through two different basins: the northeast section of the lot drains to 10th Avenue South, and the remainder of the property discharges to South Barton Street and the 96th Street storm drain system. The first drainage includes a fueling area, wash pad, and welding facility, while the second drainage is used for outside storage of concrete, metal parts, and soil. One oil/water separator is located onsite, near the entrance to the property off of 10th Avenue South. All areas of the property have construction equipment storage. The Site has an industrial general stormwater permit (permit number WAR003120).

SITE BACKGROUND:

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

From	To	Operator/Tenant	Activity
	2014	Gary Merlino Construction	Construction contractor yard and warehouse

SITE CONTAMINATION:

In 1999 the Gary Merlino Construction site was reported to Washington State Department of Ecology (Ecology) and placed on the Leaking Underground Storage Tank (LUST) list.

In 1997, prior to being placed on the LUST list, Ecology received a report of illegal dumping at the Site. An Ecology employee reportedly observed a Merlino vactor truck releasing wastewater on the north end of the Merlino property.

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The 1999 release was reported when petroleum-impacted soils were encountered in the process of removing two underground storage tanks (USTs).

PAST REMEDIATION ACTIVITIES:

One diesel UST and one unleaded gasoline UST were installed on the property in 1994. Both tanks were single walled 10,000-gallon USTs, and were connected to two dispensing pumps approximately 15 feet away. The two tanks were located approximately 30 feet north of the office building. The tanks were decommissioned in 1998, and removed from the property in July 1999. Soils surrounding the tanks were excavated and temporarily stockpiled at the Site. The excavation area extended approximately 9.5 feet below ground surface (bgs), and groundwater was encountered at approximately 9 to 12 feet bgs. Soil samples were collected from the pump area, sidewalls and stockpiled soil. These soil samples identified concentrations of benzene (0.28 milligrams per kilogram (mg/kg)), gasoline (1,300 mg/kg), and ethylbenzene (6.5 mg/kg) above Model Toxics Control Act (MTCA) Method A cleanup levels for soils from the pump area and the north edge of the excavation (gasoline only). Diesel was detected in 6 of 8 soil samples, but at concentrations below the MTCA Method A cleanup level. Following soil sampling, the excavation pit was expanded, to a depth of approximately 12 feet bgs. Approximately 200 cubic yards of soil were excavated and stockpiled on the Site. Confirmation soil samples collected from the excavation indicated gasoline was present at concentrations below the MTCA Method A cleanup level. Water samples collected from the bottom of the pit contained concentrations of gasoline (36 milligrams per liter (mg/L)), benzene (0.053 mg/L), ethylbenzene (0.7 mg/L), xylenes (1.8 mg/L), and diesel (10 mg/L) above MTCA Method A cleanup levels for groundwater. The excavation was backfilled and covered with concrete.

Ecology conducted stormwater compliance inspections at the property in 2007 and 2008, as part of source control for the Lower Duwamish Waterway, and because of the facility's failure to submit discharge monitoring reports (DMRs). Quarterly stormwater sampling at the Site indicated that zinc, copper, and turbidity were above benchmark values for the Site's stormwater permit, which triggered Level II source control actions and storm event sampling. Ecology inspectors also noted the presence of oil stains on dirt and gravel where heavy machinery was parked. A source control report from 2008 shows that water discharging to the storm drains contained concentrations of zinc above the permit benchmark value, but below the MTCA Method B cleanup level.

CURRENT SITE CONDITIONS:

Groundwater and soil impacts were identified in 1999 when two USTs were removed. Gasoline, benzene, and ethylbenzene have been previously detected in groundwater and soils at concentrations above MTCA Method A cleanup levels. Xylenes and diesel have also been detected in groundwater at concentrations above the corresponding MTCA Method A cleanup levels. Stormwater runoff at the Site is monitored quarterly as a condition of the site's industrial stormwater general permit. DMRs submitted for 2013 indicate concentrations of zinc, copper, and turbidity were above the established benchmarks.

The approximate depth to groundwater is 9 to 12 feet below ground surface, with groundwater flowing to the east (based on surface topography). Subsurface soils are poorly graded sand with silt (based on soils encountered during the UST excavation).

SPECIAL CONSIDERATIONS:

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

☐ **Surface Water**

The Site has been above benchmark levels for stormwater discharge, however the Site is covered by a stormwater permit.

☑ **Air**

Release of volatile compounds occurred in subsurface soils.

☑ **Groundwater**

Gasoline, diesel, benzene, ethylbenzene, and xylenes have been detected in groundwater at concentrations above MTCA Method A cleanup levels.

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Zinc, copper, and turbidity have been above benchmarks for stormwater runoff, but were not evaluated as the Site is covered by a stormwater permit, and there is no evidence of surface impacts for parameters not covered by the permit.

ROUTE SCORES:

Surface Water/ Human Health:		Surface Water/ Environment:	
Air/ Human Health:	32.9	Air/ Environment:	1.5
Groundwater/ Human Health:	44.1		

Overall Rank: 4

REFERENCES:

1 AMEC Geomatrix, Inc., 2008, Level II Source Control Report, Merlino Construction Storage Yard and Maintenance Facility, Seattle, Washington. December 2008.

2 Blue Sage Environmental, Inc., 1999, Site Characterization Report, Release from Underground Storage Tank System. August 31, 1999.

3 Department of Ecology and Science Applications International Corporation, 2013, Lower Duwamish Waterway RM 3.8 to 4.2 West (Sea King Industrial Park) Source Control Action Plan. August 2013.

4 Ecology Water Resources Explorer, accessed February 2014. https://fortress.wa.gov/ecy/waterresources/map/WaterResourcesExplorer.aspx

5 King County GIS Center iMAP application, Property Information, Groundwater Program, and Sensitive Areas mapsets. Accessed February 2014. http://www.kingcounty.gov/operations/GIS/Maps/iMAP.aspx

6 King County Water and Land Resources Division, 1997, Drainage Investigation Report. July 17, 1997.

7 Missouri Census Data Center, Circular Area Profiles - 2010 census data around a point location. http://mcdc.missouri.edu/websas/caps10c.html. Accessed February 2014.

8 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

9 Science Applications International Corporation, 2013, Lower Duwamish Waterway RM 3.8 to 4.2 West Sea King Industrial Park Summary of Existing Information and Identification of Data Gaps. May 2013.

10 WARM Scoring Manual

11 WARM Toxicological Database

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

SITE HAZARD ASSESSMENT
Worksheet 2
Route Documentation

Cleanup Site ID: 7758 Gary Merlino Construction

Facility/Site ID: 7727938

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:

The 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, benzene, ethylbenzene

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

Presence in shallow soil

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, benzene, ethylbenzene, xylenes, diesel

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

Presence detected in groundwater

List those management units to be considered for scoring:

Groundwater

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

Prior detections in groundwater above MTCA Method A cleanup levels

Worksheet 5

Air Route

CSID: 7758 **Site Name:** Gary Merlino 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 (benzene)	10	3	X	5
ethylbenzene	1	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
gasoline (benzene)	31947	3	4	6
ethylbenzene	X	X	3	X

Env. Final Matrix Value 6

1.6 Substance Quantity

Amount: 1,000 square feet

Basis: Estimated extent of soil contamination based on location of former USTs

Substance Quantity Value 4

Worksheet 5

Air Route

CSID: 7758 **Site Name:** Gary Merlino Construction

2.0 Migration Potential

2.1 Containment Containment Value: 5

Explain Basis: Release occurred in the subsurface with no vapor collection system

3.0 Targets

3.1 Nearest Population Population Distance Value: 10

600 feet to nearest dwelling

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

650 feet to South Park Meadow (park)

3.3 Population within 0.5 miles Population Value: 58

3,385 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}	68
	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} =(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
	AIR_E	1.5

Worksheet 6

Groundwater Route

CSID: 7758 **Site Name:** Gary Merlino Construction

1.0 Substance Characteristics

1.1 Human Toxicity

Substance	Drinking Water Standard Value	Acute Toxicity Value	Chronic Toxicity Value	Carcinogenicity Value
Gasoline (benzene)	8	3	X	5
Ethylbenzene	4	3	1	X
Xylenes	2	10	1	X
Diesel	4	5	3	X

Highest Value 10

Bonus Points? 2

Toxicity Value 12

1.2 Mobility

Cations/Anions Max Value:

Solubility Max Value: 3 Mobility Value 3

1.3 Substance Quantity

Amount: 90 cubic yards

Basis: Estimated extent of petroleum-impacted soil based on former UST location

Substance Quantity Value 2

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

Poorly graded sand with silt

2.4 Vertical Depth to Groundwater 0 to 25 feet

Confirmed release: Yes Depth to Aquifer Value 8

3.0 Targets

3.1 Groundwater Usage Aquifer Use Value 4

Private supply but alternate sources available with minimum hookup requirements

3.2 Distance to Nearest Drinking Water Well >2,640-5,000 feet

Well Distance Value 2

3.3 Population Served within 2 Miles Population Served Value 3

9 people

Worksheet 6

Groundwater Route

CSID: 7758 **Site Name:** Gary Merlino Construction

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

4 acres

4.0 Release Release to Groundwater Value 5

Explain basis for scoring a release to groundwater:

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}	200
MIG_G=Depth to Aquifer+Net Precip + Hydraulic Conductivity	MIG_G	14
REL_G = Release to Groundwater	REL_G	5
TAR_{GH} = Aquifer Use + Well Distance + Population Served + Area Irrigated	TAR_{GH}	10.5
	GW_H	44.1

Washington Ranking Method

Route Scores Summary and Ranking Calculation Sheet

Site Name: Gary Merlino Construction **CSID:** 7758

Site Address: 9125 10th Avenue South **FSID:** 7727938

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	44.1	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:

FINAL MATRIX RANKING **4**

FOR REFERENCE:

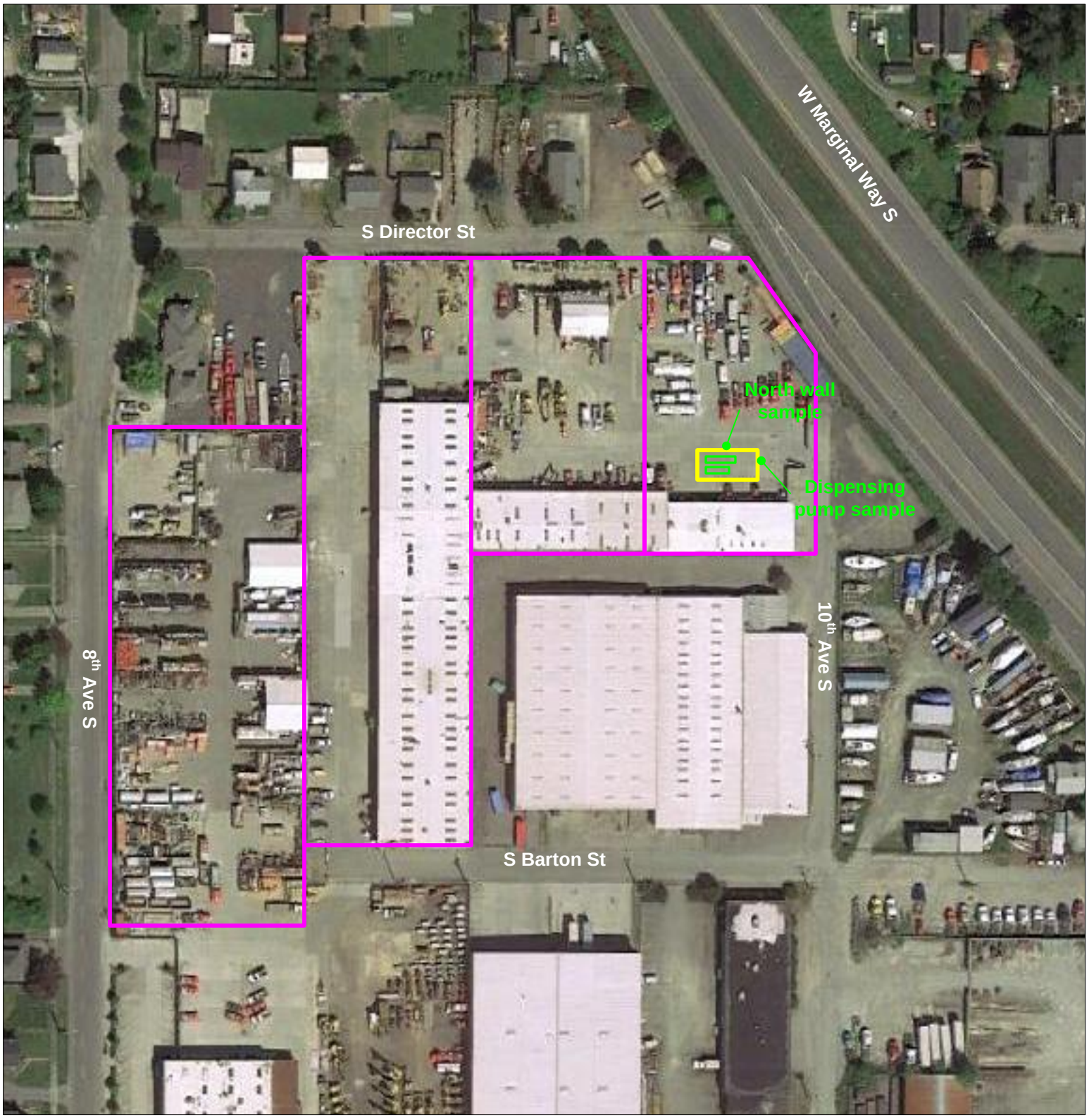
Final WARM Bin Ranking Matrix

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 - August 2014 Values

Quintile	Human Health: Surface Water	Air	Ground Water	Environment: 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 UST location (approximate)
- Soil sample location (approximate)

Notes:

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

N

Gary Merlino Construction
9125 10th Avenue South
Seattle, WA 98108

DEPARTMENT OF ECOLOGY
State of Washington

Site Overview Map

CSID 7758
CSID7758.vsd