SITE HAZARD ASSESSMENT
WORKSHEET 1
Summary Score Sheet

SITE INFORMATION:

L & E Auto Sales
227 Naval Ave & 2101 Burwell
Bremerton, WA 98312

Section/Township/Range: S14/ T24N/ R1E
Latitude: 47.56527
Longitude: -122.64653
FS ID #: 14170
Parcel # 3778-005-001-0002

Site scored/ranked for the February 2013 Hazardous Sites List update.
January 28, 2013

SITE DESCRIPTION

The L&E Auto Sales site is located in the City of Bremerton. The City is bounded on the southeast and east by Sinclair Inlet and Port Orchard Passage. Land use in the area is predominately commercial with nearby residential developments. The site topography slopes west towards a drainage referred to as the Callow sub basin, which then drains to Sinclair Inlet. This property is upland, on the northwest corner of the intersection of Burwell St. and Naval Ave.

The site was previously a vehicle sales lot, and prior to that, a taxi cab company occupied the site. The 0.25 acre site has operated as a vehicle sales lot from 1961 until 2012 and is currently vacant. The site presently includes two structures; a stick built office and a single story carport used for routine maintenance and storage. The majority of the site is asphalt-paved with utilities that include public water and connections to sanitary sewer. Storm drains have not been identified on-site; however; stormwater runoff travels overland and westward into the storm system along Burwell Ave. See **Figure 1** for a vicinity map.

Owner contact information: Frick N Frack
C\O Ric Bearbower
PO BOX 1010
Silverdale, WA 98383

REMEDIAL ACTION AND EVALUATION

Prior to Ecology's receipt of Emergency Response Tracking System (ERTS) report #623271 on August 20, 2010, DLH Environmental Consulting (DLH) conducted a limited assessment of subsurface conditions at the site on June 3, 2010. Assessment at the site included drilling six boreholes around the perimeter of the property and the collection of soil samples for Total Petroleum Hydrocarbons as Gas (TPH-Gx) and Diesel (TPH-Dx).

After confirming the presence of heavy oil-impacted soils during the June 2010 assessment, DLH facilitated the removal of one waste oil tank and one hydraulic lift on August 19, 2010. In addition,

exploratory work was initiated and completed to locate any other underground storage tanks (USTs). As a result, three USTs and numerous product lines were discovered on the northeast corner of the property. Following removal of USTs, soil samples were collected and analyzed from the tank excavation on August 20, 2010 for TPH-Gx, TPH-Dx, Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX).

According to cleanup reports by DLH, four USTs and 75.95 tons of petroleum contaminated soils (PCS) were removed from the area around tank cavities and service lines. Sampling around the excavation and associated service line trenches revealed gasoline and diesel range PCS was still in place throughout the excavation area above Model Toxicity Control Act (MTCA) cleanup levels. Removal of USTs and associated service lines was performed by Pacific Environmental Services Company (PESCO). See **Figure 2** for a DLH map of tank and product line locations.

Several documents were submitted to Ecology's Voluntary Cleanup Program (VCP). They are:

- Washington State Department of Ecology – ERTS Report #623271, August 20, 2010
- Phase II Environmental Site Assessment Report, L&E Auto Sales: 2101 Burwell Place, Bremerton WA, DLH Environmental Consulting, June 17, 2010.
- Underground Storage Tank Decommissioning and Final Cleanup Report, L&E Auto Sales: 2101 Burwell Place, Bremerton WA, DLH Environmental Consulting, January 12, 2011

No other records of correspondence between DLH, PESCO, and Ecology were found during review of files.

Sampling Results

DLH sampled numerous locations around the former tank and service line location for contaminated soil and groundwater. A total of 39 samples were taken for TPH-Gx, TPH-Dx and BTEX. Results of sampling indicated contaminant levels for TPH-Gx, TPH-Dx and BTEX in soil were in excess of MTCA standards. See **Table 1** for soil sample results and **Figure 3** for a DLH map of sample locations.

Table 1. DLH Soil Sampling Results

DLH Summary of Soil Analytical Results									
Location	**Date Sampled**	**Sample Depth (feet bgs)**	**Analytical Results (ppm)**						
			TPH as Gasoline	**TPH as Diesel/ Motor oil**	**B**	**T**	**E**	**X**	**Lead**
MTCA Method A			**30**	**2000/2000**	**0.03**	**7**	**6**	**9**	**250**
81910-N	08/19/2010	4	NA	7100/27000	NA	NA	NA	NA	NA
81910-S	08/19/2010	4	NA	<50/<250	NA	NA	NA	NA	NA
81910-E	08/19/2010	4	NA	<50/<250	NA	NA	NA	NA	NA
81910-W	08/19/2010	4	NA	<50/<250	NA	NA	NA	NA	NA
81910-B	08/19/2010	5	NA	11000/33000	NA	NA	NA	NA	NA
81910-B+4'	08/19/2010	8	NA	5600/13000	NA	NA	NA	NA	NA
81910-Hyd-7'	08/19/2010	8	NA	50/250	NA	NA	NA	NA	NA
82010-Pipes	08/20/2010	-	<2	NA	<0.02	<0.02	<0.02	<0.06	NA
82010 T1-B	08/20/2010	8	5100	NA	<0.8	19	40	300	19.6
82010-T1-E	08/20/2010	8	<2	NA	<0.02	<0.02	<0.02	<0.06	NA

Table 1. DLH Soil Sampling Results (*continued*)

DLH Summary of Soil Analytical Results									
Location	**Date Sampled**	**Sample Depth (feet bgs)**	**Analytical Results (ppm)**						
			TPH as Gasoline	**TPH as Diesel/ Motor oil**	**B**	**T**	**E**	**X**	**Lead**
MTCA Method A			**30**	**2000/2000**	**0.03**	**7**	**6**	**9**	**250**
82010-T1-N	08/20/2010	8	4900	NA	<0.8	3.6	15	69	NA
82010-T1-S	08/20/2010	8	7400	NA	<0.8	15	36	280	NA
82010-T2-N	08/20/2010	8	8700	NA	6.0	92	100	720	NA
82010-T2-B-2	08/20/2010	8	12000	NA	1.5	120	110	790	18.3
82010-T2-W	08/20/2010	8	120	NA	<0.02	0.15	0.32	2.0	NA
82010-T2B-4	08/20/2010	12	20000	NA	3.4	460	290	2000	NA
82310-T3-B-9'5"	08/23/2010	9.5	6600	NA	<2	93	120	790	NA
82310-T3-B-12	08/23/2010	12	32	NA	0.09	1.6	0.80	4.6	NA
82310-T3-W-9	08/23/2010	12	6600	NA	9.1	320	170	1100	NA
82310-T3-S-10	08/23/2010	10	8900	NA	<2	49	100	830	NA
82310-T3-E-10	08/23/2010	10	15	NA	<0.02	0.075	0.11	0.75	NA
82310-pipes-w-2	08/23/2010	NA	NA	NA	NA	NA	NA	NA	NA
101110-B-14	10/11/2010	14	<5	NA	<0.02	<0.02	<0.02	<0.06	NA
101110-S-14	10/11/2010	14	140	NA	<0.02	0.35	0.47	4.3	NA
101110-N-14	10/11/2010	14	3	NA	<0.02	<0.02	<0.02	<0.06	NA
101110-E-14	10/11/2010	14	5.9	NA	<0.02	<0.02	0.042	0.43	NA
101110-W-14	10/11/2010	14	5700	NA	<2	68	72	420	NA

** highlighted results indicate MTCA exceedences*
NA= No analysis

SHA Site Visit

In preparation for conducting a site hazard assessment (SHA) for the L&E Auto Sales site, a site visit was conducted by Kitsap Public Health District (KPHD) staff on January 15, 2013. The site visit was conducted to observe current conditions at the property and give KPHD staff a familiarity with the site and the surrounding area, including nearby drinking water well locations, and surface water flow directions.

PATHWAY SCORING

Groundwater Pathway

The groundwater contaminant route was scored as a spill or discharge from contaminated soils. Vertical depth to groundwater is 51 feet below ground surface. The soil in the vicinity of the borings were a mixture of imported non-native fill material (including old brick and crushed asphalt) underlain by native clay. The pathway was scored as contamination confirmed by analytical evidence. Drinking water wells within two miles of the site include 48 residential systems, which serve approximately110 persons.

SPECIAL CONSIDERATIONS (include limitations in site file data or data which cannot be accommodated in the model, but which are important in evaluating the risk associated with the site, or any other factor(s) over-riding a decision of no further action for the site):

Due to the significant contamination documented on-site being primarily subsurface, the surface water and air routes are not applicable for WARM scoring for this site. Thus, only the groundwater route will be scored. In addition, location of nearest public, drinking-water wells were not considered during scoring because of reported hydraulic separation.

ROUTE SCORES:

Surface Water/Human Health:	**NS**	Surface Water/Environmental:	**NS**
Air/Human Health:	**NS**	Air/Environmental:	**NS**
Groundwater/Human Health:	**16.27**		

OVERALL RANK: **5**

WORKSHEET 2
Route Documentation

1. **SURFACE WATER ROUTE –** *Not Scored*
   a. List those substances to be considered for scoring: Source:

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

   c. List those management units to be considered for scoring: Source:

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

2. **AIR ROUTE –** *Not Scored*
   a. List those substances to be considered for scoring: Source:

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

   c. List those management units to be considered for scoring: Source:

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

3. **GROUNDWATER ROUTE**
   a. List those substances to be considered for scoring: Source: 1,3

      TPH-Gx, TPH-Dx, BTEX

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

      These substances were detected in on-site subsurface soil and samples associated with the site in concentrations exceeding their respective MTCA cleanup levels.

   c. List those management units to be considered for scoring: Source: 1,3

      Subsurface soils

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

      The contaminating substances were detected in on-site subsurface soil samples in concentrations exceeding their respective MTCA cleanup levels.

WORKSHEET 6
Groundwater Route

1.0 SUBSTANCE CHARACTERISTICS

1.2 Human Toxicity

	Substance	Drinking Water Standard (µg/L)	Value	Acute Toxicity (mg/ kg-bw)	Value	Chronic Toxicity (mg/kg/day)	Value	Carcinogenicity		Value
								WOE	PF*	
1	TPH-Gx w/benzene	5	8	3306	3	--	ND	A	0.029	5
2	TPH-Dx	160	4	490	5	--	ND	--	--	ND
4	Ethylbenzene	700	4	3500	3	0.1	1	-	ND	-
5	Toluene	2000	2	5000	3	0.2	1	-	ND	-
6	Xylenes	10000	2	50	10	2	1	-	ND	-

** Potency Factor*

Source: 1,2,6
Highest Value: 8
(Max = 10)
Plus 2 Bonus Points? 0
Final Toxicity Value: 8
(Max = 12)

1.2 Mobility (use numbers to refer to above listed substances)

Cations/Anions	OR	Solubility (mg/L)
1.8x10^3		3
3x10>1		1
1.50E+02		2
5.40E+02		2
2.0+2		2

Source: 1,2,6
Value: 3
(Max = 3)

1.3 Substance Quantity:

Explain basis: Unknown, use default = 1

Source: 1,2,6
Value: 3
(Max=10)

2.0 MIGRATION POTENTIAL

		Source	Value
2.1	**Containment (explain basis):** Contaminated area capped, scored as a landfill: i) No liner (3); ii) Low permeability cover (1); iii) No leachate collection system (2) = 6	6,7	**5** (Max = 10)
2.2	**Net precipitation:** 29.7"- 5.1"= 24.1"	8	**3** (Max = 5)
2.3	**Subsurface hydraulic conductivity:** non-native deposits	1,3	**3** (Max = 4)
2.4	**Vertical depth to groundwater:** 51'	1,3	**4** (Max = 8)

3.0 TARGETS

		Source	Value
3.1	**Groundwater usage:** Public supply	9	**5** (Max = 10)
3.2	**Distance to nearest drinking water well:** 2,500 feet	9	**3** (Max = 5)
3.3	**Population served within 2 miles:** >10,000 = 100	9	**12** (Max = 100)
3.4	**Area irrigated by (groundwater) wells within 2 miles:** None	9	**0** (Max = 50)

4.0 RELEASE

	Source	Value
Explain basis for scoring a release to groundwater:	1,3	**5** (Max = 5)

SOURCES

1. Phase II Environmental Site Assessment Report, L&E Auto Sales: 2101 Burwell Place, Bremerton WA, DLH Environmental Consulting, June 17, 2010.
2. Washington Department of Ecology – ERTS Report, #623271, August 20, 2010.
3. Underground Storage Tank Decommissioning and Final Cleanup Report, L&E Auto Sales: 2101 Burwell Place, Bremerton WA, DLH Environmental Consulting, January 12, 2011.
4. Soil Survey of Kitsap County Area, WA, United States Department of Agriculture, Soil Conservation Service, September 1980.
5. Kitsap Public Health District site visit, Richard Bazzell, June 15, 2012.
6. Washington State Department of Ecology, Toxicology Database for Use in Washington Ranking Method Scoring, January 1992
7. Washington State Department of Ecology, WARM Scoring Manual, April 1992.
8. Washington Climate – Net Rainfall Table
9. Kitsap Public Health District, Drinking Water Database, August 2012.

Figure 1. L&E Auto Sales Vicinity Map

Figure 2. L&E Auto Sales DLH Map of Tank and Product Line Location

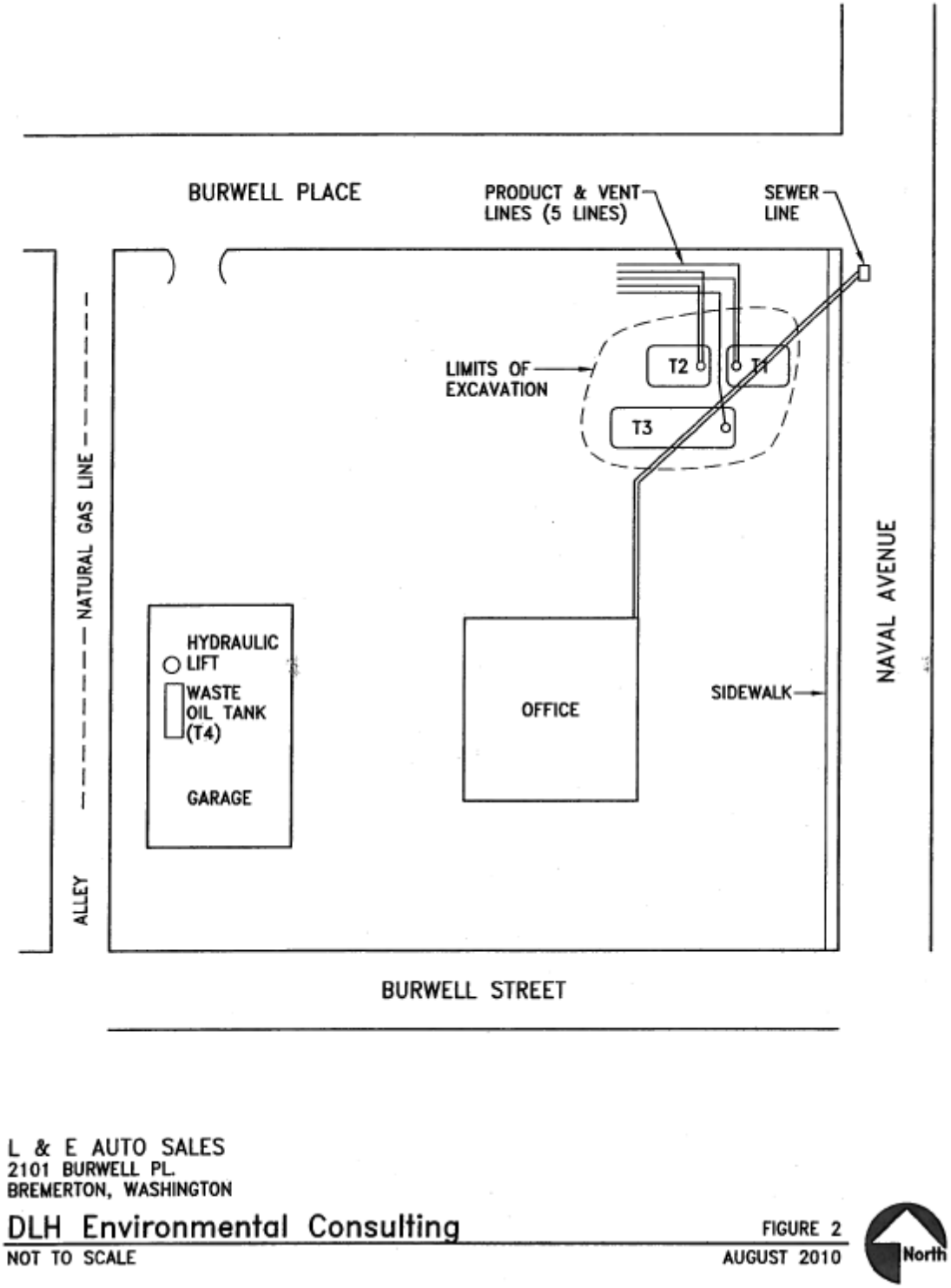

Figure 3. L&E Auto Sales DLH Sampling Area Map