CSID 2553

WORKSHEET 1
SUMMARY SCORE SHEET

Note: This document currently has no provision for sediment route scoring.

Site Name/Location (Street, City, County, Section/Township/Range, TCP ID Number):

D. Leonard & Sons
3626 34th Avenue S
Seattle, WA 98144
T-24N, R-4E, Sec-15
TCP ID# N-17-5129-000
Longitude: 122 Degrees, 17 Minutes, 23.39 Seconds
Latitude: 47 Degrees, 34 Minutes, 16.18 Seconds
Method: 99
Site scored for August 18,1998 Update

Site Description (Include management areas, substances of concern, and quantities):

The D Leonard & Sons site is an 8791 square foot commercial lot located on two parcels of land in the Columbia neighborhood of the City of Seattle. The surrounding area is a mix of commercial and residential properties. City water and sewer systems serve the site and the surrounding area. The current storm water system on this street is a combined sewer/storm drain. All future construction in the area will require a separate storm and sewer system in the future. Some of the storm drains in the neighborhood to the south of the site, along the surface drainage path, are separate at this time.

The site is mostly bare soil, although a small garage structure with a concrete parking area is located in the southwest corner of the site. The site is currently used for vehicle storage, including some old heating oil delivery trucks. In the past the site was used for storing and maintaining a fleet of construction vehicles.

The site was listed on the known or suspected hazardous waste sites list on June 7, 1991, due to results of an initial investigation by Norm Peck of Ecology, conducted on May 17, 1991. This investigation showed heavy oil staining, oil spillage to the ground surface around waste oil storage areas, lack of cover and containment of the waste oil storage drums and general lack of Best Management Practices. An early notice letter was mailed on August 24, 1993, to Michael Leonard, principal of D Leonard and Sons, advising them of the site listing. The property was taken back under the control of the past and current owner as a result of a failed attempt from D Leonard & Sons to purchase the property.

A site hazard assessment (SHA) visit was conducted by Peter Isaksen of the Seattle-King County Department of Public Health, Environmental Health Division (SKCDPH) on May 18, 1998. Dominic D'Angelo, current owner of the property, was present during the site visit. A tour of the site was conducted. Stained soils and bare spots where no vegetation was seen growing were noted on the site at this time. Due to the owner's time constraints, a sampling event was conducted on this site visit as well.

Three soil samples were taken by Isaksen and were tested for WTPH-Diesel- extended, Semivolatiles and Total RCRA Metals (8). The first sample (LEO1) was taken from the gravel/soil in an area of stained soils off the northwest corner of the small building. The excavated soils had a noticeable odor of petroleum. The second sample (LEO2) was taken 3 feet north of the south property line and 72 feet east of the west property line. The final sample (LEO3) was taken from the soils located near the northwest corner of the site. It was very difficult to find areas in the west half of this site that did not contain an irregular layer of asphalt, found below a couple inches of soil. Asphalt may have been chipped off and been included with samples LEO2 and LEO3.

Two of the three samples tested exceeded Method A Cleanup Levels for Soil for TPH-Diesel (200 mg/kg), with sample LEO1= 3800 mg/kg, and sample LEO3= 2900 mg/kg. Sample LEO2 was at the Method A cleanup level of 200 mg/kg. However, according to OnSite Environmental, hydrocarbons in the heavy oil range (>C24) are present in the sample which are elevating the diesel result. For Oil C24-C34 LEO1 showed 3000 mg/kg, LEO2 showed 820 mg/kg, and LEO3 showed 3600 mg/kg. There is no cleanup level listed for oil in the C24-C34 range. Some Metals were found above detection limits. One sample showed Cadmium at the Method A cleanup level (LEO2= 2.0 mg/kg), otherwise no sample exceeded Method A cleanup levels for metals. Sample results for Total Metals (EPA 6010B/7471A) above detection limits were:

LEO1: Barium = 47 mg/kg, Cadmium = 2.0 mg/kg, Chromium = 16 mg/kg, Lead = 20 mg/kg.
LEO2: Barium = 540 mg/kg, Chromium = 29 mg/kg, Lead = 76 mg/kg.
LEO3= Barium = 160 mg/kg, Cadmium = 0.76 mg/kg, Chromium = 34 mg/kg, Lead = 73 mg/kg.

Method A Cleanup Levels for Soils are listed as 2.0 mg/kg for Cadmium, 100.0 mg/kg for Chromium, and 250 mg/kg for Lead. Method A Cleanup Levels for Soils does not list Barium. Method B Formula Values for soil does list a cleanup level for Barium at 5,600 mg/kg.

Semivolatiles were not detected above detection limits for LEO1. LEO2 and LEO3 did show levels of some Semivolatiles above detection limits however these two samples may have contained asphalt remnants which were chipped from the asphalt found below the soil throughout the front half of this site. It was very difficult to find areas on this site that could be sampled without chipping some of the asphalt in place below the top layers of soil. The Semivolatiles found are all associated with asphalt products. Some of the resulting elevated levels were above Method B cleanup levels, however, as these levels are set at the PQL for these substances it is not considered a surprise that they should exceed the cleanup level. Therefore these substances will not be considered in the scoring of this site.

On the basis of this Site Hazard Assessment, completed by SKCDPH's Environmental Health Division, this site will be scored for the ground water, air and surface water routes.

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): N/A

ROUTE SCORES:

Surface Water/Human Health: 10.4 Surface Water/Environ.: 17.4

Air/Human Health: 28.6 Air/Environmental: ***NS***
Ground Water/Human Health: 17.6

OVERALL RANK: 4

WORKSHEET 2
ROUTE DOCUMENTATION

1. SURFACE WATER ROUTE

List those substances to be considered for scoring: Source: 2,3

TPH-Diesel

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

The above substance concentration is above MTCA Method A cleanup standards.

List those management units to be considered for scoring: Source: 3

Surface soil contamination.

Explain basis for choice of unit to be used in scoring. Source: 3

Surface soil is exposed to weather with no containment.

2. AIR ROUTE

List those substances to be considered for scoring: Source: 2

TPH-Diesel

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

The above substance concentration is above MTCA Method A cleanup standards.

List those management units to be considered for scoring: Source: 2,3

Surface soil contamination.

Explain basis for choice of unit to be used in scoring. Source: 3

Surface soil is exposed to weather with no containment.

3. GROUND WATER ROUTE

List those substances to be considered for scoring: Source: 2,3

TPH-Diesel

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

The above substance concentration is above MTCA Method A cleanup standards.

List those management units to be considered for scoring: Source: 3

Surface soil contamination.

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

Surface soil is exposed to weather with no containment.

WORKSHEET 4
SURFACE WATER ROUTE

1.0 SUBSTANCE CHARACTERISTICS

1.1 Human Toxicity

Substance	Drinking Water Standard (ug/l)	Val.	Acute Toxicity (mg/kg-bw)	Val.	Chronic Toxicity (mg/kg/day)	Val.	Carcino-genicity WOE	PF*	Val.
1. TPH-Diesel	20	6	490	5	0.004	3	-	-	5
2.									
3.									
4.									
5.									
6.									

*Potency Factor

Source: 1
Highest Value: 6
(Max.=10)

+2 Bonus Points? No
Final Toxicity Value: 6
(Max.=12)

1.2 Environmental Toxicity

(X) Freshwater
( ) Marine

Substance	Acute Water Quality Criteria (ug/l)	Value	Non-human Mammalian Acute Toxicity (mg/kg)	Value
1. TPH-Diesel	2300	2		
2.				
3.				
4.				
5.				
6.				

Source: 1 **Value: 2**
(Max.=12)

1.3 Substance Quantity: 2396 square feet Source: 3 **Value: 6**
Explain basis: 0.44 acre lot, about 1/8 lot appeared contaminated (Max.=10)

2.0 MIGRATION POTENTIAL

2.1 Containment Source: 3 **Value: 10**
Explain basis: Surface discharge with no containment, discharge unknown for existing storm drain on site. (Max.=10)

2.2 Surface Soil Permeability: Silty Sand Source: 3 **Value: 3**
(Max.=7)

2.3 Total Annual Precipitation: 34.8 inches Source: 4 **Value: 3**
(Max.=5)

2.4 Max. 2-Yr/24-hour Precipitation: >1-2 inches Source: 5 **Value: 2**
(Max.=5)

2.5 Flood Plain: Not in a flood plain Source: 8 **Value: 0**
(Max.=2)

2.6 Terrain Slope: less than 1 percent Source: 3 **Value: 1**
(Max.=5)

WORKSHEET 4 (CONTINUED)
SURFACE WATER ROUTE

3.0 TARGETS

3.1 Distance to Surface Water: about 3000 feet Source: 3,8 **Value: 4** (Max.=10)

3.2 Population Served within 2 miles (See WARM Scoring Manual Regarding Direction): √pop. = √ 0 = 0 Source: 6 **Value: 0** (Max.=75)

3.3 Area Irrigated within 2 miles 0.75 √ # acres = 0
(Refer to note in 3.2.): 0.75√ 0 =0.75(0)= 0 Source: 7 **Value: 0** (Max.=30)

3.4 Distance to Nearest Fishery Resource: 3000 feet Source: 3,8 **Value: 6** (Max.=12)

3.5 Distance to, and Name(s) of, Nearest Sensitive Environment(s) Site is about 2200 feet west of Mount Baker Park Source: 3,8 **Value: 9** (Max.=12)

4.0 RELEASE

Explain basis for scoring a release to surface water: No Confirmed releases Source: 3 **Value: 0** (Max.=5)

WORKSHEET 5
AIR ROUTE

1.0 SUBSTANCE CHARACTERISTICS

1.1 Introduction (WARM Scoring Manual) - Please review before scoring

1.2 Human Toxicity

Substance	Air Standard (ug/m^3)	Val.	Acute Toxicity (mg/m^3)	Val.	Chronic Toxicity (mg/kg/day)	Val.	Carcino-genicity WOE	PF*	Val.
1. TPH-Diesel	166.5	4	ND	-	ND	-	-	-	-
2.									
3.									
4.									
5.									

*Potency Factor

Source: 1
Highest Value: 4 (Max.=10)

+2 Bonus Points? No
Final Toxicity Value: 4 (Max.=12)

1.3 Mobility (Use numbers to refer to above listed substances)

1.3.1 Gaseous Mobility
Vapor Pressure(s) (mmHg): 1= 0.082; 2= ; 3= ; 4= ; 5= ; 6=
Source: 1
Value: 3 (Max.=4)

1.3.2 Particulate Mobility
Soil type: sandy loam
Erodibility: 86
Climatic Factor: 1-10
Source: 3
Value: 1 (Max.=4)

1.4 Highest Human Health Toxicity/Mobility Matrix Value (from Table A-7) equals **Final Matrix Value: 6** (Max.=24)

1.5 Environmental Toxicity/Mobility Source: 1

Substance	Non-human Mammalian Acute Inhal. Toxicity (mg/m^3)	Value	Mobility (mmHg)	Value	(Table A-7) Matrix Value
1.					
2.					
3.					
4.					
5.					

Highest Environmental Toxicity/Mobility Matrix Value (From Table A-7) equals **Final Matrix Value: 0** (Max.=24)

1.6 Substance Quantity: 2396 square feet Source: 3 **Value: 4** (Max.=10)
Explain basis: 0.44 acre lot, about 1/8 lot appeared contaminated

WORKSHEET 5 (CONTINUED)
AIR ROUTE

2.0 MIGRATION POTENTIAL

2.1 Containment: No cover, discharges/spills directly to ground Source: 3 **Value: 10** (Max.=10)

3.0 TARGETS

3.1 Nearest Population: less than or equal to 1,000 feet Source: 3 **Value: 10** (Max.=10)

3.2 Distance to, and Name(s) of, Nearest Sensitive Environment(s) 2,200 feet- Mount Baker Park Source: 3 **Value: 5** (Max.=7)

3.3 Population within 0.5 miles: √pop.= √4,014 = 63 Source: 3 **Value: 63** (Max.=75)

4.0 RELEASE

Explain basis for scoring a release to air: No confirmed release Source: - **Value: 0** (Max.=5)

WORKSHEET 6
GROUND WATER ROUTE

1.0 SUBSTANCE CHARACTERISTICS

1.1 Human Toxicity

Substance	Drinking Water Standard (ug/l)	Val.	Acute Toxicity (mg/kg-bw)	Val.	Chronic Toxicity (mg/kg/day)	Val.	Carcino-genicity WOE	PF*	Val.
1. TPH-Diesel	20	6	490	5	0.004	3	-	-	5
2.									
3.									
4.									
5.									
6.									

*Potency Factor

Source: 1
Highest Value: 6
(Max.=10)

+2 Bonus Points?
Final Toxicity Value: 6
(Max.=12)

1.2 Mobility (Use numbers to refer to above listed substances)
Cations/Anions: 1= 1; 2= ; 3= ; 4= ; 5= ; 6= . Source: 1 **Value: 1**
(Max.=3)

OR
Solubility(mg/l): 1= ; 2= ; 3= ; 4= ; 5= ; 6= .

1.3 Substance Quantity: 266 cubic yards Source: 3 **Value: 3**
(Max.=10)
Explain basis: 0.44 acre lot, 1/8 contaminated X 3' depth

2.0 MIGRATION POTENTIAL

2.1 Containment Source: 3 **Value: 10**
(Max.=10)
Explain basis: No containment- spills discharge to soils

2.2 Net Precipitation: 18.7 inches Source: 4 **Value: 2**
(Max.=5)

2.3 Subsurface Hydraulic Conductivity: Sandy Silt Source: 3 **Value: 3**
(Max.=4)

2.4 Vertical Depth to Ground Water: 0-25 feet Source: 3 **Value: 8**
(Max.=8)

3.0 TARGETS

3.1 Ground Water Usage: Ground water not used, but usable Source: 3 **Value: 2**
(Max.=10)

3.2 Distance to Nearest Drinking Water Well: > 2 miles Source: 6 **Value: 0**
(Max.=5)

3.3 Population Served within 2 Miles: √pop. = √ 0 = 0 Source: 6 **Value: 0**
(Max.=50)

WORKSHEET 6 (CONTINUED)
GROUND WATER ROUTE

3.4 Area Irrigated by (Groundwater) Wells

within 2 miles: 0.75 √ # acres = 0 Source: 7 **Value: 0**
(Max.=100)
0.75 √ 0 = 0.75(0)= 0

4.0 RELEASE

Explain basis for scoring a release to ground water: Non confirmed Source: 3 **Value: 0**
(Max.=5)

SOURCES USED IN SCORING

1. Washington Ranking Method Toxicological Data-base.
2. Analytical Results for D. Leonard & Sons, OnSite Environmental Inc., June, 1998.
3. Site Hazard Assessment, Seattle-King County Department of Public Health, June, 1998
4. National Weather Service Data.
5. Isopluvials of 2-Year, 24 Hour Precipitation, NOAA atlas 2, Vol. IX.
6. Washington State Department of Health Public Water Supply Listing.
7. Washington State Water Use Data.
8. Sensitive Areas Map Folio, King County, Washington, December 1990.
9. 1990 Census Data.