WORKSHEET 1
Summary Score Sheet

SITE INFORMATION:

SITE HAZARD ASSESSMENT CARNATION DAIRIES SPOKANE (INLAND NW DAIRIES)

Name: **Carnation Dairies Spokane**
411 – 444 W Cataldo Ave
Spokane, WA 99201

Latitude: **47.66477**
Longitude: **-117.41862**

SW/NW Section 18, Township 25, Range 43 EWM

FSID # 71713561
CSID # 6550

Site scored/ranked for the February 2013 update.

SITE DESCRIPTION (management areas, substances of concern, and quantities):

For the purposes of this Site Hazard Assessment (SHA), Carnation Dairies Spokane (Inland NW Dairies) is herein referred to as the site. Former names of the site as referenced in prior environmental assessment reports include Broadview Dairies Property, Inland Northwest Corporation Property, and Howard Street Property. The site initially was comprised of a combination of contiguous public and private commercial property encompassing approximately 14 acres including portions of Cataldo Ave between Howard and Washington Streets. Prior SHAs have delineated sections of the site belonging to Huckleberry Bay Co (parcel #35181.4410) consisting of approximately 1.29 acres and the City Central Park Maintenance Facility (Facility Site ID 4235787) consisting of 4.55 acres.

At this time the site is currently owned by the City of Spokane and is comprised of parcels 35181.0032, a 2.67 acre parcel (former railroad yard area now parking lot), parcel 35181.4409, a 0.52 acre parcel (former dairy processing area aka 427 W. Cataldo with west portion of old Carnations Broadview Dairy building), parcel 35181.4406, a 0.63 acre parcel (former dairy processing area parking lot now vacant land), parcel 35181.4206, a 0.8 acre parcel (former dairy garage aka 444 W. Cataldo Ave). Additionally, parcels 35181.4207 and 35181.4208, two 0.06 acre vacant lots adjacent to the NW of the dairy garage are included along with parcels 35181.4226, 35181.4225, 35181.4224, 35181.4203, and 35181.4202 which are contiguous vacant parcels amounting to 0.64 acres that are west of the dairy garage.

The site lies north and south of Cataldo Avenue between Washington Street and Howard Street. The surrounding land uses include commercial businesses, roadways, city parks, and public structures.

The site is in an area of moderate sloping terrain with a steep basalt grade within the site topography. The site slopes to the south towards the north bank of the Spokane River. The site has undergone development modifications to the surface topography over the past 100 years, using imported fill materials. Historical site development includes both construction and demolition of commercial and residential buildings and a former railroad right-of-way.

Beginning with an Ecology initial investigation dated August 8, 1996 and culminating in a Phase II Environmental Site Assessment by CH2MHILL for the City of Spokane dated April 1999, a subsurface exploration and soil sampling program was initiated and completed on March 4, 1999. Twelve sampling locations were selected with one drywell and eleven exploratory test pits (TP) completed on the site with the collection of a total of 17 soil samples.

- TP-1 was in the reported former area of the underground fuel storage tanks in the parking area on the west side of the dairy garage building.
- TP-2 and TP-3 were dug along the west wall of the dairy garage building, adjacent to an exterior sump/pump area and an interior sump location within the building. Additionally, these test pits were used to assess potential impacted soil beneath the building.
- TP-4 was dug in the area of the former fuel dispenser along the east side of the dairy garage building.
- TP-5 and TP-6 were dug in the middle of the former railroad yard area and adjacent to the location of a former chemical warehouse.
- TP-7 and TP-8 were located on the east and west sides of the railroad yard.
- TP-9 and TP-10 were located in the dairy processing parking area, east and west respectively.
- TP-11 was located in an area of surface staining midway between the dairy processing building and railroad yard.
- TP-DW (Drywell) located on the railroad property formerly associated with the chemical storage building.

The soil samples were analyzed for Semi-volatile Organics, Volatile Organics, benzene, toluene, ethylbenzene, and xylenes (BTEX), polychlorinated biphenyls (PCBs), Total Petroleum Hydrocarbons as diesel (TPH-D), Total Petroleum Hydrocarbons as gasoline (TPH-G), Total Lead and RCRA 8 Total Metals.

Contaminants were disclosed exceeding the Model Toxics Control Act (MTCA) Method A (unrestricted land use) as follows:
TP-2 - Lead at **1450** mg/kg.
TP-4 - TPH-D at **24,000** mg/kg; TPH-Oil at **4,400** mg/kg.
TP-6 - Cadmium at **6** mg/kg; Lead at **376** mg/kg.
TP-7 - Cadmium at 2 mg/kg; Lead at **364** mg/kg.
TP-11 - Cadmium at 2 mg/kg; Lead at **543** mg/kg.

Based on the analytical results contained in the Phase II Environmental Site Assessment Report Limited Subsurface Exploration "Howard Street Property" Submitted to City of Spokane April 1999 (CH2MHILL), the following contaminants exceeding the Model Toxics Control Act (MTCA) Method A (unrestricted land use) will be scored: Lead, Cadmium, Diesel

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):

ROUTE SCORES:

Surface Water/Human Health:	**N/S**	Surface Water/Environmental.:	**N/S**
Air/Human Health:	**N/S**	Air/Environmental:	**N/S**
Groundwater/Human Health:	24.9		

OVERALL RANK: 5

WORKSHEET 2
Route Documentation

1. **SURFACE WATER ROUTE**

   The surface water pathway will not be scored on the basis that site contaminants are contained in subsurface soils and that no surface water exists within the impact potential to this site.

2. **AIR ROUTE**

   The airborne pathway will not be scored on the basis that site contaminants are contained in subsurface soils.

3. **GROUNDWATER ROUTE**

   a. List those substances to be considered for scoring: Source: **1**

      Lead, Cadmium, Diesel

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

      Contaminant of Concern exceeds MTCA Method A Unrestricted Land Use in subsurface soils on site.

      Lead levels discovered in site soils (test pits) ranging from 364 mg/kg up to 1450 mg/kg exceeding the MTCA Method A unrestricted Clean-up Level of 250 mg/kg.

      Cadmium levels discovered in site soils (test pits) ranging from 2 mg/kg up to 6 mg/kg exceeding the MTCA Method A unrestricted Clean-up Level of 2 mg/kg.

      Diesel levels discovered in site soils (test pits) at 24,000 mg/kg exceeding the MTCA Method A unrestricted Cleanup Level of 2000 mg/kg.

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

      Subsurface soils and groundwater.

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

      Analytical results of subsurface soil samples revealed contaminant concentrations of lead, cadmium, and diesel exceeding the Washington State Model Toxics Control Act (MTCA) Method A soil cleanup levels for unrestricted land use.

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	Lead	5	8	NA	ND	0.001	10	ND	ND	ND
2	Cadmium	5	8	225	5	0.0005	5	B1	ND	ND
3	Diesel	20	6	490	5	0.004	3	ND	ND	ND

* *Potency Factor*

Source: **1, 2, 3**
Highest Value: 10
(Max = 10)
Plus 2 Bonus Points? Yes
Final Toxicity Value: 12
(Max = 12)

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

Cations/Anions [Coefficient of Aqueous Migration (K)] OR	Solubility (mg/L)
1 **Lead** K0.1 to 1.0 = value 2	
2 **Cadmium** K > 1.0 = value 3	
	3 Diesel 3E+01 = value 1

Source: **3**
Value: 3
(Max = 3)

1.3 Substance Quantity (volume):

Surface area estimate derived from Spokane County Assessors data. Site land size is approximately 5.5 acres. Building and paved area cover approximately 30 percent of site. Estimated area of soil contamination is one third of site from test pit data (17 pits-5 exceeding MTCA). Using 3 foot depth estimate per scoring manual estimated cubic yards of contaminated soil is [5.5 x .7 x 43560 x 3 / 27 =18,634 cubic yards] table GW-7	Source:**3, 13** **Value: 9** (Max=10)

2.0 MIGRATION POTENTIAL

		Source	Value
2.1	**Containment** Management unit scored as spills/discharges/contaminated soils only partially capped <30%	3	10 (Max = 10)
2.2	**Net precipitation:** >0.1 - 10	4	1 (Max = 5)
2.3	**Subsurface hydraulic conductivity:** Hesseltine silt loam $>10^{-7}$ - 10^{-5}	5	2 (Max = 4)
2.4	**Vertical depth to groundwater:** >25 – 50 feet (shallow bedrock)	6,7,8	6 (Max = 8)

3.0 TARGETS

		Source	Value
3.1	**Groundwater usage: Federally designated sole source aquifer**	7	10 (Max = 10)
3.2	**Distance to nearest drinking water well:** >5000 feet Site poses no threat to drinking water wells	6, 8	0 (Max = 5)
3.3	**Population served within 2 miles:** $\sqrt{}$ **pop.** = Site poses no threat to drinking water	8	0 (Max = 100)
3.4	**Area irrigated by (groundwater) wells within 2 miles:** **(0.75)*$\sqrt{}$# acres** = Site poses no threat to groundwater wells	9	0 (Max = 50)

4.0 RELEASE

	Source	Value
Explain basis for scoring a release to groundwater: Not Scored. Public water well test do not display a release, Contaminant horizon not shown to interface with existing groundwater.	3	0 (Max = 5)

SOURCES USED IN SCORING

1. Phase II Environmental Site Assessment Report Limited Subsurface Exploration "Howard Street Property" Submitted to City of Spokane April 1999 CH2MHILL

2. Toxicology Database WARM

3. WARM Scoring Manual

4. Washington Climate, Spokane Co. WSU Dept. of Agriculture

5. Soil Survey of Spokane Co. Washington, USDA Soil Conservation Svc.

6. Washington Department of Ecology Well Logs

7. Aquifer Sensitive Area Overlay Zone Map, Spokane Co. Washington

8. Washington Dept. of Health, Drinking Water Information Network

9. Water Rights Application Tracking System (WRATS) Ecology

10. FEMA Flood Insurance Maps

11. Quadrangle Maps of Washington, NE Spokane Regional Health District

12. Spokane County Census Information

13. Spokane County Assessors data