CSID 1335

WORKSHEET 1
SUMMARY SCORE SHEET

Site Name:

Western Farm Service, St. John
SW Corner, SE Corner Section 36, Township 19N, Range 41 EWM
TCP ID: E-38-3034-000
Facility Site ID: 9768
Latitude: 47° 5 min 34.58 sec
Longitude: 117° 35 min 12.7 sec
Address: Hwy 23 & Loomis Road
St. John, WA 99171

Site Scored/Ranked: Feb. 29, 2000 update

Site Description:

Western Farm Service, St. John branch is an agricultural chemical retail distribution facility located within the city limits of St. John, Washington. The facility is situated on a fairly level site bordered by residential property on the east, cereal grain fields to the west and north, and State Highway 23, Pleasant Valley Creek and the nine hole, St. John Golf Course to the south.

In 1995, concern about soil and groundwater contamination resulting from past operational practices at the facility prompted Western Farm Services to retain the environmental consulting firm of Woodward Clyde, now URS Greiner Woodward Clyde, to conduct a preliminary site evaluation as part of a risk-based corrective action (RBCA). Data from this evaluation was used to develop an independent remedial action plan (IRAP). Implementation of the IRAP ultimately led to the delineation and removal of most of the contaminated soil and the installation of a groundwater monitoring well network. Samples from the wells are currently collected on a quarterly basis and tested for Dinoseb and nitrate, the only substances detected at levels exceeding applicable cleanup standards.

SPECIAL CONSIDERATIONS:

Nitrate concentrations in the shallow groundwater are elevated area-wide due to the annual applications of nitrogenous fertilizers on the cereal grain cropland predominant in this region. However, nitrate concentrations in the groundwater monitoring wells downgradient from operational areas at the Western Farm Service St. John facility were detected at levels more than tree times greater than those found in the upgradient well. Consequently, nitrate was selected as a substance to be scored in this Site Hazard Assessment. The surface water and air

migration routes are not scored as the contamination remaining on site is located predominantly subsurface.

ROUTE SCORES:

Surface Water/Human Health: NS Surface Water/Environ.: NS
Air/Human Health: NS Air/Environmental NS
Ground Water/Human Health: 39.6

OVERALL RANK: 3

ROUTE DOCUMENTATION

1. **SURFACE WATER ROUTE. Not Applicable**

2. **AIR ROUTE. Not Applicable**

3. **GROUND WATER ROUTE**

List those substances to be considered for scoring: Source: 1

Nitrates
Dinoseb

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

Laboratory analysis of groundwater samples collected from down gradient monitoring wells confirm the presence of Nitrate and Dinoseb in concentrations exceeding Model Toxics Control Act (MTCA) Method B cleanup levels and EPA maximum contaminant levels for drinking water.

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

Contaminated Soil

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

Although the background nitrate levels in the shallow groundwater surrounding the site are elevated due to the widespread application of nitrogenous fertilizers, concentrations are consistently higher in the samples drawn from monitoring wells hydraulically down gradient from site operational areas than those from the three upgradient wells.

Also, one of five confirmation soil samples collected from the excavated rinse-pad runoff ditch was found to contain a concentration of Dinoseb above the MTCA Method B groundwater protection level.

These data indicate contaminated soils on site are impacting the shallow groundwater.

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. Dinoseb	7	8	16	10	0.001	5	X		
2. Nitrate	30000	2	350	5	0.97	1	X		
3.									
4.									
5.									
6.									

*Potency Factor

Source: 4
Highest Value: 10
+2 Bonus Points? --
Final Toxicity Value: 10

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

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

1.3 Substance Quantity Source: 3 **Value:** 1
Explain basis: Extent of soil contamination is unknown. Default value assigned.

2.0 M IGRATION POTENTIAL

2.1 Containment Source: 3 **Value:** 10
Explain basis: Contaminated soil

2.2 Net Precipitation: 8.6 inches Source: 6 **Value:** 1

2.3 Subsurface Hydraulic Conductivity: $>10^{-7}-10^{-5}$ Source: 7 **Value:** 2

2.4 Vertical Depth to Ground Water: 0 – 25′ Source: 1 **Value:** 8

3.0 TARGETS

3.1 Ground Water Usage: Public Supply,Alternate Sources Source: 2 **Value:** 4

3.2 Distance to Nearest Drinking Water Well: 210 ft Source: 8 **Value:** 5

3.3 Population Served within 2 Miles: √pop. = √ 600 = 24 Source: 8,9 **Value:** 24

3.4 Area Irrigated by (Groundwater) Wells within 2 miles: 0.75√no.acres = 0.75√25 Source: 8 **Value:** 4

4.0 RELEASE

Explain basis for scoring a release to ground water: Analytical evidence of a release from groundwater monitoring wells at the site. Source: 1 **Value:** 5

SOURCES USED IN SCORING

1. URS Greiner Woodward Clyde Groundwater Monitoring Analytical Summary, Western Farm Service Facility, St. John WA. July 2, 1999

2. URS Greiner Woodward Clyde Annual Groundwater Monitoring Report, January 19, 1999

3. Woodward Clyde Independent Remedial Action Plan for Western Farm Service St. John Branch, May 5, 1998

4. Toxicology Database WARM

5. WARM Scoring Manual

6. Washington Climate, Whitman County, WSU Cooperative Extension

7. Soil Survey of Whitman County, US Soil Conservation Service

8. USGS St. John Quadrangle Map

9. EPA Geographic Information Query System