

CSID 4754

WORKSHEET 1
SUMMARY SCORE SHEET

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

Northwest Pipeline ST Chevron
Finley Rd.
Kennewick, WA 99337

Sec 26/T8N/R30E
Facility I.D. No. 322
Ecology TCP ID: C-03-2006-000

Longitude: 119° 02' 02.0"

Latitude: 46° 08' 42.5"

Site scored/ranked for 02/04 update

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

Williams Gas Pipeline is now the owner/name of Northwest Pipeline (NWP). The name of the NWP Chevron Meter Station has been changed to the Finley Meter Station. The site is located on Finley Road, approximately ½ mile north of the Riek Road intersection near Finley, WA 99337. This natural gas metering station is in a rural area. The site is approximately 8400 square feet that is enclosed by a locked-gated chain link fence.

Mercury meters, which contain elemental mercury, were used by the natural gas industry since the 1920's to monitor gas pressure fluctuations and calculate volumes of gas delivery, along with mercury manometers used for calibration purposes. Mercury meters had been in use by NWP facilities since the early 1960's until the early 1990's, when the company decided to end their use due to worker health and safety concerns, as well as the banning by the U.S. Environmental Protection Agency (EPA) of the disposal of mercury wastes in landfills, effective May 8, 1992. These meters and manometers were not housed in any type structure at this site, and were routinely maintained and serviced. Accidental releases/spillage apparently had occurred over a period of years. The mercury meters in service at the time were targeted for replacement with dri-flow meters that didn't utilize mercury.

NWP initiated the replacement process during the early 1990's by determining every location where mercury meters had been installed, and/or where mercury manometers had been used. They completed site assessments and remediations at 123 mainline natural gas metering facilities in Washington, Oregon, Idaho, Wyoming, Colorado, and Utah. Two separate assessment programs were implemented for determining the presence of mercury contamination resulting from the operation of mercury displacement meters at each of the meter stations, as well as the use of mercury-containing measuring instruments such as manometers. The first program was initiated in July 1990, and was followed by a remediation program that same year. The second assessment program was conducted in March 1992, and also led to a remedial action program for those sites identified as contaminated. The mercury contamination, found visually and with vapor detection equipment (a Bacharach MV-2 or Jerome mercury analyzer), was typically located in the area around and directly under the meter positions.

The results of the pre-cleanup sampling were evaluated using the following criteria to select contaminated sites requiring soil cleanup. The site was considered for cleanup if:

- Mercury vapor levels detected at ground level exceeded 0.05 mg per cubic meter;
- There was visible mercury present; or

- The X-ray fluorescence instrument (X-MET 880) detected mercury contaminated soil in the medium range or above (with no interference noted) and either mercury vapor or visible mercury was also detected. In addition, if a site was know to have a concrete floor, it was eliminated from the site cleanup list, as any mercury previously spilled onto floors was routinely cleanup up, whereas the cleanup project was aimed at removing any contaminated soils.

Ecology's Central Regional Office (CRO) visited the site August 27, 1991 as an initial investigation response follow-up to the reception of the June 7, 1991 Report to Washington Department of Ecology Central Washington Region by NWP, detailing specific instances of releases of mercury to the environment in counties under the jurisdiction of Ecology CRO. NWP reportedly removed two drums of contaminated soil.

The site was listed on Ecology's Confirmed and Suspected Contaminated Sites List on April 10, 1992, as confirmed contamination of soil by priority pollutant metals, specifically mercury. NWP reported that screening with field instruments detected significant amounts of mercury and soil sampling documented a concentration of mercury in soil of 6.3 mg/kg. The contamination level remaining is greater than its Ecology Model Toxics Control Act (MTCA) Method A Cleanup Level of 1 mg/kg. The MTCA Method B Cleanup Level of 24 mg/kg can not be considered in this case as groundwater levels are very shallow in this area and there is at least one drinking water well that is only a few hundred feet away.

Another site visit was performed on August 15, 2003 by Michael Spencer from the Washington State Department of Ecology, Clifford Bates from the Benton-Franklin Health District, and Russ Amato from Williams Gas Pipeline. The site appeared to clean and well maintained. Areas inside the fence and around the meters are graveled concealing any indications of historical remedial activities. Several homes on private wells are near the site as well as an area of surface water directly to the east. The location is typically considered to have a high water table as confirmed by the presence of surface water protrusions.

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):

The site file is unclear regarding the extent of the remedial activities and the time at which soil testing was performed. Two drums of soil were noted to have been removed, but there is no post cleanup statement as to the extent of remaining contamination. In addition, it is not clear where the reported level of 6.3 mg/kg of mercury in the soil is (no depths or locations were noted) before or after remedial activities. However, CRO did place it on their Confirmed and Suspected Contaminated Sites List awaiting site hazard assessment, thus eluding that the contamination of 6.3 mg/kg remained on that site at that time.

ROUTE SCORES:

Surface Water/Human Health:	<u>17.0</u> = 3	Surface Water/Environ.:	<u>34.9</u>
Air/Human Health:	<u>18.4</u> = 3	Air/Environmental:	<u>N/S</u>
Ground Water/Human Health:	<u>47.0</u> = 4		

4 = 16/722

OVERALL RANK: 3 ²

16 + 6 + 3

25/8 = 3.125

WORKSHEET 2 - ROUTE DOCUMENTATION

1. SURFACE WATER ROUTE

List those substances to be considered for scoring: Source: 1,2

Mercury

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

Analytical results from soil samples showed concentrations greater than Method A MTCA cleanup levels.

List those management units to be considered for scoring: Source: 1,2

Contaminated surface soils.

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

Chemical analyses of on-site surface soils indicated concentrations of mercury.

2. AIR ROUTE

List those substances to be considered for scoring: Source: 1,2

Mercury

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

Analytical results from surface soil samples showed concentrations greater than Method A MTCA cleanup levels.

List those management units to be considered for scoring: Source: 1,2

Contaminated surface soils.

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

Chemical analyses of on-site surface soils indicated concentrations of mercury.

3. GROUND WATER ROUTE

List those substances to be considered for scoring: Source: 1,2

Mercury

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

Analytical results from surface soil samples showed concentrations greater than Method A MTCA cleanup levels.

List those management units to be considered for scoring: Source: 1,2

Contaminated surface soils.

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

Chemical analyses of on-site surface soils indicated significant concentrations of mercury.

WORKSHEET 3 (If Required)
 SUBSTANCE CHARACTERISTICS WORKSHEET
 FOR MULTIPLE UNIT/SUBSTANCE SITES
Combination 1 Combination 2 Combination 3

Unit: Section Not Applicable.

1. SURFACE WATER ROUTE

Substance(s):
 Human Toxicity Value:
 Environ. Toxicity Value:
 Containment Value:
 Rationale:

 Surface Water Human
 Subscore: (+3)(+1)= (+3)(+1)= (+3)(+1)=
 () () = () () = () () =
 Surface Water Environ.
 Subscore: (+3)(+1)= (+3)(+1)= (+3)(+1)=
 () () = () () = () () =

2. AIR ROUTE

Substance(s):
 Human Toxicity/Mobility
 Value:
 Environ. Toxicity/
 Mobility Value:
 Containment Value:
 Rationale:

 Air Human Subscore: (+3)(+1)= (+3)(+1)= (+3)(+1)=
 () () = () () = () () =
 Air Environ. Subscore: (+3)(+1)= (+3)(+1)= (+3)(+1)=
 () () = () () = () () =

3. GROUND WATER ROUTE

Substance(s):
 Human Toxicity Value:
 Containment Value:
 Rationale:

 Ground Water Subscore: (+3)(+1)= (+3)(+1)= (+3)(+1)=
 () () = () () = () () =

Based on their respective highest scoring toxicity/containment combinations, the following management units will be used for route scoring:

- Surface Water -
- Air -
- Ground Water -

**WORKSHEET 4
SURFACE WATER ROUTE**

1.0 SUBSTANCE CHARACTERISTICS

1.1 Human Toxicity

<u>Substance</u>	<u>Drinking Water Standard (ug/l)</u>	<u>Val.</u>	<u>Acute Toxicity (mg/kg-bw)</u>	<u>Val.</u>	<u>Chronic Toxicity (mg/kg/day)</u>	<u>Val.</u>	<u>WOE</u>	<u>Carcinogenicity PF*</u>	<u>Val.</u>
1. Mercury	2	8	-	-	0.0003	5	-	-	-
							Source: 1, 2, 5, 6		
*Potency Factor							Highest Value: 8 (Max.=10)		
							+2 Bonus Points?		
							Final Toxicity Value: 8 (max.+12)		

1.2 Environmental Toxicity

		<input checked="" type="checkbox"/> Freshwater							
		<input type="checkbox"/> Marine							
<u>Substance</u>	<u>Acute Water Quality Criteria (ug/l)</u>	<u>Value</u>	<u>Non-human Mammalian Acute Toxicity (mg/kg)</u>	<u>Value</u>	<u>Source:</u>	<u>1, 2, 5, 6</u>	<u>Value:</u>	<u>8</u>	<u>(max=10)</u>
1. Mercury	2.4	8							

1.3 Substance Quantity: <11 sq. ft. of surface soil contamination = 1 Source: 1, 6 Value: 1
(max=10)
 Explain basis: 2 55 gallon drums (.57 cu. yds.) were already removed from the site with 6.3 ppm mercury contamination remaining.

WORKSHEET 4 (CONTINUED)
SURFACE WATER ROUTE

2.0 MIGRATION POTENTIAL

- 2.1 Containment Explain basis: Source: 1, 6 Value: 10
(Max.=10)
Spills, Discharges and Contaminated Soil at the surface with no run-on/runoff control or unknown contols.
- 2.2 Surface Soil Permeability: Medium sand Source: 3, 6 Value: 1
(Max.=7)
- 2.3 Total Annual Precipitation: 0.9 inches Source: 6, 7 Value: 1
(Max.=5)
- 2.4 Max. 2-Yr/24-hour Precipitation: ≤1 inch Source: 6 Value: 1
(Max.=5)
- 2.5 Flood Plain: Not in Flood plain Source: 15 Value: 0
(Max.=2)
- 2.6 Terrain Slope: ≤2% Source: 6, 10 Value: 1
(Max.=5)

3.0 TARGETS

- 3.1 Distance to Surface Water: <1000' ft Source: 3, 6, 10 Value: 10
(Max.=10)
- 3.2 Population Served within 2 miles (See WARM Scoring Manual Regarding Direction): $\sqrt{\text{pop.}} = \sqrt{0} = 0$ Source: 6, 8 Value: 0
(Max.=75)
- 3.3 Area Irrigated within 2 miles $0.75\sqrt{\text{no. acres}} = 0.75\sqrt{2674} = 39$ Source: 9 Value: 30
(Max.=30)
- 3.4 Distance to Nearest Fishery Resource: 5000-10000ft Source: 6, 8, 14 Value: 3
(Max.=12)
- 3.5 Distance to, and Name(s) of, Nearest Sensitive Environment(s) Wetlands <1000 ft Source: 6, 8, 10 Value: 12
(Max.=12)

4.0 RELEASE

- Explain basis for scoring a release to surface water: Source: 1, 2 Value: 0
(Max.=5)
None documented by analytical evidence.

**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		Acute Toxicity		Chronic Toxicity		Carcinogenicity		
	(ug/m ³)	Val.	(mg/m ³)	Val.	(mg/kg/day)	Val.	WOE	PF*	Val.
1. Mercury	0.3	10	-	-	0.0003	8	-	-	-

*Potency Factor Source: 1,5,6
Highest Value: 10
(Max.=10)
+2 Bonus Points?
Final Toxicity Value: 10
(Max.=12)

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

1.3.1 Gaseous Mobility

Vapor Pressure(s) (mmHg): N/A Source: 6 Value: N/A
(Max.=4)

1.3.2 Particulate Mobility

Soil type: medium sand Source: 3,6 Value: 4
Erodibility: 220 tons/acre/yr (Max.=4)
Climatic Factor: 10-30

1.4 Highest Human Health Toxicity/Mobility Matrix Value (from Table A-7) equals **Final Matrix Value: 20**
(Max.=24)

1.5 Environmental Toxicity/Mobility Source: 6

Substance Non-human Mammalian Acute (Table A-7)
Inhal. Toxicity (mg/m³) Value Mobility (mmHg) Value Matrix Value

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

1.6 Substance Quantity: <110 sq. ft. of surface Source: 1,6 Value: 1
soil contamination (Max.=10)
Explain basis: Two 55 gallon drums (.57 cu. yds.)
were already removed from the site with only 6.3
ppm mercury contamination remaining.

2.0 MIGRATION POTENTIAL

2.1 Containment: Uncontaminated soil cover to an Source: 1-3,6 Value: 5
unknown depth <2 feet thick (Max.=10)

WORKSHEET 5 (CONTINUED)
AIR ROUTE

3.0 TARGETS

- 3.1 Nearest Population: < 1000 feet Source: 1,3,13 Value: 10
(Max.=10)
- 3.2 Distance to, and Name(s) of, Nearest Sensitive Environment(s) Wetlands, <1000 feet Source: 3,6,8,10 Value: 7
(Max.=7)
- 3.3 Population within 0.5 miles: $\sqrt{\text{pop.}} = \sqrt{855} = 29$ Source: 6,10 Value: 29
(Max.=75)

4.0 RELEASE

Explain basis for scoring a release to air: None Source: 1,6 Value: 0
documented. (Max.=5)

**WORKSHEET 6
GROUND WATER ROUTE**

1.0 SUBSTANCE CHARACTERISTICS

1.1 Human Toxicity

Substance	Drinking Water Standard		Acute Toxicity		Chronic Toxicity		Carcinogenicity		
	(ug/l)	Val.	(mg/kg-bw)	Val.	(mg/kg/day)	Val.	WOE	PF*	Val.
1. Mercury	2	8	-	-	0.0003	5	-	-	-

*Potency Factor Source: 1,5,6
Highest Value: 8
(Max.=10)

+2 Bonus Points?
Final Toxicity Value: 8
(Max.=12)

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

Or

Solubility(mg/l): _____

1.3 Substance Quantity: unknown quantity ≤10 cubic yards of contaminated soils = 1 Source: 1,6 **Value: 1**
(Max.=10)
Explain basis: 2 55 gallon drums (.57 cu. yds.) were already removed from the site with only 6.3 ppm mercury contamination remaining.

2.0 MIGRATION POTENTIAL

2.1 Containment Source: 1,6 **Value: 10**
(Max.=10)
 Explain basis: Spills, discharge to soil = 10

2.2 Net Precipitation: .90 inches Source: 7 **Value: 1**
(Max.=5)

2.3 Subsurf.Hydraul.Conduct.: coarse sand and gravels Source: 3,6 **Value: 4**
(Max.=4)

2.4 Vertical Depth to Ground Water: <25 feet Source: 6,11 **Value: 8**
(Max.=8)

WORKSHEET 6 (CONTINUED)
GROUND WATER ROUTE

3.0 TARGETS

- 3.1 Ground Water Usage: There are many public water supplies within 2 miles which have no alternate unthreatened sources available with minimal hookup. Source: 8,11,12 Value: 9
(Max.=10)
- 3.2 Dist. to Nearest Drinking Water Well: ≤ 600 feet Source: 3,11 Value: 5
(Max.=5)
- 3.3 Population Served within 2 Miles: $\sqrt{\text{pop.}} = \sqrt{3934} = 63$ Source: 10-12 Value: 63
(Max.=100)
- 3.4 Area Irrigated by (Groundwater) Wells within 2 miles: $0.75\sqrt{\text{no. acres}} = 0.75\sqrt{1210} = 26$ Source: 9 Value: 26
(Max.=50)
- 4.0 RELEASE
Explain basis for scoring a release to ground water: None documented by analytical data. Source: 1,2,6 Value: 0
(Max.=5)

SOURCES USED IN SCORING

1. Release and Independent Actions for Mercury Contaminated Natural Gas Meter Houses, June 7, 1991, submitted by Northwest Pipeline Corporation, Salt Lake City, Utah.
2. Site Screening - Strategy Recommendation, June 24, 1999, by Washington Department of Ecology Toxics Cleanup Program.
3. Site Hazard Assessment Site Visit by Michael Spencer and Clifford Bates, August 15, 2003
4. U.S.G.S. Topographic Quad. Map, Raymond, WA 7.5 Min. series.
5. Washington Department of Ecology, Toxicology Database for Use in Washington Ranking Method Scoring, January 1992.
6. Washington Department of Ecology, WARM Scoring Manual, April 1992.
7. Washington Climate for Benton Franklin Counties, Cooperative Extension Services, College of Agriculture, Washington State University.
8. U.S. EPA SITEINFO GIS Query for lat./long. of site.
9. Ecology Water Rights Information System (WRIS).
10. Washington State Department of Ecology Facility/Site web site <http://apps.ecy.wa.gov/website/facsit/viewer.htm>
11. Washington State Department of Ecology well log viewer web site <http://apps.ecy.wa.gov/welllog/>
12. Washington State Department of Health S.A.D.I.E database <http://www.doh.wa.gov>
13. United States Geological Series, Pasco Quadrangle Washington 7.5 minute series.
14. Mid Columbia River Spring-Run Evolutionary Significant Unit, NMFS, updated March 1998. Available <http://www.nwr/noaa/gov/lsalmon/salmesa/chinmcrs.htm>
15. Flood Insurance Rate Map, Federal Emergency Management Agency, Benton County, WA, Panel 645, July 19, 1982