CSID 50

WORKSHEET 1
SUMMARY SCORE SHEET

Site Name/Location:

Union Pacific Rail Road (UPRR) Tekoa Line Segment 2
Section 15, Township 20 N, Range 45 EWM
TCP ID: E-38-3022-000
Facility Site ID: 801
Latitude: 117° 7 min 8.65 sec
Longitude: 47° 14 min 7.62 sec
Address: RR Track Mile 118.40
City: Tekoa
Zip Code: 99033
County: Whitman

Site Description:

UPRR Tekoa rail line ran between Fairfield and Colfax, Washington. In 1993 the line was decommissioned and abandoned with the removal of the rails and ties. The ballast or gravel/rock is 8 ft. to 10 ft. wide and about 1 ft. to 2 ft. thick and is composed primarily of coarse gravel with lesser interstitial fines. In Whitman County, site hazard assessment will focus on the ballast remaining on selected segments of the right of way (ROW) from RR Track Mile 118.4 south to RR track mile 78.0. Most of the ROW traverses sparsely populated country, primarily rolling farmland with some rugged, forested areas near Colfax.

Special Considerations:

UPRR has removed the ballast within the city limits of Tekoa, Garfield, Colfax, and Farmington in Whitman County. The ballast remains in the rural agricultural areas outside these communities. Exposure of humans to the ballast in these areas will be compared to that which could occur in a residential setting. Risk considerations on exposure scenarios within residential areas along the Tekoa line are associated with individuals spending extended periods of time in contact with the ballast while ingesting or inhaling particulate ballast material. Additionally, the removal and reuse (sale and distribution) of the ballast to other locations is of concern. Upon abandonment, certain portions or the ROW have reverted to the adjacent landowners. Lack of institutional control over the remaining ballast in these locations is the primary reason for ranking these sites.

PATHWAY SCORES:

Surface Water/Human Health: 16.0 Surface Water/Environ: 47.1

Air/Human Health: 2.5 Air/Environmental: NS

Ground Water/Human Health: 11.2

OVERALL RANK: 4

Rev. 3/10/93

WORKSHEET 2
ROUTE DOCUMENTATION

1. SURFACE WATER ROUTE.

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

Lead

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

Laboratory analysis of soil and railroad ballast found concentrations of lead exceeding the MTCA Method A cleanup level of 250 mg/kg.

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

Lead contamination in railroad ballast and soil.

Explain basis for choice of unit to be used in scoring. Source: 1

Contaminated site located in a topographical position potentially subject to overland flow into nearby Hangman Creek.

2. AIR ROUTE.

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

Lead

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

Laboratory analysis of soil and railroad ballast found concentrations of lead exceeding the MTCA Method A cleanup level of 250 mg/kg.

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

Lead contamination in railroad ballast and on surface soil

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

Lead contaminated surface soil susceptible to airborne particulate transport

WORKSHEET 2 (CONTINUED)
ROUTE DOCUMENTATION

3. GROUND WATER ROUTE

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

Lead

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

Laboratory analysis of soil samples confirm the presence of lead in concentrations exceeding MTCA Method A cleanup level

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

Contaminated soil

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

Lead detected in ballast and soil in concentrations exceeding MTCA Method A cleanup level

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. Lead	5	8	X	ND	X	ND	B2	X	

*Potency Factor

Source: 2, 3
Highest Value: 8
+2 Bonus Points? N/A
Final Toxicity Value 8

1.2 Environmental Toxicity

(X) Freshwater
( ) Marine

Substance	Acute Water Quality Criteria (ug/l)	Value	Non-human Mammalian Acute Toxicity (mg/kg)	Value
1. Lead		6		

Source: 2 **Value: 6**

1.3 Substance Quantity Source: 1 **Value: 8**
Explain basis: 2000' x 10' =20,000 ft^2

2.0 MIGRATION POTENTIAL

2.1 Containment: Spills, Discharges, Contaminated Soil Source: 1 **Value: 10**
Explain basis: Contaminated surface soil with no run-on/runoff controls
2.2 Surface Soil Permeability: Silt loam Source: 5 **Value: 5**
2.3 Total Annual Precipitation: 21.2 inches Source: 4 **Value: 2**

2.4 Max. 2-Yr/24-hour Precipitation: 1.4 inches Source: 3 **Value: 2**

2.5 Flood Plain: Not in flood plain Source: **Value: 0**

2.6 Terrain Slope: <2% Source: 9 **Value: 1**

3.0 TARGETS

3.1 Distance to Surface Water: <1000' Source: 9 **Value: 10**

3.2 Population Served within 2 miles: √pop.=√ = Source: **Value: 0**

3.3 Area Irrigated within 2 miles: 0.75√no. acres=
0.75√ =0.75( )= Source: **Value: 0**
(Area entirely in dryland cereal grain production.)

3.4 Distance to Nearest Fishery Resource: < 1000' Source: 9 **Value: 12**

3.5 Distance to, and Name(s) of, Nearest Sensitive Environment(s) < 1000' Source: 9 **Value: 12**
Hangman Creek

4.0 RELEASE

Explain basis for scoring a release to surface water: No documented release Source: **Value: 0**

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. Lead	0.5	10	ND		ND		B2	ND	

*Potency Factor

Source: 1, 2, 3
Highest Value: 10
+2 Bonus Points? NA
Final Toxicity Value: 10

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

1.3.1 Gaseous Mobility

Vapor Pressure(s) (mmHg): 1= ; 2= ; Source:
3= ; 4= ; 5= ; 6= Value:

1.3.2 Particulate Mobility

Soil type: Silt Loam Source: 3, 5
Erodibility: 47 Value: 1
Climatic Factor: 1-10

1.4 Highest Human Health Toxicity/Mobility Matrix Value (from Table A-7) equals **Final Matrix Value: 5**

1.5 Environmental Toxicity/Mobility Source: 3

Substance	Non-human Mammalian Acute Inhal. Toxicity (mg/m^3)	Value	(Table A-7) Mobility (mmHg)	Value	Matrix Value
1. Lead	X	ND			NS

Highest Environmental Toxicity/Mobility Matrix Value (From Table A-7) equals **Final Matrix Value: NS**

WORKSHEET 5 (CONTINUED)
AIR ROUTE

1.6 Substance Quantity: Table A-8A Area Source: 1, 3 **Value: 6**
Explain basis: Estimate is based on 2000 foot
Length of ballast that is 10 feet wide.
2000 ft. x 10 ft. = 20,000 sq. ft.

2.0 MIGRATION POTENTIAL

2.1 Containment: Spills, Discharges, and Soil Contamination Source: 1-3 **Value: 10**
Railroad ballast scored as having an uncontaminated soil cover 2 feet thick. Particulates succeptable to air transport have migrated into the interstices of the gravel-sized material of which the ballast is mostly comprised

3.0 TARGETS

3.1 Nearest Population: >3000 – 4000 feet to nearest rural residence Source: 9
Value: 4

3.2 Distance to, and Name(s) of, Nearest Sensitive
Environment(s) Source: 9 **Value: 7**
Hangman Creek and associated wetlands <1000'

3.3 Population within 0.5 miles: $\sqrt{pop.}=\sqrt{9}=3$ Source: 9 **Value: 3**

4.0 RELEASE

Explain basis for scoring a release to air: Source: **Value: 0**
No documented release

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. Lead	5	8	X	ND	X	ND	B2	ND	

*Potency Factor

Source: 1, 3
Highest Value: 8
+2 Bonus Points? NA
Final Toxicity Value: 8

1.2 Mobility (Use numbers to refer to above listed substances)
Cations/Anions: 1= 0.1-10 ; 2= ; 3= ; 4= ; 5= ; Source: 1, 3 **Value: 2**
6= .

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

1.3 Substance Quantity GW7A Source: 1, 3 **Value: 4**
Explain basis: 2000 foot segment of ballast, 10 feet wide and 2 feet deep.
2000 ft x 10 ft x 3 ft = 60,000 ft^3
27 ft^3/yd^3 = 2,222 yds^3

2.0 MIGRATION POTENTIAL

2.1 Containment Source: 1, 3 **Value: 10**
Explain basis: Spills, Discharges, and Contaminated Soil

2.2 Net Precipitation: 11.5 – 2.9 = 8.6 inches Source: 4 **Value: 1**
(Precip.-PET. April – November)

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

2.4 Vertical Depth to Ground Water: >100 - 200 feet Source: 5, 9 **Value: 3**

WORKSHEET 6 (CONTINUED)
GROUND WATER ROUTE

3.0 TARGETS

3.1 Ground Water Usage: Public – Private, Alternate Source Available Source: 4
Value: 1

(Max.=10)

3.2 Distance to Nearest Drinking Water Well: 3000 ft Source: 9 **Value: 2**

(Max.=5)

3.3 Population Served within 2 Miles: √pop. =√138 = 12 Source: 7 **Value: 12**

(Max.=100)

3.4 Area Irrigated by (Groundwater) Wells
within 2 miles: 0.75√no.acres= 0 Source: 8 **Value: 0**
0.75√ =0.75 ( )=

(Max.=50)

4.0 RELEASE

Explain basis for scoring a release to ground water: No Documented Release

Source: **Value: 0**

(Max.=5)

SOURCES USED IN SCORING

1. Workplan for the Rail Bed Site Assessment, Union Pacific Railroad, Tekoa Rail Line US Pollution Control Inc. February 25, 1994
2. Toxicology Database W.A.R.M.
3. W.A.R.M. Scoring Manual
4. Washington Climate, Whitman Co. WSU Dept. of Agriculture
5. Soil Survey of Whitman Co. Washington. USDA Soil Conservation Svc.
6. Washington Department of Ecology, Well Logs
7. Washington Dept. of Health Drinking Water Information Network
8. W.R.I.S. Washington Department of Ecology
9. USGS Tekoa, WA QUADRANGLE MAP