CSID 919

WORKSHEET 1
SUMMARY SCORE SHEET

Site Name/Location:

Union Pacific Rail Road (UPRR) Tekoa Line Segment 4
Section 23, Township 18 N, Range 45 EWM
TCP ID: E-38-3024-000
Facility Site ID: 803
Latitude: 117° 6 min 3.6 sec
Longitude: 47° 2 min 39.62 sec
Address: RR Track Mile 99.29
City: Garfield
Zip Code: 99130
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: NS Surface Water/Environ: NS

Air/Human Health: 2.9 Air/Environmental: NS

Ground Water/Human Health: 13.0

OVERALL RANK: 5

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WORKSHEET 2
ROUTE DOCUMENTATION

1. SURFACE WATER ROUTE. Not Applicable

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.

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 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**

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 mainly comprised.

3.0 TARGETS

3.1 Nearest Population: >2000 – 3000 ft to nearest rural residence Source: 9
Value: 6

3.2 Distance to, and Name(s) of, Nearest Sensitive Environment(s)_____ Source: 10 **Value: 7**
Intermittant stream and associated wetlands.

3.3 Population within 0.5 miles: $\sqrt{pop.} = \sqrt{5} = 2$ Source: 9 **Value: 2**

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= ; 6= . Source: 1, 3 **Value: 2**

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 yd^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: 150 - 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: 7
Value: 4

(Max.=10)

3.2 Distance to Nearest Drinking Water Well: >2600 - 5000 ft Source: 9 **Value: 2**

(Max.=5)

3.3 Population Served within 2 Miles: √pop. =√37 = 6 Source: 7 **Value: 6**

(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 ( )= 0

(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 Farmington QUADRANGLE MAP