

**WORKSHEET 1
SUMMARY SCORE SHEET**

Note: This document currently has no provision for sediment route scoring.

Site Name/Location (Street, City, County, Section/Township/Range).

Upland Industries a.k.a. The Summit Properties
SW ¼ Section 13, Township 25 N., Range 42 E.W.M.
Latitude 47° 39' 43" ; Longitude 117° 26' 52"

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

The Summit Site property is located north of the Spokane River in west-central Spokane, Washington and currently consists of about 73 acres of undeveloped land.

Historically the property was occupied in the past by the Union Pacific Railroad which operated a round house, maintenance facility, fueling operation and rail lines on portions of the site from approximately 1914 to 1955.

Two on-site containment cells were constructed (approximate dimensions 570'x45' and 635'x45') in the north-western area of the site bordering Bridge Avenue. Approximate cell volumes were 8,900 cubic yards and 11,831 cubic yards for the eastern and western containment cells, respectively.

Approximately 30,400 cubic yards (ex-situ yardage) of soil containing elevated concentrations of lead, cadmium and arsenic were removed from the railroad fill embankment which transects the property from west to east. These metal contaminated soils were placed in the on site containment cells.

Bunker C soil was excavated from the areas along the pipeways of the former fueling station located at the west end of the site and in the area of an old spill located north of the embankment , south of the former Ide Avenue, and west of Nettleton Street. Bunker C impacted soils (3,416 cubic yards) timbers and piping was transported to the Roosevelt Regional Disposal facility in Kllikitat county, Washington for disposal.

Approximately 750 cubic yards (in-situ) of metal impacted soils containing 73 PPM arsenic are located along the railroad spur road west of Cedar Street.

Approximately 4,000 cubic yards of Bunker C impacted soil at a depth of 15 to 18 feet exists at the eastern area of the former fueling facility.

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):

Information obtained from Summit Property Development, Inc. pertaining to an AGRA Earth & Environmental project No. 12-1224-00 Lysimeter Monitoring and Fluid Sampling Summit Property Containment Cells. Indicated dissolved arsenic levels ranging from 8.8 to 270 parts per billion. The Summit properties is situated over a federally designated sole source aquifer. The MTCA Method A cleanup standard for arsenic is 5 ug/l.

The Summit Properties site presents issues of concern regarding the onsite contaminants and the future Planned Unit Development. The following considerations should include but not limited to:

- i. Areas which require further mitigation;
- ii. final site grading with relationships to the remaining contaminants (deep or under RR berm);
- iii. lysimeter monitoring;
- iv. shallow containment cells protection from utilities excavation.

ROUTE SCORES:

Surface Water/Human Health: NS Surface Water/Environ.: NS

Air/Human Health: 16.2 Air/Environmental: NS

Ground Water/Human Health: 19.6

OVERALL RANK: 5

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**WORKSHEET 2
ROUTE DOCUMENTATION**

1. SURFACE WATER ROUTE. Not Applicable to this Site Assessment, not scored.

2. AIR ROUTE.

List those substances to be considered for scoring: Source(s): 1,5,6

Arsenic

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

Laboratory analysis of soil samples from this site confirm on-site arsenic levels exceed MTCA standards for residential properties.

List those management units to be considered for scoring: Source(s): 1, 5

Contaminated soil on railroad spur road west of Cedar St.
Contaminated soils in on-site containment cells.

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

Contaminated soil. This site is scored on the basis that the remaining arsenic levels were detected at concentrations that exceed MTCA cleanup levels in soil.



WORKSHEET 2 (CONTINUED)
ROUTE DOCUMENTATION

3. GROUND WATER ROUTE

List those substances to be considered for scoring: Source(s): 1,5,6

- Arsenic
- Total Petroleum Hydrocarbons (TPH); specifically Bunker C Oil

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

Laboratory analysis of soil samples confirm presence of Arsenic and Bunker C Oil

List those management units to be considered for scoring: Source(s): 1,5,6

Contaminated soils.

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

Contaminated soils. This site is scored on the basis of the referenced contaminants being detected at concentrations exceeding MTCA cleanup levels in soil.



**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		Val.
	(ug/m ³)	Val.	(mg/m ³)	Val.	(mg/kg/day)	Val.	WOE	PF*	
1. Arsenic	0.00023	10	NA	X	NA	X	A	50 (mg/kg/d)-1	9
2.									
3.									

*Potency Factor

Source(s): 1,5,6,12,13
 Highest Value: 10
 + 2 Bonus Points? NS
 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: NA
3 = ; 4 = ; 5 = ; 6 = Value: NA

1.3.2 Particulate Mobility

Soil type: Gga Garrison gravelly loam Source: 16
 Erodibility: Loam (56) >30-80 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: NA

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

Final Matrix Value: NOT SCORED



WORKSHEET 5 (CONTINUED)
AIR ROUTE

1.6 Substance Quantity: Estimated quantity 750 cu/yards. Source(s): 1,6 Value: 1
Explain basis: Real extent of surface contamination unknown
default value assigned.

2.0 MIGRATION POTENTIAL

2.1 Containment: Spills, Discharges, and Soil Contamination Source: 13 Value: 5
Uncontaminated soil cover < 2 feet thick

3.0 TARGETS

3.1 Nearest Population: < 1000 feet Source: 15 Value: 10

3.2 Distance to, and Name(s) of, Nearest Sensitive Environment(s) Municipal parks Source: 15 Value: 5
Distance estimate > 2,000 - 3,000 ft
Riverfront Park City of Spokane
Cannon Playground City of Spokane

3.3 Population within 0.5 miles: √pop. = √ > 5625 = max Source: 15 Value: 75

4.0 RELEASE

Explain basis for scoring a release to air: None documented Source: 1 Value: 0



**WORKSHEET 6
GROUND WATER ROUTE**

1.0 SUBSTANCE CHARACTERISTICS

1.1 Human Toxicity

Substance	Drinking Water Standard		Acute Toxicity*		Chronic Toxicity		Carcinogenicity		Val.
	(ug/l)	Val.	(mg/kg-bw)	Val.	(mg/kg/day)	Val.	WOE	PF*	
1. Arsenic	50	6	763	5	0.001	5	A	1.75	7
2. TPH Bunker C		X		X		X			X
3.									
4.									
5.									
6.									

*Potency Factor Source(s): 1,6,7
Highest Value: 7
+ 2 Bonus Points? 0
Final Toxicity Value: 7

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

Cations/Anions: 1: Arsenic K factor = > 1.0 Source(s): 1,6,7 Value: 3

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

1.3 Substance Quantity Source(s): 1,6 Value: 9

Explain basis: 750 cu/yd Arsenic + 4000 cu/yd TPH = 4,750 cu/yards

Note: additional quantity of containment cells added (20700 cu/yds) to value in respect to shallow containment risk and lysimeter test results.

2.0 MIGRATION POTENTIAL

2.1 Containment Source(s): 1,13 Value: 10

Explain basis: Spills, Discharges, and Contaminated Soil

2.2 Net Precipitation: 7.2 inches Source: 14 Value: 1



2.3 Subsurface Hydraulic Conductivity: Silty sand (loams) Source: 16 Value: 3

2.4 Vertical Depth to Ground Water: > 100 -200 feet Source: 10 Value: 3

**WORKSHEET 6 (CONTINUED)
GROUND WATER ROUTE**

3.0 TARGETS

3.1 Ground Water Usage: Fed. Sole Source Aquifer Source: 8 Value: 10

(Max. = 10)

3.2 Distance to Nearest Drinking Water Well: > 10,000 ft Source: 9 Value: 0

(Max. = 5)

3.3 Population Served within 2 Miles = 0 ; $\sqrt{\text{pop.}} = \underline{0}$. Source: 9 Value: 0
Not Scored on the basis of improbable contaminant influence (Max. = 100)

3.4 Area Irrigated by (Groundwater) Wells
within 2 miles: 0.75 $\sqrt{\text{no. acres}}$ = Source: 11 Value: 22
 $\sqrt{908} = 30$; $0.75 (30) = 22.5$

(Max. = 50)

4.0 RELEASE

Explain basis for scoring a release to ground
water: NONE REPORTED

Source: 1 Value: 0

(Max. = 5)

SOURCES USED IN SCORING



1. Remediation Activities, Summit Site Property Spokane Wash. (DRAFT)
RZA - AGRA Inc. 6 July 1994 / 16 February 1994 # S - 1043 - 6
2. The Summit Properties P.U.D. Master Plan, June, 1994
3. Corrective Action Plan, Summit Properties (DRAFT)
RZA - AGRA Inc. 15 July 1993 # S - 1043 - 4
4. Summit Properties Final Environmental Impact Statement
The Institute for Urban and Local Studies Eastern Washington University
July 21, 1993
5. Cleanup Action Plan, Summit Property
RZA - AGRA Inc. 25 July 1993 # S - 1043 - 4
6. Level II Environmental Site Assessment, Summit Site Property
RZA - AGRA Inc. 17 June 1992 # S - 1043
7. AGRA Earth & Environmental, AEE Project No. 12 - 1224 - 00
Lysimeter Monitoring and Fluid Sampling, Summit Property Containment Cells
8. Aquifer Sensitive Overlay Zone (ASA), Spokane County
9. Washington Department of Health Drinking Water Information Network
10. Washington Department of Ecology Well Logs
11. Department of Ecology WRIS System Data Base
12. Toxicology Data Base (W.A.R.M.)
13. WARM Scoring Manual
14. Washington Climate, Spokane County, WSU Dept. of Agriculture Extension
15. Spokane County 1990 Census Information, G.I.S. and Spokane NW Quadrangle
16. Soil Survey of Spokane County Washington. USDA Soil Conservation Svc.