

WASHINGTON RANKING METHOD

ROUTE SCORE SUMMARY AND RANKING CALCULATION SHEET

Site Name: New City Cleaners Region: Central

City: Richland County: Benton

This site was [X] ranked, [ ] re-ranked on February 5, 1993, Based on quintile values from 338 sites assessed/scored on August 12, 1992.

Pathway	Route Score(s)	Quintile Group Number(s)	Priority Scores
SW-HH	<u>8.1</u>	<u>2</u>	Human Health
Air-HH	<u>36.8</u>	<u>4</u>	$\frac{H^2+2M+L}{8} = \frac{(5)^2+2(4)+(2)}{8} =$
GW-HH	<u>73.6</u>	<u>5</u>	$=4.4= 5$
Sed-hh	<u>N/S</u>	<u>0</u>	Environment
SW-En	<u>13.9</u>	<u>2</u>	$\frac{H^2+2L}{7} = \frac{(5)^2+2(2)}{7} =$
Air-En	<u>51.9</u>	<u>5</u>	$=1.5= 2$
Sed-En	<u>N/S</u>	<u>0</u>	

Use the matrix presented to the right, along with the two priority scores, to determine the site ranking. N/A refers to where there is no applicable pathway

	Human Health		Environment				
	5	4	3	(2)	1	N/A	
(5)	1	1	1	(1)	1	1	
4	1	2	2	2	3	4	
3	1	2	3	4	4	5	
2	2	3	4	4	5	5	
1	2	3	4	5	5	5	
N/A	3	4	5	5	5	NFA	

DRAFT / FINAL

Matrix ("bin") Ranking: 1, or          No Further Action

CONFIDENCE LEVEL: The relative position of this site within this "bin" is:

- almost into the next higher bin.
- right in the middle, unlikely to change.
- X almost in the next lower bin.

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WORKSHEET 1  
SUMMARY SCORE SHEET

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

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

New City Cleaners  
747 Stevens drive  
Richland

Township 9 North, Range 28 East Willamette Meridian, Section 11

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

This site is an operating dry cleaning facility. Tetrachloroethene (synonym perchloroethylene) was discovered during the site assessment of a neighboring property. During the removal of underground storage tanks (USTs) from the New City Cleaners site, samples taken revealed contamination of the soils and groundwater with tetrachloroethene, trichloroethene, 1,2-dichloroethane, benzene, toluene, ethylbenzene, xylenes and total petroleum hydrocarbons. The four USTs had reported contents of stoddard solvent, bunker oil and unknown. Tetrachloroethene had been stored behind the building in drums. Management areas include the contaminated soils piled on site and the drum storage area.

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):

ROUTE SCORES:

Surface Water/Human Health: 8.1 (2)      Surface Water/Environ.: 13.9 (2)

Air/Human Health: 36.8 (4)      Air/Environmental: 51.9 (5)

Ground Water/Human Health: 73.6 (5)

( ) indicate quintile score based on August 1991 quintile breakdown. Scores may change at August 1992 quintile breakdown.

OVERALL RANK: 1

Rev. 4/3/92

**WORKSHEET 2**  
**ROUTE DOCUMENTATION**

**1. SURFACE WATER ROUTE**

List substances to be considered for scoring:

Source: 7

- |                            |                 |            |
|----------------------------|-----------------|------------|
| 1. Trichloroethene (TCE)   | 4. Toluene      | 7. Xylenes |
| 2. Tetrachloroethene (PCE) | 5. Benzene      |            |
| 3. 1,2-dichloroethane      | 6. Ethylbenzene |            |

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

Trichloroethene, Toluene, Xylenes, Tetrachloroethene, Benzene, 1,2-dichloroethane and Ethylbenzene were used in scoring due to their presence in the ground water analysis. Due to proximity of a drainage ditch to the site these same contaminants may be available to the surface water route through an overland route or a release from groundwater.

List management units to be considered in scoring:

Source: 6,11

1. containers (drums) of solvents containing tetrachloroethene.
2. piles of contaminated soils on site

Explain basis for choice of unit used in scoring.

Source: 6,11

The piles of contaminated soil remaining on site were selected as the management unit due to the availability of contaminant to the pathway.

WORKSHEET 2 (CONTINUED)  
ROUTE DOCUMENTATION

2. AIR ROUTE

List substances to be considered for scoring:

Source: 7

- |                      |                       |            |
|----------------------|-----------------------|------------|
| 1. Trichloroethene   | 3. 1,2-dichloroethane | 5. Toluene |
| 2. Tetrachloroethene | 4. Benzene            | 6. Xylenes |

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

All six substances were used in scoring due to their availability to the air route from the soil piles

List management units to be considered in scoring:

Source: 11

1. piles of contaminated soils

Explain basis for choice of unit used in scoring.

Source: 11

The contaminated soils above the ground water were excavated at the time of the underground storage tank removals and piled on site. This action, coupled with the absence of cover or vapor recovery system increased the amount of contaminant available to the air pathway.

WORKSHEET 2 (CONTINUED)  
ROUTE DOCUMENTATION

3. GROUND WATER ROUTE

List substances to be considered for scoring:

Source: 7

- |                            |                 |            |
|----------------------------|-----------------|------------|
| 1. Trichloroethene (TCE)   | 4. Toluene      | 7. Xylenes |
| 2. Tetrachloroethene (PCE) | 5. Benzene      |            |
| 3. 1,2-dichloroethane      | 6. Ethylbenzene |            |

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

Trichloroethene, Toluene, Xylenes, Tetrachloroethene, Benzene, 1,2-dichloroethane and Ethylbenzene were used in scoring due to their presence in the ground water analysis. Due to proximity of a drainage ditch to the site these same contaminants may be available to the surface water route through an overland route or a release from groundwater.

List management units to be considered in scoring:

Source: 6,11

1. containers (drums) of solvents containing tetrachloroethene.
2. piles of contaminated soils on site

Explain basis for choice of unit used in scoring.

Source: 6,11

The piles of contaminated soil remaining on site were selected as the management unit due to the availability of contaminant to the pathway.

**WORKSHEET 3**  
**SUBSTANCE CHARACTERISTICS WORKSHEET**  
**FOR MULTIPLE UNIT/SUBSTANCE SITES**

Combination 1      Combination 2      Combination 3

Unit:

Substance:

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**SURFACE WATER ROUTE**

Human Toxicity Value:

Environ. Toxicity Value:

Containment Value:

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Surface Water Human  
Subscore:

Surface Water Environ.  
Subscore:

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**AIR ROUTE**

Human Toxicity/Mobility  
Value:

Environ. Toxicity/  
Mobility Value:

Containment Value:

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Air Human Subscore:

Air Environ. Subscore:

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**GROUND WATER ROUTE**

Human Toxicity/  
Mobility Value:

Containment Value:

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Ground Water Subscore:

**WORKSHEET 4  
SURFACE WATER ROUTE**

**1.0 SUBSTANCE CHARACTERISTICS**

**1.1 Human Toxicity**

Substance	Drinking Water Standard (ug/l)		Acute Toxicity (mg/kg-bw)		Chronic Toxicity (mg/kg/day)		Carcinogenicity WOE PF* Val.		
	Val.		Val.		Val.				
1. benzene	5	8	3306	3	X	-	A	.029	5
2. toluene	2000	2	5000	3	0.2	1	X	-	-
3. ethylbenzene	700	4	3500	3	0.1	1	X	-	-
4. xylene (total)	10000	2	50	10	2	1	X	-	-
5. TCE	5	8	2402	3	X	-	B2	.011	4
6. 1,2-dichloroeth-	5	8	725	5	X	-	B2	.091	4
7. PCE	5	8	800	5	0.01	1	B2	.051	4

\*Potency Factor

Source: 1  
 Highest Value: 10  
 +2 Bonus Points? yes  
 Final Toxicity Value 12

**1.2 Environmental Toxicity**

Substance	Acute Criteria (ug/l)		Non-human Mammalian Acute Toxicity (mg/kg)		Source: <u>1</u>	Value: <u>3</u>
	Value		Value			
1. benzene	5300	2	X	-		
2. toluene	17500	2	X	-		
3. ethylbenzene	32000	2	X	-		
4. xylene (total)	X	-	4300	3		
5. TCE	45000	2	X	-		
6. 1,2-dichloroe-	118000	2	X	-		
7. PCE	5280	2	X	-		

1.3 Substance Quantity: 125 cubic yards Source: 11 Value: 6

Explain basis: The excavation open behind the facility is greater in dimension than 15 feet wide, long and deep, providing a volume greater than 125 cubic yards by the estimate of the author of this site hazard assessment.

WORKSHEET 4 (CONTINUED)  
SURFACE WATER ROUTE

2.0 MIGRATION POTENTIAL

- 2.1 Containment Source: 11 Value: 5  
Explain basis: No secondary containment.
- 2.2 Surface Soil Permeability: Fine grained sandy silt Source: 10 Value: 3
- 2.3 Total Annual Precipitation: 7.5 inches Source: 5 Value: 1
- 2.4 Max. 2-Yr/24-hour Precipitation: 0.9 inches Source: 5 Value: 1
- 2.5 Flood Plain: Does not lie within flood plain Source: 2 Value: 0
- 2.6 Terrain Slope: < 2 % Source: 8 Value: 1

3.0 TARGETS

- 3.1 Distance to Surface Water: Adjacent drainage ditch Source: 11 Value: 10
- 3.2 Population Served within 2 miles: vpop.= 0 Source: 3,4 Value: 0
- 3.3 Area Irrigated within 2 miles: 0.75vno.acres= 0 Source: 3 Value: 0
- 3.4 Distance to Nearest Fishery Resource: Columbia;6200 Source: 8 Value: 3
- 3.5 Distance to, and Name(s) of, Nearest Sensitive Environment(s) Municipal park adjacent to Columbia High School. distance <1000 feet. Source: 11 Value: 12
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4.0 RELEASE

- Explain basis for scoring a release to surface water: No release to surface water has been documented. Source: 7 Value: 0
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WORKSHEET 5 (CONTINUED)

AIR ROUTE

1.6 Substance Quantity: Approximately 400 square feet Source: 11 Value: 6  
Explain basis: the surface area of the waste  
piles easily exceed 20 feet wide by 20 feet long.

2.0 MIGRATION POTENTIAL

2.1 Containment: Waste pile outdoors, with partial Source: 11 Value: 8  
or unmaintained cover.

3.0 TARGETS

3.1 Nearest Population: Douglas Ave & Gillespie 1400ft Source: 8,11 Value: 8

3.2 Distance to, and Name(s) of, Nearest Sensitive  
Environment(s) City Park Adjacent to columbia Source: 11 Value: 7  
High School. <1000ft.

3.3 Population within 0.5 miles:  $\sqrt{\text{pop}} = \sqrt{1268} = 35.6$  Source: 9 Value: 36

4.0 RELEASE

Explain basis for scoring a release to air: No Source:      Value: 0  
evidence is available quantifying a release



WORKSHEET 6 (CONTINUED)  
GROUND WATER ROUTE

3.0 TARGETS

3.1 Ground Water Usage: Public supply, No alternative Source: 4 Value: 9

3.2 Distance to Nearest Drinking Water Well: ≤ 5000 ft Source: 8,4 Value: 2

3.3 Population Served within 2 Miles:  $\sqrt{\text{pop}} = \sqrt{30508} = 174.6$  Source: 4 Value: 100

3.4 Area Irrigated by (Groundwater) Wells  
within 2 miles:  $0.75\sqrt{\text{no. acres}} = 11.9$  Source: 3 Value: 12

4.0 RELEASE

Explain basis for scoring a release to ground water: Source of information documents  
contaminants in the ground water.  
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#### SOURCES USED IN SCORING

1. Toxicology Database for Use in WARM Scoring, Washington Department of Ecology (SAIC.) January, 1992.
2. Flood Boundary and Floodway Map, Community-Panel Number 535533 002D, FEMA.
3. Recorded Water rights of the Department of Ecology, Region 4, August 16, 1990
4. State of Washington Public Water Supply System Listing, November 8, 1989
5. Washington Climate, Cooperative Extension Service, Washington State University, May 1979.
6. Memorandum from Roger Wright to Stanley Arlt, City of Richland, concerning New City Cleaners. August 7, 1992
7. Misc. Lab reports for samples from the New City Cleaners Site, Submitted by John Fuhrer, site assessor April & May 1992.
8. Richland Quadrangle Map, USGS 7.5 Minute Topographic Series
9. Census Data Maps & Tables, Provided by Art Tackett, Benton - Franklin Conference of Governments, 1990 U.S. Census data.
10. Final Report, US Bank Facility, Richland Washington, E.P. Johnson Construction Inc. March, 1992.
11. Personal observations by Mark Peterschmidt, Site visit, August 12, 1992.