PASSF 1.5 v1
DD-4 4/17/84

Facility name: Pasco Sanitary Landfill/Resource Recovery Inc.

Location: Kahlotus Road Pasco, Wa

EPA Region: X

Person(s) in charge of the facility: Larry Dietrich
420 E. Ainsworth
Pasco, Wa. 99301

Name of Reviewer: Patt O'Flaherty Rg Date: 17 APRIL 1984

General description of the facility:
(For example: landfill, surface impoundment, pile, container; types of hazardous substances; location of the facility; contamination route of major concern; types of information needed for rating; agency action, etc.)

Landfill used from 1972 until 1974 as a hazardous waste dumpsite. Herbicides, Wood treatment wastes, paint wastes, barium sludges & other matter was deposited. Site was evaporation treatment and recovery plant combined with standard municipal and sanitary landfill. Concern by State about lateral leaching of sanitary wastes into industrial wastes and potential groundwater contamination.

Scores: S_M = 5.5 (S_{gw} = 9.52 S_{sw} = 0.78 S_a = 0)

S_{FE} = 0

S_{DC} = 3.1

FIGURE 1
HRS COVER SHEET

USEPA SF
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Ground Water Route Work Sheet *					
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)
1 Observed Release	0 45	1	0	45	3.1
If observed release is given a score of 45, proceed to line 4. If observed release is given a score of 0, proceed to line 2.					
2 Route Characteristics					3.2
Depth to Aquifer of Concern	0 1 2 3	2	4	6	
Net Precipitation	0 1 2 3	1	0	3	
Permeability of the Unsaturated Zone	0 1 2 3	1	3	3	
Physical State	0 1 2 3	1	3	3	
Total Route Characteristics Score			10	15	
3 Containment	0 1 2 3	1	1	3	3.3
4 Waste Characteristics					3.4
Toxicity/Persistence	0 3 6 9 12 15 18	1	15	18	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1	6	8	
Total Waste Characteristics Score			21	26	
5 Targets					3.5
Ground Water Use	0 1 2 3	3	6	9	
Distance to Nearest Well/Population Served	0 4 6 8 10 12 16 18 20 24 30 32 35 40	1	20	40	
Total Targets Score			26	49	
6 If line 1 is 45, multiply 1 x 4 x 5 If line 1 is 0, multiply 2 x 3 x 4 x 5			5460	57,330	
7 Divide line 6 by 57,330 and multiply by 100		S_{gw} =	9.52		

?

FIGURE 2
GROUND WATER ROUTE WORK SHEET

Surface Water Route Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)
1 Observed Release	0 45	1	0	45	4.1
If observed release is given a value of 45, proceed to line 4. If observed release is given a value of 0, proceed to line 2.					
2 Route Characteristics					4.2
Facility Slope and Intervening Terrain	0 1 2 3	1	0	3	
1-yr. 24-hr. Rainfall	0 1 2 3	1	1	3	
Distance to Nearest Surface Water	0 1 2 3	2	0	6	
Physical State	0 1 2 3	1	3	3	
Total Route Characteristics Score			4	15	
3 Containment	0 1 2 3	1	1	3	4.3
4 Waste Characteristics					4.4
Toxicity/Persistence	0 3 6 9 12 15 18	1	15	18	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1	6	8	
Total Waste Characteristics Score			21	26	
5 Targets					4.5
Surface Water Use	0 1 2 3	3	6	9	
Distance to a Sensitive Environment	0 1 2 3	2	0	6	
Population Served/Distance to Water Intake Downstream	0 4 6 8 10 12 16 18 20 24 30 32 35 40	1	0	40	
Total Targets Score			6	55	
6 If line 1 is 45, multiply 1 x 4 x 5 If line 1 is 0, multiply 2 x 3 x 4 x 5			504	64,350	
7 Divide line 6 by 64,350 and multiply by 100		S_{sw} =	0.78		

FIGURE 7
SURFACE WATER ROUTE WORK SHEET

Air Route Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)
1 Observed Release	0 45	1	0	45	5.1
Date and Location:					
Sampling Protocol:					
If line 1 is 0, the S_a = 0. Enter on line 5. If line 1 is 45, then proceed to line 2.					
2 Waste Characteristics					5.2
Reactivity and Incompatibility	0 1 2 3	1		3	
Toxicity	0 1 2 3	3		9	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1		8	
	Total Waste Characteristics Score			20	
3 Targets					5.3
Population Within 4-Mile Radius	0 9 12 15 18 21 24 27 30	1		30	
Distance to Sensitive Environment	0 1 2 3	2		6	
Land Use	0 1 2 3	1		3	
	Total Targets Score			39	
4 Multiply 1 x 2 x 3				35,100	
5 Divide line 4 by 35,100 and multiply by 100		S_a =	0		

FIGURE 9
AIR ROUTE WORK SHEET

	S	S^2
Groundwater Route Score (S_{gw})	9.52	90.63
Surface Water Route Score (S_{sw})	0.78	0.61
Air Route Score (S_a)	0	0
$S_{gw}^2 + S_{sw}^2 + S_a^2$		91.24
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2}$		9.55
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2} / 1.73 = S_M =$		5.52

FIGURE 10
WORKSHEET FOR COMPUTING S_M

Fire and Explosion Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)
1 Containment	1 3	1		3	7.1
2 Waste Characteristics					7.2
Direct Evidence	0 3	1		3	
Ignitability	0 1 2 3	1		3	
Reactivity	0 1 2 3	1		3	
Incompatibility	0 1 2 3	1		3	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1		8	
Total Waste Characteristics Score				20	
3 Targets					7.3
Distance to Nearest Population	0 1 2 3 4 5	1		5	
Distance to Nearest Building	0 1 2 3	1		3	
Distance to Sensitive Environment	0 1 2 3	1		3	
Land Use	0 1 2 3	1		3	
Population Within 2-Mile Radius	0 1 2 3 4 5	1		5	
Buildings Within 2-Mile Radius	0 1 2 3 4 5	1		5	
Total Targets Score				24	
4 Multiply 1 x 2 x 3				1,440	
5 Divide line 4 by 1,440 and multiply by 100		S_{FE} =			

FIGURE 11
FIRE AND EXPLOSION WORK SHEET

Direct Contact Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)
1 Observed Incident	0 45	1	0	45	8.1
If line 1 is 45, proceed to line 4 If line 1 is 0, proceed to line 2					
2 Accessibility	0 1 2 3	1	3	3	8.2
3 Containment	0 15	1	15	15	8.3
4 Waste Characteristics Toxicity	0 1 2 3	5	15	15	8.4
5 Targets					8.5
Population Within a 1-Mile Radius	0 1 2 3 4 5	4	1	20	
Distance to a Critical Habitat	0 1 2 3	4	0	12	
Total Targets Score			1	32	
6 If line 1 is 45, multiply 1 x 4 x 5 If line 1 is 0, multiply 2 x 3 x 4 x 5			675	21,600	
7 Divide line 6 by 21,600 and multiply by 100		S_{DC} =	3.12		

FIGURE 12
DIRECT CONTACT WORK SHEET

EPA REGION X

DOCUMENTATION RECORDS
FOR
HAZARD RANKING SYSTEM

INSTRUCTIONS: The purpose of these records is to provide a convenient way to prepare an auditable record of the data and documentation used to apply the Hazard Ranking System to a given facility. As briefly as possible summarize the information you used to assign the score for each factor (e.g., "Waste quantity = 4,230 drums plus 800 cubic yards of sludges"). The source of information should be provided for each entry and should be a bibliographic-type reference that will make the document used for a given data point easier to find. Include the location of the document and consider appending a copy of the relevant page(s) for ease in review.

FACILITY NAME: Pasco Sanitary Landfill / Resource Recovery Corp

LOCATION: Pasco Wa (Kahlotus Rd & Hwy 12)

GROUND WATER ROUTE

1 OBSERVED RELEASE

Contaminants detected (5 maximum):

None reported in DOE or EPA ERRIS Files.

HRS Score = 0

Rationale for attributing the contaminants to the facility: (User's Guide, pg 9)

N/A

* * *

2 ROUTE CHARACTERISTICS

Depth to Aquifer of Concern

Name/description of aquifers(s) of concern:

Water table within Columbia Basin is in Basalt bedrock overlain by coarse-grained sediments. deposits. These constitute the water bearing layer (Water Supply Bulletin # 8) & JUB Eng Report 7/83.

Depth(s) from the ground surface to the highest seasonal level of the saturated zone [water table(s)] of the aquifer of concern:

410' (surface) - 350' = (60') highest ground water level

from JUB Engr. Hydrogeologic study of Pasco Landfill 1981 and 1983 packet of DOE Files with Cross section figure.

Depth from the ground surface to the lowest point of waste disposal/storage: 420 - 395' = 15'; Burial depth unknown

Landfill ranges from 395 feet above MSL to 420 ft MSL (average elevation is about 410 ft MSL) - DOE Report on Industrial Waste Disposal Site Evaluation of Hanford Re. 12/73

GW elevation at lowest point = 350' (JUB Engr. 1981)

Assume 395 - 6 feet (Burial depth HRS pg 2) = 54 ft to ground H_2O

Thus, Score 2 pg 12. HRS. (21-75' range)

Net Precipitation

Mean annual or seasonal precipitation (list months for seasonal):

M.5 "/year precip. Nat'l. Weather Service (Kennewick Station) could be higher if snowfall

Mean annual lake or seasonal evaporation (list months for seasonal):

M.5" map Nat'l. Weather Service (Kennewick Station)

Net precipitation (subtract the above figures):

0

Score = 1 (-10 to +5 incl range) HRS pg 12

Permeability of Unsaturated Zone

Soil type in unsaturated zone:

Timmerman - Quincy Burbank Association, Well to excessively drained soils that are deep or are underlain by gravel cobble or sand at about 30 inches (SCS categories in DOE Files) "Eolian Sands & Silts"; Source: DOE Files, Evaluation of Resource Known, prepared by DOE, 12/1973

Permeability associated with soil type:

Permeability estimated at (10^{-5} to $>10^{-3}$)

Scored 3 using HRS User Guide Pg. 15

Physical State

Physical state of substances at time of disposal (or at present time for generated gases):

Arsenical Wastes — Inventory of waste substances in DOE Files 1973-1975

Liquids - Liquids & Solvents

Scored on liquid leachate = 3 HRS pg. 12

* * *

3 CONTAINMENT

Containment

Method(s) of waste or leachate containment evaluated:

Containers sealed and presumed in sound condition but liner is only 2 mil plastic sheeting and soil cover is being wind eroded until portions of plastic are exposed. (WDOE, J Oakenden, 4/11/84 Site Visit)

Method with highest score:

(B) Containers - score 1 HRS ranking pg 17

4 WASTE CHARACTERISTICS

Toxicity and Persistence

Compound(s) evaluated:

2-4-D tar
MCPA Bleed
Barium Sludges
Pentachlorophenol

} Monthly letters from Resource Recovery to DOE containing waste inventories received from 1/11/73 to 1/17/75 in DOE Files.

Compound with highest score:

MCPA is High Tox - (Sax) 3
(Methoxyl) & Mod Persist (Brown, 1978) 2

Score 15 HRS pg. 18

(? - can you use the tox score from one compound & the persist from another)

Hazardous Waste Quantity

Total quantity of hazardous substances at the facility, excluding those with a containment score of 0 (Give a reasonable estimate even if quantity is above maximum):

(6)

2965 drums of MCPA Bleed
939 drums, 680 pails

(Totaled from Resource Recovery Inventory Records to DOE, letters from John R. Kenderly, Jr. 6/11 - 10/3/73, Period when Dredge-tides were accepted.)

Basis of estimating and/or computing waste quantity:

Summarized monthly manifests sent to DOE 6/11/73 - 10/1/75 DOE & EPA Files
Quantities in drums fits within 2501 - 5000 drums,
Therefore, score 6 *** for HRS pg. 23

5 TARGETS

Ground Water Use

Use(s) of aquifer(s) of concern within a 3-mile radius of the facility:

[illegible] domestic, commercial, [illegible]

Public supplies include Naval Air Station Drinking - municipal avail. but [illegible] not be minimal hookup requirements coming from Pasco

Distance to Nearest Well | Source: WSB No 8. and USGS Topo Pasco Quad. Score 2 HRS page 24

Location of nearest well drawing from aquifer of concern or occupied building not served by a public water supply:

District well on disposal site, section 22 an irrigation well. Source: DOE Files 1973

Distance to above well or building:

less than 2000 feet (on site)

Source DOE Files 1973 and JUB Report Score 4 HRS pg. 25

Population Served by Ground Water Wells Within a 3-Mile Radius

Identified water-supply well(s) drawing from aquifer(s) of concern within a 3-mile radius and populations served by each:

Water supply Bulletin No 8 lists 2 domestic wells, the public supply for Naval Air Station and industrial wells drawing aquifer. DOE Files add 6 wells within one-mile radius (8 domestic x 3.8 = 30.4 people) for HRS Pg. 25

Computation of land area irrigated by supply well(s) drawing from aquifer(s) of concern within a 3-mile radius, and conversion to population (1.5 people per acre):

7 irrigation wells listed in DOE Files within one-mile radius; WSBull. does not list any beyond one mile. Acreage served unknown but at least 7 acres. (7 x 1.5 = 10.5 people)

Total population served by ground water within a 3-mile radius:

Based on airport, motel, and Naval Air Station as well as 40 people from 6-8 domestic wells and 7 irrigation wells assume greater than 100 people served.

(101 - 1000) = Score of 2 HRS pg 27

Matrix score on pg 24 for Distance to nearest well and pop served = 20 HRS Pg. 24

SURFACE WATER ROUTE

1 OBSERVED RELEASE

Contaminants detected in surface water at the facility or downhill from it (5 maximum):

None noted in DOE or EPA files, Therefore, HRS = 0 (User's Guide, pg 29)

Rationale for attributing the contaminants to the facility:

N/A

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2 ROUTE CHARACTERISTICS

Facility Slope and Intervening Terrain

Average slope of facility in percent:

3-5% - USGS topo - Pasco QUAD.

Name/description of nearest downslope surface water:

Snake River; 2.6 miles to the N.W. USGS topo - Pasco QUAD.

Average slope of terrain between facility and above-cited surface water body in percent:

less than 3% - USGS Topo Pasco QUAD (410 ft to 300' in 2.6 miles)
HRS Score = 0 Pg. 31

Is the facility located either totally or partially in surface water?

No USGS topo Pasco QUAD.

Is the facility completely surrounded by areas of higher elevation?

The facility slopes are level to the South and East towards the Snake and South towards the Columbia.
USGS Topo, Pasco Quad.

1-Year 24-Hour Rainfall in Inches

1.21 – Nat'l Weather Service Kennewick Station

Distance to Nearest Downslope Surface Water

2.6 mi NW of Snake River (USGS topo; Pasco Quad)

Physical State of Waste

Herbicide Wastes & Tars
Sludges
Paints & Solvents
} Inventories of waste published in DOE Files, 1973-1975.

Liquid & Sludges Score *** 3 HRS pg 12

3 CONTAINMENT

Containment

Method(s) of waste or leachate containment evaluated:

Sealed containers (in drums) and buried in plastic (or lined) lined pits then covered with 2-4 ft soil. Q. Sullenberger on 4/11/84 observed wind erosion that has exposed some of the plastic liner (pers. comm 4/11/84)

Method with highest score:

Soil covered (cording) & containment system potentially breached, since pits preclude [illegible] containment.

Scored from B, "Contains" Score = 1 HRS Ranking Pg 35.

4 WASTE CHARACTERISTICS

Toxicity and Persistence

Compound(s) evaluated

2-4-D Tar
MCPA Bleed
Barium Sludges w/ Mercury
Pentachlorophenol

} Substances identified in monthly summaries of waste received in landfill from R.R. Inc. to DOE from 1/11/73 to 1/17/75 in DOE Files

Compound with highest score:

MCPA - Bleed.
High toxicity (3) from Sax
moderate persist. (2) (Brown, 1978)
Score = 15, HRS Pg 18

Hazardous Waste Quantity

Total quantity of hazardous substances at the facility, excluding those with a containment score of 0 (Give a reasonable estimate even if quantity is above maximum):

939 drums + 680 pails of MCPA bleed
2965 drums of MCPA Bleed

} Inventories in DOE Files 1973 - 1975

Basis of estimating and/or computing waste quantity:

Summarized monthly records manifest from R.R. Inc. To DOE from 6/11 to 10/3/73 period when these wastes were received this fit in range of 2501 - 5000 drums
Therefore score 6 for quantity
* * * HRS pg. 23,

5 TARGETS

Surface Water Use

Use(s) of surface water within 3 miles downstream of the hazardous substance:

Recreation in fresh consists primarily boating & fishing, Sacajawea State Park is approximately 3 miles downstream of site at confluence of Snake & Columbia Rivers,
Score 2, HRS pg. 34

Is there tidal influence?

Not in tidal waters; USGS topo, Pasco Quad

Distance to a Sensitive Environment

Distance to 5-acre (minimum) coastal wetland, if 2 miles or less:

None identified from USGS topo, Pasco Quad

Distance to 5-acre (minimum) fresh-water wetland, if 1 mile or less:

None identified from USGS topo, Pasco Quad

Distance to critical habitat of an endangered species or national wildlife refuge, if 1 mile or less:

N/A no NWR or endan. spec. identified from USGS topo, Pasco Quad. HRS Score = 0 (User's Guide = pg 37)

Population Served by Surface Water

Location(s) of water-supply intake(s) within 3 miles (free-flowing bodies) or 1 mile (static water bodies) downstream of the hazardous substance and population served by each intake:

Surface Water for drinking is taken upstream on the Columbia of the area. (Tim Sullivan DSHS 4/13/84 pers comm) Surface Water not used in this region for irrigation although area falls within current planning stage, Pasco Irrig. District #1, 4/16/84.

Therefore score 0 for surface water use HRS matrix on pg 36.

Computation of land area irrigated by above-cited intake(s) and conversion to population (1.5 people per acre):

No surface water irrigation according to Pasco Irrigation District 4/16/84

Total population served:

N/A see above

Name/description of nearest of above water bodies:

N/A see above

Distance to above-cited intakes, measured in stream miles.

N/A see above

AIR ROUTE

1 OBSERVED RELEASE

Contaminants detected:

None reported in DOE or EPA ERRIS File
However 2-4D herbicide was claimed to be spraying local grape crops although never proven. DOE Files

Date and location of detection of contaminants

Therefore $S_A = 0$
(User's Guide, pg 39)

N/A

Methods used to detect the contaminants:

N/A

Rationale for attributing the contaminants to the site:

N/A

* * *

2 WASTE CHARACTERISTICS

Reactivity and Incompatibility

Most reactive compound:

N/A

Most incompatible pair of compounds:

N/A

Toxicity

Most toxic compound:

N/A

Hazardous Waste Quantity

Total quantity of hazardous waste:

N/A

Basis of estimating and/or computing waste quantity:

N/A

* * *

3 TARGETS

Population Within 4-Mile Radius

Circle radius used, give population, and indicate how determined:

0 to 4 mi 0 to 1 mi 0 to 1/2 mi 0 to 1/4 mi

N/A

Distance to a Sensitive Environment

Distance to 5-acre (minimum) coastal wetland, if 2 miles or less:

N/A

Distance to 5-acre (minimum) fresh-water wetland, if 1 mile or less:

N/A

Distance to critical habitat of an endangered species, if 1 mile or less:

N/A

Land Use

Distance to commercial/industrial area, if 1 mile or less:

N/A

Distance to national or state park, forest, or wildlife reserve, if 2 miles or less:

N/A

Distance to residential area, if 2 miles or less:

N/A

Distance to agricultural land in production within past 5 years, if 1 mile or less:

N/A

Distance to prime agricultural land in production within past 5 years, if 2 miles or less:

N/A

Is a historic or landmark site (National Register or Historic Places and National Natural Landmarks) within the view of the site?

N/A

1 CONTAINMENT

Hazardous substances present:

No documented evidence of a fire or explosion threat

$S_{FE} = 0$

(User's Guide, pg 49)

Type of containment, if applicable:

N/A

* * *

2 WASTE CHARACTERISTICS

Direct Evidence

Type of instrument and measurements:

N/A

Ignitability

Compound used:

N/A

Reactivity

Most reactive compound:

N/A

Incompatibility

Most incompatible pair of compounds:

N/A

* * *

Hazardous Waste Quantity

Total quantity of hazardous substances at the facility:

N/A

Basis of estimating and/or computing waste quantity:

N/A

* * *

3 TARGETS

Distance to Nearest Population

N/A

Distance to Nearest Building

N/A

Distance to Sensitive Environment

Distance to wetlands:

N/A

Distance to critical habitat:

N/A

Land Use

Distance to commercial/industrial area, if 1 mile or less:

N/A

Distance to national or state park, forest, or wildlife reserve, if 2 miles or less:

N/A

Distance to residential area, if 2 miles or less:

N/A

Distance to agricultural land in production within past 5 years, if 1 mile or less:

N/A

Distance to prime agricultural land in production within past 5 years, if 2 miles or less:

N/A

Is a historic or landmark site (National Register or Historic ~~Places and~~ National Natural Landmarks) within the view of the site?

N/A

Population Within 2-Mile Radius

N/A

Buildings Within 2-Mile Radius

N/A

DIRECT CONTACT

1 OBSERVED INCIDENT

Date, location, and pertinent details of incident:

None reported in EPA ERRIS or WDOE Files.

HRS Score = 0
(User's Guide pg 57)

* * *

2 ACCESSIBILITY

Describe type of barrier(s):

No fence around site - DOE letter to District dated 12/20/79 Score = 3 HRS pg 57.

* * *

3 CONTAINMENT

Type of containment, if applicable:

Observation by Oberlander 4/11/84 of wind erosion; liquids in degradation area. HRS Pg. 59, Score 15

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4 WASTE CHARACTERISTICS

Toxicity

Compounds evaluated:

2-4 D Tar
MCPA Blend Tar] from notes in DOE Files

Compound with highest score:

MCPA: High Toxicity according to Sax Gives a 3; HRS Pg. 78

* * *

5 TARGETS

Population within one-mile radius

- < 100 - State's Work
Office of Financial Management
(1980 Fed Census nos.)

Distance to critical habitat (of endangered species) Score = 1 HRS pg 59

0 none noted on USGS topo.

HRS Score = 0

(User's Guide, pg 59)