US EPA RECORDS CENTER REGION 5
481111

IDS-8307 049

Facility name: HIMCO DUMP

Location: CTY. RD 10 AND NAPANEE EXTENSION, ELKHART IN

EPA Region: V

Person(s) in charge of the facility: CHARLES HIMES (HIMCO PRESIDENT)
705 N. WILDWOOD
ELKHART IN 46514

Name of Reviewer: Glenn Cebins FIT Date: 7-5-85

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.)

SITE WAS AN UNPERMITTED LANDFILL LOCATED IN A MARSHY AREA NORTH OF ELKHART, IN. THE SITE ACCEPTED MUNICIPLE, INDUSTRIAL AND MEDICAL WASTE. PRIVATE WELLS LOCATED SOUTH OF THE SITE WERE SHOWN TO BE CONTAMINATED IN 1974. SITE INSPECTION OF 7-30-84 CONFIRMED RELEASE TO GROUND WATER. SITE WAS CLOSED IN 1976

Scores: S_M = 42.31 (S_{gw} = 73.08 S_{sw} = 4.13 S_a = 0)
S_{FE} = 0
S_{DC} = 37.50

FIGURE 1
HRS COVER SHEET

Ground Water Route Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)
1 Observed Release	0 45	1	45	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		6	
Net Precipitation	0 1 2 3	1		3	
Permeability of the Unsaturated Zone	0 1 2 3	1		3	
Physical State	0 1 2 3	1		3	
	Total Route Characteristics Score			15	
3 Containment	0 1 2 3	1		3	3.3
4 Waste Characteristics					3.4
Toxicity/Persistence	0 3 6 9 12 15 18	1	18	18	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1	1	8	
	Total Waste Characteristics Score		19	26	
5 Targets					3.5
Ground Water Use	0 1 2 3	3	9	9	
Distance to Nearest Well/Population Served	0 4 6 8 10 12 16 18 20 24 30 32 35 40	1	40	40	
	Total Targets Score		49	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			41895	57,330	
7 Divide line 6 by 57,330 and multiply by 100		S_{gw} = 73.08			

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	2	3	
Distance to Nearest Surface Water	0 1 2 3	2	4	6	
Physical State	0 1 2 3	1	1	3	
	Total Route Characteristics Score		7	15	
3 Containment	0 1 2 3	1	2	3	4.3
4 Waste Characteristics					4.4
Toxicity/Persistence	0 3 6 9 12 15 18	1	18	18	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1	1	8	
	Total Waste Characteristics Score		19	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	4	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		10	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			2660	64,350	
7 Divide line 6 by 64,350 and multiply by 100		S_{sw} = 4.13			

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		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 =			

FIGURE 9
AIR ROUTE WORK SHEET

	S	S^2
Groundwater Route Score (S_{gw})	73.08	5340.69
Surface Water Route Score (S_{sw})	4.13	17.06
Air Route Score (S_a)	0	0
$S_{gw}^2 + S_{sw}^2 + S_a^2$		5357.75
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2}$		73.20
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2} / 1.73 = S_M =$		42.31

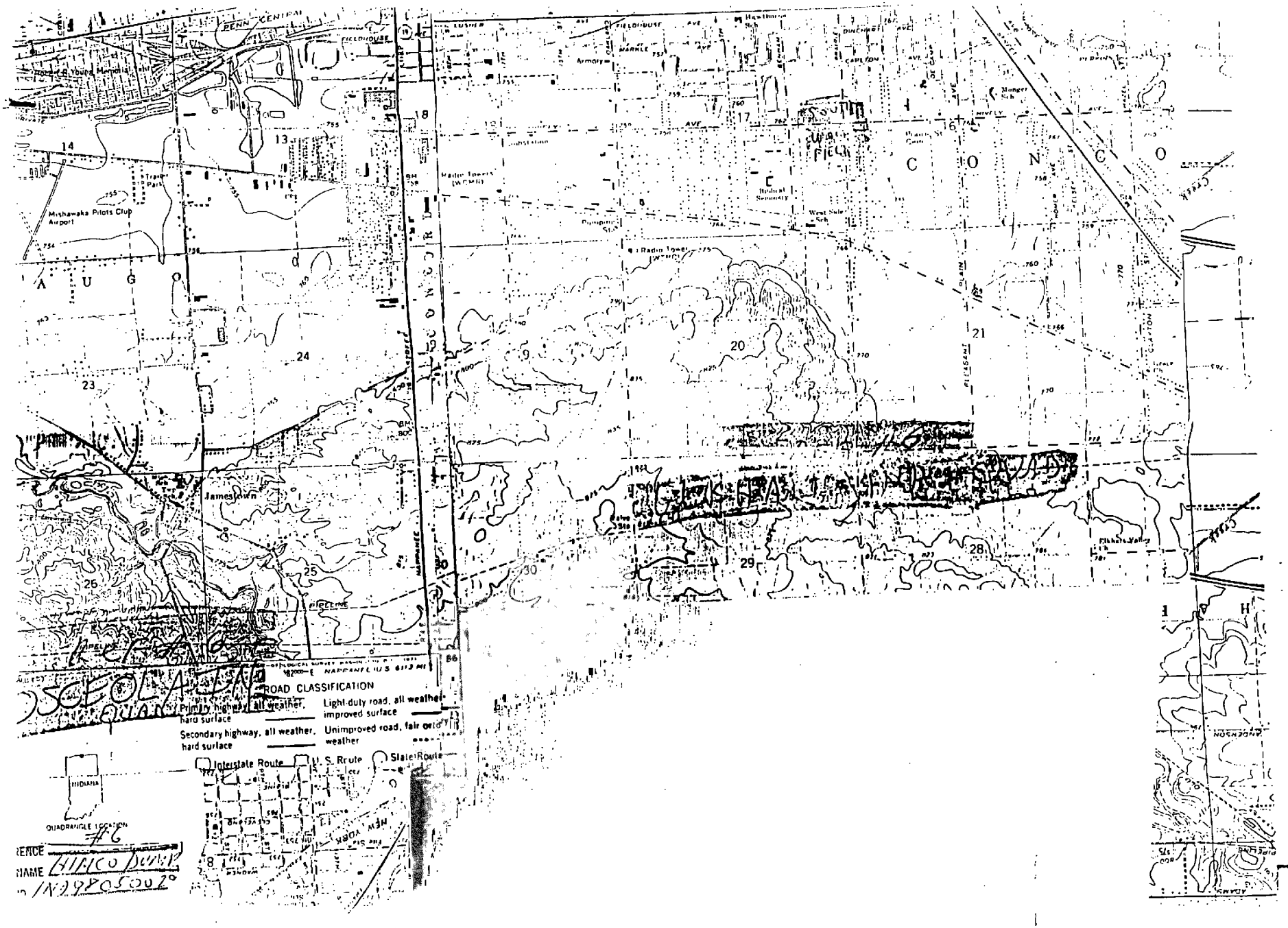
FIGURE 10
WORKSHEET FOR COMPUTING S_M

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} = 0		

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	12	20	
Distance to a Critical Habitat	0 1 2 3	4	0	12	
Total Targets Score			12	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			8100	21,600	
7 Divide line 6 by 21,600 and multiply by 100			S_{DC} = 37.50		

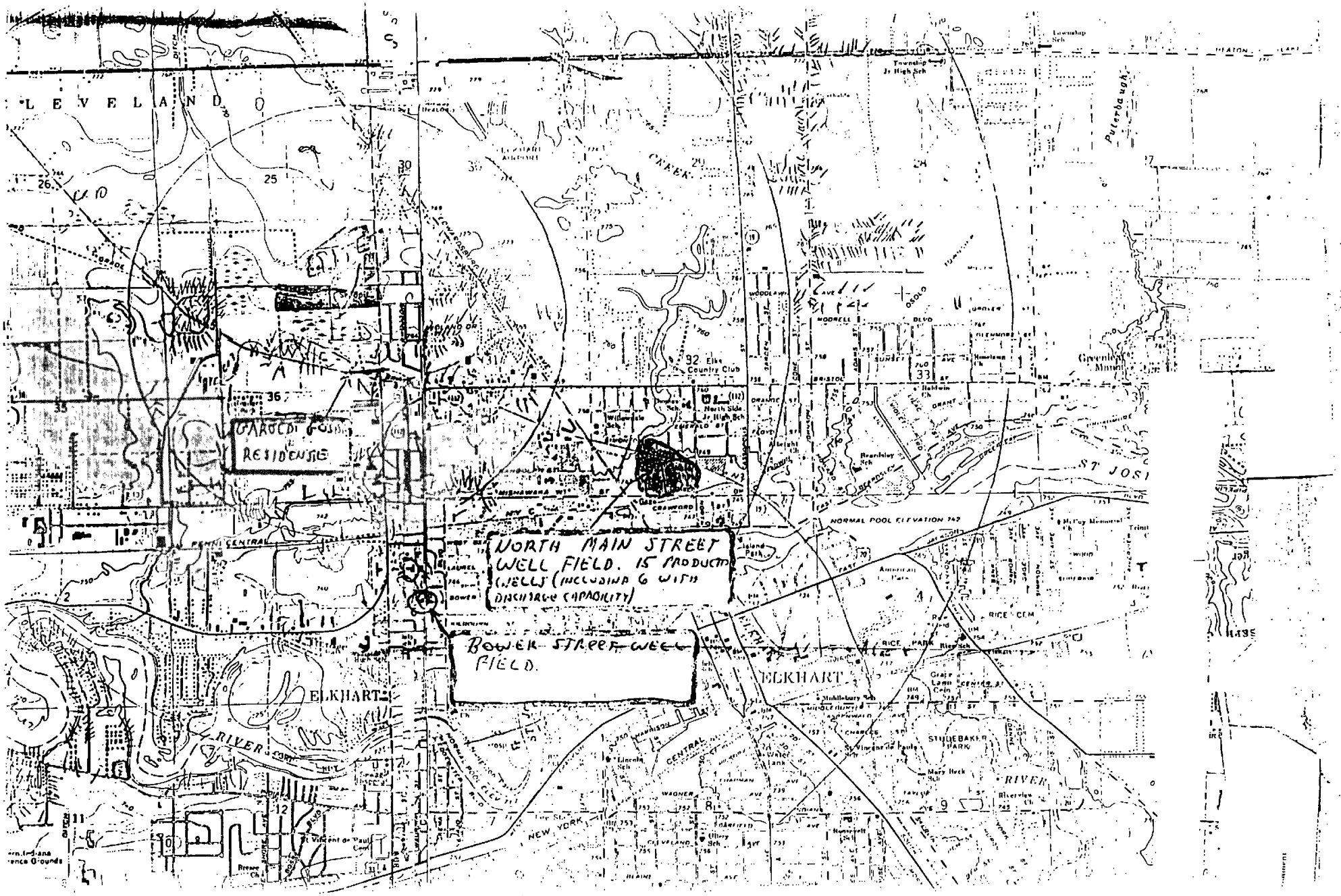
FIGURE 12
DIRECT CONTACT WORK SHEET



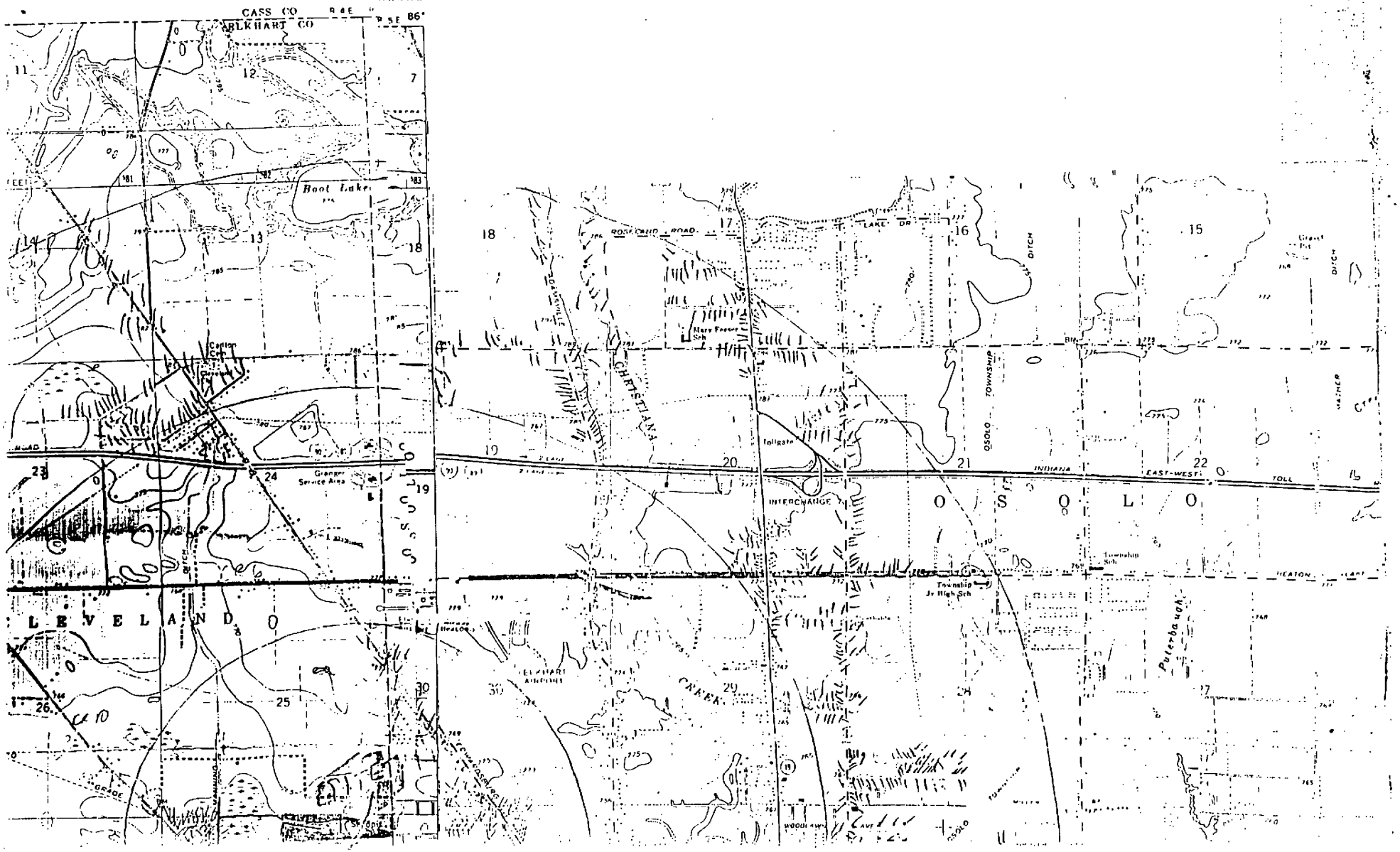
REFERENCE #6

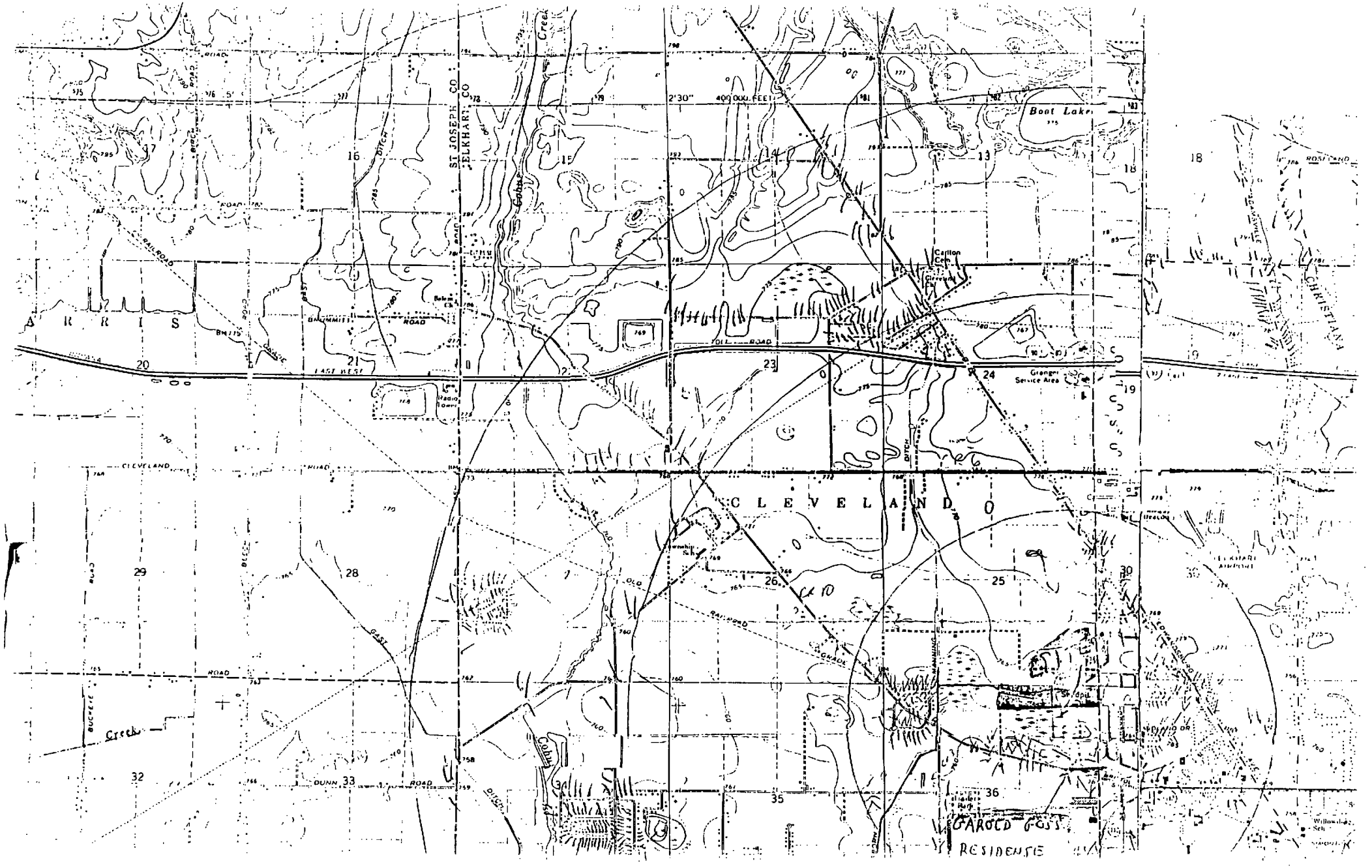
NAME HIRCO DUMP

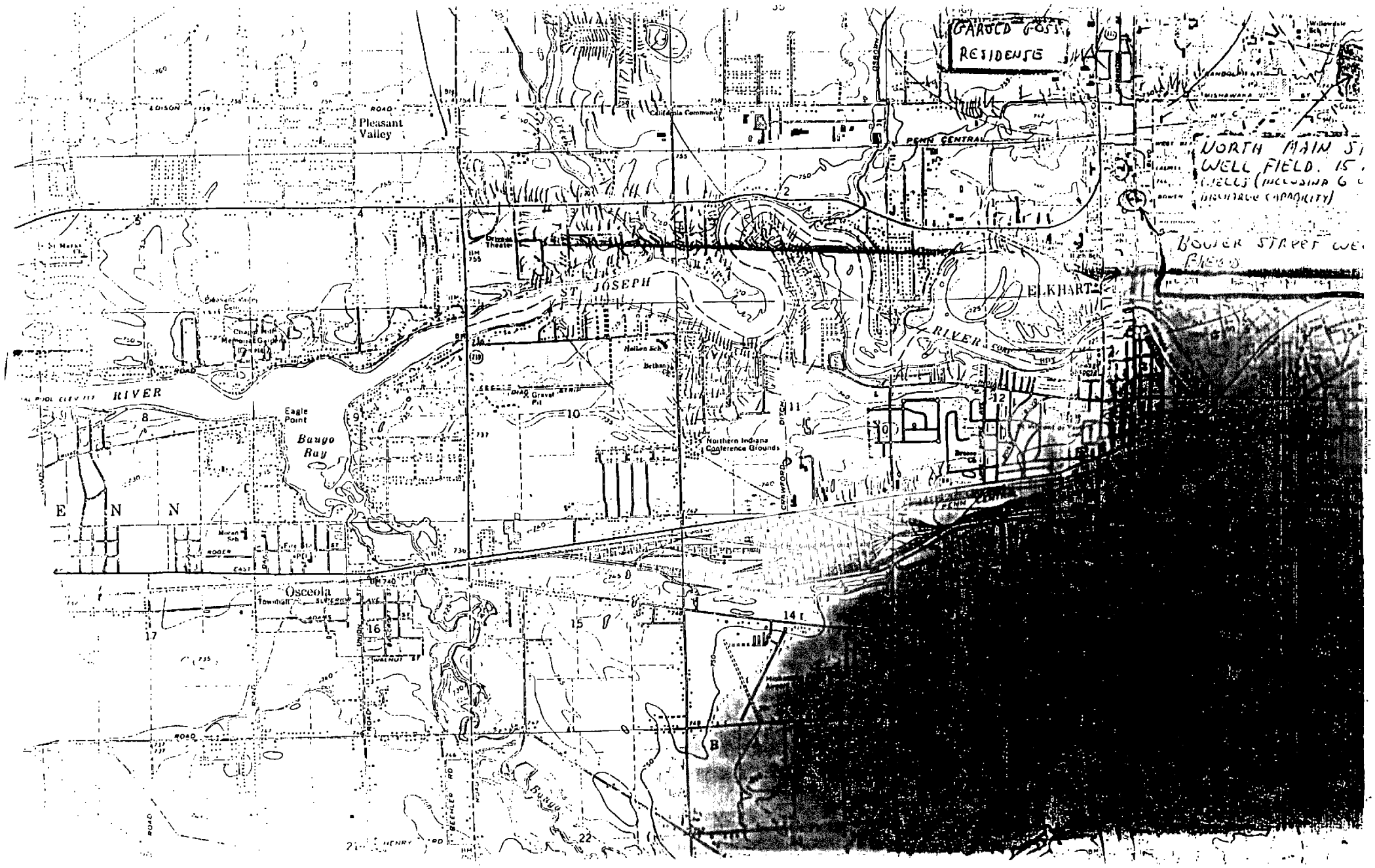
IN998050027

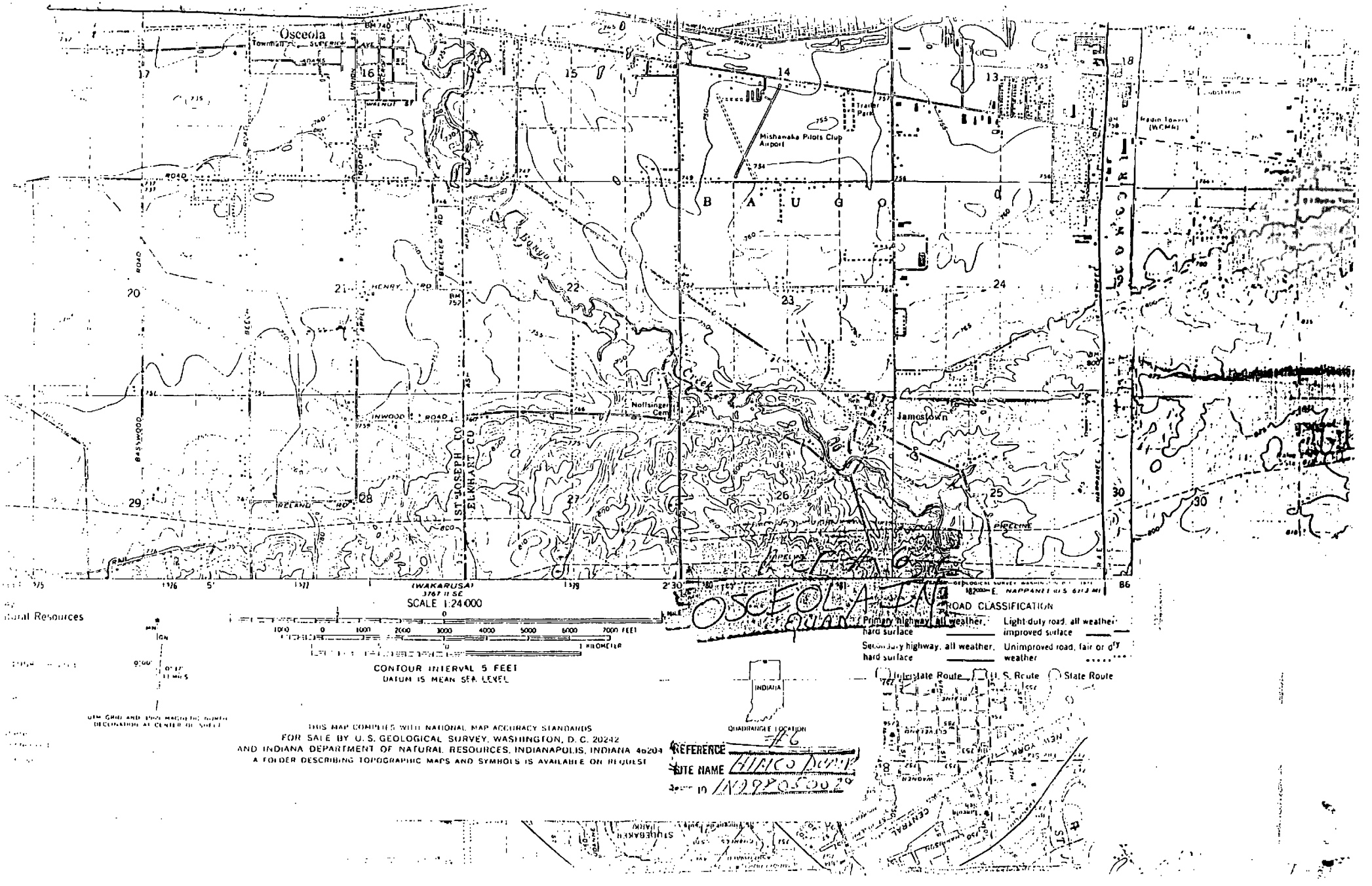

NORTH MAIN STREET WELL FIELD. 15 PRODUCTION WELLS (INCLUDING 6 WITH DISCHARGE CAPACITY)
BOWER STREET WELL FIELD.
GARRETT GOSS RESIDENCE
ELKHART
ELKHART
RIVER
RIVER
NORMAL POOL ELEVATION 742
PENN CENTRAL
NEW YORK CENTRAL
92 Elks Country Club
North Side Jr. High Sch
Brandeley Sch
Township Jr. High Sch
Greenleaf Manor
Pulaski
ST JOSEPH
RICE CEM
RICE PARK
STUDEBAKER PARK
Mary Beck Sch
Riverview Sch
St Vincent de Paul
Lincoln Sch
Millsbury Sch
Island Park
American Park
Grace Lawn Cem
Brown Cem
Indiana Fence Grounds
LEVELAND
WOODLAWN
WOODRELL BLVD
SUNSET AVE
BRISTOL
ORANGE
GRANT
WASHINGTON
CHARLES
WAGNER
CLEVELAND
MAINE
HEATON
OSOLO
CREEK
DITCH
26
25
30
35
36
33
2
11
12
8
9

OSCEOLA QUADRANGLE
INDIANA
7.5 MINUTE SERIES (TOPOGRAPHIC)




ST JOSEPH CO
ELKHART CO
2'30"
400 000 FEET
Boot Lake
Carlton Cem
Grange Service Area
Radio Tower
Township Sch
Willowdale Sch
ARRIS
CLEVELAND
CLEVELAND
EAST WEST
ROAD
RAILROAD
BRUMMITT
TOLL ROAD
DITCH
BIRCH
BUCKEYE
DUNN
CHRISTIANA
ROSELAND
Cobbs Creek
Creek
GAROLD GOST
RESIDENCE


HAROLD GOSS
RESIDENCE
NORTH MAIN ST
WELL FIELD. IS
WELLS (INCLUDING 6
DISCHARGE CAPACITY)
BOWER STREET WE
FIELD
Pleasant Valley
California Community
PENN CENTRAL
Grossman Theater
ST JOSEPH
ELKHART
RIVER
Hellen Sch
Bethany
Gravel Pit
Eagle Point
Baugo Bay
Northern Indiana Conference Grounds
CRAWFORD
Osceola
Township
WALNUT ST
BEEHLER RD
Baugo
HENRY RD
ROAD
EDISON
MISHAWAKA
RIVER


Osceola
Mishawaka Pilots Club Airport
Trailer Park
B A U G O
Jamestown
Nofsinger Cem
ST JOSEPH CO
ELKHART CO
(WAKARUSA)
3767 II SE
SCALE 1:24 000
CONTOUR INTERVAL 5 FEET
DATUM IS MEAN SEA LEVEL
ROAD CLASSIFICATION
Primary highway, all weather, hard surface
Light-duty road, all weather, improved surface
Secondary highway, all weather, hard surface
Unimproved road, fair or dry weather
Interstate Route
U. S. Route
State Route
INDIANA
QUADRANGLE LOCATION
THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U. S. GEOLOGICAL SURVEY, WASHINGTON, D. C. 20242
AND INDIANA DEPARTMENT OF NATURAL RESOURCES, INDIANAPOLIS, INDIANA 46204
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST
REFERENCE #6
SITE NAME HIMCO DUMP
ID IND980500020
OSCEOLA, IN
QUAD

June 28, 1982

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: HIMCO DUMP

LOCATION: ELKHART INDIANA

GROUND WATER ROUTE

1 OBSERVED RELEASE

Contaminants detected (5 maximum): COBALT - SAMPLE #ME3205 WELL E-2. REF 1 NOTE THAT ELEVATED LEVELS OF ARSENIC, BARIUM, BERYLLIUM, CHROMIUM, COPPER, VANADIUM, LEAD, MANGANESE, MERCURY, NICKEL, SELENIUM, AND ZINC ARE PRESENT IN DOWNGRADIENT WELL, THOUGH AT LESS THAN AN ORDER OF MAGNITUDE GREATER THAN THE UPGRADIENT. REF. 1

Rationale for attributing the contaminants to the facility: UPGRADIENT WELL (D-1, SAMPLE # ME 3201) ANALYSIS INDICATED COBALT AT < 50 ug/l (PPB). DOWNGRADIENT WELL (E-2, SAMPLE #ME 3205) ANALYSIS INDICATED COBALT AT 132 ug/l (PPB). REF 1 MAP IS LAST PAGE OF REF 1. NOTE THAT WELL D-1 SCREENED AT 19 FT AND WELL E-2 SCREENED AT 17 FT. (REF 3 P. 28).

* * *

2 ROUTE CHARACTERISTICS

Depth to Aquifer of Concern

Name/description of aquifers(s) of concern: OUTWASH AQUIFER FLOWING SOUTH TO THE ST. JOSEPH RIVER. THE AQUIFER UNDER SITE IS UNCONFINED. REF 3 P 10. THE LOWER AQUIFER IS CONFINED IN AREAS FURTHER NORTH AND SOUTH OF THE SITE. REF 3 P. 20 AND P. 21.

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

ELEVATION SHOWN ON TOPOGRAPHICAL MAP = 760 FT. REF 6
WATER LEVEL = 755 FT REF 3 P. 28-31
DEPTH TO AQUIFER OF CONCERN = 5 FT
SITE WAS FORMERLY SWAMPLAND FORMED BY GROUND WATER (AS OPPOSED TO SURFACE PONDING) REF 3 P 14

Depth from the ground surface to the lowest point of waste disposal/storage:

Net Precipitation

Mean annual or seasonal precipitation (list months for seasonal): N/A

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

Net precipitation (subtract the above figures): N/A

Permeability of Unsaturated Zone

Soil type in unsaturated zone: N/A

Permeability associated with soil type: N/A

Physical State

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

* * *

3 CONTAINMENT

Containment

Method(s) of waste or leachate containment evaluated: N/A

Method with highest score: N/A

4 WASTE CHARACTERISTICS

Toxicity and Persistence

Compound(s) evaluated:

	TOXICITY	PERSISTENCE	MATRIX VALUE
COBALT	3 (REF 12 P.799)	3 (REF 2 47FR31229)	18

Compound with highest score: COBALT =18 18
Presence indicated in Reference 1

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):

UNKNOWN - ASSUME 1 REF 15 P. 3 NOTE: SITE COVERS ~40 ACRES. HOWEVER THE ONLY LIST OF WASTE AVAILABLE SHOWS PHARMACEUTICAL OR MEDICAL WASTE WITHOUT SIGNIFICANT QUANTITIES OF HAZARDOUS WASTE.

Basis of estimating and/or computing waste quantity:

SINCE DOCUMENTED INFO ON HAZARDOUS WASTE QUANTITY IS NOT AVAILABLE (i.e. "UNKNOWN") AND THE VOLUME OF THE LANDFILL CANNOT BE USED FOR TOTAL QUANTITY, 1 IS THE ASSUMED VALUE FOR THE UNKNOWN QUANTITY OF WASTE. REF 15 P3

* * *

5 TARGETS

Ground Water Use

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

SOLE SOURCE FOR DRINKING WATER. REF 4, REF 5
THE UNTHREATENED SOUTH WELL FIELD DOES NOT HAVE THE CAPACITY OF SERVICING THE TOTAL POPULATION SERVED BY ALL THREE WELL FIELDS SHOULD BOWER STREET AND NORTH MAIN STREET WELL FIELDS BECOME CONTAMINATED REF 4

Distance to Nearest Well (See Reference 6 for well field locations)

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

~ 250 FT SOUTH OF THE SITE ALONG COUNTY ROAD 10 (THORNTON). THE SHALLOW RESIDENTIAL WELLS ALONG THIS ROAD WERE FOUND TO BE CONTAMINATED, AND MR. HIMES INSTALLED DEEPER WELLS FOR THE AFFECTED RESIDENTS. REF 17
NOTE THAT THE AQUIFER IS UNCONFINED IN THIS AREA REF 3 P20 REF 5, REF 6

Distance to above well or building:

~ 250 FT SOUTH OF SITE. REF 6, REF 7
GARRID GROSS RESIDENCE

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: NOTE: ALL OF THE WELLS IN THE AREA ARE IN THE OUTWASH AQUIFER (REF 16). TWO ELKHART WATER WORKS WELL FIELDS ARE LOCATED WITHIN A 3 MI RADIUS OF SITE. WATER FROM THESE WELL FIELDS ARE USED THROUGHOUT THE DISTRIBUTION SYSTEM TO HELP SERVICE ~ 15,000 CUSTOMERS. REF 4. IN ADDITION, 2503 BUILDINGS ARE SHOWN ON THE RELATED TOPO MAPS INSIDE THE 3 MILE RADIUS. REF 6 ALL RESIDENCES ARE ON INTERCONNECTED AQUIFERS REF 3 P1, 20, AND 21

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): NO INFORMATION IS AVAILABLE ON THE AMOUNT OF LAND IRRIGATED BY GROUND WATER WITHIN THE 3 MI RADIUS FROM SITE. SINCE THE TOTAL POPULATION IS ALREADY ABOVE 10,000 (SEE BELOW) ANY VALUE FOR IRRIGATED LAND WILL NOT INFLUENCE S_m. REF 5.

Total population served by ground water within a 3-mile radius: THE WATER FROM THE NORTH MAIN ST AND BOWER STREET WELL FIELDS MAY BE USED TO SERVE ANY OF THE 15000 ELKHART WATER WORKS CUSTOMERS REF 4. THE NUMBER OF BUILDINGS OUTSIDE THE WATER WORKS SERVICE AREA AND ASSUMED TO BE USING GROUND WATER IS 2503. REF 6

2503 × 3.8 = 9511 9511 + 15000 = 24511

BOUNDARIES OF ELKHART WATER WORKS ARE AS FOLLOWS
SOUTH - 3 MILES SOUTH OF ELKHART EAST - CITY BOUNDARIES AND COUNTY RD 13
NORTH - COUNTY ROAD 6 (CLEVELAND RD) WEST - CITY BOUNDARIES
ALL OF THE POPULATION INSIDE RADIUS MAY BE CONSIDERED ON GROUND -

SURFACE WATER ROUTE

1 OBSERVED RELEASE

Contaminants detected in surface water at the facility or downhill from it (5 maximum): NONE

Rationale for attributing the contaminants to the facility: N/A

* * *

2 ROUTE CHARACTERISTICS

Facility Slope and Intervening Terrain

Average slope of facility in percent: THE AVERAGE TERRAIN SLOPE IS 1 TO 5% TO THE SOUTH. HOWEVER, THE SITE ITSELF SLOPES GENTLY (~ 2%) TO THE NORTH TOWARD AN UNNAMED TRIBUTARY TO OSBORN CREEK. REF #8 PART 5 SEC VI 14

Name/description of nearest downslope surface water: AN UNNAMED CREEK ALONG THE NORTH BORDER OF THE SITE IS THE NEAREST DOWNSLOPE SURFACE WATER. THIS CREEK FLOWS THROUGH A MARSHY AREA AND INTO OSBORN CREEK. OSBORN CREEK IS A TRIBUTARY OF THE ST JOSEPH RIVER. REF 8 PART 5 SEC VI ALSO SEE REF 6.

Average slope of terrain between facility and above-cited surface water body in percent: 2% REF 8 PART 5 SEC VI 08 ALSO SEE REF 6 NOTE THAT THE AVERAGE SLOPE OF FACILITY IS 1 TO 5% TO THE SOUTH. THE ABOVE INFORMATION IS NOT EASILY OBVIOUS ON THE TOPO BECAUSE OF THE QUADRANGLE'S AGE (1969) AND THE LACK OF A SUBSEQUENT PHOTO REVISION REF 6

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

NO. HOWEVER, AS STATED IN THE GENERAL DESCRIPTION, THE FACILITY IS A FORMER SWAMPY AREA THAT WAS EXCAVATED AND FILLED IN REF 8 PART 5 SEC VI

Is the facility completely surrounded by areas of higher elevation?
No. REF 6

1-Year 24-Hour Rainfall in Inches $2\frac{1}{4}$" REF 2 (47FR 31233)
ELKHART IS SITUATED BETWEEN THE 2" AND $2\frac{1}{2}$" 1-YEAR 24 HOUR RAINFALL RANGE $2" + 2\frac{1}{2}" = 4\frac{1}{2}"$ $4\frac{1}{2}" - 2" = 2\frac{1}{4}"$

Distance to Nearest Downslope Surface Water ~ 1250' REF 8 PART 5 SECTION
ALSO SEE REF 6

Physical State of Waste SOLID REF 9 P. 1

* * *

3 CONTAINMENT

Containment

Method(s) of waste or leachate containment evaluated: LANDFILL WITH SAND COVER AND VISIBLE LEACHATE STREAMS, REF 9 P. 1 AND P. 2., REF 8.

Method with highest score: LANDFILL IS NOT ADEQUATELY COVERED AND LEACHATE STREAMS VISIBLE. SITE PHOTOGRAPHS TAKEN DURING THE E&E SITE INSPECTION (REF. 8) SHOW THAT A SOUND DIVERSION SYSTEM DOES NOT EXIST. THE ABOVE PHOTOS ARE AVAILABLE FOR VIEWING IN THE E&E CHICAGO OFFICE FILES. REF 9 P. 1 AND P. 2. THIS PLACES THE SITE BETWEEN A MATRIX VALUE OF 1 (INADEQUATELY COVERED) AND 3 (NO DIVERSION SYSTEM PRESENT). I ASSIGNED THE SITE A VALUE OF 2 TO REFLECT THIS STATUS REF 2 (47FR 31236)

4 WASTE CHARACTERISTICS

Toxicity and Persistence

Compound(s) evaluated COBALT WAS FOUND IN DOWNGRADIENT GROUND WATER SAMPLES. SEE GROUND WATER ROUTE WASTE CHARACTERISTICS. REF #1

Compound with highest score:

	TOXICITY	PERSISTANCE	MATRIX VALUE
COBALT	3 REF 12, P. 799	3 REF 2 (47FR 31229)	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):
UNKNOWN. ASSUME 1 REF # 2 (47FR 31236) AND REF 15 P 3.

Basis of estimating and/or computing waste quantity:
SEE GROUND WATER HAZARDOUS WASTE QUANTITY SECTION

* * *

5 TARGETS

Surface Water Use

Use(s) of surface water within 3 miles downstream of the hazardous substance: AN UNNAMED TRIBUTARE FLOWS TO OSBORN CREEK (APPROXIMATELY 1250' DISTANT FROM SITE) WHICH IN TURN FLOW 2.71 MILES TO THE ST. JOSEPH RIVER REF 6. THE ST JOSEPH RIVER IS USED FOR FISHING BOATING AND CANOEING. REF 10 P. 14

Is there tidal influence? NO. REF 6.

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: A MARSHY AREA IS LOCATED TO THE IMMEDIATE NORTH WEST OF THE SITE. IT IS APPROXIMATELY 1000 FT FROM THE SITE AND ROUGHLY SQUARE IN SHAPE, WITHIN 1500' SIDES. $(1500')^2 = 2250000 FT^2 \div 43,560 FT^2/ACRE = 51.65$ ACRES REF. 6

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

UNKNOWN, BUT THE INDIANA BAT MAY BE PRESENT IN THE GENERAL AREA. REF 11.

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:

NONE. ALL RESIDENTS IN 3 MILE DOWNSTREAM AREA ARE ON GROUND WATER. REF 4

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

NONE REF 14

Total population served: 0. NO SURFACE WATER INTAKES EXIST WITHIN 3 MILES DOWNSTREAM OF SITE. REF 6 AND REF 4.

Name/description of nearest of above water bodies: N/A

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

AIR ROUTE

1 OBSERVED RELEASE

Contaminants detected: NONE

Date and location of detection of contaminants 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: N/A

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

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: A CERTIFIED DOCUMENT FROM THE STATE OR LOCAL FIRE MARSHAL STATING THAT A SIGNIFICANT FIRE HAZARD OR EXPLOSION THREAT EXISTS AT THIS SITE DOES NOT EXIST. DOCUMENTATION IN THE E&E HRS FOLDER DOES NOT INDICATE THAT SUCH HAZARDS ARE LIKELY TO EXIST AT THIS SITE.

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

1 OBSERVED INCIDENT

Date, location, and pertinent details of incident: NONE

* * *

2 ACCESSIBILITY

Describe type of barrier(s): NATURAL OR ARTIFICIAL BARRIERS, GUARDS, AND OTHER TYPES OF SURVEILLANCE SYSTEMS WERE NOT PRESENT AT THIS SITE. REF #13

* * *

3 CONTAINMENT

Type of containment, if applicable: CALCIUM SULPHATE WAS VISIBLE IN THE INADEQUATELY COVERED AREAS OF THE SITE. REF #11

* * *

4 WASTE CHARACTERISTICS

Toxicity

Compounds evaluated: COBALT REF 1

Compound with highest score:

	TOXICITY	PERSISTANCE	MATRIX VALUE
COBALT	3(REF 12 P799)	3 RPF2(47FR 31229	18

* * *

5 TARGETS

Population within one-mile radius

333 HOMES @ 3.8 PER HOME = 1265

REF 6

Distance to critical habitat (of endangered species) UNKNOWN

THE INDIANA BAT IS LOCATED THROUGHOUT THE STATE BUT NOT PROVED TO BE IN THE AREA AROUND THE SITE. REF 11.

June 28, 1982

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: HIMCO DUMP

LOCATION: ELKHART INDIANA

GROUND WATER ROUTE

1 OBSERVED RELEASE

Contaminants detected (5 maximum): COBALT - SAMPLE # ME 3205 WELL E-2. REF 1 NOTE THAT ELEVATED LEVELS OF ARSENIC, BARIUM, BERYLLIUM, CHROMIUM, COPPER, VANADIUM, LEAD, MANGANESE, MERCURY, NICKEL, SELENIUM, AND ZINC ARE PRESENT IN DOWNGRADIENT WELL, THOUGH AT LESS THAN AN ORDER OF MAGNITUDE GREATER THAN THE UPGRADIENT. REF. 1

Rationale for attributing the contaminants to the facility: UPGRADIENT WELL (D-1, SAMPLE # ME. 3201) ANALYSIS INDICATED COBALT AT < 50 ug/l (PPB). DOWNGRADIENT WELL (E-2, SAMPLE # ME 3205) ANALYSIS INDICATED COBALT AT 132 ug/l (PPB). REF 1 MAP IS LAST PAGE OF REF 1. NOTE THAT WELL D-1 SCREENED AT 19 FT AND WELL E-2 SCREENED AT 17 FT. (REF 3 P. 78).

* * *

2 ROUTE CHARACTERISTICS

Depth to Aquifer of Concern

Name/description of aquifers(s) of concern: OUTWASH AQUIFER FLOWING SOUTH TO THE ST. JOSEPH RIVER. THE AQUIFER UNDER SITE IS UNCONFINED. REF 3 P 10. THE LOWER AQUIFER IS CONFINED IN AREAS FURTHER NORTH AND SOUTH OF THE SITE. REF 3 P. 20 AND P. 21.

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

ELEVATION SHOWN ON TOPOGRAPHICAL MAP = 760 FT. REF 6
WATER LEVEL = 755 FT REF 3 P. 28-31
DEPTH TO AQUIFER OF CONCERN = 5 FT
SITE WAS FORMERLY SWAMPLAND FORMED BY GROUND WATER (AS OPPOSED TO SURFACE PONDING) REF 3 P 14

Depth from the ground surface to the lowest point of waste disposal/storage:

Net Precipitation

Mean annual or seasonal precipitation (list months for seasonal): N/A

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

Net precipitation (subtract the above figures): N/A

Permeability of Unsaturated Zone

Soil type in unsaturated zone: N/A

Permeability associated with soil type: N/A

Physical State

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

* * *

3 CONTAINMENT

Containment

Method(s) of waste or leachate containment evaluated: N/A

Method with highest score: N/A

4 WASTE CHARACTERISTICS

Toxicity and Persistence

Compound(s) evaluated:

	TOXICITY	PERSISTENCE	MATRIX VALUE
COBALT	3 (REF 12 P.799)	3 (REF 2 47FR31229)	18

Compound with highest score: COBALT =18 18
Presence indicated in Reference 1

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):

UNKNOWN - ASSUME 1 REF 15 P. 3 NOTE: SITE COVERS ~40 ACRES. HOWEVER THE ONLY LIST OF WASTE AVAILABLE SHOWS PHARMACEUTICAL OR MEDICAL WASTE WITHOUT SIGNIFICANT QUANTITIES OF HAZARDOUS WASTE.

Basis of estimating and/or computing waste quantity:

SINCE DOCUMENTED INFO ON HAZARDOUS WASTE QUANTITY IS NOT AVAILABLE (I.E. "UNKNOWN") AND THE VOLUME OF THE LANDFILL CANNOT BE USED FOR TOTAL QUANTITY, 1 IS THE ASSUMED VALUE FOR THE UNKNOWN QUANTITY OF WASTE. REF 15 P3

* * *

5 TARGETS

Ground Water Use

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

SOLE SOURCE FOR DRINKING WATER. REF 4, REF 5
THE UNTHREATENED SOUTH WELL FIELD DOES NOT HAVE THE CAPACITY OF SERVICING THE TOTAL POPULATION SERVED BY ALL THREE WELL FIELDS SHOULD BOWER STREET AND NORTH MAIN STREET WELL FIELDS BECOME CONTAMINATED REF 4
(See Reference 6 for well field locations)

Distance to Nearest Well

Location of nearest well drawing from aquifer of concern or occupied building not served by a public water supply:
~ 250 FT SOUTH OF THE SITE ALONG COUNTY ROAD 10 (THORNTON). THE SHALLOW RESIDENTIAL WELLS ALONG THIS ROAD WERE FOUND TO BE CONTAMINATED, AND MR. HIMES INSTALLED DEEPER WELLS FOR THE AFFECTED RESIDENTS. REF 17
NOTE THAT THE AQUIFER IS UNCONFINED IN THIS AREA REF 3 P20
REF 5, REF 6

Distance to above well or building:
~ 250 FT SOUTH OF SITE. REF 6, REF 7
GERALD GROSS RESIDENCE

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: NOTE: ALL OF THE WELLS IN THE AREA ARE IN THE OUTWASH AQUIFER (REF 16). TWO ELKHART WATER WORKS WELL FIELDS ARE LOCATED WITHIN A 3 MI RADIUS OF SITE. WATER FROM THESE WELL FIELDS ARE USED THROUGHOUT THE DISTRIBUTION SYSTEM TO HELP SERVICE ~ 15,000 CUSTOMERS. REF 4 IN ADDITION, 2503 BUILDINGS ARE SHOWN ON THE RELATED TOPO MAPS INSIDE THE 3 MILE RADIUS. REF 6 ALL RESIDENCES ARE ON INTERCONNECTED AQUIFERS REF 3 P1, 20, AND 21

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): NO INFORMATION IS AVAILABLE ON THE AMOUNT OF LAND IRRIGATED BY GROUND WATER WITHIN THE 3 MI RADIUS FROM SITE. SINCE THE TOTAL POPULATION IS ALREADY ABOVE 10,000 (SEE BELOW) ANY VALUE FOR IRRIGATED LAND WILL NOT INFLUENCE S_m. REF 5.

Total population served by ground water within a 3-mile radius: THE WATER FROM THE NORTH MAIN ST AND BOWER STREET WELL FIELDS MAY BE USED TO SERVE ANY OF THE 15000 ELKHART WATER WORKS CUSTOMERS REF 4. THE NUMBER OF BUILDINGS OUTSIDE THE WATER WORKS SERVICE AREA AND ASSUMED TO BE USING GROUND WATER IS 2503. REF 6

2503 × 3.8 = 9511 9511 + 15000 = 24511

BOUNDARIES OF ELKHART WATER WORKS ARE AS FOLLOWS
SOUTH - 3 MILES SOUTH OF ELKHART EAST - CITY BOUNDARIES AND COUNTY RD 13
NORTH - COUNTY ROAD 6 (CLEVELAND RD) WEST - CITY BOUNDARIES
ALL OF THE POPULATION INSIDE RADIUS [illegible]

SURFACE WATER ROUTE

1 OBSERVED RELEASE

Contaminants detected in surface water at the facility or downhill from it (5 maximum): NONE

Rationale for attributing the contaminants to the facility: N/A

* * *

2 ROUTE CHARACTERISTICS

Facility Slope and Intervening Terrain

Average slope of facility in percent: THE AVERAGE TERRAIN SLOPE IS 1 TO 5% TO THE SOUTH. HOWEVER, THE SITE ITSELF SLOPES GENTLY (~ 2%) TO THE NORTH TOWARD AN UNNAMED TRIBUTARY TO OSBORN CREEK. REF #8 PART 5 SEC VI 14

Name/description of nearest downslope surface water: AN UNNAMED CREEK ALONG THE NORTH BORDER OF THE SITE IS THE NEAREST DOWNSLOPE SURFACE WATER. THIS CREEK FLOWS THROUGH A MARSHY AREA AND INTO OSBORN CREEK. OSBORN CREEK IS A TRIBUTARY OF THE ST JOSEPH RIVER. REF 8 PART 5 SEC VI ALSO SEE REF 6.

Average slope of terrain between facility and above-cited surface water body in percent: 2% REF 8 PART 5 SEC VI OR ALSO SEE REF 6 NOTE THAT THE AVERAGE SLOPE OF FACILITY IS 1 TO 5% TO THE SOUTH. THE ABOVE INFORMATION IS NOT EASILY OBVIOUS ON THE TOPO BECAUSE OF THE QUADRANGLE'S AGE (1969) AND THE LACK OF A SUBSEQUENT PHOTO REVISION REF 6

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

NO. HOWEVER, AS STATED IN THE GENERAL DESCRIPTION, THE FACILITY IS A FORMER SWAMPY AREA THAT WAS EXCAVATED AND FILLED IN REF 8 PART 5 SEC VI

Is the facility completely surrounded by areas of higher elevation?
No. REF 6

1-Year 24-Hour Rainfall in Inches $2\frac{1}{4}$" REF 2 (47FR 31233)
ELKHART IS SITUATED BETWEEN THE 2" AND $2\frac{1}{2}$". 1-YEAR 24 HOUR RAINFALL RANGE $2" + 2\frac{1}{2}" = 4\frac{1}{2}"$ $4\frac{1}{2}" - 2" = 2\frac{1}{4}"$

Distance to Nearest Downslope Surface Water ~ 1250' REF 8 PART 5 SEC II
ALSO SEE REF 6

Physical State of Waste SOLID REF 9 P. 1

* * *

3 CONTAINMENT

Containment

Method(s) of waste or leachate containment evaluated: LANDFILL WITH SAND COVER AND VISIBLE LEACHATE STREAMS REF 9 P. 1 AND P. 2., REF 8.

Method with highest score: LANDFILL IS NOT ADEQUATELY COVERED AND LEACHATE STREAMS VISIBLE. SITE PHOTOGRAPHS TAKEN DURING THE E&E SITE INSPECTION (REF. 8) SHOW THAT A SOUND DIVERSION SYSTEM DOES NOT EXIST. THE ABOVE PHOTOS ARE AVAILABLE FOR VIEWING IN THE E&E CHICAGO OFFICE FILES. REF 9 P. 1 AND P. 2. THIS PLACES THE SITE BETWEEN A MATRIX VALUE OF 1 (INADEQUATELY COVERED) AND 3 (NO DIVERSION SYSTEM PRESENT). I ASSIGNED THE SITE A VALUE OF 2 TO REFLECT THIS STATUS REF 2 (47FR 31236)

HRS DOCUMENTATION LOG SHEET

SITE NAME HIMCO DUMP
CITY ELKHART STATE IN
IDENTIFICATION NUMBER IND 980500292

REFERENCE NUMBER	DESCRIPTION OF THE REFERENCE
1	LABRATORY ANNALYSIS OF SAMPLES TAKEN DURING SITE INSPECTION OF JULY 30, 1984. - ROCKY MOUNTAIN ANALYTICAL, JULY 30, 1984 (SAMPLE DATE) SEP 27, 1984 (REPORT DATE) CAB NUMBERS: UPGRADIENT — SAMPLE # ME 3201 CASE # 3104, QC # 5471 DOWNGRADIENT ME 3202 CASE # 3104 QC # 5471
2	FEDERAL REGISTER, JULY 16, 1982.
3	HYDROLOGIC AND CHEMICAL EVALUATION OF THE GROUND WATER RESOURCES OF NORTHWEST ELKHART COUNTY INDIANA, IMBRIGIOTTA AND MARTIN, OCTOBER 1981, U.S. GEOLOGICAL SURVEY, PAGES 1, 5, 14, 15, 20, 21, 25, 27, 29, 30 AND 58
4	TELEPHONE CONVERSATION, GLENN CERUS AND MR. BOB LONG, ELKHART WATER WORKS, 6-26-85 1050, 219-264-4208
5	TELEPHONE CONVERSATION, GLENN CERUS AND MR. MAX MICHAEL, ELKHART COUNTY HEALTH DEPT. 4-24-85, 0840, 219-523-2200
6	OSCEOLA IN QUADRANGLE, 1969, SERIES 7.5 MIN SCALE 1:24000 NO PHOTO REVISION DATE AND ELKHART IN QUADRANGLE 1961 SERIES 7.5 MIN SCALE 1:24000 NO PHOTO REVISION DATE

HRS DOCUMENTATION LOG SHEET

SITE NAME HIMCO DUMP
CITY ELKHART STATE IN
IDENTIFICATION NUMBER IND 980500292

REFERENCE NUMBER	DESCRIPTION OF THE REFERENCE
7	WATER WELL INSPECTION OF THE HAROLD GOSS RESIDENCE ELKHART HEALTH DEP'T. 5/30/78 PLUS SKETCH OF DOWNGRADIENT (SOUTH) AREA
8	SITE INSPECTION, 7/30/84, FRAN ALLANS, ECOLOGY + ENVIRONMENT INC. 2/19/85
9	SITE INSPECTION INTERVIEW NOTES OF 7/30/84 OF MR. HIMES BY MS FRAN ALLANS OF ECOLOGY + ENVIRONMENT INC AT 1430.
10	THE INDIANA WATER RESOURCE — AVAILABILITY USES AND NEEDS; GOVERNOR'S WATER RESOURCE STUDY COMMISSION, STATE OF INDIANA; COPYRIGHT 1980; PAGE 174
11	TELEPHONE CONVERSATION; GLENN CEKUS AND MR. DON STEFFEK, U.S. FISH AND WILDLIFE SERVICE 5/23/85; 1500; 812-334-4265
12	DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS, 5TH EDITION, N. IRVING SAX
13	MEMO TO GLENN CEKUS FROM FRAN ALLANS TEAM LEADER; ECOLOGY + ENVIRONMENT INC. 5/24/85 HIMCO SITE ACCESS.
14	TELEPHONE CONVERSATION, GLENN CEKUS AND MR TOM WILSON ELKHART COUNTY HEALTH DEPT.; 6-20-85; 1001; 219-523-2200

HRS DOCUMENTATION LOG SHEET

SITE NAME HIMCO DUMP
CITY ELKHART STATE IN
IDENTIFICATION NUMBER IND 980500292

REFERENCE NUMBER	DESCRIPTION OF THE REFERENCE
15	EPA MEMORANDUM - SUPPLEMENTAL INSTRUCTIONS FOR THE HAZARD RANKING SYSTEM. FROM STEVE CALDWELL, DISCOVERY AND INVESTIGATIONS BRANCH JULY 29, 1982
16	TELEPHONE CONVERSATION, KATHY GETTY AND MR. MAX MICHAEL, ELKHART COUNTY HEALTH DEPARTMENT 6-25-85, 1015, 219-264-4208
17	LETTER FROM MR. W.T. PAYNTER, M.D. STATE HEALTH COMMISSIONER TO THE HON. O.R. BOWEN, GOVERNOR STATE OF INDIANA, DATED APRIL 5, 1977
18	TELEPHONE CONVERSATION, FRAN ALLANS AND MR. MIKE TERLEP, ELKHART WATER WORKS 7-16-84 1000 AM. 219-295-2400