SB 104 MW2F 50014

NATIONAL SURVEY OF SOLID WASTES FROM MINERAL PROCESSING FACILITIES

ROUTING SHEET 00047 JAN 12 1990

CER ID # [illegible]

FACILITY NAME Agrico [illegible]

CITY Donaldsville STATE LA

	MONTH	DAY	
Questionnaire received by RTI	[illegible]	[illegible]	
Manual edit began			Manual Edit [illegible]
Manual edit completed			
Data entry began	[illegible]	[illegible]	
Data entry completed	June	23	SB

RTI ID: 100198

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OMB # 2050-0098
Expires: 12/89

U.S. ENVIRONMENTAL PROTECTION AGENCY

National Survey of Solid Wastes from Mineral Processing Facilities

QUESTIONNAIRE

NOTICE OF ESTIMATED BURDEN

EPA estimates that completing this questionnaire will take 40-80 hours per facility, depending on the size and complexity of mineral processing operations. This estimate includes time for reading the instructions and assembling the requested information. Send any comments on this estimate or suggestions for reducing this burden to: Robert W. Hall, Office of Solid Waste (MD OS-323), U.S. Environmental Protection Agency, 401 M Street, S.W., Washington, DC 20460; and to: Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, DC 20503.

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BEFORE PROCEEDING WITH THIS QUESTIONNAIRE,
read the *Instructions and Definitions* booklet carefully.

This questionnaire is designed to obtain information on the generation and management of selected solid wastes from mineral processing facilities. EPA is studying these wastes, which are called SPECIAL WASTES in this questionnaire, for a report to Congress. Six months after subm.. 'g this report to Congress, EPA will determine whether these SPECIAL WASTES should be subject to the requirements of Subtitle C of the Resource Conservation and Recovery Act of 1976 (as amended).

The questionnaire is divided into 9 sections. The subject of each questionnaire section is:

Section 1 — General information on the entire facility.

Section 2 — Special wastes and the processing units that GENERATE them.

Section 3 — Processing units that RECEIVE a special waste (or its residue).

Section 4 — Wastewater treatment plants that RECEIVE a special waste (or its residue).

Section 5 — Surface impoundments (including tailings ponds and lagoons) that RECEIVE a special waste (or its residue).

Section 6 — Other waste management units that RECEIVE a special waste (or its residue).

Section 7 — Environmental monitoring near waste management units that RECEIVE a special waste (or its residue).

Section 8 — General information on waste management units not covered in Sections 5 and 6.

Section 9 — Contact person at the facility in case follow-up information is needed and instructions on returning the completed questionnaire.

Some of these questionnaire sections may not be relevant for your facility. Furthermore, parts of some sections may not be relevant to your facility. Specific instructions will skip you over irrelevant sections/parts of the questionnaire. Finally, this questionnaire uses many technical terms, some of which have special meanings for the purposes of this questionnaire. Definitions for all technical terms are provided in the *Instructions and Definitions* booklet.

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SECTION 1

GENERAL FACILITY INFORMATION

This section asks for information on the entire facility. For the purposes of this questionnaire, a facility includes all mining, leaching, beneficiating, processing, fabricating/manufacturing, and waste management units within property boundaries that are controlled by one operating company.

1.1 What are the name and address of this facility?

Facility name: Agrico Chemical Company

Street Address*: LA Hwy 18, River Road, 1 mi. below Sunshine Bridge

City: Donaldsonville State: LA Zip: 70346

*[*Do not give a P.O. Box number. If there is no street address where the mineral processing facility is located, identify the facility location by noting the city (or town or village) and state in which it is located and by providing a complete narrative description of where the facility is located (e.g., on Route 28, two miles north of the intersection of Routes 28 and 255, directly adjacent to the Park Brothers construction works) in the FACILITY NOTES section.]*

1.2 Does this facility generate, treat, store, or dispose of hazardous waste according to federal or state law?

(Circle one number.)

(01) Yes *(CONTINUE TO NEXT QUESTION)*

02 No *(SKIP TO QUESTION 1.4 ON NEXT PAGE)*

1.3 Does this facility have an EPA hazardous waste generation or facility identification number?

(Circle one number.)

(01) Yes ---------> a. EPA I.D.# LADO 5603 1636

b. EPA I.D.# _____

c. EPA I.D.# _____

d. EPA I.D.# _____

e. EPA I.D.# _____

f. EPA I.D.# _____

02 No

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1.4 Which of the following SPECIAL WASTES did this facility generate in calendar years 1984 through 1989?

(For each special waste generated by this facility, circle all numbers that apply.)

Commodity	Special Waste	Calendar Year 1984-87	1988	1989	For EPA Use
Alumina	Pisolites	01	02	03	a
	Red or brown refining muds	01	02	03	b
Beryllium	Barren filtrate	01	02	03	c
	Berrandite thickener slurry	01	02	03	d
	Beryl plant discard	01	02	03	e
	Processing raffinate	01	02	03	f
	Sludge leaching slurry	01	02	03	g
Cerium	Process water	01	02	03	h
Primary Chromite	Roast/leach ore residue	01	02	03	i
Coal Gas	Ash	01	02	03	j
	Cooling tower blowdown	01	02	03	k
	Process wastewater	01	02	03	l
Primary Copper	Acid plant blowdown	01	02	03	m
	Bleed electrolyte	01	02	03	n
	Process wastewater	01	02	03	o
	Roast/leach acid plant residue	01	02	03	p
	Slag	01	02	03	q
Elemental Phosphorus	Furnace off-gas solids	01	02	03	r
	Furnace scrubber blowdown	01	02	03	s
	Process wastewater	01	02	03	t
	Slag	01	02	03	u
Hydrofluoric Acid	Fluorogypsum (HF residue)	01	02	03	v
Iron	Air pollution control dust/slurry from blast furnaces	01	02	03	w
	Blast furnace slag	01	02	03	x
Lanthanides	Waste ammonium nitrate process solution	01	02	03	y

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1.4 (continued)

Commodity	Special Waste	Calendar Year 1984-87	1988	1989	For EPA Use
Primary Lead	Acid plant blowdown	01	02	03	z
	Process wastewater	01	02	03	aa
	Slag	01	02	03	bb
Lightweight Aggregate	Scrubber wastewater	01	02	03	cc
	Wastewater treatment solids	01	02	03	dd
Magnesium	Wastewater from the anhydrous process	01	02	03	ee
Primary Molybdenum	Selenium plant effluent from processing acid plant blowdown	01	02	03	ff
Phosphoric Acid	Phosphogypsum	01	02	03	gg
	Process wastewater	01	02	03	hh
Soda Ash	Wastes from trona ore processing	01	02	03	ii
Steel	Basic oxygen furnace slag	01	02	03	jj
Primary Tin	Scrubber blowdown	01	02	03	kk
	Slag	01	02	03	ll
Primary Titanium	Chloride processing waste acids	01	02	03	mm
	Chloride processing waste solids	01	02	03	nn
	Leach liquor	01	02	03	oo
	Sulfate processing waste acids	01	02	03	pp
	Sulfate processing waste solids	01	02	03	qq
Primary Zinc	Acid plant blowdown	01	02	03	rr
	Goethite	01	02	03	ss
	Process wastewater	01	02	03	tt
	Zinc-lean slag	01	02	03	uu

IF THIS FACILITY DID NOT GENERATE ANY OF THESE SPECIAL WASTES SINCE JANUARY 1, 1984, SKIP TO SECTION 9.

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1.5 *Are ALL the processing units at this facility that generate the special wastes now* **PERMANENTLY CLOSED?**
(Circle one number.)

01 Yes *(SKIP TO SECTION 9)*
02 No *(CONTINUE TO NEXT QUESTION)*

1.6 **Were any of the following operations active at this facility any time since January 1, 1984?**
(For each operation, circle 01 for Yes or 02 for No.)

Operation	Yes	No
a. Mining	01	02
b. Dump/heap leaching	01	02
c. Beneficiation	01	02

1.7 **What are the name and location of the company that *operates* this facility?**
Name of operating company: ~~FREEPORT McMORAN RESOURCE PARTNERS~~ AGRICO Chemical Company
City: ~~NEW ORLEANS~~ Welcome State or Country: ~~LOUISIANA~~ LA

1.8 **Is this operating company owned by a *parent* company?**
(Circle one number.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO QUESTION 1.10 ON NEXT PAGE)*

1.9 **What are the name and location of the parent operating company?**
(If there is more than one parent operating company, provide the name and address of the other parent operating companies in the FACILITY NOTES section at the end of this questionnaire.)
Name of parent operating company: FREEPORT McMORAN Resource Partners INC
City: New Orleans State or Country: LA

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1.10 **Does the company that *operates* this facility also *own* this facility?**
(Circle one number.)

01 Yes *(SKIP TO QUESTION 1.14 ON NEXT PAGE)*
02 No *(CONTINUE TO NEXT QUESTION)*

1.11 **What are the name and location of the company that *owns* this facility?**
(If there is more than one owner, provide the name and address of the other owners in the FACILITY NOTES section at the end of this questionnaire.)

Name of owner: Freeport McMoRan Resource Partners

City: [illegible] State or Country: [illegible]

1.12 **Is the company that owns this facility owned by a *parent* company?**
(Circle one number.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO QUESTION 1.14 ON NEXT PAGE)*

1.13 **What are the name and location of the parent company?**
(If there is more than one parent company, provide the name and address of the other parent companies in the FACILITY NOTES section at the end of this questionnaire.)

Name of parent company: Freeport McMoRan

City: [illegible] State or Country: LA

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1.14 Provide a detailed map of this facility, indicating property boundaries and labeling all waste management units and relevant environmental monitoring locations, if any.

Instructions for Completing the FACILITY SITE MAP:

a. *Use an existing map of any size and scale that can adequately show the relative location of waste management units and relevant environmental monitoring locations. Include topography and an appropriate scale for your facility on the map. If a topographic map is unavailable, provide a site map or plot plan.*

Need map with monitor wells

b. *Waste management units include wastewater treatment plants, surface impoundments (including tailings ponds and lagoons), waste piles, residuals stockpiles, landfills, underground injection wells, gypsum stacks, and mines, quarries, or stopes where the facility's solid wastes are treated, stored, or disposed. Label each of these waste management units with a unique identifier (e.g., WWTP, WP_1, LF_2, etc.) as these units will be referenced later.*

c. *Relevant environmental monitoring locations include ground water monitoring wells, ambient surface water monitoring locations, and ambient air monitoring locations near waste management units that receive special wastes (and their residues) from mineral processing operations.*

AS A GUIDE, A SAMPLE FACILITY SITE MAP IS SHOWN ON THE NEXT PAGE

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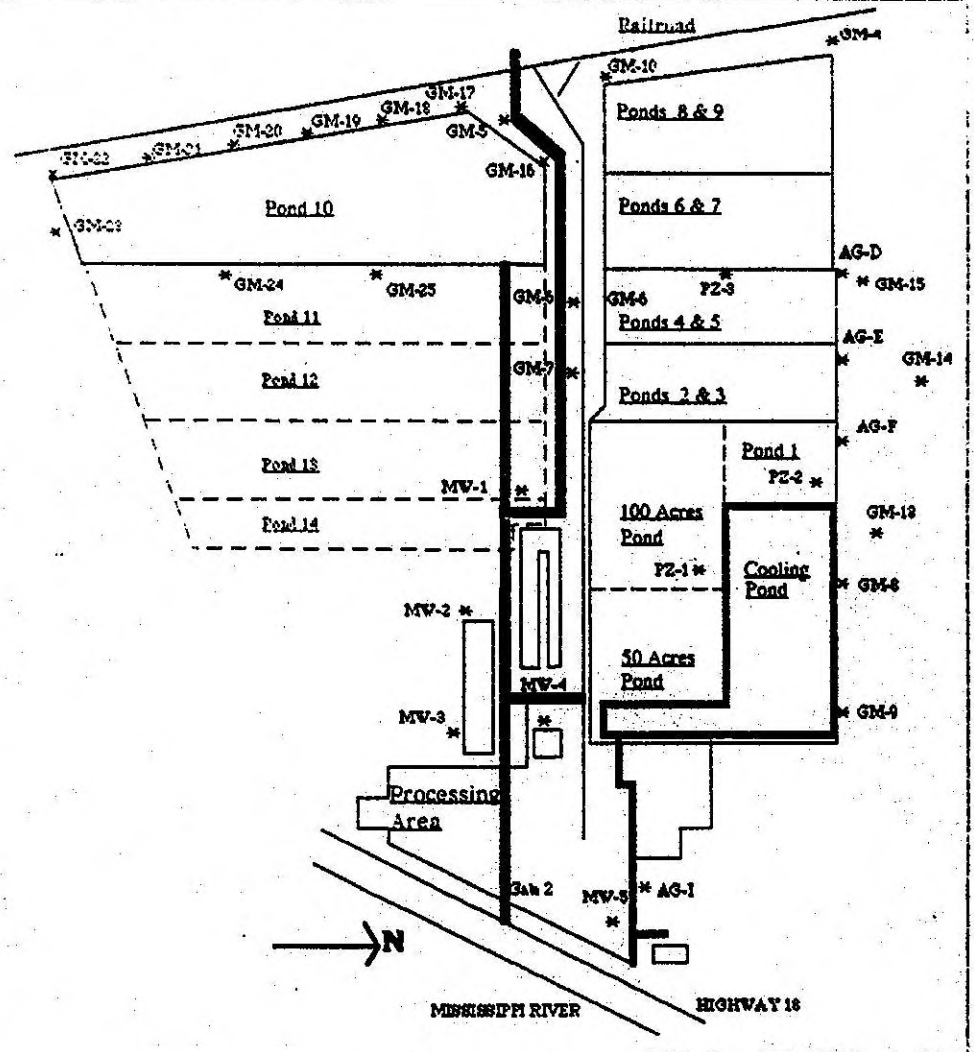

Monitor Wells Location & Sampling Network Gypsum Stack Area

Date 11/21/88 Drawing No. 01

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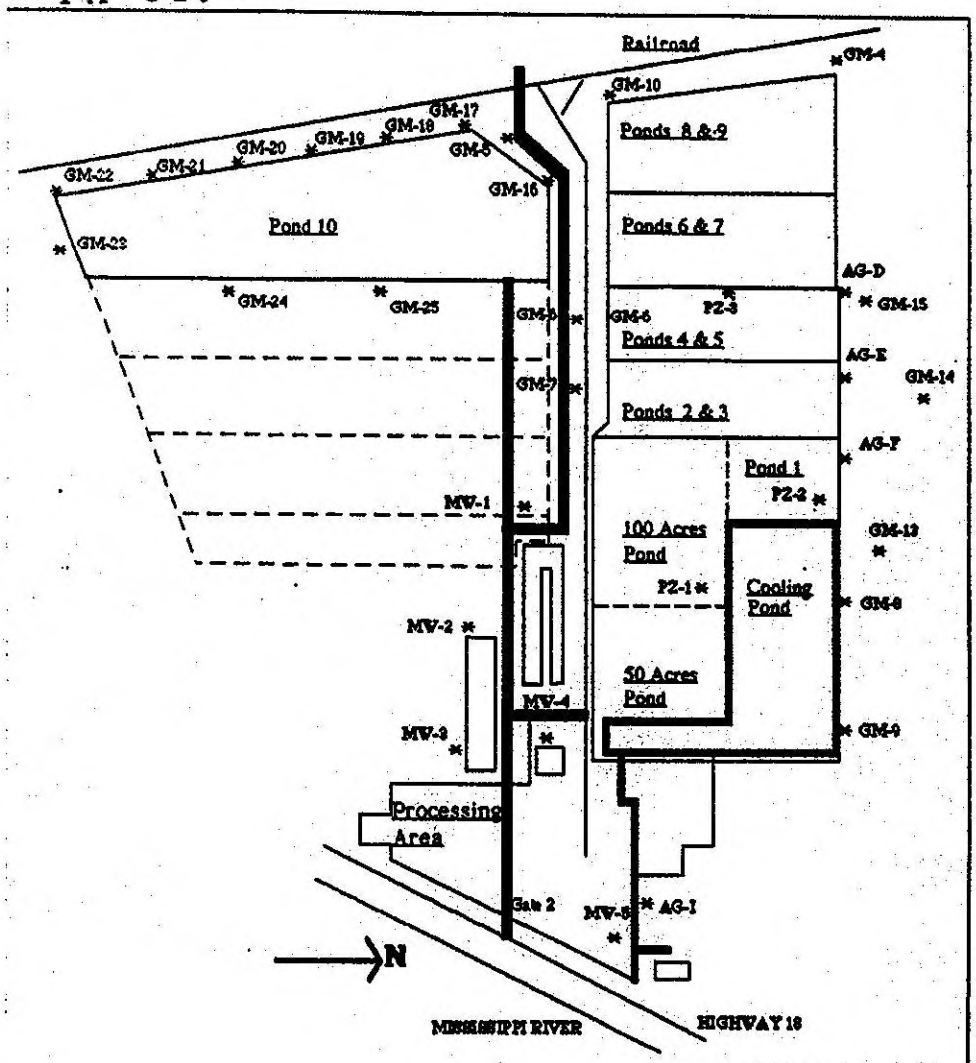

Monitor Wells Locations & Sampling Network Gypsum Stack Area

Date 11/21/88 Drawing No. 01

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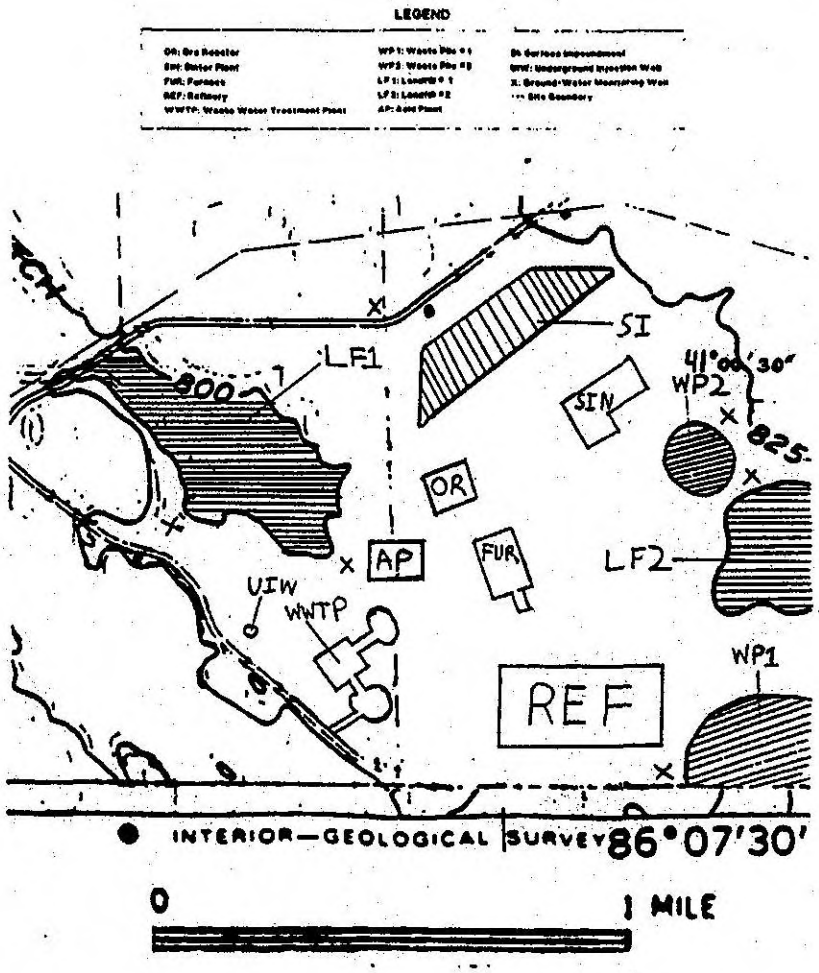
SAMPLE FACILITY SITE MAP



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1.15 What is the approximate location of the center of this facility?
(Report longitude and latitude OR township, range, and section.)

a. Longitude: 90 degrees 56 minutes West

b. Latitude: 30 degrees 04 minutes North

OR

c. Township: _____ Range: _____ Section: _____

1.16 Which of the following categories describes the surface rights ownership of the land on which this facility is located?
(Circle all numbers that apply.)

01 Federal

02 State

03 Indian

(04) Private

05 Other *(specify)* _____

1.17 Is any part of this facility located in one of the following areas?
(For each category, circle 01 for Yes or 02 for No. See the Instructions and Definitions booklet for definitions of the categories.)

Category	Yes	No
a. 100-year floodplain	01	(02)
b. Area designated as a wetland	01	(02)
c. Karst terrain	01	(02)
d. Fault area	01	(02)
e. Endangered species habitat	01	(02)

1.18 What is the approximate number of residents living within the boundary of this facility?
(If none, enter "0".)

0 residents

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1.19 **What is the approximate number of residents living within ONE MILE OUTSIDE the boundary of this facility?**
(If none, enter "0".)

68 residents

1.20 **How far outside the boundary of this facility is the nearest residence?**
(Select one of the two specified units of measure.)

1,666 yards OR _____ miles

1.21 **What is the general direction of the nearest residence from this facility?**
(Circle one number.)

(01) North
02 Northeast
03 East
04 Southeast
05 South
06 Southwest
07 West
08 Northwest

1.22 **Are any public or private drinking water wells located within the boundary of this facility or within one mile outside the boundary of this facility?**
(For each type of well, circle 01 for Yes, 02 for No, or 03 for Unknown.)

Drinking Water Wells	Yes	No	Unknown
a. Public	01	(02)	03
b. Private	01	(02)	03

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1.23 Provide a schematic that shows and labels all ACTIVE MINERAL PROCESSING UNITS at this facility in 1988, *both* those that generated or received a special waste (or its residue) and those that generated or received other solid wastes in 1988, *and* those WASTE MANAGEMENT UNITS that received one or more of the special wastes (or their residues) in 1988.

Instructions for Completing the SCHEMATIC:

a. *For the purposes of this questionnaire, processing units are distinct steps in processing operations whereby ores or minerals, or beneficiated ores or minerals, are partially or wholly transformed into saleable products. Additionally, include acid plants, air pollution control devices, and cooling towers as processing units.*

b. *Combine processing units of the same type if they generate the same type of solid waste.*

c. *Identify the products and by-products produced by each processing unit, where applicable.*

d. *Identify the special waste(s) generated by the processing units.*

e. *Include inactive processing units during 1988 and new processing units during 1989 in the schematic if they were active during 1989 or if they are expected to be active anytime during calendar years 1989 through 1993. Use an asterisk (*) to distinguish these processing units from those that were active in 1988.*

f. *Waste management units include wastewater treatment plants, surface impoundments (including tailings ponds and lagoons), waste piles, residuals stockpiles, landfills, underground injection wells, gypsum stacks, and mines, quarries, or stopes where the facility's special wastes (or their residues) are treated, stored, or disposed.*

g. *Use the same labels for the waste management units as the labels used on the FACILITY SITE MAP provided earlier in this section.*

h. *Identify all types of solid waste received by these waste management units and the sources of these solid waste on the schematic. Additionally, indicate the destination of any residues leaving a waste management unit.*

i. *Include inactive waste management units during 1988 and new waste management units during 1989 in the schematic if they received a special waste in 1989 or if they are expected to receive a special waste anytime during calendar years 1989 through 1993. Use an asterisk (*) to distinguish these waste management units from those that were active in 1988.*

AS A GUIDE, A SAMPLE SCHEMATIC IS SHOWN ON THE NEXT PAGE.

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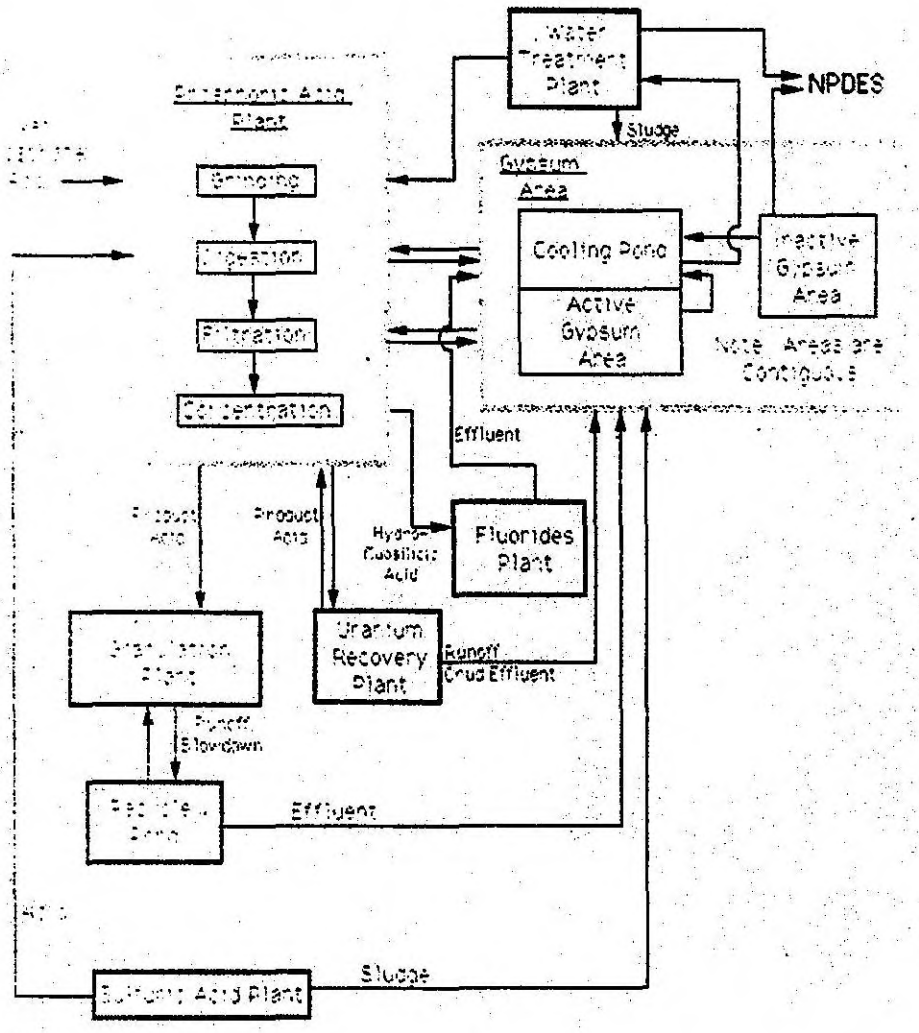
Production Process and Waste Management Schematic
Agrico Faustina Plant



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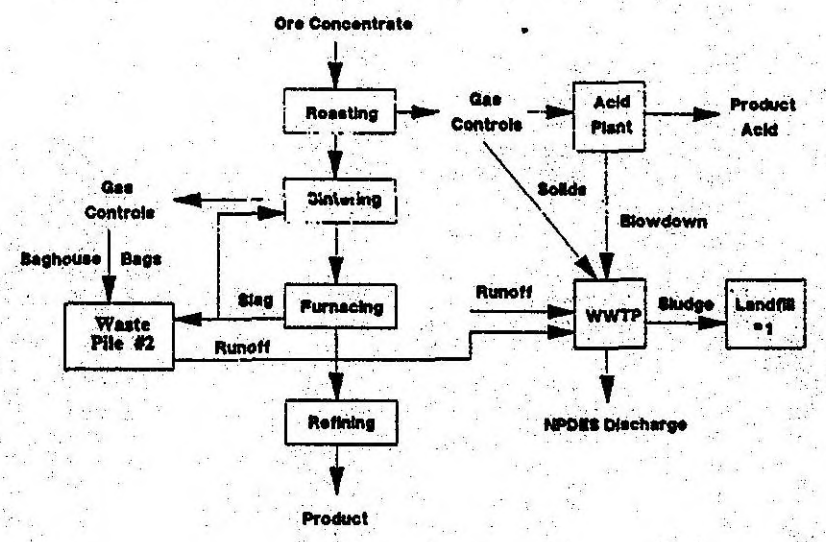
EXAMPLE PRODUCTION PROCESS AND WASTE MANAGEMENT SCHEMATIC



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1.24 Does this facility have a written source reduction or waste minimization program/policy?
(Circle one number.)

01 Yes
02 No

1.25 Does this facility have any goal(s) for source reduction or waste minimization?
(Circle one number.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO SECTION 2)*

1.26 Describe the facility's source reduction or waste minimization goals, including the time period pertaining to the goal(s).
(For example, a facility may have a source reduction goal of 25% between 1988 and 1993 or it may have a source reduction goal of 6% per year for 10 years starting in 1989.)

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SECTION 2

SPECIAL WASTES AND PROCESSING UNITS THAT GENERATE THEM

As indicated in Section 1, the SPECIAL WASTES are:

Alumina
- Pisolites
- Red or brown refining muds

Beryllium
- Barren filtrate
- Bertrandite thickener slurry
- Beryl plant discard
- Processing raffinate
- Sludge leaching slurry

Cerium
- Process water

Primary Chromite
- Roast/leach ore residue

Coal Gas
- Ash
- Cooling tower blowdown
- Process wastewater

Primary Copper
- Acid plant blowdown
- Bleed electrolyte
- Process wastewater
- Roast/leach acid plant residue
- Slag

Elemental Phosphorus
- Furnace off-gas solids
- Furnace scrubber blowdown
- Process wastewater
- Slag

Hydrofluoric Acid
- Fluorogypsum

Iron
- Air pollution control dust/slurry from blast furnaces
- Blast furnace slag

Lanthanides
- Waste ammonium nitrate process solution

Primary Lead
- Acid plant blowdown
- Process wastewater
- Slag

Lightweight Aggregate
- Scrubber wastewater
- Wastewater treatment solids

Magnesium
- Wastewater from the anhydrous process

Primary Molybdenum
- Selenium plant effluent from processing acid plant blowdown

Phosphoric Acid
- Phosphogypsum
- Process wastewater

Soda Ash
- Wastes from trona ore processing

Steel
- Basic oxygen furnace slag

Primary Tin
- Scrubber blowdown
- Slag

Primary Titanium
- Chloride processing waste acids
- Chloride processing waste solids
- Leach liquor
- Sulfate processing waste acids
- Sulfate processing waste solids

Primary Zinc
- Acid plant blowdown
- Goethite
- Process wastewater
- Zinc-lean slag

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Section 2 contains a set of questions that you complete for EACH *processing unit that* GENERATED a special waste in 1988. (These processing units must be shown on the schematic prepared in Section 1.) For example, if the reactor in a copper smelting operation generated slag (which is a special waste) in 1988, then you complete a question set on the reactor (the processing unit that generated the special waste). If another processing unit (such as the acid plant) generated another special waste (such as acid plant blowdown) in 1988, then you also complete a set of questions on this second processing unit (i.e., the acid plant) that generated a special waste. Finally, if two processing units generated the same special waste (e.g., process wastewater) in 1988, then you complete a question set on each processing unit. In summary, you complete a question set for EACH processing unit that generated a special waste in 1988. However, do not complete a question set on processing units that are now permanently closed.

2.1 Did a processing unit at the facility GENERATE a special waste in 1988?
(Circle one number.)

01 Yes *(CONTINUE WITH THIS SECTION OF THE QUESTIONNAIRE)*
02 No *(CALL THE SURVEY HELPLINE)*

Only one question set is provided in this section of the questionnaire. One more question set is provided in the *Extra Question Sets* booklet. If your facility had more than two processing units that generated special wastes in 1988, please make as many additional copies of the extra Section 2 question set as needed.

> If you are unsure about how many Section 2 question sets to complete for your facility, please call the SURVEY HELPLINE (1-800-635-8850). Additionally, call the SURVEY HELPLINE for further instructions if one processing unit generated MORE THAN ONE special waste.

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QUESTION SET FOR A PROCESSING UNIT GENERATING A SPECIAL WASTE

Answer Questions 2.2 through 2.32 for each processing unit that generated a special waste in 1988. The special wastes are listed on page 2-1. The processing unit must be shown on the schematic prepared for Section 1. Call the SURVEY HELPLINE (1-800-635-8850) for further instructions if a processing unit generated more than one special waste.

2.2 Which processing unit is the subject of this question set?

(Use the label on the schematic prepared for Section 1 to identify this processing unit.)

Label on processing unit: Phosphoric Acid Plant

See 2.6/1/91

2.3 Which special waste did this processing unit generate in 1988?

(The special wastes are listed on page 2-1.)

Name of special waste : Phosphogypsum

2.4 What calendar year was this processing unit first operational?

Year: 1974

2.5 What calendar year was this processing unit last rebuilt or modernized?

(See the Instructions and Definitions booklet for definitions of "rebuilt" and "modernized.")

Year: 1981

2.6 What was the DAILY maximum practical operating capacity of this processing unit in 1988?

(Express your answer in terms of this processing unit's principal product by volume.)

1600 short tons/day

2.7 How many days in 1988 was this processing unit in operation?

(Count partial days that the unit was in operation as whole days. For example, if the unit was in operation for half a day on 4 different days, count this as 4 full days.)

322 operating days

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2.8 **What was the PRINCIPAL product (by volume) produced by this processing unit in 1988?**

Name of principal product: Phosphoric Acid

2.9 **How much of the principal product did this processing unit produce in 1988?**
(Report the quantity as generated.)

Quantity produced: 517,000 short tons

2.10 **What OTHER products (EXCLUDING THE SPECIAL WASTE) were produced by this processing unit and how much was produced in 1988?**
(Report the quantities as generated.)

Other Product	Quantity in 1988
a. Hydrofluoric Acid	2100 short tons
b.	short tons
c.	short tons
d.	short tons
e.	short tons
f.	short tons
g.	short tons
h.	short tons

2.11 **How much of the special waste did this processing unit generate in 1988?**
(Report the quantity as generated and be sure to indicate the unit of measure for this quantity.)

Quantity generated: 2,844,000 Short Tons
(unit of measure)

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2.12 **Was this special waste a solid as it came out of the processing unit?**
(Circle one number.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO QUESTION 2.14)*

2.13 **Which of the following categories best describes the typical size of the special waste at the point of generation?**
(Circle one number.)

01 Smaller than sand (less than .02 mm in diameter)
02 Sand (between .02mm and 2 mm in diameter)
03 Gravel (between 2 mm and 3" in diameter)
04 Cobble (between 3" and 12" in diameter)
05 Boulder (greater than 12" in diameter)

SKIP TO QUESTION 2.15 ON NEXT PAGE

2.14 **What were the pH and total solids content of this special waste in 1988?**
(Select one of the two specified units of measure for total solids content.)

a. pH: _____ S.U.

b. Total solids content: _____ % OR _____ ppm

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2.15 What were the other characteristics of this special waste in 1988?

See Exh. 1.

(Provide a composition code from Appendix A in the Instructions and Definitions booklet and an average concentration for the parameters and/or constituents that characterize this special waste. Be sure to indicate the unit of measure applying to the average concentration. The basis for your answer to this question may be either test results or general knowledge of the special waste. YOU DO NOT HAVE TO CONDUCT ADDITIONAL TESTING TO RESPOND TO THIS QUESTION.)

	Waste Composition Code	Average Concentration	Unit of Measure for Average Concentration
a.	23	0.07	%
b.	27	[redacted]	ppm
c.	27	[redacted]	ppm
d.	27	35	ppm
e.	30	[redacted]	ppm
f.	32	1	ppm
g.	[redacted]	[redacted]	[redacted]
h.	34	[redacted]	ppm
i.	35	5	ppm
j.	36	110	ppm
k.	37	9	ppm
l.	38	10	ppm
m.	39	0.02	ppm
n.	[redacted] 40	[redacted]	ppm [redacted]
o.	41		ppm

Please See Next Page.

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2.16 **Was any of the special waste generated by this processing unit SOLD without onsite modification in 1988?**
(Circle one number.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO QUESTION 2.18)*

2.17 **How much of the special waste was sold in 1988 without onsite modification?**
(Report the quantity as generated and be sure to indicate the unit of measure for this quantity.)

Quantity sold: _____ _____
(unit of measure)

2.18 **Was any of the special waste generated by this processing unit SHIPPED OFFSITE for treatment or disposal in 1988 without onsite modification?**
(Circle one number.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO QUESTION 2.23 ON NEXT PAGE)*

2.19 **How much of the special waste was shipped offsite for treatment or disposal in 1988 without onsite modification?**
(Report the quantity as generated and be sure to indicate the unit of measure for this quantity.)

Quantity shipped offsite: _____ _____
(unit of measure)

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2185

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2.20 **What was the INITIAL DESTINATION of the special waste shipped offsite for treatment or disposal in 1988?**
(Circle one number.)

01 Subtitle C treatment, storage, or disposal facility

02 Land disposal facility (not a Subtitle C facility)

03 Deep-well injection

04 Treatment/reclamation/recovery facility

05 Other *(specify)*: _____

_____

_____

06 Unknown *(SKIP TO QUESTION 2.23)*

2.21 **Does your company operate the facility identified in the previous question?**
(Circle one number.)

01 Yes *(SKIP TO QUESTION 2.23)*
02 No *(CONTINUE TO NEXT QUESTION)*

2.22 **What are the name, address, and telephone number of the facility identified in Question 2.20?**

Name: _____

Address: _____

City: _____ State or Country: _____ Zip: _____

Telephone number: ( ) _____

2.23 **Was any of the special waste generated by this processing unit DISCHARGED WITHOUT TREATMENT through permitted NPDES or state PDES outfalls or SENT WITHOUT TREATMENT to a POTW in 1988?**
(Circle one number. See the Instructions and Definitions booklet for definitions of NPDES, PDES, and POTW if these acronyms are unfamiliar.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO QUESTION 2.25 ON NEXT PAGE)*

MW2F 001
2186

2.24 How much of the special waste was discharged without treatment through permitted NPDES or state PDES outfalls or sent without treatment to a POTW in 1988?
(Report the quantity as generated using one of the two specified units of measure.)

_____ gallons OR _____ acre-feet

2.25 Was any of the special waste generated by this processing unit SENT TO one or more ONSITE processing or waste management units in 1988?
(Circle one number.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO QUESTION 2.27 ON PAGE 2-11)*

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2181

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2.26 How much of the special waste was INITIALLY SENT to each of the following ONSITE destinations in 1988?

(Report the quantities as generated and be sure to indicate the unit of measure for the quantities. For each onsite destination that did not receive the special waste, enter "0" for the quantity.)

Initial Onsite Destination	Quantity in 1988	Unit of Measure
a. Recycled without treatment to the same processing unit	0	
b. Sent without treatment to other onsite processing units: *(Indicate which units using the labels on the schematic prepared for Section 1.)*		
	0	
c. Sent to onsite waste management units: *(Indicate which units using the labels on the schematic prepared for Section 1.)*		
Gypsum Area	2,844,000	Short Tons
d. Other *(specify)*:		

MW2F 001
2188

2.27 Which of the following source redı tion and recycling practices were FIRST APPLIED to this processing unit i: 1988?
(Circle all numbers that apply. Do r t include "downstream" source reduction and recycling practices in your answer.)

01 Equipment or technology modifi tion/substitution

02 Process or procedure modificatic /substitution (including closed-loop recycling)

03 Reformulation or redesign of prc ict

04 Modification/substitution of inpt or raw material

05 Better housekeeping, better oper: ing practices

06 Waste stream segregation

07 Onsite recycling or recovery for use

08 Offsite recycling or recovery for use

09 Other *(specify)*: _____ _____

_____ _____

_____ _____

10 None *(SKIP TO QUESTION 2..) ON NEXT PAGE)*

2.28 Briefly describe the source reducti n and recycling practices that were FIRST APPLIED to this processing unit i 1988.

_____ _____

_____ _____

_____ _____

_____ _____

_____ _____

2.29 Approximately how much in perc tage terms did these NEW source reduction or recycling practices REDUCE the g neration of the special waste in 1988 compared to the amount that would have bee generated in the absence of these practices?

Reduction in special waste generatec _____ percent

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2.30 In addition to generating a special waste, did this processing unit also RECEIVE a special waste in 1988?
(Circle one number.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO QUESTION 2.32)*

2.31 Which special waste(s) was (were) received by this processing unit and how much was received in 1988?
(Report the quantities as generated and be sure to indicate the units of measure for these quantities.)

Special Waste Received	Quantity in 1988	Unit of Measure
a. Process Wastewater	70	Tons
b. Process Wastewater	98,959,00	Gallons
c.		
d.		
e.		
f.		
g.		

Notes

2.32 Is there another processing unit at this facility that GENERATED a special waste in 1988?
(Circle one number.)

01 Yes *(COMPLETE A QUESTION SET FROM THE EXTRA QUESTION SETS BOOKLET ON THIS OTHER PROCESSING UNIT)*
02 No *(CONTINUE TO NEXT PAGE)*

MW2F 001
0612

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QUESTION SET FOR A PROCESSING UNIT GENERATING A SPECIAL WASTE

Answer Questions 2.2 through 2.32 for each processing unit that generated a special waste in 1988. The special wastes are listed on page 2-1 of the Questionnaire booklet. The processing unit must be shown on the schematic prepared for Section 1. Call the SURVEY HELPLINE (1-800-635-8850) for further instructions if a processing unit generated more than one special waste.

2.2 Which processing unit is the subject of this question set?
(Use the label on the schematic prepared for Section 1 to identify this processing unit.)

Label on processing unit: Phosphoric Acid Plant

2.3 Which special waste did this processing unit generate in 1988?
(The special wastes are listed on page 2-1 of the Questionnaire booklet.)

Name of special waste : Process Wastewater

2.4 What calendar year was this processing unit first operational?

Year: 1974

2.5 What calendar year was this processing unit last rebuilt or modernized?
(See the Instructions and Definitions booklet for definitions of "rebuilt" and "modernized.")

Year: 1981

2.6 What was the DAILY maximum practical operating capacity of this processing unit in 1988?
(Express your answer in terms of this processing unit's principal product by volume.)

1800 short tons/day

2.7 How many days in 1988 was this processing unit in operation?
(Count partial days that the unit was in operation as whole days. For example, if the unit was in operation for half a day on 4 different days, count this as 4 full days.)

322 operating days

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2.8 **What was the PRINCIPAL product (by volume) produced by this processing unit in 1988?**

Name of principal product: Phosphoric Acid

2.9 **How much of the principal product did this processing unit produce in 1988?**
(Report the quantity as generated.)

Quantity produced: 516,998 short tons

2.10 **What OTHER products (EXCLUDING THE SPECIAL WASTE) were produced by this processing unit and how much was produced in 1988?**
(Report the quantities as generated.)

Other Product	Quantity in 1988
a. Hydrofluosilic Acid	2100 short tons
b.	short tons
c.	short tons
d.	short tons
e.	short tons
f.	short tons
g.	short tons
h.	short tons

2.11 **How much of the special waste did this processing unit generate in 1988?**
(Report the quantity as generated and be sure to indicate the unit of measure for this quantity.)

Quantity generated: 23,730,000,000 GAL
(unit of measure)

MW2F 001

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2.12 **Was this special waste a solid as it came out of the processing unit?**
(Circle one number.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO QUESTION 2.14)*

See Fac. 1-1 Nov 5.

~~2.13~~ **Which of the following categories best describes the typical size of the special waste at the point of generation?**
(Circle one number.)

01 Smaller than sand (less than .02 mm in diameter)
02 Sand (between .02mm and 2 mm in diameter)
03 Gravel (between 2 mm and 3" in diameter)
04 Cobble (between 3" and 12" in diameter)
05 Boulder (greater than 12" in diameter)

SKIP TO QUESTION 2.15 ON NEXT PAGE

2.14 **What were the pH and total solids content of this special waste in 1988?**
(Select one of the two specified units of measure for total solids content.)

a. pH: 4.5 S.U.

b. Total solids content: _____ % OR 19,200 ppm

MW2F 001

2193

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2.15 What were the other characteristics of this special waste in 1988?
(Provide a composition code from Appendix A in the Instructions and Definitions booklet and an average concentration for the parameters and/or constituents that characterize this special waste. Be sure to indicate the unit of measure applying to the average concentration. The basis for your answer to this question may be either test results or general knowledge of the special waste. YOU DO NOT HAVE TO CONDUCT ADDITIONAL TESTING TO RESPOND TO THIS QUESTION.)

	Waste Composition Code	Average Concentration	Unit of Measure for Average Concentration
a.	W054	13,552	mg/l
b.	W069	13,865	mg/l
c.	W036	380	mg/l
d.	W026	870	mg/l
e.	W013	590	mg/l
f.	W013	2,450	mg/l
g.	W065	190	mg/l
h.	W066	1,480	mg/l
i.	W071	2,980	mg/l
j.	W050	174	mg/l
k.			
l.			
m.			
n.			
o.			

MW2F 001

2194

2.16 **Was any of the special waste generated by this processing unit SOLD without onsite modification in 1988?**
(Circle one number.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO QUESTION 2.18)*

2.17 **How much of the special waste was sold in 1988 without onsite modification?**
(Report the quantity as generated and be sure to indicate the unit of measure for this quantity.)

Quantity sold: _____ _____
(unit of measure)

2.18 **Was any of the special waste generated by this processing unit SHIPPED OFFSITE for treatment or disposal in 1988 without onsite modification?**
(Circle one number.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO QUESTION 2.23 ON NEXT PAGE)*

2.19 **How much of the special waste was shipped offsite for treatment or disposal in 1988 without onsite modification?**
(Report the quantity as generated and be sure to indicate the unit of measure for this quantity.)

Quantity shipped offsite: _____ _____
(unit of measure)

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2185

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2.20 **What was the INITIAL DESTINATION of the special waste shipped offsite for treatment or disposal in 1988?**
(Circle one number.)

01 Subtitle C treatment, storage, or disposal facility

02 Land disposal facility (not a Subtitle C facility)

03 Deep-well injection

04 Treatment/reclamation/recovery facility

05 Other *(specify)*: _____

_____

_____

06 Unknown *(SKIP TO QUESTION 2.23)*

2.21 **Does your company operate the facility identified in the previous question?**
(Circle one number.)

01 Yes *(SKIP TO QUESTION 2.23)*
02 No *(CONTINUE TO NEXT QUESTION)*

2.22 **What are the name, address, and telephone number of the facility identified in Question 2.20?**

Name: _____

Address: _____

City: _____ State or Country: _____ Zip: _____

Telephone number: ( ) _____

2.23 **Was any of the special waste generated by this processing unit DISCHARGED WITHOUT TREATMENT through permitted NPDES or state PDES outfalls or SENT WITHOUT TREATMENT to a POTW in 1988?**
(Circle one number. See the Instructions and Definitions booklet for definitions of NPDES, PDES, and POTW if these acronyms are unfamiliar.)

(01) Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO QUESTION 2.25 ON NEXT PAGE)*

MW2F 001

2.24 **How much of the special waste was discharged without treatment through permitted NPDES or state PDES outfalls or sent without treatment to a POTW in 1988?**
(Report the quantity as generated using one of the two specified units of measure.)

[illegible] gallons OR _____ acre-feet

2.25 **Was any of the special waste generated by this processing unit SENT TO one or more ONSITE processing or waste management units in 1988?**
(Circle one number.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO QUESTION 2.27 ON PAGE 2-11)*

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MW2F 001

1612

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2.26 How much of the special waste was INITIALLY SENT to each of the following ONSITE destinations in 1988?

(Report the quantities as generated and be sure to indicate the unit of measure for the quantities. For each onsite destination that did not receive the special waste, enter "0" for the quantity.)

Initial Onsite Destination	Quantity in 1988	Unit of Measure
a. Recycled without treatment to the same processing unit	0	—
b. Sent without treatment to other onsite processing units: *(Indicate which units using the labels on the schematic prepared for Section 1.)*		
c. Sent to onsite waste management units: *(Indicate which units using the labels on the schematic prepared for Section 1.)*		
Cooling Pond	21,630,000,000	GALLONS
Active Gypsum Stack	2,100,000,000	GALLONS
d. Other *(specify)*:		

See facility notes

MW2F 001

2198

2.27 **Which of the following source reduction and recycling practices were FIRST APPLIED to this processing unit in 1988?**
(Circle all numbers that apply. Do not include "downstream" source reduction and recycling practices in your answer.)

01 Equipment or technology modification/substitution

02 Process or procedure modification/substitution (including closed-loop recycling)

03 Reformulation or redesign of product

04 Modification/substitution of input or raw material

05 Better housekeeping, better operating practices

06 Waste stream segregation

07 Onsite recycling or recovery for reuse

08 Offsite recycling or recovery for reuse

09 Other *(specify)*: _____

_____

_____

10 None *(SKIP TO QUESTION 2.30 ON NEXT PAGE)*

2.28 **Briefly describe the source reduction and recycling practices that were FIRST APPLIED to this processing unit in 1988.**

_____

_____

_____

_____

_____

2.29 **Approximately how much in percentage terms did these NEW source reduction or recycling practices REDUCE the generation of the special waste in 1988 compared to the amount that would have been generated in the absence of these practices?**

Reduction in special waste generated: _____ percent

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MW2F 001

2 of 6

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2.30 In addition to generating a special waste, did this processing unit also RECEIVE a special waste in 1988?
(Circle one number.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO QUESTION 2.32 ON NEXT PAGE)*

2.31 Which special waste(s) was (were) received by this processing unit and how much was received in 1988?
(Report the quantities as generated and be sure to indicate the units of measure for these quantities.)

Special Waste Received	Quantity in 1988	Unit of Measure
a. Process wastewater	70	Tons
b. Process wastewater	98,454	Gallons
c.		
d.		
e.		
f.		
g.		

MW2F 001
0200

YOU HAVE COMPLETED THIS QUESTION SET

2.32 Have you completed a question set on ALL processing units at this facility that generated a special waste in 1988?
(Circle one number.)

1 Yes *(CONTINUE WITH QUESTION 2.33 ON PAGE 2-13 OF THE QUESTIONNAIRE BOOKLET)*

2 No *(COMPLETE A QUESTION SET ON ONE OF THE REMAINING PROCESSING UNITS THAT GENERATED A SPECIAL WASTE IN 1988.)*

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MWZF 001

2201

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2.8 **What was the PRINCIPAL product (by volume) produced by this processing unit in 1988?**

Name of principal product: Sodium Silico Fluoride

2.9 **How much of the principal product did this processing unit produce in 1988?** *(Report the quantity as generated.)*

Quantity produced: 2,207 short tons

2.10 **What OTHER products (EXCLUDING THE SPECIAL WASTE) were produced by this processing unit and how much was produced in 1988?** *(Report the quantities as generated.)*

Other Product	Quantity in 1988
a.	0 short tons
b.	short tons
c.	short tons
d.	short tons
e.	short tons
f.	short tons
g.	short tons
h.	short tons

2.11 **How much of the special waste did this processing unit generate in 1988?** *(Report the quantity as generated and be sure to indicate the unit of measure for this quantity.)*

Quantity generated: 25,644 Tons (unit of measure)

MW2F 001

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QUESTION SET FOR A PROCESSING UNIT GENERATING A SPECIAL WASTE

Answer Questions 2.2 through 2.32 for each processing unit that generated a special waste in 1988. The special wastes are listed on page 2-1 of the Questionnaire booklet. The processing unit must be shown on the schematic prepared for Section 1. Call the SURVEY HELPLINE (1-800-635-8850) for further instructions if a processing unit generated more than one special waste.

2.2 **Which processing unit is the subject of this question set?**
(Use the label on the schematic prepared for Section 1 to identify this processing unit.)

Processing unit: Fluoride Plant

2.3 **Which special waste did this processing unit generate in 1988?**
(The special wastes are listed on page 2-1 of the Questionnaire booklet.)

Name of special waste: Process Wastewater

2.4 **What calendar year was this processing unit first operational?**

Year: 1975

2.5 **What calendar year was this processing unit last rebuilt or modernized?**
(See the Instructions and Definitions booklet for definitions of "rebuilt" and "modernized.")

Year: NA.

2.6 **What was the DAILY maximum practical operating capacity of this processing unit in 1988?**
(Express your answer in terms of this processing unit's principal product by volume.)

35 short tons/day

2.7 **How many days in 1988 was this processing unit in operation?**
(Count partial days that the unit was in operation as whole days. For example, if the unit was in operation for half a day on 4 different days, count this as 4 full days.)

142 operating days

MW2F 001

2203

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2.12 **Was this special waste a solid as it came out of the processing unit?**
(Circle one number.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO QUESTION 2.14)*

2.13 **Which of the following categories best describes the typical size of the special waste at the point of generation?**
(Circle one number.)

01 Smaller than sand (less than .02 mm in diameter)
02 Sand (between .02mm and 2 mm in diameter)
03 Gravel (between 2 mm and 3" in diameter)
04 Cobble (between 3" and 12" in diameter)
05 Boulder (greater than 12" in diameter)

SKIP TO QUESTION 2.15 ON NEXT PAGE

2.14 **What were the pH and total solids content of this special waste in 1988?**
(Select one of the two specified units of measure for total solids content.)

a. pH: 2.8 S.U.

b. Total solids content: 0.58 % OR _____ ppm

MW2F 001

2204

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2.15 What were the other characteristics of this special waste in 1988?
(Provide a composition code from Appendix A in the Instructions and Definitions booklet and an average concentration for the parameters and/or constituents that characterize this special waste. Be sure to indicate the unit of measure applying to the average concentration. The basis for your answer to this question may be either test results or general knowledge of the special waste. YOU DO NOT HAVE TO CONDUCT ADDITIONAL TESTING TO RESPOND TO THIS QUESTION.)

	Waste Composition Code	Average Concentration	Unit of Measure for Average Concentration
a.	W066 (Sulfate)	0.23	wt. %
b.	W067 (Sulfite)	0.275	wt. %
c.	W019 (Nitrate)	0.06	wt. %
d.	W013 (Silicate)	0.07	wt. %
e.			
f.			
g.			
h.			
i.			
j.			
k.			
l.			
m.			
n.			
o.			

MW2F 001
2205

2.16 **Was any of the special waste generated by this processing unit SOLD without onsite modification in 1988?**
(Circle one number.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO QUESTION 2.18)*

2.17 **How much of the special waste was sold in 1988 without onsite modification?**
(Report the quantity as generated and be sure to indicate the unit of measure for this quantity.)

Quantity sold: _____ _____
(unit of measure)

2.18 **Was any of the special waste generated by this processing unit SHIPPED OFFSITE for treatment or disposal in 1988 without onsite modification?**
(Circle one number.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO QUESTION 2.23 ON NEXT PAGE)*

2.19 **How much of the special waste was shipped offsite for treatment or disposal in 1988 without onsite modification?**
(Report the quantity as generated and be sure to indicate the unit of measure for this quantity.)

Quantity shipped offsite: _____ _____
(unit of measure)

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2.20 What was the INITIAL DESTINATION of the special waste shipped offsite for treatment or disposal in 1988?
(Circle one number.)

01 Subtitle C treatment, storage, or disposal facility

02 Land disposal facility (not a Subtitle C facility)

03 Deep-well injection

04 Treatment/reclamation/recovery facility

05 Other *(specify)*: _____

_____

_____

06 Unknown *(SKIP TO QUESTION 2.23)*

2.21 Does your company operate the facility identified in the previous question?
(Circle one number.)

01 Yes *(SKIP TO QUESTION 2.23)*
02 No *(CONTINUE TO NEXT QUESTION)*

2.22 What are the name, address, and telephone number of the facility identified in Question 2.20?

Name: _____

Address : _____

City: _____ State or Country: _____ Zip: _____

Telephone number : ( ) _____

2.23 Was any of the special waste generated by this processing unit DISCHARGED WITHOUT TREATMENT through permitted NPDES or state PDES outfalls or SENT WITHOUT TREATMENT to a POTW in 1988?
(Circle one number. See the Instructions and Definitions booklet for definitions of NPDES, PDES, and POTW if these acronyms are unfamiliar.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO QUESTION 2.25 ON NEXT PAGE)*

MW2F 001
2207

2.24 **How much of the special waste was discharged without treatment through permitted NPDES or state PDES outfalls or sent without treatment to a POTW in 1988?**
(Report the quantity as generated using one of the two specified units of measure.)

_____ gallons **OR** _____ acre-feet

2.25 **Was any of the special waste generated by this processing unit SENT TO one or more ONSITE processing or waste management units in 1988?**
(Circle one number.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO QUESTION 2.27 ON PAGE 2-11)*

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2208

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2.26 How much of the special waste was INITIALLY SENT to each of the following ONSITE destinations in 1988?

(Report the quantities as generated and be sure to indicate the unit of measure for the quantities. For each onsite destination that did not receive the special waste, enter "0" for the quantity.)

Initial Onsite Destination	Quantity in 1988	Unit of Measure
a. Recycled without treatment to the same processing unit	0	
b. Sent without treatment to other onsite processing units: *(Indicate which units using the labels on the schematic prepared for Section 1.)*		
	0	
c. Sent to onsite waste management units: *(Indicate which units using the labels on the schematic prepared for Section 1.)*		
COOLING POND	6,157,023	GALLONS
d. Other *(specify)*:		
	0	

MW2F 001

2209

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2.27 **Which of the following source reduction and recycling practices were FIRST APPLIED to this processing unit in 1988?**
(Circle all numbers that apply. Do not include "downstream" source reduction and recycling practices in your answer.)

01 Equipment or technology modification/substitution

02 Process or procedure modification/substitution (including closed-loop recycling)

03 Reformulation or re. esign of product

04 Modification/substitution of input or raw material

05 Better housekeeping, better operating practices

06 Waste stream segregation

07 Onsite recycling or recovery for reuse

08 Offsite recycling or recovery for reuse

09 Other *(specify)*: _____

_____

_____

10 None *(SKIP TO QUESTION 2.30 ON NEXT PAGE)*

~~2.28~~ **Briefly describe the source reduction and recycling practices that were FIRST APPLIED to this processing unit in 1988.**

_____

_____

_____

_____

_____

~~2.29~~ **Approximately how much in percentage terms did these NEW source reduction or recycling practices REDUCE the generation of the special waste in 1988 compared to the amount that would have been generated in the absence of these practices?**

Reduction in special waste generated: _____ percent

MW2F 001

2210

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2.30 **In addition to generating a special waste, did this processing unit also RECEIVE a special waste in 1988?**
(Circle one number.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO QUESTION 2.32 ON NEXT PAGE)*

2.31 **Which special waste(s) was (were) received by this processing unit and how much was received in 1988?**
(Report the quantities as generated and be sure to indicate the units of measure for these quantities.)

Special Waste Received	Quantity in 1988	Unit of Measure
a.		
b.		
c.		
d.		
e.		
f.		
g.		

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YOU HAVE COMPLETED THIS QUESTION SET

2.32 **Have you completed a question set on ALL processing units at this facility that generated a special waste in 1988?**

(Circle one number.)

1 Yes *(CONTINUE WITH QUESTION 2.33 ON PAGE 2-13 OF THE QUESTIONNAIRE BOOKLET)*

2 No *(COMPLETE A QUESTION SET ON ONE OF THE REMAINING PROCESSING UNITS THAT GENERATED A SPECIAL WASTE IN 1988.)*

MW2F 001

2212

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QUESTION SET FOR A PROCESSING UNIT GENERATING A SPECIAL WASTE

Answer Questions 2.2 through 2.32 for each processing unit that generated a special waste in 1988. The special wastes are listed on page 2-1 of the Questionnaire booklet. The processing unit must be shown on the schematic prepared for Section 1. Call the SURVEY HELPLINE (1-800-635-8850) for further instructions if a processing unit generated more than one special waste.

2.2 Which processing unit is the subject of this question set?
(Use the label on the schematic prepared for Section 1 to identify this processing unit.)

Label on processing unit: Uranium Recovery Plant

2.3 Which special waste did this processing unit generate in 1988?
(The special wastes are listed on page 2-1 of the Questionnaire booklet.)

Name of special waste : Process Waste Water

2.4 What calendar year was this processing unit first operational?

Year: 1979

2.5 What calendar year was this processing unit last rebuilt or modernized?
(See the Instructions and Definitions booklet for definitions of "rebuilt" and "modernized.")

Year: N/A

2.6 What was the DAILY maximum practical operating capacity of this processing unit in 1988?
(Express your answer in terms of this processing unit's principal product by volume.)

0.76 short tons/day

2.7 How many days in 1988 was this processing unit in operation?
(Count partial days that the unit was in operation as whole days. For example, if the unit was in operation for half a day on 4 different days, count this as 4 full days.)

315 operating days

MW2F 001

2213

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SECTION 2—EXTRA QUESTION SET

2.8 **What was the PRINCIPAL product (by volume) produced by this processing unit in 1988?**

Name of principal product: URANIUM

2.9 **How much of the principal product did this processing unit produce in 1988?**
(Report the quantity as generated.)

Quantity produced: 210 short tons

2.10 **What OTHER products (EXCLUDING THE SPECIAL WASTE) were produced by this processing unit and how much was produced in 1988?**
(Report the quantities as generated.)

Other Product	Quantity in 1988
a. N.A.	short tons
b.	short tons
c.	short tons
d.	short tons
e.	short tons
f.	short tons
g.	short tons
h.	short tons

2.11 **How much of the special waste did this processing unit generate in 1988?**
(Report the quantity as generated and be sure to indicate the unit of measure for this quantity.)

Quantity generated: 12,112 SHORT TONS
(unit of measure)

2.12 **Was this special waste a solid as it came out of the processing unit?**
(Circle one number.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO QUESTION 2.14)*

2.13 **Which of the following categories best describes the typical size of the special waste at the point of generation?**
(Circle one number.)

01 Smaller than sand (less than .02 mm in diameter)
02 Sand (between .02mm and 2 mm in diameter)
03 Gravel (between 2 mm and 3" in diameter)
04 Cobble (between 3" and 12" in diameter)
05 Boulder (greater than 12" in diameter)

SKIP TO QUESTION 2.15 ON NEXT PAGE

2.14 **What were the pH and total solids content of this special waste in 1988?**
(Select one of the two specified units of measure for total solids content.)

a. pH: 1.5 S.U.
b. Total solids content: 23.3 % OR _____ ppm

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2215

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2.15 **What were the other characteristics of this special waste in 1988?**
(Provide a composition code from Appendix A in the Instructions and Definitions booklet and an average concentration for the parameters and/or constituents that characterize this special waste. Be sure to indicate the unit of measure applying to the average concentration. The basis for your answer to this question may be either test results or general knowledge of the special waste. YOU DO NOT HAVE TO CONDUCT ADDITIONAL TESTING TO RESPOND TO THIS QUESTION.)

	Waste Composition Code	Average Concentration	Unit of Measure for Average Concentration
a.	W019	23.3	wt-%
b.	W054	20.0	wt-%
c.	W069	0.129	wt-%
d.	W071	9.97	wt-%
e.	W036	0.007	wt-%
f.	W026	0.024	wt-%
g.	W050	0.004	wt-%
h.	W063	5.538	wt-%
i.	W065	0.003	wt-%
j.	W066	0.024	wt-%
k.			
l.			
m.			
n.			
o.			

MW2F 001

2.16 **Was any of the special waste generated by this processing unit SOLD without onsite modification in 1988?**
(Circle one number.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO QUESTION 2.18)*

2.17 **How much of the special waste was sold in 1988 without onsite modification?**
(Report the quantity as generated and be sure to indicate the unit of measure for this quantity.)

Quantity sold: _____ _____
(unit of measure)

2.18 **Was any of the special waste generated by this processing unit SHIPPED OFFSITE for treatment or disposal in 1988 without onsite modification?**
(Circle one number.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO QUESTION 2.23 ON NEXT PAGE)*

2.19 **How much of the special waste was shipped offsite for treatment or disposal in 1988 without onsite modification?**
(Report the quantity as generated and be sure to indicate the unit of measure for this quantity.)

Quantity shipped offsite: _____ _____
(unit of measure)

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2.20 **What was the INITIAL DESTINATION of the special waste shipped offsite for treatment or disposal in 1988?**
(Circle one number.)

01 Subtitle C treatment, storage, or disposal facility

02 Land disposal facility (not a Subtitle C facility)

03 Deep-well injection

04 Treatment/reclamation/recovery facility

Other *(specify)*: _____

_____

_____

06 Unknown *(SKIP TO QUESTION 2.23)*

2.21 **Does your company operate the facility identified in the previous question?**
(Circle one number.)

01 Yes *(SKIP TO QUESTION 2.23)*
02 No *(CONTINUE TO NEXT QUESTION)*

2.22 **What are the name, address, and telephone number of the facility identified in Question 2.20?**

Name: _____

Address: _____

City: _____ State or Country: _____ Zip: _____

Telephone number: ( ) _____

2.23 **Was any of the special waste generated by this processing unit DISCHARGED WITHOUT TREATMENT through permitted NPDES or state PDES outfalls or SENT WITHOUT TREATMENT to a POTW in 1988?**
(Circle one number. See the Instructions and Definitions booklet for definitions of NPDES, PDES, and POTW if these acronyms are unfamiliar.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO QUESTION 2.25 ON NEXT PAGE)*

MW2F 001
2218

2.24 How much of the special waste was discharged without treatment through permitted NPDES or state PDES outfalls or sent without treatment to a POTW in 1988?
(Report the quantity as generated using one of the two specified units of measure.)

_____ gallons OR _____ acre-feet

2.25 Was any of the special waste generated by this processing unit SENT TO one or more ONSITE processing or waste management units in 1988?
(Circle one number.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO QUESTION 2.27 ON PAGE 2-11)*

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2210

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2.26 How much of the special waste was INITIALLY SENT to each of the following ONSITE destinations in 1988?

(Report the quantities as generated and be sure to indicate the unit of measure for the quantities. For each onsite destination that did not receive the special waste, enter "0" for the quantity.)

Initial Onsite Destination	Quantity in 1988	Unit of Measure
a. Recycled without treatment to the same processing unit	0	
b. Sent without treatment to other onsite processing units: *(Indicate which units using the labels on the schematic prepared for Section 1.)*		
	0	
c. Sent to onsite waste management units: *(Indicate which units using the labels on the schematic prepared for Section 1.)*		
Active Gypsum Area	12,112	Tons
d. Other *(specify)*:		

MW2F 001
0220

2.27 **Which of the following source reduction and recycling practices were FIRST APPLIED to this processing unit in 1988?**
(Circle all numbers that apply. Do not include "downstream" source reduction and recycling practices in your answer.)

01 Equipment or technology modification/substitution

02 Process or procedure modification/substitution (including closed-loop recycling)

03 Reformulation or redesign of product

04 Modification/substitution of input or raw material

05 Better housekeeping, better operating practices

06 Waste stream segregation

07 Onsite recycling or recovery for reuse

08 Offsite recycling or recovery for reuse

09 Other *(specify)*: _____

_____

_____

10 None *(SKIP TO QUESTION 2.30 ON NEXT PAGE)*

2.28 **Briefly describe the source reduction and recycling practices that were FIRST APPLIED to this processing unit in 1988.**

_____

_____

_____

_____

_____

2.29 **Approximately how much in percentage terms did these NEW source reduction or recycling practices REDUCE the generation of the special waste in 1988 compared to the amount that would have been generated in the absence of these practices?**

Reduction in special waste generated: _____ percent

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2.30 **In addition to generating a special waste, did this processing unit also RECEIVE a special waste in 1988?**
(Circle one number.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO QUESTION 2.32 ON NEXT PAGE)*

2.31 **Which special waste(s) was (were) received by this processing unit and how much was receiv' in 1988?**
(Report the quantities as generated and be sure to indicate the units of measure for these quantities.)

Special Waste Received	Quantity in 1988	Unit of Measure
a.		
b.		
c.		
d.		
e.		
f.		
g.		

MW2F 001

PA 047d

YOU HAVE COMPLETED THIS QUESTION SET

2.32 Have you completed a question set on ALL processing units at this facility that generated a special waste in 1988?
(Circle one number.)

1 Yes *(CONTINUE WITH QUESTION 2.33 ON PAGE 2-13 OF THE QUESTIONNAIRE BOOKLET)*

2 No *(COMPLETE A QUESTION SET ON ONE OF THE REMAINING PROCESSING UNITS THAT GENERATED A SPECIAL WASTE IN 1988.)*

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QUESTION SET FOR A PROCESSING UNIT GENERATING A SPECIAL WASTE

Answer Questions 2.2 through 2.32 for each processing unit that generated a special waste in 1988. The special wastes are listed on page 2-1 of the Questionnaire booklet. The processing unit must be shown on the schematic prepared for Section 1. Call the SURVEY HELPLINE (1-800-635-8850) for further instructions if a processing unit generated more than one special waste.

2.2 **Which processing unit is the subject of this question set?**
(Use the label on the schematic prepared for Section 1 to identify this processing unit.)

Label on processing unit: GRANULATION PLANT

2.3 **Which special waste did this processing unit generate in 1988?**
(The special wastes are listed on page 2-1 of the Questionnaire booklet.)

Name of special waste: PROCESS WASTE WATER

See facility notes

2.4 **What calendar year was this processing unit first operational?**

Year: 1965

2.5 **What calendar year was this processing unit last rebuilt or modernized?**
(See the Instructions and Definitions booklet for definitions of "rebuilt" and "modernized.")

Year: 1975

2.6 **What was the DAILY maximum practical operating capacity of this processing unit in 1988?**
(Express your answer in terms of this processing unit's principal product by volume.)

7000 short tons/day

2.7 **How many days in 1988 was this processing unit in operation?**
(Count partial days that the unit was in operation as whole days. For example, if the unit was in operation for half a day on 4 different days, count this as 4 full days.)

317 operating days

MW2F 001

2224

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SECTION 3—EXTRA QUESTION SET

2.8 **What was the PRINCIPAL product (by volume) produced by this processing unit in 1988?**

Name of principal product: Diammonium Phosphate

2.9 **How much of the principal product did this processing unit produce in 1988?**
(Report the quantity as generated.)

Quantity produced: 1,7[illegible],915 short tons

2.10 **What OTHER products (EXCLUDING THE SPECIAL WASTE) were produced by this processing unit and how much was produced in 1988?**
(Report the quantities as generated.)

Other Product	Quantity in 1988
a. Mono-Ammonium Phosphate	520,555 short tons
b.	short tons
c.	short tons
d.	short tons
e.	short tons
f.	short tons
g.	short tons
h.	short tons

2.11 **How much of the special waste did this processing unit generate in 1988?**
(Report the quantity as generated and be sure to indicate the unit of measure for this quantity.)

Quantity generated: 36,729,693 Gallons
(unit of measure)

MW2F 001

PA 047.

2.12 **Was this special waste a solid as it came out of the processing unit?**
(Circle one number.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO QUESTION 2.14)*

2.15 **Which of the following categories best describes the typical size of the special waste at the point of generation?**
(Circle one number.)

01 Smaller than sand (less than .02 mm in diameter)
02 Sand (between .02mm and 2 mm in diameter)
03 Gravel (between 2 mm and 3" in diameter)
04 Cobble (between 3" and 12" in diameter)
05 Boulder (greater than 12" in diameter)

SKIP TO QUESTION 2.15 ON NEXT PAGE

2.14 **What were the pH and total solids content of this special waste in 1988?**
(Select one of the two specified units of measure for total solids content.)

a. pH: 5.9 S.U.
b. Total solids content: 5 % OR _____ ppm

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2.15 What were the other characteristics of this special waste in 1988?
(Provide a composition code from Appendix A in the Instructions and Definitions booklet and an average concentration for the parameters and/or constituents that characterize this special waste. Be sure to indicate the unit of measure applying to the average concentration. The basis for your answer to this question may be either test results or general knowledge of the special waste. YOU DO NOT HAVE TO CONDUCT ADDITIONAL TESTING TO RESPOND TO THIS QUESTION.)

	Waste Composition Code	Average Concentration	Unit of Measure for Average Concentration
a.	W028 (Arsenic)	0.02	mg/l
b.	W029 (Barium)	0.35	mg/l
c.	W032 (Cadmium)	0.02	mg/l
d.	W033 (Chromium)	0.06	mg/l
e.	W037 (Lead)	0.01	mg/l
f.	W039 (Mercury)	0.001	mg/l
g.	W034 Phosphorus	4	wt.%
h.	W050 (Zinc)	2	wt.%
i.			
j.			
k.			
l.			
m.			
n.			
o.			

MW2F 001

2.16 **Was any of the special waste generated by this processing unit SOLD without onsite modification in 1988?**
(Circle one number.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO QUESTION 2.18)*

2.17 **How much of the special waste was sold in 1988 without onsite modification?**
(Report the quantity as generated and be sure to indicate the unit of measure for this quantity.)

Quantity sold: _____ _____
(unit of measure)

2.18 **Was any of the special waste generated by this processing unit SHIPPED OFFSITE for treatment or disposal in 1988 without onsite modification?**
(Circle one number.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO QUESTION 2.23 ON NEXT PAGE)*

2.19 **How much of the special waste was shipped offsite for treatment or disposal in 1988 without onsite modification?**
(Report the quantity as generated and be sure to indicate the unit of measure for this quantity.)

Quantity shipped offsite: _____ _____
(unit of measure)

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2.20 **What was the INITIAL DESTINATION of the special waste shipped offsite for treatment or disposal in 1988?**
(Circle one number.)

01 Subtitle C treatment, storage, or disposal facility

02 Land disposal facility (not a Subtitle C facility)

03 Deep-well injection

04 Treatment/reclamation/recovery facility

05 Other *(specify)*: _____

_____

_____

06 Unknown *(SKIP TO QUESTION 2.23)*

2.21 **Does your company operate the facility identified in the previous question?**
(Circle one number.)

01 Yes *(SKIP TO QUESTION 2.23)*
02 No *(CONTINUE TO NEXT QUESTION)*

2.22 **What are the name, address, and telephone number of the facility identified in Question 2.20?**

Name: _____

Address: _____

City: _____ State or Country: _____ Zip: _____

Telephone number: ( ) _____

2.23 **Was any of the special waste generated by this processing unit DISCHARGED WITHOUT TREATMENT through permitted NPDES or state PDES outfalls or SENT WITHOUT TREATMENT to a POTW in 1988?**
(Circle one number. See the Instructions and Definitions booklet for definitions of NPDES, PDES, and POTW if these acronyms are unfamiliar.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO QUESTION 2.25 ON NEXT PAGE)*

MW2F 001
2229

2.24 How much of the special waste was discharged without treatment through permitted NPDES or state PDES outfalls or sent without treatment to a POTW in 1988?
(Report the quantity as generated using one of the two specified units of measure.)

_____ gallons OR _____ acre-feet

2.25 Was any of the special waste generated by this processing unit SENT TO one or more ONSITE processing or waste management units in 1988?
(Circle one number.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO QUESTION 2.27 ON PAGE 2-11)*

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2.26 How much of the special waste was INITIALLY SENT to each of the following ONSITE destinations in 1988?

(Report the quantities as generated and be sure to indicate the unit of measure for the quantities. For each onsite destination that did not receive the special waste, enter "0" for the quantity.)

Initial Onsite Destination	Quantity in 1988	Unit of Measure
a. Recycled without treatment to the same processing unit	0	
b. Sent without treatment to other onsite processing units: *(Indicate which units using the labels on the schematic prepared for Section 1.)*		
	0	Gallons
c. Sent to onsite waste management units: *(Indicate which units using the labels on the schematic prepared for Section 1.)*		
Granulation Recycle Pond	36,234,692	Gallons
d. Other *(specify)*:		

See Facility Notes

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2.27 **Which of the following source reduction and recycling practices were FIRST APPLIED to this processing unit in 1988?**
(Circle all numbers that apply. Do not include "downstream" source reduction and recycling practices in your answer.)

01 Equipment or technology modification/substitution

02 Process or procedure modification/substitution (including closed-loop recycling)

03 Reformulation or redesign of product

04 M. ication/substitution of input or raw material

05 Better housekeeping, better operating practices

06 Waste stream segregation

07 Onsite recycling or recovery for reuse

08 Offsite recycling or recovery for reuse

09 Other *(specify)*: _____

_____

_____

10 None *(SKIP TO QUESTION 2.30 ON NEXT PAGE)*

2.28 **Briefly describe the source reduction and recycling practices that were FIRST APPLIED to this processing unit in 1988.**

_____

_____

_____

_____

_____

2.29 **Approximately how much in percentage terms did these NEW source reduction or recycling practices REDUCE the generation of the special waste in 1988 compared to the amount that would have been generated in the absence of these practices?**

Reduction in special waste generated: _____ percent

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2.30 **In addition to generating a special waste, did this processing unit also RECEIVE a special waste in 1988?**
(Circle one number.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO QUESTION 2.32 ON NEXT PAGE)*

2.31 **Which special waste(s) was (were) received by this processing unit and how much was received in 1988?**
(Report the quantities as generated and be sure to indicate the units of measure for these quantities.)

Special Waste Received	Quantity in 1988	Unit of Measure
a. Process wastewater	31,752,700	gallons
b.		
c.		
d.		
e.		
f.		
g.		

MW2F 001

YOU HAVE COMPLETED THIS QUESTION SET

2.32 Have you completed a question set on ALL processing units at this facility that generated a special waste in 1988?

(Circle one number.)

Yes *(CONTINUE WITH QUESTION 2.33 ON PAGE 2-13 OF THE QUESTIONNAIRE BOOKLET)*

(2) No *(COMPLETE A QUESTION SET ON ONE OF THE REMAINING PROCESSING UNITS THAT GENERATED A SPECIAL WASTE IN 1988.)*

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QUESTION SET FOR A PROCESSING UNIT GENERATING A SPECIAL WASTE

Answer Questions 2.2 through 2.32 for each processing unit that generated a special waste in 1988. The special wastes are listed on page 2-1 of the Questionnaire booklet. The processing unit must be shown on the schematic prepared for Section 1. Call the SURVEY HELPLINE (1-800-635-8850) for further instructions if a processing unit generated more than one special waste.

2.2 **Which processing unit is the subject of this question set?**
(Use the label on the schematic prepared for Section 1 to identify this processing unit.)

Label on processing unit: Sulfuric Acid Plant

2.3 **Which special waste did this processing unit generate in 1988?**
(The special wastes are listed on page 2-1 of the Questionnaire booklet.)

See facility notes

Name of special waste: Process Waste Water.

2.4 **What calendar year was this processing unit first operational?**

Year: 1974

2.5 **What calendar year was this processing unit last rebuilt or modernized?**
(See the Instructions and Definitions booklet for definitions of "rebuilt" and "modernized.")

Year: NA

2.6 **What was the DAILY maximum practical operating capacity of this processing unit in 1988?**
(Express your answer in terms of this processing unit's principal product by volume.)

See facility notes

9,000 short tons/day

2.7 **How many days in 1988 was this processing unit in operation?**
(Count partial days that the unit was in operation as whole days. For example, if the unit was in operation for half a day on 4 different days, count this as 4 full days.)

337 operating days

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2235

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2.8 **What was the PRINCIPAL product (by volume) produced by this processing unit in 1988?**

Name of principal product: Sulfuric Acid

2.9 **How much of the principal product did this processing unit produce in 1988?**
(Report the quantity as generated.)

Quantity produced: 1,391,000 short tons

2.10 **What OTHER products (EXCLUDING THE SPECIAL WASTE) were produced by this processing unit and how much was produced in 1988?**
(Report the quantities as generated.)

Other Product	Quantity in 1988
a. N/A	short tons
b.	short tons
c.	short tons
d.	short tons
e.	short tons
f.	short tons
g.	short tons
h.	short tons

2.11 **How much of the special waste did this processing unit generate in 1988?**
(Report the quantity as generated and be sure to indicate the unit of measure for this quantity.)

Quantity generated: 170 Tons
(unit of measure)

MW2F 001

2.12 **Was this special waste a solid as it came out of the processing unit?**
(Circle one number.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO QUESTION 2.14)*

2.13 **Which of the following categories best describes the typical size of the special waste at the point of generation?**
(Circle one number.)

01 Smaller than sand (less than .02 mm in diameter)
02 Sand (between .02mm and 2 mm in diameter)
03 Gravel (between 2 mm and 3" in diameter)
04 Cobble (between 3" and 12" in diameter)
05 Boulder (greater than 12" in diameter)

SKIP TO QUESTION 2.15 ON NEXT PAGE

2.14 **What were the pH and total solids content of this special waste in 1988?**
(Select one of the two specified units of measure for total solids content.)

a. pH: 6.5 S.U.

b. Total solids content: _____ % OR _____ ppm
Don't Know

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2.15 **What were the other characteristics of this special waste in 1988?**
(Provide a composition code from Appendix A in the Instructions and Definitions booklet and an average concentration for the parameters and/or constituents that characterize this special waste. Be sure to indicate the unit of measure applying to the average concentration. The basis for your answer to this question may be either test results or general knowledge of the special waste. YOU DO NOT HAVE TO CONDUCT ADDITIONAL TESTING TO RESPOND TO THIS QUESTION.)

	Waste Composition Code	Average Concentration	Unit of Measure for Average Concentration
a.	W022 (sulfur)	23.5	wt. %
b.	W019 (solids)	23.5	wt. %
c.			
d.			
e.			
f.			
g.			
h.			
i.			
j.			
k.			
l.			
m.			
n.			
o.			

MW2F 001

2.16 **Was any of the special waste generated by this processing unit SOLD without onsite modification in 1988?**
(Circle one number.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO QUESTION 2.18)*

~~2.17~~ **How much of the special waste was sold in 1988 without onsite modification?**
(Report the quantity as generated and be sure to indicate the unit of measure for this quantity.)

Quantity sold: _____ _____
(unit of measure)

2.18 **Was any of the special waste generated by this processing unit SHIPPED OFFSITE for treatment or disposal in 1988 without onsite modification?**
(Circle one number.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO QUESTION 2.23 ON NEXT PAGE)*

~~2.19~~ **How much of the special waste was shipped offsite for treatment or disposal in 1988 without onsite modification?**
(Report the quantity as generated and be sure to indicate the unit of measure for this quantity.)

Quantity shipped offsite: _____ _____
(unit of measure)

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2.20 **What was the INITIAL DESTINATION of the special waste shipped offsite for treatment or disposal in 1988?**
(Circle one number.)

01 Subtitle C treatment, storage, or disposal facility

02 Land disposal facility (not a Subtitle C facility)

03 Deep-well injection

04 Trea. nt/reclamation/recovery facility

05 Other *(specify)*: _____

_____

_____

06 Unknown *(SKIP TO QUESTION 2.23)*

2.21 **Does your company operate the facility identified in the previous question?**
(Circle one number.)

01 Yes *(SKIP TO QUESTION 2.23)*
02 No *(CONTINUE TO NEXT QUESTION)*

2.22 **What are the name, address, and telephone number of the facility identified in Question 2.20?**

Name: _____

Address: _____

City: _____ State or Country: _____ Zip: _____

Telephone number: ( ) _____

2.23 **Was any of the special waste generated by this processing unit DISCHARGED WITHOUT TREATMENT through permitted NPDES or state PDES outfalls or SENT WITHOUT TREATMENT to a POTW in 1988?**
(Circle one number. See the Instructions and Definitions booklet for definitions of NPDES, PDES, and POTW if these acronyms are unfamiliar.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO QUESTION 2.25 ON NEXT PAGE)*

2.24 How much of the special waste was discharged without treatment through permitted NPDES or state PDES outfalls or sent without treatment to a POTW in 1988?
(Report the quantity as generated using one of the two specified units of measure.)

_____ gallons OR _____ acre-feet

2.25 Was any of the special waste generated by this processing unit SENT TO one or more ONSITE processing or waste management units in 1988?
(Circle one number.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO QUESTION 2.27 ON PAGE 2-11)*

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2.26 How much of the special waste was INITIALLY SENT to each of the following ONSITE destinations in 1988?

(Report the quantities as generated and be sure to indicate the unit of measure for the quantities. For each onsite destination that did not receive the special waste, enter "0" for the quantity.)

Initial Onsite Destination	Quantity in 1988	Unit of Measure
a. Recycled without treatment to the same processing unit	0	
b. Sent without treatment to other onsite processing units: *(Indicate which units using the labels on the schematic prepared for Section 1.)*		
Pl[illegible]	70	Tons
c. Sent to onsite waste management units: *(Indicate which units using the labels on the schematic prepared for Section 1.)*		
Sulfide Pond	100	Tons
d. Other *(specify)*:		
	0	

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2242

2.27 **Which of the following source reduction and recycling practices were FIRST APPLIED to this processing unit in 1988?**
(Circle all numbers that apply. Do not include "downstream" source reduction and recycling practices in your answer.)

01 Equipment or technology modification/substitution

02 Process or procedure modification/substitution (including closed-loop recycling)

03 Reformulation or redesign of product

04 Modification/substitution of input or raw material

05 Better housekeeping, better operating practices

06 Waste stream segregation

07 Onsite recycling or recovery for reuse

08 Offsite recycling or recovery for reuse

09 Other *(specify)*: _____

_____

_____

10 None *(SKIP TO QUESTION 2.30 ON NEXT PAGE)*

2.28 **Briefly describe the source reduction and recycling practices that were FIRST APPLIED to this processing unit in 1988.**

_____

_____

_____

_____

_____

2.29 **Approximately how much in percentage terms did these NEW source reduction or recycling practices REDUCE the generation of the special waste in 1988 compared to the amount that would have been generated in the absence of these practices?**

Reduction in special waste generated: _____ percent

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2.30 **In addition to generating a special waste, did this processing unit also RECEIVE a special waste in 1988?**
(Circle one number.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO QUESTION 2.32 ON NEXT PAGE)*

2.31 **Which special waste(s) was (were) received by this processing unit and how much was received in 1988?**
(Report the quantities as generated and be sure to indicate the units of measure for these quantities.)

Special Waste Received	Quantity in 1988	Unit of Measure
a.		
b.		
c.		
d.		
e.		
f.		
g.		

MW2F 001
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YOU HAVE COMPLETED THIS QUESTION SET

2.32 **Have you completed a question set on ALL processing units at this facility that generated a special waste in 1988?**
(Circle one number.)

1 Yes *(CONTINUE WITH QUESTION 2.33 ON PAGE 2-13 OF THE QUESTIONNAIRE BOOKLET)*

2 No *(COMPLETE A QUESTION SET ON ONE OF THE REMAINING PROCESSING UNITS THAT GENERATED A SPECIAL WASTE IN 1988.)*

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The previous questions in this section obtained *1988 information* on the processing unit(s) that generated special wastes. The remaining questions in this section shift the focus to *1989 or planned future changes* in processing units that have affected or will affect the quantity or characteristics of the special wastes generated by this facility.

Have there been any changes in this facility's processing units *in 1989* that have affected the quantity or characteristics of the special wastes generated by this facility?
(Circle one number.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO QUESTION 2.35)*

2.34 **Briefly describe these 1989 changes in the facility's processing units and their effect on the quantity or characteristics of the special wastes.**

_____
_____
_____
_____
_____

2.35 **Are any changes planned in this facility's processing units in *calendar years 1989 through 1993* that would affect the quantity or characteristics of the special wastes generated by this facility?**
(Circle one number.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO SECTION 3)*

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2.36 Briefly describe these planned changes in the facility's processing units and their anticipated effect on the quantity or characteristics of the special wastes.

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SECTION 3

PROCESSING UNITS THAT RECEIVE A SPECIAL WASTE (OR ITS RESIDUE)

3.1 **Did a processing unit at your facility RECEIVE a special waste (or its residue) in 1988?**

(Circle one number. When answering this question, do not include any processing units which you completed a question set in Section 2.)

01 Yes *(CONTINUE WITH THIS SECTION OF THE QUESTIONNAIRE)*
02 No *(SKIP TO SECTION 4)*

Section 3 contains a set of questions that you complete for EACH processing unit that RECEIVED a special waste (or its residue) in 1988. (These processing units must be shown on the schematic prepared for Section 1.) For example, if smelting slag from a reactor (which is a special waste) is sent to a slag concentrator to recover valuable constituents, then you complete a question set on the slag concentrator (the processing unit that received the special waste). If the tailings from the slag concentrator are sent to another processing unit for further recovery of valuable constituents, then you also complete a set of questions on this second processing unit that received a residue from a special waste. In summary, you complete a question set on EACH processing unit that received a special waste (or its residue) in 1988. Do not complete a question set in this section on a processing unit for which you completed a question set in Section 2. Also, do not complete a question set on processing units that are now permanently closed.

Only one question set is provided in this section of the questionnaire. One more question set is provided in the *Extra Question Sets* booklet. If your facility had more than two processing units that received a special waste (or its residue) in 1988, please make as many additional copies of the extra Section 3 question set as needed.

If you are unsure about how many Section 3 question sets to complete for your facility, please call the SURVEY HELPLINE (1-800-635-8850).

For EPA use: 2.2

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QUESTION SET FOR A PROCESSING UNIT RECEIVING A SPECIAL WASTE

Answer Questions 3.2 through 3.38 for each processing unit that received a special waste (or its residue) in 1988. The special wastes are listed on page 2-1 of the Questionnaire booklet. The processing unit must be shown on the schematic prepared for Section 1.

3.2 Which processing unit is the subject of this question set?
(Use the label on the schematic prepared for Section 1 to identify this processing unit.)

Label of processing unit: Granulation Plant

3.3 What calendar year was this processing unit first operational?

Year: 1969

3.4 What calendar year was this processing unit last rebuilt or modernized?
(See the Instructions and Definitions booklet for definitions of "rebuilt" and "modernized.")

Year: 1975

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3.5 What were the MATERIAL INPUTS to this processing unit and what was the quantity of each input in 1988?
(Include special wastes, residues from special wastes, and intermediate mineral products, such as ore concentrate, in your answer. Be sure to indicate the units of measure for the quantities.)

	Material Input	Quantity in 1988	Unit of Measure
a.	Phosphoric Acid	4,073,794	Tons
b.	Ammonia	454,635	Tons
c.	Sulfuric Acid	11,270	Tons
d.	Urea	38,098	Tons
e.	Process Wastewater	21,752,700	Gallons
f.			
g.			
h.			

3.6 What was the DAILY maximum practical operating capacity of this processing unit in 1988?
(Express your answer in terms of this processing unit's principal product by volume.)

7,000 short tons/day

3.7 How many days in 1988 was this processing unit in operation?
(Count partial days that the unit was in operation as whole days. For example, if the unit was in operation for half a day on 4 different days, count this as 4 full days.)

317 operating days

3.8 What was the PRINCIPAL PRODUCT (by volume) produced by this processing unit in 1988?

Name of principal product: Diammonium Phosphate

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3.9 **How much of the principal product was produced by this processing unit in 1988?**
(Report the quantity as generated.)

Quantity produced: 1,209,915 short tons

3.10 **Did this processing unit produce any BY-PRODUCTS (EXCLUDING RESIDUES) in 1988?**
(Circle one number. By-products are secondary products that are usually sold, sometimes after undergoing further processing. Residues are waste-like materials that often have little or no market value. Although residues may undergo further processing to recover valuable constituents, all or a portion of residues are often sent directly to waste management units.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO QUESTION 3.12 ON NEXT PAGE)*

3.11 **What by-products (excluding residues) were produced by this processing unit and how much was produced in 1988?**
(Report the quantities as produced and be sure to indicate the units of measure for the quantities.)

	By-Product	Quantity in 1988	Unit of Measure
a.			
b.			
c.			
d.			
e.			
f.			
g.			
h.			

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3.12 **What RESIDUE(S) was (were) generated by this processing unit and how much was generated in 1988?**
(Report the quantities as generated and be sure to indicate the units of measure for the quantities.)

	Residue	Quantity in 1988	Unit of Measure
a.			
b.			
c.			
d.			
e.			
f.			

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The remainder of this question set focuses on the management of the RESIDUE(S) generated by this processing unit in 1988. If the distinction between by-products and residues from this processing unit is unclear, call the SURVEY HELPLINE (1-800-635-8850).

3.13 Did this processing unit generate a LIQUID RESIDUE in 1988?
(Circle one number.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO QUESTION 3.19 ON PAGE 3-10)*

3.14 How much liquid residue was generated by this processing unit in 1988?
(Report the quantity as generated using one of the two specified units of measure.)

Quantity generated: _____ gallons OR _____ acre-feet

3.15 Was ALL of this liquid residue discharged without treatment through permitted NPDES or state PDES outfalls and/or sent without treatment to a POTW in 1988?
(Circle one number. See the Instructions and Definitions booklet for definitions of NPDES, PDES, and POTW if these acronyms are unfamiliar.)

01 Yes *(SKIP TO QUESTION 3.19 ON PAGE 3-10)*
02 No *(CONTINUE TO NEXT QUESTION)*

3.16 What were the pH and total solids content of the liquid residue generated by this processing unit in 1988?
(Select one of the two specified units of measure for total solids content.)

a. pH: _____ S.U.

b. Total solids content: _____ % OR _____ ppm

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3.17 **What were the other characteristics of the liquid residue generated by this processing unit in 1988?**

(Provide a composition code from Appendix A in the Instructions and Definitions booklet and an average concentration for the parameters and/or constituents that characterize this liquid residue. Be sure to indicate the unit of measure applying to the average concentration. The basis for your answer to this question may be either test results or general knowledge of the liquid residue. YOU DO NOT HAVE TO CONDUCT ADDITIONAL TESTING TO RESPOND TO THIS QUESTION.)

	Waste Composition Code	Average Concentration	Unit of Measure for Average Concentration
a.			
b.			
c.			
d.			
e.			
f.			
g.			
h.			
i.			
j.			
k.			
l.			
m.			

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3.18 How much of the liquid residue generated by this processing unit was INITIALLY SENT to each of the following destinations in 1988?

(Report the quantities as generated. For each destination that did not receive the liquid residue, enter "0" for the quantity. See the Instructions and Definitions booklet for definitions of NPDES, PDES, and POTW if these acronyms are unfamiliar.)

Initial Destination	Quantity in 1988
a. Discharged under a NPDES or state PDES permit without further treatment	_____ gallons
b. Discharged to a POTW without further treatment	_____ gallons
c. Sent without further treatment to onsite processing units: *(Indicate which units using the labels on the schematic prepared for Section 1.)*	
_____	_____ gallons
_____	_____ gallons
_____	_____ gallons
_____	_____ gallons
d. Sent to onsite waste management units: *(Indicate which units using the labels on the schematic prepared for Section 1.)*	
_____	_____ gallons
_____	_____ gallons
_____	_____ gallons
_____	_____ gallons
e. Sent offsite for further treatment or disposal	_____ gallons
f. Sold without further treatment for offsite use	_____ gallons
g. Other *(specify)*:	
_____	_____ gallons
_____	_____ gallons

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3.19 **Did this processing unit generate a SOLID RESIDUE in 1988?**
(Circle one number.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO QUESTION 3.22)*

Call the SURVEY HELPLINE (1-800-635-8850) for further instructions if this processing unit generated a solid residue AND a sludge residue in 1988.

3.20 **How much solid residue did this processing unit generate in 1988?**
(Report the quantity as generated.)

Quantity generated: _____ short tons

3.21 **Which of the following categories best describes the typical size of the solid residue from this processing unit in 1988?**
(Circle one number. Report the size as generated.)

01 Smaller than sand (less than .02 mm in diameter)
02 Sand (between .02mm and 2 mm in diameter)
03 Gravel (between 2 mm and 3" in diameter)
04 Cobble (between 3" and 12" in diameter)
05 Boulder (greater than 12" in diameter)

SKIP TO QUESTION 3.25 ON PAGE 3-12

3.22 **Did this processing unit generate a SLUDGE RESIDUE in 1988?**
(Circle one number.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO QUESTION 3.35 ON PAGE 3-16)*

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3.23 **How much sludge residue did this processing unit generate in 1988?**
(Report the quantity as generated and be sure to indicate the unit of measure for the quantity.)

Quantity generated: _____ _____ (unit of measure)

3.24 **What were the pH and total solids content of this sludge residue in 1988?**
(Select one of the two specified units of measure for total solids content.)

a. pH: _____ S.U.

b. Total solids content: _____ % OR _____ ppm

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3.25 **What were the other characteristics of the sludge/solid residue generated by this processing unit in 1988?**

(Provide a composition code from Appendix A in the Instructions and Definitions booklet and an average concentration for the parameters and/or constituents that characterize this sludge/solid residue. Be sure to indicate the unit of measure applying to the average concentration. The basis for your answer to this question may be either test results or general knowledge of the sludge/solid residue. YOU DO NOT HAVE TO CONDU ADDITIONAL TESTING TO RESPOND TO THIS QUESTION.)

	Waste Composition Code	Average Concentration	Unit of Measure for Average Concentration
a.			
b.			
c.			
d.			
e.			
f.			
g.			
h.			
i.			
j.			
k.			
l.			
m.			
n.			

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2258

3.26 **Was any of the sludge/solid residue generated by this processing unit SOLD without onsite modification in 1988?**
(Circle one number.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO QUESTION 3.28)*

3.27 **How much of the sludge/solid residue generated by this processing unit was sold in 1988 without onsite modification?**
(Report the quantity as generated and be sure to indicate the unit of measure for this quantity.)

Quantity sold: _____ _____
(unit of measure)

3.28 **Was any of the sludge/solid residue generated by this processing unit SHIPPED OFFSITE for treatment or disposal in 1988 without further onsite modification?**
(Circle one number.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO QUESTION 3.33 ON NEXT PAGE)*

3.29 **How much of the sludge/solid residue was shipped offsite for treatment or disposal in 1988 without further onsite modification?**
(Report the quantity as generated and be sure to indicate the unit of measure for the quantity.)

Quantity shipped offsite: _____ _____
(unit of measure)

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3.30 **What was the INITIAL DESTINATION of the sludge/solid residue shipped offsite for treatment or disposal in 1988?**
(Circle one number.)

01 Subtitle C treatment, storage, or disposal facility

02 Land disposal facility (not a Subtitle C facility)

03 Deep-well injection

04 Treatment/reclamation/recovery facility

05 Other *(specify)*: _____

_____

_____

06 Unknown *(SKIP TO QUESTION 3.33)*

3.31 **Does your company operate the facility identified in the previous question?**
(Circle one number.)

01 Yes *(SKIP TO QUESTION 3.33)*
02 No *(CONTINUE TO NEXT QUESTION)*

3.32 **What are the name, address, and telephone number of the facility identified in Question 3.30?**

Name: _____

Address: _____

City: _____ State or Country: _____ Zip: _____

Telephone number: ( ) _____

3.33 **Was any of the sludge/solid residue generated by this processing unit SENT TO one or more ONSITE processing or waste management units in 1988?**
(Circle one number.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO QUESTION 3.35 ON PAGE 3-16)*

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3.34 **How much of the sludge/solid residue generated by this processing unit was INITIALLY SENT to each of the following ONSITE destinations in 1988?**
(Report the quantities as generated and be sure to indicate the units of measure for the quantities. For each onsite destination that did not receive any sludge/solid residue, enter "0" for the quantity.)

Initial Onsite Destination	Quantity in 1988	Unit of Measure
a. Recycled without treatment to the same processing unit		
b. Sent to other onsite processing units (without treatment): *(Indicate which units using the labels on the schematic prepared for Section 1.)*		
c. Sent to onsite waste management units: *(Indicate which units using the labels on the schematic prepared for Section 1.)*		
d. Other *(specify)*:		

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3.35 **Which of the following source reduction and recycling practices were FIRST APPLIED to this processing unit in 1988?**
(Circle all numbers that apply. Do not include "downstream" source reduction and recycling practices in your answer.)

01 Equipment or technology modification/substitution

02 Process or procedure modification/substitution (including closed-loop recycling)

03 Reformulation or redesign of product

04 Modification/substitution of input or raw material

05 Better housekeeping, better operating practices

06 Waste stream segregation

07 Onsite recycling or recovery for reuse

08 Offsite recycling or recovery for reuse

09 Other *(specify)*: _____

10 None *(SKIP TO QUESTION 3.38 ON NEXT PAGE)*

3.36 **Briefly describe the source reduction and recycling practices that were FIRST APPLIED to this processing unit in 1988.**

_____

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3.37 **Approximately how much in percentage terms did these NEW source reduction or recycling practices REDUCE the generation of the residue from the special waste in 1988 compared to the amount that would have been generated in the absence of these practices?**

Reduction in residue generated: _____ percent

3.38 **Is there another processing unit at this facility that received a special waste (or its residu n 1988?**

(Circle one number.)

01 Yes *(COMPLETE A QUESTION SET FROM THE EXTRA QUESTION SETS BOOKLET ON THIS OTHER PROCESSING UNIT)*

02 No *(CONTINUE TO PAGE 3-19)*

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QUESTION SET FOR A PROCESSING UNIT RECEIVING A SPECIAL WASTE

Answer Questions 3.2 through 3.38 for each processing unit that received a special waste (or its residue) in 1988. The special wastes are listed on page 2-1. The processing unit must be shown on the schematic prepared for Section 1.

3.2 Which processing unit is the subject of this question set?

(Use the label on the schematic prepared for Section 1 to identify this processing unit.)

Label on processing unit: Phosphoric Acid Plant

3.3 What calendar year was this processing unit first operational?

Year: _____

3.4 What calendar year was this processing unit last rebuilt or modernized?

(See the Instructions and Definitions booklet for definitions of "rebuilt" and "modernized.")

Year: _____

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3.5 What were the MATERIAL INPUTS to this processing unit and what was the quantity of each input in 1988?

(Include special wastes, residues from special wastes, and intermediate mineral products, such as ore concentrate, in your answer. Be sure to indicate the units of measure for the quantities.)

Material Input	Quantity in 1988	Unit of Measure
a. Phosphate Rock	1,892,634	Tons
b. [illegible]	1,432,326	Tons
c. P. Intermediate (1.0)	98,954,000	Gallons
d. Process Wastewater	70	Tons
e. Fresh Water	31,000,000	Gallons
f. Process Wastewater (Cooling Pond)	3,999,060,966	Gallons
g.		
h.		

3.6 What was the DAILY maximum practical operating capacity of this processing unit in 1988?

(Express your answer in terms of this processing unit's principal product by volume.)

1800 short tons/day

3.7 How many days in 1988 was this processing unit in operation?

(Count partial days that the unit was in operation as whole days. For example, if the unit was in operation for half a day on 4 different days, count this as 4 full days.)

322 operating days

3.8 What was the PRINCIPAL PRODUCT (by volume) produced by this processing unit in 1988?

Name of principal product: Phosphoric Acid

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3.9 **How much of the principal product was produced by this processing unit in 1988?**
(Report the quantity as generated.)

Quantity produced: 516,945 short tons

3.10 **Did this processing unit produce any BY-PRODUCTS (EXCLUDING RESIDUES) in 1988?**
(Circle one number. By-products are secondary products that are usually sold, sometimes after undergoing further processing. Residues are waste-like materials that often have little or no market value. Although residues may undergo further processing to recover valuable constituents, all or a portion of residues are often sent directly to waste management units.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO QUESTION 3.12 ON NEXT PAGE)*

3.11 **What by-products (excluding residues) were produced by this processing unit and how much was produced in 1988?**
(Report the quantities as produced and be sure to indicate the units of measure for the quantities.)

By-Product	Quantity in 1988	Unit of Measure
a. Hydrochloric	2100	Tons
b.		
c.		
d.		
e.		
f.		
g.		
h.		

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3.12 What RESIDUE(S) was (were) generated by this processing unit and how much was generated in 1988?
(Report the quantities as generated and be sure to indicate the units of measure for the quantities.)

	Residue	Quantity in 1988	Unit of Measure
a.			
b.			
c.			
d.			
e.			
f.			

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The remainder of this question set focuses on the management of the RESIDUE(S) generated by this processing unit in 1988. If the distinction between by-products and residues from this processing unit is unclear, call the SURVEY HELPLINE (1-800-635-8850).

3.13 Did this processing unit generate a LIQUID RESIDUE in 1988?
(Circle one number.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO QUESTION 3.19 ON PAGE 3-10)*

3.14 How much liquid residue was generated by this processing unit in 1988?
(Report the quantity as generated using one of the two specified units of measure.)

Quantity generated: _____ gallons OR _____ acre-feet

3.15 Was ALL of this liquid residue discharged without treatment through permitted NPDES or state PDES outfalls and/or sent without treatment to a POTW in 1988?
(Circle one number. See the Instructions and Definitions booklet for definitions of NPDES, PDES, and POTW if these acronyms are unfamiliar.)

01 Yes *(SKIP TO QUESTION 3.19 ON PAGE 3-10)*
02 No *(CONTINUE TO NEXT QUESTION)*

3.16 What were the pH and total solids content of the liquid residue generated by this processing unit in 1988?
(Select one of the two specified units of measure for total solids content.)

a. pH: _____ S.U.

b. Total solids content: _____ % OR _____ ppm

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3.17 **What were the other characteristics of the liquid residue generated by this processing unit in 1988?**

(Provide a composition code from Appendix A in the Instructions and Definitions booklet and an average concentration for the parameters and/or constituents that characterize this liquid residue. Be sure to indicate the units of measure applying to the average concentration. The basis for your answer to this question may be either test results or general knowledge of the liquid residue. YOU DO NOT HAVE TO CONDUCT ADDITIONAL TESTING TO RESPOND TO THIS QUESTION.)

	Waste Composition Code	Average Concentration	Unit of Measure for Average Concentration
a.			
b.			
c.			
d.			
e.			
f.			
g.			
h.			
i.			
j.			
k.			
l.			
m.			

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3.18 **How much of the liquid residue generated by this processing unit was INITIALLY SENT to each of the following destinations in 1988?**
(Report the quantities as generated. For each destination that did not receive the liquid residue, enter "0" for the quantity. See the Instructions and Definitions booklet for definitions of NPDES, PDES, and POTW if these acronyms are unfamiliar.)

Initial Destination	Quantity in 1988
a. Discharged under a NPDES or state PDES pe[illegible] without further treatment	_____ gallons
b. Discharged to a POTW without further treatment	_____ gallons
c. Sent without further treatment to onsite processing units: *(Indicate which units using the labels on the schematic prepared for Section 1.)*	
_____	_____ gallons
_____	_____ gallons
_____	_____ gallons
_____	_____ gallons
d. Sent to onsite waste management units: *(Indicate which units using the labels on the schematic prepared for Section 1.)*	
_____	_____ gallons
_____	_____ gallons
_____	_____ gallons
_____	_____ gallons
e. Sent offsite for further treatment or disposal	_____ gallons
f. Sold without further treatment for offsite use	_____ gallons
g. Other *(specify)*:	
_____	_____ gallons
_____	_____ gallons

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3.19 Did this processing unit generate a SOLID RESIDUE in 1988?
(Circle one number.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO QUESTION 3.22)*

Call the SURVEY HELPLINE (1-800-635-8850) for further instructions if this processing unit generated a solid residue AND a sludge residue in 1988.

3.20 How much solid residue did this processing unit generate in 1988?
(Report the quantity as generated.)

Quantity generated: _____ short tons

3.21 Which of the following categories best describes the typical size of the solid residue from this processing unit in 1988?
(Circle one number. Report the size as generated .)

01 Smaller than sand (less than .02 mm in diameter)
02 Sand (between .02mm and 2 mm in diameter)
03 Gravel (between 2 mm and 3" in diameter)
04 Cobble (between 3" and 12" in diameter)
05 Boulder (greater than 12" in diameter)

SKIP TO QUESTION 3.25 ON PAGE 3-12

3.22 Did this processing unit generate a SLUDGE RESIDUE in 1988?
(Circle one number.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO QUESTION 3.35 ON PAGE 3-16)*

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3.23 **How much sludge residue did this processing unit generate in 1988?**
(Report the quantity as generated and be sure to indicate the unit of measure for the quantity.)

Quantity generated: _____ _____
(unit of measure)

3.24 **What were the pH and total solids content of this sludge residue in 1988?**
(Select one of the two specified units of measure for total solids content.)

a. pH: _____ S.U.

b. Total solids content: _____ % OR _____ ppm

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3.25 What were the other characteristics of the slud :/solid residue generated by this processing unit in 1988?

(Provide a composition code from Appendix A in e Instructions and Definitions booklet and an average concentration for the par. neters and/or constituents that characterize this sludge/solid residue. Be sure to idicate the unit of measure applying to the average concentration. The basis for your an. ver to this question may be either test results or general knowledge of the sludge/solid r idue. YOU DO NOT HAVE TO CONDUCT ADDITIONAL TESTING TO RESPO D TO THIS QUESTION.)

	Waste Composition Code	Average Concentration	Unit of Measure for Average Concentration
a.			
b.			
c.			
d.			
e.			
f.			
g.			
h.			
i.			
j.			
k.			
l.			
m.			
n.			

see facility notes for continuation

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3.26 **Was any of the sludge/solid residue generated by this processing unit SOLD without onsite modification in 1988?**
(Circle one number.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO QUESTION 3.28)*

3.27 **How much of the sludge/solid residue generated by this processing unit was sold in 1988 without onsite modification?**
(Report the quantity as generated and be sure to indicate the unit of measure for this quantity.)

Quantity sold: _____ _____
(unit of measure)

3.28 **Was any of the sludge/solid residue generated by this processing unit SHIPPED OFFSITE for treatment or disposal in 1988 without further onsite modification?**
(Circle one number.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO QUESTION 3.33 ON NEXT PAGE)*

3.29 **How much of the sludge/solid residue was shipped offsite for treatment or disposal in 1988 without further onsite modification?**
(Report the quantity as generated and be sure to indicate the unit of measure for the quantity.)

Quantity shipped offsite: _____ _____
(unit of measure)

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3.30 **What was the INITIAL DESTINATION of the sludge/solid residue shipped offsite for treatment or disposal in 1988?**
(Circle one number.)

01 Subtitle C treatment, storage, or disposal facility

02 Land disposal facility (not a Subtitle C facility)

03 Deep-well injection

04 Treatment/reclamation/recovery facility

05 Other *(specify)*: _____

06 Unknown *(SKIP TO QUESTION 3.33)*

3.31 **Does your company operate the facility identified in the previous question?**
(Circle one number.)

01 Yes *(SKIP TO QUESTION 3.33)*
02 No *(CONTINUE TO NEXT QUESTION)*

3.32 **What are the name, address, and telephone number of the facility identified in Question 3.30?**

Name: _____

Address: _____

City: _____ State or Country: _____ Zip: _____

Telephone number: ( ) _____

3.33 **Was any of the sludge/solid residue generated by this processing unit SENT TO one or more ONSITE processing or waste management units in 1988?**
(Circle one number.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO QUESTION 3.35 ON PAGE 3-16)*

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3.34 How much of the sludge/solid residue generated by this processing unit was INITIALLY SENT to each of the following ONSITE destinations in 1988?
(Report the quantities as generated and be sure to indicate the units of measure for the quantities. For each onsite destination that did not receive any sludge/solid residue, enter "0" for the quantity.)

Initial Onsite Destination	Quantity in 1988	Unit of Measure
a. Recycled without treatment to the same processing unit		
b. Sent to other onsite processing units (without treatment): *(Indicate which units using the labels on the schematic prepared for Section 1.)*		
c. Sent to onsite waste management units: *(Indicate which units using the labels on the schematic prepared for Section 1.)*		
d. Other *(specify)*:		

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3.35 Which of the following source reduction and recycling practices were FIRST APPLIED to this processing unit in 1988?
(Circle all numbers that apply. Do not include "downstream" source reduction and recycling practices in your answer.)

01 Equipment or technology modification/substitution

02 Process or procedure modification/substitution (including closed-loop recycling)

03 Reformulation or redesign of product

04 Modification/substitution of input or raw material

05 Better housekeeping, better operating practices

06 Waste stream segregation

07 Onsite recycling or recovery for reuse

08 Offsite recycling or recovery for reuse

09 Other *(specify)*: _____

10 None *(SKIP TO QUESTION 3.38 ON NEXT PAGE)*

3.36 Briefly describe the source reduction and recycling practices that were FIRST APPLIED to this processing unit in 1988.

_____

_____

_____

_____

_____

_____

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3.37 Approximately how much in percentage terms did these NEW source reduction or recycling practices REDUCE the generation of the residue from the special waste in 1988 compared to the amount that would have been generated in the absence of these practices?

Reduction in residue generated: _____ percent

YOU HAVE COMPLETED THIS QUESTION SET

3.38 Have you completed a question set on ALL processing units at this facility that received a special waste (or its residue) in 1988?
(Circle one number.)

1 Yes *(CONTINUE WITH QUESTION 3.39 ON PAGE 3-19 OF THE QUESTIONNAIRE BOOKLET)*

2 No *(COMPLETE A QUESTION SET ON ONE OF THE REMAINING PROCESSING UNITS THAT RECEIVED A SPECIAL WASTE IN 1988.).*

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The previous questions in this section obtained *1988 information* on the processing unit(s) that received special wastes. The remaining questions in this section shift the focus to *1989 or planned future changes* in processing units that have affected or will affect the quantity or characteristics of residues from special wastes generated by this facility.

3.39 Have there been any changes in this facility's processing units *in 1989* that have affected the quantity or characteristics of the residues from the special wastes generated by this facility?
(Circle one number.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO QUESTION 3.41)*

3.40 Briefly describe these 1989 changes in the facility's processing units and their effect on the quantity or characteristics of the residues from the special wastes.

_____

_____

_____

_____

_____

3.41 Are any changes planned in this facility's processing units in *calendar years 1989 through 1993* that would affect the quantity or characteristics of the residues from the special wastes generated by this facility?
(Circle one number.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO SECTION 4)*

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3.42 **Briefly describe these planned changes in the facility's processing units and their anticipated effect on the quantity or characteristics of the residues from the special wastes.**

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SECTION 4

WASTEWATER TREATMENT PLANTS THAT RECEIVE A SPECIAL WASTE (OR ITS RESIDUE)

4.1 Did a wastewater treatment plant at the facility RECEIVE a special waste (or its residue) in 1988?
(Circle one number.)

01 Yes *(CONTINUE WITH THIS SECTION OF THE QUESTIONNAIRE)*
02 No *(SKIP TO SECTION 5)*

Section 4 contains a set of questions that you complete for EACH wastewater treatment plant that received a special waste (or its residue) in 1988. For example, if you have two wastewater treatment plants that received a special waste (or its residue) in 1988, then you complete a question set on EACH of these plants. However, if you have a wastewater treatment plant that received two or more special wastes (or their residues), you need only complete one question set for that wastewater treatment plant. Do not complete a question set on wastewater treatment plants that are now permanently closed.

Only one question set is provided in this section of the questionnaire. One more question set is provided in the *Extra Question Sets* booklet. If your facility had more than two wastewater treatment plants that received a special waste (or its residue) in 1988, please make as many additional copies of the extra Section 4 question set as needed.

If you are unsure about how many Section 4 question sets to complete for your facility, please call the SURVEY HELPLINE (1-800-635-8850).

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QUESTION SET FOR A WASTEWATER TREATMENT PLANT

Answer Questions 4.2 through 4.30 for a wastewater treatment plant that received a special waste (or its residue) in 1988. The special wastes are listed on page 2-1. The wastewater treatment plant must be shown on the schematic prepared for Section 1.

4.2 Which wastewater treatment plant is the subject of this question set?
(Use the label on the schematic prepared for Section 1 to identify this wastewater treatment plant.)

Label on wastewater treatment plant: 1st stage lime treatment

4.3 What calendar year was this wastewater treatment plant first operational?

Year: 1974

4.4 What calendar year was this wastewater treatment plant last rebuilt or modernized?
(See the Instructions and Definitions booklet for definitions of "rebuilt" and "modernized.")

Year: n/a

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4.5 **What were the INFLOWS to this wastewater treatment plant and what was the quantity of each inflow in 1988?**
(Include special wastes and residues from special wastes in addition to other inflows, if any, in your answer.)

	Inflow	Quantity in 1988	
	Process Wastewater	98,454,000	gallons
b.			gallons
c.			gallons
d.			gallons
e.			gallons
f.			gallons
g.			gallons
h.			gallons
i.			gallons
j.			gallons

4.6 **What was the DAILY maximum practical operating capacity of this wastewater treatment plant in 1988?**

2,160,000 gallons/day

4.7 **How many days in 1988 was this wastewater treatment plant in operation?**
(Count partial days that the plant was in operation as whole days. For example, if the plant was in operation for half a day on 4 different days, count this as 4 full days.)

91 operating days

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4.8 **Which of the following treatment processes were part of this wastewater treatment plant in 1988?**
(Circle the number for all treatment processes that apply.)

01 Equalization
02 Clarification/flotation
03 Blending
04 Physical filtration
05 pH adjustment
06 Chemical treatment (other than pH adjustment)
07 Adsorption/ion exchange
08 Stripping
09 Biological treatment
10 Dewatering
11 Other *(specify)*: _____

4.9 **Were any chemical reagents used in the treatment processes in this wastewater treatment plant in 1988?**
(Circle one number.)

1 Yes *(CONTINUE TO NEXT QUESTION)*
2 No *(SKIP TO QUESTION 4.11 ON NEXT PAGE)*

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4.10 What chemical reagents were used in 1988?
(List each reagent in one of the spaces below.)

a. Nalco Super-Floc
b. Hydrate Lime
c. _____
d. _____
e. _____
f. _____
g. _____
h. _____

4.11 Were there any LIQUID OUTFLOWS from this wastewater treatment plant in 1988?
(Circle one number.)

(01) Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO QUESTION 4.17 ON PAGE 4-9)*

4.12 What was the quantity of the liquid outflows from this wastewater treatment plant in 1988?
(Report the quantity as generated using one of the two specified units of measure.)

Quantity of liquid outflows: 94,852,020 gallons OR _____ acre-feet

4.13 Were ALL of the liquid outflows from this wastewater treatment plant directly discharged through permitted NPDES or state PDES outfalls and/or directly discharged to a POTW in 1988?
(Circle one number. See the Instructions and Definitions booklet for definitions of NPDES, PDES, and POTW if these acronyms are unfamiliar.)

01 Yes *(SKIP TO QUESTION 4.17 ON PAGE 4-9)*
(02) No *(CONTINUE TO NEXT QUESTION)*

4.14 What were the typical pH and total solids content of the liquid outflows in 1988?
(Select one of the two specified units of measure for total solids content.)

a. pH: 3.0 S.U.

b. Total solids content: 3.- % OR _____ ppm

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4.15 What were the other characteristics of the liquid outflows from this wastewater treatment plant in 1988?

(Provide a composition code from Appendix A in the Instructions and Definitions booklet and an average concentration for the parameters and/or constituents that characterize the liquid outflows. Be sure to indicate the unit of measure applying to the average concentration. The basis for your answer to this question may be either test results or general knowledge of the liquid outflows. YOU DO NOT HAVE TO CONDUCT ADDITIONAL TESTING TO RESPOND TO THIS QUESTION.)

	Waste Composition Code	Average Concentration	Unit of Measure for Average Concentration
a.	[illegible]	[illegible]	[illegible]
b.	[illegible]	[illegible]	[illegible]
c.	[illegible]	[illegible]	[illegible]
d.	[illegible]	[illegible]	[illegible]
e.	[illegible]	[illegible]	[illegible]
f.	[illegible]	[illegible]	[illegible]
g.	[illegible]	[illegible]	[illegible]
h.	[illegible]	[illegible]	[illegible]
i.	[illegible]	[illegible]	[illegible]
j.	[illegible]	.650	[illegible]
k.	[illegible]	600	[illegible]
l.			
m.			
n.			

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4.16 How much of the liquid outflows from this wastewater treatment plant was INITIALLY SENT to each of the following destinations in 1988?
(Report the quantities as generated. For each destination that did not receive any of the liquid outflows, enter "0" for the quantity. See the Instructions and Definitions booklet for definitions of NPDES, PDES, and POTW if these acronyms are unfamiliar.)

Initial Destination	Quantity in 1988
a. Discharged under a NPDES or state PDES permit without further treatment	0 gallons
b. Discharged to a POTW without further treatment	0 gallons
c. Sent without further treatment to onsite processing units: *(Indicate which units using the labels on the schematic prepared for Section 1.)*	
Phosphoric Acid Recycling	94,852,559 gallons
	gallons
	gallons
	gallons
d. Sent to onsite waste management units: *(Indicate which units using the labels on the schematic prepared for Section 1.)*	
	gallons
	gallons
	gallons
	gallons
e. Sent offsite for further treatment or disposal	6 gallons
f. Sold without further treatment for offsite use	0 gallons
g. Other *(specify)*:	
	0 gallons
	gallons

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4.29 **How much of the sludge/solid outflows from this wastewater treatment plant was INITIALLY SENT to each of the following ONSITE destinations in 1988?**
(Report the quantities as generated and be sure to indicate the unit of measure for the quantities. For each onsite destination that did not receive any of the sludge/solid outflows, enter "0" for the quantity.)

Initial Onsite Destination	Quantity in 1988	Unit of Measure
a. Sent without further treatment to onsite processing units: *(Indicate which units using the labels on the schematic prepared for Section 1.)*		
	0	
b. Sent to onsite waste management units: *(Indicate which units using the labels on the schematic prepared for Section 1.)*		
Active Gypsum Area	3,601,440	~~Gallons~~ 24
c. Other *(specify)*:		
	0	

4.30 **Is there another wastewater treatment plant at this facility that received a special waste (or its residue) in 1988?**
(Circle one number.)

01 Yes *(COMPLETE A QUESTION SET FROM THE EXTRA QUESTION SETS BOOKLET ON THIS OTHER WASTEWATER TREATMENT PLANT)*
(02) No *(CONTINUE TO PAGE 4-15)*

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The previous questions in this section obtained *1988 information* on the wastewater treatment plant(s) that received special wastes (or their residues). The remaining questions in this section shift the focus to *1989 or planned future changes* in the wastewater treatment plant(s) that have affected or will affect the quantity or characteristics of residues from special wastes generated by this facility.

4.31 Have there been any changes in this facility's wastewater treatment plant(s) *in 1989* that have affected the quantity or characteristics of the residues from the special wastes generated by this facility?
(Circle one number.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO QUESTION 4.33)*

4.32 Briefly describe these 1989 changes in the facility's wastewater treatment plant(s) and their effect on the quantity or characteristics of the residues from the special wastes.

_____

_____

_____

_____

_____

4.33 Are any changes planned in this facility's wastewater treatment plant(s) in *calendar years 1989 through 1993* that would affect the quantity or characteristics of the residues from the special wastes generated by this facility?
(Circle one number.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO SECTION 5)*

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SECTION 4

4.34 Briefly describe these planned changes in the facility's wastewater treatment plant(s) and their anticipated effect on the quantity or characteristics of the residues from the special wastes.

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PA 047-14

SECTION 5

SURFACE IMPOUNDMENTS THAT RECEIVE A SPECIAL WASTE (OR ITS RESIDUE)

5.1 **Did a surface impoundment (including tailings ponds and lagoons) at this facility RECEIVE a special waste (or its residue) in 1988?**
(Circle one number.)

01 Yes *(CONTINUE WITH THIS SECTION OF THE QUESTIONNAIRE)*
02 No *(SKIP TO SECTION 6)*

Section 5 contains a set of questions that you complete for EACH surface impoundment that RECEIVED a special waste (or its residue) in 1988. (These surface impoundments must be shown on the schematic prepared for Section 1.) For example, if acid plant blowdown (a special waste) is sent to a tailings pond, then you complete a question set on the tailings pond (a surface impoundment that receives a special waste). Additionally, if your wastewater treatment plant receives a special waste (or its residue) and sludge from this wastewater treatment plant is sent to a sludge pond, then you also complete a set of questions on the sludge pond (a surface impoundment that receives the residue from a special waste). In summary, you complete a question set on EACH surface impoundment (including tailings ponds and lagoons) that received a special waste (or its residue) in 1988. However, do not complete a question set on surface impoundments that are now permanently closed.

Only one question set is provided in this section of the questionnaire. One more question set is provided in the *Extra Question Sets* booklet. If your facility had more than two surface impoundments that received a special waste (or its residue) in 1988, please make as many additional copies of the extra Section 5 question set as needed.

If you are unsure about how many Section 5 question sets to complete for your facility, please call the SURVEY HELPLINE (1-800-635-8850).

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QUESTION SET FOR A SURFACE IMPOUNDMENT

Answer Questions 5.2 through 5.41 for a surface impoundment that received a special waste (or its residue) in 1988. The special wastes are listed on page 2-1 of the Questionnaire booklet. The surface impoundments must be shown on the schematic prepared for Section 1.

5.2 Which surface impoundment is the subject of this question set?
(Use the label on the schematic prepared for Section 1 to identify this surface impoundment.)

Label on surface impoundment: Recycle Pond

5.3 What calendar year did this surface impoundment first receive a special waste (or its residue)?

Year: 1968

5.4 What were the INFLOWS to this surface impoundment and what was the quantity of each inflow in 1988?
(Include special wastes and residues of special wastes in addition to other inflows, if any, in your answer. Be sure to indicate the units of measure for these inflows.)

	Inflow	Quantity in 1988	Unit of Measure
a.	Process Wastewater	36,739,693	Gallons
b.			
c.			
d.			
e.			
f.			
g.			
h.			

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5.5 **What was the approximate total amount of accumulated sludge/solids in this surface impoundment on December 31, 1988?**
(Report the quantity in place and be sure to indicate the unit of measure for this quantity.)

Cumulative amount of sludge/solids: 14,500 cubic yards 22
(unit of measure)

5.6 **Approximately how much of the total amount of accumulated sludge/solids in this surface impoundment on December 31, 1988 was ADDED DURING 1988?**
(Report the quantity in place and be sure to indicate the unit of measure for this quantity.)

Quantity of 1988 sludge/solids: 720 cubic yards 22
(unit of measure)

5.7 **What was the anticipated REMAINING USEFUL LIFE of this surface impoundment on December 31, 1988?**
(If none, enter "0".)

Remaining useful life: 20 years

5.8 **What were the dimensions of this surface impoundment on December 31, 1988?**
(Select one of the two specified units of measure for each dimension.)

a. Depth: 3 feet OR _____ yards

b. Surface area of top: _____ square feet OR 5 acres

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5.9 **Which of the following best describes the liner under this surface impoundment?**
(Circle all numbers that apply.)

01 Bedrock
02 In-situ clay
03 Recompacted local clay
04 Asphalt
05 Concrete
06 Synthetic *(specify)*: _____
07 Other *(specify)*: _____
08 No liner

5.10 **Does this facility have a written closure plan for this surface impoundment that has been approved by the appropriate federal or state governmental agency?**
(Circle one number.)

01 Yes
02 No

5.11 **Which of the following treatment processes occurred in this surface impoundment in 1988?**
(Circle all numbers that apply.)

01 Equalization
02 Solids precipitation
03 pH adjustment
04 Chemical treatment (other than pH adjustment)
05 Biological treatment
06 Dewatering
07 Other *(specify)*: _____
08 None *(SKIP TO QUESTION 5.14 ON NEXT PAGE)*

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~~5.12~~ **Were any chemical reagents added to this surface impoundment in 1988?**
(Circle one number.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO QUESTION 5.14)*

~~5.13~~ **What chemical reagents were added to this surface impoundment in 1988?**
(List each reagent in one of the spaces below.)

a. _____ d. _____
b. _____ e. _____
c. _____ f. _____

5.14 **Were any LIQUIDS removed from this surface impoundment in 1988?**
(Circle one number.)

(01) Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO QUESTION 5.20 ON PAGE 5-9)*

5.15 **What quantity of liquids was removed from this surface impoundment in 1988?**
(Select one of the two specified units of measure.)

Quantity of liquids removed: _____ gallons OR _____ acre-feet

5.16 **Was ALL of the liquid removed from this surface impoundment directly discharged through permitted NPDES or state PDES outfalls and/or directly discharged to a POTW in 1988?**
(Circle one number. See the Instructions and Definitions booklet for definitions of NPDES, PDES, and POTW if these acronyms are unfamiliar.)

01 Yes *(SKIP TO QUESTION 5.20 ON PAGE 5-9)*
(02) No *(CONTINUE TO NEXT QUESTION)*

5.17 **What were the pH and total solids content of the liquid removed from this surface impoundment in 1988?**
(Select one of the two specified units of measure for total solids content.)

a. pH: 5.9 S.U.

b. Total solids content: 5 % OR _____ ppm

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PA 047

5.18 **What were the other characteristics of the liquid removed from this surface impoundment in 1988?**

(Provide a composition code from Appendix A in the Instructions and Definitions booklet and an average concentration for the parameters and/or constituents that characterize this liquid. Be sure to indicate the unit of measure applying to the average concentration. The basis for your answer to this question may be either test results or general knowledge of the liquid. YOU DO NOT HAVE TO CONDUCT ADDITIONAL TESTING TO RESPOND TO THIS QUESTION.)

	Waste Composition Code	Average Concentration	Unit of Measure for Average Concentration
a.	W028	0.02	mg/L
b.	W029	0.35	mg/L
c.	W032	0.02	mg/L
d.	W033	0.06	mg/L
e.	W037	0.01	mg/L
f.	W039	0.09	mg/L
g.	W059	4	Wt. %
h.	W050	2	Wt. %
i.			
j.			
k.			
l.			
m.			
n.			

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5.19 How much of the liquid removed from this surface impoundment was INITIALLY SENT to each of the following destinations in 1988?

(For each destination that did not receive any liquids from this surface impoundment, enter "0" for the quantity. See the Instructions and Definitions booklet for definitions of NPDES, PDES, and POTW if these acronyms are unfamiliar.)

Initial Destination	Quantity in 1988
a. Discharged under a NPDES or state PDES permit without further treatment	_____ gallons
b. Discharged to a POTW without further treatment	_____ gallons
c. Sent without further treatment to onsite processing units: *(Indicate which units using the labels on the schematic prepared for Section 1.)*	
Granulation Plant	31,752,700 ~~gallons~~ ~~gallons~~
_____	_____ gallons
_____	_____ gallons
_____	_____ gallons
d. Sent to onsite waste management units: *(Indicate which units using the labels on the schematic prepared for Section 1.)*	
Cooling Pond	4,981,993 Gallons ~~gallons~~
_____	_____ gallons
_____	_____ gallons
_____	_____ gallons
e. Sent offsite for further treatment or disposal	_____ gallons
f. Sold without further treatment for offsite use	_____ gallons
g. Other *(specify)*:	
_____	_____ gallons
_____	_____ gallons

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5.20 Were any accumulated SLUDGES/SOLIDS removed from this surface impoundment in 1988?
(Circle one number.)

01 Yes *(SKIP TO QUESTION 5.23)*
02 No *(CONTINUE TO NEXT QUESTION)*

5.21 What calendar year were sludges/solids last removed from this surface impoundment?

Year sludges/solids last removed: NA

5.22 What is the typical frequency of removing sludges/solids from this surface impoundment?

Frequency of sludge/solid removal: Once every NA months

SKIP TO QUESTION 5.36 ON PAGE 5-14

5.23 How many times were sludges/solids removed from this surface impoundment in 1988?

Frequency of sludges/solids removal: 0 times in 1988

5.24 What quantity of sludges/solids was removed from this surface impoundment in 1988?
(Be sure to indicate the unit of measure for this quantity.)

Quantity of sludges/solids removed: _____ _____ (unit of measure)

5.25 What were the pH and total solids content of the sludges/solids removed from this surface impoundment in 1988?
(Select one of the two specified units of measure for total solids content.)

a. pH: _____ S.U.

b. Total solids content: _____ % OR _____ ppm

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5.26 **What were the characteristics of the sludges/solids removed from this surface impoundment in 1988?**

(Provide a composition code from Appendix A in the Instructions and Definitions booklet and an average concentration for the parameters and/or constituents that characterize these sludges/solids. Be sure to indicate the unit of measure applying to the average con. ration. The basis for your answer to this question may be either test results o. general knowledge of the sludges/solids. YOU DO NOT HAVE TO CONDUCT ADDITIONAL TESTING TO RESPOND TO THIS QUESTION.)

	Waste Composition Code	Average Concentration	Unit of Measure for Average Concentration
a.			
b.			
c.			
d.			
e.			
f.			
g.			
h.			
i.			
j.			
k.			
l.			
m.			
n.			

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5.27 Were any of the sludges/solids removed from this surface impoundment *SOLD* in 1988 without further onsite modification?
(Circle one number.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO QUESTION 5.29)*

5.28 What quantity of sludges/solids was sold in 1988 without further onsite modification?
(Be sure to indicate the unit of measure for this quantity.)

Quantity sold: _____ _____
(unit of measure)

5.29 Were any of the sludges/solids removed from this surface impoundment SHIPPED OFFSITE for treatment or disposal in 1988 without further onsite modification?
(Circle one number.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO QUESTION 5.34 ON NEXT PAGE)*

5.30 What quantity of sludges/solids was shipped offsite for treatment or disposal in 1988 without further onsite modification?
(Be sure to indicate the unit of measure for this quantity.)

Quantity shipped offsite: _____ _____
(unit of measure)

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5.31 **What was the INITIAL DESTINATION of the sludges/solids shipped offsite in 1988?**
(Circle one number.)

01 Subtitle C treatment, storage, or disposal facility

0[illegible] and disposal facility (not a Subtitle C facility)

03 Treatment/reclamation/recovery facility

04 Other *(specify)*: _____

_____

_____

_____

05 Unknown *(SKIP TO QUESTION 5.34)*

5.32 **Does your company operate the facility identified in the previous question?**
(Circle one number.)

01 Yes *(SKIP TO QUESTION 5.34)*
02 No *(CONTINUE TO NEXT QUESTION)*

5.33 **What are the name, address, and telephone number of the facility identified in Question 5.30?**

Name: _____

Address : _____

City: _____ State or Country: _____ Zip: _____

Telephone number : ( ) _____

5.34 **Were any of the sludges/solids removed from this surface impoundment SENT TO one or more ONSITE processing or waste management units in 1988?**
(Circle one number.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO QUESTION 5.36 ON PAGE 5-14)*

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5.35 **What quantity of sludges/solids removed from this surface impoundment was INITIALLY SENT to each of the following ONSITE destinations in 1988?**
(Report the quantities as generated and be sure to indicate the units of measure for the quantities. For each onsite destination that did not receive any sludges/solids from this surface impoundment, enter "0" for the quantity.)

Initial Onsite Destination	Quantity in 1988	Unit of Measure
a. Sent without further treatment to onsite processing units: *(Indicate which units using the labels on the schematic prepared for Section 1.)*		
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
b. Sent to other onsite waste management units: *(Indicate which units using the labels on the schematic prepared for Section 1.)*		
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
c. Other *(specify)*:		
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

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5.36 **Did this surface impoundment have a leachate collection system in 1988?**
(Circle one number.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO QUESTION 5.38)*

5.37 **Does the facility periodically test the chemical composition of the leachate?**
(Circle one number.)

01 Yes
02 No

5.38 **Were any of the following practices being used on this surface impoundment on December 31, 1988?**
(For each practice, circle 01 for Yes or 02 for No.)

Practice	Yes	No
a. Runon/runoff controls	01	02
b. Secondary leachate collection	01	02
c. Slurry walls	01	02
d. Other *(specify)*: _____		

5.39 **What is the distance from this surface impoundment to the nearest residence outside the boundary of this facility?**
(Select one of the two specified units of measure.)

1667 yards OR _____ miles

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5.40 What is the general direction of the nearest residence from this surface impoundment?
(Circle one number.)

01 North
02 Northeast
03 East
04 Southeast
05 South
06 Southwest
07 West
08 Northwest

YOU HAVE COMPLETED THIS QUESTION SET

5.41 Have you completed a question set on ALL surface impoundments at this facility that received a special waste (or its residue) in 1988?
(Circle one number.)

1 Yes *(CONTINUE WITH QUESTION 5.42 ON PAGE 5-17 OF THE QUESTIONNAIRE BOOKLET)*

2 No *(COMPLETE A QUESTION SET ON ONE OF THE REMAINING SURFACE IMPOUNDMENTS THAT RECEIVED A SPECIAL WASTE IN 1988.)*

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QUESTION SET FOR A SURFACE IMPOUNDMENT

Answer Questions 5.2 through 5.41 for a surface impoundment that received a special waste (or its residue) in 1988. The special wastes are listed on page 2-1. The surface impoundments must be shown on the schematic prepared for Section 1.

5.2 Which surf... mpoundment is the subject of this question set?
(Use the label on the schematic prepared for Section 1 to identify this surface impoundment.)

Label on surface impoundment: Cooling Pond

5.3 What calendar year did this surface impoundment first receive a special waste (or its residue)?

Year: 1974

5.4 What were the INFLOWS to this surface impoundment and what was the quantity of each inflow in 1988?
(Include special wastes and residues of special wastes in addition to other inflows, if any, in your answer. Be sure to indicate the units of measure for these inflows.)

Inflow	Quantity in 1988	Unit of Measure
a. Process Wastewater (Silt)	24,010	GALLONS 24
b. " " (Fly Ash)	6,137,023	GALLONS 24
c. " " (Gluon)	4,981,987	GALLONS 24
d. " " (Bottom)	21,130,002,000	GALLONS 24
e. Process Waste Water (13 Sep. Wastewater Sludge)	3,601,990	GALLONS 24
f.		
g. Gypsum Decant Water	2,100,000,000	GALLONS 24
h.		

See fac. notes.

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5.5 **What was the approximate total amount of accumulated sludge/solids in this surface impoundment on December 31, 1988?**
(Report the quantity in place and be sure to indicate the unit of measure for this quantity.)

Cumulative amount of sludge/solids: 4,3[illegible] Cubic Feet 21
(unit of measure)

5.6 **Approximate[illegible] how much of the total amount of accumulated sludge/solids in this surface impoundment on December 31, 1988 was ADDED DURING 1988?**
(Report the quantity in place and be sure to indicate the unit of measure for this quantity.)

Quantity of 1988 sludge/solids: 511,193 Cubic Feet 21
(unit of measure)

5.7 **What was the anticipated REMAINING USEFUL LIFE of this surface impoundment on December 31, 1988?**
(If none, enter "0".)

Remaining useful life: 20 years

5.8 **What were the dimensions of this surface impoundment on December 31, 1988?**
(Select one of the two specified units of measure for each dimension.)

a. Depth: 10 feet OR _____ yards

b. Surface area of top: _____ square feet OR 80 acres

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5.9 **Which of the following best describes the liner under this surface impoundment?**
(Circle all numbers that apply.)

01 Bedrock
02 In-situ clay
03 Recompacted local clay
04 Asphalt
05 Concrete
06 Synthetic *(specify):* _____
07 Other *(specify):* _____
08 No liner

5.10 **Does this facility have a written closure plan for this surface impoundment that has been approved by the appropriate federal or state governmental agency?**
(Circle one number.)

01 Yes
02 No

5.11 **Which of the following treatment processes occurred in this surface impoundment in 1988?**
(Circle all numbers that apply.)

01 Equalization
02 Solids precipitation
03 pH adjustment
04 Chemical treatment (other than pH adjustment)
05 Biological treatment
06 Dewatering
07 Other *(specify):* _____
08 None *(SKIP TO QUESTION 5.14 ON NEXT PAGE)*

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5.12 Were any chemical reagents added to this surface impoundment in 1988?
(Circle one number.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO QUESTION 5.14)*

5.13 What chemical reagents were added to this surface impoundment in 1988?
(List each reagent in one of the spaces below.)

a. _____ d. _____
b. _____ e. _____
c. _____ f. _____

5.14 Were any LIQUIDS removed from this surface impoundment in 1988?
(Circle one number.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO QUESTION 5.20 ON PAGE 5-9)*

5.15 What quantity of liquids was removed from this surface impoundment in 1988?
(Select one of the two specified units of measure.)

Quantity of liquids removed: 4,277 X 4,466 gallons OR _____ acre-feet

5.16 Was ALL of the liquid removed from this surface impoundment directly discharged through permitted NPDES or state PDES outfalls and/or directly discharged to a POTW in 1988?
(Circle one number. See the Instructions and Definitions booklet for definitions of NPDES, PDES, and POTW if these acronyms are unfamiliar.)

01 Yes *(SKIP TO QUESTION 5.20 ON PAGE 5-9)*
02 No *(CONTINUE TO NEXT QUESTION)*

5.17 What were the pH and total solids content of the liquid removed from this surface impoundment in 1988?
(Select one of the two specified units of measure for total solids content.)

a. pH: 1.5 S.U.

b. Total solids content: _____ % OR 14,000 ppm

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5.19 How much of the liquid removed from this surface impoundment was INITIALLY SENT to each of the following destinations in 1988?

(For each destination that did not receive any liquids from this surface impoundment, enter "0" for the quantity. See the Instructions and Definitions booklet for definitions of NPDES, PDES, and POTW if these acronyms are unfamiliar.)

	Initial Destination	Quantity in 1988
a.	Discharged under a NPDES or state PDES permit without further treatment	685,250,000 gallons
b.	Discharged to a POTW without further treatment	0 gallons
c.	Sent without further treatment to onsite processing units: *(Indicate which units using the labels on the schematic prepared for Section 1.)*	
	Phosphoric Acid Plant	3,494,060,466 gallons
		gallons
		gallons
		gallons
d.	Sent to onsite waste management units: *(Indicate which units using the labels on the schematic prepared for Section 1.)*	
	15+ Stings WATER Treat.	98,454,000 gallons
		gallons
		gallons
		gallons
e.	Sent offsite for further treatment or disposal	0 gallons
f.	Sold without further treatment for offsite use	0 gallons
g.	Other *(specify)*:	
		gallons
		gallons

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5.18 What were the other characteristics of the liquid removed from this surface impoundment in 1988?

(Provide a composition code from Appendix A in the Instructions and Definitions booklet and an average concentration for the parameters and/or constituents that characterize this liquid. Be sure to indicate the unit of measure applying to the average concentration. The basis for your answer to this question may be either test results or general knowledge of the liquid. YOU DO NOT HAVE TO CONDUCT ADDITIONAL TESTING TO RESPOND TO THIS QUESTION.)

	Waste Composition Code	Average Concentration	Unit of Measure for Average Concentration
a.	Sdneas	2.15	in Phosphoric acid
b.			
c.			
d.			
e.			
f.			
g.			
h.			
i.			
j.			
k.			
l.			
m.			
n.			

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5.20 **Were any accumulated SLUDGES/SOLIDS removed from this surface impoundment in 1988?**
(Circle one number.)

01 Yes *(SKIP TO QUESTION 5.23)*
02 No *(CONTINUE TO NEXT QUESTION)*

5.21 **What calendar year were sludges/solids last removed from this surface impoundment?**

Year sludges/solids last removed: N/A

5.22 **What is the typical frequency of removing sludges/solids from this surface impoundment?**

Frequency of sludge/solid removal: Once every N/A months

SKIP TO QUESTION 5.36 ON PAGE 5-14

5.23 **How many times were sludges/solids removed from this surface impoundment in 1988?**

Frequency of sludges/solids removal: _____ times in 1988

5.24 **What quantity of sludges/solids was removed from this surface impoundment in 1988?**
(Be sure to indicate the unit of measure for this quantity.)

Quantity of sludges/solids removed: _____ _____ (unit of measure)

5.25 **What were the pH and total solids content of the sludges/solids removed from this surface impoundment in 1988?**
(Select one of the two specified units of measure for total solids content.)

a. pH: _____ S.U.

b. Total solids content: _____ % OR _____ ppm

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5.26 **What were the characteristics of the sludges/solids removed from this surface impoundment in 1988?**

(Provide a composition code from Appendix A in the Instructions and Definitions booklet and an average concentration for the parameters and/or constituents that characterize these sludges/solids. Be sure to indicate the unit of measure applying to the average concentration. The basis for your answer to this question may be either test results or general knowledge of the sludges/solids. YOU DO NOT HAVE TO CONDUCT ADDITIONAL TESTING TO RESPOND TO THIS QUESTION.)

	Waste Composition Code	Average Concentration	Unit of Measure for Average Concentration
a.			
b.			
c.			
d.			
e.			
f.			
g.			
h.			
i.			
j.			
k.			
l.			
m.			
n.			

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5.27 **Were any of the sludges/solids removed from this surface impoundment SOLD in 1988 without further onsite modification?**
(Circle one number.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO QUESTION 5.29)*

5.28 **What quantity of sludges/solids was sold in 1988 without further onsite modification?**
(Be sure to indicate the unit of measure for this quantity.)

Quantity sold: _____ _____
(unit of measure)

5.29 **Were any of the sludges/solids removed from this surface impoundment SHIPPED OFFSITE for treatment or disposal in 1988 without further onsite modification?**
(Circle one number.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO QUESTION 5.34 ON NEXT PAGE)*

5.30 **What quantity of sludges/solids was shipped offsite for treatment or disposal in 1988 without further onsite modification?**
(Be sure to indicate the unit of measure for this quantity.)

Quantity shipped offsite: _____ _____
(unit of measure)

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5.31 What was the INITIAL DESTINATION of the sludges/solids shipped offsite in 1988?
(Circle one number.)

01 Subtitle C treatment, storage, or disposal facility

02 Land disposal facility (not a Subtitle C facility)

03 Treatment/reclamation/recovery facility

04 Other *(specify)*: _____

05 Unknown *(SKIP TO QUESTION 5.34)*

5.32 Does your company operate the facility identified in the previous question?
(Circle one number.)

01 Yes *(SKIP TO QUESTION 5.34)*
02 No *(CONTINUE TO NEXT QUESTION)*

5.33 What are the name, address, and telephone number of the facility identified in Question 5.30?

Name: _____

Address: _____

City: _____ State or Country: _____ Zip: _____

Telephone number: ( ) _____

5.34 Were any of the sludges/solids removed from this surface impoundment SENT TO one or more ONSITE processing or waste management units in 1988?
(Circle one number.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO QUESTION 5.36 ON PAGE 5-14)*

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5.35 **What quantity of sludges/solids removed from this surface impoundment was INITIALLY SENT to each of the following ONSITE destinations in 1988?**
(Report the quantities as generated and be sure to indicate the units of measure for the quantities. For each onsite destination that did not receive any sludges/solids from this surface impoundment, enter "0" for the quantity.)

Initial Onsite Destination	Quantity in 1988	Unit of Measure
a. t without further treatment to onsite processing units: *(Indicate which units using the labels on the schematic prepared for Section 1.)*		
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
b. Sent to other onsite waste management units: *(Indicate which units using the labels on the schematic prepared for Section 1.)*		
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
c. Other *(specify)*:		
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

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5.36 Did this surface impoundment have a leachate collection system in 1988?
(Circle one number.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO QUESTION 5.38)*

5.37 Does the facility periodically test the chemical composition of the leachate?
(Circle one number.)

01 Yes
02 No

5.38 Were any of the following practices being used on this surface impoundment on December 31, 1988?
(For each practice, circle 01 for Yes or 02 for No.)

Practice	Yes	No
a. Runon/runoff controls	01	02
b. Secondary leachate collection	01	02
c. Slurry walls	01	02
d. Other *(specify)*: _____		

5.39 What is the distance from this surface impoundment to the nearest residence outside the boundary of this facility?
(Select one of the two specified units of measure.)

1,6 yards **OR** _____ miles

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5.40 **What is the general direction of the nearest residence from this surface impoundment?**
(Circle one number.)

01 North
02 Northeast
03 East
04 Southeast
05 South
06 Southwest
07 West
08 Northwest

5.41 **Is there another surface impoundment at this facility that received a special waste (or its residue) in 1988?**
(Circle one number.)

01 Yes *(COMPLETE A QUESTION SET FROM THE EXTRA QUESTION SETS BOOKLET ON THIS OTHER SURFACE IMPOUNDMENT)*

02 No *(CONTINUE TO PAGE 5-17)*

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PA 047

The previous questions in this section obtained *1988 information* on the surface impoundment(s) that received special wastes (or their residues). The remaining questions in this section shift the focus to *1989 or planned future changes* in the surface impoundment(s) that have affected or will affect the facility's management of special wastes (or their residues).

5.42 **Have there been any changes *in 1989* in the facility's surface impoundment(s) that received a special waste (or its residue) in 1988?**

(Circle one number. Examples of eligible changes include: changes in operating status, impoundment expansions, and changes in the destination of liquids and solids removed from surface impoundments.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO QUESTION 5.44)*

5.43 **Briefly describe these 1989 changes in the facility's surface impoundment(s) and their effect on the management of special wastes (or their residues).**

_____
_____
_____
_____
_____

5.44 **Are any changes planned in *calendar years 1989 through 1993* in the facility's surface impoundment(s) that received a special waste (or its residue) in 1988?**

(Circle one number. Examples of eligible changes include: changes in operating status, impoundment expansions, and changes in the destination of liquids and solids removed from surface impoundments.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO SECTION 6)*

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5.45 Briefly describe these planned changes in the facility's surface impoundment(s) and their anticipated effect on the management of special wastes (or their residues).

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QUESTION SET FOR OTHER WASTE MANAGEMENT UNIT

Answer questions 6.2 through 6.30 for each waste management unit (other than wastewater treatment plants and surface impoundments) that received a special waste (or its residue) in 1988. The special wastes are listed on page 2-1. The waste management unit must be shown on the schematic prepared for Section 1.

6.2 Which waste management unit is the subject of this question set?

(Use the label on the schematic prepared for Section 1 to identify this waste management unit.)

Label on waste management unit: Gypsum ~~Stack~~ AREA

see facility notes

6.3 What calendar year did this waste management unit first receive a special waste?

Year: 1974

6.4 What were the INFLOWS to this waste management unit and what was the quantity of each inflow in 1988?

(Include special wastes and residues of special wastes in addition to other inflows, if any, in your answer. Be sure to indicate the unit of measure for each inflow.)

Inflow	Quantity in 1988	Unit of Measure
a. Phosphogypsum	2,343,214	~~Short Tons~~
b. Process Wastewater (Gypsum)	2,100,000,000	~~Gallons~~
c. Process Wastewater (Uranium)	12,112	Tons
d.		
e.		
f.		
g.		
h.		

see facility notes

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6.5 **Is this waste management unit an underground injection well?**
(Circle one number.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO QUESTION 6.9)*

6.6 **What is the classification of this underground injection well?**
(Circle one number.)

01 Class 1 (non-hazardous)
02 Class 2
03 Class 3
04 Class 4
05 Class 5

6.7 **What was the injection depth of this well on December 31, 1988?**

Injection depth: _____ feet

6.8 **What was the DAILY maximum practical operating capacity of this underground injection well on December 31, 1988?**

_____ gallons/day

SKIP TO QUESTION 6.27 ON PAGE 6-9

6.9 **Is this waste management unit a gypsum stack?**
(Circle one number.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO QUESTION 6.13 ON NEXT PAGE)*

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6.10 **What were the approximate dimensions of this gypsum stack on December 31, 1988?**
(Select one of the two specified units of measure for each dimension.)

a. Height: 40 feet OR _____ yards

b. Surface area of base: _____ square feet OR 600 acres

6.11 **What were the AGGREGATE dimensions of the pond(s) on top of this gypsum stack on December 31, 1988?**
(Select one of the two specified units of measure for each dimension.)

a. Typical d. : 5 feet OR _____ yards

b. Surface area of pond(s): _____ square feet OR 400 acres

6.12 **What was the typical pH of the liquid in the gypsum stack pond(s) in 1988?**

pH: 1.5 S.U.

SKIP TO QUESTION 6.17 ON NEXT PAGE

~~6.13~~ **Is this waste management unit a mine, quarry, or stope?**
(Circle one number.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO QUESTION 6.16 ON NEXT PAGE)*

~~6.14~~ **What was the approximate depth of the waste material in this mine, quarry, or stope on December 31, 1988?**
(Select one of the two specified units of measure.)

Depth of material: _____ feet OR _____ yards

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6.15 What was the surface area of the top of the material in this mine, quarry, or stope on December 31, 1988?

(Select one of the two specified units of measure.)

Surface area of top: _____ square feet OR _____ acres

SKIP TO QUESTION 6.17

6.16 What were the approximate dimensions of this waste management unit on December 31, 1988?

(Select one of the two specified units of measure for each dimension.)

a. Height or depth: _____ feet OR _____ yards

b. Surface area of base or top: _____ square feet OR _____ acres

6.17 What was the approximate total amount of material in this waste management unit on December 31, 1988?

(Report the quantity in place and be sure to indicate the unit of measure for this amount of material.)

Cumulative amount of material: 28,000,000 SHORT TONS. 32
(unit of measure)

6.18 What was the anticipated REMAINING USEFUL LIFE of this waste management unit on December 31, 1988?

Remaining useful life: 21 years

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6.19 **Which of the following best describes the liner under this waste management unit on December 31, 1988?**
(Circle all that apply.)

01 Bedrock

02 In-situ clay

03 Recompacted local clay

04 Asphalt

05 Concrete

06 Synthetic *(specify)*: _____

07 Other *(specify)*: _____

08 No liner

09 Not applicable to this type of waste management unit

6.20 **Was any material removed from this waste management unit in 1988?**
(Circle one number.)

See FAC 1.3.2.6

01 Yes *(CONTINUE TO NEXT QUESTION)*

02 No *(SKIP TO QUESTION 6.24 ON NEXT PAGE)*

~~6.21~~ **How much material was removed from this waste management unit in 1988?**
(Be sure to indicate the unit of measure for this quantity.)

Quantity removed: _____ _____ (unit of measure)

~~6.22~~ **Does the facility periodically test the composition of the material removed from this waste management unit?**
(Circle one number.)

01 Yes

02 No

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6.23 **Where was the material removed from this waste management unit SENT in 1988?** *(Describe the onsite and/or offsite destination(s) of the material removed from this waste management unit.)*

_____

_____

_____

_____

6.24 **Did this waste management unit have a leachate collection system in 1988?** *(Circle one number.)*

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO QUESTION 6.26 ON NEXT PAGE)*

6.25 **Does the facility periodically test the chemical composition of the leachate?** *(Circle one number.)*

01 Yes
02 No

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6.26 **Were any of the following practices being used on this waste management unit on December 31, 1988?**
(For each practice, circle 01 for Yes or 02 for No.)

Practice	Yes	No
a. Dust suppression/control	01	02
b. Runon/runoff controls	01	02
c. Secondary leachate collection	01	02
d. Slurry walls	01	02
e. Other *(specify)*: _____		

6.27 **What is the distance from this waste management unit to the nearest residence outside the boundary of this facility?**
(Select one of the two specified units of measure.)

1,666 yards OR _____ miles

~~use existing of gypsum stack. Add a leachate~~
~~Sumption trench pack. Use same no. from~~
~~radionuclide study.~~

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6.28 What is the general direction of the nearest residence from this waste management unit?
(Circle one number.)

01 North
02 Northeast
03 East
04 Southeast
05 South
06 Southwest
07 West
08 Northwest

6.29 Does this facility have a written closure plan for this waste management unit that has been approved by the appropriate federal or state governmental agency?
(Circle one number.)

01 Yes
02 No

6.30 Is there another waste management unit (other than a wastewater treatment plant or surface impoundment) at this facility that received a special waste (or its residue) in 1988?
(Circle one number.)

1 Yes *(COMPLETE A QUESTION SET FROM THE EXTRA QUESTION SETS BOOKLET ON THIS OTHER WASTE MANAGEMENT UNIT)*
2 No *(CONTINUE TO NEXT PAGE)*

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The previous questions in this section obtained *1988 information* on certain types of waste management units that received special wastes (or their residues). The remaining questions in this section shift the focus to *1989 or planned future changes* in these same types of waste management units that have affected or will affect the facility's management of special wastes (or their residues).

6.31 **Have there been any changes *in 1989* in the facility's waste management unit(s) (other than wastewater treatment plants and surface impoundments) that received a special waste (or its residue) in 1988?**
(Circle one number. Examples of eligible changes include: changes in operating status, ex sions, and changes in the handling of special wastes.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO QUESTION 6.33)*

6.32 **Briefly describe these 1989 changes in the facility's waste management unit(s) and their effect on the management of special wastes (or their residues).**

_____
_____
_____
_____
_____

6.33 **Are any changes planned in *calendar years 1989 through 1993* in the facility's waste management unit(s) (other than wastewater treatment plants and surface impoundments) that received a special waste (or its residue) in 1988?**
(Circle one number. Examples of eligible changes include: changes in operating status, expansions, and changes in the handling of wastes.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO SECTION 7)*

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6.34 Briefly describe these planned changes in the facility's waste management unit(s) and their anticipated effect on the management of special wastes (or their residues).

The [illegible] will be [illegible] to [illegible] Phase [illegible]

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SECTION 7

ENVIRONMENTAL MONITORING NEAR WASTE MANAGEMENT UNITS

Section 7 focuses on the facility's environmental monitoring, if any, NEAR the waste management units (excluding wastewater treatment plants) that received a special waste (or its residue) in 1988. These waste management units, which were covered in Sections 5 and 6, include:

- Surface impoundments (including tailings ponds and lagoons)
- Waste piles
- Residuus stockpiles
- Landfills
- Underground injection wells
- Gypsum stacks
- Mines, quarries, and stopes.

For the sake of simplicity, the waste management units (excluding wastewater treatment plants) that received a special waste (or its residue) in 1988 are referred to as **SPECIAL WASTE MANAGEMENT UNITS** in this section.

7.1 What is the typical depth from the bottom of the special waste management units to the water in the uppermost USABLE aquifer at its HIGHEST seasonal level?

Depth to water in wet season: 180 feet

7.2 What is the typical depth from the bottom of the special waste management units to the water in the uppermost USABLE aquifer at its LOWEST seasonal level?

Depth to water in dry season: 180 feet

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7.3 **What are the typical permeability (hydraulic conductivity), porosity, and hydraulic gradient of the uppermost USABLE aquifer underlying the special waste management units?**
(Select one of the two specified units of measure for permeability.)

a. Permeability: [redacted] 4 centimeters per second OR _____ feet per minute

b. Porosity: .02 percent

c. Hydraulic gradient: 0.002 ~~percent~~ ft/ft

7.4 **What are the principal uses of the water in the uppermost USABLE aquifer underlying the special waste management units?**
(Circle all numbers that apply.)

01 Municipal

02 Rural domestic (not including agricultural)

03 Agricultural

04 Commercial/industrial

05 Other *(specify)*: _____

06 Unknown

07 No current use of this aquifer

7.5 **Are there any aquifers between the bottom of the special waste management units and the uppermost USABLE aquifer?**
(Circle one number.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO QUESTION 7.8 ON NEXT PAGE)*

7.6 **How many aquifers lie between the bottom of the special waste management units and the uppermost USABLE aquifer?**

Number of aquifers: 2

MW2F 001

7.7 **Briefly describe the characteristics of the aquifer(s) lying between the special waste management units and the uppermost USABLE aquifer.**
(Relevant aquifer characteristics include: depth to aquifer, aquifer thickness, salinity, and reasons for the aquifer being unusable.)

① A 55-foot sand & gravel (Fresh WATER) aquifer that correlates stratigraphically with the Sparta Aquifer, and has been called the Mississippi River Aquifer.
② A 100-foot [illegible] Salty WATER Aquifer (Jackson).

7.8 **Did this facility monitor the water quality in the uppermost USABLE aquifer underlying the special waste management units in 1988?**
(Circle one number.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
(02) No *(SKIP TO QUESTION 7.17 ON PAGE 7-6)*

7.9 **How many ground water monitoring locations for the uppermost USABLE aquifer underlying the special waste management units did this facility operate in 1988?**
(Each of these locations must be labeled on the FACILITY SITE MAP.)

Number of monitoring locations: _____

7.10 **What was the typical depth of the monitoring well screen in these ground water monitoring wells in 1988?**

Typical well screen depth: _____ feet

7.11 **Approximately how many times was the ground water sampled at each monitoring well in 1988?**

Frequency of sampling: _____ times in 1988

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7.12 **Which of the following parameters and constituents were monitored in the ground water underlying the special waste management units in 1988?**
(Circle all numbers that apply.)

01 pH

02 Organics

03 Major cations

04 Major anions

05 Radionuclides

06 Metals

07 Other *(specify)*: _____

_____

7.13 **Does the uppermost USABLE aquifer underlying the special waste management units contain FRESH water?**
(Circle one number.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO QUESTION 7.17 ON PAGE 7-6)*

7.14 **Have the ground water monitoring wells downgradient from the special waste management units indicated an exceedance of national primary or secondary drinking water standards since January 1, 1984?**
(Circle one number.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO QUESTION 7.17 ON PAGE 7-6)*

MW2F 001

7.15 Which of the following drinking water standards were exceeded in the ground water near the special waste management units since January 1, 1984?
(For each standard, circle all numbers that apply.)

Drinking Water Standard (Concentration)	Exceeded Up-gradient	Exceeded Down-gradient	Monitored but not Exceeded	Not Monitored
Primary Standards				
a. Arsenic (0.05 mg/l)	01	02	03	04
b. Barium (1.0 mg/l)	01	02	03	04
c. Cadmium (0.0 g/l)	01	02	03	04
d. Chromium (0.05 mg/l)	01	02	03	04
e. Lead (0.05 mg/l)	01	02	03	04
f. Mercury (0.002 mg/l)	01	02	03	04
g. Nitrate (as N) (10.0 mg/l)	01	02	03	04
h. Selenium (0.01 mg/l)	01	02	03	04
i. Silver (0.05 mg/l)	01	02	03	04
j. Total Trihalomethanes (0.1 mg/l)	01	02	03	04
k. Radium-226 and Radium-228 (5.0 pCi/l)	01	02	03	04
l. Gross Alpha Particle Activity* (15.0 pCi/l)	01	02	03	04
Secondary Standards				
m. Chloride (250.0 mg/l)	01	02	03	04
n. Copper (1.0 mg/l)	01	02	03	04
o. Fluoride (2.0 mg/l)	01	02	03	04
p. Iron (0.3 mg/l)	01	02	03	04
q. Manganese (0.05 mg/l)	01	02	03	04
r. pH (6.5-8.5)	01	02	03	04
s. Sulfate (250.0 mg/l)	01	02	03	04
t. Total Dissolved Solids (TDS) (500.0 mg/l)	01	02	03	04
u. Zinc (5.0 mg/l)	01	02	03	04

*Including Radium-226 but excluding radon and uranium.

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7.16 **Briefly explain why the ground water downgradient from the special waste management units exceeded national primary or secondary drinking water standards after January 1, 1984.**

7.17 **Did this facility monitor the water quality in aquifers OTHER THAN the uppermost usable aquifer underlying the special waste management units in 1988?**
(Circle one number.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO QUESTION 7.19)*

7.18 **Which other aquifers were monitored in 1988 and why were they monitored?**

See Facility Notes

7.19 **Did this facility monitor AMBIENT SURFACE WATER QUALITY near the special waste management units in 1988?**
(Circle one number. Do not include any monitoring of NPDES or state PDES discharges in answering this question.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO QUESTION 7.33 ON PAGE 7-14)*

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7.20 **How many ambient surface water monitoring locations near the special waste management units did this facility operate in 1988?**
(Each of these locations must be labeled on the FACILITY SITE MAP.)

Number of monitoring locations: 0

7.21 **Approximately how many times was the ambient surface water sampled at each monitoring location in 1988?**

Frequency of sampling: 0 times in 1988

7.22 **Which of the following parameters and constituents were monitored in the ambient surface water near the special waste management units in 1988?**
(Circle all numbers that apply.)

01 Biological indicator organisms

02 pH

03 Major cations

04 Major anions

05 Radionuclides

06 Metals

07 Nutrients

08 Other *(specify)*: _____

_____

7.23 **Is the ambient surface water near the special waste management units FRESH water?**
(Circle one number.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO QUESTION 7.30 ON PAGE 7-12)*

MW2F 001

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7.24 **Has the ambient surface water monitoring downstream from the special waste management units indicated an exceedance of national primary or secondary drinking water standards since January 1, 1984?**
(Circle one number.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO QUESTION 7.27 ON PAGE 7-10)*

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7.25 **Which of the following drinking water standards were exceeded in the ambient surface water near the special waste management units since January 1, 1984?** *(For each standard, circle all numbers that apply.)*

Drinking Water Standard (Concentration)	Exceeded Up-stream	Exceeded Down-stream	Monitored but not Exceeded	Not Monitored
Primary Standards				
a. Arsenic (0.05 mg/l)	01	02	03	04
b. Barium (1.0 mg/l)	01	02	03	04
c. Cadmium (0.01 mg/l)	01	02	03	04
d. Chromium (0.05 mg/l)	01	02	03	04
e. Lead (0.05 mg/l)	01	02	03	04
f. Mercury (0.002 mg/l)	01	02	03	04
g. Nitrate (as N) (10.0 mg/l)	01	02	03	04
h. Selenium (0.01 mg/l)	01	02	03	04
i. Silver (0.05 mg/l)	01	02	03	04
j. Total Trihalomethanes (0.1 mg/l)	01	02	03	04
k. Radium-226 and Radium-228 (5.0 pCi/l)	01	02	03	04
l. Gross Alpha Particle Activity* (15.0 pCi/l)	01	02	03	04
Secondary Standards				
m. Chloride (250.0 mg/l)	01	02	03	04
n. Copper (1.0 mg/l)	01	02	03	04
o. Fluoride (2.0 mg/l)	01	02	03	04
p. Iron (0.3 mg/l)	01	02	03	04
q. Manganese (0.05 mg/l)	01	02	03	04
r. pH (6.5-8.5)	01	02	03	04
s. Sulfate (250.0 mg/l)	01	02	03	04
t. Total Dissolved Solids (TDS) (500.0 mg/l)	01	02	03	04
u. Zinc (5.0 mg/l)	01	02	03	04

*Including Radium-226 but excluding radon and uranium.

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7.26 **Briefly explain why the ambient surface water downstream from the special waste management units exceeded national primary or secondary drinking water standards after January 1, 1984.**

_____

_____

_____

_____

_____

_____

7.27 **Has the ambient surface water monitoring downstream from the special waste management units indicated an exceedance of national ambient water quality criteria since January 1, 1984?**
(Circle one number.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO QUESTION 7.33 ON PAGE 7-14)*

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7.28 **Which of the following water quality criteria were exceeded in the ambient surface water near the special waste management units since January 1, 1984?**
(For each criterion, circle all numbers that apply.)

Ambient Water Quality Criterion (Concentration)	Exceeded Up-stream	Exceeded Down-stream	Monitored but not Exceeded	Not Monitored
a. Arsenic (pent) (48.0 µg/l)[a]	01	02	03	04
b. Arsenic (tri) (190.0 µg/l)	01	02	03	04
c. Beryllium (5.3 µg/l)	01	02	03	04
d. Cadmium (1.1 µg/l)	01	02	03	04
e. Chloride (230.0 µg/l)	01	02	03	04
f. Chromium (hex) (11.0 µg/l)	01	02	03	04
g. Copper (12.0 µg/l)	01	02	03	04
h. Cyanide (5.2 µg/l)	01	02	03	04
i. Iron (1,000.0 µg/l)	01	02	03	04
j. Lead (3.2 µg/l)	01	02	03	04
k. Mercury (0.012 µg/l)	01	02	03	04
l. Nickel (160.0 µg/l)	01	02	03	04
m. pH (6.5-9.0)	01	02	03	04
n. Selenium (5.0 µg/l)	01	02	03	04
o. Silver (0.12 µg/l)	01	02	03	04
p. Zinc (110.0 µg/l)	01	02	03	04

[a]Lowest Observable Effect Level - data are insufficient to derive a AWQC.

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7.2 **Briefly explain why the ambient surface water downstream from the special waste management units exceeded national ambient water quality criteria after January 1, 1984.**

_____

_____

_____

_____

_____

_____

SKIP TO QUESTION 7.33 ON PAGE 7-14

7.30 **Has the ambient surface water monitoring downstream from the special waste management units indicated an exceedance of national ambient water quality criteria for the protection of aquatic life since January 1, 1984?**
(Circle one number.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO QUESTION 7.33 ON PAGE 7-14)*

MW2F 001

7.31 **Which of the following water quality criteria were exceeded in the ambient surface water near the special waste management units since January 1, 1984?**
(For each criterion, circle all numbers that apply.)

Ambient Water Quality Criterion (Concentration)	Exceeded Up-stream	Exceeded Down-stream	Monitored but not Exceeded	Not Monitored
a. Arsenic (pent) (13.0 mg/l)[a]	01	02	03	04
b. Arsenic (tri) (36.0 mg/l)	01	02	03	04
c. Cadmium (9.3 mg/l)	01	02	03	04
d. Chloride (7.5 mg/l)	01	02	03	04
e. Chromium (hex) (50.0 mg/l)	01	02	03	04
f. Copper (2.9 mg/l)	01	02	03	04
g. Cyanide (1.0 mg/l)	01	02	03	04
h. Lead (5.6 mg/l)	01	02	03	04
i. Mercury (0.025 mg/l)	01	02	03	04
j. Nickel (7.9 mg/l)	01	02	03	04
k. Phosphorus (elemental) (0.1 mg/l)	01	02	03	04
l. Selenium (54.0 mg/l)	01	02	03	04
m. Sulfide (hydrogen sulfide) (2.0 mg/l)	01	02	03	04
n. Zinc (86.0 mg/l)	01	02	03	04

[a]Lowest Observable Effect Level - data are insufficient to derive a AWQC.

7.32 **Briefly explain why the ambient surface water downstream from the special waste management units exceeded national ambient water quality criteria for the protection of aquatic life after January 1, 1984.**

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7.33 **Did this facility monitor AMBIENT AIR QUALITY near the special waste management units in 1988?**
(Circle one number.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO SECTION 8)*

7.34 **How many ambient air quality monitoring locations near the special waste management units did this facility operate in 1988?**
(Each of these locations should be labeled on the FACILITY SITE MAP.)

Number of monitoring locations: _____

7.35 **Excluding continuous monitoring, approximately how many times was the ambient air sampled at each monitoring location in 1988?**

Frequency of sampling: _____ times in 1988

7.36 **Which of the following parameters and constituents were monitored in the ambient air near the special waste management units in 1988?**
(Circle all numbers that apply.)

01 Particulate matter

02 Metals

03 Other *(specify)*: _____

_____

_____

_____

7.37 **Has the ambient air quality monitoring near the special waste management units indicated an exceedance of National Ambient Air Quality Standards (NAAQS) or National Emissions Standards for Hazardous Air Pollutants (NESHAP) since January 1, 1984?**
(Circle one number.)

01 Yes *(CONTINUE TO NEXT QUESTION)*
02 No *(SKIP TO SECTION 8)*

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7.38 **Which of the following standards were exceeded near the special waste management units since January 1, 1984?**

(For each standard, circle all numbers that apply.)

Standard	Exceeded	Not Exceeded	Not Monitored
National Ambient Air Quality Standards			
a. Sulfur Oxides			
24-hour average concentration (365 µg/m³ [0.14 ppm])	1	2	3
annual arithmetic mean (80 µg/m³ [0.03 ppm])	1	2	3
b. Particulate Matter (PM-10)			
24-hour average concentration (150 µg/m³)	1	2	3
annual arithmetic mean (50 µg/m³)	1	2	3
c. Carbon Monoxide			
8-hour average concentration (10 mg/m³ [9 ppm])	1	2	3
1-hour average concentration (40 mg/m³ [35 ppm])	1	2	3
d. Ozone			
1-hour average concentration (235 µg/m³ [0.12 ppm])	1	2	3
e. Nitrogen Dioxide			
annual arithmetic mean (100 µg/m³ [0.053 ppm])	1	2	3
f. Lead			
arithmetic mean—3 month average (1.5 µg/m³)	1	2	3
National Emissions Standards for Hazardous Air Pollutants			
g. Radionuclides*			
25 mrem/yr to the whole body	1	2	3
75 mrem/yr to the critical organ of any individual	1	2	3
h. Polonium-210**			
21 curies in a calendar year	1	2	3

* Applies only to facilities licensed by the Nuclear Regulatory Commission and federal facilities not covered by Subpart H of 40 CFR Part 61. Standard excludes doses due to radon-220, radon-222, and their respective decay products.

** Includes only emissions of polonium-210 to air from calciners and nodulizing kilns at elemental phosphorous plants.

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7.39 **Briefly explain why the air near the special waste management units exceeded NAAQS or NESHAP levels after January 1, 1984.**

PA 047

SECTION 8

WASTE MANAGEMENT UNITS NOT COVERED IN SECTIONS 5 AND 6

8.1 Did this facility complete EPA's 1987 National Survey of Hazardous Waste Treatment, Storage, Disposal, and Recycling Facilities?
(Circle one number.)

01 Yes *(SKIP TO SECTION 9)*
02 No *(CONTINUE TO NEXT QUESTION)*

8.2 Does this facility have a permit or interim status under Subtitle C of RCRA to treat, store, or dispose of hazardous wastes?
(Circle one number.)

01 Yes *(SKIP TO SECTION 9)*
02 No *(CONTINUE WITH THIS SECTION OF THE QUESTIONNAIRE)*

Sections 5 and 6 of this questionnaire obtained detailed information on surface impoundments and other waste management units (excluding wastewater treatment plants) that received a special waste (or its residue) IN 1988. Section 8 asks for more general information on the facility's OTHER surface impoundments and OTHER waste management units (excluding wastewater treatment plants) that have received residuals from mining, leaching, beneficiating, processing, and/or other manufacturing/fabricating operations. These "other" waste management units may be active, inactive, or closed. The specific types of waste management units covered in this section include:

Surface impoundments (including tailings ponds and lagoons)
Waste piles
Residuals stockpiles
Landfills
Underground injection wells
Gypsum stacks
Mines, quarries, and stopes.

EPA will use the information from this section to estimate the cost of correcting potential environmental problems resulting from waste management units having no direct connection with the special wastes. Consequently, EPA needs general information on ALL onsite waste management units, including those that did not receive a special waste (or its residue) in 1988.

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Because less detailed information is needed on waste management units not receiving a special waste (or its residue) in 1988, Section 8 is organized differently from Sections 5 and 6. In the earlier sections, you completed one set of questions for each waste management unit. In Section 8, you aggregate by TYPE of waste management unit. In other words, you answer one series of questions for the TOTAL NUMBER of waste management units at the facility of a particular TYPE (such as waste piles), excluding the waste management units covered in Sections 5 and 6. Therefore, Section 8 consists of seven series of questions, one for each type of waste management unit. Each series of questions requests similar information on the number, dimensions, and content of the relevant waste management units. Rough estimates are acceptable in answering these questions. YOU DO NOT NEED TO MAKE SPECIAL MEASUREM TS TO ANSWER THE QUESTIONS IN THIS SECTION.

8.3 Are there any other active, inactive, or closed SURFACE IMPOUNDMENTS (INCLUDING TAILINGS PONDS AND LAGOONS) at this facility (excluding those covered in Section 5)?
(Circle one number.)

01 Yes ------> How many? _____
02 No *(SKIP TO QUESTION 8.11 ON PAGE 8-4)*

8.4 List these surface impoundments using the unique identifiers from the FACILITY SITE MAP prepared for Section 1.

_____ _____ _____ _____
_____ _____ _____ _____
_____ _____ _____ _____
_____ _____ _____ _____

8.5 What quantity of material (on a wet-weight basis) did these surface impoundments receive in 1988 in total?
(If none, enter "0" for the quantity. Be sure to indicate the unit of measure for this quantity of material.)

Quantity of material received: _____ _____
(unit of measure)

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8.6 **What was the COMBINED surface area of these impoundments on December 31, 1988?**

(Select one of the two specified units of measure.)

Combined surface area: _____ square feet **OR** _____ acres

8.7 **What was the AVERAGE depth of these surface impoundments on December 31, 1988?**

(Select one of the two specified units of measure.)

Average depth: _____ feet **OR** _____ yards

8.8 **What was the REMAINING useful life of these surface impoundments on December 31, 1988 in total?**

Remaining useful life: _____ years

8.9 **What was the CUMULATIVE amount of solids in these surface impoundments on December 31, 1988?**

(Report the quantity in place and be sure to indicate the unit of measure for this quantity of solids.)

Cumulative amount of solids: _____ _____ (unit of measure)

8.10 **Describe the type(s) of material and estimate the relative amount of this material (e.g., 100% wastewater sludge) in these surface impoundments on December 31, 1988.**

_____

_____

_____

_____

_____

_____

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8.11 Are there any other active, inactive, or closed WASTE PILES at this facility (excluding those covered in Section 6)?
(Circle one number.)

01 Yes -------> How many? _____

02 No *(SKIP TO QUESTION 8.18 ON PAGE 8-5)*

8.12 List these waste piles using the unique identifiers from the FACILITY SITE MAP prepared for Section 1.

_____ ___ _____ _____ _____
_____ _____ _____ _____
_____ _____ _____ _____
_____ _____ _____ _____

8.13 What quantity of material (on a wet-weight basis) did these waste piles receive in 1988 in total?
(If none, enter "0" for the quantity. Select one of the two specified units of measure.)

Quantity of material received: _____ short tons OR _____ cubic yards

8.14 What was the COMBINED surface area of the bases of these waste piles on December 31, 1988?
(Select one of the two specified units of measure.)

Combined surface area: _____ square feet OR _____ acres

8.15 What was the AVERAGE height of these waste piles on December 31, 1988?
(Select one of the two specified units of measure.)

Average height: _____ feet OR _____ yards

8.16 What was the CUMULATIVE amount of material in these waste piles on December 31, 1988?
(Report the quantity in place using one of the two specified units of measure.)

Cumulative amount of material: _____ short tons OR _____ cubic yards

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8.17 Describe the type(s) of material and estimate the relative amount of this material (e.g., 100% slag) in these waste piles on December 31, 1988.

_____

_____

_____

_____

_____

_____

8.18 Are there any active, inactive, or closed RESIDUALS STOCKPILES at this facility (excluding those covered in Section 6)?
(Circle one number.)

01 Yes ------> How many? _____

02 No *(SKIP TO QUESTION 8.25 ON NEXT PAGE)*

8.19 List these residuals stockpiles using the unique identifiers from the FACILITY SITE MAP prepared for Section 1.

_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

8.20 What quantity of material (on a wet-weight basis) did these residuals stockpiles receive in 1988 in total?
(If none, enter "0" for the quantity. Select one of the two specified units of measure.)

Quantity of material received: _____ short tons OR _____ cubic yards

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8.21 What was the COMBINED surface area of the bases of these residuals stockpiles on December 31, 1988?
(Select one of the two specified units of measure.)

Combined surface area: _____ square feet OR _____ acres

8.22 What was the AVERAGE height of these residuals stockpiles on December 31, 1988?
(Select one of the two specified units of measure.)

Average height: _____ feet OR _____ yards

8.23 What was the CUMULATIVE amount of material in these residuals stockpiles on December 31, 1988?
(Report the quantity in place using one of the two specified units of measure.)

Cumulative amount of material: _____ short tons OR _____ cubic yards

8.24 Describe the type(s) of material and estimate the relative amount of this material (e.g., 100% air pollution control dust) in these residuals stockpiles on December 31, 1988.

_____ _____
_____ _____
_____ _____
_____ _____
_____ _____
_____ _____

8.25 Are there any other active, inactive, or closed LANDFILLS at this facility (excluding those covered in Section 6)?
(Circle one number.)

01 Yes ------> How many? _____
02 No *(SKIP TO QUESTION 8.33 ON PAGE 8-8)*

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8.26 **List these landfills using the unique identifiers from the FACILITY SITE MAP prepared for Section 1.**

_____ _____ _____ _____

_____ _____ _____ _____

_____ _____ _____ _____

_____ _____ _____ _____

8.27 **What quantity of material (on a wet-weight basis) did these landfills receive in 1988 in total?**

(If no, enter "0" for the quantity. Select one of the two specified units of measure.)

Quantity of material received: _____ short tons OR _____ cubic yards

8.28 **What was the COMBINED surface area of these landfills on December 31, 1988?**

(Select one of the two specified units of measure.)

Combined surface area: _____ square feet OR _____ acres

8.29 **What was the AVERAGE depth of these landfills on December 31, 1988?**

(Select one of the two specified units of measure.)

Average depth: _____ feet OR _____ yards

8.30 **What was the REMAINING useful life of these landfills on December 31, 1988 in total?**

Remaining useful life: _____ years

8.31 **What was the CUMULATIVE amount of material in these landfills on December 31, 1988?**

(Report the quantity in place using one of the two specified units of measure.)

Cumulative amount of material: _____ short tons OR _____ cubic yards

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8.32 **Describe the type(s) of material and estimate the relative amount of this material (e.g., 10% plant trash, 10% baghouse bags, 80% wastewater treatment plant sludge) in these landfills on December 31, 1988.**

_____

_____

_____

_____

_____

_____

8.33 **Are there any other active, inactive, or closed UNDERGROUND INJECTION WELLS at this facility (excluding those covered in Section 6)?**
(Circle one number.)

01 Yes ------> How many?_____

02 No *(SKIP TO QUESTION 8.40 ON NEXT PAGE)*

8.34 **List these underground injection wells using the unique identifiers from the FACILITY SITE MAP prepared for Section 1.**

_____ _____ _____ _____

_____ _____ _____ _____

_____ _____ _____ _____

_____ _____ _____ _____

8.35 **What quantity of liquids did these underground injection wells receive in 1988 in total?**
(If none, enter "0" for the quantity.)

Quantity of liquids received: _____ gallons

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8.36 **What was the AVERAGE injection depth of these underground injection wells on December 31, 1988?**
(Select one of the two specified units of measure.)

Average injection depth: _____ feet OR _____ yards

8.37 **What was the REMAINING useful life of these underground injection wells on December 31, 1988 in total?**

Remaining useful life: _____ years

8.38 **What was the CUMULATIVE amount of liquids received by these underground injection wells as of December 31, 1988?**

Cumulative amount of liquids: _____ gallons

8.39 **Describe the type(s) of liquids and estimate the relative amount of this material (e.g., 100% contact cooling water) in these underground injection wells on December 31, 1988.**

_____

_____

_____

_____

_____

_____

8.40 **Are there any other active, inactive, or closed GYPSUM STACKS at this facility (excluding those covered in Section 6)?**
(Circle one number.)

01 Yes ------> How many? _____

02 No *(SKIP TO QUESTION 8.48 ON PAGE 8-11)*

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8.41 **List these gypsum stacks using the unique identifiers from the FACILITY SITE MAP prepared for Section 1.**

_____ _____ _____ _____

_____ _____ _____ _____

_____ _____ _____ _____

_____ _____ _____ _____

8.42 **What quantity of material (on a wet-weight basis) did these gypsum stacks receive in 1988 in to...?**

(If none, enter "0" for the quantity. Select one of the two specified units of measure.)

Quantity of material received: _____ short tons OR _____ cubic yards

8.43 **What was the COMBINED surface area of the bases of these gypsum stacks on December 31, 1988?**

(Select one of the two specified units of measure.)

Combined surface area: _____ square feet OR _____ acres

8.44 **What was the AVERAGE height of these gypsum stacks on December 31, 1988?**

(Select one of the two specified units of measure.)

Average height: _____ feet OR _____ yards

8.45 **What was the REMAINING useful life of these gypsum stacks on December 31, 1988 in total?**

Remaining useful life: _____ years

8.46 **What was the CUMULATIVE amount of solids in these gypsum stacks on December 31, 1988?**

(Report the quantity in place using one of the two specified units of measure.)

Cumulative amount of solids: _____ short tons OR _____ cubic yards

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8.47 Describe the type(s) of material and estimate the relative amount of this material (e.g., 100% phosphogypsum) in these gypsum stacks on December 31, 1988.

_____

_____

_____

_____

_____

_____

8.48 Are there any other active, inactive, or closed MINES, QUARRIES, OR STOPES at this facility that are used for waste disposal (excluding those covered in Section 6)? *(Circle one number.)*

01 Yes ------> How many? _____

02 No *(SKIP TO SECTION 9)*

8.49 List these mines, quarries, or stopes using the unique identifiers from the FACILITY SITE MAP prepared for Section 1.

_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

8.50 What quantity of waste material (on a wet-weight basis) did these mines, quarries, or stopes receive in 1988 in total?
(If none, enter "0" for the quantity. Select one of the two specified units of measure.)

Quantity of material received: _____ short tons OR _____ cubic yards

8.51 What was the REMAINING useful life of these mines, quarries, or stopes on December 31, 1988 in total?

Remaining useful life: _____ years

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SECTION 8

8.52 **What was the CUMULATIVE amount of waste material in these mines, quarries, or stopes on December 31, 1988?**

(Report the quantity in place using one of the two specified units of measure.)

Cumulative amount of material: _____ short tons OR _____ cubic yards

8.53 **Describe the type(s) of waste material and estimate the relative amount of this material (e.g., 50% mill tailings, 40% overburden, and 10% sludge) in these mines, quarries, or stopes on December 31, 1988.**

_____

_____

_____

_____

_____

_____

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SECTION 9

CONTACT FOR FOLLOW-UP INFORMATION

9.1 In case we need some follow-up information on the questionnaire responses, who should we contact?
(Provide the name, title, mailing address, and telephone number of this contact person.)

Name: Richard L. Biles Title: Environmental Manager

Comp : Aquina Chemical Inc.

Street Address: [illegible]

City: [illegible] State: [illegible] Zip: [illegible]

Telephone Number: ([illegible]) 973-4271 E328

YOU HAVE NOW COMPLETED THE QUESTIONNAIRE.
PLEASE FOLLOW THE INSTRUCTIONS BELOW FOR RETURNING IT TO EPA.

Instructions for RETURNING the Questionnaire:

a. *For your records, make a COPY of the:*
   - *Questionnaire,*
   - *Facility Site Map,*
   - *Processing/Waste Management Schematic, and*
   - *Extra Question Sets that you completed (if any).*

b. *Put the questionnaire, facility site map, processing/waste management schematic, and extra question sets that you completed (if any) in the postage-paid return envelope. If you have misplaced the return envelope, call the SURVEY HELPLINE (1-800-635-8850) for a replacement.*

c. *Tape the flap on the return envelope prior to mailing in order to prevent accidental opening (and the possible loss of parts of your response) while in the mail.*

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Facility Notes

Phosphoric Acid Plant - Phosphogypsum

2.5 & 2.12 The Phosphogypsum generated is primarily caldium sulfate from the digestion of phosphate rock, but it may also include solids generated from the cleanout of tanks and process equipment and pollution control equipment. The term Phosphogypsum is taken to include any water associated with the material: both water of hydration and any free water which remains with the phosphogypsum upon decant of slurry water. For a more complete description, please refer to Facility Notes - Phosphoric Acid Plant - Process Wastewater.

2.15 Please notice that the characterization of the special waste is continued on a second page of this section.

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Facility Notes

Phosphoric Acid Plant - Process Wastewater

2.3 The processing of phosphate rock to produce phosphate fertilizer is an extremely water intensive operation. Major uses of water in the processing of phosphate rock to produce phosphate fertilizers are gypsum transport, phosphoric acid concentration, phosphoric acid temperature control and cooling, including barometric condensers and flash coolers. Both as a matter of water conservation and to ensure compliance with effluent limitation guidelines or other applicable regulations promulgated by EPA pursuant to the Clean Water Act, water use at phosphate fertilizer facilities is carefully and elaborately controlled. Generally, across the industry, well over 90 percent of the water used is recycled. Because production and cooling are primary uses, water is generally recycled through cooling ponds. Because gypsum transport is a primary water use, the cooling ponds are generally located in the immediate vicinity of the gypsum stack. This permits gypsum transport water to drain from the gypsum stack to the cooling pond.

In addition to production and cooling and gypsum transport, water is used for a number of other purposes at facilities processing phosphate rock into phosphate fertilizer materials. Major uses of water at such facilities include the following:

Rock Grinding

Water may be used in the wet grinding of phosphate rock.

Product and Raw Material Tank Clean-out

Water may be used in the clean-out of product and raw material storage tanks, including sulfur and sulfuric acid tanks, phosphoric acid tanks, superphosphate and ammoniated phosphate storage tanks.

Process Equipment Clean-out

Water may be used in the clean-out of process equipment, including equipment used in the production of sulfuric acid, superphosphates, ammoniated phosphates, and phosphoric acid.

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including equipment used in the production of uranium and fluorosilicic products.

Pollution Control Equipment

Water may also be used in equipment, such as scrubbers, used for the control of air and water pollution.

The volume of water employed in these individual uses can vary from use-to-use and plant-to-plant. In the aggregate, however, well over 20,000,000 metric tons per year are used industry-wide for these purposes.

Because of the need for careful water management, water employed in these uses is almost always recycled. Generally, the water is recycled in the plant's overall water recycling system. Thus, water employed in these uses may be drawn from the plant's water recycling system. Alternatively, make-up water may be added to the recirculating system through one of these uses. Generally, the water used also carries solid materials for management. In most cases, these solids are co-managed with by-product phosphogypsum. In some cases, water employed in these uses, and associated solids, is recirculated separately from the gypsum handling system. Thus, for example, water used in scrubbers, storage tank and equipment clean-out in ammoniated phosphate production areas can be recirculated through a separate pond system. This allows for more complete recovery of ammoniated phosphate fertilizer materials entrained in the recirculated water.

Although the majority of solids generated in pollution control equipment and the clean-out of process equipment and storage tanks is conveyed to management areas by water, the nature of these solids may require that some clean-out be accomplished by hand. Where this is necessary, the clean-out solids are conveyed to the same management area (usually the gypsum stack) they would have reached had they been entrained in the water.

2.12 The process wastewater generated by the Phosphoric Acid Plant is composed of Cooling Pond recycle water, gypsum slurry water, and rainfall runoff water from the Inactive Gypsum Area. During 1988 these waters were commingled. (Water from the Inactive Gypsum area is returned to the Cooling Pond for reuse within the Phosphoric Acid Plant and hence have common

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characteristics. NO water from the Cooling Pond or Active Gypsum Area is sent to the Inactive Pond) The water is recycled to the Phosphoric Acid Plant.

2.26 There is some water sent to the Active Gypsum area as gypsum slurry water which stays in the gypsum stack as free water. The amount of this water varies with weather conditions, etc., and may include rainfall. For the sake of simplicity this water has not been accounted for in this questionnaire, and all water shown sent from the Phosphoric Acid Plant to the Active Gypsum Area, and from there to the Cooling Pond for Recycle is shown as being completely recycled to the Phosphoric Acid Plant. Also, please note that evaporation has not been taken into consideration for purposes of this questionnaire for the same reasons.

2.31a Process wastewater generated in the Sulfuric Acid Plant is pumped on an intermittent basis to the Phosphoric Acid Plant.

2.31b Process wastewater from 1st Stage Water Treatment - The effluent from the 1st Stage Water Treatment Plant is used as slurry water in the Wet Rock Grinding Process. This water is Phosphoric Acid Plant Cooling Pond water treated with Lime to precipitate Fluoride compounds.

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Facility Notes

Uranium Recovery Plant

2.11 Water may be used in the cleanout of product and raw material storage tanks. Water may also be used to clean out process equipment used in recovery of Uranium from phosphoric acid. Generally, the water used also carries solid materials. This stream also includes the wsh effluent and spent caustic from the crud circuits, as well as rainfall runoff within the curbed area of the plant.

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Facility Notes

Granulation Plant

2.3 The process wastewater is a weakly acidic solution of ammonium phosphate, ammonia, sulfuric acid, fluoride and silica compounds which is recycled through the recycle Pond for reuse in the Diammonium Phosphate fertilizer process. The Recycle Pond essentially provides surge capacity for the large quantities of water used in the process, which is a net consumer of water. The Recycle Pond water generated by the plant may contain cleanout water from the Phosphoric Acid Raw material tanks, plant air scrubber cleanouts, and some scale from duct and scrubber internals, as well as spilled fertilizer from the process elevators, conveyors, and processing equipment, and rainfall runoff from the Granulation Area.

2.26 The process wastewater is sent to the granulation Recycle Pond and is then recycled back to the plant. Some settling of solids may occur in the pond. From time to time chronic or catastrophic rainfall conditions may dictate that some process wastewater from this pond be sent to the Cooling Pond.

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Facility Notes

Sulfuric Acid Plant - Process Wastewater

2.5 Water may be used in the clean-out of product and raw material storage tanks, including sulfur and sulfuric acid tanks. Water may also be used to clean-out process equipment used in the production of sulfuric acid. Generally, the water used also carries solid materials. Although the majority of solids generated in the clean-out of the process equipment and storage tanks is conveyed to management areas by water, the nature of these solids may require that some clean-out be accomplished by hand. Where this is necessary, the clean-out solids are conveyed to the same management area they would have reached had they been entrained in the water.

2.6 The plant is composed of two operating units. The production is the average of both units' total production.

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Facility Notes

Phosphoric Acid Plant - Receiving a special waste - Section 3

3.12 We do not consider that there is a residue generated by the Phosphoric Acid Plant, either solid or liquid. The process wastewater described in 2.3 under Facility Notes - Phosphoric Acid Plant - Process Wastewater is a recycled process material, and the Phosphogypsum is a direct byproduct of the wet phosphoric acid process.

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Facility Notes

Cooling Pond

5.3g Gypsum Decant Water is returned from the Active Gypsum Area to the Cooling Pond. From there the water is recycled to the Phosphoric Acid Plant. There is some retention of Gypsum Decant Water by the Gypsum. This amount varies depending upon weather conditions, etc., and, since the amount is small relative to the total Decant Water recycled, in the interests of simplicity this was not included in this questionnaire. It should be noted also that evaporation losses also are not included in the water balance presented here, for the same rea...ns.

PA 047

Facility Notes

Gypsum Area

6.2 The process area diagram shows the Inactive Gypsum Area, Active Gypsum Area, and Cooling Pond to be within a larger Block labeled Gypsum Area. The following explanation should serve to clarify the process description:

At the start of 1988 there was only one Gypsum Stack which had been accumulating by-product Gypsum since the 1974 startup of the Phosphoric Acid Plant. The Cooling Pond was essentially a separate entity at that time. All available land had been used for Gypsum management. Gypsum slurry decant water was commingled with the Cooling Pond water for reuse within the Phosphoric Acid Plant.

New acreage was purchased and a new Gypsum management area constructed and placed into service during September, 1988, which is now called the Active Gypsum Area. The north Gypsum stack was declared "inactive". The Inactive Gypsum Area is managed for rainfall runoff and groundwater quality, and could conceivably be used in the future for Gypsum Stacking should the need arise. Waters from the three areas are still commingled and returned to the Phosphoric Acid Plant for reuse.

It should be noted that NO wastewater from the Cooling Pond or the Active Gypsum Area is ever routed to the Inactive Gypsum Area. Waters from the Inactive Gypsum Area are periodically sent to the Cooling Pond for process make-up, or sent to NPDES stream in case of emergency rainfall event. (See Note on Facility Note for Phosphoric Acid Plant - Wastewater, Q-2.26)

6.4a Phosphogypsum includes associated solids and water resulting from the processing of Phosphate Rock.

6.4b *Process wastewater used to transport gypsum* to the waste management unit. (See Note 2.26 under Phosphoric Acid Plant - Process Wastewater).

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Facility Notes

Section 7

7.1 & 7.2 Due to its close proximity to the Mississippi River, the facility experiences fluctuations in the depth of the Grammercy Aquifer proportional to River level changes. The highest level would be in the Spring, the lowest in Fall.

7.18 The plant monitors ground water quality in 31 monitor wells of average depth from 35-50 feet below mean sea level. The following parameters are monitored in these wells:

pH	Specific Conductance
Alkalinity	Ammonia
Chemical Oxygen Demand	Chloride
Fluoride	Hardness
Nitrate	Sulfate
Total Dissolved Solids	Total Organic Carbon
Total Phosphates	Arsenic
Cadmium	Chromium
Zinc	Calcium
Magnesium	Potassium
Sodium	Turbidity

These well depths are such that monitoring is of a discontinuous silt/sand unit stratum which is fresh to slightly brackish in character. The shallow aquifers listed in the answer to question 7.7 have no known uses due to the poor quality of the water: salinity and hardness. These units are considered the uppermost shallow water-bearing units at the site. The information was obtained from literature published by USGS entitled "Ground Water Resources of the Grammercy Area in Louisiana. Technical Report # 24." Also, please see question 7.7 for a description of the strata underlying the plant as reported by our Hydrogeologic Consultant.

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Section 7

7.1 The plant monitors ground water quality in monitor wells of average depth from 35-50 feet below mean sea level. these well depths are such that monitoring is of a discontinuous silt/sand unit stratum which is fresh to slightly brackish in character. The shallow aquifers listed in the answer to question 7.7 have no known uses due to the poor quality of the water; salinity, and hardness. These units are considered the uppermost shallow water-bearing units at the site. The information was obtained from literature published by USGS entitled "Ground Water Resources of the Gremme. Area in Louisiana. Technical Report # 24."

Due to its close proximity to the Mississippi River, the facility experiences fluctuations in the depth of the Grammercy Aquifer proportional to River level changes. the highest level would be in the spring; the lowest in Fall.

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FACILITY NOTES

Question Number(s)	Notes, comments, etc.

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Question Number(s)	Notes, comments, etc.

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4/10/89

Mr. Robert W. Hall
Office of Solid Waste (MD OS-323)
U. S. Environmental Protection Agency
401 M Street S. W.
Washington DC 20460

Re: National Survey of Solid Wastes from Mineral Processing Facilities

Dear Mr. Hall

Enclosed please find a completed questionnaire for the National Survey of Solid Wastes from Mineral facilities for the Agrico Chemical Company Faustina Plant.

We apologize for the pencil written copy, but due to the severe time constraints it was decided that timeliness was paramount. It is hoped that the enclosed questionnaire is legible. If you have any questions, or require any further information, please call on us.

Sincerely,

R. L. Biles

R. L. Biles
Environmental Control Supervisor
Agrico Chemical Co. - Faustina Plant
P. O. Box 71
Donaldsonville, LA 70346

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National Survey of Solid Wastes from Mineral Processing Facilities

ANSWERS CONTAINING CONFIDENTIAL BUSINESS INFORMATION

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1.1	☐	2.1	☐			3.1	☐		
1.2	☐	2.2	☐	2.28	☐	3.2	☐	3.28	☐
1.3	☐	2.3	☐	2.29	☐	3.3	☐	3.29	☐
1.4	☐	4	☐	2.30	☐	3.4	☐	3.30	☐
1.5	☐	2.5	☐	2.31	☐	3.5	☐	3.31	☐
1.6	☐	2.6	☐	2.32	☐	3.6	☐	3.32	☐
1.7	☐	2.7	☐	2.33	☐	3.7	☐	3.33	☐
1.8	☐	2.8	☐	2.34	☐	3.8	☐	3.34	☐
1.9	☐	2.9	☐	2.35	☐	3.9	☐	3.35	☐
1.10	☐	2.10	☐	2.36	☐	3.10	☐	3.36	☐
1.11	☐	2.11	☐			3.11	☐	3.37	☐
1.12	☐	2.12	☐			3.12	☐	3.38	☐
1.13	☐	2.13	☐			3.13	☐	3.39	☐
1.14	☐	2.14	☐			3.14	☐	3.40	☐
1.15	☐	2.15	☐			3.15	☐	3.41	☐
1.16	☐	2.16	☐			3.16	☐	3.42	☐
1.17	☐	2.17	☐			3.17	☐		
1.18	☐	2.18	☐			3.18	☐		
1.19	☐	2.19	☐			3.19	☐		
1.20	☐	2.20	☐			3.20	☐		
1.21	☐	2.21	☐			3.21	☐		
1.22	☐	2.22	☐			3.22	☐		
1.23	☐	2.23	☐			3.23	☐		
1.24	☐	2.24	☐			3.24	☐		
1.25	☐	2.25	☐			3.25	☐		
1.26	☐	2.26	☐			3.26	☐		
		2.27	☐			3.27	☐		

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2.12 **Was this special waste a solid as it came out of the processing unit?**
(Circle one number.)

01 Yes *(CONTINUE TO NEXT QUESTION)* See Facility Notes
02 No *(SKIP TO QUESTION 2.14)*

2.13 **Which of the following categories best describes the typical size of the special waste at the point of generation?**
(Circle one number.)

01 Smaller than sand (less than .02 mm in diameter)

02 Sand (between .02mm and 2 mm in diameter)

03 Gravel (between 2 mm and 3" in diameter)

04 Cobble (between 3" and 12" in diameter)

05 Boulder (greater than 12" in diameter)

SKIP TO QUESTION 2.15 ON NEXT PAGE

2.14 **What were the pH and total solids content of this special waste in 1988?**
(Select one of the two specified units of measure for total solids content.)

a. pH: _____ S.U.

b. Total solids content: _____ % OR _____ ppm

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2.15 What were the other characteristics of this special waste in 1988?
(Provide a composition code from Appendix A in the Instructions and Definitions booklet and an average concentration for the parameters and/or constituents that characterize this special waste. Be sure to indicate the unit of measure applying to the average concentration. The basis for your answer to this question may be either test results or general knowledge of the special waste. YOU DO NOT HAVE TO CONDUCT ADDITIONAL TESTING TO RESPOND TO THIS QUESTION.)

	Waste Composition Code	Average Concentration	Unit of Measure for Average Concentration
a.	[illegible]	<5	ppm
b.	[illegible]	<5	ppm
c.	[illegible]	1.7	ppm
d.	[illegible]	<20	ppm
e.	48	2	ppm
f.	49	[illegible]	ppm
g.	13	<1	ppm
h.	13	21.2	%
i.	15	245	ppm
j.	16	0.12	%
k.	68	0.16	%
l.	70	<0.05	%
m.	02	0.05	%
n.	[illegible]	1.36	%
o.	[illegible]	99.1	%

NOTE: If the film image is clearer than this, it is due to the quality of the document filmed

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