Commonwealth Edison Company
Quad Cities Generating Station
22710 206th Avenue North
Cordova, IL 61242-9740
Tel 309-654-2241

ComEd

January 19, 2000

SVP-00-019

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D C 20555

Quad Cities Nuclear Power Station, Units 1 and 2
Facility Operating License Nos. DPR-29 and DPR-30
NRC Docket Nos. 50-254 and 50-265

Subject: Renewal of National Pollutant Discharge Elimination System (NPDES) Permit No. IL 000005037

In accordance with Technical Specification, Appendix B, Section 2.2, "Reporting Related to the NPDES Permits and State Certification," our renewal to the Quad Cities Nuclear Power Station permit is enclosed in the attachment.

Should you have any questions concerning this letter, please contact Mr. C.C. Peterson at (309) 654-2241, extension 3609.

Respectfully,

Joel P. Dimmette, Jr.
Site Vice President
Quad Cities Nuclear Power Station

Attachment: Renewal of NPDES Permit No. IL 0000005037

cc: Regional Administrator – NRC Region III
NRC Senior Resident Inspector – Quad Cities Nuclear Power Station

C001

JAN 28 2000

Attachment A

Renewal of NPDES Permit No. IL 0000005037

November 8, 1999

VIA AIRBORNE EXPRESS

ComEd

Mr. Thomas G. McSwiggin, P. E.
Manager, Permit Section
Bureau of Water, Permit Section #15
Illinois Environmental Protection Agency
1021 North Grand Avenue East
P. O. Box 19276
Springfield, Illinois 62794-9276

Subject: Renewal of NPDES Permit No. IL 000005037
Quad Cities Generating Station

Dear Mr. McSwiggin:

Commonwealth Edison Company (ComEd) hereby submits two copies of Consolidated Permit Application Forms 1 and 2C for the renewal of the subject permit. As confirmed by your letter dated July 24, 1997, the only Form 2C, Part V-A pollutants reported are those required by the station's existing NPDES permit. Additionally, pollutants categorized as GC/MS Fraction Compounds in Part V-C are not reported for any outfalls, as per the Agency's letter which was received by ComEd on February 4, 1998.

Pollutant levels for all permit-required parameters were derived from station data reported from January 1998 through December 1998. In most cases, only one analysis was conducted for all other pollutant parameters. All color analyses were performed as "true" (i.e. the samples were centrifuged prior to analysis). Mass load values were calculated using long term average flows.

Form 2C, Part IIB requires descriptions of wastewater treatment processes. In addition to this requirement, we are listing the water treatment additives that have the potential of being discharged by way of various outfalls. Material Safety Data Sheets (MSDSs) have been enclosed where available:

Outfalls 001/002—Open Cycle Diffusers

No treatment applied to this discharge as wastewater. The station's circulating water is treated with **sodium hypochlorite** and **sodium bromide** for biofouling control. In addition, the station had relied upon the addition of a **polyacrylic acid (PAA) solution (NALCO 9350**—formerly called NALCO 9248) for silt dispersal and scale inhibition, prior to entry into the station's main condensers.

Quad Cities Station had requested approval for the use of two **phosphonate scale inhibitors, HEDP** and **ATMP,** for use in the main condensers and service water heat exchangers. (Please refer to correspondence to Agency dated June 16, 1999 for further details). IEPA's response on the June 16, 1999 request is still pending. However, since that submittal was made, there have been additional changes proposed for Quad Cities raw water treatment program, in order to make it more consistent with ComEd's other nuclear sites. Please refer the ComEd correspondence dated November 2, 1999 for details concerning the proposed new and/or substituted products, which will begin to be used at the station once IEPA approval is obtained. (These products include: **Depositrol PY 5203**--a like for like substitution for NALCO 9350 (PAA), **Depositrol BL5400**--a 60 % HEDP liquid scale inhibitor, **BL 5323**--a blended scale inhibitor and polymer, **Dianodic DN2300**--a co-polymer and **FloGard POT 6102** or **commodity equivalent**—a polyphosphonate corrosion inhibitor containing 35% sodium hemametaphosphate).

Outfalls 001/002—Open Cycle Diffusers (Continued):

The station performs sequential chlorination only, in accordance with permit Special Condition No. 4. Quad Cities continues to utilize a dechlorination system which relies upon the addition of **sodium bisulfite** (NALCO 1316 or commodity equivalent) to the condenser cooling water outlet. Dechlorination is necessary in order to consistently meet the 0.05 mg/L Total Residual Oxidant (TRO) limitation, which applies whenever bromine-based biocides are used.

Quad Cities also has obtained prior Agency approval to use the following products for water treatment and/or biofouling control within the station's safety and non-safety-related service water systems: **NALCO STABREX ST70** (biocide for safety related system)—no longer used, **Nalclean 2568** (special use scale remover for non-safety-related system), **Devoe Bar-Rust 235** and **Devoe ABC #3** (anti-fouling coatings for safety-related system). Please refer to Agency correspondence dated February 2, 1998 and March 8, 1999 (respectively) for further information regarding the use of these products.

Outfall 001(b)—Wastewater Treatment System

Aluminum sulfate is used in the station's wastewater treatment system to assist in the settling of solids.

Outfall 001(c)—Sanitary Waste Treatment System

Calcium hypochlorite (Sanuril 115) tablets are used for disinfection purposes in the sewage treatment system. **Sodium Bicarbonate** is added to various stages of treatment, as needed, to control effluent pH.

Outfall 002(a)—Radwaste Treatment System Blowdown

No chemical additives are routinely used in this system.

Requested Modifications/Corrections:

In addition to the preceding information required for renewal, ComEd wishes to provide the following comments relative to proposed modifications to the existing permit. Please include these requests in your deliberations regarding Quad Cities' NPDES permit renewal.

(1) **We request that the new permit reflect an alternate routing for the Crib House Floor Drain Sump** . This sump discharge is currently a sub-wastestream routed to the Wastewater Treatment System—Outfall 001(b). Alternate routing would be directly to Outfalls 001/002--Open Cycle diffusers. The water contained in this sump is composed of primarily circulating pump seal cooling water (well water) with some river water, as the result of intermittent leaks that occur in the pump housings. When the leaks are substantial, there is the possibility that the wastewater plant could become overloaded by the excess flow. The quality of the water from the circulating pump seal cooling water/ seal inleakage is the same or better than that in the Mississippi River, and therefore, should not require any treatment prior to discharge. During periods when the station is experiencing high pump seal leakage or during periods when the Mississippi River is high (which results in high in-leakage), the station wishes to be able to use this alternate routing to protect the integrity of their wastewater treatment plant operations.

(2) **We request that pH be eliminated as a parameter for Outfalls 001/002**. Based on the historical information that Quad Cities Station has collected over the years, pH has always been within the 6 to 9 range, with the only exception being certain instances when algal activity in the Mississippi River causes the influent pH to be above 9. As indicated in the above section, Quad Cities Station does not add any wastewater additives to the subwastestreams associated with Outfalls 001/002 that would affect pH levels, and therefore we believe that there is no significant justification for continuing pH monitoring of this outfall.

(3) Based on the excellent compliance record for the station's Wastewater Treatment System, **we request to have the monitoring frequency for Total Suspended Solids (TSS) and Flow reduced to 2x/month (from the current 1x/week)**. This change would be consistent with the current sampling frequency on the station's Sewage Treatment System.

(4) **We request that Oil and Grease be eliminated from the monitoring requirements for Outfall 002(a)—Radwaste Treatment System Blowdown**. The majority of the water discharged (approximately 95%) is processed floor drain water that has been filtered to remove solids, then sent through resin to remove most of the radioactivity (conductivity <1 umho/cm). The remainder of the water is from the laundry sample tank that consists primarily of water from washing masks and personal clothing that has become radioactively contaminated which has been filtered to remove solids. Equipment drain water is not routinely discharged. Equipment drain water that is discharged is water that has been treated the same as floor drain mentioned above, but has failed limits for storage (ie.. Total Organic Carbon > 200 ppb, Silica > 50 ppb). Additionally, Quad Cities did not purchase the equipment ($35,000) to perform in-house oil & grease analysis. The station will be sending their waste water treatment (non-radioactive) monthly Oil&Grease sample to a local contract laboratory (Test America) for analysis. The radwaste blowdown (radioactive) sample would need to be sent to Quanterra (in St Louis) for analysis, due to the local lab's inability to accept radioactively-contaminated samples. There are no other alternate means of having the analysis performed and, based on the information provided above, as well as Quad Cities' history of compliance with this parameter, we believe there is sufficient justification for this request.

(5) **Typographical Correction**: On Page 6 of the current permit, the two footnotes are dividing the remainder of the preceeding paragraph. It should read: "In the event that the compliance monitoring shows that the permittee .....".

(6) We request that the Agency review Quad Cities excellent compliance record and follow through with any other appropriate monitoring parameter and/or frequency reductions as deemed appropriate.

If you should have any questions regarding this application, or require any additional information, please contact me at (630) 663-5409.

Sincerely,

Julia P. Wozniak
Senior Biologist

Attachments (2 copies)
Cc: B. A. Kinsely, IEPA Permit Section

Bcc: G. Barnes w/o att.
P. A. Behrens w/ att.
M. E. Stuhlman w/att.
M. E. Burgess/J. R. Petro w/att.
K. K. Hersey w/att.
J. P. Wozniak w/att. (2 copies)
Director of Nuclear Licensing w/att.

Note: NPDES permit applications may require NRC notification pursuant to the station's EnvironmentalProtection Plan

quadletter.doc—FINAL (11/8/1999)

(Fill—in areas are spaced for elite type, i.e., 12 characters/inch).

FORM 1 GENERAL

EPA

U.S. ENVIRONMENTAL PROTECTION AGENCY

GENERAL INFORMATION

Consolidated Permits Program

(Read the "General Instructions" before starting.)

I. EPA I.D. NUMBER

F I L D 0 6 0 8 6 2 8 1 0

LABEL ITEMS

I. EPA I.D. NUMBER

III. FACILITY NAME

V. FACILITY MAILING ADDRESS

VI. FACILITY LOCATION

PLEASE PLACE LABEL IN THIS SPACE

GENERAL INSTRUCTIONS

If a preprinted label has been provided, affix it in the designated space. Review the information carefully; if any of it is incorrect, cross through it and enter the correct data in the appropriate fill—in area below. Also, if any of the preprinted data is absent *(the area to the left of the label space lists the information that should appear)*, please provide it in the proper fill—in area(s) below. If the label is complete and correct, you need not complete Items I, III, V, and VI *(except VI-B which must be completed regardless)*. Complete all items if no label has been provided. Refer to the instructions for detailed item descriptions and for the legal authorizations under which this data is collected.

II. POLLUTANT CHARACTERISTICS

INSTRUCTIONS: Complete A through J to determine whether you need to submit any permit application forms to the EPA. If you answer "yes" to any questions, you must submit this form and the supplemental form listed in the parenthesis following the question. Mark "X" in the box in the third column if the supplemental form is attached. If you answer "no" to each question, you need not submit any of these forms. You may answer "no" if your activity is excluded from permit requirements; see Section C of the instructions. See also, Section D of the instructions for definitions of bold—faced terms.

SPECIFIC QUESTIONS	MARK 'X' YES	NO	FORM ATTACHED	SPECIFIC QUESTIONS	MARK 'X' YES	NO	FORM ATTACHED
A. Is this facility a **publicly owned treatment works** which results in a **discharge** to **waters of the U.S.**? (FORM 2A)		X		B. Does or will this facility *(either existing or proposed)* include a **concentrated animal feeding operation** or **aquatic animal production facility** which results in a **discharge** to **waters of the U.S.**? (FORM 2B)		X	
C. Is this a facility which currently results in **discharges** to **waters of the U.S.** other than those described in A or B above? (FORM 2C)	X		X	D. Is this a proposed facility *(other than those described in A or B above)* which will result in a **discharge** to **waters of the U.S.**? (FORM 2D)		X	
E. Does or will this facility treat, store, or dispose of **hazardous wastes**? (FORM 3)		X		F. Do you or will you inject at this facility industrial or municipal effluent below the lowermost stratum containing, within one quarter mile of the well bore, underground sources of drinking water? (FORM 4)		X	
G. Do you or will you inject at this facility any produced water or other fluids which are brought to the surface in connection with conventional oil or natural gas production, inject fluids used for enhanced recovery of oil or natural gas, or inject fluids for storage of liquid hydrocarbons? (FORM 4)		X		H. Do you or will you inject at this facility fluids for special processes such as mining of sulfur by the Frasch process, solution mining of minerals, in situ combustion of fossil fuel, or recovery of geothermal energy? (FORM 4)		X	
I. Is this facility a proposed **stationary source** which is one of the 28 industrial categories listed in the instructions and which will potentially emit 100 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)		X		J. Is this facility a proposed **stationary source** which is NOT one of the 28 industrial categories listed in the instructions and which will potentially emit 250 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)		X	

III. NAME OF FACILITY

1 SKIP Q U A D C I T I E S G E N E R A T I N G S T A T I O N

IV. FACILITY CONTACT

A. NAME & TITLE *(last, first, & title)*	B. PHONE *(area code & no.)*		
2 L A M B , L O R I N D A C O M P L I A N C E D I R .	3 1 2	3 9 4	3 4 2 1

V. FACILITY MAILING ADDRESS

A. STREET OR P.O. BOX

3 P O B O X 7 6 7 E N V I R O N M E N T A L S V C S .

B. CITY OR TOWN	C. STATE	D. ZIP CODE
4 C H I C A G O	I L	6 0 6 9 0

VI. FACILITY LOCATION

A. STREET, ROUTE NO. OR OTHER SPECIFIC IDENTIFIER

5 2 2 7 1 0 2 0 6 t h A V E N U E N O R T H

B. COUNTY NAME

R O C K I S L A N D

C. CITY OR TOWN	D. STATE	E. ZIP CODE	F. COUNTY CODE *(if known)*
6 C O R D O V A	I L	6 1 2 4 2	

CONTINUE ON REVER

VII. SIC CODES (4-digit, in order of priority)

A. FIRST	B. SECOND
4911 (specify) ELECTRICAL GENERATION & DISTRIBUTION	(specify)
C. THIRD	**D. FOURTH**
(specify)	(specify)

VIII. OPERATOR INFORMATION

A. NAME

COMMONWEALTH EDISON COMPANY (COMED)

B. Is the name listed in Item VIII-A also the owner? [X] YES [ ] NO

C. STATUS OF OPERATOR (Enter the appropriate letter into the answer box; if "Other", specify.)

F = FEDERAL
S = STATE
P = PRIVATE
M = PUBLIC (other than federal or state)
O = OTHER (specify)

P (specify)

D. PHONE (area code & no.) A 312 394 3421

E. STREET OR P.O. BOX

P O BOX 767 ENVIRONMENTAL SVCS.

F. CITY OR TOWN CHICAGO

G. STATE IL

H. ZIP CODE 60690

IX. INDIAN LAND

Is the facility located on Indian lands? [ ] YES [X] NO

X. EXISTING ENVIRONMENTAL PERMITS

A. NPDES (Discharges to Surface Water) 9 N IL0005037	**D. PSD** (Air Emissions from Proposed Sources) 9 P
B. UIC (Underground Injection of Fluids) 9 U	**E. OTHER** (specify) 9 7302078 3 (specify) GENERATING AIR OPERATING PERMI
C. RCRA (Hazardous Wastes) 9 R LOG#A-499	**E. OTHER** (specify) 9 1999-SC-3002 (specify) LAND APPLICATION PERMIT (STP SLI

XI. MAP

Attach to this application a topographic map of the area extending to at least one mile beyond property bounderies. The map must show the outline of the facility, the location of each of its existing and proposed intake and discharge structures, each of its hazardous waste treatment, storage, or disposal facilities, and each well where it injects fluids underground. Include all springs, rivers and other surface water bodies in the map area. See instructions for precise requirements.

XII. NATURE OF BUSINESS (provide a brief description)

GENERATION AND DISTRIBUTION OF ELECTRIC POWER

XIII. CERTIFICATION (see instructions)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that, based on my inquiry of those persons immediately responsible for obtaining the information contained in the application, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. NAME & OFFICIAL TITLE (type or print)	B. SIGNATURE	C. DATE SIGNED
[illegible]	[signature]	[illegible]

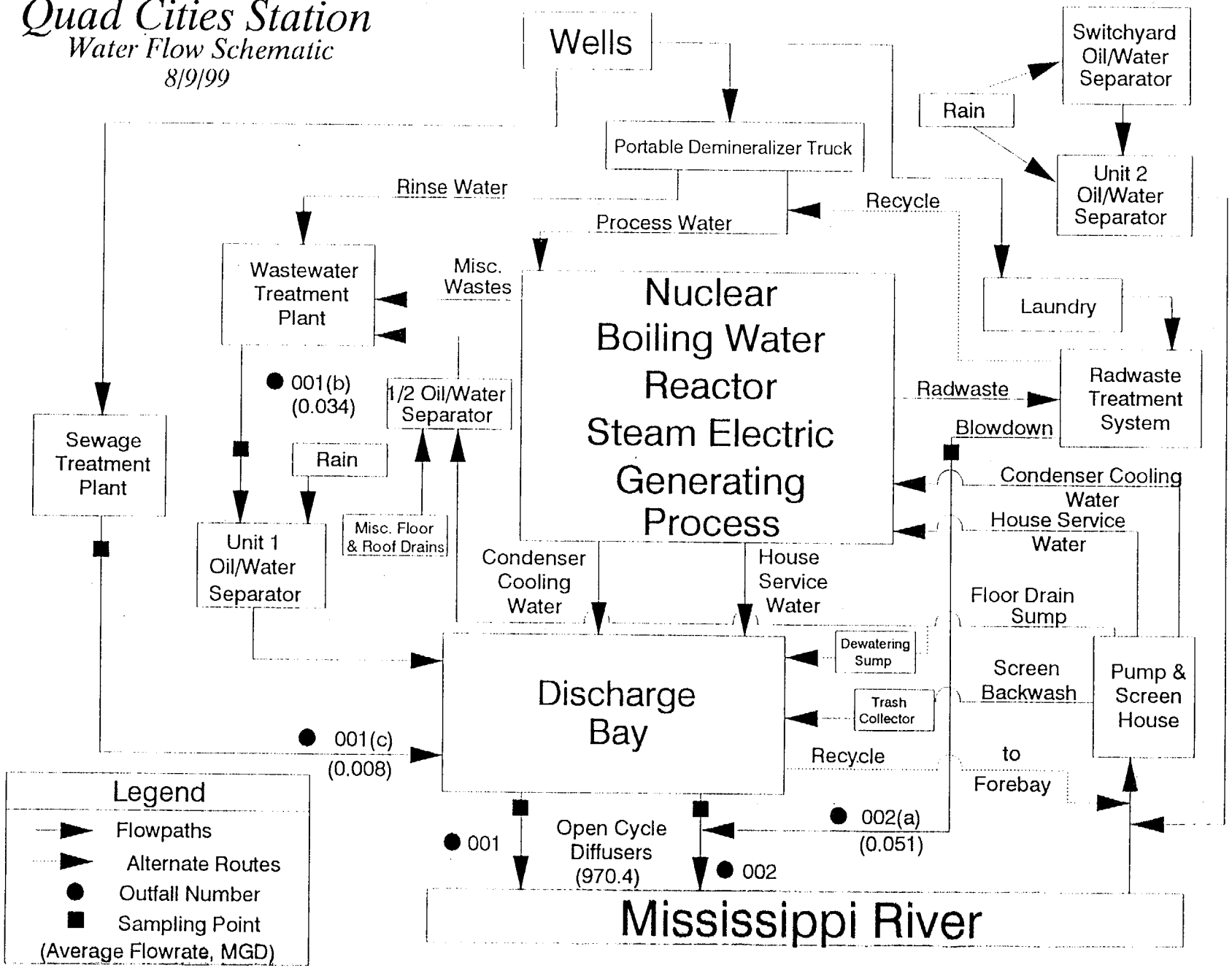
COMMENTS FOR OFFICIAL USE ONLY

Commonwealth Edison Company

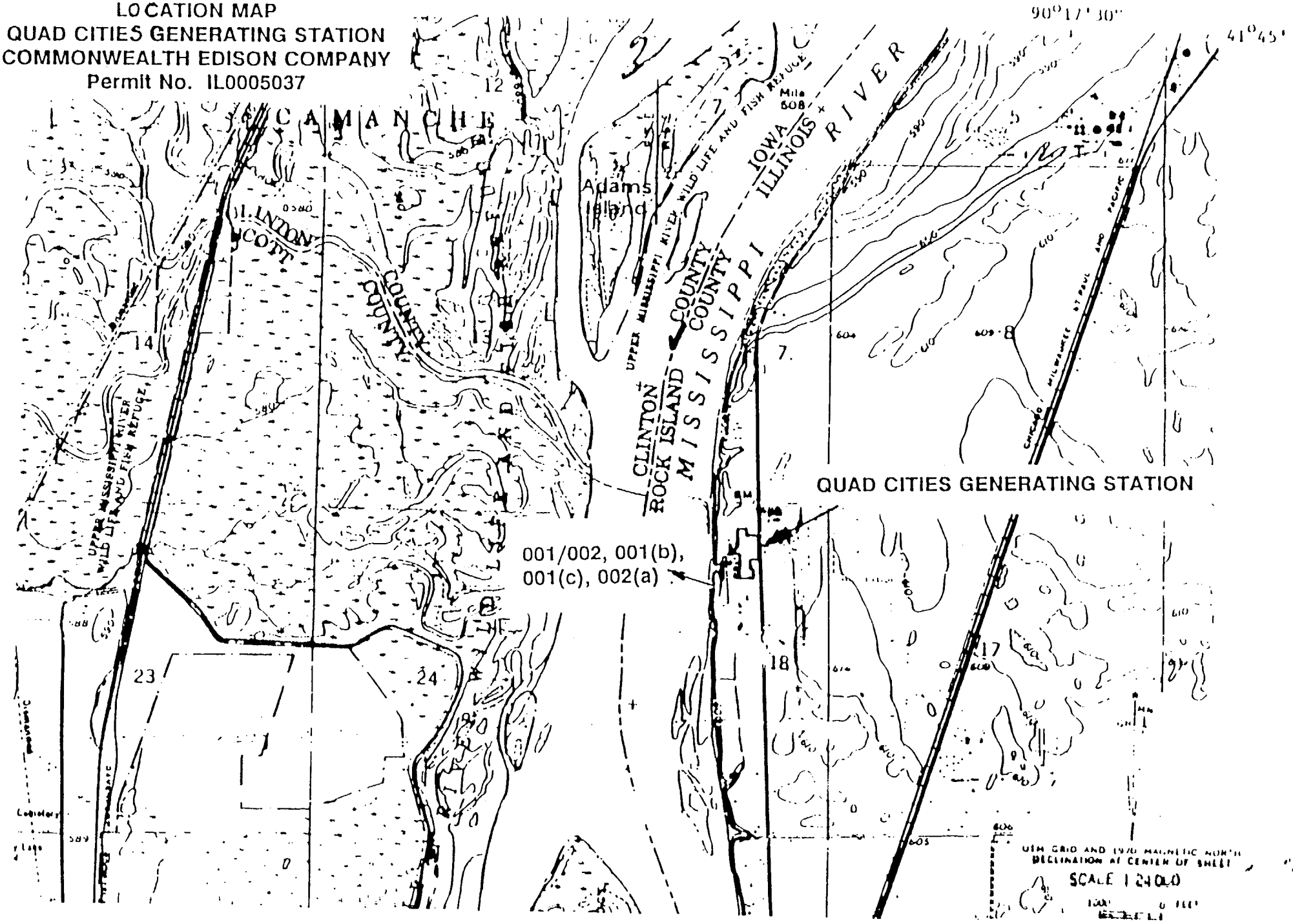
Quad Cities Station

Water Flow Schematic

8/9/99



LOCATION MAP
QUAD CITIES GENERATING STATION
COMMONWEALTH EDISON COMPANY
Permit No. IL0005037



USGS Map--Cordova, Illinois-Iowa

Please print or type in the unshaded areas only.

EPA I.D. NUMBER *(copy from Item 1 of form 1)*
ILD060862810

Form Approved.
OMB No. 2000-0059 Approval expires 12-31-85

FORM 2C
NPDES

EPA

U.S. ENVIRONMENTAL PROTECTION AGENCY
APPLICATION FOR PERMIT TO DISCHARGE WASTEWATER
EXISTING MANUFACTURING, COMMERCIAL, MINING AND SILVICULTURAL OPERATIONS
Consolidated Permits Program

I. OUTFALL LOCATION

For each outfall, list the latitude and longitude to the nearest 15 seconds and the name of the receiving water.

A. OUTFALL NUMBER *(list)*	B. LATITUDE			C. LONGITUDE			D. RECEIVING WATER *(name)*
	1. DEG.	2. MIN.	3. SEC.	1. DEG	2. MIN.	3. SEC.	
001/002	41	43	30	90	18	40	Mississippi River
001(b)	41	43	30	90	18	40	Mississippi River
001(c)	41	43	30	90	18	40	Mississippi River
002(a)	41	43	30	90	18	40	Mississippi River

II. FLOWS, SOURCES OF POLLUTION, AND TREATMENT TECHNOLOGIES

A. Attach a line drawing showing the water flow through the facility. Indicate sources of intake water, operations contributing wastewater to the effluent, and treatment units labeled to correspond to the more detailed descriptions in Item B. Construct a water balance on the line drawing by showing average flows between intakes, operations, treatment units, and outfalls. If a water balance cannot be determined *(e.g. for certain mining activities)*, provide a pictorial description of the nature and amount of any source of water and any collection or treatment measures

B. For each outfall, provide a description of: (1) All operations contributing wastewater to the effluent, including process wastewater, sanitary wastewater, cooling water, and storm water runoff; (2) The average flow contributed by each operation; and (3) The treatment received by the wastewater. Continue on additional sheets if necessary.

1. OUTFALL NO *(list)*	2. OPERATION(S) CONTRIBUTING FLOW		3. TREATMENT		
	a. OPERATION *(list)*	b. AVERAGE FLOW *(include units)*	a. DESCRIPTION	b. LIST CODES FROM TABLE 2C-1	
001/002	Open Cycle Diffusers (Radwaste Treatment	970.4 MGD	Discharge to Surface Water	4-A	
	System Blowdown, Wastewater Treatment				
	Plant, Units 1 and 2 Oil/Water Separators,				
	Intake Screen Backwash, House Service				
	Water Strainer Backwash				
001(b)	Wastewater Treatment Plant (Aux. Boiler	0.034 MGD	Oil/Water Separation,	X-X	X-X
	Blowdown, Switchyard Oil Separator,		Equalization, Oil/Water	X-X	2-D
	Crib House Floor Drain Sump, Roof and		Separation, Coagulation,	1-G	1-Q
	Floor Drains, Portable Demineralizer		Flocculation, Multi-Media	5-H	
	Rinse Water		Filtration, Crying Beds		
001(c)	Sewage Treatment Plant	0.008 MGD	Grinding, Equalization,	1-L	X-X
			Sedimentation, Trickling Filter or	1-U	3-H
			Rotating Biological Contactor,	X-X	
			Sedimentation, Disinfection,	1-U	2-F
			Drying Beds, Land Application	5-H	
			of Digested Sludge		

OFFICIAL USE ONLY *(effluent guidelines sub-categories)*

CONTINUED FROM THE FRONT

C. except for storm runoff, leaks, or spills, are any of the discharges described in Items II-A or B intermittent or seasonal?

[X] YES *(complete the following table)* [ ] NO *(go to Section III)*

1. OUTFALL NUMBER *(list)*	2. OPERATION(s) CONTRIBUTING FLOW *(list)*	3. FREQUENCY a. DAYS PER WEEK *(specify average)*	3. FREQUENCY b. MONTHS PER YEAR *(specify average)*	4. FLOW a. FLOW RATE *(in mgd)* 1. LONG TERM AVERAGE	4. FLOW a. FLOW RATE *(in mgd)* 2. MAXIMUM DAILY	4. FLOW b. TOTAL VOLUME *(specify with units)* 1. LONG TERM AVERAGE	4. FLOW b. TOTAL VOLUME *(specify with units)* 2. MAXIMUM DAILY	4. FLOW c. DURATION *(in days)*
002(a)	Radwaste Treatment System	1	12	0.051	0.06	51,000 gal.	60,000 gal.	1

III. PRODUCTION

A. Does an effluent guideline limitation promulgated by EPA under Section 304 of the Clean Water Act apply to your facility?

[X] YES *(complete Item III-B)* [ ] NO *(go to Section IV)*

B. Are limitations in the applicable effluent guideline expressed in terms of production *(or other measure of operation)*?

[ ] YES *(complete Item III-C)* [X] NO *(go to Section IV)*

C. If you answered "yes" to Item III-B, list the quantity which represents an actual measurement of your level of production, expressed in terms and units used in the applicable effluent guideline, and indicate the affected outfalls.

1. AVERAGE DAILY PRODUCTION a. QUANTITY PER DAY	b. UNITS OF MEASURE	c. OPERATION, PRODUCT, MATERIAL, ETC. *(specify)*	2. AFFECTED OUTFALLS *(list outfall numbers*
N/A	N/A	N/A	N/A

IV. IMPROVEMENTS

A. Are you now required by any Federal, State or Local authority to meet any implementation schedule for the construction, upgrading or operation of wastewater treatment equipment or practices or any other environmental programs which may affect the discharges described in this application? This includes, but is not limited to, permit conditions, administrative or enforcement orders, enforcement compliance schedule letters, stipulations, court orders, and grant or loan conditions.

[ ] YES *(complete the following table)* [X] NO *(go to Item IV-B)*

1. IDENTIFICATION OF CONDITION, AGREEMENT, ETC.	2. AFFECTED OUTFALLS a. NO.	2. AFFECTED OUTFALLS b. SOURCE OF DISCHARGE	3. BRIEF DESCRIPTION OF PROJECT	4. FINAL COMPLIANCE DATE a. REQUIRED	4. FINAL COMPLIANCE DATE b. PROJECTED
N/A	N/A	N/A	N/A	N/A	

B. OPTIONAL: You may wish to attach additional sheets describing any additional water pollution control programs *(or other environmental projects which may affect your discharges)* you now have underway or which you plan. Indicate whether each program is now underway or planned, and indicate your actual or planned schedules for construction.

[ ] MARK "X" IF DESCRIPTION OF ADDITIONAL CONTROL PROGRAMS IS ATTACHED.

V. INTAKE AND EFFLUENT CHARACTERISTICS

A, B,& C: See instructions before proceeding - Complete one set of tables for each outfall - Annotate the outfall number in the space provided. NOTE: Tables V-A, V-B, and V-C are included on separate sheets numbered V-1 through V-9.

D. Use the space below to list any of the pollutants listed in Table 2c-3 of the instructions, which you know or have reason to believe is discharged or may be discharged from any outfall. For every pollutant you list, briefly describe the reasons you believe it to be present and report any analytical data in your possession

1. POLLUTANT	2. SOURCE	1. POLLUTANT	2. SOURCE
N/A	N/A	N/A	N/A

VI. POTENTIAL DISCHARGES NOT COVERED BY ANALYSIS

Is any pollutant listed in Item V-C a substance or a component of a substance which you currently use or manufacture as an intermediate or final product or byproduct?

[ ] YES *(list all such pollutants below)* [X] NO *(go to Item VI-B)*

N/A

CONTINUED FROM THE FRONT

VII. BIOLOGICAL TOXICITY TESTING DATA

Do you have knowledge or reason to believe that any biological test for acute or chronic toxicity has been made on any of you discharges or on a receiving water in relation to your discharge within the last 3 years?

[ ] YES *(identify the test(s) and describe their purposes below)* [X] NO *(go to Section VIII)*

N/A

VIII. CONTRACT ANALYSIS INFORMATION

Were any of the analyses reported in Item V performed by a contract laboratory or consulting firm?

[X] YES *(list the name, address, and telephone number of, and pollutants analyzed by, each such laboratory or firm below)* [ ] NO *(go to Section IX)*

A. NAME	B. ADDRESS	C. TELEPHONE *(area code & no.)*	D. POLLUTANTS ANALYZED *(list)*
Quanterra Environmental Services	13715 Rider Trail North, Earth City, Missouri 63045	(800) 333-3305	All outfalls: Radioactivity Outfall 002(a): All Analyses
TestAmerica (formerly NET, Inc.)	850 W. Bartlett Road Bartlett, Illinois 60103	(630) 289-3100	All Analyses

IX. CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

A. NAME & OFFICIAL TITLE *(type or print)*	B. PHONE NO. *(area code & no.)*
Frank M. Clark; Sr. V.P.	312/344-7184
C. SIGNATURE	**D. DATE SIGNED**
Frank M Clark	1-10-94

Please print or type in the unshaded areas only.

EPA I.D. NUMBER *(copy from Item 1 of form 1)*
ILD060862810

Form Approved.
OMB No. 2000-0059 Approval expires 12-31-85

FORM **2C** NPDES

EPA

U.S. ENVIRONMENTAL PROTECTION AGENCY
APPLICATION FOR PERMIT TO DISCHARGE WASTEWATER
EXISTING MANUFACTURING, COMMERCIAL, MINING AND SILVICULTURAL OPERATIONS
Consolidated Permits Program

1. OUTFALL NO *(list)*	2. OPERATION(S) CONTRIBUTING FLOW		3. TREATMENT		
	a. OPERATION *(list)*	b. AVERAGE FLOW *(include units)*	a. DESCRIPTION	b. LIST CODES FROM TABLE 2C-1	
002(a)	Radwaste Treatment System (Laundry	0.051	Filtration or Demineralization,	1-Q	2-J
	Wastewater, Floor Drains, Equipment		Re-Use/Recycle of Treated	4-C	
	Drains, Reactor Water, Filter Backwash		Effluent, Centrifugation,		5-D
	from Reactor Clean-Up and Condensate		On-Site Storage of Sludge	X-X	
	Demineralizers, Laboratory Wastewater).				

OFFICIAL USE ONLY *(effluent guidelines sub-categories)*

PLEASE PRINT OR TYPE IN THE UNSHADED AREAS ONLY. You may report some or all of this information on separate sheets *(use the same format)* instead of completing these pages.
SEE INSTRUCTIONS

EPA I.D. NUMBER *(copy from Item1 of Form 1)*: ILD 060862810

Form Approved
OMB No. 2000-0059
Approval expires 12-31-85

V. INTAKE AND EFFLUENT CHARACTERISTICS *(continued from page 3 of Form 2-C)*

OUTFALL NO. 001/002

PART A - You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

1. POLLUTANT	2. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	a. MAXIMUM DAILY VALUE (2) MASS	b. MAXIMUM 30 DAY VALUE *(if available)* (1) CONCENTRATION	b. MAXIMUM 30 DAY VALUE *(if available)* (2) MASS	c. LONG TERM AVRG. VALUE *(if available)* (1) CONCENTRATION	c. LONG TERM AVRG. VALUE *(if available)* (2) MASS	d. NO. OF ANALYSES	3. UNITS a. CONCENTRATION	3. UNITS b. MASS	4. INTAKE *(optional)* a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	4. INTAKE *(optional)* a. LONG TERM AVERAGE VALUE (2) MASS	4. INTAKE *(optional)* d. NO. OF ANALYSES
a. Biochemical Oxygen Demand (BOD)								mg/L	lbs/day			
b. Chemical Oxygen Demand (COD)								mg/L	lbs/day			
c. Total Organic Carbon (TOC)								mg/L	lbs/day			
d. Total Suspended Solids (TSS)								mg/L	lbs/day			
e. Ammonia								mg/L	lbs/day			
f. Flow	VALUE		VALUE	1436.000	VALUE	970.400	365	MGD		VALUE		
g. Temperature *(winter)*	VALUE	26.2	VALUE		VALUE		121	°C		VALUE		
h. Temperature *(summer)*	VALUE	43.6	VALUE		VALUE		122	°C		VALUE		
i. pH	MINIMUM 7.7	MAXIMUM 9	MINIMUM	MAXIMUM			52	STANDARD UNITS				

PART B - Mark "X" in column 2-a for each pollutant you know or have reason to believe is present. Mark "X" in column 2-b for each pollutant you believe to be absent. If you mark column 2a for any pollutant which is limited either directly, or indirectly but expressly, in an effluent limitations guideline, you must provide the results of at least one analysis for that pollutant. For other pollutants for which you mark column 2a, you must provide quantitative data or an explanation of their presence in you discharge. Complete one table for each outfall. See instructions for additional details and requirements.

1. POLLUTANT AND CAS NUMBER *(if available)*	2. MARK 'X' b. BELIEVED PRESENT	2. MARK 'X' c. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	a. MAXIMUM DAILY VALUE (2) MASS	b. MAXIMUM 30 DAY VALUE *(if available)* (1) CONCENTRATION	b. MAXIMUM 30 DAY VALUE *(if available)* (2) MASS	c. LONG TERM AVRG. VALUE *(if available)* (1) CONCENTRATION	c. LONG TERM AVRG. VALUE *(if available)* (2) MASS	d. NO. OF ANALYSES	4. UNITS a. CONCENTRATION	4. UNITS b. MASS	5. INTAKE *(optional)* a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	5. INTAKE *(optional)* a. LONG TERM AVERAGE VALUE (2) MASS	5. INTAKE *(optional)* d. NO. OF ANALYSES
a. Bromide (24959-67-9)	x		< 0.50	< 4048.994						mg/L	lbs/day	<0.5		1
b. Chlorine, Total Residual	x		0.04	323.920	0.03	242.940	0.02	161.960	52	mg/L	lbs/day			
c. Color	x		237						1	Pt-Co		247		1
d. Fecal Coliform		x												
e. Fluoride (16984 48-8)	x		0.19	1538.618					1	mg/L	lbs/day	0.18		1
f. Nitrate-Nitrite *(as N)*	x		3.60	29152.757					1	mg/L	lbs/day	3.60		1

ITEM V-B CONTINUED FROM FRONT

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X' b. BELIEVED PRESENT	2. MARK 'X' c. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	a. MAXIMUM DAILY VALUE (2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	b. MAXIMUM 30 DAY VALUE (if available) (2) MASS	c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	c. LONG TERM AVRG. VALUE (if available) (2) MASS	d. NO. OF ANALYSES	4. UNITS a. CONCENTRATION	4. UNITS b. MASS	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (2) MASS	5. INTAKE (optional) d. NO. OF ANALYSES
g. Nitrogen, Total Organic *(as N)*	x		1.10	8907.8					1	mg/L	lbs/day	1.11		1
h. Oil and Grease	x		< 5	< 40490					4	mg/L	lbs/day	< 5		4
i. Phosphorus *(as P)*, Total (7723-14-0)	x		0.29	2348.417					1	mg/L	lbs/day	0.25		1
j. Radioactivity														
(1) Alpha, Total	x		3						1	pCi/L		1.54		1
(2) Beta, Total	x		5.8						1	pCi/L		7.5		1
(3) Radium, Total	x		0.5						1	pCi/L		0.4		1
(4) Radium 226, Total	x		0.1						1	pCi/L		0.1		1
k. Sulfate *(as SO_4)* (14808-79-8)	x		38	307723.5					1	mg/L	lbs/day	40		1
l. Sulfide *(as S)*		x	< 1.00	< 8097.988					1			< 1		1
m. Sulfite *(as SO_3)* (14266-46-3)		x												
n. Surfactants	x		< 0.50	< 4048.994					1	mg/L	lbs/day	< 0.05		1
o. Aluminum, Total (7429-90-5)	x		3.0	24536.904					1	mg/L	lbs/day	3.1		1
p. Barium, Total (7440-39-3)	x		0.1	631.643					1	mg/L	lbs/day	0.1		1
q. Boron, Total (7440 42-8)	x		< 0.05	< 404.899					1	mg/L	lbs/day	< 0.05		1
r. Cobalt, Total (7440 48-4)	x		< 0.10	< 809.799					1	mg/L	lbs/day	< 0.10		1
s. Iron, Total (7439-89-6)	x		3.18	25751.602					1	mg/L	lbs/day	3.22		1
t. Magnesium, Total (7439-95-4)	x		23.0	186253.72					1	mg/L	lbs/day	24.0		1
u. Molybdenum, Total (7439-98-7)	x		< 0.1	< 809.799					1	mg/L	lbs/day	< 0.1		1
v. Manganese, Total (7439-96-5)	x		0.22	1757.263					1	mg/L	lbs/day	0.27		1
w. Tin, Total (7440 31-5)	x		< 1.0	< 8097.988					1	mg/L	lbs/day	< 1.0		1
x. Titanium, Total (7440-32-6)	x		< 0.1	< 809.799					1	mg/L	lbs/day	< 0.1		1

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PART C - if you are a primary industry and this outfall contains process wastewater, refer to Table 2c-2 in the instructions to determine which of the GC/MS fractions you must test for. Mark "X" in column 2-a for all such GC/MS fractions that apply to your industry and for ALL toxic metals, cyanides, and total phenols. If you are not required to mark column 2-a *(secondary industries, nonprocess wastewater outfalls, and non-required GC/MS fractions)*, mark "X" in column 2-b for each pollutant you know or have reason to believe is present. Mark "X" in column 2-c for each pollutant you believe is absent. If you mark column 2a for any pollutant, you must provide the results of at least one analysis for that pollutant. If you mark column 2b for any pollutant, must provide the results of at least one analysis for that pollutant if you know or have reason to believe it will be discharged in concentrations of 10 ppb of greater. If you mark column 2b for acrolein, acrylonitrile, 2,4 dinitrophenol, or 2-methyl-4,6 dinitrophenol, you must provide the results of at least one analysis for each of these pollutants which you know or have reason to believe that you discharge in concentrations of 100 ppb or greater. Otherwise, for pollutants for which you mark column 2b, you must either submit at least one analysis or briefly describe the reasons the pollutant is expected to be discharged. Note that there are seven pages to this part; please review each carefully. Complete one table *(all 7 pages)* for each outfall. See instructions for additional details and requirements.

1. POLLUTANT AND CAS NUMBER *(if available)*	2. MARK 'X'			3. EFFLUENT							4. UNITS		5. INTAKE *(optional)*		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE *(if available)*		c. LONG TERM AVRG. VALUE *(if available)*		d. NO. OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		d. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
METALS, CYANIDE, AND TOTAL PHENOLS															
1M. Antimony, Total (7440-36-0)		X		< 0.5	< 4048.99					1	mg/L	lbs/day	< 0.5		1
2M. Arsenic, Total (7440-38-2)		X		< 0.005	< 40.49					1	mg/L	lbs/day	< 0.005		1
3M. Beryllium, Total (7440-41-7)		X		< 0.01	< 40.49					1	mg/L	lbs/day	< 0.01		1
4M. Cadmium, Total (7440-43-9)		X		< 0.0100	< 80.98					1	mg/L	lbs/day	< 0.0100		1
5M. Chromium, Total (7440-47-3)		X		< 0.040	< 323.92					1	mg/L	lbs/day	< 0.040		1
6M. Copper, Total (7440-50-8)		X		< 0.020	< 161.96					1	mg/L	lbs/day	< 0.020		1
7M. Lead, Total (7439-92-1)		X		< 0.200	< 1619.60					1	mg/L	lbs/day	< 0.200		1
8M. Mercury, Total (7439-97-6)		X		< 0.0002	< 1.620					1	mg/L	lbs/day	< 2E-04		1
9M. Nickel, Total (7440-02-0)		X		< 0.050	< 404.90					1	mg/L	lbs/day	< 0.050		1
10M. Selenium, Total (7782-49-2)		X		< 0.005	< 40.49					1	mg/L	lbs/day	< 0.005		1
11M. Silver, Total (7440-22-4)		X		< 0.0400	< 323.92					1	mg/L	lbs/day	< 0.0400		1
12M. Thallium, Total (7440-28-0)		X		< 0.200	< 1619.60					1	mg/L	lbs/day	< 0.200		1
13M. Zinc, Total (7440-66-6)		X		0.03	218.65					1	mg/L	lbs/day	0.03		1
14M. Cyanide, Total (57-12-5)		X		< 0.005	< 40.49					4	mg/L	lbs/day	< 0.005		1
15M. Phenols, Total		X		< 0.020	< 161.96					4	mg/L	lbs/day	0.023		1
DIOXIN															
2,3,7,8-Tetrachlorodibenzo-P-Dioxin (1764-01-6)			X	DESCRIBE RESULTS											

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'			3. EFFLUENT							4.UNITS		5. INTAKE (optional)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c.LONG TERM AVRG. VALUE (if available)		d. NO. OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		d. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION - VOLATILE COMPOUNDS															
1V. Acrolein (107-02-8)			X												
2V. Acrylonitrile (107-13-1)			X												
3V. Benzene (71-43-2)			X												
4V. Bis (Chloromethyl) Ether (542-88-1)			X												
5V. Bromoform (75-25-2)			X												
6V. Carbon tetrachloride (56-23-5)			X												
7V. Chlorobenzene (108-90-7)			X												
8V. Chlorodibromomethane (124-48-1)			X												
9V. Chloroethane (75-00-3)			X												
10V. 2-Chloroethylvinyl ether (110-75-8)			X												
11V. Chloroform (67-66-3)			X												
12V. Dichlorobromomethane (75-27-4)			X												
13V. Dichlorodifluoromethane (75-71-8)			X												
14V. 1,1-Dichloroethane (75-34-3)			X												
15V. 1,2-Dichloroethane (107-06-2)			X												
16V. 1,1-Dichloroethylene (75-35-4)			X												
17V. 1,2-Dichloropropane (78-87-5)			X												
18V. 1,3-Dichloropropylene (542-75-6)			X												
19V. Ethylbenzene (100-41-4)			X												
20V. Methyl bromide (74-83-9)			X												
21V. Methyl chloride (74-87-3)			X												

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1. POLLUTANT AND CAS NUMBER *(if available)*	2. MARK 'X'			3. EFFLUENT							4.UNITS		5. INTAKE *(optional)*		
	a. TEST-ING RE-QUIR-ED	b. BE-LIEVED PRE-SENT	c. BE-LIEVED AB-SENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE *(if available)*		c.LONG TERM AVRG. VALUE *(if available)*		d. NO. OF ANAL-YSES	a. CONCEN TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		d. NO. OF ANAL-YSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCEN-TRATION	(2) MASS	
GC/MS FRACTION - VOLATILE COMPOUNDS *(continued)*															
22V. Methylene chloride (75-09-2)			X												
23V. 1,1,2,2-Tetra-chloroethane (79-34-5)			X												
24V. Tetrachloroethylene (127-18-4)			X												
25V. Toluene (108-88-3)			X												
26V. 1,2-Trans-dichloro-ethylene (156-60-5)			X												
27V. 1,1,1-Trichloroethane (71-55-6)			X												
28V. 1,1,2-Trichloroethane (79-00-5)			X												
29V. Trichloroethylene (79-01-6)			X												
30V. Trichlorofluoro-methane (75-69-4)			X												
31V. Vinyl chloride (75-01-4)			X												
GC/MS FRACTION - ACID COMPOUNDS															
1A. 2-Chlorophenol (95-57-8)			X												
2A. 2,4-Dichlorophenol (120-83-2)			X												
3A. 2,4-Dimethylphenol (105-67-9)			X												
4A. 4,6-Dinitro-O-cresol (534-52-1)			X												
5A. 2,4-Dinitrophenol (51-28-5)			X												
6A. 2-Nitrophenol (88-75-5)			X												
7A. 4-Nitrophenol (100-02-7)			X												
8A. P-Chloro-M-cresol (59-50-7)			X												
9A. Pentachlorophenol (87-86-5)			X												
10A. Phenol (108-95-2)			X												
11A. 2,4,6-Trichlorophenol (88-06-2)			X												

CONTINUE ON REVERSE

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1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'			3. EFFLUENT							4.UNITS		5. INTAKE (optional)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG. VALUE (if available)		d. NO. OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		d. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION - BASE/NEUTRAL COMPOUNDS															
1B. Acenaphthene (83-32-9)			X												
2B. Acenaphthylene (208-96-8)			X												
3B. Antracene (120-12-7)			X												
4B. Benzidine (92-87-5)			X												
5B. Benzo (a) anthracene (56-55-3)			X												
6B. Benzo (a) pyrene (50-32-8)			X												
7B. 3,4-Benzofluoranthene (205-99-2)			X												
8B. Benzo (ghi) perylene (191-24-2)			X												
9B. Benzo (k) fluoranthene (207-08-9)			X												
10B. Bis (2chloroethox-y) methane (111-91-1)			X												
11B. Bis (2-chloroethyl) ether (111-44-4)			X												
12B. Bis (2-chloroiso-propyl) ether (102-60-1)			X												
13B. Bis (2-ethylhexyl) phthalate (117-81-7)			X												
14B. 4-Bromophenyl phenyl ether (101-55-3)			X												
15B. Butyl benzyl phthalate (85-68-7)			X												
16B. 2-Chloronaphthalene (91-58-7)			X												
17B. 4-Chlorophenyl phenyl ether (7005-72-3)			X												
18B. Chrysene (218-01-9)			X												
19B. Dibenzo (a,h) anthracene (53-70-3)			X												
20B. 1,2-Dichlorobenzene (95-50-1)			X												
21B. 1,3-Dichlorobenzene (541-73-1)			X												

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1. POLLUTANT AND CAS NUMBER *(if available)*	2. MARK 'X'			3. EFFLUENT							4.UNITS		5. INTAKE *(optional)*		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE *(if available)*		c. LONG TERM AVRG. VALUE *(if available)*		d. NO. OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		d. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION - BASE/NEUTRAL COMPOUNDS *(continued)*															
22B. 1,4-Dichlorobenzene (106-46-7)			X												
23B. 3,3'-Dichlorobenzedine (91-94-1)			X												
24B. Diethyl phthalate (84-66-2)			X												
25B. Dimethyl phthalate (131-11-3)			X												
26B. Di-N-butyl phthalate (84-74-2)			X												
27B. 2,4-Dinitrotolune (121-14-2)			X												
28B. 2,6-Dinitrotolune (606-20-2)			X												
29B. Di-N-octyl phthalate (117-84-0)			X												
30B. 1,2-Diphenylhydrazine (122-66-7)			X												
31B. Fluoranthene (206-44-0)			X												
32B. Fluorene (86-73-7)			X												
33B. Hexachlorobenzene (118-74-1)			X												
34B. Hexachlorobutadiene (87-68-3)			X												
35B. Hexachlorocyclopentadiene (77-47-4)			X												
36B. Hexachloroethane (67-72-1)			X												
37B. Indeno (1,2,3-cd) pyrene (193-39-5)			X												
38B. Isophorone (78-59-1)			X												
39B. Naphthalene (91-20-3)			X												
40B. Nitrobenzene (98-95-3)			X												
41B. N-Nitrosodimethylamine (62-75-9)			X												
42B. N-Nitrosodi-N-propylamine (621-64-7)			X												

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1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'			3. EFFLUENT							4.UNITS		5. INTAKE (optional)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c.LONG TERM AVRG. VALUE (if available)		d. NO. OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		d. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION - BASE/NEUTRAL COMPOUNDS (continued)															
43B. N-Nitrosodiphenylamine (86-30-6)			X												
44B. Phenanthrene (85-01-8)			X												
45B. Pyrene (129-00-0)			X												
46B. 1,2,4-Trichlorobenzene (120-82-1)			X												
GC/MS FRACTION - PESTICIDES															
1P. Aldrin (309-00-2)			X												
2P. -BHC (319-84-6)			X												
3P. -BHC (319-85-7)			X												
4P. -BHC (58-89-9)			X												
5P. -BHC (319-86-8)			X												
6P. Chlordane (5774-9)			X												
7P. 4,4'-DDT (5029-3)			X												
8P. 4,4'-DDE (72-55-9)			X												
9P. 4,4'-DDD (72-54-8)			X												
10P. Dieldrin (6057-1)			X												
11P. -Endosulfan (115-29-7)			X												
12P. -Endosulfan (115-29-7)			X												
13P. Endosulfan Sulfate (1031-07-8)			X												
14P. Endrin (7220-8)			X												
15P. Endrin Aldehyde (7421-93-4)			X												
16P. Heptachlor (76-44-8)			X												

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1. POLLUTANT AND CAS NUMBER *(if available)*	2. MARK 'X'			3. EFFLUENT							4. UNITS		5. INTAKE *(optional)*	
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE *(if available)*		c. LONG TERM AVRG. VALUE *(if available)*		d. NO. OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE	d. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS		
GC/MS FRACTION - PESTICIDES *(continued)*																
17P. Heptachlor Epoxide (1024-57-3)			X													
18P. PCB-1242 (53469-21-9)			X													
19P. PCB-1254 (11097-69-1)			X													
20P. PCB-1221 (11104-28-2)			X													
21P. PCB-1232 (11141-16-5)			X													
22P. PCB-1248 (12672-29-6)			X													
23P. PCB-1260 (11096-82-5)			X													
24P. PCB-1016 (12674-11-2)			X													
25P. Toxaphene (8001-35-2)			X													

PLEASE PRINT OR TYPE IN THE UNSHADED AREAS ONLY. You may report some or all of this information on separate sheets *(use the same format)* instead of completing these pages.
SEE INSTRUCTIONS

EPA I.D. NUMBER *(copy from Item1 of Form 1)*: ILD 060862810

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V. INTAKE AND EFFLUENT CHARACTERISTICS *(continued from page 3 of Form 2-C)* — OUTFALL NO. 001(b)

PART A - You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

1. POLLUTANT	2. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	a. MAXIMUM DAILY VALUE (2) MASS	b. MAXIMUM 30 DAY VALUE *(if available)* (1) CONCENTRATION	b. MAXIMUM 30 DAY VALUE *(if available)* (2) MASS	c. LONG TERM AVRG. VALUE *(if available)* (1) CONCENTRATION	c. LONG TERM AVRG. VALUE *(if available)* (2) MASS	d. NO. OF ANALYSES	3. UNITS a. CONCENTRATION	3. UNITS b. MASS	4. INTAKE *(optional)* a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	4. INTAKE *(optional)* a. LONG TERM AVERAGE VALUE (2) MASS	4. INTAKE *(optional)* d. NO. OF ANALYSES
a. Biochemical Oxygen Demand (BOD)								mg/L	lbs/day			
b. Chemical Oxygen Demand (COD)								mg/L	lbs/day			
c. Total Organic Carbon (TOC)								mg/L	lbs/day			
d. Total Suspended Solids (TSS)	8.5	2.41	4.7	1.32	2.7	0.76	52	mg/L	lbs/day			
e. Ammonia								mg/L	lbs/day			
f. Flow	VALUE	0.069	VALUE	0.047	VALUE	0.034	52	MGD		VALUE		
g. Temperature *(winter)*	VALUE		VALUE		VALUE			°C		VALUE		
h. Temperature *(summer)*	VALUE		VALUE		VALUE			°C		VALUE		
i. pH	MINIMUM	MAXIMUM	MINIMUM	MAXIMUM				STANDARD UNITS				

PART B - Mark "X" in column 2-a for each pollutant you know or have reason to believe is present. Mark "X" in column 2-b for each pollutant you believe to be absent. If you mark column 2a for any pollutant which is limited either directly, or indirectly but expressly, in an effluent limitations guideline, you must provide the results of at least one analysis for that pollutant. For other pollutants for which you mark column 2a, you must provide quantitative data or an explanation of their presence in you discharge. Complete one table for each outfall. See instructions for additional details and requirements.

1. POLLUTANT AND CAS NUMBER *(if available)*	2. MARK 'X' b. BELIEVED PRESENT	2. MARK 'X' c. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	a. MAXIMUM DAILY VALUE (2) MASS	b. MAXIMUM 30 DAY VALUE *(if available)* (1) CONCENTRATION	b. MAXIMUM 30 DAY VALUE *(if available)* (2) MASS	c. LONG TERM AVRG. VALUE *(if available)* (1) CONCENTRATION	c. LONG TERM AVRG. VALUE *(if available)* (2) MASS	d. NO. OF ANALYSES	4. UNITS a. CONCENTRATION	4. UNITS b. MASS	5. INTAKE *(optional)* a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	5. INTAKE *(optional)* a. LONG TERM AVERAGE VALUE (2) MASS	5. INTAKE *(optional)* d. NO. OF ANALYSES
a. Bromide (24959-67-9)		X	0.64	0.182					1	mg/L	lbs/day			
b. Chlorine, Total Residual		X								mg/L	lbs/day			
c. Color	X		44						1	Pt-Co				
d. Fecal Coliform		X												
e. Fluoride (16984-48-8)	X		0.13	0.037					1	mg/L	lbs/day			
f. Nitrate-Nitrite *(as N)*	X		3.90	1.107					1	mg/L	lbs/day			

ITEM V-B CONTINUED FROM FRONT

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'		3. EFFLUENT							4.UNITS		5. INTAKE (optional)		
	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c.LONG TERM AVRG. VALUE (if available)		d. NO. OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		d. NO. OF ANALYSES
			(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
g. Nitrogen, Total Organic (as N)	X		< 0.50	< 0.142					1	mg/L	lbs/day			
h. Oil and Grease	X		5	1.419	5.0	1.41865	5.0	1.41865	4	mg/L	lbs/day			
I. Phosphorus (as P), Total (7723-14-0)	X		0.08	0.023					1	mg/L	lbs/day			
j. Radioactivity														
(1) Alpha, Total	X		5						1	pCi/L				
(2) Beta, Total	X		93.3						1	pCi/L				
(3) Radium, Total	X		0.3						1	pCi/L				
(4) Radium 226, Total	X		0.1						1	pCi/L				
k. Sulfate (as SO_4) (14808-79-8)	X		38	10.8					1	mg/L	lbs/day			
l. Sulfide (as S)		X	< 1.00	< 0.284					1					
m. Sulfite (as SO_3) (14266-46-3)		X												
n. Surfactants	X		< 0.05	< 0.014					1	mg/L	lbs/day			
o. Aluminum, Total (7429-90-5)	X		0.4	0.102					1	mg/L	lbs/day			
p. Barium, Total (7440-39-3)	X		0.0	0.011					1	mg/L	lbs/day			
q. Boron, Total (7440 42-8)	X		0.05	0.014					1	mg/L	lbs/day			
r. Cobalt, Total (7440 48-4)	X		< 0.10	< 0.028					1	mg/L	lbs/day			
s. Iron, Total (7439-89-6)	X		0.25	0.070					1	mg/L	lbs/day			
t. Magnesium, Total (7439-95-4)	X		21.0	5.96					1	mg/L	lbs/day			
u. Molybdenum, Total (7439-98-7)	X		< 0.1	< 0.028					1	mg/L	lbs/day			
v. Manganese, Total (7439-96-5)	X		< 0.01	< 0.003					1	mg/L	lbs/day			
w. Tin, Total (7440 31-5)	X		< 1.0	< 0.284					1	mg/L	lbs/day			
x. Titanium, Total (7440-32-6)	X		< 0.1	< 0.028					1	mg/L	lbs/day			

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PART C - if you are a primary industry and this outfall contains process wastewater, refer to Table 2c-2 in the instructions to determine which of the GC/MS fractions you must test for. Mark "X" in column 2-a for all such GC/MS fractions that apply to your industry and for ALL toxic metals, cyanides, and total phenols. If you are not required to mark column 2-a (secondary industries, nonprocess wastewater outfalls, and non-required GC/MS fractions), mark "X" in column 2-b for each pollutant you know or have reason to believe is present. Mark "X" in column 2-c for each pollutant you believe is absent. If you mark column 2a for any pollutant, you must provide the results of at least one analysis for that pollutant. If you mark column 2b for any pollutant, you must provide the results of at least one analysis for that pollutant if you know or have reason to believe it will be discharged in concentrations of 10 ppb of greater. If you mark column 2b for acrolein, acrylonitrile, 2,4 dinitrophenol, or 2-methyl-4,6 dinitrophenol, you must provide the results of at least one analysis for each of these pollutants which you know or have reason to believe that you discharge in concentrations of 100 ppb or greater. Otherwise, for pollutants for which you mark column 2b, you must either submit at least one analysis or briefly describe the reasons the pollutant is expected to be discharged. Note that there are seven pages to this part; please review each carefully. Complete one table (all 7 pages) for each outfall. See instructions for additional details and requirements.

1. POLLUTANT AND CAS NUMBER *(if available)*	2. MARK 'X'			3. EFFLUENT							4.UNITS		5. INTAKE *(optional)*		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE *(if available)*		c.LONG TERM AVRG. VALUE *(if available)*		d. NO. OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		d. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
METALS, CYANIDE, AND TOTAL PHENOLS															
1M. Antimony, Total (7440-36-0)		x		< 0.5	< 0.142					1	mg/L	lbs/day			
2M. Arsenic, Total (7440-38-2)		x		< 0.005	< 0.0014					1	mg/L	lbs/day			
3M. Beryllium, Total (7440-41-7)		x		< 0.01	< 0.001					1	mg/L	lbs/day			
4M. Cadmium, Total (7440-43-9)		x		< 0.0100	< 0.0028					1	mg/L	lbs/day			
5M. Chromium, Total (7440-47-3)		x		< 0.040	< 0.0113					1	mg/L	lbs/day			
6M. Copper, Total (7440-50-8)		x		< 0.020	< 0.006					1	mg/L	lbs/day			
7M. Lead, Total (7439-92-1)		x		< 0.200	< 0.0567					1	mg/L	lbs/day			
8M. Mercury, Total (7439-97-6)		x		< 0.00020	< 0.00006					1	mg/L	lbs/day			
9M. Nickel, Total (7440-02-0)		x		< 0.050	< 0.014					1	mg/L	lbs/day			
10M. Selenium, Total (7782-49-2)		x		< 0.005	< 0.0014					1	mg/L	lbs/day			
11M. Silver, Total (7440-22-4)		x		< 0.0400	< 0.0113					1	mg/L	lbs/day			
12M. Thallium, Total (7440-28-0)		x		< 0.200	< 0.0567					1	mg/L	lbs/day			
13M. Zinc, Total (7440-66-6)		x		< 0.02	< 0.006					1	mg/L	lbs/day			
14M. Cyanide, Total (57-12-5)		x		< 0.005	< 0.001					4	mg/L	lbs/day			
15M. Phenols, Total		x		< 0.020	< 0.006					4	mg/L	lbs/day			
DIOXIN															
2,3,7,8-Tetrachlorodibenzo-P-Dioxin (1764-01-6)			X	DESCRIBE RESULTS											

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (If available)	2. MARK 'X'			3. EFFLUENT							4.UNITS		5. INTAKE (optional)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG. VALUE (if available)		d. NO. OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		d. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION - VOLATILE COMPOUNDS															
1V. Acrolein (107-02-8)			X												
2V. Acrylonitrile (107-13-1)			X												
3V. Benzene (71-43-2)			X												
4V. Bis (Chloromethyl) Ether (542-88-1)			X												
5V. Bromoform (75-25-2)			X												
6V. Carbon tetrachloride (56-23-5)			X												
7V. Chlorobenzene (108-90-7)			X												
8V. Chlorodibromomethane (124-48-1)			X												
9V. Chloroethane (75-00-3)			X												
10V. 2-Chloroethylvinyl ether (110-75-8)			X												
11V. Chloroform (67-66-3)			X												
12V. Dichlorobromomethane (75-27-4)			X												
13V. Dichlorodifluoromethane (75-71-8)			X												
14V. 1,1-Dichloroethane (75-34-3)			X												
15V. 1,2-Dichloroethane (107-06-2)			X												
16V. 1,1-Dichloroethylene (75-35-4)			X												
17V. 1,2-Dichloropropane (78-87-5)			X												
18V. 1,3-Dichloropropylene (542-75-6)			X												
19V. Ethylbenzene (100-41-4)			X												
20V. Methyl bromide (74-83-9)			X												
21V. Methyl chloride (74-87-3)			X												

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1. POLLUTANT AND CAS NUMBER *(if available)*	2. MARK 'X'			3. EFFLUENT							4. UNITS		5. INTAKE *(optional)*		
	a. TEST-ING RE-QUIR-ED	b. BE-LIEVED PRE-SENT	c. BE-LIEVED AB-SENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE *(if available)*		c. LONG TERM AVRG. VALUE *(if available)*		d. NO. OF ANAL-YSES	a. CONCEN-TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		d. NO. OF ANAL-YSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCEN-TRATION	(2) MASS	
GC/MS FRACTION - VOLATILE COMPOUNDS *(continued)*															
22V. Methylene chloride (76-09-2)			X												
23V. 1,1,2,2-Tetra-chloroethane (79-34-5)			X												
24V. Tetrachloroethylene (127-18-4)			X												
25V. Toluene (108-88-3)			X												
26V. 1,2-Trans-dichloro-ethylene (156-60-5)			X												
27V. 1,1,1-Trichloroethane (71-55-6)			X												
28V. 1,1,2-Trichloroethane (79-00-5)			X												
29V. Trichloroethylene (79-01-6)			X												
30V. Trichlorofluoro-methane (75-69-4)			X												
31V. Vinyl chloride (75-01-4)			X												
GC/MS FRACTION - ACID COMPOUNDS															
1A. 2-Chlorophenol (95-57-8)			X												
2A. 2,4-Dichlorophenol (120-83-2)			X												
3A. 2,4-Dimethylphenol (105-67-9)			X												
4A. 4,6-Dinitro-O-cresol (534-52-1)			X												
5A. 2,4-Dinitrophenol (51-28-5)			X												
6A. 2-Nitrophenol (88-75-5)			X												
7A. 4-Nitrophenol (100-02-7)			X												
8A. P-Chloro-M-cresol (59-50-7)			X												
9A. Pentachlorophenol (87-86-5)			X												
10A. Phenol (108-95-2)			X												
11A. 2,4,6-Trichlorophenol (88-06-2)			X												

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. TEST-ING RE-QUIR-ED	b. BE-LIEVED PRE-SENT	c. BE-LIEVED AB-SENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG. VALUE (if available)		d. NO. OF ANAL-YSES	a. CONCEN-TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		d. NO. OF ANAL-YSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCEN-TRATION	(2) MASS	
GC/MS FRACTION - BASE/NEUTRAL COMPOUNDS															
1B. Acenaphthene (83-32-9)			X												
2B. Acenaphthylene (208-96-8)			X												
3B. Antracene (120-12-7)			X												
4B. Benzidine (92-87-5)			X												
5B. Benzo (a) anthracene (56-55-3)			X												
6B. Benzo (a) pyrene (50-32-8)			X												
7B. 3,4-Benzofluoranthene (205-99-2)			X												
8B. Benzo (ghi) perylene (191-24-2)			X												
9B. Benzo (k) fluoranthene (207-08-9)			X												
10B. Bis (2chloroethox-y) methane (111-91-1)			X												
11B. Bis (2-chloroethyl) ether (111-44-4)			X												
12B. Bis (2-chloroiso-propyl) ether (102-60-1)			X												
13B. Bis (2-ethylhexyl) phthalate (117-81-7)			X												
14B. 4-Bromophenyl phenyl ether (101-55-3)			X												
15B. Butyl benzyl phthalate (85-68-7)			X												
16B. 2-Chloronaphthalene (91-58-7)			X												
17B. 4-Chlorophenyl phenyl ether (7005-72-3)			X												
18B. Chrysene (218-01-9)			X												
19B. Dibenzo (a,h) anthracene (53-70-3)			X												
20B. 1,2-Dichlorobenzene (95-50-1)			X												
21B. 1,3-Dichlorobenzene (541-73-1)			X												

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1. POLLUTANT AND CAS NUMBER *(if available)*	2. MARK 'X'			3. EFFLUENT							4.UNITS		5. INTAKE *(optional)*		
	a. TEST-ING RE-QUIR-ED	b. BE-LIEVED PRE-SENT	c. BE-LIEVED AB-SENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE *(if available)*		c.LONG TERM AVRG. VALUE *(if available)*		d. NO. OF ANAL-YSES	a. CONCEN TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		d. NO. OF ANAL-YSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCEN-TRATION	(2) MASS	
GC/MS FRACTION - BASE/NEUTRAL COMPOUNDS *(continued)*															
22B. 1,4-Dichlorobenzene (106-46-7)			X												
23B. 3,3'-Dichloro-benzedine (91-94-1)			X												
24B. Diethyl phthalate (84-66-2)			X												
25B. Dimethyl phthalate (131-11-3)			X												
26B. Di-N-butyl phthalate (84-74-2)			X												
27B. 2,4-Dinitrotolune (121-14-2)			X												
28B. 2,6-Dinitrotolune (606-20-2)			X												
29B. Di-N-octyl phthalate (117-84-0)			X												
30B. 1,2-Diphenyl-hydrazine (122-66-7)			X												
31B. Fluoranthene (206-44-0)			X												
32B. Fluorene (86-73-7)			X												
33B. Hexachlorobenzene (118-74-1)			X												
34B. Hexachlorobutadiene (87-68-3)			X												
35B. Hexachlorocyclo-pentadiene (77-47-4)			X												
36B. Hexachloroethane (67-72-1)			X												
37B. Indano (1,2,3-cd) pyrene (193-39-5)			X												
38B. Isophorone (78-59-1)			X												
39B. Naphthalene (91-20-3)			X												
40B. Nitrobenzene (98-95-3)			X												
41B. N-Nitrosodimethyl-amine (62-75-9)			X												
42B. N-Nitrosodi-N-propylamine (621-64-7)			X												

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (If available)	2. MARK 'X'			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG. VALUE (if available)		d. NO. OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		d. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION - BASE/NEUTRAL COMPOUNDS (continued)															
43B. N-Nitrosodiphenylamine (86-30-6)			X												
44B. Phenanthrene (85-01-8)			X												
45B. Pyrene (129-00-0)			X												
46B. 1,2,4-Trichlorobenzene (120-82-1)			X												
GC/MS FRACTION - PESTICIDES															
1P. Aldrin (309-00-2)			X												
2P. -BHC (319-84-6)			X												
3P. -BHC (319-85-7)			X												
4P. -BHC (58-89-9)			X												
5P. -BHC (319-86-8)			X												
6P. Chlordane (57 74-9)			X												
7P. 4,4'-DDT (50 29-3)			X												
8P. 4,4'-DDE (72-55-9)			X												
9P. 4,4'-DDD (72-54-8)			X												
10P. Dieldrin (60 57-1)			X												
11P. -Endosulfan (115-29-7)			X												
12P. -Endosulfan (115-29-7)			X												
13P. Endosulfan Sulfate (1031-07-8)			X												
14P. Endrin (72 20-8)			X												
15P. Endrin Aldehyde (7421-93-4)			X												
16P. Heptachlor (76-44-8)			X												

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1. POLLUTANT AND CAS NUMBER *(if available)*	2. MARK 'X'			3. EFFLUENT							4.UNITS		5. INTAKE *(optional)*	
	a. TEST-ING RE-QUIR-ED	b. BE-LIEVED PRE-SENT	c. BE-LIEVED AB-SENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE *(if available)*		c.LONG TERM AVRG. VALUE *(if available)*		d. NO. OF ANAL-YSES	a. CONCEN TRATION	b. MASS	a. LONG TERM AVERAGE VALUE	d. NO. OF ANAL-YSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCEN-TRATION	(2) MASS	
GC/MS FRACTION - PESTICIDES *(continued)*															
17P. Heptachlor Epoxide (1024-57-3)			X												
18P. PCB-1242 (53469-21-9)			X												
19P. PCB-1254 (11097-69-1)			X												
20P. PCB-1221 (11104-28-2)			X												
21P. PCB-1232 (11141-16-5)			X												
22P. PCB-1248 (12672-29-6)			X												
23P. PCB-1260 (11096-82-5)			X												
24P. PCB-1016 (12674-11-2)			X												
25P. Toxaphene (8001-35-2)			X												

PLEASE PRINT OR TYPE IN THE UNSHADED AREAS ONLY. You may report some or all of this information on separate sheets *(use the same format)* instead of completing these pages.
SEE INSTRUCTIONS

EPA I.D. NUMBER *(copy from Item1 of Form 1)*: ILD 060862810

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OMB No. 2000-0059
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V. INTAKE AND EFFLUENT CHARACTERISTICS *(continued from page 3 of Form 2-C)*

OUTFALL NO. 001(c)

PART A - You must provide the results of at least one analysis for every pollutant in this table. **Complete one table for each outfall.** See instructions for additional details.

1. POLLUTANT	2. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	2. EFFLUENT a. MAXIMUM DAILY VALUE (2) MASS	2. EFFLUENT b. MAXIMUM 30 DAY VALUE *(if available)* (1) CONCENTRATION	2. EFFLUENT b. MAXIMUM 30 DAY VALUE *(if available)* (2) MASS	2. EFFLUENT c. LONG TERM AVRG. VALUE *(if available)* (1) CONCENTRATION	2. EFFLUENT c. LONG TERM AVRG. VALUE *(if available)* (2) MASS	2. EFFLUENT d. NO. OF ANAL-YSES	3. UNITS a. CONCENTRATION	3. UNITS b. MASS	4. INTAKE *(optional)* a. LONG TERM AVERAGE VALUE (1) CONCEN-TRATION	4. INTAKE *(optional)* a. LONG TERM AVERAGE VALUE (2) MASS	4. INTAKE *(optional)* d. NO. OF ANAL-YSES
a. Biochemical Oxygen Demand (BOD)	25.0	1.67	17.2	1.15	13.8	0.92	24	mg/L	lbs/day			
b. Chemical Oxygen Demand (COD)								mg/L	lbs/day			
c. Total Organic Carbon (TOC)								mg/L	lbs/day			
d. Total Suspended Solids (TSS)	42.0	2.80	25.6	1.71	18.5	1.24	24	mg/L	lbs/day			
e. Ammonia								mg/L	lbs/day			
f. Flow	VALUE	0.024	VALUE	0.010	VALUE	0.008	24	MGD		VALUE		
g. Temperature *(winter)*	VALUE		VALUE		VALUE			°C		VALUE		
h. Temperature *(summer)*	VALUE		VALUE		VALUE			°C		VALUE		
i. pH	MINIMUM 6	MAXIMUM 7.9	MINIMUM	MAXIMUM			24	STANDARD UNITS				

PART B - Mark "X" in column 2-a for each pollutant you know or have reason to believe is present. Mark "X" in column 2-b for each pollutant you believe to be absent. If you mark column 2a for any pollutant which is limited either directly, or indirectly but expressly, in an effluent limitations guideline, you must provide the results of at least one analysis for that pollutant. For other pollutants for which you mark column 2a, you must provide quantitative data or an explanation of their presence in you discharge. Complete one table for each outfall. See instructions for additional details and requirements.

1. POLLUTANT AND CAS NUMBER *(if available)*	2. MARK 'X' b. BE-LIEVED PRE-SENT	2. MARK 'X' c. BE-LIEVED AB-SENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	3. EFFLUENT a. MAXIMUM DAILY VALUE (2) MASS	3. EFFLUENT b. MAXIMUM 30 DAY VALUE *(if available)* (1) CONCENTRATION	3. EFFLUENT b. MAXIMUM 30 DAY VALUE *(if available)* (2) MASS	3. EFFLUENT c. LONG TERM AVRG. VALUE *(if available)* (1) CONCENTRATION	3. EFFLUENT c. LONG TERM AVRG. VALUE *(if available)* (2) MASS	3. EFFLUENT d. NO. OF ANAL-YSES	4. UNITS a. CONCENTRATION	4. UNITS b. MASS	5. INTAKE *(optional)* a. LONG TERM AVERAGE VALUE (1) CONCEN-TRATION	5. INTAKE *(optional)* a. LONG TERM AVERAGE VALUE (2) MASS	5. INTAKE *(optional)* d. NO. OF ANAL-YSES
a. Bromide (24959-67-9)		X								mg/L	lbs/day			
b. Chlorine, Total Residual	X		4.20	0.280			3.75	0.250	4	mg/L	lbs/day			
c. Color	X		0.13							Pt-Co				
d. Fecal Coliform	X		< 5	< 5	< 5		< 5		24	#col/100 ml				
e. Fluoride (16984 48-8)	X		0.07	0.005					1	mg/L	lbs/day			
f. Nitrate-Nitrite *(as N)*	X		44.00	2.937					1	mg/L	lbs/day			

ITEM V-B CONTINUED FROM FRONT

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'		3. EFFLUENT							4.UNITS		5. INTAKE (optional)		
	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c.LONG TERM AVRG. VALUE (if available)		d. NO. OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		d. NO. OF ANALYSES
			(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
g. Nitrogen, Total Organic (as N)	x		0.90	0.060					1	mg/L	lbs/day			
h. Oil and Grease	x		< 5	< 0.334					4	mg/L	lbs/day			
i. Phosphorus (as P), Total (7723-14-0)	x		7.40	0.494					1	mg/L	lbs/day			
j. Radioactivity														
(1) Alpha, Total	x		4						1	pCi/L				
(2) Beta, Total	x		62.3						1	pCi/L				
(3) Radium, Total	x		0.1						1	pCi/L				
(4) Radium 226, Total	x		0.1						1	pCi/L				
k. Sulfate (as SO_4) (14808-79-8)	x		38	2.5					1	mg/L	lbs/day			
l. Sulfide (as S)		x	< 1.00	< 0.067					1					
m. Sulfite (as SO_3) (14266-46-3)		x							1					
n. Surfactants	x		0.13	0.009					1	mg/L	lbs/day			
o. Aluminum, Total (7429-90-5)	x		< 0.1	< 0.007					1	mg/L	lbs/day			
p. Barium, Total (7440-39-3)	x		< 0.0	< 0.001					1	mg/L	lbs/day			
q. Boron, Total (7440 42-8)	x		0.07	0.005					1	mg/L	lbs/day			
r. Cobalt, Total (7440 48-4)	x		< 0.10	< 0.007					1	mg/L	lbs/day			
s. Iron, Total (7439-89-6)	x		0.15	0.010					1	mg/L	lbs/day			
t. Magnesium, Total (7439-95-4)	x		18.0	1.20					1	mg/L	lbs/day			
u. Molybdenum, Total (7439-98-7)	x		< 0.1	< 0.007					1	mg/L	lbs/day			
v. Manganese, Total (7439-96-5)	x		0.02	0.002					1	mg/L	lbs/day			
w. Tin, Total (7440 31-5)	x		< 1.0	< 0.067					1	mg/L	lbs/day			
x. Titanium, Total (7440-32-6)	x		< 0.1	< 0.007					1	mg/L	lbs/day			

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PART C - if you are a primary industry and this outfall contains process wastewater, refer to Table 2c-2 in the instructions to determine which of the GC/MS fractions you must test for. Mark "X" in column 2-a for all such GC/MS fractions that apply to your industry and for ALL toxic metals, cyanides, and total phenols. If you are not required to mark column 2-a (secondary industries, nonprocess wastewater outfalls, and non-required GC/MS fractions), mark "X" in column 2-b for each pollutant you know or have reason to believe is present. Mark "X" in column 2-c for each pollutant you believe is absent. If you mark column 2a for any pollutant, you must provide the results of at least one analysis for that pollutant. If you mark column 2b for any pollutant, you must provide the results of at least one analysis for that pollutant if you know or have reason to believe it will be discharged in concentrations of 10 ppb of greater. If you mark column 2b for acrolein, acrylonitrile, 2,4 dinitrophenol, or 2-methyl-4,6 dinitrophenol, you must provide the results of at least one analysis for each of these pollutants which you know or have reason to believe that you discharge in concentrations of 100 ppb or greater. Otherwise, for pollutants for which you mark column 2b, you must either submit at least one analysis or briefly describe the reasons the pollutant is expected to be discharged. Note that there are seven pages to this part; please review each carefully. Complete one table (all 7 pages) for each outfall. See instructions for additional details and requirements.

1. POLLUTANT AND CAS NUMBER *(if available)*	2. MARK 'X'			3. EFFLUENT							4. UNITS		5. INTAKE *(optional)*		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE (1) CONCENTRATION	a. MAXIMUM DAILY VALUE (2) MASS	b. MAXIMUM 30 DAY VALUE *(if available)* (1) CONCENTRATION	b. MAXIMUM 30 DAY VALUE *(if available)* (2) MASS	c. LONG TERM AVRG. VALUE *(if available)* (1) CONCENTRATION	c. LONG TERM AVRG. VALUE *(if available)* (2) MASS	d. NO. OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	a. LONG TERM AVERAGE VALUE (2) MASS	d. NO. OF ANALYSES
METALS, CYANIDE, AND TOTAL PHENOLS															
1M. Antimony, Total (7440-36-0)		x		< 0.5	< 0.033					1	mg/L	lbs/day			
2M. Arsenic, Total (7440-38-2)		x		< 0.005	< 0.0003					1	mg/L	lbs/day			
3M. Beryllium, Total (7440-41-7)		x		< 0.01	< 0.000					1	mg/L	lbs/day			
4M. Cadmium, Total (7440-43-9)		x		< 0.0100	< 0.00067					1	mg/L	lbs/day			
5M. Chromium, Total (7440-47-3)		x		< 0.040	< 0.0027					1	mg/L	lbs/day			
6M. Copper, Total (7440-50-8)		x		0.027	0.002					1	mg/L	lbs/day			
7M. Lead, Total (7439-92-1)		x		< 0.200	< 0.0134					1	mg/L	lbs/day			
8M. Mercury, Total (7439-97-6)		x		< 0.00020	< 0.00001					1	mg/L	lbs/day			
9M. Nickel, Total (7440-02-0)		x		< 0.050	< 0.003					1	mg/L	lbs/day			
10M. Selenium, Total (7782-49-2)		x		< 0.005	< 0.0003					1	mg/L	lbs/day			
11M. Silver, Total (7440-22-4)		x		< 0.0400	< 0.0027					1	mg/L	lbs/day			
12M. Thallium, Total (7440-28-0)		x		< 0.200	< 0.0134					1	mg/L	lbs/day			
13M. Zinc, Total (7440-66-6)		x		0.16	0.010					1	mg/L	lbs/day			
14M. Cyanide, Total (57-12-5)		x		0.006	0.000					4	mg/L	lbs/day			
15M. Phenols, Total		x		< 0.020	< 0.001					4	mg/L	lbs/day			
DIOXIN															
2,3,7,8-Tetrachlorodibenzo-P-Dioxin (1764-01-6)			X	DESCRIBE RESULTS											

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (If available)	2. MARK 'X'			3. EFFLUENT							4.UNITS		5. INTAKE (optional)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG. VALUE (if available)		d. NO. OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		d. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION - VOLATILE COMPOUNDS															
1V. Acrolein (107-02-8)			X												
2V. Acrylonitrile (107-13-1)			X												
3V. Benzene (71-43-2)			X												
4V. Bis (Chloromethyl) Ether (542-88-1)			X												
5V. Bromoform (75-25-2)			X												
6V. Carbon tetrachloride (56-23-5)			X												
7V. Chlorobenzene (108-90-7)			X												
8V. Chlorodibromomethane (124-48-1)			X												
9V. Chloroethane (75-00-3)			X												
10V. 2-Chloroethylvinyl ether (110-75-8)			X												
11V. Chloroform (67-66-3)			X												
12V. Dichlorobromomethane (75-27-4)			X												
13V. Dichlorodifluoromethane (75-71-8)			X												
14V. 1,1-Dichloroethane (75-34-3)			X												
15V. 1,2-Dichloroethane (107-06-2)			X												
16V. 1,1-Dichloroethylene (75-35-4)			X												
17V. 1,2-Dichloropropane (78-87-5)			X												
18V. 1,3-Dichloropropylene (542-75-6)			X												
19V. Ethylbenzene (100-41-4)			X												
20V. Methyl bromide (74-83-9)			X												
21V. Methyl chloride (74-87-3)			X												

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1. POLLUTANT AND CAS NUMBER *(if available)*	2. MARK 'X'			3. EFFLUENT							4.UNITS		5. INTAKE *(optional)*		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE *(if available)*		c.LONG TERM AVRG. VALUE *(if available)*		d. NO. OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		d. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION - VOLATILE COMPOUNDS *(continued)*															
22V. Methylene chloride (75-09-2)			X												
23V. 1,1,2,2-Tetrachloroethane (79-34-5)			X												
24V. Tetrachloroethylene (127-18-4)			X												
25V. Toluene (108-88-3)			X												
26V. 1,2-Trans-dichloroethylene (156-60-5)			X												
27V. 1,1,1-Trichloroethane (71-55-6)			X												
28V. 1,1,2-Trichloroethane (79-00-5)			X												
29V. Trichloroethylene (79-01-6)			X												
30V. Trichlorofluoromethane (75-69-4)			X												
31V. Vinyl chloride (75-01-4)			X												
GC/MS FRACTION - ACID COMPOUNDS															
1A. 2-Chlorophenol (95-57-8)			X												
2A. 2,4-Dichlorophenol (120-83-2)			X												
3A. 2,4-Dimethylphenol (105-67-9)			X												
4A. 4,6-Dinitro-O-cresol (534-52-1)			X												
5A. 2,4-Dinitrophenol (51-28-5)			X												
6A. 2-Nitrophenol (88-75-5)			X												
7A. 4-Nitrophenol (100-02-7)			X												
8A. P-Chloro-M-cresol (59-50-7)			X												
9A. Pentachlorophenol (87-86-5)			X												
10A. Phenol (108-95-2)			X												
11A. 2,4,6-Trichlorophenol (88-06-2)			X												

CONTINUE ON REVERSE

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'			3. EFFLUENT							4.UNITS		5. INTAKE (optional)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG. VALUE (if available)		d. NO. OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		d. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION - BASE/NEUTRAL COMPOUNDS															
1B. Acenaphthene (83-32-9)			X												
2B. Acenaphthylene (208-96-8)			X												
3B. Antracene (120-12-7)			X												
4B. Benzidine (92-87-5)			X												
5B. Benzo (a) anthracene (56-55-3)			X												
6B. Benzo (a) pyrene (50-32-8)			X												
7B. 3,4-Benzofluoranthene (205-99-2)			X												
8B. Benzo (ghi) perylene (191-24-2)			X												
9B. Benzo (k) fluoranthene (207-08-9)			X												
10B. Bis (2chloroethox-y) methane (111-91-1)			X												
11B. Bis (2-chloroethyl) ether (111-44-4)			X												
12B. Bis (2-chloroiso-propyl) ether (102-60-1)			X												
13B. Bis (2-ethylhexyl) phthalate (117-81-7)			X												
14B. 4-Bromophenyl phenyl ether (101-55-3)			X												
15B. Butyl benzyl phthalate (85-68-7)			X												
16B. 2-Chloronaphthalene (91-58-7)			X												
17B. 4-Chlorophenyl phenyl ether (7005-72-3)			X												
18B. Chrysene (218-01-9)			X												
19B. Dibenzo (a,h) anthracene (53-70-3)			X												
20B. 1,2-Dichlorobenzene (95-50-1)			X												
21B. 1,3-Dichlorobenzene (541-73-1)			X												

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	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE *(if available)*		c.LONG TERM AVRG. VALUE *(if available)*		d. NO. OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		d. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION - BASE/NEUTRAL COMPOUNDS *(continued)*															
22B. 1,4-Dichlorobenzene (106-46-7)			X												
23B. 3,3'-Dichlorobenzedine (91-94-1)			X												
24B. Diethyl phthalate (84-66-2)			X												
25B. Dimethyl phthalate (131-11-3)			X												
26B. Di-N-butyl phthalate (84-74-2)			X												
27B. 2,4-Dinitrotolune (121-14-2)			X												
28B. 2,6-Dinitrotolune (606-20-2)			X												
29B. Di-N-octyl phthalate (117-84-0)			X												
30B. 1,2-Diphenylhydrazine (122-66-7)			X												
31B. Fluoranthene (206-44-0)			X												
32B. Fluorene (86-73-7)			X												
33B. Hexachlorobenzene (118-74-1)			X												
34B. Hexachlorobutadiene (87-68-3)			X												
35B. Hexachlorocyclopentadiene (77-47-4)			X												
36B. Hexachloroethane (67-72-1)			X												
37B. Indeno (1,2,3-cd) pyrene (193-39-5)			X												
38B. Isophorone (78-59-1)			X												
39B. Naphthalene (91-20-3)			X												
40B. Nitrobenzene (98-95-3)			X												
41B. N-Nitrosodimethylamine (62-75-9)			X												
42B. N-Nitrosodi-N-propylamine (621-64-7)			X												

CONTINUE ON REVERSE

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'			3. EFFLUENT							4.UNITS		5. INTAKE (optional)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG. VALUE (if available)		d. NO. OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		d. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION - BASE/NEUTRAL COMPOUNDS (continued)															
43B. N-Nitrosodiphenylamine (86-30-6)			X												
44B. Phenanthrene (85-01-8)			X												
45B. Pyrene (129-00-0)			X												
46B. 1,2,4-Trichlorobenzene (120-82-1)			X												
GC/MS FRACTION - PESTICIDES															
1P. Aldrin (309-00-2)			X												
2P. -BHC (319-84-6)			X												
3P. -BHC (319-85-7)			X												
4P. -BHC (58-89-9)			X												
5P. -BHC (319-86-8)			X												
6P. Chlordane (57 74-9)			X												
7P. 4,4'-DDT (50 29-3)			X												
8P. 4,4'-DDE (72-55-9)			X												
9P. 4,4'-DDD (72-54-8)			X												
10P. Dieldrin (60 57-1)			X												
11P. -Endosulfan (115-29-7)			X												
12P. -Endosulfan (115-29-7)			X												
13P. Endosulfan Sulfate (1031-07-8)			X												
14P. Endrin (72 20-8)			X												
15P. Endrin Aldehyde (7421-93-4)			X												
16P. Heptachlor (76-44-8)			X												

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1. POLLUTANT AND CAS NUMBER *(if available)*	2. MARK 'X'			3. EFFLUENT							4.UNITS		5. INTAKE *(optional)*		
	a. TEST-ING RE-QUIR-ED	b. BE-LIEVED PRE-SENT	c. BE-LIEVED AB-SENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE *(if available)*		c.LONG TERM AVRG. VALUE *(if available)*		d. NO. OF ANAL-YSES	a. CONCEN TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		d. NO. OF ANAL-YSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCEN-TRATION	(2) MASS	
GC/MS FRACTION - PESTICIDES *(continued)*															
17P. Heptachlor Epoxide (1024-57-3)			X												
18P. PCB-1242 (53469-21-9)			X												
19P. PCB-1254 (11097-69-1)			X												
20P. PCB-1221 (11104-28-2)			X												
21P. PCB-1232 (11141-16-5)			X												
22P. PCB-1248 (12672-29-6)			X												
23P. PCB-1260 (11096-82-5)			X												
24P. PCB-1016 (12674-11-2)			X												
25P. Toxaphene (8001-35-2)			X												

PLEASE PRINT OR TYPE IN THE UNSHADED AREAS ONLY. You may report some or all of this information on separate sheets *(use the same format)* instead of completing these pages.
SEE INSTRUCTIONS

EPA I.D. NUMBER *(copy from Item1 of Form 1)*: ILD060862810

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V. INTAKE AND EFFLUENT CHARACTERISTICS *(continued from page 3 of Form 2-C)*

OUTFALL NO. 002(a)

PART A - You must provide the results of at least one analysis for every pollutant in this table. **Complete one table for each outfall. See instructions for additional details.**

1. POLLUTANT	2. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	2. EFFLUENT a. MAXIMUM DAILY VALUE (2) MASS	2. EFFLUENT b. MAXIMUM 30 DAY VALUE *(if available)* (1) CONCENTRATION	2. EFFLUENT b. MAXIMUM 30 DAY VALUE *(if available)* (2) MASS	2. EFFLUENT c.LONG TERM AVRG. VALUE *(if available)* (1) CONCENTRATION	2. EFFLUENT c.LONG TERM AVRG. VALUE *(if available)* (2) MASS	2. EFFLUENT d. NO. OF ANAL-YSES	3.UNITS a. CONCEN TRATION	3.UNITS b. MASS	4. INTAKE *(optional)* a. LONG TERM AVERAGE VALUE (1) CONCEN-TRATION	4. INTAKE *(optional)* a. LONG TERM AVERAGE VALUE (2) MASS	4. INTAKE *(optional)* d. NO. OF ANAL-YSES
a. Biochemical Oxygen Demand (BOD)								mg/L	lbs/day			
b. Chemical Oxygen Demand (COD)								mg/L	lbs/day			
c. Total Organic Carbon (TOC)								mg/L	lbs/day			
d. Total Suspended Solids (TSS)	11.0	4.68	3.1	1.32	2.1	0.89	52	mg/L	lbs/day			
e. Ammonia								mg/L	lbs/day			
f. Flow	VALUE	0.060	VALUE	0.055	VALUE	0.051	365	MGD		VALUE		
g. Temperature *(winter)*	VALUE		VALUE		VALUE			°C		VALUE		
h. Temperature *(summer)*	VALUE		VALUE		VALUE			°C		VALUE		
i. pH	MINIMUM	MAXIMUM	MINIMUM	MAXIMUM				STANDARD UNITS				

PART B - Mark "X" in column 2-a for each pollutant you know or have reason to believe is present. Mark "X" in column 2-b for each pollutant you believe to be absent. If you mark column 2a for any pollutant which is limited either directly, or indirectly but expressly, in an effluent limitations guideline, you must provide the results of at least one analysis for that pollutant. For other pollutants for which you mark column 2a, you must provide quantitative data or an explanation of their presence in you discharge. Complete one table for each outfall. See instructions for additional details and requirements.

1. POLLUTANT AND CAS NUMBER *(if available)*	2. MARK 'X' b. BE-LIEVED PRE-SENT	2. MARK 'X' c. BE-LIEVED AB-SENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	3. EFFLUENT a. MAXIMUM DAILY VALUE (2) MASS	3. EFFLUENT b. MAXIMUM 30 DAY VALUE *(if available)* (1) CONCENTRATION	3. EFFLUENT b. MAXIMUM 30 DAY VALUE *(if available)* (2) MASS	3. EFFLUENT c.LONG TERM AVRG. VALUE *(if available)* (1) CONCENTRATION	3. EFFLUENT c.LONG TERM AVRG. VALUE *(if available)* (2) MASS	3. EFFLUENT d. NO. OF ANAL-YSES	4.UNITS a. CONCEN TRATION	4.UNITS b. MASS	5. INTAKE *(optional)* a. LONG TERM AVERAGE VALUE (1) CONCEN-TRATION	5. INTAKE *(optional)* a. LONG TERM AVERAGE VALUE (2) MASS	5. INTAKE *(optional)* d. NO. OF ANAL-YSES
a. Bromide (24959-67-9)		X								mg/L	lbs/day			
b. Chlorine, Total Residual		X								mg/L	lbs/day			
c. Color	X		5							Pt-Co				
d. Fecal Coliform		X												
e. Fluoride (16984 48-8)	X		< 0.01	< 0.004						mg/L	lbs/day			
f. Nitrate-Nitrite *(as N)*	X									mg/L	lbs/day			

ITEM V-B CONTINUED FROM FRONT

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X' b. BELIEVED PRESENT	2. MARK 'X' c. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	a. MAXIMUM DAILY VALUE (2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	b. MAXIMUM 30 DAY VALUE (if available) (2) MASS	c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	c. LONG TERM AVRG. VALUE (if available) (2) MASS	d. NO. OF ANALYSES	4. UNITS a. CONCENTRATION	4. UNITS b. MASS	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (2) MASS	5. INTAKE (optional) d. NO. OF ANALYSES
g. Nitrogen, Total Organic (as N)	x		< 1.00	< 0.426					1	mg/L	lbs/day			
h. Oil and Grease	x		6	2.724	5.1	2.170535	5.1	2.170535	12	mg/L	lbs/day			
i. Phosphorus (as P), Total (7723-14-0)	x		0.28	0.117					1	mg/L	lbs/day			
j. Radioactivity														
(1) Alpha, Total	x		0						1	pCi/L				
(2) Beta, Total	x		1270.0						1	pCi/L				
(3) Radium, Total	x		0.2						1	pCi/L				
(4) Radium 226, Total	x		0.0						1	pCi/L				
k. Sulfate (as SO_4) (14808-79-8)	x		2	0.8					1	mg/L	lbs/day			
l. Sulfide (as S)		x	< 1.00	< 0.426					1					
m. Sulfite (as SO_3) (14266-46-3)		x												
n. Surfactants	x		< 0.10	< 0.043					1	mg/L	lbs/day			
o. Aluminum, Total (7429-90-5)	x		< 0.2	< 0.085					1	mg/L	lbs/day			
p. Barium, Total (7440-39-3)	x		< 0.2	< 0.085					1	mg/L	lbs/day			
q. Boron, Total (7440-42-8)	x		0.17	0.071					1	mg/L	lbs/day			
r. Cobalt, Total (7440-48-4)	x		< 0.05	< 0.021					1	mg/L	lbs/day			
s. Iron, Total (7439-89-6)	x		0.33	0.139					1	mg/L	lbs/day			
t. Magnesium, Total (7439-95-4)	x		0.2	0.08					1	mg/L	lbs/day			
u. Molybdenum, Total (7439-98-7)	x		< 0.0	< 0.017					1	mg/L	lbs/day			
v. Manganese, Total (7439-96-5)	x		0.01	0.006					1	mg/L	lbs/day			
w. Tin, Total (7440-31-5)	x		< 0.1	< 0.043					1	mg/L	lbs/day			
x. Titanium, Total (7440-32-6)	x		< 0.1	< 0.021					1	mg/L	lbs/day			

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PART C - If you are a primary industry and this outfall contains process wastewater, refer to Table 2c-2 in the instructions to determine which of the GC/MS fractions you must test for. Mark "X" in column 2-a for all such GC/MS fractions that apply to your industry and for ALL toxic metals, cyanides, and total phenols. If you are not required to mark column 2-a (secondary industries, nonprocess wastewater outfalls, and non-required GC/MS fractions), mark "X" in column 2-b for each pollutant you know or have reason to believe is present. Mark "X" in column 2-c for each pollutant you believe is absent. If you mark column 2a for any pollutant, you must provide the results of at least one analysis for that pollutant. If you mark column 2b for any pollutant, must provide the results of at least one analysis for that pollutant if you know or have reason to believe it will be discharged in concentrations of 10 ppb of greater. If you mark column 2b for acrolein, acrylonitrile, 2,4 dinitrophenol, or 2-methyl-4,6 dinitrophenol, you must provide the results of at least one analysis for each of these pollutants which you know or have reason to believe that you discharge in concentrations of 100 ppb or greater. Otherwise, for pollutants for which you mark column 2b, you must either submit at least one analysis or briefly describe the reasons the pollutant is expected to be discharged. Note that there are seven pages to this part; please review each carefully. Complete one table (all 7 pages) for each outfall. See instructions for additional details and requirements.

1. POLLUTANT AND CAS NUMBER *(if available)*	2. MARK 'X'			3. EFFLUENT							4.UNITS		5. INTAKE *(optional)*		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE *(if available)*		c.LONG TERM AVRG. VALUE *(if available)*		d. NO. OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		d. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
METALS, CYANIDE, AND TOTAL PHENOLS															
1M. Antimony, Total (7440-36-0)		x		< 0.1	< 0.026					1	mg/L	lbs/day			
2M. Arsenic, Total (7440-38-2)		x		< 0.010	< 0.0043					1	mg/L	lbs/day			
3M. Beryllium, Total (7440-41-7)		x		< 0.01	< 0.002					1	mg/L	lbs/day			
4M. Cadmium, Total (7440-43-9)		x		< 0.0050	< 0.00213					1	mg/L	lbs/day			
5M. Chromium, Total (7440-47-3)		x		< 0.010	< 0.0043					1	mg/L	lbs/day			
6M. Copper, Total (7440-50-8)		x		< 0.007	< 0.003					1	mg/L	lbs/day			
7M. Lead, Total (7439-92-1)		x		< 0.003	< 0.0013					1	mg/L	lbs/day			
8M. Mercury, Total (7439-97-6)		x		< 0.00020	< 0.00009					1	mg/L	lbs/day			
9M. Nickel, Total (7440-02-0)		x		0.011	0.005					1	mg/L	lbs/day			
10M. Selenium, Total (7782-49-2)		x		< 0.005	< 0.0021					1	mg/L	lbs/day			
11M. Silver, Total (7440-22-4)		x		< 0.0100	< 0.0043					1	mg/L	lbs/day			
12M. Thallium, Total (7440-28-0)		x		< 0.010	< 0.0043					1	mg/L	lbs/day			
13M. Zinc, Total (7440-66-6)		x		0.01	0.006					1	mg/L	lbs/day			
14M. Cyanide, Total (57-12-5)		x		< 0.005	< 0.002					4	mg/L	lbs/day			
15M. Phenols, Total		x		< 0.048	< 0.020					4	mg/L	lbs/day			
DIOXIN															
2,3,7,8-Tetrachlorodibenzo-P-Dioxin (1764-01-6)			X	DESCRIBE RESULTS											

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'			3. EFFLUENT							4.UNITS		5. INTAKE (optional)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG. VALUE (if available)		d. NO. OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		d. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION - VOLATILE COMPOUNDS															
1V. Acrolein (107-02-8)			X												
2V. Acrylonitrile (107-13-1)			X												
3V. Benzene (71-43-2)			X												
4V. Bis (Chloromethyl) Ether (542-88-1)			X												
5V. Bromoform (75-25-2)			X												
6V. Carbon tetrachloride (56-23-5)			X												
7V. Chlorobenzene (108-90-7)			X												
8V. Chlorodibromomethane (124-48-1)			X												
9V. Chloroethane (75-00-3)			X												
10V. 2-Chloroethylvinyl ether (110-75-8)			X												
11V. Chloroform (67-66-3)			X												
12V. Dichlorobromomethane (75-27-4)			X												
13V. Dichlorodifluoromethane (75-71-8)			X												
14V. 1,1-Dichloroethane (75-34-3)			X												
15V. 1,2-Dichloroethane (107-06-2)			X												
16V. 1,1-Dichloroethylene (75-35-4)			X												
17V. 1,2-Dichloropropane (78-87-5)			X												
18V. 1,3-Dichloropropylene (542-75-6)			X												
19V. Ethylbenzene (100-41-4)			X												
20V. Methyl bromide (74-83-9)			X												
21V. Methyl chloride (74-87-3)			X												

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1. POLLUTANT AND CAS NUMBER *(if available)*	2. MARK 'X'			3. EFFLUENT							4.UNITS		5. INTAKE *(optional)*		
	a. TEST-ING RE-QUIR-ED	b. BE-LIEVED PRE-SENT	c. BE-LIEVED AB-SENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE *(if available)*		c.LONG TERM AVRG. VALUE *(if available)*		d. NO. OF ANAL-YSES	a. CONCEN TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		d. NO. OF ANAL-YSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCEN-TRATION	(2) MASS	
GC/MS FRACTION - VOLATILE COMPOUNDS *(continued)*															
22V. Methylene chloride (75-09-2)			X												
23V. 1,1,2,2-Tetra-chloroethane (79-34-5)			X												
24V. Tetrachloroethylene (127-18-4)			X												
25V. Toluene (108-88-3)			X												
26V. 1,2-Trans-dichloro-ethylene (156-60-5)			X												
27V. 1,1,1-Trichloroethane (71-55-6)			X												
28V. 1,1,2-Trichloroethane (79-00-5)			X												
29V. Trichloroethylene (79-01-6)			X												
30V. Trichlorofluoro-methane (75-69-4)			X												
31V. Vinyl chloride (75-01-4)			X												
GC/MS FRACTION - ACID COMPOUNDS															
1A. 2-Chlorophenol (95-57-8)			X												
2A. 2,4-Dichlorophenol (120-83-2)			X												
3A. 2,4-Dimethylphenol (105-67-9)			X												
4A. 4,6-Dinitro-O-cresol (534-52-1)			X												
5A. 2,4-Dinitrophenol (51-28-5)			X												
6A. 2-Nitrophenol (88-75-5)			X												
7A. 4-Nitrophenol (100-02-7)			X												
8A. P-Chloro-M-cresol (59-50-7)			X												
9A. Pentachlorophenol (87-86-5)			X												
10A. Phenol (108-95-2)			X												
11A. 2,4,6-Trichlorophenol (88-06-2)			X												

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'			3. EFFLUENT							4.UNITS		5. INTAKE (optional)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG. VALUE (if available)		d. NO. OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		d. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION - BASE/NEUTRAL COMPOUNDS															
1B. Acenaphthene (83-32-9)			X												
2B. Acenaphthylene (208-96-8)			X												
3B. Antracene (120-12-7)			X												
4B. Benzidine (92-87-5)			X												
5B. Benzo (a) anthracene (56-55-3)			X												
6B. Benzo (a) pyrene (50-32-8)			X												
7B. 3,4-Benzofluoranthene (205-99-2)			X												
8B. Benzo (ghi) perylene (191-24-2)			X												
9B. Benzo (k) fluoranthene (207-08-9)			X												
10B. Bis (2chloroethox-y) methane (111-91-1)			X												
11B. Bis (2-chloroethyl) ether (111-44-4)			X												
12B. Bis (2-chloroiso-propyl) ether (102-60-1)			X												
13B. Bis (2-ethylhexyl) phthalate (117-81-7)			X												
14B. 4-Bromophenyl phenyl ether (101-55-3)			X												
15B. Butyl benzyl phthalate (85-68-7)			X												
16B. 2-Chloronaphthalene (91-58-7)			X												
17B. 4-Chlorophenyl phenyl ether (7005-72-3)			X												
18B. Chrysene (218-01-9)			X												
19B. Dibenzo (a,h) anthracene (53-70-3)			X												
20B. 1,2-Dichlorobenzene (95-50-1)			X												
21B. 1,3-Dichlorobenzene (541-73-1)			X												

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1. POLLUTANT AND CAS NUMBER *(if available)*	2. MARK 'X'			3. EFFLUENT							4.UNITS		5. INTAKE *(optional)*		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE *(if available)*		c.LONG TERM AVRG. VALUE *(if available)*		d. NO. OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		d. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION - BASE/NEUTRAL COMPOUNDS *(continued)*															
22B. 1,4-Dichlorobenzene (106-46-7)			X												
23B. 3,3'-Dichlorobenzedine (91-94-1)			X												
24B. Diethyl phthalate (84-66-2)			X												
25B. Dimethyl phthalate (131-11-3)			X												
26B. Di-N-butyl phthalate (84-74-2)			X												
27B. 2,4-Dinitrotolune (121-14-2)			X												
28B. 2,6-Dinitrotolune (606-20-2)			X												
29B. Di-N-octyl phthalate (117-84-0)			X												
30B. 1,2-Diphenylhydrazine (122-66-7)			X												
31B. Fluoranthene (206-44-0)			X												
32B. Fluorene (86-73-7)			X												
33B. Hexachlorobenzene (118-74-1)			X												
34B. Hexachlorobutadiene (87-68-3)			X												
35B. Hexachlorocyclopentadiene (77-47-4)			X												
36B. Hexachloroethane (67-72-1)			X												
37B. Indeno (1,2,3-cd) pyrene (193-39-5)			X												
38B. Isophorone (78-59-1)			X												
39B. Naphthalene (91-20-3)			X												
40B. Nitrobenzene (98-95-3)			X												
41B. N-Nitrosodimethylamine (62-75-9)			X												
42B. N-Nitrosodi-N-propylamine (621-64-7)			X												

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'			3. EFFLUENT							4.UNITS		5. INTAKE (optional)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG. VALUE (if available)		d. NO. OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		d. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION - BASE/NEUTRAL COMPOUNDS (continued)															
43B. N-Nitrosodiphenylamine (86-30-6)			X												
44B. Phenanthrene (85-01-8)			X												
45B. Pyrene (129-00-0)			X												
46B. 1,2,4-Trichlorobenzene (120-82-1)			X												
GC/MS FRACTION - PESTICIDES															
1P. Aldrin (309-00-2)			X												
2P. -BHC (319-84-6)			X												
3P. -BHC (319-85-7)			X												
4P. -BHC (58-89-9)			X												
5P. -BHC (319-86-8)			X												
6P. Chlordane (5774-9)			X												
7P. 4,4'-DDT (5029-3)			X												
8P. 4,4'-DDE (72-55-9)			X												
9P. 4,4'-DDD (72-54-8)			X												
10P. Dieldrin (6057-1)			X												
11P. -Endosulfan (115-29-7)			X												
12P. -Endosulfan (115-29-7)			X												
13P. Endosulfan Sulfate (1031-07-8)			X												
14P. Endrin (7220-8)			X												
15P. Endrin Aldehyde (7421-93-4)			X												
16P. Heptachlor (76-44-8)			X												

CONTINUE ON PAGE V-9

EPA I.D. NUMBER *(copy from Item 1 of Form 1)*	OUTFALL NUMBER
ILD060862810	002(a)

Form Approved
OMB No. 2000-0059 Approval
expires 12-31-85

CONTINUED FROM PAGE V-8

1. POLLUTANT AND CAS NUMBER *(if available)*	2. MARK 'X'			3. EFFLUENT							4.UNITS		5. INTAKE *(optional)*		
	a. TEST-ING RE-QUIR-ED	b. BE-LIEVED PRE-SENT	c. BE-LIEVED AB-SENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE *(if available)*		c.LONG TERM AVRG. VALUE *(if available)*		d. NO. OF ANAL-YSES	a. CONCEN-TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		d. NO. OF ANAL-YSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCEN-TRATION	(2) MASS	
GC/MS FRACTION - PESTICIDES *(continued)*															
17P. Heptachlor Epoxide (1024-57-3)			X												
18P. PCB-1242 (53469-21-9)			X												
19P. PCB-1254 (11097-69-1)			X												
20P. PCB-1221 (11104-28-2)			X												
21P. PCB-1232 (11141-16-5)			X												
22P. PCB-1248 (12672-29-6)			X												
23P. PCB-1260 (11096-82-5)			X												
24P. PCB-1016 (12674-11-2)			X												
25P. Toxaphene (8001-35-2)			X												

MATERIAL SAFETY DATA SHEET
SODIUM HYPOCHLORITE 12.5%

Rowell Chemical Corporation
15 Salt Creek Ln. Suite 205
Hinsdale, Il. 60521

For information, please contact the Rowell Chemical facility in Willow Springs at (708) 839-1707 or the Rowell Chemical Corporate office in Hinsdale, IL. at (630) 920-8833.

In the event of a transportation emergency, **Call CHEMTREC: (800) 424-9300**

Section I - **Identification**

Trade Name:	HYPO 150
Chemical Name:	Sodium Hypochlorite Solution
Formula:	NaOCl
DOT Shipping Name:	Hypochlorite Solution
DOT Hazard Class:	Corrosive Material
UN/NA Number:	UN 1791
DOT Label:	Corrosive
DOT Placard:	Corrosive
Reportable Quantity:	Sodium Hypochlorite: 100 lbs/45.4 Kg
CAS Number:	7681-52-9
NFPA Designation:	There is no NFPA designation for sodium hypochlorite.

Section II - **Hazardous Ingredients**

Material	% By Weight	CAS No.	TLV/PEL
Sodium Hypochlorite	12.5-15.6	7681-52-9	NA
Sodium Hydroxide	0.2-2.0	1310-73-2	2 mg/m^3
Inert ingredients	Balance	7732-18-5	NA

Carcinogenicity Status: NTP-No, IARC-No, OSHA-No.

Section III - **Physical Data**

Appearance:	Yellow-green liquid
Boiling Point:	219 °F (104 °C) for 12.5% NaOCl by wt.
Freezing Point:	-11 °F (-24 °C) for 12.5% NaOCl by wt.
Odor:	Chlorine
pH:	12.5 - 13.5 S.U.
Viscosity (Cs):	2.15 @ 23 °C for 12.5% NaOCl by wt.
Percent Volatile by Volume:	Variable - water plus products of decomposition
Solubility in Water:	Complete
Specific Gravity (Water=1):	1.224 @ 20 oC for 14.15% NaOCl by wt.
Vapor Pressure (mm Hg):	Variable - water plus products of decomposition

*maximum usage level - 200 Mg/l

NSF

Section IV - **Fire And Explosion Data**

Flash Point (Test method): Not applicable
Auto Ignition Temperature: Not applicable
Flammable Limits In Air (Volume %): Not applicable
Extinguishing Media: Flood with water or carbon dioxide (CO2)
Special Fire Fighting Procedures: Use National Institute of Occupational Safety & Health (NIOSH) certified gas mask with canister for chlorine or use self-contained breathing apparatus. Unusual fire and explosion hazards: material is strong oxidizer. Contact with combustibles may initiate or promote combustion. Acid and heat accelerate combustion Decomposition products may include chlorine.

Section V - **Health Hazard Information**

Medical conditions aggravated by exposure:
No aggravation of a medical condition has been found to be caused by sodium hypochlorite.

Routes of Exposure:
Inhalation: Fumes from spills are very irritating to mucous membranes. Very little hazard from properly stored solution.
Skin Contact: Severe irritant, reddening of skin, skin damage.
Skin Absorption: Same as skin contact.
Eye Contact: Severe irritant; corrosive.
Ingestion: Causes irritation of membranes of the mouth, throat, and stomach pain and possible ulceration. LD50 (oral, rat) for 12.5% NaOCl is above 5 g/kg body weight.

Effects of Overexposure:

Acute Overexposure:
Swallowing: See "ingestion" under routes of exposure.
Skin Contact: Irritant. reddening of skin, skin damage.
Inhalation: Fumes from spills are very irritating to mucous membranes.
Eye Contact: Extreme irritant, corrosive.

Chronic Overexposure:
Eye: Can cause damage.
Skin: Can cause damage, chemical burn.

Emergency And First Aid Procedures:
Eyes: Immediately flush with water for at least fifteen (15) minutes. Get medical attention.
Skin: Remove soaked clothes. Wash with plenty of soap and water for at least fifteen (15) minutes. Inhalation: Remove to fresh air. Call physician, if exposure is severe.
Ingestion: If conscious, drink large quantities of milk, or gelatin solution, or if these are not available, drink large quantities of water. Do not give vinegar or other acids. Do not induce vomiting. Get prompt medical attention.

Section VI - **Reactivity Data**

Conditions Contributing to Instability:
Solutions are fairly stable in concentrations below 10%. Stability decreases with concentration, light, heat, fire, decrease in pH, metallic impurities such as nickel, cobalt, copper, and iron. Naturally decomposes with age.

Incompatibility:
Acids, alcohols, amines, ammonia, chlorinated isocyanurates, combustibles, cyanides, detergents, ethers, hydrocarbons, oxidizable materials, reducing agents. Corrosive to most metals.

Decomposition Products:
Contact with acid releases chlorine gas: natural decomposition product is oxygen. Thermal decomposition, or burning, may produce hydrochloric acid. Contact with ammonia may release hazardous gases. Other decomposition products are hypochlorous acid, sodium chlorate, sodium chloride.

Conditions Contributing To Hazardous Polymerization:
None, does not polymerize.

*maximum usage level - 200 Mg/l

Section VII - **Spill Or Leak Procedures**

Steps To Be Taken If Material Is Released Or Spilled:
Contain in diked area. Neutralize with sodium bisulfite or ferrous salt solution. Place neutralized material in DOT specification approved container(s). Flush area with large amounts of water. Comply with all Federal, State and Local reporting requirements. Clean up personnel must wear proper protective clothing.

Waste Disposal:
Contact Federal, State, County and Local environmental regulators for guidance regarding proper disposal.

Section VIII - **Special Protection Information**

Ventilation Requirements:
Local Exhaust is recommended.

Specific Personal Protective Equipment:
Respiratory: Use National Institute of Occupational Safety and Health (NIOSH) or Mine Safety and Health Administration (MSHA) approved respirator appropriate for this product when permissible exposure limits are exceeded.
Eyes: Use chemical goggles and face shield.
Gloves: Use rubber or neoprene gloves.
Other: Use rubber splash apron and rubber boots. Safety shower and eye wash fountain should be located nearby.

Section IX- **Special Precautions**

Precautions To Be Taken In Handling:
Danger: This product is corrosive and may cause severe skin irritation or chemical burns to broken skin. Causes eye damage. Do not get in eyes, on skin or on clothing. Wear goggles and face shield and rubber gloves when handling this product. Wash after handling. Avoid breathing vapors. Vacate poorly ventilated areas as soon as possible. Do not return until odors have dissipated.

Proper Storage And Disposal Requirements
Store in a cool, dry area away from direct sunlight. In case of spill, floor area with large quantities of water. Rinse empty container thoroughly with water and either return to manufacturer or discard by placing in trash collection or burning in an approved landfill. Product or rinseate that cannot be used should be diluted with water and disposed of in a sanitary sewer. Do not contaminate food, or feed by storage, disposal or cleaning of equipment. Store in an upright position.

Other Precautions:
Strong Oxidizing Agent: Mix only with according to label directions. Mixing this product with gross filth such as feces, urine, etc. or with ammonia, acids, detergents or other chemicals may release hazardous gases irritating to eyes, lungs and mucous membranes.

Additional Regulatory Concerns:
EPA: May not be used for disinfection or sanitizing without prior approval by EPA/ Repackagers must obtain EPA registration and establishment numbers.
FIFRA: This product is regulated under the Federal Insecticide, Fungicide, and Rodenticide Act. (FIFRA) if used as a disinfectant or sanitizer.
TSCA: Included in the Toxic Substances Control Act (TSCA) Inventory of chemical Substances if not covered by FIFRA.

MSDS Prepared By:
Rowell Chemical Corporation
15 Salt Creek Ln. Suite 205
Hinsdale, Il. 60521
(630) 920-8833

Issue Date: 10/23/93
Revision Date: 10/23/98 SMG
Printed on: 10/23/98

The information herein is given in good faith but no warranty, expressed or implied is made.

*maximum usage level - 200 Mg/l

PRODUCT DATA SHEET

MAYS CHEMICAL CO. INC
875 E 112th Sreet
Chicago, IL 60628
(773)928-3644

BioRid™ 40i

TETRA

Description

BioRid™ 40i is an aqueous sodium bromide solution.

Applications

BioRid™ 40i is intended for use as a disinfectant, sanitizer, slimicide, bactericide, algaecide, fungicide and molluscicide in pulp and paper mills, waste water treatment systems, air wash water systems, re-circulating and once-through cooling water systems, evaporative condenser systems, sewage systems, heat exchanger systems, industrial processing water, industrial scrubbing systems, ornamental ponds and aquaria, domestic and commercial non-potable water systems, influent systems and waste water systems for the control of aquatic environmental bacteria, slime forming algae, bacteria, fungi and related odors. **BioRid™ 40i** must be used in combination with an oxidizer such as sodium hypochlorite (12.5%) or chlorine gas (99%) to produce hypobromous acid.

Specifications

	specification
assay, NaBr (by weight)	38.80% - 41.20%
Density @ 20°C	11.64 – 11.92 lbs/gal
pH, 1:10 dilution	7.0 minimum
Color, APHA	30 maximum
Turbidity	6 NTU maximum
Iron	10 ppm maximum

Physical Properties

clarity	clear
odor	odorless
flash point	none
boiling point	100 - 112°C

Safety and Handling

BioRid™ 40i can cause mild eye and skin irritation with repeated or prolonged exposure. To prevent exposure, appropriate personal protective equipment should be worn when handling this product. In case of eye or skin contact, wash effected area with generous amounts of soap and water. Seek medical attention if irritation persists. If ingested, call a physician or poison control center. Drink one or two glasses of water and induce vomiting by touching back of throat with finger, or, if available, by administering syrup of ipecac. If person is unconscious, do not give anything by mouth, and do not induce vomiting.

Do not use this product until the MSDS has been read and understood, and required safety precautions are followed.

TETRA Bromine and Derivatives
25025 I-45 North
The Woodlands, TX 77380
(281) 364-2617
Technical Assistance
(281) 364-7617
Facsimile
(281) 364-2929

MAYS CHEMICAL CO. INC
875 E 112th Sreet
Chicago, IL 60628
(773)928-3644

BioRid™ 40i
File: MSDS: C-127

TETRA Technologies, Inc.

Material Safety Data Sheet

This MSDS Sheet complies with the style format specified by ANSI Z400.1-1993

SECTION 1: CHEMICAL PRODUCT - COMPANY IDENTIFICATION

TETRA Technologies, Incorporated
25025 I-45 North
The Woodlands, Texas 77380
(218) 367-1983
(800) 327-7817

(800) 424-9300 - CHEMTREC (24 Hour Emergency Response)

SUBSTANCE: Sodium Bromide Solution
TRADE NAMES/SYNONYMS: BioRid™ 40i, Liquid Sodium Bromide, NaBr
CHEMICAL FAMILY: Inorganic Salt
MSDS CREATION DATE: 03 AUG 98
MSDS REVISION DATE: 03 AUG 98

SECTION 2: COMPOSITION, INFORMATION ON INGREDIENTS

COMPONENTS: Sodium Bromide, Water
CAS NUMBER: 7647-15-6 (Sodium Bromide), 7732-18-5 (Water)
RTECS NUMBER: VZ3150000 (Sodium Bromide)
PERCENTAGE:

Sodium Bromide	1 - 46%
Water	54 - 99%

PROBABLE CONTAMINANT: Sodium Chloride

SECTION 3: HAZARDS IDENTIFICATION

NFPA RATINGS: (SCALE 0-4): HEALTH=0, FIRE=0, REACTIVITY=0
EMERGENCY OVERVIEW: Odorless, colorless, clear liquid. May cause skin, respiratory tract and eye irritation. Do not get in eyes, on skin or on clothing. May be harmful if swallowed but not an expected pathway in an industrial environment. Keep container tightly closed. Wash thoroughly after handling. Use only with adequate ventilation.

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POTENTIAL HEALTH EFFECTS:

INHALATION:

Short Term Effects: May cause irritation

Long Term Effects: No information available.

SKIN CONTACT:

Short Term Effects: No information available.

Long Term Effects: No information available.

EYE CONTACT:

Short Term Effects: May cause irritation. Additional effects may include tearing.

Long Term Effects: No information available.

INGESTION:

Short Term Effects: May cause nausea, vomiting, digestive disorders, headache and kidney damage.

Long Term Effects: No information available.

CARCINOGEN STATUS:

OSHA: No **NTP:** No **IARC:** No

SECTION 4: FIRST AID MEASURES

INHALATION: Remove from exposure area to fresh air immediately. If breathing has stopped, perform artificial resuscitation. Keep person comfortable and at rest. Treat symptomatically and supportively. Get medical attention immediately.

SKIN CONTACT: Remove contaminated clothing and shoes immediately. Wash affected area with soap or mild detergent and large amounts of water until no evidence of chemical remains (at least 15-20 minutes). In cases of burns, cover area loosely with sterile, dry dressing. Get medical attention immediately.

EYE CONTACT: Flush eyes immediately with large amounts of water or normal saline solution, occasionally lifting upper and lower lids until no evidence of chemical remains (approximately 15-20 minutes). Get medical attention immediately.

INGESTION: Treat symptomatically and supportively. Get medical attention immediately. If vomiting occurs, keep head lower than hips to prevent aspiration.

NOTE TO PHYSICIAN: Antidote:

Antidote should be administered by qualified medical personnel. No specific antidote has been recommended. Treat symptomatically and supportively. The following antidote has been recommended for bromide poisoning. However, the decision as to whether the severity of poisoning requires administration of any antidote and actual dose required should be made by qualified medical personnel.

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BROMIDE POISONING: Give sodium chloride, 1 gram orally every hour in water or as salt tablets; for severe involvement in which oral medication is impossible, give normal saline, 1 liter every 8 hours intravenously to a maximum of 2 liters daily. Sodium chloride therapy must be continued until the blood bromide level drops below 50 mg/dL. Simultaneous administration of diuretics is also useful (Driesbach, Handbook of Poisoning, 12th Ed.).

SECTION 5: FIRE FIGHTING MEASURES

FIRE AND EXPLOSION HAZARD: Negligible fire hazard when exposed to heat or flame.

EXTINGUISHING MEDIA: Dry chemical, carbon dioxide, water spray or regular foam. For larger fires, use water spray, fog or regular foam.

FIREFIGHTING: Move container(s) from fire area if you can without risk. Apply cooling water to sides of containers that are exposed to flames until well after fire is out. Extinguish fire using agent suitable for type of surrounding fire and/or chemicals. Do not use water directly on material. Avoid breathing corrosive vapors; keep upwind. Dike area to prevent runoff and contamination of water sources.

HAZARDOUS COMBUSTION PRODUCTS: Thermal decomposition products may include toxic and corrosive fumes of bromine, hydrogen bromide and sodium oxide. Product may react with some metals (aluminum, zinc, tin, etc.) to release flammable hydrogen gas.

SECTION 6: ACCIDENTAL RELEASE MEASURES

OCCUPATIONAL SPILL: Do not touch spilled material. Stop leak if you can without risk. For small spills, take up with sand or other absorbent material and place in containers for disposal. Move containers from spill area. For larger spills, dike far ahead of spill for later disposal. Keep unnecessary people away. Isolate hazard area and deny entry.

SECTION 7: HANDLING AND STORAGE

Observe all federal, state and local regulations when storing this product. Store in a tightly closed container. Store away from incompatible materials.

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SECTION 8: EXPOSURE CONTROLS, PERSONAL PROTECTION

EXPOSURE LIMITS: No occupational exposure limits established by OSHA/ACGIH/NIOSH.
VENTILATION: Provide local exhaust ventilation system.
EYE PROTECTION: Wear safety glasses with splash shields or safety goggles/shield to prevent contact with this product.
EMERGENCY WASH FACILITIES: Where there is any possibility that an employee's eyes and/or skin may be exposed to this product, the employer should provide an eye wash fountain and quick drench shower within the immediate work area for emergency use.
CLOTHING: Employee must wear appropriate protective (impervious) clothing and equipment to prevent repeated or prolonged skin contact with this product.
GLOVES: Employee must wear appropriate protective gloves to prevent contact with this product.
RESPIRATOR: The respirator selected must be based on contamination levels found in the work place and specific to the job assignment. Do not exceed the working limits of the respirator. Respirators must also be jointly approved by the National Institute for Occupational Safety and Health and the Mine Safety and Health Administration (NIOSH-MSHA). These respirators are ranked from minimum to maximum respiratory protection as listed below:

- Any dust and mist respirator with a full facepiece;
- Any air-purifying full facepiece respirator with a high-efficiency particulate filter;
- Any powered air-purifying respirator with a tight-fitting facepiece and high-efficiency particulate filter;
- Any Type 'C' supplied-air respirator with a full facepiece operated in pressure-demand or other positive-pressure mode or with a full facepiece, helmet or hood operated in continuous-flow mode;
- Any self-contained breathing apparatus with a full facepiece operated in pressure-demand or other positive-pressure mode.

FOR FIREFIGHTING AND OTHER IMMEDIATELY DANGEROUS TO LIFE OR HEALTH CONDITIONS: Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode. Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained breathing apparatus operated in pressure-demand or other positive-pressure mode.

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SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

DESCRIPTION: Odorless, colorless, clear liquid.
FORMULA: NaBr
MOLECULAR WEIGHT: 102.90 (for pure NaBr)
BOILING POINT: Not determined.
SPECIFIC GRAVITY: 1.007 - 1.522 @ 68°F (20°C)
WATER SOLUBILITY: Miscible with water in all proportions.
SOLVENT SOLUBILITY: Slightly to moderately soluble in alcohol.

SECTION 10: STABILITY AND REACTIVITY

REACTIVITY: Stable under normal temperatures and pressures. Can evolve hydrogen bromide and/or bromine when strongly heated.
CONDITIONS TO AVOID: Vapors may accumulate in tanks and hopper cars.
INCOMPATIBILITIES:
Strong acids, strong oxidizers and metal salts.
HAZARDOUS DECOMPOSITION: Thermal decomposition products may include toxic and corrosive fumes of hydrogen bromide, bromine and sodium oxide.
POLYMERIZATION: Hazardous polymerization has not been reported to occur under normal temperatures and pressures.

SECTION 11: TOXICOLOGICAL INFORMATION

TOXICITY DATA (SODIUM BROMIDE):
LD_{50}: 3500 mg/kg, rat, oral
LD_{50}: 2900 mg/kg, rat, subcutaneous
Mutagenic data and tumorigenic data-see Registry of Toxic Effects of Chemical Substances (RTECS) file.
CARCINOGEN STATUS: None.
LOCAL EFFECTS: Sodium Bromide is an eye, mucous membrane and skin irritant.
ACUTE TOXICITY LEVEL: Moderately toxic by ingestion.
TARGET EFFECTS: No data available.
INHALATION:
Acute Exposure: Inhalation of mist may cause irritation with coughing and shortness of breath.
Chronic Exposure: No data available.

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SKIN CONTACT:

Acute Exposure: Single, short exposure not likely to cause significant skin irritation. However, direct contact with dust or solutions may cause severe irritation, erythema, blistering, exfoliation, ulceration, necrosis and scarring. The degree of irritation depends on the concentration and duration of contact.

Chronic Exposure: Effects depend on concentration and duration of exposure. Repeated or prolonged contact with corrosive substances may result in dermatitis or effects similar to those in acute exposure.

EYE CONTACT:

Acute Exposure: Direct contact may cause irritation with redness and pain and superficial injury. Tearing and eye discharge may also occur.

Chronic Exposure: Repeated or prolonged exposure may result in conjunctivitis.

INGESTION:

Acute Exposure: Poisoning by acute exposure is rare because bromides irritate the gastric mucosa when ingested in large amounts as a single dose and cause immediate abdominal pain, nausea and vomiting.

Chronic Exposure: Repeated or prolonged ingestion of bromides may cause "bromism" which most frequently affects the gastrointestinal system, the central nervous system, and the skin. Gastrointestinal disturbances may include nausea and vomiting from gastric irritation, foul breath, weight loss, dehydration, and constipation. Neurological manifestations may include headache, decreased memory, impaired intellectual capacity, and ataxia. Discontinuation of exposure will normally result in reversal of symptoms. Maternal exposure may result in hypotonia in neonates. May cause abdominal spasms and nausea. Overdose may cause gastrointestinal tract or cardiovascular irregularities.

SECTION 12: ECOLOGICAL INFORMATION

ENVIRONMENTAL IMPACT RATING (0-4): No data available.

ECOTOXICITY DATA:

Fish Toxicity: 16,000,000 µg/L, 96 hour(s), LC_{50} (Mortality), Guppy (Poecilia reticulata)

Invertebrate Toxicity: 5,700,000 - 10,800,000 µg/L, 48 hour(s), EC_{50} (Immobilization), Water flea (Daphnia magna)

DEGRADABILITY: No data available.

LOG BIOCONCENTRATION FACTOR (BCF): No data available.

LOG OCTANOL/WATER PARTITION COEFFICIENT: No data available.

SECTION 13: DISPOSAL INFORMATION

Observe all federal, state and local regulations when disposing of this substance.

MAYS CHEMICAL CO. INC
875 E 112tn Sreet
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(773)928-3844

TETRA

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SECTION 14: TRANSPORT INFORMATION

US DOT Shipping Name-ID Number: No classification assigned.
Air Transport IATA/ICAO: No classification assigned.
Maritime Transport IMDG: No classification assigned.
Land Transport ADR/RID: No classification assigned.

SECTION 15: REGULATORY INFORMATION

United States:

	TSCA STATUS:	Yes
40 CFR 302.4	CERCLA SECTION 103:	No
40 CFR 355.30	SARA SECTION 302:	No
40 CFR 355.40	SARA SECTION 304:	No
40 CFR 372.65	SARA SECTION 313:	No
40 CFR 370.21	SARA HAZARD CATEGORIES, SARA SECTIONS 311/312	
	ACUTE HAZARD:	No
	CHRONIC HAZARD:	No
	FIRE HAZARD:	No
	REACTIVITY HAZARD:	No
	SUDDEN RELEASE HAZARD:	No
29 CFR 1910.119	OSHA Process Safety	No
	STATE REGULATIONS:	
	CALIFORNIA PROPOSITION 65:	No

Foreign:

CANADIAN	
DOMESTIC SUBSTANCE LIST (DSL)	Yes
NON-DOMESTIC SUBSTNACE LIST (NDSL)	No
EUROPEAN REGULATIONS (EINECS)	Yes
AUSTRALIAN INVENTORY of CHEMICAL SUBSTANCES (AICS)	Yes
JAPAN INVENTORY STATUS (ENCS)	Yes
KOREA (ECL)	Yes

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BioRid™ 40i
File: MSDS: C-127

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SECTION 16: OTHER INFORMATION

Individuals handling this product should be informed of the recommended safety precautions and should have access to this information.

This information relates to the specific product designated and may not be valid for such product used in combination with any other materials or in any other processes. Such information is to the best of our knowledge and belief, accurate and reliable as of the date compiled. However, no representation, warranty or guarantee is made as to its accuracy, reliability, or completeness. It is the user's responsibility to satisfy themselves as to the suitability and completeness of such information for their own particular use. We do not accept liability for any loss or damage that may occur from the use of this information nor do we offer warranty against patent infringement.

TETRA Technologies, Incorporated reserves the right to refuse shipment of this product to any consumer who fails to demonstrate the ability to consistently handle and use it safely and in compliance with all applicable laws, rules and regulations. Such demonstration may require on-site inspection of any or all storage, processing, packaging and other handling systems that come in contact with it.

Customers are responsible for compliance with local, state and federal regulations that may be pertinent in the storage, application and disposal of this product.

MATERIAL SAFETY DATA SHEET

NALCO

PRODUCT
NALCO 9350

Emergency Telephone Number
Medical (800) 462-5378 (24 hours) (800) I-M-ALERT

SECTION 01 CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

TRADE NAME: NALCO 9350
DESCRIPTION: Aqueous solution of a polyacrylate

NFPA 704M/HMIS RATING: 1/1 HEALTH 1/1 FLAMMABILITY 0/0 REACTIVITY 0 OTHER
0=Insignificant 1=Slight 2=Moderate 3=High 4=Extreme

SECTION 02 COMPOSITION AND INFORMATION ON INGREDIENTS

Our hazard evaluation of the ingredient(s) under OSHA's Hazard Communication Rule, 29 CFR 1910.1200 has found none of the ingredient(s) hazardous.

SECTION 03 HAZARD IDENTIFICATION

EMERGENCY OVERVIEW:
CAUTION: May cause irritation to skin and eyes. Avoid contact with skin, eyes and clothing. Do not take internally.

Empty containers may contain residual product. Do not reuse container unless properly reconditioned.

PRIMARY ROUTE(S) OF EXPOSURE: Eye, Skin, Inhalation

EYE CONTACT: May cause irritation.
SKIN CONTACT: Can cause mild, temporary irritation.

SYMPTOMS OF EXPOSURE: A review of available data does not identify any symptoms from exposure not previously mentioned.

AGGRAVATION OF EXISTING CONDITIONS: A review of available data does not identify any worsening of existing conditions.

SECTION 04 FIRST AID INFORMATION

EYES: Flush with water for 15 minutes. Call a physician.
SKIN: Flush with water for 15 minutes.
INGESTION: Do not induce vomiting. Give water. Call a physician.
INHALATION: Remove to fresh air. Treat symptoms. Call a physician.

NOTE TO PHYSICIAN: Based on the individual reactions of the patient, the physician's judgment should be used to control symptoms and clinical condition.

CAUTION: If unconscious, having trouble breathing or in convulsions, do not induce vomiting or give water.

NALCO CHEMICAL COMPANY ONE NALCO CENTER · NAPERVILLE, ILLINOIS 60563-1198
AREA 630-305-1000

NALCO

PRODUCT

NALCO 9350

Emergency Telephone Number

Medical (800) 462-5378 (24 hours) (800) I-M-ALERT

SECTION 05 FIRE FIGHTING MEASURES

FLASH POINT: Greater than 200 Degrees F (PMCC) ASTM D-93

EXTINGUISHING MEDIA: This product would not be expected to burn unless all the water is boiled away. The remaining organics may be ignitable. Use water to cool containers exposed to fire.

UNUSUAL FIRE AND EXPLOSION HAZARD: May evolve NOx or SOx under fire conditions.

SECTION 06 ACCIDENTAL RELEASE MEASURES

IN CASE OF TRANSPORTATION ACCIDENTS, CALL THE FOLLOWING 24-HOUR TELEPHONE NUMBER (800) I-M-ALERT or (800) 462-5378.

SPILL CONTROL AND RECOVERY:

Small liquid spills: Contain with absorbent material, such as clay, soil or any commercially available absorbent. Shovel reclaimed liquid and absorbent into recovery or salvage drums for disposal. Refer to CERCLA in Section 15.

Large liquid spills: Dike to prevent further movement and reclaim into recovery or salvage drums or tank truck for disposal. Refer to CERCLA in Section 15.

SECTION 07 HANDLING AND STORAGE

Handling: Avoid contact with skin, eyes, and clothing.

Storage : Keep container closed when not in use.

SECTION 08 EXPOSURE CONTROLS AND PERSONAL PROTECTION

RESPIRATORY PROTECTION: Respiratory protection is not normally needed since the volatility and toxicity are low. If significant mists are generated, use either a chemical cartridge respirator with a dust/mist prefilter or supplied air.

For large spills, entry into large tanks, vessels or enclosed small spaces with inadequate ventilation, a positive pressure, self-contained breathing apparatus is recommended.

VENTILATION: General ventilation is recommended.

PROTECTIVE EQUIPMENT: Use impermeable gloves and chemical splash goggles when attaching feeding equipment, doing maintenance or handling product. Examples of impermeable gloves available on the market are neoprene, nitrile, PVC, natural

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SECTION 08 EXPOSURE CONTROLS AND PERSONAL PROTECTION (CONTINUED)

rubber, viton and butyl (compatibility studies have not been performed).

The availability of an eye wash fountain and safety shower is recommended.

If clothing is contaminated, remove clothing and thoroughly wash the affected area. Launder contaminated clothing before reuse.

SECTION 09 PHYSICAL AND CHEMICAL PROPERTIES

COLOR: Clear, colorless	FORM: Liquid	
DENSITY:	10.2-10.7 lbs/gal.	
SOLUBILITY IN WATER:	Completely	
SPECIFIC GRAVITY:	1.23-1.29 @ 77 Degrees F	ASTM D-1298
VISCOSITY:	275 cps @ 71 Degrees F	ASTM D-2983
FREEZE POINT:	Less than -50 Degrees F	ASTM D-1177
pH (NEAT) =	3	ASTM E-70
FLASH POINT:	Greater than 200 Degrees F (PMCC)	ASTM D-93

NOTE: These physical properties are typical values for this product.

SECTION 10 STABLILITY AND REACTIVITY

INCOMPATIBILITY: Avoid contact with strong oxidizers (eg. chlorine, peroxides, chromates, nitric acid, perchlorates, concentrated oxygen, permanganates) which can generate heat, fires, explosions and the release of toxic fumes.

Avoid alkaline materials (eg. ammonia and its solutions, carbonates, sodium hydroxide (caustic), potassium hydroxide, calcium hydroxide (lime), cyanides, sulfides, hypochlorites, chlorites) which can generate heat with splattering or boiling and the release of toxic fumes.

THERMAL DECOMPOSITION PRODUCTS: In the event of combustion CO, CO_2, NOx, SOx may be formed. Do not breathe smoke or fumes. Wear suitable protective equipment.

SECTION 11 TOXICOLOGICAL INFORMATION

TOXICITY STUDIES: No toxicity studies have been conducted on this product.

HUMAN HAZARD CHARACTERIZATION: Based on our hazard characterization, the potential human hazard is: LOW

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SECTION 12 ECOLOGICAL INFORMATION

If released into the environment, see CERCLA in Section 15.

ENVIRONMENTAL HAZARD AND EXPOSURE CHARACTERIZATION: Based on our Hazard Characterization, the potential environmental hazard is: LOW.

SECTION 13 DISPOSAL CONSIDERATIONS

DISPOSAL: If this product becomes a waste, it does not meet the criteria of a hazardous waste as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261, since it does not have the characteristics of Subpart C, nor is it listed under Subpart D.

As a non-hazardous liquid waste, it should be solidified with stabilizing agents (such as sand, fly ash, or cement) so that no free liquid remains before disposal to an industrial waste landfill. A non-hazardous liquid waste can also be incinerated in accordance with local, state and federal regulations.

SECTION 14 TRANSPORTATION INFORMATION

PROPER SHIPPING NAME/HAZARD CLASS MAY VARY BY PACKAGING, PROPERTIES, AND MODE OF TRANSPORTATION. TYPICAL PROPER SHIPPING NAMES FOR THIS PRODUCT ARE:

ALL TRANSPORTATION MODES	:	PRODUCT IS NOT REGULATED DURING TRANSPORTATION

SECTION 15 REGULATORY INFORMATION

The following regulations apply to this product.

FEDERAL REGULATIONS:

OSHA HAZARD COMMUNICATION RULE, 29 CFR 1910.1200:
Based on our hazard evaluation, none of the ingredients in this product are hazardous.

CERCLA/SUPERFUND, 40 CFR 117, 302:
Notification of spills of this product is not required.

SARA/SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 (TITLE III) - SECTIONS 302, 311, 312 AND 313:

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SECTION 15 REGULATORY INFORMATION (CONTINUED)

SECTION 302 - EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355):
This product does not contain ingredients listed in Appendix A and B as an Extremely Hazardous Substance.

SECTIONS 311 and 312 - MATERIAL SAFETY DATA SHEET REQUIREMENTS (40 CFR 370):
Our hazard evaluation has found that this product is not hazardous under 29 CFR 1910.1200.

Under SARA 311 and 312, the EPA has established threshold quantities for the reporting of hazardous chemicals. The current thresholds are: 500 pounds or the threshold planning quantity (TPQ), whichever is lower, for extremely hazardous substances and 10,000 pounds for all other hazardous chemicals.

SECTION 313 - LIST OF TOXIC CHEMICALS (40 CFR 372):
This product does not contain ingredients on the List of Toxic Chemicals.

TOXIC SUBSTANCES CONTROL ACT (TSCA):
The chemical ingredients in this product are on the 8(b) Inventory List (40 CFR 710).

RESOURCE CONSERVATION AND RECOVERY ACT (RCRA), 40 CFR 261 SUBPART C & D:
Consult Section 13 for RCRA classification.

FEDERAL WATER POLLUTION CONTROL ACT, CLEAN WATER ACT, 40 CFR 401.15/ formerly Sec. 307, 40 CFR 116/formerly Sec. 311:
None of the ingredients are specifically listed.

CLEAN AIR ACT, Sec. 111 (40 CFR 60), Sec. 112 (40 CFR 61, 1990 Amendments), Sec. 611 (40 CFR 82, CLASS I and II Ozone depleting substances):
This product does not contain ingredients covered by the Clean Air Act.

STATE REGULATIONS:

CALIFORNIA PROPOSITION 65:
This product does not contain any chemicals which require warning under California Proposition 65.

MICHIGAN CRITICAL MATERIALS:
This product does not contain ingredients listed on the Michigan Critical Materials Register.

STATE RIGHT TO KNOW LAWS:
The following ingredient(s) are disclosed for compliance with State Right To Know Laws:

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SECTION 15 REGULATORY INFORMATION (CONTINUED)

Sodium sulfate 7757-82-6

INTERNATIONAL REGULATIONS:

This is not a WHMIS controlled product under The House of Commons of Canada Bill C-70.

SECTION 16 OTHER INFORMATION

Nalco internal number F103545

SECTION 17 USER'S RESPONSIBILITY

Our Risk Characterization is being determined.

This product material safety data sheet provides health and safety information. The product is to be used in applications consistent with our product literature. Individuals handling this product should be informed of the recommended safety precautions and should have access to this information. For any other uses, exposures should be evaluated so that appropriate handling practices and training programs can be established to insure safe workplace operations. Please consult your local sales representative for any further information.

SECTION 18 REFERENCES

Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices, American Conference of Governmental Industrial Hygienists, OH.

Hazardous Substances Data Bank, National Library of Medicine, Bethesda, Maryland (CD-ROM version), Micromedex, Inc., Englewood, CO.

IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Man, Geneva: World Health Organization, International Agency for Research on Cancer.

Integrated Risk Information System, U.S. Environmental Protection Agency, Washington, D.C. (CD-ROM version), Micromedex, Inc., Englewood, CO.

Annual Report on Carcinogens, National Toxicology Program, U.S. Department of Health and Human Services, Public Health Service.

MATERIAL SAFETY DATA SHEET

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PRODUCT

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Emergency Telephone Number

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SECTION 18 REFERENCES

(CONTINUED)

Title 29 Code of Federal Regulations, Part 1910, Subpart Z, Toxic and Hazardous Substances, Occupational Safety and Health Administration (OSHA).

Registry of Toxic Effects of Chemical Substances, National Institute for Occupational Safety and Health, Cincinnati, Ohio (CD-ROM version), Micromedex, Inc., Englewood, CO.

Shepard's Catalog of Teratogenic Agents (CD-ROM version), Micromedex, Inc., Englewood, CO.

Suspect Chemicals Sourcebook (a guide to industrial chemicals covered under major regulatory and advisory programs), Roytech Publications (a Division of Ariel Corporation), Bethesda, MD.

The Teratogen Information System, University of Washington, Seattle, Washington (CD-ROM version), Micromedex, Inc., Englewood, CO.

PREPARED BY: William S. Utley, PhD., DABT, Manager, Product Safety
DATE CHANGED: 12/19/1995 DATE PRINTED: 07/08/1998

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MATERIAL SAFETY DATA SHEET

NALCO

PRODUCT

NALCO 1316 LIQUID

Emergency Telephone Number

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SECTION 01 CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

TRADE NAME: NALCO 1316 LIQUID
DESCRIPTION: Aqueous sodium bisulfite solution

NFPA 704M/HMIS RATING: 1/1 HEALTH 0/0 FLAMMABILITY 0/0 REACTIVITY 0 OTHER
0=Insignificant 1=Slight 2=Moderate 3=High 4=Extreme

SECTION 02 COMPOSITION AND INFORMATION ON INGREDIENTS

Our hazard evaluation has identified the following chemical ingredient(s) as hazardous under OSHA's Hazard Communication Rule, 29 CFR 1910.1200. Consult Section 15 for the nature of the hazard(s).

INGREDIENT(S)	CAS #	APPROX.%
Sodium bisulfite	7631-90-5	40-70

SECTION 03 HAZARD IDENTIFICATION

EMERGENCY OVERVIEW:
CAUTION: May cause irritation to skin and eyes. Avoid contact with skin, eyes and clothing. Do not take internally.

Empty containers may contain residual product. Do not reuse container unless properly reconditioned.

PRIMARY ROUTE(S) OF EXPOSURE: Eye, Skin

EYE CONTACT: Can cause moderate irritation.
SKIN CONTACT: Can cause moderate irritation.
INGESTION: Can be harmful.
INHALATION: Can cause irritation and may product a temporary choking sensation or shortness of breath.

SYMPTOMS OF EXPOSURE:
ACUTE: Irritation of nose, eyes, throat and upper respiratory tract is possible if sulfur dioxide gas is inhaled. Sulfur dioxide gas is formed when the product contacts strong acids.

AGGRAVATION OF EXISTING CONDITIONS: Persons with asthma or other respiratory problems should avoid exposure to the product.

SECTION 04 FIRST AID INFORMATION

EYES: Flush with water for 15 minutes. Call a physician.

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SECTION 04 FIRST AID INFORMATION (CONTINUED)

SKIN: Wash thoroughly with soap and rinse with water. Call a physician.

INGESTION: Induce vomiting. Give water. Call a physician.

INHALATION: Remove to fresh air. Treat symptoms. Call a physician.

NOTE TO PHYSICIAN: Based on the individual reactions of the patient, the physician's judgment should be used to control symptoms and clinical condition.

CAUTION: If unconscious, having trouble breathing or in convulsions, do not induce vomiting or give water.

SECTION 05 FIRE FIGHTING MEASURES

FLASH POINT: None

EXTINGUISHING MEDIA: Not applicable

UNUSUAL FIRE AND EXPLOSION HAZARD: May evolve SOx under fire conditions. Containers exposed in a fire should be cooled with water to prevent vapor pressure buildup leading to a rupture.

SECTION 06 ACCIDENTAL RELEASE MEASURES

IN CASE OF TRANSPORTATION ACCIDENTS, CALL THE FOLLOWING 24-HOUR TELEPHONE NUMBER (800) I-M-ALERT or (800) 462-5378.

SPILL CONTROL AND RECOVERY:

Small liquid spills: Contain with absorbent material, such as clay, soil or any commercially available absorbent. Shovel reclaimed liquid and absorbent into recovery or salvage drums for disposal. Refer to CERCLA in Section 15.

Large liquid spills: Dike to prevent further movement and reclaim into recovery or salvage drums or tank truck for disposal. Refer to CERCLA in Section 15.

For large indoor spills, evacuate employees and ventilate area. Those responsible for control and recovery should wear the protective equipment specified in Section 8.

SECTION 07 HANDLING AND STORAGE

Storage : Keep container closed when not in use.

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SECTION 08 EXPOSURE CONTROLS AND PERSONAL PROTECTION

RESPIRATORY PROTECTION: Respiratory protection is not normally needed since the volatility and toxicity are low. If significant vapors, mists or aerosols are generated, wear a NIOSH approved or equivalent respirator.

For large spills, entry into large tanks, vessels or enclosed small spaces with inadequate ventilation, a positive pressure, self-contained breathing apparatus is recommended.

VENTILATION: General ventilation is recommended. Additionally, local exhaust ventilation is recommended where vapors, mists or aerosols may be released.

PROTECTIVE EQUIPMENT: Use impermeable gloves and chemical splash goggles when attaching feeding equipment, doing maintenance or handling product. Examples of impermeable gloves available on the market are neoprene, nitrile, PVC, natural rubber, viton and butyl (compatibility studies havenot been performed).

The availability of an eye wash fountain and safety shower is recommended.

If clothing is contaminated, remove clothing and thoroughly wash the affected area. Launder contaminated clothing before reuse.

HUMAN EXPOSURE CHARACTERIZATION: Based on Nalco's recommended product application and our recommended personal protective equipment, the potential human exposure is: LOW.

SECTION 09 PHYSICAL AND CHEMICAL PROPERTIES

COLOR: Yellow	FORM: Liquid	ODOR: Pungent sulfurous	
DENSITY:	11.4 lbs/gal.		
SOLUBILITY IN WATER:	Completely		
SPECIFIC GRAVITY:	1.37		ASTM D-1298
pH (at 1%) =	4.1		ASTM E-70
FLASH POINT:	None		
VAPOR PRESSURE:	32 (est) mm Hg @ 77 Degrees F		ASTM D-323
EVAPORATION RATE (Ether = 1):	Less than 1		ASTM D-1901

NOTE: These physical properties are typical values for this product.

SECTION 10 STABLILITY AND REACTIVITY

INCOMPATIBILITY: Avoid contact with strong oxidizers (eg. chlorine, peroxides, chromates, nitric acid, perchlorates, concentrated oxygen, permanganates) which can generate heat, fires, explosions and the release of toxic fumes.

SECTION 10 STABLILITY AND REACTIVITY (CONTINUED)

Avoid contact with strong acids (eg. sulfuric, phosphoric, nitric, hydrochloric, chromic, sulfonic) which can generate heat, splattering or boiling and the release of toxic fumes, specifically sulfur dioxide.

Avoid contact of product vapors with amine vapors which may react to form a visible cloud of amine salt particulate.

THERMAL DECOMPOSITION PRODUCTS: In the event of combustion SOx may be formed. Do not breathe smoke or fumes. Wear suitable protective equipment.

SECTION 11 TOXICOLOGICAL INFORMATION

ACUTE TOXICITY STUDIES: Acute toxicity studies have not been conducted on this product, but acute studies have been conducted on a similar product. The results are shown below.

ACUTE ORAL TOXICITY (ALBINO RATS): LD_{50} = 4.1 g/kg

95% Confidence Limit = 3.6 - 4.7 g/kg

ACUTE DERMAL TOXICITY (ALBINO RABBITS): LD_{50} = 3,038 mg/kg

PRIMARY SKIN IRRITATION TEST (ALBINO RABBITS):
SKIN IRRITATION INDEX DRAIZE RATING: 1.0/8.0 Mildly irritating

PRIMARY EYE IRRITATION TEST (ALBINO RABBITS):
EYE IRRITATION INDEX DRAIZE RATING: 9.4/110.0 Mildly irritating

OTHER TOXICITY RESULTS: Ingestion of sulfite can cause an allergic reaction in sensitive individuals. The resultant symptoms can include difficulty breathing, flushed skin and a rash.

HUMAN HAZARD CHARACTERIZATION: Based on our hazard characterization, the potential human hazard is: LOW

SECTION 12 ECOLOGICAL INFORMATION

AQUATIC DATA:

Results below are based on the product.

96 hour static acute LC_{50} to Rainbow Trout = Greater than 100 mg/L

SECTION 12 ECOLOGICAL INFORMATION (CONTINUED)

Results below are based on a similar product.

96 hour static acute LC_{50} to Fathead Minnow = 382 mg/L

96 hour no observed effect concentration is 250 mg/L based on no mortality or abnormal effects.

TOXICITY RATING: Slightly toxic

48 hour static acute LC_{50} to Daphnia magna = 728 mg/L

48 hour no observed effect concentration is 250 mg/L based on no mortality or abnormal effects.

TOXICITY RATING: Slightly toxic

If released into the environment, see CERCLA in Section 15.

ENVIRONMENTAL HAZARD AND EXPOSURE CHARACTERIZATION: Based on our Hazard Characterization, the potential environmental hazard is: LOW. Based on Nalco's recommended product application and the product's characteristics, the potential environmental exposure is: HIGH.

SECTION 13 DISPOSAL CONSIDERATIONS

DISPOSAL: If this product becomes a waste, it does not meet the criteria of a hazardous waste as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261, since it does not have the characteristics of Subpart C, nor is it listed under Subpart D.

As a non-hazardous liquid waste, it should be solidified with stabilizing agents (such as sand, fly ash, or cement) so that no free liquid remains before disposal to an industrial waste landfill. A non-hazardous liquid waste can also be deep-well injected in accordance with local, state, and federal regulations.

SECTION 14 TRANSPORTATION INFORMATION

PROPER SHIPPING NAME/HAZARD CLASS MAY VARY BY PACKAGING, PROPERTIES, AND MODE OF TRANSPORTATION. TYPICAL PROPER SHIPPING NAMES FOR THIS PRODUCT ARE:

NALCO

PRODUCT

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SECTION 14 TRANSPORTATION INFORMATION (CONTINUED)

ALL TRANSPORTATION MODES (UNLESS SPECIFIED BELOW)	:	BISULFITES, AQUEOUS SOLUTION, N.O.S.
AIR TRANSPORTATION	:	BISULPHITES,AQUEOUS SOLUTION,N.O.S.
MARINE TRANSPORTATION	:	SODIUM BISULPHITE, SOLUTION
UN/ID NO	:	UN 2693
HAZARD CLASS - PRIMARY	:	8 - CORROSIVE
PACKING GROUP	:	III
IMDG PAGE NO	:	8126
IATA PACKING INSTRUCTION	:	CARGO: 820
IATA CARGO AIRCRAFT LIMIT	:	60 L (MAX NET QUANTITY PER PACKAGE)
FLASH POINT	:	NONE
TECHNICAL NAME(S)	:	SODIUM BISULFITE
RQ LBS (PER PACKAGE)	:	12,000
RQ COMPONENT(S)	:	SODIUM BISULFITE

SECTION 15 REGULATORY INFORMATION

The following regulations apply to this product.

FEDERAL REGULATIONS:

OSHA'S HAZARD COMMUNICATION RULE, 29 CFR 1910.1200:
Based on our hazard evaluation, the following ingredient in this product is hazardous and the reason is shown below.

Sodium bisulfite - Eye irritant, liberates SO_2 gas which is an irritant

Sodium bisulfite = TWA 5 mg/m³ ACGIH/TLV
Sulfur dioxide (CAS No. 7446-09-5) = TWA 2 ppm, STEL 5 ppm ACGIH/TLV
5.2 mg/m³, 13 mg/m³ ACGIH/TLV

Sodium bisulfite = TWA 5 mg/m³ ACGIH/TLV
Sulfur dioxide (CAS No. 7446-09-5) = TWA 2 ppm, STEL 5 ppm OSHA/PEL
5 mg/m³, 10 mg/m³ OSHA/PEL

We have shown the TLV and PEL for sulfur dioxide because this gas may be generated during combustion or contact with strong acids.

CERCLA/SUPERFUND, 40 CFR 117, 302:
This product contains sodium bisulfite, a Reportable Quantity (RQ) substance

SECTION 15 REGULATORY INFORMATION (CONTINUED)

and if 12,000 pounds of product are released, it requires notification to the NATIONAL RESPONSE CENTER, WASHINGTON, D. C. (1-800-424-8802).

SARA/SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986
(TITLE III) - SECTIONS 302, 311, 312 AND 313:

SECTION 302 - EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355):
This product does not contain ingredients listed in Appendix A and B as an Extremely Hazardous Substance.

SECTIONS 311 and 312 - MATERIAL SAFETY DATA SHEET REQUIREMENTS (40 CFR 370):
Our hazard evaluation has found this product to be hazardous. The product should be reported under the following EPA hazard categories:

XX Immediate (acute) health hazard
-- Delayed (chronic) health hazard
-- Fire hazard
-- Sudden release of pressure hazard
-- Reactive hazard

Under SARA 311 and 312, the EPA has established threshold quantities for the reporting of hazardous chemicals. The current thresholds are: 500 pounds or the threshold planning quantity (TPQ), whichever is lower, for extremely hazardous substances and 10,000 pounds for all other hazardous chemicals.

SECTION 313 - LIST OF TOXIC CHEMICALS (40 CFR 372):
This product does not contain ingredients on the List of Toxic Chemicals.

TOXIC SUBSTANCES CONTROL ACT (TSCA):
The chemical ingredients in this product are on the 8(b) Inventory List (40 CFR 710).

FOOD AND DRUG ADMINISTRATION (FDA):
Federal Food, Drug and Cosmetic Act:
When use situations necessitate compliance with FDA regulations, this product is acceptable under 21 CFR 173.310 - boiler water additives; and 21 CFR 176.170 - components of paper and paperboard in contact with aqueous and fatty foods.

This product has been certified as KOSHER/PAREVE for year-round use EXCEPT FOR THE PASSOVER SEASON by the CHICAGO RABBINICAL COUNCIL.

RESOURCE CONSERVATION AND RECOVERY ACT (RCRA), 40 CFR 261 SUBPART C & D:
Consult Section 13 for RCRA classification.

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SECTION 15 REGULATORY INFORMATION (CONTINUED)

FEDERAL WATER POLLUTION CONTROL ACT, CLEAN WATER ACT, 40 CFR 401.15 (formerly Sec. 307), 40 CFR 116 (formerly Sec. 311):
This product contains the following ingredient covered by the Clean Water Act:

Sodium bisulfite - Section 311

CLEAN AIR ACT, Sec. 111 (40 CFR 60), Sec. 112 (40 CFR 61, 1990 Amendments), Sec. 611 (40 CFR 82, CLASS I and II Ozone depleting substances):
This product does not contain ingredients covered by the Clean Air Act.

STATE REGULATIONS:

CALIFORNIA PROPOSITION 65:
This product does not contain any chemicals which require warning under California Proposition 65.

MICHIGAN CRITICAL MATERIALS:
This product does not contain ingredients listed on the Michigan Critical Materials Register.

STATE RIGHT TO KNOW LAWS:
The following ingredient(s) are disclosed for compliance with State Right To Know Laws:

Sodium bisulfite	7631-90-5
Water	7732-18-5

INTERNATIONAL REGULATIONS:

This is a WHMIS controlled product under The House of Commons of Canada Bill C-70 (Class D2B). The product contains the following substance(s), from the Ingredient Disclosure List or has been evaluated based on its toxicological properties, to contain the following hazardous ingredient(s):

Chemical Name	CAS #	% Concentration Range
Sodium bisulfite	7631-90-5	40-70

SECTION 16 OTHER INFORMATION

None

SECTION 17 RISK CHARACTERIZATION

Due to our commitment to Product Stewardship, we have evaluated the human and environmental hazards and exposures of this product. Based on our recommended use of this product, we have characterized the product's general risk. This information should provide assistance for your own risk management practices. We have evaluated our product's risk as follows:

* The human risk is: LOW.

* The environmental risk is: LOW.

Any use inconsistent with Nalco's recommendations may affect our risk characterization. Our sales representative will assist you to determine if your product application is consistent with our recommendations. Together we can implement an appropriate risk management process.

This product material safety data sheet provides health and safety information. The product is to be used in applications consistent with our product literature. Individuals handling this product should be informed of the recommended safety precautions and should have access to this information. For any other uses, exposures should be evaluated so that appropriate handling practices and training programs can be established to insure safe workplace operations. Please consult your local sales representative for any further information.

SECTION 18 REFERENCES

Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices, American Conference of Governmental Industrial Hygienists, OH.

Hazardous Substances Data Bank, National Library of Medicine, Bethesda, Maryland (CD-ROM version), Micromedex, Inc., Englewood, CO.

IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Man, Geneva: World Health Organization, International Agency for Research on Cancer.

Integrated Risk Information System, U.S. Environmental Protection Agency, Washington, D.C. (CD-ROM version), Micromedex, Inc., Englewood, CO.

Annual Report on Carcinogens, National Toxicology Program, U.S. Department of Health and Human Services, Public Health Service.

Title 29 Code of Federal Regulations, Part 1910, Subpart Z, Toxic and

SECTION 18 REFERENCES

(CONTINUED)

Hazardous Substances, Occupational Safety and Health Administration (OSHA).

Registry of Toxic Effects of Chemical Substances, National Institute for Occupational Safety and Health, Cincinnati, Ohio (CD-ROM version), Micromedex, Inc., Englewood, CO.

Shepard's Catalog of Teratogenic Agents (CD-ROM version), Micromedex, Inc., Englewood, CO.

Suspect Chemicals Sourcebook (a guide to industrial chemicals covered under major regulatory and advisory programs), Roytech Publications (a Division of Ariel Corporation), Bethesda, MD.

The Teratogen Information System, University of Washington, Seattle, Washington (CD-ROM version), Micromedex, Inc., Englewood, CO.

PREPARED BY: William S. Utley, PhD., DABT, Manager, Product Safety
DATE CHANGED: 04/02/1998 DATE PRINTED: 07/08/1998

NALCO CHEMICAL COMPANY ONE NALCO CENTER • NAPERVILLE, ILLINOIS 60563-1198
AREA 630-305-1000

MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: **ALUMINUM SULFATE, HYDRATE**

MANUFACTURER: **GEO SPECIALTY CHEMICALS, INC.**
9213 Arch Street Pike
Little Rock, AR 72206
(501) 888-1211

24-HOUR EMERGENCY TELEPHONE: CHEMTREC 1-800-424-9300

Aluminum Sulfate, Hydrate complies with the standards of the American Water Works Association B403-93. It has been certified by the National Sanitation Foundation (NSF) under ANSI/NSF 60 for use in the treatment of drinking water at a maximum dosage of 150mg/L (dry basis).

2. COMPOSITION / INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	% (by Weight)	TWA/CEILING	REFERENCE
$Al_2(SO_4)_3$, n-hydrate	7784-31-8	57.0% min	2 mg/m^3	OSHA/ACGIH
H_2O	7732-18-5	balance		

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: White to light tan colored ground crystalline solid. Causes eye and skin irritation. Harmful if swallowed. Avoid breathing dust.

POTENTIAL HEALTH EFFECTS:

Eyes: May cause irritation and inflammation of the eye. Concentrated solutions (over 20%) may cause severe eye damage or burns.

Skin: May cause skin irritation or burns if the product is wet or in the presence of perspiration.

Ingestion: May cause abdominal pain, nausea, and/or vomiting. Concentrated solutions (over 20%) can cause burns of the mouth, bleeding stomach, incoordination, muscle spasms, and/or kidney injury.

Inhalation: Dusts are severely irritating to the mucous membranes and respiratory tract.

CHRONIC EFFECTS / CARCINOGENICITY: No evidence of additional adverse effects from repeated or prolonged exposures is noted from available information.
This product does not contain any ingredient designated by IARC, NTP, ACGIH, or OSHA as a probable human carcinogen.

4. FIRST AID MEASURES

Eyes: In case of contact, immediately flush with plenty of water for at least 15 minutes holding eyelids open. Use an eyewash fountain if available. Get medical attention if irritation persists, preferably an Ophthalmologist.

Skin: Immediately wash skin with plenty of soap and water while removing contaminated clothing and shoes. Wash contaminated clothing separately before reuse.

Ingestion: If person is conscious and alert, give two or more glasses of water or milk to drink. If available, give one tablespoon of Syrup of Ipecac to induce vomiting. If vomiting has not occurred in 20 minutes, the same dose of Syrup of Ipecac may be repeated one additional time. Alternately, induce vomiting by touching the back of the throat with a finger. Never give anything by mouth or induce vomiting in an unconscious or convulsing person. Get medical attention.

Inhalation: Remove patient to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen and get medical attention.

NOTES TO PHYSICIANS:

All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

Aluminum soluble salts may cause gastroenteritis if ingested. Treatment includes the use of demulcents.

5. FIRE FIGHTING MEASURES

Flammable Properties:

FLASH POINT [°C (°F)]:	Noncombustible
FLAMMABLE LIMITS IN AIR:	Not applicable
AUTOIGNITION TEMPERATURE [°C (°F)]:	Not applicable

Under fire conditions greater than 650°C (1202°F), product decomposes to give off sulfur trioxide, an oxidizing agent which will support combustion. Sulfur trioxide will react with water to form sulfuric acid.

Extinguishing Media:

Not combustible. Use appropriate extinguishing media for material that is supplying fuel. Use water spray to cool the surrounding area and to maintain fire temperature below decomposition temperature.

Fire Fighting Instructions:

Wear a NIOSH/MSHA approved self-contained breathing apparatus and full protective clothing. Dike area to prevent runoff and contamination of water sources.

6. ACCIDENTAL RELEASE MEASURES

Vacuum or sweep material and place in appropriate containers for disposal. Avoid dust generation. Stand upwind if possible to evade any fugitive dust. Residual spillage should be cleaned from hard surfaces as appropriate. If spilled on the ground, the affected area should be scraped clean and the material placed in proper containers for disposal. Do not flush material to public sewer systems or any waterways. Wear suitable protective clothing and equipment during clean up activities. Ensure adequate decontamination of tools and equipment following clean up. Large spills should be handled according to a predetermined plan. For assistance in developing a plan, call 1-800-453-2586.

7. HANDLING AND STORAGE

Avoid breathing dusts. Do not swallow. Avoid contact with eyes, skin and clothing.
Store in a cool area in tightly closed containers.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Facilities storing or utilizing this material should maintain an eyewash fountain, safety shower, and sink in the work area.
Provide adequate ventilation. Use local exhaust as needed to maintain airborne exposure below control limits. Where the exposure limits are or may be exceeded, use a NIOSH/MSHA approved respirator for acid dusts. Use positive pressure supplied air or self-contained breathing apparatus for emergency or other conditions where a higher level of protection is required.
Chemical safety goggles, long-sleeved clothing, rubber gloves and boots should be worn.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical Form:	Crystalline solid
Color:	White to light tan
Odor:	None
Melting Point:	Loses water of hydration @ 88°C (190°F)
Bulk Density:	65 lbs/ft^3
Water solubility (@20°C):	87.3 grams/100 grams water
pH:	3.5 (1% Aqueous solution)

MATERIAL SAFETY DATA SHEET

GEO SPECIALTY CHEMICALS, INC.

10. STABILITY AND REACTIVITY

Chemical Stability:	Stable at ambient temperatures and atmospheric pressure.
Conditions to Avoid:	Avoid high temperatures greater than 650°C (1202°F), because the product decomposes to form aluminum oxide and sulfur trioxide.
Incompatibility with Other Materials:	Reacts with strong alkali to form aluminum hydroxide. Weakly corrosive to carbon steel. On contact with moisture, an acidic solution forms.
Hazardous Decomposition Products:	Thermal decomposition produces aluminum oxide and sulfur oxides.
Hazardous Polymerization:	Will not occur.

11. TOXICOLOGICAL INFORMATION

Oral LD_{50} (rats):	> 2000 mg/kg body weight
Dermal LD_{50} (rabbits):	> 5000 mg/kg body weight
Inhalation LC_{50} (rats):	No information is available
Skin Effects (rabbits):	Non-irritating
Eye Effects (rabbits):	Severe irritant

12. ECOLOGICAL INFORMATION

No information is available.

13. DISPOSAL CONSIDERATIONS

Dispose of in accordance with Local, State and Federal regulations.

14. TRANSPORT INFORMATION

Transportation Status:	DOT	
< RQ:	Not Regulated	
> RQ:	Proper Shipping Name:	Environmentally hazardous substances, solid, n.o.s. (Aluminum Sulfate, Hydrate)
	Hazardous Class:	9
	ID No:	UN 3077
	Packing Group:	III
	Label:	Class 9

Reportable quantity (RQ) under 49 CFR 172.101 Appendix: RQ = 5000 lbs as 100% $Al_2(SO_4)_3$

MATERIAL SAFETY DATA SHEET

GEO SPECIALTY CHEMICALS, INC.

15. REGULATORY INFORMATION

TSCA Inventory Status: The components of this product are listed on the TSCA Inventory.

SARA Title III
- Section 302 Extremely Hazardous Substance List: Not listed
- Section 313 Toxic Chemicals: Not listed

Reportable Quantity (RQ) under US EPA CERCLA: RQ = 5000 lbs as 100% $Al_2(SO_4)_3$

RCRA Hazardous Waste: Not listed

16. OTHER INFORMATION

National Fire Protection Association Rating (NFPA):
- Health - 1
- Fire - 0
- Reactivity - 1

Hazardous Materials Identification System (HMIS):
- Health - 1
- Fire - 0
- Reactivity - 1

0 - Minimum
1 - Slight
2 - Moderate
3 - High/Serious
4 - Extreme/Severe

MSDS Status: Revised January 22, 1997. Supersedes May 24, 1994.

For additional technical information call 1-800-453-2586.

The information herein is given in good faith but no warranty, expressed or implied, is made.

Exceltec

SANURIL® 115

Mixed Halogen Formulation

Material Safety Data Sheet

1. GENERAL PRODUCT INFORMATION

Product Name	SANURIL® 115
US EPA Reg. No.	48482-5
Synonyms	Calcium hypochlorite and 1-bromo-3-chloro-5,5-dimethylhydantion
Product Use	Disinfecting agent for wastewater
NIOSH* Ratings	3 HIGH HEALTH HAZARD
	0 NON COMBUSTIBLE
	2 MODERATELY REACTIVE

**Ratings based upon "Identification System for Occupationally Hazardous Materials (1974)"*

DEPARTMENT OF TRANSPORTATION INFORMATION

Proper Shipping Name	Calcium Hypochlorite Mixture, Hydrated RQ
Hazard Class	Oxidizer
UN Number	UN2880
Shipping Class	55

MANUFACTURER INFORMATION

Company Name	Exceltec International Corporation
Street Address	1110 Industrial Boulevard
City, State, Zip	Sugar Land, Texas 77478
Emergency Phone	1-800-424-9300
Office Phone	(281) 274-8444 Toll Free: 1-800-621-9189
Date Prepared	4/18/1990 Last Revision: 05/1/97

2. HAZARDOUS INGREDIENTS

Chemical Name	% of Mixture	TLV	PEL	CAS #
Calcium Hypochlorite	69.30%	N/A	N/A	7778-54-3
1-bromo-3-chloro-5,5-dimethylhydantoin	0.94%	10	15	126-06-7

TLV/PEL OF MIXTURE (If known) N/A

3. PHYSICAL PROPERTIES

Boiling Point	None; dry solid	Vapor Density	N/A
Melting Point	N/A	Vapor Pressure	N/A
Specific Gravity	1.8 min (tablet)	Percent Volatiles	N/A
Solubility in Water	6% by weight (min)		
pH	8.3 (1% solution)		
Density (@ 20°C)	1.0		
Color	White solid tablet		
Odor	Slight chlorine. N-bromo compounds have a stench like odor. It is not as "sweet" as chlorine.		

4. FIRE AND EXPLOSION DATA

Flash Point	N/A	Explosive Limit	Lower: N/A
Auto Ignite Temperature	N/A		Upper: N/A
Flammability Limits In Air	N/A		
Extinguishing Media	Water ONLY		

4. FIRE AND EXPLOSION DATA (Cont.)

Special Fire Fighting Procedures:

This product is a strong oxidizer. Use ONLY water in the event of a fire or a violent reaction may result by contamination. Wear self-contained breathing apparatus.

Unusual Hazard Information:

Contamination with organics, acids, alkalis, and strong reducing agents will result in fire or rapid decomposition. Spontaneous decomposition temperature for this product is 350°F. In large fires fueled by other materials, the product may smolder for prolonged periods emitting dense black smoke.

5. HEALTH HAZARD INFORMATION

This section describes the nature of the hazardous effects resulting from exposure to this product.

Routes of Exposure:

Ingestion: Highly toxic by ingestion. May cause severe inflammation and erosion to the lining of the esophagus and stomach. Promptly induces vomiting.

Eye Contact: Mild to moderate exposure to dust causes irritation of the eyes. Severe exposure can cause permanent (irreversible) damage.

Skin Contact: Mild to moderate exposure to dust may irritate the skin. Greater exposure can cause severe irritation.

Inhalation: Mild to moderate exposure to dust causes irritation to the mucous membranes of the respiratory passages (nasal and throat).

Effects of Overexposure:

Acute: Ingestion may result in erosion of the esophagus and stomach. Vomiting, gastric bleeding and possible circulatory collapse. Exposure may cause temporary or permanent tissue damage to skin, eyes, and respiratory passages.

Chronic: Prolonged and intensive exposure may result in tissue damage to body surfaces unless promptly treated.

Emergency and First Aid Procedures:

Eyes: IMMEDIATELY flush eyes with large amounts of water for at least 15 minutes, holding lids apart to ensure flushing of entire eye surface. SEEK MEDICAL ATTENTION.

Skin: Wash with plenty of soap and water. Remove contaminated clothing and footwear. Wash clothing before reuse. Footwear should be decontaminated before reuse. Seek medical attention if symptoms persist.

Inhalation: Get person out of contaminated area to fresh air. If breathing has stopped, resuscitate and administer oxygen if readily available. SEEK MEDICAL ATTENTION.

Ingestion: NEVER give anything by mouth to an unconscious person. Feed bread soaked in milk, followed by olive or cooking oil. DO NOT induce vomiting. Call a physician immediately!

6. REACTIVITY DATA

Conditions contributing to instability:

Contamination with flammables, organics may cause fire or explosion. Acids will release chlorine and bromine gas.

Incompatibility (Materials to avoid):

Acids, flammables, organic materials, readily oxidizable materials and strong reducing agents.

Hazardous decomposition or byproducts:

Chlorine gas, hydrogen bromide, bromine and hydrogen chloride.

Hazardous polymerization:

This product is not known to polymerize.

7. SPILL OR LEAK PROCEDURES (DEVELOP SPILL PLAN)

Neutralizing Chemicals:

Sodium sulfite, sodium bisulfite or sodium metabisulfite.

Steps to be Taken if Material is Released and/or Spilled:

Wear appropriate protective gear: rubber gloves and boots. Chemical splash goggles and breathing apparatus if necessary. Avoid contact with clothing--fire may result.

Dilute spill area with large quantities of water, at least 100 gallons of water per pound of material. Avoid contact with resulting solution. Neutralize with sodium sulfite, sodium bisulfite or sodium metabisulfite. Collected neutralized solution should be disposed of through sewage treatment plant. Prior approval from plant personnel as well as Local, State and Federal environmental agencies should be obtained. File environmental spill notifications if necessary.

Waste Disposal Methods:

DO NOT dispose of material in dry form in waste container--fire may result. Proceed with spill procedure as outlined above.

Additional Precautions:

Do not attempt to recover solid material. Do not dispose of material in waste container. Do not reuse empty container, but place in trash collection.

8. INDUSTRIAL HYGIENE CONTROL MEASURES

Ventilation Requirements:

Work in well ventilated areas. Storage area should be well ventilated.

Specific Personal Protective Equipment:

Respiratory protection is not required under normal use, however when necessary, use NIOSH/MSHA approved respirator following manufacturer's recommendations. NIOSH approved dust mask is essential where dusting may occur.

Eye Protection: Chemical safety glasses should be worn.

Protective Gloves: Gloves should be worn. Rubber or other chemically resistant materials are recommended as suitable material.

Other Clothing and Equipment: Protective clothing should be worn so as to minimize skin contact. Avoid contact with clothing. Fire may result from contact of dry material with cloth or flammables.

9. SPECIAL PRECAUTIONS

Danger:

Highly corrosive. Causes skin and eye damage. May be fatal if swallowed. DO NOT get in eyes or on clothing. Wear goggles and CLEAN protective gloves when handling. Irritating to nose and throat. DO NOT breath dust and fumes. Wash thoroughly with soap and water after handling. Remove and wash contaminated clothing before reuse.

This product is toxic to fish. Do not discharge into lakes, streams, ponds or public waters unless in accordance with an NPDES permit.

Strong oxidizing agent. Mix this product only with water. Use clean dry utensils. Open container only where adequate ventilation is available. Do not add this product to any dispensing device containing remains of any other product. In case of contamination/decomposition, do not reseal container. If possible, isolate container in open air and flood with large volumes of water.

10. STORAGE AND DISPOSAL

Storage:

Keep product dry and in a tightly closed container when not in use. Store in cool, dry, well ventilated area, keeping it away from heat sources and/or open flames. Handle container with care–DO NOT drop, roll or skid. In case of decomposition, isolate container (if possible) and flood with large amounts of water to dissolve all material. Follow "Spill and Leak Procedures" as outlined in Section 7 of this Data Sheet.

Keep in original container. DO NOT store/transfer/repack this product in any other container without the approval/authorization of Exceltec International Corp.

Disposal:

Follow "Spill and Leak Procedures" as outlined in Section 7 of this Data Sheet. DO NOT reuse empty container. Wash thoroughly with water and discard clean container in a safe place.

Do not contaminate food or feed by storage, disposal or cleaning of equipment.

MSDS Number: S2954 --- Effective Date: 12/08/96

MSDS Material Safety Data Sheet

From: Mallinckrodt Baker, Inc.
222 Red School Lane
Phillipsburg, NJ 08865

MALLINCKRODT J.T.Baker

24 Hour Emergency Telephone: 908-859-2151
CHEMTREC: 1-800-424-9300

National Response in Canada
CANUTEC: 613-996-6666

Outside U.S. and Canada
Chemtrec: 202-483-7616

NOTE: CHEMTREC, CANUTEC and National Response Center emergency numbers to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure or accident involving chemicals.

All non-emergency questions should be directed to Customer Service (1-800-582-2537) for assistance.

SODIUM BICARBONATE

MSDS Number: S2954 --- *Effective Date: 12/08/96*

1. Product Identification

Synonyms: Sodium hydrogen carbonate; sodium acid carbonate; baking soda; bicarbonate of soda
CAS No.: 144-55-8
Molecular Weight: 84.01
Chemical Formula: NaHCO3
Product Codes: J.T. Baker: 3506, 3508, 3509, 3510, 5597 Mallinckrodt: 7285, 7396, 7397, 7412, 7749

2. Composition/Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
Sodium Bicarbonate	144-55-8	99 - 100%	Yes

3. Hazards Identification

Emergency Overview

As part of good industrial and personal hygiene and safety procedure, avoid all unnecessary exposure to the chemical substance and ensure prompt removal from skin, eyes and clothing.

J.T. Baker SAF-T-DATA (tm) Ratings (Provided here for your convenience)

Health Rating: 0 - None
Flammability Rating: 0 - None
Reactivity Rating: 1 - Slight
Contact Rating: 1 - Slight
Lab Protective Equip: GOGGLES; LAB COAT
Storage Color Code: Orange (General Storage)

Potential Health Effects

Inhalation:
High concentrations of dust may cause coughing and sneezing.

Ingestion:
Extremely large oral doses may cause gastrointestinal disturbances.

Skin Contact:
No adverse effects expected.

Eye Contact:
Contact may cause mild irritation, redness, and pain.

Chronic Exposure:
No information found.

Aggravation of Pre-existing Conditions:
No information found.

4. First Aid Measures

Inhalation:
Remove to fresh air. Get medical attention for any breathing difficulty.

Ingestion:
Give several glasses of water to drink to dilute. If large amounts were swallowed, get medical advice.

Skin Contact:
Not expected to require first aid measures.

Eye Contact:
Wash thoroughly with running water. Get medical advice if irritation develops.

5. Fire Fighting Measures

Fire:
Not considered to be a fire hazard.

Explosion:
Not considered to be an explosion hazard.

Fire Extinguishing Media:
Use any means suitable for extinguishing surrounding fire.

Special Information:
Use protective clothing and breathing equipment appropriate for the surrounding fire.

6. Accidental Release Measures

Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Spills: Sweep up and containerize for reclamation or disposal. Vacuuming or wet sweeping may be used to avoid dust dispersal. Small amounts of residue may be flushed to sewer with plenty of water.

7. Handling and Storage

Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.

8. Exposure Controls/Personal Protection

Airborne Exposure Limits:
None established.

Ventilation System:
In general, dilution ventilation is a satisfactory health hazard control for this substance. However, if conditions of use create discomfort to the worker, a local exhaust system should be considered.

Personal Respirators (NIOSH Approved):
For conditions of use where exposure to the dust or mist is apparent, a half-face dust/mist respirator may be worn. For emergencies or instances where the exposure levels are not known, use a full-face positive-pressure, air-supplied respirator. WARNING: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

Skin Protection:
Wear protective gloves and clean body-covering clothing.

Eye Protection:
Use chemical safety goggles. Maintain eye wash fountain and quick-drench facilities in work area.

9. Physical and Chemical Properties

Appearance:
White crystalline powder.

Odor:
Odorless.

Solubility:
7.8g/100g water @ 18C (64F).

Density:
2.2

pH:
8.3 (0.1 molar @ 25C (77F))

% Volatiles by volume @ 21C (70F):
0

Boiling Point:
Not applicable.

Melting Point:

60C (140F)

Vapor Density (Air=1):
No information found.

Vapor Pressure (mm Hg):
No information found.

Evaporation Rate (BuAc=1):
No information found.

10. Stability and Reactivity

Stability:
Stable under ordinary conditions of use and storage.

Hazardous Decomposition Products:
Gaseous carbon dioxide.

Hazardous Polymerization:
Will not occur.

Incompatibilities:
Reacts with acids to form carbon dioxide. Dangerous reaction with monoammonium phosphate or a sodium-potassium alloy.

Conditions to Avoid:
Heat, moisture, incompatibles.

11. Toxicological Information

Investigated as a mutagen, reproductive effector. Oral rat LD50: 4220 mg/kg. Irritation data: human,skin, 30mg/3D-I mild, rabbit,eye, 100 mg/30 S, mild.

--------\Cancer Lists\----------

Ingredient	---NTP Carcinogen--- Known	Anticipated	IARC Category
Sodium Bicarbonate (144-55-8)	No	No	None

12. Ecological Information

Environmental Fate:
No information found.

Environmental Toxicity:
No information found.

13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

14. Transport Information

Not regulated.

15. Regulatory Information

--------\Chemical Inventory Status - Part 1\----------

Ingredient	TSCA	EC	Japan	Australia
Sodium Bicarbonate (144-55-8)	Yes	Yes	Yes	Yes

--------\Chemical Inventory Status - Part 2\----------

Ingredient	Korea	Canada DSL	Canada NDSL	Phil.

Sodium Bicarbonate (144-55-8)	Yes	Yes	No	Yes

\--------\Federal, State & International Regulations - Part 1\----------

Ingredient	-SARA 302- RQ	TPQ	------SARA 313----- List	Chemical Catg
Sodium Bicarbonate (144-55-8)	No	No	No	No

\--------\Federal, State & International Regulations - Part 2\----------

Ingredient	CERCLA	-RCRA- 261.33	-TSCA- 8(d)
Sodium Bicarbonate (144-55-8)	No	No	No

Chemical Weapons Convention: No TSCA 12(b): No CDTA: No
SARA 311/312: Acute: No Chronic: No Fire: No Pressure: No
Reactivity: No (Pure / Solid)

Australian Hazchem Code: No information found.
Poison Schedule: No information found.

WHMIS:
This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

16. Other Information

NFPA Ratings: Health: 1 **Flammability:** 0 **Reactivity:** 0

Label Hazard Warning:
As part of good industrial and personal hygiene and safety procedure, avoid all unnecessary exposure to the chemical substance and ensure prompt removal from skin, eyes and clothing.

Label Precautions:
None.

Label First Aid:
Not applicable.

Product Use:
Laboratory Reagent.

Revision Information:

Pure. New 16 section MSDS format. all sections have been revised.

Disclaimer:

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