Cytec Industries Inc.

Fortier Manufacturing Complex

Waggaman, Louisiana
Jefferson Parish

EPA I.D. No. LAD 008175390

Hazardous Waste
Permit Application

Volume II

June, 1998

Summary of Contents

Volume I
Summary of Contents
Table of Contents
Transmittal Letter
Computer Diskettes
IT Response
Certification
Form HW-1
Part I//Part A
Chapter Responses

Volume II
Appendices A through M

Volume III
Appendices N through Q

Volume IV
Appendices R through BB

Volume V
Appendices CC through JJ

Volume VI
Appendices KK through LL

Volume VII
Appendices MM through PP

TABLE OF CONTENTS

Volume II

Appendix A	LAC 33:V.303.N
Appendix B	Letter Dated April 24, 1998 from LDEQ to Cytec Settlement Agreement
Appendix C	LAC 33:V.503.B LAC 33:V.2901
Appendix D	LAC 33:V.503.B
Appendix E	LAC 33:V.516.A.1
Appendix F	LAC 33:V.516.A.2.-5.
Appendix G	LAC 33:V.516.A.6 LAC 33:V.1907.G.2
Appendix H	LAC 33:V.516.A.6. LAC 33:V.1907.I.3. and 4.
Appendix I	LAC 33:V.516.A.6. LAC 33:V.1907.A
Appendix J	LAC 33:V.517.B.
	Figures 1 thru 23
Appendix K	LAC 33:V.517.B.3 LAC 33:V.517.T.2 LAC 33:V.1503.B.3
Appendix L	LAC 33:V.517.B.8.
Appendix M	LAC 33:V.517.D.

Appendix A

LAC 33:V.303.N

Letter Dated March 27, 1998 from LDEQ to Cytec
Letter Dated March 16, 1998 from Cytec to LDEQ
Letter Dated December 16, 1997 from LDEQ to Cytec
Letter Dated November 24, 1997 from Cytec to LDEQ

State of Louisiana

Department of Environmental Quality

M.J. "MIKE" FOSTER, JR.
GOVERNOR

J. DALE GIVENS
SECRETARY

March 27, 1998

CERTIFIED MAIL P 138 802 899
RETURN RECEIPT REQUESTED

Mr. Jaswant S. Gill, Plant Manager
CYTEC INDUSTRIES INC
Fortier Plant
10800 River Road
Westwego, LA 70094

RE: Second Request for Late Filing Date of Permit Renewal Application
CYTEC INDUSTRIES INC.
LAD 008 175 390

Dear Mr. Gill:

The Hazardous Waste Division (HWD) has received your second request for an extension on the submittal date of your Permit Renewal Application. Your request states that you will need additional time in order to incorporate recently promulgated final regulations, and allow for sufficient internal review. Your first request for an extension, dated November 24, 1997, resulted in the HWD approving a final deadline of March 31, 1998. In accordance with LAC 33:V:303.N, the HWD hereby approves your request for a later submittal date. The renewal application must be received no later than June 1, 1998.

Any questions or comments concerning this matter should be addressed to Mr. Shan Schatzle or Mr. Eric Garner of the HWD, Permits Section at (504) 765-0272.

Sincerely,

James H. Brent

James H. Brent, Ph.D.
Administrator

JHB/EG/eg

OFFICE OF SOLID AND HAZARDOUS WASTE HAZARDOUS WASTE DIVISION P.O. BOX 82178 BATON ROUGE LOUISIANA 70884-2178
TELEPHONE (504) 765-0355 FAX (504) 765-0617

AN EQUAL OPPORTUNITY EMPLOYER

CYTEC

CYTEC INDUSTRIES INC.
Fortier Plant
10800 River Road
Westwego, LA 70094
Tel: (504) 431-9511

Certified Mail No. P 162 426 599
Return Receipt Requested

Via Fax 504-765-0617

March 16, 1998

James H. Brent, Ph.D., Administrator
LDEQ/HWD-Permit Section
Post Office Box 82178
Baton Rouge, LA 70884-2178

Dear Dr. Brent:

Cytec Industries Inc.-Fortier Manufacturing Complex;
Waggaman, Jefferson Parish; EPA I.D. No. LAD 008175390
Request for Later Filing Date of the Hazardous
Waste Permit Renewal Application

Cytec Industries Inc. (Cytec) is hereby requesting LDEQ's permission for a later filing date for the submittal of the hazardous waste permit renewal application in compliance with Permit Provision II.E.2. and Louisiana Administrative Code (LAC) 33:V.303.N., which states:

> *"Reapplications. Any TSD facility with an effective permit shall submit a new permit application at least 180 days before the expiration date of the effective permit, unless permission for later filing is granted by the administrative authority. (The administrative authority shall not grant permission for applications to be submitted later than the expiration date of the existing permit.)"*

Cytec's existing hazardous waste permit, LAD 008175390-OP-1, became effective on April 24, 1995 and expires on June 23, 1998. The renewal application was due to LDEQ on December 25, 1997. However, LDEQ granted a later filing date of March 31, 1998 by letter dated December 16, 1997. Cytec is again requesting that LDEQ grant a later filing date of May 29, 1998 in order to incorporate recently promulgated final regulations and allow for sufficient internal review.

CYTEC

In order to obtain additional time to complete the hazardous waste permit renewal application, Cytec is requesting permission from LDEQ for a later filing date of May 29, 1998. LAC 33:V.303.N. allows LDEQ to grant permission for a later filing date provided that the later filing date is not past the expiration date of the existing permit.

If you have any questions or require additional information, please contact Ms. Stacy M. Foret at (504)431-6479 or Ms. Anita Junker at (504)431-6556.

I certify under penalty of the law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, 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 fines and imprisonment.

This submission and any past or future communications or discussions regarding this matter are not intended to admit any fact of liability or waive or affect any rights.

Very truly yours,

Jaswant S. Gill
Director - Manufacturing and Building Blocks

c: Eric Garner, LDEQ HW Permits Division, Baton Rouge, LA via Fax 504-765-0617

State of Louisiana

Department of Environmental Quality

M.J. "MIKE" FOSTER, JR.
GOVERNOR

J. DALE GIVENS
SECRETARY

DEC 17 1997

December 16, 1997

CERTIFIED MAIL P 138 802 886
RETURN RECEIPT REQUESTED

Mr. Jaswant S. Gill, Plant Manager
CYTEC INDUSTRIES INC
Fortier Plant
10800 River Road
Westwego, LA 70094

RE: Request for Later Filing Date of the Hazardous Waste Permit Renewal Application
CYTEC INDUSTRIES INC.
LAD 008 175 390

Dear Mr. Gill:

The Hazardous Waste Division (HWD) has received your request for an extension on the submittal date of your Permit Renewal Application. Your request is in response to a recent reorganization of staff within the Fortier Plant. In accordance with LAC 33:V.303.N, the HWD hereby approves your request for a later submittal date. The renewal application must be received no later than March 31, 1998.

Any questions or comments concerning this matter should be addressed to Mr. Shan Schatzle or Mr. Eric Garner of the HWD, Permits Section at (504) 765-0272.

Sincerely,

James H. Brent

James H. Brent, Ph.D.
Administrator

JHB/EG/eg

RECEIVED
DEC 17 1997
ENVIRONMENTAL DEPT

OFFICE OF SOLID AND HAZARDOUS WASTE HAZARDOUS WASTE DIVISION P O. BOX 82178 BATON ROUGE LOUISIANA 70884-2178
TELEPHONE (504) 765-0355 FAX (504) 765-0617

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AN EQUAL OPPORTUNITY EMPLOYER

CYTEC

CYTEC INDUSTRIES INC.
Fortier Plant
10800 River Road
Westwego, LA 70094
Tel: (504) 431-9511

Certified Mail No. P 162 426 746
Return Receipt Requested

November 24, 1997

James H. Brent, Ph.D.
Administrator
LDEQ/HWD-Permit Section
Post Office Box 82178
Baton Rouge, LA 70884-2178

Re: Cytec Industries Inc.- Fortier Manufacturing Complex, Waggaman, Jefferson Parish
EPA I.D. No. LAD 008175390
Request for Later Filing Date of the Hazardous Waste Permit Renewal Application

Dear Dr. Brent:

Cytec Industries Inc. (Cytec) is hereby requesting LDEQ's permission for a later filing date for the submittal of the hazardous waste permit renewal application in compliance with Permit Provision II.E.2. and Louisiana Administrative Code (LAC) 33:V.303.N., which states:

> *"Reapplications. Any TSD facility with an effective permit shall submit a new permit application at least 180 days before the expiration date of the effective permit, unless permission for later filing is granted by the administrative authority. (The administrative authority shall not grant permission for applications to be submitted later than the expiration date of the existing permit.)"*

Cytec's existing hazardous waste permit, LAD 008175390-OP-1, became effective on April 24, 1995 and expires on June 23, 1998. The renewal application is currently due to LDEQ on December 25, 1997.

A reorganization of the entire Fortier Plant was announced on November 4, 1997 which will require that all of the existing safety and environmental procedures be revised to accurately reflect personnel changes and responsibilities. A significant number of these procedures are either included or referenced in the hazardous waste permit renewal application. Additional time is necessary to adequately address revision of the procedures and to allow the appropriate facility personnel to review and comment on the revised documents. Furthermore, the environmental staff and files are being physically relocated, which will delay initiating some of the changes that will be required to update the documents.

CYTEC

In order to obtain additional time to complete the hazardous waste permit renewal application, Cytec is requesting permission from LDEQ for a later filing date of March 31, 1998. LAC 33:V.303.N. allows LDEQ to grant permission for a later filing date provided that the later filing date is not past the expiration date of the existing permit.

If you have any questions or require additional information, please contact Ms. Stacy M. Foret at (504)431-6479 or Ms. Anita Junker at (504)431-6556.

I certify under penalty of the law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, 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 fines and imprisonment.

This submission and any past or future communications or discussions regarding this matter are not intended to admit any fact of liability or waive or affect any rights.

Very truly yours,

Jaswant S. Gill
Director - Manufacturing and Building Blocks

cc Eric Garner, LDEQ HW Permits Division, Baton Rouge, LA via Fax 504-765-0617

Appendix B

Letter Dated April 24, 1998 from LDEQ to Cytec
Settlement Agreement

State of Louisiana

Department of Environmental Quality

M.J. "MIKE" FOSTER, JR.
GOVERNOR

J. DALE GIVENS
SECRETARY

PF
RF
PSF
SS
EG
ENF
+1

April 24, 1998

CERTIFIED MAIL P 138 804 581 - RETURN RECEIPT REQUESTED

Mr. Jaswant S. Gill, Plant Manager
Cytec Industries Inc.
Fortier Plant
10800 River Road
Westwego, LA 70094

RE: Cytec Industries Inc.
LAD 008 175 390
Temporary Authorization Request for Less Than Ninety (90) Day Treatment

Dear Mr. Gill:

The Hazardous Waste Division (HWD) has received your Request for a Temporary Authorization, dated April 1, 1998 to remove and treat sludge from your permitted storage tanks in a mobile treatment unit. The request does not meet the criteria for granting a Temporary Authorization outlined in LAC 33:V.321.C.5.b.i. However, in accordance with LAC 33:V.105.D.2, a generator may store hazardous waste in an environmentally safe container or tank for less than ninety (90) days without a permit. Additionally, the attached memorandum from the U.S. Environmental Protection Agency, dated December 15, 1987, indicates that treatment in less than ninety (90) day tanks or containers is also permissible.

Consequently, the HWD hereby authorizes Cytec to proceed with these activities as long as the following requirements are met:

1) Cytec must comply with LAC 33:V.105.D.2 and all regulations cited therein.

2) Cytec must comply with LAC 33:V.1109.E and all regulations cited therein.

3) Cytec must notify the Hazardous Waste Division, Enforcement Section prior to commencing to allow for inspection of the activities being conducted.

Because these activities are being conducted on a biennial basis to comply with Section V.B.3.c of Cytec's Hazardous Waste Operating Permit, future removal, storage, and treatment of sludge must follow the aforementioned requirements. However, prior approval is not required by the HWD.

If you have any questions or comments concerning this matter, please contact Mr. Shan Schatzle or Mr. Eric Garner at (504) 765-0272.

Sincerely,

James H. Brent

James H. Brent, Ph. D.
Administrator

JHB/SS/ss

c: Steve Aguillard, Program Manager - LDEQ-HWD-Enforcement, w/o attachment

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

DEC 15 1987

OFFICE OF
SOLID WASTE AND EMERGENCY RE:

MEMORANDUM

SUBJECT: Requested Re-interpretation of On-site Treatment Exemption

FROM: Marcia E. Williams, Director
Office of Solid Waste (WH-562B)

TO: Robert F. Greaves, Acting Chief
Waste Management Branch (3HW30)

This is in response to your request for a re-interpretation of the on-site treatment exemption. We have reviewed your concerns regarding our interpretation. While in general we continue to believe that treatment in tanks or containers is allowed under Section 262.34, the questions you posed indicate that the rule as currently written is unclear and should be clarified.

1. General policy. Although 40 CFR 270.1(c) does state that a permit is required for treatment, storage, and disposal of hazardous waste, please note that Section 270.1(c)(2)(i) exempts generators who accumulate hazardous waste on-site in compliance with Section 262.34 from the requirement to obtain a RCRA permit. The exemption does not depend on whether or not treatment is conducted. The reason for this general policy is as follows. First, as you have stated, Section 262.34 does not preclude treatment in accumulation units. Also, the performance standards under Part 265, Subparts I and J, apply to the generator's containers and tanks regardless of whether storage, treatment, or both processes occur in them. In addition, both Subparts I and J contain special handling requirements for ignitable, reactive, and incompatible wastes, and these requirements should adequately control treatment typically conducted in tanks or containers. Finally, treatment often renders waste less hazardous, or at least easier to transport or more amenable for recovery. For all of these reasons, OSW believes that treatment is not only allowable under Section 262.34, but also is consistent with sound waste management.

2. Thermal treatment. You raised the concern that generators could conduct thermal treatment such as detonation or open burning under Section 262.34 and thereby avoid permitting for obviously dangerous activities. Certainly, detonation and open burning were never intended to be allowed under Section 262.34. As explained above, a large part of the Agency's rationale in allowing treatment under Section 262.34 was that the same standards would apply for both treatment and storage. All thermal treatment is subject to Part 265, Subpart P; if this was not the case, the standards would not be the same, and the premise of the Section 262.34 exemption would be violated. The regulatory language of Section 262.34 is not clear on this point, and OSW is considering promulgating amendments to clarify applicability of the section.

If you have further questions in this area, please contact Michael Petruska at FTS 475-8551.

cc: Waste Management Branch Chiefs,
Regions I, II, and IV-X

STATE OF LOUISIANA
DEPARTMENT OF ENVIRONMENTAL QUALITY

IN THE MATTER OF	*	
	*	
	*	
CYTEC INDUSTRIES, INC.	*	DOCKET NUMBER
	*	**AHD-HC-95017**
	*	
	*	
PROCEEDINGS UNDER THE	*	
ENVIRONMENTAL QUALITY ACT	*	
LA R.S. 30:2001 ET SEQ.	*	

****

SETTLEMENT AGREEMENT

The following Settlement is hereby agreed between Cytec Industries, Inc. (Respondent) and the Department of Environmental Quality, (Department), under authority granted by the Louisiana Environmental Quality Act, LSA-R.S. 30:2001, et. seq., (the "Act").

I.

Respondent owns and/or operates a chemical production facility located at 10800 River Road in Waggaman, Jefferson Parish, Louisiana.

II.

The allegations which form the basis of the enforcement action are:

A. Investigation by the Department disclosed that on or about June 13 and 14, 1994, Respondent violated LAC 33:V.4323 by failing to maintain and operate the facility to minimize the possibility of an unplanned non-sudden release of hazardous waste or hazardous waste constituents to air, soil or surface water which could threaten human health or the environment. Specifically, Respondent is alleged to have used a portable enclosure made of scaffolding bars and tarpaulins covering the discharge of the drying unit and roll-off box being filled. The inspection noted that a portion of the tarping had been rolled up, exposing the screw discharge and roll-off box to the wind. The inspection further revealed airborne dust containing hazardous waste and/or hazardous constituents, some of which settled on the ground outside the roll-off box and containment area between the roll-off box and the filtration unit. The inspection further noted that dust was also coming from a flange left open at the bottom of the discharge screw conveyor.

B. Investigation by the Department disclosed that on or about June 13 and 14, 1994, Respondent violated LAC 33:V.2103 by failing to transfer hazardous waste from a leaking or deteriorated container to a container in good condition. Specifically, the inspection noted a bulging drum located in the less than ninety day storage area.

C. Investigation by the Department disclosed that on or about June 13 and 14, 1994, Respondent violated LAC 33:V.2107.B by storing a container holding hazardous waste in a manner which may cause the container to rupture or leak. Specifically, the inspection noted a bulging drum located in the less than ninety day storage area.

D. Investigation by the Department disclosed that on or about June 13 and 14, 1994, Respondent violated LAC 33:V.303.D by treating hazardous waste in a mobile treatment unit without having interim status or a standard permit for that treatment procedure. Specifically, the contents of an interim status storage

tank, MET 1, was being removed for the biennial tank inspection. The tank bottoms were being treated by Chemical Waste management in a MTU located in a limestone filled area, south of the MET 1 and 2 containment. The MTU was being used to solidify and reduce the volume of the MET 1 tank bottoms for off-site disposal. The vapors and liquids from the operation were being piped to the MET 2 tank. The dried solids were being discharged into a lined roll-off box for off-site incineration.

III.

Respondent denies it committed any of the violations alleged in the Compliance Order or that it is liable in any way for such alleged violations. Respondent contends that it was using adequate containment at the time of the operation described in paragraph II(A); hazardous waste was not stored in inadequate containers or in a manner which would cause the container to rupture or leak, as alleged in paragraph II(B) and (C); and Respondent did not treat hazardous waste in mobile treatment units that required interim status or a standard permit, as alleged in paragraph II(D), because these units were less than

90-day units which did not require interim status or a standard permit. The execution of this Settlement Agreement shall not constitute an admission of any nature whatsoever. Respondent's submission of any request for a Temporary Authorization in accordance with Section IV(C) hereof shall not constitute an admission as to the need for, or as to any right or authority of the Department to require, Temporary Authorization or any other form of permitting or approval for the use of the MTU's for less than 90 days for the clean out of Respondent's RCRA units. No provision of this Settlement Agreement shall be admissible in any proceeding relating to Respondent's appeal of any denial of such Temporary Authorization or in any other proceeding except as provided in paragraph V and any proceeding to enforce any provision of this Agreement. In such case, all rights of Respondent's right to contest the authority or right of the Department to require Temporary Authorization or any other form of permitting or approval for the use of MTU's for less than 90 days for the clean out of Respondent's RCRA units.

IV.

In an effort to resolve the above-mentioned alleged violations, which are disputed by the Respondent, the parties

have agreed to the following:

A. To prevent a violation as described in paragraph II. A., the Respondent will immediately use tarps or any other means to enclose the drying unit and prevent the unplanned non-sudden release of hazardous waste or hazardous constituents to air, soil or surface water. Regardless of the method used the result must prevent the unplanned non-sudden release of hazardous waste or hazardous constituents to air, soil or surface water. Use of this procedure will satisfy paragraph I of the Compliance Order.

B. The Respondent will immediately over pack drums containing hazardous waste whenever such drums are leaking or deteriorated, specifically including drums that are bulging, to prevent violations as described in paragraphs II. B. and C. In addition all over packed drums must be keep in good

condition and must not be leaking or deteriorated, including bulging. Use of this procedure will satisfy paragraphs II and III of the Compliance Order. However, nothing herein shall be construed in any way as limiting the Department's ability to regulate in the future any condition that may result or cause the drums to become leaking or deteriorated, including bulging.

C. The Respondent will notify the Department at least 60 days in advance of the use of Mobil Treatment Units (MTU's) for the clean out of the RCRA tanks and will request a Temporary Authorization as allowed by the provisions of LAC 33:V.321.C.5 for the use of the MTU's for each clean out of the RCRA tanks. The request for Temporary Authorization will include a description of the manner in which the MTU's will be used and equipment specifications received from the contractor prior to commencement of the

cleanup operation. Respondent will furnish the Department with any revisions to the equipment specifications received from the contractor at least ten (10) days prior to commencement of the cleanup operation in order to allow the Department sufficient time to review such revisions. Furthermore, the Respondent will notify the Southeast Regional Office, Hazardous Waste Division at least ten (10) days prior to use of the MTU in order to allow the Department to witness the treatment process at the facility. The above-mentioned procedure will be used until such time as the use of the MTU's becomes permitted by the Department or a determination by the Department that no permitting is required for such treatment. Use of the procedures outlined above will satisfy paragraphs IV and V of the Compliance Order. In the event the Department denies any request by Respondent for Temporary Authorization, as set forth above, such action by the Department will be

subject to review in accordance with the provisions of La. R.S. 30:2024 (A).

V.

Nonetheless, the Respondent, without making any admission of liability under state or federal statute or regulation, agrees to comply with all of the conditions and procedures outlined in paragraph IV herein. Further, Respondent agrees the Department may consider the inspection report(s), the Compliance Order and this Settlement for the purpose of determining compliance history in connection with any future enforcement or permitting action by the Department and in any such action the Respondent shall be estopped from objecting to the above referenced documents being considered as proving the violations alleged herein for the sole purpose of determining Respondent's compliance history.

WITNESSES:

RESPONDENT

BY: _____

THUS DONE AND SIGNED before me in New Orleans

this 19th day of January, 1996.

Elizabeth S. Wheeler
NOTARY PUBLIC

WITNESSES:

Carmel T. Saul

Patricia Woolfolk

STATE OF LOUISIANA
J. Dale Givens
Secretary
Department of Environmental Quality

J. Dale Givens, Secretary

THUS DONE AND SIGNED before me in Baton Rouge, Louisiana this 1st day of February, 1996.

NOTARY PUBLIC

Appendix C

LAC 33:V.503.B.
LAC 33:V.2901

Letter Dated June 7, 1989 from LDEQ to American Cyanamid Company (presently Cytec)

Letter Dated January 15, 1991 from LDEQ to American Cyanamid Company (presently Cytec)

Letter Dated January 30, 1991 from LDEQ to American Cyanamid Company (presently Cytec)

State of Louisiana

Department of Environmental Quality

BUDDY ROEMER
Governor

PAUL TEMPLET
Secretary

June 7, 1989

H. T. THURBER

JUN 14 1989

JUN 14 1989

Mr. H. T. Thurber, Plant Manager
American Cyanamid Company
Fortier Plant
10800 River Road
Westwego, Louisiana 70094

RE: American Cyanamid Company
(LAD00817340-CP4) Closure Status
Acceptance of Closure Certification

Dear Mr. Thurber:

The Louisiana Department of Environmental Quality-Hazardous Waste Division (LDEQ-HWD) is in receipt of your closure certification dated April 28, 1989.

This Department has reviewed your certification and concurs that you have closed the two (2) hazardous waste surface impoundments 1 and 3 in accordance with your closure plan of July 17, 1988.

Your patience and cooperation during the processing of this information is appreciated. If you have any questions concerning this matter, please contact Y. S. Goh at (504) 342-4685.

Sincerely,

Timothy W. Hardy

TIMOTHY W. HARDY
Assistant Secretary

TWH:YSG:pgw

OFFICE OF SOLID AND HAZARDOUS WASTE P.O. BOX 44307 BATON ROUGE, LOUISIANA 70804

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State of Louisiana

Department of Environmental Quali

BUDDY ROEMER
Governor

Secretary

January 15, 1991

CERTIFIED RETURN RECEIPT REQUESTED (P 293 993 205)

Mr. D. J. Romanik, Plant Manager
American Cyanamid Company
Fortier Plant
10800 River Road
Westwego, Louisiana 70094

RE: American Cyanamid Company
(LAD008175390) Closure Status
Acceptance of Closure Certification

Dear Mr. Romanik:

The Louisiana Department of Environmental Quality-Hazardous Waste Division (LDEQ-HWD) is in receipt of your closure certification dated May 27, 1988.

The Department has reviewed your certification, determined it to be accurate, and concurs that you have closed two (2) Hazardous Waste Surface Impoundments (North Wastewater Columns Backwash Pit and Deep Well Backwash Pit) in accordance with the approved Closure Plan dated May 18, 1988.

Your patience and cooperation during the processing of this information is appreciated. If you have any question concerning this matter, please contact Kulwant Singh at (504) 342-9779.

Sincerely,

for TIMOTHY W. HARDY, Assistant Secretary
Office of Solid and Hazardous Waste

TWH:KS:ks

FC ADMINISTRATION

JAN 17 1991

State of Louisiana

Department of Environmental Quality

BUDDY ROEMER
Governor

PAUL TEMPLET
Secretary

January 30, 1991

CERTIFIED RETURN RECEIPT REQUESTED (P 662 641 890)

Mr. D. J. Romanik, Plant Manager
American Cyanamid Company
Fortier Plant
10800 River Road
Westwego, Louisiana 70094

RE: American Cyanamid Company
(LAD008175390) Closure Status
Acceptance of Closure Certification

Dear Mr. Romanik:

The Louisiana Department of Environmental Quality-Hazardous Waste Division (LDEQ-HWD) is in receipt of your closure certification dated September 7, 1988.

The Department has reviewed your certification, determined it to be accurate, and concurs that you have closed the Hazardous Waste Surface Impoundment (South Wastewater Column Bottoms Backwash Pit) in accordance with the approved Closure Plan dated August 20, 1987.

Your patience and cooperation during the processing of this information is appreciated. If you have any question concerning this matter, please contact Kulwant Singh at (504) 342-9779.

Sincerely,

Peter A. Romanowsky

for TIMOTHY W. HARDY, Assistant Secretary
Office of Solid and Hazardous Waste

TWH:KS:ks

Appendix D

LAC 33:V.503.B

Groundwater Monitoring Agreement

State of Louisiana

Department of Environmental Quality

M.J. "MIKE" FOSTER, JR.
GOVERNOR

J. DALE GIVENS
SECRETARY

Z 012 944 687
Return Receipt Requested

December 4, 1997

Ms. Anita Junker, Environmental Manager
CYTEC Industries Inc.
Fortier Plant
10800 River Road
Westwego, LA 70094

RE: Docket Number HE-88-LAD00817390
Groundwater Monitoring Agreement for the AN Pit Area
CYTEC Industries Inc.
LAD 008 175 390

Dear Ms. Junker:

Please find enclosed an executed original copy of the Groundwater Monitoring Agreement for the AN Pit Area. We appreciate your efforts to reach a mutually acceptable agreement regarding this issue.

Should you have any questions concerning this submittal, please contact Mr. Shan Schatzle at (504) 765-0291.

Sincerely,

James H. Brent

James H. Brent, Ph.D.
Administrator

msm

RECEIVED
DEC 8 1997
ENVIRONMENTAL DEPT.

OFFICE OF SOLID AND HAZARDOUS WASTE HAZARDOUS WASTE DIVISION P O. BOX 82178 BATON ROUGE, LOUISIANA 70884-2178
TELEPHONE (504) 765-0355 FAX (504) 765-0617

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Groundwater Monitoring Agreement

Whereas, Cytec Industries Inc. (Cytec) and the Louisiana Department of Environmental Quality (Department) engaged in previous settlement negotiations in connection with Cytec's operating permit (LAD 008 175 390-OP-1) and all approved modifications issued pursuant to the Resource Conservation and Recovery Act (RCRA) Subtitle C (entitled "In the Matter of: American Cyanamid Company", Docket No. HE-88-LAD008175390, Section B), on the docket of the Administrative Hearings Division of the Department, which resulted in (i) the issuance to Cytec of a modified RCRA operating permit effective April 24, 1995; (ii) Cytec's subsequent withdrawal of its hearing request in the appeal proceedings; and (iii) issuance of a Termination Order in said proceeding on April 26, 1995; and

Whereas, in connection with the aforementioned settlement negotiations, it was agreed that the groundwater monitoring sections of Cytec's RCRA permit would contain the following language:

"VII. Groundwater Protection

A. Applicability

The regulations of Louisiana Administrative Code (LAC), Title 33, Part V, chapters 5, 15, 29, 33, 35, and the Louisiana Hazardous Waste Control Law, R.S., 30:2171 of the Environmental Quality Act, R.S. 30:2001 et seq., and the provisions of this section shall apply to groundwater protection programs for facilities that are used to treat, store and dispose of hazardous waste at Cytec Industries, located in Waggaman, Louisiana. There are no active regulated units identified in this permit that require groundwater monitoring. Additionally, the permittee's closed waste management areas are not included in this permit. The Department is planning to issue a separate RCRA post-closure permit that will address groundwater monitoring requirements. In the event that a Corrective Action Program is required and upon approval of said Corrective Action Program, the conditions of corrective action will be incorporated into the post-closure permit for areas having groundwater contamination resulting from the past operation of units subject to regulations under RCRA.

B. Required Programs

The permittee must continue to conduct detection monitoring from the existing systems established during interim status. All groundwater monitoring systems must be maintained, unless exempted from the program at a later date by the administrative authority." and

Whereas, in connection with the above referenced language in the RCRA Operating Permit, Cytec and the Department agreed to resolve the Department's interest in further monitoring in the following manner:

A. Impoundment 1, and Impoundment 3 were closed in accordance with closure plan dated July 17, 1988. The groundwater monitoring of these closed impoundments was addressed in the Post-closure permit draft issued June 7, 1996.

B. The deep well backwash pit and the north and south Waste Water Column Bottoms (WWCB) pits in the Acrylonitrile Plant Pit area (the "AN Pit Area"), were closed in accordance with closure plans dated May 18, 1988, and August 20, 1987.

Whereas, in view of the closure in accordance with approved closure plans as specified above, Cytec and the Department have agreed to address the remaining concerns of the "AN Pit Area" in this Groundwater Monitoring Agreement (Agreement) in the manner hereinafter set forth:

Now, therefore, in consideration of the premises and in the furtherance of the agreements reached during the settlement negotiations relating to Cytec's RCRA Operating permit, Cytec and the Department agree as follows:

1. Cytec will monitor the groundwater in the area of Impoundments 1 and 3 as specified in the post-closure permit (LAD 008 175 390 PC-1) dated (draft June 7, 1996);

2. Cytec will monitor groundwater in the "AN Pit Area" through continued sampling and analysis of Monitoring Wells MW-23, MW-24, MW-25, MW-26, MW-27, MW-28, MW-29, MW-30, and MW-7. MW-23, MW-27, and MW-30 will be sampled for total Cyanide on a semi-annual basis. The other monitoring wells will be sampled for total Cyanide on at least an annual basis. All wells within the monitoring system will be sampled for Cytec's site specific parameters on at least an annual basis. The AN Pit Area and the locations of the specified monitoring wells are shown on the diagram attached to this Agreement as Exhibit A. Cytec's site-specific parameters and required quantification limits are included in Table 1 at the conclusion of this agreement;

3. If total cyanide or any of Cytec's site specific parameters are detected and confirmed to be present during a verification sampling event to be completed within three months of the original sampling event that yielded the detection, the well(s) producing the detection will begin sampling on a semi-annual basis for the detected constituent(s). The semi-annual sampling shall be continued until the constituent(s) is(are) not detected in three consecutive sampling events or the administrative authority approves an alternative sampling frequency;

4. Cytec will submit monitoring reports to the Department for the groundwater monitoring provided in paragraphs 2 and 3, above, on a semi-annual basis within 30 calendar days after Cytec's receipt of the analytical results for the sampling period. The monitoring report shall include a potentiometric map showing water levels recorded during the sampling event;

5. Cytec will monitor the AN Pit Area, as set forth above, until recorded constituent levels for total cyanide are below the Practical Quantitative Limits (PQL) specified in Table 1 for three consecutive semiannual monitoring periods. Cytec will also monitor the AN Pit Area, as set forth above, until recorded constituent levels for the site specific parameters are below the PQL specified in Table 1 for three consecutive annual monitoring periods. This monitoring will be done for all monitoring wells identified in paragraph 2, or until such time as either the administrative authority approves an alternative sampling program, both parties agree that no further monitoring is required, or the administrative authority approves

a risk-based closure for the groundwater monitoring program. At the conclusion of groundwater monitoring requirements for the "AN Pit Area", Cytec shall be authorized to discontinue the monitoring program and to properly plug and abandon the monitoring wells comprising the monitoring program;

6. Cytec will manage contaminated purge and other waters extracted from the wells in accordance with Cytec's approved Groundwater Sampling and Analysis Plan;

7. If new regulations relating to the closure of units with contaminated groundwater are promulgated after the effective date of this agreement, Cytec shall have the right to immediately submit a proposal for appropriate changes to the groundwater monitoring requirements specified in this agreement. The Department hereby agrees to review and issue a response to Cytec's proposal within 180 working days of the submittal date of the proposal;

8. In the event that, based upon the monitoring provided in paragraphs 2-7 above, the Department notifies Cytec that additional assessment and/or corrective action is required in the AN Pit Area, Cytec will conduct this additional activity in compliance with all relevant provisions of the "HSWA" portion of their RCRA operating permit concerning corrective action. Events that could warrant additional assessment and/or corrective action include: 1)significant expansion of the existing groundwater plume; 2)significant increase in contaminant concentrations; 3)detection of new constituents within the contaminant plume; or 4)change in site conditions that would permit a sensitive receptor to come in contact the contaminant plume;

9. Cytec and the Department agree that this Agreement covers and resolves current issues pertaining to the groundwater monitoring of the previously closed RCRA units in the AN Pit Area. Cytec and the Department also agree that should additional contamination be detected, or other information become available, that Cytec will abide by its RCRA/HSWA permit requirements pertaining to the detection of new releases;

10. The execution of this Agreement by Cytec and the Department, and Cytec's agreement to monitor groundwater in the AN Pit Area as provided herein, shall not constitute an admission by Cytec that a release has occurred from the previously closed RCRA units. Cytec agrees that corrective action may be required by the Department pursuant to the HSWA portion of the RCRA permit;

11. The terms and conditions of this agreement shall remain in effect until monitoring of the AN Pit Area is discontinued, as provided by paragraph 5, above. At such time, all requirements and obligations of Cytec under this agreement shall be considered satisfied and this agreement shall terminate and be of no further force and effect. Termination of monitoring as provided in paragraph 5 does not relieve Cytec of its RCRA/HSWA permit requirements concerning new releases;

12. All actions undertaken by the Department will be subject to review in accordance with the provisions of the Louisiana Environmental Quality Act.

TABLE 1

Cytec's Site Specific Monitoring Parameters and Their Required Quantification Limits

Total Cyanide	0.04 ppm
*Amenable Cyanide	0.04 ppm
Acrylonitrile	10 ppb
Methyl Methacrylate	10 ppb
Acrylamide	50 ppb
Acetone	10 ppb
Acrolein	10 ppb
Acetonitrile	10 ppb

*Testing for Amenable Cyanide is only required for those wells yielding a Total Cyanide concentration of greater than 0.2 ppm

WITNESSES:

CYTEC INDUSTRIES INC.

BY: _____

Title: Director of Manufacturing

THUS DONE AND SIGNED before me this 11 day of November, 1997, in New Orleans, La.

NOTARY PUBLIC

WITNESSES:

STATE OF LOUISIANA

BY: _____

H.M. "Mike" Strong
Assistant Secretary
Department of Environmental Quality - Office of Solid and Hazardous Waste

THUS DONE AND SIGNED before me this 4th day of Dec, 19 97, in Baton Rouge, Louisiana.

NOTARY PUBLIC

Appendix E

LAC 33:V.516.A.1

Solid Waste Management Unit Location Map
Cytec Drawing No. 36-8-7-0

Reference Sheet

REF+51387

12/27/99 7:28 AM

Appendix F

LAC 33:V.516.A.2.-5.

Solid Waste Management Unit Table

Solid Waste Management Units - LANDFILLS

Unit Name	Description	T/S/D	Status	Approximate Capacity/ Dimensions	Waste Description/ Codes	Estimated Disposed Quantities	Approximate Dates of Operation	Map Location	Potential Release Evidence
Plant Landfill	Closed waste disposal area prior to RCRA, capped with native soils	D	Inactive	10 acres (650' x 650' x 6-12')	Miscellaneous process wastes including hazardous constituents of mercury and lead; see Note 1 and 2.	458,000 T	1953-1978	(1)	Evidence to indicate area underlain with relatively impervious clay; area fully revegetated; subject of ongoing RFI.
Sludge Landfill	Closed, secured landfill used for impoundment sludge disposal; clay capped	D	Inactive	10 acres (500' x 800')	Chemically fixed sludge from impoundments containing hazardous constituents of chromium, mercury and cyanides; see Note 1.	50,000 yd.^{3}	1976-1978	(2)	None; borings drilled prior to installation showed 20 feet of relatively impervious clay; additionally, leach tests performed on stabilized sludge to verify appropriate fixation; area partially revegetated.
Solid Waste Landfill	Closed, permitted non-hazardous sludge disposal facility; clay capped	D	Inactive	2.5 acres	Non-hazardous waste filter cake from melamine process and NPDES treatment	1400 yd.^{3}	1982-1983	(3)	None; inflow of water from underlying sand but no evidence of outflow; groundwater monitoring of area is being conducted subject to the Acrylo "Pit Area" Groundwater Monitoring t Agreement.
Catalyst Landfill	Closed, constructed and capped three (3) disposal cells	D	Inactive	0.15 acres (60' x 100')	Acrylonitrile catalyst	29 tons	1969-1971	(4)	None.

Note:
1. No specific information could be found that any hazardous wastes or other constituents listed in 40 CFR Part 261 (LAC 33:V.Chapter 49) were deposited.
2. The Plant Landfill is currently receiving uncontaminated excavation dirt, construction and demolition debris.

Solid Waste Management Units - SURFACE IMPOUNDMENTS

Unit Name	Description	T/S/D	Status	Approximate Capacity/ Dimensions	Waste Description/ Codes	Estimated Disposed Quantities	Approximate Dates of Operation	Map Location	Potential Release Evidence
Impoundment No.1	Collection facility for hazardous and other process wastewater	D	Closed	10 M gal. (537.5' x 250' x 10')	D002, D003, K011, K013, F001, P063, P069, U002, U007, U008, U009, U092, U154, U162, and trace acrolein	10,000 yd.^{3}	1953-1988	(5)	None; post-closure groundwater monitoring for hazardous waste and constituents shows no release to groundwater
Impoundment No. 2	Collection facility for non-hazardous wastewater and stormwater	S	Clean-Closed	5 M gal.	Non-hazardous and excluded waste water	N/A	1977-1988	(6)	None
Impoundment No. 3	Emergency spill impound	D	Closed	5 M gal. (537.5' x 112.5' x 10')	D002, D003, K011, K013, F001, P063, P069, U002, U007, U008, U009, U092, U154, U162, and trace acrolein	5,000 yd.^{3}	1953-1988	(7)	None; post-closure groundwater monitoring for hazardous waste and constituents shows no release to groundwater.
Deepwell Backwash Pit	Collection facility for backwash fluids and solids from disposal wells	D	Clean-Closed	330 k gal. (152' x 132' x 4')	D002, D003, K011, K013, F001, P063, P069, U002, U007, U008, U009, U092, U154, U162, and trace acrolein	750 yd.^{3}	1973-1988	(8)	See Note.
Caustic Pit	Backup facility for Deepwell Backwash Pit, above	D	Closed	150 k gal. (68.75' x 50' x 6')	D002, D003, K011, K013, F001, P063, P069, U002, U007, U008, U009, U092, U154, U162, and trace acrolein	None	1971-1980	(9)	See Note.
North WWCB Pit	Collection facility for backwash fluids and solids from WWCB treatment filters	T	Clean-Closed	150 k gal. (50' x 50' x 6')	K011 and trace acrolein	None	1970-1988	(10)	See Note.
South WWCB Pit	Backup facility for North WWCB Pit, above	T	Clean-Closed	125 k gal. (60' x 50' x 6')	K011 and trace acrolein	None	1974-1988	(11)	See Note.

Note: Site groundwater monitoring network is in place for the purpose of monitoring the Acrylo "Pit Area". The only contaminant that has been detected is total cyanide at levels below health-based limits in MW-23 (upgradient), MW--27 (upgradient), and MW-30 (downgradient). Groundwater monitoring for the units is being conducted subject to the Acrylo "Pit Area" Groundwater Monitoring Agreement.

Solid Waste Management Units - SURFACE IMPOUNDMENTS

Unit Name	Description	T/S/D	Status	Approximate Capacity/ Dimensions	Waste Description/ Codes	Estimated Disposed Quantities	Approximate Dates of Operation	Map Location	Potential Release Evidence
Chromate Sludge Impoundment	Closed collection facility for solids from chrome treatment of cooling water	T	Inactive	2,000 $ft.^2$	Non-hazardous waste Cr3 sludge	None	1976-1981	(12)	None; waste removed.
Deepwell No. 2 Backwash Pit	Facility for nitrogen gas backwash from Deepwell No. 2	D	Inactive	See Note.	Potentially received deepwell backwash solids with trace acrylonitrile, acetonitrile, and hydrocyanic acid.	Unknown	1965-1967	(62)	No evidence of release.
Mud Pit	Mud collection	D	Inactive	40,000 $ft.^3$ (Est.)	Non-hazardous solids for deepwell construction	Unknown	1970-1977	(63)	No evidence of release.

Note: Refer to ACCO Drawing No. 6313C.

Solid Waste Management Units - INCINERATORS

Unit Name	Description	T/S/D	Status	Approximate Capacity/ Dimensions	Waste Description/ Codes	Estimated Disposed Quantities	Approximate Dates of Operation	Map Location	Potential Release Evidence
John Zinck No. 1	Closed incinerator of certain hazardous wastes and streams if other disposal methods unavailable	T	Closed	32 TPH/ 4000 ft.^{3}	D003, K011, P063, and trace acrolein	None	Mid 1960's-1984	(14)	None
John Zinck No. 2	Closed backup for John Zinck No. 1, above	T	Closed	32 TPH/ 4000 ft.^{3}	D003, K011, P063, and trace acrolein	None	Mid 1960's-1984	(15)	None

Solid Waste Management Units - STORAGE TANKS (ABOVE GROUND)

Unit Name	Description	T/S/D	Status	Approximate Capacity/ Dimensions	Waste Description/ Codes	Estimated Disposed Quantities	Approximate Dates of Operation	Map Location	Potential Release Evidence
Acetylene Tank	Closed collection facility for filter cake sludge from past sodium ferrocyanate (YPS) production	S	Inactive	9800 ft.^{2}	D003 and cyanides	None	1974-1977	(16)	None, waste removed
Resins Effluent Tank No 1	Collection tank for bad batches and upsets in past resins production	S	Inactive	15 k gal.	Non-hazardous resins process waste	None	1979-1985	(17)	None; waste removed
Resins Effluent Tank No 2	Same as Resins Effluent Tank No. 1 above	S	Inactive	15 k gal.	Non-hazardous resins process waste	None	1979-1985	(18)	None; waste removed
Resins Effluent Tank No. 3	Same as Resins Effluent Tank No 1 above	S	Inactive	15 k gal.	Non-hazardous resins process waste	None	1979-1985	(19)	None, waste removed
YPS Mud Tank	Collection tank for runoff and filter cake from FeCl2 production in post YPS process	S	Inactive	2 k gal.	Non-hazardous waste YPS process material	None	1972-1982	(20)	None, waste removed
AN Demin Wash Tank	Collection tank for acid/caustic wash of water treatment system	S	Active	22 k gal.	Non-hazardous waste neutralized wash waters	None	1965-Present	(21)	None
Methanol/P-NH3 Demin Wash Tank No 1	Collection tank for acid/caustic wash of water treatment system	S	Active	12 k gal.	Non-hazardous waste neutralized wash waters	None	1979-Present	(22)	None
Methanol/P-NH3 Demin Wash Tank No. 2	Same as Methanol/P-NH3 Demin Wash Tank No. 1 above	S	Active	24 k gal.	Non-hazardous waste neutralized wash waters	None	1979-Present	(23)	None
K-NH3 Demin Wash Tank No. 1	Collection tank for acid/caustic wash of water treatment system	S	Active	13 k gal.	Non-hazardous waste neutralized wash waters	None	1965-Present	(24)	None
K-NH3 Demin Wash Tank No. 2	Same as K-NH3 Demin Wash Tank No. 1	S	Active	13 k gal.	Non-hazardous waste neutralized wash waters	None	1965-Present	(25)	None

Solid Waste Management Units - STORAGE TANKS (ABOVE GROUND)

Unit Name	Description	T/S/D	Status	Approximate Capacity/ Dimensions	Waste Description/ Codes	Estimated Disposed Quantities	Approximate Dates of Operation	Map Location	Potential Release Evidence
Methanol/P-NH3 Cooling Tower BD Tank	Collection tank for solids backwashed from sand filters	S	Inactive	30 k gal.	Non-hazardous waste filter backwashed solids	None	1979-Present	(26)	None
Tank 732	Collection tank for acrylonitrile storage tank scrubber water and barge line cleanout	S	Closed	25 k gal.	U002, U009, U154, U162	None	1953-1997	(27)	None
Tank 518	Collection tank for HCN storage area runoff, scrubber water, tank cleanout	S	Closed	20 k gal.	P063	None	1957-1988	(28)	None
Tank 24D	Backup for Tank 518 above	S	Closed	20 k gal.	P063	None	1957-1997	(29)	None; tank located in concrete secondary containment.
MMA Acid Filter Backwash Tank TA-301	Collection tank for backwash from MMA acid filters	S	Closed	5 k gal.	D002	None	Until 1997	(30)	None; tank located in concrete secondary containment.
Aceto Surge Tank MS 505	Collection tank for characteristic process stream in acrylonitrile production	S	Closed	5.3 k gal.	D003	None	Until 1997	(31)	None; tank located in concrete secondary containment.

Solid Waste Management Units - CONTAINER STORAGE AREAS

Unit Name	Description	T/S/D	Status	Approximate Capacity/ Dimensions	Waste Description/ Codes	Estimated Disposed Quantities	Approximate Dates of Operation	Map Location	Potential Release Evidence
Miscellaneous HW Bin Area	Storage area for bin collecting various contaminated materials and process wastes	S	Inactive	25 yd.^{3}	U007, U009, U162, D003, K011, K013, and trace acrolein	None	Uncertain	(32)	None
MMA Bin Area	Storage area for bin collecting process wastes from MMA process	S	Active	25 yd.^{3}	U162; currently only non-hazardous waste	None	Present	(33)	None
Non-hazardous Bin Area	Storage area for bin collecting non-hazardous solid process wastes	S	Active	25 yd.^{3}	Non-hazardous waste solids with trace constituents of acrylonitrile, acrylamide, formaldehyde	None	Present	(34)	None
EOP Bin Area	Storage area for three bins collecting filter cake from NPDES treatment	S	Active	51 yd ^{3}	Non-hazardous waste NPDES treatment solids	None	Present	(35)	None
Melamine Bin Area	Storage area for four bins collecting filter cake from melamine process	S	Active	34 yd.^{3}	Non-hazardous waste melamine filter solids	None	Present	(36)	None
Acetylene Pad	Closed storage area for drums of miscellaneous process waste	S	Inactive	10,000 ft ^{2}	Miscellaneous process waste. See Note.	None	Until 1980	(37)	None; concreted area; waste removed.
Urea Pad	Closed storage area for drums of miscellaneous process waste	S	Inactive	80,000 ft ^{2}	Miscellaneous process waste. See Note.	None	Until 1980	(38)	None; concreted area; waste removed.
Resins Pad	Closed storage area for drums of resins plant process waste	S	Inactive	10,000 ft.^{2}	Non-hazardous waste resins process material	None	Until 1984	(39)	None; concreted area; waste removed.
PAM Coag Bin Area	Closed storage area for polyacrylamide coagulum from resins process	S	Inactive	25 yd..^{3}	Non-hazardous waste resins material	None	1980-1984	(40)	None
Asbestos Bin	Storage area for one bin of asbestos material	S	Active	40 yd.^{3}	Non-hazardous asbestos material	None	1986-Present	(64)	None
MET Pad North	Storage area for bins of HW tank cleanout sludge	S	Active	750 yd.^{3} (55' x 272')	F001, F002, F003, F004, F005, K011, K013, P030, P063, P069, U002, U003, U007, U008, U009, U092, U154, U162, U220	None	1996-Present	(65)	None
MET Pad South	Storage area for bins of HW tank cleanout sludge.	T/S	Active	67406 gal. (120' x 180')	F001, F002, F003, F004, F005, K011, K013, P030, P063, P069, U002, U003, U007, U008, U009, U092, U154, U162, U220	None	1996-Present	(66)	None
Container Storage Building	Enclosed storage area for 4 bins and miscellaneous containerized	S	Active	240 yd.^{3}	(Refer to Part I/Part A)	None	1992-Present	(67)	None

Solid Waste Management Units - INJECTION WELLS

Unit Name	Description	T/S/D	Status	Approximate Capacity/ Dimensions	Waste Description/ Codes	Estimated Disposed Quantities	Approximate Dates of Operation	Map Location	Potential Release Evidence
Well No. 1	Fiberglass and incoloy deepwell injecting wastes into 3000 feet of sand	D	Active	Indefinite capacity	D001, D002, D003, D007, D008, D018, D035, D038, D043, F001, F002, F003, F004, F005, K011, K013, P030, P063, P069, U002, U003, U007, U008, U009, U092, U154, U162, U220, and trace acrolein	54.5 MM bbls. See Note.	1965-Present	(41)	None
Well No. 2	Fiberglass and incoloy deepwell injecting wastes into 3000 feet of sand	D	Active	Indefinite capacity	D001, D002, D003, D007, D008, D018, D035, D038, D043, F001, F002, F003, F004, F005, K011, K013, P030, P063, P069, U002, U003, U007, U008, U009, U092, U154, U162, U220, and trace acrolein	91.4 MM bbls. See Note.	1965-Present	(42)	None
Well No. 3	Fibercast and incoloy deepwell injecting wastes into 3000 feet of sand	D	Active	Indefinite capacity	D001, D002, D003, D007, D008, D018, D035, D038, D043, F001, F002, F003, F004, F005, K011, K013, P030, P063, P069, U002, U003, U007, U008, U009, U092, U154, U162, U220, and trace acrolein	39.9 MM bbls. See Note.	1970-Present	(43)	None
Well No. 4	Carbon steel deepwell injecting wastes into 2400 feet of sand	D	Active	Indefinite capacity	D001, D002, D003, D007, D008, D018, D035, D038, D043, F001, F002, F003, F004, F005, K011, K013, P030, P063, P069, U002, U003, U007, U008, U009, U092, U154, U162, U220, and trace acrolein	29.6 MM bbls. See note	1973-Present	(44)	None
Well No. 5	Fiberglass and incoloy deepwell injecting wastes into 4200 feet of sand	D	Active	Indefinite capacity	D001, D002, D003, D007, D008, D018, D035, D038, D043, F001, F002, F003, F004, F005, K011, K013, P030, P063, P069, U002, U003, U007, U008, U009, U092, U154, U162, U220, and trace acrolein	34.7 MM bbls. See Note.	1981-Present	(45)	None

Note: Accumulative totals from initial record keeping through the 3rd Quarter of 1997 measured in millions of barrels.

Solid Waste Management Units - WASTEWATER TREATMENT UNITS

Unit Name	Description	T/S/D	Status	Approximate Capacity/ Dimensions	Waste Description/ Codes	Estimated Disposed Quantities	Approximate Dates of Operation	Map Location	Potential Release Evidence
End of Pipe (EOP) Treatment Plant	NPDES treatment system	T	Active	7.2 M gpd	Non-hazardous waste NPDES sludge cake	None	Present	(47)	None
Sewage Treatment Plant	Onsite municipal waste treatment	T	Active	82 8 k gpd	Non-hazardous waste sewage	None	Present	(48)	None
Acid Neutralization System	pH adjustment tank at Acid Plant	T	Active	30 k gpd	Non-hazardous waste neutralized wastewater	None	Present	(49)	None
MMA MW Collection System No. 1	pH adjustment and filter at MMA	T	Active	800 gal.	Non-hazardous waste neutralized wastewater	None	Uncertain	(50)	None
MMA Wastewater Collection System No 2	pH adjustment tank and filter at MMA	T	Active	800 gal.	Non-hazardous waste neutralized wastewater	None	Uncertain	(51)	None
WWCB Pretreatment System(1)	Filter system for WWCB before deepwell injection	T	Active	0 65 M gpd	K011, D003, D018, D038, and trace acrolein	None	Present	(52)	None
RCB/NSB Pretreatment System (2)	Filter system for RCB/NSB before deepwell injection	T	Active	0.65 M gpd	K013	None	Present	(53)	None
Miscellaneous Effluent Pretreatment System (3)	Filter system for miscellaneous effluent stream before deepwell injection	T	Active	2.88 M gpd	D001, D002, D003, D007, D008, D018, D035, D038, D043, F001, F002, F003, F005, K011, K013, P030, P063, P069, U002, U003, U007, U008, U009, U092, U154, U162, U220, and trace acrolein	None	Present	(54)	None
Methanol P-NH3 Oil/ Water Separator No. 1	In-ground separator to remove oil from runoff	T	Active	1 k gal.	Non-hazardous waste storm water runoff containing oil drippings	None	Present	(55)	None
Methanol/P-NH3 Oil/ /Water Separator No 2	In-ground separator to remove oil from runoff	T	Active	0 3 k gal.	Non-hazardous waste storm water runoff containing oil drippings	None	Present	(56)	None
K-NH3 Oil/Water Separator	In-ground separator to remove oil from runoff	T	Active	5 k gal.	Non-hazardous waste storm water runoff containing oil drippings	None	Present	(57)	None

See attached.

NOTES:

1. The WWCB Pretreatment System consists of the following units:
   Catalyst Settling Tank (60,000 gallons)
   Primary Filter Feed Tank (60,000 gallons)
   Secondary Filter Feed Tank (95,000 gallons)
   WWCB Well Injection Tank (10,000 gallons)
   Primary Filters (2)
   Secondary Filters (2)
   Cartridge Filters (4)
   North WWCB Backwash Tank (150,000 gallons)
   South WWCB Backwash Tank (150,000 gallons)

   The North and South WWCB Backwash Tanks were installed in 1988 as replacements for, and in the same location as, the clean-closed North and South WWCB Backwash Pits. All of the units associated with the WWCB Pretreatment System are equipped with leak detection and secondary containment.

2. The Recovery Column Bottoms (RCB), formerly NSB, Pretreatment System consists of the following units:

   RCB Filters (3)

   All of the units associated with the RCB Pretreatment System are equipped with leak detection and secondary containment.

3. The Miscellaneous Effluent (MET) Pretreatment System consists of the following units:

   MET 1 Tank (1,000,000 gallons)
   MET 2 Tank (2,000,000 gallons)
   MET/RCB Backwash Tank (19,000 gallons)
   MET Injection Tank (60,000 gallons)
   MET Filters (4)

   All of the units associated with the MET Pretreatment System are equipped with leak detection and secondary containment.

All tank capacities are expressed as the "nominal capacity". The "calculated capacity" can be as much as 10% greater than the "nominal capacity".

Appendix G

LAC 33:V.516.A.6.
LAC 33:V.1907.G.2.

Letter Dated January 15, 1992 from American Cyanamid Company (presently Cytec) to LDEQ

Letter Dated November 20, 1991 from LDEQ to American Cyanamid Company (presently Cytec)

Letter Dated November 18, 1988 from American Cyanamid Company (presently Cytec) to LDEQ

CYANAMID

American Cyanamid Company
Fortier Plant
10600 River Road
Westwego, LA 70094
(504) 431-9511

Certified Mail No. P 759 259 599
Return Receipt Requested

January 15, 1992

Mr. Glenn Miller
Assistant Secretary Office of Solid and Hazardous Waste
Louisiana Department of Environmental Quality
P.O. Box 82178
Baton Rouge, LA 70884-2178

Dear Mr. Miller:

Re: LAD008175390, AMERICAN CYANAMID-FORTIER PLANT RISK-BASED SECONDARY CONTAINMENT VARIANCE CERTIFICATION

Per our receipt of Mr. Tim Hardy's November 20, 1991 correspondence on December 20, 1991 (Attachment 1), American Cyanamid Company Fortier Plant (ACCO) is hereby submitting certification in accordance with LAC 33:V.513 of no current or future underground pipelines handling hazardous waste up to the point of deepwell injection at ACCO-Fortier. As provided in July 31, 1990 correspondence to LDEQ and in Certification Report No. 89-178, also submitted to LDEQ on July 31, 1990, sections of underground line without secondary containment associated with Fortier's five injection wells were elevated to aboveground; independent professional engineering certification and integrity testing for the replacement line sections were additionally provided within the scope of the report.

Please note that the above-referenced certification is exclusive of inground product tank scrubber water conveyance components, for which a risk-based variance from secondary containment for tank systems was applied for on November 18, 1988 (Attachment 2, Item 2). As submitted to the LDEQ in the American Cyanamid Waste Minimization Questionnaire for 1990, and as submitted to the LDEQ at the LDEQ/ACCO Task Force meeting held on 5/4/91, acrylonitrile scrubber water routed through the conveyance components and subsequently through Tank 732 is no longer discarded but is now being returned to the acrylonitrile unit for recovery, thereby avoiding disposal of some 3750 tons of wastewater per year. Moreover, the scrubber discharge lines do not exist as true underground components, but rather, run through aboveground tank containment dike walls at approximately 6" to 2' below the wall surface, which is itself entirely abovegrade. Since these components exist slightly below the surface of the dike walls, however, they may not be visually inspected. Should leakage occur, it would be readily apparent through the surface of the dike due to gravimetric flow.

Re: LAD008175390, AMERICAN CYANAMID-FORTIER PLANT RISK-BASED SECONDARY CONTAINMENT VARIANCE CERTIFICATION

American Cyanamid wishes at this time to clarify to the LDEQ that these components continue to exist for its Tank 732 and acrylonitrile scrubber sump units. These components are clearly illustrated as Line Nos. 71-76 on the Hazardous Waste Systems Diagram [sheet 2 of 2] relative to the American Cyanamid Risk-Based Variance Request from Secondary Containment for Tank Systems, originally submitted to the LDEQ in November of 1988. Modification of these inground components was not undertaken in order to maintain the existing containment system's integrity. Again, as such, these inground components are not intended to be included in ACCO's attached certification of "no underground components".

In conjunction with secondary containment variance approval from the LDEQ, Fortier proposes to continue its practice of annual integrity assessment for all hazardous waste tank system components on site which do not meet the secondary containment requirements, and for which a variance was applied. This assessment is inclusive of the above denoted inground components, which are each pressure tested for leaks by an independent, qualified, registered professional engineer during the annual assessment period. This annual testing has previously been completed at Fortier during 1988, 1989, 1990 and 1991. All integrity assessment records will continue to be maintained on file at the Fortier facility.

Further, we understand that, as a condition of the variance, (1) current practices of round-the-clock monitoring (i.e., once-per-shift operator "rounds", with subsequent loggings of any unusual findings) as well as the pipelines' record of no significant releases or leaks shall continue; and (2) ACCO notification to LDEQ shall immediately occur should a significant release of hazardous waste from any component covered by the variance occur.

This submission and any past or future communications or discussions regarding this matter are not intended to admit any fact of liability or waive or affect any rights.

If you have any questions regarding the attached certification or require further information, please contact Ms. Anita Junker at (504) 431-6556 or Ms. Cheryl Beynon at (504) 431-6479.

Sincerely,

D. J. Romanik, Ph.D.
Plant Manager

c: Mr. William Honker, USEPA
Ms. Janie Hernandez, USEPA
Mr. William Gallagher, USEPA
Mr. Peter Romanowsky, Administrator HWD, LDEQ
Mr. Robert Cunningham, Program Mgr. HWD, LDEQ
Ms. Toni Evans, Coordinator HWD Permits, LDEQ
Mr. Victor Sanchez, Supervisor, HWD Eng., LDEQ

CYANAMID

CERTIFICATION STATEMENT

I certify, in accordance with LDEQ correspondence dated November 20, 1991 relative to approval of American Cyanamid-Fortier's Risk-Based Secondary Containment Variance Request, that there are neither at the present time, nor will there be in the future, any underground pipelines handling hazardous waste up to the points of deepwell injection at the Fortier Plant. This certification is exclusive of inground/underground components ancillary to hazardous waste Tank 732 (as detailed in the Risk-Based Variance Request submitted on November 20, 1988) which no longer handle hazardous waste excepting in unanticipated circumstances.

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, 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.

D. J. Romanik, Ph.D.
Plant Manager

Attachment 1

State of Louisiana

Department of Environmental Quality

BUDDY ROEMER
Governor

PAUL TEMPLET
Secretary

November 20, 1991

Dr. D. J. Romanik, Ph. D.,
Plant Manager
AMERICAN CYANAMID COMPANY
Fortier Plant
10800 River Road
Westwego, LA 70094

DEC 20 1991

RE: LAD-0008175390, AMERICAN CYANAMID-FORTIER Risk-based Secondary containment Variance Request for the Fortier plant's Hazardous Waste Pipeline Network.

Dear Dr. Romanik:

THE LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY - HAZARDOUS WASTE DIVISION (LDEQ-HWD) has reviewed the subject submittal and found that there is sufficient justification for the hazardous waste pipeline network at the Fortier plant to be exempted from the secondary containment requirements, in accordance with LAC 33:V1907.G.2. Therefore, a Variance from the secondary containment requirements of LAC 33:V.1907.F is hereby granted.

As a condition of this Variance, the current practices of around-the-clock monitoring (at least once-per-shift operator's "rounds"), with subsequent logging of any unusual findings as well as the pipelines' record of no significant releases or leaks shall continue.

If any <u>significant</u> releases of hazardous wastes from any of the components covered by this Variance should occur, AMERICAN CYANAMID shall immediately notify the Department, which will then evaluate the circumstances leading up to such an event. If so warranted, we may rescind this Variance.

As a second condition, please submit within thirty (30) days of receipt of this Variance a certification that there are neither at the present time, nor will be in the future, any underground pipelines handling hazardous waste up to the points of deep-well injection at the Fortier plant.

If you have any questions regarding this matter, please contact Mr. Victor J. Sanchez at (505)765-0292.

Sincerely,

Timothy W Hardy

TIMOTHY W. HARDY, Assistant Secretary
Office of Solid and Hazardous Waste

TWH:PAR:VJS:sje

c: Ms. Anita R. Junker, American Cyanamid
Mr. William Honker, USEPA
Ms. Janie Hernandez, USEPA
Mr. William Gallagher, USEPA
Mr. Peter A. Romanowsky, Administrator, HWD
Mr. Robert E. Cunningham, Program Manager, HWD Permits
Ms. Toni Evans, Coordinator, HWD Permits
Mr. Victor J. Sanchez, Supervisor, HWD Engineering

CYANAMID

Attachment 2

J. SCHNELLER

NOV 1988

American Cyanamid Company
Fortier Plant
10800 River Road
Westwego, LA 70094
(504) 431 9511

CERTIFIED MAIL NO P 668 942 628
RETURN RECEIPT REQUESTED

November 18, 1988

Mr. Glenn Miller, Administrator
Department of Environmental Quality
Hazardous Waste Division
P.O. Box 44066
Baton Rouge, LA 70804

RE: Risk-Based Variance from Secondary Containment for Tank Systems

Dear Mr. Miller:

Attached please find one copy of a "Risk Based Secondary Containment Variance Demonstration" for the American Cyanamid Fortier Plant located in Westwego, Jefferson Parish (LAD008175390), submitted in accordance with LAC 33:V.1907.G. This submittal follows the "Notice of Intent to Conduct a Risk-Based Variance Demonstration" prepared and submitted by Fortier on May 27, 1988. This document has been prepared in accordance with EPA's Technical Resource Document for Obtaining Variances from the Secondary Containment Requirements of Hazardous Waste Tank Systems, Volume 2. In summary, this document demonstrates that a present or future release of hazardous waste from units at the Fortier Plant site will pose no substantial risk to human health or the environment.

This Variance Demonstration is being submitted as a request for a variance from secondary containment only for those few uncontained, unexempt components of Fortier's tank systems that have recently been assessed and certified according to LAC 33:V.1903 and 1905. While all of Fortier's onground permitted tanks have recently been installed with secondary containment that meets the requirements of LAC 33:V.1907.B., C., D., and E., per the design specifications in EPA's Technical Resource Document for the Storage and Treatment of Hazardous Waste in Tank Systems, and while most ancillary equipment meets the exemptions of LAC 33:V.1907.F., the variance is being sought for the following general components:

(1) several feet of underground line without secondary containment associated with Fortier's five injection wells,
(2) inground/underground product tank scrubber water conveyance components without secondary containment,

CYANAMID

(3) a few screwed line connections located in secondary containment but not consistent with LAC 33:V.1907,
(4) a number of stemmed valves located in secondary containment but not consistent with LAC 33:V.1907,
(5) two aboveground tanks and their pumps located in secondary containment but not consistent with LAC 33:V.1907
(6) replacement or temporary components installed on an emergency basis in the future.

Items 1 and 5 are presently planned for upgrading within the next two years while Item 2 is being reviewed for feasibility of upgrading.

Based on this demonstration of no substantial risk, and based on the minimal number of non-exempt, uncontained components subject to the variance request, Fortier requests that the variance from secondary containment meeting the requirements of LAC 33:V.1907 be granted.

Please contact Ms. Anita Junker at 431-6479 if you have any questions or desire additional copies of this document. We appreciate your time and cooperation provided concerning this request.

Sincerely,

AMERICAN CYANAMID COMPANY
Chemical Products Division

H. T. Thurber /

H. T. Thurber, Plant Manager

HTT/AJ

Enclosure

c: Mr. Al Patton, DEQ

Appendix H

LAC 33:V.516.A.6.
LAC 33:V.1907.I.3. and 4.

Annual Integrity Assessment

Waste System Components Without Secondary Containment

CYTEC INDUSTRIES INC.
Waggaman, Louisiana

EPA ID No.: LAD008175390

ANNUAL INTEGRITY ASSESSMENT OF FORTIER PLANT HAZARDOUS WASTE TANK SYSTEM COMPONENTS WITHOUT SECONDARY CONTAINMENT

Report No. 97-2025M23

May 1998

W H. LINDER & ASSOCIATES, INC
CONSULTING ENGINEERS

LAWRENCE J CACIOPPO, P E
PRESIDENT

HAZARDOUS WASTE TANK SYSTEM COMPONENT INTEGRITY ASSESSMENT CERTIFICATION

I have performed the annual integrity assessment of the hazardous waste system components without secondary containment at the Cytec Industries Inc. Fortier Plant located in Waggaman, Louisiana. The EPA ID Number for this facility is LAD008175390. The assessments performed are described and documented in the attached W.H. Linder & Associates, Inc. Report No. 97-2025M23, dated May, 28 1998. This assessment was performed to address the requirements of Resource Conservation and Recovery Act (RCRA) regulations in 40 CFR 264.193(i)(3) and the corresponding State of Louisiana requirements in LAC 33:V.1907.I.3.

With regard to this duty, I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my observations and my inquiry of those individuals immediately responsible for obtaining the information, 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.

Thomas H. Wimbrow
Registered Professional Engineer
Louisiana No. 23062

W.H. Linder & Associates, Inc.
3300 West Esplanade Avenue, Suite 300
Metairie, Louisiana 70002

Signed: _____

Date: May 28, 1998

W H LINDER & ASSOCIATES, INC
CONSULTING ENGINEERS

LAWRENCE J. CACIOPPO, P E
PRESIDENT

May 28, 1998
97-2025M23

Ms. Stacy Foret
Cytec Industries Inc.
10800 River Road
Westwego, Louisiana 70094

Subject: Annual Integrity Assessment of Fortier Plant Waste System Components Without Secondary Containment

Dear Ms. Foret:

Submitted here is our integrity assessment report for the hazardous waste tank system components without secondary containment at Cytec's Fortier Plant. This assessment was performed to address the requirements of LAC 33:V.1907.I.3 for tank system ancillary equipment components without secondary containment. LDEQ-HWD has granted Cytec a Variance from the secondary containment requirements of LAC 33:V.1907.F for the Fortier plant hazardous waste pipeline network (reference LDEQ letter dated November 20, 1991), so containment provisions are not required for these components.

The body of the report summarizes the results of the inspections and assessments performed. Detailed information and documentation are presented in an Appendix to the report.

We have enjoyed working with you on this project, and look forward to another opportunity to be of service to Cytec. Please call me at 504-835-2577 if you have any questions.

Sincerely,

Thomas H. Wimbrow, P.E.
Sr. Environmental & Mechanical Engineer

Attachment: Report No. 97-2025M23

MAY 28, 1998

3330 WEST ESPLANADE AVE. • SUITE 300 • METAIRIE, LOUISIANA 70002 • (504) 835-2577 • FAX (504) 837-5924

ANNUAL INTEGRITY ASSESSMENT OF FORTIER PLANT HAZARDOUS WASTE TANK SYSTEM COMPONENTS WITHOUT SECONDARY CONTAINMENT

For:

CYTEC INDUSTRIES INC.
Waggaman, Louisiana

By:

W.H. Linder & Associates, Inc.
Metairie, Louisiana

Report No. 97-2025M23

May 1998

TABLE OF CONTENTS

Title **Page No.**

INTRODUCTION 1

SCOPE OF INTEGRITY ASSESSMENT 2

SUMMARY OF INSPECTION RESULTS 3

A. Visual Inspections 3

B. Ultrasonic Thickness Measurements 6

CONCLUSIONS OF ASSESSMENT 7

APPENDIX - System and Inspection Documentation

HAZARDOUS WASTE TANK SYSTEM COMPONENT INTEGRITY ASSESSMENT

INTRODUCTION

W. H. Linder & Associates, Inc. was retained by Cytec Industries to assess the integrity of selected components of tank systems used to handle hazardous waste at their Fortier Plant located in Waggaman, Louisiana. The assessment described here was performed to meet the State of Louisiana requirements in LAC 33:V.1907.I.3 for tank system components without secondary containment meeting regulatory requirements. LDEQ-HWD has granted Cytec a variance from the secondary containment requirements of LAC 33:V.1907.F for the Fortier plant hazardous waste pipeline network (reference LDEQ letter dated November 20, 1991), so containment provisions are not required for the components assessed.

Visual inspection of the system ancillary equipment items was used as a primary inspection method. Other inspection methods utilized included ultrasonic measurement of system piping wall thicknesses in selected locations.

W. H. Linder personnel performed visual inspections of the tank system components to:

1. Identify leaking components, if any;
2. Assess condition, especially with respect to corrosion and erosion, in order to identify deteriorating or unfit for service components;

INTRODUCTION (Continued)

3. Confirm the documented configuration of system components; and
4. Identify components or systems which may have had minor configuration changes, maintenance modifications, or component additions or removals.

Piping thickness measurements were made with a calibrated ultrasonic thickness gauge. Thickness measurements were obtained to confirm that the system piping sections have sufficient remaining wall thickness for their service conditions.

SCOPE OF INTEGRITY ASSESSMENT

This report includes integrity assessments for the piping and miscellaneous non-exempt connections and valves in hazardous waste service outside of secondary containment areas meeting the requirements of LAC 33:V.1907. The assessed pipelines and ancillary equipment items are illustrated on *Hazardous Waste System Diagrams* 36-0-38 and 36-0-39 and described in the *Hazardous Waste System Diagram - Line Identification* list. Copies of those items are included in the Appendix of this report. Other than visual observation of their exteriors, assessment of the integrity of the hazardous waste system tanks and vessels was not included in the scope of this assessment.

SUMMARY OF INSPECTION RESULTS

Inspection of the hazardous waste system ancillary equipment components without secondary containment was performed by W.H. Linder personnel during November and December 1997. Follow up inspections of system modifications and repairs were performed by W.H. Linder personnel during April and May, 1998. Detailed documentation of the inspections performed is included in the Appendix of this report. The following paragraphs describe and summarize the inspection results.

A. Visual Inspections

Visual inspection of the piping and non-exempt ancillary equipment located outside of secondary containment areas verified that the operating conditions, materials of construction, and sizes are consistent with the schematic diagrams on drawings 36-0-38 and 36-0-39 and the Line Identification list. Except as noted below, no significant corrosion or other deterioration or defects were observed in any of the system ancillary equipment items within the scope of the assessment.

1. Line 3 developed a significant leak which was detected, reported to LDEQ, and repaired during the inspection period. Reference Cytec LDEQ notification follow up letter dated December 17, 1997 and Linder Piping Repair Assessment Report 97-2025M24 dated November 25, 1997.

2. Lines 4, 26, 34, and 104 had temporary external clamp-type repairs in place at the time of the initial assessment inspection. All of the clamps

SUMMARY OF INSPECTION RESULTS (Continued)

A. Visual Inspections (Continued)

appeared to meet API 570 requirements for temporary repairs and were functioning satisfactorily at the time of the inspection with no seepage or leakage visible.

Line 26 had previously been removed from service and after the assessment inspection it was disconnected from the hazardous waste piping system and physically removed. Line 34 (along with connected lines 9 and 10) had also previously been removed from service and after the assessment it was disconnected from the hazardous waste piping system to prevent possible leakage. After the assessment inspection a short section of line 104 containing the repair clamp was cut out and a replacement section of pipe welded in its place. Ultrasonic measurements of the wall thickness of the remaining sections of line 104 confirm that it has sufficient wall thickness to safely remain in service.

Cytec reports that, in accordance with API 570, the repair clamp on line 4 will be replaced with a permanent welded or flanged installation of replacement pipe at the next available opportunity to take the line out of service. Ultrasonic thickness measurements taken during the inspection

SUMMARY OF INSPECTION RESULTS (Continued)

A. Visual Inspections (Continued)

indicate that the piping in the vicinity of the clamp has sufficient wall thickness to safely remain in service until the clamp can be replaced.

3. Line 34 had residue from an apparent pinhole seep located in a welded joint. As was discussed above in item 2, line 34 was out of service at the time of the initial inspection and has since been disconnected from the hazardous waste system to prevent any additional potential leakage.

4. Line 105 also had residue from minor seepage visible due to an apparent pinhole in a welded joint. A follow up inspection of the joint later in the inspection period confirmed that there was no active leakage or seepage from the apparent defect. Cytec has fabricated a replacement pipe section which will be installed as soon as practical.

5. A section of line 3 had wall thickness values which were below the Cytec minimum safe service limit. Cytec replaced an approximately 350 ft. long section of the line which contained the low thicknesses with new stainless steel pipe. The design and installation of the replacement pipe were assessed by an independent registered Professional Engineer. Reference W.H Linder & Associates, Inc. Report No. 98-2025M05.

SUMMARY OF INSPECTION RESULTS (Continued)

A. Visual Inspections (Continued)

6. Line 39 had an external sealant applied at the connection from lines 9 and 34. A 15 foot long section of line 39 including the old tie-in location was replaced with stainless steel pipe after the initial inspection. Since it was no longer required, the tie-in from lines 9 and 34 was deleted from the replacement line. The design and installation of the replacement pipe were assessed by an independent registered Professional Engineer. Reference W.H Linder & Associates, Inc. Report No. 98-2025M09.

All of the items observed were corrected as noted above during or shortly after the initial assessment inspection. All of the repaired items were observed by Linder personnel after the completion of repairs and were confirmed to be free of leaks and in accordance with API 570 requirements. Documentation of the inspections performed is included in the Appendix of this report.

B. Ultrasonic Thickness Measurements

Ultrasonic thickness measurements were obtained to determine the wall thickness at selected locations on the system piping. The piping thickness measurements results are presented in the Appendix of this report. While some sections of piping have experienced some wall thickness loss due to long term corrosion,

SUMMARY OF INSPECTION RESULTS (Continued)

B. Ultrasonic Thickness Measurements (Continued)

with the exception of the section of line 3 discussed in paragraph A.5 above, all of the wall thicknesses measured exceed applicable code requirements for their respective services.

CONCLUSIONS OF ASSESSMENT

Hazardous waste tank system ancillary equipment components at the Cytec Industries Fortier plant in Waggaman, Louisiana were inspected during November and December 1997. Visual inspections were supplemented by ultrasonic thickness measurements to assess the condition of the tank system ancillary equipment components not provided with secondary containment.

A piping leak which developed during the inspection period was satisfactorily repaired in accordance with API 570 requirements. Four lines with temporary piping repairs installed prior to the inspection were either disconnected from the hazardous waste piping system or satisfactorily repaired. A fifth line with a repair clamp has sufficient remaining wall thickness to remain in service until a permanent repair can be made. A 350 foot long section of line which had reached the end of its service life was replaced with new stainless steel pipe. No other evidence of leaks, cracks, or other

CONCLUSIONS OF ASSESSMENT (Continued)

significant deterioration or defects was observed in the assessed system components. No evidence of significant piping erosion or corrosion was observed. Ultrasonic thickness measurements indicated greater than required metal thicknesses for all piping sections. The final observed condition of the subject components was found to be satisfactory for their service conditions and suitable for continued service.

APPENDIX

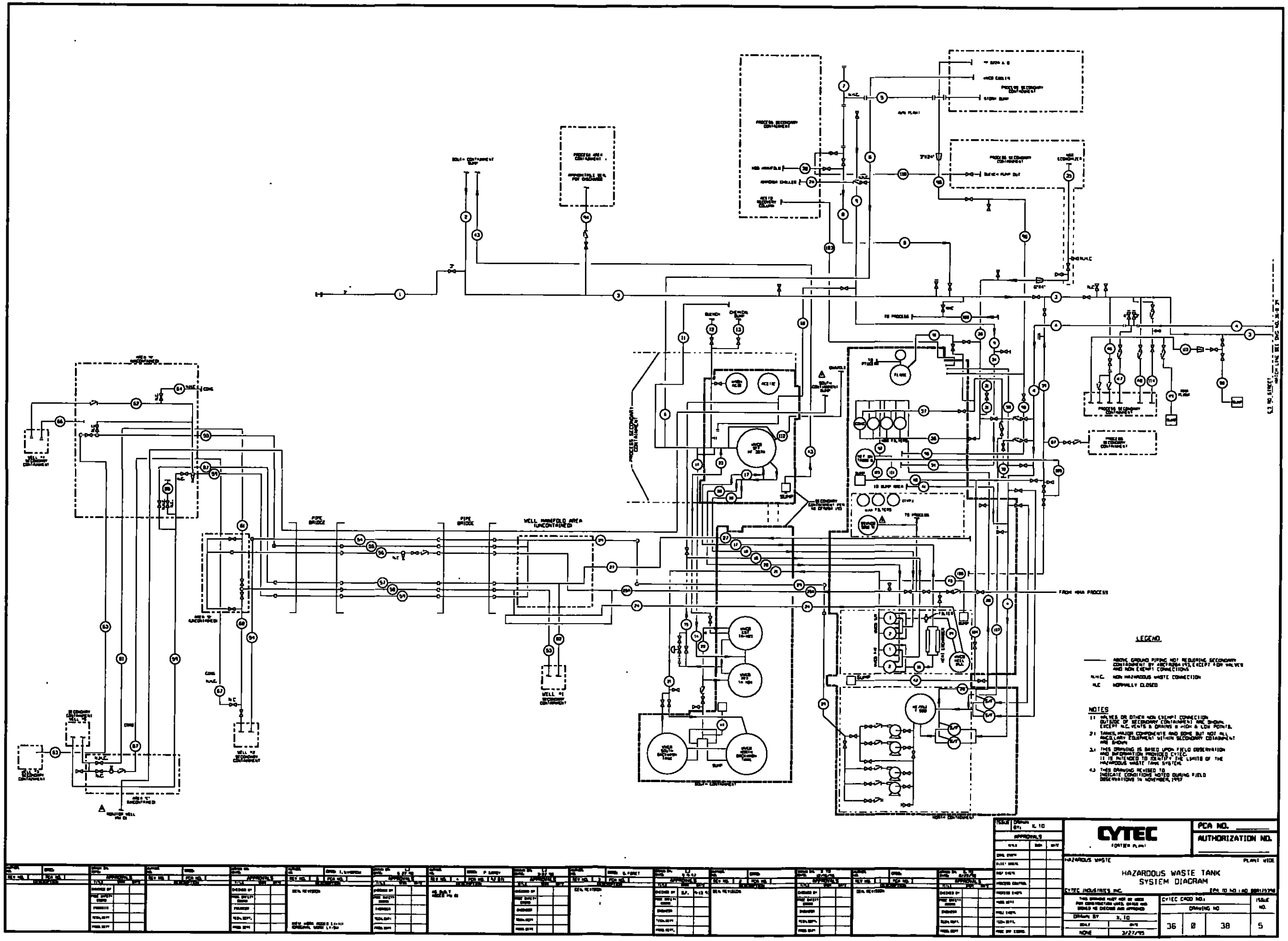
System and Inspection Documentation

APPENDIX

System and Inspection Documentation

TABLE OF CONTENTS

Title	Page No.
Hazardous Waste Tank System Diagram 36-0-38 Rev. 4	A-1
Hazardous Waste Tank System Diagram 36-0-39 Rev. 3	A-2
Hazardous Waste System Diagram - Line Identification List	A-3
Hazardous Waste System Piping Inspection Record	A-6
Piping Ultrasonic Thickness Measurement Record	A-10



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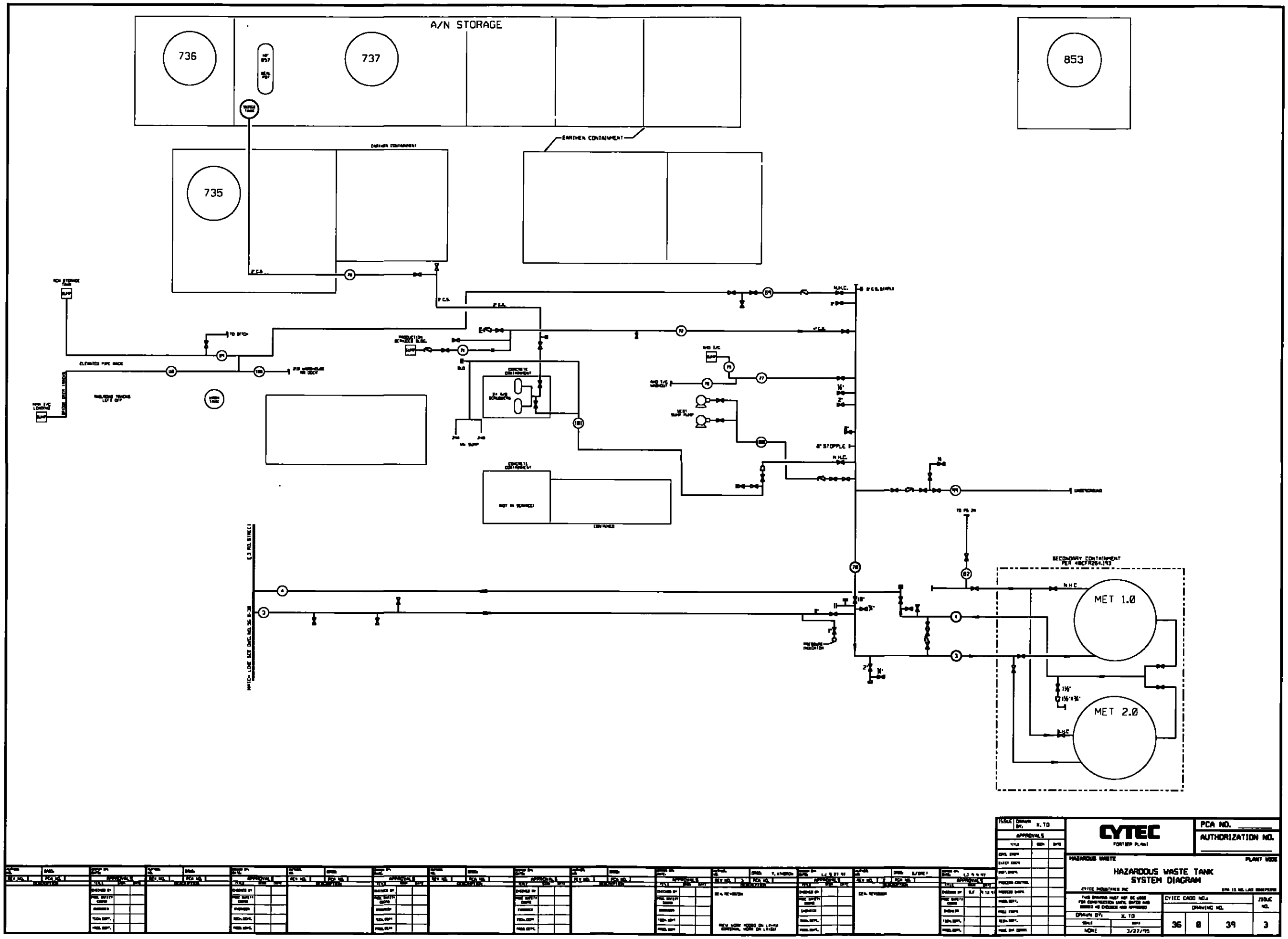
A/N STORAGE
736
737
853
735
EARTHEN CONTAINMENT
MET 1.0
MET 2.0
SECONDARY CONTAINMENT
PER 40CFR264.193
CONCRETE CONTAINMENT
NOT IN SERVICE!
CONTAINED
UNDERGROUND
8" STOPPLE
N.H.C.
P.C.S.
TO DITCH
ELEVATED PIPE RACK
RAILROAD TRACKS
LOT OFF
PRESSURE INDICATOR
MATCH LINE SEE DWG NO. 36-8-38
CYTEC
FORTIER PLANT
PCA NO.
AUTHORIZATION NO.
HAZARDOUS WASTE
PLANT WIDE
HAZARDOUS WASTE TANK
SYSTEM DIAGRAM
CYTEC INDUSTRIES INC
THIS DRAWING MUST NOT BE USED FOR CONSTRUCTION UNTIL SIGNED AND DATED AS CHECKED AND APPROVED
DRAWN BY: K. TO
SCALE: NONE
DATE: 3/27/95
CYTEC CADD NO.:
DRAWING NO.
36
8
39
ISSUE NO.
3
APPROVALS
..\dgn\sewage\general\3600039.dgn May. 27. 1998 15:55:29

Hazardous Waste System Diagram - Line Identification

Reference: Cytec Drawing Nos. 36-0-38 and 36-0-39

Line No.	*Description*	*Classification*
1	Deep Well Workover Line to MET Tank Inlet Header	Hazardous
2	South Containment Sump Discharge to MET Tank Inlet Header	Non-Hazardous
3	Miscellaneous Effluent Header to MET tanks (MET Tank Inlet Header)	Hazardous
4	MET Tank Discharge Header to MET filters	Hazardous
5	WW Column Area Storm Sump Discharge	Non-Hazardous
6	WWCB from Economizer TT-435 to Line 14	Hazardous
7	A/N Plant West Storm Sump	Removed from service
7a	NH3 Chiller Blowdown to Line 6	Non-Hazardous
8	Miscellaneous Effluent Collection to MET Inlet Header	Hazardous
9	Wastewater Area Caustic	Removed from service
10	Wastewater Area Caustic	Removed from service
11	WWCB Inlet to SFF Tank (standby)	Removed from service
12	Quench Clean Out / Slop Water Tank	Non-Hazardous
13	Chemical Sewer (emergency discharge)	Non-Hazardous
14	WWCB from Line 6 to CST and PFF Tanks	Hazardous
15	WWCB (CST/PFFT to Primary Filters)	Hazardous
16	WWCB (Primary Filters to Heat Exchangers)	Hazardous
17	WWCB (Heat Exchangers to SFF Tank)	Hazardous
18	WWCB (SFF Tank to Secondary Filters)	Hazardous
19	WWCB (Secondary Filters to Well Injection Tank)	Hazardous
20	SFF Tank to Primary and Secondary Filters (Backwash)	Hazardous
21	Primary and Secondary Filter Backwash to North and South Backwash Tanks	Hazardous
22	North and South Backwash Tank Discharge to CST and PFFT	Hazardous
23	WWCB to CST (alternate)	Hazardous
24	WW Well Injection Tank to Well Manifold	Hazardous
25a	Spent Acid (MMA process to well manifold)	Hazardous
27	RCB to Well Manifold	Removed from service
28	MET Sand Filter Backwash Discharge to 100-6	Hazardous
29	MET Well Injection Tank to Well Manifold	Hazardous
30	Aceto Surge Tank Pumps to MET Header	Hazardous
31	RCB Filter Bypass to MET	Hazardous

Line No.	Description	Classification
32	Raw / Coag Water	Non-Hazardous
34	MET Backwash Tank Pump to MET (old pump discharge)	Removed from service
35	RCB Heat Exchanger Discharge	Hazardous
36	RCB Filter Inlet	Hazardous
37	RCB Filter Discharge	Hazardous
38	RCB to MET Header (option)	Hazardous
39	Waste Disposal Area MET Collection	Hazardous
40	RCB Filter Area Sump Discharge	Non-Hazardous
41	RCB Filter Area Sump Discharge	Removed from service
42	MET Injection Tank Area Sump Discharge	Non-Hazardous
43	SFF Tank Area Sump Discharge	Non-Hazardous
44	WW Backwash Tank Area Sump Discharge	Non-Hazardous
45	WW Filter / Tank Area Sump Discharge	Non-Hazardous
46	MM6 and MM7 WW Column Tanks	Non-Hazardous
47	MMA Lower Layer Pumps	Non-Hazardous
48	ACH Collection Tank Discharge	Non-Hazardous
49	MMA Crude Storage Area Sump Discharge	Non-Hazardous
50	ACH Plant Sump Discharge	Non-Hazardous
52	MET to Well No. 1	Hazardous
53	WWCB / WA to Well No. 1	Hazardous
54	MET to Well No. 2	Hazardous
55	MET to Well No. 3	Hazardous
56	WA to Well No. 2 / 3 split	Hazardous
57	RCB to Well No. 5	Removed from service
58	WWCB to Well No. 2 / 5 split	Hazardous
59	MET to Well No. 5	Hazardous
60	WWCB / WA to Well No. 2	Hazardous
62	MET to Well No. 4	Removed from service
61	WWCB / WA to Well No. 5	Hazardous
63	MET to Well No. 3	Hazardous
64	Coag Water	Non-Hazardous
65	Coag Water	Non-Hazardous
66	Coag Water	Removed from service
67	Coag Water	Non-Hazardous
69	ACH Tank Stormwater Sump	Non-Hazardous

Line No.	*Description*	*Classification*
70	MET Tank Inlet Header (E-W Piperack)	Hazardous
71	PS Bldg Sump Pump Discharge	Non-Hazardous
72	PS MET Collection Header	Non-Hazardous
75	AMD T/C Sump Pump Discharge	Non-Hazardous
76	AMD T/C Washout	Hazardous
77	AMD MET Collection Header	Hazardous
78	PS Surge Tank Discharge	Non-Hazardous
82	Intercept Ditch Diversion	Non-Hazardous
87	MMA Seal Pot to MET Collection Header	Non-Hazardous
91	Flare Seal Pot Discharge	Non-Hazardous
92	RCB Filter Backwash to 100-6 Backwash Tank	Hazardous
94	Amino Seal Pot to MET Header	Non-Hazardous
96	MET to Aceto Surge Pumps and RCB Filter	Hazardous
99	UMCE Diversion	Non-Hazardous
100	From AMD Sump Pumps	Non-Hazardous
101	Tank 24 A / B Scrubber Discharge	Non-Hazardous
102	Surge Tank to Slop Water Tank	Non-Hazardous
103	Aceto Vaporizer Discharge	Hazardous
104	MET Injection Tank Area Sump Discharge (alternate)	Non-Hazardous
105	Discharge from 100-6 Backwash Tank	Hazardous
106	Caustic Pump Discharge	Non-Hazardous
107	RCB to MET Injection Tank	Hazardous
108	210 Warehouse T/C Washout to MET	Non-Hazardous
109	Coag Water	Non-Hazardous
110	Quench Column Pump Out	Hazardous
111	RCB Filter Area Sump Discharge to 100-6	Non-Hazardous
112	Oxazole Filters to SFFT	Hazardous
113	From Vessel and pumps near PZT mix/feed tanks	Non-Hazardous
114	ACH Lab Waste to MET (not installed)	Hazardous
115	RCB Filter Area Sump to 100-6 Pump Suction	Non-Hazardous
116	MMA T/C Loading Sump Pump Discharge	Non-Hazardous

Hazardous Waste System Piping Inspection Record

Notes: Visual observations and ultrasonic thickness measurements (see seperate record) were made by W.H. Linder personnel during November and December 1997 with follow up observations of repairs and modifications made in April and May 1998. Observations were limited to the hazardous waste system piping and ancillary equipment items located outside of secondary containment areas.

Reference: ***Cytec Drawing Nos. 36-0-38 and 36-0-39***

Line No.	*Description*	*Condition / Comments*
1	Deep Well Workover Line to MET Tank Inlet Header	Satisfactory
2	South Containment Sump Discharge to MET Tank Inlet Header	Satisfactory
3	Miscellaneous Effluent Header to MET tanks (MET Tank Inlet Header)	Satisfactory; 20 ft. section of 10 NPS carbon steel pipe at tie-in from 39 replaced Nov. '97; 350 ft. section of 8 and 10 NPS carbon steel pipe from old orifice flange to 3rd Street replaced with 8 NPS stainless steel April '98
4	MET Tank Discharge Header to MET filters	Satisfactory; Repair clamp on line at tie-in from line 41
5	WW Column Area Storm Sump Discharge	Satisfactory; Combined pump discharge line replaced with new 4 NPS carbon steel pipe
6	WWCB from Economizer TT-435 to Line 14	Satisfactory
7	A/N Plant West Storm Sump	Satisfactory
7a	NH3 Chiller Blowdown to Line 6	Satisfactory
8	Miscellaneous Effluent Collection to MET Inlet Header	Satisfactory; wall thickness approaching minimum from FMP-7618
9	Wastewater Area Caustic	Disconnected and blinded with line 34
10	Wastewater Area Caustic	Disconnected and blinded with line 34
11	WWCB Inlet to SFF Tank (standby)	Open on end at WW Column; slip blind at MF-307
12	Quench Clean Out / Slop Water Tank	Satisfactory
13	Chemical Sewer (emergency discharge)	Satisfactory
14	WWCB from Line 6 to CST and PFF Tanks	Satisfactory
15	WWCB (CST/PFFT to Primary Filters)	Satisfactory
16	WWCB (Primary Filters to Heat Exchangers)	Satisfactory
17	WWCB (Heat Exchangers to SFF Tank)	Satisfactory
18	WWCB (SFF Tank to Secondary Filters)	Satisfactory

Line No.	Description	Condition / Comments
19	WWCB (Secondary Filters to Well Injection Tank)	Satisfactory
20	SFF Tank to Primary and Secondary Filters (Backwash)	Satisfactory
21	Primary and Secondary Filter Backwash to North and South Backwash Tanks	Satisfactory
22	North and South Backwash Tank Discharge to CST and PFFT	Satisfactory
23	WWCB to CST (alternate)	Satisfactory
24	WW Well Injection Tank to Well Manifold	Satisfactory
25a	Spent Acid (MMA process to well manifold)	Satisfactory
27	RCB to Well Manifold	Satisfactory
28	MET Sand Filter Backwash Discharge to 100-6	Satisfactory
29	MET Well Injection Tank to Well Manifold	Satisfactory
30	Aceto Surge Tank Pumps to MET Header	Satisfactory
31	RCB Filter Bypass to MET	Satisfactory
32	Raw / Coag Water	Satisfactory
34	MET Backwash Tank Pump to MET (old pump discharge)	Disconnected and blinded
35	RCB Heat Exchanger Discharge	Satisfactory
36	RCB Filter Inlet	Satisfactory
37	RCB Filter Discharge	Satisfactory
38	RCB to MET Header (option)	Satisfactory
39	Waste Disposal Area MET Collection	Satisfactory; 15 ft. section which included old 9/34 tie-in replaced with stainless steel pipe
40	RCB Filter Area Sump Discharge	Satisfactory
41	RCB Filter Area Sump Discharge	Satisfactory; line has open and blinded ends
42	MET Injection Tank Area Sump Discharge	Satisfactory
43	SFF Tank Area Sump Discharge	Satisfactory
44	WW Backwash Tank Area Sump Discharge	Satisfactory
45	WW Filter / Tank Area Sump Discharge	Satisfactory
46	MM6 and MM7 WW Column Tanks	Satisfactory
47	MMA Lower Layer Pumps	Satisfactory
48	ACH Collection Tank Discharge	Satisfactory
49	MMA Crude Storage Area Sump Discharge	Satisfactory; line replaced with new carbon steel pipe

Line No.	*Description*	*Condition / Comments*
50	ACH Plant Sump Discharge	Satisfactory
52	MET to Well No. 1	Satisfactory
53	WWCB / WA to Well No. 1	Satisfactory
54	MET to Well No. 2	Satisfactory
55	MET to Well No. 3	Satisfactory
56	WA to Well No. 2 / 3 split	Satisfactory
57	RCB to Well No. 5	Satisfactory
58	WWCB to Well No. 2 / 5 split	Satisfactory
59	MET to Well No. 5	Satisfactory
60	WWCB / WA to Well No. 2	Satisfactory
62	MET to Well No. 4	Satisfactory
61	WWCB / WA to Well No. 5	Satisfactory
63	MET to Well No. 3	Satisfactory
64	Coag Water	Satisfactory
65	Coag Water	Satisfactory
66	Coag Water	Satisfactory; blinded on both ends
67	Coag Water	Satisfactory
69	ACH Tank Stormwater Sump	Satisfactory
70	MET Tank Inlet Header (E-W Piperack)	Satisfactory
71	PS Bldg Sump Pump Discharge	Satisfactory
72	PS MET Collection Header	Satisfactory
75	AMD T/C Sump Pump Discharge	Satisfactory
76	AMD T/C Washout	Satisfactory
77	AMD MET Collection Header	Satisfactory
78	PS Surge Tank Discharge	Satisfactory
82	Intercept Ditch Diversion	Satisfactory
87	MMA Seal Pot to MET Collection Header	Satisfactory
91	Flare Seal Pot Discharge	Satisfactory
92	RCB Filter Backwash to 100-6 Backwash Tank	Satisfactory
94	Amino Seal Pot to MET Header	Satisfactory

Line No.	*Description*	*Condition / Comments*
96	MET to Aceto Surge Pumps and RCB Filter	Satisfactory
99	UMCE Diversion	Satisfactory
100	From AMD Sump Pumps	Satisfactory
101	Tank 24 A / B Scrubber Discharge	Satisfactory
102	Surge Tank to Slop Water Tank	Satisfactory
103	Aceto Vaporizer Discharge	Satisfactory
104	MET Injection Tank Area Sump Discharge (alternate)	Satisfactory; repair clamp replaced with new carbon steel pipe
105	Discharge from 100-6 Backwash Tank	Satisfactory; past residue from weld joint pinhole seepage, no active leakage observed; replacement section fabricated and ready for installation
106	Caustic Pump Discharge	Satisfactory
107	RCB to MET Injection Tank	Satisfactory
108	210 Warehouse T/C Washout to MET	Satisfactory
109	Coag Water	Satisfactory
110	Quench Column Pump Out	Satisfactory; new line installed
111	RCB Filter Area Sump Discharge to 100-6	Satisfactory
112	Oxazole Filters to SFFT	Satisfactory
113	From Vessel and pumps near PZT mix/feed tanks	Satisfactory
114	ACH Lab Waste to MET (not installed)	Satisfactory
115	RCB Filter Area Sump to 100-6 Pump Suction	Satisfactory
116	MMA T/C Loading Sump Pump Discharge	Satisfactory

Piping Ultrasonic Thickness Measurement Record

Notes: Measurements were taken during November and December 1997 by W.H. Linder personnel using a Panametrics Model 26DL Plus ultrasonic thickness gage. Measurements for sections of pipe replaced subsequent to the time these measurements were taken are not included (see Linder reports 97-2025M24, 98-2025M05, and 98-2025M09). Gage was calibrated with carbon steel and stainless steel step blocks S/N A12486 and A12816, respectively. "Size" is the nominal pipe size or diameter. "Meas.Thick." is the measured pipe wall thickness. "Min. Allow. Thick" is the minimum allowable pipe wall thickness per Cytec Standard FMP-7618 for carbon steel pipe and for stainless steel pipe it is the nominal new pipe wall thickness less the code allowable manufacturing tolerance and a 0.030 inch corrosion allowance (typical for the Cytec stainless steel pipe specifications used).

Line No. *1*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
3	Carbon Steel	End of line	0.19	0.1

Line No. *2*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
8	Carbon Steel	Amino sump North pump discharge ell outside	0.302	0.15
8	Carbon Steel	Amino sump North pump discharge ell outside	0.332	0.15
8	Carbon Steel	Amino sump North pump horizontal run - center top	0.262	0.15
8	Carbon Steel	Amino sump North pump horizontal run - center right	0.26	0.15
8	Carbon Steel	Amino sump North pump horizontal run - center bottom	0.277	0.15
8	Carbon Steel	Amino sump North pump horizontal run - center left	0.265	0.15
8	Carbon Steel	Amino sump South pump discharge ell outside	0.328	0.15
8	Carbon Steel	Amino sump South pump discharge ell outside	0.301	0.15
8	Carbon Steel	Amino sump South pump horizontal run - center top	0.272	0.15
8	Carbon Steel	Amino sump South pump horizontal run - center left	0.26	0.15
8	Carbon Steel	Amino sump South pump horizontal run - center bottom	0.271	0.15
8	Carbon Steel	Amino sump South pump horizontal run - center right	0.256	0.15

Line No. *2*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
10	Carbon Steel	Vert downstream of sump pumps	0.293	0.15
10	Carbon Steel	Amino sump combined discharage - 8 in above reducer weld	0.316	0.15
10	Carbon Steel	Amino sump combined discharage - 8 in above reducer weld	0.335	0.15
10	Carbon Steel	Amino sump combined discharage - 8 in above reducer weld	0.304	0.15
10	Carbon Steel	Amino sump combined discharage - 8 in above reducer weld	0.325	0.15
10	Carbon Steel	Amino sump combined discharage - outside top ell	0.323	0.15
10	Carbon Steel	Amino sump combined discharage - outside top ell	0.326	0.15
10	Carbon Steel	Amino sump combined discharage - 1 in US weld at top ell in rack	0.347	0.15
10	Carbon Steel	Amino sump combined discharage - 1 in US weld at top ell in rack	0.379	0.15
10	Carbon Steel	Amino sump combined discharage - 1 in US weld at top ell in rack	0.315	0.15
10	Carbon Steel	Amino sump combined discharage - 1 in US weld at top ell in rack	0.343	0.15
10	Carbon Steel	Amino sump combined discharage - outside top ell in rack	0.317	0.15
10	Carbon Steel	Amino sump combined discharage - outside top ell in rack	0.32	0.15

Line No. *3*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
8	Carbon Steel	1 ft upstr 49 tie-in	0.271	0.15
8	Carbon Steel	18 in dnstr 49 tie-in	0.271	0.15
8	Carbon Steel	north of road bridge; upstr top ell	0.269	0.15
8	Carbon Steel	north of road bridge; outside top ell	0.249	0.15

Line No. 3

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
8	Carbon Steel	north of road bridge; 1 in dnstr top ell weld	0.224	0.15
8	Carbon Steel	north of road bridge; corroded area 4 in dnstr top ell weld	0.209	0.15
8	Carbon Steel	UT at rise to pipe bridge: upstr bottom ell	0.274	0.15
8	Carbon Steel	UT at rise to pipe bridge: outside bottom ell	0.257	0.15
8	Carbon Steel	UT at rise to pipe bridge: dnstr bottom ell	0.256	0.15
8	Carbon Steel	UT on vertical pipe at tie-in at E-W pipe rack	0.25	0.15
8	Carbon Steel	UT on vertical pipe at tie-in at E-W pipe rack	0.242	0.15
8	Carbon Steel	above block valve at 8/10 tie in end of N-S	0.232	0.15
8	Carbon Steel	2' upstr 50/112 tie in at bridge	0.24	0.15
8	Carbon Steel	2' dnstr 50/112 tie in at bridge	0.28	0.15
10	Carbon Steel	UT downstream of 94 tie-in	0.336	0.15
10	Carbon Steel	Amino sump combined discharage - vert in rack at 1 tie-in:: north above 1	0.321	0.15
10	Carbon Steel	Amino sump combined discharage - vert in rack at 1 tie-in:: north below 1	0.32	0.15
10	Carbon Steel	Amino sump combined discharage - vert in rack at 1 tie-in:: south above 1	0.335	0.15
10	Carbon Steel	Amino sump combined discharage - vert in rack at 1 tie-in:: south opposite 1	0.32	0.15
10	Carbon Steel	Amino sump combined discharage - vert in rack at 1 tie-in:: south below 1	0.32	0.15
10	Carbon Steel	Upstream end: side of bottom ell	0.311	0.15
10	Carbon Steel	1 in from ell weld joint	0.341	0.15
10	Carbon Steel	1 in US weld joint at Rundown Tk A stile	0.34	0.15
10	Carbon Steel	1 in DS weld joint at Rundown Tk A stile	0.33	0.15
10	Carbon Steel	3 in DS 94 tie-in: top	0.35	0.15

Line No. 3

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
10	Carbon Steel	1 ft DS 94 tie-in: top	0.339	0.15
10	Carbon Steel	2 ft DS 94 tie-in: top	0.351	0.15
10	Carbon Steel	4 ft DS 94 tie-in: top	0.344	0.15
10	Carbon Steel	3 in DS 94 tie-in: bottom	0.334	0.15
10	Carbon Steel	1 ft DS 94 tie-in: bottom	0.301	0.15
10	Carbon Steel	2 ft DS 94 tie-in: bottom	0.294	0.15
10	Carbon Steel	4 ft DS 94 tie-in: bottom	0.306	0.15
10	Carbon Steel	6 ft DS 94 tie-in: bottom	0.321	0.15
10	Carbon Steel	UT 10 ft DS 94 tie-in: top	0.332	0.15
10	Carbon Steel	UT 10 ft DS 94 tie-in: bottom	0.315	0.15
10	Carbon Steel	US weld joint west of MIPK tk: top	0.325	0.15
10	Carbon Steel	DS weld joint west of MIPK tk: top	0.334	0.15
10	Carbon Steel	US weld joint west of MIPK tk: bottom	0.279	0.15
10	Carbon Steel	DS weld joint west of MIPK tk: bottom	0.302	0.15
10	Carbon Steel	US weld joint west of CV: top	0.323	0.15
10	Carbon Steel	DS weld joint west of CV: top	0.34	0.15
10	Carbon Steel	DS weld joint west of CV: bottom	0.334	0.15
10	Carbon Steel	1 ft US 8 tie-in	0.301	0.15
10	Carbon Steel	1 ft US 8 tie-in	0.307	0.15
10	Carbon Steel	1 ft US 102 tie-in	0.281	0.15
10	Carbon Steel	1 ft DS 102 tie-in	0.287	0.15
10	Carbon Steel	6 in US 10 in block valve	0.301	0.15
10	Carbon Steel	6 in DS 10 in block valve	0.26	0.15
10	Carbon Steel	upstr 8 in tie-in from N-S pipe rack	0.257	0.15
10	Carbon Steel	dnstr 8 in tie-in from N-S pipe rack	0.236	0.15
10	Carbon Steel	UT 40 ft dnstr tie-in from N-S pipe rack	0.271	0.15

Line No. *3*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
10	Carbon Steel	at MET 2 outside elbow at rise to tank inlet (erroneous record)	0.827	0.15
10	Carbon Steel	dnstr lower ell weld at rise to MET 2 inlet	0.379	0.15
10	Carbon Steel	side of pipe at 99 tie in	0.21	0.15
10	Carbon Steel	top of pipe upstr 99 tie in	0.217	0.15
10	Carbon Steel	top of pupe dnstr 100 tie in	0.185	0.15
10	Carbon Steel	side of pipe at 100 tie in	0.189	0.15
10	Carbon Steel	top upstr 100	0.208	0.15

Line No. *4*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
6	Carbon Steel	south 6" upstr orifice outside ell	0.261	0.15
6	Carbon Steel	south 6" upstr orifice horiz bottom	0.279	0.15
6	Carbon Steel	north 6" upstr orivice ouside ell	0.268	0.15
6	Carbon Steel	north 6" upstr orifice horiz bottom	0.281	0.15
6	Carbon Steel	south 6" dnstr orifice outside ell	0.261	0.15
6	Carbon Steel	north 6" dnstr orifice outside ell	0.269	0.15
10	Carbon Steel	UT at line 3 repair area	0.244	0.15
10	Carbon Steel	opposite edge of horiz tank containment area	0.241	0.15
10	Carbon Steel	at pipe support west of tank containment divider wall	0.212	0.15
10	Carbon Steel	North of pipe support opposite vertical tank containment containment wall	0.238	0.15
10	Carbon Steel	1 ft south of pipe support opposite end of tank containment area	0.247	0.15
10	Carbon Steel	straight dnstr of ells	0.239	0.15
10	Carbon Steel	dnstr 45 ell side of pipe	0.447	0.15
10	Carbon Steel	upstr 45 ell side	0.402	0.15
10	Carbon Steel	upstr straight	0.241	0.15
10	Carbon Steel	6" dnstr 316 SS flanged section	0.24	0.15

Line No. 4

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
10	Carbon Steel	2.5' dnstr 316 SS flanged section	0.228	0.15
10	Carbon Steel	5' dnstr 316 SS flanged section	0.242	0.15
10	Carbon Steel	6" upstr new 316 SS section	0.249	0.15
10	Carbon Steel	1' upstr new 316 SS section	0.242	0.15
10	Carbon Steel	UT at 4"/3" tie in	0.233	0.15
10	Carbon Steel	5' upstr new 316 SS section	0.242	0.15
10	Carbon Steel	end of straight	0.245	0.15
10	Carbon Steel	first ell outside	0.325	0.15
10	Carbon Steel	straight end near second ell	0.248	0.15
10	Carbon Steel	last (second) ell	0.327	0.15
10	Carbon Steel	straight (at scratches)	0.245	0.15
10	Carbon Steel	dnstr weld joint at entrance to road crossing	0.248	0.15
10	Carbon Steel	upstr weld joint at entrance to road crossing	0.229	0.15
10	Carbon Steel	UT at rise to N-S pipe racd from E-W pipe rack; dnstr	0.243	0.15
10	Carbon Steel	ell	0.332	0.15
10	Carbon Steel	upstr	0.246	0.15
10	Carbon Steel	UT upstr catwalk across E-W pipe rack near steam vent	0.381	0.15
10	Carbon Steel	UT at road bridge	0.379	0.15
10	Carbon Steel	vert at turn to MET tanks	0.387	0.15
10	Carbon Steel	top ell outside	0.372	0.15
10	Carbon Steel	horiz from tanks	0.377	0.15
10	Carbon Steel	dnstr MET 2 discharge pumps	0.378	0.15
10	Carbon Steel	dnstr MET 1 discharge pumps	0.383	0.15
10	Carbon Steel	upstr 45 ell upstr bolck valve at E-W to N-S pipe rack	0.424	0.15
10	Carbon Steel	45 ell	0.356	0.15
10	Carbon Steel	dnstr 45 ell - straight	0.403	0.15
10	Carbon Steel	90 ell down	0.362	0.15

Line No. *4*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
10	Carbon Steel	vert upstr bolck valve	0.352	0.15
10	Carbon Steel	end dead leg	0.243	0.15
10	Carbon Steel	end of N-S at E-W tie in	0.248	0.15
10	Carbon Steel	UT in vert ant end of N-S	0.243	0.15
10	Carbon Steel	2' upstr 49 tie in	0.24	0.15
10	Carbon Steel	UT at 49 tie in	0.231	0.15
10	Carbon Steel	dnstr 49 tie in; 2' upstr flange to SS	0.243	0.15
10	Carbon Steel	2' upstr 36 tie in	0.215	0.15
10	Carbon Steel	3' dnstr 36, also 3" upstr 32	0.216	0.15
10	Carbon Steel	3' snstr 32 tie in, also at 30 tie	0.206	0.15
10	Carbon Steel	3' dnstr 30 tie in	0.217	0.15
10	Carbon Steel	UT at 41 tie in; upstr	0.221	0.15
10	Carbon Steel	3" dnstr 42 tie in	0.18	0.15
10	Carbon Steel	3 ft snstr 21 tie in	0.2	0.15
10	Carbon Steel	UT bottom 4" dnstr 41 clamp repair	0.212	0.15
10	Stainless Steel	dnstr end of new 316 SS section	0.434	0.114
10	Stainless Steel	upstr end of new 316 SS section	0.457	0.114
10	Stainless Steel	3" dnstr flange weld; upstr side	0.463	0.114
10	Stainless Steel	3" upstr of downstream flange joint	0.427	0.114
10	Stainless Steel	3" dnstr flange at spec break	0.242	0.114
10	Stainless Steel	3' dnstr flange at spec break	0.233	0.114

Line No. *5*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
4	Carbon Steel	WW Col north sump pump discharge US check valve	0.173	0.11

Line No. *6*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
4	Stainless Steel	WWCB at discharge side of CV station at TT-435	0.123	0.075

Line No. *7.1*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
1	Carbon Steel	horiz dnstr block valve at rise to tie in 6 on center isle	0.165	0.1

Line No. *8*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
6	Carbon Steel	upstr block valve flange at tie-in to 3	0.16	0.15
6	Carbon Steel	UT upstr tie-in to 3	0.152	0.15
6	Carbon Steel	end of horiz at tie-in to 3	0.159	0.15

Line No. *10*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
2	Galvanized Steel	Caustic line at manifold inside vault at Acetic Acid Storage Tank	0.142	0.1

Line No. *12*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
3	Stainless Steel	horiz 8" dnstr 422 side of pipe	0.118	0.075

Line No. *13*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
2	Stainless Steel	vert 8" above block valve at line start manifold (west of toluene tank)	0.157	0.065
2	Stainless Steel	UT upper ell	0.148	0.065

Line No. *14*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
3	Stainless Steel	WWCB east of pipe bridge above insulation	0.262	0.075

Line No. *15*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
3	Stainless Steel	WW from PFF pumps to PF south of south vault above insulation	0.12	0.075

Line No. *16*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
3	Stainless Steel	primary filter B outlet dnstr filter manifold block valve	0.127	0.075
3	Stainless Steel	primary filter A outlet dnstr filter manifold block valve	0.129	0.075
3	Stainless Steel	heat exchanger inlet combined vert 1" above weld	0.126	0.075

Line No. *17*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
3	Stainless Steel	heat exchanger outlet combined vert	0.126	0.075
3	Stainless Steel	ell on north exchanter discharge UT	0.125	0.075
3	Stainless Steel	ell on south exchanger discharge UT	0.126	0.075
3	Stainless Steel	south side of pipe bridge lower ell	0.128	0.075
3	Stainless Steel	UT suth of south containment on vert	0.127	0.075
3	Stainless Steel	UT ell east of backwash pump PU-405	0.125	0.075
3	Stainless Steel	UT ell upstr tank connection	0.126	0.075
3	Stainless Steel	UT horiz south of 322 outside south containment	0.127	0.075

Line No. *18*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
3	Stainless Steel	top ell dnstr pump flow orifice flange	0.127	0.075
3	Stainless Steel	south of south containment on vert (same elev ast 302)	0.128	0.075
3	Stainless Steel	south side of pipe bridge lower ell	0.127	0.075
3	Stainless Steel	2" above TI combined inlet at secondary filter manifold	0.133	0.075

Line No. *18*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
3	Stainless Steel	2" from tee weld dnstr side C filter	0.132	0.075
3	Stainless Steel	2" from tee weld dnstr side D filter	0.132	0.075
3	Stainless Steel	UT horiz south of 322 outside south containment	0.132	0.075

Line No. *19*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
3	Stainless Steel	2" from joint at C filter manifiod block valve	0.127	0.075
3	Stainless Steel	2" from joint at D filter manifiod block valve	0.134	0.075
3	Stainless Steel	UT on vert at sock filter inlet	0.126	0.075
3	Stainless Steel	suction header between west and center pumps	0.206	0.075
3	Stainless Steel	suction header between center and east pumps	0.231	0.075
3	Stainless Steel	tank inlet horiz straight in center	0.205	0.075

Line No. *20*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
6	Stainless Steel	backwash inlet F-401 B: 3" dnstr block valve in manifold	0.14	0.097
6	Stainless Steel	backwash inlet F-401 A: 3" dnstr block valve in manifold	0.138	0.097
6	Stainless Steel	backwash inlet F-401 D: 3" dnstr block valve in manifold	0.141	0.097
6	Stainless Steel	backwash inlet F-401 C: 3" dnstr block valve in manifold	0.14	0.097
6	Stainless Steel	UT on crossover loop to 21	0.136	0.097
6	Stainless Steel	UT lower ell on south side of pipe bridge	0.14	0.097
6	Stainless Steel	UT horiz south of 322 outside south containment	0.14	0.097
6	Stainless Steel	ell at support above backwash pump	0.139	0.097
6	Stainless Steel	UT on lower ell at return to MF-307	0.127	0.097

Line No. *20*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
6	Stainless Steel	UT on backwash and primary filter feed suction line	0.138	0.097

Line No. *21*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
6	Stainless Steel	WWCB at split manifold west of T-501 A/B tanks and vault	0.126	0.097

Line No. *22*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
3	Stainless Steel	east (no. 2) transfer pump discharge vert 2" dnstr block valve joint	0.119	0.075
3	Stainless Steel	west (no. 1) transfer pump discharge vert 2" dnstr block valve joint	0.119	0.075
3	Stainless Steel	UT at grade outside containment	0.126	0.075
3	Stainless Steel	UT at vert over wall to primary filter feed tank	0.127	0.075
3	Stainless Steel	UT at vert over wall to catayist settling tank	0.126	0.075
4	Stainless Steel	suction from T-501 A/B	0.12	0.075

Line No. *23*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
3	Stainless Steel	UT at ell outside containment near CST	0.124	0.075
3	Stainless Steel	vert dnstr 335 3" below ell weld joint	0.116	0.075
3	Stainless Steel	lower ell below lap joint flante at crossover in rack south of south containment	0.124	0.075
3	Stainless Steel	anstr bolck valve at tie in to 11 south of SFF tank	0.119	0.075

Line No. *24*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
3	Stainless Steel	Vert dnst of TA-402 discharge CV	0.245	0.075
4	Lined Carbon Steel	Horiz dnst connection to 3" SS from TA-402 pumps	0.224	0.11

Line No. *25.1*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
3	Lined Carbon Steel	vert at north side of N/S containment pipe bridge	0.241	0.1
3	Lined Carbon Steel	upstr block valve at tie to 56 and 58	0.194	0.1

Line No. *26*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
3	Carbon Steel	1 ft north of repair clamps east of panel board	0.201	0.1

Line No. *27*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
3	Galvanized Steel	vert north side of N-S containment pipe bridge	0.297	0.1

Line No. *28*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
6	Carbon Steel	Vert at MET filter end of E-W piperack	0.275	0.15

Line No. *29*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
8	Carbon Steel	UT top ell outside; dnstr injection pumps	0.329	0.15
8	Carbon Steel	UT low ell inside; dnstr injection pumps	0.388	0.15
8	Carbon Steel	UT horiz dnstr injection pumps	0.337	0.15
8	Carbon Steel	vert at N-S pipe bridge	0.325	0.15
8	Carbon Steel	horiz at well manifold end	0.337	0.15
8	Carbon Steel	last ell at well manifold area; upstr check valve	0.297	0.15
8	Carbon Steel	1 ft dnstr 3/4 vent valve; 3 ft upstr 8"/3" reducer	0.293	0.15
8	Carbon Steel	tee dnstr 406	0.519	0.15

Line No. *30*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
2	Stainless Steel	above insulation dnstr pumps	0.115	0.065

Line No. *31*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
4	Stainless Steel	North of vault horiz behind filters	0.111	0.075

Line No. *35*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
4	Stainless Steel	At bypass valve east of TT-444 trench	0.122	0.075

Line No. *36*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
6	Stainless Steel	Upstream of insulation outside of S/C	0.123	0.097

Line No. *37*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
3	Stainless Steel	Over dike wall north of filters (break point to 107 at block/check)	0.116	0.075

Line No. *38*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
6	Stainless Steel	Near grade at end	0.147	0.097

Line No. *39*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
6	Carbon Steel	dnstr of 9/34 tie-in	0.166	0.15
6	Carbon Steel	18 in upstr 87 tie-in: top	0.241	0.15
6	Carbon Steel	6 in dnstr 87 tie-in: top	0.237	0.15
6	Carbon Steel	6 in upstr block valve at 9/34 tie-in: tie-in joint repaired with epoxy	0.197	0.15
6	Carbon Steel	dnstr block valve at 105/48 tie-in: bottom	0.246	0.15
6	Carbon Steel	1 ft upstr 9/34 tie in: top	0.194	0.15
6	Carbon Steel	side at 9/34 tie in	0.167	0.15
6	Carbon Steel	1 ft dnstr 9/34 tie in	0.181	0.15

Line No. *41*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
2	Stainless Steel	horiz at containment wall	0.151	0.065

Line No. *42*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
2	Carbon Steel	Vert at sump pimp platform	0.237	0.1

Line No. *43*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
2	Stainless Steel	horiz dnstr sump pumps; 6" upstr containment wall ell; top of pipe	0.108	0.065
2	Stainless Steel	outside ell at containment wall; dnstr sump pump	0.111	0.065
2	Stainless Steel	6" dnstr horiz 427, bottom of pipe	0.102	0.065
4	Stainless Steel	UT dnstr block valve north of amino area	0.112	0.075
4	Stainless Steel	UT horiz at rack east of amino sump	0.112	0.075
4	Stainless Steel	UT vert at rack east of amino sump	0.11	0.075
4	Stainless Steel	UT vert drop to sump	0.108	0.075

Line No. *44*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
2	Stainless Steel	UT ell on 1 sump discharge	0.104	0.065
2	Stainless Steel	UT ell on 2 sump discharge	0.105	0.065
3	Stainless Steel	vert combined sump discharge down to transfer pump	0.13	0.075
3	Stainless Steel	vert 1" above block valve flange joint: 1 discharge to tank	0.118	0.075
3	Stainless Steel	vert 1" above block valve flange joint: 2 discharge to tank	0.12	0.075

Line No. *45*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
2	Stainless Steel	WW sump discharge at tie in to 6" WW B/W	0.103	0.065

Line No. *46*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
2	Stainless Steel	vert at discharge of WW col tank pumps (LG-327)	0.147	0.065
2	Stainless Steel	vert bombined discharge dnstr LV-3111	0.105	0.065
3	Carbon Steel	3" upstr block valve at tie in	0.137	0.1
3	Carbon Steel	3" upstr block valve at tie in	0.114	0.1

Line No. *47*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
1.5	Stainless Steel	vert above 4 tie in	0.14	0.065
1.5	Stainless Steel	UT at ell above 4 tie in	0.116	0.065
1.5	Stainless Steel	vert at lower layer tank	0.108	0.065

Line No. *49*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
3	Carbon Steel	vert at pump above repair clamp	0.1	0.1
3	Carbon Steel	vert at tie to 4	0.169	0.1

Line No. *50*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
2	Carbon Steel	3" dnstr combined discharge from last tee at pumps	0.144	0.1
2	Carbon Steel	near bridge upstr CS/SS break flange	0.172	0.1
2	Stainless Steel	near bridge dnstr CS/SS break flange	0.105	0.065
2	Stainless Steel	horiz 2" from top ell	0.103	0.065
2	Stainless Steel	top ell at tie to 3	0.105	0.065

Line No. *52*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
6	Carbon Steel	UT at well 1 area	0.27	0.15

Line No. *53*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
4	Incoloy	Horiz dnst tie to lined pipe east of manifold area	0.243	0.15

Line No. *54*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
6	Carbon Steel	UT just outside Well 2 area	0.293	0.15

Line No. *56*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
3	Lined Carbon Steel	Vert upstr area B connections	0.2	0.1
3	Lined Carbon Steel	dnstr block valve at tie to 25a	0.2	0.1

Line No. *57*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
3	Galvanized Steel	UT upstr block valve at tie in to 59	0.339	0.1

Line No. *58*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
4	Lined Carbon Steel	Vert at UT dnst first pipe bridge	0.22	0.11

Line No. *59*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
6	Carbon Steel	Horiz at old UT 8' upstr well head	0.264	0.15

Line No. *60*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
3	Lined Carbon Steel	Horiz dnst new 4" section with flow meter	0.221	0.1
3	Lined Carbon Steel	Dnst at UT near well 2 area	0.206	0.1

Line No. *61*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
4	Lined Carbon Steel	Horiz at UT in manifold Area A	0.241	0.11

Line No. *62*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
6	Carbon Steel	UT near flange dnstr check valve at area A	0.263	0.15

Line No. *63*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
6	Carbon Steel	UT 12' upstr well head 3	0.289	0.15
6	Carbon Steel	UT at area A	0.283	0.15

Line No. *64*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
3	Galvanized Steel	Horiz upst tie in to 62	0.303	0.1

Line No. *65*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
3	Galvanized Steel	Horiz upstr tie in to 59	0.274	0.1

Line No. *66*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
3	Galvanized Steel	disconnected coag loose end area A 6' dnstr	0.29	0.1

Line No. *67*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
3	Galvanized Steel	UT near well 2 area	0.289	0.1

Line No. *69*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
4	Carbon Steel	vert at drop to grade end of 12" header	0.217	0.11
4	Carbon Steel	ell at drop to grade end of 12" header	0.244	0.11
4	Carbon Steel	dnstr dual blockvalves end of 12" header	0.235	0.11
4	Carbon Steel	UT at rise to pupe bridge:horiz	0.233	0.11
4	Carbon Steel	1' dnstr 108 tie in	0.222	0.11
4	Carbon Steel	1' upstr 108 tie in	0.225	0.11
4	Carbon Steel	drop from rack to dike: horiz through pipe wrap	0.233	0.11
4	Carbon Steel	vert from rack to dike: no wrap, rough surface	0.241	0.11

Line No. *70*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
10	Carbon Steel	top ell	0.29	0.15
10	Carbon Steel	end horiz straight again	0.299	0.15
10	Carbon Steel	bottom ell	0.285	0.15
10	Carbon Steel	below 8" valve at 3 tie in	0.232	0.15
12	Carbon Steel	UT 20' upstr 10" block valve in E-W at N-S tie in	0.255	0.188
12	Carbon Steel	UT at block valve	0.197	0.188
12	Carbon Steel	at 99 tie in	0.248	0.188

Line No. *71*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
1.5	Stainless Steel	ell at sump pump discharge	0.127	0.065
2	Stainless Steel	ell at spec change/tie to 69	0.146	0.065
2	Stainless Steel	upste last ell	0.146	0.065
2	Stainless Steel	dnstr block valve at sump next to new Pdn Svcs building	0.145	0.065
4	Carbon Steel	straight vert upstr ell at sump pump discharge	0.141	0.11

Line No. *72*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
3	Carbon Steel	ell at spec change to 2" SS: dnstr ell	0.181	0.1
3	Carbon Steel	ell at spec change to 2" SS: upste ell	0.186	0.1
4	Carbon Steel	dnstr 4" valve with hose to Rundown B line (at drap to near grade)	0.216	0.11
4	Carbon Steel	dnstr 4" block valve behind new Pdn Svcs building	0.24	0.11
4	Carbon Steel	upstr 4" block valve behind new Pdn Svcs building	0.234	0.11

Line No. *75*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
3	Stainless Steel	AMD tank car sump discharge upstr tie in to 77	0.123	0.075
3	Stainless Steel	AMD tank car sump discharge pipe vert above sump	0.119	0.075

Line No. *76*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
2	Stainless Steel	AMD tank car washout upstr tie in to 77	0.112	0.065
2	Stainless Steel	AMD tank car washout dnstr pump discharge: vert	0.11	0.065
2	Stainless Steel	AMD tank car washout pump suction: horiz 1' from flange	0.102	0.065

Line No. *77*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
3	Stainless Steel	AMD tank car combined to MET header vert at rise to rack	0.113	0.075

Line No. *78*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
2	Carbon Steel	Aceto scrubber water (24 A/B) to surge tank at rise from grade in pipe rack west of new Pdn Svcs building; hortz	0.214	0.1
2	Carbon Steel	vert same location as 265	0.152	0.1
2	Carbon Steel	at pipe support east of stile east of surge tank dike	0.225	0.1

Line No. *82*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
12	Carbon Steel	from PS 2A (intercept ditch) upstr tie in to N-S pipe rack	0.355	0.188
12	Carbon Steel	upstr tie in in E-W pipe rack	0.359	0.188
12	Carbon Steel	dnstr block valve and tie in in E-W pipe rack	0.391	0.188

Line No. *87*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
1	Stainless Steel	upstr check valve at tie-in to 39	0.125	0.065

Line No. *91*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
1	Carbon Steel	Vert north of flare stack over vault wall	0.162	0.1

Line No. *92*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
6	Carbon Steel	RCB/MET Backwash between RCB filters vert	0.244	0.15

Line No. *96*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
2	Stainless Steel	horiz at vert ell inside containment upstr pumps	0.108	0.065
2	Stainless Steel	vert ell inside containment upstr pumps	0.118	0.065
2	Stainless Steel	UT lower ell at end of E-W pipe rack at N-S pipe rack	0.112	0.065
2	Stainless Steel	UT vert below block valve at tie to old MS-505	0.107	0.065
2	Stainless Steel	Horiz to old MS-505	0.112	0.065
2	Stainless Steel	UT at top ell at rack crossing to NSB filter area	0.108	0.065

Line No. *99*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
8	Carbon Steel	horiz dnstr check valve	0.313	0.15
8	Carbon Steel	upstr weld at tie in ell to 3	0.314	0.15
8	Carbon Steel	outside ell at tie in	0.264	0.15

Line No. *100*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
4	Carbon Steel	ell at west pump discharge	0.294	0.11
4	Carbon Steel	horiz at west pump discharge	0.284	0.11
4	Carbon Steel	ell at east pump discharge	0.121	0.11
4	Carbon Steel	horiz at east pump discharge	0.134	0.11
4	Stainless Steel	upstr flange to carbon steel	0.225	0.075
4	Stainless Steel	dnstr horiz at lower ell at rise to rack	0.222	0.075
4	Stainless Steel	oudside lower ell at rise to rack	0.261	0.075
4	Stainless Steel	horiz dnstr pump discharge (upstr lower ell)	0.228	0.075
6	Carbon Steel	outside ell at block valves	0.252	0.15

Line No. *100*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
6	Carbon Steel	horiz straight dnstr check at tie in	0.229	0.15
6	Carbon Steel	horiz straight upstr check valve	0.231	0.15
6	Carbon Steel	top ell	0.239	0.15
6	Carbon Steel	vert	0.231	0.15
6	Carbon Steel	lower ell	0.233	0.15

Line No. *101*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
2	Carbon Steel	from 24 A/B scrubber pump disch upstr 732/MET split	0.145	0.1
2	Stainless Steel	ell at bolck valve at tie in to 3	0.101	0.065
2	Stainless Steel	upstr ell at block	0.112	0.065
2	Stainless Steel	UT upstr lower ell at rise to rack: top	0.15	0.065
2	Stainless Steel	UT upstr lower ell at rise to rack: bottom	0.15	0.065
3	Carbon Steel	dnstr 24 A/B scrubber pump 732/MET split (on MET line)	0.153	0.1
3	Carbon Steel	24 A/B combined sump discharge vert 1 ft. above lower ell	0.2	0.1

Line No. *102*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
3	Carbon Steel	UT on 3 header nozzle	0.286	0.1
3	Carbon Steel	upstr of block valve at tie in	0.205	0.1
3	Carbon Steel	upstr of control valve at 3 tie in (below 211)	0.196	0.1

Line No. *103*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
1.5	Stainless Steel	dnstr vaporizer pump and recycle tee; vert 3" from tee joint	0.148	0.065
1.5	Stainless Steel	dnstr FT-1278	0.114	0.065

Line No. *104*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
2	Carbon Steel	6 ft upstream repair clamp area	0.151	0.1
2	Carbon Steel	1 ft upstream repair clamp area	0.146	0.1
2	Carbon Steel	1 ft downstream repair clamp area	0.14	0.1
2	Carbon Steel	6 ft downstream repair clamp area	0.147	0.1

Line No. *105*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
3	Carbon Steel	vertical pipe 1 in above label at pump discharge	0.216	0.1

Line No. *106*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
2	Carbon Steel	At UT at east end of line in E-W rack	0.147	0.1
3	Carbon Steel	dnstr check valve at caustic pump	0.209	0.1

Line No. *107*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
3	Stainless Steel	vert downstream of block/check north of vault wall	0.114	0.075

Line No. *108*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
2	Galvanized Steel	upstr end block vcalve at tie in to 69" (thd pipe)	0.137	0.1
2	Galvanized Steel	dnstr pump block valve at Whse 210	0.203	0.1

Line No. *110*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
3	Carbon Steel	Vert above tee at end block valve near LV-3	0.217	0.1

Line No. *111*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
2	Carbon Steel	Vert dnst block valve at sump pump platform	0.138	0.1

Line No. *111*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
2	Carbon Steel	above block valve at sump pump; 4" above flange	0.142	0.1

Line No. *112*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
3	Stainless Steel	vert at SFF tank 3" above lower ell	0.103	0.075
3	Stainless Steel	vert at east oxazole; 4" above block valve	0.121	0.075
3	Stainless Steel	vert at west oxazole; 4" above block valve	0.113	0.075

Line No. *113*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
3	Stainless Steel	2" form weld joint ell at 3 tie in	0.242	0.075
3	Stainless Steel	elbow at 3	0.212	0.075
3	Stainless Steel	vert from tank containment	0.23	0.075

Line No. *115*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
2	Carbon Steel	above block valve at sump pump; 4" above flange	0.142	0.1
2	Carbon Steel	above block valve at tank pump; 4" above conduit clamp	0.14	0.1

Line No. *116*

Size	*Pipe Material*	*Location*	*Meas. Thick.*	*Min. Allow. Thick.*
2	Galvanized Steel	dnstr MMA tank car loading sump pump vert	0.143	0.1

Appendix I

LAC 33:V.516.A.6.
LAC 33:V.1907.A

Secondary Containment Certification

AMERICAN CYANAMID COMPANY
CHEMICAL PRODUCTS DIVISION
FORTIER PLANT
10800 RIVER ROAD
WESTWEGO, LOUISIANA 70094

HAZARDOUS WASTE SYSTEM
NEW TANK SYSTEM COMPONENTS
MISCELLANEOUS EFFLUENT TANKS AND WWCB TANKS
INSTALLATION CERTIFICATION

Prepared By:

WALDEMAR S. NELSON AND COMPANY
INCORPORATED
ENGINEERS AND ARCHITECTS

1200 St. Charles Avenue
New Orleans, LA 70130

REVIEWED BY W.S.P.

JOB NO. 88209
November 15, 1988

88209.AB1

MISCELLANEOUS EFFLUENT TANKS

TANK DESCRIPTIONS:

MET-1.0

MET-1.0 is a 60'-0" I.D. x 48'-0" high carbon steel (ASTM A283C shell) API 650 cone roof tank of 1,000,000 gallons nominal capacity built in 1977 by the Fisher Tank Company for the purpose of fuel oil storage. The tank was modified for miscellaneous effluent service in 1988 by Maloney-Crawford. An aggregate filled 80 mil HDPE liner, sloped to a leak detection drain was installed on the existing bottom and a new 3/8" steel bottom was installed on top of the gravel. Nozzle and manway changes were also made. The tank is on an existing pile supported concrete slab foundation.

MET-2.0

MET-2.0 is a 93'-0" I.D. x 40'-0" high carbon steel (ASTM A516 Gr. 70 shell) API 650 cone roof tank of 2,000,000 gallons nominal capacity built by Anderco, Inc., in 1988 for miscellaneous effluent service. The tank was installed on a pile supported concrete slab foundation which incorporates an aggregate filled 80 mil HDPE liner, sloped to a leak detection drain.

ANCILLARY EQUIPMENT DESCRIPTION:

The ancillary equipment installed includes four 125 HP transfer pumps with back pressure control recycle valves, three 10 HP sump pumps, manual valves, strainers and piping.

SECONDARY CONTAINMENT AND STRUCTURAL STEEL DESCRIPTION:

The secondary containment installed consists of reinforced concrete paving which surrounds the tanks and is bordered by a reinforced concrete dike with all joints sealed. A large sump sealed with concrete sealant was installed on the north side of the containment. A galvanized structural steel platform to support the pumps and associated piping and equipment was installed above the sump. Galvanized structural steel pipe supports were installed to support the piping.

WWCB TANKS

TANK DESCRIPTIONS:

WWCB-N & WWCB-S

WWCB-N and -S are two 30'-0" O.D. x 30'-0" high 316 stainless steel API 650 covered tanks of 150,000 gallons nominal capacity built in 1988 by Anderco Inc., for waste water column bottoms service. The tanks were installed on pile supported concrete slab foundations which incorporate aggregate filled HDPE liners, each sloped to a leak detection drain.

OTHER TANK FOUNDATIONS AND LEAK DETECTION SYSTEMS:

Foundations for the Primary Filter Feed Tank, Catalyst Settling Tank, Miscellaneous Effluent Surge Tank and Well Injection Tank were modified to provide aggregate filled HDPE liners, each sloped to a leak detection drain. New reinforced concrete slab foundations incorporating aggregate filled HDPE liners sloped to leak detection drains were installed for the Secondary Filter Feed Tank, Acetic Acid Tank and the Wash Acid Tank. New reinforced concrete slab foundations suitable for installing aggregate filled HDPE liners sloped to leak detection drains were installed for the replacement NSB Back Wash Tank and NSB Surge Tank.

ANCILLARY EQUIPMENT DESCRIPTION:

The ancillary equipment installed includes manual valves, piping, a pump station with two 100 GPM transfer pumps and two 50 GPM sump pumps located

near the WWCB-N and WWCB-S tanks, a 50 GPM sump pump near the Secondary Filter Feed Tank, a 50 GPM sump pump near the Miscellaneous Effluent Surge Tank and a 50 GPM sump pump near the NSB Tank foundations. Two new Miscellaneous Effluent Sand Filters and associated items were installed near the existing ones.

SECONDARY CONTAINMENT AND STRUCTURAL STEEL DESCRIPTION:

The secondary containment installed consists of two reinforced concrete paved and diked areas with all joints sealed. The north containment surrounds the new filters, the miscellaneous effluent area, the WWCB filtration area, the waste acid filtration area, the NSB filtration area, the Aceto Surge Tank and the flare. A sump sealed with concrete sealant is installed near the miscellaneous effluent surge tank and another near the NSB Tank foundations. Galvanized structural steel platforms are installed at these points to support the pumps. The south containment has acid resistant topping and consists of an east and west sub area connected by a concrete box culvert. The east sub area surrounds the WWCB-N Tank, the WWCB-S Tank, the Primary Filter Feed Tank and the Catalyst Settling Tank. The west sub area surrounds the Secondary Filter Feed Tank, the Acetic Acid Tank and the Wash Acid Tank. A large sump sealed with concrete sealant is installed near the WWCB-N and WWCB-S Tanks and a smaller one near the Secondary Filter Feed Tank. Galvanized structural steel platforms to support the pumps were installed above the sumps. Galvanized structural steel pipe supports were installed to support the piping.

INSPECTION ACTIVITIES:

In order to ensure proper installation, field inspections were made during all phases of construction, and certifications based on these inspections are attached.

Tank Foundations

a. Pile driving was observed, and pile driving logs and purchase orders were reviewed.

b. Forms were inspected and rebar size and placement verified prior to pours. Concrete placement was observed and slump tests made. Concrete mix design and cylinder compression tests were reviewed.

Secondary Containment and Leak Detection

a. Forms were inspected and rebar size and placement verified prior to pours. Concrete placement was observed and slump tests made. Concrete mix design and cylinder compression tests were reviewed.

b. Joint seals were inspected and concrete sealant application in sumps was observed. Vendor data for sealing compounds was reviewed.

c. Acid resistant topping was inspected. Vendor data for the topping was reviewed.

d. Installation of field welded 80 mil high density polyethylene liners under tanks was observed. Samples were taken and lab tested, and vendor data was reviewed. Aggregate fill was also inspected.

Tanks

a. Unloading of materials, erection and joint inspection of MET-2.0, WWCB-N and WWCB-S were observed. Materials, welding procedures, welder qualifications, and manufacturer's certification letters were reviewed. Vacuum testing and water fill testing were observed.

b. Unloading of materials, erection and joint inspection for modifications to MET-1.0 were observed. Materials, welding procedures, welder qualifications, and manufacturer's certification were reviewed. Vacuum testing and water fill testing were observed. Surface preparation, application and testing of the internal coating was observed, and the vendor data was reviewed.

Ancillary Equipment

a. Installation and test of pumps and filters and field fabrication, erection and hydrotest of piping and valves were observed. Pipe supports were inspected. Material lists, test records, welding procedures, welder qualifications and vendor data were reviewed. Support of piping and equipment was inspected.

Structural Steel and Pipe Supports

a. Installation of pump support and access structures and pipe supports was observed, and vendor shop drawings and material lists were reviewed.

I, August J. Albano, have supervised the inspection of a portion of the installation of the new tank system components located at Avondale, Louisiana, owned and operated by American Cyanamid Co. This included inspecting for weld breaks, punctures, scrapes of protective coatings, cracks, corrosion and other structural damage or inadequate construction/installation, tank and piping tightness test and adequate support and protection of piping from external and internal loads for the following new tank system components: Miscellaneous Effluent Tanks, WWCB Tanks and ancillary equipment as generally shown on Drawings 36-0-21 and 10-0-60 and as described above, as required by the Resource Conservation and Recovery Act (RCRA) regulations, namely, 40 CFR 264.192 (b), (d), and (e).

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments pertaining to the above and that, based on my inquiry of those individuals immediately responsible for obtaining the information, 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.

August J Albano 11/15/88

Signature

Project Engineer

Title

10245

Registration No.

1200 St. Charles Avenue

Address

We, Kenneth H. Nelson and Barton W. Harris, have inspected a portion of the installation of the new tank system components located at Avondale, Louisiana, owned and operated by American Cyanamid Co. Our duties were inspecting piling, reinforced concrete, HDPE liners and structural steel for the following new tank system components: Miscellaneous Effluent Tank MET-2.0, WWCB-N and -S Tanks, NSB Surge and Backwash Tanks, Secondary Filter Feed Tank, Acetic Acid Tank and Wash Acid Tank New Foundations: Primary Filter Feed Tank, Catalyst Settling Tank, Miscellaneous Effluent Surge Tank T-500 and Well Injection Tank Modified Foundations: ancillary equipment: structural steel supports; secondary containment and leak detection systems as required by the Resource Conservation and Recovery Act (RCRA) regulation(s), namely, 40 CFR 264.192 (b) and (e) and 264.193 (b), (c), (d) (e) and (f).

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments pertaining to the above and that, based on my inquiry of those individuals immediately responsible for obtaining the information, 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.

Barton W. Harris 11/15/88
Kenneth H. Nelson 11/15/88

STATE OF LOUISIANA
BARTON W. HARRIS
REG. NO. 22399
REGISTERED
PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING

STATE OF LOUISIANA
KENNETH H. NELSON
REG. NO. 21888
REGISTERED
PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING

Signatures

Civil Engineer

Title

21888 22399

Registration Nos.

1200 St. Charles Avenue

Address

Appendix J

LAC 33:V.517.B.

List of Figures

Figure 1 USGS Map (Luling Quadrangle and New Orleans West Quadrangle 7.5 Minute Series - Topographic Revised 1992)

Figure 2 Cytec Drawing No. 36-0-32 Hazardous Waste Management System Location Map

Figure 3 Groundwater Potentiometric Surface Map, 1st Quarter, 1997

Figure 4 Groundwater Potentiometric Surface Map, 2nd Quarter, 1997

Figure 5 Groundwater Potentiometric Surface Map, 3rd Quarter, 1997

Figure 6 Groundwater Potentiometric Surface Map, 4th Quarter, 1997

Figure 7 Groundwater Elevations and Flow Rate

Figure 8 North Lagoon Area Location of Borings and Subsoil Profile

Figure 9 Lagoon Area Location of Borings and Subsoil Profile

Figure 10 Site Plan and Cross-Section Locations

Figure 11 Cross-Section A-A'

Figure 12 Cross-Section B-B'

Figure 13 Cross-Section C-C' and Cross-Section D-D'

Figure 14 Log of Subsurface Strata

Figure 14A North-South Geohydrologic Section

Table 1 for Figure 15 Non-Freshwater Artificial Penetrations Within the 2 Mile Radius

Figure 15 Plate 1, Terra Dynamics Inc. Area of Review Base Map

Table 2 for Figure 16 Water Wells

Figure 16 Well Locations Within 2 Miles of Cytec

Figure 17 Parish Drainage from Plant to Outfall Canal

Figure 18 Fortier Plant Exterior Collection Ditches

Appendix J

LAC 33:V.517.B.

List of Figures

Figure 19 Cytec Drawing No. 36-0-36 Sanitary Sewer Collection System Flow Diagram

Figure 20 Cytec Drawing No. 36-0-37 Process Sewer Collection System Flow Diagram

Figure 21 Cytec Drawing No. 30-0-44 Fire Water Distribution Flow Diagram

Figure 22 Adjacent Landowners Plan

Figure 23 Aerial Photograph

Reference Sheet

REF+51389

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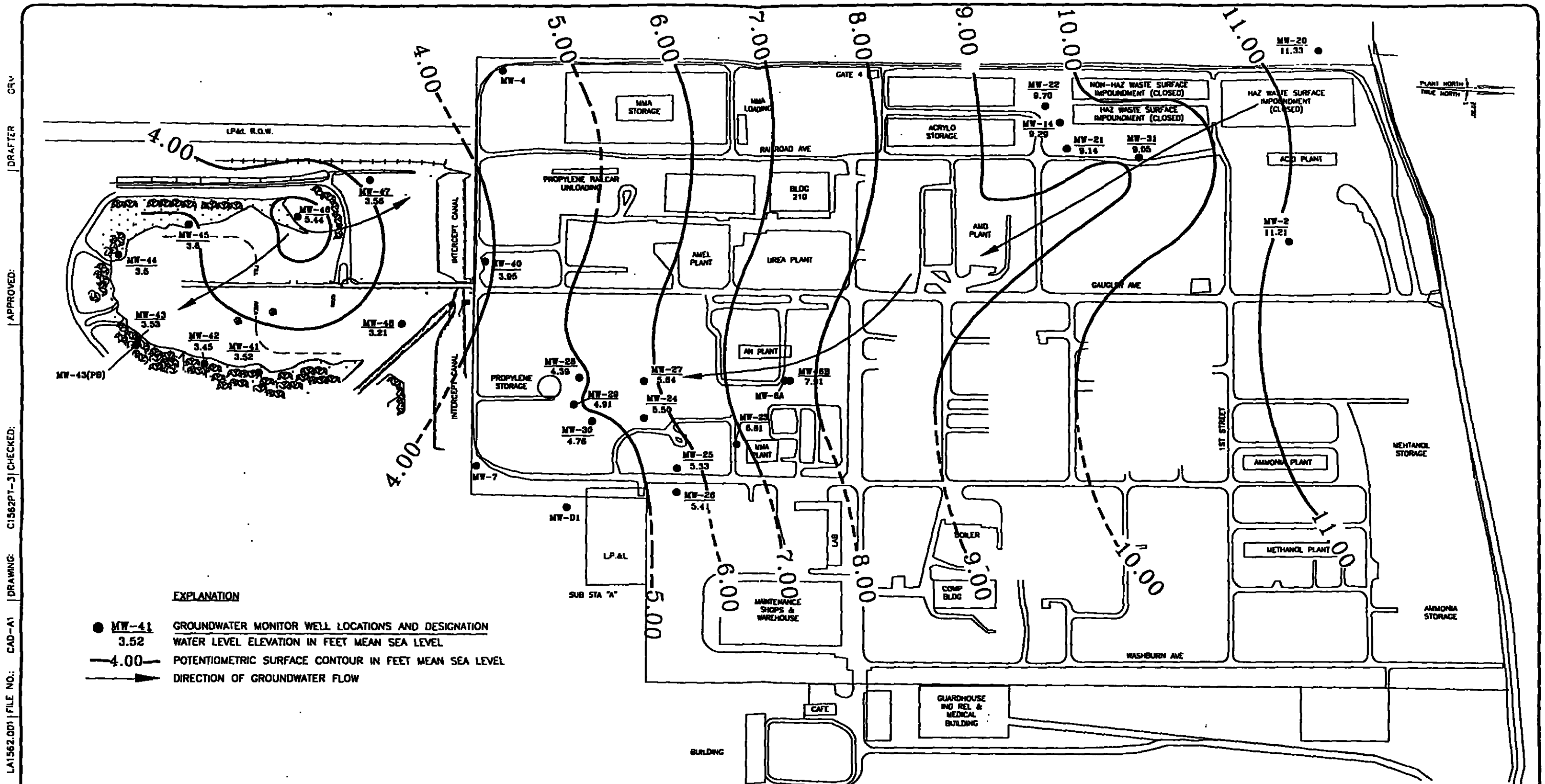


EXPLANATION

● MW-41	GROUNDWATER MONITOR WELL LOCATIONS AND DESIGNATION
3.52	WATER LEVEL ELEVATION IN FEET MEAN SEA LEVEL
—4.00—	POTENTIOMETRIC SURFACE CONTOUR IN FEET MEAN SEA LEVEL
——►	DIRECTION OF GROUNDWATER FLOW

0 400 800 FEET
SCALE

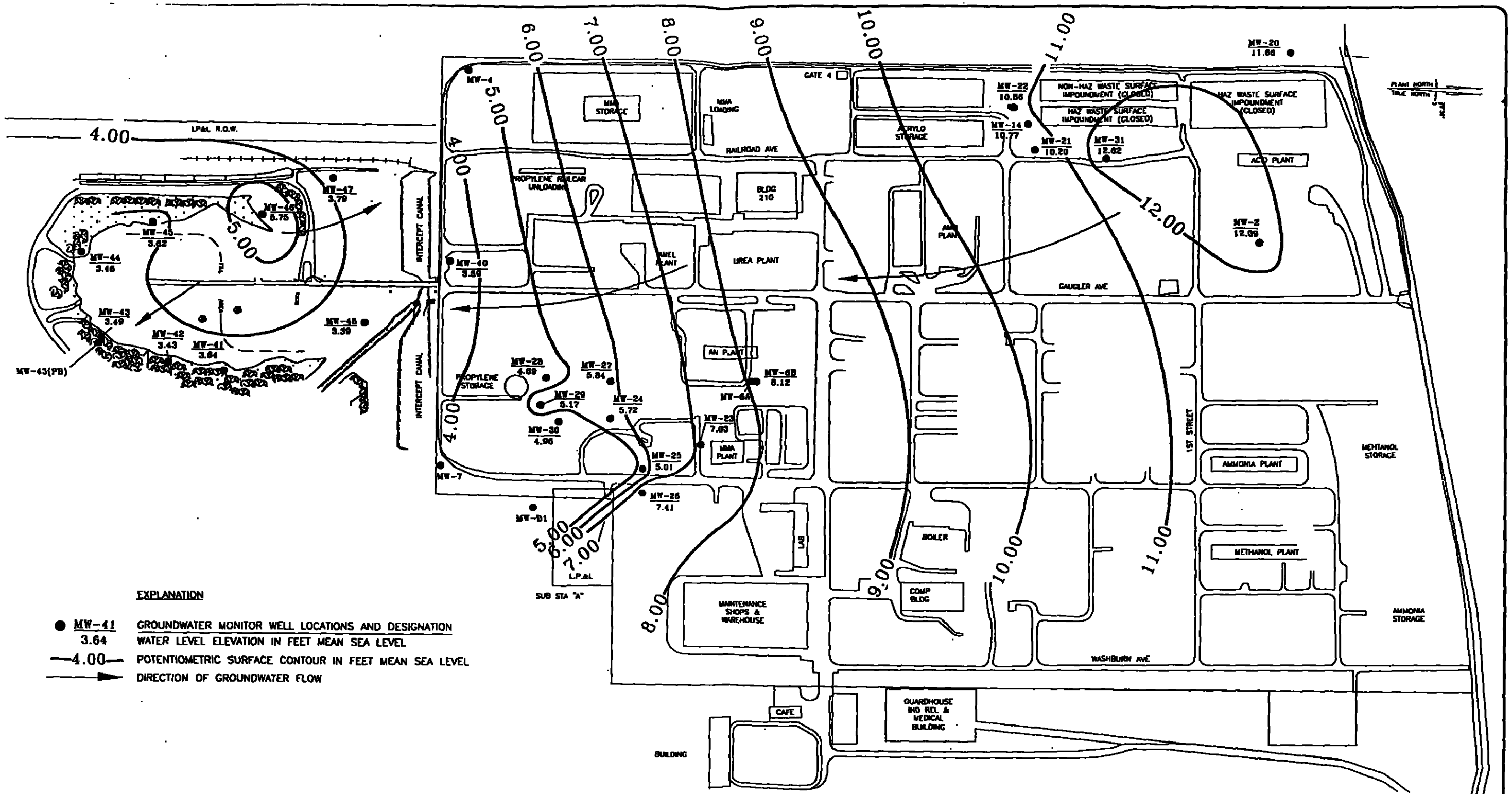
Cytec Industries Inc.
Fortier Plant
EPA I.D. No. LAD 008175390
Figure 3

GERAGHTY & MILLER, INC.
Environmental Services

POTENTIOMETRIC MAP
UPPERMOST PERMEABLE ZONE
1ST QUARTER 1997
CYTEC INDUSTRIES
FORTIER FRONT
Waggaman, Louisiana

FIGURE
3

DWG DATE: 2-18-98 | PRJCT NO.: LA1562.001 | FILE NO.: CAD-A1 | DRAWING: C1562PT-3 | CHECKED: | APPROVED: | DRAFTER: SRV



EXPLANATION

● MW-41	GROUNDWATER MONITOR WELL LOCATIONS AND DESIGNATION
3.64	WATER LEVEL ELEVATION IN FEET MEAN SEA LEVEL
—4.00—	POTENTIOMETRIC SURFACE CONTOUR IN FEET MEAN SEA LEVEL
——►	DIRECTION OF GROUNDWATER FLOW

0 400 800 FEET
SCALE

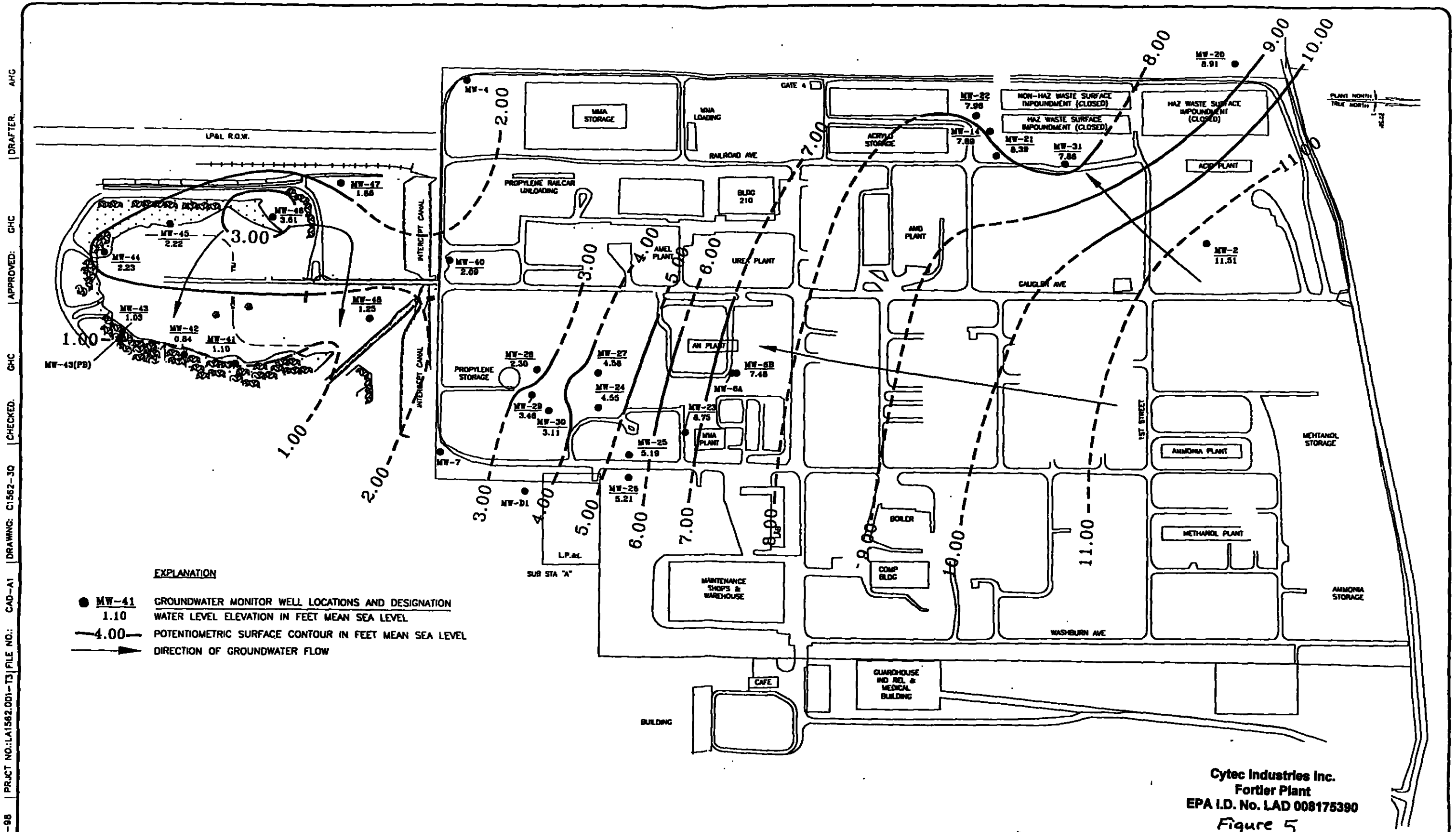
Cytec Industries Inc.
Fortier Plant
EPA I.D. No. LAD 008175390
Figure 4

GERAGHTY & MILLER, INC.
Environmental Services

POTENTIOMETRIC MAP
UPPERMOST PERMEABLE ZONE
2ND QUARTER 1997
CYTEC INDUSTRIES
FORTIER FRONT
Waggaman, Louisiana

FIGURE
4

DWG DATE: 2-18-98 | PRJCT NO.:LA1562.001-T3 | FILE NO.: CAD-A1 | DRAWING: 1562P2-3 | CHECKED: GHC | APPROVED: GHC | DRAFTER: GRM



Cytec Industries Inc.
Fortier Plant
EPA I.D. No. LAD 008175390

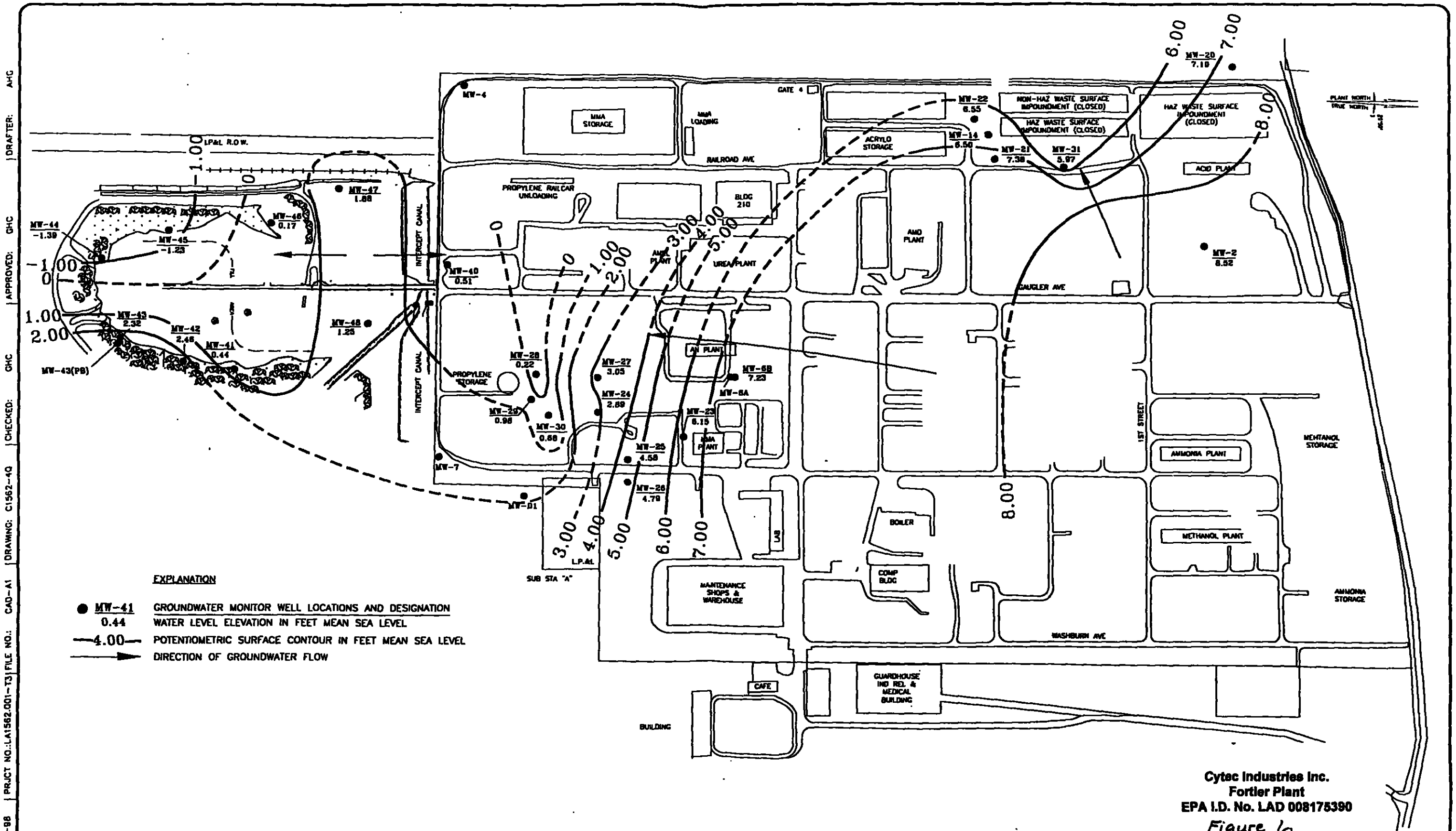
Figure 5

GERAGHTY & MILLER, INC.
Environmental Services

POTENTIOMETRIC MAP
UPPERMOST PERMEABLE ZONE
3RD QUARTER 1997
CYTEC INDUSTRIES
FORTIER FRONT
Waggaman, Louisiana

FIGURE 5

DWG DATE: 2-18-98 | PRJCT NO.:LA1562.001-T3 | FILE NO.: CAD-A1 | DRAWING: C1562-3Q | CHECKED: GHC | APPROVED: GHC | DRAFTER: AHC



Cytec Industries Inc.
Fortier Plant
EPA I.D. No. LAD 008175390

Figure 6

GERAGHTY & MILLER, INC.
Environmental Services

POTENTIOMETRIC MAP
UPPERMOST PERMEABLE ZONE
4TH QUARTER 1997
CYTEC INDUSTRIES
FORTIER FRONT
Waggoman, Louisiana

FIGURE 6

DWG DATE: 2-18-98 | PRJCT NO.:LA1562.001-T3 | FILE NO.: CAD-A1 | DRAWING: C1562-4Q | CHECKED: GHC | APPROVED: GHC | DRAFTER: AHC

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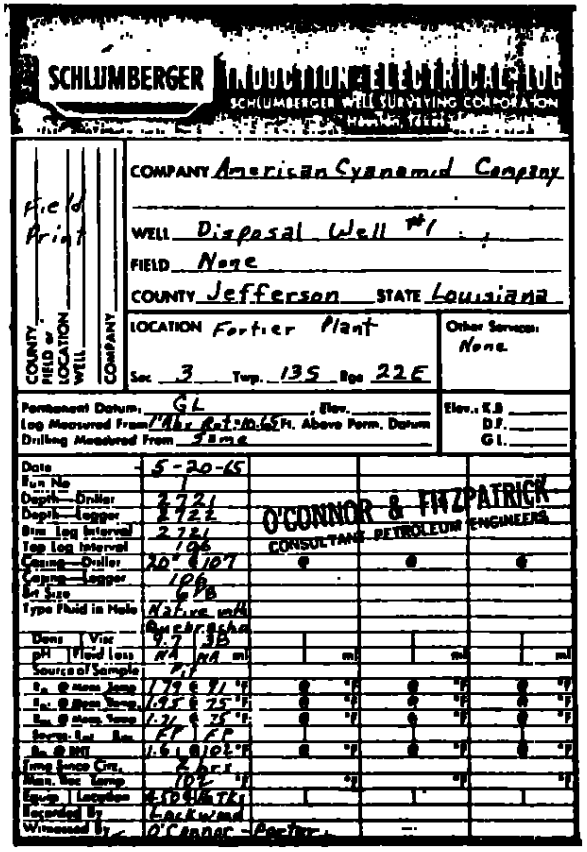


SCHLUMBERGER INDUCTION ELECTRICAL LOG
SCHLUMBERGER WELL SURVEYING CORPORATION
Houston, Texas

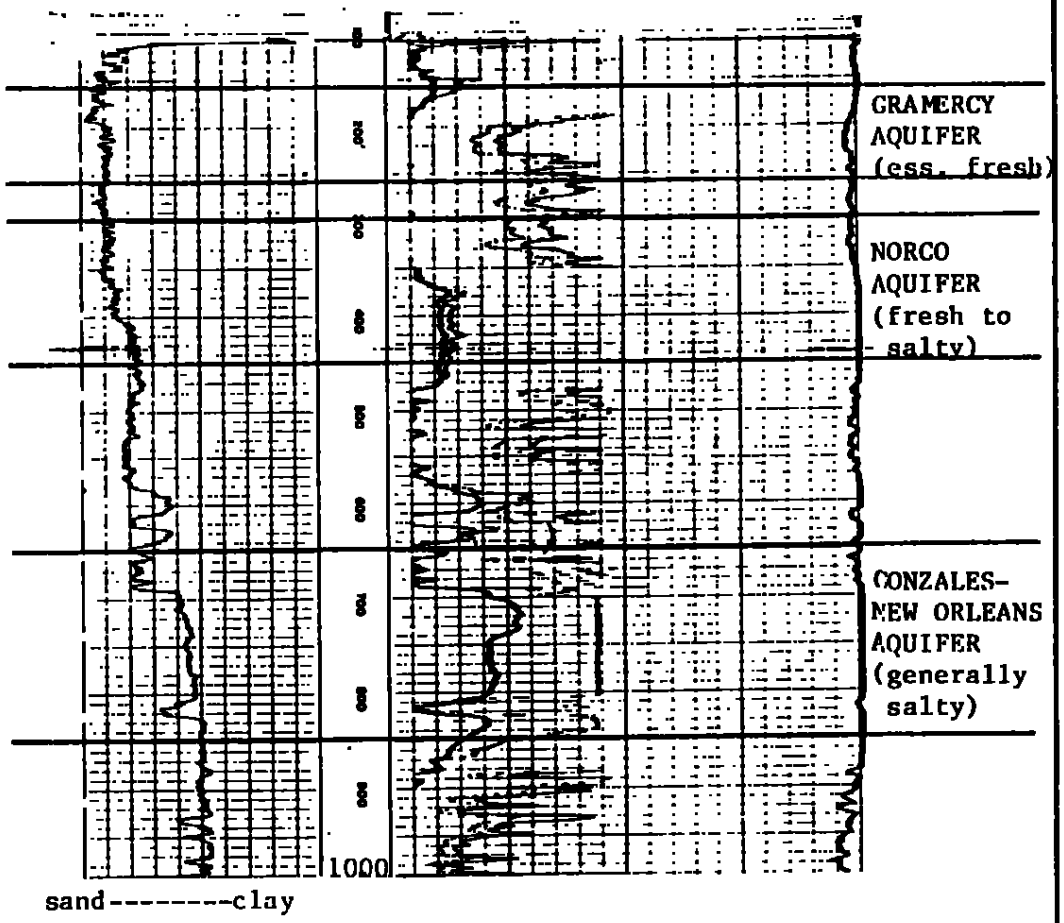
Field Print

COMPANY American Cyanamid Company
WELL Disposal Well #1
FIELD None
COUNTY Jefferson STATE Louisiana
LOCATION Fortier Plant
Other Services: None
Sec. 3 Twp. 13S Rge 22E

Permanent Datum: GL, Elev.
Log Measured From: 7 Abv Grd 10.65 Ft. Above Perm. Datum
Drilling Measured From: Same
Elev.: K.B. D.F. G.L.

Date	5-20-65			
Run No.	1			
Depth—Driller	2721			
Depth—Logger	2722			
Btm. Log Interval	2721			
Top Log Interval	106			
Casing—Driller	20" @ 107	@	@	@
Casing—Logger	106			
Bit Size	6 1/8			
Type Fluid in Hole	Native water Gyscharge			
Dens. / Visc.	9.7 / 38			
pH / Fluid Loss	NA / NA ml	ml	ml	ml
Source of Sample	Pit			
R_m @ Meas. Temp.	1.79 @ 71 °F	@ °F	@ °F	@ °F
R_{mf} @ Meas. Temp.	1.55 @ 75 °F	@ °F	@ °F	@ °F
R_{mc} @ Meas. Temp.	1.21 @ 75 °F	@ °F	@ °F	@ °F
Source: R_{mf} / R_{mc}	FP / FP			
R_m @ BHT	1.61 @ 101 °F	@ °F	@ °F	@ °F
Time Since Circ.	2 hrs			
Max. Rec. Temp.	102 °F	°F	°F	°F
Equip. / Location	4-10 Metairie			
Recorded By	Lockwood			
Witnessed By	O'Connor - Porter			

O'CONNOR & FITZPATRICK
CONSULTING PETROLEUM ENGINEERS



FIGURE

LOG OF SUBSURFACE STRATA
(freshwater sands extrapolated from Gen. Hydrol. Column)

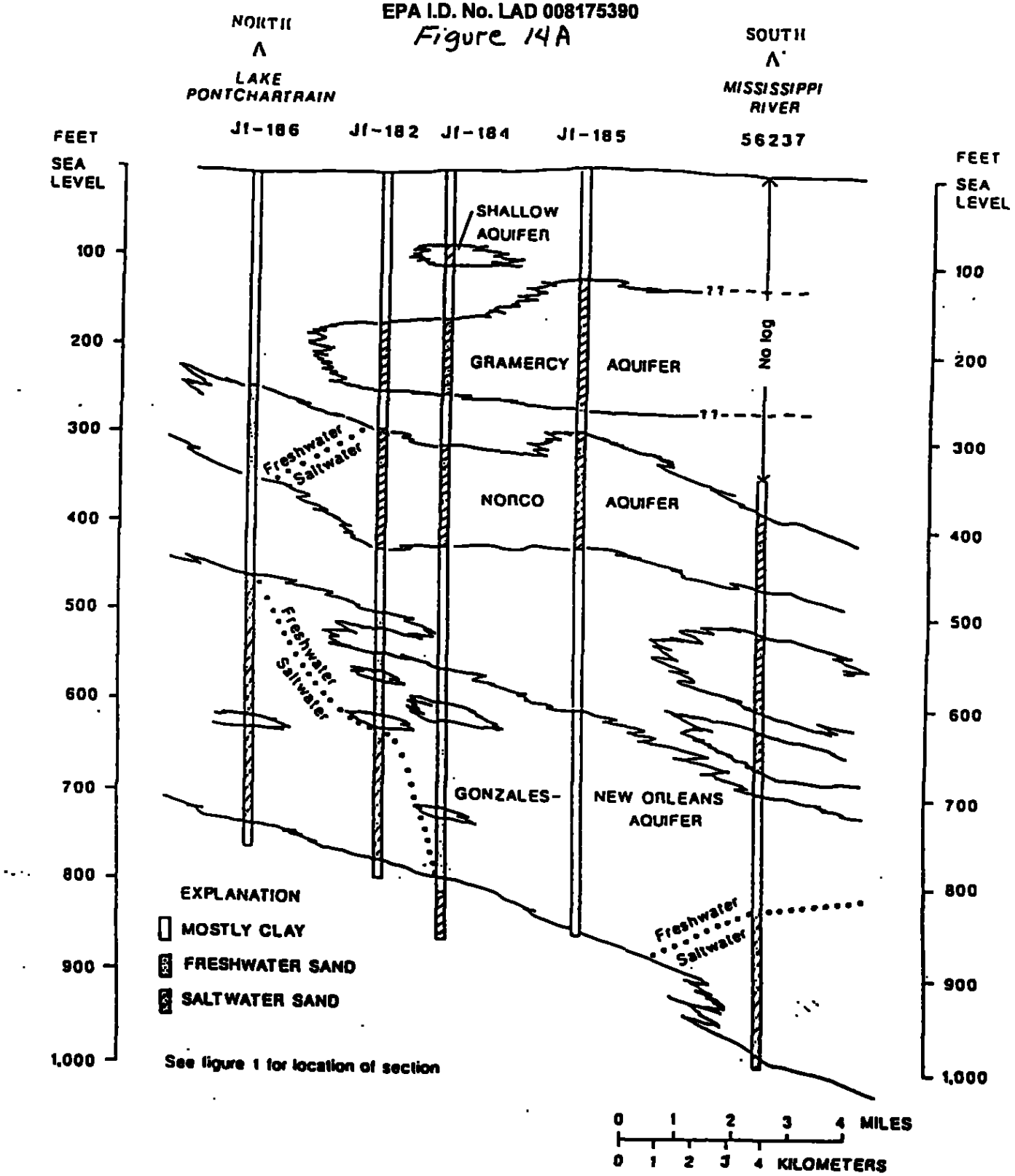
SCALE=1"=200'

2/11/85
Rev5/85

Cytec Industries Inc.
Fortier Plant
EPA I.D. No. LAD 008175390

Figure 14

Cytec Industries Inc.
Fortier Plant
EPA I.D. No. LAD 008175390
Figure 14A



-North-south geohydrologic section from Lake Pontchartrain to the Mississippi River.

(Figure Reference: Dial, D.C. and D.C. Tomaszewski, Geohydrology, Water Quality, and Effects of Pumpage on the New Orleans Aquifer System, Northern Jefferson Parish, Louisiana; United States Geological Survey, Water Resources Report 88-4097).

APPENDIX J, TABLE 1 for FIGURE 15

NON-FRESHWATER ARTIFICIAL PENETRATIONS WITHIN THE 2-MILE RADIUS AOR

Map ID No.[1]	Operator	Well Name	Well No.	Total Depth (ft.)	Current Well Status	Date Completed or Plugged	Casing Types Present	Injection Rate (gpm)[2]
C-1	Cytec	Disposal Well	1	3300	Injection	1966	Surf. & Prod.	207
C-2	Cytec	Disposal Well	2	3220	Injection	1966	Surf. & Prod.	177
C-3	Cytec	Disposal Well	3	4815	Injection	1970	Surf. & Prod.	208
C-4	Cytec	Disposal Well	4	5010	Injection	1973	Surf. & Prod.	0[3]
C-5	Cytec	Disposal Well	5	4900	Injection	1981	Surf. & Prod.	267
1	F.A. Callery	Delta Match Corp.	1	9244	P & A	3/2/62	Surface	NA
5	Texoil Co.	Sixty Acres et.al.	1	8989	P & A	5/2/84	Surf. & Prod.	NA
8	Davis Oil	Marsh Invest. Co.	1	11282	P & A	412//78	Surface	NA
35	F.A. Callery	S. L. 3821	1	10600	P & A	10//26//61	Surface	NA
43	Kilroy of Tx.	C. Monsted	1	10817	P &A	3/28/77	Surface	NA
45	W. G. Helis	Sellers et.al.	1	11000	P &A	11/23/64	Surface	NA
87	Westland Oil	S. L. 8135	1	12547	P &A	1/16/83	Surf. & Prod.	NA
88	California Co.	S. L. 2359	1	11905	P &A	10/21/56	Surf. & Prod.	NA
91	California Co.	Cities Services	2A	10703	P &A	9/20/56	Surface	NA
92	Brit. Amer.	La. Ark. R.R.	1	10573	P &A	2/3/49	Surface	NA
97	Texoil Co.	James	1	9350	P &A	8/22/79	Surface	NA
98	Texoil Co.	S. L. 12466	1	12057	P &A	12/27/92	Surf. & Prod.	NA
99	California Co.	Cities Service	2	10600	P &A	8/13/56	Surface	NA
141	Burk Royalty	S. L. 12466	2	9870	P &A	11/21/90	Surface	NA

[1]Plate 1, Terra Dynamics, Inc., Area of Review Base Map..., Dated 8/27/97.
[2]The data provided are the average flow rates from the 1st Quarter of 1997. The combined permitted maximum cannot exceed 1250 gpm.
[3]Inactive.

Reference Sheet

REF+51973

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TABLE 2 - WATER WELLS

Well No.	Location T., R., Sec.	Latitude	Longitude	Owner	Well Depth (ft.)	Well Use	Year Drilled
				JEFFERSON PARISH			
JF-1	12S,9E,42	295835	901437	Cristina Ice Svc.	460	Unused (Plugged)	1930
JF-2	12S,9E,37	295828	901508	Jefferson Parish School Board	700	Unused(Destroyed)	1932
JF-24	12S,9E,37	295908	901528	NO Public Svc.	845	Test Well(Plugged)	1950
JF-24A	12S,9E,37	295908	901528	NO Public Svc.	708	Test Well(Plugged)	1950
JF-29	12S,9E,37	295831	901543	Louisiana Box Co.	760	Industrial and domestic	1942
JF-31	12S,9E,37	295908	901528	NO Aviation Board	720	Sprinkler system-industrial	1950
JF-55	13S,22E,8	295600	901404	V.P. Lambert Co.	200	Dairy(Abandoned)	1945
JF-58	13S,22E,11	295533	901314	Leon Darcantel	382	Abandoned	1945
JF-59	13S,22E,11	295533	901314	Leon Darcantel	17	Abandoned	--
JF-60	13S,22E,6	295726	901419	E.L. Schroeder	384	Dairy (Abandoned)	1950
JF-64	12S,9E,38	295831	901646	Universal Match	719	Industrial	1956
JF-65	13S,9E,37	295906	901527	NO Aviation Board	698	Industrial	1958
JF-66	13S,9E,37	295907	901529	NO Aviation Board	697	Industrial(Plugged)	1958
JF-75	13S,22E,3	295739	901552	USGS	96	Test well (Plugged)	1960
JF–76	13S,22E,3	295704	901547	USGS	82	Test well(Plugged)	1960
JF-77	13S,22E,3	295749	901537	Cytec	39	Unused (Destroyed)	1960
JF-78	13S,22E,3	295742	901555	Cytec	400	Dairy (Plugged)	1948
JF-79	13S,22E,6	295650	901356	E.H. Johnson	400	Unused (Abandoned)	1950
JF-80	13S,22E,6	295650	901356	E.H. Johnson	50	Unused (Abandoned)	1950
JF-81	13S,22E,6	295651	901356	E.H. Johnson	6	Unused (Abandoned)	1860
JF-92	13S,22E,12	295523	901303	H.G. Deweese	450	Abandoned	1947
JF-111	13S,22E,4	295752	901504	Capt. Ed Bisso	272	Unused(Abandoned)	1935

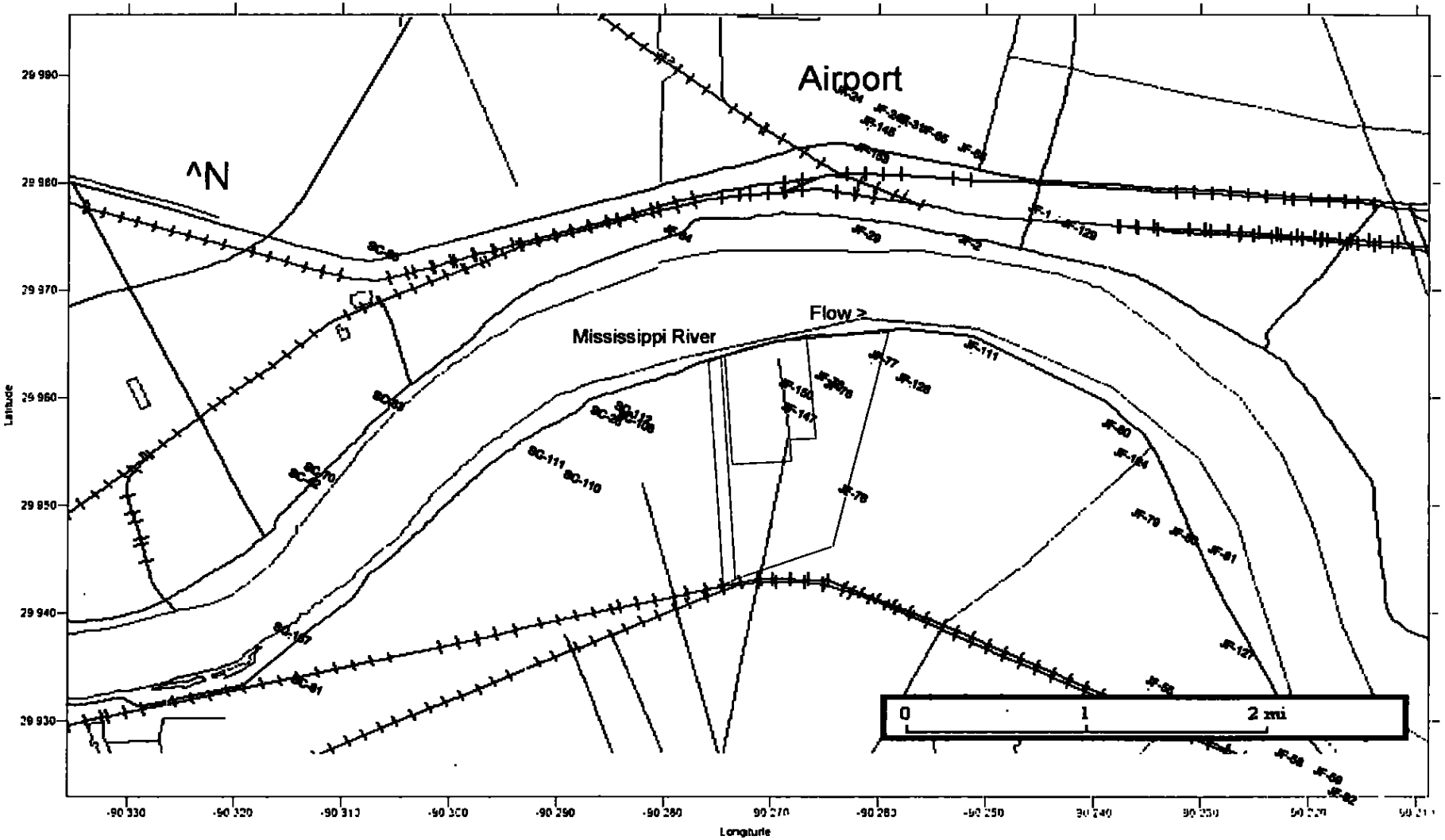
TABLE 2 - WATER WELLS

JF-124	13S,22E,6	295716	901414	Live Oak Manor	400	Industrial	1950
JF-127	13S,22E,8	295612	901338	M.C. Comiskey	184	Unused (Former dairy)	1938
JF-128	13S,22E,4	295741	901527	L. Gaudet, et.al.	356	Unused (Abandoned)	1960
JF-129	12S,9E,42	295835	901437	Cristina Ice Svc.	709	Abandoned(Plugged)	1923
JF-145	12S,09E,38	295907	901539	Aviation Program Mgt.	722	Fire Protection	1995
JF-147	13S,22E,3	295731	901605	Cytec	473	Industrial (Pllugged)	1963
JF-150	13S,22E,3	295739	901606	Cytec	471	Unused (Plugged)	1964
JF-153	12S,9E,37	295858	901541	W&H Warehouse	670	Unused (Abandoned)	1968
ST. CHARLES PARISH							
SC-26	13S,22E,1	295730	901710	Ms. B.F. Clesi	363	Abandoned	1935
SC-42	13S,9E,38	295709	901851	C.W. Mattingly	460	Domestic	1942
SC-43	12S,9E,40	295732	901822	Bob Landry	400	Abandoned	1943
SC-70	13S,9E,38	295711	901846	Charles Goodman	520	Abandoned	1941
SC-81	13S,21E,65	295600	901850	Pizzolato & Post	300	Abandoned	1944
SC-83	12S,9E,40	295735	901823	Bob Landry	360	Unused	1956
SC-85	12S,9E,40	295815	901825	The California Co.	206	Unused (Destroyed)	1957
SC-108	13S,22E,1	295728	901700	T.B. Sellers	200	Stock	1934
SC-110	13S,21E,35	295708	901718	John Walton, Jr.	67	Unused (Abandoned)	1950
SC-111	13S,21E,35	295716	901730	Julius Sellers	100	Test well (never completed)	1935
SC-112	13S,22E,1	295731	901701	T.B. Sellers	80	Unused (Abandoned)	1923
SC-157	13S,21E,30	295617	901855	U.S. Corp of Eng.	175	Test well (Plugged)	1952

Source: Louisiana Department of Transportation and Development, Registered Water Wells, Public Works and Flood Control Division, Water Resources Section, http://www.dotd.state.la.us/wells/intro.html.

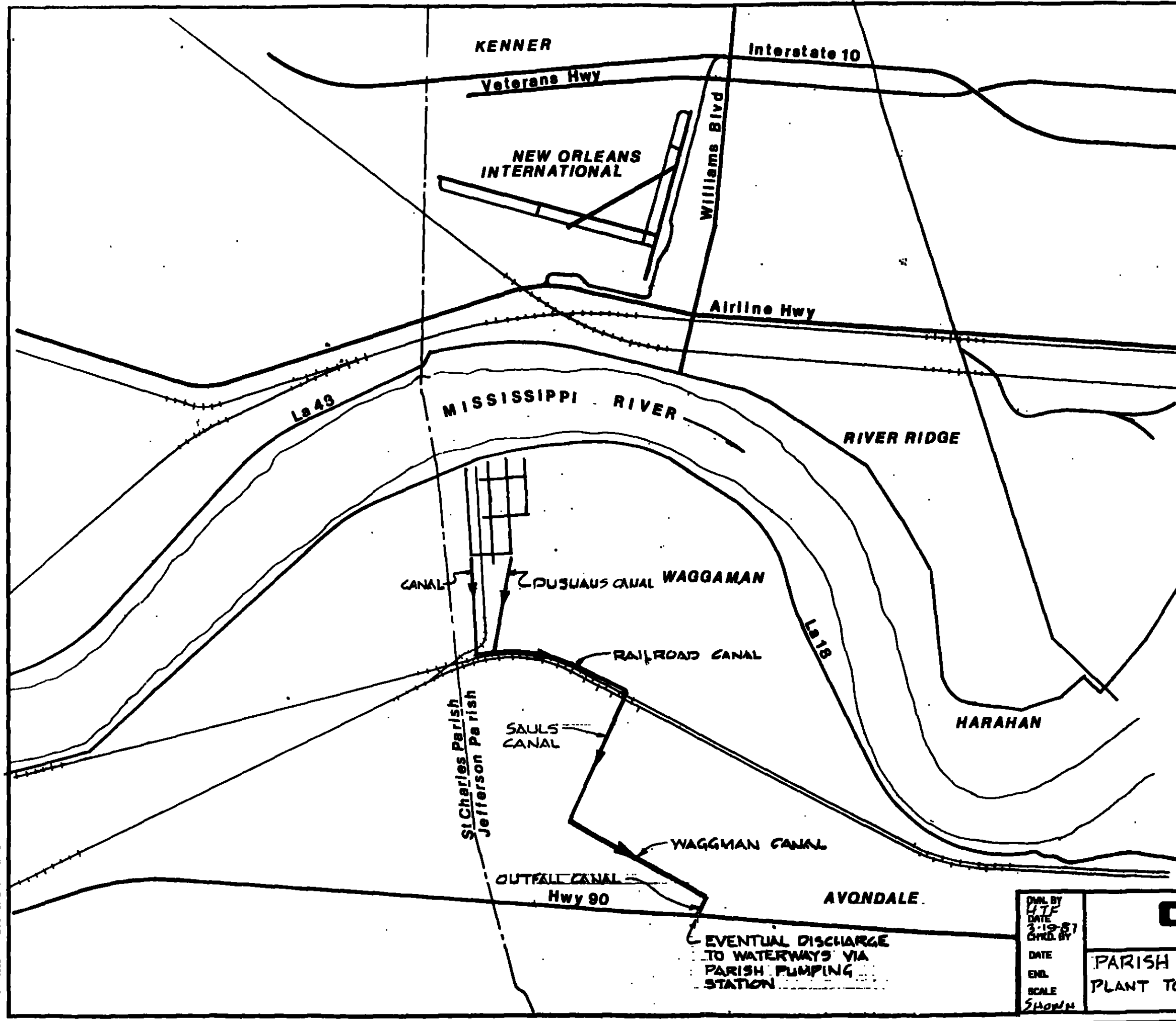
Well locations within two miles of Cytec Industries, Fortier Plant
EPA ID. No LAD008175390

Figure 16



Reference: Louisiana Department of Transportation and Development, Registered Water Wells, Public Works and Flood Control Division, Water Resources Section, http://www.dotd.state.la.us/wells/intro.html

36-SKA-226



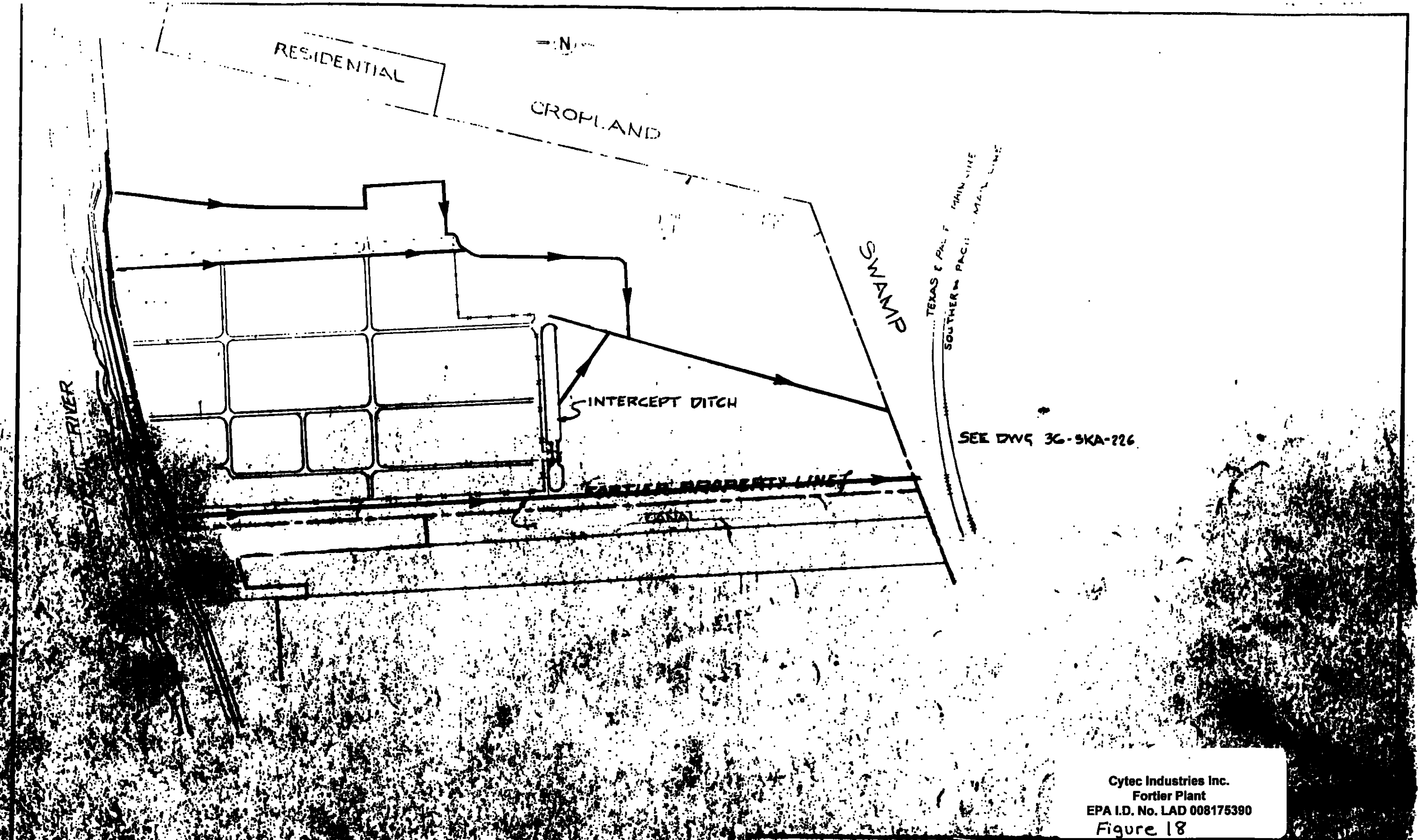
Cytec Industries Inc.
Fortier Plant
EPA I.D. No. LAD 008175390
Figure 17

APPROX SCALE IN MILES
0 1/4 1/2 3/4 1

FIGURE 17

DWN. BY UTF DATE 3-19-87 CHKD. BY DATE ENG. SCALE SHOWN	CYTEC FORTIER PLANT	PCA NO. AUTHORIZATION NO.
	PARISH DRAINAGE FROM PLANT TO OUTFALL CANAL	36-SKA-226
		REVISION NO.

MASSERO BLUEPRINT & SUPPLY CO. N79427



Cytec Industries Inc.
Fortier Plant
EPA I.D. No. LAD 008175390
Figure 18

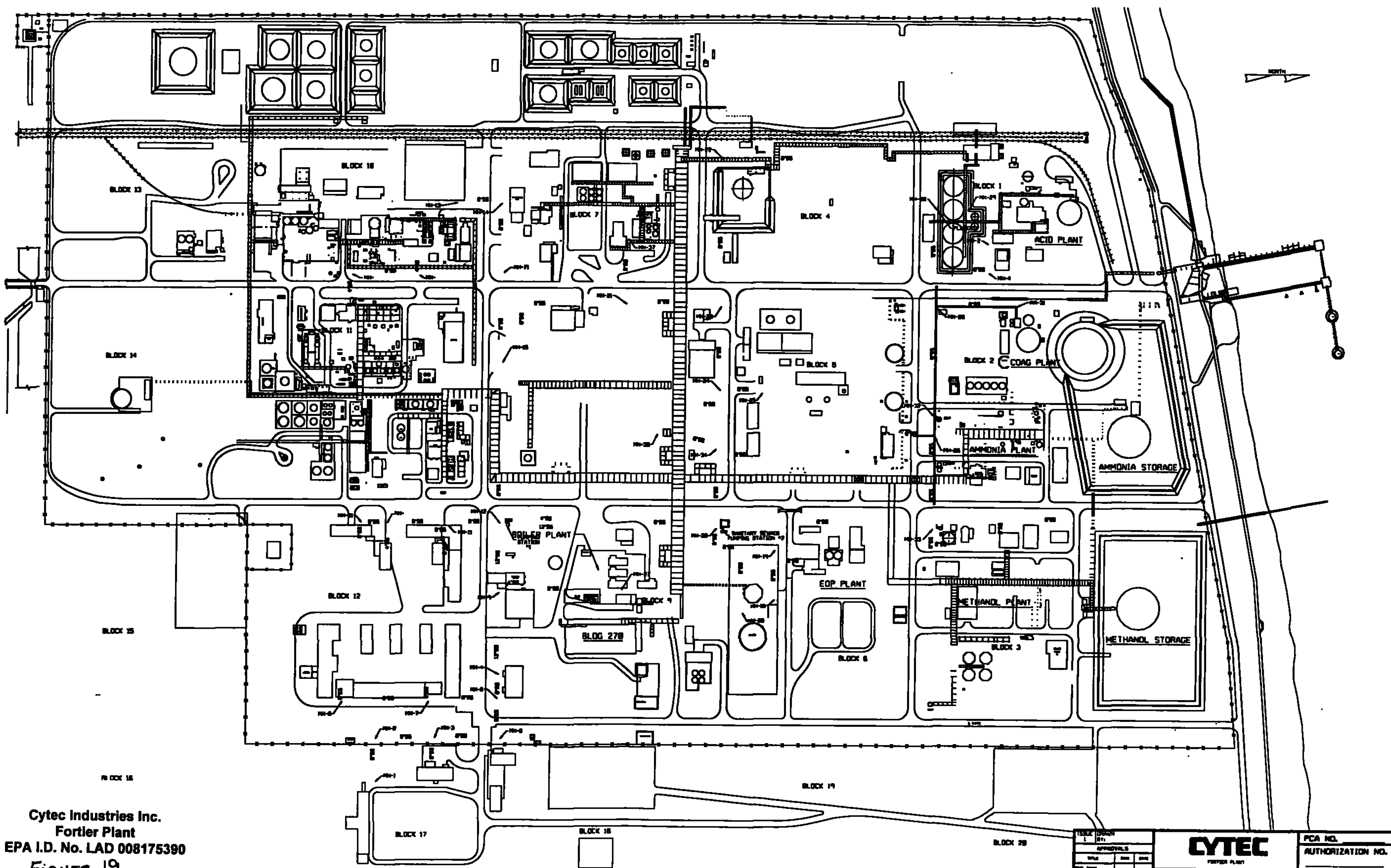
REVISIONS			APPROVALS
	DATE	APPR.	

DWN. BY DAB
DATE 12-6-76
CHKD. BY
DATE
ENG.
SCALE

CYTEC
FORTIER PLANT

FORTIER PLANT
EXTERIOR COLLECTION DITCHES

PCA NO.
AUTHORIZATION NO.
36-SKA-224
REVISION NO.

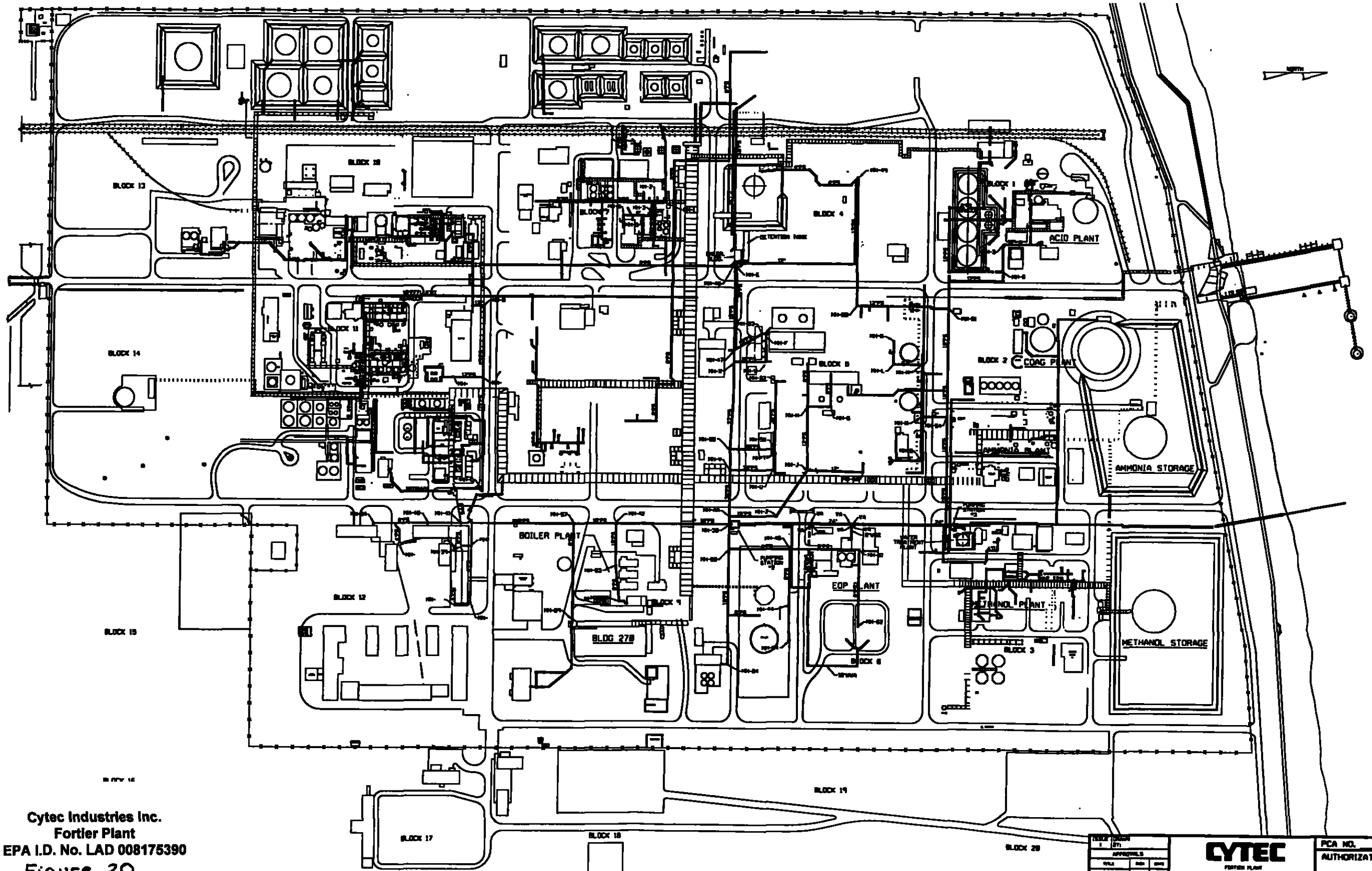


Cytec Industries Inc.
Fortier Plant
EPA I.D. No. LAD 008175390
Figure 19

CYTEC
UTILITES-PLANT WIDE PLANTWIDE
SANITARY SEWER COLLECTION SYSTEM FLOW DIAGRAM

CYTEC CADD NO.		DRAWING NO.	ISSUE NO.
36	Ø	36	P

c:\dgn\sewage\general\3600036.dgn Sep. 15, 1997 09:13:56



Cytec Industries Inc.
Fortier Plant
EPA I.D. No. LAD 008175390
Figure 20

CYTEC
FORTIER PLANT

PCA NO.
AUTHORIZATION NO.

UTILITES-PLANT WIDE
PLANTWIDE

PROCESS SEWER COLLECTION SYSTEM
FLOW DIAGRAM

CYTEC CADD NO.			ISSUE NO.
36	0	37	P

c:\dgn\sewage\general\3600037.dgn Sep. 15, 1997 09:15:25

Reference Sheet

REF+51974

12/29/99 10:38 AM

Reference Sheet

REF+51975

12/29/99 10:38 AM

ADJACENT LANDOWNERS INDEXED TO MAP
CYTEC INDUSTRIES - FORTIER PLANT
Updated December 19, 1997

The manufacturing complex is located on only 268 acres in the North-East section of the 585 acre tract originally purchased on April 23, 1952. All of the 585 acre tract is zoned M-2 (heavy industrial). This layout created a 317 acre buffer zone to the South and East of the manufacturing complex. A buffer zone was created on the West side of the manufacturing complex when a 15.76 acre plot was purchased in June 1955. Cytec Industries owns all land adjacent to the Fortier Manufacturing Complex fence line. Although there are no adjacent property owners other than the Fortier Manufacturing Complex, ownership of land closest to each side of the original 585 acre tract is provided below.

WEST SIDE:

All of the land between the Fortier Manufacturing Complex's Western fence line and the boundary between Jefferson Parish and St. Charles Parish is zoned R-2 (two family residential) except for a strip along River Road extending from the Fortier Manufacturing Complex's Western fence line to Lauve Lane and approximately 275 to 500 feet to the South. (The exact distance to the South could not be determined accurately from the Jefferson Parish zoning map.) All landowners between the Fortier Manufacturing Complex's Western fence line and Lauve Lane are:

Cytec Industries, Inc., et al Garret Mountain Plaza West Paterson, New Jersey 02424	Numerous tracts of land (79 of 84 total) between the original 585 acre purchase and Lauve Lane identified as: 1/2 of original lot 3, lot Y-2, lot DA2, lot E-1, lot A-1, lot A-2, lot B, all lots (1 through 65) in Fortier Heights Subdivision, original lot A, original lot B, lower 1/2 of lot 1, lot 1-A, lot 1-B, lot 1-C, lot 1-D, tract CP No. 1 and tract MP No.2,
Robert R. Charlebois 1011 Milan Street New Orleans, LA	Lot AA2 on East side of Fortier Heights (formerly Lucille Ave), 105 Fortier Hts. COB 1001/127:IN#96310
Adam Matthews 119 Fortier Heights Waggaman, LA 70094	Lot BA2 on East side of Fortier Heights (formerly Lucille Ave), 119 Fortier Hts. COB 812/921,IN#638910
Carlie Petit 125 Fortier Heights Westwego, LA 70094	Lot CA2 on East side of Fortier Heights (formerly Lucille Ave), 125 Fortier Hts. COB 354/377,IN#30172

Lamont L. Murphy 3505 Palmisano Blvd. Chalmette, LA 70043	Lots CB2 and DB2 on Wast side of Fortier Heights (formerly Lucille Ave), 124 Ft. Hts. COB 1567/230:IN#8648005 COB 1773/264:IN#87-37514

SOUTH SIDE:

The Southern buffer zone varies between 3,000 and 4,000 feet wide and extends from the Fortier Manufacturing Complex's Southern fence line to the boundary between Sections 3 and 4 (the 40 arpent line). The land between the 40 arpent line and the railroad tracks is zoned M-2 (heavy industrial). The land South of the railroad tracks is zoned U-1 (unrestricted). The land adjacent to the Fortier Manufacturing Complex's Southern buffer zone is owned by:

Ladies of the Sacred Heart, et al c/o Miss L. Savoy 2432 Jefferson Avenue New Orleans, LA	184 acre tract in Section 34 Tax Bill # 55802

NORTH SIDE:

Cytec owns the batture between the Fortier Manufacturing Complex's Northern fence line and the Mississippi river. The river runs along the entire North side, and is more than 1/2 mile wide at this location. Hence there are no adjacent private property owners to the North.

EAST SIDE:

The Eastern buffer zone (created by the original 585 acre pruchase) varies between 900 and 1,700 feet wide and extends from the Fortier Manufacturing Complex's East fence line to a 67.65 acre tract of land (identified as Tracts X, Y & Z). Since the Fortier Manufacturing complex also owns this tract, the effective buffer zone extends to the boundary between Sections 3 and 4. The Northern part of the Kenner Subdivision is zoned S-1 (suburban residential) and the Southern part of the Kenner Subdivision is zoned M-2 (heavy industrial). About 16 tracts in the middle are zoned part S-1 and part M-2. (The exact number of tracts cannot be accurately determined from the Jefferson Parish zoning map.) Owners of the land nearest to the Fortier Manufacturing complex's Eastern buffer zone are:

Cytec Industries, Inc., et al Garret Mountain Plaza West Paterson, New Jersey 02424	Tracts X, Y & Z consisting of 67.65 acres
Victor C. Bostick 10535 River Road Westwego, LA 70094	Lot 2, Square "O" South Kenner Subdivision, Tax Bill # 54421

City of New Orleans Department of Property Management City Hall New Orleans, LA	Lots 3, 4, 5, 6, 7, 9, 10, 11, 12,, 13, 14, 15, 16 and 17, Square "O" South Kenner Subdivision. Exempt COB 2924/674 (Lots 6, 7 and 9)
Elva Weiss, et al 704 Port Royal Way Pensacola, FL 32501	S4,T13S,R22E, 88.503 acres in South Kenner Subdivision.
Harold L. Molaison, et al 33 Willow Drive Gretna, LA	Plot 42, South Kenner Subdivision. Tax Bill # 57671
Mrs. Rita D. Rigamer, et al 634 S. Kenner Avenue Waggaman, LA	Lots L19, L20, L57 and L58 located in the Elmore Gardens Subdivision of plots 44 and 46. Tax Bill # 58544
Ethel H. Lawton 133 Glenwood Ave Harahan, LA 70123	Plot 48A, South Kenner Subdivision COB 2961/468 5.99 acres
Frank L. Barousse 816 S. Kenner Avenue Westwego, LA 70094	Plot 50A, South Kenner Subdivision Tax Bill # 54178 2.973 acres
Jan Joseph Vidonne, Sr. 812 S. Kenner Avenue Waggaman, LA 70094	Plot 50B, South Kenner Subdivision CB 2962/789;IN9730889 3.27 acres
Jules F. Barousse, Jr. 808 S. Kenner Avenue Westwego, LA 70094	Plot 50C, South Kenner Subdivision Tax Bill # 54179 3.31 acres
Ginger Ayers Lewis (w/o Michael A. Lewis) 39551 Hwy. 1056 Mt. Hermon, LA 70450	Plot 52, South Kenner Subdivision Tax Bill # 57127 8.29 acres
Rose Caronna White, et al 160 Dorothy Drive Avondale, LA 70094	Plot 54, South Kenner Subdivision COB 2959/800;IN#9721432 8.01 acres
Michelle Shuh. et al 10149 N. Kelly Lane Waggaman, LA 70094	Plot 56, South Kenner Subdivision COB 2969/318;IN9748826 7.73 acres

Bobby G. Guillot, et al 5541 Amite Dr. Marrero, LA 70072	Lot 58B, South Kenner Subdivision COB 2909/730 7.44 acres (including 58A)
Mandy Lynn Arcement 2281 Columbo Dr. Harvey, LA 70058	Lot 60, South Kenner Subdivision COB # 2910/2 7.16 acres
Edward F. Phillips 111, et al 5810 Waterford Valley Crescent Apt. # 718 Raleigh, NC 27612	Plots 62, 64 and 66, South Kenner Subdivision, COB # 2957/377 Plot 62=6.86 acres, Plot 64=6.60 acres Plot 66=6.32 acres
West Jefferson Corporation c/o Donald P. Mitchell 20 Lark Street New Orleans, LA	Plots 68 through 88, South Kenner Subdivision, Tax Bills # 59968 through 59987

Appendix K

LAC 33:V.517.B.3
LAC 33:V.517.T.2
LAC 33:V.1503.B.3

Flood Plain Documentation

DEPARTMENT OF THE ARMY
NEW ORLEANS DISTRICT, CORPS OF ENGINEERS
P. O. BOX 60267
NEW ORLEANS, LOUISIANA 70160

IN REPLY REFER TO
LMNPD-M

13 February 1979

FEB 23 1979

Mr. T. V. Maulden
Civil Engineer
American Cyanamid Company
Fortier Plant
10800 River Road
Westwego, LA 70094

Dear Mr. Maulden:

Reference is made to your letter dated 6 February 1979 in which you requested the 100- and 500-year flood levels for the American Cyanamid Fortier Plant located in Westwego, Jefferson Parish, Louisiana.

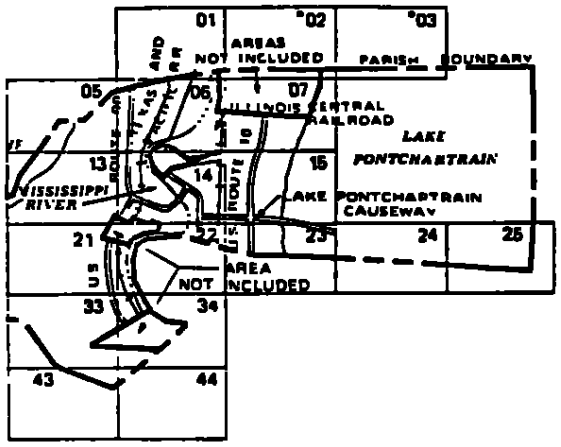
Information from a flood insurance study done for the Federal Insurance Administration indicates that your site is not affected by the 500-year flood, that is, it is located above the 500-year flood plain. We are returning your map which shows the location of your Fortier Plant.

Should you require additional information concerning the above, please contact Mr. R. J. Kliebert at (504) 865-1121, extension 249.

Sincerely yours,

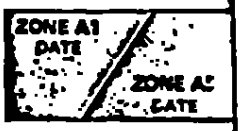
JAMES F. ROY
Chief, Planning Division

1 Incl
As stated



KEY TO SYMBOLS

ZONE DESIGNATIONS* WITH DATE OF IDENTIFICATION
ie., 12/2/74



Base Flood Elevation Line with elevation in feet — 513 —

Base Flood Elevation where uniform within zone (EL 587' MSL)

Elevation Reference Mark RM7 x

River Mile M1.5

*EXPLANATION OF ZONE DESIGNATIONS

A flood insurance map displays the zone designations for a community according to areas of designated flood hazards. The zone designations used by FIA are

Zone	Explanation
A	Areas of 100-year flood; base flood elevations and flood hazard factors not determined
AO	Areas of 100 year shallow flooding; flood depth 1 to 3 feet, product of flood depth (feet) and velocity (feet per second) less than 10
A1 - A30	Areas of 100-year flood; base flood elevations and flood hazard factors determined
A99	Areas of 100-year flood to be protected by a flood protection system under construction; base flood elevations and flood hazard factors not determined
B	Area between limits of 100-year flood and 500 year flood; areas of 100-year shallow flooding where depths less than 1 foot
C	Areas outside 500-year flood
D	Areas of undetermined but possible, flood hazards
V	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors not determined.
VO	Areas of 100-year shallow flooding with velocity, flood depth 1 to 3 feet product of depth (feet) and velocity (feet per second) more than 10
V1 - V30	Areas of 100 year coastal flood with velocity (wave action); base flood elevations and flood hazard factors determined

CONSULT NFIA SERVICING COMPANY OR LOCAL INSURANCE AGENT OR BROKER TO DETERMINE IF PROPERTIES IN THIS COMMUNITY ARE ELIGIBLE FOR FLOOD INSURANCE.

INITIAL IDENTIFICATION DATES: JUNE 25, 1969
MARCH 13, 1970
OCTOBER 13, 1973

INTERIM MAP REVISION EFFECTIVE JULY 1, 1974
TO CHANGE ZONE DESIGNATIONS

MAP REVISION EFFECTIVE JULY 9, 1976
TO REFLECT CURVILINEAR FLOOD BOUNDARY,
TO CHANGE ZONE DESIGNATIONS
AND TO ADD SFHA

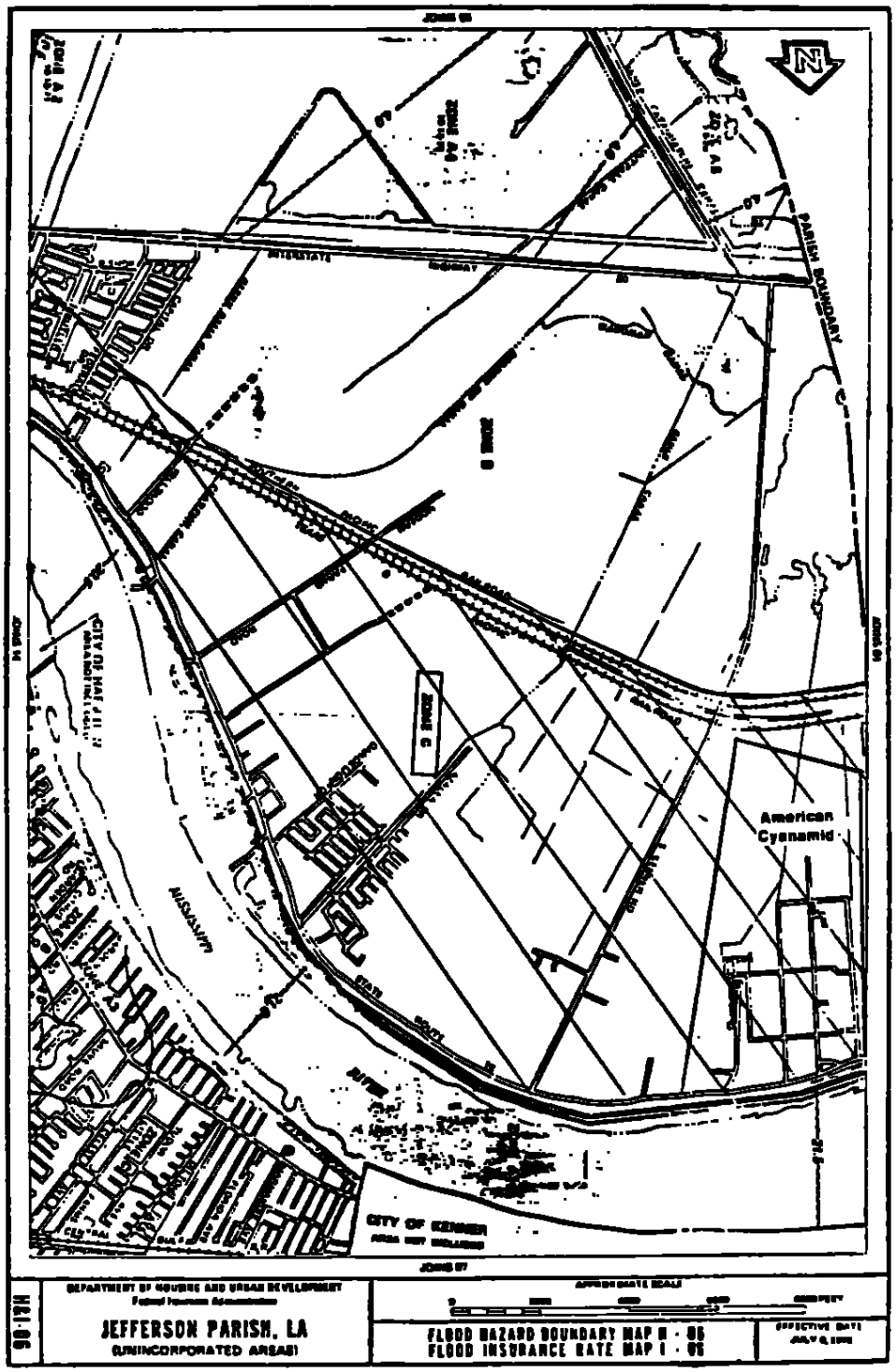
DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
Federal Insurance Administration

FLOOD HAZARD BOUNDARY MAP H - 01 - 51
FLOOD INSURANCE RATE MAP I - 01 - 51

MAP INDEX

JEFFERSON PARISH, LA
(UNINCORPORATED AREAS)

COMMUNITY NO. 225199B


JONES ST
ZONE A4
ZONE A6
INTERSTATE
HIGHWAY
PARISH BOUNDARY
ZONE B
RAILROAD
ZONE C
CITY OF HAY
MISSISSIPPI
RIVER
STATE
ROUTE
American
Cyanamid
CITY OF KENNER
ZONE C
ZONE C
JONES ST
DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
Federal Insurance Administration
JEFFERSON PARISH, LA
(UNINCORPORATED AREAS)
APPROXIMATE SCALE
FLOOD HAZARD BOUNDARY MAP H - 05
FLOOD INSURANCE RATE MAP I - 05
EFFECTIVE DATE
JULY 6, 1978
90-1930

United States Army Corps of Engineers
New Orleans District

FACSIMILE TRANSMITTAL HEADER SHEET

FROM:

Harris Blanchard
United States Army Corps of Engineers, New Orleans District
Planning Division (CELMN-PD-FB)
P. O. Box 60267
New Orleans, Louisiana 70160-0267
(504) 862-2556 (wk)
(504) 862-2572 (fax)

TO:

Ms. Stacy Foret
(504) (phone)
(504-431-6476) (fax)
Number of Pages (including this header): 4
Date:October 14, 1997
Time: 2:40pm

Remarks:

Authorized Signature

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

JEFFERSON PARISH, LOUISIANA AND INCORPORATED AREAS

PANEL 30 OF 350
(SEE MAP INDEX FOR PANELS NOT PRINTED)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
HARAHAN, CITY OF	225200	0030	E
KENNER, CITY OF	225201	0030	E
UNINCORPORATED AREAS	225199	0030	E

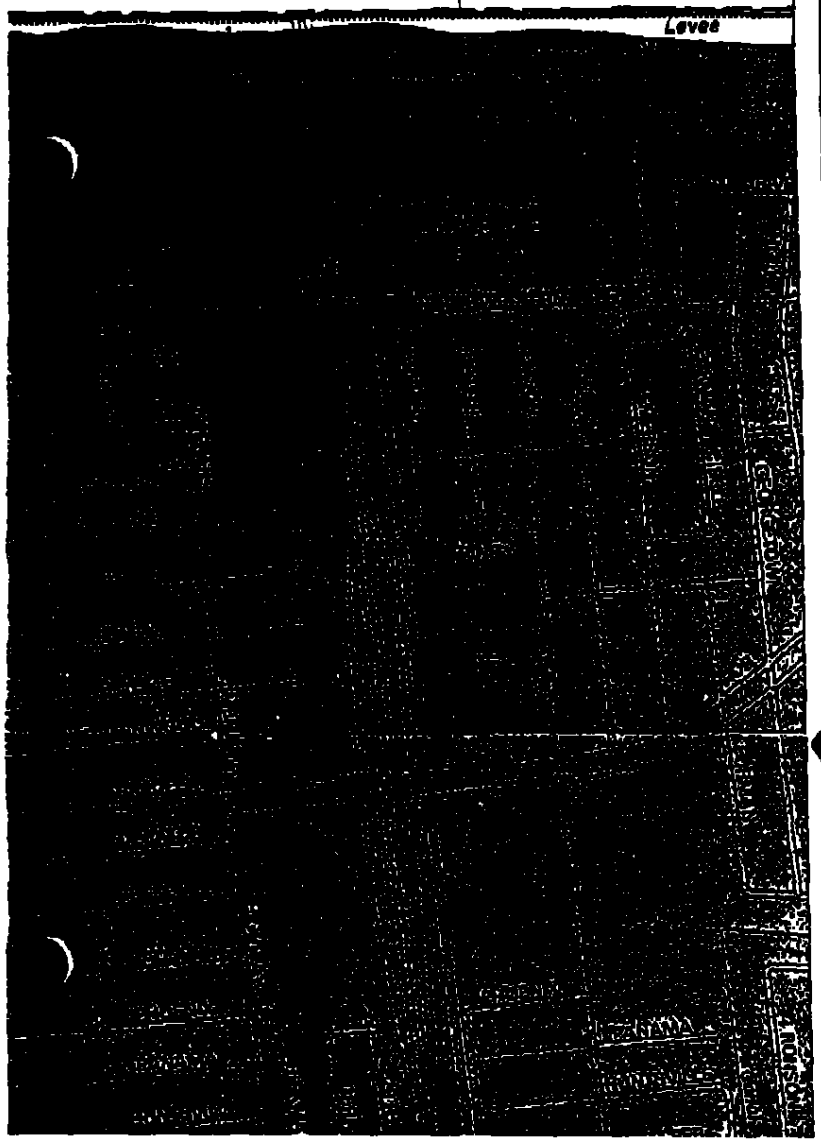
Notice To User: The MAP NUMBER shown below should be used when placing map orders; the COMMUNITY NUMBER shown above should be used on insurance applications for the subject community.

MAP NUMBER
22051C0030 E

EFFECTIVE DATE:
MARCH 23, 1995

Federal Emergency Management Agency

ZONE A



LEGEND

SPECIAL FLOOD HAZARD AREAS INUNDATED BY 100-YEAR FLOOD

ZONE A No base flood elevations determined.

ZONE AE Base flood elevations determined.

ZONE AH Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.

ZONE AO Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.

ZONE A99 To be protected from 100-year flood by Federal flood protection system under construction; no base flood elevations determined.

ZONE V Coastal flood with velocity hazard (wave action); no base flood elevations determined.

ZONE VE Coastal flood with velocity hazard (wave action); base flood elevations determined.

FLOODWAY AREAS IN ZONE AE

OTHER FLOOD AREAS

ZONE X Areas of 500-year flood; areas of 100-year flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 100-year flood.

OTHER AREAS

ZONE X Areas determined to be outside 500-year floodplain.

ZONE D Areas in which flood hazards are undetermined.

UNDEVELOPED COASTAL BARRIERS†

Identified 1983 | Identified 1990 or Later | Otherwise Protected Areas Identified 1991 Or Later

†Coastal barrier areas are normally located within or adjacent to special flood hazard areas.

Floodplain Boundary

Floodway Boundary

Zone D Boundary

Boundary Dividing Special Flood Hazard Zones, and Boundary Dividing Areas of Different Coastal Base Flood Elevations Within Special Flood Hazard Zones.

513 — Base Flood Elevation Line; Elevation in Feet*

D — D Cross Section Line

(EL 987) Base Flood Elevation in Feet Where Uniform Within Zone*

RM7X Elevation Reference Mark

•M1.5 River Mile

*Referenced to the National Geodetic Vertical Datum of 1929

NOTES

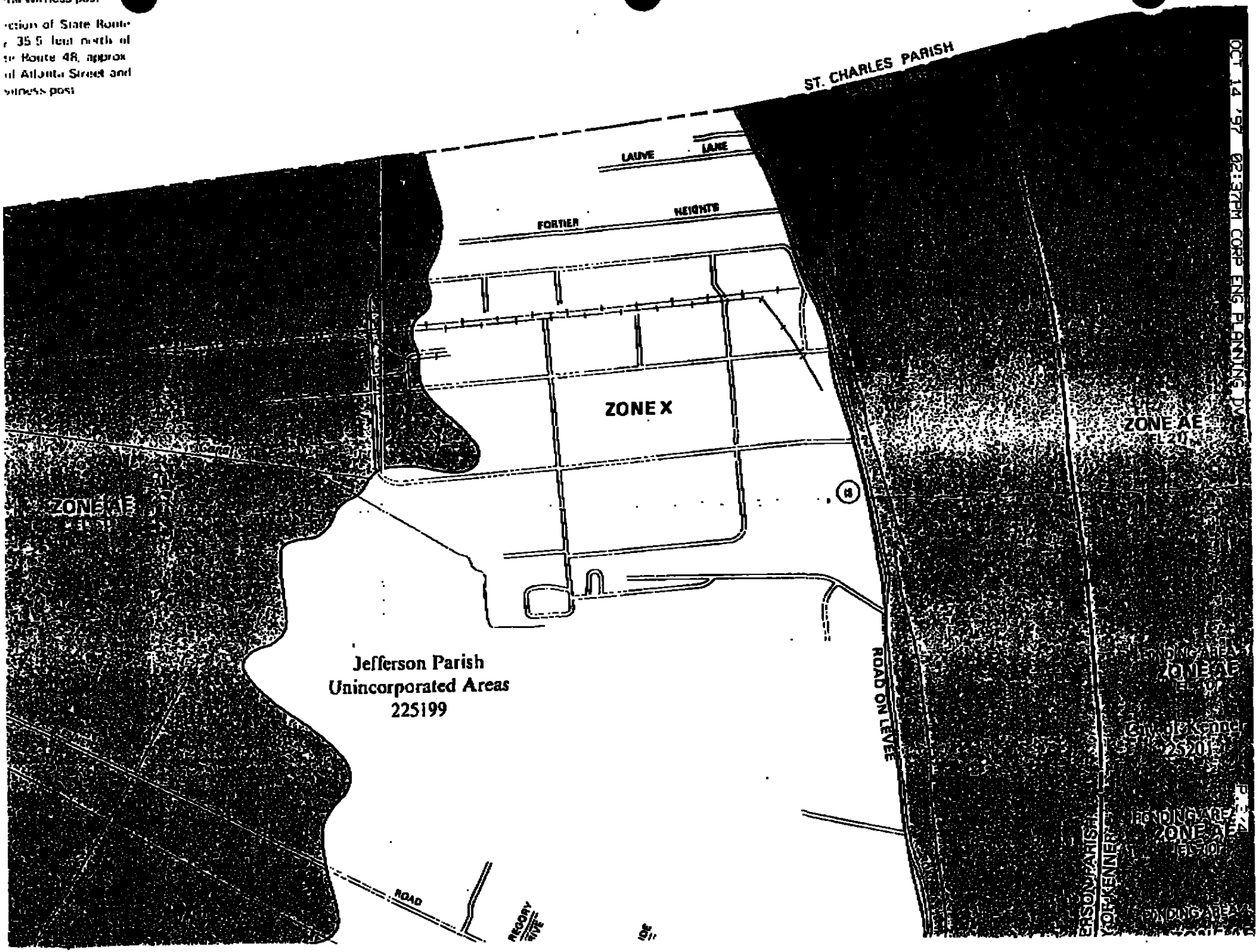
This map is for use in administering the National Flood Insurance Program; it does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size, or all planimetric features outside Special Flood Hazard Areas. The community map repository should be consulted for possible updated flood hazard information prior to use of this map for property purchase or construction purposes.

Coastal base flood elevations apply only landward of 0.0 NGVD, and include the effects of wave action; these elevations may also differ significantly from those developed by the National Weather Service for hurricane evacuation planning.

Areas of special flood hazard (100-year flood) include Zones A, AE, AH, AO, A99, V, and VE.

Clay Street, approx-
of eastbound lane o
ral witness post

ection of State Route
, 35.5 feet north of
e Route 48, approx
of Atlanta Street and
witness post



OCT 14 '97 02:37PM CORP ENG PLANNING DIV

Reference Sheet

REF+51977

12/29/99 10:38 AM

Appendix L

LAC 33:V.517.B.8.

Water Well Analyses

TABLE 3.--RECORDS OF SELECTED WELLS

[FOR EXPLANATION OF AQUIFER CODE, USE, AND TYPES OF LOGS SEE P. 11. AN ASTERISK (*) TO THE LEFT OF A WELL NUMBER INDICATES THE WELL COULD BE USED AS A POTABLE WATER SUPPLY DURING EMERGENCIES]

WELL NUMBER	OWNER	YEAR COMP-LETED	AQUIFER	ALTITUDE OF LAND SURFACE (FEET)	DEPTH OF WELL (FEET)	DEPTH TO FIRST OPENING (FEET)	CASING DIAM-ETER (INCHES)	USE	WATER LEVEL (FEET)	DATE WATER LEVEL MEASURED	DISCHARGE (GALLONS PER MINUTE)	SPECIFIC CAPACITY (GALLONS/ MIN/FOOT)	TYPES OF LOGS AVAILABLE
JF- 1	CRISTINA ICE	1930	112NORC	6	460	400	8	U	8.00	1940	200	--	--
JF- 2	JF PAR SCH BRD	1932	112GZNO	7	700	--	6	Z	15.00	1932	--	--	--
JF- 3	J P CRISTINA	1939	112GZNO	3	780	740	2	U	36.49	07/57	--	--	J
JF- 4	E J FOLSE	1930	112NORC	4	585	545	2	Z	--	--	20	--	--
JF- 5	CRISTINA ICE	1936	112GRMC	4	350	--	8	A	F	1936	250	--	--
JF- 6	PUB BELT RR COM	1933	112GZNO	4	764	--	3-2	Z	12.00	10/33	100	3.3	J
JF- 6A	PUB BELT RR COM	--	112GRMC	4	150	--	3-2	A	F	08/60	--	--	J
JF- 7	JF DRAINAGE DIS	--	112GZNO	1	700	--	4	Z	2.00	05/42	150	--	--
JF- 8	LAFOURCHE LEVEE	--	112GZNO	12	825	765	6	Z	58.00	05/44	--	--	--
JF- 9	AMER CREOSOTE	1914	112GZNO	5	750	--	6	Z	--	--	--	--	--
JF- 10	ARMOUR FERT WKS	1900	112GZNO	3	800	--	8	A	20.00	1941	300	--	--
JF- 11	PENDLETON TERM	1942	112GZNO	6	800	720	6	Z	--	--	600	--	E
JF- 12	JF DRAINAGE DIS	1926	112GZNO	0	880	--	4	Z	14.44	12/42	--	--	--
JF- 13	COM SOLVENTS CO	1925	112GZNO	9	780	700	12-8	N	85.54	06/54	1000	--	--
JF- 14	COM SOLVENTS CO	1930	112GZNO	8	800	720	12-10	U	85.20	07/57	900	--	--
JF- 15	AMER CREOSOTE	1943	112GZNO	5	800	780	6	Z	85.60	06/60	--	--	--
JF- 16	LAFOURCHE LEVEE	1943	112GRMC	12	300	--	10	Z	--	--	--	--	--
JF- 17	PUBLICKER CHEM	--	112GZNO	10	800	--	12	Z	--	--	--	--	--
JF- 18	PUBLICKER CHEM	1943	112GZNO	7	782	694	12-8	N	94.75	02/60	1500	--	--
JF- 19	PUBLICKER CHEM	1943	112GZNO	8	780	690	12-8	N	--	--	--	--	--
JF- 20	PUBLICKER CHEM	1943	112GZNO	9	800	--	12-10	U	75.99	01/58	920	25.0	--
JF- 21	PUBLICKER CHEM	1942	112GZNO	9	800	720	12-8	U	74.07	07/57	900	24.0	J
JF- 22	S N COLLENBERG	1947	111PNBR	13	59	49	2	U	9.50	11/60	4 F	--	--
JF- 23	MARRERO LAND	1949	112GRMC	4	202	192	2	U	+ 2.50	01/49	5 F	--	D
JF- 24	N O AVIATION BD	1950	--	1	845	--	--	T	--	--	--	--	D
JF- 24A	N O AVIATION BD	1950	112GZNO	1	708	678	6-4	T	14.70	05/50	35	--	D,E
* JF- 25	LA POWER & LIGHT	1949	112GZNO	14	878	754	12-8	E	62.00	03/50	1200	20.7	D
JF- 26	JOHN FRABIALE	1950	112GRMC	1	185	180	2	Z	+ 3.50	05/50	2 F	--	--
JF- 27	R A LOUVIER	1948	112GRMC	0	200	190	2	Z	F	05/50	2 F	--	--
* JF- 28	LA POWER & LIGHT	1949	112GZNO	12	807	685	12-8	E	79.97	01/61	1300	28.3	D
JF- 29	LA BOX CO	1942	112GZNO	7	760	680	6-4	N	35.00	05/54	125	--	--
JF- 30	GEORGE ROBERT	1950	111SLNO	11	158	148	2	U	7.00	07/50	17	--	D
* JF- 31	N O AVIATION BD	1950	112GZNO	1	720	640	10-8	AC	18.08	09/50	500	13.6	D,E
JF- 32	ED MARTIN SEAFD	1922	112GRMC	5	240	--	8	Z	1.48	09/50	--	--	--
JF- 33	CUTCHER CAN CO	1950	112GRMC	8	290	250	6-4	U	+ 1.66	04/58	--	--	--

JF-	34	HUNT-WESSON FOODS	1946	112GZNO	8	807	724	12-8	U	54.00	04/46	810	25.3	D,J
JF-	35	SO SHELLFISH CO	1949	112GRMC	5	270	228	10-6	U	12.95	08/56	360	9.6	D,J
JF-	36	S J WEAVER	1947	112NORC	3	454	434	2	H	--	--	--	--	--
JF-	37	RHEEM MFG CO	1953	112GZNO	8	787	688	16-10	U	55.00	05/53	1500	--	D,E
JF-	38	U S STEEL CORP	1952	112GZNO	10	725	685	6-4	Z	50.00	06/52	220	--	D
JF-	39	CUTCHER CAN CO	1952	112GRMC	8	241	211	8-6	U	+ 0.32	03/58	300	--	D
JF-	40	SCHWEGMANN BROS	1950	112GZNO	1	810	--	6-4	U	--	--	--	--	--
JF-	41	SCHWEGMANN BROS	1954	112GZNO	1	728	688	8-6	U	--	--	600	--	D
JF-	42	CRISTINA ICE	1946	112GRMC	4	282	242	8	U	11.00	05/54	175	--	J
* JF-	43	LA POWER & LIGHT	1951	112GZNO	13	835	708	12-8	E	75.00	03/52	1480	26.0	D,J
JF-	44	JOHNS-MANVILLE	1953	112GZNO	5	788	728	12-6	U	80.00	09/53	1000	13.0	D,E
JF-	45	JOHNS-MANVILLE	1953	112GZNO	5	793	733	12-8	U	80.00	09/53	1000	15.6	D,E
JF-	46	JF DRAINAGE DIS	1953	112GRMC	0	250	--	2	H	--	--	--	--	--
JF-	47	SOUTHERN PAC RR	1955	112GRMC	3	148	--	8	U	6.60	01/57	85	5.9	D
JF-	48	PUBLICKER CHEM	1955	112GZNO	7	780	700	16-10	O	95.20	07/57	1500	17.6	D
JF-	49	SO SHELLFISH CO	1957	112GRMC	5	270	205	12-6	N	13.34	03/58	525	27.5	D
JF-	50	JF DRAINAGE DIS	--	112GZNO	5	700	--	8-4	U	1.09	04/57	--	--	--
JF-	51	JF DRAINAGE DIS	1953	112NORC	0	350	--	2	U	--	--	--	--	--
JF-	52	JF DRAINAGE DIS	1953	112GRMC	0	260	--	2	H	--	--	--	--	--
JF-	53	E J FOLSE	1927	112NORC	5	585	--	2	Z	3.83	05/57	--	--	--
JF-	54	AMER CREOSOTE	1954	112GZNO	5	772	691	6-4	Z	95.16	09/63	--	--	--
JF-	55	V P LAMBERT CO	1945	112GRMC	5	200	--	2.5	A	2.97	01/59	--	--	--
JF-	56	CHARLES ISRAEL	1951	112GRMC	-1	221	--	3	S	--	--	--	--	--
JF-	57	TV STATION WWL	1957	112NORC	1	368	--	--	U	--	--	--	--	--
JF-	58	LEON DARCANTEL	1945	112NORC	10	382	362	3-2.5	U	6.55	04/60	--	--	J
JF-	59	LEON DARCANTEL	--	111SLNO	10	17	--	48	U	2.49	04/60	--	--	--
JF-	60	E L SCHROEDER	1950	112NORC	13	384	--	3	U	21.55	04/60	--	--	J
JF-	61	TIMBERLANE CC	1960	112NORC	-1	422	382	6-4	Z	+ 0.25	06/60	300	--	D,J
JF-	62	ROBERT WIEGAND	1931	111SLNO	12	160	120	4	U	12.00	08/31	--	--	--
JF-	63	RANSOM LUMBER	1947	112GZNO	11	800	--	4	Z	--	--	150	--	--
* JF-	64	UNIVERSAL MATCH	1956	112GZNO	4	717	656	10-6	N	44.54	09/76	525	--	D,E
JF-	65	N O AVIATION BD	1958	112GZNO	1	698	638	10-8	A	28.50	12/58	--	--	D
JF-	66	N O AVIATION BD	1958	112GZNO	3	697	637	10-8	A	32.98	10/60	545	21.1	D
* JF-	67	C DENNERY INC	1956	112GZNO	5	788	698	10-5	N	55.00	02/56	656	20.5	D
JF-	68	DELTA PETROLEUM	1954	112GZNO	5	717	676	6-4	U	--	--	--	--	D
JF-	69	NATIONAL GYPSUM	1955	112GZNO	5	761	719	6-4	Z	75.00	12/57	200	--	D
JF-	70	NATIONAL GYPSUM	1955	112GZNO	5	768	727	6-4	Z	74.00	11/55	200	--	D
JF-	71	GR NO EXPWY COM	1956	112GZNO	11	566	551	4	H	66.60	03/63	--	--	D
JF-	72	FRANK CLANCY	1953	112GRMC	-1	220	--	2	S	2.14	10/60	--	--	--
JF-	73	FRANK CLANCY	1953	112GRMC	-2	220	--	2	S	+ 3.57	06/60	--	--	--
JF-	74	FRANK CLANCY	1953	112GRMC	-1	220	--	2	U	1.29	10/60	--	--	--
JF-	75	U S GEOL SURVEY	1960	111PNBR	10	96	90	1.25	O	3.60	07/60	8	--	D
JF-	76	U S GEOL SURVEY	1960	--	5	82	--	--	T	--	--	--	--	D
JF-	77	AM CYANAMID CO	--	111PNBR	10	39	--	2	U	4.57	07/60	--	--	--
JF-	78	AM CYANAMID CO	1948	112NORC	11	400	--	2	Z	--	--	--	--	--

TABLE 3.--RECORDS OF SELECTED WELLS--CONTINUED

WELL NUMBER	OWNER	YEAR COMP-LETED	AQUIFER	ALTITUDE OF LAND SURFACE (FEET)	DEPTH OF WELL (FEET)	DEPTH TO FIRST OPENING (FEET)	CASING DIAM-ETER (INCHES)	USE	WATER LEVEL (FEET)	DATE WATER LEVEL MEASURED	DISCHARGE (GALLONS PER MINUTE)	SPECIFIC CAPACITY (GALLONS/ MIN/FOOT)	TYPES OF LOGS AVAILABLE
JF- 79	E H JOHNSON	1950	112NORC	13	400	--	2	U	19.96	08/60	--	--	--
JF- 80	E H JOHNSON	1950	111PNBR	13	50	--	2	U	8.47	08/60	--	--	--
JF- 81	E H JOHNSON	1860	111SLNO	13	6	--	42	U	2.70	04/60	--	--	--
JF- 82	PAILET IND	1933	112NORC	2	460	--	10	U	2.00	02/33	--	--	--
JF- 83	AVONDALE SHIPYD	1942	112GZNO	18	890	--	8	U	53.24	08/60	--	--	J
JF- 84	WESTSIDE CREAMY	1943	111SLNO	6	12	--	36	Z	--	--	--	--	--
JF- 85	WESTSIDE CREAMY	1947	112GRMC	6	225	215	2	Z	--	--	--	--	--
JF- 86	FRANK GAMBINO	1948	112GRMC	6	210	190	2	U	8.23	08/60	--	--	--
JF- 87	HUNT SHIPYARD	1957	112NORC	1	480	460	4	U	+ 2.38	08/60	--	--	E
JF- 88	CHURCHILL FARMS	1927	112NORC	0	400	--	2	U	--	--	--	--	--
JF- 89	J CAPDEBOSCQ,SR	1928	112NORC	5	426	396	2	U	4.52	08/60	--	--	--
JF- 90	J CAPDEBOSCQ,SR	1949	112NORC	5	440	410	2	S	--	--	--	--	--
JF- 91	WALTON ARNONDIN	1950	112GRMC	4	186	--	2	U	6.81	08/60	10	--	--
JF- 92	H G DEWEESE	1947	112NORC	10	450	--	2	U	14.47	08/60	--	--	--
JF- 93	ODELIE PUNCH	1955	112NORC	0	474	462	2-1.5	C	F	1955	--	--	--
JF- 94	J PARADELAS	1951	112GRMC	0	262	256	2	H	1.00	1951	260	--	--
JF- 95	AUGUST FORTADO	1952	112GRMC	0	262	--	2	H	1.00	08/60	--	--	--
JF- 96	JOHN REPAK	1952	112GRMC	0	260	--	2	U	--	--	--	--	--
JF- 97	JOE HOURCADE	1939	112NORC	5	503	--	2	A	F	1939	--	--	--
JF- 98	V BENINATE	1957	112GRMC	1	259	239	4	H	4.00	12/57	--	--	--
JF- 99	V BENINATE	1928	112GRMC	1	260	--	2	Z	--	--	--	--	--
JF- 100	MICHAEL GAMBINO	1939	112GZNO	5	709	--	2	Z	59.07	08/60	--	--	--
JF- 101	MICHAEL GAMBINO	1931	112NORC	5	550	--	2	A	--	--	--	--	--
JF- 102	J F SIEVERS	1928	112NORC	5	560	--	2	U	2.15	06/61	--	--	--
JF- 103	CHRISTIANA BROS	1956	112GRMC	0	289	274	3	U	--	--	--	--	--
JF- 104	PETER KOGOS	1945	112GRMC	3	355	315	4	U	0.31	05/61	--	--	J
JF- 105	W DELGRANDILE	1944	112GRMC	4	322	282	2	Z	--	--	--	--	--
JF- 106	EDDIE OTERO	1934	112NORC	4	485	--	6	Z	--	--	--	--	--
JF- 107	EDDIE OTERO	1928	112GRMC	4	374	--	6	U	+ 0.75	08/60	--	--	J
JF- 108	CLEM PERRIN	1944	112GRMC	5	360	--	--	Z	--	--	--	--	--
JF- 109	H GEORGUSIS	1960	112GRMC	4	371	351	6-4	C	0.00	05/63	400	--	D
JF- 110	H GEORGUSIS	1944	112GRMC	4	320	--	4	C	--	--	--	--	--
JF- 111	CAPT ED BISSO	1935	112GRMC	13	272	--	2	U	5.00	05/35	--	--	--
JF- 112	RUSSELL CARPET	1956	112GZNO	5	790	750	6-3	C	68.00	04/56	61	2.9	D
JF- 113	A J SALZER	1952	111SLNO	5	70	--	1.5	U	--	--	--	--	--
JF- 114	UNCAS B FAVRET	--	111SLNO	2	136	--	1.5	A	--	--	--	--	--
JF- 115	FRANK J EBLE	1952	112NORC	1	490	--	2	Z	16.00	08/52	--	--	--
JF- 116	EARNEST CONST	1941	112NORC	6	463	--	2.5	Z	1.00	08/41	--	--	--
JF- 117	H A FABACHER	1954	112GRMC	5	153	--	--	T	--	--	--	--	--
JF- 118	H A FABACHER	1954	112GZNO	5	785	765	4	H	--	--	--	--	--

	JF- 119	A C CARTER	1950	111SLNO	1	58	55	2	Z	8.00	01/51	--	--	--
	JF- 120	GULF ATL WREHSE	1920	112GZNO	3	780	705	8	Z	78.20	09/60	--	--	J
	JF- 121	W J FOURROUX	1953	112GRMC	-1	263	253	2	S	4.00	06/60	--	--	--
	JF- 122	WWL RADIO-LOY.U	1939	112NORC	0	350	340	--	Z	--	--	--	--	--
	JF- 123	WWL RADIO-LOY.U	1948	112NORC	0	350	335	--	C	--	--	5	--	--
	JF- 124	LIVEOAK MANOR	1950	112NORC	12	400	--	2	U	--	--	6	--	--
	JF- 125	J J RELLE, INC	1950	111SLNO	3	60	59	2	S	1.30	11/60	--	--	--
	JF- 126	FAITH G HECKER	1925	112NORC	5	440	403	4	U	4.50	05/61	--	--	J
	JF- 127	DR M C COMISKEY	1938	112GRMC	12	184	--	2	A	10.10	12/60	--	--	--
	JF- 128	L GAUDET ET AL	--	112NORC	9	356	341	3	U	20.93	12/60	--	--	J
	JF- 129	CRISTINA ICE	1923	112GZNO	6	709	--	8	A	--	--	--	--	D
	JF- 130	US IND CHEMICAL	1925	112GZNO	4	750	--	12	U	--	--	--	--	J
	JF- 131	US IND CHEMICAL	1925	112GZNO	4	750	--	12	U	61.24	06/61	--	--	--
	JF- 132	ROBINSON CAN CO	1953	112GZNO	4	785	730	10-8	C	30.00	1953	540	--	D
	JF- 133	CALVIN GAMBINO	1955	112NORC	5	377	357	2	S	5.50	1961	--	--	--
	JF- 134	CALVIN GAMBINO	1940	112NORC	5	355	--	2	U	5.36	06/61	--	--	--
	JF- 135	CALVIN GAMBINO	1940	111SLNO	5	151	--	2	U	2.48	06/61	--	--	--
	JF- 136	PUB BELT RR COM	1926	--	12	600	--	--	T	--	--	--	--	D
	JF- 137	PUB BELT RR COM	1926	--	9	600	--	--	T	--	--	--	--	D
	JF- 138	U S CORPS ENGS	--	--	-45	300	--	--	T	--	--	--	--	--
	JF- 139	ILL CENTRAL RR	1949	112GZNO	5	774	758	4-2	U	31.50	05/50	34	--	D
	JF- 140	PENDLETON TERM	--	112GRMC	6	240	--	10	U	--	--	--	--	J
*	JF- 141	AVONDALE SHIPYD	1962	112GZNO	7	740	690	8-6	N	57.08	04/62	--	--	D
	JF- 142	WALKER-ROEMER	1962	112GZNO	-1	732	692	8-6	A	48.40	04/62	200	--	D
	JF- 146	U S CORPS ENGS	1961	--	9	189	--	--	T	--	--	--	--	D
	JF- 147	AM CYANAMID CO	1963	112NORC	10	473	373	18-10	N	31.00	07/63	2500	22.9	D
	JF- 148	U S STEEL CORP	1964	112GZNO	10	730	670	6-4	U	--	--	--	--	--
*	JF- 149	METAIRIE CLUB	1965	112GZNO	0	749	679	10-6	I	91.00	11/65	776	22.8	D
	JF- 150	AM CYANAMID CO	1964	112NORC	11	471	391	20-12	U	45.00	07/64	2500	43.9	D
	JF- 151	AVONDALE SHIPYD	1964	112GRMC	5	242	214	6-4	N	--	--	400	--	D
*	JF- 152	NATIONAL GYPSUM	1968	112GZNO	5	771	721	8-6	N	--	--	--	--	D
	JF- 153	PAUL HURLEY	1968	112GZNO	2	670	630	8-6	O	--	--	350	--	E
	JF- 154	JF PAR WW DIST	1973	--	8	518	--	--	T	--	--	--	--	E,Z
	JF- 155	JF PAR WW DIST	1973	112GZNO	12	670	665	5-3	U	--	--	--	--	D,E
	JF- 156	JF PAR WW DIST	1973	112GZNO	9	780	660	6-4	U	93.28	05/74	--	--	D
	JF- 157	EXXON CO USA	1947	111DLTCY	4	290	239	--	U	--	--	12	--	D,E
*	JF- 158	AVONDALE SHIPYD	1971	112GZNO	15	798	730	10-7	N	99.00	01/71	750	--	D
*	JF- 159	AVONDALE SHIPYD	1967	112GZNO	5	798	738	10-6	N	71.00	06/67	640	11.9	D
	JF- 160	AVONDALE SHIPYD	1968	112GZNO	6	836	777	12-9	N	80.00	12/68	1400	--	D
*	JF- 161	AVONDALE SHIPYD	1971	112GZNO	20	772	698	12-9	N	99.00	02/71	1250	--	D
*	JF- 162	CHATEAU ESTATES	1973	112GZNO	-5	629	589	8-6	I	32.00	03/73	450	--	D
*	JF- 163	COLONIAL CLUB	1966	112GZNO	13	768	708	10-6	I	63.50	03/66	681	21.0	D
	JF- 164	TIMBERLANE CLUB	1974	112NORC	0	420	395	10-6	I	F	04/74	--	--	D
	JF- 165	KERNER FOODS	1979	112GRMC	3	401	348	8-6	C	2.00	06/79	500	--	D
	JF- 166	U S GEOL SURVEY	1981	11212NO	2	1302	1292	2	O	44.81	01/82	20	--	D,E

TABLE 3.--RECORDS OF SELECTED WELLS--CONTINUED

WELL NUMBER	OWNER	YEAR COMP-LETED	AQUIFER	ALTITUDE OF LAND SURFACE (FEET)	DEPTH OF WELL (FEET)	DEPTH TO FIRST OPENING (FEET)	CASING DIAM-ETER (INCHES)	USE	WATER LEVEL (FEET)	DATE WATER LEVEL MEASURED	DISCHARGE (GALLONS PER MINUTE)	SPECIFIC CAPACITY (GALLONS/ MIN/FOOT)	TYPES OF LOGS AVAILABLE
SB- 11	GOURMET SEAFOOD	1944	112GZNO	7	750	710	10-6	N	63.00	10/55	--	--	--
SB- 12	L H FOLSE ICE	1948	112GZNO	5	800	--	8	N	--	--	--	--	--
SB- 13	SOUTHLAND PKG	1946	112GZNO	5	900	--	8-5	Z	--	--	--	--	--
SB- 14	GULF SOAP CORP	1952	112GZNO	5	711	669	6-4	N	29.00	12/52	--	--	D
SB- 15	W H HODGES & CO	1950	112GZNO	8	800	740	6-4	S	--	--	100	--	--
SB- 16	UNION TEXAS PET	1958	111SLNO	4	110	85	8	N	5.00	05/58	200	11.1	D
SB- 17	UNION TEXAS PET	1958	111SLNO	4	110	85	8	N	5.00	04/58	200	11.1	D
SB- 18	UNION TEXAS PET	1957	--	3	--	--	--	T	--	--	--	--	D
SB- 19A	UNION TEXAS PET	1957	111SLNO	3	85	75	--	T	2.00	06/57	15	--	D,E
SB- 19B	UNION TEXAS PET	1957	112SLNO	3	167	157	--	T	3.00	03/57	60	--	D,E
SB- 19C	UNION TEXAS PET	1957	112GZNO	3	676	666	--	T	5.00	06/57	15	--	D,E
SB- 20	SOUTHERN GAS CO	1953	111SLNO	5	94	64	8	N	12.00	06/53	150	--	D
SB- 21	TENNECO OIL CO	1960	112PLCN	11	1965	1947	7	X	--	--	--	--	E
SB- 22	LA DEPT OF HWYS	1956	112DDMRO	1	440	--	2	H	--	--	--	--	D
SB- 23	F J SMITH	1955	111SLNO	3	154	144	2	S	--	--	--	--	--
SB- 24	F J SMITH	--	111SLNO	5	35	--	36	S	2.78	04/62	--	--	--
SB- 25	MASCOT FARMS	1918	111SLNO	6	75	--	--	Z	--	--	--	--	--
SB- 26	PL PAR CANNING	1954	112GRMC	5	336	--	8-6	U	0.40	09/60	--	--	--
SB- 27	JAMES RUSSELL	1936	112GRMC	3	300	--	1.5	Z	10.00	07/36	--	--	--
SB- 28	LIONEL HEBERT	1948	111SLNO	7	100	90	2-3	S	--	--	--	--	--
SB- 29	PL PAR CANNING	1935	112GRMC	5	315	290	4	Z	--	--	--	--	--
SB- 32	TENNECO OIL CO	1963	112PLCN	11	1950	1920	--	X	--	--	--	--	E
SB- 33	VIOLET PKG CO	1963	112GZNO	5	792	742	8-6	N	41.20	09/63	--	--	D
SB- 34	TENNECO OIL CO	1963	112GZNO	9	756	666	16-9	N	80.00	09/63	1800	37.5	D,E
SB- 35	VIOLET PKG CO	1970	112GZNO	8	776	726	10-8	N	53.05	01/71	--	--	D
SC- 1	SHELL OIL	1920	112NORC	7	420	357	24-12	A	34.50	11/42	536	53.6	--
SC- 2	SHELL OIL	1920	112NORC	6	420	--	24-12	A	--	--	--	--	--
SC- 3	SHELL OIL	1920	112NORC	6	420	--	24-12	A	--	--	--	--	--
SC- 4	SHELL OIL	1922	112NORC	8	450	370	24-12	A	--	--	--	--	--
SC- 5	SHELL OIL	1926	112NORC	8	454	374	24-12	A	33.50	11/42	872	18.0	--
SC- 6	SHELL OIL	1926	112NORC	6	412	323	24-12	A	71.54	07/53	--	--	--
SC- 7	SHELL OIL	1926	112NORC	6	456	367	24-12	A	35.00	1941	--	--	--
SC- 8	SHELL OIL	1929	112GZNO	6	769	679	24-12	A	25.00	--	--	--	D
SC- 9	SHELL OIL	1929	112GZNO	5	808	673	24-10	O	19.31	02/43	--	--	D
SC- 10	SHELL OIL	1929	112GZNO	8	846	729	24-12	A	4.34	02/43	--	--	D
SC- 11	SHELL OIL	1929	112GZNO	6	852	732	24-10	A	25.00	--	--	--	D
SC- 12	SHELL OIL	1933	112NORC	6	431	351	18-10	A	39.50	11/42	850	14.9	D
SC- 13	SHELL OIL	1933	112NORC	8	457	376	18-10	A	39.50	11/42	1150	18.9	D
SC- 14	SHELL OIL	1935	112NORC	6	404	324	18-10	O	44.50	11/42	1150	23.0	D
SC- 15	SHELL OIL	1937	112GZNO	6	864	784	18-10	N	29.50	11/42	1413	32.3	D

SC-	16	SHELL OIL	1937	112GZNO	6	754	674	18-10	N	32.50	11/42	1293	30.8	D
SC-	17	SHELL OIL	1941	112GZNO	6	789	709	18-12	N	21.60	11/42	1087	23.6	D
SC-	18	SHELL OIL	1941	112NORC	5	415	340	18-12	A	44.50	11/42	1326	39.0	D
SC-	19	AMERICAN OIL	--	112NORC	10	417	254	12-8	Z	21.00	11/30	500	10.0	D
SC-	20	AMERICAN OIL	1939	112NORC	10	484	294	24-10	U	16.20	--	1150	57.5	--
SC-	21	AMERICAN OIL	1940	112NORC	10	306	240	16-8	A	20.00	--	1500	--	--
SC-	22	HENRY SAIZAN	1935	112NORC	9	389	--	2.5	A	32.70	02/43	--	--	--
SC-	23	W N KUGLER, JR	1935	112NORC	12	372	--	4-1.5	A	19.00	1935	--	--	--
SC-	24	INTL TANK TERM	1921	112NORC	12	492	439	18-6	O	25.34	01/60	440	27.3	--
SC-	25	AMERICAN OIL	1956	112NORC	8	476	396	20	N	33.45	12/58	2736	118.9	--
SC-	26	MRS B F CLESI	1935	112NOHC	11	363	--	2	Z	--	--	--	--	--
SC-	27	GERARD FOLSE	1938	112GRMC	3	276	256	1.5	Z	3.00	02/43	--	--	--
SC-	28	MRS J GROS	--	112GRMC	2	288	274	4	A	11.14	05/58	--	--	D,J
SC-	29	O J BOYER	1942	112GRMC	3	276	--	2	U	10.72	07/57	--	--	--
SC-	30	STANLEY TINNEY	--	112NORC	4	300	280	3	Z	--	--	--	--	--
SC-	31	PRESTON MADERE	1938	111PNBR	15	147	--	3	U	13.69	12/59	--	--	--
SC-	32	PRESTON MADERE	1937	111PNBR	15	117	--	4	U	8.81	08/57	--	--	--
SC-	33	MILLIKEN&FARWEL	--	112NORC	11	350	--	8	Z	--	--	--	--	--
SC-	34	MILLIKEN&FARWEL	--	112NORC	11	387	--	2	Z	--	--	--	--	--
SC-	35	SC POLICE JURY	1937	112GRMC	15	270	238	3	Z	17.71	05/57	--	--	J
SC-	36	LANDECHE BROS	--	112NORC	14	364	344	2	U	--	--	--	--	--
SC-	37	S J MCCLENDON	--	112NORC	10	500	--	2	Z	--	--	--	--	--
SC-	38	S J MCCLENDON	--	112GRMC	12	278	258	2	Z	--	--	--	--	--
SC-	39	SC PAR SCH BRD	1931	112NORC	4	307	287	2	A	1.00	08/31	--	--	--
SC-	40	LAKESIDE FISH	1937	112GRMC	2	292	--	2	U	6.63	07/57	--	--	--
SC-	41	SC PAR SCH BRD	1931	112GRMC	4	285	265	1.5	Z	--	--	--	--	--
SC-	42	C W MATTINGLY	1942	112NORC	12	460	--	2	H	--	--	--	--	--
SC-	43	BOB LANDRY	--	112NORC	12	400	--	2	Z	--	--	--	--	--
SC-	44	SHELL OIL	1943	112NORC	8	424	364	18-12	A	40.25	08/43	1162	29.0	D,E
SC-	45	SHELL OIL	1944	112NORC	11	400	354	18-14	Z	67.00	12/49	424	6.1	D,E
SC-	46	SHELL OIL	1944	112NORC	10	460	370	18-12	A	72.00	12/49	1162	31.4	D,E
SC-	47	PURE OIL	1948	112GRMC	4	175	155	4	Z	7.30	11/56	--	--	--
SC-	48	AMERICAN OIL	1943	112NORC	11	327	246	18-8	A	24.13	12/58	1125	--	D,J
SC-	49	AMERICAN OIL	1946	112NORC	12	475	395	18-12	A	27.28	11/59	1350	--	D,E
SC-	50	SHELL OIL	1946	112NORC	4	401	332	18-12	A	47.00	05/46	1080	32.7	D
* SC-	51	SHELL OIL	1946	112NORC	4	416	323	18-12	N	71.00	12/49	1316	69.3	--
SC-	52	SHELL OIL	1946	112NORC	4	446	336	18-12	N	--	--	1336	44.5	--
SC-	53	SHELL OIL	1947	112NORC	6	449	369	18-12	A	77.00	12/49	1418	61.7	--
SC-	54	SHELL OIL	1948	112NORC	6	464	384	18-12	A	70.00	12/49	1243	22.6	D
SC-	55	SHELL OIL	1948	--	6	472	--	--	T	--	--	--	--	D
SC-	56	EMMET PERILLOUX	1931	112GRMC	14	252	--	2	Z	--	--	--	--	--
SC-	57	LA POWER & LIGHT	1938	112NORC	4	380	--	2	A	--	--	--	--	--
SC-	58	SHELL OIL	1948	112NORC	5	364	324	9-4	Z	51.00	11/56	--	--	D
SC-	59	EXXON CO USA	--	112NORC	4	350	--	4	U	--	--	--	--	--
SC-	60	MRS ANDY HOGAN	1946	112GRMC	3	304	--	2	U	5.99	10/58	--	--	--

TABLE 3.--RECORDS OF SELECTED WELLS--CONTINUED

WELL NUMBER	OWNER	YEAR COMP-LETED	AQUIFER	ALTITUDE OF LAND SURFACE (FEET)	DEPTH OF WELL (FEET)	DEPTH TO FIRST OPENING (FEET)	CASING DIAM-ETER (INCHES)	USE	WATER LEVEL (FEET)	DATE WATER LEVEL MEASURED	DISCHARGE (GALLONS PER MINUTE)	SPECIFIC CAPACITY (GALLONS/ MIN/FOOT)	TYPES OF LOGS AVAILABLE
SC- 61	TEXACO, INC	1948	112GRMC	4	298	277	4	U	9.20	11/60	--	--	--
SC- 62	W H TALBOT	1948	112GRMC	5	273	253	3	A	9.99	09/48	--	--	--
SC- 63	SIDNEY HYMEL	1943	112NORC	11	475	--	2	Z	13.00	1943	--	--	--
SC- 64	SHELL OIL	1949	--	6	875	--	--	T	--	--	--	--	D
SC- 65	SHELL OIL	1949	--	6	882	--	--	T	--	--	--	--	D
SC- 66	ILL CENTRAL RR	1923	112GZNO	1	670	570	4	H	+ 2.50	12/49	--	--	D
SC- 67	ILL CENTRAL RR	1910	112NORC	1	457	--	4	A	+ 1.00	12/49	--	--	D
SC- 68	SHELL OIL	1949	112NORC	8	463	379	18-12	N	67.00	11/49	1339	74.4	D
SC- 69	SHELL OIL	1950	112GZNO	6	833	754	18-10	N	21.00	09/50	2000	58.8	E
SC- 70	CHARLES GOODMAN	1941	112NORC	12	425	--	3	Z	--	--	--	--	--
SC- 71	AMERICAN OIL	1954	112NORC	10	489	409	20-12	U	30.00	11/54	2000	57.1	D,J
SC- 72	SHELL OIL	1955	112NORC	4	406	329	18-10	N	85.00	10/56	1375	39.3	D,E
SC- 73	LEON C VIAL, JR	1952	112GRMC	7	262	--	2-1.5	S	14.01	04/60	--	--	D
SC- 74	A N ZIMMER & SONS	1952	112NORC	2	367	--	2-1.5	U	22.40	01/60	--	--	D
SC- 75	UNION CARBIDE	1952	112NORC	6	367	--	1.5	Z	--	--	--	--	D
SC- 76	EXXON CO USA	1945	112NORC	1	379	334	4	U	48.25	07/57	200	--	D
SC- 77	EXXON CO USA	--	112NORC	1	373	--	4	U	45.65	07/57	--	--	J
SC- 80	A CHAMPAGNE	1945	112GRMC	13	256	--	1.25	O	28.40	01/57	--	--	--
SC- 81	PIZZOLATO & POST	1944	112GRMC	7	152	140	2	U	+ 0.78	04/57	2 F	--	--
SC- 82	LA POWER & LIGHT	--	112NORC	12	373	--	4	O	33.90	05/57	--	--	J
SC- 83	BOB LANDRY	1956	112NORC	10	360	336	2	U	F	06/57	--	--	--
SC- 84	LA POWER & LIGHT	1951	112NORC	2	383	--	2	H	--	--	--	--	--
SC- 85	CALIFORNIA CO	1957	112GRMC	4	206	186	4	Z	F	06/57	4 F	--	D
SC- 86	W H TALBOT	1957	112GRMC	3	279	269	2.5	S	12.77	06/57	--	--	--
SC- 87	HOOKER CHEMICAL	1951	112NORC	12	400	360	4	U	33.25	10/63	--	--	--
SC- 88	SHELL OIL	1958	112NORC	6	479	397	18-10	N	--	--	1280	29.8	E
SC- 89	U S CORPS ENGS	1958	--	10	102	--	--	T	--	--	--	--	D,E,J
SC- 90	U S CORPS ENGS	1958	--	11	202	--	--	T	--	--	--	--	D,E,J
SC- 91	U S CORPS ENGS	1958	--	12	102	--	--	T	--	--	--	--	D,E
SC- 92	U S CORPS ENGS	1959	--	10	102	--	--	T	--	--	--	--	D,E
SC- 93	U S CORPS ENGS	1959	--	10	202	--	--	T	--	--	--	--	D,E,J
SC- 94	U S GEOL SURVEY	1959	--	10	47	--	--	T	--	--	--	--	D
SC- 95	U S GEOL SURVEY	1959	--	14	72	--	--	T	--	--	--	--	D
SC- 96	SHELL OIL	1957	112NORC	4	370	350	2	H	--	--	--	--	--
SC- 97	U S GEOL SURVEY	1960	--	13	77	--	--	T	--	--	--	--	D
SC- 98	U S GEOL SURVEY	1960	--	5	67	--	--	T	--	--	--	--	D
SC- 99	GEORGE FRANCIS	1950	112NORC	5	350	--	2	S	--	--	--	--	--
SC- 100	U S GEOL SURVEY	1960	--	5	97	--	--	T	--	--	--	--	D

SC- 101	U S GEOL SURVEY	1960	--	11	82	--	--	T	--	--	--	--	D
SC- 102	U S GEOL SURVEY	1960	111PNBR	12	62	60	1.25	O	3.38	01/60	5	--	D
SC- 103	U S GEOL SURVEY	1960	--	7	--	--	--	T	--	--	--	--	D
SC- 104	UNION CARBIDE	--	112NORC	12	396	375	4-2	Z	39.05	01/60	--	--	--
SC- 105	TEXACO, INC	--	111SLNO	-2	191	--	2	U	+ 0.36	03/60	--	--	--
SC- 106	TEXACO, INC	--	112GRMC	3	372	352	4	U	7.59	04/60	--	--	D
SC- 107	DUFRENE PACKING	1944	112GRMC	1	196	--	2	U	5.48	04/60	--	--	--
SC- 108	T B SELLERS	1934	111PNBR	11	168	--	2	S	+ 4.05	04/61	--	--	--
SC- 109	U S GEOL SURVEY	1960	--	4	82	--	--	T	--	--	--	--	D
SC- 110	JOHN WALTON, JR	1950	111PNBR	8	67	--	3	U	5.36	07/60	--	--	J
SC- 111	JULIUS SELLERS	1935	--	10	100	--	--	T	--	--	--	--	D
SC- 112	T B SELLERS	1923	111PNBR	11	80	--	2.5	U	7.82	09/60	--	--	--
SC- 113	MRS L C VIAL, SR	1937	112NORC	11	285	--	2	Z	8.00	05/37	--	--	--
SC- 114	D A KELLER EST	--	112NORC	4	320	--	2	Z	17.90	09/60	--	--	--
SC- 115	L M GRANIER	--	112GRMC	4	315	--	2	U	26.30	09/60	--	--	--
SC- 116	E A DUFRESNE,SR	1942	112GRMC	10	260	--	2	U	15.00	05/42	--	--	--
SC- 117	EXXON CO USA	1942	112GRMC	3	310	270	6	Z	--	--	150	--	D
SC- 118	DUFRENE PACKING	1942	112GRMC	1	351	--	4	U	4.98	05/66	--	--	--
SC- 119	MONSANTO CHEM	1936	112GRMC	9	280	--	4	Z	--	--	--	--	--
SC- 120	SC PAR SCH BRD	1931	112GRMC	11	270	--	2.5	Z	6.00	08/31	--	--	--
SC- 121	SHELL OIL	1944	--	6	770	--	--	T	--	--	--	--	D
SC- 122	SHELL OIL	1944	--	6	870	--	--	T	--	--	--	--	D
SC- 123	SHELL OIL	1945	--	4	845	--	--	T	--	--	--	--	D
SC- 124	SHELL OIL	1945	--	3	869	--	--	T	--	--	--	--	D
SC- 125	SHELL OIL	1945	--	6	857	--	--	T	--	--	--	--	D
SC- 126	SHELL OIL	1944	--	6	850	--	--	T	--	--	--	--	D,E
SC- 127	SC PAR SCH BRD	1931	112GRMC	9	257	--	2	Z	10.00	09/31	--	--	--
SC- 128	PURE OIL	1944	112GZNO	4	690	--	9	A	40.00	07/44	--	--	--
SC- 129	WOODROW DUFRENE	1952	112NORC	5	325	--	2	U	33.21	10/65	--	--	--
SC- 130	MRS A WETZKA	1937	112NORC	6	380	--	2	A	40.00	1937	--	--	--
SC- 131	LA POWER & LIGHT	1931	112NORC	15	315	--	2	Z	12.00	09/31	--	--	--
SC- 132	A W BROWN	1946	112NORC	12	420	--	4	U	28.00	01/61	--	--	--
SC- 133	A W BROWN	1948	112GZNO	12	700	--	6	I	29.36	01/61	--	--	--
SC- 134	R PATTERSON	1951	112NORC	8	435	--	4	A	18.00	1951	--	--	--
SC- 135	TEXACO, INC	1944	112GRMC	3	306	--	4	Z	--	--	--	--	D
SC- 136	TEXACO, INC	1944	112GRMC	-2	298	--	4	U	--	--	--	--	--
SC- 137	TEXACO, INC	1943	112GRMC	4	331	293	4	U	--	--	--	--	D
SC- 138	TEXACO, INC	1942	112GRMC	0	293	275	2	U	--	--	--	--	D
SC- 139	TEXACO, INC	1940	112GRMC	4	296	--	2	Z	--	--	--	--	--
SC- 140	TEXACO, INC	1958	112GRMC	0	286	--	4	U	3.52	07/61	--	--	--
SC- 141	ALVIN J EGLE	1938	112GRMC	2	269	--	1.5	U	0.00	01/39	--	--	--
SC- 142	C W MATTINGLY	1936	112GRMC	10	312	--	2	U	--	--	--	--	--
SC- 143	MICHAEL H BROWN	1945	112GRMC	11	315	--	2	S	--	--	--	--	--
SC- 144	LAWRENCE O'NEIL	1946	112GRMC	10	315	--	2	A	--	--	--	--	--
SC- 145	N E SHAAK	1952	112GRMC	5	350	--	2	I	12.00	06/53	--	--	--

TABLE 3.--RECORDS OF SELECTED WELLS--CONTINUED

WELL NUMBER	OWNER	YEAR COMP-LETED	AQUIFER	ALTITUDE OF LAND SURFACE (FEET)	DEPTH OF WELL (FEET)	DEPTH TO FIRST OPENING (FEET)	CASING DIAM-ETER (INCHES)	USE	WATER LEVEL (FEET)	DATE WATER LEVEL MEASURED	DISCHARGE (GALLONS PER MINUTE)	SPECIFIC CAPACITY (GALLONS/ MIN/FOOT)	TYPES OF LOGS AVAILABLE
SC- 146	MONTGOMERY EST	1950	112NORC	2	400	--	2	S	--	--	--	--	--
SC- 147	SC POLICE JURY	1939	112NORC	15	350	--	4	Z	--	--	--	--	--
SC- 148	SC POLICE JURY	1942	112GRMC	15	200	--	2	Z	--	--	--	--	--
SC- 149	SC PAR SCH BRD	1931	112NORC	11	407	--	2	Z	14.00	09/31	--	--	--
SC- 150	AMERICAN OIL	1923	112NORC	10	500	--	12	Z	--	--	--	--	D
SC- 151	SHELL OIL	1959	120TRTR	7	1794	1754	7	X	--	--	--	--	E
SC- 152	SHELL CHEM CO	1956	120TRTR	11	1900	1860	10	X	--	--	--	--	E
SC- 153	LA POWER & LIGHT	1958	--	14	125	--	--	T	--	--	--	--	D
SC- 154	U S CORPS ENGS	1956	--	18	142	--	--	T	--	--	--	--	D
SC- 155	U S CORPS ENGS	1955	--	13	110	--	--	T	--	--	--	--	D
SC- 156	U S CORPS ENGS	1956	--	19	154	--	--	T	--	--	--	--	D
SC- 157	U S CORPS ENGS	1952	--	18	175	--	--	T	--	--	--	--	D
SC- 158	SHELL CHEM CO	1959	120TRTR	11	1830	1815	10	X	--	--	--	--	D,E
* SC- 159	BEKER INDUSTRIES	1964	112NORC	11	440	380	16-8	N	33.00	08/64	600	30.0	D,E
SC- 160	MRS THEO KELLER	1945	112GRMC	15	289	--	2	U	17.09	09/67	--	--	--
SC- 161	UNION CARBIDE	1966	112GRMC	10	283	273	2	H	--	--	--	--	--
SC- 162	UNION CARBIDE	1967	112NORC	10	378	368	2	H	--	--	--	--	--
SC- 163	UNION CARBIDE	1967	112NORC	10	378	368	2	H	20.00	04/67	13	--	--
SC- 164	WITCO CHEM CORP	1966	112NORC	7	410	370	12-8	N	--	--	--	--	D
SC- 165	TEXACO, INC	1967	112NORC	0	350	290	12-9	N	8.50	05/67	800	--	D
SC- 166	TEXACO, INC	1971	112NORC	0	350	--	--	N	8.50	1971	--	--	E
SC- 167	WITCO CHEM CORP	1977	112NORC	6	464	364	20-12	F	18.00	06/76	2006	59.0	D
SC- 168	GOOD HOPE REFIN	1978	112NORC	7	406	346	12-8	N	33.00	1978	1000	--	D
SC- 169	BUNGE CORP	1978	--	12	290	--	--	T	--	--	--	--	D
SC- 170A	BUNGE CORP	1978	112GRMC	9	247	237	4	T	--	--	100	--	D
SC- 170B	BUNGE CORP	1978	112GRMC	9	254	194	16-8	N	10.00	06/78	500	22.7	D
SC- 171	BUNGE CORP		111NLLV	13	21	--	16	D	19.18	06/78	--	--	--
SC- 172	GOOD HOPE REFIN	1977	112NORC	4	415	353	10-6	N	35.00	08/77	750	--	D
SC- 173	GOOD HOPE REFIN	1977	112NORC	7	412	351	10-6	N	--	--	750	--	D
SC- 174	U S GEOL SURVEY	1980	112GRMC	14	272	262	2	O	15.98	07/80	10	--	D,E
SC- 175	SHELL OIL	1979	112NORC	5	420	328	18-12	N	38.00	07/79	1500	68.2	D
* SC- 176	ORMOND ESTATES	1978	112NORC	2	415	378	8-6	I	13.20	10/78	--	--	D
SC- 177A	SHELL OIL	1943	112GRMC	8	253	245	2	T	--	--	--	--	D,E
SC- 177B	SHELL OIL	1943	112NORC	8	361	353	2	T	--	--	--	--	D,E
SC- 177C	SHELL OIL	1943	112NORC	8	410	402	2	T	--	--	--	--	D,E

JF-35. SOUTHERN SHELLFISH CO. (SEC. 1, T. 1[illegible], R. 2[illegible].) DRILLED UNUSED ARTESIAN WELL IN GRAMBREY AQUIFER OF PLEISTOCENE AGE. DIAM 10 IN TO 4 IN. DEPTH 270 FT. SCREENED 22A-270. MP EDGE OF STEEL PLATE ON CONCRETE FOUNDATION. 3.50 FT ABOVE LSD.
LSD 5 FT ABOVE MSL.
HIGHEST WATER LEVEL 7.27 BELOW LSD. APR. 18. 1974.
LOWEST WATER LEVEL 21.58 BELOW LSD. OCT. 13. 1970.
RECORDS AVAILABLE: 1956. 1959-66. 1966-74.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
AUG. 2. 1956	12.05	OCT. 1. 1959	20.29	JUNE 22. 1961	12.51	MAY 6. 1969	9.95
JAN. 17. 1958	12.01	DEC. 10	18.86	SEP. 7	10.50	OCT. 6	7.70
MAR. 5	15.53	FEB. 25. 1960	12.34	OCT. 11	17.18	JAN. 12. 1970	11.00
MAR. 28	16.21	APR. 29	18.72	FEB. 1. 1962	15.65	APR. 1	14.00
MAY 29	16.04	JUNE 24	19.41	NOV. 14	20.58	OCT. 13	21.58
JULY 11	18.45	AUG. 25	14.60	APR. 11. 1963	19.05C	MAY 3. 1971	19.19
AUG. 8	16.60	OCT. 19	18.19	SEP. 17	20.89C	OCT. 19	18.20
SEP. 9	16.09	DEC. 13	11.06	MAY 15. 1964	8.[illegible]	APR. 6. 1972	19.27
OCT. 2	19.54	JAN. 13. 1961	9.18	MAY 13. 1965	8.05	NOV. 29	11.81
JAN. 15. 1959	15.73	FEB. 2	19.53	OCT. 11	19.74	MAY 22. 1973	9.31
MAR. 13	19.11	FEB. 10	20.14	MAY 3. 1967	18.96	OCT. 16	12.62
MAY 1	19.33	MAR. 9	20.54	DEC. 6	19.95	APR. 18. 1974	7.27
JULY 14	18.00	APR. 14	19.53	JULY 10. 1968	17.99	OCT. 9	12.70

JF-53. E. J. FOLSE. (SEC. 4, T. 14S., R. 23E.) DRILLED UNUSED ARTESIAN WELL IN NORCO AQUIFER OF PLEISTOCENE AGE. DIAM 2 IN. REPORTED DEPTH 586 FT. SCREENED INTERVAL UNKNOWN. MP TOP EDGE OF 2-IN IPE. AT LSD. WELL DESTROYED 10-10-71.
LSD 5 FT ABOVE MSL.
HIGHEST WATER LEVEL 2.50 BELOW LSD. APR. 10. 1962.
LOWEST WATER LEVEL 7.23 BELOW LSD. SEP. 17. 1963.
RECORDS AVAILABLE: 1957-64. 1966-71.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
MAY 29. 1957	3.83	MAR. 13. 1959	4.50	MAR. 9. 1961	5.53	MAY 15. 1964	3.45
JULY 31	4.80	MAY 1	5.09	APR. 17	3.50	OCT. 11. 1965	7.12
SEP. 26	5.88	JULY 14	5.42	MAY 10	3.60	MAY 2. 1967	5.77
JAN. 17. 1958	3.22	OCT. 1	6.36	JUNE 22	3.40	DEC. 6	6.68
MAR. 26	4.18	DEC. 10	6.24	SEP. 7	4.82	JULY 10. 1968	5.44
APR. 28	4.24	FEB. 25. 1960	3.78	OCT. 10	4.85	MAY 6. 1969	2.77
MAY 29	3.12	JUNE 24	5.93	DEC. 7	5.19	OCT. 6	4.15
JULY 11	4.02	AUG. 25	6.04	FEB. 1. 1962	2.99	JAN. 12. 1970	4.30
AUG. 8	4.20	OCT. 19	6.91	APR. 10	2.50	APR. 1	3.30
SEP. 9	4.76	DEC. 13	6.28	JUNE 12	4.47	OCT. 13	5.93
OCT. 2	5.44	JAN. 13. 1961	5.00	APR. 11. 1963	5.21	MAY 3. 1971	5.45
JAN. 15. 1959	5.79	FEB. 10	5.75	SEP. 17	7.23		

JF-60. E. L. SCHROEDER. (SEC. 4, T. 13S., R. 22E.) DRILLED UNUSED ARTESIAN WELL IN NORCO AQUIFER OF PLEISTOCENE AGE. DIAM 3 IN. DEPTH 386 FT. SCREENED INTERVAL UNKNOWN. MP TOP INSIDE EDGE OF 1 1/2 IN PLUG. 1.30 FT ABOVE LSD.
LSD 13 FT ABOVE MSL.
HIGHEST WATER LEVEL 12.75 BELOW LSD. OCT. 9. 1974.
LOWEST WATER LEVEL 34.48 BELOW LSD. OCT. 11. 1966.
RECORDS AVAILABLE: 1960-68. 1971-72. 1974.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
APR. 15. 1960	21.55	FEB. 10. 1961	22.87	JUNE 12. 1962	20.84	DEC. 6. 1967	21.51
JULY 8	21.57	MAR. 9	22.17	NOV. 14	22.60	JULY 12. 1968	19.38
AUG. 3	22.09	APR. 13	20.82	APR. 11. 1963	21.50	MAR. 1. 1971	18.70
AUG. 24	22.23	JUNE 22	20.21	SEP. 17	27.04	MAY 3	18.77
SEP. 23	22.74	SEP. 7	21.07	FEB. 5. 1964	22.46	OCT. 6	19.09
OCT. 19	22.98	OCT. 11	21.75	MAY 15	25.35	APR. 7. 1972	16.82
NOV. 11	23.31	FEB. 9. 1962	20.30	NOV. 24. 1964	33.25	OCT. 9. 1974	12.75
DEC. 12	23.48	APR. 10	19.41	OCT. 11. 1965	34.48		

JF-65. CITY OF NEW ORLEANS AVIATION BOARD. (SEC. 37. T. 12S.. R. 9E.) DRILLED INDUSTRIAL ARTESIAN WELL IN GONZALES-NEW ORLEANS AQUIFER OF PLEISTOCENE AGE. DIAM 10 TO 8 IN. DEPTH 608 FT. SCREENED 638-608. MP HOLE IN SAFETY SEAL. 1.0 FT ABOVE LSD.
LSD 1 FT ABOVE MSL.
HIGHEST WATER LEVEL 28.50 BELOW LSD. DEC. 23. 1958.
LOWEST WATER LEVEL 46.64 BELOW LSD. APR. 4. 1972.
RECORDS AVAILABLE: 1958. 1960-61. 1963. 1965-70. 1972. 1974.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC. 23. 1958	28.50	FEB. 9. 1961	31.84	OCT. 13. 1966	46.94	APR. 1. 1970	45.32C
OCT. 19. 1960	37.65C	MAR. 9	31.50C	MAY 2. 1967	47.26	NOV. 25	41.09
OCT. 21	33.32	APR. 12	30.72	DEC. 4	49.47C	APR. 4. 1972	54.64C
DEC. 13	33.18C	MAR. 4. 1963	34.30C	JULY 11. 1968	45.35	NOV. 29	53.07
JAN. 13. 1961	32.31C	NOV. 23. 1965	44.48	OCT. 4. 1969	50.59	APR. 10. 1974	54.48
JAN. 27	32.09	MAY 17. 1966	44.08	JAN. 4. 1970	43.30	OCT. 9	55.65

JF-71. GREATER NEW ORLEANS EXPRESSWAY COMMISSION. (SEC. 44. T. 12S.. R. 10E.) DRILLED UNUSED ARTESIAN WELL IN GONZALES-NEW ORLEANS AQUIFER OF PLEISTOCENE AGE. DIAM 4 IN. DEPTH 564 FT. SCREENED 551-564. MP HOLE IN SAFETY SEAL. 3.40 FT ABOVE LSD.
LSD 11 FT ABOVE MSL.
HIGHEST WATER LEVEL 66.50 BELOW LSD. MAR. 5. 1963.
LOWEST WATER LEVEL 87.43 BELOW LSD. OCT. 17. 1973.
RECORDS AVAILABLE: 1963. 1965-74.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
MAR. 5. 1963	66.60	MAY 2. 1967	70.85	JAN. 12. 1970	80.15	APR. 4. 1972	81.13
SEP. 16	70.75	DEC. 5	77.27	APR. 1	78.01	NOV. 29	85.35
NOV. 23. 1965	73.50	JULY 1. 1968	80.77	OCT. 4	83.00	MAY 22. 1973	82.03
MAY 13. 1966	70.00	MAY 6. 1969	81.42	APR. 23. 1971	79.40	OCT. 17	87.43
OCT. 11	74.17	OCT. 13	86.78	OCT. 18	83.25	APR. 19. 1974	81.00

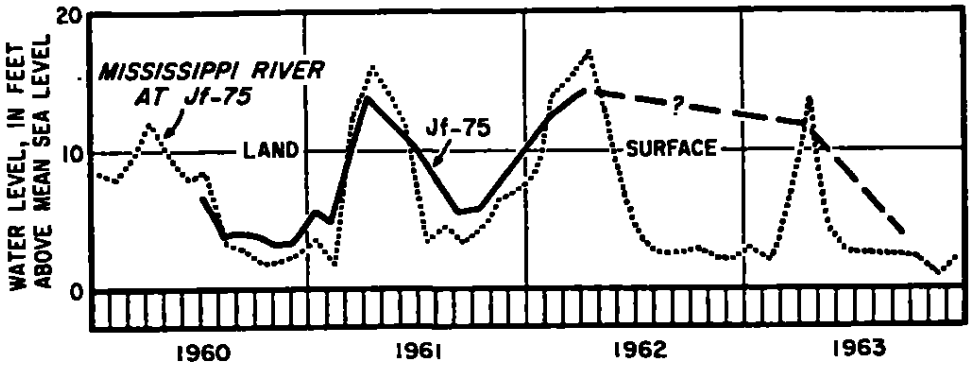


Figure 1. Water level in well Jf-75 compared with the Mississippi River stage, 1960-63.

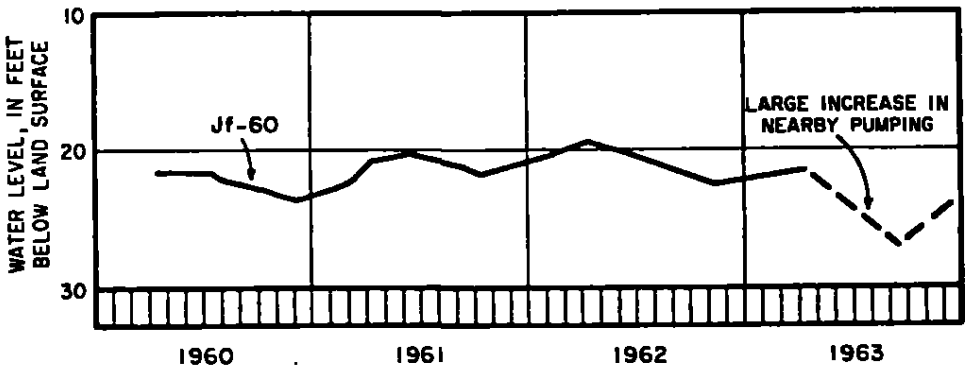


Figure 4. Fluctuations of water level in the "400-foot" sand.

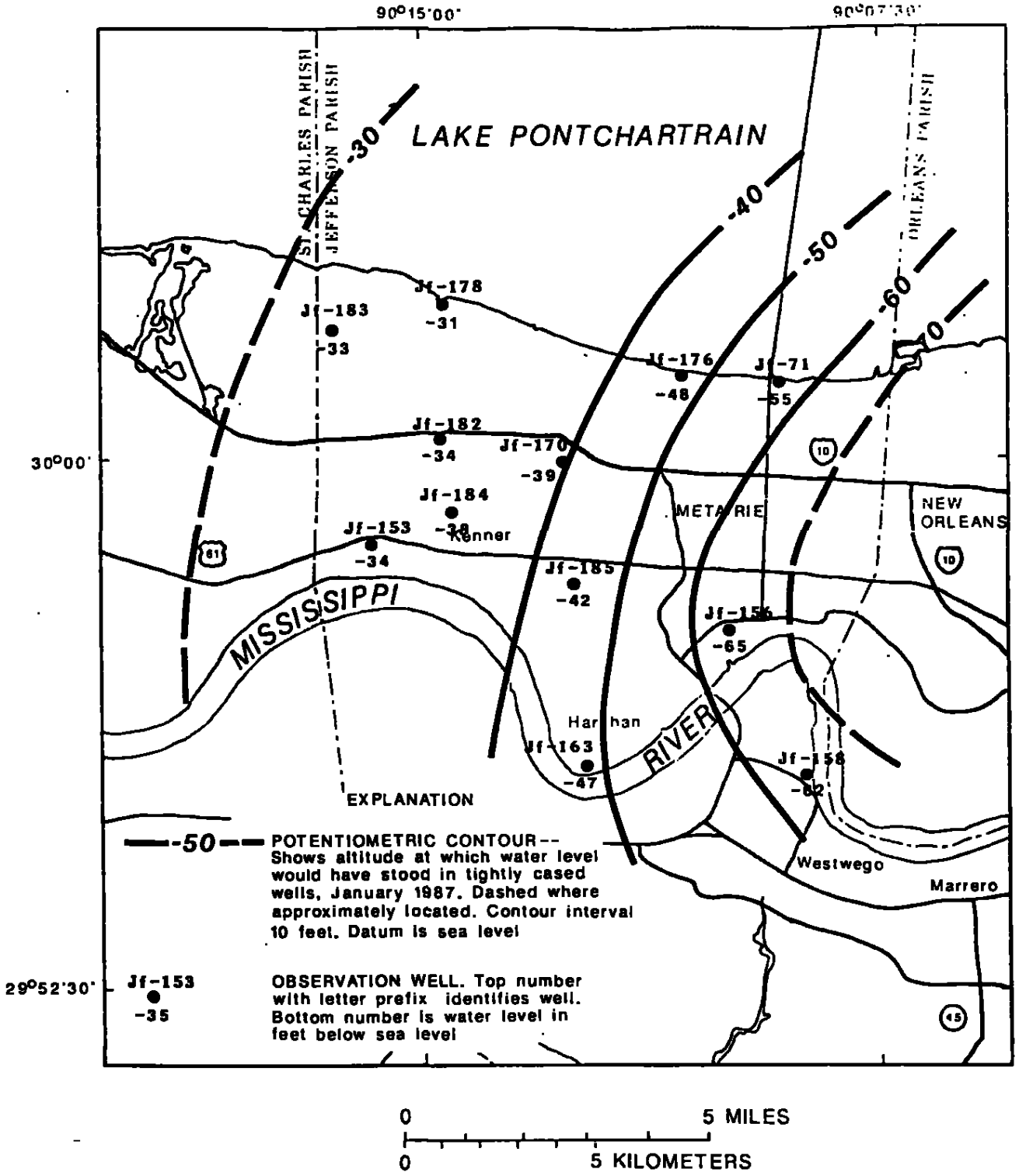


Figure 4.--Potentiometric surface of the Gonzales-New Orleans aquifer, January 1987.

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY PROCESS DATE 11-03-97
MULTIPLE STATION ANALYSES

LOCAL IDENT-I-FIER	GEO-LOGIC UNIT	DATE	TEMPER-ATURE WATER (DEG C) (00010)	AGENCY COL-LECTING SAMPLE (CODE NUMBER) (00027)	AGENCY ANA-LYZING SAMPLE (CODE NUMBER) (00028)	COLOR (PLAT-INUM-COBALT UNITS) (00080)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)
JF- 1	112NORC	02-15-33	--	--	9722	42	--	--	--	13
	112NORC	08-02-40	--	--	--	--	--	--	--	--
	112NORC	05-25-54	--	--	--	--	--	--	--	--
	112NORC	01-21-59	--	--	--	--	2200	7.1	--	--
	112NORC	12-08-59	--	--	--	--	2220	--	--	--
	112NORC	05-03-60	--	--	--	--	2240	--	--	--
	112NORC	11-08-60	--	--	--	30	2230	7.7	--	29
	112NORC	04-25-61	--	--	--	--	2240	--	--	--
	112NORC	05-14-65	--	--	--	--	2360	--	--	--
JF- 24A	112GZNO	05-23-50	--	--	9801	60	--	8.2	--	--
	112GZNO	05-30-50	25.0	--	--	45	606	7.8	--	7.0
	112GZNO	06-03-50	--	--	9801	60	--	8.0	--	0
JF- 29	112GZNO	08-07-42	--	--	9722	60	--	7.4	--	4.4
	112GZNO	04-15-50	--	--	--	--	--	--	--	--
	112GZNO	05-27-54	--	--	--	--	--	--	--	--
	112GZNO	09-25-57	24.5	--	--	55	716	7.8	--	7.1
	112GZNO	01-21-59	24.5	--	--	120	714	7.2	--	--
	112GZNO	05-19-59	25.0	--	--	--	683	7.4	--	--
	112GZNO	06-14-60	24.5	--	--	60	636	--	--	--
	112GZNO	04-25-61	--	--	--	--	643	--	--	--
JF- 31	112GZNO	08-08-51	--	--	9722	54	--	8.0	--	0
	112GZNO	06-03-54	--	--	--	--	--	--	--	--
	112GZNO	07-24-56	--	--	9722	60	--	7.7	--	0
	112GZNO	02-28-57	--	--	--	--	--	--	--	--
	112GZNO	06-20-60	25.0	--	--	40	1490	--	--	--
	112GZNO	10-19-60	--	--	--	40	1530	--	--	--
	112GZNO	10-21-60	--	--	--	50	1530	--	--	--
	112GZNO	12-13-60	25.0	--	--	--	1700	--	--	--
	112GZNO	01-13-61	--	--	--	--	1690	--	--	--
	112GZNO	04-25-61	--	--	--	--	1670	--	--	--
	112GZNO	06-29-61	--	--	--	--	1710	--	--	--
	112GZNO	10-10-61	--	--	--	--	1570	--	--	--
	112GZNO	03-16-62	--	--	--	--	1750	--	--	--
	112GZNO	05-14-65	25.0	--	--	--	1680	--	--	--
	112GZNO	06-09-69	--	--	--	--	1770	--	--	--
	112GZNO	10-29-71	--	--	--	--	1850	--	--	--
	112GZNO	10-25-73	24.5	--	--	--	1750	--	--	--
	112GZNO	08-19-81	--	--	--	--	2000	--	--	--
	112GZNO	04-29-82	25.0	80010	80010	--	--	7.9	8.2	--
JF- 60	112NORC	05-01-51	--	--	9722	--	--	--	--	--

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY PROCESS DATE 11-03-97
MULTIPLE STATION ANALYSES

LOCAL IDENT-I-FIER	DATE	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3 (00410)	BICAR-BONATE WATER WH FET FIELD MG/L AS HCO3 (00440)	CAR-BONATE WATER WH FET FIELD MG/L AS CO3 (00445)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)
JF- 1	02-15-33	289	--	--	0.00	--	--	--	91
	08-02-40	282	340	--	--	--	--	--	100
	05-25-54	--	--	--	--	--	--	--	--
	01-21-59	--	--	--	--	--	--	--	150
	12-08-59	--	--	--	--	--	--	--	150
	05-03-60	--	--	--	--	--	--	--	150
	11-08-60	296	360	0	0.200	0.40	--	--	150
	04-25-61	--	--	--	--	--	--	--	150
	05-14-65	--	--	--	--	--	--	--	160
JF- 24A	05-23-50	232	--	--	--	--	--	--	8
	05-30-50	226	270	0	0.410	--	--	--	14
	06-03-50	--	--	--	--	--	--	--	--
JF- 29	08-07-42	230	--	--	--	--	--	--	8
	04-15-50	--	--	--	--	--	--	--	--
	05-27-54	--	--	--	--	--	--	--	15
	09-25-57	233	280	0	0.270	0.70	--	--	10
	01-21-59	--	--	--	--	--	--	--	14
	05-19-59	--	--	--	--	--	--	--	--
	06-14-60	--	--	--	--	--	--	--	14
	04-25-61	--	--	--	--	--	--	--	12
JF- 31	08-08-51	238	--	--	--	--	--	--	14
	06-03-54	--	--	--	--	--	--	--	10
	07-24-56	225	--	--	--	--	--	--	20
	02-28-57	--	--	--	--	--	--	--	--
	06-20-60	--	--	--	--	--	--	--	52
	10-19-60	--	--	--	--	--	--	--	50
	10-21-60	--	--	--	--	--	--	--	50
	12-13-60	--	--	--	--	--	--	--	56
	01-13-61	--	--	--	--	--	--	--	56
	04-25-61	--	--	--	--	--	--	--	53
	06-29-61	--	--	--	--	--	--	--	48
	10-10-61	--	--	--	--	--	--	--	44
	03-16-62	--	--	--	--	--	--	--	65
	05-14-65	--	--	--	--	--	--	--	52
	06-09-69	--	--	--	--	--	--	--	55
	10-29-71	--	--	--	--	--	--	--	68
	10-25-73	--	--	--	--	--	--	--	58
	08-19-81	--	--	--	--	--	--	--	61
	04-29-82	--	--	--	--	--	2.0	0.60	62
JF- 60	05-01-51	--	--	--	--	--	--	--	--

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY PROCESS DATE 11-03-97
MULTIPLE STATION ANALYSES

LOCAL IDENT-I-FIER	DATE	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3 (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM PERCENT (00932)	SODIUM+ POTAS-SIUM DIS-SOLVED (MG/L AS NA) (00933)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)
JF- 1	02-15-33	--	--	--	--	--	--	--	--
	08-02-40	0	--	--	--	--	--	--	--
	05-25-54	--	--	--	--	--	--	--	--
	01-21-59	--	--	--	--	--	--	--	--
	12-08-59	--	--	--	--	--	--	--	--
	05-03-60	--	--	--	--	--	--	--	--
	11-08-60	0	34	16	440	16	86	--	7.0
	04-25-61	--	--	--	--	--	--	--	--
	05-14-65	--	--	--	--	--	--	--	--
JF- 24A	05-23-50	--	2.5	0.40	--	--	--	130	--
	05-30-50	0	3.2	1.4	130	15	92	--	7.6
	06-03-50	--	--	--	--	--	--	--	--
JF- 29	08-07-42	--	--	--	--	--	--	--	--
	04-15-50	--	--	--	--	--	--	--	--
	05-27-54	--	--	--	--	--	--	--	--
	09-25-57	0	2.7	0.80	160	22	97	--	1.9
	01-21-59	--	--	--	--	--	--	--	--
	05-19-59	--	--	--	--	--	--	--	--
	06-14-60	--	--	--	--	--	--	--	--
	04-25-61	--	--	--	--	--	--	--	--
JF- 31	08-08-51	--	--	--	--	--	--	--	--
	06-03-54	--	--	--	--	--	--	--	--
	07-24-56	--	--	--	--	--	--	--	--
	02-28-57	--	--	--	--	--	--	--	--
	06-20-60	--	--	--	--	--	--	--	--
	10-19-60	--	--	--	--	--	--	--	--
	10-21-60	--	--	--	--	--	--	--	--
	12-13-60	--	--	--	--	--	--	--	--
	01-13-61	--	--	--	--	--	--	--	--
	04-25-61	--	--	--	--	--	--	--	--
	06-29-61	--	--	--	--	--	--	--	--
	10-10-61	--	--	--	--	--	--	--	--
	03-16-62	--	--	--	--	--	--	--	--
	05-14-65	--	--	--	--	--	--	--	--
	06-09-69	--	--	--	--	--	--	--	--
	10-29-71	--	--	--	--	--	--	--	--
	10-25-73	--	--	--	--	--	--	--	--
	08-19-81	--	--	--	--	--	--	--	--
	04-29-82	--	16	5.2	370	21	93	--	2.4
JF- 60	05-01-51	--	--	--	--	--	--	--	--

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY PROCESS DATE 11-03-97
MULTIPLE STATION ANALYSES

LOCAL IDENT-I-FIER	DATE	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	BORON, DIS-SOLVED (UG/L AS B) (01020)
JF- 1	02-15-33	280	--	--	--	--	--	--	--
	08-02-40	470	1.0	0.50	--	--	--	--	--
	05-25-54	470	--	--	--	--	--	--	--
	01-21-59	550	--	--	--	--	--	--	--
	12-08-59	550	--	--	--	--	--	--	--
	05-03-60	550	--	--	--	--	--	--	--
	11-08-60	570	2.0	0.80	31	--	--	--	720
	04-25-61	570	--	--	--	--	--	--	--
	05-14-65	570	--	--	--	--	--	--	--
JF- 24A	05-23-50	46	0.0	--	26	--	--	--	--
	05-30-50	60	1.4	0.30	36	--	--	--	260
	06-03-50	64	--	--	25	--	--	--	--
JF- 29	08-07-42	29	--	--	--	--	--	--	--
	04-15-50	100	--	--	--	--	--	--	--
	05-27-54	110	--	--	--	--	--	--	--
	09-25-57	91	0.0	0.50	28	--	--	--	240
	01-21-59	87	--	--	--	--	--	--	--
	05-19-59	82	--	--	--	--	--	--	--
	06-14-60	68	--	--	--	--	--	--	--
	04-25-61	66	--	--	--	--	--	--	--
JF- 31	08-08-51	47	--	0.10	--	--	--	--	--
	06-03-54	60	--	--	--	--	--	--	--
	07-24-56	59	--	--	--	--	--	--	--
	02-28-57	52	--	--	--	--	--	--	--
	06-20-60	330	--	--	--	--	--	--	--
	10-19-60	360	--	--	--	--	--	--	--
	10-21-60	360	--	--	--	--	--	--	--
	12-13-60	420	--	--	--	--	--	--	--
	01-13-61	420	--	--	--	--	--	--	--
	04-25-61	410	--	--	--	--	--	--	--
	06-29-61	400	--	--	--	--	--	--	--
	10-10-61	380	--	--	--	--	--	--	--
	03-16-62	440	--	--	--	--	--	--	--
	05-14-65	400	--	--	--	--	--	--	--
	06-09-69	420	--	--	--	--	--	--	--
	10-29-71	430	--	--	--	--	--	--	--
	10-25-73	400	--	--	--	--	--	--	--
	08-19-81	490	--	--	--	--	--	--	--
	04-29-82	500	5.0	0.40	27	1	430	<0.50	270
JF- 60	05-01-51	400	--	--	--	--	--	--	--

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY PROCESS DATE 11-03-97
MULTIPLE STATION ANALYSES

LOCAL IDENT-I-FIER	DATE	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, SUS-PENDED RECOV-ERABLE (UG/L AS FE) (01044)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)
JF- 1	02-15-33	--	--	--	--	0	--	--	--
	08-02-40	--	--	--	--	--	--	--	--
	05-25-54	--	--	--	--	--	--	--	--
	01-21-59	--	--	--	--	--	--	--	--
	12-08-59	--	--	--	--	--	--	--	--
	05-03-60	--	--	--	--	--	--	--	--
	11-08-60	--	--	--	--	300	--	--	10
	04-25-61	--	--	--	--	--	--	--	--
	05-14-65	--	--	--	--	--	--	--	--
JF- 24A	05-23-50	--	--	--	--	--	--	--	--
	05-30-50	--	--	--	--	300	--	--	--
	06-03-50	--	--	--	--	--	--	--	--
JF- 29	08-07-42	--	--	--	--	0	--	--	--
	04-15-50	--	--	--	--	--	--	--	--
	05-27-54	--	--	--	--	--	--	--	--
	09-25-57	--	--	--	--	200	--	--	0
	01-21-59	--	--	--	--	--	--	--	--
	05-19-59	--	--	--	--	--	--	--	--
	06-14-60	--	--	--	--	--	--	--	--
	04-25-61	--	--	--	--	--	--	--	--
JF- 31	08-08-51	--	--	--	--	1300	--	--	--
	06-03-54	--	--	--	--	--	--	--	--
	07-24-56	--	--	--	--	200	--	--	--
	02-28-57	--	--	--	--	--	--	--	--
	06-20-60	--	--	--	--	--	--	--	--
	10-19-60	--	--	--	--	--	--	--	--
	10-21-60	--	--	--	--	--	--	--	--
	12-13-60	--	--	--	--	--	--	--	--
	01-13-61	--	--	--	--	--	--	--	--
	04-25-61	--	--	--	--	--	--	--	--
	06-29-61	--	--	--	--	--	--	--	--
	10-10-61	--	--	--	--	--	--	--	--
	03-16-62	--	--	--	--	--	--	--	--
	05-14-65	--	--	--	--	--	--	--	--
	06-09-69	--	--	--	--	--	--	--	--
	10-29-71	--	--	--	--	--	--	--	--
	10-25-73	--	--	--	--	--	--	--	--
	08-19-81	--	--	--	--	--	--	--	--
	04-29-82	2.0	<3.0	<10	40	190	150	<10	--
JF- 60	05-01-51	--	--	--	--	--	--	--	--

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY PROCESS DATE 11-03-97
MULTIPLE STATION ANALYSES

LOCAL IDENT-I-FIER	DATE	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)
JF- 1	02-15-33	--	--	--	--	--	--	1090	--
	08-02-40	--	--	--	--	--	--	--	--
	05-25-54	--	--	--	--	--	--	--	--
	01-21-59	--	--	--	--	--	--	--	--
	12-08-59	--	--	--	--	--	--	--	--
	05-03-60	--	--	--	--	--	--	--	--
	11-08-60	--	--	--	--	--	--	1280	1280
	04-25-61	--	--	--	--	--	--	--	--
	05-14-65	--	--	--	--	--	--	--	--
JF- 24A	05-23-50	--	--	--	--	--	--	379	--
	05-30-50	--	--	--	--	--	--	384	379
	06-03-50	--	--	--	--	--	--	--	--
JF- 29	08-07-42	--	--	--	--	--	--	360	--
	04-15-50	--	--	--	--	--	--	--	--
	05-27-54	--	--	--	--	--	--	--	--
	09-25-57	--	--	--	--	--	--	427	434
	01-21-59	--	--	--	--	--	--	--	--
	05-19-59	--	--	--	--	--	--	--	--
	06-14-60	--	--	--	--	--	--	--	--
	04-25-61	--	--	--	--	--	--	--	--
JF- 31	08-08-51	--	--	--	--	--	--	404	--
	06-03-54	--	--	--	--	--	--	--	--
	07-24-56	--	--	--	--	--	--	387	--
	02-28-57	--	--	--	--	--	--	--	--
	06-20-60	--	--	--	--	--	--	--	--
	10-19-60	--	--	--	--	--	--	--	--
	10-21-60	--	--	--	--	--	--	--	--
	12-13-60	--	--	--	--	--	--	--	--
	01-13-61	--	--	--	--	--	--	--	--
	04-25-61	--	--	--	--	--	--	--	--
	06-29-61	--	--	--	--	--	--	--	--
	10-10-61	--	--	--	--	--	--	--	--
	03-16-62	--	--	--	--	--	--	--	--
	05-14-65	--	--	--	--	--	--	--	--
	06-09-69	--	--	--	--	--	--	--	--
	10-29-71	--	--	--	--	--	--	--	--
	10-25-73	--	--	--	--	--	--	--	--
	08-19-81	--	--	--	--	--	--	--	--
	04-29-82	83	<10	270	4.0	36	<1	--	1050
JF- 60	05-01-51	--	--	--	--	--	--	--	--

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY PROCESS DATE 11-03-97
MULTIPLE STATION ANALYSES

LOCAL IDENT-I-FIER	DATE	DENSITY (GM/ML AT 20 C) (71820)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS NO3) (71851)	BROMIDE DIS-SOLVED (MG/L AS BR) (71870)	ELEV. OF LAND SURFACE DATUM (FT. ABOVE NGVD) (72000)	DEPTH OF WELL, TOTAL (FEET) (72008)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	ALKA-LINITY LAB (MG/L AS CACO3) (90410)	HARD-NESS NONCARB WH WAT TOT LAB MG/L AS CACO3 (95902)
JF- 1	02-15-33	--	0.0	--	6.0	460.00	--	--	--
	08-02-40	--	--	--	6.0	460.00	--	--	--
	05-25-54	--	--	--	6.0	460.00	--	--	--
	01-21-59	--	--	--	6.0	460.00	--	--	--
	12-08-59	--	--	--	6.0	460.00	--	--	--
	05-03-60	--	--	--	6.0	460.00	--	--	--
	11-08-60	--	0.90	--	6.0	460.00	--	--	--
	04-25-61	--	--	--	6.0	460.00	--	--	--
	05-14-65	--	--	--	6.0	460.00	--	--	--
JF- 24A	05-23-50	--	--	--	1.0	708.00	--	--	--
	05-30-50	--	1.8	--	1.0	708.00	--	--	--
	06-03-50	--	--	--	1.0	708.00	--	--	--
JF- 29	08-07-42	--	--	--	7.0	760.00	--	--	--
	04-15-50	--	--	--	7.0	760.00	--	--	--
	05-27-54	--	--	--	7.0	760.00	--	--	--
	09-25-57	--	1.2	--	7.0	760.00	--	--	--
	01-21-59	--	--	--	7.0	760.00	--	--	--
	05-19-59	--	--	--	7.0	760.00	--	--	--
	06-14-60	--	--	--	7.0	760.00	--	--	--
	04-25-61	--	--	--	7.0	760.00	--	--	--
JF- 31	08-08-51	--	--	--	1.0	720.00	--	--	--
	06-03-54	--	--	--	1.0	720.00	--	--	--
	07-24-56	--	--	--	1.0	720.00	--	--	--
	02-28-57	--	--	--	1.0	720.00	--	--	--
	06-20-60	--	--	--	1.0	720.00	--	--	--
	10-19-60	--	--	--	1.0	720.00	--	--	--
	10-21-60	--	--	--	1.0	720.00	--	--	--
	12-13-60	--	--	--	1.0	720.00	--	--	--
	01-13-61	--	--	--	1.0	720.00	--	--	--
	04-25-61	--	--	--	1.0	720.00	--	--	--
	06-29-61	--	--	--	1.0	720.00	--	--	--
	10-10-61	--	--	--	1.0	720.00	--	--	--
	03-16-62	--	--	--	1.0	720.00	--	--	--
	05-14-65	--	--	--	1.0	720.00	--	--	--
	06-09-69	--	--	--	1.0	720.00	--	--	--
	10-29-71	--	--	--	1.0	720.00	--	--	--
	10-25-73	--	--	--	1.0	720.00	--	--	--
	08-19-81	--	--	--	1.0	720.00	--	--	--
	04-29-82	1.001	--	0.98	1.0	720.00	1920	210	0
JF- 60	05-01-51	--	--	--	13.0	384.00	--	--	--

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY PROCESS DATE 11-03-97
MULTIPLE STATION ANALYSES

LOCAL IDENT-I-FIER	GEO-LOGIC UNIT	DATE	TEMPER-ATURE WATER (DEG C) (00010)	AGENCY COL-LECTING SAMPLE (CODE NUMBER) (00027)	AGENCY ANA-LYZING SAMPLE (CODE NUMBER) (00028)	COLOR (PLAT-INUM-COBALT UNITS) (00080)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)
JF- 64	112GZNO	05-16-62	--	--	--	--	1350	--	--
	112GZNO	06-18-86	25.5	1028	80020	20	1730	8.1	7.7
JF- 65	112GZNO	06-14-60	25.0	--	--	60	975	--	--
	112GZNO	06-27-61	--	--	--	--	1040	--	--
	112GZNO	10-10-61	--	--	--	--	1030	--	--
	112GZNO	03-16-62	--	--	--	--	1140	--	--
	112GZNO	10-14-64	--	--	--	--	954	--	--
	112GZNO	05-14-65	--	--	--	--	765	--	--
	112GZNO	10-27-66	--	--	--	--	1170	--	--
	112GZNO	06-09-69	--	--	--	--	865	--	--
	112GZNO	12-02-76	24.5	--	--	--	773	--	--
	112GZNO	01-18-79	--	--	--	--	777	--	--
	112GZNO	08-19-81	--	--	--	--	812	--	--
JF- 66	112GZNO	12-29-58	26.0	--	9722	70	--	8.6	--
	112GZNO	06-29-61	--	--	--	--	1560	--	--
	112GZNO	10-10-61	--	--	--	--	1620	--	--
	112GZNO	05-16-62	--	--	--	--	1630	--	--
	112GZNO	10-14-64	--	--	--	--	1740	--	--
	112GZNO	05-14-65	25.0	--	--	--	1670	--	--
	112GZNO	10-27-66	--	--	--	--	1640	--	--
	112GZNO	06-09-69	--	--	--	--	1820	--	--
	112GZNO	10-29-71	--	--	--	--	1780	--	--
	112GZNO	10-25-73	24.5	--	--	--	1790	--	--
	112GZNO	11-11-75	--	--	--	--	1840	--	--
	112GZNO	12-02-76	24.5	--	--	--	1970	--	--
	112GZNO	01-18-79	--	--	--	--	2040	--	--
	112GZNO	08-19-81	--	--	--	--	2070	--	--
JF- 111	112GRMC	05-25-35	--	--	9722	55	--	--	--
JF- 124	112NORC	05-01-51	--	--	9722	--	--	--	--
	112NORC	09-30-60	22.5	--	--	50	1910	7.5	--
	112NORC	11-11-60	21.5	--	--	--	--	7.9	--
JF- 127	112GRMC	04-13-61	--	--	--	--	3280	--	--
SC- 26	112NORC	02-16-43	--	--	--	--	--	7.9	--
SC- 42	112NORC	05-15-59	21.5	--	--	--	2130	--	--
	112NORC	12-08-59	--	--	--	--	2130	--	--
SC- 43	112NORC	02-27-43	--	--	--	--	--	7.6	--
SC- 70	112NORC	05-25-54	--	--	--	--	--	--	--
SC- 81	112GRMC	06-26-57	21.0	--	--	--	--	--	--
	112GRMC	04-08-60	21.0	--	--	--	4640	6.8	--
	112GRMC	04-13-61	21.0	--	--	--	4760	--	--

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY PROCESS DATE 11-03-97
MULTIPLE STATION ANALYSES

LOCAL IDENT-I-FIER	DATE	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3 (00410)	BICAR-BONATE WATER WH FET FIELD MG/L AS HCO3 (00440)	CAR-BONATE WATER WH FET FIELD MG/L AS CO3 (00445)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)
JF- 64	05-16-62	--	--	--	--	--	--	--	44
	06-18-86	--	--	--	--	--	--	2.6	74
JF- 65	06-14-60	--	--	--	--	--	--	--	30
	06-27-61	--	--	--	--	--	--	--	25
	10-10-61	--	--	--	--	--	--	--	28
	03-16-62	--	--	--	--	--	--	--	50
	10-14-64	--	--	--	--	--	--	--	24
	05-14-65	--	--	--	--	--	--	--	14
	10-27-66	--	--	--	--	--	--	--	35
	06-09-69	--	--	--	--	--	--	--	18
	12-02-76	--	--	--	--	--	--	--	12
	01-18-79	--	--	--	--	--	--	--	15
	08-19-81	--	--	--	--	--	--	--	16
JF- 66	12-29-58	0	253	--	--	--	--	--	16
	06-29-61	--	--	--	--	--	--	--	43
	10-10-61	--	--	--	--	--	--	--	50
	05-16-62	--	--	--	--	--	--	--	54
	10-14-64	--	--	--	--	--	--	--	52
	05-14-65	--	--	--	--	--	--	--	48
	10-27-66	--	--	--	--	--	--	--	54
	06-09-69	--	--	--	--	--	--	--	58
	10-29-71	--	--	--	--	--	--	--	55
	10-25-73	--	--	--	--	--	--	--	61
	11-11-75	--	--	--	--	--	--	--	62
	12-02-76	--	--	--	--	--	--	--	71
	01-18-79	--	--	--	--	--	--	--	66
	08-19-81	--	--	--	--	--	--	--	66
JF- 111	05-25-35	0	746	--	--	--	--	--	87
JF- 124	05-01-51	--	--	--	--	--	--	--	--
	09-30-60	22	364	440	0	0.090	1.1	--	96
	11-11-60	--	--	--	--	--	--	--	--
JF- 127	04-13-61	--	--	--	--	--	--	--	650
SC- 26	02-16-43	7.1	290	350	--	--	--	--	78
SC- 42	05-15-59	--	--	--	--	--	--	--	120
	12-08-59	--	--	--	--	--	--	--	120
SC- 43	02-27-43	16	331	400	--	--	--	--	110
SC- 70	05-25-54	--	--	--	--	--	--	--	50
SC- 81	06-26-57	--	--	--	--	--	--	--	--
	04-08-60	--	--	--	--	--	--	--	1000
	04-13-61	--	--	--	--	--	--	--	1100

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY PROCESS DATE 11-03-97
MULTIPLE STATION ANALYSES

LOCAL IDENT-I-FIER	DATE	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3 (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM PERCENT (00932)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
JF- 64	05-16-62	--	--	--	--	--	--	--	300
	06-18-86	--	19	6.5	300	15	--	--	410
JF- 65	06-14-60	--	--	--	--	--	--	--	180
	06-27-61	--	--	--	--	--	--	--	190
	10-10-61	--	--	--	--	--	--	--	200
	03-16-62	--	--	--	--	--	--	--	220
	10-14-64	--	--	--	--	--	--	--	180
	05-14-65	--	--	--	--	--	--	--	110
	10-27-66	--	--	--	--	--	--	--	240
	06-09-69	--	--	--	--	--	--	--	130
	12-02-76	--	--	--	--	--	--	--	120
	01-18-79	--	--	--	--	--	--	--	110
	08-19-81	--	--	--	--	--	--	--	120
JF- 66	12-29-58	--	--	--	--	--	--	--	38
	06-29-61	--	--	--	--	--	--	--	350
	10-10-61	--	--	--	--	--	--	--	390
	05-16-62	--	--	--	--	--	--	--	390
	10-14-64	--	--	--	--	--	--	--	420
	05-14-65	--	--	--	--	--	--	--	400
	10-27-66	--	--	--	--	--	--	--	400
	06-09-69	--	--	--	--	--	--	--	440
	10-29-71	--	--	--	--	--	--	--	410
	10-25-73	--	--	--	--	--	--	--	420
	11-11-75	--	--	--	--	--	--	--	470
	12-02-76	--	--	--	--	--	--	--	500
	01-18-79	--	--	--	--	--	--	--	510
	08-19-81	--	--	--	--	--	--	--	520
JF- 111	05-25-35	--	--	--	--	--	--	--	210
JF- 124	05-01-51	--	--	--	--	--	--	--	410
	09-30-60	0	23	9.4	390	17	89	5.5	410
	11-11-60	--	--	--	--	--	--	--	--
JF- 127	04-13-61	--	--	--	--	--	--	--	790
SC- 26	02-16-43	0	--	--	--	--	--	--	420
SC- 42	05-15-59	--	--	--	--	--	--	--	500
	12-08-59	--	--	--	--	--	--	--	500
SC- 43	02-27-43	--	--	--	--	--	--	--	500
SC- 70	05-25-54	--	--	--	--	--	--	--	460
SC- 81	06-26-57	--	--	--	--	--	--	--	1400
	04-08-60	--	--	--	--	--	--	--	1400
	04-13-61	--	--	--	--	--	--	--	1400

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY PROCESS DATE 11-03-97
MULTIPLE STATION ANALYSES

LOCAL IDENT-I-FIER	DATE	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
JF- 64	05-16-62	--	--	--	--	--	--	--	--
	06-18-86	0.20	--	--	--	--	190	--	90
JF- 65	06-14-60	--	--	--	--	--	--	--	--
	06-27-61	--	--	--	--	--	--	--	--
	10-10-61	--	--	--	--	--	--	--	--
	03-16-62	--	--	--	--	--	--	--	--
	10-14-64	--	--	--	--	--	--	--	--
	05-14-65	--	--	--	--	--	--	--	--
	10-27-66	--	--	--	--	--	--	--	--
	06-09-69	--	--	--	--	--	--	--	--
	12-02-76	--	--	--	--	--	--	--	--
	01-18-79	--	--	--	--	--	--	--	--
	08-19-81	--	--	--	--	--	--	--	--
JF- 66	12-29-58	--	--	--	--	100	--	--	--
	06-29-61	--	--	--	--	--	--	--	--
	10-10-61	--	--	--	--	--	--	--	--
	05-16-62	--	--	--	--	--	--	--	--
	10-14-64	--	--	--	--	--	--	--	--
	05-14-65	--	--	--	--	--	--	--	--
	10-27-66	--	--	--	--	--	--	--	--
	06-09-69	--	--	--	--	--	--	--	--
	10-29-71	--	--	--	--	--	--	--	--
	10-25-73	--	--	--	--	--	--	--	--
	11-11-75	--	--	--	--	--	--	--	--
	12-02-76	--	--	--	--	--	--	--	--
	01-18-79	--	--	--	--	--	--	--	--
	08-19-81	--	--	--	--	--	--	--	--
JF- 111	05-25-35	--	--	--	--	--	--	--	--
JF- 124	05-01-51	--	--	--	--	--	--	--	--
	09-30-60	0.60	0.70	32	960	220	--	20	--
	11-11-60	--	--	--	--	280	--	--	--
JF- 127	04-13-61	--	--	--	--	--	--	--	--
SC- 26	02-16-43	1.0	--	--	--	--	--	--	--
SC- 42	05-15-59	--	--	--	--	--	--	--	--
	12-08-59	--	--	--	--	--	--	--	--
SC- 43	02-27-43	1.0	--	--	--	--	--	--	--
SC- 70	05-25-54	--	--	--	--	--	--	--	--
SC- 81	06-26-57	--	--	--	--	--	--	--	--
	04-08-60	--	--	--	--	--	--	--	--
	04-13-61	--	--	--	--	--	--	--	--

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY PROCESS DATE 11-03-97
MULTIPLE STATION ANALYSES

LOCAL IDENT-I-FIER	DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS NO3) (71851)	ELEV. OF LAND SURFACE DATUM (FT. ABOVE NGVD) (72000)	DEPTH OF WELL, TOTAL (FEET) (72008)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	ALKA-LINITY LAB (MG/L AS CACO3) (90410)
JF- 64	05-16-62	--	--	--	4.0	717.00	--	--
	06-18-86	899	--	--	4.0	717.00	1720	198
JF- 65	06-14-60	--	--	--	3.0	698.00	--	--
	06-27-61	--	--	--	3.0	698.00	--	--
	10-10-61	--	--	--	3.0	698.00	--	--
	03-16-62	--	--	--	3.0	698.00	--	--
	10-14-64	--	--	--	3.0	698.00	--	--
	05-14-65	--	--	--	3.0	698.00	--	--
	10-27-66	--	--	--	3.0	698.00	--	--
	06-09-69	--	--	--	3.0	698.00	--	--
	12-02-76	--	--	--	1.0	698.00	--	--
	01-18-79	--	--	--	1.0	698.00	--	--
	08-19-81	--	--	--	1.0	698.00	--	--
JF- 66	12-29-58	345	--	--	3.0	697.00	--	--
	06-29-61	--	--	--	3.0	697.00	--	--
	10-10-61	--	--	--	3.0	697.00	--	--
	05-16-62	--	--	--	3.0	697.00	--	--
	10-14-64	--	--	--	3.0	697.00	--	--
	05-14-65	--	--	--	3.0	697.00	--	--
	10-27-66	--	--	--	3.0	697.00	--	--
	06-09-69	--	--	--	3.0	697.00	--	--
	10-29-71	--	--	--	3.0	697.00	--	--
	10-25-73	--	--	--	3.0	697.00	--	--
	11-11-75	--	--	--	3.0	697.00	--	--
	12-02-76	--	--	--	3.0	697.00	--	--
	01-18-79	--	--	--	3.0	697.00	--	--
	08-19-81	--	--	--	3.0	697.00	--	--
JF- 111	05-25-35	1370	--	--	13.0	272.00	--	--
JF- 124	05-01-51	--	--	--	12.0	400.00	--	--
	09-30-60	1100	1090	0.40	12.0	400.00	--	--
	11-11-60	--	--	--	12.0	400.00	--	--
JF- 127	04-13-61	--	--	--	12.0	184.00	--	--
SC- 26	02-16-43	--	--	--	11.0	363.00	--	--
SC- 42	05-15-59	--	--	--	12.0	460.00	--	--
	12-08-59	--	--	--	12.0	460.00	--	--
SC- 43	02-27-43	--	--	--	12.0	400.00	--	--
SC- 70	05-25-54	--	--	--	12.0	425.00	--	--
SC- 81	06-26-57	--	--	--	7.0	152.00	--	--
	04-08-60	--	--	--	7.0	152.00	--	--
	04-13-61	--	--	--	7.0	152.00	--	--

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY PROCESS DATE 11-03-97
MULTIPLE STATION ANALYSES

LOCAL IDENT-I-FIER	GEO-LOGIC UNIT	DATE	TEMPER-ATURE WATER (DEG C) (00010)	AGENCY ANA-LYZING SAMPLE (CODE NUMBER) (00028)	COLOR (PLAT-INUM-COBALT UNITS) (00080)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)
SC- 85	112GRMC	06-25-57	--	--	--	--	--
SC- 108	111PNBR	04-15-60	21.0	--	--	2300	--
	111PNBR	11-11-60	21.0	--	--	1990	--
	111PNBR	04-13-61	21.0	--	--	1730	--
SC- 112	111PNBR	07-07-30	--	9722	42	--	106
	111PNBR	04-12-61	21.0	--	--	821	--

LOCAL IDENT-I-FIER	DATE	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	ELEV. OF LAND SURFACE DATUM (FT. ABOVE NGVD) (72000)	DEPTH OF WELL, TOTAL (FEET) (72008)
SC- 85	06-25-57	--	1700	--	--	4.0	206.00
SC- 108	04-15-60	700	480	--	--	11.0	168.00
	11-11-60	650	380	--	--	11.0	168.00
	04-13-61	660	380	--	--	11.0	168.00
SC- 112	07-07-30	--	8.9	17000	606	11.0	80.00
	04-12-61	400	9.9	--	--	11.0	80.00

TABLE 1. CHEMICAL ANALYSES OF WATER FROM THE SHALLOW AQUIFERS

(See Appendix A for explanation of significance of chemical constituents.)

Well No.	Depth (feet)	Date of collection	Temperature (°F)	Constituents in parts per million: Silica (SiO_2)	Total iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Carbonate (CO_3)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Boron (B)	Phosphate (PO_4)	Dissolved Solids: Residue on evaporation at 180°C	Dissolved Solids: Sum of determined constituents	Hardness As $CaCO_3$: Calcium, magnesium	Hardness As $CaCO_3$: Noncarbonate	pH	Specific conductance (micromhos at 25°C)	Color
Point-Bar Aquifers																									
Jf-30	158	11/ 8/60	70	44	23	0.04	242	19	46	4.8	0	926	1.6	22	0.2	0.2	0.66	0.0	844	836	681	0	6.8f	1,350	30
Jf-76	96	7/ 7/60	70	36	13	.02	93	48	14	5.0	0	530	.8	20	.7	.1	.06	.4	493	479	430	0	6.8f	802	20
Distributary Channel Deposits																									
SB-20	96	11/10/60	70	36	12	0.30	230	89	290	11	0	485	3.0	840	0.2	0.0	0.42	0.1	1,980	1,740	940	543	7.1f	3,170	30
"200-Foot" Sand																									
Jf- 26	185	5/20/50	70	26	0.90	.....	77	50	190	22	0	476	13	318	0.0	0.2	.....	.....	927	930	398	.....	7.7	1,730	20
Jf- 42	282	1/14/55	70	38	.73	0.22	198	84	530	19	0	452	21	1,170	.1	.0	0.25	.....	2,030	2,280	840	470	7.5	4,080	20
Jf- 46	250	12/ 6/61	71	20	.59	.02	23	8	242	11	0	516	.6	150	.3	4.8	.28	1.2	745	715	90	0	7.6f	1,160	40
Jf- 49	273	10/11/61	70	19	1.8	.00	91	52	307	22	0	466	.8	520	.1	5.4	.37	.00	1,350	1,250	441	59	7.3f	2,240	15
Jf- 95	262	10/10/61	71	18	.59	.00	64	35	357	21	0	424	.8	545	.4	3.0	.74	.20	1,330	1,250	304	0	7.7f	2,210	20
Or- 38	300	5/19/42	71	38	.61	.....	25	21	616	8.9	...	688	1.4	660	.4	.4	.....	.....	1,730	1,710	140	.....	.....	.....	90
Or-116	292	4/13/61	72	34	.58	.00	33	19	575	13	0	709	1.0	598	.5	.5	.29	.0	1,800	1,620	160	0	7.7f	3,140	80

f—Field measurement.

Appendix M

LAC 33:V.517.D.

Hazardous Waste Chemical and Physical Analyses

January - March 1997 CHEMICAL ANALYSIS

QUARTERLY AVERAGE CONCENTRATION

PARAMETER	UNIT	Waste acid	Waste Water	Misc. Eff.	NSB
Solids (disolved)	%	72.73	8.59	0.96	1.13
Solids (suspended)	ppm	182	190	54	201
Solids (total)	%	72.75	8.61	0.97	1.15
N (NH3)	%	5.45	1.45	0.07	0.05
CN (total)	ppm	-	122	180	19
S04	%	56.77	5.40	0.05	0.02
Ash content	%	0.03	0.07	0.18	0.02
Total acidity as H2S04	%	40.14	-	-	-
pH		-	3.4	11.5	7.1
TOC	%	3.25	1.70	0.66	1.07
Acetic acid	ppm	-	1310	-	410
Acetone	ppm	440	0	250	-
Acetonitrile	ppm	-	770	3540	0
Acrylamide	ppm	-	1040	196	28
Acrylic Acid	ppm	-	5500	-	520
Acrylonitrile	ppm	-	26	0	0
Benzene	ppm	-	0.0	0.0	0.0
Formic Acid	ppm	-	790	-	54
Fumaronitrile	ppm	-	1010	-	-
Methacrylic Acid	ppm	2030	-	-	-
Methanol	ppm	5700	0	360	-
MMA	ppm	380	-	30	-
Pyridine	ppm	-	220	0	0
Succinonitrile	ppm	-	84	1010	1930
Toluene	ppm	-	-	7.20	-

April - June 1997 CHEMICAL ANALYSIS

QUARTERLY AVERAGE CONCENTRATION

PARAMETER	UNIT	Waste acid	Waste Water	Misc. Eff.	NSB
Solids (disolved)	%	70.25	8.31	0.98	0.95
Solids (suspended)	ppm	236	212	19	35
Solids (total)	%	70.27	8.33	0.98	0.95
N (NH3)	%	5.97	1.33	0.04	0.03
CN (total)	ppm	-	306	47	23
S04	%	57.00	4.90	0.04	0.02
Ash content	%	0.02	0.05	0.08	0.03
Total acidity as H2S04	%	39.30	-	-	-
pH		-	4.0	9.8	7.7
TOC	%	1.83	1.65	0.83	1.10
Acetaldehyde	ppm	-	63	10	0
Acetic acid	ppm	-	1910	-	430
Acetone	ppm	1580	0	350	-
Acetonitrile	ppm	-	165	7300	0
Acrylamide	ppm	-	1360	131	28
Acrylic Acid	ppm	-	8200	-	390
Acrylonitrile	ppm	-	0	0	0
Allyl Alcohol	ppm	-	66	54	0
Benzene	ppm	-	0.0	0.0	0.0
Formic Acid	ppm	-	650	-	38
Fumaronitrile	ppm	-	1410	-	-
Methanol	ppm	6100	0	320	-
MMA	ppm	600	-	0	-
Pyridine	ppm	-	340	0	0
Succinonitrile	ppm	-	131	2400	4900
Toluene	ppm	-	-	2.20	-

JULY - SEPTEMBER 1997 CHEMICAL ANALYSIS

QUARTERLY AVERAGE CONCENTRATION

PARAMETER	UNIT	Waste acid	Waste Water	Misc. Eff.	NSB
Solids (disolved)	%	70.90	8.00	1.07	1.32
Solids (suspended)	ppm	249	192	2	187
Solids (total)	%	70.92	8.02	1.07	1.34
N (NH3)	%	5.96	1.33	0.07	0.05
CN (total)	ppm	-	309	209	38
S04	%	55.67	4.81	0.06	0.03
Ash content	%	0.00	0.04	0.08	0.03
Total acidity as H2S04	%	39.80	-	-	-
pH		-	4.0	9.7	6.4
TOC	%	1.11	1.78	0.08	1.03
Acetaldehyde	ppm	-	52	155	0
Acetic acid	ppm	-	1416	390	560
Acetone	ppm	2400	-	360	0
Acetonitrile	ppm	-	171	9000	0
Acrylamide	ppm	-	981	96	53
Acrylic Acid	ppm	-	6160	280	650
Acrylonitrile	ppm	-	11	41	0
Allyl Alcohol	ppm	-	45	79	0
Benzene	ppm	-	-	0.0	0.0
Formic Acid	ppm	-	621	107	97
Fumaronitrile	ppm	-	1052	0	0
Methanol	ppm	6050	-	250	0
MMA	ppm	450	-	0	0
Pyridine	ppm	-	261	21	0
Succinonitrile	ppm	-	100	3100	8900
Toluene	ppm	-	-	0.00	-

OCTOBER - DECEMBER 1997 CHEMICAL ANALYSIS

QUARTERLY AVERAGE CONCENTRATION

PARAMETER	UNIT	Waste acid	Waste Water	Misc. Eff.	NSB
Solids (dissolved)	%	70.17	8.07	1.57	1.34
Solids (suspended)	ppm	70	267	28	118
Solids (total)	%	70.18	8.10	1.57	1.35
N (NH3)	%	5.47	1.24	0.04	0.03
CN (total)	ppm	-	304	136	118
S04	%	56.41	4.89	0.07	0.03
Ash content	%	0.01	0.07	0.10	0.01
Total acidity as H2S04	%	39.30	-	-	-
pH		-	3.8	9.7	6.6
TOC	%	3.03	1.69	1.08	1.35
Acetaldehyde	ppm	-	27	36	0
Acetic acid	ppm	-	1611	400	610
Acetone	ppm	(see note)	-	440	-
Acetonitrile	ppm	-	329	4200	0
Acrylamide	ppm	-	1095	340	34
Acrylic Acid	ppm	-	7291	350	590
Acrylonitrile	ppm	-	216	51	32
Allyl Alcohol	ppm	-	37	51	0
Benzene	ppm	-	-	0.0	0.0
Formic Acid	ppm	-	785	158	47
Fumaronitrile	ppm	-	1104	21	-
Methanol	ppm	8600	-	300	-
MMA	ppm	470	-	119	-
Pyridine	ppm	-	277	22	30
Succinonitrile	ppm	-	132	3800	7800
Toluene	ppm	-	-	0.17	-

NOTE: Acetone in Waste Acid was reported by the lab as less than the detection limit of 200 ppm. However, acetone is present in the Waste Acid stream. The lab technician indicated that acetone was observed in the sample at about 50 ppm but could not quantify it accurately because it was below the practical quantitation limit.