February 27, 1995

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Lance R. Richman, P.G.
Emergency and Remedial Response Division
U. S. Environmental Protection Agency
290 Broadway
New York, NY 10007

Re: Diamond Alkali Superfund Site, Passaic River Study Area

Dear Mr. Richman:

Attached is the response of E. I. du Pont de Nemours and Company ("DuPont") to the Request for Information on the subject site. This is a joint response of DuPont, Conoco, Inc. and Consol, Inc. who each received a similar request. The answer to Question 14 in the response explains the corporate relationship among the three entities.

Please direct all future correspondence on the matter to:

Bernard J. Reilly, Esq.
DuPont Legal, D-8068
1007 Market Street
Wilmington, DE 19898
(302) 774-5445
(302) 774-1189 (fax)

84301

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LG-4878 Rev. 2/94

Should you have any questions or need further clarification of this response, do not hesitate to contact me.

Very truly yours,

Barbara U. Gravely
for
Bernard J. Reilly

Attachments

cc: Ms. Pat Hicks
Office of Regional Counsel
U. S. Environmental Protection Agency
290 Broadway
New York, NY 10007

Barbara U. Gravely, DuPont Legal

RESPONSE TO REQUEST FOR INFORMATION
E. I. DU PONT DE NEMOURS AND COMPANY
DIAMOND ALKALI SUPERFUND SITE, PASSAIC RIVER STUDY AREA

1. How long has your company operated at the facility designated above? If your company no longer operates at this facility, during what years did your company operate at the facility?

   In 1955 Pitt-Consol Chemical Company, a wholly-owned subsidiary of Consolidation Coal Company (Consol), purchased the site from Reilly Tar & Chemical, Inc. and operated at the site until 1983 when all manufacturing was discontinued. In 1984 the work to dismantle the facility was begun; it concluded in 1986.

2. (a) Does your company have or has it in the past had a permit or permits issued pursuant to the Resource Conservation and Recovery Act, 42 U.S.C. Section 6901 et seq.? If "yes", please provide the years that your company held such a permit.

   Attachment 1 is the RCRA Part A Permit Application, #NJD 004948188.

   (b) Does your company have or has it in the past had a permit or permits issued pursuant to the Federal Water Pollution Control Act, 33 U.S.C. Section 1251. et seq.? If "yes", please provide the years that your company held such a permit.

   DuPont does not know of any permits issued pursuant to the Federal Water Pollution Control Act.

3. Did your company receive, utilize, manufacture, discharge, release or dispose of any materials containing the following substances:

   When the tanks were closed in February 1987, part of the official RCRA closure included an analysis of the tar materials recovered at the site. Substances found included:

   Phenanthrene
   Anthracene
   Fluoranthene
   Pyrene
   Benzo (a) anthracene
   Benzo (b) fluoranthene
   Benzo (a) pyrene (BAP)
   Lead

The other contaminants were not found: dioxin compounds, PCBs, benzo (k) fluoranthese, indeno pyrene, benzo perylene, dibenzofurans, fluorene, 2-methyl napthalene, and zinc. Attachment 2.

4. (a) Provide a description of the manufacturing processes for which all hazardous substances, including, but not limited to the substances listed in response to item (3), were a product or by-product.

Attachment 3 is a description of the manufacturing processes and synthetic processes at the plant. This information was compiled for use in the prospectus when Conoco, Inc. offered the Pitt-Consol Chemical Company for sale. The plant was not sold and instead dismantled.

(b) During what parts of the manufacturing processes identified in the response to items (4) (a), above, were hazardous substances, including, but not limited to, the substances listed in response to item (3) generated?

See Attachment 3. Additional information is found in Attachment 4, RCRA Section 3007 Questionnaire dated March 31, 1983.

5. Describe the methods of collection, storage, treatment, and disposal of all hazardous substances, including, but not limited to, the substances listed in response to item (3) and (4). Include information on the following:

Raw materials were stored in tank farms. By products, storm water and possibly products were stored in lagoons. Waste water was discharged to a Passaic Valley Sewerage Commission (PSVC) municipal sanitary sewer.

(a) Identify all persons who arranged for and managed the processing, treatment and disposal of hazardous substances.

Based on existing records, the only people we can identify are Alex Guanlao of Pittsburgh Consolidation Coal Company who was the environmental engineer for the facility in 1982. His name appears on bills of lading and proposal requests for waste disposal. DuPont (P. Brandt Butler as agent) appears as the generator for materials manifested and sent out for disposal during closure in 1987.

(b) If hazardous substances were taken off-site by a hauler or transporter, provide the names and addresses of the waste haulers and the disposal site locations.

In 1987 waste materials were sent to Chem Waste Management, 100 Lister Avenue, Newark, NJ. The manifest number is NJA153670. Wastes which represent the accumulation of spill cleanup materials (contaminated soil/gravel/absorbents) which were collected and stored in DOT-approved drums

were sent to SCA Chemical Services Company for disposal in their Pinewood, South Carolina landfill.

We have no information describing disposal during years of operation.

(c) Describe all storage practices employed by your company with respect to all hazardous substances from the time operations commenced until the present. Include all on-site and off-site storage activities.

Wastewater was sent to the PSVC sewer system. By products, storm water and possibly products were stored in lagoons. See interim status permit application, Attachment 1, for a description of storage and treatment of hazardous waste. Additional information may be found in Part II of the 1983 Hazardous Waste Facility Annual Report, Attachment 7.

6. (a) For process waste waters generated at the facility which contained any hazardous substances, including, but limited to, the substances listed in response to item (3) and (4):

(i) Did the waste stream connect to a sanitary sewer and if so, during what years.

To the best of our knowledge and belief, it was connected to PSVC sewer .

(ii) Were they treated before being discharged to the sanitary sewer and if so, how?

Yes, oils were decanted and neutralized prior to discharge.

(iii) Where was the discharge from any of these structures released and during what years? Was this discharge treated before its release and if so, how and during what years?

DuPont has no information on disposal of wastewater beyond what was plumbed to the PSVC sewer.

(b) For floor drains or other disposal drains at the facility:

We are not in possession of any diagrams of process buildings.

(c)(i) Did any storm sewers, catch basins or lagoons exist at any time at the facility and if so, during what years?

Aerial photos show that seven (7) lagoons existed at the facility. The lagoons closed between 1954 - 1970. All but one, lagoon A closed by 1966, per the

Woodward-Clyde Phase I Report; see tables section. Attachment 5. Attachment 6 are interpretation drawings of the aerial photos that were done by CH2M Hill.

(ii) If catch basins or lagoons existed, were they line or un-lined?

They were unlined lagoons.

(iii) Where was the discharge from any of these structures released and during what years? Was this discharge treated before its release and if so, how and during what years?

There is no evidence of routine discharge from lagoons.

(d) Please supply diagrams of any waste water collection or disposal systems on the property.

We are not in possession of any diagrams.

7. (a) For each hazardous substance, including, but not limited to, the substances listed in response to item (3) or identified in the responses to item (4), above, provide the total amount generated during the operation of the facility on an annual basis.

The only indications we know of to indicate the amount of hazardous waste generated can be found in the 7/23/82 letter from Alex Guanlao, Attachment 8, the amounts estimated under our USEPA Generators ID number and the estimated annual quantity of waste in 1980 RCRA permit application, see Attachment 1.

(b) Were any hazardous substances, including, but not limited to, the substances listed in response to item (3) or identified in the response to item (4), above, disposed of in the Passaic River or discharged to the Passaic River? If yes, estimate the amount of material discharged to or disposed of in the Passaic River and the frequency with which this discharge or disposal occurred.

We know of no records indicating any discharge to the Passaic River.

8. Please identify any leaks, spills, explosions, fires, or other incidents of accidental material discharge that occurred at the facility during which or as a result of which any hazardous substances, including, but not limited to, the substances listed in response to item (3) or (4), were released on the property of the facility or discharged to the Passaic River. provide any documents or information relating to these incidents.

We do not have any records of incidents during the period of operation.

9. Provide the date of any leaks, spills, explosions, fires or other incidents of accidental material discharge of any hazardous substances, including, but not limited to, the substances listed in response to item (3) and (4), on the property or into the waste water discharge system at the facility. Provide details of the ultimate disposal of any contaminated materials.

U.S. EPA completed a site inspection report in March, 1983. In that report reference is made to the release of an "unknown" red liquid into the Passaic River on May 11, 1981. There is a handwritten note stating the Coast Guard has no record of the incident. See Site Inspection Report, Attachment 9.

10. Was you facility ever subject to flooding. If so was the flooding due to (i) overflow from sanitary or storm sewer back-up and/or (ii) flood overflow from the Passaic River?

The elevation of the facility is approximately 5 MSL. There is no evidence in the aerial photos of flooding from the Passaic River to the facility. There is evidence of ponding and poor drainage after storm events.

11. Please provide a detailed description of any civil, criminal or administrative proceedings against your company for violations of any local, State or federal laws or regulations relating to water pollution or hazardous waste generation, storage, transport or disposal. Provide copies of all pleadings and depositions or other testimony given in these proceedings.

On February 29, 1984, an Administrative Complaint was filed for alleged violations of Sections 6(e) and 15 of the Toxic Substances Control Act. See Attachment 10.

12. Provide a copy of each document which relates to the generation, purchase, use, handling, hauling, and/or disposal of all hazardous substances, including, but not limited to, the substances listed in response to item (3) or (4). If you are unable to provide a copy of any document, then identify the document by describing the nature of the document (e.g. letter, file memo, invoice, inventory form, billing record, hazardous waste manifest, etc.). Describe the relevant information contained therein. Identify by name and job title the person who prepared the document. If the document is not readily available, state where it is stored, maintained, or why it is unavailable.

The only relevant document is the 7/23/82 letter from Alex Guanlao in which he indicates the handling of flyash, contaminated gravel, and cooling water sludge. There is also a document indicating re-sale of unused sulfuric acid as a raw material back to Essex Chemical. Attachment 8.

13. Provide all other documents pertaining to the results of any analyses of groundwater, surface water, ambient air, and any other environmental media performed at the facility.

Quarterly NPDES-DGW permits have been filed with NJDEP since 1987. Please see files under NPDES permit #NJ0060704. Attached is the latest quarterly monitoring report dated November, 1994. See Attachment 11. Two extensive investigations have been conducted by CH2M Hill in 1989 and 1992 and submitted to NJDEP by DuPont.

14. Has your company owned the facility at the location designated above? If so, from whom did your company purchase the property and in what year? If your company subsequently sold the property, to whom did your company sell it and in what year? Please provide copies of any deeds and documents of sale.

From the late 1800s until 1955, the site was operated by Judson Buttorworth, Inc. and later Reilly Tar & Chemical, Inc. In 1955, Pitt-Consol Chemical Company, a wholly-owned subsidiary of Consolidation Coal Company (Consol) purchased the site from Reilly Tar & Chemical, Inc. and operated separately from any other business of Consol Consolidation Coal Company owned all the Pitt-Consol stock and Consolidation Coal personnel made up the Pitt-Consol Board of Directors.

In 1966, Conoco Inc. purchased Consolidation Coal Company, which included the Pitt-Consol Chemical Company. Consolidation Coal Company continued to own all the Pitt-Consol stock and its personnel made up the Board of Directors.

In 1969, Pitt-Consol Chemical Company operations became a division of Conoco Chemicals, but Consol continued to own the corporate stock.

In 1981, E. I. du Pont de Nemours and Company ("DuPont") purchased Conoco, Inc. which included Consolidation Coal Company and Pitt-Consol Chemical Company. Consolidation Coal continued to own all the Pitt-Consol stock and the profits and losses were recorded on Conoco Chemical's books as a division operation. Conoco Chemicals was de facto administratively under DuPont's Petrochemical Department.

In May, 1983, all manufacturing at the Pitt-Consol site was discontinued. In late 1983/early 1984, the Petrochemical Department was given the responsibility for the Pitt-Consol site after operations had ceased.

In July, 1984, Conoco Chemicals was sold to Vista Chemical Company. Pitt-Consol remained a separate corporation; however, the Board of Directors was changed to DuPont personnel. Dismantlement of the facilities at the site began in late third quarter/early fourth quarter.

In 1985, the RCRA facilities were closed and acknowledged as satisfactory by the NJDEP in April. In January, 1986 the dismantling of all production facilities was completed.

In 1988, all Pitt-Consol stock owned by Consolidation Coal Company was transferred to DuPont. See closure documents, Attachment 12.

15. Answer the following questions regarding your business or company. In identifying a company that no longer exists, provide all of the information requested, except for the agent for service of process. If your company did business under more than one name, list each name.

(a) State the legal name of your company.

E. I. du Pont de Nemours and Company

(b) State the name and address of the president or the chairman of the board, or other presiding officers of your company.

Edgar S. Woolard, Jr., Chairman
John A. Krol, Vice Chairman
1007 Market Street
Wilmington, DE 19898

(c) Identify the state of incorporation of your company and your company's agent for service of process in the state of incorporation and in New Jersey.

DuPont is incorporated in the State of Delaware
DuPont is its own registered agent in Delaware; Corporation Trust is the registered agent in New Jersey.

(d) Provide a copy of your company's "Certificate of Incorporation" and any amendments thereto.

The Charter for E. I. du Pont de Nemours and Company is attached. Attachment 13.

(e) If your company is a subsidiary of affiliate of another company, or has subsidiaries, or is a successor to another company, identify these related companies. For each related company, describe the relationship to your company; indicate the date and manner in which each relationship was established.

See answer to Question 14 for details in the corporate relationship between DuPont, Conoco, and Consol.

(f, g, h, i) Questions related to mergers and acquisitions of companies with DuPont.

DuPont is a publicly traded corporation with $40 billion in annual sales that has been in business for nearly two hundred years and incorporated since 1915. The companies that have been merged, acquired and divested with and from DuPont are numerous. If you can identify a specific company for this information, we will be happy to provide it.

16. Provide the name, address, telephone number, title and occupation of the person(s) answering this Request for Information and state whether such person(s) has personal knowledge of the responses. In addition, identify each person who assisted in any way in responding to the "Request for Information" and specify the question to which each person assisted in responding.

P. Brandt Butler, Remediation Program Manager
DuPont Environmental Remediation Services
300 Bellevue Parkway, Suite 300
Wilmington, DE 19809

Gary Barton, Senior Staff Geologist **(Authors of**
Jeffrey Evans, Ph.D., Project Manager **referenced report)**
Woodward-Clyde Consultants, Inc.
5120 Butler Pike
Plymouth Meeting, PA 19642

Paul B. Dahlgren, Project Manager in 1989 **(Authors of**
Martha L. Monserrate, Project Manager in 1992 **referenced reports)**
CH2M HILL
99 Cherry Hill Road
Parsippany, NJ 07054

Bernard J. Reilly, Corporate Counsel
Barbara U. Gravely, Corporate Legal Assistant
DuPont Legal
1007 Market Street
Wilmington, DE 19898

1

CONOCO

Interoffice Communication

Part A

To R. E. Lehmkuhl, Conoco Chemicals, Houston

From H. Garrison, Pitt-Consol Chemicals, Newark

Date November 4, 1980

Subject RCRA Permit Application

Attached is the RCRA Permit Application for the Newark Plant which must be signed by you and submitted to the EPA (Region II) by November 19, 1980. To the best of my knowledge, the information is true, accurate, and complete. If you have any questions, please contact J. Ledvina, W. Revelt or myself.

H. Garrison

H. Garrison
Plant Manager

sag
Enc
cc: J. Ledvina, Director of Environmental Activities, Houston
W. Revelt, Senior Process Engineer, Newark
File: RCRA

843010012

Please print or type in the unshaded areas only
(fill-in areas are spaced for elite type, i.e., 12 characters/inch).

Form Approved OMB No. 158-R0175

FORM 1 GENERAL

EPA

U.S. ENVIRONMENTAL PROTECTION AGENCY

GENERAL INFORMATION

Consolidated Permits Program

(Read the "General Instructions" before starting.)

I. EPA I.D. NUMBER

F N J D 0 0 4 9 4 8 1 8 8

LABEL ITEMS

I. EPA I.D. NUMBER	NJD004948188
III. FACILITY NAME	[redacted]
V. FACILITY MAILING ADDRESS	[redacted] NEWARK, NJ 07105
VI. FACILITY LOCATION	191 DOREMUS AVE NEWARK, NJ 07105

GENERAL INSTRUCTIONS

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

II. POLLUTANT CHARACTERISTICS

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

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

III. NAME OF FACILITY

1 SKIP PITT-CONSOL CHEMICAL COMPANY

IV. FACILITY CONTACT

A. NAME & TITLE *(last, first, & title)*	B. PHONE *(area code & no.)*
2 REVELT, WILLIAM S.R. PROCESS ENG.	201 344 3800

V. FACILITY MAILING ADDRESS

A. STREET OR P.O. BOX

3 191 DOREMUS AVENUE

B. CITY OR TOWN	C. STATE	D. ZIP CODE
4 NEWARK	NJ	07105

VI. FACILITY LOCATION

A. STREET, ROUTE NO. OR OTHER SPECIFIC IDENTIFIER

5 191 DOREMUS AVENUE

B. COUNTY NAME

ESSEX

C. CITY OR TOWN	D. STATE	E. ZIP CODE	F. COUNTY CODE *(if known)*
6 NEWARK	NJ	07105	

ONTINUED FROM THE FRONT

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

A. FIRST		B. SECOND	
2865	(specify) Cyclic Chemicals	2879	(specify) Agricultural Chemicals

C. THIRD		D. FOURTH	
2821	(specify) Plastics	2899	(specify) Misc. Chemical Products

VIII. OPERATOR INFORMATION

A. NAME: PITT-CONSOL CHEMICAL COMPANY

B. Is the name listed in Item VIII-A also the owner? ☒ YES ☐ NO

C. STATUS OF OPERATOR (Enter the appropriate letter into the answer box; if "Other", specify.)
F = FEDERAL, M = PUBLIC (other than federal or state), S = STATE, O = OTHER (specify), P = PRIVATE
Answer: 0 (specify) Public Corporation

D. PHONE (area code & no.): A 201 344 3800

E. STREET OR P.O. BOX: 191 DOREMUS AVENUE

F. CITY OR TOWN: NEWARK

G. STATE: NJ

H. ZIP CODE: 07105

IX. INDIAN LAND

Is the facility located on Indian lands? ☐ YES ☒ NO

X. EXISTING ENVIRONMENTAL PERMITS

A. NPDES (Discharges to Surface Water)	N	N.A.	
D. PSD (Air Emissions from Proposed Sources)	9P	N.A.	
B. UIC (Underground Injection of Fluids)	U	N.A.	
E. OTHER (specify)	9	STATE OF N.J.	(specify) Air Quality (see attached list)
C. RCRA (Hazardous Wastes)	R	N.A.	
E. OTHER (specify)	9	PVSC	(specify) Water Effluent (see attached)

XI. MAP

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

XII. NATURE OF BUSINESS (provide a brief description)

Manufacture of alkylated phenols

XIII. CERTIFICATION (see instructions)

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

A. NAME & OFFICIAL TITLE (type or print)	B. SIGNATURE	C. DATE SIGNED
R. E. Lehmkuhl Vice President-Operations		

COMMENTS FOR OFFICIAL USE ONLY

843010014

AIR QUALITY RELATED PERMITS WITH STATE OF NEW JERSEY

PITT-CONSOL CHEMICAL COMPANY

NEWARK, NEW JERSEY

CERTIFICATE NO.	DESCRIPTION
TANKS	
30248	Gasoline Storage
30325	Fuel Oil Storage
30326	Methanol Storage
30327	Fuel Oil Storage
30328	Fuel Oil Storage
30840	Fuel Oil Storage
31661	Cresylic Acid Storage
31662	Cresylic Acid Storage
31663	Cresylic Acid Storage
31664	Cresylic Acid Storage
31665	Alkylated Phenols Storage
31673	Cresylic Acid Storage
Equipment	
CT-300	Vent Scrubber
CT-301	Vent System and Incinerator
CT-35482	Vent System and Quench Drum
CT-3149 (1)	Vent System and Incinerator
32827	Vent System and Boiler/Incinerator
30841	Vent System and Boiler/Incinerator
043225	Hot Oil Heater
New Permits Applied For	
NA	New Hot Oil Heater

Notes:

(1) An application to revise this permit has been submitted to the State of New Jersey.

11/4/80

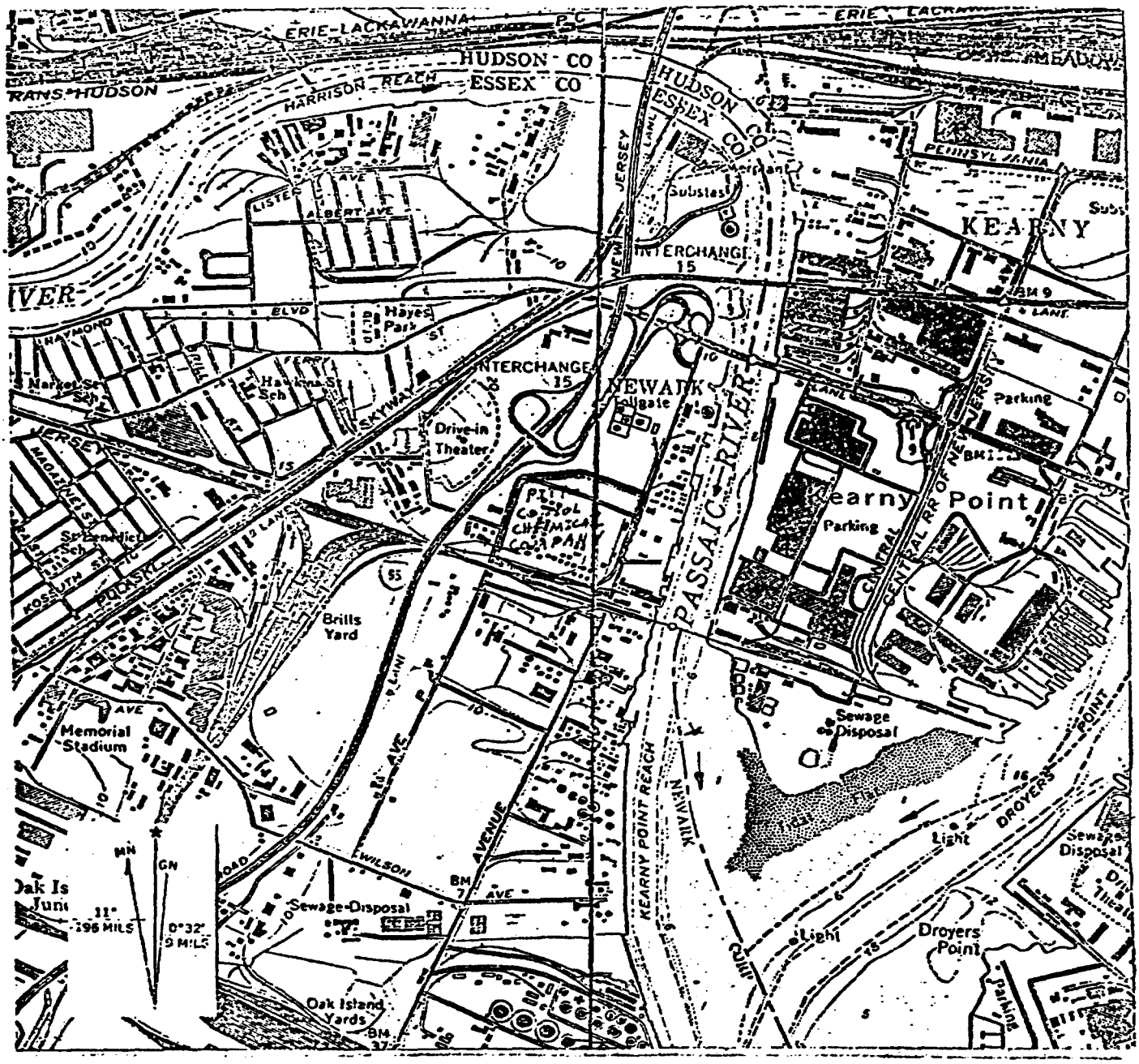
WATER EFFLUENT PERMITS

PITT-CONSOL CHEMICAL COMPANY

NEWARK, NEW JERSEY

An application to continue to discharge the Plant's effluent to the facilities of the Passaic Valley Sewerage Commission (PVSC) has been submitted and is being reviewed.

11/4/80



Notes:

1. All water intake is via the City of Newark's water system. No well or river water is used.
2. With the exception of general run off, all water discharge is via the Passaic Valley Sewerage Commission's sanitary sewer system.
3. We do not have knowledge of any drinking water wells within one quarter of a mile.
4. Scale is approximately 1:24,000.
5. Plant's north east corner is approximately N 40° 42' 45" - W 74° 7' 21".
6. For location of hazardous waste management facilities see attached figure 3-1.

11/4/80

843010017

Please print or type in the unshaded areas only
(fill-in areas are spaced for elite type, i.e., 12 characters/inch).

Form Approved OMB No. 158-S80004

FORM 3 RCRA

U.S. ENVIRONMENTAL PROTECTION AGENCY

HAZARDOUS WASTE PERMIT APPLICATION

Consolidated Permits Program

(This information is required under Section 3005 of RCRA.)

I. EPA I.D. NUMBER

F N J D 0 0 4 9 4 8 1 8 8

FOR OFFICIAL USE ONLY

APPLICATION APPROVED	DATE RECEIVED (yr., mo., & day)	COMMENTS

II. FIRST OR REVISED APPLICATION

Place an "X" in the appropriate box in A or B below *(mark one box only)* to indicate whether this is the first application you are submitting for your facility or a revised application. If this is your first application and you already know your facility's EPA I.D. Number, or if this is a revised application, enter your facility's EPA I.D. Number in Item I above.

A. FIRST APPLICATION *(place an "X" below and provide the appropriate date)*

[X] 1. EXISTING FACILITY *(See instructions for definition of "existing" facility. Complete item below.)*

FOR EXISTING FACILITIES, PROVIDE THE DATE *(yr., mo., & day)* OPERATION BEGAN OR THE DATE CONSTRUCTION COMMENCED *(use the boxes to the left)* Pre-1900

[ ] 2. NEW FACILITY *(Complete item below.)*

FOR NEW FACILITIES PROVIDE THE DATE *(yr., mo., & day)* OPERATION BEGAN OR IS EXPECTED TO BEGIN

B. REVISED APPLICATION *(place an "X" below and complete Item I above)*

[ ] 1. FACILITY HAS INTERIM STATUS

[ ] 2. FACILITY HAS A RCRA PERMIT

III. PROCESSES – CODES AND DESIGN CAPACITIES

A. PROCESS CODE – Enter the code from the list of process codes below that best describes each process to be used at the facility. Ten lines are provided for entering codes. If more lines are needed, enter the code(s) in the space provided. If a process will be used that is not included in the list of codes below, then describe the process *(including its design capacity)* in the space provided on the form *(Item III-C)*.

B. PROCESS DESIGN CAPACITY – For each code entered in column A enter the capacity of the process.
1. AMOUNT – Enter the amount.
2. UNIT OF MEASURE – For each amount entered in column B(1), enter the code from the list of unit measure codes below that describes the unit of measure used. Only the units of measure that are listed below should be used.

PROCESS	PROCESS CODE	APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY
Storage:		
CONTAINER *(barrel, drum, etc.)*	S01	GALLONS OR LITERS
TANK	S02	GALLONS OR LITERS
WASTE PILE	S03	CUBIC YARDS OR CUBIC METERS
SURFACE IMPOUNDMENT	S04	GALLONS OR LITERS
Disposal:		
INJECTION WELL	D79	GALLONS OR LITERS
LANDFILL	D80	ACRE-FEET *(the volume that would cover one acre to a depth of one foot)* OR HECTARE-METER
LAND APPLICATION	D81	ACRES OR HECTARES
OCEAN DISPOSAL	D82	GALLONS PER DAY OR LITERS PER DAY
SURFACE IMPOUNDMENT	D83	GALLONS OR LITERS

PROCESS	PROCESS CODE	APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY
Treatment:		
TANK	T01	GALLONS PER DAY OR LITERS PER DAY
SURFACE IMPOUNDMENT	T02	GALLONS PER DAY OR LITERS PER DAY
INCINERATOR	T03	TONS PER HOUR OR METRIC TONS PER HOUR; GALLONS PER HOUR OR LITERS PER HOUR
OTHER *(Use for physical, chemical, thermal or biological treatment processes not occurring in tanks, surface impoundments or incinerators. Describe the processes in the space provided; Item III-C.)*	T04	GALLONS PER DAY OR LITERS PER DAY

UNIT OF MEASURE	UNIT OF MEASURE CODE	UNIT OF MEASURE	UNIT OF MEASURE CODE	UNIT OF MEASURE	UNIT OF MEASURE CODE
GALLONS	G	LITERS PER DAY	V	ACRE-FEET	A
LITERS	L	TONS PER HOUR	D	HECTARE-METER	F
CUBIC YARDS	Y	METRIC TONS PER HOUR	W	ACRES	B
CUBIC METERS	C	GALLONS PER HOUR	E	HECTARES	Q
GALLONS PER DAY	U	LITERS PER HOUR	H		

EXAMPLE FOR COMPLETING ITEM III *(shown in line numbers X-1 and X-2 below)*: A facility has two storage tanks, one tank can hold 200 gallons and the other can hold 400 gallons. The facility also has an incinerator that can burn up to 20 gallons per hour.

C DUP 1

LINE NUMBER	A. PROCESS CODE (from list above)	B. PROCESS DESIGN CAPACITY 1. AMOUNT (specify)	2. UNIT OF MEASURE (enter code)	FOR OFFICIAL USE ONLY	LINE NUMBER	A. PROCESS CODE (from list above)	B. PROCESS DESIGN CAPACITY 1. AMOUNT	2. UNIT OF MEASURE (enter code)	FOR OFFICIAL USE ONLY
X-1	S02	600	G		5	T04	1,320	U	
X-2	T03	20	E		6	T04	10,000	U	
1	S01	50,000	G		7				
2	S03	130	Y		8				
3	T01	720,000	U		9				
4	T04	900	U		10				

Continued from the front.

III. PROCESSES *(continued)*

C. SPACE FOR ADDITIONAL PROCESS CODES OR FOR DESCRIBING OTHER PROCESSES *(code "T04")*. FOR EACH PROCESS ENTERED HERE INCLUDE DESIGN CAPACITY.

Line Number
From 111-B

4 T04 - The Plant has a "hot box" which can be used to melt 50 drums at one time to allow recovery of off-spec or solidified spilled materials. The box operates on a cycle of approximately 3 days.

5 T04 - The Plant has two racks capable of steaming out 12 drums each.

6 T04 - The Plant has the capability of neutralizing spent and/or scrap acid and/or caustic in a 3000 gallon agitated reactor. Approximately 10,000 gallons per day could be neutralized.

IV. DESCRIPTION OF HAZARDOUS WASTES

A. EPA HAZARDOUS WASTE NUMBER — Enter the four-digit number from 40 CFR, Subpart D for each listed hazardous waste you will handle. If you handle hazardous wastes which are not listed in 40 CFR, Subpart D, enter the four-digit number*(s)* from 40 CFR, Subpart C that describes the characteristics and/or the toxic contaminants of those hazardous wastes.

B. ESTIMATED ANNUAL QUANTITY — For each listed waste entered in column A estimate the quantity of that waste that will be handled on an annual basis. For each characteristic or toxic contaminant entered in column A estimate the total annual quantity of all the non-listed waste*(s)* that will be handled which possess that characteristic or contaminant.

C. UNIT OF MEASURE — For each quantity entered in column B enter the unit of measure code. Units of measure which must be used and the appropriate codes are:

ENGLISH UNIT OF MEASURE	CODE	METRIC UNIT OF MEASURE	CODE
POUNDS	P	KILOGRAMS	K
TONS	T	METRIC TONS	M

If facility records use any other unit of measure for quantity, the units of measure must be converted into one of the required units of measure taking into account the appropriate density or specific gravity of the waste.

D. PROCESSES

1. PROCESS CODES:
For listed hazardous waste: For each listed hazardous waste entered in column A select the code*(s)* from the list of process codes contained in Item III to indicate how the waste will be stored, treated, and/or disposed of at the facility.
For non-listed hazardous wastes: For each characteristic or toxic contaminant entered in column A, select the code*(s)* from the list of process codes contained in Item III to indicate all the processes that will be used to store, treat, and/or dispose of all the non-listed hazardous wastes that possess that characteristic or toxic contaminant.
Note: Four spaces are provided for entering process codes. If more are needed: (1) Enter the first three as described above; (2) Enter "000" in the extreme right box of Item IV-D(1); and (3) Enter in the space provided on page 4, the line number and the additional code*(s)*.

2. PROCESS DESCRIPTION: If a code is not listed for a process that will be used, describe the process in the space provided on the form.

NOTE: HAZARDOUS WASTES DESCRIBED BY MORE THAN ONE EPA HAZARDOUS WASTE NUMBER — Hazardous wastes that can be described by more than one EPA Hazardous Waste Number shall be described on the form as follows:

1. Select one of the EPA Hazardous Waste Numbers and enter it in column A. On the same line complete columns B,C, and D by estimating the total annual quantity of the waste and describing all the processes to be used to treat, store, and/or dispose of the waste.
2. In column A of the next line enter the other EPA Hazardous Waste Number that can be used to describe the waste. In column D(2) on that line enter "included with above" and make no other entries on that line.
3. Repeat step 2 for each other EPA Hazardous Waste Number that can be used to describe the hazardous waste.

EXAMPLE FOR COMPLETING ITEM IV *(shown in line numbers X-1, X-2, X-3, and X-4 below)* — A facility will treat and dispose of an estimated 900 pounds per year of chrome shavings from leather tanning and finishing operation. In addition, the facility will treat and dispose of three non-listed wastes. Two wastes are corrosive only and there will be an estimated 200 pounds per year of each waste. The other waste is corrosive and ignitable and there will be an estimated 100 pounds per year of that waste. Treatment will be in an incinerator and disposal will be in a landfill.

LINE NO.	A. EPA HAZARD. WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESSES 1. PROCESS CODES (enter)	D. PROCESSES 2. PROCESS DESCRIPTION (if a code is not entered in D(1))
X-1	K 0 5 4	900	P	T 0 3 D 8 0	
X-2	D 0 0 2	400	P	T 0 3 D 8 0	
X-3	D 0 0 1	100	P	T 0 3 D 8 0	
X-4	D 0 0 2				*included with above*

Continued from page 2.

NOTE: Photocopy this page before completing if you have more than 26 wastes to list.

Form Approved OMB No. 158-S80004

EPA I.D. NUMBER (enter from page 1)	FOR OFFICIAL USE ONLY
W N J D 0 0 4 9 4 8 1 8 8 — T/A: — C: 1	W — DUP — T/A: — C: 2 — DUP

IV. DESCRIPTION OF HAZARDOUS WASTES (continued)

LINE NO.	A. EPA HAZARD. WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESSES 1. PROCESS CODES (enter)	D. PROCESSES 2. PROCESS DESCRIPTION (if a code is not entered in D(1))
1	F001	4,000	P	S01 T04	
2	U013	20	T	S03	
3	D007	400	P	S01 T04	
4	D008	100	P	S01	
5	D002	9,000	P	S01 T04	
6	D001	10,000	P	S01	
7	F005				Included with above
8	U154				Included with above
9	U220				Included with above
10	U054	100,000	P	S01 T04	
11	U052				Included with above
12	U101				Included with above
13	U188				Included with above
14	F004				Included with above
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					

Continued from the front.

IV. DESCRIPTION OF HAZARDOUS WASTES *(continued)*

E. USE THIS SPACE TO LIST ADDITIONAL PROCESS CODES FROM ITEM D(1) ON PAGE 3.

EPA I.D. NO. *(enter from page 1)*

F N J D 0 0 4 9 4 8 1 8 8 6

V. FACILITY DRAWING

All existing facilities must include in the space provided on page 5 a scale drawing of the facility *(see instructions for more detail)*.

VI. PHOTOGRAPHS

All existing facilities must include photographs *(aerial or ground—level)* that clearly delineate all existing structures; existing storage, treatment and disposal areas; and sites of future storage, treatment or disposal areas *(see instructions for more detail)*.

VII. FACILITY GEOGRAPHIC LOCATION

LATITUDE *(degrees, minutes, & seconds)*	LONGITUDE *(degrees, minutes, & seconds)*
40 42 045	074 07 021

VIII. FACILITY OWNER

☒ A. If the facility owner is also the facility operator as listed in Section VIII on Form 1, "General Information", place an "X" in the box to the left and skip to Section IX below.

B. If the facility owner is not the facility operator as listed in Section VIII on Form 1, complete the following items:

1. NAME OF FACILITY'S LEGAL OWNER	2. PHONE NO. *(area code & no.)*

3. STREET OR P.O. BOX	4. CITY OR TOWN	5. ST.	6. ZIP CODE

IX. OWNER CERTIFICATION

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

A. NAME *(print or type)*	B. SIGNATURE	C. DATE SIGNED
R. E. Lehmkuhl		

X. OPERATOR CERTIFICATION

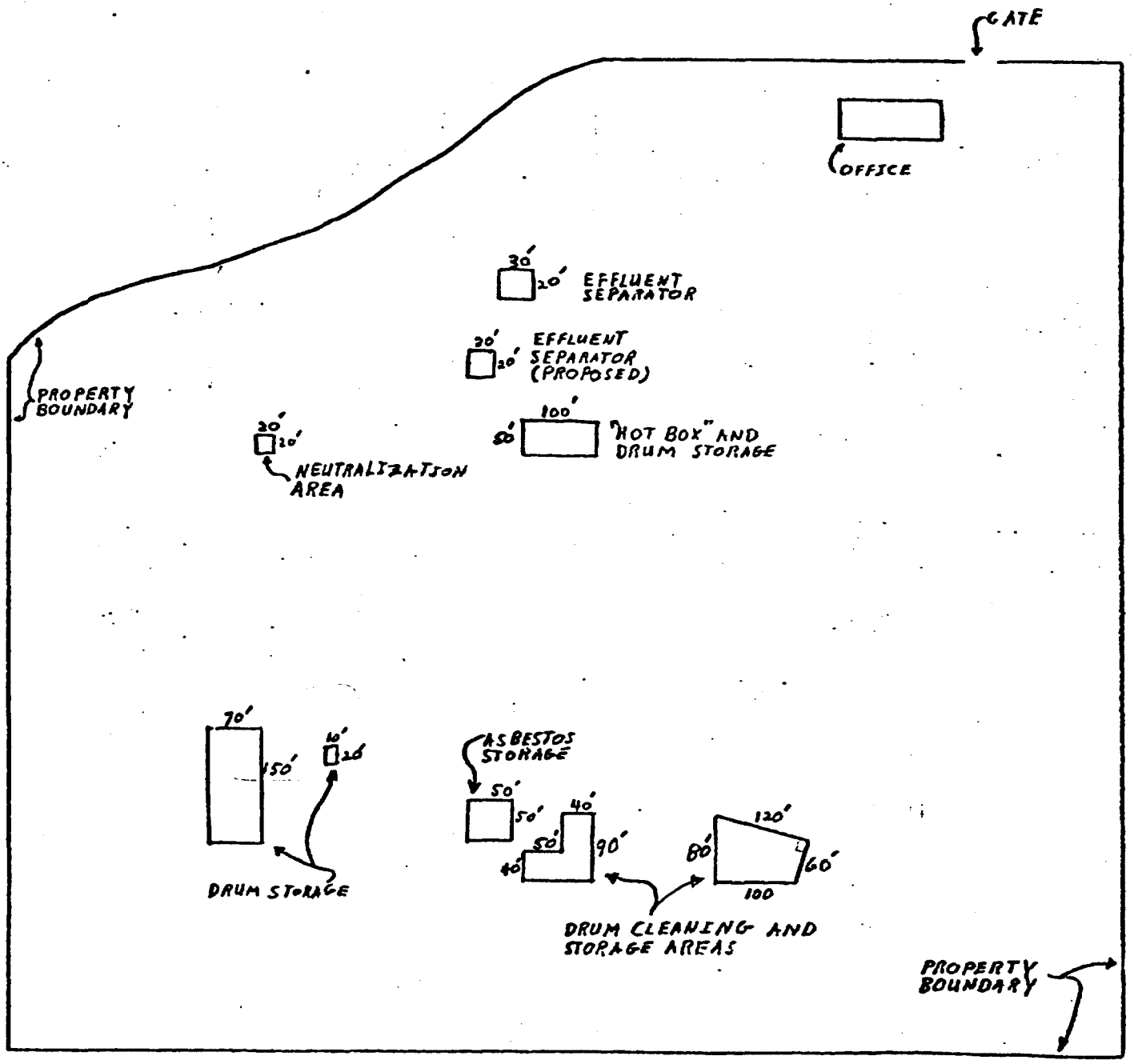
I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true,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

A. NAME *(print or type)*	B. SIGNATURE	C. DATE SIGNED

CONTINUE ON PAGE

Form Approved OMB No. 158-S80004

V. FACILITY DRAWING (see page 4)



ONE-INCH EQUALS 200 FEET

Pitt-Consol Chemicals
Conoco Inc.
191 Doremus Avenue
Newark, NJ 07105
(201) 344-3800

Superfund

June 8, 1981

US EPA Region 2
Sites Notification
New York, New York 10007

Dear Sirs:

Attached is a "Notification of Hazardous Waste Site" form for our Newark, New Jersey Plant. This Plant is an active treatment and storage facility as per RCRA definitions. Our Plant identification number is NJD004948188.

Sincerely,

Harry D. Garrison
Plant Manager

sag
Enc

Registered Mail - RRR

BC: Super Fund
AVG
WFR
HDG

843010023

EPA Notification of Hazardous Waste Site

United States
Environmental Protection
Agency
Washington DC 20460

This initial notification information is required by Section 103(c) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 and must be mailed by June 9, 1981.

Please type or print in ink. If you need additional space, use separate sheets of paper. Indicate the letter of the item which applies.

A Person Required to Notify:
Enter the name and address of the person or organization required to notify.

Name: Conoco Inc./Pitt-Consol Chemicals
Street: 191 Doremus Avenue
City: Newark State: NJ Zip Code: 07105

B Site Location:
Enter the common name (if known) and actual location of the site.

Name of Site: Conoco Inc./Pitt-Consol Chemicals
Street: 191 Doremus Avenue
City: Newark County: Essex State: NJ Zip Code: 07105

C Person to Contact:
Enter the name, title (if applicable), and business telephone number of the person to contact regarding information submitted on this form.

Name (Last, First and Title): Garrison, Harry - Plant Manager
Phone: (201) 344-3800

D Dates of Waste Handling:
Enter the years that you estimate waste treatment, storage, or disposal began and ended at the site.

From (Year): Pre-1900 To (Year): Present

E Waste Type: Choose the option you prefer to complete

Option 1: Select general waste types and source categories. If you do not know the general waste types or sources, you are encouraged to describe the site in Item I—Description of Site.

General Type of Waste:
Place an X in the appropriate boxes. The categories listed overlap. Check each applicable category.

1. ☒ Organics
2. ☒ Inorganics
3. ☐ Solvents
4. ☐ Pesticides
5. ☐ Heavy metals
6. ☒ Acids
7. ☒ Bases
8. ☐ PCBs
9. ☐ Mixed Municipal Waste
10. ☐ Unknown
11. ☐ Other (Specify)

Source of Waste:
Place an X in the appropriate boxes.

1. ☐ Mining
2. ☐ Construction
3. ☐ Textiles
4. ☐ Fertilizer
5. ☐ Paper/Printing
6. ☐ Leather Tanning
7. ☐ Iron/Steel Foundry
8. ☒ Chemical, General
9. ☐ Plating/Polishing
10. ☐ Military/Ammunition
11. ☐ Electrical Conductors
12. ☐ Transformers
13. ☐ Utility Companies
14. ☐ Sanitary/Refuse
15. ☐ Photofinish
16. ☐ Lab/Hospital
17. ☐ Unknown
18. ☐ Other (Specify)

Option 2: This option is available to persons familiar with the Resource Conservation and Recovery Act (RCRA) Section 3001 regulations (40 CFR Part 261).

Specific Type of Waste:
EPA has assigned a four-digit number to each hazardous waste listed in the regulations under Section 3001 of RCRA. Enter the appropriate four-digit number in the boxes provided. A copy of the list of hazardous wastes and codes can be obtained by contacting the EPA Region serving the State in which the site is located.

Form Approved
OMB No. 2000-0138
EPA Form 8900-1

843010024

F Waste Quantity:

Place an X in the appropriate boxes to indicate the facility types found at the site.

In the "total facility waste amount" space give the estimated combined quantity (volume) of hazardous wastes at the site using cubic feet or gallons.

In the "total facility area" space, give the estimated area size which the facilities occupy using square feet or acres.

Facility Type

1. ☐ Piles
2. ☐ Land Treatment
3. ☒ Landfill
4. ☒ Tanks
5. ☐ Impoundment
6. ☐ Underground Injection
7. ☐ Drums, Above Ground
8. ☒ Drums, Below Ground
9. ☐ Other (Specify) _____

Total Facility Waste Amount

cubic feet Unknown

gallons

Total Facility Area

square feet

acres Approx. 37 acres

G Known, Suspected or Likely Releases to the Environment:

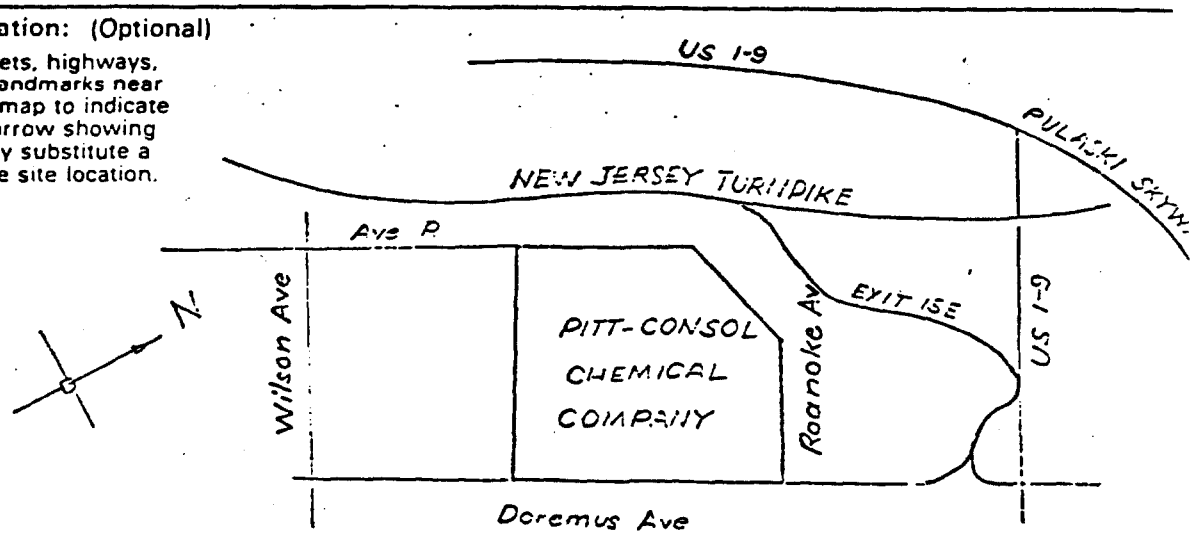
Place an X in the appropriate boxes to indicate any known, suspected, or likely releases of wastes to the environment.

☐ Known ☒ Suspected ☐ Likely ☐ None

Note: Items H and I are optional. Completing these items will assist EPA and State and local governments in locating and assessing hazardous waste sites. Although completing the items is not required, you are encouraged to do so.

H Sketch Map of Site Location: (Optional)

Sketch a map showing streets, highways, routes or other prominent landmarks near the site. Place an X on the map to indicate the site location. Draw an arrow showing the direction north. You may substitute a publishing map showing the site location.



I Description of Site: (Optional)

Describe the history and present conditions of the site. Give directions to the site and describe any nearby wells, springs, lakes, or housing. Include such information as how waste was disposed and where the waste came from. Provide any other information or comments which may help describe the site conditions.

Industrial activity has taken place on this site since before 1900. Consolidation Coal Co. purchased the Plant in the mid-fifties from Reilly Tar. Conoco acquired Consolidation Coal in the late sixties and currently produces cresylic acids at the Newark Plant.

Based on employee interviews, it appears that industrial wastes may have been deposited at several locations throughout the Plant. Some of this material most likely meets the definition of hazardous waste.

Like many manufacturing sites of this vintage, the present owner has no way of quantifying waste type and volume which may have been disposed of in the past. As a result, Conoco is reporting the entire Plant site to meet its obligations under Superfund (CERCLA).

The quality of water in the area is poor. During the recent water shortage, a well was drilled in the area. Brackish water (800 ppm chlorides) was found in excess of 500 feet below the current groundwater level. Closer to the surface chlorides were as high as 3600 ppm.

J Signature and Title:

The person or authorized representative (such as plant managers, superintendents, trustees or attorneys) of persons required to notify must sign the form and provide a mailing address (if different than address in item A). For other persons providing notification, the signature is optional. Check the boxes which best describe the relationship to the site of the person required to notify. If you are not required to notify check "Other".

Name Harry D. Garrison

Street Conoco Inc./Pitt-Consol Chemicals 191 Doremus Avenue

City Newark State NJ Zip Code 07105

Signature Harry D. Garrison Date 6/8/81

☒ Owner, Present
☐ Owner, Past
☐ Transporter
☐ Operator, Present
☐ Operator, Past
☐ Other

843010025

2

2

843010026

Table 5-3
TAR MATERIAL COMPOSITE SAMPLE ANALYSES
ORGANIC ANALYSES

Parameters	Concentration[a] (mg/kg)	TCLP[b,c] Extract (mg/l)	TCLP Proposed Limit (mg/l)
BASE-NEUTRAL ORGANICS			
Anthracene	2,200	BDL[d]	
Benzo(a)anthracene	2,700	BDL	
Benzo(b)fluoranthene	3,100	BDL	
Benzo(j)fluoranthene*	ND	ND[e]	
Benzo(k)fluoranthene	BDL	BDL	
Benzo(a)pyrene	1,600	BDL	
Bis(2-ethylhexyl)phthalate	BDL	BDL	
Butylbenzyl phthalate	BDL	BDL	
Chrysene	2,900	BDL	
Dibenz(a,h)acridine*	ND	ND	
Dibenz(a,h)anthracene	BDL	BDL	
Di-n-butyl phthalate	BDL	BDL	
o-Dichlorobenzene	BDL	BDL	
m-Dichlorobenzene	BDL	BDL	
p-Dichlorobenzene	BDL	BDL	
Diethyl phthalate	BDL	BDL	
7,12-Dimethylbenz(a)anthracene	BDL	BDL	
Dimethyl phthalate	BDL	BDL	
Di-n-octyl phthalate	BDL	BDL	
Fluoranthene	7,300	BDL	
Indene	130	0.26	
Methyl chrysene*	ND	ND	
1-Methylnapththalene	1,200	0.26	
Naphthalene	2,800	2.2	
Phenanthrene	9,200	0.13	
Pyrene	7,700	BDL	
Pyridine**	BDL	BDL	4.0
Quinoline	BDL	0.47	
ACID ORGANICS			
Benzenethiol**	ND	ND	
o-Cresol	BDL[f]	0.418	200.0
p & m-Cresol	BDL[f]	3.38	200.0
2,4-Dimethylphenol	BDL[f]	1.38	
2,4-Dinitrophenol	BDL[h]	BDL[i]	
4-Nitrophenol	BDL[h]	BDL[i]	
Phenol	BDL[f]	0.33[i]	

BDL= Below detectable limit

843010027

Table 5-3
(Continued)

Parameters	Concentration[a] (mg/kg)	TCLP[b,c] Extract (mg/l)	TCLP Proposed Limit (mg/l)
VOLATILE ORGANICS			
Benzene	0.18[j]	0.010[k]	0.5
Carbon disulfide	BDL[j]		
Chlorobenzene	BDL[j]		100.0
Chloroform	BDL[j]		6.0
1,2-Dibromoethane	BDL[e]		
1,2-Dichloroethane	BDL[j]		
1,4-Dioxane	BDL[m]		
Methyl ethyl ketone	BDL[n]		200.0
Styrene	0.24[j]		
Ethyl Benzene	0.47[j]	0.008[o]	
Toluene	0.93[j]	0.019[o]	1000.0
Xylenes,m	1.4[j]	0.024[o]	
Xylenes, o & p	1.5[j]	0.024[p]	

[a]Detection Limits=62 mg/kg for all constituents except Pyridene, for which the DL=120 mg/kg
[b]Detection Limits=0.02 mg/l for all constituents except Pyridene, for which the DL=0.04 mg/l
[c]TCLP = Toxicity Characteristic Leaching Procedure
[d]BDL = Below Detection Limit
[e]ND = Not Detected
[f]Detection Limits=62 mg/kg
[g]Detection Limits=0.02 mg/l
[h]Detection Limits=310 mg/kg
[i]Detection Limits=0.1 mg/l
[j]Detection Limits=0.062 mg/kg
[k]Detection Limits=0.005 mg/l
[l]Detection Limits=0.12 mg/kg
[m]Detection Limits=19 mg/kg
[n]Detection Limits=0.62 mg/kg
[o]Detection Limits=0.001 mg/l
[p]Detection Limits=0.002 mg/l
*no analytical standard available
**not recovered consistently using Method 8270
Source: Mittelhauser, February 1987.

3

3

843010029

C. Manufacturing Processes

Natural Petroleum Process

Petroleum based cresylics are formed during the catalytic cracking operation. These cresylics are not recovered intentionally but are extracted when caustic washing is used to reduce the mercaptan content of the gasoline. Caustic washing is a classical method of lowering mercaptan levels, but is being replaced by the Merox process and by hydrotreating. These processes do not result in by-product cresylics. As a result, the supply of petroleum cresylics is declining.

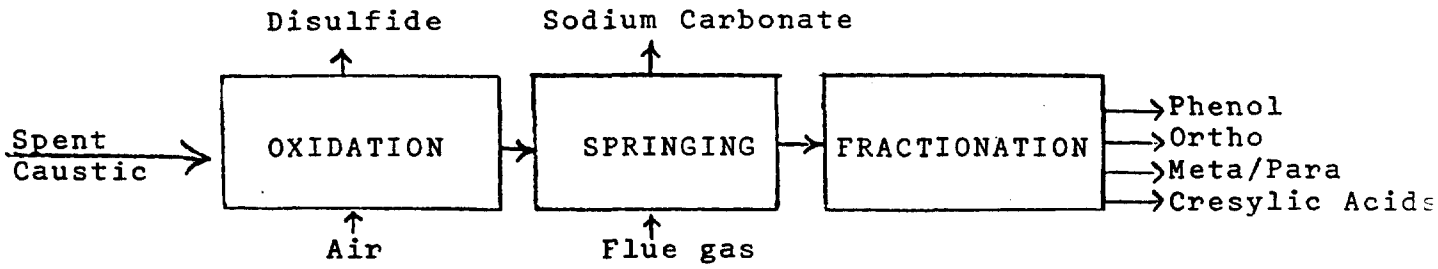
2216700

Spent caustic from washing cat-cracked gasoline is the feedstock for petroleum-based cresylic production. Spent caustic is an aqueous solution of phenols and thiophenols.

The first step in recovering natural cresylics is usually to separate the cresylics from the sulfur compounds. This is accomplished by oxidation of the mercaptans to disulfides, which are removed as an oily layer by decantation.

843010030

The next step is to "spring" the cresylics from the aqueous phase by contacting it with flue gas (CO_2) or H_2S. The free cresylics form an oily layer and are removed by decantation. This crude cresylic material is then separated into commercial products by fractionation. Schematically, the steps are as follows:

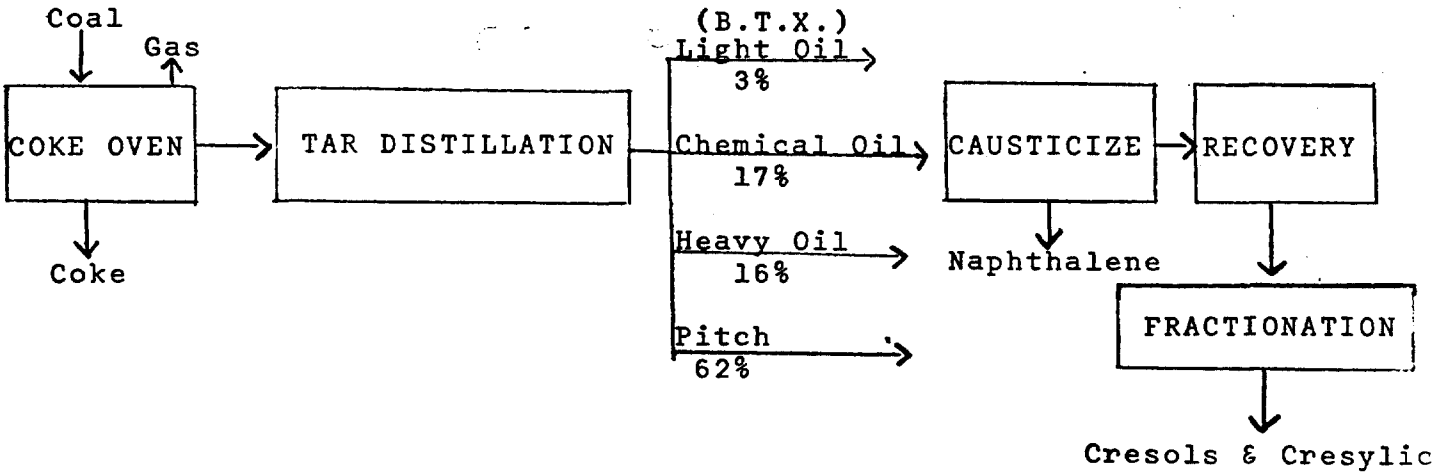


Natural Coal Tar Process

During the coking of coal volatile components are driven off and decomposed into a wide variety of low molecular weight substances, which are recovered as coal tar. These tars contain between 1 and 7% tar acids (phenol, cresols, xylenols).

Coal tar, when subjected to distillation, yields a light oil fraction (benzene, toluene, xylene), a chemical oil fraction, a heavy oil (creosote) fraction, and a residue which is sold as pitch. Cresylics are contained in the chemical oil.

The cresylics are extracted from the chemical oil with caustic. The extract or "carbolate" is sprung with flue gas and the crude cresylics are separated into commercial products by fractionation. Schematically, the steps are as follows:



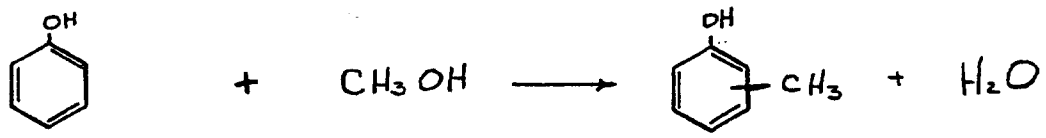
In the U.S. coking is substantially all done at high temperatures for the production of metallurgical coke. In recent years coking technology has moved in the direction of higher temperatures which tend to de-alkylate ring compounds and drive cresols to phenol. As a consequence, the production of coal derived cresylics today is probably only 1/3 the peak levels achieved 10 to 20 years ago. This decline is still continuing.

Overseas much of the coking was done at lower temperatures for the manufacture of gas or smokeless fuel. The cresol content of these low-temperature carbonization tars was significantly higher than the high-temperature carbonization tars. With the discovery of gas in the North Sea and in Eastern Europe, much of this coal-derived gas has been displaced by natural gas. As a consequence, foreign production of coal tar cresylics is at only a fraction of former levels.

Synthetic Processes

There are several commercial processes to synthesize cresylics. In general, these processes produce different cresol isomers, thus all processes do not necessarily compete with one another. Cresols are produced synthetically by the following processes:

1. Methylation of phenol (vapor phase). In this process, phenol and methanol undergo the following reaction:



Phenol Methanol Cresol Water

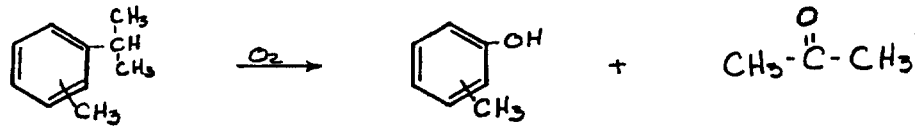
The principal products of vapor-phase methylation are ortho cresol and 2,6 xylenol. Producers employing this process are:

Producer	Location	Capacity, MM #/Year
Conoco	Newark, New Jersey	50
Koppers	Follansbee, West Virginia	15
CRM	England	15

2. Methylation of Phenol (liquid phase). In the liquid-phase process, phenol and methanol are reacted under high pressure and temperature. In contrast with the vapor phase process, significant quantities of para cresol are produced. Union Rheinische Braunkohlen Kraftstoff (URBK in Wessling, Germany) operates a 22 million pound per year plant utilizing the liquid phase process.

3. Toluene Sulfonation. This process is analogous to the manufacture of phenol from benzene by sulfonation and caustic fusion. The sulfonation product is predominately para toluene sulfonic acid, hence the main cresol product is the para isomer. Sherwin-Williams operates a 30 million pound per year para cresol plant in Chicago using toluene sulfonation. There is also a toluene sulfonation plant in Japan.

4. Cymene Peroxidation. This process is analogous to the manufacture of phenol from cumene (isopropylbenzene). Cymene is produced by alkylating toluene with propylene. Cymene is then oxidized to cresol and acetone.



Cymene Cresol Acetone

Since alkylation of toluene yields primarily meta and para cymene, the main cresols produced in the cymene process are meta and para cresol. Both Mitsui and Mitsubishi operate cymene-process cresol plants in Japan. The capacity of each of these plants is 44 million pounds per year.

D. Comparison of Natural and Synthetic Products

There are some differences in cresylics derived from natural and synthetic sources. These are discussed below:

1. Substituting Group. The substituting group in synthetic cresylics is always a methyl group. Natural cresylic acids have some substitution with ethyl and, to a much lesser extent, propyl and butyl groups.

2. Impurities. Natural acids contain several impurities not present in synthetic acids. Petroleum acids contain sulfur compounds, such as thiophenols and thiocresols. Tar acids contain tar bases such as pyridine.

3. Isomer Distribution. When phenol is methylated, the predominate reaction is in the ortho position. This gives ortho cresol and 2,6 xylenol (both ortho positions filled) as the main products. In contrast, natural acids have a high degree of substitution in the meta and para position. This is probably due to isomerization conditions during cat cracking and coking operations.

The following table compares typical isomer distributions of synthetic (vapor-phase methylation of phenol), petroleum, and coal-tar sources:

	% of Isomer in Crude Cresylic		
	Synthetic	Petroleum	Coal Tar
ortho cresol	58	22	20
meta/para cresol	2	40	50
2,6 xylenol	26	2	1
2,4/2,5 xylenol	5	12	8
2,3 xylenol	2	2	1
3,5 xylenol	-	7	8
3,4 xylenol	-	3	4
2,3,6 trimethyl phenol	5	-	-
2,4,6 trimethyl phenol	2	-	-
ethyl phenols	-	8	6
heavier phenols	-	4	2
	100	100	100

2216703

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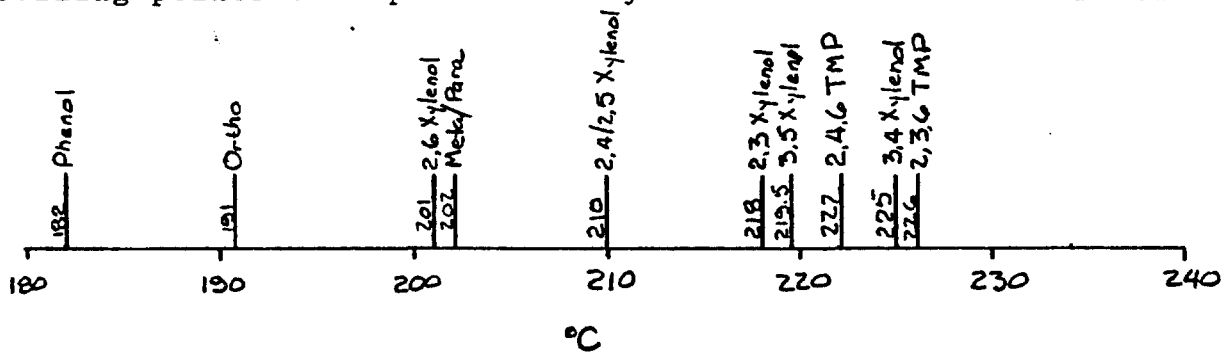
Commercial products are generally based on separation of the crude mixture of isomers by distillation. Commercial distillation practices include the production of ortho cresol, meta/para cresol (can not be separated by distillation), and various xylenol cuts. A large volume of cresylic sales are made in the form of broad boiling ranges. There are two reasons for these broad-range materials. First, they give desirable blends of properties in some products, such as wire enamel solvents. Second, the cost of producing a high purity, close-cut product is avoided. The boiling points of important cresylic isomers are shown below:



2216704

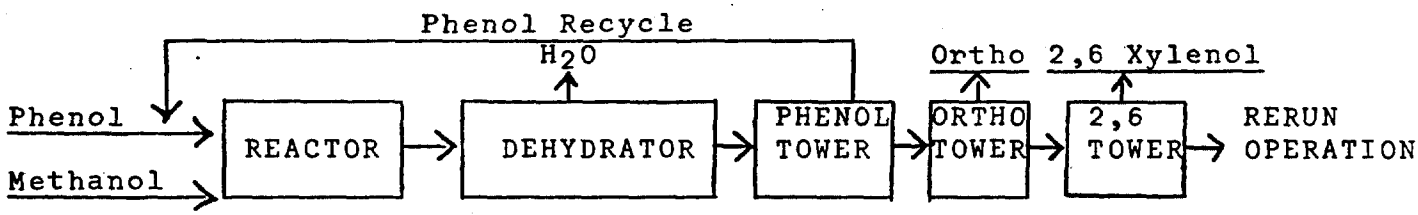
GENERAL

A. Location

Pitt-Consol Chemical Company is located at 191 Doremus Avenue, Newark, New Jersey. It consists of approximately 37 acres of land and a complex of processing units: the synthetic unit, and the alkylation unit are in operation; while the natural extraction unit, the isomerization unit, and the thiophenol unit are shut down.

B. Synthetic Plant Description

Conoco's synthetic cresylic plant was put on stream in 1967, with an initial capacity of 10 million pounds per year. This plant has been expanded several times and has a current capacity of 50 million pounds per year. A block flow diagram of the plant is shown below:



Methanol and phenol are vaporized and charged into a reactor filled with a catalyst. The crude reaction product is charged to a dehydrator where the water of reaction is removed. The dry acid is then charged to distillation. Phenol is taken overhead in the first tower and recycled back to reaction. Ortho cresol is taken overhead in the second tower. 2,6 Xylenol is taken overhead in the third tower. Essentially all of the meta/para cresol produced is taken over with the 2,6 xylenol. Since the ratio of meta/para to 2,6 xylenol in the reactor product is about 1:10, this limits the purity of the 2,6 xylenol to about 90%. Higher purity grades of 2,6 xylenol (up to 96%) can be made by additional fractionation. Extremely high purity (99.9%) could be attained by caustic extraction.

The bottoms from the 2,6 tower are accumulated in storage during the above "straight run" operation and are separated into finer cuts during the "re-run" operation.

In the "re-run" operation, accumulated bottoms from the 2,6 tower are charged to the first tower and 2,6 xylenol is taken overhead. In the second tower, most of the 2,4/2,5 xylenol, 2,3 xylenol, and 2,4,6 TMP is taken over. In the third tower 2,3,6 TMP is taken overhead. Bottoms from this tower are residue and are consumed as fuel.

2216705

C. Natural Plant Description

The natural process involved a novel refining process for these chemicals. It was based on several years of research and development work on a bench and pilot plant scale using the Duosol principle of refining.

This process consists of contacting crude cresylic acids contaminated with neutral hydrocarbons and aromatic mercaptans with aqueous methanol and hexane in a Scheibel tower. The aqueous methanol dissolves the cresylic acids and slowly descends through the tower; it is scrubbed free of mercaptans and neutral oils by hexane as it rises through the same tower. The hexane solution is then stripped off and the remaining raffinate, rich in aromatic mercaptans, serves as the feedstock for thiophenol, thiocresols, and thioxylenols. The aqueous methanolic solution is also stripped from the refined cresylic acids and reused, as in the hexane. This plant was brought up to a capacity of over 33 million pounds per year.

D. Alkylation Plant

The alkylation plant contains a versatile reactor and two fractionators. The purpose of the plant is to upgrade phenol or cresols by alkylating them with an alcohol or olefin. It has also been used for esterification.

The reactor is a stainless steel 3,000 gallon kettle equipped with coils for cooling water, steam and hot oil. It can be run at full vacuum or up to 75 psig. One fractionator is a batch still with a 20,000 gallon capacity. It is a packed column with porcelain saddles. The other fractionator can be run either batch or continuously. It is also a packed column.

Commercial products that have been manufactured here include:

1. Dibutyl para cresol (DBPC or BHT)
2. Mono butyl meta cresol
3. Dinonyl ortho cresol
4. 2,4 dibutyl phenol
5. 2,6 dibutyl phenol
6. 6 butyl 2,4 methyl phenol
7. Esters such as synthetic sperm oil

E. Rubber Reclaiming Plant

One of the products from the natural cresylic acid operation was a disulfide oil used in rubber reclaiming. This was manufactured in a proprietary process by first extracting the thiophenol compounds in a dual solvent extraction system, then oxidizing the thiophenol compounds to disulfides and finally separating the substituted disulfides.

After the natural cresylic acids were phased out, this attractive market was retained -- initially from inventory and then by upgrading purchased disulfide streams.

F. Isomerization Plant

2216706

As the natural cresylic acids were phased out, it was thought that significant markets would be lost if no meta/para cresol were available. It had been determined that ortho cresol could be isomerized to meta/para cresol and therefore a unit was constructed to do this.

843010036

When this plant was being started up very inexpensive imports of meta/para cresol became available. These imports were used for several years. At the end of that time, one attractive outlet for meta/para cresol disappeared (tricresyl phosphate for gasoline) and the synthetic plant was virtually sold out on existing isomers. Thus, there was still no incentive to isomerize ortho cresol to make meta/para cresol and the isomerization unit was not operated.

This plant contains a furnace and a large catalytic reactor capable of operating at 1,200 F and 50 psig.

G. Thiophenol Plant

One of the products from spent caustic was thiophenol. When it became obvious that spent caustic would no longer be brought to Newark, a plant was built to produce thiophenol. In a unique process cyclohexane is reacted with sulfur to produce thiophenol.

Like the isomerization unit, this plant was never fully brought on stream to produce commercial quantities. In this case, it was partly due to being able to obtain thiophenol elsewhere and to a greater extent due to environmental considerations. The latter was an odor problem associated with startup problems.

The unit consists of a heater to vaporize the cyclohexane and sulfur, a reactor and some cleanup towers.

4

4

843010038

OMB No: 2000-0396
Expiration Date: ~~12/31/82~~
MAR 31 1983

RCRA Section 3007 Questionnaire
Organic Chemicals Manufacturing Industry

Return within 45 days from date of receipt to:

Yvonne M. Garbe
Hazardous and Industrial Waste Division (WH-565A)
Office of Solid Waste
U.S. Environmental Protection Agency
401 M St., S.W.
Washington, D.C. 20460

1. Corporate/Plant Data

A. Name of Corporation Conoco Inc.

B. Address of Corporation Headquarters

Street High Ridge Park

City Stamford State CT Zip 06904

C. Name of Plant Pitt-Consol Chemical Co.

D. Address of Plant

Street 191 Doremus Avenue

City Newark State NJ Zip 07105

Hazardous waste generator ID number: NJD 004948188

E. Mailing Address of Plant (if different from above)

F. Name(s) of personnel to be contacted for additional information pertaining to this questionnaire

Name	Title	Telephone
Alex Guanlao	Environmental Engineer	(201) 344-3800

843010039

2. Type of Plant Operations:

A. Indicate whether the following organic chemicals were manufactured at this facility in 1981:

1. CAS No.: Manufactured: ☐ Yes ☐ No
   Chemical Name: Cresol/cresylic acid by methylation of phenol
2. CAS No.: Manufactured: ☐ Yes ☐ No
   Chemical Name:
3. CAS No.: Manufactured: ☐ Yes ☐ No
   Chemical Name:
4. CAS No.: Manufactured: ☐ Yes ☐ No
   Chemical Name:
5. CAS No.: Manufactured: ☐ Yes ☐ No
   Chemical Name:
6. CAS No.: Manufactured: ☐ Yes ☐ No
   Chemical Name:
7. CAS No.: Manufactured: ☐ Yes ☐ No
   Chemical Name:
8. CAS No.: Manufactured: ☐ Yes ☐ No
   Chemical Name:
9. CAS No.: Manufactured: ☐ Yes ☐ No
   Chemical Name:
10. CAS No.: Manufactured: ☐ Yes ☐ No
    Chemical Name:

Complete this questionnaire for each chemical listed above which you manufactured. If none of these chemicals were manufactured, return pages 1 and 2 of this questionnaire.

B. Identify as follows the chemical intermediate(s)[1] produced at this facility in the production of the chemicals identified above:

CAS Number	Chemical Name	Common Name
Not Applicable	Not Applicable	Not Applicable

[1] Intermediate means any chemical substance (1) which is intentionally manufactured and removed from the equipment in which it is manufactured, and (2) which either is consumed in whole or in part in chemical reaction(s) used for the intentional manufacture of other chemical substance(s) or mixture(s).

843010040

C. Indicate those classes of chemical products or intermediates which were produced at this facility in 1981. Circle appropriate code number(s).

Code Number	Classes of Products and Intermediates	Code Number	Classes of Products and Intermediates	Code Number	Classes of Products and Intermediates
ORGANIC DYES & PIGMENTS		286 66	Halogenated Aromatics NEC	286 84	Acyclic Acids, Anhydrides & Esters
286 52	Organic Dyes	286 68	Alicyclic Chemicals	286 85	Acyclic Aldehydes
286 53	Organic Pigments	286 69	Cyclic Intermediates NEC	286 86	Acyclic Ketones
CYCLIC INTERMEDIATES		CYCLIC CHEMICALS NEC		286 87	Acyclic Nitrogens
286 61	Aromatic Acids & Derivatives	286 71	Salts of Aromatic Acids	286 88	Acyclic Compounds NEC
286 61	Aromatic Acids Anhydrides	286 72	Other Cyclic Chemicals	286 89	Acyclics NEC
286 62	Aromatic Ketones & Aldehydes	ACYCLIC CHEMICALS		ORGANIC CHEMICALS NEC	
286 63	Aromatic Alcohols	286 81	Halogenated Hydrocarbons	286 91	Flavor & Perfume Materials
286 64	Aromatic Hydrocarbons	286 82	Monohydric Acyclic Alcohols	286 93	Plasticizers
286 65	Cyclic Amines	286 83	Polyhydric Alcohols & Ethers	NEC — Not elsewhere classified	

3. Process Information

This information will be used to address industry wide variation in type and quantity of residuals generated. Residuals include any process stream generated during the manufacture of a product which is not used as a raw material or principally sold as a commercial product. Residuals may be solids (e.g., still bottoms), liquids (e.g., wastewater), confined gases (e.g., gases that are containerized to facilitate disposal), and unconfined gases generated by the management of solid or liquid residuals (e.g., incinerator stack emissions). For each unit process used to manufacture the products listed in Question 2, provide a general process block flow diagram that identifies major unit operations and indicates the types and points of introduction/generation of feedstocks, products, co-products/by-products, and residuals. (See Examples I and II.) Include the information requested in Questions 3-A through 3-D in the flow diagram. Provide the information requested in Questions 3-E and 3-F in an attachment.

A. Identify the product process, intermediates, co-products, and by-products produced by the process.

B. Provide a block for each major unit operation in the production and residuals management process (e.g., reactor, washer, filtration, wastewater treatment, air emission control).

C. Identify process input such as raw materials, reagents and solvents by chemical or common name or chemical formula, and indicate the point of introduction with arrows.

D. Assign a Residual Identification Number to each of the following types of residuals and indicate its point of generation with an arrow:

1. Residuals generated by unit operations in the product process, including unit operations that produce/recover co-products, by-products and solvents; and
2. Final treatment residuals (i.e., residuals generated by physical, chemical (including incineration and other thermal treatment) or biological treatment and that are not intermediate treatment residuals generated within a treatment train).

When more than one process block flow diagram is provided (i.e., for multiple product processes), assign unique, sequential Residual Identification Numbers to the residuals.

E. If residuals from this product process are combined with the residuals from other product processes at this facility prior to treatment, identify the product process residual by Residual Identification Number and specify the source of the other residuals using the codes provided in Question 2-C.

F. Indicate the typical annual production, or 1981 production (specify), for each product and co-product/by-product. Provide production data at bottom of flow diagram as shown in Example I.

PROCESS BLOCK FLOW DIAGRAM

Product Process: Cresol/Cresylic Acid by methylation of Phenol

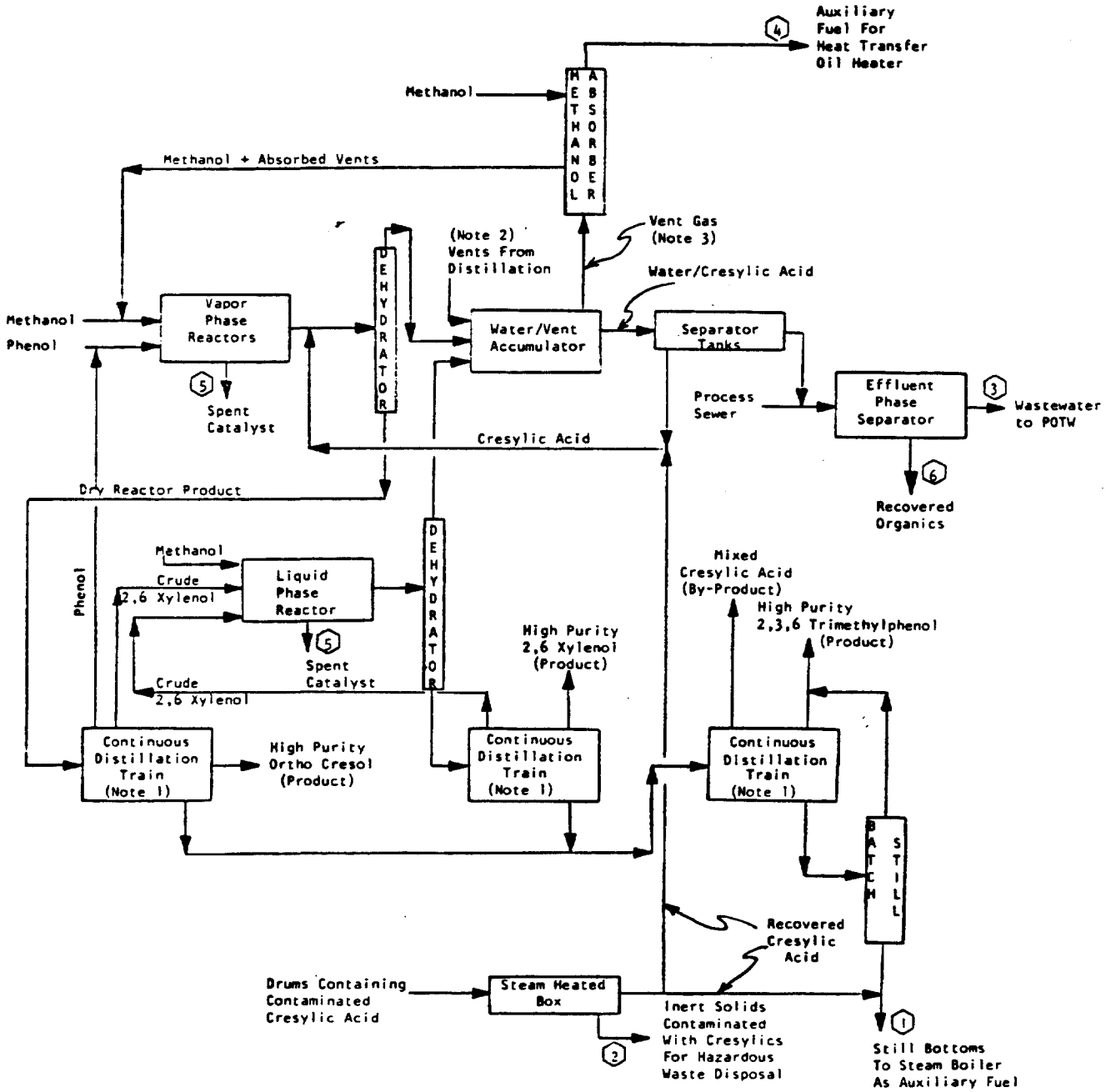
Chemical Intermediate: Not Applicable

Co-Products: a) High Purity Ortho Cresol

b) High Purity 2,6 Xylenol

c) High Purity 2,3,6 Trimethyl Phenol

CONFIDENTIAL



NOTES: 1) Only one Distillation Train Exists. It operates in a series of blocked out campaigns.

2) Vents from distillation went to incinerator in 1981, but in August, 1982, the vents were routed through the Water/Vent Accumulator, Methanol Absorber and on to the Hot Oil Heater as auxiliary fuel. The incinerator was shut down.

3) Vent from Water/Vent Accumulator discharged to atmosphere in 1981. In August, 1982, the vent was routed through the Methanol Absorbert and on to the Hot Oil Heater as auxiliary fuel.

⬡ - Designates Residual I.D. Number

843010042

Response to Questions 3-E and 3-F

Product Process: Cresol/Cresylic Acid from methylation of Phenol.

Item 3E. - Not Applicable. No other product processes generating residuals at this facility.

Item 3F. - Plant Annual Production for 1981

Product	Quantity, Pounds
a. Product/Co-products:	
1. Ortho-Cresol	13,320,750 lbs
2. High purity 2,6 Dimethyl Phenol (Xylenol)	2,291,698 lbs
3. High purity 2,3,6 Trimethyl Phenol	2,634,171 lbs
b. By-product:	
1. Mixed Cresylic Acid	4,846,794 lbs
c. Residuals:	
1. Still Bottoms (from Cresol/Cresylic Acid Manufacture)	3,574,600 lbs
2. Inert Solids contaminated with Cresol/Cresylic Acid	24,000 lbs
3. Wastewater Discharged to POTW	309 MM lbs (1)
4. Methanol Absorber Vent	120,000 lbs
5. Spent Catalyst	29,300 lbs
6. Recovered Organics	80,000 lbs

Note: (1) Volume was estimated from 1982 POTW quarterly discharge/monitoring reports. Actual 1981 data is not available.

4. Residuals Characterization Information

For each process used to manufacture the chemicals listed in Question 2, complete Table I by providing the following information for each identified residual. An example is provided below (Example III).

A. Identify the product process.

B. List each residual by Residual Identification Number.

C. If the residual has been identified in the facility RCRA notification, indicate whether it was identified as ignitable (I), corrosive (C), reactive (R), or EP toxic (E), or listed by EPA or reported by the facility as toxic (T), or acutely hazardous (H).

D. For each residual, describe the following properties where appropriate: physical state (e.g., liquid (specify whether aqueous or organic), solid, slurry (indicate solids content), gas); pH; flash point; Btu content; viscosity; toxicity.

E. List the compounds which are known by analysis to be present in the residual and specify, as known, the concentration ranges as follows:

Code	Range
A	> 50%
B	> 10% to 50%
C	> 1% to 10%
D	> 0.1% to 1%
E	0.01% to 0.1%
[Actual concentration]*	< 0.01%

*If concentration is less than 0.01%, specify, as known, typical concentration in ppm.

F. If residual analyses are not available, list the compounds which are expected to be present in the residual based on chemical engineering principles.

Example III — Response to Question 4

A. Product Process: Phenol/Acetone from Cumene

B. Residual Identification Number	C. RCRA Identification (I,C,R,E,T, or H)	D. Properties of Residual	E. Known Compounds, Concentrations Ranges		F. Other Expected Compounds
2	T (#K022)	Semisolid;	NaOH	D	Cumene
		organic; listed	AMS Dimers	D	
		toxic waste	Phenol	D	
			Cumyl Phenol	C	
			Acetophenone	B	
			Tars	A	

843010044

Table I — Response to Question 4

A. Product Process: Cresol/Cresylic Acid from Methylation of Phenol

B. Residual Identification Number	C. RCRA Identification (I.C.R.E.T. or H)	D. Properties of Residual	E. Known Compounds, Concentrations*	F. Other Expected Compounds
1	Non-Hazardous	Solid at ambient temperature; Organic H.V.= 16,000 BTU/Lb	Trimethyl Phenol (B) Tetramethyl Phenol (A) Pentamethyl Phenol (B) Pentamethyl Benzene (C) Hexamethyl Benzene (D) Cresol/Cresylic Acid Polymers (D)	
2	T(U101/U188/U052) C (D002)	Inert Solids Contaminated with Cresol/Cresylic Acid	Soil/Gravel/Absorbent (A) Cresol/Cresylic Acid (B) Phenol (E) 2,4 Dimethyl Phenol (E)	
3	Exclusions 40 CFR 261.4 (a)(1)	Wastewater; Liquid; Organics pH = 8 (avg)	Phenol (D) Methanol (D) Dimethyl Ether (D) Anisole 90 ppm (avg) Cresol/Cresylic Acid (E) 2,4 Dimethyl Phenol (E) Cresylic Acid Polymer (E)	Chromium
4	I (D001)	Accumulator Vent; Gas	Methanol (C) Dimethyl Ether (C)	Anisole

*RESIDUAL CONSTITUENT CONCENTRATION CODE

Code	Range
A	> 50%
B	> 10% to 50%
C	> 1% to 10%
D	> 0.1% to 1%
E	0.01% to 0.1%
[Actual concentration]†	< 0.01%

† If concentration is less than 0.01%, specify, as known, typical concentration in ppm.

Table I — Response to Question 4

A. Product Process: Cresol. Cresylic Acid from Methylation of Phenol

B. Residual Identification Number	C. RCRA Identification (I,C,R,E,T, or H)	D. Properties of Residual	E. Known Compounds, Concentrations*	F. Other Expected Compounds
5	Non-Hazardous	Solid	Alumina (A)	Carbon
6	Exclusion 40 CFR 261.2(c)(2)	Liquid;Organic	Floading Oils (B) Cresol/Cresylic Acid (B)	

*RESIDUAL CONSTITUENT CONCENTRATION CODE

Code	Range
A	> 50%
B	> 10% to 50%
C	> 1% to 10%
D	> 0.1% to 1%
E	0.01% to 0.1%
(Actual concentration)†	< 0.01%

† If concentration is less than 0.01%, specify, as known, typical concentration in ppm.

5. Residuals Management Information — General

For each process used to manufacture the chemicals listed in Question 2, complete Table II by providing the following information for each identified residual. An example is provided below. (Example IV).

A. Identify the product process.

B. Specify the Residual Identification Number.

C. Specify residual category in accordance with codes provided.

Code	Categories of Residuals	Code	Categories of Residuals (continued)
C1.	Process precipitates or filtration residues	C7.	Spent solvents
C2.	Process decanters or filtrates	C8.	Untreated process wastewater
C3.	Treatment sludges (specify)	C9.	Treated wastewater discharge
C4.	Spent activated carbon or other adsorber (specify)	C10.	Containers, liners, cleaning rags, gloves, etc.
C5.	Spent catalyst	C11.	Off specification products and feedstock
C6.	Still bottoms	C12.	Other (specify)

D. Specify management methods in accordance with codes provided. If a residual is subject to a sequence of methods (e.g., storage in a tank, incineration), list the methods in sequence. If a residual is handled alternatively by more than one method (e.g., either incinerated or burned in a boiler), identify the alternate methods.

Code	Management Methods	Code	Management Methods (continued)
M1.	Storage or treatment in: (specify) a. tank b. container c. pile	M8.	On-site wastewater treatment
M2.	Surface impoundment	M9.	Discharge to publicly owned wastewater treatment works
M3.	Burning in a boiler	M10.	Discharge to surface water under NPDES
M4.	Recovery/reclamation (specify)	M11.	Discharge to off-site privately owned wastewater treatment works
M5.	Incineration	M12.	Other (specify)
M6.	Landfill		
M7.	Underground injection		

E. Indicate the amount of each residual managed by each method in 1981 (specify units), except for discharges to a publicly owned treatment works (POTW) or to surface water under a NPDES permit.

F. Indicate whether the residual is managed on-site or off-site. If managed off-site, identify the site in the space provided in Table III.

G. For residuals managed off-site, except for discharges to a POTW or surface water under a NPDES permit, indicate the average management cost per unit quantity of residual in 1981.

H. Indicate planned changes in residual management methods by specifying the codes for the new management methods, and indicate the anticipated date of change.

Example IV — Response to Question 5

A. Product Process: Phenol/Acetone from Cumene

B. Residual Identification Number	C. Residual Code	D. Management Code	E. 1981 Residual Quantities	F. Management On-site	F. Management Off-site	G. 1981 Costs for Off-site Management	H. Changes in Management Methods
1	C4	M1-b	20 metric		X	N.A.	None
		M4-Regen-eration	tons		X	$600/ton	None
2	C6		14,500	X		N.A.	None
			metric tons				

Table II — Response to Question 5

A. Product Process: Cresol/Cresylic Acid from methylation of Phenol

B. Residual Identification Number	C. Residual Code	D. Management Code	E. 1981 Residual Quantities (Pounds)	F. Management* On-site	F. Management* Off-site	G. 1981 Costs for Off-site Management	H. Changes in Management Methods
1	C6	M1-a		X		NA	None
		M3	3,574,600	X		NA	None
2	C12	M1-6		X		NA	None
	(Contaminated inert solids)	M6	24,000		X	NA	None
3	C9	M1-a		X		NA	None
		M9	309 MM Lbs		X	$52,000 (1)	None
4	C12 (Absorber Vent Gas)	M3		X		NA	(2)
5	C5	M-12 - Land Treatment	29,300	X		NA	None
6	C12 (Recovered Organics; Liquid)	M1-a M3	80,000	X		NA	None

Notes:

(1) Cost estimated based on $10.50/1000 CF.

(2) The vent gas from the Water/Vent accumulator discharged to atmosphere in 1981, but in August 1982 the vent was routed to the Methanol Absorber to the Hot Oil Heater as indicated on the Process Flow Diagram. Data presented reflects operations since **Table III — Response to Question 5-F** August, 1982.

Name of Facility: Did not ship waste in 1981

Residual Identification Numbers: _____

Facility Mailing Address:

Street or P.O. Box: _____

City or Town: _____

State: _____ Zip: _____

Facility Location (if different from above):

Street, Route Number or Other Specific Identifier: _____

City or Town: _____

State: _____ Zip: _____

Hazardous Waste Facility I.D. Number (if any): _____

Name of Facility: _____

Residual Identification Numbers: _____

Facility Mailing Address:

Street or P.O. Box: _____

City or Town: _____

State: _____ Zip: _____

Facility Location (if different from above):

Street, Route Number or Other Specific Identifier: _____

City or Town: _____

State: _____ Zip: _____

Hazardous Waste Facility I.D. Number (if any): _____

6. Specific On-site Residuals Management Information

Provide specific information for residuals managed on-site using available information to complete the following sections which pertain to your residuals management operations.

A. Storage or Treatment in Tanks*

B. Storage or Treatment in Containers*

C. Storage or Treatment in Piles*

D. Burning in a Boiler

E. Incineration

F. Land Treatment*

G. Surface Impoundments*

H. Landfills*

*If residuals are managed by these methods, provide the following information:

(1) Are groundwater monitoring data available? ☐ Yes ☒ No

(2) Are geologic or hydrogeologic data available? ☐ Yes ☒ No

A. Storage or Treatment in Tanks

Have identified residuals been stored or treated in on-site tanks at any time since January 1, 1981? ☒ Yes ☐ No

If yes, provide the following information for the 10 largest tanks:

Tank	Residuals Managed[1]	Design Capacity[2]	Used for Storage (S) and/or Treatment (T) (Indicate S and/or T)	Part of Wastewater Treatment Train[3] (Circle Yes or No)	Covered (Circle Yes or No)	Secondary Containment[4] Provided (Circle Yes or No)
1	1	B	S	Yes (No)	(Yes) No	(Yes) No
2	3	B	S and/or T	(Yes) No	(Yes) No	(Yes) No
3	6	A	S and/or T	(Yes) No	(Yes) No	(Yes) No
4				Yes No	Yes No	Yes No
5				Yes No	Yes No	Yes No
6				Yes No	Yes No	Yes No
7				Yes No	Yes No	Yes No
8				Yes No	Yes No	Yes No
9				Yes No	Yes No	Yes No
10				Yes No	Yes No	Yes No

[1] Use Residual Identification Numbers to identify residuals.

[2] Use the following code to designate the tank capacity:

A < 10,000 gallons

B 10,000 gallons to 100,000 gallons

C > 100,000 gallons to 1,000,000 gallons

D > 1,000,000 gallons

[3] Treatment train from which wastewater is discharged under a NPDES permit or through a sewer system to a publicly-owned treatment works.

[4] Secondary containment is provided when the tank is located inside a diked area where the volume of liquid that the diked area can contain is at least equivalent to the capacity of the largest tank.

B. Storage or Treatment in Containers*

Have identified residuals been stored or treated on-site in containers at any time since January 1, 1981? ☒ Yes ☐ No

If yes, provide the following information (if the facility has several container storage areas, provide information only on the primary container storage area):

1. Check typical and maximum quantity stored on any day in 1981:

Quantity (gallons)	Typical	Maximum
< 550 gallons	☐	☐
550 to 5,500 gallons	☒	☐
> 5,500 to 55,000 gallons	☐	☐
> 55,000 gallons	☐	☐

2. Identify the storage area base material:

☒ Concrete ☐ Asphalt ☐ Soil ☐ Other (specify) _____

3. If liquid residuals or residuals containing free liquids† are stored, is the storage area designed and operated to collect and contain surface runoff?

☒ Yes ☐ No ☐ Liquids are not stored

* Container means any portable device in which residuals were stored, treated or otherwise handled.

† A residual contains free liquids if liquids readily separate from the solid portion of the residual under ambient temperature and pressure

C. Storage or Treatment in Piles

Have identified residuals been stored or treated in on-site piles at any time since January 1, 1981? ☐ Yes ☒ No

If yes, provide the following information for the 10 largest piles:

Pile	Residuals Managed [1]	Typical Quantity [2] Managed	Under Roofed Structure (Circle Yes or No)	Containment [3] Provided (Circle Yes or No)	Synthetic [4] Liner Base (Circle Yes or No)
1	_____	_____	Yes No	Yes No	Yes No
2	_____	_____	Yes No	Yes No	Yes No
3	_____	_____	Yes No	Yes No	Yes No
4	_____	_____	Yes No	Yes No	Yes No
5	_____	_____	Yes No	Yes No	Yes No
6	_____	_____	Yes No	Yes No	Yes No
7	_____	_____	Yes No	Yes No	Yes No
8	_____	_____	Yes No	Yes No	Yes No
9	_____	_____	Yes No	Yes No	Yes No
10	_____	_____	Yes No	Yes No	Yes No

[1] Use Residual Identification Numbers to identify residuals.

[2] Use the following code to designate the typical quantity of residual(s) contained in the pile on any day in 1981:

- A < 20 cubic yards
- B 20 to 200 cubic yards
- C > 200 to 2,000 cubic yards
- D > 2,000 to 20,000 cubic yards
- E > 20,000 cubic yards

[3] Containment is provided when the pile base is designed, operated, and maintained to contain leachate and run-off.

[4] Is a synthetic liner installed in the pile base? Waste may lie directly on synthetic liner or the liner may be covered with clay layer.

D. Burning in a Boiler

Have identified residuals been burned in an on-site boiler at any time since January 1, 1981? ☒ Yes ☐ No

If yes, provide the following information for each boiler:

1. Boiler and fuel type:

Type	Heater Capacity (Heat Input in Million Btu/hr)	Primary Boiler Fuel	Typical Fuel Replacement Ratio with Residual (Heat Input Basis)	Typical Boiler Load When Firing Residual (% of Capacity)
☐ Fire tube	☐ < 10 million	☒ Oil (Low Sulfur No. 4 Fuel OIL)	☒ < 5%	☒ 75-100
☐ Water tube	☒ 10 million to 100 million	☐ Gas	☐ 5-10%	☐ 50-75
☒ Hot Oil Heater	☐ > 100 million	☐ Coal	☐ 10-25%	☐ < 50
		☐ Wood or other	☐ 25-50%	
			☐ > 50%	

2. Use Residual Identification Numbers to identify the types of residuals burned in this boiler: 4

3. Provide the following information, if known:

	Residual, as Fired (Or Residual Mixture, If Residuals Are Blended)	Boiler Fuel, as Fired (Residual(s) Plus Primary Fuel)
Btu content (Btu/lb)		
Typical	1153	19581
Minimum	-	-
Total metals content (% by wt.)		
Typical	Not Expected	Not Expected
Maximum	Not Expected	Not Expected
Total halogen content (% by wt.)		
Typical	Not Expected	Not Expected
Maximum	Not Expected	Not Expected

4. If the boiler is equipped with an air pollution control device, specify the type of device:

☐ Scrubber ☐ Electrostatic precipitator ☐ Other (specify) None

5. Are residual-burning stack emissions data available? ☐ Yes ☒ No

D. Burning in a Boiler

Have identified residuals been burned in an on-site boiler at any time since January 1, 1981? ☒ Yes ☐ No

If yes, provide the following information for each boiler:

1. Boiler and fuel type:

Type	Boiler Capacity (Heat Input in Million Btu/hr)	Primary Boiler Fuel	Typical Fuel Replacement Ratio with Residual (Heat Input Basis)	Typical Boiler Load When Firing Residual (% of Capacity)
☐ Fire tube	☐ < 10 million	☒ Oil (Low Sulfur No. 4 Fuel Oil)	☐ < 5%	☐ 75-100
☒ Water tube	☒ 10 million to 100 million	☐ Gas	☐ 5-10%	☐ 50-75
	☐ > 100 million	☐ Coal	☐ 10-25%	☒ < 50
		☐ Wood or other	☒ 25-50%	
			☐ > 50%	

2. Use Residual Identification Numbers to identify the types of residuals burned in this boiler: 1,6

3. Provide the following information, if known:

	Residual, as Fired (Or Residual Mixture, If Residuals Are Blended)	Boiler Fuel, as Fired (Residual(s) Plus Primary Fuel)
Btu content (Btu/lb)		
Typical	16,000	18,700
Minimum	-	-
Total metals content (% by wt.)		
Typical	Not Expected	Not Expected
Maximum	Not Expected	Not Expected
Total halogen content (% by wt.)		
Typical	Not Expected	Not Expected
Maximum	Not Expected	Not Expected

4. If the boiler is equipped with an air pollution control device, specify the type of device:

☐ Scrubber ☐ Electrostatic precipitator ☐ Other (specify) None

5. Are residual-burning stack emissions data available? ☐ Yes ☒ No

E. Incineration

Have identified residuals been incinerated on-site at any time since January 1, 1981? ☐ Yes ☒ No

If yes, provide the following information for each incinerator:

1. Incinerator type:

☐ Liquid injection ☐ Rotary kiln ☐ Hearth ☐ Other (specify) _____

2. Use Residuals Identification Numbers to identify the types of residuals incinerated in this unit: _____

3. Combustion chamber design parameters:

a. Combustion chamber temperature (°C): _____

b. Residence time in combustion chamber (sec.): _____

4. If the incinerator is equipped with an air pollution control device, specify the type of device:

☐ Scrubber ☐ Electrostatic precipitator ☐ Other (specify) _____

5. Provide the following information on the incinerator feed:

		Corresponding Feed Rate (Tons or Gallons/Hour, Specify)
Btu content (Btu/lb)		
Typical:	_____	_____
Minimum:	_____	_____
Total metals content (% by wt.)		
Typical:	_____	_____
Maximum:	_____	_____
Total halogen content (% by wt.)		
Typical:	_____	_____
Maximum:	_____	_____

6. Are incinerator stack emissions data available: ☐ Yes ☐ No

F. Land Treatment

Have identified residuals been managed in an on-site land treatment operation at any time since Jan. 1, 1981?
☒ Yes ☐ No
If yes, provide the following information:

1. Year land treatment initiated at site: Unknown
2. Year land treatment of identified residuals initiated: 1967
3. Have residuals other than identified residuals been land treated at any time since Jan. 1, 1981?
   ☐ Yes ☒ No
4. What was the total area actively used for land treatment in 1981? Approx. 1 acres
5. What is the average slope of the land treatment site? 0 percent
6. Is surface water run-off from the site collected for treatment, re-application to the site, or analyzed prior to discharge? ☐ Yes ☒ No
7. Check method(s) used to apply residuals to the land treatment site.
   a. ☒ Surface spreading or spray irrigation without plow or disc incorporation. Indicate residuals applied in this manner using Residual Identification Numbers: 5
   b. ☐ Surface spreading or spray irrigation with plow or disc incorporation to a depth of _____ (specify). Indicate residuals applied in this manner using Residual Identification Numbers: _____
   c. ☐ Subsurface injection to a depth of _____ (specify). Indicate residuals applied in this manner using Residual Identification Numbers: _____
   d. ☐ Other methods (specify method and residuals): _____
8. Is soil core monitoring performed? ☐ Yes ☒ No
9. Is soil pore water monitoring performed? ☐ Yes ☒ No

G. Surface Impoundments*

Have identified residuals been stored, treated, or disposed of in an on-site surface impoundment at any time since January 1, 1981? ☐ Yes ☒ No

If yes, complete Table IV.

*Holding, storage, settling, and aeration pits, ponds and lagoons formed primarily of earthen materials.

Table IV — Response to Question 6-G

If more than 5 surface impoundments have been used since January 1, 1981 to manage identified residuals, provide information only on the 5 impoundments with the largest capacities. Use Residual Identification Numbers to identify residuals. If you do not know whether a liner has been installed, circle both "Yes" and "No". If you do not know the thickness of a liner, indicate "UNK" for unknown.

			Synthetic Liner				Clay Liner				Leachate Collection System			
Impoundment	Total Capacity (Gallons)	Residuals Disposed (RIN)	Installed		Thickness (mils)	No. of Liners	Installed		Thickness (in)	No. of Liners	Installed		Leachate Generated	
1			Yes	No			Yes	No			Yes	No	Yes	No
2			Yes	No			Yes	No			Yes	No	Yes	No
3			Yes	No			Yes	No			Yes	No	Yes	No
4			Yes	No			Yes	No			Yes	No	Yes	No
5			Yes	No			Yes	No			Yes	No	Yes	No

H. Landfills

1. Have identified residuals been landfilled on-site at any time that you owned or operated this facility?
   ☐ Yes ☒ No
   If yes, answer questions 2 and 3.

2. Has any on-site landfill (or landfill cell) that was used to dispose of identified residuals been closed (i.e., no longer used to dispose of wastes)?
   ☐ Yes ☐ No
   If yes, complete Table V.

3. Have any identified residuals been landfilled on-site at any time since Jan. 1, 1981 in a cell that has not been closed?
   ☐ Yes ☐ No
   If yes, complete Table VI.

Table V — Response to Question 6-H-2

Closed Landfill Cells - Not applicable

If more than 5 cells containing identified residuals have been closed, provide information only on the 5 cells that were most recently closed. Use Residual Identification Numbers to identify residuals. If you do not know whether a layer or liner was installed, circle both "Yes" and "No". If you do not know the thickness of a layer or liner, indicate "UNK" for unknown.

A. Cap/Cover Design

		Cap Design								
		Drainage Layer			Clay Layer			Synthetic Liner		
Cell	Residuals Disposed (RIN)	Installed		Thickness (in)	Installed		Thickness (in)	Installed		Thickness (mils)
1		Yes	No		Yes	No		Yes	No	
2		Yes	No		Yes	No		Yes	No	
3		Yes	No		Yes	No		Yes	No	
4		Yes	No		Yes	No		Yes	No	
5		Yes	No		Yes	No		Yes	No	

B. Bottom Liner Design/Leachate Collection

	Synthetic Liner				Clay Liner				Leachate Collection System			
Cell Number (As Assigned Above)	Installed		Thickness (mils)	No. of Liners	Installed		Thickness (in)	No. of Liners	Installed		Leachate Generated	
1	Yes	No			Yes	No			Yes	No	Yes	No
2	Yes	No			Yes	No			Yes	No	Yes	No
3	Yes	No			Yes	No			Yes	No	Yes	No
4	Yes	No			Yes	No			Yes	No	Yes	No
5	Yes	No			Yes	No			Yes	No	Yes	No

Table VI — Response to Question 5-H-3

Landfill Cells Used to Dispose of Identified Residuals At Any Time Since Jan. 1, 1981. - Not applicable

If more than 5 cells have been used since Jan. 1, 1981 to dispose of identified residuals, provide information only on the 5 containing the greatest quantities of identified residuals, Use Residual Identification Numbers to identify residuals. If you do not know whether a liner has been installed, circle both "Yes" and "No". If you do not know the thickness of a liner, indicate "UNK" for unknown.

		Synthetic Liner				Clay Liner				Leachate Collection System			
Cell	Residuals Disposed (RIN)	Installed		Thickness (mils)	No. of Liners	Installed		Thickness (in)	No. of Liners	Installed		Leachate Generated	
1		Yes	No			Yes	No			Yes	No	Yes	No
2		Yes	No			Yes	No			Yes	No	Yes	No
3		Yes	No			Yes	No			Yes	No	Yes	No
4		Yes	No			Yes	No			Yes	No	Yes	No
5		Yes	No			Yes	No			Yes	No	Yes	No

5

5

843010057

5120 Butler Pike
Plymouth Meeting
Pennsylvania 19462
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Woodward-Clyde Consultants

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PETROCHEMICALS DEPT.

January 17, 1985
84C2271

Plant
Topic
Subtopic
Violation
File/Other
Entered

E. I. duPont de Nemours & Co., Inc
Louviers Building
Engineering Department
Wilmington, DE 19898

Attention: Mr. Phil A. Palmer

PHASE I REPORT
PRELIMINARY ASSESSMENT OF ENVIRONMENTAL IMPACTS
PITT-CONSOL CHEMICAL CO.

Gentlemen:

In accordance with our Proposal dated October 23, 1984, Woodward-Clyde Consultants (WCC) is pleased to present in draft form our Phase I Report for a Preliminary Assessment of Environmental Impacts at DuPont's Pitt-Consol Chemical Co. site in Newark, New Jersey. This Phase I Report presents historical information concerning land use at and adjacent to the Pitt-Consol facility including the delineating of "pitch bay" boundaries via aerial photography interpretation. Also presented is background information regarding hydrogeology and groundwater quality. Recommendations for the use of geophysics and locations for test borings and test pits are also presented.

After your review of this draft report, we would welcome the opportunity to meet with you and discuss your comments as soon as possible. Our Health and Safety Plan for the field work at Pitt-Consol is in preparation and will be submitted to DuPont under separate cover.

We sincerely appreciate the opportunity to work with you on this Pitt-Consol project. If you have any questions, please feel free to contact us.

Very truly yours,

WOODWARD-CLYDE CONSULTANTS

Gary J. Barton

Gary J. Barton
Senior Staff Geologist

Jeffrey C. Evans

Jeffrey C. Evans, Ph.D., P.E.
Project Manager

GJB/JCE/gmb

Five Copies Submitted

cc: George Cassidy
Robert J. DeStefano
John Davis - Pitt-Consol

DRAFT
PHASE I REPORT
PRELIMINARY ASSESSMENTS OF ENVIRONMENTAL IMPACTS
PITT-CONSOL CHEMICAL CO.
Newark, New Jersey

Submitted to:

E. I. DUPONT DE NEMOURS & CO., INC.

Wilmington, Delaware

Prepared by:

WOODWARD-CLYDE CONSULTANTS

Plymouth Meeting, Pennsylvania

843010060

TABLE OF CONTENTS

		Page Number
1.0	INTRODUCTION	1
2.0	PROJECT BACKGROUND	
	2.1 SITE DESCRIPTION	1
	2.2 SCOPE OF WORK - PHASE I REPORT	2
3.0	PREVIOUS REPORTS	2
4.0	AERIAL PHOTO INTERPRETATION	
	4.1 LOW-ALTITUDE PHOTOGRAPHY AVAILABILITY	2
	4.2 AERIAL PHOTOGRAPHY INTERPRETATION OF THE PITT-CONSOL FACILITY	3
	4.3 SUMMARY OF LAGOON DEVELOPMENT AND CLOSURE	4
	4.4 AERIAL PHOTOGRAPHY INTERPRETATION OF THE AREAS ADJACENT TO PITT-CONSOL FACILITY	4
	4.5 POTENTIAL CONTAMINATION FROM AREAS ADJACENT TO PITT-CONSOL	6
5.0	GEOLOGIC SETTING	6
6.0	HYDROGEOLOGY	7
7.0	GROUNDWATER QUALITY	8
8.0	CONCLUSIONS	8
9.0	RECOMMENDATION FOR THE GEOPHYSICAL SURVEY	9
10.0	RECOMMENDATION FOR THE LOCATION OF TEST BORINGS AND TEST PITS FOR FILL INSPECTION	10
11.0	LIMITATIONS	10

LIST OF PLATES

	Plate Number
REGIONAL LOCATION PLAN	1
PITT-CONSOL SITE PLAN	2
1954 AERIAL PHOTOGRAPHY INTERPRETATION - PITT-CONSOL AND ADJACENT AREA	3
1957 AERIAL PHOTOGRAPHY INTERPRETATION - PITT-CONSOL AND ADJACENT AREA	4
1966 AERIAL PHOTOGRAPHY INTERPRETATION - PITT-CONSOL AND ADJACENT AREA	5
1970 AERIAL PHOTOGRAPHY INTERPRETATION - PITT-CONSOL AND ADJACENT AREA	6
1984 AERIAL PHOTOGRAPHY INTERPRETATION - PITT-CONSOL AND ADJACENT AREA	7
PITT-CONSOL FACILITY SPATIAL RELATIONSHIP TO NEARBY POTENTIAL OFF-SITE CONTAMINATION SOURCES	8
PITT-CONSOL FACILITY SPATIAL RELATIONSHIP TO THE NEWARK BASIN	9
SPECIFIC CAPACITIES OF WELLS PENETRATING THE BRUNSWICK FORMATION IN NEWARK, NEW JERSEY	10
PROPOSED GEOPHYSICAL SURVEY AND LOCATIONS OF TEST BORINGS, TEST PITS AND PIEZOMETERS	11
LIMITED GEOPHYSICAL SURVEY RESULTS	12

LIST OF TABLES

	Table Number
PARTIAL LISTING OF PRODUCTS USED OR PRODUCED AT PITT-CONSOL	1
RELATIVE CHANGES IN THE SURFACE AREA OF LAGOONS AT PITT-CONSOL FROM 1954 TO 1970	2

1.0 INTRODUCTION

Woodward-Clyde Consultants (WCC) is conducting a multi-phased, preliminary hydrogeologic investigation at DuPont's Pitt-Consol Chemical Co. facility in Newark, New Jersey. Petrochemical derivatives have reportedly been produced at this site over the last 50 years. Subsurface contamination is suspect. As described in the cover letter, this Phase I Report presents historical information concerning land use at and adjacent to the Pitt-Consol site via aerial photography interpretation, background information concerning previous site-specific studies, geology, hydrogeology, and groundwater quality, and includes recommendations for Phase II - Fill Inspection including the use of geophysics and locations of test borings and test pits.

Upon the completion of Phase II - Fill Inspection, data obtained from the geophysical survey, test borings, and test pits will be interpreted collectively to assist in picking optimum locations for piezometers. Phase IV of this study is piezometer installation, Phase V is groundwater sampling and Phase VI is report preparation.

2.0 PROJECT BACKGROUND

2.1 SITE DESCRIPTION

The Pitt-Consol Chemical Co. site, a former chemical manufacturing facility, is located in Essex County, New Jersey, as shown on Plate 1. The facility has been in operation for over 50 years and is presently being dismantled. The site includes a petrochemical processing facility, several "pitch bays" (lagoons) and several tank farms. The lagoons, tank farms, and processing areas may be potential sources of contamination. The maximum lateral extent of the lagoons and locations of pre-existing and existing tank farms are shown on Plate 2. The lagoons were reportedly approximately three feet deep and were decommissioned and covered with fill between 1954 and 1967. Manufacturing by-products, including tars and possibly a variety of phenolic compounds, were stored in the lagoons. A partial listing of chemical products used or produced at the site is found in Table 1.

2.2 SCOPE OF WORK - PHASE I REPORT

The verification of land use at and adjacent to the Pitt-Consol site was conducted through interpretation of historical aerial photographs. The primary goal of this task was to delineate former lagoon boundaries and identify evidence of potential contamination sources on adjacent properties. Low altitude photography from 1954 to 1984 were reviewed to identify changes in soil type, drainage, vegetation, industrial structures (i.e. tank farms, lagoons and processing facilities, drum storage areas) and other land use.

In addition, a review was conducted of available data, including reports and publications concerning geology, hydrogeology, and groundwater quality, as well as site specific background information provided by DuPont.

The scope of work includes this written interim report addressing the aforementioned concerns and including recommendations for subsequent project phases.

3.0 PREVIOUS REPORTS

The data available in previous reports is identified and presented in Appendix A. Where such data is utilized directly, an author reference is given in the text. As shown in Appendix A, the previously available information can range from regional geologic studies to studies specific to Pitt-Consol, such as the Geotechnical Investigation previously performed by WCC.

4.0 AERIAL PHOTO INTERPRETATION

4.1 LOW-ALTITUDE PHOTOGRAPH AVAILABILITY

Low-altitude aerial photographs were available from the United States Geological Survey - EROS Data Center (1954, 1966, and 1984), the National Oceanographic Service (1944, 1951, 1962, and 1971), and DuPont (1954, 1955, 1957, 1957 to 1965 (specific dates unknown) and 1970). WCC has not yet received photographs from the

National Oceanographic Services; therefore, we are unable to present interpretations for the appropriate dates listed above. The scale of the available photography varies from approximately 1 inch equals 150 to 1 inch equals 500 feet.

4.2 AERIAL PHOTOGRAPHY INTERPRETATION OF THE PITT-CONSOL FACILITY

Possible relate to Passaic

The 1954 aerial photography interpretation, presented on Plate 3 shows considerable site activity at Lagoons A,B,C,D, E, F and G. The lagoons were being used as storage for liquid by-product material. The level of by-product in Lagoon C appears to have lowered slightly as the bottom of Lagoon C is exposed along its southern boundary. Runoff from the processing-tank farm area was draining into Lagoon C and D. Liquids in Lagoon G appear to be overflowing the northern bank. This runoff was draining into a shallow ditch which runs north and eventually empties into the Passaic River. In addition, it appears that precipitation has inundated the area east of Lagoons E and F. Tires were being stockpiled near the intersection of Doremus Avenue and the railroad.

Considerable development and expansion occurred between 1954 and 1957. By 1957, as shown on Plate 4, Lagoon A was taken out of service and partially covered with fill. In Lagoon B, the steel dikes had been removed or covered around the perimeter of the lagoon. The size of Lagoon B was reduced by approximately 70 percent. The size of Lagoon C, D and E remained virtually unchanged from 1954. Lagoon F was also taken out of service and covered with fill. The addition of Roanoke Avenue along the northern and western property line did not change the size of Lagoon G and did not cover any portion of Lagoon G. Existing buildings and a small tank farm south and east of Lagoon A, and two buildings along Doremus Avenue were razed. Expansion at the facility included the installation of a tank farm east of Lagoon E. During this time (August), the site was not inundated by water due to the small amount of precipitation normal for this time of year.

Extensive development occurred between 1957 and 1966, as shown on Plate 5. Among these developments were the closure of Lagoons B, C, D and G; expansion at the facility, including the installation of two small tank farms in the northern sector of

the property; and numerous buildings were razed. Water inundated the area south Lagoon E.

Fewer changes occurred at the site between 1966 and 1970, as shown Plate 6. Lagoon E was closed and filled. Expansion included the installation of a sm tank farm along the eastern boundary of former Lagoon B and southeastern boundary former Lagoon C. A railroad siding was added for access to this tank farm. A f buildings were built and a few others were razed. Water inundated most of the facili but not the northern sector near Roanoke Avenue.

The aerial photography for 1984 is less useful; because of the scale it v taken at, its detail is considerably less compared to the older aerial photography studi Few changes occurred at the site between 1971 and 1984. An office building was built the northeast corner of the property.

4.3 SUMMARY OF LAGOON DEVELOPMENT AND CLOSURE

Seven lagoons were identified at Pitt-Consol through interpretation aerial photographs and are labeled A, B, C, D, E, F and G on Plate 3. These lagoons w closed at different times between 1954 and 1970. The relative change in each lagoo surface area with respect to time is given on Table 2. The first lagoon to be drained a covered with fill was Lagoon A, the last to remain open was Lagoon E and was clos between 1966 and 1970.

4.4 AERIAL PHOTOGRAPHY INTERPRETATION OF THE ARE ADJACENT TO THE PITT-CONSOL FACILITY

By 1954 as shown on Plate 3, Pitt-Consol had many industrial facilities neighbors. Of these nearby facilities, the most significant are likely those upgradie from the site. An industrial facility with a tank farm is situated west of Lagoon A, sho as Area 1 on Plate 3. Another industrial facility (Area 2) with a small lagoon is locat west of the New Jersey Turnpike shown as Area 2. A railroad yard, identified as Area with numerous parked tank cars is located southwest of Pitt-Consol. A railway syste

with an east-west orientation is located just south of Pitt-Consol in Area 4; tank cars were parked on sidings in or near the facility. North of Lagoon G, a series of small ponds and a tank farm were located (Areas 5 and 6, respectively). Areas 5 and 6, and Lagoon G were drained by a ditch which empties into the Passaic River. West of Area 6 is a lagoon situated in a small facility identified as Area 7. An area with extensive land use believed to be lagoons or dumping is situated approximately 1300 feet south of Pitt-Consol in Area 8. To the east of Pitt-Consol were numerous tank farms identified as Area 9.

Due to limited aerial photography coverage, only limited data are available on land use adjacent to Pitt-Consol during 1957. The 1957 aerial photography interpretation, presented on Plate 4, shows some activity. North and adjacent to Area 1, a building has been erected with a parking lot. West of this area, a drive-in movie theater has been built. A small facility with tanks, located south of Area 1, has been erected in Area 10. In Area 11, drums are stored in the open.

A limited amount of additional development occurred around Pitt-Consol between 1957 and 1966, as shown on Plate 5. A tank farm and an industrial facility were built south of Pitt-Consol in Area 12. A set of small lagoons was developed southwest of Pitt-Consol in Area 12. A small lagoon was developed west of Pitt-Consol in Area 13. Drums were no longer stored in the open in the railroad yard.

Because of limited aerial photography coverage, very limited information is available concerning offsite conditions during 1970. However, considerable activity is occurring in Area 5 as shown in Plate 6. The ponds in this area are being excavated and the material is apparently being hauled offsite. The reason for this activity is unknown. A set of small lagoons was developed south of Pitt-Consol in Area 11.

The aerial photography for 1984 is poor. The scale it was taken at has reduced its detail compared to older aerial photography. A limited amount of development occurred around Pitt-Consol between 1970 and 1984. The lagoons in Area 7, 11 and 13 were drained and filled (Plate 7). A few buildings were built in Area 5.

4.5 POTENTIAL CONTAMINATION FROM AREAS ADJACENT TO PITT-CONSOL

Based upon the aerial photography interpretation and general knowledge of groundwater flow in the vicinity of the Pitt-Consol Chemical Co., WCC has identified sites which may be considered potential off-site contamination sources as shown on Plate 8. All facilities identified probably store and/or process hazardous materials. Ranking each site according to contamination potential is not possible at this time because information concerning activities at each site is insufficient.

5.0 GEOLOGIC SETTING

The Pitt-Consol site lies within the eastern edge of the Newark Basin in northeastern New Jersey as shown on Plate 9. Regionally, the bedrock consists of sedimentary rocks of the Newark Group. In the Newark area bedrock dips west to northwest at approximately 10 degrees. Bedrock beneath the site belongs to the Brunswick Formation which is generally composed of a reddish-brown mudstone, siltstone and/or shale with gypsum deposits present in some areas. The Brunswick gradually becomes coarser-grained north of Newark, consisting largely of sandstone and conglomerate in the northern part of the basin located in New York State.

Unconsolidated sediments, consisting of glacial till and stratified drift, cover most of the bedrock in the Newark area. Till is an unsorted mixture of gravel, sand, silt, and clay deposited directly by the glacial ice. Stratified drift consists of sorted layers of the same materials deposited by glacial meltwater streams (glaciofluvial deposits) and lakes (glaciolacustrine deposits). Glaciofluvial deposits generally consist of stratified sand and gravel; whereas, glaciolacustrine deposits are generally laminated silt or clay.

Site specific subsurface data are available from a previous WCC project, which entailed drilling two test borings at the Pitt-Consol site. Boring logs are presented in Appendix A. Bedrock is approximately 60 feet below the surface and consists of a reddish brown shale or mudstone. Bedrock is overlain by approximately 20 feet of red

silty clay containing minor amounts of sand and gravel. The red clay is overlain by approximately five feet of a brown-gray sand with traces of silt. This sand is overlain by approximately 25 feet of a dark gray clay with an organic constituent identified as peat. The peat is most abundant in the upper 10 feet of this clay unit. The peat is capped by approximately nine feet of fill. The fill is composed of sand and gravel with pieces of concrete, brick and wood.

6.0 GEOHYDROLOGY

Groundwater in the vicinity of the Pitt-Consol site is encountered in both the unconsolidated and consolidated sediments. Groundwater in the unconsolidated sediments probably occurs under confined as well as unconfined conditions. Therefore, a groundwater system with more than one water-bearing zone is likely present within the unconsolidated sediments.

The unconfined water-bearing zone is found within the fill material capping the organic clay sediments. The primary source of groundwater recharge to the unconfined aquifer is surface infiltration. The confined water-bearing zone is likely to be in the thin sand unit below the thick organic clay underlying the fill. The top of the confined water-bearing zone is estimated from the test borings presented in Appendix A to be at a depth of approximately 35 feet. Recharge probably occurs at outcrop areas or where the confining layer is leaky. It is believed reported that glaciofluvial deposits are the most productive aquifers in Essex County with specific capacities greater than 14 gpm/ft.

Groundwater in bedrock at the Pitt-Consol site is probably under confined conditions considering that the glacial overburden is primarily clayey material. Water normally moves along secondary pore spaces, such as joints and fractures, since primary pore spaces within the Brunswick Formation are too small and discontinuous to allow for significant transmittal of water under natural hydraulic gradients. The specific capacity for wells screened in the Brunswick in Essex County is variable but averages 3 gpm/ft as shown on Plate 10.

Groundwater flow in the uppermost aquifer is believed to flow toward the Passaic River. This flow may be effected by tidal fluctuations in the Passaic River. During Phase IV of this investigation, piezometers will be installed to monitor changes in water table elevations with respect to tidal fluctuations. The information collected during this investigation will be useful in preparing groundwater flow maps and assessing the impact of tidal fluctuations on groundwater flow.

7.0 GROUNDWATER QUALITY

Previous investigations have reported high chloride concentrations in the Brunswick aquifer in areas of relatively heavy pumpage in eastern Newark adjacent to Newark Bay and the Passaic River. Heavy groundwater withdrawals have lowered the water table in this area and introduced saltwater into the aquifer by reversing the natural gradient between the groundwater and surface water bodies.

Further information regarding groundwater quality may be obtained from the New Jersey Geological Survey-Division of Water Resources. Review of their "New Jersey Groundwater Pollution Index", indicates that two soil or groundwater contamination cases may be located near Pitt-Consol. However, due to the nature of this study, WCC believes at this time, that a request to review their files is not warranted.

8.0 CONCLUSIONS

The aerial photography interpretation has shown that the Pitt-Consol Chemical Co., a petrochemical processing facility in Newark, New Jersey, has undergone major changes in land use from 1954 to approximately 1970. During this period at Pitt-Consol, seven unlined lagoons which were used to store plant by-products were drained and filled. These former lagoons, as well as the tank farms and processing areas may be sources for potential soil and groundwater contamination. In addition, this study located numerous potential off-site contamination sources.

WCC's review of available data pertinent to site conditions at Pitt-Consol indicate bedrock is overlain by approximately 50 feet of unconsolidated sediments. These

sediments are capped by approximately 10 feet of fill. Within the unconsolidated sediments is believed to be a groundwater system with more than one water-bearing zone. The unconfined water-bearing zone in the fill is the water-bearing zone most likely to be impacted by contaminants although the extent to which the clay layers act as confining beds needs to be better established. Groundwater is believed to regionally flow toward the Passaic River. Therefore, degradation of the shallow unconfined water-bearing zone related to land use at this site may be confined to the area between the site and the Passaic River. However, groundwater flow directions specific to this site need to be confirmed.

Recommendations have been included in this Phase I Report to evaluate conditions within the fill at the site, and are based upon the interpretation developed from available aerial photography and geologic, hydrogeologic and groundwater quality data.

9.0 RECOMMENDATIONS FOR THE GEOPHYSICAL SURVEY

WCC recommends that as the first step in Phase II, a geophysical survey be conducted to delineate the boundaries of former lagoons and delineate areas of the subsurface which indicate terrain conductivity different from background. WCC will conduct a geophysical survey using the EM-31 Terrain Conductivity meters with a gridded survey system as shown on Plate 11. The maximum depth of exploration with the EM-31 is 20 feet.

During WCC's previous site visit, a limited survey was conducted across Lagoon E with the EM-31. The results of this survey as shown on Plate 12. The observed terrain conductivity values of profile A-A' decrease in the area of the suspect Lagoon G and reflect changes in the subsurface materials. Chemical characteristics of the lagoon material result in this material having lower conductivity values than those obtained in the site fill east of the suspect lagoon/fill contact. Based upon the aforementioned observations, plus the evidence presented in Plate 12, it appears that the terrain conductivity method can delineate the areal extent of lagoons at this site.

10.0 RECOMMENDATIONS FOR THE LOCATION OF TEST BORINGS AND TEST PITS FOR FILL INSPECTION

WCC recommends that test borings and test pits be used for fill inspection to determine the type and thickness of fill material, delineate the presence or absence of a separate liquid phase residue in the fill, to verify the presence or absence of former lagoons and to determine other potential contaminant sources around the plant. Previous field work has shown that test borings and test pits are not as reliable as piezometers when verifying the presence or absence of a separate liquid phase residue in subsurface materials. However, WCC believes that test borings and test pits are appropriate for identifying the aforementioned.

The location of test borings and test pits, as shown in Plate 11, were chosen after reviewing available hydrogeologic data, aerial photography from 1954 to 1984 and limited geophysical data acquired by WCC. A total of 34 test borings will be utilized during fill inspection. The primary purpose of test borings TB-1 to TB-24 (excluding TB-5), TB-32 and TB-33 is to verify the presence or absence of former lagoons. The primary purpose of TB-5, TB-25 to TB-28, TB-31 and TB-34 is to identify contamination, particularly liquid phase residue which may be associated with leaks or spills at tank farms and process areas. The location of test borings are subject to change after data from the geophysical survey is interpreted.

Test pits will be utilized only to replace test borings which cannot be augered. Test pits are not as appropriate a technique as test borings at Pitt-Consol due to the presence of a very shallow water table. Excavations below the water table often experience difficulty with walls collapsing.

11.0 LIMITATIONS

These recommendations are based upon data available at the time of review and are subject to change pending the availability of new data. In particular, aerial photography from 1944, 1951, 1962 and 1972 have not been received by WCC due to circumstances beyond our control as previously discussed in our December 21, 1984 letter to DuPont.

REFERENCES

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Carswell, L.D., 1976, Appraisal of Water Resources in the Hackensack River Basin, New Jersey, U.S. Geological Survey Water-Resource Investigations 76-74, 68 pp.

Ford, Bacon & Davis, 1957, Storm Drainage and Waste Treatment, Pitt-Consol Chemical Company, Newark, New Jersey, 15 pp.

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Woodward-Clyde Consultants, 1980, Geotechnical Investigation SCP Fractimation Expansion Project Pitt-Consol Chemical Company, Newark, New Jersey, 33 pp.

Tables

TABLE 1

PARTIAL LIST OF PRODUCTS USED OR PRODUCED AT THE PLANT

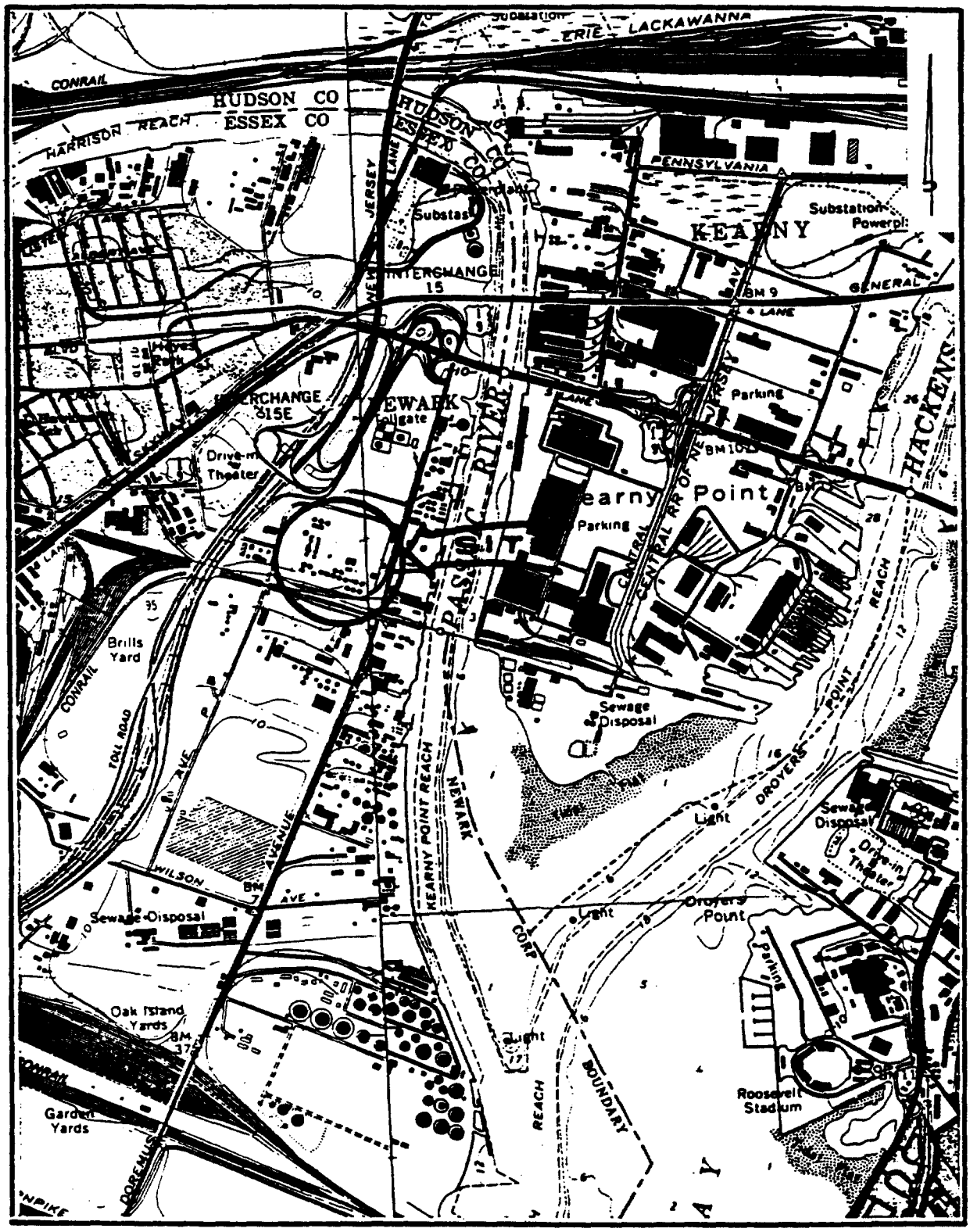
Anisoles
2,6 Dimethyl anisol
Dibutyl para cresol (DBC or BHT)
Dinonyl ortho cresol
m, p-Cresol
Monobutyl meta cresol
o-Cresol
Thiocresols
Cyclohexane
Dimethyl ether
Disulfide oil
Esters such as synthetic sperm oil
Hexane
Methanol
Aromatic mercaptans
Phenol
2,4, Dibutyl phenol
2,6 Dibutyl phenol
6 Butyl 2,4 methyl phenol
Pentamethylphenols
Tetramethylphenols
2,3,6-Trimethylphenol
2,4,6-Trimethylphenol
Other trimethylphenols
Thiophenols
Thiophenols compounds
2,6-Xylenol
Other xylenols

TABLE 2: RELATIVE CHANGES IN THE SURFACE AREA OF LAGOONS AT PITT-CONSOL FROM 1954 TO 1970

	Relative Changes (%) In Lagoon Surface Area		
Lagoon	1954-1957	1957-1966	1966-1970
A	Closed		
B	-70	Closed	
C	-5	Closed	
D	+10	Closed	
E	0	+25	Closed
F	Closed		
G	0	Closed	

Plates

843010078



1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 .5 0 1 KILOMETER

REGIONAL LOCATION PLAN

843010079

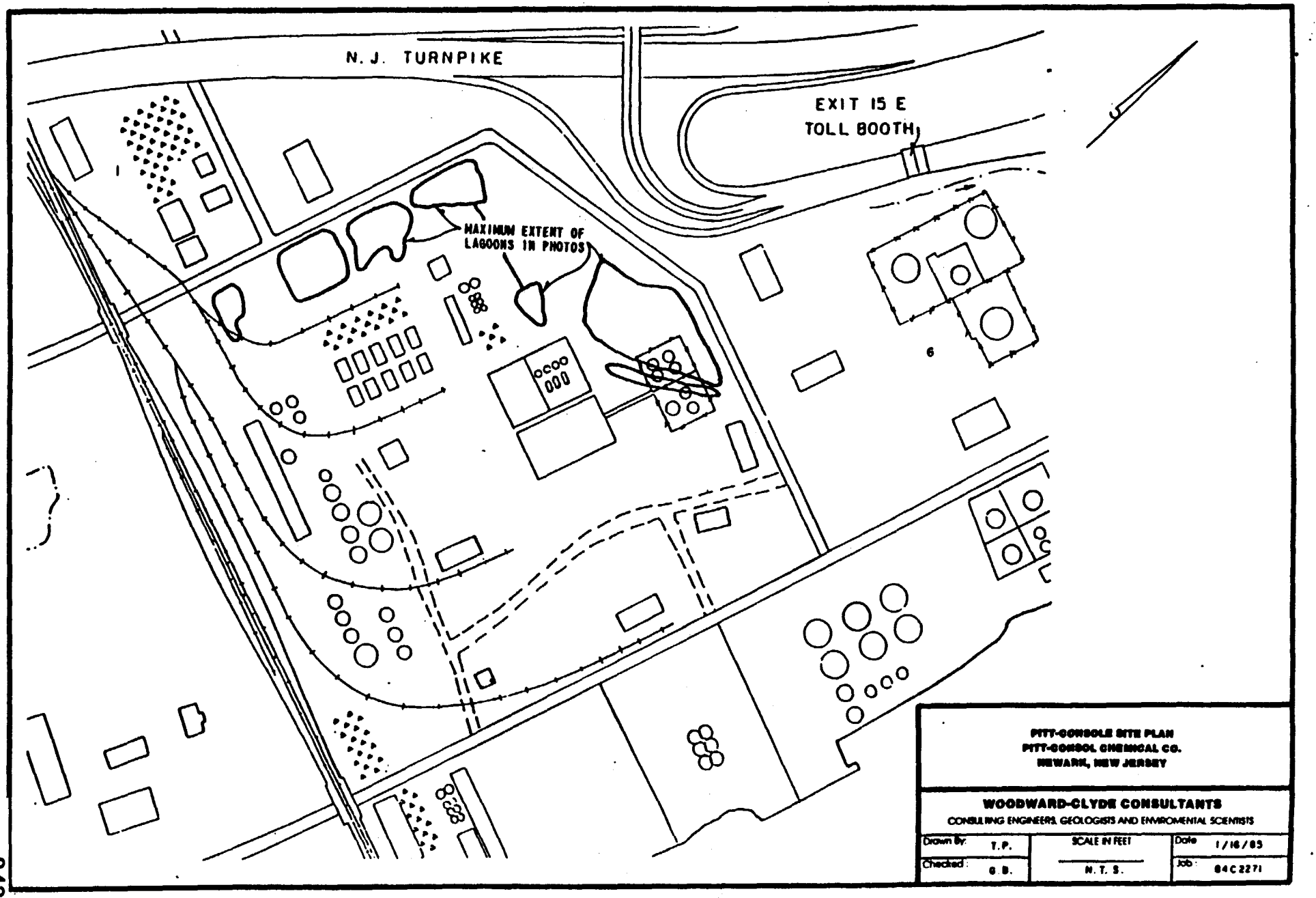
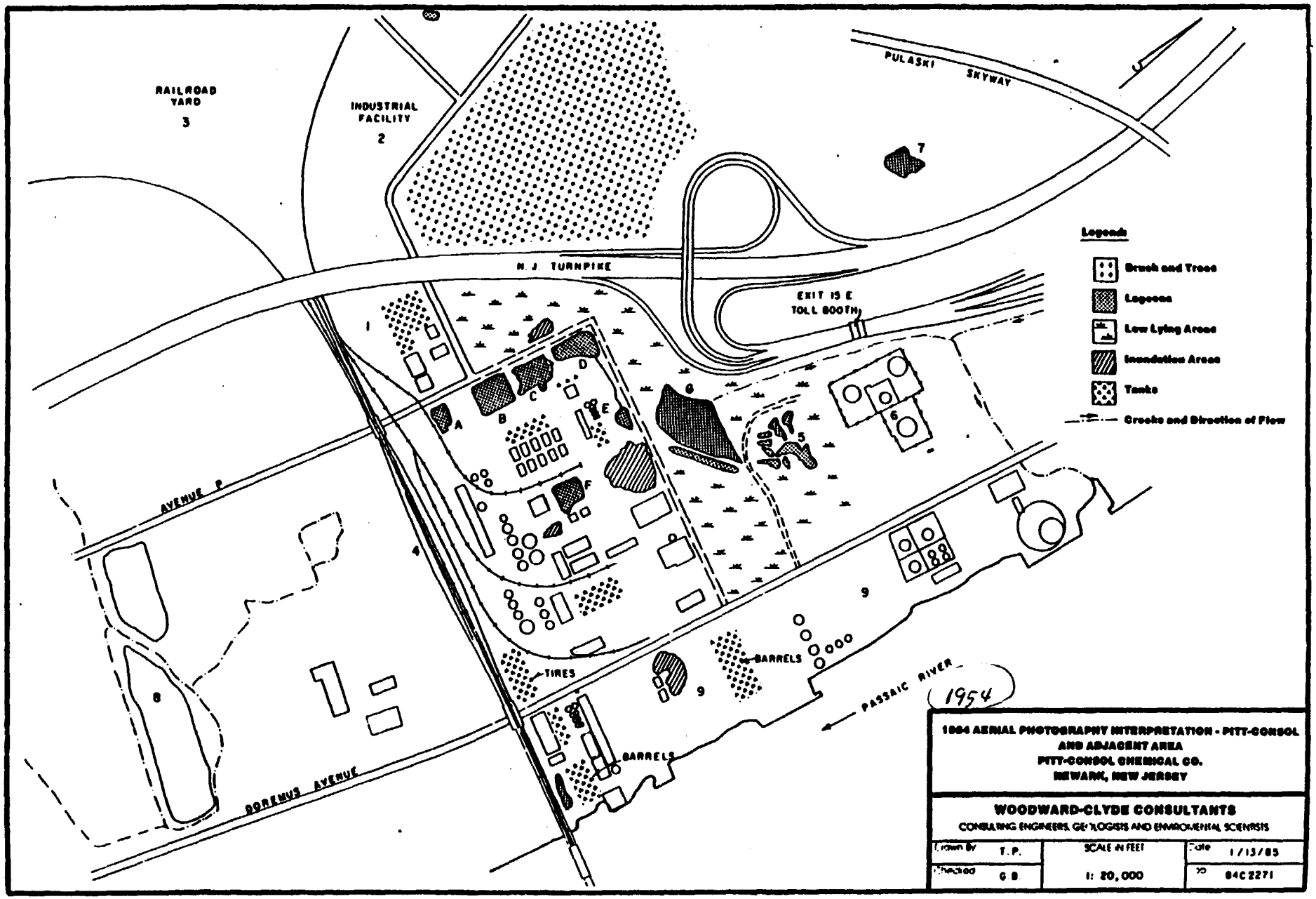


PLATE 2

843010080



1954 AERIAL PHOTOGRAPHY INTERPRETATION - PITT-CONSOL AND ADJACENT AREA
PITT-CONSOL CHEMICAL CO.
NEWARK, NEW JERSEY

WOODWARD-CLYDE CONSULTANTS
CONSULTING ENGINEERS, GEOLOGISTS AND ENVIRONMENTAL SCIENTISTS

Drawn By T. P.	SCALE IN FEET	Date 1/13/85
Checked G B	1: 20,000	No 84C2271

PLATE 3

843010081

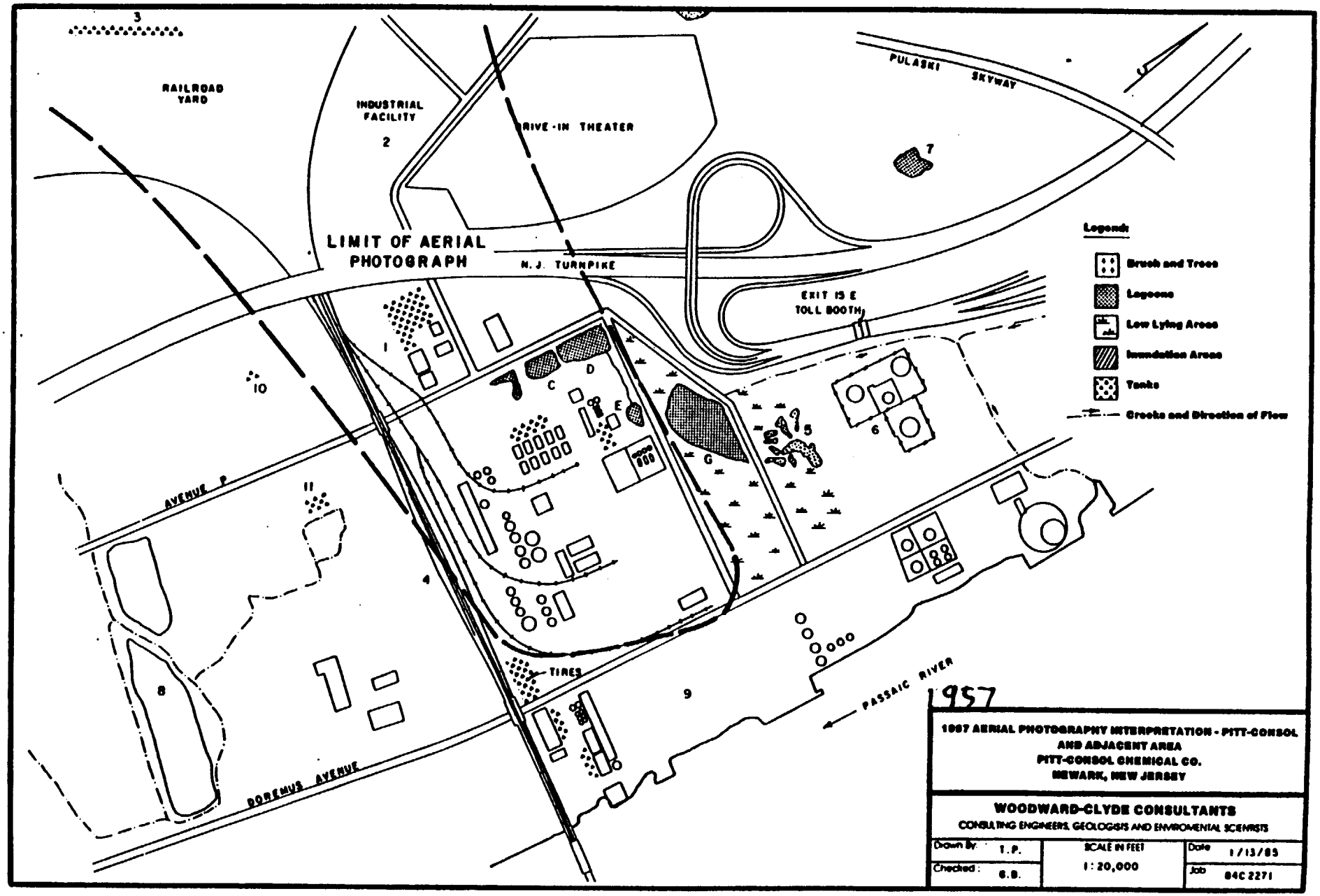
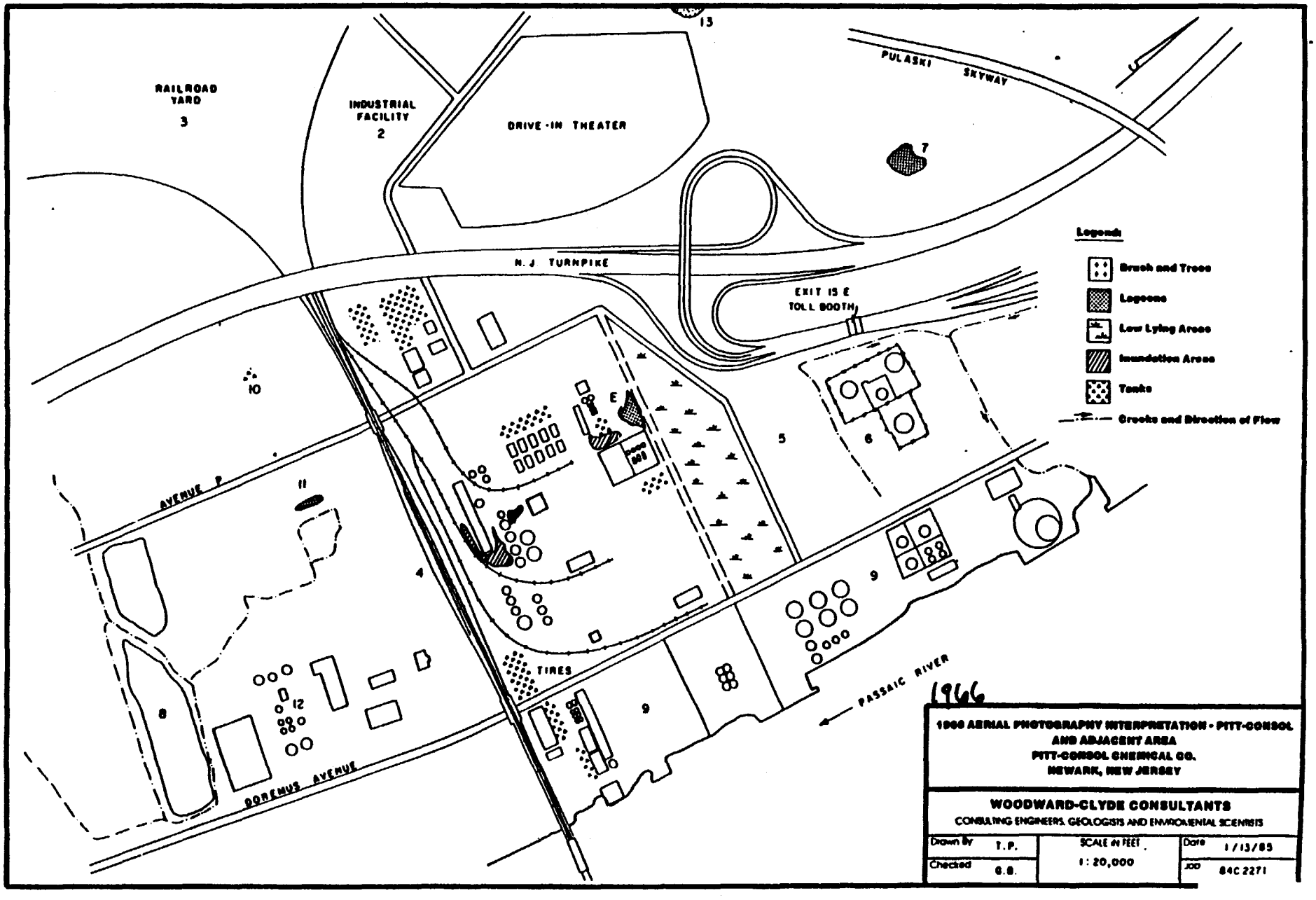
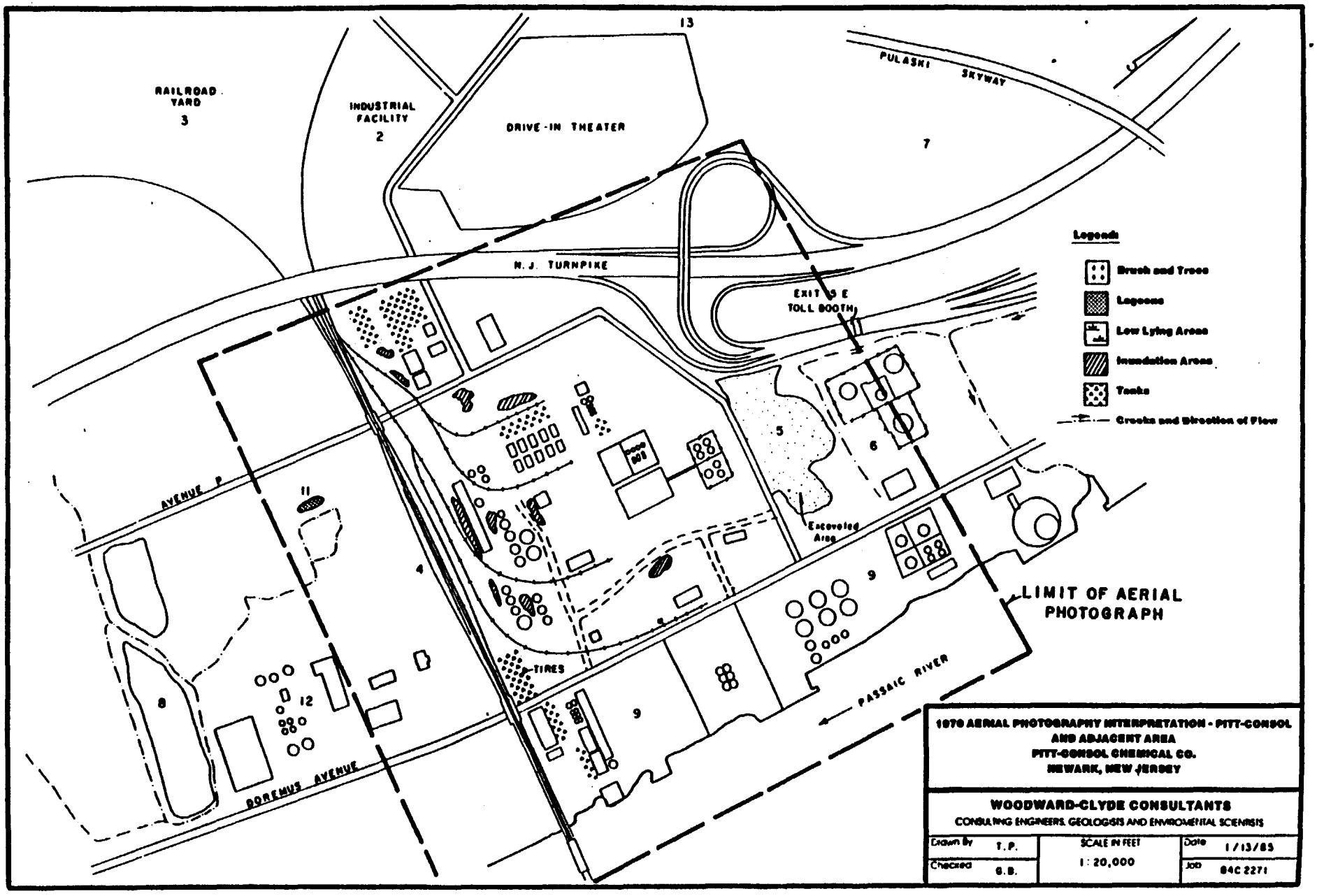


PLATE 4

843010082


RAILROAD YARD
3
INDUSTRIAL FACILITY
2
DRIVE-IN THEATER
13
PULASKI SKYWAY
7
N. J. TURNPIKE
EXIT 15 E
TOLL BOOTH
10
E
5
6
AVENUE P
11
4
9
TIRES
PASSAIC RIVER
8
12
DOREMUS AVENUE
Legend:
Brush and Trees
Lagoons
Low Lying Areas
Inundation Areas
Tanks
Creeks and Direction of Flow
1966
1966 AERIAL PHOTOGRAPHY INTERPRETATION - PITT-CONSOL
AND ADJACENT AREA
PITT-CONSOL CHEMICAL CO.
NEWARK, NEW JERSEY
WOODWARD-CLYDE CONSULTANTS
CONSULTING ENGINEERS, GEOLOGISTS AND ENVIRONMENTAL SCIENTISTS
Drawn By T.P.
Checked G.B.
SCALE IN FEET
1:20,000
Date 1/13/85
JOB 84C 2271

843010083



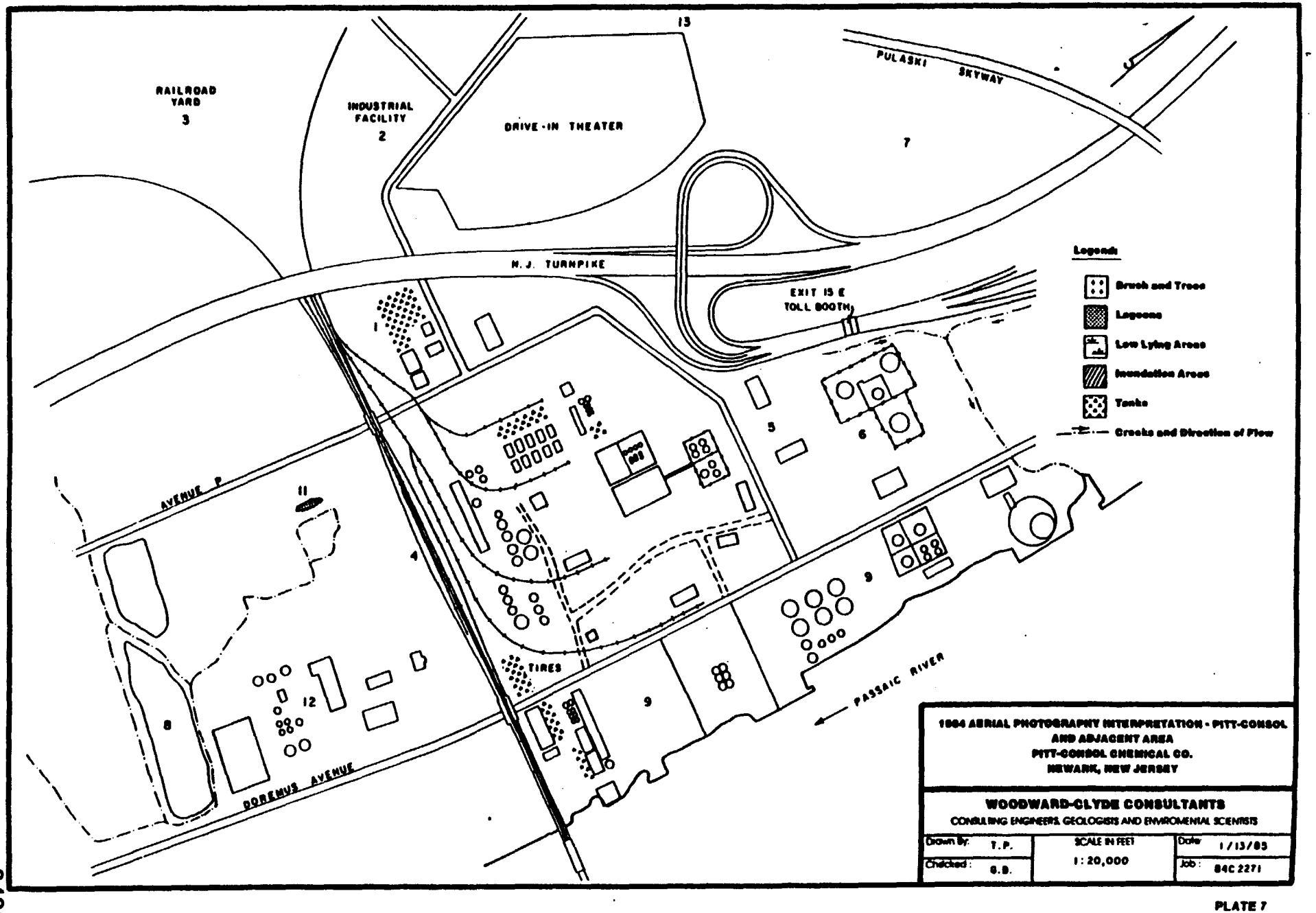
1970 AERIAL PHOTOGRAPHY INTERPRETATION - PITT-CONSOL AND ADJACENT AREA
PITT-CONSOL CHEMICAL CO.
NEWARK, NEW JERSEY

WOODWARD-CLYDE CONSULTANTS
CONSULTING ENGINEERS, GEOLOGISTS AND ENVIROMENTAL SCIENTISTS

Drawn By T.P.	SCALE IN FEET 1:20,000	Date 1/13/85	
Checked G.B.		Job 84C 2271	

PLATE 6

843010084



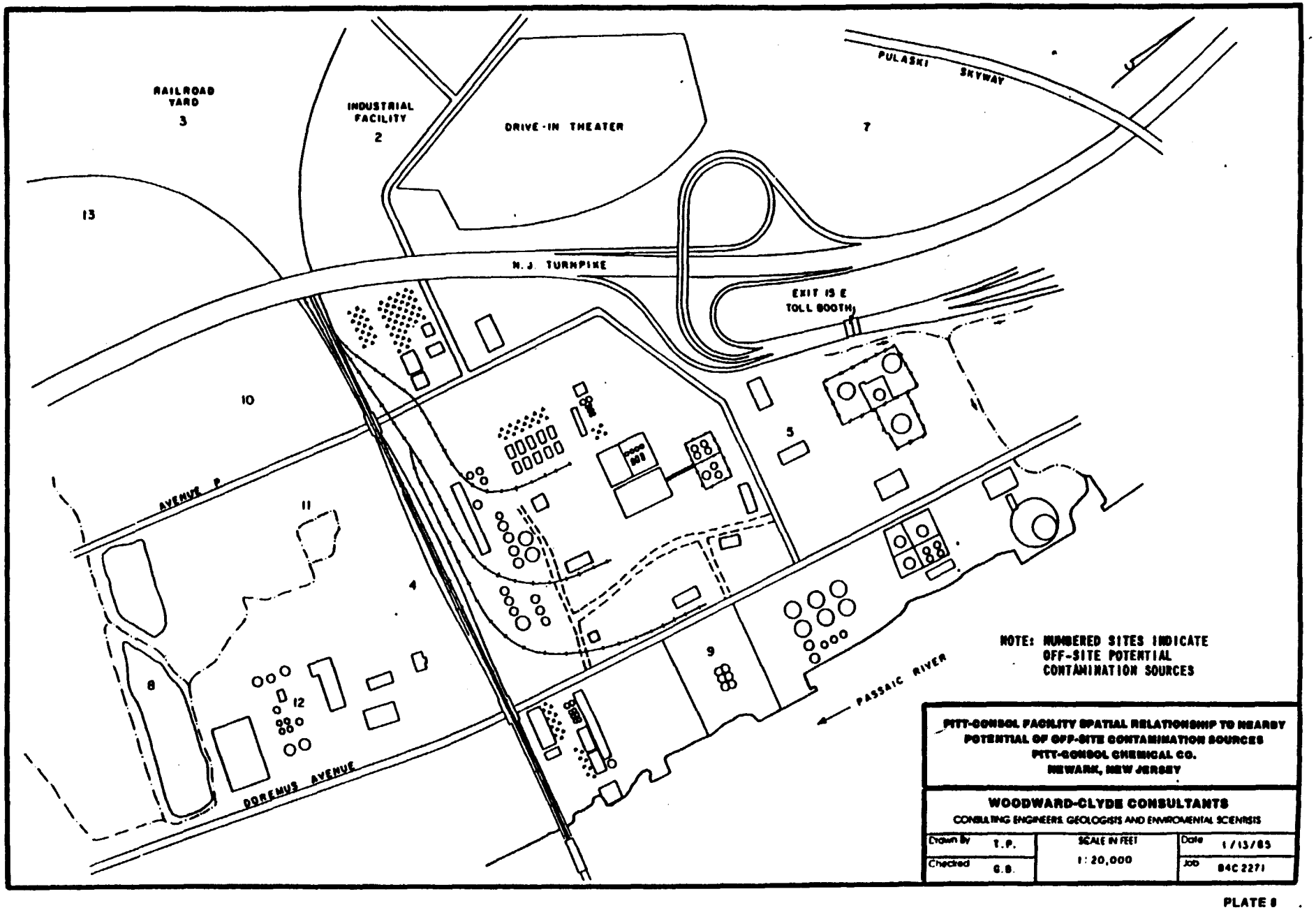
1984 AERIAL PHOTOGRAPHY INTERPRETATION - PITT-CONSOL AND ADJACENT AREA
PITT-CONSOL CHEMICAL CO.
NEWARK, NEW JERSEY

WOODWARD-CLYDE CONSULTANTS
CONSULTING ENGINEERS, GEOLOGISTS AND ENVIROMENTAL SCIENTISTS

Drawn By: T.P.	SCALE IN FEET 1:20,000	Date: 1/13/85	
Checked: G.B.		Job: 84C 2271	

PLATE 7

843010085



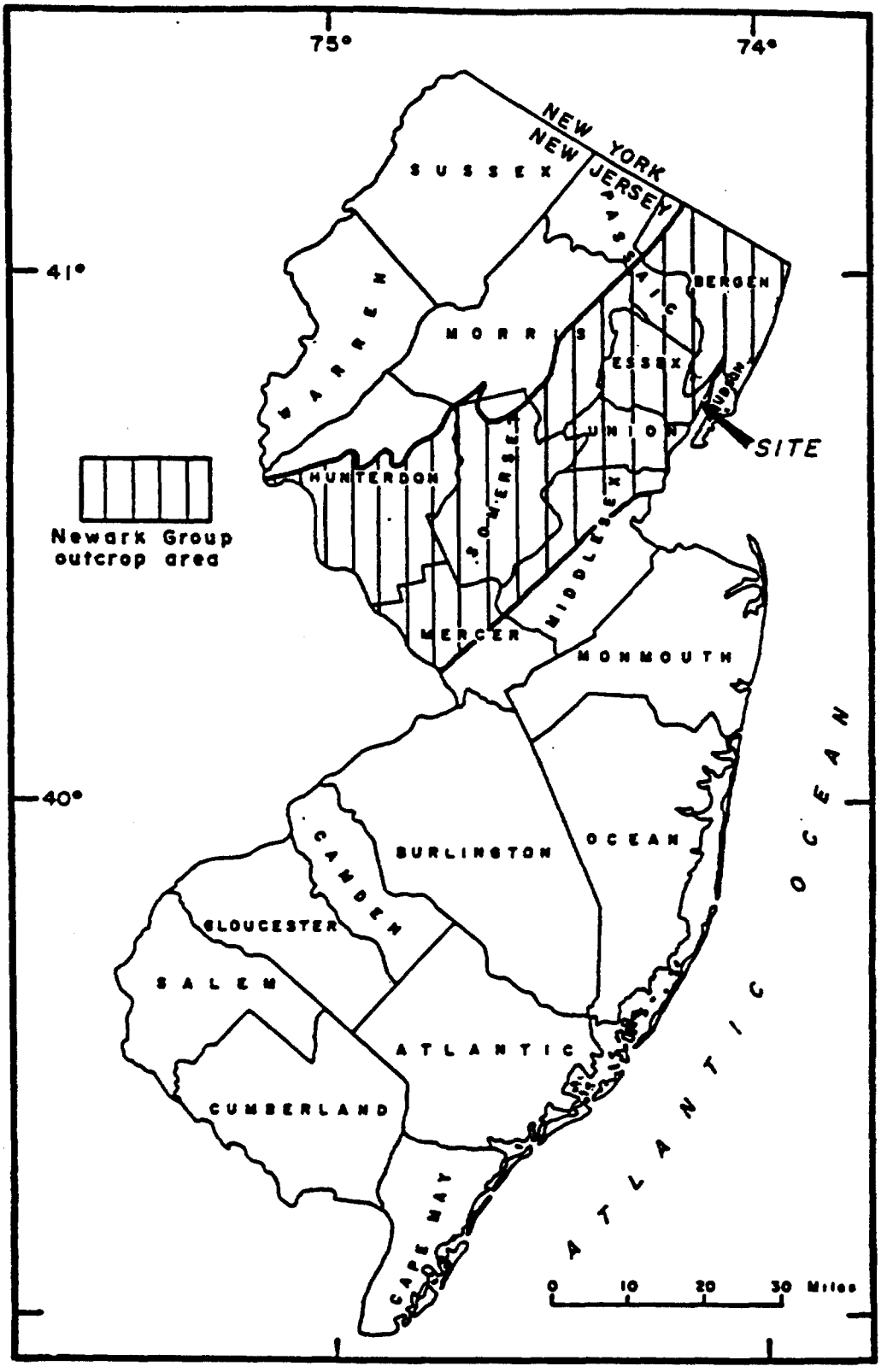
PITT-CONSOL FACILITY SPATIAL RELATIONSHIP TO NEARBY POTENTIAL OF OFF-SITE CONTAMINATION SOURCES
PITT-CONSOL CHEMICAL CO.
NEWARK, NEW JERSEY

WOODWARD-CLYDE CONSULTANTS
CONSULTING ENGINEERS, GEOLOGISTS AND ENVIRONMENTAL SCIENTISTS

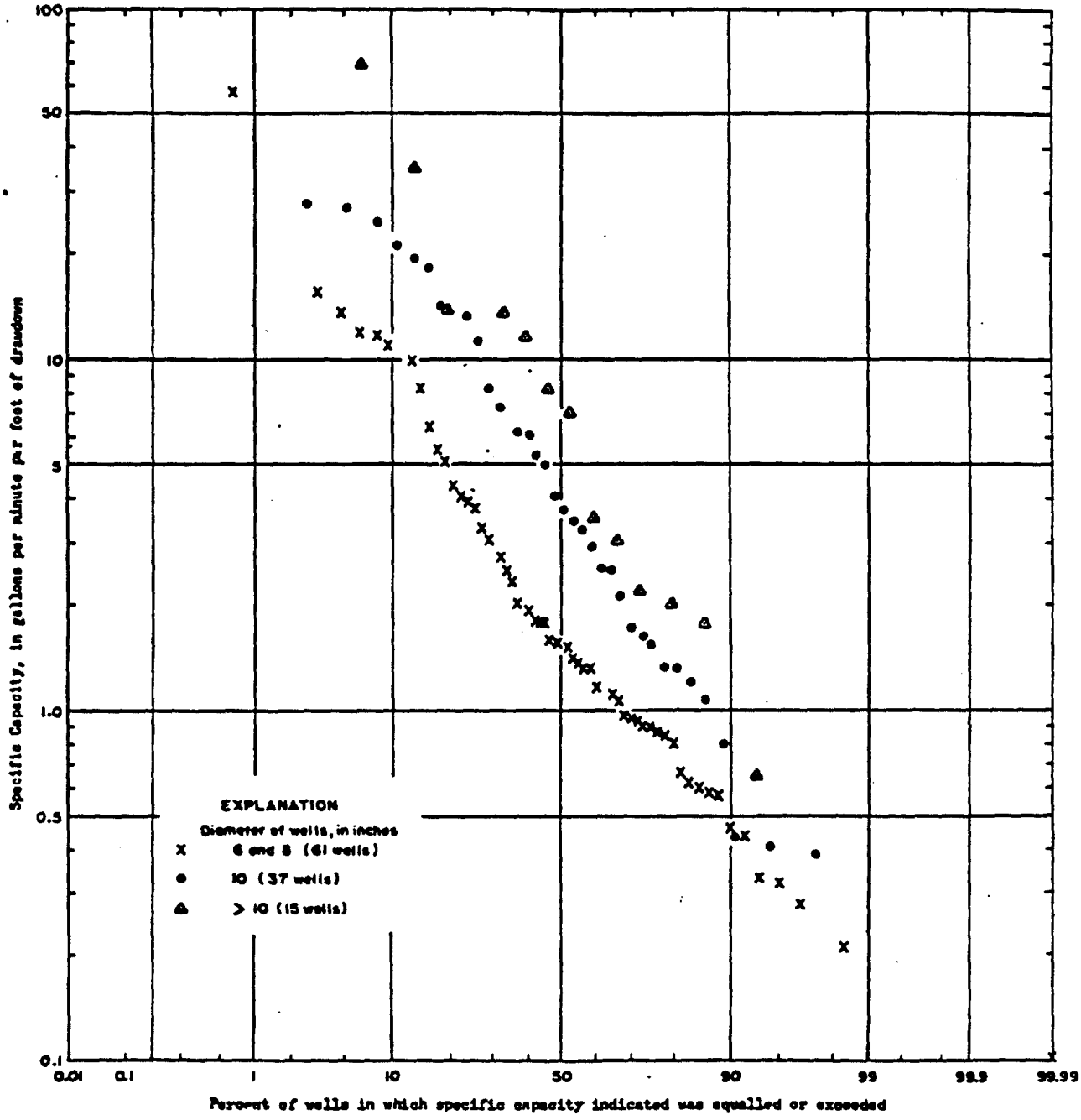
Drawn By T.P.	SCALE IN FEET 1:20,000	Date 1/13/85	
Checked G.B.		Job 84C 2271	

PLATE 8

84301008 6



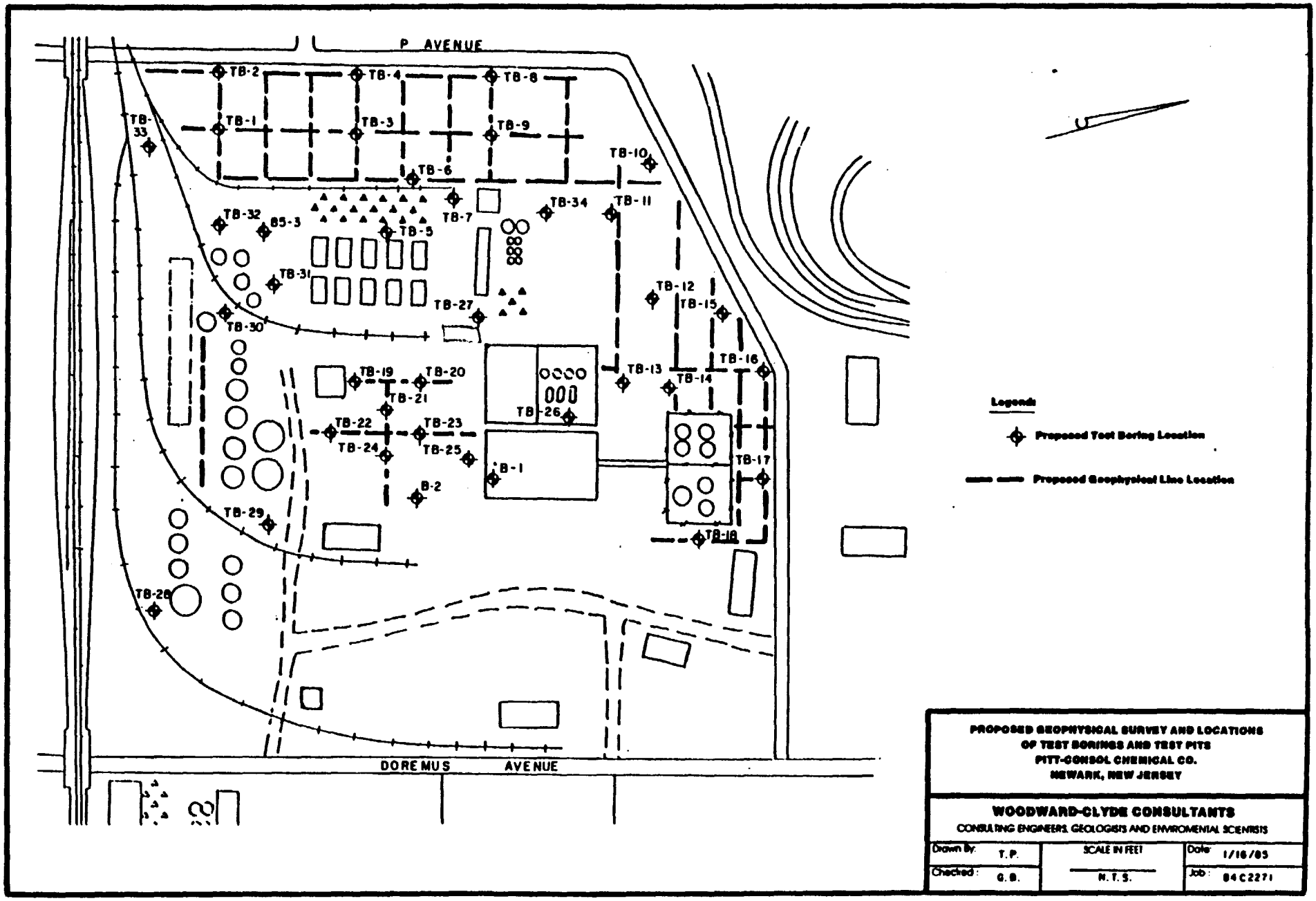
PITT-CONSOL SPATIAL RELATIONSHIP
TO THE NEWARK BASIN
PITT-CONSOL CHEMICAL CO.
NEWARK, NEW JERSEY 843010087



SPECIFIC CAPACITIES OF WELLS PENETRATING THE BRUNSWICK FORMATION IN NEWARK, NEW JERSEY
PITT-CONSOL CHEMICAL CO.
NEWARK, NEW JERSEY

PLATE 10

843010088



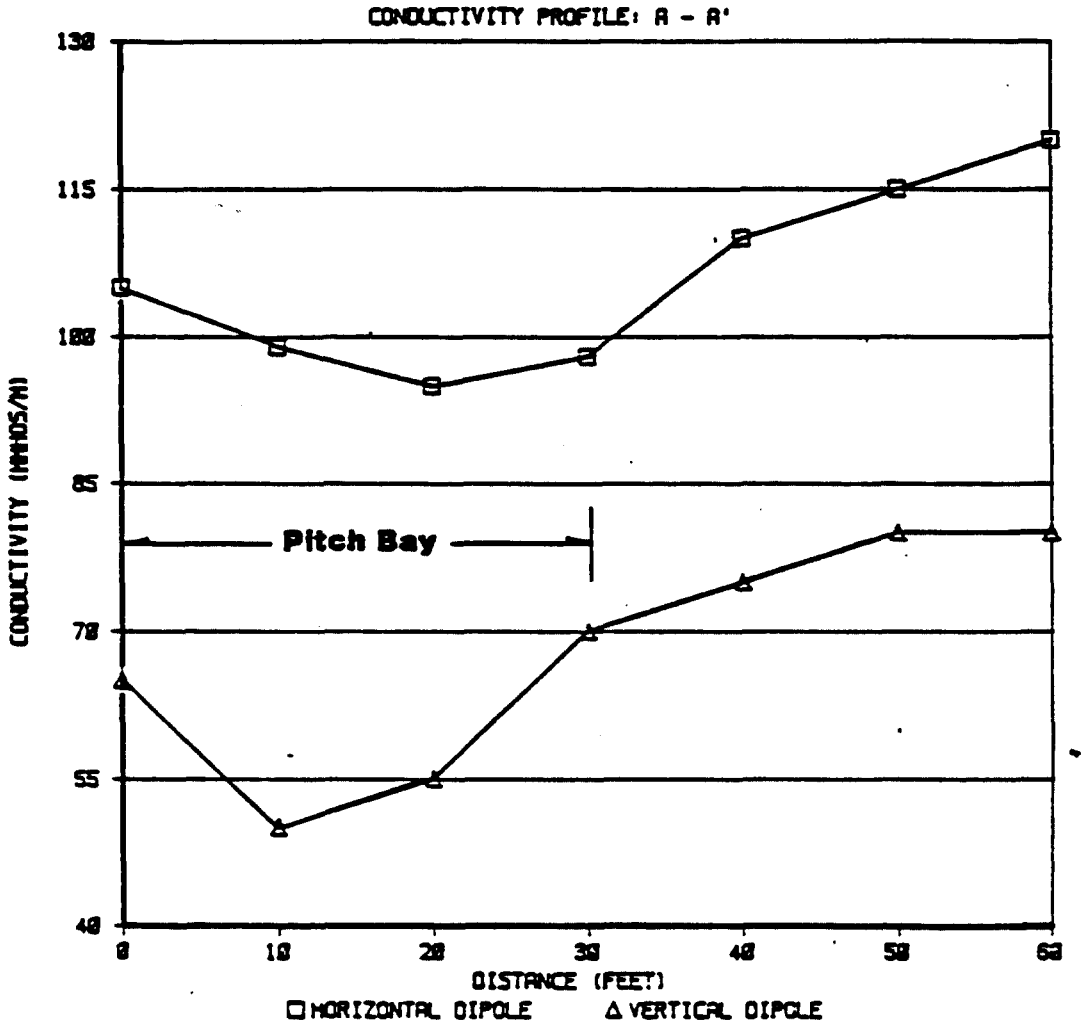
PROPOSED GEOPHYSICAL SURVEY AND LOCATIONS
OF TEST BORINGS AND TEST PITS
PITT-CONSOL CHEMICAL CO.
NEWARK, NEW JERSEY

WOODWARD-CLYDE CONSULTANTS
CONSULTING ENGINEERS, GEOLOGISTS AND ENVIROMENTAL SCENTISTS

Drawn By: T.P.	SCALE IN FEET	Date: 1/16/85
Checked: G.B.	N.T.S.	Job: 84C2271

PLATE 11

843010089



LIMITED GEOPHYSICAL SURVEY
PITT-CONSOL CHEMICAL CO.
NEWARK, NEW JERSEY

843010090

PLATE 12

Appendix A

WOODWARD-CLYDE CONSULTANTS

CONSULTING ENGINEERS, GEOLOGISTS AND ENVIRONMENTAL SCIENTISTS

LOG OF BORING B-1 SHEET 1 OF 4

PITT-CONSOL CHEMICAL CO.; Newark, N.J.		+100ft± (see note 1 on sh.4)	80C1159
Warren George, Inc.	Ken Reed	10 Nov. 1980	11 Nov. 1980
Truck-mounted, rotary-wash		75.0 ft.	Approx. 70 ft.
CASING 4" dia.	NX double tube, diamond bit	15	0 / 1
		5'+	- / -
CASING HAMMER	WEIGHT 300 lb.	DROP 24"	Vertical
SAMPLER 2" dia. standard split spoon			
SAMPLER HAMMER	WEIGHT 140 lb.	DROP 30"	J. Hall

DESCRIPTION	DEPTH, FT	SAMPLE			W_n,%	LL,%	PL,%	-200,%	REMARKS
Asphalt, 3"									
(FILL) Black coarse to fine SAND and GRAVEL, trace silt, with pieces of concrete, brick, and wood (strong chemical odor)	1	S-1	-	-					Sample obtained by hand auger
	2								
	3	S-2	10"	34 11 13					
	4								
	5								
	6								
	7								
	8	S-3	3"	9 27 3					
	9								
	10								
(OH) Dark gray moderately organic CLAY, some peat (very soft)	11	S-4	12"	1/ 18					
	12								
	13								
	14								
	15								
	16	S-5	12"	WOH					WOH=Sampler advanced under weight of drill rods and hammer without driving
	17								
	18								
	19								

843010092

WOODWARD-CLYDE CONSULTANTS

CONSULTING ENGINEERS, GEOLOGISTS AND ENVIRONMENTAL SCIENTISTS

LOG OF BORING B-1 SHEET 2 OF 4

DESCRIPTION	DEPTH, FT	SAMPLE			W_n,%	LL,%	PL,%	-200,%	REMARKS
grades brown-gray in color, with trace peat	21	S-6	14"	WOH					
	22								
	23								
	24								
	25	S-7	12"	WOH					
	26								
	27								
	28								
	29								
change approximate	30								
(CH) Mottled gray and blue CLAY, little medium to fine sand, trace vegetation fragments (medium stiff)	31	S-8	12"	2 2 5					
	32								
	33								
	34								
change approximate	35								
(SP-SM) Brown-gray medium to fine SAND, trace silt (loose)	36	S-9	8"	1 2 6					
	37								
	38								
	39								
change approximate	40								
(CL-ML) Red-brown SILTY CLAY to CLAYEY SILT (stiff)	41	S-10	12"	5 4 9					
	42								
	43								
	44								

843010093

WOODWARD-CLYDE CONSULTANTS

CONSULTING ENGINEERS, GEOLOGISTS AND ENVIRONMENTAL SCIENTISTS

LOG OF BORING B-1 SHEET 3 OF 4

DESCRIPTION	DEPTH, FT				W_n,%	LL,%	PL,%	-200,%	REMARKS
grades to (SM) Red-brown fine SAND, little silt (very dense)	46	S-11	12"	48 88 100/4"					
	47								
	48								
	49								
grades to (ML-CL) Interbedded red-brown SILT, some fine sand; CLAYEY SILT; and CLAY (very stiff)	50	S-12	18"	7 12 18					
	51								
	52								
	53								
	54								
grades to (CH) Red-brown CLAY, little fine gravel, trace coarse to fine sand (soft)	55	S-13	18"	3 2 2					
	56								
	57								
	58								
	59								
change approximate	60								
(WEATHERED ROCK) Heavily-weathered red shale---gravel-size rock fragments in a clay martrix (very hard)	61	S-14	16"	12 24 56					
	62								
	63								
	64								
	65	S-15	6"	134/6"					
	66								
	67								
	68								
	69								
Change at 70'±									

843010094

WOODWARD-CLYDE CONSULTANTS

CONSULTING ENGINEERS, GEOLOGISTS AND ENVIRONMENTAL SCIENTISTS

LOG OF BORING B-1 SHEET 4 OF 4

DESCRIPTION	DEPTH, FT	SAMPLES				W_n,%	LL,%	PL,%	-200,%		REMARKS
(ROCK) Red shale-relatively sound, with occasional clay seams	71 72 73 74 75	Rock Core	5'								Recovery=100% RQD=15%

NOTES:

1. Boring elevation estimated using CONOCO dwg. No. CC-1-42-1-X, rev. 2, dated 10/13/80, and is referenced to an arbitrary plant datum which is very approximately estimated to be five feet above mean sea level.

2. Boring completed at a depth of 75.0 feet on Nov. 11, 1980.

3. Four-inch diameter casing and water used to a depth of 14 ft. Drilling mud only used below 14 ft.

4. Groundwater encountered at a depth of approximately five feet while advancing boring.

5. The discussion of soil and groundwater conditions in the text of this report is essential for a proper understanding of the subsurface conditions.

843010095

843010096

WOODWARD-CLYDE CONSULTANTS

CONSULTING ENGINEERS, GEOLOGISTS AND ENVIRONMENTAL SCIENTISTS

LOG OF BORING B-2 SHEET 1 OF 4

PITT-CONSOL CHEMICAL CO; Newark, N.J.		+100ft.± (see note 1 on sh.4)	80C1159
Warren George, Inc.	Ed Tomkins	11 Nov. 1980	11 Nov. 1980
Truck-mounted, rotary-wash		70.0 ft.	approx. 65 ft.
CASING None	NX double tube, diamond bit	12	0 / 1
CASING HAMMER WEIGHT -	DROP -	-	- / -
SAMPLER 2" dia. standard split spoon		Vertical	
SAMPLER HAMMER WEIGHT 140 lb.	DROP 30 "	J. Hall	

DESCRIPTION	DEPTH, FT	Type	Length	Blows	W_n,%	LL,%	PL,%	-200,%	REMARKS
(FILL) Dark brown coarse to fine SAND, trace silt, trace fine gravel, with some clay in lumps	1	S-1	8"	28 14 10					
	2								
grades with cinders	3	S-2	15"	7 11 9					
	4								
grades to dark-gray moderately organic CLAY, trace cinders, with large wood fragments	5	S-3	7"	3 5 11					
	6								
	7								drill rods dropped from 7' to 13'
	8								
	9								steady loss of drilling mud during remainder of boring
	10								
	11								
(OH) Dark gray moderately organic CLAY, trace peat (stiff)	12								
	13								
	14	S-4	12"	3 6 9					
	15								
	16								
	17								
	18								
	19								sample continues to 20.5' (on sheet 2)
grades very soft		S-5	8"	WOH					

843010097

WOODWARD-CLYDE CONSULTANTS

CONSULTING ENGINEERS, GEOLOGISTS AND ENVIRONMENTAL SCIENTISTS

LOG OF BORING B-2 SHEET 2 OF 4

DESCRIPTION	DEPTH, FT	SAMPLE			W_n,%	LL,%	PL,%	-200,%	REMARKS
	21								end of sample S-5
	22								
	23								
	24								
	25								
	26	S-6	8"	WOH					
	27								
	28								
	29								
change approximate									
(CL-SC) Mottled light gray and green SILTY CLAY, and fine sand (stiff)	30								
	31	S-7	18"	9 6 3					
	32								
	33								
	34								
change approximate									
(SP-SM) Brown-gray medium to fine SAND, trace silt (medium dense)	35								
	36	S-8	8"	10 10 10					
	37								
	38								
grades to gray-brown coarse to fine SAND, trace silt, trace fine gravel	39								
	40	S-9 A	6"	20					
(CL) Red-brown SILTY CLAY to CLAYEY SILT, grading to CLAY (medium stiff)	41	S-9 B	8"	5 6					
	42								
	43								
	44								

843010098

WOODWARD-CLYDE CONSULTANTS

CONSULTING ENGINEERS, GEOLOGISTS AND ENVIRONMENTAL SCIENTISTS

LOG OF BORING B-2 SHEET 3 OF 4

DESCRIPTION	DEPTH, FT	SAMPLES TYPE NO. LOG	RECOV., FT	PENETR. RESIST. BLOWS	W_n,%	LL,%	PL,%	-200,%	REMARKS
grades to (ML) Red-brown SILT, some fine sand, trace fine gravel (very dense)	46	S-10	14"	36 36 35					
	47								
	48								
	49								
grades to (ML) Red-brown CLAYEY SILT, some coarse to fine gravel, little coarse to fine sand (hard)	50								
	51	S-11	11"	32 26 19					
	52								
	53								
	54								
	55								
	56	-	0	13 18 39					no recovery
	57								
	58								
	59								
change approximate	60								
(WEATHERED ROCK) Heavily-weathered red shale---gravel-size rock fragments in a clay martrix (very hard)	61	S-12	6"	90/6"					
	62								
	63								
change approximate	64								
(ROCK) Red shale-relatively sound with occasional clay seams	65								Recovery=80% RQD=20%
	66								
	67								
	68	Rock Core	4'						
	69								

843010099

WOODWARD-CLYDE CONSULTANTS

CONSULTING ENGINEERS, GEOLOGISTS AND ENVIRONMENTAL SCIENTISTS

LOG OF BORING B-2 SHEET 4 OF 4

DESCRIPTION	DEPTH, FT	W_n,%	LL,%	PL,%	-200,%	REMARKS
NOTES: 1. Boring elevation estimated using CONOCO dwg. No. CC-1-42-1-X, rev. 2, dated 10/13/80, and is referenced to an arbitrary plant datum which is very approximately estimated to be five feet above mean sea level. 2. Boring completed at a depth of 70.0 feet on Nov. 11, 1980. 3. No casing used. Drilling mud only used. 4. Groundwater level not recorded. 5. The discussion of soil and groundwater conditions in the text of this report is essential for a proper understanding of the subsurface conditions.						

6

6

843010100

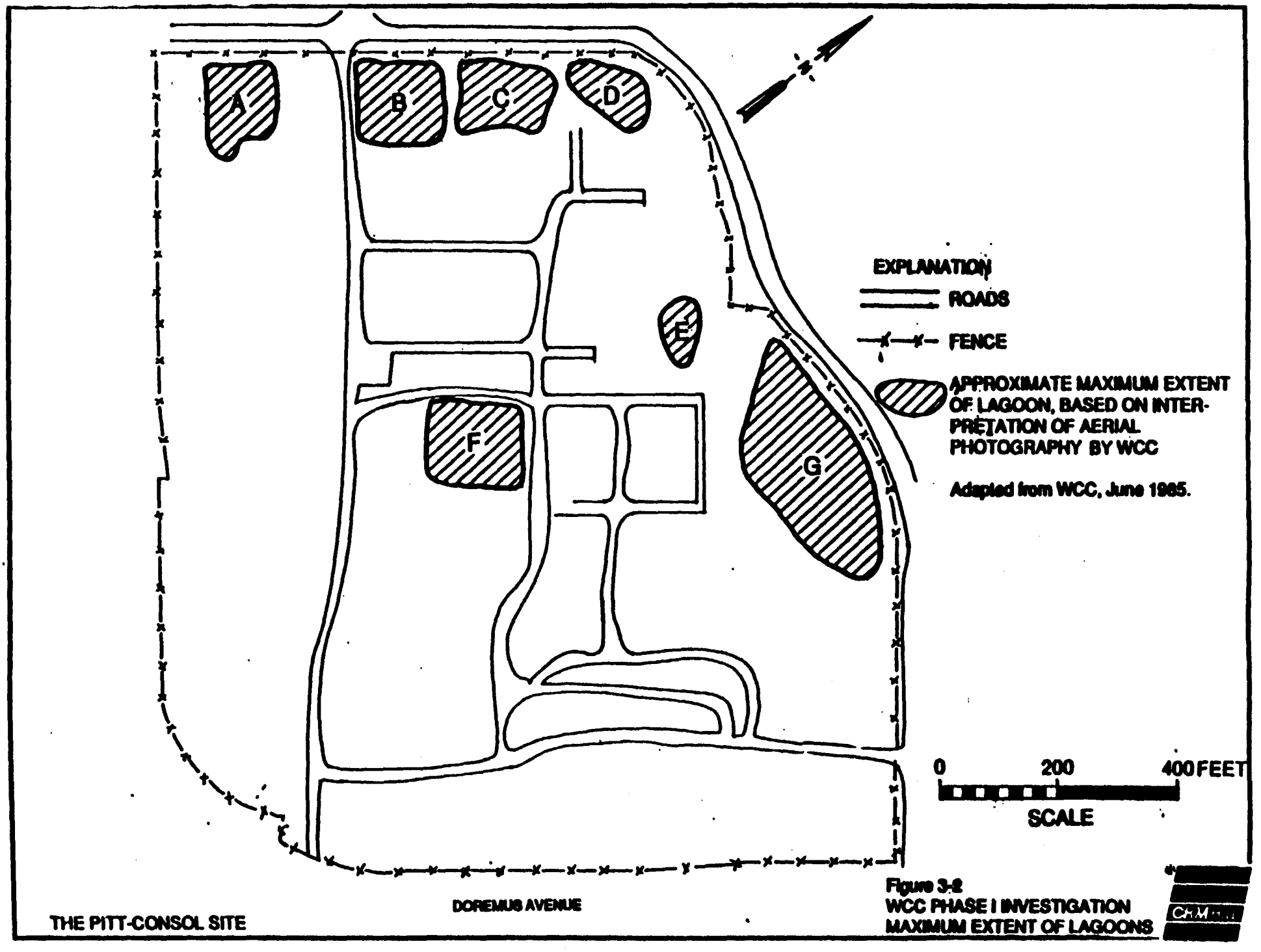


Figure 3-2
WCC PHASE I INVESTIGATION
MAXIMUM EXTENT OF LAGOONS

843010101

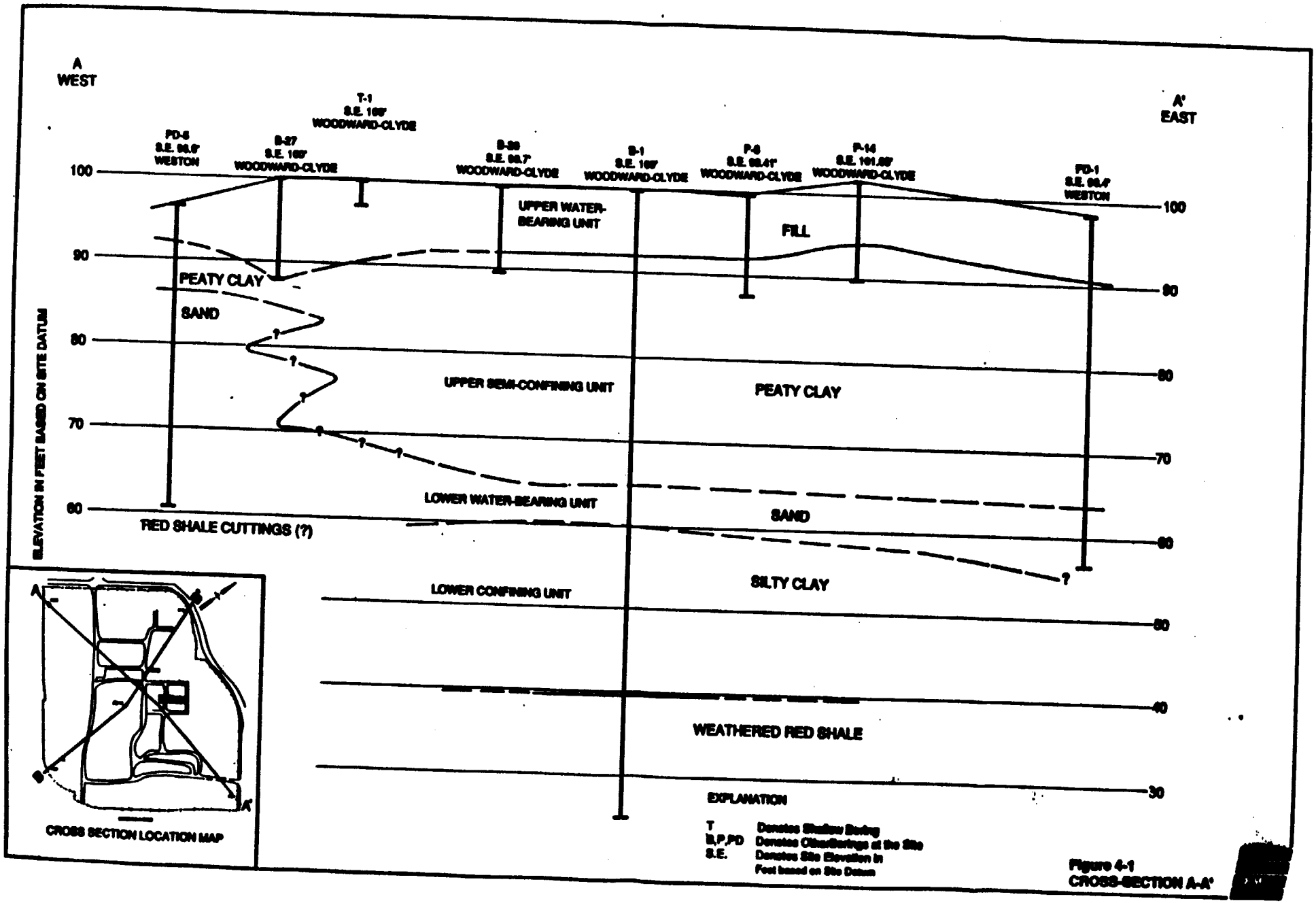


Figure 4-1
CROSS-SECTION A-A'

843010102

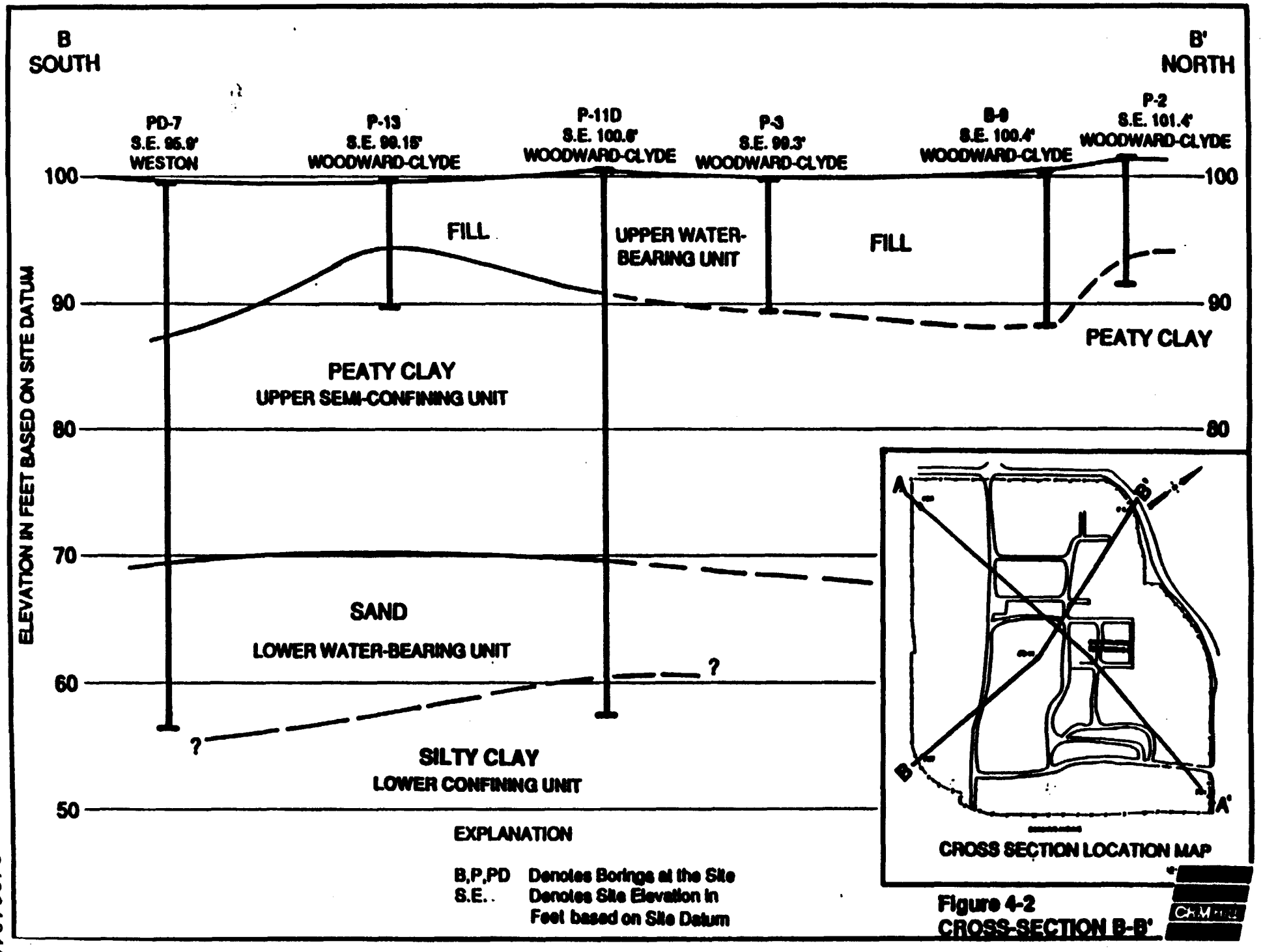
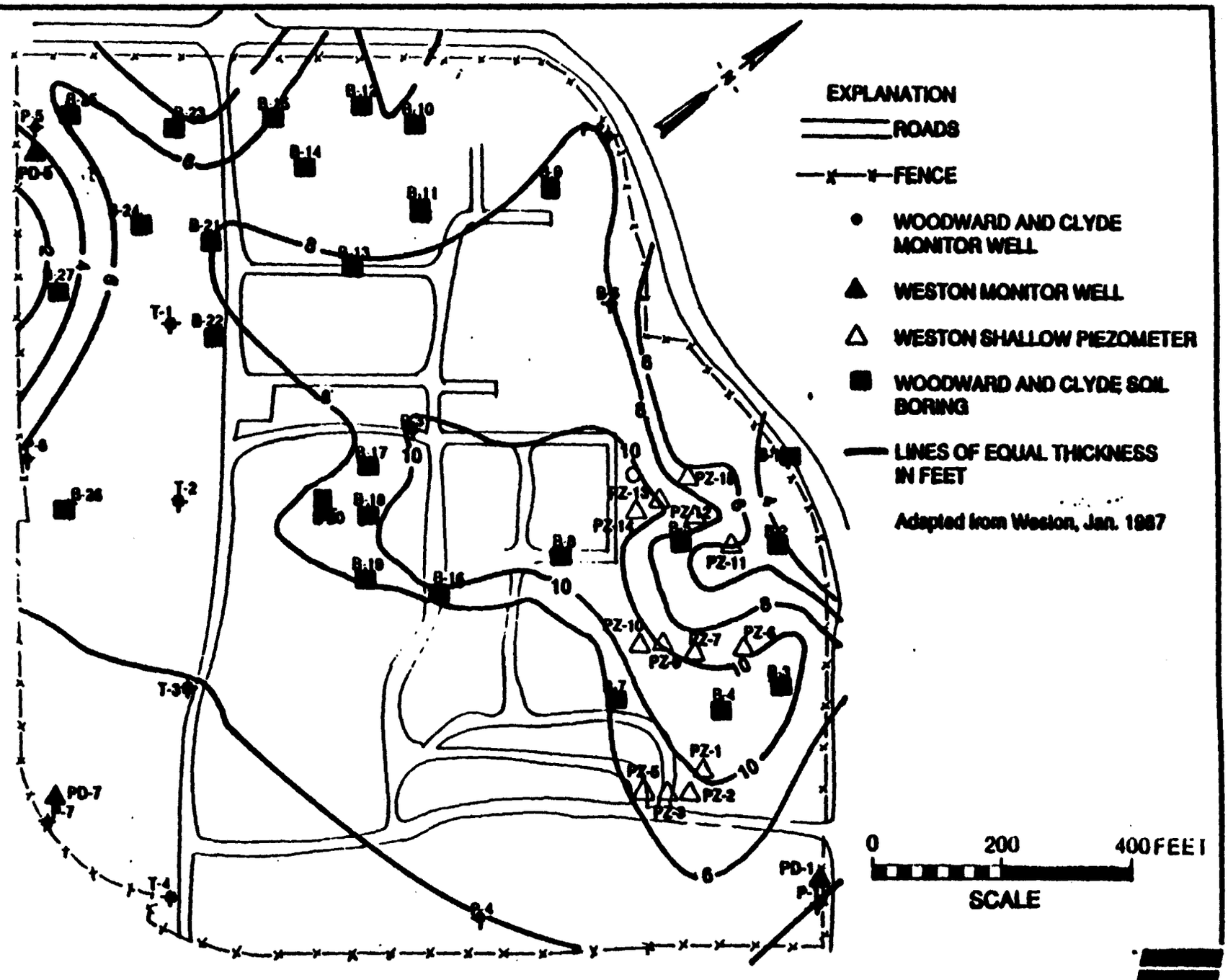


Figure 4-2
CROSS-SECTION B-B'

CH2M HILL

843010103

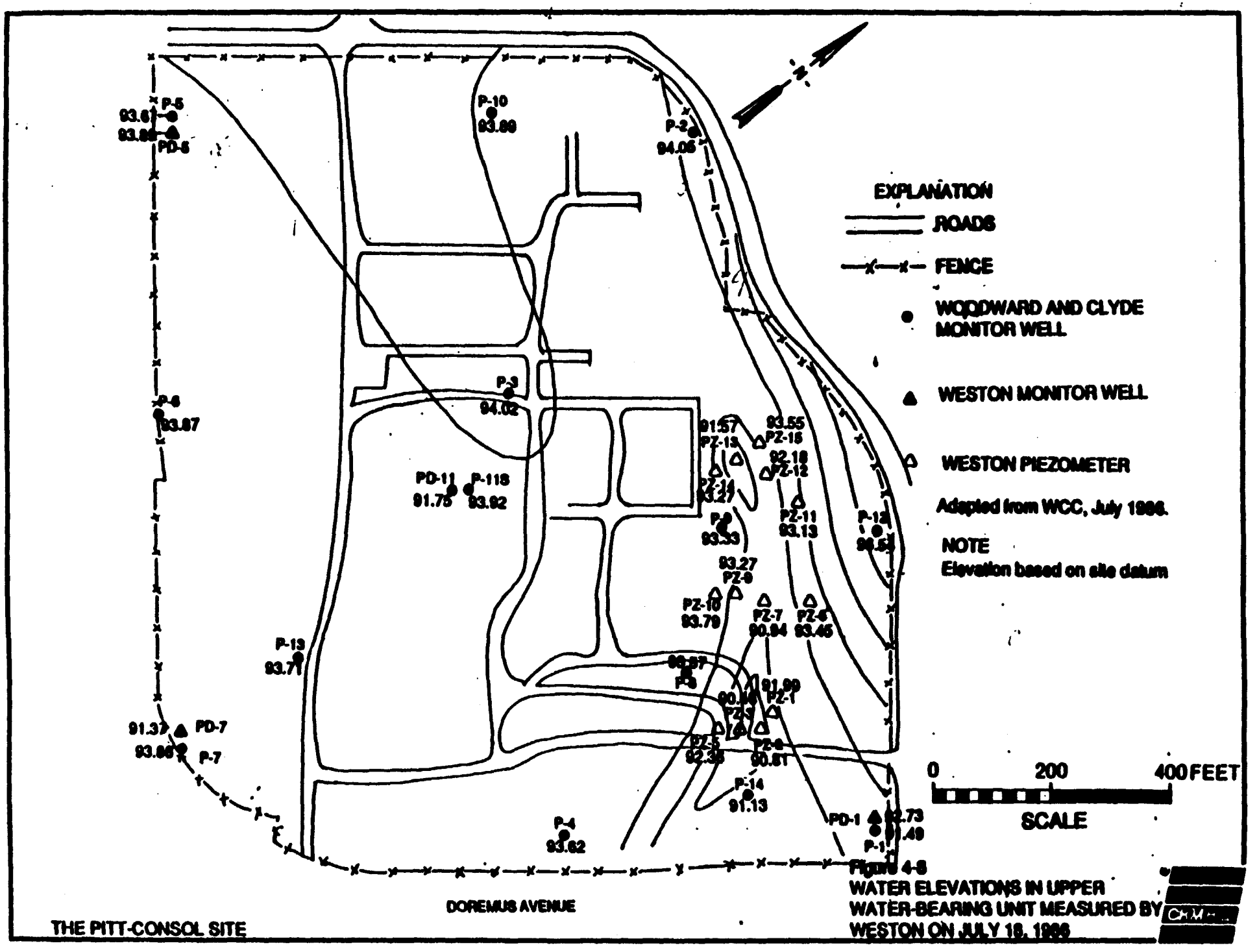


THE PITT-CONSOL SITE

Figure 4-4
FILL ISOPACH MAP

CH2M HILL

843010104



THE PITT-CONSOL SITE

Figure 4-8
WATER ELEVATIONS IN UPPER WATER-BEARING UNIT MEASURED BY WESTON ON JULY 18, 1986

843010105

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843010107

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
HAZARDOUS WASTE FACILITY ANNUAL REPORT - PART I

1. CALENDAR YEAR COVERED 1983
2. FACILITY'S NAME PITT-CONSOL CHEMICAL COMPANY
3. EPA ID NO. NJD 004948188
4. MAILING ADDRESS 191 DOREMUS AVENUE
NEWARK, NJ 07105
5. STREET ADDRESS OF FACILITY
6. FACILITY CONTACT DAVID HOLLIS PHONE NUMBER 201-344-3800
7. CLOSURE COST ESTIMATE $ 27,570
8. POST-CLOSURE COST ESTIMATE (if applicable) $
9. CERTIFICATION STATEMENT

"I certify under penalty of law that I have personally examined and am familar 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 under N.J.S.A. 13:1E-1 et seq. for submitting false information, including the possibility of fine and imprisonment".

DAVID HOLLIS	David Hollis	2/15/84
Print or Type Name	Signature	Date

843010108

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
HAZARDOUS WASTE FACILITY ANNUAL REPORT - PART I

10 F. Quantity of each waste type treated, stored or disposed of at the facility:

LINE NUMBER	a) DESCRIPTION OF WASTE	b) NJDEP HAZARDOUS WASTE NUMBER	c) HANDLING METHOD	d) AMOUNT OF WASTE	e) UNITS
1.	Cresylic Acid Waste	U-054	S01	30.99	T
2.	Corrosive Liquid, N.O.S.	D002	S02	452.09	T
3.	Waste Fuel Oil, No. 4	D001	S02	141.48	T
4.	Corrosive Solid, N.O.S. (Contaminated w/up to 1600 ppm PCB)	D002	S01	119.12	T
5.	Corrosive Liquid, N.O.S. (Contaminated w/up to 1600 ppm PCB)	D002	S02	72.25	T
6.	Corrosive Solid, N.O.S. (Clothing & rags contaminated with PCB & Cresylics)	D002	S01	17.56	T
7.	Sulfuric Acid, Spent	D002	S01	3.6	T
8.	Soil contaminated with disulfides	D002	S01	6.1	T
9.	Solids contaminated with cresols	U052	S01	3.6	T
10.	Hazardous Waste (Fuel Oil)	X725	S01	2.0	T
11.	Thiocresol Solid	D002	S01	320.0	P
12.	Thiophenol Solid	P014	S01	1435.0	P
13.	Non-Hazardous Waste	-	S01	2.5	T

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
HAZARDOUS WASTE FACILITY ANNUAL REPORT - PART I

G. Total quantities of each waste type consigned to each treatment, storage or disposal process:

LINE NUMBER	HANDLING METHOD	WASTE TYPE	NJDEP HAZARDOUS WASTE NUMBER	AMOUNT OF WASTE	UNITS
1.	S01	Cresylic Acid Waste	U054	30.99	T
2.		Corrosive Solid, N.O.S. (contaminated with up to 1600 ppm PCB)	D002	119.12	T
3.		Corrosive Solid,N.O.S.(clothing & rags contaminated with PCB &Cresylics)	D002	17.56	T
4.		Sulfuric Acid, Spent	D002	3.6	T
5.		Soil Contaminated with disulfides	D002	6.1	T
6.		Solids contaminated with cresols	U052	3.6	T
7.		Hazardous Waste (Fuel Oil)	X725	2.0	T
8.		Thiocresol Solid	D002	320.0	P
9.		Thiophenol Solid	P014	1435.0	P
10.		Non-Hazardous Waste	-	2.5	T
11.	S02	Corrosive Liquid,N.O.S.	D002	452.09	T
12.		Waste Fuel Oil, No. 4	D001	141.48	T
13.		Corrosive Liquid,N.O.S.(contaminated with up to 1600 ppm PCB)	D002	72.25	T

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
HAZARDOUS WASTE FACILITY ANNUAL REPORT - PART II

11. FACILITY EPA ID # NJD 004948188

12. GENERATOR NAME PITT-CONSOL CHEMICAL COMPANY - ON-SITE

13. GENERATOR ADDRESS 191 DOREMUS AVENUE
NEWARK, NJ 07105

14. GENERATOR EPA ID#

15. WASTE IDENTIFICATION

LINE NUMBER	a) DESCRIPTION OF WASTE	b) NJDEP HAZARDOUS WASTE NUMBER	c) HANDLING METHOD	d) AMOUNT OF WASTE	e) UNITS
1.	Waste Corrosive Solid, N.O.S.	D002	Disposed off-site	770.51	T
2.	Cresylic Acid Waste	U-054	S01/Disposed off-site	30.99	T
3.	Corrosive Liquid,N.O.S.	D002	Disposed off-site	202.83	T
			S02	452.09	T
4.	Waste Fuel Oil, No.4	D001	Disposed off-site	163.26	T
			S02	141.48	T
5.	Corrosive Solid, N.O.S.	D002	Disposed off-site	47.47	T
	(Contaminated with up to 1600 ppm PCB)		S01	119.12	T
6.	Corrosive Liquid, N.O.S.	D002	Disposed off-site	20.00	T
	(Contaminated with up to 1600 ppm PCB)		S02	72.25	T
7.	Corrosive Solid, N.O.S.	D002	S01	17.56	T
	(Clothing & rags contaminated with PCB & Cresylics)				
8.	Crude Cresylic Acid	D001	Disposed off-site	16.24	T
9.	Sulfuric Acid,Spent	D002	Disposed off-site	8.5	T
			S01	3.6	T
10.	Soil contaminated with disulfide	D002	S01	6.1	T
11.	Solids contaminated with cresols	U052	S01	3.6	T
12.	Potassium Nitrate with/ Sodium Nitrite	D001	Disposed off-site	42.0	T
13.	Hazardous Waste (Fuel Oil)	X725	S01/Disposed off-site	2.0	T
14.	Thiocresol Solid	D002	S01/Disposed off-site	320.00	P
15.	Thiophenol Solid	P014	S01/Disposed off-site	1435.00	P
16.	Non-Hazardous Waste	-	S01/Disposed off-site	1.8	T
			S01	0.7	T

843010111

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843010112

(conoco)

AUG A/F

Pitt-Consol Chemicals
Conoco Inc.
191 Doremus Avenue
Newark, NJ 07105
(201) 344-3800

July 23, 1982

SCA Chemical Services Company
107 Albert Avenue
Newark, New Jersey 07105

Attention: Mr. Richard Gance

Dear Mr. Gance:

Attached are completed "Authorization Request Forms" for our Plant's waste materials which we are considering to dispose of at SCA landfill in Pinewood, South Carolina. The wastes are the accumulation of spill cleanup materials (contaminated soil/gravel/absorbents) which were collected and stored in DOT-approved drums: RQ corrosive Solid NOS

1) Approximately 5,000 lbs of soil/gravel contaminated with fuel oil and cresylic acid - one time disposal. WASTE MATERIAL NA 1759

2) Approximately 3,000 lbs soil/absorbent contaminated with phenyl-, tolyl-, and xylyl-disulfides - one time disposal. NO LABEL

3) Approximately 2,000 lbs soil/gravel/absorbent contaminated with fuel oil - once per year disposal. NO LABEL

4) Approximately 2,000 lbs soil/absorbent contaminated with non-PCB heating fluid (Dowtherm/Therminol) - once per year disposal. NO LABEL

5) Approximately 2,000 lbs fly ash contaminated with chrome - once per year disposal. ORM E

6) Approximately 1,000 lbs sludge containing chrome - once per year disposal. ORM-E

Please review the attached forms for completeness and let us know if you need further input prior to submitting them to the State of South Carolina.

If you have any questions, please call me.

Sincerely,

Alex V. Guanlao
Environmental Engineer

sag
Enc

843010113

SCA CHEMICAL SERVICES, INC.
SCSCA SERVICES

Route 1, Box 255
Pinewood, South Carolina 29125
(803) 452-5003

SCA CHEMICAL SERVICES

August 24, 1982

Pitt-Consol Chemical
191 Doremus Avenue
Newark, New Jersey 07105

Attention: Alex Guanlao

Dear Mr. Guanlao:

It is our pleasure to inform you that your Waste Stream(s) SCA code number(s) *** , meets the criteria for disposal at our Pinewood facility. As per South Carolina State Law, your authorization request form was submitted to the Department of Health and Environmental Control on 8-10-82 .

The review period passed without comment and your waste stream(s) are now permitted for shipment to our facility at your convenience.

Please note that South Carolina regulations require completion of a South Carolina Hazardous Waste Manifest form for each shipment of waste product.

Sincerely,

J. L. Marshall

James L. Marshall
Regional Sales Manager

JLM/kl

***	1082-6102	Soil/gravel contaminated with fuel oil/cresylic acid
	1082-4102	Soil/gravel/absorbent contaminated with fuel oil
	1082-4101	Soil/absorbent contaminated with non-PCB heating fuel
	1082-2101	Cooling Water Sludge
	1082-1102	Fly ash contaminated with Chrome
	1082-1101	Soil/absorbent contaminated with Phenyl-Tolyl-Xylyl

843010114

REVISED 8/2/82

ATTACHMENT "A"

Order 2343

PITT - CONSOL CHEMICALS

EMPAK, INC.

Blanket P. O. _____

Contract No. EM-1324

Release No. _____

Stream No. 1

I. Designated Waste Material

Pitt - Consol Chemicals Carbolate/Carbonate Wastewater. Waste consistent with the following allowable waste parameters shall be deemed acceptable waste under this Agreement:

Total Suspended Solids	-	Less than 1000 mg/liter
pH	-	Greater than 10, less than 14
Oil & Grease (NON-EMULSIFIED)	-	Less than 1500 mg/liter
COD	-	Less than 750,000 mg/liter
Specific Gravity	-	Greater than 1.00, less than 1.08
Total Sulfide	-	Less than 40,000 mg/liter

II. Non-Conforming Waste

Subject to the terms of the foregoing Agreement, EMPAK reserves the right to reject any load which it discovers:

a) Exceeds the above allowable waste parameters except as allowed in Section V hereof; or

b) Contains any free cyanide ion or dissolved hydrogen cyanide gas; or

c) Is emulsified.

III. Site and Means of Disposal

EMPAK will dispose of the waste by means of deep well injection at its Deer Park, Texas facility. The facility is permitted by the Texas Water Commission under Permit WDW-157.

IV. Service & Equipment

Pitt - Consol Chemicals shall be responsible for the transportation of the waste at their cost to a public storage facility that has adequate vessel access. EMPAK shall be responsible for arranging the transportation of waste from the public storage facility to EMPAK's facility. Transportation will be by American flag ship. EMPAK will provide for the transfer of the waste from the vessel into storage at EMPAK's facility.

Pitt - Consol Chemicals shall coordinate its needs with EMPAK's Traffic Department at Deer Park, Texas (713/479-1990). For each load delivered to EMPAK, Pitt - Consol Chemicals shall furnish EMPAK with a bill of lading specifying EMPAK Contract Number (EM-1324), Stream No. (1), Waste Stream Name (Pitt - Consol Chemicals Carbolate/Carbonate Water) and with a TDWR Industrial Waste Shipping Control Ticket unless this waste stream has been certified as "Non-Hazardous" by the State of New Jersey, Department of Environmental Protection.

843010115

V. Compensation

Disposal: $0.16 per gallon of waste received.

Sulfides Surcharge: A composite sample shall be maintained to determine average sulfide level. If the sulfide level is found to be in excess of 40,000 mg/liter, a surcharge of $0.365 per 100 pounds shall be included for every 100 mg/liter in excess of base disposal level of 40,000 mg/liter.

Total Suspended Solids Surcharge: From a composite sample a TSS amount will be determined. If TSS level is found to be in excess of 1500 mg/liter, a surcharge of $0.375 per 100 pounds shall be included for every 1000 mg/liter in excess of base disposal level of 1500 mg/liter.

Above disposal prices shall be effective for one vessel move between August 1 and September 30, 1982.

Transportation: (Vessel)

$30 per long ton (1 long ton = 2240 pounds) with a minimum load of 1750 tons.

An additional demurrage fee of $1,100 per hour will be charged for any time taken by the vessel from hose on to hose off that is in excess of the free time as calculated below:

$$\frac{\text{Total Volume to be Loaded in Long Tons}}{\text{Minumum Long Ton Loading Rate of 250 Long Tons/Hour}} + 1 \text{ Hour} = \text{Free Time}$$

Additional vessel charges incurred by Pitt - Consol Chemical or Pitt - Consol Chemical's agent or designated public terminal shall be chargeable to Pitt - Consol Chemical at cost plus 15%.

Transportation rates are estimated quotes and may be subject to change without written notice prior to confirmation/acceptance of this Agreement. All transportation rate changes in excess of the above quote are chargeable to Pitt-Consol's account.

VI. Authorization of Services

PITT - CONSOL CHEMICALS

By _____ Date _____

EMPAK, INC.

By _____ Date 8-3-82

843010116

ESSEX CHEMICAL CORPORATION

1401 BROAD STREET · CLIFTON, N.J. 07015

EXECUTIVE OFFICES

PHONE 773-6300
NEW YORK: WORTH 2-3042
CABLE ADDRESS: ESSEXCHEM, CLIFTON, N. J.

April 5, 1982

Pitt-Consol Chemical Co., Inc.
191 Doremus Avenue
Newark, NJ

Attention: Accounts Payable Supervisor

Gentlemen:

The following charge(s) remain unpaid as of this date:

DATE	INVOICE #	AMOUNT
2-26-82	EC-685	521.14

41800 #
20.9 Ton

Please forward your remittance by return mail.

Very truly yours,
ESSEX CHEMICAL CORPORATION
CHEMICALS DIVISION

A.F. Banas

A.F. BANAS
CREDIT MANAGER

AFB:jf
#1

cc: G. Toomey

Current price $89.35 Ton

Purchased 12/26/79 47700 # @ $61.85 Ton
23.85 Ton $1456.04

843010117

ESSEX CHEMICAL CORPORATION

PLEASE REMIT TO:

ESSEX CHEMICAL CORP.
P O BOX 4427
CHURCH STREET STATION
NEW YORK, N.Y. 10049

DATE	ACCOUNT NO.
3/31/82	935107

DATE SHIPPED	INVOICE NUMBER	DUE DATE	TR CODE	AMOUNT	CURRENT	CREDITS	PAST DUE ITEMS
[illegible]	[illegible]	[illegible]	11	521.14			521.14

TRANSACTION CODES	TOTAL AMOUNT	TOTAL CURRENT	TOTAL CREDITS	TOTAL PAST DUE
11 - CHARGES 21 - CREDITS 40 - CHARGEBACKS 50 - UNAPPLIED CASH	521.14			521.14

Systemedia Group EC-35765

FORM AR2 10M 12/76

843010118

ESSEX CHEMICAL CORPORATION
INDUSTRIAL CHEMICALS DIVISION

1401 BROAD STREET • CLIFTON, NEW JERSEY 07015
N. J. PHONE (201) 773-6300 N. Y. C. PHONE (212) 962-3042

PLEASE REMIT TO:
ESSEX CHEMICAL CORPORATION
P.O. BOX 4427, CHURCH STREET STATION
NEW YORK, NEW YORK 10049

SOLD TO:

PITT-CONSOL CHEMICAL COMPANY
191 DOREMUS AVENUE
NEWARK, NEW JERSEY 07105

SHIPPED TO:

INVOICE NO.

EC-685

PLEASE REFER TO THIS NUMBER IN ALL COMMUNICATIONS

TERMS: NET 30 DAYS

SHIPPED VIA	PPD	COL.	F. O. B. POINT	CUSTOMER'S PURCHASE ORDER NO.	SHIP TO ACCT. NO.	SALESMAN	SHIPPING AND INVOICE DATE
ESSEX	X		WORKS	-	983107	23	2-26-82

CONTAINERS & WEIGHT	P/C	DESCRIPTION	QTY. SHIPPED	PRICE & UNIT	TOTAL
	903	CHARGES INCURRED TO REMOVE SULFURIC ACID FROM YOUR TANK AND RETURN IT TO OUR NEWARK PLANT. TRAILER SPOTTED ON 2-9-82 PICKED UP ON 2-12-82			
		2 TRIPS EMPTY TO YOUR PLANT	2 TRIPS	$36.00/TRIP	$72.00
		FREIGHT ON 41,800# OF MATERIAL RETURNED	20.90NT	9.40NT	196.46
		PLUS FREIGHT FUEL SURCHARGE			17.68
		PLUS SPOTTING TRAILER CHARGE	3 DAYS	70.00/DAY	210.00
		PLUS CHARGE FOR WASHING TANK			25.00
				PAY THIS AMOUNT ▶	$521.14

SELLER REPRESENTS THAT WITH RESPECT TO THE PRODUCTION OF THE ARTICLES AND/OR THE PERFORMANCE OF THE SERVICES COVERED BY THIS INVOICE IT HAS FULLY COMPLIED WITH SECTION 12 (A) OF THE FAIR LABOR STANDARDS ACT OF 1938, AS AMENDED.
THIS TRANSACTION IS SUBJECT TO SELLER'S STANDARD CONDITIONS, PRINTED ON BACK HEREOF, NOTWITHSTANDING CONFLICTING PROVISIONS SUBMITTED BY BUYER.

INVOICE COPY

843010119

is Memorandum is an acknowledgment that a Bill of Lading has been issued and is not the Original Bill of Lading, nor a copy or duplicate, covering the property named herein, and is intended solely for filing or record.

Order No	B/L No.
Customer P.O./Release	
Origin SPLC	Shipping Date 02-12-82

ier PICK UP CAC

EIVED, Subject to the classifications and tariffs in effect on the date of the issue of the Bill of Lading.

NEWARK, NJ

m PITT-CONSOL CHEMICAL COMPANY - CONOCO INC.

property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as ated below, which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under contract) agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. mutually agreed, as to each carrier of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested l or any of said property, that every service to be performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of ng set forth (1) in Uniform Freight Classification in effect on the date hereof, if a rail or rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.

Shipper hereby certifies that he is familiar with all the terms and conditions of the bill of lading, including those on the back thereof, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

PITT CONSOL CHEMICAL CO.
RECEIVED
MAR 3 1982
AM 7,8,9,10,11,12,1,2,3,4,5,6 PM

p ESSEX CHEMICAL COMPANY
330 DOREMUS AVENUE
NEWARK, NEW JERSEY 07105

Dest. SPLC	Car/Vehicle No.
Prepaid/Collect PREPAID	
Mode of Transp.	

ite PICK UP

and Kind of Pkg.-Hazardous Materials Description and Proper Shipping Names

T/T RQ SULFURIC ACID UN 1830
CORROSIVE MATERIAL

Desc. Ref.	Item No.	Product Code	Description	Container Code	Qty.	Type	Customer Iden. Code
30	1		SULFURIC ACID				
	2						
	3						
	4						
	5						

Billing Quantity	U/M	As Is Lbs.	Active Lbs.	Freight Weight	U/M	CWT Rate	Load Temp.	Percent Active

SCRIPTION OF ARTICLES FOR FREIGHT CLASSIFICATION PURPOSES
Petroleum alkylate detergent intermediates STCC 28 151 54
Dodecyl benzene STCC 28 151 36
Petroleum oil, NOIBN (not prepared nor represented as a remedy medicine or lubricant for the human body) STCC 29 117 91
Compounds, cleaning, scouring or washing, NOIBN, liquid STCC 28 419 20
Ethoxylated fatty or ethoxylated and sulfated fatty alcohols STCC 28 431 28
Inedible fatty alcohols, NOIBN, of petroleum STCC 28 184 91
Butyl alcohol STCC 28 184 16
Hexyl alcohol, other than perfumery grade STCC 28 184 24
Octyl alcohol, other than perfumery grade STCC 28 184 27
Decyl alcohol, other than perfumery grade STCC 28 184 18
Compounds, gas or oil well drilling, and treating, NOIBN STCC 28 998 55
Spent sulfuric acid STCC 40 251 64
Chemicals, NOIBN (released value not exceeding 50 cents a pound see NOTE below) STCC 28 999 91
Muriatic acid STCC 28 194 50
Vinyl chloride STCC 28 139 66
Methyl chloride STCC 28 189 47
17 Petroleum, partially refined, to be further refined, blended, compounded and/or mixed into products having a commercial value only as a petroleum product containing more than 51 per cent petroleum base, at 6.6 lbs per gallon STCC 29 117 35
18 Petroleum oil, NOIBN, suitable only for mixing, blending, compounding and/or further manufacturing at 6.6 lbs. per gallon STCC 29 117 35
19 Ethylene dichloride STCC 28 181 40
20 Aluminum chloride liquid solution STCC 28 196 31
21 Butadiene STCC 29 119 85
22 Liquefied petroleum gas (Propane-propylene) STCC 29 121 90
23 Plastic, synthetic, other than liquid (polyvinyl chloride) STCC 28 211 45
24 Plasticizer, plastic, liquid STCC 28 189 67
25 Cresylic acid STCC 28 151 21
26 Rubber accelerator or softener (see NOTE below) STCC 28 189 70
27 Alumina, hydrated STCC 10 513 10
28 Bottoms, chlorinated hydrocarbon, by-product obtained in the production of ethyl chloride or vinyl chloride suitable only for further processing STCC 28 999 91
29 Plastic Material, other than expanded, Granules, Pellets, or Powders (Polyvinyl Chloride) STCC 28 211 41
30 Other
SULFURIC ACID

Capacity	
Outage	
Gross Gals.	
Net Gals.	
Gross Lbs.	
Tare Lbs.	
Net Lbs.	

Subject to Section 7 of Conditions of applicable bill of lading, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement.
The carrier shall not make delivery of this shipment without payment of freight and all lawful charges.
Signed

Carrier hereby certifies that the cargo tank used for this shipment is a proper container for the commodity loaded therein and complies with Department of Transportation specifications.

emarks

TRUCK TO BE WEIGHED

CARRIER NOTE - on prepaid shipments only attach this copy to the Freight Bill and mail to
FREIGHT BILLS WITHOUT THIS COPY WILL BE RETURNED
Conoco Inc
Transportation Department
P.O. Box 2197
Houston, Texas 77001

For chemical emergency spill, leak, fire, exposure or accident call CHEMTREC day or night 800-424-9300.

weights shown on this bill of lading by the shipper are for the convenience of the carrier, and can be verified at any time by an examination of the records on file in the shipper's office.

Fiber containers used for this shipment conform to the specifications set forth in the certificate of maker thereon and all other requirements of Rule 41 of the governing classification.

*If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading shall state whether it is "carrier's or shipper's weight."
TE-The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding 50 cents per pound for each article.

This is to certify that the above named materials are properly classified, cribed, packaged, marked and labeled, and are in proper condition for nsportation, according to the applicable regulations of the Department Transportation

Shipper (see above)

35 - 212

Agent

manent Post Office Address of Shipper — Surface Transportation Dept
P.O. Box 2197, Houston, Texas 77001

CARRIER FREIGHT BILL COPY

1 X 6, 1-81

843010120

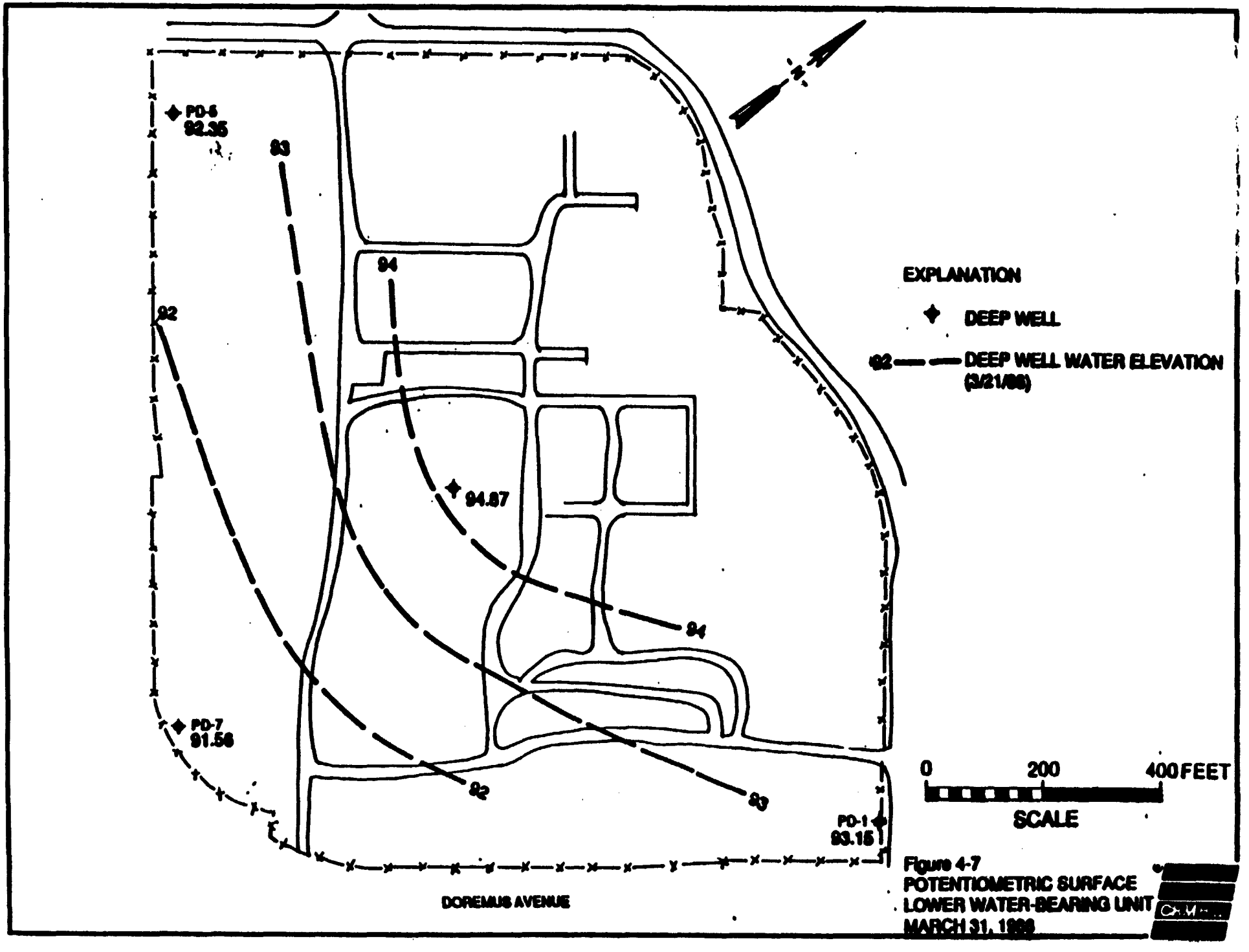

Figure 4-7
POTENTIOMETRIC SURFACE
LOWER WATER-BEARING UNIT
MARCH 31, 1988

843010106

Number 37-212 Date 2-16-82

ESSEX CHEMICAL CORPORATION NEWARK, N. J.

GROSS 1b070860 82 FE 16 PM 3:10

TARE 1b029060 82 FE 16 PM 4:38

NET 41800

Commodity Sp[illegible] 66° @ _____ Per _____

From _____ Driver On ( ) Off ( )

To Essex Chem B. tanks by Coffey

Address Newark NJ

Remarks from Pitconsul

Load No. _____

Weighed By _____

843010121

STRAIGHT BILL OF LADING—SHORT FORM

ORIGINAL—NOT NEGOTIABLE

Order No	B/L No
Customer P.O./Release	
Origin SPLC	Shipping Date 02-12-82

Carrier PICK UP SCAC

RECEIVED, Subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading.

NEWARK, NJ

From PITT-CONSOL CHEMICAL COMPANY - CONOCO INC.

The property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated below, which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each carrier of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service to be performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Uniform Freight Classification in effect on the date hereof, if this is a rail or rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, including those on the back thereof, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

Dest. SPLC	Car/Vehicle No.
Prepaid/Collect: PREPAID	
Mode of Transp.	

Ship To
ESSEX CHEMICAL COMPANY
330 DOREMUS AVENUE
NEWARK, NEW JERSEY 07105

Route PICK UP

No. and Kind of Pkg.-Hazardous Materials Description and Proper Shipping Names

T/T RQ SULFURIC ACID UN 1830
CORROSIVE MATERIAL

HM	Desc. Ref.	Item No.	Product Code	Description	Container Code	Container Qty.	Container Type	Customer Iden. Code
X	30	1		SULFURIC ACID				
		2						
		3						
		4						
		5						

Item No.	Billing Quantity	U/M	As Is Lbs.	Active Lbs.	Freight Weight	U/M	CWT Rate	Load Temp.	Percent Active
1									
2									
3									
4									
5									

DESCRIPTION OF ARTICLES FOR FREIGHT CLASSIFICATION PURPOSES
01 Petroleum alkylate detergent intermediates STCC 28 151 54
02 Dodecyl benzene STCC 28 151 36
03 Petroleum oil, NOIBN (not prepared nor represented as a remedy medicine or lubricant for the human body) STCC 29 117 91
04 Compounds, cleaning, scouring or washing, NOIBN, liquid STCC 28 419 20
05 Ethoxylated fatty or ethoxylated and sulfated fatty alcohols STCC 28 431 28
06 Inedible fatty alcohols, NOIBN, of petroleum STCC 28 184 91
07 Butyl alcohol STCC 28 184 16
08 Hexyl alcohol, other than perfumery grade STCC 28 184 24
09 Octyl alcohol, other than perfumery grade STCC 28 184 27
10 Decyl alcohol, other than perfumery grade STCC 28 184 18
11 Compounds, gas or oil well drilling, and treating, NOIBN STCC 28 998 55
12 Spent sulfuric acid STCC 40 251 64
13 Chemicals, NOIBN (released value not exceeding 50 cents a pound see NOTE below) STCC 28 999 91
14 Muriatic acid STCC 28 194 50
15 Vinyl chloride STCC 28 139 66
16 Methyl chloride STCC 28 189 47
17 Petroleum, partially refined, to be further refined, blended, compounded and/or mixed into products having a commercial value only as a petroleum product containing more than 51 per cent petroleum base, at 6.6 lbs. per gallon STCC 29 117 35
18 Petroleum oil, NOIBN, suitable only for mixing, blending, compounding and/or further manufacturing at 6.6 lbs. per gallon STCC 29 117 35
19 Ethylene dichloride STCC 28 181 40
20 Aluminum chloride liquid solution STCC 28 196 31
21 Butadiene STCC 29 119 85
22 Liquefied petroleum gas (Propane-propylene) STCC 29 121 90
23 Plastic, synthetic, other than liquid (polyvinyl chloride) STCC 28 211 45
24 Plasticizer, plastic, liquid STCC 28 189 67
25 Cresylic acid STCC 28 151 21
26 Rubber accelerator or softener (see NOTE below) STCC 28 189 70
27 Alumina, hydrated STCC 10 513 10
28 Bottoms, chlorinated hydrocarbon, by-product obtained in the production of ethyl chloride or vinyl chloride suitable only for further processing STCC 28 999 91
29 Plastic Material, other than expanded, Granules, Pellets, or Powders (Polyvinyl Chloride) STCC 28 211 41
30 Other
SULFURIC ACID

Capacity	
Outage	
Gross Gals.	
Net Gals.	
Gross Lbs.	
Tare Lbs.	
Net Lbs.	

Subject to Section 7 of Conditions of applicable bill of lading, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement.
The carrier shall not make delivery of this shipment without payment of freight and all lawful charges.

Signed

Carrier hereby certifies that the cargo tank used for this shipment is a proper container for the commodity loaded therein and complies with Department of Transportation specifications

Remarks

TRUCK TO BE WEIGHED

Any weights shown on this bill of lading by the shipper are for the convenience of the carrier, and can be verified at any time by an examination of the records on file in the shipper's office.

Any Fiber containers used for this shipment conform to the specifications set forth in the certificate of maker thereon and all other requirements of Rule 41 of the governing classification.

*If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading shall state whether it is "carrier's or shipper's weight."
NOTE-The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding 50 cents per pound for each article.

This is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation, according to the applicable regulations of the Department of Transportation.

Shipper (see above)

Per

Permanent Post Office Address of Shipper — Surface Transportation Dept. P.O. Box 2197 Houston Texas 77001

Agent

ORIGINAL

-51 X 6, 1-81

843010122

Plant Shipment Loadsheet

File | Action

Carrier PICK UP SCAC

NEWARK, NJ

PITT-CONSOL CHEMICAL COMPANY - CONOCO INC.

Order No.	B/L No.
Customer P.O./Release	
Origin SPLC	Shipping Date 02-12-82

Ship To
ESSEX CHEMICAL COMPANY
330 DOREMUS AVENUE
NEWARK, NEW JERSEY 07105

Dest. SPLC	Car/Vehicle No.
Prepaid/Collect PREPAID	
Mode of Transp.	

Route PICK UP

React

No. and Kind of Pkg. - Hazardous Materials Description and Proper Shipping Names

T/T RQ SULFURIC ACID UN 1830
CORROSIVE MATERIAL

HM	Desc. Ref.	Item No.	Product Code	Description	Container Code	Container Qty.	Container Type	Customer Iden. Code
X	30	1		SULFURIC ACID				
		2						
		3						
		4						
		5						

Item No.	Billing Quantity	U/M	As Is Lbs.	Active Lbs.	Freight Weight	U/M	CWT Rate	Load Temp.	Percent Active
1									.
2									.
3									.
4									.
5									.

Plant Shipment No.	Freight Weight	Rate/CWT

Capacity	
Outage	
Gross Gals.	
Net Gals.	
Gross Lbs..	
Tare Lbs.	
Net Lbs..	

FOR TONS OR METRIC TONS, A TWO PLACE DECIMAL MUST BE SHOWN. SEE EXAMPLES BELOW

SHOW 20 TONS AS 20.00 T	SHOW 1748 GALLONS AS 1748 G
SHOW 20.5 TONS AS 20.50 T	SHOW 4.5 METRIC TONS AS 4.50 M
SHOW 20.45 TONS AS 20.45 T	SHOW 20000 POUNDS AS 20000 P

SULFURIC ACID

TRUCK TO BE WEIGHED

3-51 X 6. 1-81

LOADSHEET COPY

843010123

This Memorandum is an acknowledgment that a Bill of Lading has been issued and is not the Original Bill of Lading, nor a copy or duplicate, covering the property named herein, and is intended solely for filing or record.

Order No	B/L No
Customer P.O. / Release	
Origin SPLC	Shipping Date 02-12-92

Carrier PICK UP SCAC

RECEIVED, Subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading.

NEWARK, NJ

From PITT-CONSOL CHEMICAL COMPANY - CONOCO INC

The property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated below, which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each carrier of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service to be performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Uniform Freight Classification in effect on the date hereof, if this is a rail or rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, including those on the back thereof, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

Ship To
ESSEX CHEMICAL COMPANY
330 DOREMUS AVENUE
NEWARK, NEW JERSEY 07105

Dest. SPLC	Car/Vehicle No
Prepaid/Collect PREPAID	
Mode of Transp	

Route PICK UP

No. and Kind of Pkg. - Hazardous Materials Description and Proper Shipping Names

T/T RQ SULFURIC ACID UN 1830
CORROSIVE MATERIAL

HM	Desc. Ref.	Item No	Product Code	Description	Container Code	Qty.	Type	Customer Iden. Code
X	30	1		SULFURIC ACID				
		2						
		3						
		4						
		5						

Item No	Billing Quantity	U/M	As Is Lbs.	Active Lbs.	Freight Weight	U/M	CWT Rate	Load Temp.	Percent Active
1									
2									
3									
4									
5									

DESCRIPTION OF ARTICLES FOR FREIGHT CLASSIFICATION PURPOSES
01 Petroleum alkylate detergent intermediates STCC 28 151 54
02 Dodecyl benzene STCC 28 151 36
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05 Ethoxylated fatty or ethoxylated and sulfated fatty alcohols STCC 28 431 28
06 Inedible fatty alcohols, NOIBN, of petroleum STCC 28 184 91
07 Butyl alcohol STCC 28 184 16
08 Hexyl alcohol, other than perfumery grade STCC 28 184 24
09 Octyl alcohol, other than perfumery grade STCC 28 184 27
10 Decyl alcohol, other than perfumery grade STCC 28 184 18
11 Compounds, gas or oil well drilling, and treating, NOIBN STCC 28 998 55
12 Spent sulfuric acid STCC 40 251 64
13 Chemicals, NOIBN (released value not exceeding 50 cents a pound see NOTE below) STCC 28 999 91
14 Muriatic acid STCC 28 194 50
15 Vinyl chloride STCC 28 139 66
16 Methyl chloride STCC 28 189 47
17 Petroleum, partially refined to be further refined, blended, compounded and/or mixed into products having a commercial value only as a petroleum product containing more than 51 per cent petroleum base, at 6.6 lbs per gallon STCC 29 117 35
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20 Aluminum chloride liquid solution STCC 28 196 31
21 Butadiene STCC 29 119 85
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25 Cresylic acid STCC 28 151 21
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29 Plastic Material, other than expanded, Granules, Pellets, or Powders (Polyvinyl Chloride) STCC 28 211 41
30 Other

SULFURIC ACID

Capacity	
Outage	
Gross Gals.	
Net Gals.	
Gross Lbs.	
Tare Lbs.	
Net Lbs.	

Subject to Section 7 of Conditions of applicable bill of lading, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement.
The carrier shall not make delivery of this shipment without payment of freight and all lawful charges.

Signed

Carrier hereby certifies that the cargo tank used for this shipment is a proper container for the commodity loaded therein and complies with Department of Transportation specifications

Remarks

TRUCK TO BE WEIGHED

CUSTOMER PACKING LIST

843010124

This Memorandum *is an acknowledgment that a Bill of Lading has been issued and is not the Original Bill of Lading, nor a copy or duplicate, covering the property named herein, and is intended solely for filing or record.*

Order No	B/L No
Customer P.O./Release	
Origin SPLC	Shipping Date 02-12-82

Carrier PICK UP SCAC

RECEIVED. Subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading.

NEWARK, NJ

From PITT-CONSOL CHEMICAL COMPANY - CONOCO INC

The property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated below, which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each carrier of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service to be performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Uniform Freight Classification in effect on the date hereof, if this is a rail or rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, including those on the back thereof, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

Ship To
ESSEX CHEMICAL COMPANY
330 DOREMUS AVENUE
NEWARK, NEW JERSEY 07105

Dest. SPLC	Car/Vehicle No
Prepaid/Collect PREPAID	
Mode of Transp.	

Route PICK UP

No. and Kind of Pkg. - Hazardous Materials Description and Proper Shipping Names

T/T RQ SULFURIC ACID UN 1830
CORROSIVE MATERIAL

HM	Desc. Ref.	Item No.	Product Code	Description	Container Code	Container Qty.	Container Type	Customer Iden. Code
X	30	1		SULFURIC ACID				
		2						
		3						
		4						
		5						

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2									
3									
4									
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5 Ethoxylated fatty or ethoxylated and sulfated fatty alcohols STCC 28 431 28
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12 Spent sulfuric acid STCC 40 251 64
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19 Ethylene dichloride STCC 28 181 40
20 Aluminum chloride liquid solution STCC 28 196 31
21 Butadiene STCC 29 119 85
22 Liquefied petroleum gas (Propane-propylene) STCC 29 121 90
23 Plastic, synthetic, other than liquid (polyvinyl chloride) STCC 28 211 45
24 Plasticizer, plastic, liquid STCC 28 189 67
25 Cresylic acid STCC 28 151 21
26 Rubber accelerator or softener (see NOTE below) STCC 28 189 70
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28 Bottoms, chlorinated hydrocarbon, by-product obtained in the production of ethyl chloride or vinyl chloride suitable only for further processing STCC 28 999 91
29 Plastic Material, other than expanded, Granules, Pellets, or Powders (Polyvinyl Chloride) STCC 28 211 41
30 Other

SULFURIC ACID

Capacity	
Outage	
Gross Gals.	
Net Gals.	
Gross Lbs.	
Tare Lbs.	
Net Lbs.	

Subject to Section 7 of Conditions of applicable bill of lading, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement.
The carrier shall not make delivery of this shipment without payment of freight and all lawful charges

Signed

Carrier hereby certifies that the cargo tank used for this shipment is a proper container for the commodity loaded therein and complies with Department of Transportation specifications.

Remarks

TRUCK TO BE WEIGHED

PLANT COPY

51 X 6, 1-81

843010125

1340.308

Let's protect our earth

STATE OF NEW JERSEY
Department of Environmental Protection and Energy

Scott A. Weiner
Commissioner

Environmental Regulation
Hazardous Waste Regulation Program
CN 421
Trenton, NJ 08625-0421
Phone# 609-633-1418

Frank Coolick
Administrator

Dear Member of the Regulated Community:

On January 10, 1992 the New Jersey Department of Environmental Protection and Energy adopted amendments to N.J.A.C. 7:26-4A.3(a & b) establishing a new manifest processing fee for generators and hazardous waste facilities. The amendments establish a fee for the processing of each completed manifest received by the Department and authorizes the Department to bill the regulated community on a periodic basis. The maximum frequency being quarterly, if there is sufficient activity in the quarter to warrant billing.*

The manifest processing fee for generators and hazardous waste facilities is as follows:

A. Generators located in the State of New Jersey: $11.10 per manifest.

B. Hazardous Waste Facilities: $11.10 per manifest for waste received from generators located outside of the State of New Jersey. A hazardous waste facility is not assessed a manifest processing fee for waste received from New Jersey generators.

The fees are dedicated to the tracking and reporting of hazardous activities The revenues collected will ensure that the Deparment has the necessary funds to continue effective operation of the Hazardous Waste Management Program.

If you should have any questions or require further assistance regarding your bill or the billing process in general, please contact the Manifest Section at (609) 292-7081.

Hazardous Waste Regulation Program

*This being the Final Billing of the Fiscal Year all Generators are being billed, including those that were not previously billed because of insufficient frequency of activity (1 to 4 manifests processed).

1340

Job #

WEINER S A 375452-1
07/13/93 PITT-CONSOL NEW JERSE

DERS1

PR79:nb

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND ENERGY

INVOICE NO.
930700830

NEW JERSEY HAZARDOUS WASTE MANIFEST PROCESSING FEE INVOICE

EPA ID No.	# Manifests	Type of Notice	Billing Date	Due Date	Amount Due
NJD004948188	2	QUARTERLY	07/13/93	08/13/93	$ 22.20

KEEP THIS PORTION FOR YOUR RECORDS

PLEASE NOTE: Failure to pay this fee is a violation of N.J.A.C. 7:26-4A.2. Violators may be subject to civil penalties in accordance with N.J.S.A. 13:1E-9 and 13:1E-12.

PROCESSING PERIOD	FACILITY BILLED	FEE RATE/ MANIFEST	SUMMARY		AMOUNT
03/10/93 - 07/13/93	PITT-CONSOL CHEM CO 191 DOREMUS AVE NEWARK NJ	$ 11.10	# of Generator Manifests	2 $	22.20
			# of TSDF Manifests	0 $	0.00
			Previous Unpaid Balance	$	0.00
			TOTAL AMOUNT DUE	$	22.20

MESSAGES: *** SEE MANIFEST DETAIL ON NEXT PAGE(S) ***

REMINDER:
- Please write the EPA ID No. and INVOICE NO. on your check or money order.
- Enter the amount of your payment in the box underneath AMOUNT DUE shown below.
- Return the BOTTOM PORTION of this INVOICE with your PAYMENT via the enclosed envelope.

Send Billing Inquiries to:
NJDEPE
Division of Hazardous Waste Regulation
Bureau of Advisement and Manifest
CN 421
Trenton, NJ 08625-0421

or contact directly at:
(609)-292-7081

INVOICE NO.
930700830

DEP56F 12 92

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND ENERGY

INVOICE NO.
930700830

NEW JERSEY HAZARDOUS WASTE MANIFEST PROCESSING FEE INVOICE

EPA ID No.	# Manifests	Type of Notice	Billing Date	Due Date	Amount Due
NJD004948188	2	QUARTERLY	07/13/93	08/13/93	$ 22.20

If there are changes to your Mailing Name or Address, check this box ☐ and print the change on the back of this invoice.

DO NOT FOLD, BEND OR MARK

Enter the Amount of your Payment ☞ $.

RETURN THIS PORTION with your check made payable to:
TREASURER - STATE OF NEW JERSEY
and mail to:
NJDEPE
BUREAU OF REVENUE
CN 417
TRENTON, NJ 08625-0417

PITT-CONSOL CHEM CO
56
191 DOREMUS AVE
NEWARK NJ 07105-4806

10101024201400000409040801080811111100000222001747193070083065 63

843010127

State of New Jersey
Department of Environmental Protection
Division of Hazardous Waste Management
Manifest Section
CN 028, Trenton, NJ 08625

Please type or print in block letters. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039. [illegible]

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. N J D 0 0 9 9 4 8 1 8 8 0 0 0 0 2
Manifest Document No.

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
DUPONT - PITT CONSOL
191 DOREMUS AVE.
NEWARK, NJ 07105

4. Generator's Phone (302) 773-4237

A. State Manifest Document Number NJA 1536570

B. State Generator's ID
Same

5. Transporter 1 Company Name
Chemical Waste Management, Inc.

6. US EPA ID Number I L D 0 9 9 2 0 2 6 8 1

C. State Trans. ID S 1 0 3 3 1

7. Transporter 2 Company Name

8. US EPA ID Number

D. Transporter's Phone (201) 465-2121

E. State Trans. ID

9. Designated Facility Name and Site Address
Chemical Waste Management of New Jersey, Inc.
100 Lister Ave.
Newark, NJ 07105

10. US EPA ID Number N J D 0 8 9 2 1 6 7 9 0

F. Transporter's Phone ( )

G. State Facility's ID

H. Facility's Phone (201) 465-9100

	11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number) HM	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a.	X RQ Hazardous Waste Solid, N.O.S. (lead) ORM-E NA9189 X12286	0 0 3	D M	0 1 5 0 0	P	D 0 0 8
b.						
c.						
d.						

J. Additional Descriptions for Materials Listed Above
100% Contaminated Soils
a. S.T LKC
b.
d.

K. Handling Codes for Wastes Listed Above
a. S01
b.
c.
d.

15. Special Handling Instructions and Additional Information
WO#S04700
Decal # 13163
CWM 24 Hour Emergency # (205) 652-9721
LTL

MAIL COPY OF MANIFEST TO:
Dupont Environmental
300 Bellview Parkway, Suite 390
Willminton, DE 19809 Attn: G. Sams

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

GENERATOR

Printed/Typed Name: P. Brandt Butler
Signature: P. Brandt Butler
Month Day Year: 1 2 1 0 9 2

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: NORMAN JAMES
Signature: Norman James
Month Day Year: 1 2 1 0 9 2

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name
Signature
Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Matthew Fudge
Signature: Matthew Fudge
Month Day Year: 1 2 1 0 9 2

In case of an emergency or spill immediately call the state the emergency occurred in and the N.J. Dept. of Environmental Protection. (609) 292-5560 (Day) (609) 292-7172 (Night)

EPA Form 8700-22 (Rev. 9/88) Previous editions are obsolete.

SIGNATURE AND INFORMATION *MUST* BE LEGIBLE ON ALL COPIES

1 — TSD MAIL TO - TSD'S STATE

843010128

Let's protect our earth

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND ENERGY

INVOICE NO.
930700830

NEW JERSEY HAZARDOUS WASTE MANIFEST PROCESSING FEE INVOICE

EPA ID No.	# Manifests	Type of Notice	Billing Date	Due Date	Amount Due
NJD004948188	2	QUARTERLY	07/13/93	08/13/93	$ 22.20

KEEP THIS PORTION FOR YOUR RECORDS

GENERATOR

DOCUMENTS PROCESSED THIS PERIOD

DOCUMENT NUMBER	DATE SHIPPED	DOCUMENT NUMBER	DATE SHIPPED	DOCUMENT NUMBER	DATE SHIPPED	DOCUMENT NUMBER	DATE SHIPPED
NYB5276772	10/29/92	NJA1536570	12/10/92				

D5601F 2/93

843010129

DUPONT ENVIRONMENTAL REMEDIATION SERVICES, INC.

East Region Cashier Check Request

DATE: September 10, 1993

PAYEE: Treasurer - State of New Jersey
NJDEPE
Bureau of Revenue
CN 417

PURPOSE: To cover manifest processing fee from State of New Jersey

(Attach supporting documentation)

AMOUNT: $ 22.20 1099?

CHARGE CODE: 1340-02-5000-02-6

DETAIL CODE:

APPROVED: [signature] APPROVED:

DATE: 9/10/93 DATE:

DATE NEEDED: 9/10/93 CHECK #

RETURN TO: CHECK DATE:

843010130

DuPONT ENVIRONMENTAL
REMEDIATION SERVICES, INC.
BELLEVUE ACCOUNT
300 BELLEVUE PARKWAY, SUITE 390
WILMINGTON, DE 19809
PH. 302-792-8900

6124

62-9/311 1

9-10 19 93

PAY TO THE ORDER OF Treasurer - State of New Jersey $ 22.20

Twenty two and 20/100 DOLLARS

WILMINGTON TRUST
Wilmington, Delaware

FOR NJD004948188

Robin J. Hickey

⑈006124⑈ ⑆031600092⑆ 2455 3878⑈

843010131

STRAIGHT BILL OF LADING—SHORT FORM

ORIGINAL—NOT NEGOTIABLE

Order No	B/L No
Customer P.O./Release	
Origin SPLC	Shipping Date 9-16-82

Carrier HISCO TRUCKING COMPANY SCAC

RECEIVED, Subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading.

NEWARK, NJ

From PITT-CONSOL CHEMICAL COMPANY - CONOCO INC.

The property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated below, which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each carrier of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service to be performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Uniform Freight Classification in effect on the date hereof, if this is a rail or rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, including those on the back thereof, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

Ship To
WITCO CHEMICAL COMPANY
3300 WEST FOURTH
TRAINER, PA 19013

Dest. SPLC	Car/Vehicle No.
Prepaid/Collect: PREPAID	
Mode of Transp.	

Route

No. and Kind of Pkg.-Hazardous Materials Description and Proper Shipping Names

HM	Desc. Ref.	Item No.	Product Code	Description	Container Code	Qty.	Type	Customer Iden. Code
		1		PETROLEUM SULFONATE		11	DRUMS	
		2		PETROLEUM OIL NOIBN				
		3						
		4						
		5						

Item No.	Billing Quantity	U/M	As Is Lbs.	Active Lbs.	Freight Weight	U/M	CWT Rate	Load Temp.	Percent Active
1									
2									
3									
4									
5									

DESCRIPTION OF ARTICLES FOR FREIGHT CLASSIFICATION PURPOSES
01 Petroleum alkylate detergent intermediates STCC 28 151 54
02 Dodecyl benzene STCC 28 151 36
03 Petroleum oil, NOIBN (not prepared nor represented as a remedy medicine or lubricant for the human body) STCC 29 117 91
04 Compounds, cleaning, scouring or washing, NOIBN, liquid STCC 28 419 20
05 Ethoxylated fatty or ethoxylated and sulfated fatty alcohols STCC 28 431 28
06 Inedible fatty alcohols, NOIBN, of petroleum STCC 28 184 91
07 Butyl alcohol STCC 28 184 16
08 Hexyl alcohol, other than perfumery grade STCC 28 184 24
09 Octyl alcohol, other than perfumery grade STCC 28 184 27
10 Decyl alcohol, other than perfumery grade STCC 28 184 18
11 Compounds, gas or oil well drilling, and treating, NOIBN STCC 28 998 55
12 Spent sulfuric acid STCC 40 251 64
13 Chemicals, NOIBN (released value not exceeding 50 cents a pound - see NOTE below) STCC 28 999 91
14 Muriatic acid STCC 28 194 50
15 Vinyl chloride STCC 28 139 66
16 Methyl chloride STCC 28 189 47
17 Petroleum, partially refined, to be further refined, blended, compounded and/or mixed into products having a commercial value only as a petroleum product containing more than 51 per cent petroleum base, at 6.6 lbs per gallon STCC 29 117 35
18 Petroleum oil, NOIBN, suitable only for mixing, blending, compounding and/or further manufacturing at 6.6 lbs per gallon STCC 29 117 35
19 Ethylene dichloride STCC 28 181 40
20 Aluminum chloride liquid solution STCC 28 196 31
21 Butadiene STCC 29 119 85
22 Liquefied petroleum gas (Propane-propylene) STCC 29 121 90
23 Plastic, synthetic, other than liquid (polyvinyl chloride) STCC 28 211 44
24 Plasticizer, plastic, liquid STCC 28 189 67
25 Cresylic acid STCC 28 151 21
26 Rubber accelerator or softener (see NOTE below) STCC 28 189 70
27 Alumina, hydrated STCC 10 513 10
28 Bottoms, chlorinated hydrocarbon, by-product obtained in the production of ethyl chloride or vinyl chloride suitable only for further processing STCC 28 999 91
29 Plastic Material, other than expanded, Granules, Pellets, or Powders (Polyvinyl Chloride) STCC 28 211 44
30 Other

Capacity	
Outage	
Gross Gals.	
Net Gals.	
Gross Lbs.	5140
Tare Lbs.	
Net Lbs.	

Subject to Section 7 of Conditions of applicable bill of lading, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement.
The carrier shall not make delivery of this shipment without payment of freight and all lawful charges.

Signed _____

Carrier hereby certifies that the cargo tank used for this shipment is a proper container for the commodity loaded therein and complies with Department of Transportation specifications.

Remarks
ATTN: VINCE CEASE
215-494-3561

Any weights shown on this bill of lading by the shipper are for the convenience of the carrier, and can be verified at any time by an examination of the records on file in the shipper's office.

Any Fiber containers used for this shipment conform to the specifications set forth in the certificate of maker thereon and all other requirements of Rule 41 of the governing classification.

*If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading shall state whether it is "carrier's or shipper's weight."
NOTE-The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding 50 cents per pound for each article.

This is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation, according to the applicable regulations of the Department of Transportation.

Shipper (see above)

H. Snyder Hisko

Agent

Permanent Post Office Address of Shipper — Surface Transportation Dept
P.O. Box 2197, Houston, Texas 77001

ORIGINAL

31 X 6 6-81

843010132

Plant Shipment Loadsheet

File | Action

Carrier HISCO TRUCKING COMPANY SCAC

NEWARK, NJ

PITT-CONSOL CHEMICAL COMPANY - CONOCO INC.

Order No	B/L No
Customer P.O./Release	
Origin SPLC	Shipping Date 9-16-82

Ship To

WITCO CHEMICAL COMPANY
3300 WEST FOURTH
TRAINER, PA 19013

Dest. SPLC	Car/Vehicle No
Prepaid/Collect PREPAID	
Mode of Transp.	

Route

React

No. and Kind of Pkg.-Hazardous Materials Description and Proper Shipping Names

HM	Desc. Ref.	Item No.	Product Code	Description	Container Code	Qty.	Type	Customer Iden. Code
		1		PETROLEUM SULFONATE		11	DRUMS	
		2		PETROLEUM OIL NOIBN				
		3						
		4						
		5						

Item No.	Billing Quantity	U/M	As Is Lbs.	Active Lbs.	Freight Weight	U/M	CWT Rate	Load Temp.	Percent Active
1									
2									
3									
4									
5									

Plant Shipment No	Freight Weight	Rate/CWT

Capacity	
Outage	
Gross Gals.	
Net Gals.	
Gross Lbs.	5140
Tare Lbs.	
Net Lbs.	

FOR TONS OR METRIC TONS, A TWO PLACE DECIMAL MUST BE SHOWN. SEE EXAMPLES BELOW

SHOW 20 TONS AS 20.00 T	SHOW 1748 GALLONS AS 1748 G
SHOW 20.5 TONS AS 20.50 T	SHOW 4.5 METRIC TONS AS 4.50 M
SHOW 20.45 TONS AS 20.45 T	SHOW 20000 POUNDS AS 20000 P

TO: VINCE CENSE
215-674-3561

H Snyder Hisko

LOADSHEET COPY

843010133

3-51 X 6, 6-81

This Memorandum is an acknowledgment that a Bill of Lading has been issued and is not the Original Bill of Lading, nor a copy or duplicate, covering the property named herein, and is intended solely for filing or record.

Order No.	B/L No.
Customer P.O./Release	
Origin SPLC	Shipping Date

arrier HISCO TRUCKING COMPANY SCAC

ECEIVED, Subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading.

NEWARK, NJ

9-16-82

rom PITT-CONSOL CHEMICAL COMPANY - CONOCO INC.

e property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as dicated below, which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under e contract) agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. is mutually agreed, as to each carrier of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested all or any of said property, that every service to be performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of ading set forth (1) in Uniform Freight Classification in effect on the date hereof, if this is a rail or rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.

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hip
o

WITCO CHEMICAL COMPANY
3300 WEST FOURTH
TRAINER, PA 19013

Dest. SPLC	Car/Vehicle No.
Prepaid/Collect: PREPAID	
Mode of Transp.	

oute

No. and Kind of Pkg. - Hazardous Materials Description and Proper Shipping Names

HM	Desc. Ref.	Item No.	Product Code	Description	Container Code	Qty.	Type	Customer Iden. Code
		1		PETROLEUM SULFONATE		11	DRUMS	
		2		PETROLEUM OIL NOIBN				
		3						
		4						
		5						

Item No.	Billing Quantity	U/M	As Is Lbs.	Active Lbs.	Freight Weight	U/M	CWT Rate	Load Temp.	Percent Active
1									
2									
3									
4									
5									

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01 Petroleum alkylate detergent intermediates STCC 28 151 54
02 Dodecyl benzene STCC 28 151 36
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04 Compounds, cleaning, scouring or washing, NOIBN, liquid STCC 28 419 20
05 Ethoxylated fatty or ethoxylated and sulfated fatty alcohols STCC 28 431 28
06 Inedible fatty alcohols, NOIBN, of petroleum STCC 28 184 91
07 Butyl alcohol STCC 28 184 16
08 Hexyl alcohol, other than perfumery grade STCC 28 184 24
09 Octyl alcohol, other than perfumery grade STCC 28 184 27
10 Decyl alcohol, other than perfumery grade STCC 28 184 18
11 Compounds, gas or oil well drilling, and treating, NOIBN STCC 28 998 55
12 Spent sulfuric acid STCC 40 251 64
13 Chemicals, NOIBN (released value not exceeding 50 cents a pound - see NOTE below) STCC 28 999 91
14 Muriatic acid STCC 28 194 50
15 Vinyl chloride STCC 28 139 66
16 Methyl chloride STCC 28 189 47
17 Petroleum, partially refined, to be further refined, blended, compounded and/or mixed into products having a commercial value only as a petroleum product containing more than 51 per cent petroleum base, at 6.6 lbs. per gallon STCC 29 117 35
18 Petroleum oil, NOIBN, suitable only for mixing, blending, compounding and/or further manufacturing at 6.6 lbs per gallon STCC 29 117 35
19 Ethylene dichloride STCC 28 181 40
20 Aluminum chloride liquid solution STCC 28 196 31
21 Butadiene STCC 29 119 85
22 Liquefied petroleum gas (Propane-propylene) STCC 29 121 90
23 Plastic, synthetic, other than liquid (polyvinyl chloride) STCC 28 211 44
24 Plasticizer, plastic, liquid STCC 28 189 67
25 Cresylic acid STCC 28 151 21
26 Rubber accelerator or softener (see NOTE below) STCC 28 189 70
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28 Bottoms, chlorinated hydrocarbon, by-product obtained in the production of ethyl chloride or vinyl chloride suitable only for further processing STCC 28 999 91
29 Plastic Material, other than expanded, Granules, Pellets, or Powders (Polyvinyl Chloride) STCC 28 211 44
30 Other

Capacity	
Outage	
Gross Gals.	
Net Gals.	
Gross Lbs.	
Tare Lbs.	
Net Lbs.	

Subject to Section 7 of Conditions of applicable bill of lading, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement.
The carrier shall not make delivery of this shipment without payment of freight and all lawful charges.

Signed

Carrier hereby certifies that the cargo tank used for this shipment is a proper container for the commodity loaded therein and complies with Department of Transportation specifications.

Remarks

PLANT COPY

843010134

3-51 X 6, 6-81

Alex V. Guanlao

CONOCO

To HDG

Date 8/27/82

Re: SACI Disposal

WITCO Chemicals has accepted taking 11 drs of SACI material which will be recycled/or disposed of at their Trainer Plant.

Plant ~~Address~~:

WITCO Chemical Co
3300 West Fourth
Trainer, PA 19013

Contact: Vince Cease (215) 494-3561

AVG

c: DWH, HAC

843010135

A CHEMICAL SERVICES
THLINE DIVISION
VARK, J. 07105

VENDOR NUMBER	VENDOR NAME		CHECK DATE	CHECK NO
57108	PITT CONSOL CHEMICAL	SCA SERVICES - EARTHLINE	07/23/82	0123369

OPERATING UNIT	INVOICE NO	CREDIT MEMO	VOUCHER NO	INVOICE DATE	INVOICE AMOUNT	DISCOUNT	AMOUNT PAID
ARTHLINE WASTE	E182HC		122114	06-01-82	250.00	.00	250.00
				TOTAL	250.00	.00	250.00

SCA CHEMICAL SERVICES
EARTHLINE DIVISION
100 LISTER AVENUE
NEWARK, NEW JERSEY 07105

SCA SERVICES

MANUFACTURERS HANOVER TRUST COMPANY
350 PARK AVENUE, NEW YORK, N.Y. 10022

1-3
21

123369

PITT CONSOL CHEMICAL CO.
RECEIVED
SEP 10 1982
AM 7,8,9,10,11,12,1,2,3,4,5,6 PM

DATE	CHECK NO.
07/23/82	0123369

PAY

WO HUNDRED FIFTY AND 00/100 DOLLARS

PAY EXACTLY
$*****250.00

TO THE ORDER OF

PITT CONSOL CHEMICAL
191 DOREMUS AVE
NEWARK NJ 07105

SCA CHEMICAL SERVICES

AUTHORIZED SIGNATURE

⑈123369⑈ ⑆021000306⑆0144 0⑈24255⑈

843010136

CONOCO

Pitt-Consol Chemical Company
An Affiliate of Continental Oil Company
191 Doremus Avenue
Newark, N. J. 07105

Invoice

Remit To—
Pitt-Consol Chemical Co.
P. O. Box 5282
Church Street Station
New York, New York 10008

State Code	Customer Code	Shipper Code	Dest. Code	Invoice Date	Invoice No.
				[illegible]/31/[illegible]	
				Shipper Date: [illegible]/11/[illegible]	[illegible]

Terms: Net 30 Days Unless Otherwise Specified

Sold To: SCA CHEMICAL SERVICES, CO.
107 ALBERT AVENUE
NEWARK, NEW JERSEY 07105

Shipped To: SCA CHEMICAL SERVICES
100 LISTER AVENUE
NEWARK, NEW JERSEY 07105

Our Order No. & Date	Cust. Order No. & Date	Date Required	F.O.B.	Freight	Terms
	12470	ASAP	COLLECT	PPD ☐ Coll ☒	NET

Contract No.	Car. No.	Shipped From	Shipped Via	Shipping Wt.
		Newark, N. J.	SCA CHEMICAL	6400

Ordered	Product Code	Description	Quantity Shipped	Units Shipped	Price	Amount
1000 GAL		26% CAUSTIC SOLUTION	6400	LBS.	.25 GAL	$250.00
		UNLEAD	1000	GAL		
		GROSS 43340 TARE 36940 NET 6400				

1092-46-8611-400-44-33-0

J J McLaughlin

We hereby certify that all goods and services covered by this invoice were produced and furnished in compliance with the requirements of the Fair Labor Standards Act 1938, as amended, and any regulations and orders issued thereunder.

-260 X10, 8-72

QUADRUPLICATE INVOICE

843010137

ESSEX CHEMICAL CORPORATION

INDUSTRIAL CHEMICALS DIVISION

1401 BROAD STREET

CLIFTON, NEW JERSEY 07015

TO

PITT-CONSOL CHEMICAL CO.

JUL 14 1982

NEWARK, N. J.

DATE 7/12/82

PITT-CONSOL CHEMICAL CO
191 DOREMUS AVE
NEWARK,N.J. 07105

CREDIT NO. 13480

SALESMAN 23

CREDIT FOR SULFURIC ACID PICKED UP ON 2/12/82

$26.00/NT = $543.40

GERALDINE M. TOOMEY

ESSEX INDUSTRIAL CHEMICALS, INC.
A WHOLLY-OWNED SUBSIDIARY OF
ESSEX CHEMICAL CORPORATION

1401 BROAD STREET
CLIFTON, NJ 07015
(201) 773-6300

NET CREDIT DUE $543.40

NOTE:
INVOICE EC-685 DATED 2/26/82 COVERING VARIOUS COSTS FOR PICKING UP THIS ACID WAS CANCELLED TO CLEAR THIS CREDIT PER G.TOOMEY.

843010138

This Memorandum is an acknowledgment that a Bill of Lading has been issued and is not the Original Bill of Lading, nor a copy or duplicate, covering the property named herein, and is intended solely for filing or record.

Order No.	Bill No.
Customer P.O./Release	
Origin SPLC	Shipping Date 2-11-82

Carrier SCA CHEMICAL SCAC

RECEIVED, Subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading.

At Newark, N.J.

From BIST-CONSOL CHEMICALS CONOCO INC

The property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated below, which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each carrier of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service to be performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Uniform Freight Classification in effect on the date hereof, if this is a rail or rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.

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Ship To

SCA CHEMICAL SERVICES
100 Lister Avenue
Newark, New Jersey 07105

Route SCA CHEMICAL

Dest. SPLC	Car/Vehicle No.
Prepaid/Collect: COLLECT	
Mode of Transp.	

No. and Kind of Pkg. - Hazardous Materials Description and Proper Shipping Names

T/T RQ SODIUM HYDROXIDE LIQUID
CORROSIVE MATERIAL UN 1824

HM	Desc. Ref.	Item No.	Product Code	Description	Container Code	Container Qty.	Container Type	Customer Iden. Code
X	30	1		~~Sodium Hydroxide Liquid~~				
		2						
		3						
		4						
		5						

PLACARDED CORROSIVE

Item No.	Billing Quantity	U/M	As Is Lbs.	Active Lbs.	Freight Weight	U/M	CWT Rate	Load Temp.	Percent Active
1									
2									
3									
4									
5									

DESCRIPTION OF ARTICLES FOR FREIGHT CLASSIFICATION PURPOSES
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10 Decyl alcohol, other than perfumery grade STCC 28 184 18
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20 Aluminum chloride liquid solution STCC 28 196 31
21 Butadiene STCC 29 119 85
22 Liquefied petroleum gas (Propane-propylene) STCC 29 121 90
23 Plastic, synthetic, other than liquid (polyvinyl chloride) STCC 28 211 45
24 Plasticizer, plastic, liquid STCC 28 189 67
25 Cresylic acid STCC 28 151 21
26 Rubber accelerator or softener (see NOTE below) STCC 28 189 70
27 Alumina, hydrated STCC 10 513 10
28 Bottoms, chlorinated hydrocarbon, by-product obtained in the production of ethyl chloride or vinyl chloride suitable only for further processing STCC 28 999 91
29 Plastic Material, other than expanded, Granules, Pellets, or Powders (Polyvinyl Chloride) STCC 28 211 41
30 Other

Sodium Hydroxide Liquid

Capacity	
Outage	
Gross Gals.	
Net Gals.	
Gross Lbs.	43340
Tare Lbs.	35940
Net Lbs.	6400

Subject to Section 7 of Conditions of applicable bill of lading, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement.
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Signed

Carrier hereby certifies that the cargo tank used for this shipment is a proper container for the commodity loaded therein and complies with Department of Transportation specifications.

Remarks

NEW JERSEY MANIFEST NO. 0035504

CUSTOMER PACKING LIST

51 X 6, 1-81

843010139

9

9

843010140

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION
01 STATE NJ | 02 SITE NUMBER D004948188

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 ☐ J. DAMAGE TO FLORA — 02 ☐ OBSERVED (DATE _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
There is no soil exposed on site. Surface is covered by asphalt, gravel or tar wastes.

01 ☐ K. DAMAGE TO FAUNA — 02 ☐ OBSERVED (DATE _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION (Include name(s) of species)
No potential exists.

01 ☐ L. CONTAMINATION OF FOOD CHAIN — 02 ☐ OBSERVED (DATE _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
No potential exists.

01 ☒ M. UNSTABLE CONTAINMENT OF WASTES (Spills/Runoff/Standing liquids/Leaking drums) — 02 ☐ OBSERVED (DATE _____) ☒ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 73 workers
04 NARRATIVE DESCRIPTION The former impoundments and buildi were leveled, partially covered with gravel. Empty, rusted drums are on the property. There is no spilled waste, runoff, standing liquids, or leaking drums visible.

01 ☐ N. DAMAGE TO OFFSITE PROPERTY — 02 ☐ OBSERVED (DATE _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
No potential exists

01 ☐ O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs — 02 ☐ OBSERVED (DATE _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
No potential exists

01 ☐ P. ILLEGAL/UNAUTHORIZED DUMPING — 02 ☐ OBSERVED (DATE _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
No potential exists

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS
There were drum storage areas in and around tar pits. These may have been buried when impoundments were leveled. No drums have been encountered during recent construction activities on site.

III. TOTAL POPULATION POTENTIALLY AFFECTED: 73

IV. COMMENTS
During rainfall, the ground water table rises and occasionally discolored water is visible.

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)
Site inspection 3/8/83 and conversations with Mr. Garrison, Plant Manager.

EPA FORM 2070-13 (7-81)

843010141

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION
PART 4 - PERMIT AND DESCRIPTIVE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NJ	D004948188

II. PERMIT INFORMATION

01 TYPE OF PERMIT ISSUED (Check all that apply)	02 PERMIT NUMBER	03 DATE ISSUED	04 EXPIRATION DATE	05 COMMENTS
☐ A. NPDES	Covered under sewer permit to Passaic Valley Sewerage Commission			
☐ B. UIC				
☒ C. AIR	25 State permits; 20 new permit applications			
☒ D. RCRA	NJD004948188			
☒ E. RCRA INTERIM STATUS	NJD004948188			
☒ F. SPCC PLAN	no number			also a DPCC plan
☐ G. STATE (Specify)				
☐ H. LOCAL (Specify)				
☒ I. OTHER (Specify)	204010722	5/13/81	5/13/83	sewer permit for Passaic Valley Sewerage Commission
☐ J. NONE				

III. SITE DESCRIPTION

01 STORAGE/DISPOSAL (Check all that apply)	02 AMOUNT	03 UNIT OF MEASURE
☒ A. SURFACE IMPOUNDMENT (former)	24,200	Cubic Yds.
☐ B. PILES		
☐ C. DRUMS, ABOVE GROUND		
☒ D. TANK, ABOVE GROUND	approximately 20 empty storage tanks	
☐ E. TANK, BELOW GROUND		
☐ F. LANDFILL		
☐ G. LANDFARM		
☐ H. OPEN DUMP		
☒ I. OTHER (Specify) buried drums may be present at site.		

04 TREATMENT (Check all that apply)

- ☐ A. INCENERATION
- ☐ B. UNDERGROUND INJECTION
- ☐ C. CHEMICAL/PHYSICAL
- ☐ D. BIOLOGICAL
- ☐ E. WASTE OIL PROCESSING
- ☐ F. SOLVENT RECOVERY
- ☐ G. OTHER RECYCLING/RECOVERY
- ☒ H. OTHER (Specify) All wastes generated at present are transported offsite.

05 OTHER

☒ A. BUILDINGS ON SITE approximately 15

06 AREA OF SITE: 37 (Acres)

07 COMMENTS

The quantity indicated for the former surface impoundments is based on a surface area of 5 acres and a depth of 3 feet, as inferred from aerial photographs. These impoundments contained viscous wastes from tar processing. They were filled and levelled sometime between 1955 and 1967.

IV. CONTAINMENT

01 CONTAINMENT OF WASTES (Check one)

☐ A. ADEQUATE, SECURE ☐ B. MODERATE ☒ C. INADEQUATE, POOR ☐ D. INSECURE, UNSOUND, DANGEROUS

02 DESCRIPTION OF DRUMS, DIKING, LINERS, BARRIERS, ETC. Former surface impoundments were leveled and tar wastes apparently spread over entire site.
There are several empty, rusted drums in the fill material on the site. There are no dikes, liners, or barriers. Fill is partially covered by gravel.

V. ACCESSIBILITY

01 WASTE EASILY ACCESSIBLE YES ☒ NO

02 COMMENTS

Site is completely enclosed by a secure chain-link fence. Access is strictly controlled through a gate.

VI. SOURCES OF INFORMATION

Alex Guanlao (Environmental Engineer, Pitt-Consol Chemical Co.)

Site Inspection 3/8/83

EPA FORM 2070-13 (7-81)

843010142

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION
01 STATE: NJ
02 SITE NUMBER: D004948188

II. DRINKING WATER SUPPLY

01 TYPE OF DRINKING SUPPLY (Check as applicable)

	SURFACE	WELL
COMMUNITY	A. ☒	B. ☐
NON-COMMUNITY	C. ☐	D. ☐

02 STATUS

ENDANGERED	AFFECTED	MONITORED
A. ☐	B. ☐	C. ☒
D. ☐	E. ☐	F. ☐

03 DISTANCE TO SITE
A. 25 (mi)
B. _____ (mi)

III. GROUNDWATER

01 GROUNDWATER USE IN VICINITY (Check one)

☐ A. ONLY SOURCE FOR DRINKING ☐ B. DRINKING (Other sources available) COMMERCIAL, INDUSTRIAL, IRRIGATION (No other water sources available) ☐ C. COMMERCIAL, INDUSTRIAL, IRRIGATION (Limited other sources available) ☒ D. NOT USED, UNUSEABLE

02 POPULATION SERVED BY GROUND WATER 0

03 DISTANCE TO NEAREST DRINKING WATER WELL 2 (mi)

04 DEPTH TO GROUNDWATER	05 DIRECTION OF GROUNDWATER FLOW	06 DEPTH TO AQUIFER OF CONCERN	07 POTENTIAL YIELD OF AQUIFER	08 SOLE SOURCE AQUIFER
3 (ft)	east	none (ft)	Not applicable (gpm)	☐ YES ☐ NO Not applicable

09 DESCRIPTION OF WELLS (including usage, depth, and location relative to population and buildings)

A nearby firm installed a 700-foot well in 1980. Chloride concentrations ranged from 800 ppm at depth to 3600 ppm near the surface.

10 RECHARGE AREA
☐ YES
☒ NO
COMMENTS

11 DISCHARGE AREA
☒ YES
☐ NO
COMMENTS Site is adjacent to an estuarine reach of the Passaic River

IV. SURFACE WATER

01 SURFACE WATER USE (Check one)

☐ A. RESERVOIR, RECREATION DRINKING WATER SOURCE ☐ B. IRRIGATION, ECONOMICALLY IMPORTANT RESOURCES ☐ C. COMMERCIAL, INDUSTRIAL ☒ D. NOT CURRENTLY USED

02 AFFECTED/POTENTIALLY AFFECTED BODIES OF WATER

NAME:	AFFECTED	DISTANCE TO SITE
Passaic River	☐	0.2 (mi)
	☐	(mi)
	☐	(mi)

V. DEMOGRAPHIC AND PROPERTY INFORMATION

01 TOTAL POPULATION WITHIN

ONE (1) MILE OF SITE	TWO (2) MILES OF SITE	THREE (3) MILES OF SITE
A. 10,000 NO OF PERSONS	B. 40,000 NO OF PERSONS	C. 265,000 NO OF PERSONS

02 DISTANCE TO NEAREST POPULATION 0.5 (mi)

03 NUMBER OF BUILDINGS WITHIN TWO (2) MILES OF SITE
numerous (densely urbanized area)

04 DISTANCE TO NEAREST OFF-SITE BUILDING 0.01 (mi)

05 POPULATION WITHIN VICINITY OF SITE (Provide narrative description of nature of population within vicinity of site (e.g., rural, village, densely populated urban area))

The immediate vicinity of the site is an uninhabited industrial area. A densely populated urban area begins 0.5 miles to the west.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NJ	D004948188

VI. ENVIRONMENTAL INFORMATION

01 PERMEABILITY OF UNSATURATED ZONE (Check one)

☐ A. $10^{-6} - 10^{-8}$ cm/sec ☒ B. $10^{-4} - 10^{-6}$ cm/sec ☐ C. $10^{-4} - 10^{-3}$ cm/sec ☐ D. GREATER THAN 10^{-3} cm/sec

02 PERMEABILITY OF BEDROCK (Check one)

☐ A. IMPERMEABLE (Less than 10^{-6} cm/sec) ☒ B. RELATIVELY IMPERMEABLE ($10^{-4} - 10^{-6}$ cm/sec) ☐ C. RELATIVELY PERMEABLE ($10^{-2} - 10^{-4}$ cm/sec) ☐ D. VERY PERMEABLE (Greater than 10^{-2} cm/sec)

fractures may increase the permeability

03 DEPTH TO BEDROCK	04 DEPTH OF CONTAMINATED SOIL ZONE	05 SOIL pH
65 (ft)	unknown (ft)	unknown

06 NET PRECIPITATION	07 ONE YEAR 24 HOUR RAINFALL	08 SLOPE: SITE SLOPE	DIRECTION OF SITE SLOPE	TERRAIN AVERAGE SLOPE
25 (in)	2.7 (in)	0 %	flat	0 %

09 FLOOD POTENTIAL
SITE IS IN UNKNOWN YEAR FLOODPLAIN

10 estuary 0.1 miles east of site
☒ SITE IS ON BARRIER ISLAND, COASTAL HIGH HAZARD AREA, RIVERINE FLOODWAY

11 DISTANCE TO WETLANDS (5 acre minimum)

ESTUARINE: A. 0.1 (mi)
OTHER: B. 15 (mi)

12 DISTANCE TO CRITICAL HABITAT (of endangered species)

_____ (mi)

ENDANGERED SPECIES: none

13 LAND USE IN VICINITY

DISTANCE TO:

COMMERCIAL/INDUSTRIAL	RESIDENTIAL AREAS, NATIONAL/STATE PARKS, FORESTS, OR WILDLIFE RESERVES	AGRICULTURAL LANDS: PRIME AG LAND	AGRICULTURAL LANDS: AG LAND
A. 0 (mi)	B. 0.5 (mi)	C. _____ (mi)	D. 20 (mi)

14 DESCRIPTION OF SITE IN RELATION TO SURROUNDING TOPOGRAPHY

Site is on flatlands bordering the Passaic River and Newark Bay. There is no surface drainage off the site.

VII. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Herpers, Henry & Barlesdale, Henry. 1951. Preliminary Report on the Geology and Ground-water Supply of the Newark, New Jersey, Area. New Jersey Department of Conservation and Economic Development, Division of Water Policy and Supply, Special Report 10.

U.S. Geological Survey, Elizabeth 7½-minute quadrangle

Nemickas, B. 1974. Bedrock Topography and Thickness of Pleistocene Deposits in Union County and Adjacent Areas, New Jersey. U.S. Geological Survey Micellaneous Geologic Investigations Map 795.

EPA

POTENTIAL HAZARDOUS WASTE E SITE INSPECTION REPORT
PART 6 - SAMPLE AND FIELD INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NJ	D004948188

II. SAMPLES TAKEN

SAMPLE TYPE	01 NUMBER OF SAMPLES TAKEN	02 SAMPLES SENT TO	03 ESTIMATED DATE RESULTS AVAILABLE
GROUNDWATER	none		
SURFACE WATER			
WASTE			
AIR			
RUNOFF			
SPILL			
SOIL			
VEGETATION			
OTHER			

III. FIELD MEASUREMENTS TAKEN

01 TYPE	02 COMMENTS
Organic Vapor Analysis	There were no readings above background using HNu, Photoionization detector.

IV. PHOTOGRAPHS AND MAPS

01 TYPE ☒ GROUND ☒ AERIAL

02 IN CUSTODY OF NUS Corporation (Name of organization or individual)

03 MAPS ☒ YES ☐ NO

04 LOCATION OF MAPS Site Location Map and Site Map attached. Plan map of site in PTT files

V. OTHER FIELD DATA COLLECTED (Provide narrative description)

15 Polaroid photographs and 18 35 mm photographs taken during site visit.

6 representative photos are included in report. Polaroids and remaining 35mm photos are in NUS custody.

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Aerial photographs are in custody of Pitt-Consol Chemical Co.

EPA FORM 2070-13 (7-81)

843010145

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POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 7 - OWNER INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NJ	D004948188

II. CURRENT OWNER(S)

01 NAME	02 D+B NUMBER	08 NAME (PARENT COMPANY)	09 D+B NUMBER
Pitt-Consol Chemicals	none	(Conoco Inc.) Conoco Chemicals, Co.	00-842-7692

03 STREET ADDRESS	04 SIC CODE	10 STREET ADDRESS	11 SIC CODE
191 Doremus Avenue		Highridge Park, Box 1050	

05 CITY	06 STATE	07 ZIP CODE	12 CITY	13 STATE	14 ZIP CODE
Newark	NJ	07105	Stamford	CT	06904

01 NAME	02 D+B NUMBER	08 NAME	09 D+B NUMBER

03 STREET ADDRESS	04 SIC CODE	10 STREET ADDRESS	11 SIC CODE

05 CITY	06 STATE	07 ZIP CODE	12 CITY	13 STATE	14 ZIP CODE

01 NAME	02 D+B NUMBER	08 NAME	09 D+B NUMBER

03 STREET ADDRESS	04 SIC CODE	10 STREET ADDRESS	11 SIC CODE

05 CITY	06 STATE	07 ZIP CODE	12 CITY	13 STATE	14 ZIP CODE

01 NAME	02 D+B NUMBER	08 NAME	09 D+B NUMBER

03 STREET ADDRESS	04 SIC CODE	10 STREET ADDRESS	11 SIC CODE

05 CITY	06 STATE	07 ZIP CODE	12 CITY	13 STATE	14 ZIP CODE

III. PREVIOUS OWNER(S) (List most recent first)

01 NAME	02 D+B NUMBER	03 STREET ADDRESS	04 SIC CODE
Consolidation Coal Co.		purchased by Conoco in 1967	55

05 CITY	06 STATE	07 ZIP CODE

01 NAME	02 D+B NUMBER	03 STREET ADDRESS	04 SIC CODE
Reilly Tar and Chemical Co.		unknown	

05 CITY	06 STATE	07 ZIP CODE
	IN	

01 NAME	02 D+B NUMBER	03 STREET ADDRESS	04 SIC CODE
Butterworth-Judson Corp.		unknown	

05 CITY	06 STATE	07 ZIP CODE

IV. REALTY OWNER(S) (If applicable, list most recent first)

01 NAME	02 D+B NUMBER	03 STREET ADDRESS	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

01 NAME	02 D+B NUMBER	03 STREET ADDRESS	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Harry Garrison (Plant Manager for Pitt-Consol Chemicals)

EPA FORM 2070-13 (7-81)

843010146

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POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 8 - OPERATOR INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NJ	D004948188

II. CURRENT OPERATOR (Provide if different from owner)

01 NAME	02 D+B NUMBER
same as owners	

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

08 YEARS OF OPERATION	09 NAME OF OWNER

OPERATOR'S PARENT COMPANY (If applicable)

10 NAME	11 D+B NUMBER

12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE

14 CITY	15 STATE	16 ZIP CODE

III. PREVIOUS OPERATOR(S) (List most recent first; provide only if different from owner)

01 NAME	02 D+B NUMBER
same as previous owners	

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD

PREVIOUS OPERATORS' PARENT COMPANIES (If applicable)

10 NAME	11 D+B NUMBER

12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE

14 CITY	15 STATE	16 ZIP CODE

01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD

10 NAME	11 D+B NUMBER

12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE

14 CITY	15 STATE	16 ZIP CODE

01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD

10 NAME	11 D+B NUMBER

12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE

14 CITY	15 STATE	16 ZIP CODE

IV. SOURCES OF INFORMATION (Cite specific references, e.g. state files, sample analysis, reports)

Harry Garrison (Plant Manager for Pitt-Consol Chemical Co.)

EPA FORM 2070-13 (7-81)

843010147

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 9 - GENERATOR/TRANSPORTER INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NJ	D004948188

II. ON-SITE GENERATOR

01 NAME	02 D+B NUMBER
Pitt-Consol Chemicals	none

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
191 Doremus Avenue	

05 CITY	06 STATE	07 ZIP CODE
Newark	NJ	07105

III. OFF-SITE GENERATOR(S)

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
None: all wastes were generated onsite.			

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE

IV. TRANSPORTER(S)

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
Present transporters not known			

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Harry Garrison (Plant Manager for Pitt-Consol Chemical Co.)

EPA FORM 2070-13 (7-81)

843010148

EPA

POTENTIAL HAZARDOUS WASTE SI
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NJ	D004948188

II. PAST RESPONSE ACTIVITIES

01 ☐ A. WATER SUPPLY CLOSED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ B. TEMPORARY WATER SUPPLY PROVIDED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ C. PERMANENT WATER SUPPLY PROVIDED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ D. SPILLED MATERIAL REMOVED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ E. CONTAMINATED SOIL REMOVED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ F. WASTE REPACKAGED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ G. WASTE DISPOSED ELSEWHERE — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ H. ON SITE BURIAL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ I. IN SITU CHEMICAL TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ J. IN SITU BIOLOGICAL TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ K. IN SITU PHYSICAL TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ L. ENCAPSULATION — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ M. EMERGENCY WASTE TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ N. CUTOFF WALLS — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ O. EMERGENCY DIKING/SURFACE WATER DIVERSION — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ P. CUTOFF TRENCHES/SUMP — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ Q. SUBSURFACE CUTOFF WALL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NJ	D004948188

II PAST RESPONSE ACTIVITIES (Continued)

01 ☐ R. BARRIER WALLS CONSTRUCTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ☒ S. CAPPING/COVERING — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
Tar fill is partially covered by gravel.

01 ☐ T. BULK TANKAGE REPAIRED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ U. GROUT CURTAIN CONSTRUCTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ V. BOTTOM SEALED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ W. GAS CONTROL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ X. FIRE CONTROL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ Y. LEACHATE TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ Z. AREA EVACUATED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ 1. ACCESS TO SITE RESTRICTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ 2. POPULATION RELOCATED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ 3. OTHER REMEDIAL ACTIVITIES — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

III. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

EPA files, N.J. Department of Environmental Protection files.

EPA FORM 2070-13 (7-81)

843010150

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 11 - ENFORCEMENT INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NJ	D004948188

II. ENFORCEMENT INFORMATION

01 PAST REGULATORY/ENFORCEMENT ACTION ☒ YES ☐ NO

02 DESCRIPTION OF FEDERAL, STATE, LOCAL REGULATORY/ENFORCEMENT ACTION

EPA files contain an Enforcement Report dated 4/15/76, which lists an SPCC number of 47620 for Pitt-Consol. A code violation was reported by the Inspector.

EPA files also contain an incident report to the state office of Hazardous Substance Control from P.O. Allen of the U.S. Coast Guard (212-668-7936), dated May 12, 1981. The report indicates that an "unknown" red liquid was released into the Passaic River by dumping or illegal discharge on May 11, 1981. Pitt-Consol is confirmed as the source of the spilled substance. The case number is 81-05-12-003.

7454

shows no record of incident @ all

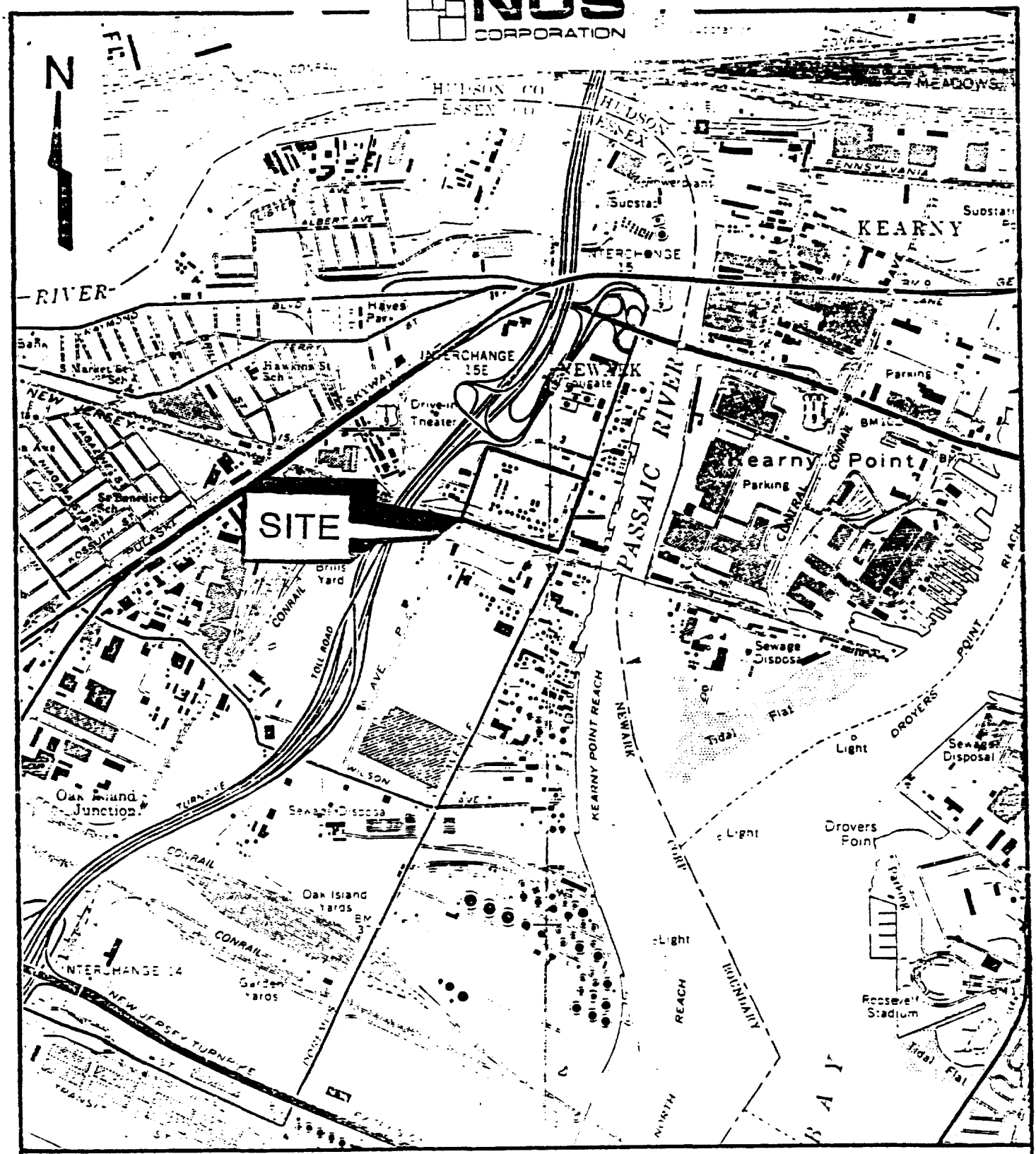
III. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

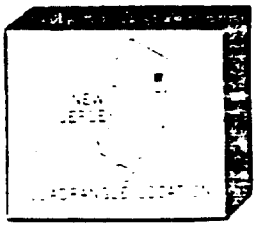
EPA files

EPA FORM 2070-13 (7-81)

843010151

NUS CORPORATION





1000 0 1000 2000 ft

1 : 24,000

FIGURE 1

PITT-CONSOL

NEWARK, N.J.

SITE LOCATION MAP

843010152

NUS CORPORATION

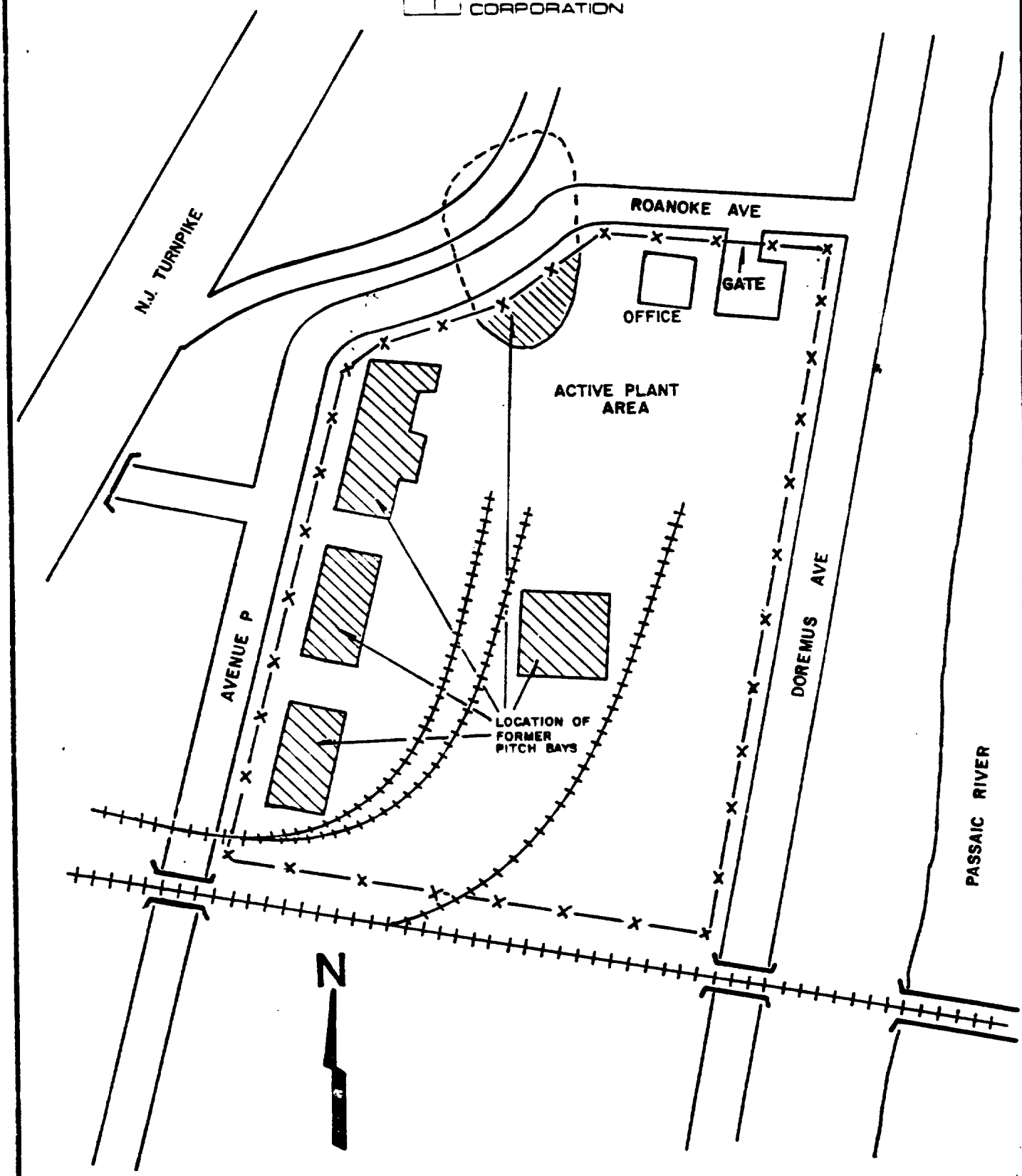


FIGURE 2

PITT-CONSOL
NEWARK, N.J.

SITE MAP

843010153

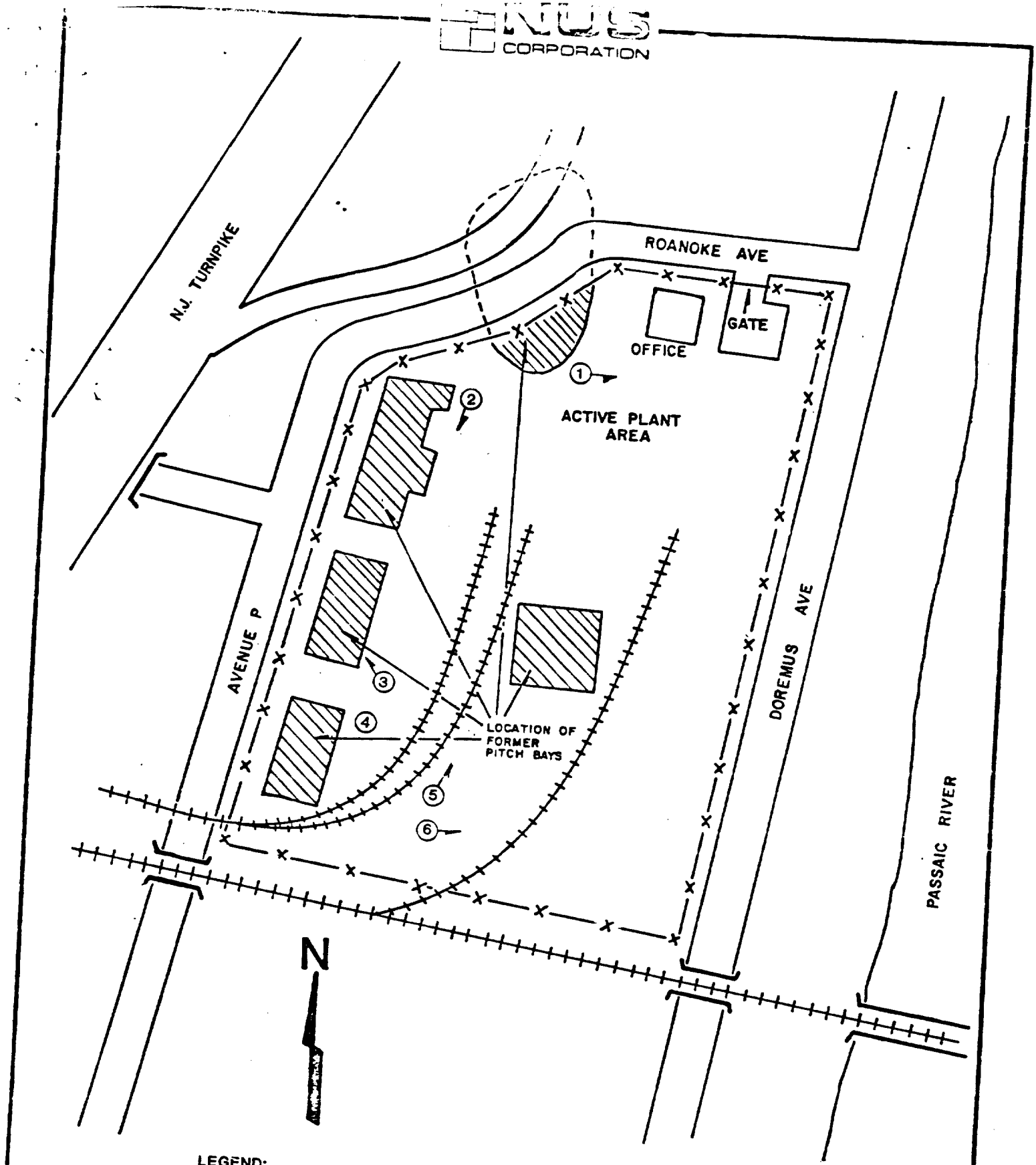


FIGURE 3

PITT-CONSOL
NEWARK, N.J.

PHOTO LOCATION MAP

843010154

INDEX TO PHOTOGRAPHS

1. Gravelled surface in active plant area.

2. Gravelled surface covering former tar waste impoundments

3. View of fill covering former tar waste impoundments.

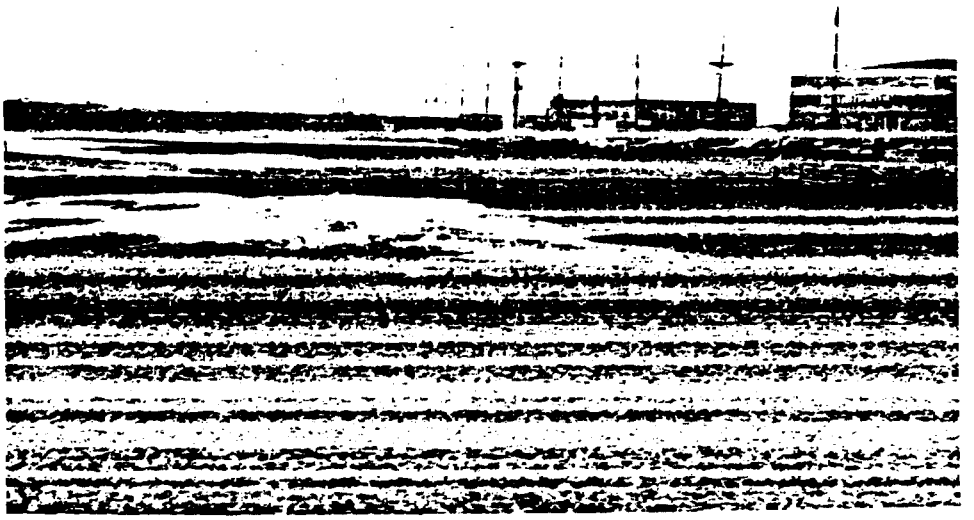
4. Close-up of tar waste on surface above former impoundments.

5. Surface with tar waste visible.

6. Surface with tar waste visible. To the right (south) of photo 5.

NUS CORPORATION

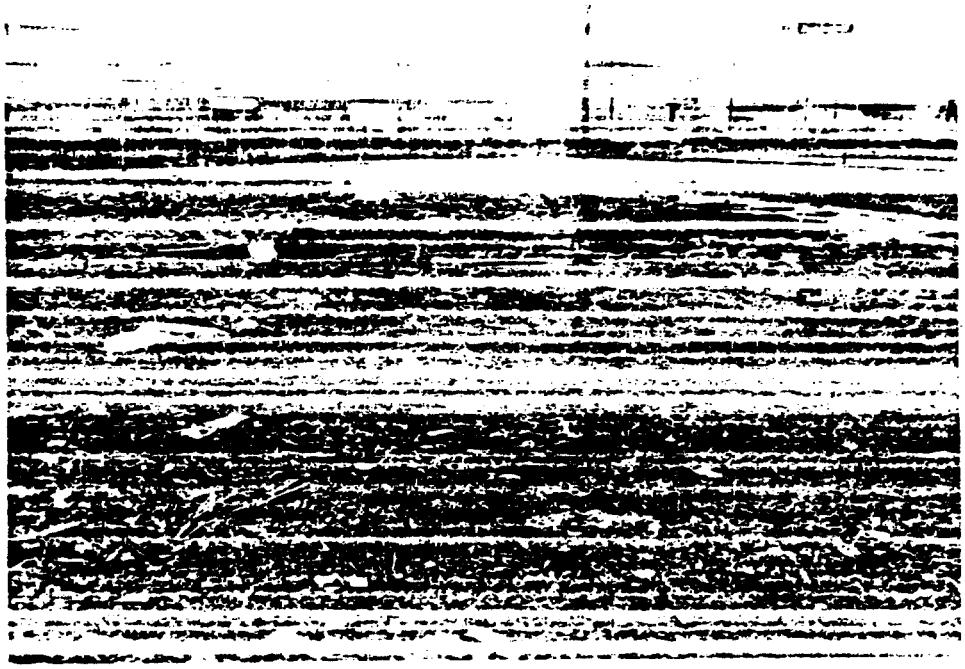
1. Gravelled surface in active plant area.



2. Gravelled surface covering former tar waste impoundments.

Pitt-Consol Chemicals; Newark, NJ
March 2, 1983

NUS CORPORATION

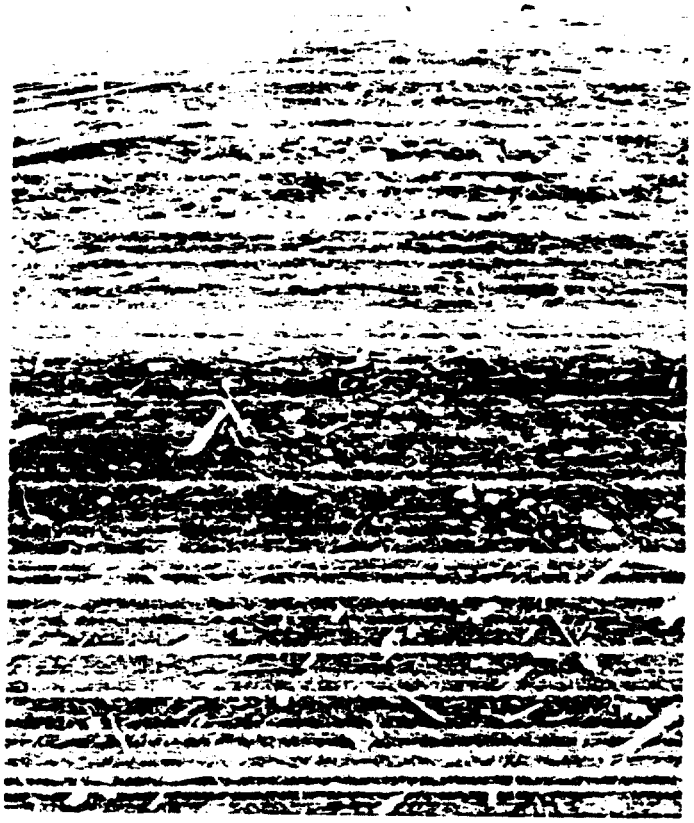


3. View of fill covering former tar waste impoundments.

4. Close-up of tar waste on surface above former impoundment.

Pitt-Consol Chemicals; Newark, NJ
March 2, 1983

NUS CORPORATION



5. Surface with tar waste visible.

Surface with tar waste visible. To the right (south) of photo 5.

[illegible] Chemicals; Newark, NJ

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION II
EDISON, NEW JERSEY 08817

RECEIVED
MAY 19 1983
WILLIAM L. McCLAIN

May 11, 1983

William L. McClain, Attorney
Conoco, Inc.
P.O. Box 2197
Houston, TX 77252

Dear Mr. McClain:

In response to your recent request, we are enclosing a copy of the Site Inspection Report for the investigation conducted on March 2, 1983 at Pitt-Consol Chemical Facility.

We hope this information proves helpful to you.

Sincerely yours,

Richard D. Spear, Ph.D.
Chief
Surveillance and Monitoring Branch

Enclosure: As Stated

5/26/83

843010159

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 1 - SITE LOCATION AND INSPECTION INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NJ	D004948188

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site)	02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER
Pitt-Consol Chemical Co.	191 Doremus Avenue

03 CITY	04 STATE	05 ZIP CODE	06 COUNTY	07 COUNTY CODE	08 CONG DIST
Newark	NJ	07105	Essex	013	10

09 COORDINATES LATITUDE	LONGITUDE	10 TYPE OF OWNERSHIP (Check one)
40° 43' 12".N	74° 07' 30".W	☒ A. PRIVATE ☐ B. FEDERAL ☐ C. STATE ☐ D. COUNTY ☐ E. MUNICIPAL ☐ F. OTHER ☐ G. UNKNOWN

III. INSPECTION INFORMATION

01 DATE OF INSPECTION (MONTH DAY YEAR)	02 SITE STATUS	03 YEARS OF OPERATION (BEGINNING YEAR / ENDING YEAR)
03 02 83	☒ ACTIVE ☐ INACTIVE	1917 / active ☐ UNKNOWN

04 AGENCY PERFORMING INSPECTION (Check all that apply)

☐ A. EPA ☒ B. EPA CONTRACTOR NUS Corporation (Name of firm) ☐ C. MUNICIPAL ☐ D. MUNICIPAL CONTRACTOR _____ (Name of firm)
☐ E. STATE ☐ F. STATE CONTRACTOR _____ (Name of firm) ☐ G. OTHER _____ (Specify)

05 CHIEF INSPECTOR	06 TITLE	07 ORGANIZATION	08 TELEPHONE NO.
Scott Stanford	Geologist	NUS Corp.	201) 225-6160
09 OTHER INSPECTORS	**10 TITLE**	**11 ORGANIZATION**	**12 TELEPHONE NO**
Alan Woodard	Aquatic Biologist	NUS Corp.	201) 225-6160
Rich Dabal	Geologist	NUS Corp.	(201225-6160
			( )
			( )
			( )

13 SITE REPRESENTATIVES INTERVIEWED	14 TITLE	15 ADDRESS	16 TELEPHONE NO
Harry Garrison	Plant Manager	191 Doremus Ave. Newark, NJ 07105	201) 344-3800
David Hollis	Process Superintendent	191 Doremus Ave. Newark, NJ 07105	201) 344-3800
Alex Guanlao	Environmntl Engr.	191 Doremus Ave. Newark, NJ 07105	201) 344-3800
			( )
			( )
			( )

17 ACCESS GAINED BY (Check one)	18 TIME OF INSPECTION	19 WEATHER CONDITIONS
X PERMISSION ☐ WARRANT	10:00am	Partly cloudy, windy, temperatures in 40's

IV. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency/Organization)	03 TELEPHONE NO
Mark Haulenbeek	Environmental Protection Agency	201) 321-6776

04 PERSON RESPONSIBLE FOR SITE INSPECTION FORM	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NO	08 DATE (MONTH DAY YEAR)
Scott Stanford	NUS Corp.	Region II FIT	(201) 225-6160	03 08 83

EPA FORM 2070-13 (7-81)

843010160

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION

01 STATE: NJ | 02 SITE NUMBER: D004948188

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)

- X A SOLID
- B POWDER FINES
- X C SLUDGE
- D OTHER _____ (Specify)
- E SLURRY
- F LIQUID
- G GAS

02 WASTE QUANTITY AT SITE (Measures of waste quantities must be independent)

TONS _____
CUBIC YARDS 24,200
NO OF DRUMS _____

03 WASTE CHARACTERISTICS (Check all that apply)

- X A TOXIC
- X B CORROSIVE
- C RADIOACTIVE
- D PERSISTENT
- X E SOLUBLE
- F INFECTIOUS
- G FLAMMABLE
- X H IGNITABLE
- I HIGHLY VOLATILE
- J EXPLOSIVE
- X K REACTIVE
- L INCOMPATIBLE
- M NOT APPLICABLE

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE			
OLW	OILY WASTE	24,200	cubic	Quantity based on
SOL	SOLVENTS		yards	impoundments visible on
PSD	PESTICIDES			aerial photographs taken
OCC	OTHER ORGANIC CHEMICALS			in 1954. Impoundments covered
IOC	INORGANIC CHEMICALS	20-30	cubic yds	acres and were 3 feet deep.
ACD	ACIDS	unknown		Asbestos from old piping.
BAS	BASES			Picric acid formerly produced
MES	HEAVY METALS			

IV. HAZARDOUS SUBSTANCES (See Appendix for most frequently cited CAS Numbers)

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
IOC	asbestos		bagged, in pile, waiting to be transported		
			off-site.		
OCC	petrochemical derivatives		Formerly in SI, SI was levelled and covered		
	(naphthalene, cresylic		with gravel prior to 1967. Similar wastes		
	acid, phenol, coke, roofing		presently generated are all transported off-		
	pitch and other resins)		site.		
ACD	picric acid		UNknown		

V. FEEDSTOCKS (See Appendix for CAS Numbers)

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS	information not available		FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION

INterviews with Mr. Harry Garrison, Plant Manager, during site visit, 3/2/83.
Inspection of aerial photographs in custody of Pitt-Consol Chemical Co.

EPA FORM 2070-13 (7-81)

843010161

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION
01 STATE: NJ | 02 SITE NUMBER: D004948188

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 [X] A GROUNDWATER CONTAMINATION — 02 [ ] OBSERVED (DATE ____) — [X] POTENTIAL — [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 0
04 NARRATIVE DESCRIPTION

Water table is close to the surface and is probably in contact with the material in the former pitch bays. The groundwater in the area is brackish and is not used for water supply.

01 [X] B SURFACE WATER CONTAMINATION — 02 [ ] OBSERVED (DATE ____) — [X] POTENTIAL — [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 0
04 NARRATIVE DESCRIPTION

High water table discharges into Passaic River and Newark Bay. Contamination in ground water will reach these water bodies. Water from Passaic River is only used for industrial purposes.

01 [ ] C CONTAMINATION OF AIR — 02 [ ] OBSERVED (DATE ____) — [ ] POTENTIAL — [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: ____
04 NARRATIVE DESCRIPTION

No potential exists.

01 [ ] D FIRE/EXPLOSIVE CONDITIONS — 02 [ ] OBSERVED (DATE ____) — [ ] POTENTIAL — [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: ____
04 NARRATIVE DESCRIPTION

No potential exits.

01 [X] E DIRECT CONTACT — 02 [ ] OBSERVED (DATE ____) — [X] POTENTIAL — [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 73
04 NARRATIVE DESCRIPTION

Workers in the facility could come into contact with contaminated soil. Site is inaccessible to the general public.

01 [X] F CONTAMINATION OF SOIL — 02 [ ] OBSERVED (DATE 3/2/83) — [ ] POTENTIAL — [ ] ALLEGED
03 AREA POTENTIALLY AFFECTED: 10 Acres
04 NARRATIVE DESCRIPTION

Tar wastes are exposed in the fill in the southern section of the site. The ground surface elsewhere on the site is covered by a layer of gravel.

01 [ ] G DRINKING WATER CONTAMINATION — 02 [ ] OBSERVED (DATE ____) — [ ] POTENTIAL — [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: ____
04 NARRATIVE DESCRIPTION

No potential exists.

01 [X] H WORKER EXPOSURE/INJURY — 02 [ ] OBSERVED (DATE ____) — [X] POTENTIAL — [ ] ALLEGED
03 WORKERS POTENTIALLY AFFECTED: 73
04 NARRATIVE DESCRIPTION

Workers in the facility could come into contact with contaminated soil and water.

01 [ ] I POPULATION EXPOSURE/INJURY — 02 [ ] OBSERVED (DATE ____) — [ ] POTENTIAL — [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: ____
04 NARRATIVE DESCRIPTION

No potential exists.

10

10

843010163

CONOCO

Copy to [illegible]
Pitt Consol file

Interoffice Communication

(1) ~~GJH~~
(2) Other Site Newark

To Administrative Section, Treasury

From Bradley I. Raffle, Legal, Houston

Date September 17, 1984

Subject CONOCO, INC. DOCKET No. II TSCA-PCB-84-0104

RECEIVED
SEP 19 1984

Background

On February 29, 1984, an Administrative Complaint was filed by the U.S. Environmental Protection Agency, Region II (EPA), against Conoco's Pitt-Consol facility in Newark, New Jersey. The complaint alleged violations of Sections 6 (e) and 15 of the Toxic Substances Control Act and EPA's regulations promulgated thereunder at 40 CFR 761. The complaint sought an administrative penalty of $28,000.

Conoco and EPA have agreed to settle the matter for $21,000. A copy of the Consent Decree to be signed by Conoco and EPA is attached for your information. Conoco's outside counsel will sign the Consent Decree for Conoco. Also attached is a copy of an authorization to pay up to $28,000 to settle this matter.

Request

I would appreciate your making out a check, payable to "Treasurer of the United States" in the amount of $21,000. The check should be drawn on Account number 8611-400-61-32-4.

If you have any questions, please call me at 672-3058.

Bradley I. Raffle
Supervising Counsel

/asi

Encs.

cc: J. Neeld, Env. Cons., Houston
C. Everett, Du Pont Legal, Wilmington
B. D. Ratliff, Du Pont Petrochemicals, Wilmington

EIP 130001700
843010164

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843010165

State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WATER RESOURCES
CN 029
TRENTON, NEW JERSEY 08625
Water Quality Management

JOHN W. GASTON JR., P.E.
DIRECTOR

DIRK C. HOFMAN, P.E.
DEPUTY DIRECTOR

RECEIVED
APR 22 1985
ENVIRONMENTAL AFFAIRS
PETROCHEMICALS DEPT.

2 WKS

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

APR 08 1985

Pitt-Consol Chemical
c/o E.I. du Pont de Nemours & Co.
Petrochemicals Department
1007 Market Street
Wilmington, Delaware 19898
Attn: B.D. Ratliff

Re: Groundwater Monitoring Permit for the Pitt-Consol Chemical site in Newark, New Jersey, NJ0060704

Dear Mr. Ratliff:

Attached is a draft New Jersey Pollutant Discharge Elimination System (NJPDES) permit that has been issued pursuant to N.J.A.C. 7:14A-1 et seq. This NJPDES permit is issued under the authority of the New Jersey Water Pollution Control Act and upon issuance of the permit shall supersede any previously existing ground water monitoring requirements that the above named facility may have implemented.

Please be aware of the following provisions of this permit:

1) New ground water monitoring wells must be drilled within the time specified in the permit and certifications to location and construction shall be submitted in accordance with the conditions of the permit.

2) New Jersey State well permits shall be obtained for all new wells and any existing wells that were drilled without valid well permits.

3) Samples must be analyzed by a New Jersey Certified laboratory at the frequency and for the parameters specified in the permit.

4) Data must be submitted on the enclosed state forms. Data which is not submitted on the state forms does not meet the

reporting requirements of this permit. Data submitted for water analysis from uncertified wells is likewise unacceptable and does not fulfill the reporting requirements of the permit.

5) Please be advised that failure to meet the conditions of the permit can result in the imposition of substantial administrative, civil, and criminal penalties.

The appearance of the public notice in the newspapers marks the commencement of the mandatory 30-day public comment period required by Section 8.1 of the NJPDES regulations. During this time frame, both the permittee and concerned citizens may offer comments regarding the terms and conditions of this draft permit. All comments must be submitted within the appropriate time frame and in writing to:

Administrator
NJDEP Division of Water Resources
Water Quality Management Element
CN-029
Trenton, New Jersey 08625

If you have any questions regarding this permit, please contact David Mooney of the Land Application of Wastewater Section of the Bureau of Ground Water Quality Management (609) 292-0424.

Sincerely yours,

John J. Trela, Ph.D., Chief
Bureau of Ground Water
Quality Management

WQM166
Enclosures

843010167

New Jersey Department of Environmental Protection
Division of Water Resources
Water Quality Management Element
Bureau of Ground Water Quality Management
CN-029
Trenton, N.J. 08625
(609) 292-0424

PUBLIC NOTICE

Notice is hereby given that the New Jersey Department of Environmental Protection, Division of Water Resources proposes to issue a permit to:

Pitt-Consol Chemical
c/o E.I. du Pont de Nemours & Co.
Petrochemicals Department
1007 Market Street
Wilmington, Delaware 19898

to monitor the ground water at the Pitt-Consol Chemical site at 191 Doremus Avenue, Newark, New Jersey.

Pitt-Consol Chemical formerly operated a chemical manufacturing plant at the Newark facility that was primarily involved in processing products related to coal tars and their derivatives. This permit requires the permittee to install and sample ground water monitoring wells to determine the facility's impact on the quality of groundwater at the site.

This notice is being given to inform the public that NJDEP has prepared a draft NEW JERSEY POLLUTANT DISCHARGE ELIMINATION SYSTEM (NJPDES) action (NJPDES NO. NJ 0060704) , in accordance with the provisions of the New Jersey "Water Pollution Control Act" (N.J.S.A. 58:10A-1 et seq.) and its implementing regulations (N.J.A.C. 7:14A-1 et seq.)

This is an existing facility and implementation of the New Jersey Pollutant Discharge Elimination System requirements are the enforcement mechanism by which existing pollutant discharges are brought into conformance and compliance with laws, regulations and standards. The pollution control requirements are those conditions necessary to restrict the discharge of pollutants and protect the public health and the environment.

The draft document prepared by NJDEP is based on the administrative record which is on file at the offices of the NJDEP, Division of Water Resources, located at 1474 Prospect Street in the Township of Ewing, Mercer County, New Jersey. It

is available for inspection, by appointment, between 8:30 A.M. and 4:00 P.M., Monday through Friday. Appointments for inspection may be scheduled by calling (609) 633-6620.

Interested persons may submit written comments on the draft to the Administrator, Water Quality Management, at the address cited above. All comments shall be submitted within 30 days of the date of this public notice. All persons, including the owner or operator, who believe that any condition of this draft document is inappropriate or that the Department's tentative decision to issue this draft document as a final agency action is inappropriate, must raise all reasonably ascertainable issues and submit all reasonably available arguments and factual grounds supporting their position, including all supporting material, by the close of the public comment period. All comments submitted by interested persons in response to this notice, within the time limit, will be considered by the NJDEP with respect to the requirements being applied to this facility. After the close of the public comment period, the Department will make a final decision. The Department will respond to all significant and timely comments when a final decision is made. The owner or operator and each person who has submitted written comments will receive notice of NJDEP's final decision.

Any interested person may request in writing that NJDEP hold a nonadversarial public hearing on the draft document. This request shall state the nature of the issues to be raised in the proposed hearing and shall be submitted within 30 days of the date of this public notice to the Administrator, Water Quality Management at the address cited above. A public hearing will be conducted whenever the NJDEP determines that there is a significant degree of public interest in the permit decision. If a public hearing is held, the public comment period in this notice shall automatically be extended to the close of the public hearing.

Additional information concerning the Water Pollution Control requirements applied to this facility (NJPDES Permit No. NJ0060704) may be obtained between the hours of 8:00 A.M. and 4:30 P.M., Monday through Friday from David W. Mooney, Bureau of Ground Water Quality Management, (609) 292-0424.

Arnold Schiffman
Administrator
Water Quality Management

FACT SHEET
FOR THE NJPDES PERMIT TO DISCHARGE
INTO THE GROUND WATERS OF THE STATE

Name and Address of Applicant:

Pitt-Consol Chemicals
c/o E.I. du Pont de Nemours & Co.
Petrochemicals Department
1007 Market Street
Wilmington, Delaware 19898

Name and Address of Facility Where Discharge Occurs:

Pitt-Consul Chemicals
191 Doremus Avenue
Newark, Essex Co., New Jersey 07105

Receiving Water:

Ground Waters of the State. The discharge is to fill material and glacial outwash of Wisconsin Age that overlie the Brunswick Formation of the Triassic Period.

Description of Facility:

Pitt Consol in Newark was primarily involved in the manufacture of alkylated phenols, particularly methyl phenol (cresol). There was an alkylation unit, a natural acid plant, a synthetic cresol plant, and several above ground tank and drum storage areas. The facility ceased major manufacturing operations on May 23, 1983 and submitted certification by a NJ licensed Professional Engineer that the closure plan had been completed in accordance with the plan approved by the NJDEP Division of Waste Management's Bureau of Hazardous Waste Engineering. Fourteen shallow monitoring wells and one deep well have been installed at the site. Two in-ground concrete sumps for the collection of storm water are still in existence and discharge to the Passaic Valley Sewage Commission.

Description of Discharge:

This site had two underground gasoline tanks and two underground tanks used to collect raw material and product drainage and flushings. They were emptied and decontaminated in the closure procedure. There were also large tank and drum storage areas. Ground water pollution from spills in the unsaturated zone is likely. An aerial photography review of the site from 1944 to 1984 by Woodward-Clyde Consultants indicated that seven lagoons were used at various times for the storage of liquid materials at the facility. A black oily creosote-like material was reported to be present throughout the subsurface at the site.

Permit Conditions:

According to the attached General and Specific Conditions.

CHECKLIST OF PARTS AND MODULES COMPRISING THIS NJPDES PERMIT

1. Cover Page

2. Checklist

3. Part I (General Conditions for All NJPDES Discharge Permits)

4. Part II - Additional General Conditions for the types of NJPDES Permits checked as follows:

   ____ Part II - A (Municipal/Sanitary)

   ____ Part II - B/C (Industrial/Commercial/Thermal)

   ____ Part II - L (SIU)

   ____ Part II - IWMF (Industrial Waste Management Facility)

   ____ Part II - DGW Specify type(s): _____

5. Part III - Effluent Limitations and Monitoring Requirements

   ____ Part III - A

   ____ Part III - B/C

   ____ Part III - L

   X Part III - DGW Specify type(s): Ground Water Monitoring and Limitations

6. Part IV - Special Conditions

   ____ Part IV - A

   ____ Part IV - B/C

   ____ Part IV - L

   ____ Part IV - IWMF

   X Part IV - DGW

STATE OF NEW JERSEY
DEPARTMENT OF ENVIRONMENTAL PROTECTION
CN 402
Trenton, N.J. 08625

PERMIT

he New Jersey Department of Environmental Protection grants this permit in accordance with your application, attachments ccompanying same application, and applicable laws and regulations. This permit is also subject to the further conditions nd stipulations enumerated in the supporting documents which are agreed to by the permittee upon acceptance of the permit.

ermit No.	Issuance Date	Effective Date	Expiration Date
NJ0060704			

ame and Address of Applicant	Location of Activity/Facility	Name and Address of Owner
itt-Consol Chemical /o E.I. du Pont de Nemours & Co. 007 Market Street lmington, DE 19898	Pitt-Consol Chemical Site 191 Doremus Avenue Newark, Essex Co., New Jersey 07105	same as applicant

ssuing Division	Type of Permit	Statute(s)	Application No.
Water Resources	NJPDES DGW	N.J.S.A. 58:10A-1 et seq.	

his permit grants permission to:

Requires the permittee to conduct a ground water monitoring program according to conditions herein. The permittee formerly operated a petrochemical manufacturing plant at the Doremus Avenue site which was primarily involved in processing coal tars and their derivatives. This permit requires the permittee to install and sample ground water monitoring wells to determine the facility's impact on the quality of ground water at the site.

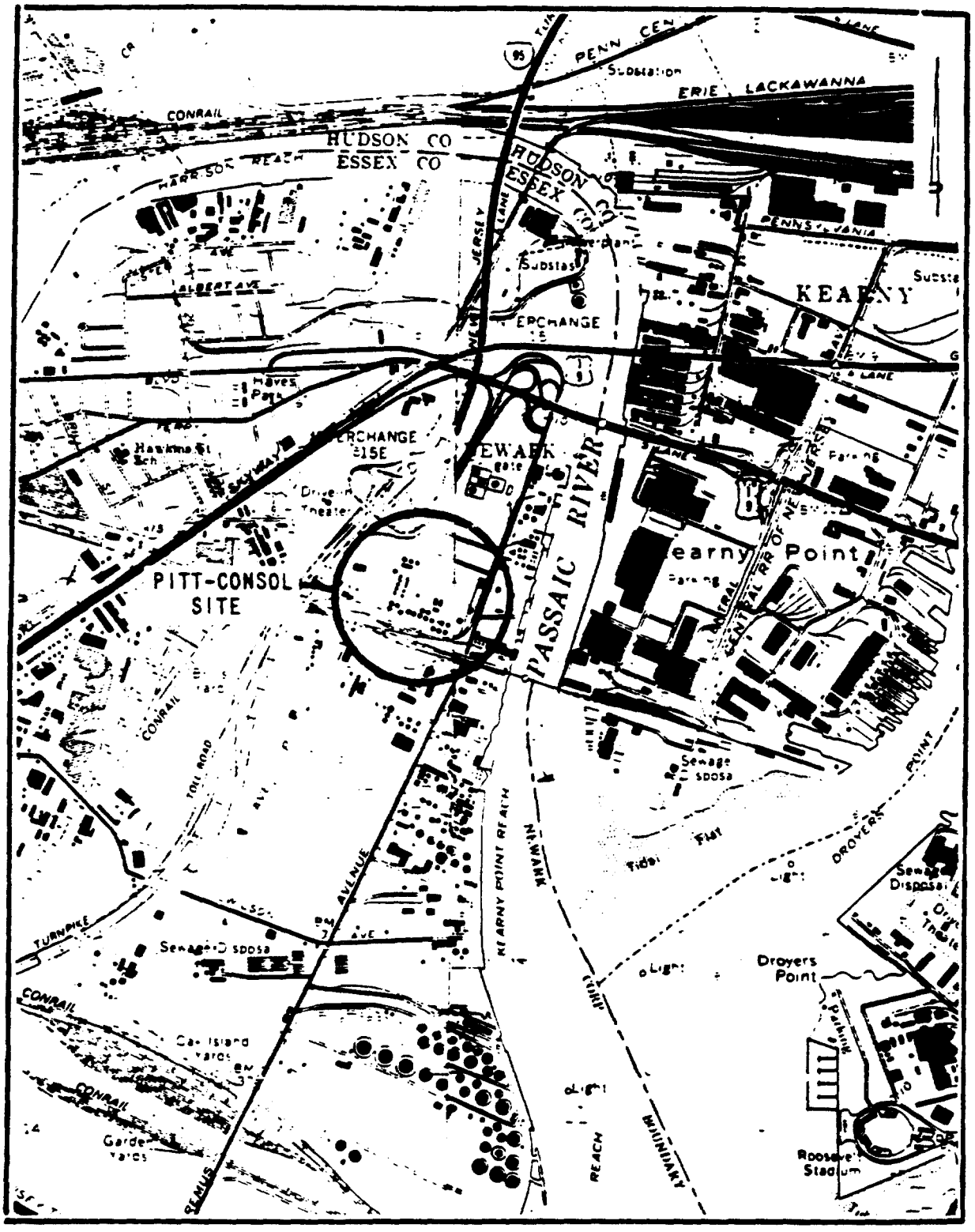
pproved by the Department of Environmental Protection

DATE

The word permit means "approval, certification, registration, etc."

(GENERAL CONDITIONS ARE ON THE REVERSE SIDE.)

843010172



REGIONAL LOCATION PLAN

NJ0060704

843010173

Form T-VWX-014
5/83

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WATER RESOURCES

MONITORING REPORT – TRANSMITTAL SHEET

NJPDES NO.	REPORTING PERIOD MO. YR.		MO. YR.
0 0 6 0 7 0 4		THRU	

PERMITTEE: Name Pitt-Consol Chemical - c/o E.I. du Pont de Nemours & Co.

Address 1007 Market Street

Wilmington, DE 19898

FACILITY: Name Pitt-Consol Chemical

Address 191 Doremus Ave.

Newark, NJ 07105 (County) Essex

Telephone ( )

FORMS ATTACHED *(Indicate Quantity of Each)*

SLUDGE REPORTS - SANITARY

☐ T-VWX-007 ☐ T-VWX-008 ☐ T-VWX-009

SLUDGE REPORTS - INDUSTRIAL

☐ T-VWX-010A ☐ T-VWX-010B

WASTEWATER REPORTS

☐ T-VWX-011 ☐ T-VWX-012 ☐ T-VWX-013

GROUNDWATER REPORTS

8 VWX-015(A,B) ☐ VWX-016 ☐ VWX-017

NPDES DISCHARGE MONITORING REPORT

☐ EPA FORM 3320-1

OPERATING EXCEPTIONS

	YES	NO
DYE TESTING	☐	☐
TEMPORARY BYPASSING	☐	☐
DISINFECTION INTERRUPTION	☐	☐
MONITORING MALFUNCTIONS	☐	☐
UNITS OUT OF OPERATION	☐	☐
OTHER	☐	☐

(Detail any "Yes" on reverse side in appropriate space.)

NOTE: *The "Hours Attended at Plant" on the reverse of this sheet must also be completed.*

AUTHENTICATION - 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 the submitted 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.

LICENSED OPERATOR

Name *(Printed)* _____

Grade & Registry No. _____

Signature _____

Date _____

PRINCIPAL EXECUTIVE OFFICER or
DULY AUTHORIZED REPRESENTATIVE

Name *(Printed)* _____

Title *(Printed)* _____

Signature _____

Date _____

843010174

GROUND WATER MONITORING REQUIREMENTS AND LIMITATIONS

The permittee shall install three additional deep ground water monitoring wells below the peaty clay layer in the locations shown in Figure 1, Monitor Well Locations. These wells shall be double cased, with the outer casing grouted into the peaty clay layer. (The procedure used to install P-11D as described in the Hydrogeologic Investigation Phase II by Woodward-Clyde Consultants shall be followed.) Wells P-5, P-10, P-13, P-14, P-11D, and the three additional deep wells shall be sampled according to the schedule below. All ground water elevations must be determined prior to pumping and sampling the wells. Sampling of the wells shall be performed according to the methodology specified in Section 6.12 of the NJPDES regulations and the Departments's Field Procedures Manual for Water Data Acquisition. The permittee shall sample for all parameters listed below. Sampling shall be performed and reported during the months which are specified for that parameter.

P-5D P-13D P-14D

has lag?

PARAMETER	LIMITATION		SAMPLING MONTH	SAMPLE TYPE	REPORTING MONTH
Elevation of top of monitor well casing with cap removed (to be determined once but reported as indicated)			--	N/A	MarJunSepDec
Depth to Water Table from top of casing with cap removed prior to sampling			FebMayAugNov	N/A	MarJunSepDec
Depth to Water Table from original ground level prior to sampling			FebMayAugNov	N/A	MarJunSepDec
Toxic Pollutants* plus 10 Acid Compounds		ppb	once, with first sampling	grab	month after sampling
Phenolics, Total	0.3	ppm	FebMayAugNov	grab	MarJunSepDec
pH	5-9	S.U.	FebMayAugNov	grab	MarJunSepDec
Total Dissolved Solids (TDS)	500	ppm	FebMayAugNov	grab	MarJunSepDec
Total Organic Carbon (TOC)	---	ppm	FebMayAugNov	grab	MarJunSepDec
Total Organic Halogen (TOX or TOH)	--	ppm	FebMayAugNov	grab	MarJunSepDec

* GC/MS scan for volatile organic compounds, acid extractable organic compounds plus identification of the next ten largest peaks, and base/neutral organic compounds, GC analysis for

pesticides and PCBs, and analyses for metals and total cyanides as identified in Tables II and III of Appendix B of the NJPDES regulations. The concentration for specific parameters shall be the 10-6 Cancer Risk for those items listed in Appendix F of the NJPDES regulations which have a 10-6 Cancer Risk limit. In no case shall the total concentration for all volatile organic chemicals exceed 10 ppb. The total concentration for all volatiles, acid extractable and base neutral organic toxic pollutants shall not exceed a concentration of 50 ppb.

The permittee shall sample and analyze the eight monitoring wells identified above on the first round of sampling for Toxic Pollutants. Additional samples and analyses may be required, based upon the results of the initial analyses.

Satisfactory ground water monitoring wells are defined in Section 6.13 of the NJPDES regulations and shall be subject to Departmental approval. If ground water monitoring wells do not meet these standards, they must be replaced with new wells meeting Departmental standards.

A Ground Water Monitoring Well Certification (Forms A and B) shall be completed for each existing and proposed ground water monitoring well. Information for each well must be shown on a separate form. For an existing well, if information required on the Ground Water Monitoring Certification (Forms A and B) cannot be determined or the ground water monitoring well is not adequately constructed to meet the requirements of this Permit, the Department reserves the right to require a replacement well. Criteria to be used by the Department in judging the adequacy of a well will be related to the ability of the well to provide a representative ground water sample at any time of the year specified by the Permit. Any replacement well must be installed within a 10 foot radius of the existing well. Inadequate or damaged existing wells must be properly sealed pursuant to N.J.A.C. 58:4A-4.1. Instructions regarding sealing may be obtained by contacting the Water Allocation Office (609) 292-0580.

Special Conditions for Pitt-Consol's NJPDES/DGW Permit

1. All ground water monitoring wells shall be installed by a licensed New Jersey well driller, pursuant to N.J.S.A. 58:4A-6. A valid New Jersey permit, issued pursuant to N.J.S.A. 58:4A-14, to drill a well must be obtained from the Water Allocation Office, (609) 292-0580 of the Division of Water Resources prior to installation of any ground water monitoring wells. The permittee shall provide the Land Application of Wastewater Section of the Bureau of Ground Water Discharge Permits a minimum of two weeks notification prior to the installation of any ground water monitoring wells required within this permit.

2. All new wells shall be constructed according to the attached Department specifications. All new wells shall be logged using the U.S.D.A. Soil Textural Classification System. For sites where inadequate geological information is available to properly design the well specifications, a Department geologist will finalize the well specifications prior to drilling. Failure to obtain prior Departmental approval may result in disapproval of the wells as constructed and may require new wells to be installed.

3. A ground water monitoring well as required by this permit is a monitoring device under N.J.S.A. 58:10A-10 and as such the permittee is required to maintain the wells in proper working order at all times. The permittee is further required to take any and all reasonable steps necessary to limit public access by constructing fences, barricades, or any other structures or means necessary to restrict access to the ground water monitoring well(s). Said structures shall be maintained to restrict access.

4. If the monitoring wells are damaged or are otherwise rendered inadequate for their intended purpose, the Administrator, Water Quality Management Element, shall be notified within five days in writing indicating:

   (a) Which wells were damaged or rendered inadequate for their intended use;

   (b) The cause and extent of damage or the reason for the inadequacy;

   (c) If the sampling schedule as required in this permit will be violated or if the results of the sampling may reasonably become misleading;

(d) The date that the well will again be operational. Damaged wells must be replaced or repaired within thirty (30) days after the damage has occurred. The wells must be sampled within five (5) days after they have been installed. A replacement well must meet the construction requirements established by the Department. A valid New Jersey well permit is required prior to the installation of the replacement well;

(e) The next date that the well will be sampled.

Failure to follow these procedures is a violation of this permit and may subject the permittee to the provisions of N.J.S.A. 58:10A-10.

5. The permittee must obtain and analyze samples from the ground water monitoring system as required by this permit pursuant to the NJDEP Field Procedures Manual for Water Data Acquisition and as delineated in N.J.A.C. 7:14A-6.12. A chain of custody record for each sample shall be maintained at the facility and may be requested and/or examined by the Department. The permittee or his/her agent shall evacuate the ground water monitoring well(s) according to the procedures identified in Section 6.12 of the NJPDES regulations no more than four (4) hours prior to sample collection.

6. All samples shall be analyzed by a New Jersey Certified Laboratory. Sampling results shall be reported on forms provided by the Division of Water Resources and attached as Part III of this permit. Information not reported on the above specified forms shall not be deemed to fulfill the reporting requirements of this permit. It shall be the permittee's responsibility to maintain an adequate supply of forms to report ground water monitoring data to the Department.

7. All permit required ground water monitoring wells, piezometers and/or lysimeters shall be installed within 30 days of the Effective Date of the permit.

8. Within 30 days of the Effective Date of the permit, the permittee shall identify to the Department by written notification all ground water monitoring wells or piezometers installed on the permittee's property during the period in which the permittee owned or had control of the property. The locations of these ground water monitoring wells and/or piezometers shall be shown on a plot plan drawn to a scale suitable to the Department.

9. The permittee shall submit to the Department "Ground Water Monitoring Well Certifications - Forms A and B" for each ground water monitoring well which is required to be sampled in the permit. The Ground Water Monitoring Well Certifications shall be submitted to:

   David W. Mooney
   NJDEP-Div. of Water Resources
   Bur. of Ground Water Quality Management
   CN-029
   Trenton, NJ 08625

   within 60 days of the Effective Date of the permit.

10. The permittee shall sample the ground water monitoring wells in the following order:

1.	P-5D	5.	P-5
2.	P-13D	6.	P-14 — Sub. P-1
3.	P-14D	7.	P-13
4.	P-11D	8.	P-10

11. The following sections of the "General Conditions for all NJPDES Discharge Permits" (Part I of this permit) do not apply to this facility:

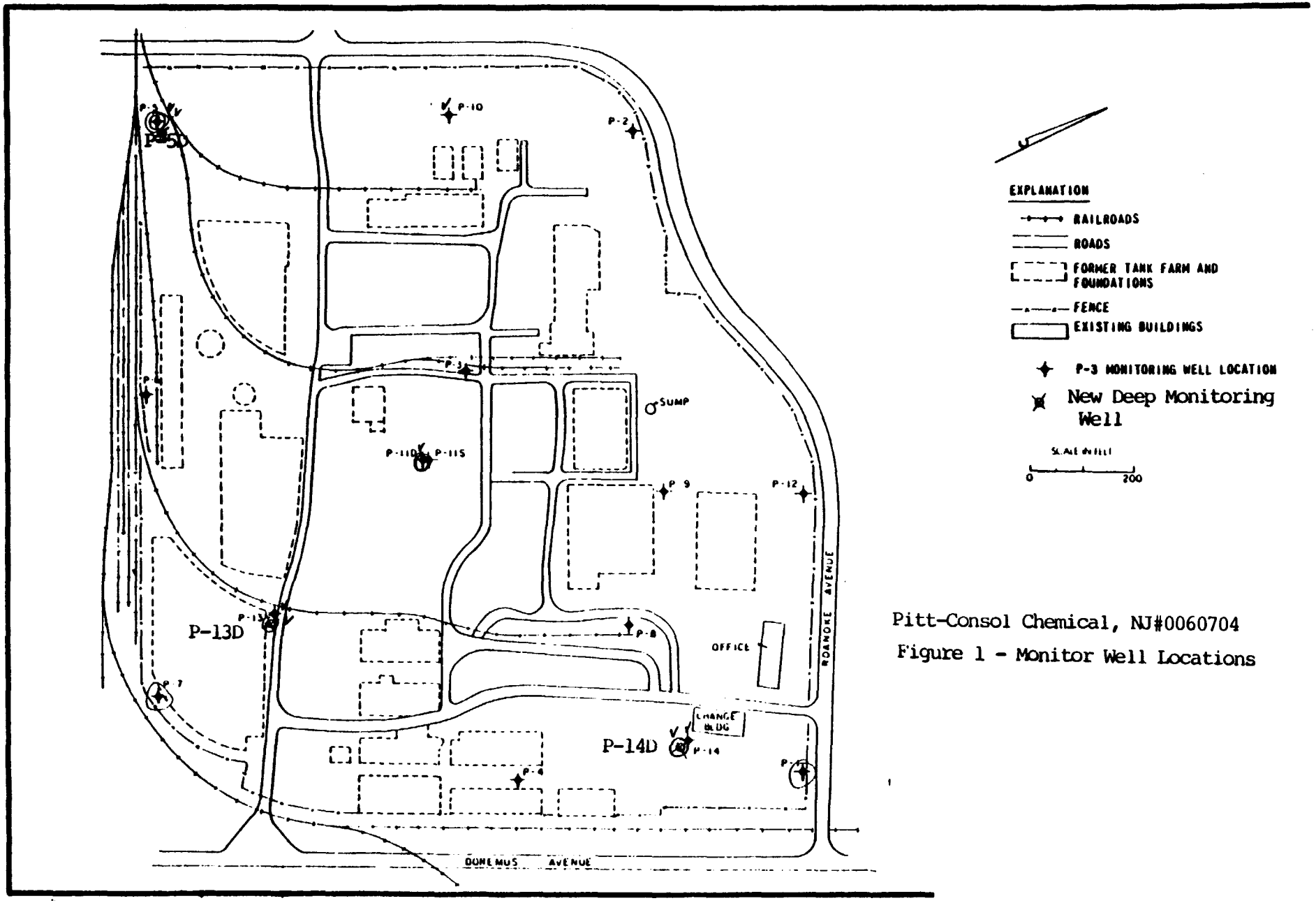
    #17. No Emergency Plan need be submitted.

12. The permittee shall perform a pump test on well P-11D within 60 days of the Effective Date of Permit. Water levels in the three new deep wells and at least three shallow wells shall be monitored during pumping.

13. Within 60 days of the Effective Date of Permit the permittee shall submit a report on the cause of the ground water depression in the northeast corner of the site.

    Request 90 days. Don't mention method in comments. Try piezometers.

843010180



Pitt-Consol Chemical, NJ#0060704

Figure 1 - Monitor Well Locations

DU PONT ENVIRONMENTAL REMEDIATION SERVICES
300 Bellevue Parkway, Suite 390
Wilmington, DE 19809-3722
(302) 792-8900
Fax: (302) 792-8995

January 12, 1995

Bureau of Aquifer Protection
Water Quality Management
Division of Water Resources
New Jersey Department of Environmental Protection
CN 029
Trenton, New Jersey 08625
Attn: Monitoring Reports Section

NOVEMBER 1994 MONITORING REPORT AND
EXCEEDANCE NOTIFICATION REPORT
NJPDES NJ0060704
DuPont Pitt-Consol Site
Newark, New Jersey

Dear Sir or Madam:

The results of the November 1994 sampling at the Pitt-Consol site (NJ0060704) are attached. As discussed in the attached Exceedance Notification Report, this quarter's sampling indicated some exceedances of permit limitations.

Sampling at Pitt-Consol was conducted on November 14 and 15, 1994. Samples were analyzed as required by the NJPDES permit.

If you or your staff have any questions regarding this submittal, please contact me at (302) 773-4237.

Sincerely,

P. Brandt Butler
Pitt-Consol Remediation Manager

PBB:dmf
Attachment

cc: J. Carol, NJDEP

bcc: J. M. Concannon, DERS
E. B. Keller, DERS
B. J. Reilly, Legal
File 107.3.9
DERS file 1340

NOVEMBER 1994 EXCEEDANCE NOTIFICATION REPORT
NJPDES NJ0060704
DUPONT PITT-CONSOL SITE
NEWARK, NEW JERSEY

The following exceedances of the limits in New Jersey Pollutant Discharge Elimination System NJ0060704 were detected during the November 1994 sampling event:

Well Number	Parameter	Concentration (mg/l)	
		Value	Limit
P-1	Phenol	1.48	0.3
	TDS	2,400	500
P-5	TDS	780	500
P-7	TDS	670	500
P-10	Phenol	262	0.3
	TDS	3,400	500
	pH	9.18*	9.0*
PD-1	Phenol	119	0.3
	TDS	13,500	500
PD-5	Phenol	0.8	0.3
	TDS	1,390	500
PD-7	Phenol	0.8	0.3
	TDS	11,100	
PD-11	Phenol	139	0.3
	TDS	9,400	500

*pH is measured in standard units.

The site has been studied extensively, and considerable correspondence and discussions have taken place with NJDEP personnel regarding groundwater quality at the site. The key documents describing the site and the compliance activities already undertaken by DuPont are the July 1989 *Report—Summary of Existing Environmental Data* and the April 1992 *Site Investigation Summary and Report of Findings*, both of which were submitted by CH2M Hill.

DuPont submits the following specific responses to the notification requirements:

A. Description of the Discharge

The nature and extent of contamination was described in the July 1989 and April 1992 CH2M Hill reports.

B. Steps to Determine Cause

Extensive studies of the site have been conducted. The work was summarized in the two reports referenced in Item A.

C. Steps to Reduce or Eliminate

The need for remedial action has not been determined. The CH2M Hill April 1992 Site Investigation Summary and Report of Findings is currently being reviewed by the NJDEPE.

D. Period of Noncompliance

Noncompliance has been detected since groundwater monitoring began in 1987.

E. Cause of Noncompliance

The constituents detected in the upper groundwater zone appear to be residuals remaining in the soil from former manufacturing operations. DuPont believes that an off-site source (or sources) is contributing to the groundwater contamination in the lower unit.

F. Steps to Prevent Recurrence

Groundwater monitoring is continuing. The need for further study or remediation has not been determined.

G. Off-site Groundwater Impact

Groundwater flow and direction have been defined. No active off-site groundwater wells or surface-water supplies would be affected by the constituents detected.

Form T-VWX-014
8/83

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WATER RESOURCES

MONITORING REPORT – TRANSMITTAL SHEET

NJPDES NO.	REPORTING PERIOD MO. YR.		MO. YR.
0 0 6 0 7 0 4	1 0 9 4	THRU	1 2 9 4

PERMITTEE: Name Pitt-Consol Chemical-c/o E.I. du Pont de Nemours and Co., Inc.

Address 1007 Market Street -

Wilmington, DE 19898

FACILITY: Name Pitt-Consol Chemical

Address 191 Doremus Avenue

Newark, NJ 07105 (County) Essex

Telephone (302) 773-4237

FORMS ATTACHED *(Indicate Quantity of Each)*

SLUDGE REPORTS - SANITARY

☐ T-VWX-007 ☐ T-VWX-008 ☐ T-VWX-009

SLUDGE REPORTS - INDUSTRIAL

☐ T-VWX-010A ☐ T-VWX-010B

WASTEWATER REPORTS

☐ T-VWX-011 ☐ T-VWX-012 ☐ T-VWX-013

GROUNDWATER REPORTS

8 VWX-015(A,B) ☐ VWX-016 ☐ VWX-017

NPDES DISCHARGE MONITORING REPORT

☐ EPA FORM 3320-1

OPERATING EXCEPTIONS

	YES	NO
DYE TESTING	☐	☐
TEMPORARY BYPASSING	☐	☐
DISINFECTION INTERRUPTION	☐	☐
MONITORING MALFUNCTIONS	☐	☐
UNITS OUT OF OPERATION	☐	☐
OTHER	☐	☐

(Detail any "Yes" on reverse side in appropriate space.)

NOTE: The "Hours Attended at Plant" on the reverse of this sheet must also be completed.

AUTHENTICATION - 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 the submitted 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.

LICENSED OPERATOR

Name *(Printed)* _____

Grade & Registry No. _____

Signature _____

PRINCIPAL EXECUTIVE OFFICER or DULY AUTHORIZED REPRESENTATIVE

Name *(Printed)* P. Brandt Butler

Title *(Printed)* Business Programs Manager

Signature

843010185

VALUE CODING RULES

- NUMBERS SHALL BE CODED IN CONTIGUOUS BLOCKS *(NO EMBEDDED BLANKS)* WITH ONE DIGIT PER BLOCK.
- THE DECIMAL POINT MUST BE CODED AS PART OF EACH VALUE. THE DECIMAL POINT SHALL OCCUPY ONE BLOCK BY ITSELF.
- THE UNITS DETAILED FOR EACH PARAMETER NUMBER MUST BE UTILIZED. SUBSTITUTION OF UNITS IS NOT ALLOWED. THE PERSON(S) PREPARING THE REPORT ARE RESPONSIBLE FOR ALL UNIT CONVERSIONS WHERE REQUIRED *(E.G. A LABORATORY HAS REPORTED IN MICROGRAMS PER LITER BUT THE PARAMETER ON THE FORM REQUIRES PARTS PER MILLION).*
- FOR EXTRAORDINARY CIRCUMSTANCES WHERE COMPLIANCE WITH THE ABOVE IS IMPOSSIBLE, BRIEFLY DETAIL THE PARTICULARS IN WRITING. INCLUDE A CONTACT PERSON'S NAME AND TELEPHONE NUMBER. A DIVISION REPRESENTATIVE WILL TELEPHONE TO DISCUSS THE PROBLEM AND EFFECT A SOLUTION.

REMARK CODES

B RESULTS ARE BASED UPON COLONY COUNTS OUTSIDE THE ACCEPTABLE RANGE.

C CALCULATED

J ESTIMATED VALUE, VALUE IS NOT ACCURATE. USE IF SAMPLE EXCEEDED HOLDING TIME.

K ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN. USE IF ANALYSIS IS NEGATIVE, BUT WITH THE LIMIT OF DETECTABILITY AS THE VALUE.

L ACTUAL VALUE IS KNOWN TO BE GREATER THAN THE VALUE GIVEN.

O SAMPLED BUT ANALYSIS LOST.

U MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. CODE "K" WHERE LIMIT OF DETECTABILITY EXISTS. CODE "U" WHERE NO LIMIT OF DETECTABILITY EXISTS.

Form VWX-015A
9/91

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND ENERGY
DIVISION OF PUBLICLY FUNDED SITE REMEDIATION
GROUND WATER QUALITY MANAGEMENT ELEMENT

GROUND WATER ANALYSIS - MONITORING WELL REPORT

PLEASE TYPE OR PRINT WITH BALLPOINT PEN

OWNER'S WELL ID NO. P-1

FACILITY NAME	SW ID NO.
Pitt-Consol Chemical - Newark	P-1
LAB NAME: Enseco, Incorporated	

NJPDES NO.	WELL PERMIT NO.	SAMPLE DATE YR. MO. DAY	NJ LAB CERT.NO.	WQM USE
R NJ 0060704 (1, 2–8)	26-07445-1 (9–16)	94 11 15 (17–22)	18725 (23–27)	☐ (28)

THE SCHEDULE INDICATED BELOW IS TO BE OBSERVED FROM 10 94 (MO. YR.) TO 12 94 (MO. YR.)

SUBMIT WITH SIGNED T-VWX-014

SAMPLING MONTHS: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANALYSIS	UNITS	PARAMETER	VALUE	REM
	X			X			X			X		Elev. of top of well casing with cap off (as specified in well completion report)	feet Msl: to nearest 0.01	72110	10.35	
	X			X			X			X		Elev. of original ground level (as specified in well completion report)	feet Msl: to nearest 0.01	72009	7.85	
	X			X			X			X		Depth to water table from top of casing prior to sampling (with cap off)	feet: to nearest 0.01	82546	7.70	
	X			X			X			X		Depth to water table from original ground level prior to sampling	feet: to nearest 0.01	72019	5.20	
												Arsenic, Dissolved	ug/l as As	01000		
												Barium, Dissolved	ug/l as Ba	01005		
												Biochemical Oxygen Demand - 5 Day	mg/l	00310		
												Cadmium, Dissolved	ug/l as Cd	01025		
												Chloride, Dissolved	ug/l as Cl	82295		
												Chromium, Dissolved	ug/l as Cr	01030		
												Chromium, Dissolved, Hexavalent	ug/l as Cr	01220		
												Chemical Oxygen Demand (COD), Dissolved	mg/l	00341		
												Coliform Group	n/100 ml	74056		
												Color	pt-co	00080		
												Copper, Dissolved	ug/l as Cu	01040		
												Cyanide, Total	mg/l as CN	00720		
												Endrin, Total	ug/l	39390		
												Fluoride, Dissolved	mg/l as F	00950		
												Gross Alpha, Dissolved	pc/l	01503		
												Gross Beta, Dissolved	pc/l	03503		
												Hardness, Total as CaCO3	mg/l	00900		
												Iron, Dissolved	mg/l as Fe	01046		
												Lead, Dissolved	ug/l as Pb	01049		
												Lindane, Total	ug/l	39782		
												Manganese, Dissolved	ug/l	01056		
												Mercury, Dissolved	ug/l	71890		

29 33 34 40 41

VALUE CODING AND REMARK CODES ON REVERSE

843010187

VALUE CODING RULES

- NUMBERS SHALL BE CODED IN CONTIGUOUS BLOCKS *(NO EMBEDDED BLANKS)* WITH ONE DIGIT PER BLOCK.
- THE DECIMAL POINT MUST BE CODED AS PART OF EACH VALUE. THE DECIMAL POINT SHALL OCCUPY ONE BLOCK BY ITSELF.
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- FOR EXTRAORDINARY CIRCUMSTANCES WHERE COMPLIANCE WITH THE ABOVE IS IMPOSSIBLE, BRIEFLY DETAIL THE PARTICULARS IN WRITING. INCLUDE A CONTACT PERSON'S NAME AND TELEPHONE NUMBER. A DIVISION REPRESENTATIVE WILL TELEPHONE TO DISCUSS THE PROBLEM AND EFFECT A SOLUTION.

REMARK CODES

B	RESULTS ARE BASED UPON COLONY COUNTS OUTSIDE THE ACCEPTABLE RANGE.
C	CALCULATED
J	ESTIMATED VALUE, VALUE IS NOT ACCURATE. USE IF SAMPLE EXCEEDED HOLDING TIME.
K	ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN. USE IF ANALYSIS IS NEGATIVE, BUT WITH THE LIMIT OF DETECTABILITY AS THE VALUE.
L	ACTUAL VALUE IS KNOWN TO BE GREATER THAN THE VALUE GIVEN.
O	SAMPLED BUT ANALYSIS LOST.
U	MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. CODE "K" WHERE LIMIT OF DETECTABILITY EXISTS. CODE "U" WHERE NO LIMIT OF DETECTABILITY EXISTS.

Form VWX-015B
9/91

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND ENERGY
DIVISION OF PUBLICLY FUNDED SITE REMEDIATION
GROUND WATER QUALITY MANAGEMENT ELEMENT

GROUND WATER ANALYSIS - MONITORING WELL REPORT

PLEASE TYPE OR PRINT WITH BALLPOINT PEN

OWNER'S WELL ID NO. P-1

FACILITY NAME Pitt-Consol

SW ID NO. P-1

LAB NAME Enseco, Incorporated

	NJPDES NO.	WELL PERMIT NO.	SAMPLE DATE YR. MO. DAY	NJ LAB CERT.NO.	WQM USE
S	NJ 0060704	26-07445-1	94 11 15	18725	
1	2 8	9 16	17 22	23 27	28

THE SCHEDULE INDICATED BELOW IS TO BE OBSERVED FROM 10 94 (MO. YR.) TO 12 94 (MO. YR.)

SUBMIT WITH SIGNED T-VWX-014

SAMPLING MONTHS: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANALYSIS	UNITS	PARAMETER	VALUE	REM
												Methoxychlor, Total	ug/l	39480		
												Methylene Blue Active Substances	mg/l	38260		
												Nitrogen,Ammonia, Dissolved NH3+NH4 as N	mg/l as N	00608		
												Nitrogen, Nitrate, Dissolved	mg/l as N	00618		
												Odor	T.O.N.	00085		
	X			X			X			X		pH	Stn. Units	00400	7.44	
	X			X			X			X		Phenols, Total Recoverable	ug/l	32730	1480.	
												Radium 226, Dissolved	pc/l	09503		
												Radium 228, Dissolved	pc/l	81366		
												Selenium, Dissolved	ug/l	01145		
												Silver, Dissolved	ug/l	01075		
												Sodium, Dissolved	mg/l	00930		
												Sulfate, Dissolved (as SO4)	mg/l	00946		
	X			X			X			X		Total Dissolved Solids (TDS)	ppm	70300	2400.	
	X			X			X			X		Total Organic Carbon (TOC)	ppm	00680	26.	
	X			X			X			X		Total Organic Halogen (TOX)	ug/l	70353	30.	K
												Toxaphene	ug/l	39400		
												Turbidity	ntu	00076		
												Zinc, Dissolved	ug/l	01090		
												2,4-D,Total	ug/l	39730		
												2,4,5-TP, Total	ug/l	39045		

29 33 34 40 41

VALUE CODING AND REMARK CODES ON REVERSE

843010189

VALUE CODING RULES

- NUMBERS SHALL BE CODED IN CONTIGUOUS BLOCKS *(NO EMBEDDED BLANKS)* WITH ONE DIGIT PER BLOCK.
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Form VWX-015A
9/91

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND ENERGY
DIVISION OF PUBLICLY FUNDED SITE REMEDIATION
GROUND WATER QUALITY MANAGEMENT ELEMENT

GROUND WATER ANALYSIS - MONITORING WELL REPORT

PLEASE TYPE OR PRINT WITH BALLPOINT PEN

OWNER'S WELL ID NO. P-5

FACILITY NAME	SW ID NO.
Pitt-Consol Chemical - Newark	P-5
LAB NAME	
Enseco, Incorporated	

R	NJPDES NO.	WELL PERMIT NO.	SAMPLE DATE YR. MO. DAY	NJ LAB CERT. NO.	WQM US
	NJ 0060704	26-07449-4	94 11 15	18725	
1	2 8	9 16	17 22	23 27	28

THE SCHEDULE INDICATED BELOW IS TO BE OBSERVED FROM 10 94 (MO. YR.) TO 12 94 (MO. YR.)

SUBMIT WITH SIGNED T-VWX-014

SAMPLING MONTHS JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANALYSIS	UNITS	PARAMETER	VALUE
	X			X			X			X		Elev. of top of well casing with cap off (as specified in well completion report)	feet Msl: to nearest 0.01	72110	8.89
	X			X			X			X		Elev. of original ground level (as specified in well completion report)	feet Msl: to nearest 0.01	72009	6.39
	X			X			X			X		Depth to water table from top of casing prior to sampling (with cap off)	feet: to nearest 0.01	82546	4.73
	X			X			X			X		Depth to water table from original ground level prior to sampling	feet: to nearest 0.01	72019	2.23
												Arsenic, Dissolved	ug/l as As	01000	
												Barium, Dissolved	ug/l as Ba	01005	
												Biochemical Oxygen Demand - 5 Day	mg/l	00310	
												Cadmium, Dissolved	ug/l as Cd	01025	
												Chloride, Dissolved	ug/l as Cl	82295	
												Chromium, Dissolved	ug/l as Cr	01030	
												Chromium, Dissolved, Hexavalent	ug/l as Cr	01220	
												Chemical Oxygen Demand (COD), Dissolved	mg/l	00341	
												Coliform Group	n/100 ml	74056	
												Color	pt-co	00080	
												Copper, Dissolved	ug/l as Cu	01040	
												Cyanide, Total	mg/l as CN	00720	
												Endrin, Total	ug/l	39390	
												Fluoride, Dissolved	mg/l as F	00950	
												Gross Alpha, Dissolved	pc/l	01503	
												Gross Beta, Dissolved	pc/l	03503	
												Hardness, Total as CaCO3	mg/l	00900	
												Iron, Dissolved	mg/l as Fe	01046	
												Lead, Dissolved	ug/l as Pb	01049	
												Lindane, Total	ug/l	39782	
												Manganese, Dissolved	ug/l	01056	
												Mercury, Dissolved	ug/l	71890	

29 33 34 40 41

VALUE CODING AND REMARK CODES ON REVERSE

843010191

VALUE CODING RULES

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- FOR EXTRAORDINARY CIRCUMSTANCES WHERE COMPLIANCE WITH THE ABOVE IS IMPOSSIBLE, BRIEFLY DETAIL THE PARTICULARS IN WRITING. INCLUDE A CONTACT PERSON'S NAME AND TELEPHONE NUMBER. A DIVISION REPRESENTATIVE WILL TELEPHONE TO DISCUSS THE PROBLEM AND EFFECT A SOLUTION.

REMARK CODES

B RESULTS ARE BASED UPON COLONY COUNTS OUTSIDE THE ACCEPTABLE RANGE.

C CALCULATED

J ESTIMATED VALUE, VALUE IS NOT ACCURATE. USE IF SAMPLE EXCEEDED HOLDING TIME.

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L ACTUAL VALUE IS KNOWN TO BE GREATER THAN THE VALUE GIVEN.

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Form VWX-015B
9/91

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND ENERGY
DIVISION OF PUBLICLY FUNDED SITE REMEDIATION
GROUND WATER QUALITY MANAGEMENT ELEMENT

GROUND WATER ANALYSIS - MONITORING WELL REPORT

PLEASE TYPE OR PRINT WITH BALLPOINT PEN

OWNER'S WELL ID NO. P-5

FACILITY NAME	SW ID NO.
Pitt-Consol	P-5
LAB NAME	
Enseco, Incorporated	

S (1)	NJPDES NO. (2–8)	WELL PERMIT NO. (9–16)	SAMPLE DATE YR. NO. DAY (17–22)	NJ LAB CERT.NO. (23–27)	WQM USE (28)
S	NJ 0060704	26-074449-4	94 11 15	18725	

THE SCHEDULE INDICATED BELOW IS TO BE OBSERVED FROM 10 94 (NO. YR.) TO 12 94 (NO. YR.)

SUBMIT WITH SIGNED T-VWX-014

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANALYSIS	UNITS	PARAMETER (29–33)	VALUE (34–40)	REM (41)
												Methoxychlor, Total	ug/l	39480		
												Methylene Blue Active Substances	mg/l	38260		
												Nitrogen,Ammonia, Dissolved NH3+NH4 as N	mg/l as N	00608		
												Nitrogen, Nitrate, Dissolved	mg/l as N	00618		
												Odor	T.O.N.	00085		
	X		X			X			X			pH	Stn. Units	00400	7.23	
	X		X			X			X			Phenols, Total Recoverable	ug/l	32730	22.0	
												Radium 226, Dissolved	pc/l	09503		
												Radium 228, Dissolved	pc/l	81366		
												Selenium, Dissolved	ug/l	01145		
												Silver, Dissolved	ug/l	01075		
												Sodium, Dissolved	mg/l	00930		
												Sulfate, Dissolved (as SO4)	mg/l	00946		
	X		X			X			X			Total Dissolved Solids (TDS)	ppm	70300	780.	
	X		X			X			X			Total Organic Carbon (TOC)	ppm	00680	22.	
	X		X			X			X			Total Organic Halogen (TOX)	ug/l	70353	70.	
												Toxaphene	ug/l	39400		
												Turbidity	ntu	00076		
												Zinc, Dissolved	ug/l	01090		
												2,4-D,Total	ug/l	39730		
												2,4,5-TP, Total	ug/l	39045		

VALUE CODING AND REMARK CODES ON REVERSE

843010193

VALUE CODING RULES

- NUMBERS SHALL BE CODED IN CONTIGUOUS BLOCKS *(NO EMBEDDED BLANKS)* WITH ONE DIGIT PER BLOCK.
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REMARK CODES

B	RESULTS ARE BASED UPON COLONY COUNTS OUTSIDE THE ACCEPTABLE RANGE.
C	CALCULATED
J	ESTIMATED VALUE, VALUE IS NOT ACCURATE. USE IF SAMPLE EXCEEDED HOLDING TIME.
K	ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN. USE IF ANALYSIS IS NEGATIVE, BUT WITH THE LIMIT OF DETECTABILITY AS THE VALUE.
L	ACTUAL VALUE IS KNOWN TO BE GREATER THAN THE VALUE GIVEN.
O	SAMPLED BUT ANALYSIS LOST.
U	MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. CODE "K" WHERE LIMIT OF DETECTABILITY EXISTS. CODE "U" WHERE NO LIMIT OF DETECTABILITY EXISTS.

Form VWX-015A
9/91

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND ENERGY
DIVISION OF PUBLICLY FUNDED SITE REMEDIATION
GROUND WATER QUALITY MANAGEMENT ELEMENT

GROUND WATER ANALYSIS - MONITORING WELL REPORT

PLEASE TYPE OR PRINT WITH BALLPOINT PEN

OWNER'S WELL ID NO. P-7

FACILITY NAME	SW ID NO.
Pitt-Consol Chemical - Newark	P-7
LAB NAME	
Enseco, Incorporated	

R (1)	NJPDES NO. (2-8)	WELL PERMIT NO. (9-16)	SAMPLE DATE YR. MO. DAY (17-22)	NJ LAB CERT.NO. (23-27)	WQM USE (28)
	NJ 0060704	26-07451-6	94 11 15	18725	

THE SCHEDULE INDICATED BELOW IS TO BE OBSERVED FROM 10 94 (MO. YR.) TO 12 94 (MO. YR.)

SUBMIT WITH SIGNED T-VWX-014

SAMPLING MONTHS: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANALYSIS	UNITS	PARAMETER	VALUE	REM
	X			X			X			X		Elev. of top of well casing with cap off (as specified in well completion report)	feet Msl: to nearest 0.01	72110	8.05	
	X			X			X			X		Elev. of original ground level (as specified in well completion report)	feet Msl: to nearest 0.01	72009	5.55	
	X			X			X			X		Depth to water table from top of casing prior to sampling (with cap off)	feet: to nearest 0.01	82546	4.17	
	X			X			X			X		Depth to water table from original ground level prior to sampling	feet: to nearest 0.01	72019	1.67	
												Arsenic, Dissolved	ug/l as As	01000		
												Barium, Dissolved	ug/l as Ba	01005		
												Biochemical Oxygen Demand - 5 Day	mg/l	00370		
												Cadmium, Dissolved	ug/l as Cd	01025		
												Chloride, Dissolved	ug/l as Cl	82295		
												Chromium, Dissolved	ug/l as Cr	01030		
												Chromium, Dissolved, Hexavalent	ug/l as Cr	01220		
												Chemical Oxygen Demand (COD), Dissolved	mg/l	00341		
												Coliform Group	n/100 ml	74056		
												Color	pt-co	00080		
												Copper, Dissolved	ug/l as Cu	01040		
												Cyanide, Total	mg/l as CN	00720		
												Endrin, Total	ug/l	39390		
												Fluoride, Dissolved	mg/l as F	00950		
												Gross Alpha, Dissolved	pc/l	01503		
												Gross Beta, Dissolved	pc/l	03503		
												Hardness, Total as CaCO3	mg/l	00900		
												Iron, Dissolved	mg/l as Fe	01046		
												Lead, Dissolved	ug/l as Pb	01049		
												Lindane, Total	ug/l	39782		
												Manganese, Dissolved	ug/l	01056		
												Mercury, Dissolved	ug/l	71890		

VALUE CODING AND REMARK CODES ON REVERSE

29 33 34 40 41

843010195

VALUE CODING RULES

- NUMBERS SHALL BE CODED IN CONTIGUOUS BLOCKS *(NO EMBEDDED BLANKS)* WITH ONE DIGIT PER BLOCK.
- THE DECIMAL POINT MUST BE CODED AS PART OF EACH VALUE. THE DECIMAL POINT SHALL OCCUPY ONE BLOCK BY ITSELF.
- THE UNITS DETAILED FOR EACH PARAMETER NUMBER MUST BE UTILIZED. SUBSTITUTION OF UNITS IS NOT ALLOWED. THE PERSON(S) PREPARING THE REPORT ARE RESPONSIBLE FOR ALL UNIT CONVERSIONS WHERE REQUIRED *(E.G. A LABORATORY HAS REPORTED IN MICROGRAMS PER LITER BUT THE PARAMETER ON THE FORM REQUIRES PARTS PER MILLION).*
- FOR EXTRAORDINARY CIRCUMSTANCES WHERE COMPLIANCE WITH THE ABOVE IS IMPOSSIBLE, BRIEFLY DETAIL THE PARTICULARS IN WRITING. INCLUDE A CONTACT PERSON'S NAME AND TELEPHONE NUMBER. A DIVISION REPRESENTATIVE WILL TELEPHONE TO DISCUSS THE PROBLEM AND EFFECT A SOLUTION.

REMARK CODES

B	RESULTS ARE BASED UPON COLONY COUNTS OUTSIDE THE ACCEPTABLE RANGE.
C	CALCULATED
J	ESTIMATED VALUE, VALUE IS NOT ACCURATE. USE IF SAMPLE EXCEEDED HOLDING TIME.
K	ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN. USE IF ANALYSIS IS NEGATIVE, BUT WITH THE LIMIT OF DETECTABILITY AS THE VALUE.
L	ACTUAL VALUE IS KNOWN TO BE GREATER THAN THE VALUE GIVEN.
O	SAMPLED BUT ANALYSIS LOST.
U	MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. CODE "K" WHERE LIMIT OF DETECTABILITY EXISTS. CODE "U" WHERE NO LIMIT OF DETECTABILITY EXISTS.

Form VWX-0138 NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND ENERGY
9/91
DIVISION OF PUBLICLY FUNDED SITE REMEDIATION
GROUND WATER QUALITY MANAGEMENT ELEMENT

GROUND WATER ANALYSIS - MONITORING WELL REPORT

PLEASE TYPE OR PRINT WITH BALLPOINT PEN

OWNER'S WELL ID NO. P-7

FACILITY NAME	SW ID NO.
Pitt-Consul	P-7
LAB NAME	
Enseco, Incorporated	

	NJPDES NO.	WELL PERMIT NO.	SAMPLE DATE YR. NO. DAY	NJ LAB CERT.NO.	WQM USE
S	NJ 0006074	26-07451-6	94 11 15	18725	
1	2 8	9 16	17 22	23 27	28

THE SCHEDULE INDICATED BELOW IS TO BE OBSERVED FROM 10 94 (NO. YR.) TO 12 94 (NO. YR.)

SUBMIT WITH SIGNED T-VWX-014

SAMPLING MONTHS JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANALYSIS	UNITS	PARAMETER	VALUE	REM
												Methoxychlor, Total	ug/l	39480		
												Methylene Blue Active Substances	mg/l	38260		
												Nitrogen,Ammonia, Dissolved NH3+NH4 as N	mg/l as N	00608		
												Nitrogen, Nitrate, Dissolved	mg/l as N	00618		
												Odor	T.O.N.	00085		
	X		X				X			X		pH	Stn. Units	00400	7.19	
	X		X				X			X		Phenols, Total Recoverable	ug/l	32730	44.	
												Radium 226, Dissolved	pc/l	09503		
												Radium 228, Dissolved	pc/l	81366		
												Selenium, Dissolved	ug/l	01145		
												Silver, Dissolved	ug/l	01075		
												Sodium, Dissolved	mg/l	00930		
												Sulfate, Dissolved (as SO4)	mg/l	00946		
	X			X			X			X		Total Dissolved Solids (TDS)	ppm	70300	6700.	
	X			X			X			X		Total Organic Carbon (TOC)	ppm	00680	34.	
	X			X			X			X		Total Organic Halogen (TOX)	ug/l	70353	30.	
												Toxaphene	ug/l	39400		
												Turbidity	ntu	00076		
												Zinc, Dissolved	ug/l	01090		
												2,4-D,Total	ug/l	39730		
												2,4,5-TP, Total	ug/l	39045		

29 33 34 40 41

VALUE CODING AND REMARK CODES ON REVERSE

843010197

VALUE CODING RULES

- NUMBERS SHALL BE CODED IN CONTIGUOUS BLOCKS *(NO EMBEDDED BLANKS)* WITH ONE DIGIT PER BLOCK.
- THE DECIMAL POINT MUST BE CODED AS PART OF EACH VALUE. THE DECIMAL POINT SHALL OCCUPY ONE BLOCK BY ITSELF.
- THE UNITS DETAILED FOR EACH PARAMETER NUMBER MUST BE UTILIZED. SUBSTITUTION OF UNITS IS NOT ALLOWED. THE PERSON(S) PREPARING THE REPORT ARE RESPONSIBLE FOR ALL UNIT CONVERSIONS WHERE REQUIRED *(E.G. A LABORATORY HAS REPORTED IN MICROGRAMS PER LITER BUT THE PARAMETER ON THE FORM REQUIRES PARTS PER MILLION).*
- FOR EXTRAORDINARY CIRCUMSTANCES WHERE COMPLIANCE WITH THE ABOVE IS IMPOSSIBLE, BRIEFLY DETAIL THE PARTICULARS IN WRITING. INCLUDE A CONTACT PERSON'S NAME AND TELEPHONE NUMBER. A DIVISION REPRESENTATIVE WILL TELEPHONE TO DISCUSS THE PROBLEM AND EFFECT A SOLUTION.

REMARK CODES

B RESULTS ARE BASED UPON COLONY COUNTS OUTSIDE THE ACCEPTABLE RANGE.

C CALCULATED

J ESTIMATED VALUE, VALUE IS NOT ACCURATE. USE IF SAMPLE EXCEEDED HOLDING TIME.

K ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN. USE IF ANALYSIS IS NEGATIVE, BUT WITH THE LIMIT OF DETECTABILITY AS THE VALUE.

L ACTUAL VALUE IS KNOWN TO BE GREATER THAN THE VALUE GIVEN.

O SAMPLED BUT ANALYSIS LOST.

U MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. CODE "K" WHERE LIMIT OF DETECTABILITY EXISTS. CODE "U" WHERE NO LIMIT OF DETECTABILITY EXISTS.

Form VWX-015A
9/91

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND ENERGY
DIVISION OF PUBLICLY FUNDED SITE REMEDIATION
GROUND WATER QUALITY MANAGEMENT ELEMENT

GROUND WATER ANALYSIS - MONITORING WELL REPORT

PLEASE TYPE OR PRINT WITH BALLPOINT PEN

OWNER'S WELL ID NO. P-10

FACILITY NAME	SV ID NO.
Pitt-Consol Chemical - Newark	P-10
LAB NAME	
Enseco, Incorporated	

R (1)	NJPDES NO. (2-8)	WELL PERMIT NO. (9-16)	SAMPLE DATE YR. MO. DAY (17-22)	NJ LAB CERT.NO. (23-27)	WQM USE (28)
	NJ 0060704	26-07916-0	94 11 15	18725	

THE SCHEDULE INDICATED BELOW IS TO BE OBSERVED FROM 10 94 (MO. YR.) TO 12 94 (MO. YR.)

SUBMIT WITH SIGNED T-VWX-014

SAMPLING MONTHS: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANALYSIS	UNITS	PARAMETER	VALUE	REM
	X			X			X			X		Elev. of top of well casing with cap off (as specified in well completion report)	feet Msl: to nearest 0.01	72110	9.08	
	X			X			X			X		Elev. of original ground level (as specified in well completion report)	feet Msl: to nearest 0.01	72009	7.08	
	X			X			X			X		Depth to water table from top of casing prior to sampling (with cap off)	feet: to nearest 0.01	82546	4.37	
	X			X			X			X		Depth to water table from original ground level prior to sampling	feet: to nearest 0.01	72019	2.37	
												Arsenic, Dissolved	ug/l as As	01000		
												Barium, Dissolved	ug/l as Ba	01005		
												Biochemical Oxygen Demand - 5 Day	mg/l	00370		
												Cadmium, Dissolved	ug/l as Cd	01025		
												Chloride, Dissolved	ug/l as Cl	82295		
												Chromium, Dissolved	ug/l as Cr	01030		
												Chromium, Dissolved, Hexavalent	ug/l as Cr	01220		
												Chemical Oxygen Demand (COD), Dissolved	mg/l	00341		
												Coliform Group	n/100 ml	74056		
												Color	pt-co	00080		
												Copper, Dissolved	ug/l as Cu	01040		
												Cyanide, Total	mg/l as CN	00720		
												Endrin, Total	ug/l	39390		
												Fluoride, Dissolved	mg/l as F	00950		
												Gross Alpha, Dissolved	pc/l	01503		
												Gross Beta, Dissolved	pc/l	03503		
												Hardness, Total as CaCO3	mg/l	00900		
												Iron, Dissolved	mg/l as Fe	01046		
												Lead, Dissolved	ug/l as Pb	01049		
												Lindane, Total	ug/l	39782		
												Manganese, Dissolved	ug/l	01056		
												Mercury, Dissolved	ug/l	71890		

29 33 34 40 41

VALUE CODING AND REMARK CODES ON REVERSE

843010199

VALUE CODING RULES

- NUMBERS SHALL BE CODED IN CONTIGUOUS BLOCKS *(NO EMBEDDED BLANKS)* WITH ONE DIGIT PER BLOCK.
- THE DECIMAL POINT MUST BE CODED AS PART OF EACH VALUE. THE DECIMAL POINT SHALL OCCUPY ONE BLOCK BY ITSELF.
- THE UNITS DETAILED FOR EACH PARAMETER NUMBER MUST BE UTILIZED. SUBSTITUTION OF UNITS IS NOT ALLOWED. THE PERSON(S) PREPARING THE REPORT ARE RESPONSIBLE FOR ALL UNIT CONVERSIONS WHERE REQUIRED *(E.G. A LABORATORY HAS REPORTED IN MICROGRAMS PER LITER BUT THE PARAMETER ON THE FORM REQUIRES PARTS PER MILLION).*
- FOR EXTRAORDINARY CIRCUMSTANCES WHERE COMPLIANCE WITH THE ABOVE IS IMPOSSIBLE, BRIEFLY DETAIL THE PARTICULARS IN WRITING. INCLUDE A CONTACT PERSON'S NAME AND TELEPHONE NUMBER. A DIVISION REPRESENTATIVE WILL TELEPHONE TO DISCUSS THE PROBLEM AND EFFECT A SOLUTION.

REMARK CODES

B	RESULTS ARE BASED UPON COLONY COUNTS OUTSIDE THE ACCEPTABLE RANGE.
C	CALCULATED
J	ESTIMATED VALUE, VALUE IS NOT ACCURATE. USE IF SAMPLE EXCEEDED HOLDING TIME.
K	ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN. USE IF ANALYSIS IS NEGATIVE, BUT WITH THE LIMIT OF DETECTABILITY AS THE VALUE.
L	ACTUAL VALUE IS KNOWN TO BE GREATER THAN THE VALUE GIVEN.
O	SAMPLED BUT ANALYSIS LOST.
U	MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. CODE "K" WHERE LIMIT OF DETECTABILITY EXISTS. CODE "U" WHERE NO LIMIT OF DETECTABILITY EXISTS.

Form VWX-015B
9/91

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND ENERGY
DIVISION OF PUBLICLY FUNDED SITE REMEDIATION
GROUND WATER QUALITY MANAGEMENT ELEMENT

GROUND WATER ANALYSIS - MONITORING WELL REPORT

PLEASE TYPE OR PRINT WITH BALLPOINT PEN

OWNER'S WELL ID NO. P-10

FACILITY NAME Pitt-Consol	SW ID NO. P-10
LAB NAME Enseco, Incorporated	

	NJPDES NO.	WELL PERMIT NO.	SAMPLE DATE YR. MO. DAY	NJ LAB CERT.NO.	WQM USE
S	NJ 0006074	26-07916-0	94 11 15	18725	
1	2 8	9 16	17 22	23 27	28

THE SCHEDULE INDICATED BELOW IS TO BE OBSERVED FROM 10 94 (MO. YR.) TO 12 94 (MO. YR.)

SUBMIT WITH SIGNED T-VWX-014

SAMPLING MONTHS JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANALYSIS	UNITS	PARAMETER	VALUE	REM
												Methoxychlor, Total	ug/l	39480		
												Methylene Blue Active Substances	mg/l	38260		
												Nitrogen,Ammonia, Dissolved NH3+NH4 as N	mg/l as N	00608		
												Nitrogen, Nitrate, Dissolved	mg/l as N	00618		
												Odor	T.O.N.	00085		
	X			X			X			X		pH	Stn. Units	00400	9.18	
	X			X			X			X		Phenols, Total Recoverable	ug/l	32730	26200.00.	
												Radium 226, Dissolved	pc/l	09503		
												Radium 228, Dissolved	pc/l	81366		
												Selenium, Dissolved	ug/l	01145		
												Silver, Dissolved	ug/l	01075		
												Sodium, Dissolved	mg/l	00930		
												Sulfate, Dissolved (as SO4)	mg/l	00946		
	X			X			X			X		Total Dissolved Solids (TDS)	ppm	70300	3400..	
	X			X			X			X		Total Organic Carbon (TOC)	ppm	00680	660.	
	X			X			X			X		Total Organic Halogen (TOX)	ug/l	70353	70..	
												Toxaphene	ug/l	39400		
												Turbidity	ntu	00076		
												Zinc, Dissolved	ug/l	01090		
												2,4-D,Total	ug/l	39730		
												2,4,5-TP, Total	ug/l	39045		

29 33 34 40 41

VALUE CODING AND REMARK CODES ON REVERSE

843010201

VALUE CODING RULES

- NUMBERS SHALL BE CODED IN CONTIGUOUS BLOCKS *(NO EMBEDDED BLANKS)* WITH ONE DIGIT PER BLOCK.
- THE DECIMAL POINT MUST BE CODED AS PART OF EACH VALUE. THE DECIMAL POINT SHALL OCCUPY ONE BLOCK BY ITSELF.
- THE UNITS DETAILED FOR EACH PARAMETER NUMBER MUST BE UTILIZED. SUBSTITUTION OF UNITS IS NOT ALLOWED. THE PERSON(S) PREPARING THE REPORT ARE RESPONSIBLE FOR ALL UNIT CONVERSIONS WHERE REQUIRED *(E.G. A LABORATORY HAS REPORTED IN MICROGRAMS PER LITER BUT THE PARAMETER ON THE FORM REQUIRES PARTS PER MILLION).*
- FOR EXTRAORDINARY CIRCUMSTANCES WHERE COMPLIANCE WITH THE ABOVE IS IMPOSSIBLE, BRIEFLY DETAIL THE PARTICULARS IN WRITING. INCLUDE A CONTACT PERSON'S NAME AND TELEPHONE NUMBER. A DIVISION REPRESENTATIVE WILL TELEPHONE TO DISCUSS THE PROBLEM AND EFFECT A SOLUTION.

REMARK CODES

B	RESULTS ARE BASED UPON COLONY COUNTS OUTSIDE THE ACCEPTABLE RANGE.
C	CALCULATED
J	ESTIMATED VALUE, VALUE IS NOT ACCURATE. USE IF SAMPLE EXCEEDED HOLDING TIME.
K	ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN. USE IF ANALYSIS IS NEGATIVE, BUT WITH THE LIMIT OF DETECTABILITY AS THE VALUE.
L	ACTUAL VALUE IS KNOWN TO BE GREATER THAN THE VALUE GIVEN.
O	SAMPLED BUT ANALYSIS LOST.
U	MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. CODE "K" WHERE LIMIT OF DETECTABILITY EXISTS. CODE "U" WHERE NO LIMIT OF DETECTABILITY EXISTS.

Form VWX-015A
9/91

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND ENERGY
DIVISION OF PUBLICLY FUNDED SITE REMEDIATION
GROUND WATER QUALITY MANAGEMENT ELEMENT

GROUND WATER ANALYSIS - MONITORING WELL REPORT

PLEASE TYPE OR PRINT WITH BALLPOINT PEN

OWNER'S WELL ID NO. PD-1

FACILITY NAME	SW ID NO.
Pitt-Consol Chemical - Newark	PD-1
LAB NAME	
Enseco, Incorporated	

R	NJPDES NO.	WELL PERMIT NO.	SAMPLE DATE YR. MO. DAY	NJ LAB CERT.NO.	WQM USE
1	NJ 0060704 (2–8)	26-09075-9 (9–16)	94 11 14 (17–22)	18725 (23–27)	☐ (28)

THE SCHEDULE INDICATED BELOW IS TO BE OBSERVED FROM 10 94 (MO. YR.) TO 12 94 (MO. YR.)

SUBMIT WITH SIGNED T-VWX-014

SAMPLING MONTHS: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANALYSIS	UNITS	PARAMETER	VALUE	REM
	X			X			X			X		Elev. of top of well casing with cap off (as specified in well completion report)	feet Msl: to nearest 0.01	72110	10.88	
	X			X			X			X		Elev. of original ground level (as specified in well completion report)	feet Msl: to nearest 0.01	72009	8.88	
	X			X			X			X		Depth to water table from top of casing prior to sampling (with cap off)	feet: to nearest 0.01	82546	8.87	
	X			X			X			X		Depth to water table from original ground level prior to sampling	feet: to nearest 0.01	72019	6.87	
												Arsenic, Dissolved	ug/l as As	01000		
												Barium, Dissolved	ug/l as Ba	01005		
												Biochemical Oxygen Demand - 5 Day	mg/l	00310		
												Cadmium, Dissolved	ug/l as Cd	01025		
												Chloride, Dissolved	ug/l as Cl	82295		
												Chromium, Dissolved	ug/l as Cr	01030		
												Chromium, Dissolved, Hexavalent	ug/l as Cr	01220		
												Chemical Oxygen Demand (COD), Dissolved	mg/l	00341		
												Coliform Group	n/100 ml	74056		
												Color	pt-co	00080		
												Copper, Dissolved	ug/l as Cu	01040		
												Cyanide, Total	mg/l as CN	00720		
												Endrin, Total	ug/l	39390		
												Fluoride, Dissolved	mg/l as F	00950		
												Gross Alpha, Dissolved	pc/l	01503		
												Gross Beta, Dissolved	pc/l	03503		
												Hardness, Total as CaCO3	mg/l	00900		
												Iron, Dissolved	mg/l as Fe	01046		
												Lead, Dissolved	ug/l as Pb	01049		
												Lindane, Total	ug/l	39782		
												Manganese, Dissolved	ug/l	01056		
												Mercury, Dissolved	ug/l	71890		

29 33 34 40 41

VALUE CODING AND REMARK CODES ON REVERSE

843010203

VALUE CODING RULES

- NUMBERS SHALL BE CODED IN CONTIGUOUS BLOCKS *(NO EMBEDDED BLANKS)* WITH ONE DIGIT PER BLOCK.
- THE DECIMAL POINT MUST BE CODED AS PART OF EACH VALUE. THE DECIMAL POINT SHALL OCCUPY ONE BLOCK BY ITSELF.
- THE UNITS DETAILED FOR EACH PARAMETER NUMBER MUST BE UTILIZED. SUBSTITUTION OF UNITS IS NOT ALLOWED. THE PERSON(S) PREPARING THE REPORT ARE RESPONSIBLE FOR ALL UNIT CONVERSIONS WHERE REQUIRED *(E.G. A LABORATORY HAS REPORTED IN MICROGRAMS PER LITER BUT THE PARAMETER ON THE FORM REQUIRES PARTS PER MILLION).*
- FOR EXTRAORDINARY CIRCUMSTANCES WHERE COMPLIANCE WITH THE ABOVE IS IMPOSSIBLE, BRIEFLY DETAIL THE PARTICULARS IN WRITING. INCLUDE A CONTACT PERSON'S NAME AND TELEPHONE NUMBER. A DIVISION REPRESENTATIVE WILL TELEPHONE TO DISCUSS THE PROBLEM AND EFFECT A SOLUTION.

REMARK CODES

B RESULTS ARE BASED UPON COLONY COUNTS OUTSIDE THE ACCEPTABLE RANGE.

C CALCULATED

J ESTIMATED VALUE, VALUE IS NOT ACCURATE. USE IF SAMPLE EXCEEDED HOLDING TIME.

K ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN. USE IF ANALYSIS IS NEGATIVE, BUT WITH THE LIMIT OF DETECTABILITY AS THE VALUE.

L ACTUAL VALUE IS KNOWN TO BE GREATER THAN THE VALUE GIVEN.

O SAMPLED BUT ANALYSIS LOST.

U MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. CODE "K" WHERE LIMIT OF DETECTABILITY EXISTS. CODE "U" WHERE NO LIMIT OF DETECTABILITY EXISTS.

Form VWX-0158
9/91

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND ENERGY
DIVISION OF PUBLICLY FUNDED SITE REMEDIATION
GROUND WATER QUALITY MANAGEMENT ELEMENT

GROUND WATER ANALYSIS - MONITORING WELL REPORT

PLEASE TYPE OR PRINT WITH BALLPOINT PEN

OWNER'S WELL ID NO. PD-1

FACILITY NAME	SW ID NO.
Pitt-Consol	PD-1
LAB NAME	
Enseco, Incorporated	

	NJPDES NO.	WELL PERMIT NO.	SAMPLE DATE YR. MO. DAY	NJ LAB CERT.NO.	WQM USE
S	NJ 0060704	26-09075-9	94 11 14	18725	
1	2 8	9 16	17 22	23 27	28

THE SCHEDULE INDICATED BELOW IS TO BE OBSERVED FROM 10 94 (MO. YR.) TO 12 94 (MO. YR.)

SUBMIT WITH SIGNED T-VWX-014

SAMPLING MONTHS JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANALYSIS	UNITS	PARAMETER	VALUE	REM
												Methoxychlor, Total	ug/l	39480		
												Methylene Blue Active Substances	mg/l	38260		
												Nitrogen,Ammonia, Dissolved NH3+NH4 as N	mg/l as N	00608		
												Nitrogen, Nitrate, Dissolved	mg/l as N	00618		
												Odor	T.O.N.	00085		
	X			X			X				X	pH	Stn. Units	00400	6.04	
	X			X			X				X	Phenols, Total Recoverable	ug/l	32730	11900.0	
												Radium 226, Dissolved	pc/l	09503		
												Radium 228, Dissolved	pc/l	81366		
												Selenium, Dissolved	ug/l	01145		
												Silver, Dissolved	ug/l	01075		
												Sodium, Dissolved	mg/l	00930		
												Sulfate, Dissolved (as SO4)	mg/l	00946		
	X			X			X				X	Total Dissolved Solids (TDS)	ppm	70300	1350.0	
	X			X			X				X	Total Organic Carbon (TOC)	ppm	00680	67.0	
	X			X			X				X	Total Organic Halogen (TOX)	ug/l	70353	600.	
												Toxaphene	ug/l	39400		
												Turbidity	ntu	00076		
												Zinc, Dissolved	ug/l	01090		
												2,4-D,Total	ug/l	39730		
												2,4,5-TP, Total	ug/l	39045		

29 33 34 40 41

VALUE CODING AND REMARK CODES ON REVERSE

843010205

VALUE CODING RULES

- NUMBERS SHALL BE CODED IN CONTIGUOUS BLOCKS *(NO EMBEDDED BLANKS)* WITH ONE DIGIT PER BLOCK.
- THE DECIMAL POINT MUST BE CODED AS PART OF EACH VALUE. THE DECIMAL POINT SHALL OCCUPY ONE BLOCK BY ITSELF.
- THE UNITS DETAILED FOR EACH PARAMETER NUMBER MUST BE UTILIZED. SUBSTITUTION OF UNITS IS NOT ALLOWED. THE PERSON(S) PREPARING THE REPORT ARE RESPONSIBLE FOR ALL UNIT CONVERSIONS WHERE REQUIRED *(E.G. A LABORATORY HAS REPORTED IN MICROGRAMS PER LITER BUT THE PARAMETER ON THE FORM REQUIRES PARTS PER MILLION).*
- FOR EXTRAORDINARY CIRCUMSTANCES WHERE COMPLIANCE WITH THE ABOVE IS IMPOSSIBLE, BRIEFLY DETAIL THE PARTICULARS IN WRITING. INCLUDE A CONTACT PERSON'S NAME AND TELEPHONE NUMBER. A DIVISION REPRESENTATIVE WILL TELEPHONE TO DISCUSS THE PROBLEM AND EFFECT A SOLUTION.

REMARK CODES

B RESULTS ARE BASED UPON COLONY COUNTS OUTSIDE THE ACCEPTABLE RANGE.

C CALCULATED

J ESTIMATED VALUE, VALUE IS NOT ACCURATE. USE IF SAMPLE EXCEEDED HOLDING TIME.

K ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN. USE IF ANALYSIS IS NEGATIVE, BUT WITH THE LIMIT OF DETECTABILITY AS THE VALUE.

L ACTUAL VALUE IS KNOWN TO BE GREATER THAN THE VALUE GIVEN.

O SAMPLED BUT ANALYSIS LOST.

U MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. CODE "K" WHERE LIMIT OF DETECTABILITY EXISTS. CODE "U" WHERE NO LIMIT OF DETECTABILITY EXISTS.

Form VWX-015A
9/91

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND ENERGY
DIVISION OF PUBLICLY FUNDED SITE REMEDIATION
GROUND WATER QUALITY MANAGEMENT ELEMENT

GROUND WATER ANALYSIS - MONITORING WELL REPORT

PLEASE TYPE OR PRINT WITH BALLPOINT PEN

OWNER'S WELL ID NO. PD-5

FACILITY NAME	SW ID NO.
Pitt-Consol Chemical - Newark	PD-5
LAB NAME	
Enseco, Incorporated	

R	NJPDES NO.	WELL PERMIT NO.	SAMPLE DATE TR. MO. DAY	NJ LAB CERT.NO.	WQM USE
	NJ 0060704	26-09076-7	94 11 14	18725	
1	2 8	9 16	17 22	23 27	28

THE SCHEDULE INDICATED BELOW IS TO BE OBSERVED FROM 10 94 (MO. YR.) TO 12 94 (MO. YR.)

SUBMIT WITH SIGNED T-VWX-014

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANALYSIS	UNITS	PARAMETER	VALUE	REM
	X			X			X			X		Elev. of top of well casing with cap off (as specified in well completion report)	feet Msl: to nearest 0.01	72110	10.02	
	X			X			X			X		Elev. of original ground level (as specified in well completion report)	feet Msl: to nearest 0.01	72009	8.02	
	X			X			X			X		Depth to water table from top of casing prior to sampling (with cap off)	feet: to nearest 0.01	82546	5.04	
	X			X			X			X		Depth to water table from original ground level prior to sampling	feet: to nearest 0.01	72019	3.04	
												Arsenic, Dissolved	ug/l as As	01000		
												Barium, Dissolved	ug/l as Ba	01005		
												Biochemical Oxygen Demand - 5 Day	mg/l	00370		
												Cadmium, Dissolved	ug/l as Cd	01025		
												Chloride, Dissolved	ug/l as Cl	82295		
												Chromium, Dissolved	ug/l as Cr	01030		
												Chromium, Dissolved, Hexavalent	ug/l as Cr	01220		
												Chemical Oxygen Demand (COD), Dissolved	mg/l	00341		
												Coliform Group	n/100 ml	74056		
												Color	pt-co	00080		
												Copper, Dissolved	ug/l as Cu	01040		
												Cyanide, Total	mg/l as CN	00720		
												Endrin, Total	ug/l	39390		
												Fluoride, Dissolved	mg/l as F	00950		
												Gross Alpha, Dissolved	pc/l	01503		
												Gross Beta, Dissolved	pc/l	03503		
												Hardness, Total as CaCO3	mg/l	00900		
												Iron, Dissolved	mg/l as Fe	01046		
												Lead, Dissolved	ug/l as Pb	01049		
												Lindane, Total	ug/l	39782		
												Manganese, Dissolved	ug/l	01056		
												Mercury, Dissolved	ug/l	71890		

29 33 34 40 41

VALUE CODING AND REMARK CODES ON REVERSE

843010207

VALUE CODING RULES

- NUMBERS SHALL BE CODED IN CONTIGUOUS BLOCKS *(NO EMBEDDED BLANKS)* WITH ONE DIGIT PER BLOCK.
- THE DECIMAL POINT MUST BE CODED AS PART OF EACH VALUE. THE DECIMAL POINT SHALL OCCUPY ONE BLOCK BY ITSELF.
- THE UNITS DETAILED FOR EACH PARAMETER NUMBER MUST BE UTILIZED. SUBSTITUTION OF UNITS IS NOT ALLOWED. THE PERSON(S) PREPARING THE REPORT ARE RESPONSIBLE FOR ALL UNIT CONVERSIONS WHERE REQUIRED *(E.G. A LABORATORY HAS REPORTED IN MICROGRAMS PER LITER BUT THE PARAMETER ON THE FORM REQUIRES PARTS PER MILLION).*
- FOR EXTRAORDINARY CIRCUMSTANCES WHERE COMPLIANCE WITH THE ABOVE IS IMPOSSIBLE, BRIEFLY DETAIL THE PARTICULARS IN WRITING. INCLUDE A CONTACT PERSON'S NAME AND TELEPHONE NUMBER. A DIVISION REPRESENTATIVE WILL TELEPHONE TO DISCUSS THE PROBLEM AND EFFECT A SOLUTION.

REMARK CODES

B RESULTS ARE BASED UPON COLONY COUNTS OUTSIDE THE ACCEPTABLE RANGE.

C CALCULATED

J ESTIMATED VALUE, VALUE IS NOT ACCURATE. USE IF SAMPLE EXCEEDED HOLDING TIME.

K ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN. USE IF ANALYSIS IS NEGATIVE, BUT WITH THE LIMIT OF DETECTABILITY AS THE VALUE.

L ACTUAL VALUE IS KNOWN TO BE GREATER THAN THE VALUE GIVEN.

O SAMPLED BUT ANALYSIS LOST.

U MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. CODE "K" WHERE LIMIT OF DETECTABILITY EXISTS. CODE "U" WHERE NO LIMIT OF DETECTABILITY EXISTS.

Form VWX-0158
9/91

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND ENERGY
DIVISION OF PUBLICLY FUNDED SITE REMEDIATION
GROUND WATER QUALITY MANAGEMENT ELEMENT

GROUND WATER ANALYSIS - MONITORING WELL REPORT

PLEASE TYPE OR PRINT WITH BALLPOINT PEN

OWNER'S WELL ID NO. PD-5

FACILITY NAME	SW ID NO.
Pitt-Consol	PD-5
LAB NAME	
Enseco, Incorporated	

	NJPDES NO.	WELL PERMIT NO.	SAMPLE DATE YR. MO. DAY	NJ LAB CERT.NO.	WQM USE
S	NJ 0060704	26-09076-7	94 11 14	18725	
1	2 8	9 16	17 22	23 27	28

THE SCHEDULE INDICATED BELOW IS TO BE OBSERVED FROM 10 94 (MO. YR.) TO 12 94 (MO. YR.)

SUBMIT WITH SIGNED T-VWX-014

SAMPLING MONTHS JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANALYSIS	UNITS	PARAMETER	VALUE	REM
												Methoxychlor, Total	ug/l	39480		
												Methylene Blue Active Substances	mg/l	38260		
												Nitrogen,Ammonia, Dissolved NH3+NH4 as N	mg/l as N	00608		
												Nitrogen, Nitrate, Dissolved	mg/l as N	00618		
												Odor	T.O.N.	00085		
	X		X			X			X			pH	Stn. Units	00400	6.51	
	X		X			X			X			Phenols, Total Recoverable	ug/l	32730	80.0.	
												Radium 226, Dissolved	pc/l	09503		
												Radium 228, Dissolved	pc/l	81366		
												Selenium, Dissolved	ug/l	01145		
												Silver, Dissolved	ug/l	01075		
												Sodium, Dissolved	mg/l	00930		
												Sulfate, Dissolved (as SO4)	mg/l	00946		
	X		X			X			X			Total Dissolved Solids (TDS)	ppm	70300	1390.	
	X		X			X			X			Total Organic Carbon (TOC)	ppm	00680	60..	
	X		X			X			X			Total Organic Halogen (TOX)	ug/l	70353	190..	
												Toxaphene	ug/l	39400		
												Turbidity	ntu	00076		
												Zinc, Dissolved	ug/l	01090		
												2,4-D,Total	ug/l	39730		
												2,4,5-TP, Total	ug/l	39045		

29 33 34 40 41

VALUE CODING AND REMARK CODES ON REVERSE

843010209

VALUE CODING RULES

- NUMBERS SHALL BE CODED IN CONTIGUOUS BLOCKS *(NO EMBEDDED BLANKS)* WITH ONE DIGIT PER BLOCK.
- THE DECIMAL POINT MUST BE CODED AS PART OF EACH VALUE. THE DECIMAL POINT SHALL OCCUPY ONE BLOCK BY ITSELF.
- THE UNITS DETAILED FOR EACH PARAMETER NUMBER MUST BE UTILIZED. SUBSTITUTION OF UNITS IS NOT ALLOWED. THE PERSON(S) PREPARING THE REPORT ARE RESPONSIBLE FOR ALL UNIT CONVERSIONS WHERE REQUIRED *(E.G. A LABORATORY HAS REPORTED IN MICROGRAMS PER LITER BUT THE PARAMETER ON THE FORM REQUIRES PARTS PER MILLION).*
- FOR EXTRAORDINARY CIRCUMSTANCES WHERE COMPLIANCE WITH THE ABOVE IS IMPOSSIBLE, BRIEFLY DETAIL THE PARTICULARS IN WRITING. INCLUDE A CONTACT PERSON'S NAME AND TELEPHONE NUMBER. A DIVISION REPRESENTATIVE WILL TELEPHONE TO DISCUSS THE PROBLEM AND EFFECT A SOLUTION.

REMARK CODES

B	RESULTS ARE BASED UPON COLONY COUNTS OUTSIDE THE ACCEPTABLE RANGE.
C	CALCULATED
J	ESTIMATED VALUE, VALUE IS NOT ACCURATE. USE IF SAMPLE EXCEEDED HOLDING TIME.
K	ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN. USE IF ANALYSIS IS NEGATIVE, BUT WITH THE LIMIT OF DETECTABILITY AS THE VALUE.
L	ACTUAL VALUE IS KNOWN TO BE GREATER THAN THE VALUE GIVEN.
O	SAMPLED BUT ANALYSIS LOST.
U	MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. CODE "K" WHERE LIMIT OF DETECTABILITY EXISTS. CODE "U" WHERE NO LIMIT OF DETECTABILITY EXISTS.

Form VWX-015A
9/91

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND ENERGY
DIVISION OF PUBLICLY FUNDED SITE REMEDIATION
GROUND WATER QUALITY MANAGEMENT ELEMENT

GROUND WATER ANALYSIS - MONITORING WELL REPORT

PLEASE TYPE OR PRINT WITH BALLPOINT PEN

OWNER'S WELL ID NO. PD-7

FACILITY NAME	Pitt-Consol Chemical - Newark	SW ID NO.	PD-7
LAB NAME	Enseco, Incorporated		

	NJPDES NO.	WELL PERMIT NO.	SAMPLE DATE YR. MO. DAY	NJ LAB CERT.NO.	WQM USE
R	NJ 0060704	26-09077-5	94 11 14	18725	
1	2 8	9 16	17 22	23 27	28

THE SCHEDULE INDICATED BELOW IS TO BE OBSERVED FROM 10 94 (MO. YR.) TO 12 94 (MO. YR.)

SUBMIT WITH SIGNED T-VWX-014

SAMPLING MONTHS JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANALYSIS	UNITS	PARAMETER	VALUE	REM
	X			X			X			X		Elev. of top of well casing with cap off (as specified in well completion report)	feet Msl: to nearest 0.01	72110	8.82	
	X			X			X			X		Elev. of original ground level (as specified in well completion report)	feet Msl: to nearest 0.01	72009	6.32	
	X			X			X			X		Depth to water table from top of casing prior to sampling (with cap off)	feet: to nearest 0.01	82546	6.69	
	X			X			X			X		Depth to water table from original ground level prior to sampling	feet: to nearest 0.01	72019	4.19	
												Arsenic, Dissolved	ug/l as As	01000		
												Barium, Dissolved	ug/l as Ba	01005		
												Biochemical Oxygen Demand - 5 Day	mg/l	00310		
												Cadmium, Dissolved	ug/l as Cd	01025		
												Chloride, Dissolved	ug/l as Cl	82295		
												Chromium, Dissolved	ug/l as Cr	01030		
												Chromium, Dissolved, Hexavalent	ug/l as Cr	01220		
												Chemical Oxygen Demand (COD), Dissolved	mg/l	00341		
												Coliform Group	n/100 ml	74056		
												Color	pt-co	00080		
												Copper, Dissolved	ug/l as Cu	01040		
												Cyanide, Total	mg/l as CN	00720		
												Endrin, Total	ug/l	39390		
												Fluoride, Dissolved	mg/l as F	00950		
												Gross Alpha, Dissolved	pc/l	01503		
												Gross Beta, Dissolved	pc/l	03503		
												Hardness, Total as CaCO3	mg/l	00900		
												Iron, Dissolved	mg/l as Fe	01046		
												Lead, Dissolved	ug/l as Pb	01049		
												Lindane, Total	ug/l	39782		
												Manganese, Dissolved	ug/l	01056		
												Mercury, Dissolved	ug/l	71890		

29 33 34 40 41

VALUE CODING AND REMARK CODES ON REVERSE

843010211

VALUE CODING RULES

- NUMBERS SHALL BE CODED IN CONTIGUOUS BLOCKS *(NO EMBEDDED BLANKS)* WITH ONE DIGIT PER BLOCK.
- THE DECIMAL POINT MUST BE CODED AS PART OF EACH VALUE. THE DECIMAL POINT SHALL OCCUPY ONE BLOCK BY ITSELF.
- THE UNITS DETAILED FOR EACH PARAMETER NUMBER MUST BE UTILIZED. SUBSTITUTION OF UNITS IS NOT ALLOWED. THE PERSON(S) PREPARING THE REPORT ARE RESPONSIBLE FOR ALL UNIT CONVERSIONS WHERE REQUIRED *(E.G. A LABORATORY HAS REPORTED IN MICROGRAMS PER LITER BUT THE PARAMETER ON THE FORM REQUIRES PARTS PER MILLION).*
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REMARK CODES

B	RESULTS ARE BASED UPON COLONY COUNTS OUTSIDE THE ACCEPTABLE RANGE.
C	CALCULATED
J	ESTIMATED VALUE, VALUE IS NOT ACCURATE. USE IF SAMPLE EXCEEDED HOLDING TIME.
K	ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN. USE IF ANALYSIS IS NEGATIVE, BUT WITH THE LIMIT OF DETECTABILITY AS THE VALUE.
L	ACTUAL VALUE IS KNOWN TO BE GREATER THAN THE VALUE GIVEN.
O	SAMPLED BUT ANALYSIS LOST.
U	MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. CODE "K" WHERE LIMIT OF DETECTABILITY EXISTS. CODE "U" WHERE NO LIMIT OF DETECTABILITY EXISTS.

Form VWX-015B
9/91

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND ENERGY
DIVISION OF PUBLICLY FUNDED SITE REMEDIATION
GROUND WATER QUALITY MANAGEMENT ELEMENT

GROUND WATER ANALYSIS - MONITORING WELL REPORT

PLEASE TYPE OR PRINT WITH BALLPOINT PEN

OWNER'S WELL ID NO. PD-7

FACILITY NAME	Pitt-Consol	SW ID NO.	PD-7
LAB NAME	Enseco, Incorporated		

	NJPDES NO.	WELL PERMIT NO.	SAMPLE DATE YR. MO. DAY	NJ LAB CERT.NO.	WQM USE
S	NJ 0060704	26-09077-5	94 11 14	18725	
1	2 8	9 16	17 22	23 27	28

THE SCHEDULE INDICATED BELOW IS TO BE OBSERVED FROM 10 94 (NO. YR.) TO 12 94 (NO. YR.)

SUBMIT WITH SIGNED T-VWX-014

SAMPLING MONTHS JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANALYSIS	UNITS	PARAMETER	VALUE	REM
												Methoxychlor, Total	ug/l	39480		
												Methylene Blue Active Substances	mg/l	38260		
												Nitrogen,Ammonia, Dissolved NH3+NH4 as N	mg/l as N	00608		
												Nitrogen, Nitrate, Dissolved	mg/l as N	00618		
												Odor	T.O.N.	00085		
	X		X			X			X			pH	Stn. Units	00400	6.30	
	X		X			X			X			Phenols, Total Recoverable	ug/l	32730	800.	
												Radium 226, Dissolved	pc/l	09503		
												Radium 228, Dissolved	pc/l	81366		
												Selenium, Dissolved	ug/l	01145		
												Silver, Dissolved	ug/l	01075		
												Sodium, Dissolved	mg/l	00930		
												Sulfate, Dissolved (as SO4)	mg/l	00946		
	X		X			X			X			Total Dissolved Solids (TDS)	ppm	70300	110.0	
	X		X			X			X			Total Organic Carbon (TOC)	ppm	00680	70..	
	X		X			X			X			Total Organic Halogen (TOX)	ug/l	70353	210.	
												Toxaphene	ug/l	39400		
												Turbidity	ntu	00076		
												Zinc, Dissolved	ug/l	01090		
												2,4-D,Total	ug/l	39730		
												2,4,5-TP, Total	ug/l	39045		

29 33 34 40 41

VALUE CODING AND REMARK CODES ON REVERSE

843010213

VALUE CODING RULES

- NUMBERS SHALL BE CODED IN CONTIGUOUS BLOCKS *(NO EMBEDDED BLANKS)* WITH ONE DIGIT PER BLOCK.
- THE DECIMAL POINT MUST BE CODED AS PART OF EACH VALUE. THE DECIMAL POINT SHALL OCCUPY ONE BLOCK BY ITSELF.
- THE UNITS DETAILED FOR EACH PARAMETER NUMBER MUST BE UTILIZED. SUBSTITUTION OF UNITS IS NOT ALLOWED. THE PERSON(S) PREPARING THE REPORT ARE RESPONSIBLE FOR ALL UNIT CONVERSIONS WHERE REQUIRED *(E.G. A LABORATORY HAS REPORTED IN MICROGRAMS PER LITER BUT THE PARAMETER ON THE FORM REQUIRES PARTS PER MILLION).*
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REMARK CODES

B	RESULTS ARE BASED UPON COLONY COUNTS OUTSIDE THE ACCEPTABLE RANGE.
C	CALCULATED
J	ESTIMATED VALUE, VALUE IS NOT ACCURATE. USE IF SAMPLE EXCEEDED HOLDING TIME.
K	ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN. USE IF ANALYSIS IS NEGATIVE, BUT WITH THE LIMIT OF DETECTABILITY AS THE VALUE.
L	ACTUAL VALUE IS KNOWN TO BE GREATER THAN THE VALUE GIVEN.
O	SAMPLED BUT ANALYSIS LOST.
U	MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. CODE "K" WHERE LIMIT OF DETECTABILITY EXISTS. CODE "U" WHERE NO LIMIT OF DETECTABILITY EXISTS.

Form VWX-015A
9/91

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND ENERGY
DIVISION OF PUBLICLY FUNDED SITE REMEDIATION
GROUND WATER QUALITY MANAGEMENT ELEMENT

GROUND WATER ANALYSIS - MONITORING WELL REPORT

PLEASE TYPE OR PRINT WITH BALLPOINT PEN

OWNER'S WELL ID NO. PD-11

FACILITY NAME: Pitt-Consol Chemical - Newark	SW ID NO. PD-11
LAB NAME: Enseco, Incorporated	

R	NJPDES NO.	WELL PERMIT NO.	SAMPLE DATE YR. MO. DAY	NJ LAB CERT.NO.	WQM USE
	NJ 0060704	26-07917-8	941114	18725	
1	2 8	9 16	17 22	23 27	28

THE SCHEDULE INDICATED BELOW IS TO BE OBSERVED FROM 10 94 (MO. YR.) TO 12 94 (MO. YR.)

SUBMIT WITH SIGNED T-VWX-014

SAMPLING MONTHS: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANALYSIS	UNITS	PARAMETER	VALUE	REM
	X			X			X			X		Elev. of top of well casing with cap off (as specified in well completion report)	feet Msl: to nearest 0.01	72110	8.06	
	X			X			X			X		Elev. of original ground level (as specified in well completion report)	feet Msl: to nearest 0.01	72009	6.56	
	X			X			X			X		Depth to water table from top of casing prior to sampling (with cap off)	feet: to nearest 0.01	82546	6.20	
	X			X			X			X		Depth to water table from original ground level prior to sampling	feet: to nearest 0.01	72019	4.70	
												Arsenic, Dissolved	ug/l as As	01000		
												Barium, Dissolved	ug/l as Ba	01005		
												Biochemical Oxygen Demand - 5 Day	mg/l	00310		
												Cadmium, Dissolved	ug/l as Cd	01025		
												Chloride, Dissolved	ug/l as Cl	82295		
												Chromium, Dissolved	ug/l as Cr	01030		
												Chromium, Dissolved, Hexavalent	ug/l as Cr	01220		
												Chemical Oxygen Demand (COD), Dissolved	mg/l	00341		
												Coliform Group	n/100 ml	74056		
												Color	pt-co	00080		
												Copper, Dissolved	ug/l as Cu	01040		
												Cyanide, Total	mg/l as CN	00720		
												Endrin, Total	ug/l	39390		
												Fluoride, Dissolved	mg/l as F	00950		
												Gross Alpha, Dissolved	pc/l	01503		
												Gross Beta, Dissolved	pc/l	03503		
												Hardness, Total as CaCO3	mg/l	00900		
												Iron, Dissolved	mg/l as Fe	01046		
												Lead, Dissolved	ug/l as Pb	01049		
												Lindane, Total	ug/l	39782		
												Manganese, Dissolved	ug/l	01056		
												Mercury, Dissolved	ug/l	71890		

29 33 34 40 41

VALUE CODING AND REMARK CODES ON REVERSE

843010215

VALUE CODING RULES

- NUMBERS SHALL BE CODED IN CONTIGUOUS BLOCKS *(NO EMBEDDED BLANKS)* WITH ONE DIGIT PER BLOCK.
- THE DECIMAL POINT MUST BE CODED AS PART OF EACH VALUE. THE DECIMAL POINT SHALL OCCUPY ONE BLOCK BY ITSELF.
- THE UNITS DETAILED FOR EACH PARAMETER NUMBER MUST BE UTILIZED. SUBSTITUTION OF UNITS IS NOT ALLOWED. THE PERSON(S) PREPARING THE REPORT ARE RESPONSIBLE FOR ALL UNIT CONVERSIONS WHERE REQUIRED *(E.G. A LABORATORY HAS REPORTED IN MICROGRAMS PER LITER BUT THE PARAMETER ON THE FORM REQUIRES PARTS PER MILLION).*
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REMARK CODES

B RESULTS ARE BASED UPON COLONY COUNTS OUTSIDE THE ACCEPTABLE RANGE.

C CALCULATED

J ESTIMATED VALUE, VALUE IS NOT ACCURATE. USE IF SAMPLE EXCEEDED HOLDING TIME.

K ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN. USE IF ANALYSIS IS NEGATIVE, BUT WITH THE LIMIT OF DETECTABILITY AS THE VALUE.

L ACTUAL VALUE IS KNOWN TO BE GREATER THAN THE VALUE GIVEN.

O SAMPLED BUT ANALYSIS LOST.

U MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. CODE "K" WHERE LIMIT OF DETECTABILITY EXISTS. CODE "U" WHERE NO LIMIT OF DETECTABILITY EXISTS.

Form VWX-015B
9/91

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND ENERGY
DIVISION OF PUBLICLY FUNDED SITE REMEDIATION
GROUND WATER QUALITY MANAGEMENT ELEMENT

GROUND WATER ANALYSIS - MONITORING WELL REPORT

PLEASE TYPE OR PRINT WITH BALLPOINT PEN

OWNER'S WELL ID NO. PD-11

FACILITY NAME	Pitt-Consol	SW ID NO.	PD-11
LAB NAME	Enseco, Incorporated		

	NJPDES NO.	WELL PERMIT NO.	SAMPLE DATE YR. MO. DAY	NJ LAB CERT. NO.	WQM USE
S	NJ 0060704	26-07917-8	94 11 14	18725	
1	2 8	9 16	17 22	23 27	28

THE SCHEDULE INDICATED BELOW IS TO BE OBSERVED FROM 10 94 (MO. YR.) TO 12 94 (MO. YR.)

SUBMIT WITH SIGNED T-VWX-014

SAMPLING MONTHS JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANALYSIS	UNITS	PARAMETER	VALUE	REM
												Methoxychlor, Total	ug/l	39480		
												Methylene Blue Active Substances	mg/l	38260		
												Nitrogen, Ammonia, Dissolved NH3+NH4 as N	mg/l as N	00608		
												Nitrogen, Nitrate, Dissolved	mg/l as N	00618		
												Odor	T.O.N.	00085		
	X			X			X			X		pH	Stn. Units	00400	6.51	
	X			X			X			X		Phenols, Total Recoverable	ug/l	32730	13900.	
												Radium 226, Dissolved	pc/l	09503		
												Radium 228, Dissolved	pc/l	81366		
												Selenium, Dissolved	ug/l	01145		
												Silver, Dissolved	ug/l	01075		
												Sodium, Dissolved	mg/l	00930		
												Sulfate, Dissolved (as SO4)	mg/l	00946		
	X			X			X			X		Total Dissolved Solids (TDS)	ppm	70300	940 0.	
	X			X			X			X		Total Organic Carbon (TOC)	ppm	00680	710 .	
	X			X			X			X		Total Organic Halogen (TOX)	ug/l	70353	700..	
												Toxaphene	ug/l	39400		
												Turbidity	ntu	00076		
												Zinc, Dissolved	ug/l	01090		
												2,4-D, Total	ug/l	39730		
												2,4,5-TP, Total	ug/l	39045		

29 33 34 40 41

VALUE CODING AND REMARK CODES ON REVERSE

843010217

VALUE CODING RULES

- NUMBERS SHALL BE CODED IN CONTIGUOUS BLOCKS *(NO EMBEDDED BLANKS)* WITH ONE DIGIT PER BLOCK.
- THE DECIMAL POINT MUST BE CODED AS PART OF EACH VALUE. THE DECIMAL POINT SHALL OCCUPY ONE BLOCK BY ITSELF.
- THE UNITS DETAILED FOR EACH PARAMETER NUMBER MUST BE UTILIZED. SUBSTITUTION OF UNITS IS NOT ALLOWED. THE PERSON(S) PREPARING THE REPORT ARE RESPONSIBLE FOR ALL UNIT CONVERSIONS WHERE REQUIRED *(E.G. A LABORATORY HAS REPORTED IN MICROGRAMS PER LITER BUT THE PARAMETER ON THE FORM REQUIRES PARTS PER MILLION).*
- FOR EXTRAORDINARY CIRCUMSTANCES WHERE COMPLIANCE WITH THE ABOVE IS IMPOSSIBLE, BRIEFLY DETAIL THE PARTICULARS IN WRITING. INCLUDE A CONTACT PERSON'S NAME AND TELEPHONE NUMBER. A DIVISION REPRESENTATIVE WILL TELEPHONE TO DISCUSS THE PROBLEM AND EFFECT A SOLUTION.

REMARK CODES

B RESULTS ARE BASED UPON COLONY COUNTS OUTSIDE THE ACCEPTABLE RANGE.

C CALCULATED

J ESTIMATED VALUE, VALUE IS NOT ACCURATE. USE IF SAMPLE EXCEEDED HOLDING TIME.

K ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN. USE IF ANALYSIS IS NEGATIVE, BUT WITH THE LIMIT OF DETECTABILITY AS THE VALUE.

L ACTUAL VALUE IS KNOWN TO BE GREATER THAN THE VALUE GIVEN.

O SAMPLED BUT ANALYSIS LOST.

U MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. CODE "K" WHERE LIMIT OF DETECTABILITY EXISTS. CODE "U" WHERE NO LIMIT OF DETECTABILITY EXISTS.

Form VWX-015A
9/91

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND ENERGY
DIVISION OF PUBLICLY FUNDED SITE REMEDIATION
GROUND WATER QUALITY MANAGEMENT ELEMENT

GROUND WATER ANALYSIS - MONITORING WELL REPORT

PLEASE TYPE OR PRINT WITH BALLPOINT PEN

OWNER'S WELL ID NO._____

FACILITY NAME	SW ID NO.
Pitt-Consol Chemical - Newark	PD-2
LAB NAME	

	NJPDES NO.	WELL PERMIT NO.	SAMPLE DATE YR. NO. DAY	NJ LAB CERT. NO.	WQM USE
R	NJ 0060704	26-26735-0	94 11 14	18725	
1	2 8	9 16	17 22	23 27	28

THE SCHEDULE INDICATED BELOW IS TO BE OBSERVED FROM 10 94 (MO. YR.) TO 12 94 (MO. YR.)

SUBMIT WITH SIGNED T-VWX-014

SAMPLING MONTHS JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANALYSIS	UNITS	PARAMETER	VALUE	REM
							X			X		Elev. of top of well casing with cap off (as specified in well completion report)	feet Msl: to nearest 0.01	72110	8.96	
							X			X		Elev. of original ground level (as specified in well completion report)	feet Msl: to nearest 0.01	72009	6.07	
							X			X		Depth to water table from top of casing prior to sampling (with cap off)	feet: to nearest 0.01	82546	61.78	
							X			X		Depth to water table from original ground level prior to sampling	feet: to nearest 0.01	72019	3.89	
												Arsenic, Dissolved	ug/l as As	01000		
												Barium, Dissolved	ug/l as Ba	01005		
												Biochemical Oxygen Demand - 5 Day	mg/l	00310		
												Cadmium, Dissolved	ug/l as Cd	01025		
												Chloride, Dissolved	ug/l as Cl	82295		
												Chromium, Dissolved	ug/l as Cr	01030		
												Chromium, Dissolved, Hexavalent	ug/l as Cr	01220		
												Chemical Oxygen Demand (COD), Dissolved	mg/l	00341		
												Coliform Group	n/100 ml	74056		
												Color	pt-co	00080		
												Copper, Dissolved	ug/l as Cu	01040		
												Cyanide, Total	mg/l as CN	00720		
												Endrin, Total	ug/l	39390		
												Fluoride, Dissolved	mg/l as F	00950		
												Gross Alpha, Dissolved	pc/l	01503		
												Gross Beta, Dissolved	pc/l	03503		
												Hardness, Total as CaCO3	mg/l	00900		
												Iron, Dissolved	mg/l as Fe	01046		
												Lead, Dissolved	ug/l as Pb	01049		
												Lindane, Total	ug/l	39782		
												Manganese, Dissolved	ug/l	01056		
												Mercury, Dissolved	ug/l	71890		

29 33 34 40 41

VALUE CODING AND REMARK CODES ON REVERSE

843010219

VALUE CODING RULES

- NUMBERS SHALL BE CODED IN CONTIGUOUS BLOCKS *(NO EMBEDDED BLANKS)* WITH ONE DIGIT PER BLOCK.
- THE DECIMAL POINT MUST BE CODED AS PART OF EACH VALUE. THE DECIMAL POINT SHALL OCCUPY ONE BLOCK BY ITSELF.
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- FOR EXTRAORDINARY CIRCUMSTANCES WHERE COMPLIANCE WITH THE ABOVE IS IMPOSSIBLE, BRIEFLY DETAIL THE PARTICULARS IN WRITING. INCLUDE A CONTACT PERSON'S NAME AND TELEPHONE NUMBER. A DIVISION REPRESENTATIVE WILL TELEPHONE TO DISCUSS THE PROBLEM AND EFFECT A SOLUTION.

REMARK CODES

B	RESULTS ARE BASED UPON COLONY COUNTS OUTSIDE THE ACCEPTABLE RANGE.
C	CALCULATED
J	ESTIMATED VALUE, VALUE IS NOT ACCURATE. USE IF SAMPLE EXCEEDED HOLDING TIME.
K	ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN. USE IF ANALYSIS IS NEGATIVE, BUT WITH THE LIMIT OF DETECTABILITY AS THE VALUE.
L	ACTUAL VALUE IS KNOWN TO BE GREATER THAN THE VALUE GIVEN.
O	SAMPLED BUT ANALYSIS LOST.
U	MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. CODE "K" WHERE LIMIT OF DETECTABILITY EXISTS. CODE "U" WHERE NO LIMIT OF DETECTABILITY EXISTS.

9/91

DIVISION OF PUBLICLY FUNDED SITE REMEDIATION
GROUND WATER QUALITY MANAGEMENT ELEMENT

GROUND WATER ANALYSIS - MONITORING WELL REPORT

PLEASE TYPE OR PRINT WITH BALLPOINT PEN

OWNER'S WELL ID NO._____

FACILITY NAME	Pitt-Consol	SW ID NO.	PD-2
LAB NAME	Enseco, Incorporated		

S (1)	NJPDES NO. NJ 0060704 (2–8)	WELL PERMIT NO. (9–16)	SAMPLE DATE YR. NO. DAY 94 11 14 (17–22)	NJ LAB CERT.NO. 18725 (23–27)	WQM USE (28)

THE SCHEDULE INDICATED BELOW IS TO BE OBSERVED FROM 10 94 (NO. YR.) TO 12 94 (NO. YR.)

SUBMIT WITH SIGNED T-VWX-014

SAMPLING MONTHS JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANALYSIS	UNITS	PARAMETER	VALUE	REM
												Methoxychlor, Total	ug/l	39480		
												Methylene Blue Active Substances	mg/l	38260		
												Nitrogen,Ammonia, Dissolved NH3+NH4 as N	mg/l as N	00608		
												Nitrogen, Nitrate, Dissolved	mg/l as N	00618		
												Odor	T.O.N.	00085		
							X			X		pH	Stn. Units	00400	8.50	
							X			X		Phenols, Total Recoverable	ug/l	32730	810000.	
												Radium 226, Dissolved	pc/l	09503		
												Radium 228, Dissolved	pc/l	81366		
												Selenium, Dissolved	ug/l	01145		
												Silver, Dissolved	ug/l	01075		
												Sodium, Dissolved	mg/l	00930		
												Sulfate, Dissolved (as SO4)	mg/l	00946		
							X			X		Total Dissolved Solids (TDS)	ppm	70300	3200.	
							X			X		Total Organic Carbon (TOC)	ppm	00680	280.	
							X			X		Total Organic Halogen (TOX)	ug/l	70353	400.	
												Toxaphene	ug/l	39400		
												Turbidity	ntu	00076		
												Zinc, Dissolved	ug/l	01090		
												2,4-D,Total	ug/l	39730		
												2,4,5-TP, Total	ug/l	39045		

29 33 34 40 41

VALUE CODING AND REMARK CODES ON REVERSE

843010221

VALUE CODING RULES

- NUMBERS SHALL BE CODED IN CONTIGUOUS BLOCKS *(NO EMBEDDED BLANKS)* WITH ONE DIGIT PER BLOCK.
- THE DECIMAL POINT MUST BE CODED AS PART OF EACH VALUE. THE DECIMAL POINT SHALL OCCUPY ONE BLOCK BY ITSELF.
- THE UNITS DETAILED FOR EACH PARAMETER NUMBER MUST BE UTILIZED. SUBSTITUTION OF UNITS IS NOT ALLOWED. THE PERSON(S) PREPARING THE REPORT ARE RESPONSIBLE FOR ALL UNIT CONVERSIONS WHERE REQUIRED *(E.G. A LABORATORY HAS REPORTED IN MICROGRAMS PER LITER BUT THE PARAMETER ON THE FORM REQUIRES PARTS PER MILLION).*
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REMARK CODES

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C	CALCULATED
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L	ACTUAL VALUE IS KNOWN TO BE GREATER THAN THE VALUE GIVEN.
O	SAMPLED BUT ANALYSIS LOST.
U	MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. CODE "K" WHERE LIMIT OF DETECTABILITY EXISTS. CODE "U" WHERE NO LIMIT OF DETECTABILITY EXISTS.

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RECEIVED
APR 16 1985
ENVIRONMENTAL AFFAIRS
PETROCHEMICALS DEPT.

State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WASTE MANAGEMENT
32 E. Hanover St., CN 028, Trenton, N.J. 08625

DR. MARWAN M. SADAT, P.E.
DIRECTOR

LINO F. PEREIRA, P.E.
DEPUTY DIRECTOR

11 APR 1985

Gregory J. Hollod, Ph.D.
Senior Environmental Engineer
E.I. DuPont de Nemours & Co.
Petrochemicals Department
1007 Market St.
Wilmington, Delaware 19898

RE: Facility Closure, Pitt Consol, Newark, NJ, Essex County, 191 Doremus Avenue, EPA ID NO. NJD 004 948 188

Dear Dr. Hollod:

The Department of Environmental Protection has received October 1, 1984 notification with documentation as evidence of a completed closure of all hazardous waste storage and treatment aspects at the above referenced facility.

The certificate of closure by an independent registered professional engineer and by the owner/operator are in accordance with the requirements of N.J.A.C. 7:26-9.8 and the September 5, 1983 approved closure plan.

Additionally, a site inspection was conducted by a member of my staff on September 24, 1984 to verify clean conditions of tanks, pads, and storage areas.

On the basis of the foregoing, the Department concludes that the Pitt Consol Chemicals, Conoco Inc., Newark, Essex County, NJ, facility identified as:

EPA ID NO. NJD 004 948 188

has satisfactorily completed the closure of Hazardous Waste Treatment, Storage, and Disposal (TSDF).

The EPA identification number can be retained for the site as requested to identify the facility as a generator only provided that the requirements of N.J.A.C. 7:26-9.3(a) are in force and maintained. This was requested by Pitt Consol on October 1, 1984 to address the need to ship any classified waste encountered in the course of plant dismantlement. All manufacturing activity ceased in May, 1983.

11 APR 1985

Additionally, it should be noted that the sump, subject of item 1 of the Closure Plan, has been decontaminated of all hazardous waste, will remain in service, discharging non-hazardous waste water (storm water, etc.) to the Passaic Valley Sewage Commission under conditions of discharge permit no. 20401072 (also per your October 1, 1984 request).

Your company's hazardous waste facility is no longer included in DEP's list of "existing facilities" (see N.J.A.C. 7:26-1.4 and 12.3) and therefore does not need to conform with the interim operating requirements of N.J.A.C. 7:26-1 et seq. for existing facilities.

The issuance of this letter by the Department does not indicate, or imply, and should not be construed as a waiver of any requirements pursuant to the New Jersey Water Pollution Control Act, N.J.S.A. 58:10A-1 et seq. and regulations promulgated thereunder concerning New Jersey Pollutant Discharge Elimination System, N.J.A.C. 7:14A-1 et seq. If your facility is in any of the regulated categories identified in the above cited regulations, you are hereby directed to apply for any and all permits necessary within ninety (or 180 days - at the option of DWR) to the Bureau of Ground Water Discharge Permits, CN 029, Trenton, New Jersey, 08625. Applications may be obtained by calling (609) 292-0424.

You are further reminded that to operate a hazardous waste facility without prior approval from the DEP is a violation of the Solid Waste Management Act N.J.S.A. 13:1E-1 et seq.

Very truly yours,

Frank Coolick

Frank Coolick, Chief
Bureau of Hazardous Waste Engineering

EP5/slw

c: A. Chang, EPA, Region II
R. Baker, EPA, Region II
S. Schiffman, DWM, BHWPC
J. Trela, DWR, BGWDP

ERTIFIED MAIL
P405 643 087
ETURN RECEIPT REQUESTED

PITT CONSOL CHEMICAL CO.
RECEIVED
NOV 30 1983
AM PM

State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WASTE MANAGEMENT
32 E. Hanover St., CN 028, Trenton, N.J. 08625

MARWAN M. SADAT, P.E.
DIRECTOR

November 23, 1983

LINO F. PEREIRA, P.E.
DEPUTY DIRECTOR

Mr. David W. Hallis
Pitt-Consol Chemicals
Conoco, Inc.
191 Doremus Avenue
Newark, New Jersey 07105

RE: Complete Closure of Pitt-Consol Chemicals, Newark, Essex County
EPA ID NO. NJD004948188

Dear Mr. Hallis:

The Department of Environmental Protection has reviewed your September 5, 1983 letter with the accompanying closure plan requesting complete closure of the Doremus Avenue site.

As a result of this review, the Department hereby grants approval for the complete closure of the referenced site. The following procedures shall be followed to complete this closure:

1) All tankage and process equipment will be free of hazardous materials and no hazardous materials will remain stored at the plant.

2) The Hot-Box will be cleaned of drums, steam rack disassembled and the entire unit decontaminated.

3) The drum storage area will be cleared of drums with the diked enclosed area cleaned and decontaminated.

4) The accumulated bagged asbestos will be disposed of to a DEP approved sanitary landfill.

5) The effluent sump and adjoining effluent phase separator will be emptied and cleaned. Disconnect and plug all inlet lines. Remove all appurtances such as pumps, skimmer, piping, etc.

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This closure shall be completed within 180 days of the date of this letter. Upon completion of closure, certification shall be submitted to the Department by Pitt-Consol Chemicals Co. and an independent registered professional engineer that the facility has been closed in accordance with the approved closure plan.

Should you have any questions on this matter, please contact Mr. Erwin Rutkowski of my staff at (609) 292-5361.

Very truly yours,

Edward J. Londres
Assistant Director
Engineering

EP5/jb

c: Joel Golumbek
USEPA-Region II

Pitt-Consol Chemicals
Conoco Inc.
191 Doremus Avenue
Newark, NJ 07105
(201) 344-3800

October 1, 1984

Mr. Frank Coolick, Chief
Bureau of Hazardous Waste Engineering
Department of Environmental Protection
32 East Hanover Street, CN 027
Trenton, NJ 08625

Dear Mr. Coolick:

Re: Hazardous Waste Facilities Closure
Pitt-Consol, Newark, NJ
EPA I.D. No. NJD004948188

Closure activities at the referenced Hazardous Waste Facilities have been completed as detailed in our Closure Plan as submitted 9/5/83 and approved 11/23/83 (Edward J. Londres to David W. Hallis), and in accordance with N.J.A.C. 7:26 - 9.8.

The following documentation is submitted as required:

(1) Certification of closure by an independent, registered professional engineer. (Exhibit A)

(2) Certification of closure by owner/operator. (Exhibit B)

The site was visited by Mr. Erwin Rutkowski of your Bureau following completion of closure, 9/24/84.

Sincerely,

George H. Cassedy
Environmental Consultant

GHC:da

BCC: G. J. Hollod
C. B. Everett
R. N. Franz

843010228

EXHIBIT A

1-E Franklin Greens
Somerset, NJ 08873

September 27, 1984

Mr. Frank Coolick, Chief
Bureau of Hazardous Waste Engineering
Department of Environmental Protection
32 East Hanover Street, CN 027
Trenton, NJ 08625

Re: Complete Closure of Pitt-Consol Chemicals, Newark, Essex County. EPA I.D. No. NJD004948188

Dear Mr. Coolick:

In accordance with N.J.A.C. 7:26-9.8(1), I have reviewed closure activities at the Pitt-Consol Chemicals, Doremus Avenue, Newark, Essex County, hazardous waste treatment, storage and disposal facility.

A copy of the approved closure plan of November 23, 1983, sent to Mr. David W. Hallis of Pitt-Consol by Mr. Edward J. Londres of the Bureau of Hazardous Waste Engineering, has been reviewed by me. I have also monitored cleanup operations and inspected each of the specific items listed in the closure plan, namely:

All tankage and process equipment being free of hazardous materials and no hazardous materials remaining stored at the site.

The Hot-Box for being cleaned of drums, steamrack disassembled and the entire unit being decontaminated.

The drum storage area being cleared of drums with the diked enclosed area cleaned and decontaminated.

The accumulated bagged asbestos being disposed of to a DEP-approved sanitary landfill.

The effluent sump and adjoining effluent phase separator being emptied and cleaned.

George R. Stone

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Mr. Frank Coolick, Chief
Bureau of Hazardous Waste Engineering

September 27, 1984

I have also reviewed records, reports and documents related to the cleanup operations.

I hereby certify, as an independent professional engineer registered in the State of New Jersey (GE 20177), that closure has been properly completed in accordance with the approved closure plan.

Very truly yours,

George R. Stone

George R. Stone, P.E.

George R. Stone

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EXHIBIT B

conoco

Pitt-Consol Chemicals
Conoco Inc.
191 Doremus Avenue
Newark, NJ 07105
(201) 344-3800

October 1, 1984

Mr. Frank Coolick, Chief
Bureau of Hazardous Waste Engineering
Department of Environmental Protection
32 East Hanover Street, CN 027
Trenton, NJ 08625

Dear Mr. Coolick:

I hereby certify that the Pitt-Consol site at 191 Doremus Avenue, Newark, NJ, EPA I.D. No. NJD004948188, has completed closure, according to the closure plan dated 9/5/83, and approved 11/23/83, and in accordance with the requirements of N.J.A.C. 7:26 - 9.8.

It should be noted that while the sump, subject of Item I of the Closure Plan, has been decontaminated of all hazardous waste, it will remain in service, discharging non-hazardous waste water to the Passaic Valley Sewage Commission facility under conditions of our discharge permit No. 20401072.

Please also recognize that although the subject site has ceased all manufacturing activities, there may be need to "generate" and ship hazardous waste in the course of dismantlement of the plant. Therefore, the EPA I.D. No. NJD004948188 will be retained for that purpose.

Very truly yours,

B. Ratliff

BR:da

BCC: G. H. Cassedy
G. J. Hollod
R. N. Franz

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(*e*) The rights, if any, which the shares of such series may have for conversion into shares of any other class or classes or any other series of the same or any other class or classes of stock of the corporation.

All shares of any one series of Preferred Stock shall be identical with each other in all respects, except that shares of any one series issued at different times may differ as to the dates from which the initial dividends thereon shall accumulate; and all series shall rank equally and be identical in all respects, except as permitted in the foregoing provisions of this Section III.

IV. The Preferred Stock shall entitle the holders thereof to receive, when and as declared from the surplus or net earnings of the corporation, cumulative dividends, payable quarterly on such dates as the Board of Directors may determine, at the rates fixed herein or fixed by the Board of Directors for the respective series, as herein provided, and no more, which dividends shall be paid or set apart before any dividend shall be set apart or paid on the Common Stock. The dividend payment dates for all series of Preferred Stock shall be the same and no dividends shall be declared on any series in respect of any quarterly dividend payment unless there shall likewise be or have been declared on all shares of Preferred Stock of each other series at the time outstanding like proportionate dividends ratably in proportion to the respective annual dividend rates fixed therefor.

V. In the event of any liquidation or dissolution or winding-up of the corporation, whether voluntary or involuntary, the Preferred Stock shall entitle the holders thereof to be paid the amounts fixed herein or fixed by the Board of Directors for the respective series as herein provided, including all unpaid accumulated dividends thereon to the date of such payment, before any amount

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unpaid accumulated dividends thereon to the date of such payment.

(*d*) The Preferred Stock—$4.50 Series shall be subject to redemption on or before April 25, 1952 at One Hundred Twenty-five Dollars ($125.00) per share and accumulated dividends thereon to the date of redemption, and thereafter at One Hundred Twenty Dollars ($120.00) per share and accumulated dividends thereon to the date of redemption, upon the terms and in the manner as hereinafter provided.

III. Authority is hereby expressly granted to the Board of Directors of the corporation, subject to the provisions of this Article FOURTH, to authorize the issue of one or more series of Preferred Stock in addition to the $4.50 Series and with respect to each such series to fix by resolution or resolutions providing for the issue of such series:

(*a*) The number of shares to constitute such series and the distinctive designation thereof;

(*b*) The dividend rate on the shares of such series and the date or dates from which dividends shall accumulate;

(*c*) The amount per share over and above any accumulated dividends thereon which the shares of such series shall be entitled to receive upon redemption;

(*d*) The amount per share over and above accumulated dividends which such series shall be entitled to receive (1) upon involuntary liquidation or dissolution or winding-up of the corporation, which amount shall not exceed $100.00 a share, and (2) upon voluntary liquidation or dissolution or winding-up of the corporation; and

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designation, preferences and relative, optional or other rights, and qualifications, limitations or restrictions thereof, as are stated and expressed herein, or in a resolution or resolutions providing for the issue of such series adopted by the Board of Directors as hereinafter provided.

II. (*a*) The 1,688,850 shares of the corporation's Preferred Stock issued and outstanding on April 25, 1947, shall constitute a series of Preferred Stock, designated as "Preferred Stock—$4.50 Series" (hereinafter sometimes called the "$4.50 Series Stock"). The Board of Directors may from time to time authorize the issuance of additional shares of Preferred Stock as $4.50 Series Stock.

(*b*) The shares of $4.50 Series Stock shall bear dividends at the rate of Four Dollars and Fifty Cents ($4.50) per annum from and after April 25, 1947, provided, however, that any shares of said Series issued after April 25, 1947 shall bear dividends from and after such date or dates as the Board of Directors from time to time may determine.

(*c*) In the event of any liquidation or dissolution or winding-up of the corporation, whether voluntary or involuntary, the Preferred Stock—$4.50 Series shall entitle the holders thereof to be paid, in the event of any involuntary liquidation or dissolution or winding-up of the corporation, One Hundred Dollars ($100.00) per share with all unpaid accumulated dividends thereon to the date of such payment or, in the event of any voluntary liquidation or dissolution or winding-up of the corporation, One Hundred Fifteen Dollars ($115.00) per share with all

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it, any stocks, bonds or other obligations, or any property which may be acquired by it; to secure any bonds or other obligations by it issued or incurred; to guarantee any dividends, or bonds, or contracts, or other obligations; to make and perform contracts of any kind and description, and in carrying on its business, or for the purpose of attaining or furthering any of its objects, to do any and all other acts and things, and to exercise any and all other powers which a co-partnership or natural person could do and exercise, and which now or hereafter may be authorized by law in any part of the world.

(*k*) To carry on any business whatsoever which the corporation may deem proper or convenient in connection with any of the foregoing purposes or otherwise, or which may be calculated directly or indirectly to promote the interests of the corporation or to enhance the value of its property; and it is the purpose of the corporation from time to time to do any one or more of the acts and things herein set forth; and it may conduct its business in other states, in the territories, the District of Columbia, the colonies and dependencies and in foreign countries and places; it may have one office or more than one office and keep the books of the company outside the State of Delaware, except as otherwise provided by law.

Fourth: — The total authorized stock of the corporation is as follows:

The total number of shares of all classes of stock which the corporation shall have authority to issue shall be Nine Hundred Twenty-Three Million (923,000,000), of which Twenty-Three Million (23,000,000) shares shall be Preferred Stock without par value and Nine Hundred Million (900,000,000) shares shall be Common Stock having a par value of Sixty Cents ($0.60) each.

I. The Preferred Stock may be issued from time to time in one or more series, each of such series to have such

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assets and property of any and every kind whatsoever, or any part thereof of itself or any other corporation or corporations, stock companies, association or associations, now or hereafter existing, and whether created by or under the laws of the State of Delaware, or of any other state, district, territory or colony of the United States, or any other country or otherwise, and to use, operate, manage and control such properties or any of them, either in the name of such other corporation or corporations, stock company or association, or in the name of this corporation, and while owners of any of said shares of capital stock or bonds or other property to exercise all the rights, powers and privileges of ownership of every kind and description, including the right to vote thereon, with power to designate some person for that purpose from time to time to the same extent as natural persons might or could do.

(*i*) To endorse, guarantee and secure the payment and satisfaction of the bonds, coupons, mortgages, deeds of trust, debentures, securities, obligations, evidences of indebtedness, and shares of the capital stock of other corporations, and also to guarantee and secure the payment or satisfaction of dividends on shares of the capital stock of other corporations; also to undertake the whole or any part of the assets and liabilities, existing or prospective, of any person, firm or association, also to procure any other person or corporation to assume any such obligation or obligations.

(*j*) Without in any particular limiting any of the objects and powers of the corporation, it is hereby expressly declared and provided that the corporation shall have power to do all the things hereinbefore enumerated, and also to issue or exchange stock, bonds and other obligations in payment for property purchased or acquired by it, or for any other object in or about its business; to borrow money without limit; to mortgage or pledge its franchises, real or personal property, income and profits accruing to

843010237

(*e*) To manufacture, acquire, own, sell or otherwise dispose of all kinds of goods, merchandise and personal property of every nature whatsoever either within or without the State of Delaware and anywhere in the world.

(*f*) To engage in all kinds of business, including the following but without excluding others: All manufacturing, milling, mining, quarrying, building, construction and industrial works and operations; development and utilization of every kind of power; the acquirement, construction, use, operation, sale and other disposition of all kinds of machinery, plants, factories, warehouses, elevators, buildings and other structures, bridges, wharves, docks, slips, dams, power works, water works, boats, ships, engines, cars, equipment and appliances, whether in connection with said business or otherwise, and generally the utilization of all instrumentalities, methods, processes and appliances, in all ways and by all means now known or which may hereafter be discovered or invented.

(*g*) To apply for, obtain, register, purchase, lease or otherwise to acquire, and to hold, use, own, operate and introduce, and to sell, assign or otherwise to dispose of any trademarks, trade names, brands, copyrights, concessions, patents, inventions, formulae, improvements and processes used in connection with or secured under letters patent of the United States, or any other country, or otherwise, and to use, exercise, develop, grant licenses in respect of, or otherwise to turn to account any such trademarks, copyrights, concessions, patents, licenses, processes and the like, or any such property or rights.

(*h*) To subscribe or cause to be subscribed for, and to purchase or otherwise acquire, hold for investment, or otherwise, sell, assign, transfer, mortgage, pledge, exchange, distribute or otherwise dispose of the whole or any part of the shares of the capital stock, bonds, coupons, mortgages, deeds of trust, debentures, securities, obligations, evidences of indebtedness, notes, goodwill, rights,

843010238

synthetic, in the form of raw materials, intermediates, or finished products, and chemicals which may be used in the manufacture of any and all products of every kind whatsoever; and (2) chemical products of every kind and description.

(*b*) To engage in research, exploration, laboratory and development work relating to any substance, compound or mixture, now known or which may hereafter be known, discovered or developed, and to perfect, develop, manufacture, use, apply and generally deal in any such substance, compound or mixture.

(*c*) To purchase or otherwise acquire, hold, own, occupy, develop, improve, sell, dispose of and convey real property and any and every interest therein either within or without the State of Delaware and anywhere in the world; to extract, remove, produce or prepare from any such property any animal, vegetable, mineral or other product or material therein or thereon, either by agricultural pursuits, mining, quarrying, or by any other method or means now known or that may hereafter be discovered or invented, and to avail itself in every manner of each and every resource of such property by reducing it to proper form and by use, sale or other disposition thereof.

(*d*) To erect, purchase, sell, lease, manage, occupy and improve buildings and to do and perform all things needful and lawful for the holding, development and improvement of the same for residence, trade and business purposes; to buy, own, operate, improve, lease and occupy, lands and buildings for hotels, apartment houses, dwelling houses, and business structures of all kinds, for the accommodation of the public and of individuals; to manage, operate, conduct, and carry on, hotels, apartment houses, dwelling houses, office buildings, restaurants, cafes, pharmacies, drug stores, theaters, and other places for the accommodation of the public and of individuals.

843010239

E. I. DU PONT DE NEMOURS AND COMPANY

RESTATED CERTIFICATE OF INCORPORATION

E. I. du Pont de Nemours and Company, a corporation organized and existing under the Laws of the State of Delaware, hereby certifies as follows:

1. The name of the corporation is E. I. du Pont de Nemours and Company. The date of filing its original Certificate of Incorporation with the Secretary of State was September 4, 1915.

2. This Restated Certificate of Incorporation only restates and integrates and does not further amend the provisions of the Certificate of Incorporation of this corporation as heretofore amended or supplemented and there is no discrepancy between those provisions and the provisions of this Restated Certificate of Incorporation.

3. The text of the Certificate of Incorporation as amended or supplemented heretofore is hereby restated without further amendments or changes to read as herein set forth in full.

First: — The name of the corporation is

E. I. DU PONT DE NEMOURS AND COMPANY

Second: — The principal office of the corporation is to be located at No. 1007 Market Street, in the City of Wilmington, in the County of New Castle, in the State of Delaware. The name of its resident agent is E. I. du Pont de Nemours and Company, whose address is Room 8042, Du Pont Building, No. 1007 Market Street, in the City of Wilmington, County of New Castle, State of Delaware 19898.

Third: — The nature of the business of the corporation and the objects and purposes proposed to be transacted, promoted or carried on by it, are as follows:

(*a*) To manufacture, produce, prepare, experiment with, purchase, and otherwise acquire, import, export, sell, distribute, and otherwise dispose of, and generally to trade and deal in, in any manner whatsoever, (1) chemicals of every description, organic or inorganic, natural or

843010240

CHARTER

OF

E. I. du Pont de Nemours and Company

INCORPORATED UNDER THE LAWS OF DELAWARE

Authorized Capital

Preferred Stock ..... 23,000,000 Shares No Par Value
Common Stock ..... 900,000,000 Shares $.60 Par Value

Original Certificate	Filed September 4, 1915
Certificate of Amendment	Filed December 4, 1922
Certificate of Amendment	Filed June 19, 1925
Certificate of Amendment	Filed October 27, 1926
Certificate of Amendment	Filed January 19, 1929
Certificate of Amendment	Filed April 23, 1934
Certificate of Amendment	Filed June 18, 1937
Certificate of Amendment	Filed September 29, 1939
Certificate of Amendment	Filed March 15, 1940
Certificate of Amendment	Filed March 10, 1942
Certificate of Change of Resident Agent	Filed April 23, 1946
Certificate of Amendment	Filed April 25, 1947
Certificate of Change of Resident Agent	Filed May 23, 1947
Certificate of Amendment	Filed June 15, 1949
Certificate of Amendment	Filed July 6, 1955
Certificate of Change of Resident Agent	Filed July 6, 1955
Certificate of Amendment	Filed November 13, 1957
Certificate of Change of Resident Agent	Filed June 19, 1963
Certificate of Change of Resident Agent	Filed September 21, 1966
Certificate of Amendment	Filed April 8, 1968
Certificate of Amendment	Filed April 13, 1970
Certificate of Amendment	Filed April 8, 1974
Agreement of Merger Amending Certificate of Incorporation	Filed October 17, 1977
Certificate of Amendment	Filed April 16, 1979
Certificate of Amendment	Filed April 21, 1980
Certificate of Amendment	Filed August 17, 1981
Certificate of Amendment	Filed May 4, 1987
Certificate of Amendment	Filed December 21, 1989
Restated Certificate	Filed December 22, 1989

843010241

CHARTER

OF

E. I. du Pont de Nemours and Company

Incorporated Under The Laws of Delaware

843010242

shall be paid to the holders of the Common Stock of the corporation.

Such payments to the holders of the Preferred Stock shall be made without preference or priority of one series over any other series and shall be made before any amount shall be paid to the holders of the Common Stock. If the assets of the corporation distributable upon any such liquidation or dissolution or winding-up of the corporation shall be insufficient to permit the payments to the holders of the Preferred Stock of the full amounts above provided for, including an amount equivalent to all unpaid accumulated dividends as aforesaid, the said assets shall be allocated to the respective series of Preferred Stock in the ratios that such aggregate liquidation value of the issued shares of each series bears to the aggregate liquidation value of the issued shares of all series of Preferred Stock as fixed for the respective series of Preferred Stock in the Certificate of Incorporation or in the resolution or resolutions of the Board of Directors providing for the issuance of the respective series, and shall be distributed among the holders of the respective series of Preferred Stock according to their respective shares.

VI. The Preferred Stock of any series shall be subject to redemption at any time in whole or in part at the amount fixed herein, or fixed by the Board of Directors as herein provided, for the redemption of such series including an amount equivalent to all unpaid accumulated dividends thereon, upon not less than sixty days' notice addressed to the respective holders of record of the stock to be redeemed at their addresses as the same shall appear on the stock transfer records of the corporation in such manner as the Board of Directors shall determine.

VII. The holders of the Preferred Stock shall have no voting power on any questions whatsoever except as otherwise provided by law, and except that in the event

843010243

that the corporation shall fail to pay any dividend on the Preferred Stock when it regularly becomes due and such default shall continue for the period of six (6) months, then until but not after such time as accumulated and unpaid dividends on all outstanding Preferred Stock of all series shall have been paid, the holders of the outstanding Preferred Stock shall have the exclusive right, voting separately and as a class, to elect two directors or, if the total number of directors of the corporation be only three, then only one director, at each meeting of the stockholders of the corporation held for the purpose of electing directors. At all meetings of stockholders held for the purpose of electing directors at which the holders of Preferred Stock shall have the exclusive right, voting separately and as a class, to elect any directors as aforesaid, the presence in person or by proxy of the holders of a majority of the oustanding shares of Preferred Stock shall be required to constitute a quorum of such class for the election of any directors by holders of Preferred Stock, as a class, provided, however, that the absence of a quorum of the holders of Preferred Stock shall not prevent the election at any such meeting or adjournment thereof of the remaining directors for whose election a class vote of the holders of Preferred Stock is not required, if the necessary quorum of the stockholders entitled to vote in the election of such remaining directors is present in person or by proxy in accordance with the by-laws of the corporation; and provided further, that in the absence of a quorum of the holders of Preferred Stock, a majority of those holders of such Preferred Stock who are present in person or by proxy shall have power to adjourn the election of those directors to be elected by their class from time to time without notice other than announcement at the meeting until the requisite amount of holders of Preferred Stock shall be present in person or by proxy.

The holders of Common Stock shall have the right to

843010244

vote on all questions to the exclusion of all other stockholders except as hereinbefore specifically stated.

VIII. Whenever, at any time, full accumulated dividends as aforesaid for all past dividend periods and for the current dividend period shall have been paid, or declared and set apart for payment, on the then outstanding Preferred Stock, the Board of Directors may declare dividends on the Common Stock of the corporation.

IX. Upon any liquidation or dissolution or winding-up of the corporation, whether voluntary or involuntary, the assets and funds of the corporation remaining, after the payments have been made to the holders of the Preferred Stock, as provided in Section V hereof, shall be divided and paid to the holders of the Common Stock according to their respective shares.

X. From time to time the Preferred Stock or the Common Stock may be increased according to law.

XI. From time to time the Preferred Stock and the Common Stock may be issued in such amounts and proportions and for such consideration as may be fixed by the Board of Directors, or, in the case of Common Stock issued upon the exercise of the options referred to in Section XIII hereof, as provided in such Section.

XII. No stockholder of the corporation, of whatever class or series, shall have any preemptive or preferential right of subscription to any shares of any series of the Preferred Stock of the corporation, authorized hereunder or under any amendment hereof, or to any obligations convertible into said Preferred Stock of any series of the corporation, issued or sold, nor any right of subscription to any thereof other than such, if any, as the Board of Directors of the corporation in its discretion from time to time may determine, and the Board of Directors may issue said Preferred Stock of any series of the corporation, or

843010245

obligations convertible into said Preferred Stock of any series, without offering said Preferred Stock, or said obligations, either in whole or in part, to any stockholders of the corporation.

No holder of any shares of the Preferred Stock of any series of the corporation shall have any preemptive or preferential right of subscription to any shares of stock of any class of the corporation, or to any obligations convertible into shares of stock of any class of the corporation, issued or sold, nor any right of subscription to any thereof other than such, if any, as the Board of Directors of the corporation in its discretion from time to time may determine.

XIII. The Board of Directors may create and issue to employees (including officers and directors) of this corporation, or of any corporation in which this corporation shall directly or indirectly own fifty per cent or more of the voting stock, options to purchase the corporation's Common Stock in accordance with the terms of any duly adopted compensation plan. The shares of stock so optioned may be unissued, or issued and reacquired shares of Common Stock of the corporation, as shall be determined by the Board of Directors, and the Board shall have power to take all action necessary and appropriate in connection with any such issuance or sale of shares. The options shall be evidenced by such instruments as shall be approved by the Board of Directors. The terms upon which, the time or times at or within which, and the consideration for which such options may be issued, and for which any shares of stock may be issued or sold by the corporation upon the exercise of such options, shall be such as shall be stated in the resolution or resolutions adopted by the Board of Directors providing for the creation and issuance of such options and, in every case, set forth or incorporated by reference in the instrument or instruments evidencing

843010246

such options. The judgment of the Board of Directors as to the consideration and sufficiency thereof for the issuance of such options and for the issuance or sale of stock pursuant to the exercise thereof shall be conclusive.

Any standing committee duly designated by resolution passed by a majority of the whole Board of Directors and consisting of two or more of the directors, shall have and may exercise any or all of the rights, powers and functions of the Board of Directors specified in this Section XIII, or otherwise pertaining to any duly adopted compensation plan, to the extent provided in a resolution passed by a majority of the whole Board or in the By-Laws of the corporation.

XIV. The amount of capital stock with which this corporation will commence business is Seventy-five Hundred Dollars ($7500).

Fifth:—The names and places of residence of each of the original subscribers to the capital stock and the number of shares subscribed for by each are as follows:

Name	*Residence*	*Number of Shares*
Pierre S. du Pont	Christiana Hundred, Delaware,	25
John J. Raskob	Brandywine Hundred, Delaware,	25
John P. Laffey	Wilmington, Delaware,	25

Sixth:—The corporation is to have perpetual existence.

Seventh:—The private property of the stockholders shall not be subject to the payment of corporate debts to any extent whatever.

Eighth:—The number of the directors of the corporation shall be fixed from time to time by the by-laws and the number may be increased or decreased as therein provided.

843010247

In case of any increase in the number of directors the additional directors shall be elected as provided by the By-laws by the directors or by the stockholders at an annual or special meeting.

In case of any vacancy in the Board of Directors for any cause the remaining Directors by affirmative vote of a majority of the whole Board of Directors may elect a successor to hold office for the unexpired term of the Director whose place is vacant and until the election of his successor.

In furtherance, but not in limitation of the powers conferred by law, the Board of Directors are expressly authorized:

(*a*) To hold their meetings outside of the State of Delaware at such places as from time to time may be designated by the By-laws or by resolution of the Board. The By-laws may prescribe the number of directors necessary to constitute a quorum of the Board of Directors, which number may be less than a majority of the whole number of directors.

(*b*) To appoint the regular officers of the corporation, and such other officers as they may deem necessary for the proper conduct of the business of the Company.

(*c*) To remove at any time any officer elected or appointed by the Board of Directors but only by the affirmative vote of a majority of the whole Board of Directors.

(*d*) To remove any other officer or employe of the corporation or to confer such power on any committee or superior officer of the corporation, unless such removals are otherwise regulated by the By-laws.

843010248

(*e*) To appoint standing committees by the affirmative vote of a majority of the whole Board, and such standing committees shall have and may exercise such powers as shall be conferred or authorized by the By-Laws.

(*f*) To issue the stock of every class in such amounts and proportions as they may determine up to the total amount of the authorized capital stock or any increase thereof, subject, however, to the provisions of this certificate.

(*g*) From time to time to fix and determine and to vary the sum to be reserved over and above its capital stock paid in as working capital before declaring any dividends among its stockholders; to direct and determine the use and disposition of any surplus or net profits over and above the capital stock paid in; to fix the time of declaring and paying any dividend, and, unless otherwise provided in the By-laws, to determine the amount of any dividend. All sums reserved as working capital or otherwise may be applied from time to time to the acquisition or purchase of its bonds or other obligations or shares of its own capital stock or other property to such extent and in such manner and upon such terms as the Board of Directors shall deem expedient, and neither the stock, bonds or other property so acquired shall be regarded as accumulated profits for the purpose of declaring or paying dividends unless otherwise determined by the Board of Directors, but shares of such capital stock so purchased or acquired may be resold, unless such shares shall have been retired for the purpose of decreasing the Company's capital stock as provided by law.

(*h*) From time to time to determine whether and to what extent, and at what times and places, and under what conditions and regulations the accounts and books of the

843010249

corporation, or any of them, shall be open to the inspection of the stockholders, and no stockholders shall have any right to inspect any account or book or document of the corporation, except as conferred by statute or authorized by the Board of Directors or by a resolution of the stockholders.

(*i*) Subject always to By-laws made by the stockholders, to make By-laws; and, from time to time, to alter, amend or repeal any By-laws; but any By-laws made by the Board of Directors may be altered or repealed by the stockholders at any annual meeting, or at any special meeting, provided notice of such proposed alteration or repeal be included in the notice of the meeting.

(*j*) With the written assent, without a meeting of the holders of two-thirds of its stock, or pursuant to the affirmative vote, in person or by proxy, at any meeting called as provided in the By-laws, of the holders of two-thirds of its stock, issued and outstanding, the Board of Directors may sell, convey, assign, transfer or otherwise dispose of, the property, assets, rights and privileges of the corporation as an entirety, for such consideration and on such terms as they may determine.

Ninth: — A director of the corporation shall not be personally liable to the corporation or its stockholders for monetary damages for breach of fiduciary duty as a director, except for liability (i) for any breach of the director's duty of loyalty to the corporation or its stockholders, (ii) for acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law, (iii) under Section 174 of the General Corporation Law of Delaware, or (iv) for any transaction from which the director derived any improper personal benefit. If the General Corporation Law of Delaware is amended after approval by the stockholders

843010250

of this article to authorize corporate action further eliminating or limiting the personal liability of directors, then the liability of a director of the corporation shall be eliminated or limited to the full extent permitted by the General Corporation Law of Delaware, as so amended.

Any repeal or modification of the foregoing paragraph by the stockholders of the corporation shall not adversely affect any right or protection of a director of the corporation existing at the time of such repeal or modification.

4. This Restated Certificate of Incorporation was duly adopted by the Board of Directors in accordance with Section 245 of the General Corporation Law of the State of Delaware.

5. This Restated Certificate of Incorporation shall be effective at 5:00 p.m. Eastern Standard Time on December 22, 1989.

IN WITNESS WHEREOF, said E. I. du Pont de Nemours and Company has caused this certificate to be signed by John F. Schmutz, its Senior Vice President and General Counsel, and attested by Roger W. Arrington, its Secretary, this 21st day of December, 1989.

E. I. DU PONT DE NEMOURS AND COMPANY

By: JOHN F. SCHMUTZ
Senior Vice President and General Counsel

ATTEST:

By: R. W. ARRINGTON
Secretary

843010251

I hereby certify that the within and foregoing is a true and correct copy of the Restated Certificate of Incorporation of E. I. du Pont de Nemours and Company.

Witness my hand and the corporate seal of the Company this day of 19 .

Secretary

843010252

PREFERRED STOCK—$3.50 SERIES

Certificate Authorizing the Issue of Preferred Stock—$3.50 Series	Filed April 30, 1947
Certificate Decreasing the Number of Authorized Shares of Preferred Stock—$3.50 Series	Filed July 6, 1955

843010253

CERTIFICATE SETTING FORTH COPY OF RESOLUTION OF THE BOARD OF DIRECTORS OF E. I. DU PONT DE NEMOURS AND COMPANY ESTABLISHING AND AUTHORIZING THE ISSUE OF A NEW SERIES OF PREFERRED STOCK DESIGNATED "PREFERRED STOCK — $3.50 SERIES".

(Pursuant to Section 13 of the General Corporation Law of the State of Delaware and of the Certificate of Incorporation, as amended, of E. I. du Pont de Nemours and Company)

We, W. J. Beadle, a Vice-President, and W. F. Raskob, Secretary, of E. I. du Pont de Nemours and Company, a corporation of the State of Delaware, do hereby certify under the seal of said Corporation as follows:

That at a special meeting of the Board of Directors of the Corporation duly called for the consideration of the resolutions hereinafter set forth and on notice thereof duly given in accordance with the By-Laws of the Corporation and with the laws of the State of Delaware, and held on April 29, 1947, and pursuant to power and authority expressly vested in the Board of Directors by the provisions of the General Corporation Law of the State of Delaware and Article FOURTH of the Certificate of Incorporation, as amended, of E. I. du Pont de Nemours and Company, the Board of Directors duly adopted the following resolutions:

> "RESOLVED that the Board of Directors hereby establishes and authorizes the issue of a new series of Preferred Stock without par value of the corporation and hereby fixes the designation, the number of shares to be issued, the dividend rate, the redemption price and the amount payable upon liquidation or dissolution or winding-up of the corporation with respect to such new series of Preferred Stock without par value

843010254

as follows, such attributes to be in addition to the other provisions set forth in Article Fourth of the Certificate of Incorporation as amended, which are applicable to all shares of Preferred Stock without par value irrespective of any variations between the shares of Preferred Stock without par value of the different series:

(*a*) The new series of Preferred Stock without par value established by this resolution is hereby designated Preferred Stock—$3.50 Series;

(*b*) Preferred Stock—$3.50 Series be and hereby is authorized to be issued in the amount of 1,000,000 shares;

(*c*) The dividend rate on the Preferred Stock—$3.50 Series shall be $3.50 per share per annum and no more, and dividends on the 1,000,000 shares of Preferred Stock—$3.50 Series herein authorized to be issued shall accumulate from and after April 25, 1947;

(*d*) The amount per share over and above any accumulated dividends thereon which the shares of Preferred Stock—$3.50 Series shall be entitled to receive upon redemption is as follows: if redeemed on or before April 25, 1952, $107.00 a share; thereafter on or before April 25, 1955, $106.00 a share; thereafter on or before April 25, 1958, $105.00 a share; thereafter on or before April 25, 1961, $104.00 a share; thereafter on or before April 25, 1964, $103.00 a share; and thereafter, $102.00 a share; and

(*e*) The amount per share over and above accumulated dividends which the shares of Preferred Stock—$3.50 Series shall be entitled to receive upon involuntary liquidation or dissolution or winding-up of the corporation is

843010255

$100.00 a share, and upon voluntary liquidation or dissolution or winding-up of the corporation is $107.00 a share.

FURTHER RESOLVED that a certificate setting forth a copy of the foregoing resolution providing for the establishment and issue of 1,000,000 shares of Preferred Stock—$3.50 Series shall be made under the seal of the corporation, signed by the President or a Vice-President and by the Secretary or an Assistant Secretary of the corporation, acknowledged by such President or Vice-President before an officer authorized by the laws of Delaware to take acknowledgments of deeds, and shall be filed and a copy thereof shall be recorded pursuant to and in the manner provided pursuant to and in the manner provided by Section 13 of the Delaware Corporation Law."

IN WITNESS WHEREOF, we have hereunto signed this certificate and have caused the corporate seal of the Corporation to be hereunto affixed this 29th day of April, A. D. 1947.

E. I. DU PONT DE NEMOURS AND COMPANY

By: W. J. BEADLE
Vice-President

Attest:
W. F. RASKOB
Secretary

E. I. DU PONT DE NEMOURS AND CO.
FOUNDED 1802
SEAL
DELAWARE

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STATE OF DELAWARE
COUNTY OF NEW CASTLE } SS

BE IT REMEMBERED, that on this 29th day of April, A. D. 1947, before the subscriber, a Notary Public in and for the State and County aforesaid, authorized by the laws of Delaware to take acknowledgments of deeds, personally appeared W. J. BEADLE, Vice-President of E. I. du Pont de Nemours and Company, the Corporation mentioned in and which executed the foregoing Certificate, known to me personally to be such, and he, the said W. J. BEADLE, as such Vice-President, acknowledged the said Certificate to be his act and deed and the act and deed of said Corporation, and that the seal thereto affixed is the common and corporate seal of said Corporation duly affixed by its authority, and that his act of executing, acknowledging and delivering said Certificate was duly authorized by the Board of Directors of said Corporation.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal the day and year in this Certificate above written.

J. H. CASSIDY
Notary Public
Appointed July 3, 1946
For Two Years
Delaware

J. H. CASSIDY
Notary Public

843010257

CERTIFICATE SETTING FORTH COPY OF RESOLUTION OF THE BOARD OF DIRECTORS OF E. I. DUPONT DE NEMOURS AND COMPANY DECREASING THE AUTHORIZED NUMBER OF SHARES OF PREFERRED STOCK—$3.50 SERIES FROM ONE MILLION SHARES TO SEVEN HUNDRED THOUSAND SHARES.

(Pursuant to Section 151(g) of the General Corporation Law of the State of Delaware and the Certificate of Incorporation, as amended, of E. I. du Pont de Nemours and Company)

WE, L. du P. Copeland, a Vice-President, and F. G. Hess, Assistant Secretary, of E. I. du Pont de Nemours and Company, a corporation of the State of Delaware, DO HEREBY CERTIFY under the seal of said Corporation as follows:

That at a meeting of the Board of Directors of the Corporation duly called, and held on the 20th day of June, 1955, in accordance with the By-Laws of the Corporation and with the laws of the State of Delaware, and pursuant to power and authority expressly vested in the Board of Directors by the provisions of the General Corporation Law of the State of Delaware and Article Fourth of the Certificate of Incorporation, as amended, of E. I. du Pont de Nemours and Company, the Board of Directors duly adopted the following resolution:

"RESOLVED, by the Board of Directors of this Company that pursuant to authority expressly vested in it by the provisions of this Company's Certificate of Incorporation, as amended, the Series of 1,000,000 shares of Preferred Stock, without par value, designated 'Preferred Stock— 3.50 Series' (provided for in a resolution of the Board of Directors of this Company adopted April 29, 1947 and a certificate therefor duly

843010258

filed and a copy thereof duly recorded) shall be and stand decreased by 300,000 shares of said 'Preferred Stock—$3.50 Series', that have been duly retired and are not now outstanding, to 700,000 shares thereof by a certificate hereby authorized and directed to be made, signed, acknowledged and filed, and a copy thereof recorded in accordance with the provisions of Title 8, Section 151 of the Revised Code of Delaware of 1953, setting forth a statement that a decrease in said Series of 1,000,000 shares of 'Preferred Stock—$3.50 Series' by 300,000 shares thereof not now outstanding, to 700,000 shares of said 'Preferred Stock—$3.50 Series' without par value, had been authorized and directed by a resolution duly adopted by the Board of Directors of this Company on the 20th day of June, 1955."

IN WITNESS WHEREOF, we have hereunto signed this certificate and have caused the corporate seal of the Corporation to be hereunto affixed this 20th day of June, A. D. 1955.

E. I. DU PONT DE NEMOURS AND COMPANY

By: L. DU P. COPELAND
Vice-President

Attest:
F. G. HESS
Asst. Secretary

E. I. DU PONT DE NEMOURS AND CO.
FOUNDED 1802
SEAL
DELAWARE

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STATE OF DELAWARE }
COUNTY OF NEW CASTLE } SS.

BE IT REMEMBERED, that on this 20th day of June, A.D. 1955, before the subscriber, a Notary Public in and for the State and County aforesaid, authorized by the laws of Delaware to take acknowledgments of deeds, personally appeared L. DU P. COPELAND, Vice-President of E. I. du Pont de Nemours and Company, the Corporation mentioned in and which executed the foregoing Certificate, known to me personally to be such, and he, the said L. DU P. COPELAND, as such Vice-President, acknowledged the said Certificate to be his act and deed and the act and deed of said Corporation, and that the seal thereto affixed is the common and corporate seal of said Corporation duly affixed by its authority, and that his act of executing, acknowledging and delivering said Certificate was duly authorized by the Board of Directors of said Corporation.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal the day and year in this Certificate above written.

RICHARD H. TALLANT
Notary Public
Appointed October 5, 1953
For Two Years
Delaware

RICHARD H. TALLANT
Notary Public

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